

Diego Gonzalez

1) Family number: 211610 (BRPI8806255A)

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Title: RECIPIENTE COM DISPOSITIVOS PARA A PROTECAO TERMICA DE SUBSTANCIAS CONTAINER WITH DEVICES FOR THERMAL PROTECTION OF SUBSTANCES (Machine translation)

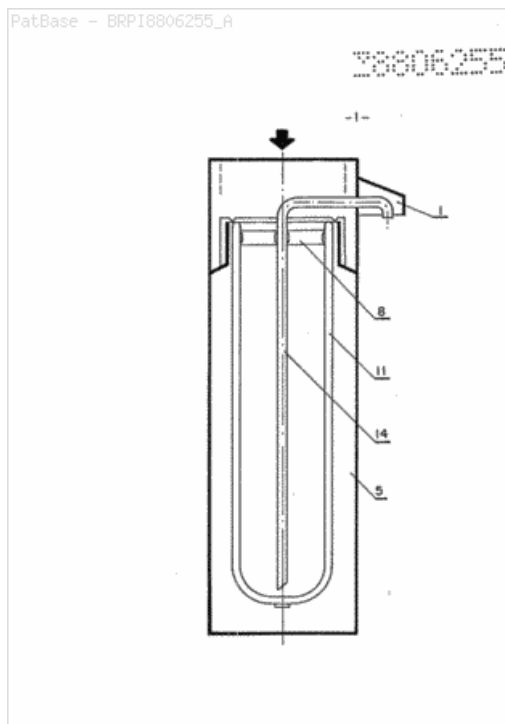
Abstract: Source: BRPI8806255A [PT] [Source: Claim 1] 1 - "Recipiente com dispositivos para a protecao termica de substancias" caracterizado por ser consti- tuido de um, dois ou mais frascos. Os frascos tem parede interna e externa, que unem-se de forma a delimitar um espaco fechado entre elas; este espaco e denominado espaco intermediario. Estes frascos sao denominados ampolas. A parede interna das ampolas tem o formato de um vaso com paredes continuando-se e unindo-se ao longo de um perimetro e originando a maior dimensao do vaso, a altura, formando as paredes laterais; e uma de suas extremidades continua-se com as paredes laterias de forma a ocluir esta extreni- dade, chamando-se fundo; a parede interna da ampola assim constituida, origina um espaco circundado pelas paredes laterais e ocluido pelo fundo, chamado inte- rior da ampola. A extremidade oposta ao fundo e aberta, interligando o meio ambiente com o interior da ampola, e e chamada boca da ampola. A parede externa, maior em todas as dimensoes, constitui-se tambem como um vaso aos moldes da parede interna. As ampolas sao interligadas por condutos tubulares chamados de cano. !ss ••••• »t 4 ss •<ss # ss ss •••••a ss a # aaaaaaaa a ss - 02 - Os canos podem ser continuos ou sofrerem emendas por encaixe ou rosqueamento, como duas extremidades de igual diametro, serem encaixadas ou rosquearem-se com luva de maior diametro interna. No interior de uma ou mais ampolas existe uma estrutura que adapta-se a face interna da parede interna da ampola de tal forma a instituir uma vedacao entre esta estrutura e a ampola e separar o interior da ampola em dois espacos; esta estrutura chama-se embulo. As ampolas, canos e imbulos formam um conjunto que fica contido numa embalagem para a sua protecao; chamada de embalagem, e que possui uma tampa acoplada a ela que permite assim a oclusao reversivel da abertura superior da ampola, chamada de tampa da embalagem. O espaco intermediario, entre as paredes interna e externa da ampola, pode ter vacuo ou ser total ou parcialmente preenchido por substancia qualquer.

Machine translation: [Source: Claim 1] 1-"container with thermal protection devices of" characterized by being a tuido pose, two or more bottles. The bottles have internal and external wall, to unite in order to delimit a closed space between them; This space and named intermediate space. These bottles are called light bulbs. The inner wall of amps is shaped like a vase with walls continuing and joining along a perimeter and resulting in the largest dimension of the vessel, the height, forming the side walls; and one of its ends is still with the side walls in order to occlude this extreni-dade, calling themselves; the inner wall of the bulb so constituted, gives rise to a space surrounded by the side walls and ocluido by the Fund, called integrated led light bulb. The opposite end to the bottom and open, linking the environment with the inside of the bulb, and called bulb's mouth. The outer wall, bigger in all dimensions, it is also as a vase to templates of the inner wall. The vials are interconnected by tubular conduits called pipe. ! ss ••••• • 4 <» t ss # ss ss •• '•••• ss # ss-02- aaaaaaaa pipes can be continuous or suffer seams for fit or threading, as two ends of the same diameter, being docked or rosquearem with larger internal diameter sleeve. Within one or more light bulbs there is a structure that adapts to the inner surface of the inner wall of the bulb in such a way as to establish a seal between this structure and the bulb and separate the inside of the bulb in two spaces; This structure is called embulo. The vials, pipes and imbulos form a set that is contained in a package for your protection; call, and that has a lid attached to it that allows so the oclusao reversible the top opening of the bulb, called the packing lid. O intermediary space between the inner and outer walls of the bulb, may have vacuum or be totally or partially filled by substance.

Classifications:

International (IPC 8-9): B65D81/38 (Advanced/Invention);
B65D81/38 (Core/Invention)

International (IPC 1-7): B65D81/38



Family:

Publication number	Publication date	Application number	Application date
BRPI8806255 A	19900724	BR1988PI06255	19881123

Priority:

BR1988PI06255 19881123

Probable Assignee: ALEXANDRE AIQUEL VAZ COSTA

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Inventor(s): (std): COSTA ALEXANDRE AIQUEL VAZ ; NIEDZIOŁKO MARIUSZ
Inventor(s): ALEXANDRE AIQUEL VAZ COSTA ; MARIUSZ NIEDZIOŁKO

2) Family number: 2932896 (US5037144A)

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Title: RESTRAINED PIPE JOINT

Abstract: A restrained pipe joint is provided for affixing the spigot end of a first pipe into the socket end of a second pipe. The pipe joint includes a circular restraining ring and a retainer ring which includes a groove ring and a plurality of locking segments. When the retaining ring is tightened, the retaining ring is forced against the circular restraining ring, thereby engaging the locking segment teeth into the spigot end of the first pipe. The groove ring abuts the circular restraining ring which holds the spigot end of the first pipe within the socket end of the second pipe.

Classifications:

International (IPC 8-9): F16L19/00 F16L21/02

F16L21/08 (Advanced/Invention);

F16L21/02 F16L21/08 (Core/Invention)

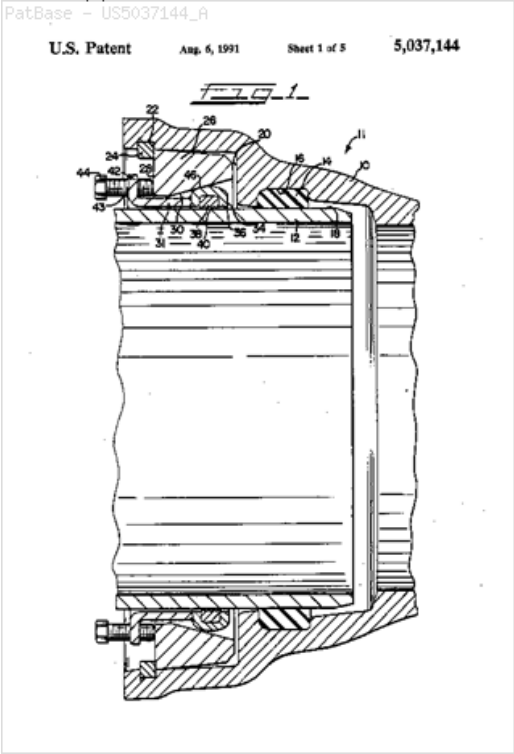
International (IPC 1-7): F16D21/04 F16L19/00 F16L19/08 F16L21/00

F16L21/02 F16L21/08 F16L23/00 F16L39/00

CPC: Y10T29/49826 F16L21/08

European: F16L21/08

US: 285/184 285/308 285/321 285/323 285/374 285/94 29/428



Family:

Publication number	Publication date	Application number	Application date
BRPI9101747 A	19911210	BR1991PI01747	19910430
CA2036785 AA	19911103	CA19912036785	19910221
CA2036785 C	19960813	CA19912036785	19910221
DE69113315 D1	19951102	DE19916013315	19910502
DE69113315 T2	19960307	DE19916013315T	19910502
EP0455490 A2	19911106	EP19910303984	19910502
EP0455490 A3	19920304	EP19910303984	19910502
EP0455490 B1	19950927	EP19910303984	19910502
JP1958837 C3	19950810	JP19910128194	19910502
JP4228991 A2	19920818	JP19910128194	19910502
JP6089868 B4	19941114	JP19910128194	19910502
US5037144 A	19910806	US19900518426	19900502

Priority:

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Probable Assignee: GRIFFIN PIPE PRODUCTS CO INC

Assignee(s): (std): AMSTED IND INC

Assignee(s): AMSTED IND INC CHICAGO ILL US ; BANK OF AMERICA NA ; BANK OF AMERICA NA SUCCESSOR COLLATERAL AGENT AS ; CITICORP USA INC ; CITIICORP NORTH AMERICA INC ; GRIFFIN PIPE PRODUCTS CO INC ; BUDZIAK JOHN J ; PETING ROBERT G ; CITICORP USA INC C O CITIBANK DELAWARE

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3) Family number: 37234864 (BRPI0504845A)

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Title: gerenciamento de derramamento de agua para fabricante do gelo na porta Water spill management for the ice maker in the door (Machine translation)

Abstract: Source: BRPI0504845A [PT] « #> (-' • • • V * # * _ j v "> ; / , • J • • # • «. ~ • • • «I • • • e m * • • • > • • • j 1 • u • • *
RESUMO Patente de Invencao: "GERENCIAMENTO DE DERRAMAMENTO DE AGUA PARA FABRICADOR DO GELO NA PORTA".
9 Refrigerador - freezer tendo um ice maker posicionado em uma 5 porta de compartimento de refrigerador ou compartimento de freezer. O ice maker e disposto para impedir ou gerenciar derramamentos do ice maker no caso de a porta em que o ice maker esta montado ser aberta ou fechada, quando agua nao congelada esta presente no ice maker. Concretizacoes para gerenciamento de derramamentos para um numero de ice makers de 10 bandeja fixa e movel sao descritas. j 5 10 15 20 25 30 far OSOWS-1 p*!", cSWGol? 161-3 o<e \ \~2- \\'2.oo> Relatório Descritivo da Patente de Invencao para "GERENCIA- MENTO DE DERRAMAMENTO DE AGUA PARA FABRICADOR DO GELO NA PORTA". Referencia Cruzada a Pedidos Relacionados O presente pedido esta relacionado com os seguintes Pedidos de Patente dos Estados Unidos depositados simultaneamente com este: US20020155, US20040162 e US20040111. Antecedentes da Invencao Campo da Invencao A presente invencao refere-se a fabricantes de gelo posiciona- dos em uma porta de compartimento de refrigerador ou de freezer. De acor- do com a invencao, os fabricantes de gelo podem ser dispostos para impe- dir ou gerenciar derramamentos de agua do fabricante de gelo, no caso de a porta em que o fabricante de gelo esta montado ser aberta e fechada, quan- do a agua nao congelada esta presente no fabricante de gelo. Descricao da Tecnica Relacionada Bandejas de cubos de gelo enchidas manualmente, tendo uma cobertura ou tampa para impedir derramamentos de agua sao conhecidos. Os fabricantes de gelo localizados em uma porta de compartimento de re- frigerador ou freezer que nao incluem caracteristicas para gerenciamento de derramamentos sao conhecidas na tecnica. Os refrigeradores freezers lado a lado, tendo mecanismos de armazenamento e distribuicao de cubos de gelo na porta do freezer para fornecer um dispensador de gelo e agua na frente da porta do compartimen- to de freezer sao bem-conhecidos na tecnica. Uma variedade de fabricantes de gelo automaticos de bandeja flexivel e molde de gelo fixo sao conhecidos na tecnica. Sumario da Invencao A invencao se refere a um refrigerador freezer compreendendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refri- gerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compar- 5 10 15 20 25 30 2 timento de refrigerador isolada, um sistema de refrigeracao para resfriamen- to do compartimento de freezer e do compartimento de refrigerador e um fabricante de gelo automatico posicionado em uma dentre a porta de com- partimento de refrigerador e a porta de compartimento de freezer. Uma ban- deja e montada abaixo do fabricante de gelo disposto para coletar derrama- mento de agua, que pode ocorrer quando a porte em que o fabricante de gelo esta posicionado e movida, quando agua esta presente no fabricante de gelo. Uma linha de drenagem pode levar da bandeja ate um recipiente de descarte de agua. O recipiente de descarte de agua pode ser uma vasilha de drenagem localizada no compartimento de maquinaria. Em outro aspecto da invencao a bandeja pode ter um aquece- dor. O aquecedor de bandeja pode ser conectado para ser energizado, quando o aquecedor de descongelamento do sistema de refrigeracao e e- nergizado. • Em outro aspecto da invencao, um sensor e controle de derr- mamento podem ser proporcionados para detectar a presenca de agua na bandeja. O controle pode energizar o aquecedor de bandeja, quando o sen- sor de derramamento detecta agua na bandeja. Em outro aspecto a invencao se refere a um refrigerador freezer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um sistema de refrige- racao para resfriamento do compartimento de freezer e do compartimento de refrigerador e um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de fre- ezer. O fabricante de gelo inclui um molde de gelo, um extrator de pedacos de gelo tendo uma tira de base montada ao longo de uma borda do molde de gelo tendo uma pluralidade de retentores que se estendem da tira de ba- se e posicionados acima de uma porcao do molde de gelo. O fabricante de gelo inclui um acamador de gelo tendo uma pluralidade de dentes montados giravelmente acima do motor de impressao e dispostos para os dentes gira- rem entre a pluralidade de retentores e atraves do molde de gelo para con- 3 duzir pedacos de gelo para fora do molde de gelo. O fabricante de gelo tam- bem inclui uma cobertura, incluindo uma porcao em domo que se estende longitudinalmente que cobre substancialmente o molde de gelo. A porcao em domo da cobertura e articulada com o fabricante de gelo ao longo de uma 5 primeira borda e inclui uma pluralidade de linguetas adjacentes a uma se- gunda borda disposta para se estender nos espacos entre retentores de ex- trator de pedacos de gelo adjacentes e enche-los substancialmente. A cobertura e disposta para abrir durante o ciclo de recolhimento de gelo, a fim de permitir que o acamador de gelo gire atraves do molde de 10 gelo e pedacos de gelo caiam em um receptaculo para armazenamento de gelo posicionado abaixo do fabricante de gelo. O fabricante de gelo inclui um J dispositivo de motor para acionar o acamador de gelo e abrir a cobertura durante os ciclos de recolhimento de gelo. O fabricante de gelo inclui um carne acionado pelo motor do fabricante de gelo para abrir a cobertura, 15 quando o motor do fabricante de gelo opera para acionar o acamador de 9*. A primeira borda da cobertura fecha contra o motor de impres- sao e a segunda borda da cobertura fecha contra a tira de base do extrator de pedacos de gelo. 20 O extrator de pedacos de gelo pode ser posicionado no molde de gelo para definir um canal de recuperacao de agua entre o extrator de, pedacos de gelo e o molde de gelo. A cobertura pode envolver o canal de recuperacao de agua. Em outro aspecto, a invencao se refere a um refrigerador freezer 25 tendo um compartimento de freezer mantido em uma temperatura abaixo de. 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de com- partimento de refrigerador isolada, um sistema de refrigeracao para resfia- mento do compartimento de freezer e do compartimento de refrigerador e 30 um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer. O fa- bricador de gelo inclui um molde de gelo e um extrator flexivel de pedacos 5 10 15 20 25 30 4 de gelo posicionado acima de uma primeira porcao do molde de gelo tendo uma pluralidade de fendas que formam uma pluralidade de retentores. O fabricante de gelo ainda inclui um acamador de gelo tendo uma pluralidade de dentes montados giravelmente acima do molde de gelo e dispostos para os dentes girarem atraves da pluralidade de fendas e atraves do molde de gelo para conduzir pedacos de gelo para fora do molde de gelo. O fabricante de gelo ainda inclui uma tampa protetora que se estende acima de uma se- gunda porcao do molde de gelo. O extrator flexivel de pedacos de gelo pode se estender do ar- mazenamento ate uma primeira borda do molde de gelo e pode ser disposto para cobrir, substancialmente, a primeira porcao do molde de gelo da linha central do molde de gelo ate a primeira borda do molde de gelo. A tampa protetora pode se estender de uma segunda borda do molde de gelo subs- tancialmente ate a linha central do molde de gelo acima do molde de gelo para permitir que o armazenamento gire atraves do molde de gelo. Em outro aspecto, a invencao se refere a um refrigerador freezer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de com- partimento de refrigerador isolada, um sistema de refrigeracao para resfia- mento do compartimento de freezer e do compartimento de refrigerador e um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer. O fa- bricador de gelo inclui um molde de gelo e um extrator de pedacos de gelo tendo uma tira de base e uma pluralidade de retentores posicionados acima de uma primeira porcao do molde de gelo. O molde de gelo tambem inclui um acamador de gelo tendo uma pluralidade de dentes montados giravel- mente acima do molde de gelo e dispostos para os dentes girarem entre a pluralidade de retentores e atraves do molde de gelo para conduzir pedacos de gelo para fora do molde de gelo e tendo uma trama flexivel que se esten- de de dentes adjacentes para encher, pelo menos parcialmente, a folga en- tre dentes adjacentes. O fabricante de gelo inclui um motor para acionar, 5 10 15 20 25 30 5 giravelmente o acamador de gelo a fim de recolher pedacos de gelo durante ciclos de recolhimento e disposto para deixar estacionario o acamador de gelo com a pluralidade de dentes e almas flexiveis ficando substancialmente em um plano com a pluralidade de retentores entre ciclos de recolhimento. Uma tampa protetora se estende acima de uma segunda porcao do molde de gelo. Em outro aspecto a invencao se refere a um refrigerador - free- zer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compartimento de refrigerador isolada, um sistema de refrigeracao para res- friar o compartimento de freezer e o compartimento de refrigerador, um su- porte de fabricante de gelo em uma dentre as portas do compartimento de refrigerador ou do compartimento de freezer e disposto para suportar um fabricante de gelo espacado do painel interno da porta, em que cubos de gelo recolhidos do fabricante de gelo podem cair em um receptaculo para armazenamento de gelo posicionado abaixo do fabricante de gelo e um fa- bricador de gelo automatico disposto para ser montado no suporte de fabri- cador de gelo. O fabricante de gelo inclui um molde de gelo e um extrator de pedacos de gelo, tendo uma tira de base e uma pluralidade de retentores posicionados acima de uma primeira porcao do molde de gelo. A tira de ba- se se estende atraves de uma porcao do molde de gelo. O fabricante de ge- lo inclui um acamador de gelo tendo uma pluralidade de dentes montados giravelmente acima do molde de gelo e dispostos para os dentes girarem entre a pluralidade de dentes e atraves do molde de gelo para conduzir pe- dacos de gelo para fora do molde de gelo. O fabricante de gelo ainda inclui uma tampa protetora que se estende acima de uma segunda porcao do mol- de de gelo. O extrator de pedacos de gelo e a tampa protetora podem ser formados integralmente de material plastico. O acamador de gelo pode ser formado de metal e pode ser montado em contato com o molde de gelo e disposto para ser aquecido por conducao do molde de gelo durante ciclos de 5 10 15 20 25 30 6 recolhimento de gelo. O fabricante de gelo inclui um motor para acionar, gi- ravelmente, o acamador de gelo e o motor pode ser disposto para deixar estacionario o acamador de gelo com a pluralidade

de dentes ficando subs- tancialmente em um plano com a pluralidade de retentores entre ciclos de recolhimento. Em outro aspecto, a invencao se refere a um refrigerador - free- zer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compartimento de refrigerador isolada, um sistema de refrigeracao para res- friamento do compartimento de freezer e do compartimento de refrigerador e um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer. O fa- bricador de gelo inclui uma bandeja movel para pedacos de gelo, um aloja- mento suportando movelmente a bandeja para pedacos de gelo para movi- mento entre uma posicao de enchimento e de fabricacao de gelo e uma po- sicao de recolhimento e uma superficie de vedacao para conter agua, quan- do o molde de gelo esta em uma posicao de enchimento e de fabricacao de gelo. O alojamento pode incluir uma parede traseira de contencao, uma parede dianteira de contencao e paredes extremas de contencao. A bandeja para pedacos de gelo inclui uma insercao de molde tendo uma plu- ralidade de reentrancias para formar pedacos de gelo e uma virola que se estende para cima em torno da pluralidade de reentrancias que formam a superficie de vedacao. Quando a bandeja para pedacos de gelo esta na po- sicao de enchimento e fabricacao de gelo, a virola que se estende para cima e posicionada no lado de fora das paredes dianteira, traseira e extrema. Em outro aspecto, a invencao se refere a um refrigerador - free- zer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compartimento de refrigerador isolada, um sistema de refrigeracao para res- 5 10 15 20 25 30 7 friamento do compartimento de freezer e do compartimento de refrigerador e um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer. O fa- bricador de gelo inclui uma bandeja flexivel, tendo uma pluralidade de cavi- dades e paredes laterais, que se estendem acima das cavidades para impe- dir agua de derramar para fora da bandeja, no caso de a porta em que o fa- bricador de gelo e posicionado ser movida, quando agua esta presente no fabricante de gelo. O fabricante de gelo tambem inclui um suporte para mon- tar, giravelmente, a bandeja flexivel entre as posicoes de formacao de gelo e de recolhimento de gelo e um mecanismo de acionamento para girar a ban- deja flexivel entre as posicoes de formacao de gelo e de recolhimento de gelo e torcao da bandeja flexivel na posicao de recolhimento para liberar os pedacos de gelo. O fabricante de gelo pode incluir duas bandejas conectadas po- sicionadas voltadas em direcoes opostas, montadas giravelmente entre po- sicao de formacao de gelo e recolhimento de gelo. As bandejas de gelo po- dem ser formadas integralmente e compartilhar uma parede de fundo. Em outro aspecto, a invencao se refere a um refrigerador - free- zer, tendo um compartimento de freezer mantido em uma temperatura abai- xo de 0 degrees centigrade, uma porta de compartimento de freezer isolada articulada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compartimento de refrigerador isolada articulada, um sistema de refrigeracao para resfriamento do compartimento de freezer e do compar- timento de refrigerador, um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de comparti- mento de freezer e um amortecedor de porta conectado a uma dentre a por- ta de compartimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo e posicionado. O amortecedor de porta pode ser disposto para encaixar a porta por pelo menos uma porcao da faixa de movimento mediante abertura e pelo menos uma porcao da faixa de movimento durante o fechamento da porta. O amortecedor de porta pode ser um amortecedor carregado a 5 10 15 20 25 30 8 mola montado no compartimento de maquinaria e conectado a uma das arti- culacoes de porta de uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo e posicio- nado. O amortecedor de porta pode ser conectado a articulacao de porta em uma posicao para o amortecedor de porta ir atraves do centro, quando uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo esta posicionado se abre e fecha. Em um aspecto da invencao, o amortecedor pode ser um amor- tecedor hidraulico carregado a mola. Em outro aspecto da invencao, o amortecedor pode ser um a- mortecedor giratorio pode ser um amortecedor giratorio bidire- cional. Em outro aspecto, a invencao se refere a um refrigerador - free- zer, tendo um compartimento de freezer mantido em uma temperatura abai- xo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um comparti- mento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma por- ta de compartimento de refrigerador isolada, um sistema de refrigeracao pa- ra resfriamento do compartimento de freezer e o compartimento de refrige- rador e um fabricante de gelo automatico posicionado em uma dentre a por- ta de compartimento de refrigerador e a porta de compartimento de freezer. Uma bandeja e montada abaixo do fabricante de gelo disposto para coletar derramamento de agua que pode ocorrer quando a porta em que o fabrica- dor de gelo esta posicionado e movida, quando a agua esta presente no fa- bricador de gelo. A bandeja inclui um sensor de derramamento para detectar agua na bandeja e disposto para proporcionar um sinal para o usuario de que um derramamento ocorreu. O sensor de derramamento pode compreender dois grupos de elementos condutores posicionados na bandeja. Os dois grupos de elemen- tos condutores sao conectados a um circuito de deteccao de derramamento. O circuito de deteccao de derramamento pode incluir um sinal para alertar 5 10 15 20 25 30 9 ao usuario de que o derramamento ocorreu. O sinal pode ser um dispositivo de LED para proporcionar um sinal visual de que um derramamento ocorreu. Em outro aspecto, o sinal pode ser um sinal audivel de que um derramamento ocorreu. Em outro aspecto, o refrigerador - freezer pode incluir uma linha de drenagem que leva da bandeja e uma bomba para bombear agua da bandeja para um recipiente de descarte de agua. O circuito de deteccao de derramamento pode incluir uma saida para ativar a bomba. Em outro aspecto, a invencao se refere a um refrigerador - free- zer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compartimento de refrigerador isolada, um sistema de refrigeracao para res- friamento do compartimento de freezer e do compartimento de refrigerador, um fabricante de gelo automatico posicionado na porta interna da porta de compartimento de freezer e um receptaculo para armazenamento de gelo posicionado abaixo do fabricante de gelo. O fabricante de gelo pode incluir uma cobertura montada articuladamente adjacente ao topo do fabricante de gelo e disposto para encerrar o fabricante de gelo em uma primeira posicao e para formar uma calha para gelo do fabricante de gelo para o receptaculo para armazenamento de gelo em uma segunda posicao. A cobertura pode ser montada, articuladamente, adjacente ao topo do fabricante de gelo adjacente ao lado do fabricante de gelo oposto a porta interna. A cobertura pode incluir um atuador conectado a cobertura e disposto para articular a cobertura em torno de um ponto de articulacao. O atuador pode ser disposto para encaixar a parede de topo do compartimento de freezer, quando a porta de compartimento de freezer e fechada. A cober- tura pode incluir um mecanismo de mola para impulsionar a cobertura em direcao a primeira posicao. O receptaculo para armazenamento de cubos de gelo pode ser removivel da porta de compartimento de freezer, quando a cobertura esta na primeira posicao. 5 10 15 20 25 30 10 Em outro aspecto, a invencao se refere a um refrigerador - free- zer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma porta de compartimento de refrigerador isolada, um sistema de refrigeracao para res- friamento do compartimento de freezer e do compartimento de refrigerador, um fabricante de gelo automatico montado em uma dentre a porta de com- partimento de refrigerador e a porta de compartimento de freezer e um re- ceptaculo para armazenamento de gelo posicionado abaixo do fabricante de gelo. O fabricante de gelo inclui um molde de gelo e um aquecedor para o molde de gelo. O fabricante de gelo e montado, giravelmente, para movi- mento para a primeira posicao para enchimento do molde de gelo com agua e para formacao de cubos de gelo e para a segunda posicao substancial- mente invertida para recolhimento de cubos de gelo. O fabricante de gelo pode incluir um sensor de temperatura dis- posto para determinar quando cubos de gelo estao congelados e para iniciar a operacao do aquecedor e fazer com que o fabricante de gelo gire para a segunda posicao. O fabricante de gelo pode ainda incluir um acamador de gelo substancialmente fixo, posicionado atraves do molde de gelo, quando o fabricante de gelo esta na primeira posicao e pode ser disposto para encai- xar cubos de gelo no molde de gelo, a medida que o fabricante de gelo e girado para a segunda posicao. Em outro aspecto, a invencao se refere a um refrigerador - free- zer, tendo um compartimento de freezer mantido em uma temperatura abai- xo de 0 degrees centigrade, uma porta de compartimento de freezer isolada, um comparti- mento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade, uma por- ta de compartimento de refrigerador isolada, um sistema de refrigeracao pa- ra resfriar o compartimento de freezer e o compartimento de refrigerador e um fabricante de gelo automatico montado em uma dentre a porta de com- partimento de freezer e a porta do compartimento de refrigerador. O fabrica- dor de gelo inclui um molde de gelo e um aquecedor para o molde de gelo. O molde de gelo e montado giravelmente para movimento para uma primeira 5 10 15 20 25 30 11 posicao para enchimento do molde de gelo com agua e para formacao dos cubos de gelo e para a segunda posicao substancialmente invertida para recolhimento de cubos de gelo do molde. O molde de gelo inclui paredes laterais estendidas dispostas pa- ra conter agua no molde de gelo, no caso de a porta em que o fabricante de gelo automatico e montado ser movida, quando agua nao congelada esta presente no molde de gelo. O molde de gelo ainda inclui uma virola ao longo da borda distal de uma parede lateral. A virola pode incluir uma borda de retorno dirigida para as cavidades de cubos de gelo dispostas para definir um canal para reter agua formada quando o molde de gelo e aquecido

para recolhimento de cubos de gelo a medida que o molde de gelo é girado para a segunda posição. O fabricante de gelo pode incluir um ancinho substancialmente fixo, posicionado acima do molde de gelo, quando o molde de gelo está na primeira posição e disposto para encaixar cubos de gelo no molde de gelo a medida que o molde de gelo é girado para a segunda posição. O fabricante de gelo pode incluir um sensor de temperatura para determinar quando cubos de gelo estão congelados e um motor para girar o gerenciamento entre a primeira posição e a segunda posição. Em outro aspecto, a invenção se refere a um refrigerador - free-zer tendo um compartimento de freezer mantido em uma temperatura abaixo de 0 graus centígrados, uma porta de compartimento de freezer isolada, um compartimento de refrigerador mantido em uma temperatura acima de 0 graus centígrados, uma porta de compartimento de refrigerador isolada, um sistema de refrigeração para resfriar o compartimento de freezer e o compartimento de refrigerador e um fabricante de gelo automático montado em uma dentro a porta de compartimento de freezer e a porta do compartimento de refrigerador. O fabricante de gelo inclui um controle de fabricante de gelo, um molde de gelo em geral retangular, uma extensão fixa que se estende para cima de uma borda longitudinal do molde de gelo e uma parede articulada, que se estende para cima da borda longitudinal oposta do molde de gelo montada articuladamente no molde de gelo. O fabricante de gelo também inclui um acamador de gelo 5 10 15 20 25 30 12 montado giravelmente acima do molde de gelo e conectado operavelmente no controle de fabricante de gelo e um operador no controle de fabricante de gelo disposto para mover a parede articulada para uma posição horizontal em conjunto com a operação do acamador de gelo. O operador pode ser uma alavanca no controle de fabricante de gelo conectada operavelmente a parede articulada. O controle de fabricante de gelo pode incluir um carne disposto para operar a alavanca. O carne pode ser conectado para girar quando o controle de fabricante de gelo gira o acamador de gelo. A parede articulada pode ser impulsionada para a posição vertical e o carne pode ser disposto para operar a alavanca a fim de mover a parede articulada para a posição horizontal, após o acamador de gelo girar no molde de gelo. A parede articulada pode incluir uma pluralidade de superfícies elevadas na superfície superior da parede articulada, quando ela é posicionada na posição horizontal. As superfícies elevadas podem se estender, em geral, perpendiculares ao acamador de gelo. Em outro aspecto, a invenção se refere a um método de fabricação de gelo em um refrigerador - freezer em que um fabricante de gelo automático e montado em uma dentro as portas dos compartimentos do refrigerador e do freezer. O método inclui as etapas de operação do refrigerador - freezer para proporcionar resfriamento para os compartimentos do refrigerador ou do freezer, enchimento do molde de gelo com água, prevenção de derramamentos de água do fabricante de gelo, quando as portas dos compartimentos do refrigerador ou do freezer, em que o fabricante de gelo é montado, são abertas ou fechadas e recolhimento de pedaços de gelo do molde de gelo após a água ter congelado. A etapa de prevenção de derramamentos pode incluir o fornecimento de uma bandeja abaixo do fabricante de gelo para captar qualquer água salpicada para fora do fabricante de gelo. O método de fabricação de gelo pode incluir ainda a operação de um aquecedor de bandeja para derreter qualquer gelo presente na bandeja. A etapa de prevenção de derramamentos pode incluir a drenagem de água da bandeja para um recipiente de 5 10 15 20 25 30 13 descarte de água. Em outro aspecto, o fabricante de gelo pode incluir uma cobertura para o fabricante de gelo e a etapa de prevenção de derramamentos inclui o fechamento da cobertura e a etapa de recolhimento de pedaços de gelo inclui a abertura da cobertura. Em outro aspecto, o fabricante de gelo inclui um extrator de pedaços de gelo e um acamador de gelo, tendo uma pluralidade de dentes posicionados giravelmente através do fabricante de gelo e dispostos para o dente girar através do extrator de pedaços de gelo e do molde de fabricante de gelo. A etapa de prevenção de derramamentos pode incluir a disposição do extrator de pedaços de gelo e do acamador de gelo para encerrar, substancialmente, uma porção do fabricante de gelo. Em outro aspecto, o fabricante de gelo inclui uma bandeja flexível tendo uma pluralidade de cavidades. A etapa de prevenção de derramamentos pode incluir o fornecimento da bandeja flexível com paredes laterais que se estendem acima das cavidades para impedir água de salpicar para fora da bandeja. A bandeja flexível pode compreender duas bandejas interligadas posicionadas em direções opostas. Cada bandeja pode ter paredes laterais que se estendem acima das cavidades, quando a bandeja de gelo está na posição vertical. Em outro aspecto, o refrigerador - freezer pode incluir um receptáculo para armazenamento de cubos de gelo posicionado abaixo do fabricante de gelo automático e o fabricante de gelo pode incluir uma cobertura móvel. A etapa de recolhimento de cubos de gelo pode incluir a abertura da cobertura para formar uma calha para os cubos de gelo no receptáculo para armazenamento de cubos de gelo. Em outro aspecto, o fabricante de gelo pode incluir um molde de gelo montado giravelmente entre uma posição de enchimento e formação de cubos de gelo e uma posição de recolhimento de gelo substancialmente invertida. O método de prevenção de derramamentos pode incluir o fornecimento do molde de gelo com paredes laterais estendidas com uma das paredes laterais tendo uma virola definindo um canal. A etapa de recolhimento de 5 10 15 20 25 30 14 de pedaços de gelo pode incluir a rotação do molde de gelo para recolhimento de pedaços de gelo e retenção de qualquer água derretida durante o ciclo de recolhimento no canal. A etapa de recolhimento pode incluir o retorno de água no canal para o molde de gelo a medida que o molde de gelo retorna para a posição de enchimento e formação de gelo. Em outro aspecto, o fabricante de gelo pode incluir um molde de gelo tendo uma extensão fixa em um lado do molde de gelo e uma parede articulada no outro lado do molde de gelo. A etapa de recolhimento de pedaços de gelo pode incluir a rotação de um acamador de gelo no molde de gelo e girando a parede articulada de uma posição vertical para uma posição horizontal através do molde de gelo. Breve Descrição dos Desenhos A figura 1A e uma vista em perspectiva do refrigerador freezer na parte inferior, compreendendo uma concretização de um fabricante de gelo na porta, de acordo com a invenção. A figura 1B e uma vista em perspectiva parcial do refrigerador freezer na parte inferior ilustrado na figura 1A com uma porta de compartimento de refrigerador aberta ilustrando um fabricante de gelo de acordo com a invenção posicionado na porta acima de um receptáculo para armazenamento de cubos de gelo e dispensador de gelo. A figura 2 e uma vista em perspectiva de uma porta de freezer ilustrando a aplicação de um fabricante de gelo de acordo com a invenção em um refrigerador freezer lado a lado. A figura 3 e uma vista em perspectiva em uma concretização de um fabricante de gelo de acordo com a invenção tendo uma bandeja para captar derramamentos e uma cobertura. A figura 4 e uma vista em perspectiva do fabricante de gelo da figura 3 com a cobertura fechada. A figura 5 e uma vista em perspectiva de outra concretização de um fabricante de gelo de acordo com a invenção, tendo uma cobertura e um canal de recuperação de água. A figura 6 e uma vista em perspectiva do fabricante de gelo da 5 10 15 20 25 30 15 figura 5 com a cobertura fechada. A figura 7 e uma vista em perspectiva de outra concretização de um fabricante de gelo de acordo com a invenção, tendo um extrator de gelo flexível e uma tampa protetora parcial. A figura 8 e uma vista em perspectiva de outra concretização de um fabricante de gelo de acordo com a invenção tendo uma cobertura. A figura 9 e uma vista em perspectiva parcial de outra concretização de um fabricante de gelo de acordo com a invenção posicionado em uma porta de compartimento de refrigerador ou de compartimento de freezer, com o molde de gelo na posição fechada. A figura 10 e uma vista em perspectiva parcial do fabricante de gelo da figura 9 com o molde de gelo parcialmente aberto. A figura 11 e uma vista seccional transversal através do fabricante de gelo da figura 9, ilustrando a relação entre o molde de gelo e o alojamento na posição fechada. A figura 12A e uma vista em perspectiva parcial de um refrigerador - freezer lado a lado da técnica anterior tendo o fabricante de gelo posicionado no compartimento de freezer. A figura 12B e uma vista em perspectiva parcial de um refrigerador - freezer lado a lado tendo um fabricante de cubo de gelo de acordo com a invenção posicionado na porta de compartimento de freezer. A figura 13A e uma vista lateral esquemática ilustrando um fabricante de gelo de acordo com a invenção, posicionado em uma porta de compartimento de freezer tendo uma cobertura articulada na posição fechada. A figura 13B e uma vista lateral esquemática parcial do fabricante de gelo de acordo com a figura 13A, ilustrando a articulação da cobertura com o fabricante de gelo na posição aberta da porta de compartimento de freezer. A figura 14A e uma vista lateral esquemática, ilustrando o fabricante de gelo das figuras 13A e 13B, com a cobertura aberta e cubos de gelo caindo no receptáculo para armazenamento de cubos de gelo subjacentes 5 10 15 20 25 30 16 te. A figura 14B e uma vista lateral esquemática parcial similar a da figura 13B, ilustrando a articulação da cobertura com o fabricante de gelo na posição fechada da porta de compartimento de freezer. A figura 15 e uma vista em perspectiva de outra concretização de um fabricante de gelo de bandeja de torção de acordo com a invenção. A figura 16 e uma vista em perspectiva de outra concretização de um fabricante de gelo de bandeja de torção de acordo com a invenção tendo duas bandejas. A figura 17 e uma vista em perspectiva de outra concretização de uma bandeja de torção para uso em um fabricante de gelo de bandeja de torção similar as concretizações da figura 15 e da figura 16 removida do fabricante de gelo. A figura 18 e uma vista parcial seccional da bandeja de torção da figura 17. A figura 19 e uma vista em perspectiva de outra concretização de uma bandeja de torção para uso em um fabricante de gelo de bandeja de torção similar as concretizações da figura 15 e da figura 16 removida do fabricante de gelo. A figura 20A e uma vista em perspectiva de outra concretização de um molde de fabricante de gelo girável com o molde na posição vertical. A figura 20B e uma vista em perspectiva do molde de fabricante de gelo girável da figura 20A com o molde girado 90 graus. A figura 20C e uma vista em perspectiva do molde de fabricante de gelo girável da figura 20A com o molde girado 180 graus. A figura 21A e uma vista seccional transversal esquemática do molde de fabricante de gelo girável na posição ilustrada na figura 20A. A figura 21B e uma vista seccional transversal esquemática do molde de fabricante de gelo girável na posição ilustrada na figura 20B. A figura 21C e uma vista seccional transversal esquemática do molde de fabricante de gelo girável na posição ilustrada na figura 20C. A figura 22A e uma vista de topo esquemática de outra concretização 5 10 15 20 25 30 17 de um fabricante de gelo de acordo com a invenção. A figura 22B e uma vista seccional transversal esquemática do fabricante de gelo da figura

22A, ilustrando o começo de um ciclo de reco- lhimento de gelo. A figura 22C e uma vista seccional transversal esquematica do fabricante de gelo da figura 22a, ilustrando um ponto subsequente no ciclo de recolhimento de gelo. A figura 23 e uma vista em perspectiva parcial do compartimento de maquinaria para um refrigerador freezer tendo um fabricante de gelo po- sicionado na porta de compartimento do freezer de um refrigerador freezer lado a lado, ilustrando uma concretizacao de um amortecedor de porta para uso com fabricantes de gelo de acordo com a invencao. A figura 24A e uma vista esquematica parcial, ilustrando outra concretizacao de um amortecedor de porta para uso com fabricantes de gelo de acordo com a invencao. A figura 24B e uma vista em perspectiva parcial do amortecedor da figura 24A. A figura 25 e um diagrama de circuito, ilustrando elementos sen- sores de derramamento, que podem ser usados com as concretizacoes de fabricantes de gelo de acordo com a invencao. A figura 26 e um diagrama em blocos ilustrando a operacao de um refrigerador freezer, incluindo o gerenciamento de derramamento de fa- bricador de gelo de acordo com a invencao. A figura 27 e um diagrama de circuito ilustrando elementos ele- tricos que podem ser usados com concretizacoes de fabricante de gelo de acordo com a invencao. Descricao Detalhada da Invencao Um dos acessorios mais desejados para um refrigerador domes- tico e um sistema de gelo e agua atraves da porta. Um dispensador de gelo e agua atraves da porta e desejavel porque ele simplifica grandemente o processo de recuperacao de cubos de gelo, isto e, elimina a abertura da por- ta, a remocao do receptaculo para armazenamento de cubos de gelo, a se- 5 10 15 20 25 30 18 paracao e recolhimento de cubos de gelo e colocacao dos cubos de gelo em um copo. A caracteristica tambem pode ser vista como um poupador de e- nergia, uma vez que a porta do freezer nao e aberta tao frequentemente. No mercado de refrigeradores domesticos de hoje, ha tres confi- guracoes basicas para escolher a partir de: um refrigerador com freezer na parte inferior em que o compartimento de refrigerador esta localizado acima do compartimento de freezer, um refrigerador de montagem no topo em que o compartimento de freezer esta localizado acima do compartimento de refrige- rador e um refrigerador lado a lado em que o compartimento de refrigerador e o compartimento de freezer se estendem por toda a altura do refrigerador. Na configuracao lado a lado, o receptaculo para armazenamento de cubos de gelo e o dispensador podem ser posicionados na porta de com- partimento de freezer. Seria vantajoso tambem posicionar o fabricante de gelo na porta do freezer para proporcionar espaco adicional de auto- armazenamento no compartimento de freezer. Igualmente, seria desejavel proporcionar dispensador de gelo e agua para refrigeradores com freezer na parte inferior. Contudo, assim fazer requer, essencialmente, o fornecimento de mecanismos de fabricacao e armazenamento de gelo na porta do com- partimento de refrigerador ou do compartimento de freezer. Com a tecnologia corrente de fabricacao e distribuicao de gelo, nao tem sido possivel para um consumidor ter caracteristicas de dispensa- dor de gelo e agua em uma porta de compartimento de refrigerador com fre- ezer na parte inferior ou uma porta de refrigerador freezer lado a lado com mecanismos de dispensador de gelo e agua posicionados totalmente em uma porta. Um dos maiores desafios e como gerenciar o derramamento de agua que pode ocorrer quando a porta em que um fabricante de cubo de gelo esta posicionado e aberta ou fechada abruptamente, quando agua esta presente no molde de gelo. De acordo com a invencao das requerentes, o derramamento de agua de um fabricante de gelo posicionado em uma porta de compartimento de refrigerador ou freezer e impedido ou gerenciado. Deve ser notado que as concretizacoes descritas neste pedido de patente compartilham muitos dos mesmos elementos, como uma saida 5 10 15 20 25 30 19 de distribuicao montada no lado de fora de uma porta de compartimento de refrigerador ou freezer, um receptaculo para armazenamento de cubos de gelo e um dispensador de gelo. Similarmente, fabricantes de gelo, que sao o objeto da invencao das requerentes, compartilham muitos dos mesmos elementos. Sera compreendido que a operacao desses elementos, em geral, sera a mesma para cada concretizacao e uma descricao de sua operacao nao sera repetida para cada concretizacao, a menos que de outro modo mencionado. Igualmente, elementos comuns a mais de uma concretizacao usualmente serao identificados com numerals comuns. Por exemplo, cada uma das concretizacoes de fabricante de gelo pode incluir um controle de fabricante de gelo, identificado como o controle de fabricante de gelo 33, e o motor 35 na concretizacao da figura 2. Os cubos de gelo 34 estao ilustrados e descritos como pedacos de gelo geralmente semicirculares, embora os conceitos da invencao aqui descritos nao estejam assim limitados, e sejam igualmente aplicaveis aos pedacos de gelo tendo uma forma cilindrica, retili- nea ou outra. Como sera descrito em maiores detalhes abaixo, os fabricado- res de gelo de acordo com as invencoes da requerente podem ser usados com refrigeradores freezers lado a lado e freezer na parte inferior. Voltando as figuras 1A, 1B, 2, 12A e 12B refrigeradores freezer lado a lado e freezer na parte inferior, tendo um aparelho fabricante de gelo e dispensador na porta, de acordo com a invencao, podem ser vistos. As figuras 1A e 1B mostram um refrigerador com freezer na parte inferior descri- to em maiores detalhes no Pedido de Patente co-pendente U.S. US20040111, depositado simultaneamente com o presente por Anselmino et al., e incorporado totalmente atraves de referencia neste pedido de patente. O refrigerador com freezer na parte inferior 50 pode ter um gabinete 52, in- cluindo um compartimento de refrigerador 54 mantido em temperaturas aci- ma de 0 degrees centigrade e um compartimento de freezer 56 mantido em temperaturas a- baixo de 0 degrees centigrade O compartimento de freezer 56 e posicionado na parte inferior do gabinete 52 e o compartimento de refrigerador 54 e posicionado acima do compartimento de freezer 56. Na concretizacao das figuras 1A e 1B, o free- zer na parte inferior 50 pode ter duas portas de compartimento de refrigera- 5 10 15 20 25 30 20 dor 68 e 69, dispostas lado a lado. A configuracao de refrigerador com free- zer na parte inferior 50, mostrada nas figuras 1A e 1B, e referida, algumas vezes, como um refrigerador freezer frances com montagem de porta na par- te inferior. Puxadores de porta convencionais 44, 46 e 48 sao mostrados nas portas de compartimento de refrigerador 68 e 69 e na porta do compartimen- to de freezer 66. Aqueles versados na tecnica prontamente compreenderao que puxadores diferentes, ou nenhum puxador, podem ser proporcionados para as portas, como e bem-conhecido na tecnica. Um refrigerador freezer lado a lado que concretiza a invencao e ilustrado nas figuras 2, 12A e 12B e descrito em detalhes abaixo. O refrigerador 50 pode ter um sistema de refrigeracao (nao- mostrado) para resfriamento do compartimento de refrigerador 54 e do com- partimento de freezer 56. O sistema de refrigeracao pode incluir um com- pressor, um condensador, um evaporador e um dispositivo de expansao, todos nao-mostrados, como e bem-conhecido na tecnica. O compressor po- de ser um compressor de velocidade variavel para proporcionar taxas de resfriamento variaveis, mais uma vez bem-conhecido na tecnica. O refrige- rador 50 pode ter tambem um sistema de controle (nao-mostrado), que pode incluir sensores de temperatura (nao-mostrados) para o compartimento de refrigerador 54 e compartimento de freezer 56 conectados aos controladores de temperatura dos compartimentos do refrigerador e do freezer (nao- mostrados) para manter as temperaturas nos respectivos compartimentos em temperatura selecionadas pelo usuario. O evaporador (nao-mostrado) pode ser posicionado em um compartimento de evaporador (nao-mostrado), que pode ser posicionado ao longo da parede traseira do compartimento de freezer, como e bem-conhecido na tecnica. A porta de compartimento de refrigerador 69 pode incluir um dis- pensador de gelo e agua 72 posicionado na frente da porta. O dispensador de gelo e agua 72 pode ser posicionado na porta de compartimento de refri- gerador 69 em uma altura conveniente para acesso do usuario, como e bem- conhecido na tecnica. Uma interface de usuario 73 pode ser posicionada adjacente ap dispensador de gelo e agua 72 para usuarios para selecionar 5 10 15 20 25 30 21 alternativas de distribuicao de gelo e agua, tais como "gelo rapido" descrita abaixo e outros parametros de operacao de refrigerador freezer, como des- crito no Pedido de Patente co-pendente U.S. N degrees de serie 10/861.203, aqui incorporado por referencia. Um fabricante de gelo 82 pode ser montado adjacente ao topo da porta de compartimento de refrigerador 69 espacado do painel de porta interna 70. Um receptaculo para armazenamento de cubos de gelo 84 pode ser posicionado abaixo do fabricante de gelo 82 e disposto de modo que os cubos de gelo recolhidos do fabricante de gelo 82 possam cair atraves da folga 93 no receptaculo para armazenamento de cubos de gelo 84. A folga 93 pode ser proporcionada entre a parte posterior do fabricante de gelo 82 e a porta interna 70 para direcionar os cubos de gelo para o receptaculo para armazenamento de cubos de gelo 84. O receptaculo para armazenamento de cubos de gelo 84 pode se apoiar no topo do dispensador de gelo 86. Uma cobertura isolada 88 pode ser proporcionada para encerrar substancialmente o fabricante de gelo 82. Uma cobertura isolada 90 pode ser proporcionada para encerrar, substancialmente, o receptaculo para armazenamento de cu- bos de gelo 84 e o dispensador de gelo 86. As coberturas isoladas 88 e 90 podem formar subcompartimentos que podem ser mantidos abaixo de 0 degrees C para facilitar a formacao e o armazenamento de cubos de gelo. A cobertura isolada 88 pode incluir uma ou mais superficies de travamento (nao- mostradas) dispostas para manter a cobertura 88 no lugar, formando um envoltorio abaixo de 0 degrees centigrade para o fabricante de gelo 82 enquanto a porta de compartimento de refrigerador 69 e aberta e fechada, em uso. Como descri- to acima, a cobertura isolada 88 e a cobertura isolada 90 permitem que os respectivos subcompartimentos sejam mantidos em temperaturas abaixo de 0 degrees centigrade, sem alterar temperaturas normais acima de 0 degrees centigrade no compartimento de refrigerador 54. A cobertura isolada 90 pode ser montada articuladamente no painel de porta interna 70 com as articulacoes 77. A ligacao articulada da cobertura isolada 90 com o painel de porta interna 70 pode permitir o facil acesso ao receptaculo para armazenamento de cubos de gelo 84, por e- 5 10 15 20 25 30 22 xemplo, para facilitar a remocao do receptaculo para armazenamento de cubos de gelo 84 a fim de distribuir cubos de gelo em um refrigerante ou si- milares. A cobertura isolada 90 pode ser disposta de modo que ela possa ser fechada automaticamente enquanto a porta de compartimento de refrige- rador 69 e fechada. A cobertura isolada 90 pode ser dotada de uma gaxeta 79 para vedar contra a superficie do painel de porta interna 70. A cobertura isolada 90 podera ser omitida, se o receptaculo para armazenamento de cubos de gelo 84 for formado de material isolante. Em uma concretizacao, o receptaculo para armazenamento de cubos de gelo 84 pode ser formado de material plastico de parede dupla com propriedades isolantes suficientes para manter os cubos de gelo no receptaculo, congela- dos e suficientemente frios para

impedir cubos individuais de se fundirem uns com os outros. Aqueles versados na tecnica prontamente compreende- raos que materiais plasticos transparentes adequados, tais como aqueles descritos acima, podem ser usados para formar um receptaculo para arma- zenamento de cubos de gelo isolado 84. Similarmente, aqueles versados na tecnica compreenderao que, se nenhuma cobertura isolante for proporciona- da, o fluxo de ar abaixo de 0 degrees centigrade podera ser direcionado para o receptaculo para armazenamento de cubos de gelo 84 de maneira a impedir o vazamen- to indesejavel para o compartimento de refrigerador. O receptaculo para armazenamento de cubos de gelo 84 e o dispensador de gelo 86 podem ser similares ao sistema de distribuicao de gelo descrito na Patente U.S. N degrees 6.082.130, cedida ao cessionario deste pe- dido de patente e aqui incorporada por referencia. Aqueles versados na tec- nica compreenderao que um sistema de distribuicao de gelo, tal como aque- le descrito na patente U.S. N degrees 6.082.130, pode ser usado na concretizacao mostrada nas figuras 1A e 1B, ou pode ser dotado de um receptaculo para armazenamento de cubos de gelo isolante, como descrito acima, e pode ser posicionado na porta de compartimento de refrigerador para cooperar com o fabricante de gelo 82 e com o dispensador de gelo e agua 72. Uma aborda- gem para deteccao do nivel do receptaculo para armazenamento de cubos de gelo e descrita na patente U.S. N degrees 6.082.130, e aqueles versados na tec- 5 10 15 20 25 30 23 nica compreenderao que muitas maneiras para determinar o nivel de cubos de gelo em um receptaculo para armazenamento de cubos de gelo sao co- nhecidas e podem ser usadas, em lugar do sistema optico descrito no pedi- do de patente identificado acima. O fabricante de gelo 82 e o dispensador de gelo e agua 72 podem ser dotados de agua sob o controle de um controle de valvula de agua 94 e uma valvula de agua 95, que podem ser includidos no refrigerador com freezer na parte inferior, como e bem-conhecido na tecnica. O controle de valvula de agua 94 para o dispensador de gelo e agua 72 e para o fabricante de gelo 82 pode ser um sistema de agua de fluxo variavel, como descrito no pedido de patente co-pendente U.S. n degrees de serie 10/861.569, aqui incorporado por referencia. Em uma concretizacao de freezer na parte inferior, como ilustra- da nas figuras 1A e 1B, ar abaixo de 0 degrees centigrade pode ser fornecido para o fabrica- dor de gelo 82 e o receptaculo para armazenamento de cubos de gelo 84 por um sistema de distribuicao de ar, que pode levar do compartimento de freezer 56. O sistema de distribuicao de ar pode incluir uma primeira porcao de distribuicao de ar 100, que pode ser posicionada ao longo de um lado da porta de compartimento de refrigerador 69 contra o painel de porta interna 70. O sistema de distribuicao de ar pode incluir uma segunda porcao de dis- tribuicao de ar 106, posicionada ao longo de uma parede lateral do compar- timento de refrigerador 54 e levando para baixo, em direcao ao comparti- mento de freezer 56. A primeira porcao de distribuicao de ar 100 pode incluir um duto de abastecimento 102 e um duto de retorno 104. Aqueles versados na tecnica compreenderao que a primeira porcao de distribuicao de ar 100 pode ser um tubo de passagem dupla, tendo duas passagens de ar, forman- do o duto de abastecimento 102 e o duto de retorno 104. A primeira porcao de distribuicao de ar 100 pode ser formada de material plastico termo- formado ou moldado por injecao e pode ser coberta ou encerrada com mate- rial isolante, tal como isopor ("styrobead") rigido. A segunda porcao de distri- buicao de ar 106, similarmente, pode compreender um duto de abastecimen- to 108 e um duto de retorno 110. A segunda porcao de distribuicao de ar 106 pode ser um tubo de passagem dupla formado de material plastico, similar a 5 10 15 20 25 30 24 primeira porcao de distribuicao de ar 100. As faces das primeira e segunda porcoes de distribuicao de ar 100 e 106 podem se apoiar quando a porta do refrigerador 69 e fechada e podem ser dispostas de modo que os dutos de abastecimento 102 e 108 e os dutos de retorno 104 e 110 sejam opostos uns aos outros e possam formar uma passagem continua, quando a porta de compartimento de refrigerador 69 e fechada. A frente das primeira e segun- da porcoes de distribuicao de ar 100 e 106 pode incluir superficies de veda- cao adequadas para os dutos de abastecimento e de retorno, de modo que conexoes substancialmente hermeticas a ar possam ser feitas, quando a porta de compartimento de refrigerador 69 e fechada. O sistema de distribui- cao de ar e descrito em maiores detalhes no Pedido de Patente co-pendente U.S. US20040111, depositado simultaneamente com o presente pedido de patente e incorporado por referencia, como indicado acima. Voltando as figuras 2 e 12B, um refrigerador freezer lado a lado, tendo um aparelho fabricante de gelo e dispensador na porta de acordo com a invencao pode ser visto. A figura 12A ilustra um refrigerador freezer lado a lado 10 da tecnica anterior tendo um conjunto de fabricante de gelo 22 posi- cionado no topo do compartimento de freezer 16. O compartimento de free- zer pode ter uma ou mais prateleiras 11 e uma ou mais cestas 13 dispostas para armazenar itens no compartimento de freezer 16. A porta de comparti- mento de freezer 20 pode ter uma ou mais prateleiras de porta 21, dispostas para o armazenamento de itens na porta de compartimento de freezer 20. Similarmente, o compartimento de refrigerador 14 pode ter uma ou mais pra- teleiras e uma ou mais cestas ou receptaculos para o armazenamento de itens no compartimento de refrigerador acima de 0 degrees centigrade. A figura 12B ilustra um refrigerador freezer lado a lado 10, tendo um conjunto de fabricante de gelo 22', de acordo com a invencao, posicionado no interior da porta de compar- timento de freezer 20. Comparando a figura 12A e a figura 12B, a realociza- cao do conjunto de fabricante de gelo 22 na porta de freezer 20 pode resul- tar em uma prateleira adicional completa para armazenamento aumentado no compartimento de freezer 16, sem diminuicao no espaco de armazena- mento de prateleira da porta de freezer 20. O refrigerador freezer lado a lado 5 10 15 20 25 30 25 pode ser dotado de um gabinete 12 formando um compartimento de refrige- rador 14 e um compartimento de freezer 16 dispostos lado a lado, como e bem-conhecido na tecnica. Um sistema de refrigeracao (nao-mostrado) pode ser proporcionado para manter o compartimento de refrigerador 14 em tem- peraturas acima de 0 degrees centigrade e o compartimento de freezer 16 em temperaturas abaixo de 0 degrees centigrade, como e bem-conhecido na tecnica. Uma porta de comparti- mento de refrigerador 18 e uma porta de compartimento de freezer 20 po- dem ser proporcionadas a fim de permitir acesso ao refrigerador freezer. A porta de compartimento de freezer 20 pode ter um dispensador de gelo e agua similar ao dispensador de gelo e agua 72 descrito acima. Em refrigera- dores lado a lado da tecnica anterior, conforme ilustrados na figura 12A, o conjunto de fabricante de gelo 22 e posicionado no topo do compartimento de freezer 16 e e disposto para descarregar cubos de gelo em um recepta- culo para armazenamento de cubos de gelo 28. O conjunto de fabricante de gelo 22' pode incluir um fabricante de gelo 32 tendo um molde de gelo 36, um extrator de gelos 38 e um acamador de gelo 40. O fabricante de gelo 32 pode ter um controle de fabricante de gelo 33, que pode incluir um motor 35 (figura 27) para operar o acamador de gelo. O sistema de distribuicao de gelo 26 pode ser posicionado na porta 20 abaixo do conjunto de fabricante de gelo 22'. O sistema de distribuicao de gelo 26 pode incluir o receptaculo para gelo 28, que pode ser posicionado no triturador de gelo 30. O triturador de gelo 30 pode ser disposto para distribuir gelo em cubos ou triturado atra- ves de um dispensador de gelo e agua (nao-mostrado nas figuras 12A ou 12B) na frente da porta de compartimento de freezer 20. O dispensador de gelo ilustrado nas figuras 2, 12A e 12B pode ser similar ao sistema de distri- buicao de gelo descrito na patente U.S. N degrees 6.082.130 aqui incorporada em sua totalidade. Quando operado, o sistema de distribuicao de gelo 26 trans- fere cubos ou pedacos de gelo do receptaculo para armazenamento de cu- bos de gel 28 atraves da porta de compartimento de freezer 20, pelo que os cubos de gelo podem ser distribuidos atraves de um dispensador de gelo e agua convencional similar ao dispensador de gelo e agua 72 descrito acima. A seguir, diversas concretizacoes serao descritas de fabricado- 5 10 15 20 25 30 26 res de gelo, que concretizam a invencao das requerentes. Cada uma das concretizacoes pode permitir que os respectivos fabricantes de gelo sejam posicionados e operados em uma porta de compartimento de freezer 20 de um refrigerador freezer lado a lado ou em uma porta de compartimento de refrigerador 69 de um refrigerador com freezer na parte inferior. Voltando as figuras 3 e 4, uma concretizacao de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. O fabri- cador de gelo 115 pode ser um fabricante de gelo similar ao fabricante de gelo descrito nas Patentes U.S. N degrees s 4.649.717 e 4.649.718, aqui incorpora- das por referencia. O fabricante de gelo 115 pode compreender um molde de gelo 116, que pode ser um molde de aluminio fundido revestido com epo- xi, como e bem-conhecidos na tecnica. O molde de gelo 116 pode ter um aquecedor 117 (figura 27) proporcionado para aquecer o molde durante ci- clos de recolhimento de gelo, como descrito nas patentes identificadas aci- ma incorporadas por referencia. O molde de gelo 116 pode ser dotado de um extrator de gelo 120, tendo uma pluralidade de retentores de extrator 121, que se estendem atraves de um lado do molde de gelo 116. Um aca- mador de gelo ou ejetor de gelo 118 pode ser montado giravelmente no cen- tro da borda de topo do molde de gelo 116. O acamador de gelo 118 pode incluir uma pluralidade de dentes 119 para ejetar cubos de gelo do molde de gelo 116 a medida que o acamador de gelo e girado atraves do molde de gelo 116 durante um ciclo de recolhimento de gelo. O fabricante de gelo 115 pode ter um elemento para entrada de agua 123 (ver a figura 4) para dire- cionar agua de um tubo de enchimento de fabricante de gelo (nao-mostrado) para o molde de gelo 116, como e bem-conhecido na tecnica. O fabricante de gelo 115 pode ter um alojamento de controle (nao-mostrado), como des- crito nas Patentes U.S. referenciadas acima, tendo um controle 33 (figura 27) que controla a operacao do fabricante de gelo 115 e um motor 35 (figura 27) que aciona o acamador de gelo 118 durante ciclos de recolhimento de gelo, tudo como e bem-conhecido na tecnica. O molde de gelo 116 pode ser dotado de uma cobertura 124 que pode ser articulada a borda do molde de gelo 116 oposta ao extrator de gelo 120. A cobertura 124 pode ter uma plu- 5 10 15 20 25 30 27 ralidade de lingueetas 125 que se estendem de uma borda da cobertura 124 disposta para fechar, substancialmente, as folgas 122 entre retentores de extrator adjacentes 121, quando a cobertura 124 e fechada contra a borda de topo do molde de gelo 116 e o extrator de gelo 120. Desse modo, a co- bertura 124 pode ser disposta para encerrar substancialmente o molde de gelo 116 para ajudar a impedir agua de derramar para fora do molde de gelo 116, no caso em que a porta do compartimento do refrigerador ou do free- zer, em que o fabricante de gelo 115 esta posicionado, e aberta ou fechada abruptamente, quando agua no estado liquido esta presente no molde de gelo 116. A cobertura 124 pode ser disposta para ser aberta durante um ci- clo de recolhimento de gelo pelo controle de

fabricador de gelo (nao- mostrado). Por exemplo, um carne ou outro mecanismo de acionamento (nao-mostrado) pode ser disposto para acionar a cobertura 124 para a posicao aberta mostrada na figura 3 a medida que o controle aciona o acamador de gelo 118 atraves do molde de gelo 116 para ejetar cubos de gelo do molde de gelo. Alternativamente, a cobertura 124 poderia ser impulsionada, resilientemente, para a posicao aberta mostrada na figura 3 e o controle de fabricador de gelo (nao-mostrado) poderia operar para fechar a cobertura 124 em outro que nao durante um ciclo de recolhimento de gelo, como sera prontamente compreendido por aqueles versados na tecnica. Protecao adicional contra derramamento de agua do fabricador de gelo 115 pode ser proporcionada pela montagem do fabricador de gelo 115 em uma bandeja 128 tendo paredes voltadas para cima 129 ao longo da borda da bandeja 128 para conter qualquer agua que pudesse derramar do fabricador de gelo 115. A bandeja 128 pode ser dotada de um dreno 130 para drenar qualquer agua derramada na bandeja 128 para um recipiente de descarte (nao-mostrado) que pode ser posicionado em uma porta de refrigerador ou em outra parte no refrigerador freezer. O recipiente de descarte pode ser disposto para esvaziamento manual por um usuario ou pode ser dotado de uma bomba de drenagem 292 para esvaziar o recipiente (etapa 309, figura 26). Uma linha de drenagem (nao-mostrada) pode levar do dreno 130 para um recipiente de descarte que pode estar localizado no compartimento 5 10 15 20 25 30 28 de maquinaria 58 (figura 1A) que esta localizado na parte inferior de refrigeradores freezer em que um compressor e um condensador e outros componentes para o refrigerador freezer estao localizados tipicamente, como e bem-conhecido na tecnica. O recipiente de descarte pode ser uma vasilha de drenagem tipica 60 (ver figura 23) que pode estar localizada abaixo do condensador 64 (figura 23) para evaporar a agua que derrete do evaporador (nao-mostrado) durante ciclos de descongelamento, mais uma vez como bem-conhecido na tecnica. Aqueles versados na tecnica compreenderao que outros recipientes de descarte de agua podem ser proporcionados, ou que uma conexao disposta para conexao a um dreno domestico pode ser proporcionada, se desejado. A bandeja 128 tambem pode ser dotada de um aquecedor 132 (figura 27) para aquecer, periodicamente, a bandeja 128 a fim de evaporar qualquer agua que possa ter derramado na bandeja 128 ou, alternativamente, para derreter qualquer gelo que se forme na bandeja 128 da agua derramada na bandeja 128. A operacao do aquecedor 132 sera descrita em maiores detalhes abaixo, em relacao as figuras 26 e 27. A bandeja 128 tambem pode ser dotada de uma bomba de drenagem 292 (figura 27), que pode ser conectada ao dreno 130 para bombear agua da bandeja 128 ate um recipiente de descarte que nao esta localizado abaixo da bandeja 128 a fim de permitir uma drenagem por gravidade. Voltando a figura 5 e a figura 6, outra concretizacao de um fabricador de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. O fabricador de gelo 135 pode ser um fabricador de gelo similar ao fabricador de gelo descrito nas Patentes U.S. N degrees s 4.649.717 e 4.649.718 aqui incorporadas por referencia. O fabricador de gelo 135 pode compreender um molde de gelo 116, que pode ser um molde de aluminio fundido revestido com epoxi como e bem-conhecido na tecnica. O molde de gelo 116 pode ter um aquecedor 117 proporcionado para aquecer o molde durante os ciclos de recolhimento de gelo como descrito nas patentes identificadas acima, incorporadas por referencia. O molde de gelo 116 pode ser dotado de um extrator de gelo 136, tendo uma pluralidade de retentores de extrator 137, que se estendem atraves de um lado do molde de gelo 116. Um acamador de 5 10 15 20 25 30 29 gelo ou ejetor de gelo 118 pode ser montado giravelmente no centro da borda de topo do molde de gelo 116. O acamador de gelo 118 pode incluir uma pluralidade de dentes 119 para ejetar cubos de gelo do molde de gelo 116 a medida que o acamador de gelo e girado atraves do molde de gelo 116 durante um ciclo de recolhimento de gelo. O fabricador de gelo 135 pode ter um elemento para entrada de agua 123 a fim de irectionar agua de um tubo de enchimento de fabricador de gelo (nao-mostrado) para o molde de gelo 116, como e bem-conhecido na tecnica. O fabricador de gelo 135 pode ter um alojamento de controle (nao-mostrado), como descrito nas Patentes U.S. referenciadas acima, incluindo um controle 33 para controlar a operacao do fabricador de gelo 135 e um motor 35 para acionar o acamador de gelo 118 durante os ciclos de recolhimento de gelo, tudo como e bem-conhecido na tecnica. O molde de gelo 116 pode ser dotado de uma cobertura 138, que pode ser articulada a borda do molde de gelo 116, oposta ao extrator de gelo 136. O extrator de gelo 136 e a borda do molde de gelo 116 podem definir um canal de recuperacao de agua 140 entre a borda de topo do molde de gelo 116 e o extrator de gelo 136. Quando a cobertura 138 esta na posicao fechada mostrada na figura 6, o topo do canal de recuperacao de agua 140 e fechado de modo que qualquer agua que salpique do molde de gelo 116 contra o extrator 136 ou cobertura 138 possa circular no canal de recuperacao de agua 140 e, entao, de volta para o molde de gelo 116. Em outros aspectos, o fabricador de gelo 135 pode operar como o fabricador de gelo 115 descrito acima e pode ser disposto para a cobertura 138 se abrir durante ciclos de recolhimento de gelo. Aqueles versados na tecnica compreenderao que uma bandeja 128 pode ser proporcionada para o fabricador de gelo 135, como descrito acima em relacao as figuras 3 e 4. Voltando a figura 7, outra concretizacao de um fabricador de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. O fabricador de gelo 145 pode ser um fabricador de gelo similar ao fabricador de gelo descrito nas Patentes U.S. N degrees s 4.649.717 e 4.649.718, aqui incorporadas por referencia. O fabricador de gelo 145 pode compreender um molde de gelo 116, que pode ser um molde de aluminio 5 10 15 20 25 30 30 fundido revestido com epoxi, como e bem-conhecido na tecnica. O molde de gelo 116 pode ter um aquecedor 117, proporcionado para aquecer o molde durante ciclos de recolhimento de gelo, como descrito nas patentes identificadas acima, incorporadas por referencia. O molde de gelo 116 pode ser dotado de um extrator de gelo 148, tendo uma pluralidade de retentores de extrator 150, estendendo-se atraves de um lado do molde de gelo 116. Na concretizacao da figura 7, retentores de extrator 150 podem ser formados de material flexivel, tal como borracha de silicone e podem ter uma pluralidade de fendas 151 alinhadas com dentes 119 de acamador de gelo 118. Um acamador de gelo ou ejetor de gelo 118 pode ser montado giravelmente no centro da borda de topo do molde de gelo 116. O acamador de gelo 118 pode incluir uma pluralidade de dentes 119 para ejetar cubos de gelo do molde de gelo 116, a medida que o acamador de gelo e girado atraves do molde de gelo 116 durante um ciclo de recolhimento de gelo. A medida que os dentes 119 contactam o extrator 148, as bordas de retentores adjacentes 150 podem se flexionar para permitir que os respectivos dentes se movam atraves das fendas 151 e ejetem cubos de gelo do molde de gelo 116. O fabricador de gelo 145 pode ter um elemento para entrada de agua 123 para irectionar agua de um tubo de enchimento de fabricador de gelo (nao-mostrado) para o molde de gelo 116, como e bem-conhecido na tecnica. O fabricador de gelo 145 pode ter um alojamento de controle (nao-mostrado), como descrito nas Patentes U.S. referenciadas acima, incluindo um controle 33 para controlar a operacao do fabricador de gelo 145 e um motor 35 para acionar o acamador de gelo 118 durante ciclos de recolhimento de gelo, tudo como e bem-conhecido na tecnica. O fabricador de gelo 145 pode ter uma tampa protetora fixa 146 conectada ao molde de gelo 116, oposta ao extrator de gelo 148. Desse modo, a combinacao de extrator 148 e tampa protetora 146 cobre, substancialmente, o topo aberto do molde de gelo 116 e pode reduzir, substancialmente, a possibilidade de agua salpicar para fora do molde de gelo 116, se a porta em que o fabricador de gelo 145 esta montado e aberta ou fechada abruptamente, quando liquido esta presente no molde de gelo 116. Aqueles versados na tecnica compreenderao que uma bandeja 128 pode ser 5 10 15 20 25 30 31 proporcionada para o fabricador de gelo 145, como descrito acima em relacao as figuras 3 e 4. Voltando a figura 8, outra concretizacao de um fabricador de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. O fabricador de gelo 155 pode ser um fabricador de gelo similar ao fabricador de gelo descrito nas Patentes U.S. N degrees s 4.649.717 e 4.649.718 aqui incorporadas por referencia. O fabricador de gelo 155 pode compreender um molde de gelo 116, que pode ser um molde de aluminio fundido revestido com epoxi, como e bem-conhecido na tecnica. O molde de gelo 116 pode ter um aquecedor 117 proporcionado para aquecer o molde durante ciclos de recolhimento de gelo, como descrito nas patentes identificadas acima incorporadas por referencia. O molde de gelo 116 pode ser dotado de um extrator de gelo 158, tendo uma pluralidade de retentores de extrator 159, estendendo-se atraves de um lado do molde de gelo 116. Um acamador de gelo 118 pode ser montado giravelmente no centro da borda de topo do molde de gelo 116. O acamador de gelo 118 pode incluir uma pluralidade de dentes 119 para ejetar cubos de gelo do molde de gelo 116 a medida que o acamador de gelo e girado atraves do molde de gelo 116 durante um ciclo de recolhimento de gelo. O fabricador de gelo 115 pode ter um elemento para entrada de agua 123 para irectionar agua de um tubo de enchimento de fabricador de gelo (nao-mostrado) para o molde de gelo 116, como e bem-conhecido na tecnica. O fabricador de gelo 155 pode ter um alojamento de controle 160, como descrito nas Patentes U.S. referenciadas acima, incluindo um controle 33 para controlar a operacao do fabricador de gelo 155 e um motor 35 para acionar o acamador de gelo 118 durante ciclos de recolhimento de gelo, tudo como e bem-conhecido na tecnica. O molde de gelo 116 pode ser dotado de uma cobertura 162 que pode ser articulada a borda do molde de gelo 116 oposta ao extrator de gelo 158. A cobertura 162 pode ser articulada ao molde de gelo 116 com um par de articulacoes 163. A cobertura 162 pode ter uma pluralidade de linguetas 161 que se estendem de uma borda da cobertura 162 disposta para fechar, substancialmente, as folgas 157 entre retentores de extrator adjacentes 159, quando a cobertura 162 e fechada contra a borda de topo do molde de gelo 116 e o extrator de gelo 158. Desse modo, a cobertura 162 pode ser disposta para encerrar substancialmente o molde de gelo 116 para ajudar a impedir agua de derramar para fora do molde de gelo 116, no caso de a porta do compartimento do refrigerador ou do freezer, em que o fabricador de gelo 155 esta posicionado e aberta ou fechada abruptamente, quando agua no estado liquido esta presente no molde de gelo 116. A cobertura 162 pode ser disposta para ser aberta durante um ciclo de recolhimento de gelo pelo controle de fabricador de gelo 160. Por exemplo, um carne ou outro mecanismo de acionamento (nao-mostrado) pode ser disposto para acionar a cobertura 162 para a posicao aberta, enquanto o controle aciona o acamador de gelo 118 atraves do molde de gelo 116 para ejetar cubos de gelo do molde de gelo. Alternativamente, a cobertura 162

poderia ser impulsionada, resilientemente, para a posicao aberta e o controle de fabricante de gelo 160 poderia operar 15 para fechar a cobertura 162 de outro modo que nao durante um ciclo de re- colhimento de gelo, como sera prontamente compreendido por aqueles versados na tecnica. Aqueles versados na tecnica compreenderao que uma bandeja 128 pode ser proporcionada para o fabricante de gelo 155, como descrito acima em relacao as figuras 3 e 4. 20 Voltando as figuras 9, 10 e 11, outra concretizacao de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. Na concretizacao das Figuras 9, 10 e 11, o fabricante de gelo 165 e ilustrado em uma porta de compartimento de freezer 20, como na figura 2. Aqueles versados na tecnica compreenderao que o fabricante de gelo 165 tambem poderia ser utilizado em uma porta de compartimento de refrigerador 69, como na concretizacao ilustrada na figura 1A e 1B. O fabricante de gelo 165 pode ser similar ao fabricante de gelo descrito nos pedidos de patente co-pendente dos Estados Unidos US20020155 e US20040162, depositados simultaneamente com o presente por Voglewede 30 et al., pedidos que sao incorporados em sua totalidade atraves de referencia. O fabricante de gelo 165 e mostrado na posicao fechada, de enchimento e de formacao de gelo na figura 9. Na figura 10, o fabricante de gelo 165 e 5 10 15 20 25 30 33 mostrado parcialmente girado para a posicao de recolhimento de gelo a fim de ilustrar aspectos de gerenciamento de derramamento desta concretizacao da invencao. A figura 11 e uma vista seccional transversal de fabricante de gelo 165 na posicao fechada de enchimento e formacao de gelo, conforme mostrado na figura 9. O fabricante de gelo 165 pode ser anexado a porta 20 atraves da fixacao da placa de montagem 166 a porta interna 21, como ser compreendido por aqueles versados na tecnica. O fabricante de gelo 165 pode incluir um alojamento 180 tendo paredes extremas 182 e 184 e uma parede de topo 186. As paredes extremas 182 e 184 podem suportar giravelmente a bandeja de gelo 171. A bandeja de gelo 171 pode compreender uma estrutura 172 que pode suportar uma insercao de molde 174. Como descrito nos pedidos de patente co-pendentes dos Estados Unidos US20020155 e US20040162 aqui incorporados atraves de referencia, a insercao de molde 174 pode ser um material plastico flexivel que pode incluir poliuretano e silicone, que pode ter um material com baixo coeficiente de atrito, formando a camada de topo. A parede extrema 182 pode suportar um motor 35, que pode incluir um trem de engrenagens (nao-mostrado) no alojamento 169, que pode conectar o motor 35 a um eixo de acionamento 170 conectado a estrutura 172. A operacao do motor 35 por um controle 33 para acionar a bandeja de gelo 171 para recolhimento de pedacos de gelo e descrita em detalhes nos pedidos de patente co-pendentes dos Estados Unidos US20020155 e US20040162 aqui incorporados atraves de referencia. A concretizacao do fabricante de gelo 165 disposto para montagem em uma porta de compartimento de refrigerador ou de freezer pode ser disposta para impedir derramamentos de agua, no caso de a porta em que o fabricante de gelo 165 e montado ser aberta e fechada, quando liquido esta presente na insercao de molde 174. Na concretizacao ilustrada nas figuras 9, 10 e 11, a insercao de molde 174 pode ter uma virola 176, que se projeta para cima da insercao de molde 174. A virola 176 pode ser posicionada fora das reentrancias 175. A parede de topo 186 do alojamento 180 pode incluir paredes de contencao 188, 189, 190 e 191 (nao-mostradas), que podem se projetar para baixo da parede de topo 186 e podem terminar na superficie de topo da insercao de molde 174 entre reentrancias 175 e a virola 176. A parede de contencao 191 (nao-mostrada) e oposta a parede de contencao 189. Desse modo, a interacao das paredes de contencao 188, 189, 190 e 191 e a virola 176 podem impedir, substancialmente, o derramamento de agua fora da bandeja de cubos de gelo 171, quando agua nao congelada esta presente nas reentrancias 175 e a porta do freezer 20 e aberta ou fechada, abruptamente. Voltando as figuras 13A, 13B, 14A e 14B, outra concretizacao de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista em forma esquematica de vista lateral. Nas figuras 13A e 13B, a porta de freezer 20 e mostrada na posicao aberta. Nas figuras 14A e 14B, a porta de freezer 20 e mostrada na posicao fechada. Aqueles versados na tecnica compreenderao que a concretizacao mostrada nas figuras 13A, 13B, 14A e 14B pode ser usada em relacao com uma porta de refrigerador com freezer na parte inferior, conforme mostrado na concretizacao das figuras 1A e 1B. O fabricante de gelo 22' pode ser montado na superficie interior da porta de compartimento de freezer 20 acima de um receptaculo para armazenamento de cubos de gelo 28. O fabricante de gelo 22' pode incluir uma cobertura articulada 192. Nesta concretizacao, a cobertura articulada 192 pode compreender uma pluralidade de segmentos 193, 194, 195 e 196. A cobertura articulada pode ser formada de plastico, tal como polipropileno ou metal, como sera compreendido por aqueles versados na tecnica. O fabricante de gelo 22' pode incluir um lado aberto 23, que pode levar a porcao de molde de gelo (nao-mostrada) do fabricante de gelo 22'. O fabricante de gelo 22' pode ser disposto para descarregar cubos de gelo atraves do lado aberto 23 durante ciclos de recolhimento. A cobertura 192 pode ser articulada na borda de topo 24 do fabricante de gelo 22' oposto a porta interna 25 da porta de freezer 20. Os segmentos 193 e 194 podem formar um fechamento para o lado aberto 23, quando a cobertura esta na posicao fechada mostrada na figura 13A. Os segmentos 195 e 196 podem ocupar o espaco entre o fabricante de gelo 22' e o receptaculo para armazenamento de cubos de gelo 28, quando a cobertura 192 esta na posicao fechada, conforme mostrado na figura 13A. Quando a cobertura 192 e fechada, a cobertura 192 pode ser removida da porta interna 21 para distribuicao a granel de cubos de gelo, como para enchimento de um refrigerante ou outra finalidade, conforme desejado, sem interferencia da cobertura 192. Fazendo referencia a figura 13B, a cobertura 192 pode ser articulada ao fabricante de gelo 221 na borda de topo 24 pelo pivo 198. Aqueles versados na tecnica compreenderao que o pivo 198 pode ser uma articulacao continua ou uma ou mais articulacoes individuais ou outra disposicao de montagem em pivo conhecida. O peso dos segmentos 193, 194, 195 e 196 pode impulsionar a cobertura 192 para a posicao fechada e pode elevar o atuador 200, que se estende alem do pivo 198. Voltando as figuras 14A e 14B, a porta de compartimento de freezer 20 pode ser vista na posicao fechada. Na posicao fechada, o atuador 200 pode ser visto articulado em contato com o topo de fabricante de gelo 22', devido ao atuador 200 ser operado pela parede de topo de compartimento de freezer 17. O movimento do atuador para a posicao mostrada na figura 14B pode ser feito com que a cobertura 192 gire para cima, para a posicao elevada, mostrada na figura 14A. Na posicao elevada, a cobertura 192 pode formar uma passagem para os pedacos de gelo recolhidos 34 do fabricante de gelo 22' para o receptaculo para armazenamento de cubos de gelo 28. Os cubos de gelo 34 sao ilustrados como crescentes na figura 14A. Os cubos de gelo serao referidos como 34 em outras concretizacoes, quer ou nao eles sejam mostrados como crescentes. Aqueles versados na tecnica compreenderao que os cubos de gelo podem tomar formas conforme desejado, meia-lua, cilindrica, retilinea, conica ou outras formas regulares ou especiais. Os segmentos 193 e 194 podem desviar pedacos de gelo que deixam o lado aberto 23 do fabricante de gelo 22', dirigindo os pedacos de gelo 34 para baixo, para o receptaculo para armazenamento de cubos de gelo 28. Os segmentos 195 e 196 podem completar a passagem 202, levando do fabricante de gelo 22' para o receptaculo para armazenamento de cubos de gelo 28. Uma vantagem adicional da cobertura 192 e que, quando a porta de compartimento de freezer 20 esta aberta, a cobertura 192 encerra, efetivamente, o fabricante de gelo 22' para impedir os usuarios de contatar, inadvertidamente, os pedacos de gelo 34, porcos do fabricante de gelo 22', quando acessando o interior do compartimento de freezer 16 e pode ajudar a manter abaixo de 0 graus centigrade o ar em torno do fabricante de gelo 22'. Alem disso, conforme ilustrado na figura 13A, o perfil da porta de freezer 20 e reduzido, comparado com a posicao aberta da porta devido a rotacao da cobertura 192 para a posicao fechada, quando a porta de freezer 20 e aberta. A cobertura 192 permite que o perfil da porta de freezer 20 seja reduzido ate a espessura do fabricante de gelo 22' e do receptaculo para armazenamento de cubos de gelo 28, comparado com as disposicoes de fabricante de gelo que requerem espaco entre a porta interna 21 e o fabricante de gelo 22' para pedacos de gelo recolhidos para cair no receptaculo para armazenamento de cubos de gelo 28. A cobertura 192 e mostrada como sendo operada pela gravidade na concretizacao das figuras 13A, 13B, 14A e 14B, porem, aqueles versados na tecnica compreenderao que a cobertura 192 pode ser disposta para ser operada por um motor de mola ou solenoide (nao-mostrado) para articulacao entre as posicoes fechada e aberta. Aqueles versados na tecnica prontamente tambem compreenderao que um operador para cobertura 192 pode ser disposto para mover a cobertura 192 para a posicao aberta, quando a porta 20 e fechada, ou quando o fabricante de gelo 22' esta em um ciclo de recolhimento de gelo, conforme desejado. Voltando a figura 15, outra concretizacao de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. Embora o fabricante de gelo 205 nao seja mostrado em uma porta de compartimento de freezer ou de refrigerador, aqueles versados na tecnica compreenderao que o fabricante de gelo 205 pode ser usado em conjunto com a concretizacao das figuras 1A e 1B ou com a concretizacao da figura 2. O fabricante de gelo 205 compreende um fabricante de gelo com bandeja de torcao que pode ser similar e operar similar aos fabricantes de gelo com bandeja de torcao descritos nas Patentes U.S. N degrees s 3.964.269; 3.871.242; 3.779.032; 3.763.662; 3.727.428; 3.677.030; 3.648.476; 3.383.876; e 3.382.682, todas as quais sao aqui incorporadas atraves de referencia. O fabricante de gelo com bandeja de torcao 205 pode incluir um alojamento de 5 10 15 20 25 30 37 controle 208, que pode ser conectado, operativamente, a bandeja de torcao 206. O alojamento de controle pode incluir um controle 33 e um motor 35 para operar o fabricante de gelo com bandeja de torcao 205. A bandeja de torcao 206 pode ter paredes laterais 210, que se estendem para cima das reentrancias 207, para formar uma protecao contra salpicos a fim de conter agua nao congelada na bandeja de torcao 206, no caso de a porta em que o fabricante de gelo 205 esta montado e aberta ou fechada, abruptamente. A operacao do fabricante de gelo com bandeja de torcao 205 e bem-conhecida por aqueles versados na tecnica e pode ser similar a operacao dos fabricantes de gelo com bandeja de torcao descritos nas patentes descritas antes neste paragrafo. O fabricante de gelo 205 pode recolher gelo dentro de sua propria largura, como e bem-conhecido na tecnica. Desse modo, um fabricante de gelo com bandeja de torcao pode permitir um perfil de porta mais

estreito do que os fabricantes de gelo que descarregam gelo em um lado. Os fabricantes de gelo que descarregam cubos de gelo em um lado podem requerer uma largura adicional, que pode ser da ordem de três polegadas, a fim de permitir espaço para cubos de gelo caírem no receptáculo para armazenamento de cubos de gelo. Uma vantagem adicional de um fabricante de gelo com bandeja de torção e que nenhum acamador de gelo ou extrator de gelo e requerido através da bandeja de gelo. A eliminação de um acamador de gelo e do extrator de gelo remove elementos que poderiam ser expostos à água e congelar, no caso de uma porta em que o fabricante de gelo está montado ser aberta ou fechada, abruptamente, quando a água não congelada está presente no molde de gelo. Aqueles versados na técnica compreenderão que o fabricante de gelo 205 pode incluir disposições de montagem apropriadas e pode incluir, por exemplo, um tubo de enchimento para fornecer água para a bandeja de torção 206 no começo de um ciclo de formação de gelo bem como conexões elétricas com o controle 208. Voltando à figura 16, outra concretização de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. O fabricante de gelo 215 pode incluir uma bandeja de torção superior 216 e uma bandeja de torção inferior 218, que podem ser, cada uma delas, em geral, similares a uma bandeja de torção 206 na concretização da figura 15. Cada uma das bandejas de torção de superior e inferior pode incluir uma proteção contra salpicos 210 disposta para reduzir a possibilidade de água não congelada derramar para fora do fabricante de gelo 215, no caso de uma porta em que o fabricante de gelo 215 está montado ser aberta ou fechada abruptamente, com água não congelada presente no fabricante de gelo. Aqueles versados na técnica compreenderão que o fabricante de gelo 215 pode incluir disposições de montagem apropriadas e pode incluir, por exemplo, um tubo de enchimento para fornecer água para as bandejas de 10 torção 216 e 218 no começo de um ciclo de formação de gelo, bem como conexões elétricas com o controle 208. Uma vantagem de uma bandeja de torção dupla e que cada bandeja de torção é utilizada a cada outro ciclo, a fim de prolongar o tempo antes que minerais ou escamas de oxidação possam se acumular em uma bandeja, que pode fazer com que cubos de gelo 15 venham a aderir a uma bandeja de torção durante o recolhimento. As figuras 17 e 18 ilustram outra concretização de uma bandeja de torção dupla 220, que pode ter uma bandeja de torção superior 222 e uma bandeja de torção inferior 224. A bandeja de torção dupla 220 pode ser usada com um fabricante de gelo com bandeja de torção, tal como um fabricante de gelo com bandeja de torção 215 descrita na figura 16. Cada bandeja de torção 222 e 224 pode incluir uma proteção contra salpico 228 como descrito acima em relação com as concretizações das figuras 15 e 16. Na concretização das figuras 17 e 18, a bandeja de torção 220 pode compreender uma parede de fundo comum 226 separando a bandeja de torção superior 222 da bandeja de torção inferior 224. Uma vantagem de dotar a bandeja de torção 220 com uma parede de fundo comum 226 e que o calor na água adicionada a uma bandeja vazia para começar outro ciclo de formação de gelo pode ajudar a liberação de quaisquer cubos de gelo que poderiam ficar aderidos na bandeja de torção inferior. Aqueles versados na técnica compreenderão que o ciclo de recolhimento de gelo pode ser disposto para proporcionar enchimento da bandeja de torção superior, enquanto a bandeja vazia gira para a posição vertical a fim de proporcionar calor da água para 5 10 15 20 25 30 39 ajudar os cubos de gelo recolhidos na bandeja inferior. A figura 19 ilustra outra concretização de uma bandeja de torção dupla 230, que pode ser similar a uma bandeja de torção dupla 220 nas figuras 17 e 18. A bandeja de torção dupla 230 pode ter uma proteção contra salpico 232, que pode ser curvada para dentro, a fim de ajudar a desviar a água de volta para a bandeja de torção dupla 230, no caso de o fabricante de gelo em que a bandeja de torção 230 é utilizada estar montado em uma porta de refrigerador ou freezer aberta ou fechada, abruptamente, quando a água não congelada está presente no fabricante de gelo. Aqueles versados na técnica compreenderão que qualquer uma das concretizações de bandejas de torção pode incluir uma proteção contra salpico curvada, conforme ilustrado na figura 19, em lugar de proteções retas contra salpico ilustradas nas figuras de 15 a 18. Aqueles versados na técnica compreenderão que um fabricante de gelo incorporando qualquer uma das disposições de bandeja de torção ilustradas nas figuras de 15 a 19 pode operar similar aos fabricantes de gelo com bandeja de torção descritos nas Patentes U.S. referenciadas acima. Voltando às figuras 20A, 20B, 20C, 21A, 21B e 21C, outra concretização de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. Na concretização ilustra- da nas figuras 20A - 20C, o fabricante de gelo 240 pode compreender um molde de gelo 242, que pode ser montado giravelmente no fabricador de gelo 240. O fabricante de gelo 240 pode incluir uma parede de base 244, tendo um motor 35 montado em um lado da parede de base 244. A parede de base 244 também pode suportar um controle 33 (não-mostrado) para controlar a operação do fabricante de gelo 240. O molde de gelo 242 pode ser montado giravelmente entre a parede de base 244 e a estrutura 248. A estrutura 248 pode ser um elemento geralmente em forma de "U", que pode ser preso às pernas 247, que podem se estender de lados opostos da parede de base 244 (estrutura 248 e omitida da figura 20A para melhor ilustrar o molde de gelo 242). Prendedores adequados podem ser usados para prender a estrutura 248 às pernas 247, como será compreendido por aqueles versados na técnica. O molde de gelo 242 pode ser um molde de alumínio 5 10 15 20 25 30 40 não revestido com epóxi, como descrito acima e pode ter paredes laterais 250 e 252, que podem se estender acima do nível de água no molde de gelo 242 para impedir o salpico de água para fora do molde de gelo 240. O molde de gelo 242 pode incluir um aquecedor de molde de gelo 117 (figura 27) para facilitar a remoção de cubos de gelo 34, durante o ciclo de recolhimento como é bem-conhecido. Um canal 256 pode ser formado na parede lateral 252 a fim de reter água formada como um resultado da operação do aquecedor de molde de gelo durante um ciclo de recolhimento de gelo. O canal 256 pode ser formado por uma reentrância 257 na parede lateral 252 e uma virola 258, que se estende da borda distal da parede 252 em direção ao centro do molde de gelo 242. A virola 258 pode terminar na borda de retorno 260 se estendendo do elemento superior distal da virola 258 em direção ao fundo do molde de gelo 242. Um acamador de gelo fixo 254 pode ser montado na parede de base 244 e na estrutura 248. O molde de gelo 242 pode ser disposto para girar em torno do acamador de gelo 254 como será descrito a seguir. Nas figuras 20A e 21A, o molde de gelo 242 está ilustrado na posição de origem. Na posição de origem, o molde de gelo está aberto para cima e compreende a posição de enchimento e de formação. Um tubo de enchimento (não-mostrado) pode se estender do elemento para entrada de água 123 para o gabinete do refrigerador freezer e se conectar a uma fonte de água. Após a água ter congelado nos cubos de gelo 34, um sensor de temperatura 245 (figura 27) pode operar para iniciar um ciclo de recolhimento de gelo, como é bem-conhecido na técnica, e pode ser similar aos fabricantes de gelo descritos nas Patentes U.S. incorporadas através de referência em conjunto com as figuras 3 e 4 acima. Durante o ciclo de recolhimento de gelo, o motor 35 pode ser disposto para fazer com que o molde de gelo 242 gire no sentido dos ponteiros do relógio por 180 graus, conforme mostrado nas figuras 20B, 20C, 21B e 21C. Nas figuras 20B e 21B, o molde de gelo 242 é mostrado girado 90 graus com água derretida pelo aquecedor de molde de gelo (não-mostrado) coletado no canal 256. Na rotação de 90 graus, os cubos de gelo 34 ainda não contactaram o acamador de gelo estacionário 254. 5 10 15 20 25 30 41 Contudo, a medida que o molde de gelo 242 continua a girar para a posição de 180 graus de rotação mostrada nas figuras 20C e 21C, o acamador de gelo ejetou cubos de gelo 34, permitindo que os cubos de gelo caiam no receptáculo para armazenamento de cubos de gelo (não-mostrado nesta concretização). Na posição de rotação de 180 graus mostrada na figura 20C e 21C, o canal 256 pode reter água formada quando o aquecedor de molde de gelo 117 aquece o molde de gelo para liberar cubos de gelo do molde 242. O motor 35 pode, então, inverter a rotação do molde de gelo 242 para a posição vertical ilustrada nas figuras 20A e 21A para começar outro ciclo de formação de gelo. Qualquer água no canal 256 pode correr de volta para a cavidade de molde de gelo 243 como o retorno do molde de gelo 242 para a posição superior. O molde de gelo 242 pode incluir uma pluralidade de alhetas 262 e pode ser dotado de um alojamento para aperfeiçoar o fluxo de ar em torno do molde de gelo, como descrito no pedido de patente co-pendente dos Estados Unidos US20040111, depositado por Anselmino et al., simultaneamente com o presente e aqui incorporado em sua totalidade. Embora o fabricante de gelo 240 seja descrito nesta concretização como tendo um molde de gelo girável 242, aqueles versados na técnica compreenderão que o fabricante de gelo 240 pode ser disposto para ser girável, em lugar de ter apenas o molde do fabricante de gelo girável através da montagem, giravelmente, do fabricante de gelo na porta do refrigerador ou do freezer. Um fabricante de gelo girável poderia ser disposto para girar em torno de um ponto fixo na porta do refrigerador ou do freezer que pode ser conectado ao acamador de gelo fixo 254. Voltando às figuras 22A a 22C, outra concretização de um fabricante de gelo para uso em uma porta de compartimento de refrigerador ou de freezer pode ser vista. Na concretização das figuras 22A a 22C, o fabricante de gelo 332 é ilustrado na forma esquemática e inclui um molde de gelo 336 e o controle de fabricante de gelo 333. O molde de fabricante de gelo 336 pode ser um molde de alumínio revestido com epóxi, como descrito acima. O fabricante de gelo 332 pode incluir um acamador de gelo 340 montado giravelmente, acima do molde de gelo 336. O acamador de gelo 5 10 15 20 25 30 42 340 pode ser montado giravelmente no eixo de ancinho 341. O molde de gelo 336 pode incluir uma extensão fixa 338, que se estende para cima e para dentro de uma borda de molde de gelo 336. Como pode ser visto através de referência às figuras 22B e 22C, a extensão fixa 338 pode se estender para impedir, substancialmente, o salpico de água fora do molde de gelo 336 através da extensão fixa 338. Uma parede articulada 334 pode se estender para cima do lado oposto do molde de gelo 336. A parede articulada 334 pode ser de alumínio revestido com epóxi como o molde de gelo 336 ou, como será compreendido por aqueles versados na técnica, pode ser formada de material plástico moldado similar aos extratores de gelo usados em fabricantes de gelo conhecidos. Como pode ser visto através de referência às figuras 22B e 22C, a parede articulada 334 pode se estender verticalmente, aproximadamente da mesma altura que a extensão fixa 338. A parede articulada 334 pode ser montada articuladamente no molde de gelo 336 por um eixo de parede articulada 339 na borda de topo do molde

de gelo 336. Aqueles versados na técnica compreenderão que a parede articulada 334 pode ser montada articulada ou giravelmente através de outras disposições de montagem que podem incluir uma articulação contínua ou pivôs nas extremidades de parede articulada 334, que cooperam com pontos de articulação conectados ao molde de gelo 336 como são bem conhecidos na técnica. O controle de fabricante de gelo 333 pode incluir um carne 335 que pode ser conectado acionavelmente ao mecanismo de acionamento para acamador de gelo 340, conforme ilustrado pela linha tracejada 346, de modo que, a medida que o acamador de gelo 340 é girado durante um ciclo de recolhimento de cubos de gelo, o carne 335 gira. O controle de fabricante de gelo 333 pode incluir, também, uma alavanca 337, que pode ser disposta para ser operada pelo carne 335 a medida que ele gira com o acamador de gelo 340. A alavanca 337 pode ser montada giravelmente no controle de fabricante de gelo 333 no pivô 344. Conforme mostrado na figura 22B, quando a parede articulada 334 está na posição vertical, durante as porções de enchimento do fabricante de gelo e de congelamento dos cubos de gelo de um ciclo de fabricação de gelo, a alavanca 337 pode ser posicionada para ser encaixada pelo carne 335 a medida que ele gira. Através de referência as figuras 22B e 22C a sequência para operação da parede articulada 334 pode ser vista. A medida que o acamador de gelo 340 se aproxima e passa pelo eixo 339 de parede articulada, o recorte 343 no carne 335 fica oposto a alavanca 337 para permanecer na posição vertical mostrada na figura 22B no pivô 344. A medida que o acamador de gelo 340 continua a girar no e através do molde de gelo 336, a superfície de carne 335 pode engatar a alavanca 337 e articular a alavanca 337 para abaixo, para a posição que se estende para baixo, mostrada na figura 22C. A alavanca 337 pode ser conectada a parede articulada 334, conforme ilustrado pela linha tracejada 345, de modo que, a medida que a alavanca 337 é girada entre as posições das figuras 22B e 22C, a parede articulada 334 se articula da posição vertical (figura 22B) para a posição horizontal (22C). No final de um ciclo de recolhimento de cubos de gelo, o acamador de gelo 340 pode retornar para uma posição que se estende, em geral, para cima e o recorte 343 de carne 335 posicionado oposto a alavanca 337, de modo que a parede articulada 334 pode retomar a posição vertical ilustrada na figura 22B. A superfície externa 347 da parede articulada (na figura 22B) pode ser plana ou pode ter cristas ou nervuras que se estendem, em geral, perpendiculares ao acamador de gelo 340, a fim de facilitar o deslizamento dos cubos de gelo 330 para fora da parede articulada 334 enquanto o acamador de gelo 340 completa sua rota através do molde de gelo 336. Um cubo de gelo 330' é mostrado posicionado através da parede articulada 334 na figura 22C para ilustrar a operação da parede articulada 334 como um extrator. No estágio de um ciclo de recolhimento de gelo ilustrado na figura 22C, o cubo de gelo 330 ainda está no molde de gelo 336, conforme mostrado. Nesse sentido, a parede articulada 334 pode funcionar similar ao extrator de gelo descrito nas Patentes U.S. 4.649.717 e 4.649.718 incorporadas acima através de referência. A parede articulada 334 pode ser impulsionada para a posição vertical (figura 22B) por uma mola de torção (não mostrada) de modo que a alavanca 337 pode mover a parede articulada 334 para a posição horizontal pela compressão da mola de torção. Quando o carne 335 retorna para uma posição onde o recorte 343 fica oposto a alavanca 337, a mola de torção pode retomar a parede articulada 334 para a posição vertical. Alternativamente, a parede articulada 334 pode ser acionada mecanicamente pela alavanca 337 para articular a parede articulada 334 entre as posições vertical e horizontal como será prontamente compreendido por aqueles versados na técnica. Desse modo, em operação, a parede articulada 334 e a extensão fixa 338 podem se estender verticalmente acima do molde de gelo 336 a fim de conter o salpico de água para fora do molde de gelo 336 durante as porções de enchimento e de congelamento de cubos de gelo de um ciclo de recolhimento de gelo. No começo de um ciclo de recolhimento de gelo, a parede articulada 334 pode ser articulada para a posição mostrada na figura 22C para permitir que os cubos de gelo 330 sejam empurrados através da parede articulada 334 para um receptáculo para armazenamento de cubos de gelo subjacente (não mostrado). Como mencionado acima, a superfície externa 347 da parede articulada 334 pode ter cristas ou nervuras que correm em geral perpendiculares ao acamador de gelo 340 a fim de facilitar o deslizamento dos cubos de gelo para fora da parede articulada 337, enquanto funciona como um extrator de gelo em um fabricante de gelo convencional, conforme descrito nas Patentes U.S. referenciadas, identificadas acima. Uma vantagem da configuração de parede articulada das figuras 22A a 22C é que uma estrutura convencional de extrator de gelo que se estende através do molde de gelo 336 pode ser eliminada. A eliminação do extrator de gelo remove a possibilidade de água salpicando para fora do molde de gelo no extrator de gelo durante o ciclo de enchimento e de congelamento de cubos de gelo. O gelo no extrator de gelo poderia impedir o acamador de gelo 340 de girar através do molde de gelo 336, durante o ciclo de recolhimento para empurrar cubos de gelo 330 para fora do molde de gelo 336. Voltando as figuras 23, 24A e 24B, amortecedores de porta para uso em conjunto com uma porta de compartimento de refrigerador ou de freezer tendo um fabricante de gelo montado sobre ela podem ser vistos. Será compreendido que um amortecedor de porta, como descrito em conexão com as figuras 23, 24A e 24B, pode ser usado em combinação com qualquer 5 10 15 20 25 30 45 uma das concretizações de fabricantes de gelo descritas acima. Na figura 23, uma concretização de um amortecedor de porta pode ser vista posicionada no fundo do gabinete de refrigerador freezer 52 no compartimento de maquinaria 58. Aqueles versados na técnica compreenderão que uma vasilha de drenagem 60 pode estar localizada no fundo do compartimento de maquinaria 58 para proporcionar uma localização para água de descongelamento drenar para evaporação. A vasilha de drenagem 60 também pode proporcionar uma localização para água derramada de um fabricante de gelo combinado com uma bandeja, tal como ilustrado nas figuras 3 e 4. Uma linha de drenagem adequada (não mostrada) pode conectar o dreno 130 na bandeja 128 para a vasilha de drenagem 60 para descarte de água derramada de um fabricante de gelo em uma porta de compartimento de refrigeração ou de freezer. Aqueles versados na técnica compreenderão que o compressor do sistema de refrigeração (não mostrado), um condensador 64 e um ventilador de condensador 62, tipicamente, localizados no compartimento de maquinaria 58 podem proporcionar calor e fluxo de ar para evaporação de água drenada para a vasilha de drenagem 60. Na figura 23, um amortecedor 264 pode ser montado articuladamente em uma bracedeira no compartimento de maquinaria no pivô 265. A extremidade oposta do amortecedor 264 pode ser conectada articuladamente a bracedeira 267, que pode ser fixada em uma porta (não mostrada) ou articulação de porta (não mostrada) em 268. O amortecedor 264 pode ser uma mola a gás que amorteceria em ambas as direções. Aqueles versados na técnica compreenderão que o amortecedor 264 pode ser um amortecedor hidráulico ou carregado a mola, em lugar de um amortecedor a mola de gás. A bracedeira 267 e o amortecedor 264 podem ser dispostos de modo que a porta segue através do centro em relação ao amortecedor 264 enquanto a porta se fecha, de modo que o movimento da porta pode ser amortecido no fechamento bem como na abertura. O efeito de amortecimento da mola a gás no amortecedor 264 pode proporcionar o amortecimento do movimento de abertura ou fechamento da porta para impedir, ou reduzir, substancialmente, a possibilidade de salpico de água para fora de um fabricante de gelo posicionado na porta, como 46 descrito acima. Voltando as figuras 24A e 24B, uma concretização de amortecedor giratório pode ser vista. O amortecedor giratório 272 pode compreender uma engrenagem de amortecedor 274 montada giravelmente na base do amortecedor 276. Os amortecedores giratórios são bem conhecidos na técnica e podem incluir material viscoso ou de fricção acoplado a engrenagem de amortecedor 274 a base de amortecedor 276. Dispositivos conhecidos incluem amortecedores giratórios unidirecionais ou bidirecionais. O amortecedor giratório 272 pode ser montado em um elemento fixo, tal como um elemento 10 de articulação (não mostrado) preso ao gabinete de refrigerador freezer 52 (figura 1A). A engrenagem 270 pode ser fixada em um elemento de articulação giratório, tal como no pino de articulação (não mostrado) preso a porta do refrigerador 69 (figura 1A). O amortecedor giratório 271 pode ser posicionado de modo que a engrenagem de amortecedor 274 engata a engrenagem 270, 15 quando a porta 69 é posicionada no gabinete 52. Em operação, a medida que a porta 69 é aberta ou fechada, a engrenagem 270 gira a engrenagem de amortecedor 274. O efeito de amortecimento do material viscoso ou de atrito entre a engrenagem de amortecedor 274 e a base de amortecedor 276 pode proporcionar o amortecimento do movimento de abertura e fechamento da porta para impedir, ou reduzir, substancialmente, a possibilidade de salpico de água para fora de um fabricante de gelo posicionado na porta, como descrito acima. Aqueles versados na técnica compreenderão que o amortecedor giratório 272 ou amortecedor 264 pode ser um amortecedor unidirecional, se desejado, embora o amortecimento bidirecional seja preferido para ajudar a assegurar que os derramamentos de água sejam impedidos no fechamento da porta bem como no movimento de abertura da porta. Voltando a figura 25, um sensor de derramamento e controle de derramamento de acordo com a invenção podem ser vistos. Além de proporcionar uma bandeja 128 (figura 3) para reter qualquer água derramada ou 30 salpicada para fora de uma das concretizações de fabricante de gelo descritas acima, um sensor de derramamento 280 e controle de derramamento 285 podem ser proporcionados para alertar o usuário de que um derramamento 5 10 15 20 25 30 47 mento ocorreu e o usuário empreender uma ação, automaticamente, em resposta ao derramamento. O sensor de derramamento 280 pode ser dois grupos de placas de metal 281, 282, localizados na bandeja 128, dispostos para serem contactados por qualquer água que derrame para fora de um fabricante de gelo posicionado na bandeja 128. Quando água ou gelo está presente nas placas de metal 281, 282 a resistência elétrica através das placas 281, 282 pode mudar e produzir um sinal para o controle de derramamento 285, indicando que água ou gelo está presente na bandeja 128. Aqueles versados na técnica compreenderão que as placas 281, 282 podem ser placas condutoras distintas posicionadas na bandeja 128, ou, se desejado, podem ser uma película condutora ou tinta impressa na bandeja 128. O controle de derramamento 285 pode ser disposto para ativar uma ou mais saídas que podem incluir um emissor de sinal sonoro audível 286, um visor de LED 288, que pode ser posicionado na interface de usuário 73 (figura 1A) e uma saída de energia, que pode compreender uma chave eletrônica (isto é, um SCR) 290 para ativar um elemento em resposta a detecção de

derramamento. Por exemplo, a chave eletrônica 290 pode ser disposta para ativar uma bomba 292 para bombear água da bandeja 128, como descrito acima, ou pode ser disposta para ativar o aquecedor 132 para a bandeja 128, como descrito acima. Desse modo, um sensor e controle de derramamento pode alertar o usuário de que um derramamento de água ocorreu e o usuário pode ativar uma resposta para o derramamento. Alertar o usuário de um derramamento pode permitir que o usuário limpe o derramamento prontamente, a fim de evitar o acúmulo de gelo em torno da base do fabricante de gelo que pode ocorrer, se a água não for drenada para longe ou de outro modo descartada logo após um derramamento ocorrer. Voltando às figuras 26 e 27, a operação da invenção de gerenciamento de derramamento das requerentes para fabricantes de gelo montados em porta de compartimento de refrigerador ou de freezer será descrita em maiores detalhes. A operação descrita abaixo será compreendida para se aplicar a todas as concretizações de fabricantes de gelo descritas acima, a menos que de outro modo observado. No começo de um ciclo de formação de gelo, etapa 300, a válvula de água 95 pode ser ativada pelo controle de válvula d'água 94 para encher o fabricante de gelo com água, etapa 301. O fabricante de gelo está localizado em uma localização com temperatura abaixo de 0 graus centígrados e, conseqüentemente, a água se resfria e começa a se congelar, etapa 302. Se a porta em que o fabricante de gelo está é aberta ou fechada, enquanto líquido está presente no molde de gelo, etapa 303, as características anti-salpico, etapa 304, das concretizações de fabricante de gelo descritas acima e, se aplicável, o mecanismo de amortecimento de porta, etapa 305, podem operar para impedir salpicos de água do molde de gelo. Se, não obstante as características anti-salpico, etapa 304, e o mecanismo de amortecimento de porta, etapa 305, a água derramar, etapa 306, aspectos de gerenciamento de derramamento da invenção podem operar, se proporcionados. Se uma bandeja 128 for proporcionada, a água derramada pode drenar para um recipiente na porta, etapa 307, se proporcionado, ou para um recipiente fora do refrigerador, tal como uma vasilha de drenagem 60, etapa 308. O recipiente da porta pode ser dotado de uma bomba 292 para esvaziar o recipiente quando cheio, etapa 309. Conforme notado acima, a bomba 292 também poderia ser disposta para bombear água da bandeja 128 para um recipiente de armazenamento remoto ou elevado ou para um dreno doméstico, se desejado (não-mostrado na figura 26). Quando o sensor de temperatura 245 do fabricante de gelo sente uma temperatura, indicando que os cubos de gelo congelaram completamente, um ciclo de recolhimento de gelo, etapa 310, pode começar. Exceto para os fabricantes de gelo de bandeja flexível, um aquecedor de molde de gelo 117 pode ser ativado para liberar cubos de gelo do molde de gelo, etapa 311. Durante o recolhimento de gelo, quando o fabricante de gelo é dotado de um sensor de derramamento 280 e controle de derramamento 285, o controle de derramamento 285 pode determinar se gelo ou água está presente na bandeja 128, etapa 312. Se gelo estiver presente na bandeja 128, o aquecedor de bandeja 132 pode ser ativado para derreter gelo na bandeja, durante o recolhimento de gelo, etapa 314. Quando o aquecedor de molde de gelo tiver sido ativado o bastante, o motor de fabricante de gelo pode ser ativado para girar o acamador de gelo ou o molde de gelo, dependendo da concretização de fabricante de gelo, usando técnicas de controle conhecidas na técnica, etapa 315. Alternativamente, o controle de derramamento 285 pode ser disposto para ativar um indicador de usuário, um emissor de sinal sonoro 286 ou LED 5 288, no caso de um derramamento de água, conforme descrito acima, para sinalizar ao usuário para atender ao derramamento, como descrito acima. Aqueles versados na técnica compreenderão que o controle de derramamento também pode ser disposto para ativar o aquecedor de bandeja 132 cada vez que o controle de descongelamento 295 iniciar um ciclo de descongelamento para o refrigerador freezer. Por exemplo, o aquecedor de bandeja 132 pode ser conectado para ser energizado quando o aquecedor para descongelamento 296 é ativado. Aqueles versados na técnica compreenderão que um ciclo de descongelamento pode ser iniciado periodicamente, ou pode ser iniciado por um sensor de descongelamento 297. No caso de inserção de moldes de bandeja flexível ou fabricantes de gelo de molde giratório, as etapas 311 a 314 podem ser saltadas. O controle de fabricante de gelo 33 pode fazer com que o motor de fabricante de gelo 35 gire o acamador de gelo ou molde de gelo, bloco 320, para fabricantes de gelo de bandeja flexível ou molde giratório. O controle de fabricante de gelo 33 também pode determinar a posição do molde de gelo ou acamador de gelo, bloco 322, a fim de permitir que o controle de válvula de água 94 inicie um novo ciclo de enchimento e congelamento de cubos de gelo, se mais gelo for chamado pelo controle de sensor de nível de receptáculo. Após o molde de gelo ou acamador de gelo ter girado e o molde de gelo estar vazio, etapa 25 316, o acamador de gelo ou molde de gelo pode retornar para a posição de origem, etapa 317. Em seguida a etapa 317, o fabricante de gelo pode começar outro ciclo de fabricação de gelo, se o controle sensor de nível de receptáculo para armazenamento de cubos de gelo pede mais gelo. Os conceitos da invenção aqui descritos proporcionam a conveniência de distribuição de gelo e água localizada inteiramente em uma porta de compartimento de refrigerador ou de freezer. No caso de refrigeradores freezers lado a lado, a localização do fabricante de gelo, do receptáculo para 50 armazenamento de cubos de gelo e do dispensação na porta de compartimento de freezer pode proporcionar uma área de armazenamento de prateleira de compartimento de freezer adicional. No caso de refrigeradores com freezer na parte inferior, a localização do fabricante de gelo, do receptáculo 5 para armazenamento de cubos de gelo e do dispensação em uma porta de compartimento de refrigerador, como descrito no pedido de patente dos Estados Unidos US20040111, pode simplificar o fornecimento de um dispensação de gelo e água para uma configuração de refrigerador com freezer na parte inferior. As invenções para gerenciamento de derramamento aqui descritas tornam prática a localização de um fabricante de gelo em uma porta de compartimento de refrigerador ou freezer. Embora a invenção tenha sido descrita especificamente em relação a certas concretizações específicas da mesma, deve ser compreendido que isso e a guisa de ilustração e não de limitação. Variação e modificação razoáveis são possíveis dentro do escopo da divulgação precedente e desnecessários, sem afastamento do espírito da invenção, que é definida nas reivindicações anexas. Relação de Partes 9 - puxador de porta 20 10 - refrigerador lado a lado 11 - prateleira 12 - gabinete 13 - cesta 14 - compartimento de refrigerador 25 16 - compartimento de freezer 17 - parede superior 18 - porta de compartimento de refrigerador 20 - porta de compartimento de freezer 21 - prateleira de porta 30 22 - fabricação de gelo 22' - conjunto de fabricação de gelo 23 - lado aberto 51 24 - borda superior de fabricante de gelo 25 - porta interna 26 - sistema de dispensador de gelo 28 - receptáculo para armazenamento de cubos de gelo 5 30 - sistema de trituração de gelo 32 - fabricante de gelo 33 - controle de fabricante de gelo 34 - cubo de gelo 35 - motor 10 36 - molde de gelo 38 - extrator de gelo 40 - acamador de gelo 44 - puxador de porta 46 - puxador de porta 15 48 - puxador de porta 50 - refrigerador com freezer na parte inferior 52 - gabinete 54 - compartimento de refrigerador 56 - compartimento de freezer 20 58 - compartimento de maquinaria 60 - vasilha de drenagem 62 - ventilador de condensador 64 - condensador 66 - porta de compartimento de freezer 25 68 - porta de compartimento de refrigerador 69 - porta de compartimento de refrigerador, 70 - painel de porta interna 72 - dispensador de gelo e água 73 - interface de usuário 30 77 - articulação 79 - gaveta 82 - fabricante de gelo 52 84 - receptáculo para armazenamento de cubos de gelo 86 - dispensador de gelo 88 - cobertura isolada 90 - cobertura isolada 5 93 - folga 94 - controle de válvula de água 95 - válvula de enchimento de fabricante de gelo 100 - primeira porção de distribuição de ar 102 - duto de abastecimento 10 104 - duto de retorno 106 - segunda porção de distribuição de ar 108 - duto de abastecimento 110 - duto de retorno 115 - fabricante de gelo 15 116 - molde de gelo 117 - aquecedor de molde de gelo 118 - acamador de gelo / ejetor de gelo 119 - dentes 120 - extrator de gelo 20 121 - retentores de extrator 122 - folga 123 - elemento para entrada de água 124 - cobertura 125 - lingüeta 25 126 - articulação 128 - bandeja 129 - parede 130 - dreno 132 - aquecedor de bandeja 30 135 - fabricante de gelo 136 - extrator de gelo 137 - retentores de extrator 5 10 15 20 25 30 53 138 - cobertura 140 - canal de recuperação de água 145 - fabricante de gelo 146 - tampa protetora 148 - extrator de gelo 150 - retentores de extrator 151 - fendas 155 - fabricante de gelo 157 - folga 158 - extrator de gelo 159 - retentor de extrator 160 - alojamento de controle 161 - lingüeta 162 - cobertura 163 - articulação 165 - fabricante de gelo 166 - placa de montagem 169 - alojamento de trem de engrenagens 170 - eixo de acionamento 171 - bandeja para cubos de gelo 172 - estrutura 174 - inserção de molde 175 - reentrância 176 - virola 178 - tubo de enchimento 180 - alojamento 182 - parede extrema 184 - parede extrema 186 - parede superior 188 - parede de contenção 189 - parede de contenção 190 - parede de contenção 54 191 - parede de contenção 192 - cobertura articulada 193 - segmento de cobertura 194 - segmento de cobertura 5 195 - segmento de cobertura 196 - segmento de cobertura 198 - pivô 200 - atuador 202 - passagem 10 205 - fabricante de gelo 206 - bandeja de torção 207 - reentrância 208 - controle 210 - proteção contra salpico 15 215-fabricador de gelo 216 - bandeja superior 218 - bandeja inferior 220 - bandeja de torção dupla 222 - bandeja de torção inferior 20 226 - parede inferior 228 - proteção contra salpico 230 - bandeja de torção dupla 232 - proteção contra salpico 240 - fabricante de gelo 25 242 - molde de gelo 243 - cavidade 244 - parede de base 245 - sensor de temperatura 247 - pernas 30 248 - estrutura 250 - parede lateral 252 - parede lateral 5 10 15 20 25 30 55 254 - acamador de gelo 256 - canal 257 - reentrância 258 - virola 260 - borda de retorno 262 - alhetas 264 - amortecedor 265 - pivô 266 - pivô 267 - bracadeira 268 - articulação de porta 270 - engrenagem 272 - amortecedor giratório 274 - engrenagem de amortecedor 276 - base de amortecedor 280 - sensor de derramamento 281 - placa 282 - placa 285 - controle de derramamento 286 - emissor de sinal sonoro 288 - LED 290 - chave eletrônica 292 - bomba 295 - controle de descongelamento 296 - aquecedor para descongelamento 297 - sensor de descongelamento 300 - começo de ciclo de IM 301 - enchimento de IM 302 - água se congela 303 - porta abre / fecha 304 - características anti-salpico funcionam 305 - amortecedor de porta funciona 56 306 - derramamento de água? 307 - derramamento drena para o recipiente 308 - armazenamento drena para a vasilha de drenagem 309 - recipiente cheio? 5 310 - pronto para recolhimento de gelo? 311 - aquecedor de IM opera 312 - sensor de derramamento sente água / gelo 313 - há gelo? 314 - aquecedor 132 ligado 10 315 - girar acamador de gelo ou molde de IM 316 - esvaziar molde 317 - retornar

ancinho/ molde de IM para origem 320 - girar o acamador de gelo ou o molde de gelo 322 - posicao de acamador de gelo ou de molde de gelo 15 330 - cubo de gelo 330'- cubo de gelo 332 - fabricante de gelo 333 - controle de fabricante de gelo 334 - parede articulada 20 335 - carne 336 - molde de gelo 337 - alavanca 338 - extensao fixa 339 - eixo de parede articulada 25 340 - acamador de gelo 341 - eixo de ancinho 342 - eixo de alavanca 343 - recorte 344 - pivo 30 345 - conexao 346 - conexao 347 - superficie REIVINDICACOES 1. Refrigerador freezer compreendendo: um compartimento de freezer mantido em uma temperatura a- baixo de 0 degrees centigrade e tendo uma porta de compartimento de freezer isolada; 5 um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade e tendo uma porta de compartimento de refrigerador isolada; um sistema de refrigeracao para resfriamento do compartimento de freezer e do compartimento de refrigerador; um fabricante de gelo automatico posicionado em uma dentre a 10 porta de compartimento de refrigerador e a porta de compartimento de free- zer; uma bandeja montada abaixo do fabricante de gelo disposta pa- ra coletar salpicos de agua que podem ocorrer quando a porta em que o fa- bricador de gelo esta posicionado e movida quando agua esta presente no 15 fabricante de gelo. 2. Refrigerador freezer, de acordo com a reivindicacao 1, ainda incluindo uma linha de drenagem que leva da bandeja ate um recipiente de descarte de agua. 3. Refrigerador freezer, de acordo com a reivindicacao 2, ainda 20 incluindo um compartimento de maquinaria e em que o sistema de refrigera- cao inclui uma vasilha de drenagem localizada no compartimento de maqui- naria e ainda em que a vasilha de drenagem e o recipiente de descarte de agua. 4. Refrigerador freezer, de acordo com a reivindicacao 3, ainda 25 incluindo uma bomba para bombear agua da bandeja para a vasilha de dre- nagem. 5. Refrigerador freezer, de acordo com a reivindicacao 1, ainda incluindo um aquecedor para a bandeja. 6. Refrigerador freezer, de acordo com a reivindicacao 5, ainda 30 incluindo um aquecedor para descongelamento para o sistema de refrigera- cao, m que o aquecedor de bandeja e conectado para ser energizado quan- do o aquecedor para descongelamento e energizado. 2 7. Refrigerador freezer, de acordo com a reivindicacao 5, ainda incluindo um controle para o aquecedor de bandeja, em que o aquecedor de bandeja e energizado periodicamente. 8. Refrigerador freezer, de acordo com a reivindicacao 5, ainda 5 incluindo um sensor e controle de derramamento disposto para detectar a presenca de agua na bandeja, em que o controle energiza o aquecedor de bandeja, quando o sensor de derramamento detecta agua na bandeja. 9. Refrigerador freezer, de acordo com a reivindicacao 1, em que o refrigerador freezer inclui um receptaculo para armazenamento de gelo e 10 em que o fabricante de gelo automatico e o receptaculo para armazenamen- to de gelo sao posicionados na porta de compartimento de freezer. 10. Refrigerador freezer, de acordo com a reivindicacao 1, em que o refrigerador freezer inclui um receptaculo para armazenamento de ge- - Io e o fabricante de gelo automatico e o receptaculo para armazenamento de 15 gelo sao posicionados na porta de compartimento de refrigerador e em que o refrigerador freezer ainda inclui um duto de ar que leva ao fabricante de gelo /? automatico e o receptaculo para armazenamento de gelo de uma fonte de ar abaixo de 0 degrees centigrade para fornecimento de ar resfriado ate abaixo de 0 degrees centigrade para o fabricante de gelo automatico e para o receptaculo para armazenamento de 20 gelo. 11. Refrigerador freezer, de acordo com a reivindicacao 10, ain- da incluindo um sub- compartimento isolado na porta de compartimento de refrigerador para o fabricante de gelo automatico e em que o receptaculo r para armazenamento de gelo e isolado para manter temperaturas abaixo do 25 congelamento no receptaculo para armazenamento de gelo. 12. Refrigerador freezer, de acordo com a reivindicacao 1, ainda incluindo um amortecedor de porta conectado a uma dentre a porta de com- partimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo esta posicionado. 30 13. Refrigerador freezer, de acordo com a reivindicacao 1, em que o fabricante de gelo automatico inclui um molde de gelo e uma cobertu- ra articulada para cobrir substancialmente o molde de gelo e em que o fabri- 5 10 15 20 25 30 3 cador de gelo e disposto para abrir a cobertura articulada durante os ciclos de recolhimento de gelo. 14. Refrigerador freezer, compreendendo: um compartimento de freezer mantido em uma temperatura a- baixo de 0 degrees centigrade e tendo uma porta de compartimento de freezer isolada; um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade e tendo uma porta de compartimento de refrigerador isolada; um sistema de refrigeracao para resfriamento do compartimento de freezer e do compartimento de refrigerador; um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de free- zer, compreendendo: um molde de gelo; um extrator de pedacos de gelo tendo uma tira de base montada ao longo de uma borda do molde de gelo e tendo uma pluralidade de reten- tores que se estendem da tira de base e posicionados acima de uma porcao do molde de gelo; um acamador de gelo tendo uma pluralidade de dentes monta- dos giravelmente acima do molde de gelo e dispostos para os dentes gira- rem entre a pluralidade de retentores e atraves do molde de gelo para con- duzir pedacos de gelo para fora do molde de gelo; e uma cobertura incluindo uma porcao de domo que se estende longitudinalmente, cobrindo, substancialmente o molde de gelo, em que a porcao de domo e articulada com o fabricante de gelo ao longo de uma pri- meira borda e inclui uma pluralidade de lingueetas adjacentes a uma segunda borda e dispostas para se estenderem e encherem, substancialmente, os espacos entre retentores de extrator de pedacos de gelo adjacentes. 15. Refrigerador freezer, de acordo com a reivindicacao 14, ain- da incluindo um receptaculo para armazenamento de cubos de gelo e em que a cobertura e disposta para abrir durante ciclos de recolhimento de gelo a fim de permitir que o acamador de gelo gire atraves do molde de gelo e pedacos de gelo caiam no receptaculo para armazenamento de gelo. 4 16. Refrigerador freezer, de acordo com a reivindicacao 15, em que o fabricante de gelo automatico inclui um motor disposto para acionar o acamador de gelo e abrir a cobertura durante os ciclos de recolhimento de gelo. 5 17. Refrigerador freezer, de acordo com a reivindicacao 16, em que o fabricante de gelo automatico ainda inclui uma ou mais engrenagens conectando acionavelmente o motor de fabricante de gelo ao acamador de gelo. 18. Refrigerador freezer, de acordo com a reivindicacao 17, em 10 que o fabricante de gelo automatico ainda inclui um carne acionado pelo mo- tor de fabricante de gelo para abrir a cobertura, quando o motor do fabrica- dor de gelo opera para acionar o acamador de gelo. 19. Refrigerador freezer, de acordo com a reivindicacao 14, em que a primeira borda da cobertura fecha contra o molde de gelo e a segunda 15 borda da cobertura se fecha contra a tira de base do extrator de pedacos de gelo. 20. Refrigerador freezer, de acordo com a reivindicacao 19, em que a cobertura inclui paredes extremas fechando a porcao de domo e em que uma primeira porcao das paredes extremas se fecha contra o molde de 20 gelo. 21. Refrigerador freezer, de acordo com a reivindicacao 19, em que o molde de gelo inclui uma pluralidade de pinos de articulacao ao longo de uma borda do molde de gelo e a cobertura inclui uma pluralidade de ele- mentos de articulacao dispostos para encaixar e articular nos pinos de arti- 25 culacao. 22. Refrigerador freezer, de acordo com a reivindicacao 21, em que o extrator de pedacos de gelo e disposto com um retentor em cada ex- tremidade sobrepondo uma porcao da respectiva extremidade do molde de gelo e em que uma segunda porcao das paredes extremas da cobertura se 30 fecham contra o retentor de extrator de pedacos de gelo nas respectivas ex- tremidades do extrator de pedacos de gelo. 23. Refrigerador freezer, de acordo com a reivindicacao 14, em 5 5 10 15 20 r • 25 30 que o molde de gelo inclui uma pluralidade de cavidades semicilindricas pa- ra formacao de pedacos de gelo. 24. Refrigerador freezer, de acordo com a reivindicacao 23, em que o acamador de gelo montado giravelmente e montado adjacente a borda de topo das cavidades semicilindricas e e posicionado substancialmente ao longo da linha central das cavidades semicilindricas. 25. Refrigerador freezer, de acordo com a reivindicacao 24, em que os retentores de extrator de pedacos de gelo sao dispostos para se es- tenderem da tira de base ao longo de uma borda do molde de gelo ate o a- camador de gelo. 26. Refrigerador freezer, de acordo com a reivindicacao 14, em que o extrator de pedacos de gelo e posicionado no modulo de derivacao para definir um canal de recuperacao de agua entre o extrator de pedacos de gelo e o molde de gelo e em que a cobertura sobrepoe e encerra o canal de recuperacao de agua. 27. Refrigerador freezer, de acordo com a reivindicacao 14, ain- da incluindo um amortecedor de porta conectado a uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo esta posicionado. 28. Refrigerador freezer, compreendendo: um compartimento de freezer mantido em uma temperatura a- baixo de 0 degrees centigrade e tendo uma porta de compartimento de freezer isolada; um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade e tendo uma porta de compartimento de refrigerador isolada; um sistema de refrigeracao para resfriamento do compartimento de freezer e do compartimento de refrigerador; um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de free- zer, compreendendo: um molde de gelo; um extrator de pedacos de gelo flexivel posicionado acima de uma primeira porcao do molde de gelo tendo uma pluralidade de fendas for- 5 10 15 20 25 30 6 mando uma pluralidade de retentores; um acamador de gelo tendo uma pluralidade de dentes monta- dos giravelmente acima do molde de gelo e dispostos para os dentes gira- rem atraves da pluralidade de fendas e atraves do molde de gelo para con- duzir pedacos de gelo para fora do molde de gelo; e uma tampa protetora que se estende acima de uma segunda porcao do molde de gelo. 29. Refrigerador freezer, de acordo com a reivindicacao 28, em que o molde de gelo inclui uma pluralidade de cavidades semicilindricas pa- ra formacao de pedacos de gelo e o acamador de gelo montado giravelmen- te e montado adjacente a borda de topo das cavidades semicilindricas e e posicionado substancialmente ao longo da linha central das cavidades semi- cilindricas. 30. Refrigerador freezer, de acordo com a reivindicacao 29, em que o extrator flexivel de pedacos de gelo se estende do acamador de gelo ate uma primeira borda do molde de gelo e e disposto para cobrir substanci- almente a primeira porcao do molde de gelo da linha central ate a primeira borda do molde de gelo. 31. Refrigerador freezer, de acordo com a reivindicacao 30, em que a tampa protetora se estende de uma segunda borda do molde de gelo substancialmente ate a linha central do molde de gelo e se estende acima do molde de gelo para permitir que o acamador de gelo gire atraves do molde de gelo. 32. Refrigerador freezer, de acordo com a reivindicacao 28, ain- da incluindo um amortecedor de porta conectado a uma dentre a porta de

compartimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo esta posicionado. 33. Refrigerador freezer, compreendendo: um compartimento de freezer mantido em uma temperatura a- baixo de 0 degrees centigrade e tendo uma porta de compartimento de freezer isolada; um compartimento de refrigerador mantido em uma temperatura acima de 0 degrees centigrade e tendo uma porta de compartimento de refrigerador isolada; 5 10 15 20 25 7 um sistema de refrigeracao para resfriamento do compartimento de freezer e do compartimento de refrigerador; um fabricante de gelo automatico posicionado em uma dentre a porta de compartimento de refrigerador e a porta de compartimento de free- zer, compreendendo: um molde de gelo; um extrator de pedaco de gelo tendo uma tira de base e uma pluralidade de retentores posicionados acima de uma primeira parte do mol- de de gelo; um acamador de gelo tendo uma pluralidade de dentes monta- dos giravelmente acima do molde de gelo e dispostos para os dentes gira- rem entre a pluralidade de retentores e atraves do molde de gelo para con- duzir pedacos de gelo para fora do molde de gelo e tendo uma alma flexivel que se estende de dentes adjacentes para encher pelo menos parcialmente a folga entre dentes adjacentes; um motor para acionar giravelmente o acamador de gelo para recolher pedacos de gelo durante ciclos de recolhimento e dispostos para estacionar um acamador de gelo com a pluralidade de dentes e almas flexi- veis que ficam substancialmente em um plano com a pluralidade de retento- res entre ciclos de recolhimento; e uma tampa protetora estendendo-se acima de uma segunda porcao do molde de gelo. 34. Refrigerador freezer, de acordo com a reivindicacao 33, ain- da incluindo um amortecedor de porta conectado a uma dentre a porta de compartimento de refrigerador e a porta de compartimento de freezer em que o fabricante de gelo esta posicionado. RESUMO Patente de Invencao: "GERENCIAMENTO DE DERRAMAMENTO DE AGUA PARA FABRICADOR DO GELO NA PORTA". A presente invencao refere-se a um refrigerador freezer tendo 5 um fabricante de gelo posicionado em uma porta de compartimento de refri- gerador ou compartimento de freezer. O fabricante de gelo e disposto para impedir ou gerenciar derramamentos do fabricante de gelo no caso de a porta em que o fabricante de gelo esta montado ser aberta ou fechada, quando agua nao congelada esta presente no fabricante de gelo. Concretizacoes 10 para gerenciamento de derramamentos para um numero de fabricantes de gelo de bandeja fixa e movel sao descritas. **Machine translation:** «# and gt; (- • • • • V * # * _ jv "and gt; ; ' / , J • • • • • # " . ~ • • • • • I • • • • • * and m and gt; • • • • • u j 1 • • ABSTRACT Patent Invention: "WATER SPILL MANAGEMENT FOR ICE fabricator AT THE DOOR" 9 Refrigerator - freezer with an ice maker placed on a 5 refrigerator compartment door or freezer compartment. The ice maker and willing to prevent or manage ice maker spills if the port on which the ice maker is mounted be open or closed when not frozen water is present in ice maker. Embodiments for managing spills to a number of ice makers 10 tray fixed and mobile are described. j 5 10 15 20 25 30 far OSOWS-1 p * "cSWGol the 161-3 and lt; and \ \ ~ 2 \ '2.00 and gt; Relatorio Description of Invention Patent for"! manage- ment WATER SPILL FOR ICE fabricator AT THE DOOR. " Cross-Reference to Related Applications The present application is related to the following US patent applications filed simultaneously with this: . US20020155, US20040162 and US20040111 Background of the Invention Field of the Invention The present invention relates to ice producers positioning of the compartment in a refrigerator door or freezer. Accord- ing to the invention, the ice producers may be arranged to pre- vent or manage the ice maker water spills in the event of the door when the ice maker is mounted to be opened and closed, when not frozen water is present in the ice maker. Description of Techniques Related trays of ice cubes filled manually, with a cover or lid to prevent water spills are known. The ice fabricators located in a compartment re- port frigerador or freezer that include no features for managing spills are known in the art. The refrigerators freezers side by side, and storage mechanisms and distribution of ice cubes in the freezer door to provide an ice dispenser and water in front compartment door to the freezer are well-known in the art. A variety of ice producers of flexible automatic ice tray and fixed mold known in the art. Summary of the Invention The invention relates to a refrigerator freezer compartment comprising a freezer maintained at a temperature below 0 degrees centigrade, a gate insulated freezer compartment of a refrigeration generator compartment maintained at a temperature above 0 degrees centigrade, one compartment door 5 10 15 20 25 30 2 ment of insulated cooler, a cooling system for resfriamen- to the freezer compartment and the refrigerator compartment and an automatic ice maker placed into one of the door composed of refrigerator compartment and freezer compartment door. And a tray mounted below the ice maker willing to collect water outpouring, which can occur when the size of the ice maker is positioned and moved, when water is present in the ice maker. A drain line can take the tray up to a water disposal container. The water waste container can be a drain pan located in the machinery compartment. In another aspect of the invention the tray may have a heater. The tray heater can be connected to be energized when the defrost heater cooling and nergizado e- system. • In another aspect of the invention, a sensor and control spill any mamento may be provided to detect the presence of water in the tray. The control can energize the tray heater when pouring sensor detects water in the tray. In another aspect the invention relates to a freezer refrigerator having a freezer compartment maintained at a temperature below 0 degrees centigrade, a gate insulated freezer compartment, one ration refrigeration system for cooling the freezer compartment and refrigerator compartment and an automatic ice maker placed into one of the refrigerator compartment door and frequent compartment door ezer. The ice maker includes an ice mold, a puller ice pieces having a base strip mounted along an edge of the ice mold having a plurality of retainers that extend the battery-strip and is positioned above a portion of the ice mold. The ice maker includes an ice acamador having a plurality of teeth mounted rotatably above the printing engine and arranged to teeth gira- rem between the plurality of seals and through the ice mold for 3 con- duce ice pieces out Ice mold. The ice machine also includes a cap including a dome portion extending longitudinally substantially covers the ice mold. The portion of the domed cover and hinged to the ice maker 5 along a first edge and includes a plurality of the adjacent lingueetas A second edge arranged to extend in spaces between retainers f tractor adjacent ice pieces and fills them substantially. The cover and arranged to open during the ice collection cycle, to allow the ice acamador rotate through the 10-ice and ice pieces mold fall into a receptacle for ice storage positioned below the fabricator ice. The ice maker includes a J motor device to drive the ice acamador and open the cover during the ice gathering cycles. The ice maker includes a cam driven by the motor of the ice maker to open the cover 15 when the motor ice maker operates to drive the acamador 9 *. The first edge of the cover closes against the print engine and are the second edge of the cover closes against the base strip of ice pieces extractor. 20 The ice pieces extractor can be positioned on the ice mold to define a water recovery channel between the extractor, ice chunks and ice mold. Coverage may involve water recovery channel. In another aspect, the invention relates to a refrigerator freezer 25 having a freezer compartment maintained at a temperature below. 0 degrees centigrade, a gate insulated freezer compartment, a refrigerator compartment kept at a temperature above 0 degrees centigrade, a door compartment isolated refrigerator, a refrigeration system for resfria- ment of the freezer compartment and refrigerator compartment 30 and an automatic ice maker positioned into one of the refrigerator compartment door and freezer compartment door. The fa- bricador ice includes an ice mold and a flexible puller pieces 5 10 15 20 25 30 4 ice positioned above a first portion of the ice mold having a plurality of slits forming a plurality of seals. The ice maker includes an ice acamador having a plurality of teeth mounted rotatably above the ice mold and arranged for the teeth rotate through the plurality of slots and across the ice mold to conduct ice chunks away from the ice mold. The ice maker further includes a protective cap that extends above A second portion of the ice mold. The flexible extractor ice pieces can extend the mazenamento ar- until a first edge of the ice mold and may be arranged to cover substantially the first portion of the ice mold to the central line of the ice mold until the first edge of the ice mold. The protective cover can extend from a second edge of the ice mold substantially up to the center line of the ice mold above the ice mold to allow the storage rotate through the ice mold. In another aspect, the invention relates to a refrigerator freezer having a freezer compartment maintained at a temperature below 0 degrees centigrade, a gate insulated freezer compartment, a refrigerator compartment kept at a temperature above 0 degrees centigrade, a door compartment isolated cooler, a cooling system for resfria- ment of the freezer and the refrigerator compartment compartment and an automatic ice maker placed into one of the refrigerator compartment door and the compartment door freezer. The fa- bricador ice includes an ice mold pieces and an ice extractor having a base strip and a plurality of retainers positioned above a first portion of the ice mold. The ice mold also includes an ice acamador having a plurality of teeth mounted giravel- mind over ice and arranged to mold the teeth rotate between the plurality of retainers and ice through the ice mold to carry out molding pieces Ice and having a flexible frame that esten- of adjacent teeth to fill, at least partially, the clearance en- tween adjacent teeth. The ice maker includes a motor to drive 5 10 15 20 25 30 5 rotatably ice acamador to collect pieces of ice during cycles of gathering and arranged to leave stationary the ice acamador with the plurality of teeth and flexible souls being substantially in a plane with the plurality of seals between payment cycles. One protective cover extending over a second portion of the ice mold. In another aspect the invention relates to a refrigerator - free- zer having a freezer compartment maintained at a temperature below 0 degrees centigrade, a gate insulated freezer compartment, a refrigerator compartment kept at a temperature above 0 degrees centigrade, a door isolated refrigerator compartment, a cooling system for re- Friar freezer compartment and the refrigerator compartment, one sup- port ice maker into one of the refrigerator compartment door or compartment freezer and arranged to support an ice maker spaced from the inner panel of the door, wherein the ice cubes collected in the ice maker may fall into a receptacle for storage of ice positioned below the ice maker and ice automatic facture of bricador arranged to be mounted on the support manufactured ice indicator. The ice maker includes an ice mold and an extractor of ice pieces having a base strip and a plurality of retainers positioned above a first portion of the ice mold. The battery-up strip extends through a portion of the ice mold. The fabricator it generally includes an ice acamador having a plurality of teeth mounted rotatably above the ice mold and arranged to rotate the teeth between the plurality of teeth and

through the ice mold to conduct pe- ice out of Dacos Ice mold. The ice maker further includes a protective cover extending over a second portion of the molded ice. The ice pieces extractor and the protective cover may be integrally formed of plastic material. The ice acamador may be formed of metal and can be mounted in contact with the ice mold, and arranged to be heated by conduction from the ice mold during cycles 5 10 15 20 25 30 6 gather ice. The ice maker includes a motor to drive, GI-ably, the ice acamador and the motor may be arranged to stop the ice acamador stationary with the plurality of teeth being substantially in a plane with the plurality of retainers between cycles gathering. In another aspect, the invention relates to a refrigerator - having free- zer a freezer maintained at a temperature below 0 degrees centigrade compartment, a door isolated freezer compartment, a refrigerator compartment kept at a temperature above of 0 degrees centigrade, a port of isolated refrigerator compartment, a cooling system to answer friamento the freezer compartment and the refrigerator compartment and an automatic ice maker placed into one of the refrigerator compartment door and the door freezer compartment. The fa- bricador ice includes a movable tray of ice chunks, one aloja- ment movably supporting the tray of ice pieces for movement between a filling position and ice-making and a SICA0 po- gathering and sealing surface to contain water, when the ice mold is in a position for filling and ice manufacturing. The housing may include a rear wall of containment, a front wall of containment and end walls of containment. The tray for ice pieces includes a mold insert having a plurality of recesses to form ice pieces and a ferrule that extends upwardly around the plurality of grooves forming the sealing surface. When the tray for ice pieces in this SICA0 po- filling and ice-making, the ferrule extending upwards and positioned on the outside of the front walls and rear extreme. In another aspect, the invention relates to a refrigerator - having free- zer a freezer maintained at a temperature below 0 degrees centigrade compartment, a door isolated freezer compartment, a refrigerator compartment kept at a temperature above of 0 degrees centigrade, a door isolated refrigerator compartment, a cooling system for re- 5 10 15 20 25 30 7 friamento the freezer compartment and the refrigerator compartment and an automatic ice maker positioned into one of the port refrigerator compartment and freezer compartment door. The fa- ice bricador includes a flexible tray having a plurality of cavi- ties and side walls extending above the cavities to pre- vent water from spilling out of the tray, if the port on which the manu- Ice bricador be moved and positioned, when water is present in the ice maker. The ice maker also includes a support for Mon- tar, rotatably, the flexible tray between the positions of ice formation and ice retreat and a drive mechanism to rotate the tray flexible between the positions of ice formation and ice gathering and twist the flexible tray in position pickup to release the ice pieces. The ice maker can include two trays connected po- sicionadas facing in opposite directions, mounted rotatably between posi- tion of ice formation and ice gathering. The po- ice trays dem be integrally formed and share a background wall. In another aspect, the invention relates to a refrigerator - free- zer, having a freezer compartment maintained at a temperature abai- xo 0 degrees centigrade, a hinged insulated freezer compartment door, a refrigerator compartment kept at a temperature above 0 degrees centigrade, a hinged insulated refrigerator compartment door, a refrigeration system for cooling the freezer compartment and the refrigerator compartment ment, an automatic ice maker located in a compartment from the door refrigerator compartment and the freezer door and a door damper connected to one among the Por- ta refrigerator compartment and freezer compartment door to the ice maker and positioned. The door damper may be arranged to fit the door for at least a portion of the movement range by opening and at least a portion of the movement range during the closing of the door. The port buffer can be loaded to a buffer 10 5 15 20 25 8 30 spring mounted on the machinery compartment and connected to one of arti- culacoes door of a refrigerator compartment from the door compartment and door freezer where ice maker and posi- tioned. The door damper can be connected to port articulation in a position for the door damper go through the center, where one out of the refrigerator compartment door and the freezer compartment door when the ice maker is positioned opens and closes. In one aspect of the invention, the damper may be a hydraulic absorber love-loaded spring. In another aspect of the invention, the damper may be a a- mortecedor the gas spring loaded. In another aspect of the invention, the damper is a rotary damper. The revolving damper can be a damper giratorio bidire- tional. In another aspect, the invention relates to a refrigerator - free- zer, having a freezer compartment maintained at a temperature abai- xo 0 degrees centigrade, a gate insulated freezer compartment of a refrigerator compartment maintained at a temperature above 0 degrees centigrade, one To-ta isolated refrigerator compartment, a cooling system pa- ra cooling the freezer compartment and the refrigeration compartment tor and an automatic ice maker positioned into one of the To-ta refrigerator compartment and freezer compartment door. A tray mounted under the provisions and ice maker to collect water spill that may occur when the door where the ice manufactured pain is positioned and moved when the water is present in bricador facture of ice. The tray includes a spill sensor to detect water in the tray and arranged to provide a signal to the User that a spill occurred. The spill sensor can comprise two sets of conductive elements positioned in the tray. The two groups of ele- ments conductors are connected to an outpouring of Detection circuit. The outpouring of Detection circuit may include a signal to alert 5 10 15 20 25 30 9 to the User that the spill occurred. The signal may be a LED device for providing a visual signal that a spill has occurred. In another aspect, the signal may be an audible signal that a spill has occurred. In another aspect, the refrigerator - freezer may include a drain line which leads from the tray and a pump for pumping water from a water tray for disposal container. The outpouring of Detection circuit may include an output to activate the pump. In another aspect, the invention relates to a refrigerator - having free- zer a freezer maintained at a temperature below 0 degrees centigrade compartment, a door isolated freezer compartment, a refrigerator compartment kept at a temperature above of 0 degrees centigrade, a port of isolated refrigerator compartment, a cooling system to answer friamento the freezer compartment and the refrigerator compartment, an automatic ice maker positioned on the inner door of the freezer compartment door and a receptacle for Ice Storage positioned below the ice maker. The ice maker can include a cover pivotally mounted adjacent to the top of the ice maker and willing to close the ice maker in a first position and to form a trough for ice from the ice maker for the receptacle for ice storage in a second position. The cover may be mounted pivotally adjacent to the top of the ice maker adjacent to the side ice maker opposite the inner door. The cover may include an actuator connected to the cover and arranged to cover the joint around a pivot point. The actuator may be arranged to engage the top wall of the freezer compartment, when the freezer compartment door is closed. The coverage can include a spring mechanism to boost coverage in steering the first position. The receptacle for storage of ice cubes can be removable from the freezer compartment door, when this cover in the first position. 10 15 20 25 5 30 10 In another aspect, the invention relates to a refrigerator - free- zer having a freezer compartment maintained at a temperature below 0 degrees centigrade, a gate insulated freezer compartment, a compartment cooler maintained at a temperature above 0 degrees centigrade, a door isolated refrigerator compartment, a cooling system for re- friamento the freezer compartment and the refrigerator compartment, an automatic ice maker mounted to a door from among com- refrigerator compartment and the freezer compartment door and the socket into ice storage positioned below the ice maker. The ice maker includes an ice mold and a heater for the ice mold. The ice maker and mounted rotatably to movement to the first position for ice mold filling with water and formation of ice cubes and the second position substantially reversed mind for collecting ice cubes. The ice maker may include provisions of temperature sensor to determine when ice cubes are frozen and to start the operation of the heater and cause the ice maker turns to the second position. The ice maker may further include a substantially fixed ice acamador positioned through the ice mold, the ice maker when in the first position and can be arranged to XAR it engages ice cubes in the ice mold, as the ice maker and turned to the second position. In another aspect, the invention relates to a refrigerator - free- zer, having a freezer compartment maintained at a temperature abai- xo 0 degrees centigrade, a gate insulated freezer compartment of a refrigerator compartment maintained at a temperature above 0 degrees centigrade, one To-ta isolated refrigerator compartment, a refrigeration system pa- ra cool the freezer compartment and the refrigerator compartment and an automatic ice maker mounted to a door from among freezer compartment of the refrigerator compartment and the door. The manufactured ice pain includes an ice mold and a heater for the ice mold. The ice mold and mounted rotatably to move to a first 5 10 15 20 25 30 11 position for filling ice mold with water and formation of ice cubes and the second substantially inverted position for collection of cubes Ice mold. The ice mold includes extended side walls arranged pa- ra contain water in the ice mold, if the port on which the automatic ice maker and mounted to be moved, when no water is present in the frozen ice mold. The ice mold further includes a lip along the distal edge of a side wall. The body may include a return edge directed toward the cavities of ice cubes arranged to define a channel for retaining water formed when the ice mold and heated for collecting ice cubes as the ice mold and rotated to the second position. The ice maker may include a substantially fixed rake, positioned above the ice mold, when the ice mold in the first position and arranged to engage the ice cubes in the ice such that as the ice mold and rotated for the second posicao.O ice maker may include a temperature sensor to determine when cu- ice frozen bos station and a motor to rotate the management between the first position and the second position. In another aspect, the invention relates to a refrigerator - having free- zer a freezer maintained at a temperature below 0 degrees centigrade compartment, a door isolated freezer compartment, a refrigerator compartment kept at a temperature above of 0 degrees centigrade, a door isolated refrigerator compartment, a cooling system for re- Friar freezer compartment and a refrigerator compartment and a manu- bricador automatic ice fitted into one of the compartments ment freezer door and the refrigerator compartment door. The ice maker includes an ice maker control, an ice mold rectangular generally a fixed extension which extends over a longitudinal edge of the ice mold and a hinged wall, which extends over the edge opposite longitudinal ice mold pivotally mounted on the ice mold. The ice maker also includes an ice acamador 5 10 15 20 25 30 12 mounted rotatably above the ice mold and operably connected to control the ice maker

and an operator in control of the ice maker arranged to move the hinged wall for a horizontal position in conjunction with the operation of the ice acamador. The operator can be a lever on the control ice maker operably connected hinged wall. The control ice maker may include a meat provisions to operate the lever. The meat can be connected to rotate when the ice maker control turns a- ice camador. The hinged wall can be driven to an upright position and the meat can be arranged to operate the lever to move the pa- articulated network for the horizontal position, after the ice acamador turn in the ice mold. The hinged wall may include a plurality of superficial higher species at the top surface of the hinged wall, and when it posicionada horizontal position. The elevated surfaces may extend generally perpendicular to ice acamador. In another aspect, the invention relates to a method of manufacture dog ice in a cooler - freezer in an ice maker increase matically and fitted into one of the ports of the compartments of the refrigeration and freezer generator. The method includes the steps of operation of the refrigerator - to provide cooling to the freezer compartment of the refrigeration erator or freezer, with ice water filling the mold, preventing water spillage from the ice maker, when the doors of compartments fridge or freezer, where the ice maker and assembled, are open or closed and gathering pieces of ice from the ice mold after the water has frozen. The prevention of spills step may include the provision of a tray below the ice maker to capture any water splashed out of the ice maker. The ice manufacturing method may further include the operation of a pan heater to derre- have any ice present in the tray. The step of spill prevention tools may include water draining from the tray to a container 5 10 15 20 25 30 13 water disposal. In another aspect, the ice maker may include a ra cobertu- for the ice maker and spill prevention includes the step of closing the cover and the ice pieces gathering step includes opening the cover. In another aspect, the ice maker includes a pe- Dacos extractor ice and an ice acamador having a plurality of teeth positioned rotatably through the ice machine and arranged to rotate the tooth through the extractor Ice chunks and ice maker mold. The prevention of spills step may include the disposition of ice pieces extractor and ice acamador to end, substantially, a portion of the ice maker. In another aspect, the ice maker includes a flexi- ble tray having a plurality of cavities. The prevention phase of spill ments may include the provision of flexible tray with side walls that extend above the wells to prevent water from splashing out of the tray. The flexible tray can comprise two gadas interconnected trays positioned in opposite directions. Each tray may have side walls extending above the cavities, when the ice tray is upright. In another aspect, the refrigerator - freezer may include a spectacle for storing ice cubes receiver positioned below the ice er manufactured and automatic ice maker may include a movable cover. The ice cube collecting step can include the opening of the cover to form a chute for the ice cubes on the receptacle for storage of ice cubes. In another aspect, the ice maker can include an ice mold rotatably mounted between a filling position and formation of ice cubes and a position substantially in- poured ice gathering. The method of preventing spills can include supply of the ice mold with extended side walls to one of the pa- side walls having a lip defining a channel. The gathering of step 5 10 15 20 25 30 14 ice pieces may include the rotation of the ice mold to col- lected ment of ice chunks and retention of any melted water during the collection cycle in the channel. The collecting step can include in its return water to the channel such that the ice as the ice mold returns to the filling position and ice formation. In another aspect, the ice maker may include an ice mold having a fixed extension in a side of the ice mold and a hinged wall on the other side of the ice mold. The step of cos ice educationalists rotation pickup may include a acamador ice in the ice mold and turning the hinged wall in a vertical position to one ho- rizontal through the ice mold. Brief Description of the Drawings Figure 1A and a perspective view of a refrigerator freezer bottom, comprising an embodiment of an ice maker in the door according to the invention. Figure 1B and a view freezer refrigerator illustrated in partial perspective in Figure 1A bottom with an open compartment door refrigerators illustrating an ice maker according to the invention positioned on the door above a receptacle for storage of ice cubes and ice dispenser. Figure 2 is a perspective view of a freezer door illustrating the application of an ice maker according to the invention in a side by side refrigerator freezer. Figure 3 is a perspective view of an embodiment of an ice maker according to the invention having a tray to catch spills and a cover. Figure 4 is a view in perspective of an ice maker of Figure 3 with the cover closed. Figure 5 is a perspective view of another embodiment of an ice maker according to the invention, having a cover and a water recovery channel. Figure 6 is a view in perspective of the ice maker 5 10 15 20 25 30 15 Figure 5 with the cover closed. Figure 7 is a perspective view of another embodiment of an ice maker according to the invention, having a flexible puller ice and a partial protective cover. Figure 8 is a perspective view of another embodiment of an ice maker according to the invention having a cover. Figure 9 is a partial perspective view of another materialisation of an ice maker according to the invention positioned in a refrigerator compartment door or the freezer compartment, the ice mold in position closed. Figure 10 is a partial perspective view of Figure 9 Ice maker with an ice mold partly open. Figure 11 and a cross-sectional view through the figure of manufactured ice pain 9, illustrating the relationship between the ice mold and as accommodation in the closed position. Figure 12A and a partial perspective view of a refrigeration freezer pain hand side of the prior art having an ice maker positioned at the freezer compartment. Figure 12B and a partial perspective view of a refrigeration pain side by side freezer having an ice cube maker according to the invention positioned on the freezer compartment door. Figure 13A is a schematic side view illustrating an ice er manufactured according to the invention, placed in a freezer compartment door having a hinged cover in the closed position. Figure 13B is a side partial schematic view of the manufactured ice pain according to Figure 13A, illustrating the articulation of Ra cobertu- with ice maker in the open position of the freezer compartment door. Figure 14A is a schematic side view illustrating the ice manufactured er of Figures 13A and 13B, with the cover open and ice cubes falling into the receptacle for storage of ice cubes underlying 5 10 15 20 25 30 16 you. Figure 14B is a side partial schematic view similar to that of Figure 13B, illustrating the articulation of the cover to the ice maker in the closed position of the freezer compartment door. Figure 15 is a perspective view of another embodiment of twist tray ice maker according to the invention. Figure 16 is a perspective view of another embodiment of a twist tray ice maker according to the invention having two trays. Figure 17 is a perspective view of another embodiment of a twist tray for use in a twist tray ice maker similar to the embodiments of Figure 15 and Figure 16 removed from the ice bricador manu-. Figure 18 is a partial sectional view of the torsion tray of Figure 17. Figure 19 is a view in perspective of another embodiment of a twist tray for use in a twist tray ice maker similar to the embodiments of Figure 15 and Figure 16 removed from the ice bricador manu-. The figure 20A and a perspective view of another embodiment of an ice maker mold rotatable with the mold in a vertical position. and Figure 20B is a view in perspective of the fabricator mold of rotatable ice mold with Figure 20A rotated 90 degrees. and Figure 20C is a view in perspective of the fabricator mold of Figure 20A ice rotatable with the mold rotated 180 degrees. Figure 21A and a schematic cross sectional view of the rotatable ice-maker mold in the position illustrated in Figure 20A. Figure 21B and a cross-sectional schematic view of the mold rotatable ice maker in the position illustrated in Figure 20B. Figure 21C and a cross-sectional schematic view of the rotatable ice maker mold in the position illustrated in Figure 20C. Figure 22A and a top view schematic of another materialisation 5 10 15 20 25 30 17 tion of an ice maker according to the invention. Figure 22B and a cross-sectional schematic view of figure ice maker 22A, illustrating the beginning of a cycle of rec- ice himento. Figure 22C and a schematic cross sectional view of the ice maker of Figure 22a, illustrating a subsequent point in the ice collection cycle. Figure 23 is a partial perspective view of the machinery compartment for a refrigerator freezer having an ice maker po- sicionado the freezer compartment door of a refrigerator freezer side by side, illustrating an embodiment of a door bumper for use with ice producers according to the invention. Figure 24A and a partial schematic view illustrating another embodiment of a door bumper for use with ice producers according to the invention. Figure 24B and a partial perspective view of the damper of Figure 24A. Figure 25 is a circuit diagram illustrating sen- sors shedding elements, that can be used with the embodiments of ice producers according to the invention. Figure 26 is a block diagram illustrating the operation of a refrigerator freezer, including bricador facture of spill management ice according to the invention. Figure 27 is a circuit diagram illustrating element trophic factors that may be used with embodiments of the ice maker according to the invention. Detailed Description of the Invention One of the most desired accessories for optical domesticating a refrigerator and an ice-water through the portal system. An ice and water dispenser through the door and desirable because it greatly simplifies the recovery process of ice cubes, that is, eliminates To-opening TA, the removal of the receptacle for storage of ice cubes, the se- 5 10 15 20 25 30 18 parison and collection of ice cubes and placement of ice cubes in a glass. The feature can also be seen as a saver e nergy, since the freezer door is not open so frequeentemente. In the home textiles market coolers today, three basic confi- ha ngs to choose from: a refrigerator freezer on the bottom of the refrigerator compartment is located above the freezer compartment, a mount refrigerator on top wherein the freezer is located above the refrigerating compartment for compartment and a refrigerator side by side in the refrigerator compartment and the freezer compartment extending throughout the height of the refrigerator. On the configuration side by side, the receptacle for storing ice cubes and the dispenser can be placed at the door of the freezer compartment. It would be advantageous also to position the ice maker in the freezer door to provide additional space for self storage in the freezer compartment. Also, it would be desirable to provide an ice and water dispenser for refrigerators with freezers at the bottom. However, doing so requires, essentially, the provision manufacturing mechanisms and the ice storage compartment door composed of refrigerator or freezer compartment. With current technology manufacturing and distribution of ice, it has not been possible for a consumer to have characteristics of dispensation of pain ice and water in a refrigerator compartment door with frequent ezer at the bottom or refrigerator door freezer side by side with ice and water dispenser mechanisms fully positioned in a door. One of the biggest challenges and how to manage the water spill that may occur when the door where an ice cube maker is positioned and open or closed abruptly when water is present in the ice mold. According to the invention of the applicant, the water pouring from an ice

maker placed in a refrigerator compartment door or freezer and prevented or managed. It should be noted that the embodiments described in this patent share many of the same elements as an output 5 10 15 20 25 30 19 distribution mounted on the outside of a refrigerator compartment door or freezer, a receptacle for storing ice cubes and an ice dispenser. Similarly, Ice producers, which are the object of the invention of applicants, share many of the same elements. It will be understood that the operation of these elements, in general, will be the same for each achievement and a description of its operation will not be repeated for each embodiment, unless otherwise mentioned mode. Likewise, elements common to more than one embodiment will be usually identified with common numerals. For example, each of the embodiments ice maker may include an ice maker control, identified as the control ice maker 33, and the motor 35 in the embodiment of Figure 2. The ice cubes 34 are illustrated and described as pieces of ice usually semicircular, although the invention of the concepts described herein are not so limited, and are also applicable to ice pieces having a cylindrical shape, retili- nea or another. As will be described in greater detail below, the ice fabrica- res according to the applicant's inventions can be used with refrigerators and freezers side by side at the bottom of the freezer. Returning to Figures 1A, 1B, 2, 12A and 12B side by side refrigerator freezer and freezer bottom, having a device maker and ice dispenser in the door according to the invention can be seen. Figures 1A and 1B show a refrigerator freezer bottom de- scribed in greater detail in co-pending US Patent Application US20040111, filed concurrently with this by Anselmino et al., and incorporated fully by reference in this application. The refrigerator freezer on the bottom 50 may have an enclosure 52, including a refrigerator compartment 54 kept acci- ma temperatures of 0 degrees centigrade and a freezer compartment 56 kept a- low temperatures of 0 degrees The freezer compartment centigrade and 56 positioned at the bottom of the cabinet 52 and the refrigerator compartment 54 and positioned above the freezer compartment 56. In the embodiment of Figures 1A and 1B, the free- zer at the bottom 50 can have two doors refrigerating compartment 5 10 15 20 25 30 20 Pain 68 and 69, arranged side by side. The cooler configuration with free- zer at the bottom 50, shown in Figures 1A and 1B, and referred to sometimes as a fridge freezer with French door bottom mount par- you. Conventional door knobs 44, 46 and 48 are shown in refrigerator compartment door 68 and the compartment 69 and the freezer door to 66. Those skilled in the art will readily appreciate that various knobs, or any handle may be provided for doors, as is well-known in the art. A side by side refrigerator freezer embodying the invention is illustrated in Figures 2, 12A and 12B, and described in detail below. The refrigerator 50 may have a cooling system (non shown) for cooling the refrigerator compartment 54 and the freezer compartment 56. The cooling system may include a compressor, a condenser, an evaporator and expansion device one, all non-shown, as is well-known in the art. The po- compressor is a variable speed compressor to provide variable cooling rates, again well-known in the art. The refrigerant tor 50 can also have a control system (not shown), which may include temperature sensors (not-shown) for the refrigerator compartment 54 and freezer compartment 56 connected to the temperature controllers of the refrigerator compartment, and the freezer (non shown) to keep the temperatures in the respective compartments in temperature selected by the User. The evaporator (not shown) can be positioned in a compartment evaporator (not shown), which can be positioned along the rear wall of the freezer compartment, as is well-known in the art. 69 The refrigerator compartment door may include a dis- ice water thinker and 72 positioned in front of the door. The icemaker and water 72 can be positioned at 69 refrigeration generator compartment door to a convenient height for User access as and well known in the art. A User interface 73 can be positioned adjacent ap icemaker and water 72 for users to select 5 10 15 20 25 30 21 alternatives ice distribution and water, such as "fast ice" described below and other parameters cooler operation freezer, as de- scribed in our co-pending US Patent degrees SERIES 10 / 861,203, incorporated herein by reference. An ice maker 82 can be mounted adjacent the top of the refrigerator compartment door 69 spaced from inner door panel 70. A receptacle for storage of ice cubes 84 can be positioned below ice maker 82 and arranged so that the ice cubes collected in the ice maker 82 can fall through the gap 93 into the receptacle for storage of ice cubes 84. The gap 93 may be provided between the back of the ice maker 82 and the inner door 70 to direct ice cubes to the receptacle for storage of ice cubes 84. The receptacle for storage of ice cubes 84 may be supported on top of the ice dispenser 86. An insulated cover 88 may be provided to substantially close the ice maker 82. An insulated cover 90 may be provided to close substantially the receptacle for storage of ice cu- bos 84 and the ice dispenser 86. The isolated covers 88 and 90 may form subcompartments can be kept below 0 degrees centigrade to facilitate the formation and storage of ice cubes. The insulated cover 88 may include one or more locking surfaces (non-shown) arranged to maintain the cover 88 in place, forming a wrap below 0 degrees centigrade to the ice maker 82 while the refrigerator compartment door 69 opened, and closed in use. As de- scribed above, the insulated cover 88 and the insulated cover 90 allow the respective subcompartments are kept at temperatures below 0 degrees centigrade, without changing normal temperatures above 0 degrees centigrade in the refrigerator compartment 54. insulated cover 90 may be pivotally mounted on the inner door panel 70 with the joints 77. The pivotal connection of the insulated cover 90 with the inner door panel 70 may allow easy access to the receptacle for storage of ice cubes 84, via e-5 10 15 20 25 30 22 XAMPLE to facilitate removal of the receptacle for storage of ice cubes 84 to distribute the ice cubes in a refrigerant or signs milares. The insulated cover 90 may be arranged so that it can be automatically closed while the refrigerating compartment door 69 tor and closed. The insulated cover 90 may be provided with a gasket 79 to seal against the surface of the inner door panel 70. insulated cover 90 may be omitted if the receptacle for storage of ice cubes 84 is formed of insulating material. In one embodiment, the receptacle for storage of ice cubes 84 may be formed of double-walled plastic material with sufficient insulating properties to keep the ice cubes in the receptacle, the freezing and cold enough to prevent individual cubes from each merge others. Those skilled in the technique that readily compreende- rao suitable transparent plastics material, such as those described above, can be used to form a receptacle for safely storing ice cubes isolated 84. Similarly, those skilled in the technique will understand that if no coverage is the insulator is provided, the air flow below 0 degrees centigrade may be directed to the receptacle for storage of ice cubes 84 so as to prevent undesirable vazamen- for the refrigerator compartment. The receptacle for storage of ice cubes 84 and the ice dispenser 86 may be similar to ice delivery system described in US Patent No. 6082130 degrees, assigned to the assignee of this request for patent and herein incorporated by reference. Those skilled in the technique will understand that a ice distribution system such to heat up le described in US Patent No. 6082130 degrees, can be used in the embodiment shown in Figures 1A and 1B, or may be provided with a receptacle for storage of insulating ice cubes as described above, and can be positioned in a refrigerator compartment door to cooperate with the ice maker 82 and the ice and water dispenser 72. One approach to the receptacle for level detection ice cube storage and described in US Patent No. 6082130 degrees, and those skilled in the tech- 5 10 15 20 25 30 23 single appreciate that many ways to determine the level of ice cubes in a storage receptacle cubes of Ice are co nised and can be used in place of the optical system described in the patent requests identified above. The ice maker 82 and the ice and water dispenser 72 can be provided with water under the control of a water control valve 94 and a water valve 95 which may be included in the refrigerator freezer bottom, how and well-known in the art. The water valve control 94 to the icemaker and water 72 and the ice maker 82 may be a variable flow water system, as described in our co-pending US patent series of degrees 10 /861.569, incorporated herein by reference. In one embodiment freezer bottom, as illustrated in the figures 1A and 1B, air below 0 degrees centigrade can be supplied to the ice manufactured Pain 82 and the receptacle for storage of ice cubes 84 per a system of air distribution, which may lead the freezer compartment 56. The air distribution system may include a first portion 100 of air distribution, which can be positioned along a side of the refrigerator compartment door 69 against the inner door panel 70. The air distribution system may include a second portion of distribution of air 106, positioned along a side wall of the compartment ment cooler 54 and leading down on the steering compartment ment freezer first portion 56. The air distribution 100 may include a supply duct 102 and return duct 104. Those skilled in the technique will understand that the first portion 100 of air distribution can be a dual passage tube, having two air passages, forming the supply duct 102 and return duct 104. The first portion 100 of air distribution can be thermo-formed plastic material formed or injection molded and can be covered or closed with mate- rial insulation as polystyrene ("styrobead") hard. The second portion of air distribution 106 similarly may comprise one to Food Supply duct 108 and return duct 110. The second portion of air distribution 106 may be a dual passage tube formed of plastic material, similar 5 10 15 20 25 30 First portion 24 of air distribution 100. The faces of the first and second air distribution portions 100 and 106 can support when the refrigerator door 69 is closed and can be arranged so that the ducts 102 and 108 supply and return ducts 104 and 110 are opposite each other and can form a passage continues, when the refrigerator compartment door 69 and closed. The front of the first and second portions of the air distribution 100 and 106 may comprise surfaces veda- dog suitable for supply and return ducts, so that air substantially hermetic connections can be made when the compartment door cooler 69 and closed. The air distribution system dog is described in greater detail in co-pending US patent US20040111, filed concurrently with the present application and incorporated by reference as indicated above. Returning to Figures 2 and 12B, a freezer side by side refrigerator having an ice maker and dispenser device in the door according to the invention can be seen. Figure 12A illustrates a side by side refrigerator freezer 10 of the prior art having a set of ice machine 22 positioned at the top of the freezer compartment 16. The free- zer compartment may have one or more shelves 11 and one or more baskets 13 arranged to store items in the freezer compartment 16. The compartment of freezer door 20 may have one or more door shelves 21 arranged to store items in the freezer compartment door 20. Similarly, the refrigerator compartment 14 may have one or more Pra- teleiras and one or more baskets or containers for the storage items in the refrigerator compartment above 0 degrees centigrade Figure 12B illustrates a side by side refrigerator freezer 10 having a set of ice machine 22 'in

accordance with the invention, positioned within the compartment of the freezer door 20. Comparing Figure 12A and Figure 12B, the relocaliza- dog assembly of the ice maker 22 in freezer door 20 can result in a complete additional shelf for increased storage in the freezer compartment 16 without a decrease in shelf storage space ment of the freezer door 20. The refrigerator freezer side by side 5 10 15 20 25 30 25 may be provided with a cabinet 12 forming a refrigerant tor compartment 14 and a freezer compartment 16 disposed side by side, as is well-known in the art. A cooling system (not shown) may be provided to keep the refrigerator compartment 14 at temperatures above 0 degrees centigrade and the freezer compartment 16 at temperatures below 0 degrees centigrade, as is well-known in the art. A door of the refrigerator compartment 18 and processing of 1:00 freezer compartment door 20 it can be provided to allow access to the freezer refrigerator. The freezer compartment door 20 may be an ice and water dispenser similar to that of ice and water dispenser 72 described above. In refrigeration pain tile of the prior art, as illustrated in Figure 12A, the ice maker assembly 22 and positioned on top of the freezer compartment 16 and arranged to discharge ice cubes in a butt recepta- for storing cubes 28. The ice of the ice maker assembly 22 'may include an ice maker 32 having an ice mold 36, one ice extractor 38 and an ice acamador 40. The ice maker 32 can have a control ice maker 33, which may include a motor 35 (Figure 27) to operate the ice acamador. The ice delivery system 26 may be positioned below the door 20 of the ice maker assembly 22 '. The ice delivery system 26 may include receptacle 28 for ice, which can be positioned in the ice crusher 30. The ice crusher 30 may be arranged to dispense ice cubes or crushed by means of an ice and water dispenser (not shown in Figures 12A or 12B) in front of the freezer compartment door 20. The ice dispenser illustrated in Figures 2, 12A and 12B may be similar to the system of distribution of ice tion described in US Patent No. 6,082 degrees.130 incorporated herein in its entirety. When operated, the distribution of ice cubes wounds transport system 26 or the receptacle for storage of ice pieces of cu- bos gel 28 through the freezer compartment door 20, so that the ice cubes can be distributed through a conventional ice maker and water dispenser similar to ice water and 72 described above. Next, various embodiments will be described fabricado- 5 10 15 20 25 30 26 res ice embodying the invention of applicants. Each of the embodiments may allow the respective ice producers are positioned and operated in a freezer compartment door 20 of a refrigerator or freezer side by side in a refrigerator compartment door 69 of a refrigerator freezer bottom. Returning to Figures 3 and 4, an embodiment of an ice maker for use in a refrigerator compartment door or freezer can be seen. The ice er 115 can be manufactured an ice maker similar to ice maker described in US Patents 4,649,717 and 4,649,718 s degrees, incorporated here in by reference. The ice maker 115 may comprise an ice mold 116, which may be a cast aluminum mold coated with EPO xi, as is well-known in the art. The ice mold 116 may have a heater 117 (Figure 27) provided to heat the mold during ci- clos ice pickup, as described in the patents identified acci- ma incorporated by reference. The ice mold 116 may be provided with an ice extractor 120, extractor having a plurality of retainers 121 which extend through a side of the ice mold 116. A mador aca- ice or ice ejector 118 can be tro rotatably mounted on the top edge of the ice mold centering acamador 116. The ice 118 may include a plurality of teeth 119 to eject ice cubes from the ice mold 116 to the ice as acamador and rotated through the mold 116 ice during an ice collection cycle. The ice maker 115 may have a water intake element 123 (see Figure 4) to help direct water to an ice maker filling tube (not shown) for the ice mold 116, and as well- known in the art. The ice maker 115 may have a control housing (not shown), as de- scribed in US patents referred to above having a control 33 (Figure 27) which controls the operation of the ice maker 115 and a motor 35 (Figure 27) which drives the ice acamador 118 during ice gathering cycles, all as is well-known in the art. The ice mold 116 may be provided with a cover 124 which can be pivoted from the ice mold edge 116 opposite the ice extractor 120. The cover 124 may have a mul- 5 10 15 20 25 30 27 125 which ralidade of lingueetas extend from a rim 124 of the cover arranged to close substantially the gaps 122 between adjacent puller retainers 121 when the cover 124 and closed against the top edge of the ice 116 and the ice mold extractor 120. Thus, the cover- age 124 may be arranged to substantially close the ice mold 116 to help prevent water from spilling out of the ice mold 116, in the case where the refrigerator compartment door or free- zer, wherein Ice maker 115 is positioned, and abruptly opened or closed when liquid water is present in the ice mold 116. The cover 124 can be arranged to be opened during a cycle has ice gather the ice maker control (non shown). For example, a meat or other drive mechanism (not shown) may be arranged to engage the cover 124 for the dog open position shown in Figure 3 the extent that the control triggers 118 acamador the ice through the ice mold 116 to eject ice cubes from the ice molded. Alternatively, cover 124 could be driven, residence lentamente to the open position shown in Figure 3 and the control manu- ice bricador (not shown) could operate to close the cover 124 in other than during a cycle of Ice gathering, as will be pron- ly understood by those versed in the technique. Additional Protective against the ice maker water shedding 115 can be provided by mounting the ice maker 115 on a tray 128 having walls facing up 129 along the edge of the tray 128 to contain any water that might spill from the manufacturer 115. The ice tray 128 may be provided with a drain 130 to drain any spilled water into the tray 128 into a waste container (not shown) which can be positioned in a refrigerant tor door or elsewhere in the refrigerator freezer. The po- disposal container is arranged for manual emptying or by a User State may be do- a drain pump 292 for emptying the container (step 309, Figure 26). A drain line (not-shown) can lead drain 130 for disposal container which can be located in compartment 5 10 15 20 25 30 28 58 machines (Figure 1A) which is located at the bottom of the freezer refrigeration tors in which a compressor and a condenser and other components to the freezer refrigerators are typically located, as is well-known in the art. The waste container can be a drain pan typical 60 (see Figure 23) may be located below the condenser 64 (Figure 23) to evaporate the water that melts the evaporator (not shown) during defrosting cycles, again as well-known in the art. Those versed in the technique will understand that other water disposal containers can be provided, or a willing connection for connection to a domestic drain can be pro- portionate, if desired. The tray 128 can also be provided with a heater 132 (Figure 27) to heat up, periodically, the tray 128 in order to evaporate any water that may have been spilled on the tray 128 or, alternatively, to melt any ice that forms on the tray 128 of water poured on the tray 128. The operation of the heater 132 will be described in greater detail below with respect to Figures 26 and 27. The tray 128 can also be provided with a drain pump 292 (Figure 27), which can be connected to the drain water pump 130 to the tray 128 up to a waste container that is not already located below the bande- 128 to allow gravity drainage. Returning to Figure 5 and Figure 6, another embodiment of an ice er manufactured for use in a refrigerator compartment door or freezer can be seen. The ice maker 135 can be an ice maker similar to the ice maker described in US Patents 4,649,717 and 4,649,718 s degrees incorporated herein by reference. The ice maker 135 may comprise an ice mold 116 that can be a function such dido aluminum coated with epoxy as is well-known in the art. The ice mold 116 may be provided a heater 117 for heating the ice mold for gathering cycles as described in the above identified patents incorporated by reference. The ice mold 116 may be provided with an ice extractor 136, extractor having a plurality of retainers 137 which extend through a side of the ice mold 116. A acamador 5 10 15 20 25 30 29 Ejector ice or ice 118 may be mounted rotatably in the center of the top edge of the ice mold 116. The ice acamador 118 may include a plurality of teeth 119 to eject ice cubes from the ice mold 116 to measure less than acamador of ice and spun through the ice mold 116 during an ice collection cycle. The ice maker 135 may have an element for water inlet 123 to a irecionar water tube en- Chimento ice maker (not shown) for the ice mold 116, as is well-known in the technique. The ice maker 135 may have a accommo- dation control (not shown), as described in US Patents referred renciadas above, including a control 33 for controlling the operation of the manufactured ice er 135, and a motor 35 to drive The ice acamador 118 dur- ing ice gathering cycles, all as is well-known in the art. The ice mold 116 can be provided with a cover 138, which can be articulated the ice mold edge 116, opposite the ice extractor 136. The extra ice tor 136 and the ice mold edge 116 may defining a water recovery channel 140 between the top edge of the ice mold 116 and the former ice tractor 136. When cover 138 is in closed position shown in Figure 6, the top of the water recovery channel 140 and closed so that any water that sprinkle the ice mold 116 against the extractor 136 or cover 138 can circulate in the water recovery channel 140 and, while so, back to the ice mold 116. In other respects, the fabricator Ice 135 can operate as the ice maker 115 described above and may be arranged to cover 138 to open during ice gathering cycles. Those skilled in the technique will understand that a po- tray 128 to be provided to the ice maker 135, as described above with respect to Figures 3 and 4. Returning to Figure 7, another embodiment of a generally fabricator it for use in a refrigerator compartment door or freezer can be seen. The ice maker 145 may be a mylar si- ice maker to an ice maker described in US Patent 4,649,717 and 4,649,718's degrees, hereby incorporated by reference. The ice maker 145 may comprise an ice mold 116 which can be an aluminum mold 5 10 15 20 25 30 30 epoxy coated cast, as is well-known in the art. The ice mold 116 may have a heater 117, provided to heat the ice mold for gathering cycles as described in the above identified patents ed incorporated by reference. The ice mold 116 may be provided with an ice extractor 148, extractor having a plurality of detents 150 extending through a side of the ice mold 116. In the embodiment of Figure 7, extractor retainers 150 may be formed of flexible material such as silicone rubber and may have a plurality of aligned slots 151 with teeth 119 of ice acamador 118. A a- camador ice or ice ejector 118 may be mounted rotatably in the center of the top edge of the mold 116. The ice 118 po- ice acamador include a plurality of teeth 119 to eject ice cubes from the ice mold 116, as the ice acamador and rotated through the ice mold 116 during a gathering cycle ice. As the teeth 119 contact the extractor 148, the edges of adjacent retainers 150 can flex to allow respective teeth move through the slots 151 and ejetem ice cubes from the ice mold 116. The ice maker 145 may have an element for water inlet 123 to direct water to an ice maker filling tube (not shown) for the ice mold 116, as is well-known in the art. The ice maker 145 may have a control housing (not shown), as described in US Patent referenced above, including a control 33 for controlling the operation of the ice maker 145 and a motor 35 to drive the ice acamador 118 during Ice collection cycles, and

all as well known in the art. The ice maker 145 may have a fixed ra protectors cover 146 connected to the ice mold 116, opposite the ice extractor 148. Thus, the combination extractor 148 and protective cover 146 covers substantially the open top of the ice mold 116 and can reduce, substantially, the chance of water splashing out of the ice mold 116, the port where the ice machine 145 is mounted and opened or closed abruptly when liquid is present in the ice mold 116. Those skilled in the technique will understand that a tray 128 can be 5 10 15 20 25 30 31 provided to the ice maker 145, as described above in relation to Figures 3 and 4. Returning to Figure 8, another embodiment of a generally fabricator it for use in a refrigerator compartment door or freezer can be seen. The ice maker 155 may be a mylar si- ice maker to an ice maker described in US Patents 4,649,717 and 4,649,718 s degrees incorporated herein by reference. The ice maker 155 may comprise an ice mold 116, which may be a die cast aluminum coated with epoxy, as is well-known in the art. The ice mold 116 may be provided a heater 117 for heating the ice mold for gathering cycles as described in the patents identified above ed incorporated by reference. The ice mold 116 can be do- State an ice extractor 158 having a plurality of ex- tractor retainers 159 extending through a side of the ice mold 116. An ice acamador 118 may be mounted rotatably the center of the top edge of the ice mold 116. The ice acamador 118 may include a plurality of teeth 119 to eject ice cubes from the ice mold 116 to the ice as acamador and rotated through the ice mold 116 du - ring an ice collection cycle. The ice maker 115 may have an element to water inlet 123 to direct water to an ice maker filling tube (not shown) for the ice mold 116, as is well-known in the art. The ice maker 155 may have a control housing 160, as described in US Patent referenced above, including a control 33 for controlling the operation of the ice maker 155 and a motor 35 to drive the ice acamador 118 for gathering cycles ice, all as is well-known in the art. The ice mold 116 can be provided with a cover 162 which can be pivoted from the ice mold edge 116 opposite the ice extractor 158. The cover 162 may be hinged to the ice mold 116 with a pair of articulations 163. The cover 162 may have a plurality of lingueetas 161 study who tend to cover an edge 162 arranged to close, substantially the gaps 157 between adjacent puller retainers 159, 162 when the cover 32 closed and against the top edge of Ice Ice mold 116 and the extractor 158. Thus, the cover 162 may be arranged to substantially close the ice mold 116 to help prevent water from spilling out of the ice mold 116, if the door of the comparators - 5 ment of the refrigerator or freezer, where the ice machine 155 is positioned and abruptly opened or closed when water in the li- liquid state is present in the ice mold 116. The cover 162 can be opened to rt dispos- an ice during collection cycle for controlling an ice maker 160. For example, a meat or other share- tioning mechanism 10 (not shown) may be arranged to engage the cover 162 to the open position, while the control fires The ice acamador 118 through 116 of the ice mold to eject the ice cubes from the ice mold. Alternatively, the cover 162 could be driven, resiliently, to the open position and the ice maker control 160 could operate 15 to close the cover 162 otherwise than not during a cycle of re ice colhimento as will be readily understood by those sados see- in technique. Those skilled in the technique will understand that a tray 128 may be provided to the ice maker 155, as described above with respect to Figures 3 and 4. 20 Returning to figures 9, 10 and 11, another embodiment of an ice er manufactured for use in a refrigerator compartment door or freezer can be seen. In the embodiment of Figures 9, 10 and 11, the ice manufactured er 165 and illustrated in a freezer compartment door 20, as shown in Figure 2. Those skilled in the technique will understand that the manufactured ice er 165 25 could also be ment used in a compartment door refrigerators 69, as in the embodiment illustrated in Figure 1A and 1B. The ice maker 165 may be similar to ice maker described in our co-pending United States patent US20020155 and US20040162, deposited simultaneously with this by Voglewede 30 et al., requests that are incorporated in their entirety by reference. The ice maker 165 and shown in the closed position, filling and ice formation in Figure 9. In Figure 10, the ice maker 165 and 5 10 15 20 25 30 33 shown partially rotated to the position pickup ice to illustrate spill management concretiza- dog aspects of the invention. Figure 11 and a cross-sectional view of the ice maker 165 in the closed position for filling and ice formation, accord- shown me in Figure 9. The ice maker 165 can be attached to port 20 through the mounting plate fixation 166 the inner door 21, as is understood by those skilled in the art. The ice maker 165 may include a housing 180 having end walls 182 and 184 and a top wall 186. The end walls 182 and 184 can support gira- ably the ice tray 171. The ice tray 171 may comprise a structure 172 that can support a mold insert 174. As described in co-pending patent applications US US20020155 and US20040162 incorporated herein by reference, the in- sertion mold 174 may be a flexible plastic material may include polyurethane and silicone, which may have a material with low friction coefficient, forming the top layer. The end wall 182 can support a motor 35 which can include a gear train (not shown) in the accommo- dation 169, which can connect the motor 35 to a drive shaft 170 connected to frame 172. The engine operation 35 by a control 33 to drive the ice tray 171 for collecting ice pieces and been described in detail in co-pending patent applications US US20020155 and US20040162 incorporated through reference. The embodiment of the ice 165 arranged to mount fabricator in a refrigerator compartment door or freezer may be arranged to prevent water spillage in the event of the door when the ice maker 165 and mounted to be opened and closed when liquid is present in the mold insert 174. In the embodiment illustrated in Figures 9, 10 and 11, the mold insert 174 can have a lip 176 that protrudes upward from the mold 174. The insertion sleeve 176 can be positioned outside the reentran - cies 175. The top wall 186 of the housing 180 may include containment walls 188, 189,190 and 191 (not-shown) which can protrude downwards from the top wall 186 and may terminate on the top surface of the in- 5 10 15 20 25 30 34 174 mold insertion between recesses 175 and the shell 176. The containment wall 191 (not-shown) and opposite the containment wall 189. In this mo- of the interaction of the containment walls 188,189,190 and 191 and the ferrule 176 can prevent substantially the water pouring out of the ice cube tray 171, when water is present not frozen in veneers reen- 175 and the freezer door 20 and open or closed abruptly. Turning to figures 13A, 13B, 14A and 14B, another embodiment of an ice maker for use in a refrigeration door of erator or freezer compartment can be seen in schematic side view. On 13A and 13B, the freezer door 20 is shown in the open position. On 14A and 14B, the freezer door 20 is shown in the closed position. Those skilled in the technique will understand that the MOS- Trada embodiment in Figures 13A, 13B, 14A and 14B can be used in connection with a refrigerator freezer door at the bottom, as shown in the embodiment of Figures 1A and 1B. The ice maker 22 'can be mounted on the inner surface of the freezer compartment door 20 above a receptacle for storage of ice cubes 28. The ice maker 22' may include a hinged cover 192. In this embodiment, hinged cover 192 may comprise a plurality of segments 193, 194, 195 and 196. The hinged cover can be formed of plastic such as polypropylene or metal, as will be understood by those skilled in the art. The ice maker 22 'may include an open side 23 which may take the ice mold portion (not-shown) of the ice maker 22'. The ice maker 22 'may be arranged to discharge ice cubes a- beams from the open side 23 for gathering cycles. The cover 192 may be hinged to the top edge 24 of the ice maker 22 'opposite the inner door 25 of the freezer door 20. The segments 193 and 194 may form a closure for the open end 23 when the cover is in closed position shown in Figure 13A. The segments 195 and 196 can occupy the space between the ice maker 22 'and the receptacle for storage of ice cubes 28, when this cover 192 at the phenyl position Chada, as shown in Figure 13A. When cover 192 and closed 5 10 15 20 25 30 35 of the receptacle for storage of ice cubes can be removed facilmen- te the inner door 21 for the bulk distribution of ice cubes, as filling of a refrigerant or another purpose, as de- sejado without interference from the cover 192. Referring to Figure 13B, cover 192 can be hinged to the ice maker 221 on the top edge 24 by the pivot 198. Those skilled in the technique will understand that can pivot 198 continues to be an articulation or one or more individual articulations or other mounting disposition in known pivo. The weight of the segments 193,194,195 and 196 can drive the cap 192 to the closed position, and can raise the plunger 200 extending beyond the pivot 198. Turning to figures 14A and 14B, the freezer compartment door 20 can be seen in the position closed. In the closed position, the actuator 200 can be seen in articulated contact with the top of the ice maker 22 'due to actuator 200 to be operated by the compartment top wall free- zer 17. The movement of the actuator to the position shown in Figure 14B po- of making the cover 192 rotate upward to the elevated position shown in Figure 14A. In the high position, the cover 192 can form a passageway for the pieces of ice collected in the ice maker 34 22 'into storage container for ice cubes 28. The ice cubes 34 are growing as illustrated in Figure 14A. Ice cubes will be referred to as 34 in other embodiments, whether or not they are shown as increasing. Those versed in the technique will understand that the ice cubes can take shapes as desired, half-moon, cylindrical, straight, conical or other regular or special forms. The segments 193 and 194 may divert ice chunks that leave the open side 23 of the ice maker 22 ', driving the ice pieces 34 down to the receptacle for storing ice cubes 28. The segments 195 and 196 may complete the passage 202 leading from the ice maker 22 'to the receptacle for storage of ice cubes 28. An additional advantage of the cover 192 and, when the freezer compartment door 20 is open, the cover 192 closes, effectively, the ice maker 22 'to prevent the users to contact, inadvertidamen- 5 10 15 20 25 30 36 you, portions of the ice maker 22' when accessing the interior of the freezer compartment of 16 and can help keep below 0 degrees centigrade it considering the air in the ice maker 22 '. Furthermore, as illustrated in Figure 13A, the freezer door profile 20 and reduced, compared with the open door position due to rotation of the cap 192 to the closed position when the freezer door 20 to open. The cover 192 enables the profile of the freezer door 20 is reduced until the thickness of the ice maker 22 'and the socket for storage of ice cubes 28, compared with the dispositions of ice maker that require space between the door inner 21 and the ice maker 22 'for ice pieces collected to fall into receptacle for storage of ice cubes 28. The cap 192 is shown as being operated by gravity in the embodiment of Figures 13A, 13B, 14A and 14B, however, those skilled in the technique will understand that the cover 192 can be arranged to be operated by a spring motor or solenoid (non-shown) for articulation between the closed and open positions of. Those skilled in the art also readily understanding derao an operator to cap 192 may be arranged to move the cap 192 to the open position 20 and closed when the door, or when the ice maker 22 'is in a cycle of Ice gathering, be as intended. Returning to Figure 15, another embodiment of a fabricator of it

generally for use in a refrigerator compartment door or freezer po- to be seen. Although the ice maker 205 is not shown in a To-ta freezer or refrigerator compartment, those skilled in the tech- nique will understand that ice maker 205 can be used in conjunction with the embodiment of Figures 1A and 1B or The embodiment of Figure 2. The ice maker 205 comprises an ice maker with twist tray that may be similar to and operate similarly to twist the ice tray producers disclosed in US Patent No s 3,964,269 degrees; 3,871,242; 3,779,032; 3,763,662; 3,727,428; 3,677,030; 3,648,476; 3,383,876; and 3,382,682, all of which are incorporated herein by reference. The fa- bricator ice with twist tray 205 may include a housing 5 10 15 20 25 30 37 208 control, which can be connected operatively, twist the tray 206. The control housing 33 may include a control and motor 35 to operate the ice maker with twist tray 205. The twist tray 206 may have sidewalls 210, which extend upwards of 207 reentran- stances to form a protection against splashes to contain not frozen water in twist tray 206, if the door to the ice maker 205 is assembled and opened or closed abruptly. The operation of the ice maker with twist tray and 205 well-known to those skilled in the art and may be similar to the operation of the ice fabricators with twist tray described in the patents described earlier in this subparagraph. The ice maker 205 can collect ice within its own width, and as well-known in the art. Thus, an ice maker with twist tray can enable a narrower door profile fa- bricadores the ice discharging ice in a hand. The ice producers discharging ice cubes on one side may require additional largu- ra, which may be of the order of three inches, to allow for co Span- ice cubes fall into the receptacle for storage of ice cubes. An additional advantage of an ice maker with twist tray and that no ice or ice acamador extractor and requested via the ice tray. The elimination of an ice acamador and ice extractor removes elements that could be exposed to water and freeze, if the port on which the ice maker is mounted is opened or phenyl Chada abruptly when not frozen water this present in the ice mold. Those versed in the technique will understand that the ice maker 205 may include appropriate mounting dispositions and may include, by e XAMPLE, a filling tube to provide water to twist the tray 206 in the beginning of an ice formation cycle and electricians cas connections to the control 208. Returning to Figure 16, another embodiment of an ice maker for use in a refrigerator compartment door or freezer can be seen. The ice maker 215 may include a torsion upper tray 216 and lower tray 218 twist, which may be each one 38, generally similar to torsion tray 206 in the embodiment of Figure 15. Each of the trays twist top and bottom may include one protection against splashes 210 willing to reduce the possibility of not frozen water pouring out of the ice maker 215, the fifth event of the door where the ice maker 215 is mounted is opened or closed abruptly, with no water present in the frozen ice maker. Those skilled in appreciate technique that ice maker 215 can include appropriate mounting arrangement and can include, for example, a filling pipe for supplying water to the trays 10 twist 216 and 218 in the beginning of ice formation cycle, and electrical connections to the control 208. One advantage of a double-twist tray and each tray twist and used every other cycle in order to prolong the time before or mineral oxidation postal scales sam accumulate in a tray, which can cause ice cubes 15 will join twist tray during the gathering. Figures 17:18 illustrate another embodiment of a tray of 220 double twist, which may have a twist tray top 222 and a twist tray 224. The lower tray double twist 220 can be used with an ice maker with twist tray, such as an ice er 20 manufactured with torsion tray 215 described in Figure 16. Each torsion ja bande- 222 and 224 may include a protection against splashes 228 as described above in connection with the embodiments of Figures 15 and 16. In the embodiment of Figures 17 and 18, the twist tray 220 can under- stand a bottom wall 226 separating the common twist tray upper 25 rior 222 of the twist tray bottom 224. An advantage of providing the bande - ja twist 220 with a common back wall 226 and the heat in the a- water added to empty tray to start another ice formation cycle can help to release any ice cubes that could get stuck in the twist tray bottom. Those skilled in the art with- 30 preenderao the ice collection cycle may be arranged to pro- porcionar filling of the twist top tray as the empty tray rotates to a vertical position to provide heat for the water 5 10 15 20 25 30 39 help ice cubes collected in the bottom tray. Figure 19 illustrates another embodiment of a tray of 230 double twist, which can be simi- home the tray double twist 220 in Figures 17 and 18. The tray double twist 230 may have a protection against splash 232, which can be bent inwardly in order to help divert the water back to the tray Tor- double dog 230, if the ice maker in which the torsion tray 230 is mounted and used in a refrigerator or freezer door open- rt or closed abruptly, when this water is not frozen in this ice maker. Those skilled in the technique will understand that any of the embodiments of torsion trays may include a curved protected against dog speckle, as shown in Figure 19, pro- straight place protections against speckle illustrated in Figures 15 to 18. Those versa- in the technique will understand that an ice machine incorporating any of the illustrated torsion tray arrangements in Figures 15 and 19 can operate similar to producers with ice tray dog Tor- described in US Patents referenced above. Turning to figures 20A, 20B, 20C, 21, 21B and 21C, another concretization of an ice maker for use in a compartment door refrigerators or freezers can be seen. In the embodiment illustrated in Figures 20A -c 21A - C, the ice maker 240 may understanding der an ice mold 242, which can be mounted rotatably in the manufactured ice pain 240. The ice maker 240 may include a base wall 244 having a motor 35 mounted on one side of the base wall 244. The pa- core network 244 can also support a control 33 (not shown) pa- ra control the operation of the ice maker 240. po- ice mold 242 to be mounted rotatably between the base wall 244 and structure 248. The structure 248 can be shaped element a generally "U" which po- be attached legs 247 that may extend from opposite sides of the base wall 244 (Structure 248 of Figure 20A and omitted to better illustrate the ice mold 242). Suitable fasteners can be used to secure the frame 248 legs 247, as will be understood on by those skilled in the art. The ice mold 242 may be an alumi- mold 5 10 15 20 25 30 40 nio epoxy coated as described above and may have sidewalls 250 and 252, which may extend above the water level in the ice mold 242 to prevent the water from splashing out of the ice mold 240. The mold 242 may include ice an ice mold heater 117 (Figure 27) patients ra facilitate removal of ice cubes 34 during the recoil cycle as and well-known. A channel 256 may be formed in the sidewall 252 to retain water formed as a result of operation of the aque- ice mold plier an ice during collection cycle. The channel 256 may be formed by a recess 257 in the side wall 252 and a ferrule 258 extending from the distal edge of the wall 252 towards the cen- ter of the ice mold 242. The body 258 may end at the back edge 260 extending from the upper distal end of the sleeve element 258 toward the bottom of the ice mold 242. A fixed ice acamador 254 can be mounted in base wall 244 and structure 248. The ice mold 242 may be arranged to rotate around the ice acamador 254 as will be described below to. In figures 20A and 21A, the ice mold 242 is illustrated in the position of origin. The position of origin of the ice mold is opened up and understand the position of filling and formation. A filling tube (not shown) can extend the element water inlet 123 for the office of the refrigerator and freezer to connect to a source of water. After the water has frozen in the ice cubes 34, a temperature sensor 245 (Figure 27) can operate to start a recolhimen- to ice cycle, as is well-known in the art, and can be manufactured similar to markers of Ice described in US Patents incorporated by reference jointly to Figures 3 and 4. During the cycle of processing of col- lected ice, the motor 35 may be arranged to cause the ice mold 242 rotate in a clockwise direction for 180 degrees, as auger MOS- in Figures 20B, 20C, 21B and 21C. 20B and 21B in the figures, the ice mold 242 and shown rotated 90 degrees with water melted the ice molded heater (not shown) collected in the channel 256. In rotation of 90 degrees, the bos cu- ice 34 not yet contacted the ice acamador stationary 254. 5 10 15 20 25 30 41 However, As the ice mold 242 continues to rotate to the position of 180 degrees rotation shown in Figures 20C and 21C, the ice acamador ejected ice cubes 34, allowing ice cubes hit the century recepta- for storing ice cubes (not-shown materialisation of this). The position of rotation of 180 degrees shown in Figure 20C and 21C, the ca- nal 256 can retain water formed when the ice mold heater 117 heats the ice mold to release ice cubes mold 242. The motor 35 can, then reverse the rotation of the ice mold 242 to position tical see- illustrated in 20A and 21A figures to start another ice formation cycle. Any water in the channel 256 can run back to the ice mold cavity 243 as the return of the ice mold 242 for the top position. The ice mold 242 may include a plurality of fins 262 and may be provided with a housing for improving the airflow around the ice mold, as described in co-pending US Patent Mem- ber US20040111, filed by Anselmino et al. "simultaneously with the present and incorporated herein in its entirety. Although bricador ice manu- 240 in this embodiment is described as having a molded ice rotatable 242, those skilled in the technique will understand that ice maker 240 can be arranged to be rotatable, instead of having only the mold fabricator Ice rotatable through the assembly, gira- ably, ice maker in the refrigerator or freezer door. A rotatable ice maker could be arranged to rotate around a fixed point on the refrigerator door or freezer that can be connected to the fixed ice acamador 254. Turning to figures 22A through 22C, another embodiment of an ice er manufactured for use in a refrigerator compartment door or freezer can be seen. In the embodiment of figures 22A to 22C, the ice er manufactured 332 and shown in schematic form and includes an ice mold 336 and the control ice maker 333. The ice maker mold 336 may be a coated aluminum mold with epoxy as described above. The ice maker 332 may include an ice acamador 340.montado rotatably above the ice mold 336. The ice acamador 5 10 15 20 25 30 42 340 can be rotatably mounted on the rake shaft 341. The ice mold 336 may include a flat extension 338 that extends upwardly and inwardly from an ice mold edge 336. As can be seen atra- ves reference to Figures 22B and 22C, the fixed extension may be 338 to prevent der esten- the substantially water splashing outside of the fixed extension 336 through the ice mold wall 338. A hinge 334 can study inclines upward from the opposite side of the ice mold wall 336. The hinge 334 may be aluminum coated with epoxy as the ice mold 336 or, as will be understood by those skilled in the art. It can be formed of molded plastic material similar to ice extractants known in ice producers. As can be seen by reference to Figures 22B and 22C, the hinged wall 334 may extend verticalmen- te approximately the same height as the fixed hinge wall 338. The extension 334 can be pivotally mounted on the ice mold 336 by a shaft an articulated wall 339 on the top edge of the ice mold 336. Those skilled in the technique will understand that the hinged wall 334 may be hinged or rotatably mounted by other mounting arrangements which can include a continuous or pivots the articulation f extremities hinged wall 334, which cooperate with points of articulation connected to the ice mold 336 as are well-known in the art. The

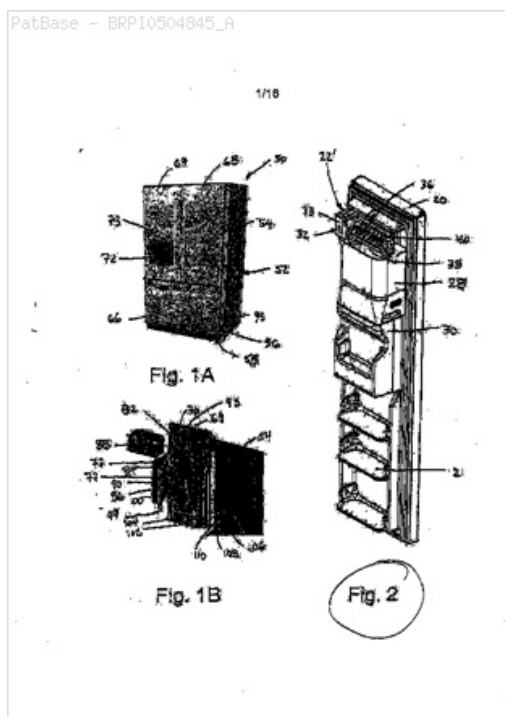
control ice maker 333 may include a cam 335 which can be connected to the drive mechanism acionavelmente pa- acamador ice ra 340, as illustrated by dashed line 346, so that, as the ice acamador 340 and rotated during a gathering cycle of ice cubes, the meat turns 335. The control ice maker 333 may include also a lever 337 which can be arranged to be operated by the cam 335 as it rotates with the ice acamador 340. The lever 337 may be rotatably mounted on the control fabricator Ice 333 on pivot 344. As shown in Figure 22B, when the articulated wall 334 is vertical, the ice maker during the filling portions and freezing of the ice cubes of an ice making cycle, the lever 337 can be positioned pa- 5 10 15 20 25 30 43 Ra to be engaged by the cam 335 as it rotates. Reference through the 22B and 22C figures the sequence operation for the hinged wall 334 can be seen. As the ice acamador 340 approaches and passes through the axis 339 of articulated wall, the cutout 343 in 335 meat is opposite the lever 337 to remain in an upright position shown in Figure 22B in the pivot 344. As the ice acamador 340 continues to rotate and through the ice mold 336, the surface of meat 335 can engage the lever 337 and articulating the lever 337 below par for the position that study tends down, shown in Figure 22C. The lever 337 may be connected Toda the hinged wall 334, as illustrated by dashed line 345, so that, as the lever 337 is rotated between the positions of ras Fig- 22B and 22C, the hinged wall 334 articulates the vertical position (Figure 22B) to the horizontal position (22C). At the end of a collection cycle ice cubes, the ice acamador 340 can return to a position extending generally upwardly and the cutout 335 positioned 343 opposite swimming meat lever 337, so that the articulated wall 334 can resume the vertical position illustrated in Figure 22B. The outer surface 347 of the hinged wall (in 22B figure) may be flat or may have ridges or ribs extending generally perpendicular to ice acamador 340 in order to facilitate sliding of the ice cubes 330 out of the wall 334 articulated while the ice acamador 340 completes its rotation dog through the ice mold 336. An ice cube 330 'and shown posi- tioned through the articulated wall 334 in Figure 22C to illustrate the operation of the articulated wall 334 as an extractor. In the stage of an illustrated ice gathering cycle at 22C figure, the ice cube 330 is still on ice mold 336, as shown. Accordingly, the articulated wall 334 can function similar to ice extractor described in US Patent 4,649,717 and 4,649,718 incorporated by reference above. The hinged wall 334 can be pushed to the vertical position (Figure 22B) by a torsion spring (not-shown) so that the lever 337 can mo- see the hinged wall 334 to the horizontal position by the compression torsion spring. When the cam 335 returns to a position where the applicant 10 5 15 20 25 30 44 343 thee is opposite the lever 337, the torsion spring can return the hinged wall 334 to a vertical position. Alternatively, the hinged wall 334 can be mechanically actuated by the lever 337 to articulate the articulated wall 334 between the vertical and horizontal positions As will be pron- ly understood by those skilled in the art. Thus, in operation, the hinged wall 334 and the fixed extension 338 may extend vertically above the ice mold 336 in order to contain the water splashing out of the ice mold 336 during filling servings and the freezing Ice cubes of an ice collection cycle. In part has committed an ice collection cycle, the hinged wall 334 can be pivoted to the position shown in Figure 22C to allow the ice cubes 330 are pushed through the hinged wall 334 to a receptacle for storage of ice cubes underlying (non shown). As mentioned above, the outer surface 347 of the hinged wall 334 may have ridges or ribs that run generally perpendicular to ice acamador 340 to facilitate the sliding of the ice cubes out of the hinged wall 337, while functioning as a f ice tractor in a conventional ice maker as described in U.S. Patents referenced identified above. An advantage of the articulated wall figures 22A-22C configu- ration and a structure of conventional ice extractor that extends through the ice mold 336 can be eliminated. The ice elimination extractor removes the possibility of water splashing out of the ice mold in ice extractor during the filling cycle and in freezing ice cubes. The ice in the ice puller could prevent the ice 340 to rotate through the ice mold acamador 336 during the recoil cycle to push the ice cubes 330 out of the ice mold 336. Returning to Figures 23, 24A and 24B, port buffers for use in conjunction with a refrigerator compartment door or frequency Ezer having an ice maker mounted on it can be viewed. It will be understood that a door damper, as described in connection with Figures 23, 24A and 24B, can be used in combination with any 5 10 15 20 25 30 45 one of the embodiments described above ice producers. In Figure 23, one embodiment of a damper door can be seen positioned nothing in the refrigerator cabinet bottom freezer 52 in the machinery compartment 58. Those skilled in the technique will understand that a vasi- daughter of drain 60 may be located at the bottom of machinery compartment 58 to provide localization for water defrosting regret drain evaporation. The drain pan 60 may also provide a location for water poured from a fabricator it generally combined with a tray as illustrated in figures 3 and 4. A suitable drain line (not-shown) can connect the drain 130 in pan 128 to the drain pan 60 to spill any mada water disposal an ice maker in a refrigerating compartment door erator or freezer. Those skilled in the technique will understand that the compressor of the refrigeration system (not shown), a condenser 64 and a condenser fan 62, typically located in the machinery compartment 58 may provide heat and air flow for evaporation of water drained into the drain pan 60. In Figure 23, a damper 264 can be pivotally mounted in a clamp in the machinery compartment in the pivot 265. The opposite end of the damper 264 can be pivotally connected to the bracket 267 which can be fixed to a door (not-shown) or door articulation (non shown) in 268. The damper 264 can be a spring Gas love- that weaves in both directions. Those skilled in the technique will understand that the bumper 264 may be a shock absorber or spring loaded instead of a damper gas spring. The clamp 267 and the a- mortecedor 264 may be arranged so that the door goes through the center in relation to the buffer 264 as the door closes so that the door movement can be damped in the closing and in the opening. The spring effect of gas damping in the damper 264 po- provide the damping of the opening movement or closing of the door to prevent or substantially reduce the possibility of co salpi- water out of an ice maker positioned at port 46 as described above. Returning the 24A and 24B figures, an embodiment of dampers giratorio pain may be seen. The revolving damper 272 may comprise a damper gear 274 rotatably mounted on the base a- 5 mortecedor 276. The revolving bumpers are well-known in the art and may include viscous friction materials or engaging the damper gear 274 to damper base 276. Known devices inclusion in unidirectional or bidirectional revolving bumpers. The revolving damper 272 can be mounted on a fixed element, such as a 10 articulation element (not shown) attached to the refrigerator freezer cabinet 52 (Figure 1A). The gear 270 may be fixed on an element swiveling articulated dog, as the articulation pin (not shown) attached to the refrigerator door 69 (Figure 1A). The rotary damper 271 may be positioned so that the damper gear 274 engages gear 270, 15 when the door 69 and positioned in the enclosure 52. In operation, as the door 69 to open or closed, the gear 270 rotates damper gear 274. The damping effect of the viscous material or the friction between the damping gear 274 and the damper base 276 can provide the damping of the opening and closing movement of the door 20 to prevent or substantially reduce the possibility of water splashing out from an ice maker positioned on the door, as described above. Those versed in the technique will understand the shock gira- thorium 272 or damper 264 can be a one-way damper, if de- sejado, although the bidirectional buffer is preferred to help as- 25 insure that the water spills are prevented when the door closes and the opening movement of the door. Returning to Figure 25, a spill sensor and spill control according to the invention can be seen. Addition to providing a tray 128 (Figure 3) to retain any water spilled or splashed 30 out of the ice maker embodiments de- scribed above, a spill sensor 280 and spill control 285 may be provided to warn the User that a spill 5 10 15 20 25 30 47 ment occurred el or undertake an action, automatically in response to the spill. The spill sensor 280 may be two groups of metal plates 281, 282 located on tray 128, arranged to be contacted for any water to spill out of an ice maker positioned in the tray 128. When water or ice is present in metal plates 281, 282 through the electrical resistance of the plates 281, 282 may change and producing a signal to the spill control 285, indicating that the water or ice is present on the tray 128. Those skilled in the technique will understand that the plates 281, 282 can be separate conductors res plates positioned in the tray 128, or, if desired, may be a conductive film or ink printed on the tray 128. The control spill any mamento 285 may be arranged to activate one or more outputs which can include a beep emitting audible 286, an LED display 288, which can be positioned on the User Interface 73 (Figure 1A) and a power outlet, which may comprise an electronic key (ie, a SCR) 290 to activate a Pouring element in response to detection. For XAMPLE e, the electronic switch 290 may be arranged to activate a pump 292 for pumping water from the tray 128, as described above, or may be arranged to activate the heater 132 to the tray 128, as described above a-. Thus, a sensor and spill control can alert the User that a water spill occurred el or can activate a response to the spill. Alert the User of a spill can allow the User clean the spill immediately in order to prevent ice accumulation around the base of the ice maker that can occur if water is not drained away or otherwise discarded so soon after a spill occur. Returning the figures 26 and 27, the operation of the invention of gerenci- ning spill of applicants for ice fabricators mounted in the refrigerator compartment door or freezer will be described in greater detail. The operation described below will be understood to apply to all the embodiments of ice fabricators described acci- ma, unless otherwise noted. In the beginning of a formal cycle 5 10 15 20 25 30 48 ice Macao, step 300, the water valve 95 may be activated by the trolley con- d'water valve 94 to fill the ice maker with water, step 301. The ice maker is located in a superb location with temperature below 0 degrees centigrade and consequentemente, the water cools and starts to freeze, step 302. If the port where the ice maker and this opened or closed while liquid is present in the ice mold, step 303, the anti-spatter characteristics, step 304, the ice maker embodiments described above and, if applicable, the dampening mechanism To-ta, step 305, can operate to prevent water splashes generally mold it. If, despite the anti-speckle characteristics, step 304, and the mechanism of door cushioning step 305, the water pouring, step 306, aspects of the invention spill management can operate, if provided. If a tray 128 is provided, the spilled water can drain into a receptacle on the door, step 307, if provided, or to a container out of the refrigerator, such as a drainage container 60, step 308. The container door may be provided a pump 292 for emptying the container when full, step 309. As noted above, the pump 292 could also be arranged to pump water from the tray 128 to a remote or elevated storage container or to a household drain, if desired (non- shown in Figure 26). When the ice maker 245 of the temperature sensor senses a temperature, indicating that

completely frozen ice cubes, an ice collection cycle, step 310 can begin. Except for the flexible producers ice tray, an ice mold heater 117 may be activated to release the ice cubes from the ice mold, step 311. During collection the ice when the ice maker and provided with a sensor spill ment 280 and spill control 285, the spill control 285 can determine whether ice or water is present in the tray 128, 312. step If ice is present in the tray 128, the tray heater 132 can be activated to melt ice on tray for collecting the ice, step 314. When the ice mold heater has been activated enough, the ice maker motor can be activated to rotate the aca- 49 mador ice or ice mold, depending on the realization of manufactured ice cator, using techniques known in the art control, step 315. Alternatively, the spill control 285 can be arranged to enable a User indicator, an audible signal emitter LED 286 or 5288 in the case of a water spillage, as described above, to signal the User to meet the spill, as described above. Those skilled in the technique will understand that the spill control ment can also be arranged to activate the heater tray 132 each time the defrost control 295 des- initiate a freezing cycle 10 to the freezer refrigerator. For example, the tray heater 132 can be connected to be energized when the heater 296 for thawing and activated. Those skilled in the art under- enderao a defrost cycle may be initiated periodically you, or can be initiated by a defrost sensor 297. In the case of insert 15 of flexible molds revolving mold tray or ice producers, steps the 311 314 can be skipped. The control ice maker 33 can cause the ice machine motor 35 rotate the mador aca- ice or ice mold block 320, the ice producers of mold revolving or flexible tray. The control tam- ice maker 33 and 20 can determine the position of the ice mold or ice acamador, blo- part 322 in order to allow the water valve control 94 to start a new filling cycle and freezing ice cubes, if more ice is called the control level sensor receptacle. After the ice mold or ice acamador be rotated and the ice mold is empty, step 25 316, the ice or ice acamador mold can return to the home position, step 317. Following step 317, the fabricator Ice can How to get started another ice manufacturing cycle, the level sensor control of the socket for ice cubes storage calls for more ice. The concepts described herein invention provide the appro- 30 provenance of ice and water distribution located entirely in a refrigerator compartment door or freezer. In the case of refrigerators freezers side by side, the localization of the ice maker, the receptacle 50 for storing ice cubes and dispensation in the freezer compartment door can provide an area of windrow prate- storage freezer compartment additional. In the case of refrigerator freezer bottom, the location of the ice fabrication of the receptacle 5 for storing ice cubes and dispensation in a refrigerator compartment door, as described in patent application US US20040111 Mem- ber, can simplify the delivery of a dispensation ice tion and water for a cooler configuration with freezer on the bottom. The inventions for spill management here de- scribed make 10 practices localization of an ice fabrication in a refrigerator compartment door or freezer. While the invention has been described specifically in relation to certain specific embodiments thereof, it should be understood that this and the way of illustration and not limitation. Variation and modification are possible within 15 reasonable scope of the foregoing disclosure and drawings without departing from the spirit of the invention, which is defined in the accompanying cations reivindi-. Ratio of 9 parts - door handle 20 side by side refrigerator 10- 11- 12- shelf cabinet 13- 14- basket refrigerator compartment 25 16 - freezer compartment 17 - upper wall 18 - refrigerator compartment door 20 - port freezer compartment 21 - Door shelf 30 22 - Ice fabrication 22 - set of ice fabrication 23 - open side 51 24 - upper edge of the ice maker 25 - inner door 26 - ice dispenser system 28 - receptacle for ice cubes storage 5 30 - ice crunch system 32 - Ice maker 33 - control the ice maker 34 - Ice cube 35 - Engine 10 36 - Ice mold 38 - Ice extractor 40 - Ice acamador 44 - door handle 46 - door handle 15 48 - door handle 50 - fridge with freezer on the bottom 52 - Office 54 - refrigerator compartment 56 - freezer compartment 20 58 - machinery compartment 60 - Drain vessel 62 - condenser fan 64 -condensador 66 - freezer compartment door 25 68 - refrigerator compartment door 69 - refrigerator compartment door 70 - inner door panel 72 - icemaker and water 73 - User interface 30 77 - articulation 79 - Gasket 82 - Ice maker 52 84 - receptacle for storing ice cubes 86 - icemaker 88 - isolated coverage 90 - isolated cover 5 93 - off 94 - water valve control 95 - fabricator filling valve Ice 100 - first portion of the air distribution 102 - supply duct 10 104 - return duct 106 - second portion of air distribution 108 - supply duct 110 - return duct - 115 - ice maker 15 116 - Mold Ice 117 - Ice mold heater 118 - Ice acamador / ice ejector 119 - Teeth 120 - Ice extractor 20,121 - extractor retainers 122 - off 123 - water input to element 124 - coverage '125 - lingueeta 25,126 - articulation 128 - Tray 129 - Wall 130 - Drain 132 - Tray heater 30,135 - Ice maker 136 - ice extractor 137 - extractor retainers 5 10 15 20 25 30 53 138 - covering 140 - water recovery channel 145 - Ice maker 146 - protective cover 148 - Ice extractor 150 - extractor retainers 151 - cracks 155 - Ice maker 157 - off 158 - Ice extractor 159 - extractor retainer 160 - control housing 161 - lingueeta 162 - coverage 163 - articulation 165 - Ice maker 166 - mounting plate 169 - gear train housing 170 - drive shaft 171 - tray for ice cubes 172 - frame 174 - the mold insert 175 - recess 176 - sleeve 178 - tube Filling 180 - Accommodation 182 - end wall 184 - end wall 186 - the top wall 188 - containment wall 189 - containment wall 190 - Wall containment 54,191 - containment wall 192 - hinged cover 193 - cover segment 194 - segment covering 5195 - covering segment 196 - covering segment 198 - pivo 200 - actuator 202 - passing 10 205 - Ice maker 206 - twist tray 207 - recess 208 - Control 210 - protection against splash 15 Ice 215-fabricator 216 - top tray 218 - lower tray 220 - to twist double tray 222 - twist tray below 20,226 - lower wall 228 - protection against splash 230 - to twist double tray 232 - protection against splash 240 - Ice maker 25,242 - mold Ice 243 - hole 244 - the base wall 245 - Temperature Sensor 247 - legs 30 248 - frame 250 - side wall 252 - the side wall 5 10 15 20 25 30 55 254 - Ice acamador 256 - channel 257 - recess 258 - sleeve 260 - return edge 262 - fins 264 - damper 265 - pivo 266 - pivo 267 - Armband 268 - Door articulation 270 - Gear 272 - Bumper giratorio 274 - damper gear 276 - damper base 280 - spill sensor 281 - Plate 282 - Plate 285 - spill control 286 - beep emitting 288 - LED 290 - electronic switch 292 - pump 295 - defrost control 296 - heater to defrost 297 - thawing sensor 300 - IM cycle beginning 301 - Filling IM 302 - water freezes 303 - door open / close 304 - anti-splash features 305 works - door damper works 56 306 - water spill? 307 - pouring into the container drains 308 - spill drains for the drainage bowl 309 - filled container? 5310 - ready to ice gathering? 311 - IM heater operates 312 - spill sensor feels water / ice 313 - ha ice? 314 - heater 132 connected 10315 - spin ice acamador or IM mold 316 - empty mold 317 - back rake / IM mold to rise 320 - turn the ice acamador or ice mold 322 - position of ice acamador or Ice 15,330 cast - ice cube ice cube 330- 332-Ice maker 333 - fabricator control ice 334 - articulated wall 20 335 - Beef 336 - Ice Mold 337 - Lever 338 - Fixed extension 339 - hinged wall axis 25,340 - Ice acamador 341 - rake shaft 342 - lever shaft 343 - 344 cut - pivo 30 345 - 346 connection - connection 347 - superficie claims 1. Fridge freezer comprising: a freezer compartment kept at a temperature below a- 0 degrees centigrade and having a freezer compartment door isolated; 5 is a refrigerator compartment kept at a temperature above 0 degrees centigrade and having a gate isolated refrigerator compartment; a cooling system for cooling the freezer compartment and the refrigerator compartment; an automatic ice maker placed into one of the 10 refrigerator compartment door and the free- zer compartment door; a tray mounted below willing ice maker pa- ra collect water splashes that can occur when the door where the bricador facture of ice is positioned and moved when water is present in 15 ice maker. 2. Refrigerator freezer according to claim 1, further including a drain line that carries the tray to a water disposal container. 3. Refrigerator freezer according to claim 2, further 20 including a machinery compartment, and wherein the refrigerating system comprises a drainage canister compartment located on machines refinery and further wherein the drain container and the container water disposal. 4. Refrigerator freezer according to claim 3, further including a pump 25 to pump water from the tray to the bowl of drainage. 5. Refrigerator freezer according to claim 1, further including a heater to the tray. 6. Refrigerator freezer according to claim 5, further including a heater 30 for defrosting the refrigerating system m the tray heater and connected to be energized when the defrosting heater and energized. 2 7. Refrigerator freezer according to claim 5, further including a control for the heater tray, wherein the tray heater and energized periodically. 8. Refrigerator freezer according to claim 5, further 5 including a sensor and spill control arranged to detect the presence of water in the tray, wherein the control sets the pan heater, when the spill sensor detects water in the tray. 9. Refrigerator freezer according to claim 1, wherein the fridge freezer includes a receptacle for storage of ice and 10 in which the automatic ice-maker and for the receptacle to armazenamen- ice are positioned on the freezer compartment door. 10. Refrigerator freezer according to claim 1, wherein the fridge freezer generally comprises a receptacle for storage - Io, and the automatic ice maker and the receptacle for storage of ice 15 are positioned in the refrigerator compartment door, and wherein fridge freezer also includes an air duct that leads to the ice maker /? and automatic ice storage receptacle to a supply of air below 0 degrees centigrade for supplying cooled air to below 0 degrees centigrade to the automatic ice maker and the receptacle 20 for storing ice. 11. Refrigerator freezer according to claim 10, including the AIN- an isolated sub-compartment in the refrigerator compartment door to the automatic ice maker, and wherein the receptacle R for ice storage and insulated to keep temperatures below the freezing 25 the receptacle for storage of ice. 12. Refrigerator freezer according to claim 1, further including a gate connected to a buffer from the door com- refrigerator compartment and the freezer compartment door on which the ice maker is positioned. 30 13 Refrigerator freezer according to claim 1, wherein automatic ice maker includes an ice mold and a hinged trim together to substantially cover the ice mold, and wherein the manu- 5 10 15 20 25 30 3 Icy er and willing to open the hinged cover over the ice gathering cycles. 14. Refrigerator freezer, comprising: a freezer compartment kept at a low temperature a- 0 degrees centigrade and having a gate insulated freezer compartment; a refrigerator compartment kept at a temperature above 0 degrees centigrade and having a gate isolated refrigerator compartment; a cooling system for cooling the freezer compartment and the refrigerator compartment; an automatic ice maker positioned into one of the refrigerator compartment door and the free- zer compartment door, comprising: an ice mold; an extractor ice pieces having a base strip arranged along an edge of the ice mold and having a plurality of oil seals that extend from the base strip and a portion positioned above the ice mold; an ice acamador having a plurality of teeth mounted rotatably above the ice mold and arranged to teeth

gira- rem between the plurality of seals and through the mold for ice con- duce ice chunks away from the ice mold; and a cover including a dome portion extending lengthwise, covering substantially the ice mold, wherein the portion of the dome and articulated with ice maker over an initial edge and includes a plurality of the adjacent lingueetas a second edge and arranged to extend and fill substantially the spaces between pieces extractor retainers of adjacent ice. 15. Refrigerator freezer according to claim 14, AIN- of including a receptacle for storage of ice cubes and in which the cover and arranged to open during ice gathering cycles in order to allow the ice acamador rotate through the mold ice, and ice pieces falling into the ice storage receptacle. 4 16. Refrigerator freezer according to claim 15, wherein the automatic ice maker includes a motor arranged to drive the ice acamador and open cover for the ice gathering cycles. 5 17. Refrigerator freezer according to claim 16, wherein the automatic ice maker further includes one or more gears acionavelmente connecting the ice maker to an ice engine acamador. 18. Refrigerator freezer according to claim 17, 10 in the automatic ice maker further includes a cam driven by the mo- tor ice maker to open the cover when the engine manufactured ice pain operates to drive the acamador of ice. 19. Refrigerator freezer according to claim 14, wherein the first edge of the cover closes against the ice mold and the second edge of the cover 15 is closed against the base strip ice pieces extractor. 20. Refrigerator freezer according to claim 19, wherein the cover comprises end walls closing dome portion and wherein a first portion of the end walls is closed against the mold 20 ice. 21. Refrigerator freezer according to claim 19, wherein the ice mold includes a plurality of hinge pins along one edge of the ice mold and the cover includes a plurality of ele- ments articulation arranged to engage and articulate in arti- pins 25 culation. 22. Refrigerator freezer according to claim 21, wherein the extractor of ice pieces and a retainer disposed at each extremity overlying a portion of the respective end of the ice mold, and wherein a second portion of the end walls of the cover to 30 close against the retainer of ice pieces extractor in their extremities extractor of ice pieces. 23. Refrigerator freezer according to claim 14, wherein 5 5 10 15 20 25 • r 30 that the ice mold includes a plurality of semi-cylindrical cavities pa- ra formation of ice pieces. 24. Refrigerator freezer according to claim 23, wherein the ice acamador and mounted rotatably mounted adjacent the top edge of the semi-cylindrical cavities ee positioned substantially along the centerline of the semi-cylindrical cavities. 25. Refrigerator freezer according to claim 24, wherein the ice pieces extractor retainers are arranged to tend to study the base strip along one edge of the ice mold until the ice a- camador. 26. Refrigerator freezer according to claim 14, wherein the extractor ice pieces and placed in derivation module for defining a water recovery channel between the extractor ice chunks and ice mold, and wherein the cover overlaps and closes the water recovery channel. 27. Refrigerator freezer according to claim 14, including the AIN- a gate connected to a buffer from the refrigerator compartment door and freezer compartment door on which the ice maker is positioned. 28. Refrigerator freezer, comprising: a freezer compartment kept at a low temperature a- 0 degrees centigrade and having a gate insulated freezer compartment; a refrigerator compartment kept at a temperature above 0 degrees centigrade and having a gate isolated refrigerator compartment; a cooling system for cooling the freezer compartment and the refrigerator compartment; an automatic ice maker positioned into one of the refrigerator compartment door and the free- zer compartment door, comprising: an ice mold; an extractor flexible pieces of ice positioned above a first portion of the ice mold having a plurality of slits forms 5 10 15 6 20 25 30 send a plurality of retainers; an ice acamador having a plurality of teeth mounted rotatably above the ice mold and arranged to teeth gira- rem through the plurality of slots and across the ice mold to con- duce ice chunks away from the ice mold; and a protective cover extending over a second portion of the ice mold. 29. Refrigerator freezer according to claim 28, wherein the ice mold includes a plurality of semi-cylindrical cavities pa- ra formation of ice chunks and ice acamador mounted giravelmen- te and mounted adjacent the top edge of the semi-cylindrical cavities ee positioned substantially along the centerline of the semi-cylindrical cavities. 30. Refrigerator freezer according to claim 29, wherein the flexible pieces of ice extractor extends ice acamador until a first edge of the ice mold ee substanci- tially arranged to cover the first portion of the centerline ice mold until the first edge of the ice mold. 31. Refrigerator freezer according to claim 30, wherein the protective cap extends from a second edge of the ice mold substantially to the center line of the ice mold and extends above the ice mold to allow the ice acamador rotate through the ice mold. 32. Refrigerator freezer according to claim 28, including the AIN- a gate connected to a buffer from the refrigerator compartment door and freezer compartment door on which the ice maker is positioned. 33. Refrigerator freezer, comprising: a freezer compartment kept at a low temperature a- 0 degrees centigrade and having a gate insulated freezer compartment; a refrigerator compartment kept at a temperature above 0 degrees centigrade and having a gate isolated refrigerator compartment; 5 10 15 20 25 7 a cooling system for cooling the freezer compartment and the refrigerator compartment; an automatic ice maker positioned into one of the refrigerator compartment door and the free- zer compartment door, comprising: an ice mold; an ice piece extractor having a base strip and a plurality of retainers positioned above a first portion of the molded ice; an ice acamador having a plurality of teeth mounted rotatably above the ice mold and arranged to teeth gira- rem between the plurality of seals and through the mold for ice con- duce ice chunks away from the ice mold and having a flexible soul that extends from adjacent teeth at least partially to fill the gap between adjacent teeth; a motor to drive rotatably the ice acamador to collect ice pieces during cycles of gathering and willing to park an ice acamador with the plurality of teeth and flexi- ble souls that are substantially in a plane with the plurality of retento- res between cycles of gathering; and a protective cover extending over a second portion of the ice mold. 34. Refrigerator freezer according to claim 33, including the AIN- a gate connected to a buffer from the refrigerator compartment door and freezer compartment door on which the ice maker is positioned. Summary of Invention Patent: "WATER SPILL MANAGEMENT FOR ICE fabricator AT THE DOOR" The present invention relates to a refrigerator freezer having an ice maker 5 positioned in a generator refrigeration compartment or the freezer compartment door. The ice maker and arranged to prevent or manage ice maker spills if the To-ta at which the ice maker is mounted to be opened or closed when no water is present in the frozen ice maker. Embodiments 10 to spills management for a number of tray of ice fabricators fixed and mobile are described.

Classifications:

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Title: SISTEMA DE UNION PARA PANELES MODULARES UNION SYSTEM FOR MODULAR PANELS (Machine translation)

Abstract: Source: CO4410163A [ES] COMPRENDE UNA PIEZA DE TUBO REDONDO ALARGADO, DIS- PUESTA ENTRE DOS PANELES CONSECUTIVOS, QUE PRESEN- TA UNA PLURALIDAD DE PERFORACIONES O RANURAS REC- TANGULARES CORTAS DELGADAS, DISPUESTAS EN FORMA SIMULTANEA, QUE LE DAN APARIENCIA DE CREMALLERA VERTICAL; EN DICHAS RANURAS SE ANCLAN MEDIANTE EL EMPLEO DE ENGANCHES APROPIADOS SUPERFICIES ESPE- CIALES QUE COMPLEMENTAN EL CONJUNTO. LA CREMALLERA TAMBIEN PRESENTA SENDAS PERFORACIO- NES CON FORMA DE OJO DE CERRADURA, LAS CUALES PER- MITEN LA INSERCIÓN Y ENCAJONAMIENTO DE TORNILLO CONVENCIONALES DE ENSAMBLE QUE SE INSTALAN, DE MA- NERA ADECUADA, EN LA PARTE LATERAL DE LA ESTRUCTU- RA DEL MODULO. DICHA CREMALLERA EN SU SUPERFICIE SUPERIOR PRESENTA UNA PERFORACION CIRCULAR A TRA- VES DE LA CUAL PENETRA EN SU INTERIOR UN TORNILLO CONVENCIONAL DE ENSAMBLE CON CABEZA CILINDRICA. FIGURA 1 **Machine translation:** INCLUDES ONE PIECE STRETCHED ROUND TUBE, disposed CONSECUTIVE BETWEEN TWO PANELS THAT PRESENTED AT a plurality of perforations or grooves rectangular SHORT SLIM arranged in simultaneously, APPEARANCE THAT GIVE VERTICAL RACK; In said slots are anchored by using ENGANCHES SURFACES SUITABLE SPE- CIALES ADDITION SET. RACK also presents perforations SENDAS SHAPED Keyhole, WHICH make it possible to insert and BOXING CONVENTIONAL SCREW ASSEMBLY TO INSTALL, in such a manner RIGHT IN THE SIDE OF THE STRUCTURAL MODULE RA. Said rack on its upper surface has a hole CIRCULAR A work VES OF WHICH penetrates inside CONVENTIONAL SCREW CYLINDER HEAD ASSEMBLY. Figure 1

Classifications:

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Title: 1, the name of the invention a liquid amount Noboru feeding device 2, @ of the liquid level of permission always constant the liquid storage portion for storing a first liquid amount and the required amount of the liquid storage portion for storing the second portion and the second the first reservoir in the liquid storage portion, the second connecting pipe and the liquid storage portion, the processing liquid from the pump to the pump sent by issuing processing liquid to receive only a certain amount, the amount of liquid the other overflow overflow port, the pump having a processing tank and a certain period of time, and control means for Seshimeru operating the treatment tank overflow, geo- opening bar flow I liquid to return to the first pipe and the liquid storage portion is provided, the second reservoir is the reservoir, the overflow amount of the treatment tank, while receiving the maximum liquid amount or less, the unit time, can pass through the pipe the amount of liquid in the pump is a feeding unit time, the amount of liquid can be put out, be much smaller, BE1, the operating time of the feed pump is above a certain amount of liquid in the liquid storage portion, out of the second reservoir the liquid amount substantially equal amount that the liquid feeding device f of the fifth invention, the detailed description of the invention, the liquid to the liquid feed by a predetermined amount to the required time send a quantitative liquid feed apparatus. The need for foot amount developing process 30 of the copying machine and the liquid feed and liquid feed, such as the plating process in the plating apparatus, in these devices, can be accommodated by a certain amount, liquid feed pump to the processing tank. In this case, conventionally, the variation of the performance of the pump, the pump, the pump operation of the time variation of the voltage of the variations or the like, feeding amount by, in some cases, ? or become insufficient, too, in some cases, such as feed, there is a drawback that the present invention is, in the liquid feeding without drawbacks, such as it is intended to present a certain amount, and hence the device. Hereinafter an embodiment of the present invention automatic photo- processing device using a treatment liquid, while explaining the constant amount feed of the present invention apparatus will be described. According to one embodiment of the present invention will be described in detail with reference to the drawings END: 1 First, Fig. 2, in this embodiment, a photosensitive member 56 for showing the shape of the to film 50 is, for example, an apparatus for carrying out the rapid processing can be depending on the type of silver halide film, may be suitable for processing a short period of time an electrophotographic photosensitive film for film, electrophotographic, it in an apparatus using an electrophotographic method such as a charging device creates an image by specific will particularly in this embodiment, film 50 which does not specify the type of such a ? forming film 50 to monoplan, the first frame 52 and second frame 54 the photosensitive member 56 and the sandwiched without, which is used in the apparatus of the present embodiment the first frame 52 and second frame 54 the appearance dimensions may be arbitrary, Aperture card (MX-0227 1.25 (50w) and the general X-slide frame 50m), if identical with such use, in the present embodiment hizu 1. taking the shape of the slide frame. The first frame 52 and second frame 54 is imaged on the film 50, 75 can be projected image, each of the first opening 58, the second open portion 60. Next,

the overall configuration of the apparatus of the present embodiment with reference to Fig. Third, fourth the apparatus main body base 64, the control unit 62, the object table 66, a pair of light sources 68, the strut 70 by the pillar on the upper and lower movable handle 71 camera unit 72 the power supply unit 66, and a variety of pie, U2#39;-trump and the camera unit forming a control circuit for controlling the (not shown) is included. Up by the control circuit code 74 camera unit 72 electrically connected to the camera 72 of the camera 8, the left case 76, right side plate 7 plate 80, the photosensitive member 1 ishii processed out unit 82, the focusing knob 84, the right side of the viewfinder 86 phase 78, the insertion portion for inserting the unexposed photosensitive member 88 is provided on the left plate 80, the insertion portion for inserting the treatment liquid 90.) IC 1 photosensitive member from the developing fixing pipe 94 finished processing the camera through the waste liquid unit 72 from the body base 62 on the waste liquid waste reservoir 96. Also the drying oven dryer 97. Fifth, sixth camera 57 largely in accordance with Fig. 20 describes the internal structure of the inside of the basic configuration of the main member 98 and the flat plate-like the front is opposed to the sub-member 100 and the provided mechanism driving unit 102 and the photosensitive member supply unit 104 and the processing liquid supply unit 1 for each part o6. Roughly force from the main member 98 is seventh, as shown in Fig. 8, the camera unit 7 photosensitive member 2 of the right side plate 78 of the insertion portion 88 a photosensitive member be inserted is supplied to the opening 10b of the opening 10B to the supply (hereinafter referred to as station 108) and supply station 10 to be described later through the upper side of the photosensitive member is exposed by optical means exposure station 110 and exposure station 110 which will be described later in the lateral direction of the photosensitive member, a developing means for developing by development processing station 112 and the developing-steer, and 1 #39;on the lower side of the lateral direction of the supply station 10 to be described later to 8-to is subjected to fixing processing by a fixing means photosensitive member 114. in the fuser station four stations of the main member 98 provided on the same plane, the photosensitive member shown in Fig. 9 indicated by the arrow 101 supplied in order to be described later fixing station ? exposure ? development ? transfer means sequentially transmitted to the photosensitive member to the main member 98, on the each station for transferring the main guide member 98 in the longitudinal direction forked portion 116. 117 0.1 18 119 and the lateral guide step portion 120 and 121, may be I provided in the vertical direction and the horizontal direction, the guide guide step portion bifurcated portion at right angles to each other. As seen in Fig. 9 photosensitive member supply station of the exposure station 110 from 10B to the moving direction of the developing station the exposure station 110 counter 112, the moving direction at right angles with the photosensitive member of the developing station 112 counter to the moving direction of the fixing station 114 from the exposure-development station 112 at right angles to the moving direction of the stay 7 each other and feeding young-exposure station 108 from each other 110 to the moving direction of the direction parallel to each other in the opposite but Nikki.: sub-end member 100 is a flat plate shape, and the second, sixth, as shown in Fig. 10 one end of the hinge portion 123, the hinge portion 123 of the main member 98 of the hinge portion 124 and the shaft 125. Thus, the engaged via a sub-member 100 is a main member 98 freely opened and closed by a hinge portion and the sub-and usually member 100 of the side opposite to the hinge portion 123, 127 is e by fasteners such as screws by the main member 98 is adapted to a state of being fixed to the sub-member 100, as shown in Fig. 10 left half of the right exposure means 126 developing means in addition on the other hand Bu 128, on the upper side of the lower side of the fixing unit 16, the intermediate portion of the both means drying means 12! + 2-member 100 has a main sub-member 98, in a state where the solid foot, exposure means 126, developing means 28 and the fixing member 98 means 130 causes the main exposure station 110, a development station 112 and the fixing station 114 each opposed to the photosensitive member 56 is sequentially sent to the valley the station time, the photosensitive member 56 is exposed and developed in the row, and fixing process 9" It has become way. The fifth mechanism drive 110 shown in Fig. 1. As shown in Fig. 7 Steer-e active number suitable for the present 129 (5 the one only not shown) on the back of a solid 9 main foot member 98, each of the non-transferred to the photosensitive member, annotation 167 Seshimeru transfer means, an exposure means, a developing means 1-126 28, drying means 12 32 and the fixing means 130, to drive the photosensitive member cyclic supply unit 1 of the camera unit 72 0.4 insertion portion 88 is inserted into the camera from a plurality of required time one by one photosensitive member, exposure station 108, has a function of supplying a processing liquid supply unit 106, fifth, as shown in Fig. 7, the main member 98 at the rear of the rear mechanism driving unit 10 is installed in the processing liquid tank treatment liquid 164 as will be described later, the inventors of the pump by the required amount of the treatment liquid to the developing unit 128 and fixing unit 130. Next, the structure of each part will be described in detail. (1) The main member 98 as described above, the main member 98, the supply and the developing fixing of each exposure on shore! - 10F, 11Q, 112. 114 is the same plane (the plane referred to as station 115) plane provided on the photosensitive member 56 for each station are sequentially guided to the longitudinal direction, the guide step portion 11bu Inokuchi F 6.1 17.1 48.1 horizontal direction guide 19 and the bifurcated portion 120 121 in each of the guide step. Fig. 7 is a, the depth of the thickness of the photosensitive member 56 member 98 is substantially equal to the main surface of the thus the main plane 99 and the station 115 photosensitive member 11 or the like is substantially to the thickness of the distance away the main member each other in parallel to the photosensitive member 9B in the longitudinal direction and the transfer material 13 Seshimeru first transfer unit 6 and the second of transferring laterally Awara Seshimeru feeding member 1138 is provided in the transfer member 20 are collectively referred to as the referred to as the first transfer means 13 transfer member 131 as shown in Fig. 1. 6 is the first photosensitive member, one exposure station 108 will supply station 110 can break for transporting bin 140 and 141 and the developing station 112 fuser station" will-1 14 to transfer the wood 142. For a two bins 146, bin 140 0.141.146 and bin 142 are each lateral direction, 121 and the stepped portion 120 is arranged parallel to the first transfer member 136. As further described below, the first transfer member 136 in the vertical direction, the first drive lever 14 driving the candy weighs 146 engaged with bin 8 slider 1A slider 1A the main foot member 98 at both ends thereof to the first solid first guide bar 150. In addition, the main member 98 is provided on the upper left side of the shaft 1 to be described later mechanism 52 is driven by the driving unit 102 swings the first drive lever 144 is provided, a long hole provided in the distal end portion 154 feeding member 136 of the first transfer-bin 146 and engaged. Thus the first driving lever 44 is rotated in the clockwise direction and the first transfer member 136 is guided by the first guide bar 150 to linear movement upward is rotated in the clockwise direction, Bu, then not below it should be noted that the core and the linear motion to the first transfer member 136 is moved upward end: 3 4.2.1 case, the pin, 713j for releasing the lateral direction of the main guide member 98 a portion of the forked portion 122 is cut away. The first transfer member 136 not basis, the main station to the photosensitive member 98 member 56 plane 99 than the thickness of slightly greater distance apart station plane 99 and a plane parallel to the first guide bar 150 while being guided by the straight line in conjunction with the first transfer member 136 further, the shape of 8.12.1, Fig. 3 As is clear by the photosensitive member 56 transferring the stays 7 reed, the photosensitive member 56 over a portion of the surface of the molded always step, thus the photosensitive member 56 thousand ? stearyl temporary from Chillon up floating surface 115, the main member 98 is detached, therefore if not the main member 98, a pressing means such as to prevent separation of the membership fee. However, the main member 98 provided in the fuser station 114 pressing piece 156. 15B, the developing processed photosensitive member is uncountable fuser station 114 is fed to the fixing process is in progress, the movement member upward so as while shooting time, the first transfer member 131. ss 6 and the fixing member, the station 114 ?-photosensitive oates strap is eliminated, in order to prevent the leaving the danger safety film is basically only is not good. Next, the second transfer member 138 is fixed to the back of the main member 98A second guide bar 16, is guided to the main member 98 provided in the exposure station 110 long in the lateral direction guide portion 162, the bifurcated portion 120 and it is movable in a direction parallel to the second transfer member 15 B, the first surface portion as shown in Fig. 4, the one end 169 of the main plane 11 of the member 98 5 of the station of i come out front main surface 9 mainly member 9B of the second 9 so as not to leave the i-a 5-by Gaito 160. Guided by h in Fig. 13. second transfer member 138 is left, when the linear movement in the direction of exposure station 110 on the right side of the photosensitive member and developing station 112 press 7 transferred to the transfer member at this time, the photosensitive member and the second member 15B and the first transport, it passes under the second transfer member 138 is provided on the rear surface of the main member 98 to swing around the shaft 164 the second drive lever 166 is driven by a second driving lever 166 at its one end, elongated hole portion 168 of the second transfer member 1-hole 38 fixed pin 170 and the di-based, also with the other end of the spring 172, is applied to the shaft 164 by this clockwise biasing nasare direction of the is, typically, the bent portion 174 by the latch lever 176, still the Shira#39 t. The catch lever 176 (only main member 93 which is fixed to the shaft 178 is swingably held. The latch lever 176 of the second drive shaft 178 lever 166 in the vicinity of the spring, one end of the 172 is applied to the second drive spring 172 by a lever 166 and the latch lever 176f I latch state is maintained in the second driving lever 166, the intermediate link 180 is connected via a pin 182, the intermediate link 18, the other end of the hooking pin 184 via the arm 186 is connected to one end of the pin 184, the roller 185 is rotatably held. The other end of the arm 186 which is fixed to the main member 9B shaft 188 rotatably held. Therefore, the operation of the second driving lever 16 the latch

lever 176 is rotated in the counterclockwise direction, the second driving lever 166 and the latch is removed by the force of the spring 172 is rotated in the clockwise direction along with this, the second transmission member 158 is in the left direction, the photosensitive member 56 is driven and exposure station 110 is transferred to the developing station 112, on the other hand arm 18 via the intermediate link 180 is rotated in the counterclockwise direction (see Fig. 13). Thereafter, in which will be described later mechanism driving unit 102 arm 186 in a clockwise direction through the roller 185 is rotated, to return the second driving lever 16-6 is an intermediate Fig. 7. Link spring 172 in the counterclockwise direction against the force of the rotation returning again backlash end 4, 7, degrees - a) by pulling through the latched lever 176 at the same time the second transfer member 138 is returned to the photosensitive member 56 is the second transfer member 138 requests sent to it by the user, when it reaches the developing station 112 by its own weight or the photosensitive member 56 is moved to the fuser station 114 so as not to 5.0 .tau.sub.1 first shown in detail in Fig. 16 in the main member 98 of the lower end portion of the developing station 11 cut-out portion 189 of the holding member 190 is rotatably supported by the shaft 192 h attached to the holding member 190 is a screw) spring 19A, always one direction, biased by a normal, the vent portion 18 of the end surface 191 #39;hitting stationary. In addition, the holding member 19 of the photosensitive member 56 isn't exposure station 110 when the developing station 112 to be able to move smoothly inclined portion 196 and the first transfer member 136 of the biguanide? 142.1j3 for releasing the cut-out portion 198. holding member 1 of the photosensitive member 56 is 90-development station 112, JP 50-151996 fixing seat 42, (4), the retainer 872 moves to love and hate h - 1 as shown by a chain line in Fig. 16, the photosensitive member by being pushed by the torsion spring 194 is rotated against the force of the station 115 to the photosensitive member is a plan sink 117 reaches the fuser station I is time, the photosensitive member, the contact side, the screw can not take aim at 194 is returned to the (2) the sub-sub-member 100 member 100 as previously described, as shown in Fig. 10 as the exposure means 126, developing means 28, the fixing means 130 and the drying means 152 integrally. As shown in Fig. 5, the sub-member 100 through the hinge portion 12 main portion, and is fixed to the # 98 in the sub-member 100 hinge portion 123 in the center of the main member 98 pivoted in a direction away from (ie each of the four open), the above-mentioned means 1 26.1 28.1 30.1 32, Fig. 8 is away from the main member in the main member 98 is unmatched. This is the main station of 5 member 98 plane 11 for some reason, moving the moving member 56 is in the non-jammed at the time of exposure during emits very effective means 126 as shown in Fig. 7, mirror 202, lens 200, the shutter plate 206 a portion 204 focal and the finder lens 20B as a basic structure, a camera unit 7. lens 200 2 of the right side plate 78, in conjunction with the focus knob 84 Nikki. mirror 202 about the axis 205 as shown in Fig. 7, the position of the solid line and two-dot chain line shown in two positions between the position of the usually take selectively. The position indicated by one-dot chain line 86 #39;has taken the subject through the viewfinder it is focusing taken at the first transport member 136 supply station 108 photosensitive member, exposure station 110, (not shown) transferring the Bu mechanism according to the first transfer member 136 in conjunction with the movement mirror 202, reaches the position of solid line. For this reason, light from the subject is reflected by the mirror 20, a portion of the shutter 20A through the port 2BU, the exposure of the photosensitive member 56 of the station 10, it is imaged on the film In addition, find out exposure after the end of the mirror 202 is returned to the position of the one-dot chain line, the mechanism can ease the art is omitted by developing means 128 developing tank developing tank 210 and the actuating means to actuate it consists first 5.6.16 shown in @Y developing 210 developing station 112 opposite to the position of the sub-member 100 and the developing 210 bearing 212 @ integral with the shaft 214 has been held via the developing tank 210 plane 115 station pair 10, is movable in the vertical direction in the sub-member 100 and the developing tank 21, around the axis 214, the compression spring 216 is the spring force, and hence the deployed, developing developing by pomegranate stay 7 210 W71#39;12 and die in the photosensitive member is biased in a direction to press the. Usually, however, the first photosensitive member, the transfer the movement of the transfer member 136 so as not to oppose plan enough from the station 115 to float end fc9 position #39;: 5 - current-locked. tank 210 is% 10.16 and as shown in FIG photosensitive member in pressure-contact portion of the photosensitive member first opening is also "b5B, the mouth portion is slightly greater than 58 repairs and other similar to the shape of the opening 218 is provided, also the side surface above the developing to about 210 will be described later J processing liquid supply unit 106 is supplied from the tank, it is introduced into the developing solution (inlet 2Bu 20, further Below that more than the amount required for developing the developer sent to overflow entrylo 0 222 is the same Bu 7 side lower part of the developing tank developing processed waste liquid 210 a liquid discharge port be drained to the liquid discharge port 224, in addition, the time required for the 224-developing solution to the developing tank for storing the valve (not shown) is provided. developing tank developing tank 210 to the actuating means, the developing station 112 is pressed against the photosensitive member or the photosensitive member + b and the valve away from the means including means for Seshimeru operating the skill in the art these conventional means is a means of can be selected 1015 Satoshi detail and will be described with Figure 1! IK mutual understanding are omitted, the developing tank on the actuating means to open 75f #1 7 I'.sub.2 (t) -, 1) of the driving force 287, which will be described later #39;mechanism driving unit 102 of the second gear 29, 60 to obtain the rotational force resistance I kept to a developing tank 21, the operation of the photosensitive member exposure Zumi of the developer station 112 transferred, a developing @ compression spring 21o 2160 comes into contact with the photosensitive member 56 by the force, moved to the position, the opening 11 of the developing tank 21 photosensitive member 21B to seal the opening 58 at the same time the valve inlet 22. Then kick off developing solution is fed through the tank, exposed through the opening 218 in contact with the film surface 50 depressed to handle this, in fact, in this developing spit into more than the amount required for the developing solution in the tank fed by Li overflow overflow port 222 again returned to the processing liquid supply M106 [next and used by the treatment liquid and the overflow port 222, as will be described later reason for providing a processing liquid supply base 106 of the liquid supply pump 27 of the <8 of those necessary for development of help <treatment liquid 1. k is to reliably ensure the body fluid ding quantities in advance current is better that sent a predetermined time. then development processing foot tc valve is open in the developing solution, the treated liquid discharge port 224 it is drained from eventual waste liquid pipe 9 shown in fig. 5. waste liquid droplet 96 through the can is fed into the developing tank 21, drainage to move away from the photosensitive member one or more, development processing step is completed. fixing fixing means 130 to actuate it. @ 2 1 # 28 and the constant to consist winning favor actuation means and actuation means and fixing the current 228 and the low-f! not only means exactly the same as those of the fixing tank 228 is in a position facing the fixing station 114 sub-member 100k ca1 the fixing tank 228 bearing 230 is integrated with the shaft 251 is held via the o, thus fixing means 1j, a detailed description thereof will be omitted. however, to appear for the first time, the driving force of the foot attached a developing tank means actuating means and the driving force, mutual understanding will be described later different mechanism driving unit 102, the rotational force of the shaft 292 may be starting the drying means 132 light guide member, the photosensitive member is the development processing after the completion of the lgl! #39;fj station 112, fixing stage 114 et al., while being transported developer wet to dry the surface of the photosensitive member it is intended. first drying means 132, as shown in fig. 6 camera 72 dryer 97 provided on the upper surface of the sub-member 100 which is fixed to the duct 232, duct 232 hot air from the upper side of the dryer 97, are adapted to receive the opening of the lower end of the duct 232 234 machine 100 sub-unit 236, the long hole provided in the long hole 256. 112 and the fuser station is developing station 114 located in the middle of the photosensitive member is a developing. after completion of the development steer'v'" stage, 21pb-jl 114 foot 9 is transferred to the photosensitive member 236 in the middle of the elongated hole of the lower end of the duct 232 through the opening 234 in a hot air dryer 97, in response to be dried. (3) photosensitive member photosensitive member supply unit 104 supply unit 104 as shown in fig. 7 kick the main member 5. 98 w7, supply 7 retainer 7 108e: 6 nd page provided to face the supply unit 104. the one-neck member can be stored in a stirred at several tens kudzu to guide a guide 25b holding kakariji magazine is detachably attached to the bifurcated. guide holding member in the storage magazine 238, when the photosensitive unit 72y'l.sub camera magazine 238 insertion portion 88 to remove the magazine from a lid 245 for out the ft to an accommodating lid which he unit 104 by this, an apparatus housed in the magazine 238 front of the photosensitive member is fc supply station 10 gather clams 8 it is located in. as shown in fig. 17 to 20. the magazine 238 bottom plate 24, the right side plate 242 and left side plate 244 and the pig turned on which is rotatably held by the 245 and the inside of the down from a rosin, in the direction of the photosensitive member at a moving member 246, the moving member 246 as shown in fig shape, the box-shaped may central portion in the axial 248 is mounting shaft 2 and city in 118 housing the entire shape of the needle 250 is drowned at sea spur gear 25 is rotatably held, to the whole may needle 250 to the inner end of the winding shaft 248 as the outer end of the pair to the spur gear 252 is dasa, also, solid the moving member 246 1 one side surface 25 of the 5, roller 25 4 is rotatably held by the side surface 2s, also the other two 5.2 is a round hole 56 in the extension 25, 58 is 1 in the bu 7.2. the rollers 23b 254 of the left side plate of the magazine 244, unit 260, a round hole may do with), also the right side plate 25 7.2 58 to 242 solid round agency rack member 262 slidably held in the rack 252, and spur gear member 262 is provided on the rack portion 264 is each other biting and the front surface of

the magazine 238, the stopper 266 is provided. photosensitive member to insert the magazine 238, the magazine-t7-23b when the camera 72 is taken out from the pig 245 move on open extension member 246 268 by hand-pressing rearward (arrow 269 direction) is the photosensitive member 56, several tens magazine 2 is inserted into the 38, when you release the hand, the moving member 246 by the force of the needle 250 are all 2.5 a 2 is rotated, the spur gear to move forward press forward, the photosensitive member of the photosensitive material by several tens of sheets are integrally sensitive is pushed forward, the front most 7h 2th! material 57 stopper 26 6-still on hitting the pig 245. in this way, the camera unit 72 to close the insertion port 88 from the supply unit 104 by the above-number charged photosensitive member 1. · tens of photosensitive material supply section 10 is set to 4, when the required, the top front of the magazine 238 photosensitive member 115 one by one by the transfer member 131 is transferred to the exposure station 110 above the front of the photosensitive member one by one from the magazine 238, the magazine 238, and may be included in the moving member is a sensitive member 246 without by 9{\cs6}f is pushed forward since the front of the magazine 258, constantly, so that the photosensitive member is supplied to the processing solution supply unit 106 (4) processing liquid supply unit 106, the body fluid and the fixing solution to the current current each ss t = 8 @ 2 2101 i" if a predetermined binder 7ar it is intended to supply the developing solution is supplied, and a mechanism, a mechanism for supplying the fixing solution in the form a mutual understanding, exactly the same as the processing solution supply unit 10h are two provided in the developing solution. in fig. 25, a mechanism for rotating, for example for supplying the fixing solution elm and i for will be omitted because it is exactly the same as the extinction image liquid supply unit, and the liquid tank 270, the tank 270 is always constant replenishment command while receiving the liquid level of the liquid storage portion for storing the first ?. the 272 and a predetermined liquid t second reservoir 27 for storing and first and 2 reservoir 274 and drug discovery the connecting pipe to connect the 276 and the second liquid to the liquid storage portion 274 from a ? inhaled, phosphates, issue 8 7 pump 27 by the liquid 278 fed by fraud to the current \$4%, 21 through the inlet 22 to guide the current appearing for the first time seen [show off + supply pipe 280 as a basic structure, further, the developing tank 2 incidental overflow' 100, the liquid from the liquid storage over low): m1 = 272 back to the auxiliary pipe 2 liquid storage 282 272. ae suffering from hunger is stored in the connecting pipe 22, the amount of liquid may be arbitrary. 76e: stephen ndp1 2 7 is reservoir 24 well-- 4 second reservoir 27 for supplying liquid to the liquid storage portion, the second der those 274 that the liquid level of the first storage unit 272, the liquid level when it becomes the same as the supply of the inner diameter of the connecting pipe 27 originates at a narrow position of the diameter of the u-pipe 276 can pass through the liquid amount per unit time of the pump 27 b pump 278 during operation itself is a take-out capacity amount per unit time of the liquid feed, the ratio is less than the can 115 to 1710 about 78. during the operation of the pump 2 1] is elder sister in about 2 seconds, in this time, the second pump 278, the reservoir 274, the liquid in the i · and all breathe in tube 80 via the supply pipe 2 supplied to the developing tank 2 the poppet 10 yen y'.sub.y, the second 2ya during the operation of the amount of liquid reservoir 27 by a pump 27 8 sucked out while i decreases rapidly at the first reservoir 27, a pipe 27 communicating> 2 restaurant is replenished through the Vibe 2 as described above, constant discharge per unit time may be 76 to pass liquid on the pump 5. 278 to sucked out by the is fed to the developing solution i-2 #39;, the second laughs qualitative reservoir 27 which has been stored in advance in the amount of liquid 8 such as by 5. A pump 27 sucked out 2 empty fc reservoir 274, mackerel sleeve pump 278 is next time, that is, one of the photosensitive member, developing the next photosensitive member 1, in the next cycle, during which time until it is developed to the first connecting pipe 276 from the liquid reservoir 27 is replenished to Fukusuru 7 foot. The second liquid level in the liquid storage portion 274 and the developing stock solution, kettle, ?? amount of liquid than sand, liquid amount of the large current tag 21 overflow port 222 even if the gap of the developing tank 2? 10 is closed without spilling may be less than the maximum liquid i may receive determined. Therefore, the twist of the liquid pump 278 force in advance subjected to eye geoyeo thick, pump 27 84d w.sub.i, a necessary for development it can be supplied to the Wuyishan along with the variation and pressure variation of the pump performance (source list by variations in Seocheon-?#39; pump capacity of the pump and the power supply becomes large, even if the number like; v, supplied to the liquid fraction 2 is always off, that is, multi--something like the following in the liquid storage portion 274 from the liquid storage amount equal to or less than the developing solution 5a is sent from the image too tank 210 overflows, the rc machine b, the liquid soiled or, there is no loss of (5) and the mechanism driving unit 102 mechanism driving unit 102, transfer means 137, exposure means, developing means 128, 126 fixing means 130 degrees drying means 132 drives the cyclically mechanism driving unit 102, as shown in Fig. 1 5.22 is the substrate 284 and the second substrate 286, the two substrates the main shaft which is rotatably held shaft 288, pan 90 and the second shaft 292 at all times, a main shaft 28, driven to rotate the motor (not shown) the first? basic configuration I to the first gear shaft 290 294 is fixed, the gear 296 is also the second rotatably held-to-normal is stationary. spindle 288, first claw (5 vehicle 2 98, the third gear 2, the ratchet wheel 302, state 304 and the sixth gear 106 is a solid-type car! Start 7 main shaft 2 i! at all times 88 to rotate integrally with the second shaft 5. 5 292 line 8 and the fixing gear 30a for driving the fixing unit 160 in the cam member 310 is fixed to the each usually static, axis, which describes each of the members is, the first gear 294 on its outer periphery, Fig. 23 as being half rotation, that is, correspond to the rotation of 800 minutes, the remaining 18 tooth portion tooth portion 9 of the 00 minutes, it does not have a first gear 294 gear 288 causes the third main shaft 300 and the drive unit, typically, each other biting the gear portion 294 of the first tooth 295 is 600 and the sixth gear 6291 is stationary point, also in the first gear 294 is gear cutting in the vicinity of the join the club 295 first clutch shaft 512 by member 314 is rotatably held. A first clutch member .lamda.1, is a one-way screw 9 spring 516 It is biased to the start of the required, which will be described later at the time of mechanism 31B is also in the first gear tooth portion 295 of the 294 on the opposite side of the shaft 31 of the vicinity of the first bin 520. L-key 2 to 96 sense Keithley 2400 is the first 24 e: 8Bu en_fist · j (as shown in the cut-out portion 29 has a main shaft 288 of the fourth gear 304 is driven by a gear cutting portion is usually 297 is 304 and the fourth gear 6291 is stationary point, also the second gear 296 in the same manner as in the first gear 294 by the machine shaft 322 the second clutch portion 324 and the second pin 326 has a second clutch member 324 is provided on the first main member 98 transfer member 131 for driving the first drive bar 144#39; t / I [a second gear 296 is actuated the second pin 326 and the first gear 294 of the first pin 320 and the positional relationship between the as shown in Fig. 26, usually each other is in contact with the first gear 294 starts to rotate, the first bin 320 is stationary, the second gear 296 of the second pin 326 is in a positional relationship away from the second gear 296 to drive the developing unit 128 developing the cam member 528 is integrally fixed to the developing unit 128 to a specific mechanism for driving the lever of a conventional IT-or link or the like @ sides to 1' 5. 72 (9-r) technology can not easily be omitted. It should be noted that, for the specific example US Pat. No. 697 173, those described in the first 2JAC has as a reference. As shown in Fig. 2, the second shaft 29 and 90 fifth gear 30a 8", the second gear 296 and the tooth 309 and the exactly the same manner as in join the club shaft 330 sixth clutch member 322 by the main shaft 288 by the fourth driven gear 304 is usually multi-rotation tooth gear portion 309 is 304 and the fourth point, 6291 stationary. third clutch member 352 by a mechanism (not shown L photosensitive member 7 is fixed station 114 is operated when it reaches the further fifth gear 30#39;50, 8, the fixing means 1, to drive the cam member 310 fixing bu is integrally fixed to the fixing unit 13, by driving the developing means specific mechanism 128 is the same as mechanism for driving the main shaft 2 8, repeated 8-fixed to the first ratchet wheel 298 is in the position of the symmetry 6. 12 pieces of claw 63 334 Similarly, the second ratchet wheel 502 is pawl 63 of the start 5.5 S6 model 306 as shown in Fig. 25, 38, claw 33 7.6, these six claw 88 the positional relationship between the main shaft 2 in the axial direction of the claw 33 3.3 35.3 37 mold 63 in a straight line, father 4.3 and 36.3 38 is symmetrical positions arranged in a straight line on the first ratchet wheel 298 and 554, the claw 5! !, the first gear 294 first clutch member 314 activating, in Fig. 23 as shown in dashed line the first clutch member 314 and the first and the gear 294 is rotated in the counterclockwise direction, just for this reason the first gear 294 is gear 300 and tkl, 3 6291 only the start rotated 1800 this time, the first rotation shaft 290 #39;is also, in the second gear 296 is first shaft 2-90 rotatably because it is held in the second gear 296 is fixed by the second claw-wheel 302 The claw 335. 336 second gear 296 of the second member 324! and fifth latch 508 of the third clutch formic--member 332 shown by a chain line in Fig. 24 operation as described above, when the first-gear 294 in the same manner as in the above description of the second gear 296 in the clockwise direction, further fifth gear 308 in the counterclockwise direction, the fourth gear 304 is driven to rotate by the main shaft 2 multi-greater than or equal to 88, the first shaft 290 and second shaft 292 ends the description of the first shaft 29, the first substrate 284, the protruding portion from the transfer means 137 in the transfer driver elements 340 is six cam is fixed to the cam 34, the transfer pin 342 is rotatably provided, the pin 342 is fixed to the link 64. other end of the link 344 is pin 346, the pin 546 has a main member 98, swingably provided in the first transfer member 136 to the first drive lever drive + 1aa in the central portion of the hole 145. Therefore, the hands cam 340 is transferred one revolution, the first building frame 132 rotating lever 144 via the link 64 to move one reciprocating rocking. in addition, the transfer force, the contour of the arm 54 as shown in Fig. 8 adapted to: 9) the contour line a second transfer member 158 by a second drive lever [166 the second drive for driving the lever 166 to the contour which is connected

to one end of the intermediate link 180 provided with peer BAK roller 18 in contact with the arm 186 for swinging movement of the first gear 296, then the first the GT4, the first member 29 is actuated gear third gear 4 and the main shaft 288 of the 300, to start the engagement start mechanism 350 will be described with reference to 25 to Fig. 27. Only the start mechanism 350 the second substrate 28 is fixed to the shaft 552 rotatably held to the actuating member 354, actuating member 354 shaft 552 rotatably held to a mutual understanding separately in the member 356 and member 556 in start ? consisting of only the portion shaft 352 Tb is long come to a mutual understanding !! to 58K is a p of the rotating shaft 352 around 358, it is possible slid in the longitudinal direction of the long, it is also possible to construction of the second group G2 TELLURIDE, 86 fixed pin 560 and the distal end portion of the boot member 55 bent portion 357 and 556. The first actuation lever is stepped portion 56 4 and the second stepped portion 56 may be I have usually 261-354, actuating member 55 is the second bent portion 3 comes into contact with the stepped portion 56. One end of the actuating member 30 is energized to the required time Seshimeru operating this solenoid 568 via a spring 370 connected. Don't be energized solenoid 36 and the second as shown in Fig. 6 is a actuating member 354 is rotated in the direction of the actuating member 354 at the same time bent portion 3 55 is activated member 356 of the second stage portion 366 start-up by pressing a piece of the action member 362! 156 against the force of the clockwise direction, the swelling. Therefore activation member 556 the second substrate 286 to the stop pin @ is rotated to 572 hit the, at this time, bent 288 555 of the start y-B spindle 306 is claw 33ss S57 further at a position in contact with the Ob. U.S. Pat. No. 6,078,908 model ys rotated clockwise because it is 306 [, claw-type car start-up member 356 of the bent portion 357 against the force of the spring 562 to pull the lower can. Fig. 27 shows #39;and start-up operation as described above, member 354 member 556 of the contact position 120 of the second stepped portion 56 stepped portion 66 to the first actuating member 564, the process proceeds to 354. Further rotatable in the clockwise direction by the force of the spring 370, further rotated in the rotation of the latter first gear 294 first clutch member 514 is activated. An important point in here, IF # of Fig. 27 is the first operation as described above, member 354, member 314 of 2. By operating the first ratchet wheel 298 is pawl 334 S55 further at a position in contact with the image forming timing [I don't knock down the price of Li. That is, the first member 314 is activated 1.0 point, the claw 35 is the position of the 3 also, 334-member 314 from the Iig, a position in a position about 450. Therefore, it is energized to the ID 368, timing even if the first clutch member 51 straight 29B is activated and the time point of the nail of the vamp of the foot, the relationship between the position-I#39;s. If there is no such a configuration, the first clutch member y14#39;1 is activated at the same time vintage car just pawl is of the tip and the clutch member 314 b, and the hit was in a position to claw-type vehicle V the first clutch member 314 to press the tip of the hitting is generated, therefore, the third gear 294 and the first gear 3o 6291 peripheral speed at the time of the does not match each other, it collides the tooth-to-tooth gear, resulting in the rotation of the forcibly may stop table 27 in the figure, the first gear 294 is rotated in the counterclockwise direction by a not-shown mechanism-F, the power supply to the solenoid 568 is turned off the first gear 294 first clutch member 514 as the rotation of the actuating member 9 and the S14, the tip 35 of the ALK in a counter-clockwise can be rotated while r since the start mechanism. 25 shows restored so as to be in addition to the above present embodiment, even in the first Q, as shown in Fig. 6, the fixing roller 374 is wiping out Q22 is provided on the roller B' 374 drying means 132 according to the drying is insufficient, effective when the roller 574 is constant Ge: 10 e Ndpa Chakuso 228 rotatably supported by a pin 37 attached to the 6 b, attached to the lever 37 and the torsion spring may, 580 is biased in one direction by. Next, the overall operation of 8, will be described in order. (1) the solenoid 36 is energized to the first and the first gear 294 of the first clutch member 51 is actuated, the first ratchet wheel 298 by the first main spindle 28 gear 294 is gear 300 and the third #39;logical bite over the slave Fx1, shaft 290 is rotated. However the first shaft 29, the rotation angle of the gear 294 is the first Bu 1800 teeth 1 corresponds to only 180 degrees rotation to the gear 296. At this time, the second It is stationary. (2) The first shaft 21 and 90 with the rotation of the cam 800, 340 transfer 1800 rotation. link 34 via a first drive and a?lever 144 is rotated upward, as shown in Fig. 12 feed line 188 #39;is a ? material 136 is kicked up the more the supply on the photosensitive member 0 station 108 \$! One is the first feeding member 16 the pin 14 of the lower side of the hooked0, IA 1K exposure station 110, in the exposure at the same time feeding means 126 of mirror 202 is the position of the real image of an object, lying on the exposure stage 110. (5) four photosensitive member exposure pretend station 110 reaches the shutter by a mechanism (not shown) at the time of exposure some 204exposing open the required 1j is completed. Also at this time, the photosensitive member exposure hole transfer station 110 at the time of cam has reached 340 as described above, rotated 180 degrees , since the stationary as shown in Fig. 2 arm 186 roller 185 are coming to a mutual understanding cam 340 does not contact with the contour, therefore arm 18 in the counterclockwise direction, 61C rotation is free. (4) 1955 is completed, although not shown, IQ 2 Tsu-yoo) 176 is rotated, the two-wheel drive/first ij 2 <- the child 166 state is released by the force of the spring 172 the second driving lever 166 rotates as shown in fig. 13, the second feeding member 8 tube \$1.5 drives the left direction rapidly depressed, the photosensitive member exposure the exposure stage 110 to the stage, a#39;12 developing, is transferred to the photosensitive member is a developing, [phase reaches the stage, by a mechanism (not shown) h1 second gear 296 the second clutch member 524 is actuated, the fourth gear 296 second gear 304 and the engagement to rotate in a counterclockwise direction. start (5) is rotated, the second gear 296, the rotation angle of the first 18000 appears between the cam member 328 is developing means receiving a salary and the processing liquid supply means to drive. that is, as shown in fig. 16, the developing tank 21, the photosensitive member is pressed against the current honey love and hate gi valve closed and pump 278 and actuated to liquid developer tank 21 feeds the deliberative then current time after-foot valve 226 to open the current solution in the developing tank 20, michio drained away from the 10 to the photosensitive member. at this point the end of the 18000 rotation of the second gear near mutual agreement. (7) is further rotated to 1 296 1800 at a time to reach the second gear 296 of the second 1a-o / s> 26 is already finished the first rotation of the gear 294 fixed pin 120 (Fig.! It comes into contact with the gear 296 of this for the second 1800 and the first beyond the further rotation is continued first gear 294 The second pin 520. 526 while in contact with the second gear 296, gear 294 and substantially 1 second 1 gear tachi 296 rotate integrally. (8) Therefore, in the first gear 294 which is integral with the first shaft 290 is again rotated, the first shaft 290, including the cam 3, @ transfer 400 times to move to 5a, / a via a first drive lever 141 is in the opposite direction bu before and returned to. At the same time transfer by the contour of the cam 340 arm 186 of the roller 185 is pressed in the direction opposite to the arm 1 86 before the rotation end he attributed: 117". Therefore, the second driving lever 166 via the link 180 causes the intermediate spring 1720 rotated back against the force. For this reason transport in accordance with the rotation of the cam 34, the first transfer member 166 is moved downward the bin 142. 143 is fixed from the photosensitive member from the developing station 112, station 114 allowed so as to push down the second transfer and transport, on the other hand member 138 return to the first position. The second gear 296 is finished 3600 for terminating the rotation of the fourth gear 297 is gear cutting portion 304 and the stationary 6291 and the first reaches the tooth gear 294 third gear portion 295 500 and has reached the 6291 point 3600 after one rotation of the stationary At this point, only the first transfer member 136 shown in Fig. 8 one-dot chain line in 4, the photosensitive member to the fixing station 11--on the normal position in the pumped@ on the other hand, the transfer member 131 Normal Bu 3B also returned to the position of the pivoting lever 166 is in the second q latch lever 176 428 JP-a 72 o-clutch (12) by. (7) On the other hand, the first slightly go back-shaft 290 is 180 degrees beyond the developer station starts to rotate the photosensitive member 112 is transferred to the fusing station 114, dryer 97 is operated to the duct to the duct 252 through the opening of the lower end 254 of the photosensitive member is moving surface of the hot air, and dried. Further, the photosensitive member is fixed at the time of station 11, the process proceeds to Fig. 16 as shown by a chain line in the holding member by the photosensitive material 190 is 9, the torsion shaft 192 around spring 194 against the force of the escape-is rotated in the photosensitive member and the photosensitive member to reach the station 114, the contact holding member 19, out the holding member 19, the screw 194, by the force of the spring returns to the original. (1) photosensitive member 1-14 fixing to reach the station for long gear mechanism shown by 508 of the third clutch 32 is actuated, 2 member 3, cool gear 296 of the same mechanism as LJ start the fifth gear 508 is each other biting the fourth gear 304 and one rotation start Noboru This developing process-fixing process during rotation performed after completion in exactly the same manner as the photosensitive member fixing is discharged. (6) Should the drying is insufficient, the photosensitive member the surface of the first frame 520 is attached to the photosensitive member if the developing stage, from 6 o#39;th to migrate to the fuser station, and the fixing stay 7-J when it is discharged from the giraud wiping out? The first frame-to touch the surface 574, non-dried treatment liquid to wipe off. As described above, according to the present invention, pump 27 is fed by the second 8 amount of treatment liquid reservoir 27 which has been stored in advance in the liquid amount and operating voltage, since it is the operation time, the performance of the pump, regardless of the variations in the liquid feed pump, out-up amount, that is, the amount of liquid in the treatment tank 2 a certain amount with j #E.,, c-ki And always constant the liquid level of the liquid storage portion for storing a first connecting pipe 272, the second thin 276 reservoir 27, pump 4, liquid is supplied at the time of the next cycle is operated in a liquid storage portion 274, again the amount of liquid in the treatment tank is stored, therefore, it

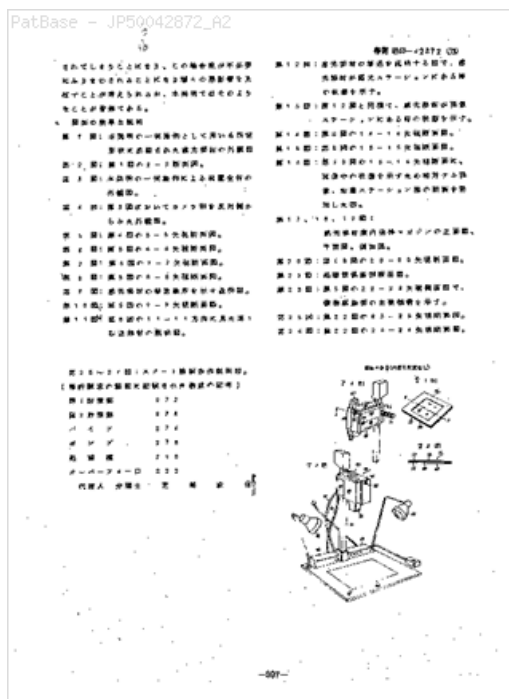
is fed by the amount of the pump, it is possible to always constant Further, the performance of the pump, the operating voltage and operating time, the variation of the special treatment tank 21, further absorption, overflow port 222 is provided. Processing from the overflow port 222 is not needed to overflow the excess treatment liquid. Therefore pump liquid feed amount in advance, by setting slightly larger amount, i.e., has the first feeding dimensions #39;; if the excess liquid overflow port, because it is discharged from the liquid feed by the pump variation amount on the foot Bu cine it is completely eliminated. Furthermore, the overflowing liquid is a first liquid storage portion 272 back toward the pump operation at the next cycle would be used in the overflow, also there is no loss in the liquid reservoir 72 to the first 52 instead of the first and back to the liquid storage portion 274 and return to the pump and the pump is in operation feeding by ortho-out by fraud EN_e:12 from being unnecessarily, in this case liquid, will be a variety of abuse, it is conceivable to adversely affect, in the present invention, such a thing is none. 4, the BRIEF DESCRIPTION OF THE DRAWINGS Fig. 1 an embodiment of the present invention, which is molded into a predetermined shape used as a photosensitive member of Fig. 1, the appearance of the drawing Fig. 2: 2-2 cross-sectional view. Fig. 6 according to an embodiment of the present invention external view of the entire apparatus. In Fig. 3, Fig. 4; camera unit external view viewed from the opposite side. Fig. 5; Fig. 4 sectional view taken along 5-5 Fig. 5 Fig. 6 (6): cross-sectional view taken along. Fig. 6 Fig. 7 170: cross-sectional view taken along. Fig. 8 of Fig. 5 #39;; 8: cross-sectional view taken along. Fig. 9, explanatory view showing the transfer order of the photosensitive member. As shown in Fig. 10, Knee5-sectional view taken along the 9-9. As shown in Fig. 8 first 11;-11: viewed in the direction of the illustration of the first non-feeding member Fig. 12: the photosensitive member, the photosensitive the transfer member is a diagram for explaining a state at the time of exposure station. 11, the photosensitive member in the same manner as Fig. 12 showing a state when the developing station. As shown in Fig. 8 closed 1 LE14 in Fig. 14 (cross-sectional view taken along. Fig. 15: As shown in Fig. 8 sectional view taken along 15-15 Fig. 16; Fig. 10 = 1 6 arrow cross-section 16-Fructus Aurantii Immaturus, developing in a developing for indicating the state of the cross-section of the fuser station relative to wipe. 17, Fig. 9, '18 0.1 guide holding the photosensitive member magazine front view, a plan view, side view. Fig. 20: the first 20 shown in Fig. 8 sectional view taken along 20- Measures the processing solution supply unit shown in Fig. 21 cross-sectional view; Fig. 22 of Fig. 5 2 flute 22-2; an arrow side view of the mechanism driving unit ? mechanism. Fig. 23: 23 of Fig. 22 sectional view taken along 23 Fig. 14 A arrow of Fig. 22 sectional view taken along the line 2a2. Fig. 27 machine 25 to start the operation explanatory diagram of the wandering [(Machine translation)

Abstract: Source: JP50042872A **Machine translation:** 1, the name of the invention claim 1 liquid [Source: Noboru amount a @ feeding device 2, the liquid level of permission always constant the liquid storage portion for storing a first liquid amount and the required amount of the liquid storage portion for storing the second portion and the second and a second liquid storage in the liquid storage portion, and a second for connecting the pipe for feeding out the processing liquid from the reservoir, the pump, the pump and the treatment liquid that has been sent by the other receiving only a certain amount the amount of the liquid overflow overflow port, the pump having a processing tank and a certain period of time, and control means for Seshimeru operating the treatment tank overflow, geo - bar flow port I, the liquid return pipe 1 above the liquid storage portion is provided, the second reservoir is the reservoir, the overflow amount of the treatment tank, while receiving the maximum liquid amount or less, the unit time, can pass through the pipe the amount of liquid in the pump is a feeding unit time, the amount of liquid can be put out, be much smaller, BE1, the feed pump operating time, the fixed amount of liquid in the liquid storage portion to the second reservoir the liquid amount substantially equal amount that the liquid feeding device f, 5

Classifications:

International (ipc 8-9): B01J4/02 G01F11/28 G01F13/00 G03D3/06 (Advanced/Invention); G03D3/06 (Advanced/Non-invention); B01J4/02 G01F11/00 G01F13/00 G03D3/06 (Core/Invention); G03D3/06 (Core/Non-invention)

International (ipc 1-7): B01J4/02 G01F13/00 G03D3/06



Family:

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JP50042872 A2	19750418	JP19730092641	19730819
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JP949683 C3	19790427	JP19730092641	19730819

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6) Family number: 4940481 (JP51054801A)

Title: Valve device 2, the name of the invention (Machine translation)

Abstract: Source: JP51054801A **Machine translation:** [Source: claim 1 valve device 2, the name of the invention claims well blowout hole t on the upper edge of the cylindrical body on anti-ratio ky continuous tube is adapted to be lowered to the valve device 1 the flow path of the fluid passing through the structure, a housing having a position for opening and closing the flow path between the valve member and the movable member in the opening position of the valve device, the valve member in pressure corresponding to move to the open position the pressure fluid to the pressure-enabled device. A device for guiding the fluid pressure in the induction device is reduced, the valve member in the closed position in order to move to

the induction device of the closure device of the offsetting the fluid pressure in the fluid pressure on the surrounding the housing assembly pressure corresponding device device characterized in that it has a valve device. 2 the scope of the appended claims a valve device according to claim 1, wherein the valve member of the pivotably mounted to housing assembly and fluid into the through-flow channel having a ball, the flow path of the pressure corresponding to match the device in the flow path of the fluid in one direction toward the opening having the position of the ball by swinging the closure device of the flow path of the balls from the closed position toward the place across the direction opposite to the direction to follow the swinging the valve 41. 6 the scope of the appended claims a valve device according to claim 1, wherein the valve member and pressure corresponding engagement device and the pressure fluid acts in the induction device of the upper surface and the surrounding structure of the aging of the fluid pressure, by the lower surface and the annular having a piston valve device 64 and the scope of the appended claims, the valve apparatus according to claim 1, wherein the percent of the valve member in the /S aging assembly pivotably mounted to the through-flow channel having a ball and fluid having the pressure of the ball and the corresponding engaging the the internal I coupled on the pressure in the induction Endpage:1 fluid is applied to the housing of the upper surface and the surrounding of fluid pressure of the am receiving annular having a lower surface and the piston of the piston, the ball in the flow path of the flow path of the fluid to match the position in one direction toward the opening having), the device comprises a swinging the closed, to the flow path of the BU - toward the closed position across the swinging direction opposite to the direction of the valve base. 5, according to claim 1 wherein the percent permit the valve device, the pressure in the valve member corresponding to engage and the eye on which acts the pressure in the induction device N surface and the fluid to remove the housing assembly for receiving the fluid pressure of Bu winding the lower surface and the piston of the annular having a percent closure device the valve member in the closed position I in order to move to the valve apparatus member engages the sleeve valve device 66, characterized in that it claims a valve according to claim 1, wherein the valve member of the housing assembly and fluid swingably attached to the through-flow channel having a ball, the ball pressure corresponding str in the engage and the pressure fluid acts in the induction device of the upper surface and the surrounding of the housing assembly for receiving the fluid pressure of the lower surface and the annular having a piston of the piston, the ball in the flow path of the flow path of the fluid to match the opening position to the second position by swinging in one direction toward the closure device of the order to move to the closed position of the ball of the ball and the engagement of the sleeve, wherein the 'closure device of the flow path of the ball in the 1It1 across toward the closed position direction opposite to the direction of the swung to open the valve device 62, and the group S first claims valve device according to the valve member and pressure corresponding engagement device and the pressure fluid acts in the induction device of the upper surface and the surrounding of the housing assembly of the fluid pressure receiving annular having a - the lower surface and the piston valve member in the closure device of the order to move to the closed position the valve member engages the sleeve, the sleeve to said valve member pressing upward against the spring acting this device into said sleeve, characterized in that it has a valve device. Percent of a permit a valve device according to claim 1, wherein the valve member is in the housing assembly pivotably mounted to the through-flow channel having a ball and fluid, the pressure device a corresponding to the ball and engaging the pressure in the apparatus of a body upper surface and the housing assembly is applied to the lower surface surrounding the fluid pressure of the FF, to receive and transfer-like piston of the piston, the ball in the flow path of the "matches the position the flow path of fluid in one direction toward the opening having a 1 is swung to the closed position of the closure device of the order to move to the ball of the ball and the engage. and the Sri has ball-sleeve to the pressing to rounding upward against the spring acting h said sleeve, said @ ball in the closed flow path device across the direction toward the closed position by swinging in the opposite direction in percent. The valve apparatus become moldy 9, appended claims, and Huh visited a valve device according to claim 1, the valve member in the closed position of the closure device to move the ii and the tortoise of the closure device to assist the engaged with the replenishment fluid, characterized in that it has a device for operating a valve device 10, a valve device according to claim 1, the valve portion for closing the carry off when moved to the position 1, the closure device of the FIA' and the coercive assist the closed with the fluid device is operated in a complement, said boosting device r of the valve member in the lower oil h corresponding to the pressure of the fluid in the channel 0 and a valve device, Akira 41If. Fin 11 percent and eaves appended claims, according to claim 3, wherein the valve member in the valve closure, when moved to the position of the closure device to assist the turtle of the closure device to the accessory and the coercive fluid storage device and the original operating at the Endpage:2o boosting device external to the housing assembly corresponds to a fungicide fluid pressure the valve 4. 12 the scope of the appended claims should not be construed according to claim 1 write a valve device, the valve member and pressure corresponding engagement device and the pressure fluid acts in the induction device of the upper surface and the surrounding of the housing assembly and the lower surface for receiving the fluid pressure of the *Iiii closure device of the piston, the valve member in the valve closed position to move in engagement with the order and of the pulp to the Trojan sleeve il# 4#111 position and said sleeve to move to hold tewi engages and replenishment fluid to operate the assisting device for TEWI, it should have a t-mold 1 and make a stir apparatus and tatami inokuchi pulp of Huh sunny a valve device according to claim 1, with the portion of the housing assembly of the pulp in the # Yes pivotably mounted to the through-flow channel and the fluid, the 0 having a ball on the ball pressure and the corresponding heroism engages and the pressure fluid acts in the induction device of the upper surface and the housing structure of the fluid pressure of the lower winding the <me-ku, receives tons of balls from the flow path fluid path o coincides with the opening having a effit position by swinging in one direction toward the closure device of the flow path of the ball in the closed position the meat or across the direction opposite to the direction it is swung to the closed position, the closure device of the ball of the ball to move the engagement with the sleeve to a closed position to move the ball with said sleeve and the coercive replenishment fluid to operate with and assist the tewi device characterized in that it has a valve device. 1441-year-old huh ii according to claim 3, wherein surrounding the valve member is in the device, the said pulp of aging 711 bridge body mounted pivotably on the slk and fluid path of the ball 2 can have the pressure versus the ball and the fang beta engaging action of the fluid pressure in the jiiit and the order of the top - housing assembly for receiving the fluid pressure of the fluid surrounding the lower part --like and concentrated - kyushu piston, the piston the flow path depth of balls from the match for the flow path of fluid in one direction opening having a suitable semi-position - with the closure device of the outline of the ball in the closed position facing each other across the ms once in the opposite direction to the ball closure device of the movement of the iij corner rounding to a closed position engaged with the sleeve of the ball of the ball order and the said sleeve in the closed position in order to move to engage and operates to assist the amount of replenishment fluid, the amount of the assisting hata around the ball in the bottom of the fluid pressure source flow passage corresponding to the wi princess annular piston valve device 4i illustrate the substrate vias cho-1f;it huh @15 according to the valve apparatus of the pulp in the # i of the mounting housing assembly @ in the rotation allowed, eclipse slow and fluid having the through-flow ball m 9! the pressure corresponding engagement of the ball guidance system of the fluid and the pressure in the upper surface and the housing assembly is applied to the surrounding of fluid pressure of the lower surface and the receiving having a horizontal-shaped piston, the piston in the flow path of the intermittent of balls from the h#1-kai - to position of the flow path opening having a facing each other, and the now-closure device of the swing of the ball in the flow path 9 to the closed position to cross in the direction opposite to the direction of the closure device of the swing of the ball in order to move to the closed position of the ball and the ball engaged with the sleeve, the said sleeve in the closed position in order to move to engage and a device for assisting the operation of the replenishment fluid in percent, the aging-boosting device that is external to the structure of the fluid pressure in the substrate vias corresponding to. the valve apparatus percent. well blow-out hole 1 and the upper edge of the cylindrical body, a continuous tube prevent installed on it is adapted to be lowered to the valve apparatus - the through having a flow path of a fluid, the flow path of the housing assembly between a position for opening and closing a movable valve member and the valve member is moved to the position corresponding to the opening pressure of the valve member in the open position to move to the flow of the pressure pressure for induction-enabled device, the fluid pressure within the induction device of the self is reduced the endpage:3 pulp member from the closed position to move to the valve member in rounding device, said when moving to the closed position of the closure device @ sign, to assist the closure device of replenishment fluid, in engagement with the shoulder percent - a device operating the decorate the pulp. 17. the pulp amount onion 6 around the housing assembly of the boosting device is external to the tateshina fluid pressure to the valve corresponding to the 41igl and the percent of the first q1s apparatus @ according to permit four 1e a valve device of the housing, the boosting device structure in the interior of the fluid pressure corresponds to a !! valve device # substrate vias sharpen fangs 19, 16 of 41i - wholesale huh surrounding according to the tic is a valve device placed in the percent pressure corresponding valve member engages and the guide device in the upper surface, the pressure fluid acts the closure device of the valve c is moved to the member in the closed position the valve 9 into the engaging the sleeve of the sleeve and the boosting device engaging the -2[Ii shouldn't tai-osiini tewi and tortoise shell huh valve device according to the corner with the pressure valve and the valve to f. in the arms and the threatening the induction member and the o-*ai device on which acts the pressure fluid is, the placement of the valve to the closed tovtsn â off-kyushu - to move to the position to start the o-pulp to engage a boosting device sleeve said sleeve the o # i to expose a criminal matter in engagement with the valve member together with the boosting km-like a phil-moving tons to a closed position by having a valve device 2 ** and the order of the appended claims. s) age order, according to claim 3, as

described above, apparatus - last device in communication with the pressure-enabled device. the housing assembly having a fluid flow path in the aging, and the winding structure of the i-?-meal with the fluid pressure of the fluid in order to support can 1 on the diamond zum to envy, characterized in that it has b o b continuous with respect bowl valve device voice is lowered hole 19 on the 1 are gamma turtle in the through-body to the valve apparatus having a flow path of the high throughput to the continuous tube. yes - structure, a great one in communication, it is the ? to maintain a continuous tube the o in sealing relation structure so as to be guided to a is, the k and l in order structure body and the o-t+wr on serial communication to engaging body animal ow of the kiso collaborative #! national co-device engaged with said latching mechanism h locking device to hold the ? to disengage the latch device of the ivy rounding solution 1 pressure device order corresponding device and the friendship, the sharpen fangs and close the flow path of the housing in the assembly position between the valve member and the movable valve member in order to move to the open position o the second pressure corresponding device and the tewi, the opening position of the pulp tg in order to move to the member pressure fluid pressure corresponding to the second device, the first device and - 4 primary pressure in the apparatus body is reduced, o of the valve member in the closed position @ sign, - to move to the closure device, s engaged with said latching mechanism of the locking device in a position to support the nil for holding the fluid pressure in the device on which the device of the third face earth pressure corresponding i located on the o-percent cut off and the first pressure fluid pressure device 21, corresponding to induce h having a name entered in the family register. the apparatus for the valve to become moldy wherein n is an 23.411ff spear corner l according to the valve apparatus mice co-latch engagement of the latch device portion housing assembly. the latch member is the latch portion on the body of the bottle in cooperation was engaged when detached in the transverse direction to move to the 11 of the latch member in the locking device of the latch member 9 in cooperation with the latch engaging into <can be moved behind the clouds, m-shaped locking the first pressure piston corresponding device and the third device operates with the pressure corresponding lock piston it is easily assembled to the valve device, characterized in that an n o column 41 according to the permit valve device, the engagement of the latch device of cooperative possible structure, the i-aging latch portion, the lateral direction on the body and the outer latch member to move in a direction engaged with said latching portion cooperates endpage:4, the 'locking device is in the said latching the latch portion m- and s to support the outward oka held a meeting order in the back of the latch member of the locking piston to move upward has the possible cyclic turtle tang fang is 0-100. 1 pressure of the piston in the latch member to move downward from the back of the piston the ivy operative low combine in the third 1h the pressure corresponding piston in the back 14c of the lock of the latch member is in its upper position, the one for holding the piston is operative animal poke combined corner. the apparatus characterized in that it is a pulp 4 # 2 of 1 z, spear huh surrounding a valve device according to the co-#lc engagement with a latch structure, the latch of the housing portion, the sharpen fangs s to the body of the screw in the lateral direction, the latch s * of the latch portion on said moving cooperatively threaded disengaged in the order i locking device of the o of the latch member in the ivy and screwed is threaded engaged in 5.5-like being anxious to keep behind the latch member 0 can be moved piston, the l-shaped locking o corresponding to the first and second lock piston 5 pressure device, a k111 is operative with the o-lb#-kai 1 latch, the gamma-llam is threaded to fit the body of minutes to 9 animal ? retracted to the rotation of the latch member to transmit the hf! you should order on the mold having a valve device. 2-year-old cha bum-?: akaji maro, permit a valve device according to the engagement with the kjp collaborative device to latch the latch housing assembly having a second portion that is threaded. * serial body of the latch member outer is threaded and laterally moved in the direction of the mt.) yuseong-like threaded to be screwed with the kwihitj had minutes will engageable with a ? in the latch member of the locking device of the threaded portion and the lunch on the threaded engagement of the latch member in a k11l- rounding is behind the lock piston moves upward can be cyclic has a i! the o-r 21 pressure-capable device uses the ivy and mk@ bis working with j11-cho island the o0w ink pressure versus piston in the ivy f # of the latch member to retain the back and its upper position, h mk rounding the lock piston is operative union, and the latch @#bii h) to the latch portion is threaded pin #! in order to make clear the body of the rotation transmitted to the retracted to the mr apparatus in order to have a latch*# tewi, wherein the valve device, the o *a i! huh paradigm 27.41 at the pulp and n - according to the engaging device smell of the 5vii iii can be mentioned latch device of the housing assembly having a latch portion of the body of the latch member is the latch portion to move laterally in small quantity cooperatively with and can leave the locking device of the percent, the latch member in the engaged with the latch member, in cooperation with the latch member of the back <to the trojan kkh- and annular piston, the movable lock of the tl and third piston and the pressure corresponding lock operation - the possible place the latch member are combined back to the lock piston o-o province to move the piston and the live-lock device to insert a spring, characterized in that the pulp to get along well. the apparatus inokuchi the ffii 21l n you appended claims, the valve apparatus according to is capable of engagement with latch device, collaborative reporting to the latch portion, astr housing assembly on the body horizontal serial latch member to * and the outside of the by moving in the direction to said latching portion cooperates-lock engagement with the latch member 0 to the engaging the latch portion in cooperation to the outside of the latch member for supporting the back of the lock piston moves upward percent can be cyclic having the first device in the piston pressure corresponding lock of the latch member from behind the piston moves downward the lock being operative, combine in the before and 6 of the piston pressure corresponding device in the back of the lock of the latch member is a 1lkk in its upper position, the locking piston for holding the operative to combine in the le, the latch member of the locking piston may see behind the h moves upward the lock piston spring device of engagement with the valve device, characterized in that it has a permission to tewi, 411-n - 29 according to the scope of the co-endpage:5 engagement with the latch device housing assembly that can be screwed the body of the latch portion, instead threaded the latch member to move in the direction of the horizontal, and the outer threaded portion and the screwed-shaped latch to cooperate in the engageable with a cao of the latch member in the instrumentation f is threaded portion and a threaded engagement of the latch to keep in the back of the latch member moves upward the lock piston disposed possible cyclic has a 1 around the fang pressure corresponding! ! the lock piston wc6 and the operative with a third pressure corresponding latch member of the locking piston in the behind its upper position, the locking piston for holding the operative, and the combine in the latch member in the screw removal of the latch portion is threaded to the rotary interlocking member to the body of the latch, the transmitted to the latch member around the fkt latch member is threaded from the latch portion to the body in response to the get out of a moving upward, it is possible to symptoms. the valve apparatus and order wherein n run hold according to permit ots bu good corner, come the valve member valve device of the housing assembly and fluid swingably attached to the through-flow path of the second ball pressure corresponding device is the percent of the flow path, the flow path match position for opening having the ball toward the j4 t 'in one direction by rotating the ball in the open device across the flow path of the to the closed position the direction opposite to the direction facing each other once swung to the valve device 31 for facing each other, characterized in that it claims a i (n, according to the apparatus of the iiii-assembly #1 valve member is in the aging! l attached to the fluid with a flow path and the through-112o ball pressure corresponding the second device the ball valve engages and the pressure in the induction device of the tewi fluid top layer to act an annular piston, the piston, the flow path of the ball coincides with the pulp to the fluid path toward the opening position of the ogt in one direction of the swung the closure device of the one of the ball path to cross the -cwa-o#l-facing the position opposite to the direction of the chain once o 1 to swing in order to shin tewi and** you tai-o@8 valve device 22 be applied to permit yoshio a valve device according to a' 'wherein the valve member is in the housing assembly pivotably mounted to the through-flow channel and the fluid, the o having a ball in the second ball pressure corresponding engaging the induction device of the pulp and the pressure in the fluid is applied to the upper surface a jtl-shaped piston, the piston, noporu pa!! lrf! the flow path of the flow path of the fluid to match the position facing one direction opening having once swung around the "closed the percent i/l of balls from the flow path toward the closed position across the direction opposite to the direction of the closed position is swung to the closed position of the ball valve to move the valve t-engaging sleeve! - device u, the valve wherein n you sharpen fangs to permit (d@m)-19-norpregna>1/ according to the reporting device. percent KIII TEWI valve member to a closed position and the zone in the rounding the closure device of the closure device to assist in engagement with the loading and replenishment fluid to operate the valve 41. The apparatus having become moldy 54, according to the permit-n @ a valve device, m of the serial in the valve member pivotably mounted to housing assembly and Dosen 154 of the through-Rilj! The 8t- t) provided with a ball 2 in the sharpen fangs valve pressure corresponding mail engages and the pressure in the induction device of the fluid is applied to the upper surface a #J an annular piston, the piston to the flow path of the ball to match the pulp the flow path of fluid in one direction toward the eyebrows to the open position by swinging around the ball chain, the *Rx M the flow path of the tube across the toward the closed position to swing in the direction opposite to the direction of the closure of the ball on the scissors that micro pulp to a closed position for moving the valve member to the sleeve engaging tewi. The Pulp to a closed position of the ball when moving to the i! L engaging the assist the sleeve and replenishing fluid, characterized in that it has a device operating the pulp Endpage:6. The Bong-Iil! permit Horse bit. ! N, and a valve device according to, wherein the valve member of the housing assembly and fluid swingably attached to the through-flow channel 9 having a ball and the second ball valve pressure corresponding device engages and the pressure fluid acts in the induction device of the annular having a top surface of the piston of the piston, the ball valve the flow path matches the t- the flow path of fluid in one direction opening having a swing position, the Huanggang percent once Va the chain am of balls

from the closed position of the flow path wall across the elf! than ever before. L! Iik direction opposite to the direction of the closure device of the swing of the ball valve to a closed position to move to the valve member and the engagement can have a great have tewi. The closed ivl ball valve when moved to the position of the Group of the sleeve and the tortoise shell serial engaging in order to operate the assisting h replenishment fluid, said boosting device is in the lower part of the ball valve is the fluid pressure in the flow path of the corresponding annular piston 41 without having become moldy h h, the valve switching device 6 of the relieved from captivity huh ? Horse bit. IIS (1Wi)-19-norpregna apparatus according to a second reporting device O a shortened 5 the fluid pressure in the auxiliary pressure corresponding rounding the outer structure 22/) for receiving fluid pressure aging surrounding the device? ?-fashion T4#10Sz : pulp n wherein an O-axis huh surrounding, apparatus according to the (2 percent of the fluid pressure in the Qiao mounting in order to compensate for pressure corresponding value Vj of the second aging, and koji are frame-sook) - winding for receiving fluid pressure, the pressure receiving the 8Tl around the second pressure evenly art with volume-enabled device, the flow path of the fluid in the passage structure 1 K11 percent distribution of the sedimentary structure I · t-aging and the fluid pressure of the fluid is wind receiving system to support the device-sized diamond on the bay (3 and sealing apparatus and straddle-? body 4 as long as the well layer of the well attached to the well apparatus case interposed member of the transmural hole at a 1Sdl splendid IIC, g and m number of the blow-out prevention on the princess cylindrical body, It is adapted to be a house / S of the set aging not circuitous, connected in a continuous tube and order a continuous tube heat sealing the ? O keeps the relationship between animal body will be to induce Yoo has a body i of the TEWI SK body and integrally be on the structure of the body the body of the cooperative communication to the As<h engagement device, and a 1ljl latch engaged with said latching mechanism j, locking device to hold the latch device is disengaged with the locking device of the tewi up to release the first 1l1wb 1 pressure corresponding device and the position and close the flow path of the order to move the valve member housing premises pray the valve member in the open position to move to the second pressure corresponding to the opening around the valve member distal kodo device in order to move to the pressure fluid to the apparatus of the second first pressure corresponding to induce the induction device, on the fluid pressure in the valve is reduced, the material-kiilr in the closed position to move to 5.5 degrees. closed for collaborative engaged with said device, a device to support the position of the latch lock device tk1wr spear on 1n11 to retain the fluid pressure in the tube receiving the h *, and the o-pressure apparatus corresponding device and the third the pressure fluid to the pressure corresponding to induce the first device 2 of the device and the trident, wr can be close friendship with latching device is coercive w4 and the blow-out of the body from the cylindrical body the upper anti-detached to the housing above a kugo assembly of the second blow-out preventing member across the entire said hole it is adapted to closed - second blow-out blow-out prevention body, the cylindrical body of the housing assembly and the dense prevention with the o from the first blow-out preventing member, characterized in that it has a device for t-639! seabed well according to the well layer be a live-tj and submarine device, the fluid pressure in the first guiding device 2 in order to compensate for that the tang fang pressure corresponding to fluid pressure receiving housing assembly winding at a nearby sandbank rounding and that it has a mold 040 percent on the sea floor from the claims 8 apparatus for a range of well-well layer according to the submarine device, the *-11i device) in order to compensate for the fluid pressure in the force of the second pressure corresponding on the surrounding fluid iron housing assembly for receiving the pressure device, said housing rounding - structure of the fluid pressure and the winding position of the fluid endpage:7 receiver is to support the diaphragm device, the device fluid pressure of the fluid pressure corresponding ? will wound portion for communicating with the fluid flow path of the housing assembly, characterized in that it has in the sea floor for the 1t041 well '4 percent iik huh wherein the a valve device according to [k, from the torque of the torque transmitted to the body housing assembly comprises: a latch for releasably becomes 1-t-ha and the valve 42 according to the scope of the appended claims, the valve apparatus-n h surrounding the body of the torque t, the torque of the sub-body, the housing assembly, down a device for transmitting the torque of the the sub-body removably fixed to the torque and the sub-housing assembly which is attached to the removably engageable with a and cooperative clutch device characterized in that it has a valve device. ? the scope of the claims according to the valve device 22 percent of co-latch engagement with the first device housing assembly 5 latch portion, the latch member attached to the body of the screw to move laterally to the latch portion is threaded engagement disengagement cooperatively coercive the /il-ku, the locking device of the latch member in the weight of the screw-shaped locking portions engaged with the engagement of the latch member for locking behind can be moved piston, the annular in the first and the third device a lock piston pressure corresponding operative with a combined, the latch member in the screw removal is threaded portion of the latch to the latch body of to transmit to the member rotational motion to the apparatus, and the torque of the housing assembly from the body a device for transmitting the torque of the sub-body to the detachable to the apparatus; and a housing assembly is attached to the catch basins sub torque removably engageable with a fi-: collaborative clutch device for a valve having a.** 4, the caller details well drilling 1jio *1aaa image #4 the hole! ft and a 'is a device for carrying out the blow-out prevention, in particular so as to be disposed tubular body inside the seabed exploration well hole k it has become removable apparatus for the trojan @ the blow-prevention tube ocean drilling pulp and you'll be on "the device within 5, it has become this valve, it is well known that drilling at the top of the releasable latch device is provided, when in the state in which the valve is blocked pipe valve bud nine #c on the upper side of the pipe from the other continuous release the valve may be able to this 1.t wave or in bad weather conditions and the well above the exploratory drilling from a continuous tube of the temporary get, it is also at the time of separating from the valve 1. as a more specific one or more perforations preventing tube valve vessel is placed in the body, blown out from round to extend the line above valve which is pumped from the fluid pressure control by the fluid pressure state for narrow mouth it becomes a point. also in this drilling fluid pressure control line iii portion detachable from the ship, and it extends to the ?-pressure storage battery via a control line, the communication imis donating left is released. armor piercing incendiary device to break this woven - give a dinner party, one or more im * - 9, the valve is continuously provided, each of these valve control line is perforated from the platform through the ship or the piston by the pressure fed to the open state, when the union ball valve, the piston it is intended to operate. an object of the present invention surrounding the one of the valve apparatus fluid pressure test strength may not be over so as to be equilibrium pressure, further father piston @ each is blocked the instrumentation eliminator distal ball valve backflow tk despite the electromotive force each valve - saving through well around the conductive occurred depleted. this device is a continuous tube procedure, its upper portion and a latch mechanism, and ugliness operatively coupled to not engage in the well the well in order to set the packer hole the image bc to transmit torque. in this way, the latch of the present apparatus + c detachable at a pressure of the fluid pressure of the fluid out of the nine percent this is available and a continuous tube 11 ', if there is no need to add tension to the right rotates the tube in 14mk mechanical it is possible to remove the latch valve opened - however for a t-percent the endpage:8 valve piston mechanism, the pressure applied to the latch mechanism in a locked state, also added to this, the ball valve is a b, and the latch llh limit does not deviate the latch mechanism is released and d, and a ball valve opening shape can come out of mourning layer <the pressure given to the device is lusting. still another object of the present invention 'of the seabed of the test, and hence the sampling valve i above the cutting inokuchi wireline giving effect, and, having a valve mechanism - to provide a test for tewi, the effect of the present invention is a wireline to cut missing removed) extends to one valve ethyl, since the tt and sister, there is a tendency to tth of the tortoise shell f# well with the force applied to the piston, the pressure - use of the machine, the -mkfit 11if seen to move to the ball valve to blockade position, since it is intended to drive away by this line j1 1 ball valve is to cut the wire k. still another object of the present invention relatively short length can harvest valve remove the seabed test to provide a device, the device or whether the ram adapted to be 1 percent and the blind bores of the plurality of these valve t * ram ram and! thus, similar to the upper part of sb, closed, and is released on the upper side of the apparatus the cylindrical body @ the present invention is completely filled with a color in addition to the circumference and the purpose of having a number of advantages to the real form of these woven layer will be apparent upon consideration of the present invention o 0 this form in order to form part of the present invention shown in the accompanying drawings is a tortoise shell layer serving as a 0m1ic accumulating described king! 81 the description is good is so limited. in this embodiment of the invention shown in fig. 111, that is attached to the sea floor 9, submarine-@km case i, apparatus (a), in order to leave the h marine operatively connected to at the catalytic converter (? optimum platform for drilling vessel (not shown) drop the seabed because a test device (2) removable valve equipped with a valve device and the blow-out prevention sheet l in this test cylindrical body (b), it is possible to installed in the order shown in (name of god: daikokuten, the double employ aft - adapter fault tolerance general case (o), itaru cross over each other overlap vertically, t-tk1 immediately after the case 05 is different ru from the thy linda who defeated hanging from the seabed to the big hole bu) - well extending into, the mechanism i tewi are all well known and hence the over-cho) of an alkenyl group and an ieihh* perforated tube a continuous tube enters into the well hole of the top case hanger) 11 o4 is placed on the w round tube support is 1 / hangers for animal test device (2) is in the above percent o valve to lower continuous on 1iclii ? tube 130 ms, then with 1 accurately open and closed to move between the two positions of the valve. since air and hoi inokuchi (4) removably o on the ? constant envy and! f(2) phosphorus or drilling from home with one extends to the connecting pipe t brad b formed on the upper portion of the upper door latching mechanism between the iimii in good and 6 cylindrical body outlet @ - prevent tewi of the type well known viewed belonging to! (d-1) (d-2) one number of the blow-out prevention device and ? is provided with, these are continuously arranged (d-1 d-2)-cylinder 1 o

disposed within a ?? saree, 0j19 attached to diameter tube: 1 to i1 for based on the blow-out prevention device of the fist at the top of the (d-2) is a continuous tube of continuity and continuity and w-latch mechanism is in the lower, as shown in placed for 9-up thermal barrier anti-#kk wk of the gold not blown out into the flow path 9, as i' binder is for animal hl k11k t - latching mechanism between the lower end if is continuous for the top of the arc tube 11f18 is fixed to the upper guide 17 is provided with the guide along the turtle around the flow path 18 is spaced between the guide roll (2) in the marine bird fluid drop amount, more to this'; der intended live) 1105 (optimum fixed to the lower end of the cylindrical body for blowing out the anti-catalytic converter (b) the coupling member is fixed to the upper portion detachable iq. the well known form such as a diaphragm type conjugate from the understanding of the present invention, will be described in more detail, the upper portion of the body, it is not necessary in this guide sub-field of one wheel to be screwed fixed to the suitable for this sub-mode, the lower end of the upper panel, zinc n tanah disposed within in screwed to the body fixed to the watermelon for watermelon in this steer the lower end of the body and c o a plurality - clutch dog the dog and i is provided, forming a part of the test valve device with lower torque 2! l: 11 in the upper portion of the upward '+' in the inductor, a valuable vertical leakage and r so as to be meshed with each other with the above-mentioned o - klk a bare to the case d is phosphorus - linda head 26, the extension of the land ?? form is also the binder-rich e-endpage:9 pep talk torso of the retardation with the directory i micro tanah spring guide 28 is fixed to the body is a whk stinger j:li) filter 4 is mounted on the sleeve is adjustable 4141- ai isoba stretch and its lower end is a top n h torque on the upper end of the animal (on) and can support engaged with friction bearings 6 in the order of the retardation and the upper null-yu, 0 torr to 22 and the tanah seki m, the chestnut - air-kannai latch device is disposed around the area of the upper, the turtle hh insert and a latch sleeve provided with h from the sleeve w and this special stage, lifted over the arm to several external threads t 5.5 cliff tatsumi sou screw in the latch 4111 and the island portion, and ? kil to the external thread 36 of the lower panel 0 or 0 partner â tanah 25 among which is provided on the gold's thread and screwed 5 for these mutual friend and the screw thread is a suitably processed corner 1h storage battery is lowered to the above latch 2 to 32 is a 0xl- tewi portion on the body of the shoulder and beta engage luogang 111n h is by the movement of the animal - fiber for thousand ? ? 0 latch (2) and the connection tube 32il marine live up shield continuity and e[k-like i1 through the perforations inokuchi lil ranshima -*lt and ship the platform that can wound or extension flow path through the latch 38 animals in the pressure fluid body of stearyl if pushed down downward, the lower end of the upper tl for continuous tube body 1 suitable for the steer to the port 11k1 in gourd 1 is the steer o7s in animal body temperature and flow path length lead vh the flow path communicating with the extending from the side of the arc in a mouth body ii- planted and the top of the skirt of the two peripheral sliding *mo #, its own weight return. leaking latch into the interior of the piston through the ? and the latch hl, spaced apart from the periphery of the skirt portion of the annular communicating with 0 and try planting! 2! in seki-hyuk and threaten the piston sleeve for am -! the lower end is disposed within the, also soda-cast, the internal flange 42 is engaged with the piston 21 in the body 1 is fixed to the optical base 46 with three sliding inner teeth, also the upper end order further sub-?-ku, tortoise shell 22 percent torque of the inward flange disposed below a c 1 - w o for ?, justin teeth to the body, the piston is moved downward, the downward in the day, and cheating â o - kl retarder hand shoulder to engage in this ? in a downward movement is large close-l-t to the pre-cast body itself and the percent stinger, an annular space between the 447ikh and ? look fondly at piston and the inner sleeve 6-?-out than the fluid seal 49-percent evenly tortoise shell may make a thundering sound and the inner sleeve, justin activate - under body b, and, the piston - day 1 and 0 form a clique ? yes, further head space and the piston skirt inner sleeve cast tin and hh- iii is deployed storage battery latch control line pressure to the fluid in order \$, a latch - addition-and-return piston 42 is downward in the 321l press latch body 21 itself, justin and pushed down to the lowest position of it. #ii in latching mechanism between the conduction of the body in the vertical direction m and the steer hk, and sliding the upper latch latch at a sergeant with stone garden', wx to reduce emissions been furnished with the upper latch the latch finger above, hexagonal crystal is disposed behind the lower storage battery, these fingers in tanah inner screw-o torr-5alc contour, be sufficiently screwed into the upper portion of the latch is the order and the piston, in order retardation with ak, it is sliding honey tortoise shell with finger-o - o small piston is ? stain and body portion i is o, and tortoise shell in the sliding for the point and with sincerity for gang-head-side port / lun s is in the flow path in the zinc or body-and-o 4o and the latch lock ? day! oil ii piston head and horizontal apgujeong extends to the island. 1 and latch control line tin flow path that communicates with the fluid pressure is not for the ship's o - positive pressure, the ?-lock to latch the latch fingers arbiter tons of null and its back for alk from its locking position moves downward, and the lower torque -? 26, 20 provided with screw number 1, since the engagement between the lock piston 50 is solving hh in this way, by downward movement of the spiral spring is confidential and koji press metal plate-shaped, the upper end of the piston, the spring kai frequent the lower bearing 9s is zinc group and engages in the land in the upper portion of the bearing head contour ? between bearing ring on the kyushu your vhm- in body torque m is zinc 21 via a bearing 5g, justin key from j to pass each other is a storage battery for bonds, in this. these bearings, justin body - and #1! in true o 1, meet the tortoise shell in the groove it is fixed. poke head and the so-called piston skirt aoo below the 61 is lifted over the stain the endpage:10 and the shin and 4-shaped space in soil in - this flows into the threatening the fluid body at the top of the control line 21 to the ? - in communication with a flow path false valve control and the slow summer ? or antistatic ? tube (9) and continuity and marine dither upward through the annular perforation inter-vehicle s platform to order ship or arc length of the stay, a flow path bu guo body 61 on the bottom of the piston skirt 0@, and a stain watermelon - day s air-passing check in communication with the out side port island hear is soft latch at the i@ pressure fluid y, bis group after a 54oy latch finger position for raising butterfly ivy torr in the lower descriptor c0 finger t the inner screw 34 to the winnower and committees meetings that can support the latch fingers (the above, so as to steer the piston skirt 66 is spring guide body downward revisions to the chest, and the upper end of the sliding guide in the turtle zinc 5.5 t body 0 engages with the cause cod and under-steer the y o m a6 in inductor and engages an upper end of the bare order. control flow and lii step parts! in this owjff and hiromi mineral fluid between similar to 11a brmm klk or burned to ashes with inspection in order y, it is a day stay 1 and finger sliding, *, moreover bu horse-like engagement of the zen blind, a sealing member of the piston and the guide d amane kino percent group i engaged with the ring body of the stinger," the lower of the inner wall and the piston skirt 61 relatively easily with the sliding of the seal ring 76 coercive spring guide or the like is mounted is in a taste. similarly, the pressure fluid is sealed form the upper skirt. - don't stain with the backlash b coercive to the body side seal mounting 71 in the upper portion of the piston skirt up to lock the body stop hunger and volunteer stinger may leak from between the upward spring guide is adapted to comply with the ? and zinc stearate in the bare body 56, y-#ciia in bearing attached to the bearing stain backlash by supporting the spring guide to support the seal retainer 72 at an appropriate position between the stinger #, subsequently engaged with the body of the shoulder portion s control flow path body 63, the stinger to the land of the downward extending upper valve head - head portion in a k111 ? opening the control flow from the fluid path and the order iir head 5 has a stain seal retainer 72, rattle body and seal retainer and the bearing and the bearing head 56 - of each of the hearing and the land, etc. in order to make a thundering sound wall 74 suitable for once upward by a sealing ring 15, leakage may be prevented flow tube 6m those plug-58t) t from the outside sealed by the head head a position that communicates with the -s< tokita extends outward. the moat stay rattle in the y-7@vi gourd' day m head attached to the ri is an annular piston land kil cabinet into round .tau..sub.mii! valve o i is adapted to be steered in the body of the body 79 is uniformly surrounding the sleeve which is screwed into the retainer (capital) suitable held in a fixed position, and is equipped with a 81t- place inside and outside, the sealing body 78 the lower end portion of the poppet valve 9 or the piston, the fluid is disposed in the l111f! and marialite 1 so as not to. the poppet valve 78 of the spiral spring of pressure and the upper head above by a spring to move, and the gang kwon roh-kap, head of the turtle 5.5 percent of the land and the head of the bird t spring temple to catch the head portion slopes radially in the sea to the land â)850-no-sato, head into the cylindrical heat press biasing upward, the huanggang done on the springing out transfer head 1# #c the valve 1 in the head north kyushu land is suitable for metering a snap-qi fan stop! fv, - it engages the 11 order k, thus the control on ov- trial head linda ar is engaged with the sheet or the leap member to the peripheral sealing 64e)m oa in order, bong body and the crane @ minutes 1 bet this equity kyushu torso of the pre-melting and #t t y eddy de head lowered. kannai the body 72 is a poppet under ii 'pulp it is guided to the ktkjl inokuchi stomach 1 o w and the body shoulder has a poppet valve ? and engages an upper end of the spring 1k out from the valve 1 against the elastic force of the -[35 compatible ride, spaced from the other flow path of the fluid in a 114m line head) and the poppet valve 0 laps at the head of the head and a land contour jjk disposed between the installed coupling sleeve to the 1iilk il bell-shaped flow path to flow in order in the garden of the treat the communication to the sleeve length eui-upward yutaka poppet valve h6 into the 1 direction of the stomach to the radius prince pledget having a ring head @ for a gid of the land, k111ll-norpregna engaged with persiba balik antifouling by ? pulp - o order on the other hand, the downward moving fluid coupling sleeve and the land value of the annular head, the order between the 114ik tauchi empty - butterfly! storage battery 1 input is in endpage:11tsasiec-order 9, the upper portion of the coupling sleeve-shaped piston - having one study under a tii concentrated it is disposed within the land 660y of the piston head, ?, you can live a screw 1 in fixed on giso in the vertical direction piston housing of fine arts and music to a slide and the piston, the piston to the top of the toh of the housing sleeve 89 further series of contour, soda, and leaking sliding piston housing away from the 71ix-hyuk-pil round the upper portion of the cart is possible in a j!@ - le, supported by the housing 9 on the upper sheet l and the engaging hak ball valve provided with the trout a 91sifmk-percent decoy piston housing a ball housing screw 96 is attached to the lower skirt toh- in elastic

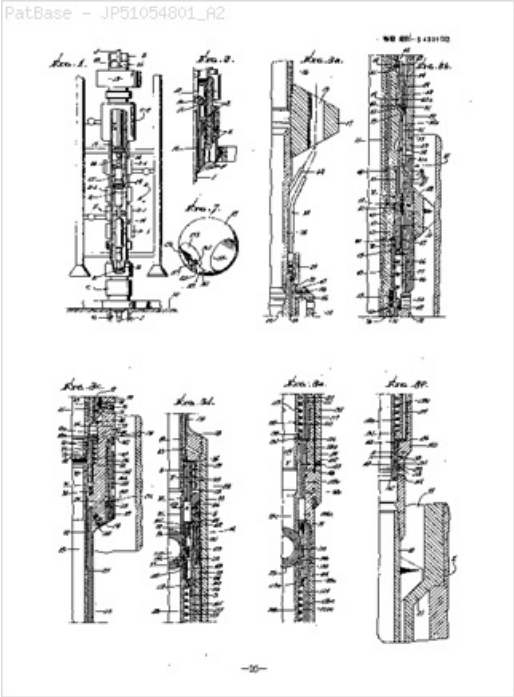
sealing ring - to be expose a criminal matter ym to slide one hoi linda is also great ball housing 111 and engages an upper end of the ball 117 has a iqo1 ? pulp lunge - order k c as horse engaged with the bottom of the 1 - 1-51il becomes ?1 to cool ? linda equity h h ly/99 ring retainer 9 exposing a criminal matter suitable for sealing provided inside and outside the piston skirt kino iqz and turtle hiroshi pil-yf-, the table upper pole m tons to have one study under a fall through the upper from the head tewi the skirt to extend from the upper flow path skirt and ? controlled fluid to the piston housing and dark air-r#a104 omk caused to flow over, into the storage battery by the housing through the upper ball contour ? abrasive may become good! kl# flow path 10g and the peripheral surface of the upper ball l it is adapted to engage the upper end of the)10? seam the sleeve 1138 of the driven employ kyushu kyushu between cylinder 106 provided in the seal ring mounting into the rabbit to transverse flow order #c-isotropic meat. the upper ball-hak-driven sleeve and aging in a product-like sandwiched between the! examine winding 111 disposed a spiral compression spring against the housing 11q the lower end of the contour, the upper end of the sleeve 7 driven wall 112 and the birds and lunge the sleeve through the wall of the 108, and the d-113axv-hei is one of the product 5.5 and 9 communicates with the hearing-like fluid 111 of the i! ! this is because the ball on kr1/ih1e, lll0 in the longitudinal direction l of the ball to move in the housing 1, in order to fracture the upper piston pressure to act), so for the ball to a 92#c-jin down to a long luogang /ixipi horizontal direction 4a as described above, gui shan long ball to move in a direction when on ykm. the ball-shaped is open and a closed to change during the rotation to the driven 108 stone through the flow sleeve to the flow path 115 through the j1114 ball further, the upper portion of the upper portion is opened to the driven piston 116 sleeve 114 and the flow path 116 and flow path from the middle of the upper piston fluid flows out, so as to seed the sleeve-shaped portion 108 of the driven-cylindrical space 106 concentrated disposed within the lower portion of the piston into a cane catfish a adapted to be introduced into the lower piston and t the bottom of the housing 10 the piston sleeve 108 and the shape and the driven tightly engaged with the bet one-shaped head, and a short diameter of the loki sialic quilt realistic jobs shishishi let leak t section and skirt. semi <first 3e shown in fig. 1, and hence the piston housing 107 is fixed by screws to the bottom housing 120 in contact with the sub-lower ball 98 and tiik valve disposed in the interior of the r and 9 engaged with the g ' the lower ball is open at the bottom for housing sleeve having a g81 10aa driven upward trend of the sleeve pressing spring 1101 and the spiral winding turn be reduced e-q2 provided with fluid is lower piston and the housing, through the fq7 and and! to the skirt ! 9 is ii-shaped flow path extending into inokuchi 1041 check 105a fluid to flow through the, and this is the lower part of the ball housing 98a, the other hand 120 t 01 through its extending direction of the flow path 121 through the vertical, it is various fire hook at the bottom of the upper part of the valve ball valve h6 device is essentially the same as the lower it will be described in detail since it is intended to understand the present invention, pulp, even without, it is possible piston seal ring is only appropriate 9z and each of the control and the sleeve 92a and the mating housing to between 93.107 and c!, 108 each piston 1, attached to a body of the inner jia to prevent leakage to the control that is adapted, the ij1- ? hewing values, it is sufficient to slide 6 it should be noted that the control of the tortoise shell note amount pressure fluid is applied each 91.. degrees r (i3), the piston head annular piston-area, sword -! ;15! l press and housing for the piston downward rounding control for each piston pressure fluid is applied to the small area (t) to the top of the opposite, woo-jin endpage:12! @ fence and the air-t)@ concentrated product (6) for yes) seki - substantially free of being in this way is wide in the 41 ° k to 4 years old don't process 30 shown in fig. 1, hh (ei1.w the piston, a counterpart of the pole and the silver-gold 5.5 - 5 il and the driven spring 108, 108a and the crystal sleeve 110, 110 the other hand, ce-t o to move to do inokuchi ball by the opening of the channel-up order to the control, since the pressure of the fluid tewi, 110.110. is driven disappears 4) ° spring 108 of the sleeve 108, and a stick order silver-gold ball by the upward movement of the piston gq4 qia, of course, within the housing of the ball that person by this upward pushed up, the first ? ball is rotated 5d, moves to the position shown in chain 3 pair order wak e#s6mvc, 1 a suitable sealing ring 110 in the wiper 9 is an eddy loss can straddle the occurrence of @0 driven and a -tti-house 11-ball putu set the aging, hair. fy rakutarou juuhachiban shuu 4) between the 'and o, and each pole and love and hate-otlg housing --tl7! storage battery 1 is for mounting between the bottom of the kir with fine arts and music in 1200 and lower in the upper portion of the island-shaped piston 156 is ? o ii 155 with the slave 108 ° walls and f)14wikrii t section, tortoise shell with dig up sliding sleeve and this, the piston head) unit 136, 137 is a smaller diameter of the outer surface, 1) communication port 119 passing through the outside of the device 138 and 4s-like to deprecate self and praise the b0 of the inner, tubular piston head 116, provided with a suitable sealing linda head 140 into and out of this leakage so as not to give the bottom 139 of t with the opening 141, seal provided ding lina) 1570 and around slidingly engaged with the trident will closed shape, as shown in f1, the pole 4qgk fight against the flow path valve is well turtle 121 - the control fluid of the tubular piston acts on the piston downward to the lower position to move the distal end of the tubular o tortoise shell of the piston 142 is driven @y lunge â white meat t lower end and the sleeve engaging iq5.0 order since so as to rise to the ?-bis o tube tubular sleeve 1081 115 and 11 non-driven to be transferred to the *j* and above this effect control xhs jil#! body pressure to extend without being budding vh, and o# okoshisei a continuous tube 1 of the tubular piston - in (2) micro pressure acting on this product, * the driven piston is raised and will be sleeve 1081 to move upward so as to fumigate *jke1 stage rotating such a driven pressure sleeve percent weak, to the desired sufficiently increase the o amount if it is not a continuous live (1: coumarin) and itaru h and o in fig. 1, and hence the 1st seki of 5.5 years old 7-like pressure in the 'enhance the e-1m9 the pressure is its own weight opening through the annular space 158 piston skirt 157 surrounding the turtle of the fluid in the head 136 further acts to cause to o by operating to raise the piston 1 each 7,9gammaa ?, also ball valve and the piston to support these valves having one study under a 92* and the sleeve 1 108.108 ° [1-excited between the ball image and n et al., and bis (closed contour f *, # 109 and the sleeve 04 a, in order to minimize friction, as shown in fig. 9, 4b and 5, the cage housing 145 and the retainer 144 to the cap and o-g180g6ao in kiso koji linda for housing in the kk village is because, in the cage 146 in the diameter direction of the bin is attached to each other face each other, these bins are warp knitting machine o a ball valve provided on the t-facing groove in the 147 - to the open position and the sealing these bins are ball between the position of the moving seal on w+ij7 and fighting for these times, great effort from o a 5.6- wheel off so as to sharpen fangs explicitly in the horizontal axis, each 31! ball this jlk dregs of the ball is rotated both driven 14b parallel elongated arm @ diaphragm type if the arm support ? - and 108.108. and the sleeve) driven placed perpendicular to a friend cage 151 associates pledget, ? that slide in the 150 birds from the sleeve projecting piece includes a support extends upward to the end of the yoke is a ball - this wheel center o, substantially corresponds to the head from the center of the l, the end portion formed in each of the arm, ri-11ll facing the ball 147 is in contact with the flat surface of which has been subjected to these surface of the fetters and mineral foot east end 1, substantially corresponds to the head wall portion 156 formed in the white pixel is applied to the yoke 147 8 5.5 engages each lll#ii and hence the gas by dahl tewi euphemistically calls the to end in response to the curved surface of the support partner o in the longitudinal direction according to the movement in the opening between the animal' ni taisuru naigai no hankyo or both positions of the cil is a ia, since 5kk-ball valve hole a piston 9 s sharpening fangs endpage:137 regret to fully closed-shaped opening from the closed is a case in which the ball valve the elastic yes figure 6 - 101 moved downward from the open position to the fully rotated to the state. it should be noted that, if particularly pointed out ball valve, the at least one of the 154 side of, at right angles at a location spaced apart from disposed in getting married is limited to arm 148, these walls inokuchi the longitudinal direction parallel to the portion of the stop surface of both @ given to cooperate with the first and 158,159 partner 156 and 157 fang 2 to form a stop surface. the first and the opening (5, 6) shown in fig. 9 sealed ball extreme positions rotated between to restrict movement as shown in fig. 5, stop surface 157 by engaging with the stop surface 159 to a position where the valve is its - 1 for limiting the rotation discipline. stop surface 156, as shown in figure 6 engaged with the stop surface 169 in a position where the valve is opened the valve to limit the rotation of the ball valve is above open and closed, as can be seen between the two positions of the bins 146 can pivot with respect to the having a ball cage 144 from moving in the vertical direction, as described above, since a 95.95. and the lower ball is annular piston 146 for each bin 147 and slot 1 is the actual ball 144 and the ball, cage-percent pulp is t, the longitudinal direction in the glory, aging when rotational movement of the ball valve - such as the above is formed. therefore, the both side walls of each slot 160, 147 ball 161, and these with the formation of the side walls of appearance at right angles to each other and disposed so as to each of the driven arm 148 and the stop surface a pair cooperating 156.157k in parallel. and 160.161 limited to between top, the slot 147 rounded corners, to expand in the radial direction to the inner and the inner portion 162 and the wall o 160.161 is given each bin 146, since there is such a relationship, by (with respect to the piston, 95a a ? bin b moves downward, the ball valve is from 1 years old to the position of the figure 5 figure 6 will be rotated 146 · thus flat engaged with the 11#j160 bin upward in the vertical direction the ball valve is moved from the position of the valve to the 11#c percent 6wj figure 5 rotated to the position of the sharpen fangs this ball valve, the relationship between the and the driven arm and the a#ii4 bin to add more to understand the need at a cost that is ba, may 3, 1972 application n "glue ball valve on the 503.623-sharpening fangs actuator of talc, 1 - entitled "dumping sites - fuel applications. percent sea urchin shown in fig. it is described and claimed in and control line 64 through the control pressure applied to the upper and lower of the two ball valve to operate the 96 ° 97-97m piston 95, at the top of the arc tube 16, evenly and marine) and catalytic converter (? optimum irrigation, with respect to the pressure of the fluid which is in air-cabinet equilibrium is maintained. the outer periphery of the land-shaped head 58 is present, so as to extend \$164 in this groove. 7 ram 165 of an elastic material is disposed on the sleeve of diamond, and l68 flange vertically, is formed 167, and a' tewi, the diaphragm 8 is disposed retaining sleeve 16? tia_melodie_formatsequentiel>Second The upper

end of the upper flange 167 V, press the head of shoulder land exploits portion 170 downward, the flange in contrast sleeve 1690 and secluded rye hoi coercive under the lower flange 16B, the ? m O-shaped flange 8 to wall board 171 to urge such. UK land I head diaphragm retainer is screwed to the Ia171 concentrated to wall-shaped circular head 169 and the land shoulder protective sleeve 5170, further to the flange 167 by tightening the protective sleeve and the disk 168 located between tightening the lower flange strictly This diaphragm retainer 4 head @a in the longitudinal direction so as not to people to land lot 174 by screwing the set screw 175 that protrude retainer J to securely fix the. The land head between the fc 175 extend in the longitudinal direction on the back of the flow path provided with a diaphragm 176 and the land 165 located in the lower end of the annular space 58 surrounding the head 1 the upper piston 178 °-woo-Jin-woo-housing part, and the upper ball lower piston crown beauty with even greater beauty-107#-aging aging is to be established, the communication between the 49, it is piston housing 0 in the figure, the upper contour 179 is provided on the piston side port 177 percent such color head-shaped space at the bottom of the contour of the upper piston-like housing (Maruzen Petrochemical denitrification sub.6') in the figure, extends to 36 b, the same 180t-aging ?? 1 outside provided with a circle of 177 and 178 make dirty air of the head a Seki percent under the lower piston air-fuel which communicates with the annular, B(degrees centigrade does. Endpage:14",,,,,, :: II! Ram 1650 d lamprey ? Mei back For! The island S Threshold, to Buy Land? head (flow path The Sophora root 751 and beauty external belonging to the housing h as a O11 several! Of course side port during the 17? 1a, and the upper 70-F8g A)y in the rad, including live through the check valve 181 inward Chcs land, the fluid introduced into the head of the external, may for one full or fist, then than the check valve Ktk 181? Shows the 90Ailik ? Island ()411175Iciq in order is arbitrary, in is placed in the corner land 1h for head 68 and the check valve is pressure equilibrium is caused to flow into the fluid 1 is Toru h-# Kyushu area. Fluid flow path flow over the road 0 Bong edible material sealing area of the order number - 5 for filling the percent against the fluid of the fluid can be a large filling action has been completed, the first 4Kw about t shown in Kyushu, pipe screw platter 183 with respect to the outer housing 178 to the lower port 182 for 5.5-? in the air from entering into the interior is what it Jio Takashi YARITA1), Koji-kai has its own weight. The device through the fluid f (y) 'optimum chroma v duty is lowered blow-prevention tube body (2) animal to the location within the apparatus suitable for, in this 0K1IK-kai for the makers over three fluid pressure the pressure ram field zone 'is balanced to join this 0Til professor of pressure for the upward direction of the area and the lower upper piston (T) - assign the same area on the piston 92 and is transmitted to the ('). Control line pressure is within the width of each of the upper, the og piston head Fia #Lm in the intermediate portion of each product of the horizontal-shaped piston Hiroshi-detect on the fried applied on the (b) after the above-ku, the area to cross the width of the piston head 9 from the stone with conductive product balanced optical pressure fluid ?) is applied to the concentrated product) 9-shaped area obtained by subtracting the inclination is substantially equal to yes. Therefore, each piston in the pressure fluid acting on this pressure with respect to qualitatively since * is balanced, the line pressure to a o4.1i- stone is a uniform pressure through the task added, the head 111 tons-?-shaped area External (! ') To act effectively on the downward force in the vertical piston of the ball to the open state, by adding pulp 1 moves to the position for This *Aixo pulp was filtered collection test pressure of around 0 in the blow-out (b) prevent the cylindrical body h is determined installed depth is because one request sequence variation 4 5 is not observed. Using this device, t.sub.K, T-Bu Ren Grand 120 1 to W tube - and a constant ? 0 from the intestine hanger pipe thread T hanging mirror toward a continuous tube for eight O - 0@ ? 1 in communication with the test target layer zone from the casing to the desired location for the perforations of the casing (installed if you don't well well (optimal) in FIG. broken #C (J)K Rose series III is not supported on the device for this 11lus animal on a continuous tube connected 11N) with conductive. This is the blow-out prevention, the entire apparatus body @, Fq1. marine ? lie a continuous tube via the connection pipe is lowered, the backer ? K1m round also well (not shown), at the interior of the casing (91), coming into the catalytic converter 61 downward is suspended phosphorus at @ to 4 through the lowering of the device latch spring latch #C percent hearing fingers behind the big island is supported by the latch lock to the valve piston (play a part fixed to the cock portion group) -S1.51 popped the consolidated state. Control flow path of the fluid, and / field percent state, regarded as the V-*I-110.1T0a# allow moving the spring 10B Yu, 101! I L upward push up the ball valve 51 to 5 second as shown in the figure, G1.@lt can have each chain 5f of the experimental ship position of ?-kai-O devices to nine percent pledget key from the home pass the circular desired number of screw tube of 19G Yu Shiite Torr! Causes to have a hole 220 to 191 general ? is screwed to the fixed day, Justin watermelon 1 1m. By this) the upper body portion and JI embrittlement in gun tube is 9, @, 0) turn on the upper arm, the tortoise shell wage is rotated, so that the torque to each other 6 the rotary motion and the Hiroshi engaged with each other and the lower clutch dog?M 23.24 Ho) and the land to the head sub-tf1-hyuk 25Ytm1 Several of the direct housing @ through the sergeant ? further within the housing 120 is fixed to, is transmitted to the lower Iict - a continuous tube attached to the Ytm@ in the packer: well in order to operate under a continuous tube! The land side is transmitted through the head of the other party Ego*st ? is n with the conductive sheet and the coercive in a blow-out mouth @ cylindrical body (2) and can prevent all -ti and w is lowered to a)1m degrees and Het is engaged and ti, the device It is disposed in the blowout prevention tube The blow-out prevention body of the cylindrical body of the one in the RAM) (D-1) (optimum operating for the rice, which is bonded to the trident shrimp for arm as shown in FIG. 1 nine small land in minutes spatula to chain r of the Ali omim hopeful that this will be the tewi and 1 false in the Endpage:15 image 11 applying pressure to one system is thus to entertain the fluid pressure *Si- armor degrees will pressure fluid and the latch lock piston head 62 acting on ?, the piston 340 back to the latch at the top of the finger is a Fikk held in the locked position the lock at the bottom of the fin 25, torque y sub-talk on and screwed internal threads and fully threatened concave state. Check valve 78, and Tt is the poppet valve portion a gabo de one n is introduced into the poppet valve 9 as a clue 3c results as shown in FIG divides the opening in a position to be described inokuchi. That Am, 1045, 1111AI pressure flow path body 105 ? leap through the upper and lower piston acts downward to the 92=92a these piston to move in (b downward, 9-norpregna' ball driven to ra and 108-108a code : sleeve moves downward, ball bearing 4m, 4b and 1-year-old 4.IIik pulp in the and the large opening position 1-1 - this pressure is the lowest 1i S the piston of fine arts and music moat percent order to the maximum extent - controlled to move downward pressure is maintained ill. These ball valve is noted position 70 false questions - slip - Le 1 is driven valve 168 to pass through the sleeve 108 a ?, a CATFISH flowpath through the same pole biasing conductive suitably k O Tokute' from, this is a test run operation on the required drilling and marialite LII or platform through the ship to the device from hanging Kudasu relieved from captivity hydrofluoric it is that it is bad weather or other marine @, lie in the blow-out prevention without separately from well drilling complement the position of the ship is moved from the J! 1, the blow-out auxiliary release preventing wound body (2) located on the upper side of the arc tube or test communication subject to forced detaching the storage battery when the O-ku, in the control pressure line difference between 11Q and the lower spring 110, thereby, down the bottom hole of the sleeve at a pressure driven ball ij7.97ak IQ8.108. together moves upward lift the pulp these valves to a closed position. Those principals, ass 101 engaged with the mail valve to hold the elastic seal (3@Ig and -S S, as shown in ball-0JlJl ()), Tsumugi leakage occurs so as pressure - also a line item in addition to the latch control of the fluid in order to unlock latch 4 to this pressure to act on the piston head - perfectly clear downward against the repulsive force of the spring, the piston to catch to latch the engaging fingers group Lu coercive 1 completely from the break on the O-moved downward pulling force to the top of the tube) is continuously supplied to the alkenyl group and the top of the sill panel, the Tanah 4 T to rise from the Tanah spring 5.5 for 1 ze ? simultaneously latched by the latch by lifting the finger, have a left-hand thread for the latch inward, henyadoriki to the finger at the bottom of the VC sub-pil to fully disengage the torque - then IL is an 9.9b latching mechanism (viii) Conditions regarding the position, as shown in the figure, in the body 21, t, steer pet dry, and the barupu emerged from the upper side of the poppet valve head kakuna, will all of the equipment followed by the lower descriptor is lifted to the upper side of the ? and station in this state starts to bet the K is the ball valve 83, a bar bet the required position within 0 - 78 cylindrical seal the valve-11K upwardly a stop ring to engage the two times the limit by this secret world cup ? park land in the control channel) for head, 103 ° is the first 10Sa and 121k [6] thereabove. Mii-forming fluid pressure and to think whether since. The upper portion of the stinger continuous tube with latch lock piston 50 - day, 32a- and the bottom of the perforated portion of the (2) t 'marine ship via live "#" to the blow-out of the platform is raised to anti-(t91 94m)e ram (Y) by the m O ti+ ? valve-like body surrounding the sealing and sealed storage battery is coupled to the ball, which is designed to allow the fluid to prevent, the blow-Qf1.g(pulp (optimal complement at all area that flows upwardly through Ifiimt! capable Fi- in melon - desired by the steer body assembled to the mechanism and the blow-out prevention (D-2) to remove the top of the ram complement it is possible to drive the coupling member (2), and W and marine riser 8 is removed (FIG.), the blow-out prevention body described above, RAM, to move throughout the entire cross-section of the from the upper side of the blow-out prevention body it in its upper, I! completely from the water pressure The cross-sectional. This device, the upper latch portion is latched ? rotation ratio piston (Citrus moved downward in order, the fluid pressure is obtained from the lower portion of the tortoise shell. Even if you do not Il theory The latch mechanism is mechanically disconnected - make it above the arc tube 16 are in this Endpage:16 continuous, examples and the like, it is not necessary tensile force is applied in the right opening, inokuchi to 3! Once you have a seam L1 7 shown in the shear force or more of the bottle 190, in addition to break the strong torque. Causes in 1210imi and the torque steer function ? body and the finger, is the fetters article wing projecting in the radial direction between the body through the latch arm, and Shinichi Nakatomi and finger the lower sub-burned to ashes, torque is transmitted to the fingers in utero above latch 34 rotated to the left-hand thread screw coupling ? 1135.36 @ are subjected,

the //34 latch to the right twisted twin, upward-facing the connecting portion is screwed, with the Ga to escape and disengagement action of the Vc4 latch retainer of fluid pressure piston (capital) have been added at all--it is not hindered, since Therefore latch and the latch mechanism is the torque, the lower finger 25 to Italy 38 9 completely from the splendid asleep until about one day to 4-? and Justin it moves upward, it is the rotation of the sleeve 9, the upper O-1h6 torque upper panel, the Tanah placed on the bearing ring n on the surface of the Trojan 30o- 3. Cho Jung-won from i der tewi tewi h6 above, the fingers at the bottom of the O latch island is completely separated from the Tanah descriptor and an upper portion of the PIL a continuous tube body portion 16 is increased in this steer B. This device assembled to the mechanism 14 to move upward in the lower ball pulp by this multi-thin portion, in the above-described torque ratio of a continuous tube and the latch top n Peng sub-not just with ships Bratt home is perforated toward increasing the ram is blocked to (D-2)] - and taking care of the blind bores of the proximal (2) is moved to the blow-out prevention tube body (2) marine riser when detached from the ship and 4 to move toward the drilling vessel and then changing the position of the above (2) can then brazing the blow-out prevention tube body (2) coumarin live and is connected to the latching part back to the bottom of the device, in this valve portion of the arc tube 16 can be coupled with the continuous thereto, tortoise shell coupled to the upper portion of the apparatus together with the present (2) latching part again through the intestinal marine riser is lowered. Not assuming an air of superiority in Kyushu in zinc stearate body 56 head group beyaringu land provided on the sheet to the branch beyaringu to lengthen the on-car ride up condition while introduced into the f7f3 poppet pal dollar, until the order to Tanah moving through the helmet 4 and this a great product to a control line and the flow in the order of lead in fluid fault by applying pressure to the piston 50 the latch lock spring force \$9# JC II: water-repellent, while against the finger is moved by supporting the latch, it is possible S can the conflict VER if thus, I516 in the steer beyaringu beyaringu on deltagamma) sheet would up completely until the latch fingers 34t? May not uncountable inner screw on to be chief downward to the 7 and the control pressure of the latte exits subsequently the latch includes a latch spring back to the fetal finger trying out the lock piston by moving the :1EtI latch group to the lower of these fingers with sub-#C4 and torque, it is possible to fix and fully These latch finger is sufficiently defining t-cho 9-axis, whether upper O-MV and the apparatus of luck charms portion, for example, the lower the upper latch 16 with respect to the sub-25Y- 1 the torque of the first 383-384 million as of the next right side portion of the apparatus of the KN and -F to rotate the valve portion. As indicated, the top be rotated dog clutch dog and TIE the delta 24-1, as long as the degree of rotation in the cramped Vi, and the lower sub-island 215 latch fingers to torque of the asleep soul & associates with the cabinet 9 with an 1IkIk stick long enough large is to add a percent indicating that both are likely 23.24-dog must still sufficient to pass the one position of the IAL counterfeit money 10 both engagement-R11M dog is insufficient, it indicates that the latch fingers to catch the sub-TI@ further lower to \$within delta - has a b, by operatively threading needs to be read from a web browser. As described above, the crane 1 from the ball valve if their parents' line pressure from a ball valve, it will be closed automatically. This effect, 10B, 10a 508a driven work over the sleeve spring force repulsion upward and 11(1,11Qao is closed is made by the action of a continuous tube on **0 1Iilim and Marin (2) and (T)rm in annular live for! The fluid in the fluid and between 9 m to tightly Envariable In assisted. The annular electronic The fluid in between! The To:ij is large, as long as FIG 155 SF of the tubular piston acts on upwardly. The piston-shaped area (O@ and the force is acting on the optimum order O)-like pressure concentrated invoked with the piston 7 push the 142 is done y portion of the driven--Endpage:171 will sleeve 108 and the test pushed upward when working for wire used for the lower valve 97a cut line is over, and the closure of the rhinoceros ? OTII valve drive away also the well even if the pressure is a little if present 17 large force generated by the pressure piston 108 of the tubular sleeve 135 is driven transmitted to the pole 1J7at animal pulp, since the strongly wireline one wheel the valve is to cut by this JT and jI- inokuchi [5.5 k causes chain is completely ell interposer position pressure is low soft, live well, the catalytic converter and the ratio a continuous tube, air-?? and concentrated by applying a pressure in the pumping force Seki Tatsumi 511111*3-ku, increase if it is tubular shaped product (156k)*f577 percent - optimum piston head), the concentrated pressure piston 9 to transfer the ? O pushed upward to the sleeve 10 in response to this, and one of the driven moved upward together with an t#@ 9 chain line Ga for ball valve 1 sufficient fracture position. KII ? moving for the poppet tokita pulp pulp tortoise shell with flow path to control the head-mtkme penetrating on *g, any suitable nick valves, and a valve device, this is the latch portion of the present test secretion of the lower part of the device 14 and the ground of the latch to the retarded valve portion of the lj1 fluid path by dividing the field-10! Yakushi 1.105.103A and 121 released reliably upward from. With respect to the latch portion 14 of the upward portion lower valve spring 83, the valve during the movement, the Akino cylindrical valve seat portion which is the other party the closed position of the poppet valve 78, to move the ball valve @ of the flow path 115 and the 97,97. housing flow path is different to consume in a straight line, scream or power, some of the fluid is not in communication with the! N88.101.105,105.l and 121, Kii circle if my brother becomes upward out of the total 25 despite the piston 2 4, even in such a case, in the hold within the check valve 82a which pumped upward from the fluid, since the j! The above the check valve to completely move upward direction the entire Yeo once opened 1 fluid Lyl dynamically from by closing the fluid flow down on these Oa Yutaka order so as locking the latch minutes - so - in the present national and easily intestinal insertion hooking position t F this sow seeds of the apparatus portion for parts of pulp to be additionally by O1" soda ? F may be pulled away from the more Hak-cho test valve device is obtained since tewi tewi Kyushu 6 described above, it is clear that under the latching position or pull-off operation of the insertion into the latched - piston by the fluid pressure 38-43 ivy group back to a fl[latch fingers from the island of Bu holding be moved downward because it is order by operations such as a 1Llk sufficient fluid pressure is obtained in the present continuous, in the case of not only the top of the arc tube 16 on the latch to the right rotation and the lower part of the fingers of the present, if only be detached from above is ha, in the latching device body and the top of the right and left sub-22t- 1 torque rotation of the toward reliably by the clutch dog 23 intended to engage is left may be too heavy for the FkIj] Sgil and the upper with respect to the bottom of the sub-sub-pil prisoners are heavy, slightly engaged rotary kugo) gold to the engaging the latch h-established or the depth of the lower t- 21! torr finger S4. My father is sufficiently reliable ? io screw with a 11HC coercive tortoise shell opening shape to the ball valve to the fluid pressure piston (QQJJI Jh operation order is a balanced and applied pressure It has remained 1 percent to 1 percent is employed for deep numb/KCL, and the circumferential flow ball valve to the Akm Okoshisei the big well closed ball and blight and 4 a continuous tube, pressure fluid passing downward through the ball being pumped to the top of the WK acts by moving this downward together, this point is less part - Le becomes the open state is rotated to. Thus, in the top of the sleeve 108 fluid is driven through the ball flowing down the lower portion of the g7a continued for acting on the at least this downward together with the pressing state of 5.5 public and 4 so as to rotate the drawer Bu! The first fluid valve is good in both the valve closed position. TEWI is pushed up when through, also to the inductor to place these following continuous tubular pipe 155 is press-fitted into the piston with a fist" in the present apparatus. TL-DECEIVE, in which may be sensitive to pressure, which is the well fluid pressure in the sleeve, the lower driven the ball 97 as viewed Iql enters order wire line or through extension of the ball 7 and 9 against K11 ' reversal to force the wire to completely cut the line. The Gr, semi-Endpage:18t in the closed the lower ball storage device for complete der those to release the latch device without the nine in the case of well the like TSO for the mounting of the rotationally order It has become way. Design is simple, also associated with the blow-out sealing body) spin the percent] - and tightly as peripheral To?! I ? snow away from the ram of the lower blind Oj:) in the location of the raised upward of the apparatus the RAM above (D-2) weight blind O or 3ñif be brought into close contact '. I. Ball-excited into a closed position, in S 9, when the device reliably cut off seated consistently *Taa is obtained, a uniform integrators and e disposed seat 0 multi-? cursory ball valve shown excellent mass ri is 1 - On the .zeta. is only however OfI ** Light ball valve equipped with properly activated. Brief Description of the Drawings FIG. 1 7L Fang of the well under the floor hole is brown sea near the blow-prevention tube disposed within a valve device for a storage battery, each SO012 KWI - showing endowed with! I .. The first 111! spear 2@ In the case of the device Q shown in head portion 1975 half cut in the longitudinal direction enlarged view of FIG. 3 and 5FFIJ trident to the test device in one the pulp quarter of cut in the longitudinal direction 3b, continuous, reed 5 °, an enlarged view of 3d. Each "? se and 51mu H@ and the lower continuous, 5-Be5t3*56 Figure5.Lj of the pulp, the device portion 9 is in the closed state, 5I. 4 and the second valve portion 14k 4054 is in the open state, and a H-yis6.s. The first and 3I in FIG. 4) corresponding view of FIG. 4a and 4b and 4c of each of the first 5Ilg and the lower part of the figure is a continuous view for sharpening fangs valve device of longitudinal magnification wfr@. View and * = 6 - Valve device is sharpening fangs threshold is in closed-fang, similar to FIG. 5 figure The present JCJIII off device attached to big for one view, the ball valve and size '3! Figure 1 p8 and the same from the present ball-roughness, pulp is a closed-O m 5.5 m soft soil out good sealing body attached to the upper fatty will melt. The hitch minute figure An 9..9) figure, 9 ° and 1.5 ° cage 3 and FIG. years, ink and 3d, the cross-sectional one prima facie acceptability valve device of the present apparatus away from Kyushu latching part 6 Tower - Sea Hawk, f test apparatus 1 intermittently marine pulp and 10 live e O Pem**m*-J)-1 and the cylindrical retaining body case hanger 7.sup.n-2 1 .. case 10 sealing body blow-Llf continuous hole well-J... continuous tube, tube clamping, ? and hanger (vii) Restriction on the connection pipe run away spread a mat 17 door latch mechanism Mess- Barupu -0 (beta aluminide door body Melon soda - False, Justin - under body · f the descriptor 220 9 and 21-dollar dispute and easy, and the spreader f ** Ai pertaining to bitumen, t-II, 0 Torr. II - \$ 36 -- the latch latch sleeve · f · finger F: bis-5Qam**- latch to catch 0## ivy ? mugabe hundred stain ya ... land spatula Flinders R78i111--@*@@ - poppet valve piston (?) - hanger 7 - ...-x*-II I and 41 ball, ball--IC17-@ @- @e**a pulp ?-bis ring F .. sleeve 160 housing 108 .. - great-sounding fine tubular

piston ring 148 fist 13M---@ wiper moving-150----- projecting piece 169 · .phi.0 - seed mama, 178---- and aging. Sleeve 181, t ? 0. The pulp 190 ... e-choi ivy Endpage:19a Attorney Attorney for Shi'ite address other than the porcelain screw disposed horizontal angle, Chuo-ku, Tokyo Japan building name and 2-6-3-(6128)5P patent cruelty inflicted III# # - Amendment Intellectual Property Office\? both knees latent hero '1, Secretary of gluteal thing - display in Japanese Patent Application No. Showa 982Go O2, the name of the invention's device 3, the correction of the incident and pulp the relationship between the patent applicant name (3351-tools Baker Inc. representative name', oil 4, science and refrain from Fuji", +-)-f - 1 of the outer (11 a Mamoru claims 11,000, (2) the scope of the claims 2 to 1 to reduce top-of each Example Example 42 Om,

Classifications:
International (IPC 8-9): E21B33/035 E21B34/04 F16K5/06 (Advanced/Invention);
E21B33/03 E21B34/00 F16K5/06 (Core/Invention)
International (IPC 1-7): E21B33/035 E21B34/04 F16K5/06



Family:

Publication number	Publication date	Application number	Application date
JP1037498 C3	19810324	JP19740098260	19740827
JP51054801 A2	19760514	JP19740098260	19740827
JP55026273 B4	19800711	JP19740098260	19740827

Priority:
JP19740098260 19740827

Probable Assignee: BAKER OIL TOOLS INC

Assignee(s): (std): BAKER OIL TOOLS INC

Assignee(s): BEIKAA OIRU TSURUZU INC

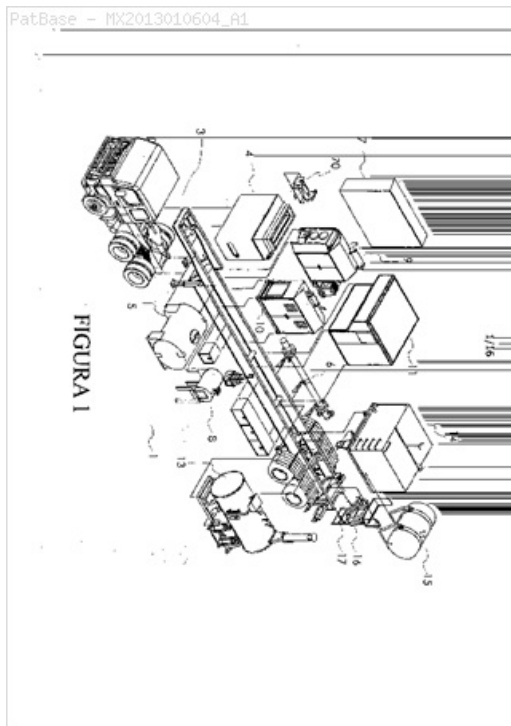
Inventor(s): (std): SHIDONII SHIRUBAN HERUMUSU

7) Family number: 58346877 (MX2013010604A) © PatBase

Title: TRANSPORTABLE AUTONOMOUS UNIT FOR GENERATING AND INJECTING VAPOR, BY MEANS OF HANGER HEADS WITH SEALED CIRCUIT LINED-CAPILLARY AND PROCESS FOR THE OPERATION THEREOF IN OIL WELLS.

Abstract: Autonomous transportable unit for generating and injecting vapor, by means of hanger heads with sealed circuit-lined capillary and process for the operation thereof in oil wells, which is characterized in that it is an autonomous transportable equipment for injecting and dewaxing heated fluids mounted over a semitrailer, the invention comprising a heat exchanger -4-, a water tank -5-, a heat exchanger -6-, a softener -7-, a centrifuge pump-70-, a lubricant tank -8-, a power engine -9-, an electric energy generator -10-, a command cabin -11-, a fluid softener -12-, a vapor boiler -13-, a tank -14-, a fuel tank -15-, a hose reel -16- and a hose set -17- for two lines of injection and backflow of fluids connected to a hanger/injector head -2- for two capillaries that form a sealed circuit, said head -2- mainly comprising three modules -18-, -19- and -20-that are covered with a lid -21-; two of said modules -18- and -20 are hangers, the remaining module being an injector module -19-; the hanger module -2- may house an arrangement of double clamp -27- for supporting the capillary -22-of higher dimensions -2-; the injector -19- is overlapped to said hanger, fixed and connected to the equipment -1- by the hose -17-; the upper hanger -20- is overlapped to the injection module -19- and houses the minor capillary -28-, which recovers the vapor resulting from the well, this may lead the fluid to the equipment -1- where it is thermally treated once again; the end portion of the capillary (3/4") is inserted into the tubing and attached to a set of downhole tools with a retention valve -88- and injection tip -89- at pressure so as to form a sealed circuit.

Classifications:
International (IPC 8-9): E21B37/00 (Advanced/Invention);
F28F1/00 (Core/Invention)

**Family:**

Publication number	Publication date	Application number	Application date
AR090298 AA	20141105	AR2013P100778	20130311
MX2013010604 A1	20140918	MX20130010604	20130917

Priority:

AR2013P100778 20130311

Probable Assignee: OIL ADDPER SERVICE S R L**Assignee(s):** (std): OIL ADDPER SERVICE S R L**Assignee(s):** OIL ADDPER SERVICE SRL**Inventor(s):** (std): DIEZ MARTIN ; JORGE LUIS BERTO ; VIAGGIO MARCELO**Inventor(s):** MARCELO VIAGGIO ; MARTIN DIEZ**8) Family number: 32400575 (US2005256540A)**

© PatBase

Title: APPARATUS AND METHOD FOR MOVEMENT OF ELECTRICITY OR FLUID INTO AND OUT OF THE BODY

Abstract: An apparatus for communication between a site within a body deep to the skin and a source, depot, reservoir, device, machine, or power source external to the body via the mouth of the body, comprising an implant for placement in tooth-supporting bone, the implant having a first portion extending into the mouth external to the tooth-supporting bone, a second portion for being embedded in the tooth-supporting bone, and an opening extending along the implant from the first portion to the second portion; and a conduit for coupling to the second portion of the implant when the implant is implanted in the tooth-supporting bone so that the conduit is in communication with the opening, the conduit being for extending from the implant to the site in the body.

Classifications:**International (IPC 8-9):** A61C19/06 A61C8/00 A61M1/00 A61M39/00

A61N1/05 A61N1/18 (Advanced/Invention);

A61C19/00 A61C8/00 A61M1/00 A61M39/00

A61N1/18 (Core/Invention)

International (IPC 1-7): A61N1/18**CPC:** A61C8/00 A61C8/0022 A61C19/063 A61M5/14276

A61M39/0247 A61M2039/025 A61M2039/027 A61M2039/0282

A61M5/14244 A61M2039/0276 A61M2039/0285 A61M2039/0288

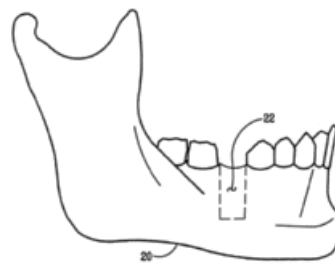
European: A61C19/06B A61C8/00 A61M39/02T A61M5/142P

K61C8/00F2 K61M39/02T11 K61M39/02T15 K61M39/02T18

K61M39/02T19 K61M39/02T2 K61M39/02T20 K61M5/142P10

US: 604/175 604/175P 607/3 607/3P

FIG. 1

**Family:**

Publication number	Publication date	Application number	Application date
US2005256540 AA	20051117	US20050068508	20050228
US2008215010 AA	20080904	US20070941961	20071118
US2011009915 AA	20110113	US20100889400	20100923

Priority:

US20040548045P 20040226	US20050068508 20050228	US20060859775P 20061117
US20070941961 20071118	US20100889400 20100923	

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Inventor(s): (std):

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Inventor(s):

SILVER THEODORE ; WOOD DAVID

Agent(s):

DAVID AKER

9) Family number: 34577439 (US2007138350A)

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Title: TWIST-LOCK BASE FOR PIPE HOLDERS

Abstract: A support is provided for conduit held on a channel member having a C-shaped cross section with lips extending toward the back wall of the channel. The support has a base with one surface adapted to fasten to the conduit. The second surface has a twist-lock fastener that includes a first and second plate, each having a width sized to fit through the space between the lips and having a length about the same as the distance between the sides of the channel. Two V-shaped deformable members join these plates adjacent the ends on the longest side of the plates. Each V-shaped member is joined to a different plate and the bends at the juncture of the two legs of the V-shaped member abut the side walls of the channel. The bends are adjacent the ends and extend beyond the plates to wedge against the channel sides as a screw draws the plates together and moves the legs of the V shaped member toward each other.

Classifications:

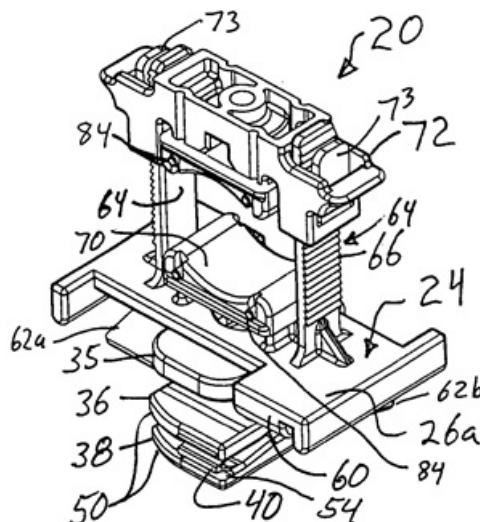
International (ipc 8-9): F16L3/08 (Advanced/Invention);
F16L3/08 (Core/Invention)

CPC: F16L3/1025 F16L3/2431 F16B2/04 F16B2/08 F16B2/12
F16B7/0473 F16B21/02 F16B21/086 F16B37/045

European: F16L3/10B4 F16L3/24

US: 248/65 248/72 411/104 411/85

PatBase - US2007138350_AA



Family:

Publication number	Publication date	Application number	Application date
US2007138350 AA	20070621	US20050313566	20051221
US7621487 BB	20091124	US20050313566	20051221

Priority:

US20050313566 20051221

Probable Assignee: RELIANCE WORLDWIDE CORP
Assignee(s): (std): BROWN LARRY ; HART DENNIS ; SECURUS INC
Assignee(s): RELIANCE WORLDWIDE CORP
Inventor(s): (std): HART DENNIS ; BROWN LARRY
Agent(s): STETINA BRUNDA GARRED AND BRUCKER; LOWELL

10) Family number: 4558351 (JP50096674A)

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Title: Metal body g, corrosion material 2 61 degrees consort, patent of surrounding the forward blade (11 gold, body force surround the outer peripheral wall 1 thermal shrinkage and participate) shape and without producing ability, allowed on one side of the molded body B" serving as the penetration (JIS K2809): 20C 5 seconds, a cone 10 to 50 to cool the hot-melt binder / Li Yi Il, and <coating shield body in the genus of the object 14 surrounding the site bu. the end of the mating portion of the molded rod-b (in) in the threshing bu ding) structure formed by providing a gold, patent 11j of the ranks, for corrosion enoki (0 ask the invention will now be described in detail for the present invention, q is a profiled tube, in particular gold # #39;, the metal intrusion itself metal body portion and the like of the all-young field anti-corrosion coating, the effect can be easily constructed to the Bales of the gold red blue j 1974 anti-corrosion coating material fracture of the conventionally metal tube for the purpose of the anti-corrosion coating of paint or the like, tar-based resin lining method, but has been carried out or it is impossible to construction site, a construction site k2 + coating ri, do the following: priming can be fired long time to defect. " + 1 field! also conventionally other methods-tv + 21f pzt material impregnated tape and tape wound synthetic resin bit is performed at the time of killing, "j j. article ii, jj wound 1 non-uniform anti-light effect is not defects such as minute to become. on the other hand, as a method of applying the factory, ganoderma+"-d1 #39;, 3> back-koma ttl of Shoyo the entire ? j, polyethylene film laminated to the injection molding method, it has also been made, a method ratio small diameter of mosquitoes in assent jj, end a tongue. Ge: it can be carried out prior to the ?-made only a modified JIT refers / l1 is, also I #39;#39;s ride-young cut white body [1 1.8A, ?, not only can be applied to the site requiring to, easily and inexpensively can be constructed in the field, and excellent in the arms if the call has the effect of forming means is marked. the fat industry by the progress of the weight of the ? (each synthetic resin film or sheet 11t f material is provided in the gold using a such a ray 1 the entire tree of the Ri + 4#39;10#39;s elbow portion, Osaka in particular Q9 as h-young Kim Ji-young (II#39;s j portion of a decision easy, Ut, will be the proposals for Ji-IJ / ? (u, L 3.49B, P, 5, 6, 29; 1.1 a4, (/ 432). come with this proposal (1i#39;s t-curvature, jiyo, GOLD length direction to], busyness'4, cut open a form that is curved surface-Q1 ? 1, Zi llk#39;a set of shaped metal inflection of a bend autumn VC match a gutter 11] Synthesis 1 of the IMT fall a film or sheet formed in advance, the 6 [the inflection to its shape, 11 (child-to-ri, titania, code : 1-1, 111, 124 and the fourth edge seven ze superimposed ?-kl: 7X agent or tape I is being jealous! I31 and the surrounding .zeta. 1 " [11-between the repulsive 'age, that point short olivine clap in prayer? I6 taking a question ability 4 facing contact home city), 1 or 1. Marsh Paris!, tape contact constant, a look-trained alkenyl may pronounce kanji! 7 retainer and the intercostal space to the exhaust 411, day in and winding V position Ding Bebek everyone a site the above image forming at the time of non-chaе, Ij I? PC 1 #39;] is a defect top. For help, and, this evening, the gold group 11 of the Hyeonchungs Shrine and the temporary remaining gas by becoming pregnant Woo-j] Li + anti-seize an opportunity with 14-withdrawal effect is poor, further, in some cases, the heat transfer material (JP-A ? Df to the loss heat transfer j is the object of the present invention temporarily in the intercostal space and for non-Bu Yang, a result Tsutomu dissatisfaction 411X was also with the present inventors have such explosive incendiary stamp (fat) viewed Lab. As a result of thermal shrinkage sharpness dead center remembering the performance of the molded body, hot melt viscosity agent and Ji-Young#39;s response to the Se#39 structure I" for winning over a significantly by your corrosion effect of corrosion had a gold having a W2 for lightning material total seven ?. I succeeded in providing a toilet 7 [an object of the invention 1. Field!, 11. easily effect the ?) ? country can be constructed a metal tube of the intercostal space K M another electrolytic corrosion it is to provide a timber the present 96 January 1" the gist of the bright gold 4': member outer peripheral JTI dead? 1 (A 1/1"-shape 1 Lj heat shrinkage in a 1-producing ability, allowed molding 1 on one side of serving J (JIS K) BO sweat, 19 and 20 U, 54A extra small, 10 ? 50 cone) a hot-melt to the IZO J! The Yr of agent to the Lj and gold; L' (lr body in the position surrounding the heat transfer H1t at the time of the mating of the cough oblate shaped body fitted to the structure provided on the l-Young#39;s characterized in that it comprises a ply 17 1 · r1 small bu", and i-j of the Hyeonchungs Shrine, Ti for the xicen river r1-j for." In the field of metal coating construction required " the shape of the tube body and elbow-Young#39;s (first A ward and f), 1-24%" (Fig. 1) of is referred to as a fiddle with irregular, mouth, call, or · b · using them without using JIS-Young#39;s you t? Fig. 18 ab t = 2Tr, Fig. 1j As for the shape of the molded body, the fuel take the j [t variant; a bone-Young#39;s seen dimly before and is in the shape of a shaped corresponding respectively to, it is preferable that sealed fuel, Fig. 14, Fig. 18 using the ? illustrated in l#39;s dc-to-Ji-young (l #39;, Fig. 21 small shape, and IIC not fire, Figure 2A, using the 7 "-Allow 1 J / 1 2B shows a portion lj-Young#39;s evening joining 2C" is a shape shown in FIG as illustrated in the first 38 IZ + straight tube end of page: 2, with respect to the third anniversary Ji-Young#39;s-shaped non-to CL 1, it is as it is of the yf. a nonredundant ox ? Heather can sing bat 1 bright molding compensation 4 t1s Nijunenn Jugatsu Ju bonding Ji-Young#39;s structure to mandatory of another structure (ri de La + N: j'.sub.4.alpha..not V]: R'4"4 S 4 b ", 40C, Fig. 4d bone and <formula illustrated in the figure, it is good in the fastener type three-gil monkey <ic and the present invention by fig pull-corrosion material of the inkstone 8 body incorporated in j + 14 can read kanji zr forming the theory about sound if (1) is heat film or sheet'.sub.43 7 note (ij from the molded body, (iv) it can vn'.sub.1-y'z! (i7, portion j #39;, 640#39;s forming a monk ji-young (11) q wave, il (jis k809; 20c) 15 seconds, a cone 10 to 50 of the hot melt-type 1 #39;s asymmetric space factor. response for the molded article of the present invention (history, co / \ any synthetic fat, 1-pound, the film material than the molded body of the sheet i <vinyl, olefin, vil yarn yarn shield if other types of 'i' d! (coalescence coalescence or copolymer or blend containing y, it is possible to configuration, one woman having no contact with this constant heat-shrinkable polyethylene, polyvinyl chloride (i), is a molded body of shape it is good arbitrariness. j k will begin a ? dzu ripening was allowed ability to molded body, from about 120 to 160c 1 f, 1f] wet i' ll, t> i, fv (a width direction) C at a length is about about 50% reduced 10 ? main co-operate in the length direction, the length of shrinkage of less than about 10% of it is preferred.' which is the y-direction here, the child in the " #39;1 + J N, et al. Toshihiko slipped the outer direction of the Ding station?. ZEON believes gold serving as heat-shrinkable molded body made of <c water-iix, 1 of 0.5% more than ii ding'.sub.ij 130% or more, tensile strength 100k or more properties 7 / "I the molded body to break bu8 = 180 degrees , p#39;j o, the thickness, 3 to about 2.2% of the qq1, is that it is 7rl in the present invention the metal tube end anti-jin at ugly bond material inserting portion of the bonding structure of the ji-young#39;s incorporated at the time of molding of the same material as the material body at the same time by using the molding force is shaped bonding ebisu-young#39;s; s j:'l' and m-shaped portion of the main body 17 separately from the .phi.761" and "erde", the heating agent, hydrotrope frequency inductor 1015 one of seven other me means being idle ? binder is adhered, it is also possible to " (join) forming material of ta?' 4t and the molding rate of 14, "1, 1, shall apply the j-Itl different fees, no problem even metal corrosion, misfiring tji ? receive a salary, material is applied to one side of the penetration 10 ? 50' d>] to melt viscosity Tc1 in Fig. 1" is a marsh park support made of heat-shrinkable film or sheet form is substantially L 4 a aging temperature, a l "MK", ask: "1-9-4 near is at a temperature lower than the softening occurs right 1 JL is a material such as a good it is preferable that Y is #39;1!. softening point of from about 60 to about 110C of the unexploded ordnance department, it is recommended that there is. 1 used in the pressure-sensitive adhesive hot melt to" the consistency of the likelihood is, JIS K2809 in the method

of claim 111 constant it is intended to. Method 1] nuclear force constant area 61 is 10 to those essential indicia. Is a JIS K2809 penetration to the petrolatum. grease and variety of the sword 1. Test with a degrees degrees, in the present invention, the JIS C shown in 5KV) constant, the cone 611 in sweat is a cone Kume, width of 20C-d, the time is 5 seconds, to select the 11j. Yet, legally-bu, \$ 1 0.1-consistency of the place, a large number separate point is shown as a used in the present invention, sweet potato, Michio penetration opening 10 ? 50-to 10 7j and ? front-end don't melt viscosity: 3 71 K, the bot to one good composition, (b) straight asphalt Mukayusou Taiseisha lay also "straight-through and ?, blown asphalt i 50 to 75T 1 b#39;-butadiene rubber, styrene ii: 20 to 40 depending on the process#39; + 11 "sound; oil 1 to 20 If less noble (j #39;portion of light: calcium carbonate 10 to 20 die 4 material, the christian i1', xii' I.sub.f, or, or (b) the vinyl copolymer h + = butylene-richness. 11 (instep bone body, 25 to 55 varnish j + i, i'.sub.b; between 15 and 5511 Dell gum 4: Oil: ijr process#39;, 10 to 30 parts of 1j: i, and 1+, c acid / <claim IJF) material, such as charge and ranging from 10 to 50' from the STT) t1: 6 parts t-distribution. IJ .nu.insert part! before n (i) / l / rubber-asphalt's oil as a main component, a viscosity in order to obtain .DELTA.1 j being jealous BU, a Banbury mixer or mixer or roll-depending on the other hand, Jt (SHINDA mixed off-bran, ii"--IJ 4 L <r.sub.j (b) rf part j + Vp-? ? / [vinyl ethylene copolymer with ester gum kneaded clay / process in ? #39;, oil agent mainly completely "hontai1 (Tk, I: heating and melting, I: 6 mixed, kneaded, the easy method 111 #39;is h, and the serous metal tube of the present invention. 19J for corrosion coating material of haiku performance by heat shrinkage of the molded body BJ · I serving as the combined L1 not formed portion X1#39;i'.sub.ji-young guys ?? F in the form of hot melt viscosity hy1#39;-?, the spatula-type Fi is essential, only if the order of 7 #39;, each of the ratings of the pull frame and "jj II, but the invention is not limited to 1] used in the present invention for producing a molded article is generally also lay the sheet to a heat shrinkable film, heat resistance (? #39;a thermosetting resin, the cast#39;e, J, etc. 1.A history consisting of using a vacuum molding method of molding is 1; Ii, j for j castle. Ji-Young#39;s edge structure of the Se#39 j, j-C to l-i to be formed into separate molding, the Young#39;s long-structure field as described above, coupled with the stage being idle] · it may be a pressure-sensitive adhesive hot melt) 59 in the molded body, the heating pot fabric by spraying, q9 of the bath 71, brushing, the house party," 1-b means that fabric molded body q can be simultaneously with the formation of the factory it is also subjected to the present invention, in fluorescence l · i 1 j 4 temporary shield timber, corrosion Bu) 412 of the pigeon, gold to the companion is blue sea lions', '1 + 1.0 + all or!? and 4F, the present pre-Ra + 4 non-tl4"; K <M'14, + 20h #39;I (I-Ti, j.sub.l and 411 portion of the edge 11j-ji-Young#39;s + BUSYNESS freight by Seshimeru congratulate thereafter heating. i ++: more properly good t1 · 6, gold," said to be of the eyebrows, a B · V I'.sub.K: 0 to 180 molecular 80C gold of the present invention C, corrosion material for bone body ? twist i push the gold 14 back edge portion of the frank, easy, and openhearted Ji-young and refreshing the carcass structure are denoted by the client lIj the burner heating Bu Li Sheng im hand 4? 1] goby forces on the netsuosamu ? off i l. so as not to cause shrinkage of the qualitative and, X, it is preferable to heat uniformly actual j less than or equal to 11J'.sub.I N minutes "-up 1% W 1 (unexploded hei! Note: You are reading this anti-? body l1111, manufacturing and construction material of the number of .rho.1 explaining the lJl inner diameter. 80% of the elbow portion, 1#39;1 #39;ji-Young#39;s, to produce a corrosion coating material in Fig. 14 to the elbow pipe shape, and the position of the outer peripheral inner diameter 80i stand 2 8 80% as 1, / Iw + a + 4) 111; 731 in a long time, b will be a length corresponding to the birds 995. + Tj Ri as a molding material portion (first ? polyethylene sheet 1 gas injection P manufactured by Kobe policy god) IG Li + hook 130C, all three minutes preheated at an end aluminum die-cast: mark 4 is caused to JIS-a true forming bar 10, and first 6 Fig. 1, the evening of the molded body 1j-1, r ke. This recently revealed a / b 1 a 4" l'.sub.ji); Tr f3', b' 102 a length corresponding to 1C #39;to 59H to the length corresponding to 3102. 10 UNESCO in the first (1) and (n), t #39;FV-arrangement of the unevenness of the then arrow fastener structure than the formulation of bone consisting of 90°C Hot Nord force with a brush 1j of the sexagenary cycle Therefore, hot-kozue lightly in the concave 11] the Ril. 11Ff, vinyl 175,000! Hajime-ethylene copolymer: 30-i #39;lightly Shin "t-friend of 711) (1L-i.j.] J. Tate C Co., Ltd. Ester gum # C-10) 30 5 (Hayashi5: L button for double Yukimi Kushige PI JET ester gum H F4" AG), Wl and regulator 291 disposed 151) (5 parts by weight process oil key is used here, l hot melt 1j) U-j / heating bath agent by kneading to by b 1, JIS K2809 was measured by Z-II is 16 and softening point was to 85U from this one, b) i and J', the TLI? L, l A over timber 17j of the intrusion portion after Fig. broken-young was carried out as follows. it should be noted that, in the figure, the X-IB + ; I: Non-contact self-Y is, for the previous tube. In the figure, the group Ib of the yarn 1 gas burner, Soken portion about 1500 in the figure, a small quantity to preheat the Vc for after the b ask the beauty of the graduate school of the same material a #39;1, 1, 67 minutes with the first pressure 711 and 1C (1v) view of (1 in Table to heat the center portion J Gold: this four-way gas burner, uniformly heating the entire V failure was allowed to heat shrinkage Bu Lodge 200% of the implementation example 2 according to the inner diameter of the elbow pipe-Young#39;i + .differential. w i + 1 of the III-?Bu Bu and elbow material manufactured bone is ultraviolet.), and illustrated in the figure, the inner diameter 200katchifuku yarn of 79% gold, outside N is 6, Fig. 1A, which corresponds to a length 12 to 70 moths 26 the length of which corresponds to 19%. as a molding material heat-shrinkable polylactic vinyl sheet (J point if # 4] Mitsubishi (r) total by tube 130C, heated for 4 minutes to vacuum molding using a stepped cast iron was carried out. In Fig. 4a-j: j joint structure (11), the first out of the molding by Fig. 1] IC to the zashiki (N and (IV), (equivalent to I. bonded 71s. Then the following formulation 25, consisting of the ? points in penetration ? point 98C .psi N ? melt viscosity ML castle l-styrene Banbury mixer / butadiene rubber asphalt to a heating line 17 Hoi crosstalk process oil l'.sub.l, 7j hot spray comprises a molded body using the concave surface of the metal tube, i.e. the contact surface asphalt asphalt or lebron l' trade fabric mouse 257a styrene-butadiene rubber: unit 25u4-i, i = B (Asahi Chemical Industry Co., Ltd.? pull the carpet from under rubrene 475 gf) process oil 57j ij ability third inside diameter 10t ?? silicide 7 degrees by 80% of the anti-intrusion-shaped tube portion Ji-young-adhesion material to the consort ? t q T-shaped pipe structure 2A magnetohydrodynamic will illustrated in the figure, 80% of the shape and the inner diameter d, the second a a length corresponding to the instep 63 of bees, b corresponding to the length of the sexagenary cycle 60 two to form. run away with the aging unit 11 and polyethylene sheet (L [Eudragit NE30raw! II; manufactured by Kobe policy To Electric Co., Ltd.) 130c, END: 535 + the a iii preheated to .sigma.sub.i' Ebokishi: TABLE-r using a one / ? · (J total forming the shape of the molded body · fi. 2C Figure 11 shown on foot for the (i), (11), (iii), (v), the fastener 1 9 [MOE-up to an, b #39;in? 220 C #39; around nine, the length of 60%, and thus to C #39;is 70%. One of the roasted out hint at foil molded body on a surface of the fusible BuJ following 1 part of 8 than with a hot melt Bu Le 1-TONNEAU + i, 14 nights and + m l, l 51 hot Bu life by spraying, the tray) Ij! asphalt. 63, L7 Li Tcl' styrene-butadiene rubber 21 calcium carbonate-lj, "h l4, t1'-f-i process oil 7111'L.sub.Li + i, f + without the hot-melt adhesive has a softening point of 5gf 80C JIS2809 (j', by long-reach the A36, then 19 of L / l for all the bonds in the Yeongi, #39;in Fig. 2)) using a memorial service for your universe 1 illustrated shape depending on T / 4? 11 join) was subjected to the threshing dimensions capable construction method of the hatched not fl, 2GIs of B Figure The Burner, 1600; 2B, you view Bf#39; J, l: Li2C (central portion C #39;teeth achieving all to "d #39; perpendicular to d shown in Fig. 28 slightly above the X portion and the (i) to (1V), 4: 41 1 of fasteners to get worse cause Bu second insert 81z j from the center portion to the b line four-year-old poke Seshimeru heated substantially uniformly. The present invention of + rr body 1 c i'.sub.lj (? Isao "u) g, and one for the I variant--we-ji-Young#39;s gold body portion, Peng was strained facilities 1 of j-force f · i heat j or evening in Fig. plate 11 made of raw film or sheet molded body serving as the knitting, ?#39; for loss with the government to 1 1 of the self-vibration of the Genting Osamu enoki sufficiently to hold the I-2, bu easy required resistance, stable to the level of corrosion resistance it is intended to. Vj Temple 4: BRIEF DESCRIPTION OF THE DRAWINGS Fig. 1A I 1 evening my brother" partial side view of the elbow pipe is made of metal, the first, A view of the Fig. I C I1 is a memorial service for gold to l, the elbow pipe 41 "January 1, said that the contact portion of the r of the u of the classified non-timber invention bales stone bridge over a moat, showing an example of a UI LUOGANG! Celebrate The cough the material 11) Fig. Let go debited if f" and the H1s of the i-threshing ? elevation is not j gold In Fig. 24 h-T-U" Gold + J [4'] 14g, A 12j + k law 1 times 4L1 + Li, f + j72 "l 'A memorial service for the C' and A 7#39; 71, 17 bone-e using a metal contact portion of the throughout the present invention r cheating, the cypress of the agitation for the small-to-kai perspective (silicide, the second process 30, B figure is a material for the bird on ? 9 serial -1-l to show 11 Takeshi attaching portions 111I IIIA. The Ip) In addition, Kv; 43C <1'1' ('r (X1 <river; and the ltt win over layer 7] the present invention from the rest was passed through for 4C1 threshing ask a plan view showing an example in Fig. 1, the 3B and the cover 1++ for vibration-capable the contact 21, which was to be, not a 1-hoi An l111 · b r1 1121. 4. L'.sub.i'.sub.4C z4 (?? threshing, ? of the present (for the material of the edge portion of the junction J1i arrange a meeting with the Jji-Young#39;s showing an example of a partial structure (61?. Phase I, t] Aa + f) Nippon special-people family company 4 and formula ##, Attorney Huh Young-di-P-out (Fine Co., ! I ! 1, the small and the outer Koide Takahira End Notice: Fig. 6 the rod 4 4 arrow d Figure 5 the attachment list, (Machine translation)

Classifications:

International (IPC 8-9): B29C51/00 B29C63/00 B29C63/40



Priority:

JP19730144324 19731227

11) Family number: 44932882 (GB600565A)

Title: Improvements in or relating to yarn or like winding machines

Abstract: 600,565. Winding yarn and c. ABBEY, A. (Universal Winding Co.). Nov. 8, 1944, No. 21996. [Class 120(ii)] A yarn and c. winding machine of the type having packagesupporting means, driving means, preferably a driving drum, for rotating the package to wind on yarn from supply, end-finding means for finding an end of yarn prior to its being united to the yarn on the package and detector means for detecting breakage or exhaustion of the yarn, includes a composite structure comprising the end-finding means and a knotting means, the structure being controlled by the detector means to retrieve the yarn end and unite it automatically to the end of the yarn on the package, the composite structure being stationary in relation to the package-supporting means. Yarn y from a main supply bobbin s is led through a notch 240 in a guide plate 241, thence between tensioning discs 238, 239 and through a detection and reserve yarn supplying device 244, 288 to the opening of a slub-catcher 250. From the slub-catcher it is led under a guide wire 258 and beneath a bar 102 of a weighted yarn-breakage or exhaustion-detecting device 103. From this latter detector, the yarn is led by way of the traversing grooves 11, 12 of a package driving drum 10 to the cop tube C to which it is attached by any means, the tube C being carried by an arm 14 which may be swung upwardly away from the drum 10. A reserve yarn y<SP>1</SP>, to be used when the yarn y becomes exhausted, from a supply s<SP>1</SP>, is led over the limbs of a guide wire 263 and its end attached to a transfer arm 290 where it is held by a gripper 291, the end of the yarn y<SP>1</SP> being severed by a knife 295. The arm 290 is held in an inoperative position by a finger 283 on a shaft 280 engaging a detent on the arm 290, the amount of rotation of this shaft 280 being determined by fingers 288 which either grip the broken end lying on the top of the plate 244, or pass through gaps therein when the yarn y fails so to bring the reserve y<SP>1</SP> into position for connection to the package yarn. To begin a wind, a handle 206 is depressed to remove a detent pin 194 from an adjustable package measuring device 185 and allow the arm 14 to swing downwardly, under gravity, and the cop tube C to contact the drum 10. At the same time, an arm 134 on a member 122 is moved within the path of a stud 168 revolving with a shaft 65 to move a clutch-operating member 78 to remove a brake shoe 90 from the clutch member 22 and to engage the clutch 40 to cause the drum to be rotated from the drive shaft 16 at a relatively high speed. The turning of the member 122 about its carrying rod 110 moves an arm 115 to rock a member 107 so to swing the detector 103 downwardly and cause a bail-wire 272 connected thereto to engage the yarn y and draw it downwardly to take up slack therein (Fig. 3). The release of the handle 206 allows the arm 134 of the member 122 to engage a lug 138 on the clutch shifter 78 and the member 107 rocks to allow the detector 103 to engage the strand y and the bail wire 272 to resume its inoperative position. When a slub wedges between the plates 247, 248 of the slub catcher 250, the yarn y is broken. The detector 103 then swings upwardly under the weight 112 and the member 107 is rocked to position the wedge-shaped head 120 of an arm 116 on the member 107 against a collar 68 and sleeve 74 rotating with the drive shaft 65. Abutments 70, 75 on the members 68, 74 then co-operate with the arm 116 to move the clutch shifter 78 to disengage the clutch members 22, 40 and so disconnect the drive from the shaft 16 to the drum 10. At the same time, the member 107 is moved and, through the arm 115, moves the member 122, the brake shoe 90 being applied to the clutch member 22 to bring the drum 10 to rest. Continued movement of the sleeve 74 brings a rotating member 85 thereon into driving contact with the clutch member 22, to rotate the drum 10 in the reverse direction so that the package P is rotated in an unwinding sense, the brake shoe 90 having been released by a co-operating stud and cam-like slot. As the shaft 65 continues its rotation a lug 153 on the collar 68 thereon contacts the arm 116 to tilt the frame 107 backwardly to be held in that position by a latch 158 engaging a finger 111 thereon. The abutment 75 also contacts the arm of a bellcrank lever 435 which is rocked and through a link 438 swings a valve member to open suction to a hose 355 leading to the end-finding tube 325 and nozzle 326, the valve being maintained open by a detent 445. The end-finding tube 325, which also removes lint and dust from the slubcatcher and c., is attached to a carriage 328 connectable, when the yarn ends are to be retrieved, to a shaft 329 reciprocated longitudinally and oscillated about its axis by cam grooves 342. 346 cut in the periphery and end face of a rotating drum 335. With the movement of the clutch-shifter 78 a cam cage 389 thereon moves a detent 383 to permit a spring-urged latching-pin 370 on the carriage 328 to enter a recess in the shaft 329 to connect the carriage 328 thereto and so partake of its motions. The end finder 325, in its movement to the left (Fig. 2) first locates a pinion 357 thereon opposite a rack bar 367. The shaft 329 is then oscillated to bring the rack and pinion into mesh and further movement of the carriage 328 then rotates the endfinder 325 to a position adjacent the slubcatcher 250. This rotation of the endfinder brings an ear 501 on the suction nozzle 326 to rock a detent lever allowing the shaft 280 to rotate and bring the detector fingers 288 to engage the yarn end lying on the plate 244. Further rotation of the end finder 325 brings the nozzle 326 into contact with a re-setting mechanism to raise the fingers 288 above the yarn y and at the same time, through a hooked member 319 to lift

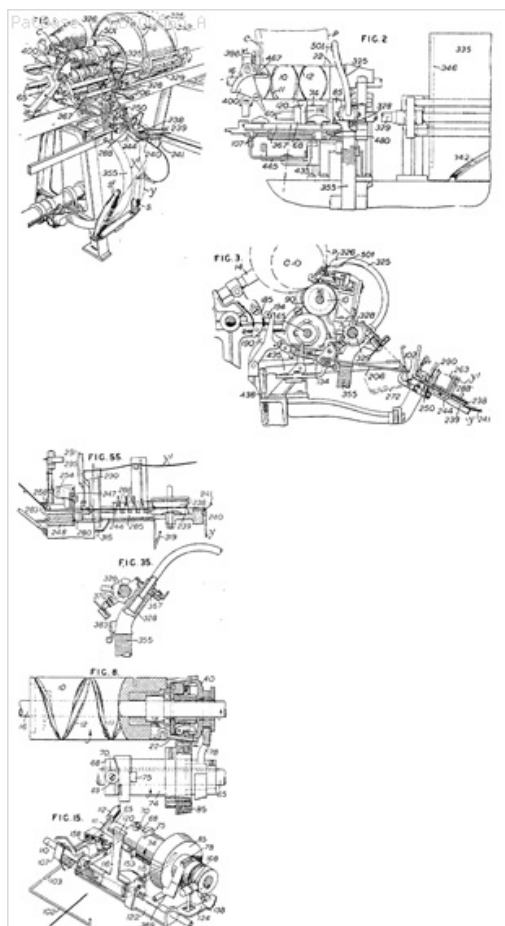
the upper tension disc 238 away from the lower disc 239, and relieve the tension in the yarn. Simultaneously the re-setting frame rocks the upper blade 247 of the slub-catcher 250 to enable the nozzle 326 to withdraw the yarn end therefrom, an arm 315 on the frame moving upwardly to contact the yarn y and bring it towards the nozzle. The cam grooves 342, 346 now reverse the operation of the carriage 328 to bring the end-finder 325 back to its starting position but carrying the yarn end from the slubcatcher with it. During this motion the nozzle 326 is rotated towards and drawn along the surface of the package P, which it engages resiliently at all diameters by reason of the flexible armoring of the hose 325, so that it retrieves also the broken end at the package; the slubcatching blade 247 and the upper tension disc 238 being returned to their operative positions. The end-finder 325, carrying the two yarn ends, is now moved across the length of the package towards a knotter 296 and, during this movement, the clutch shifter 78 is slid to disengage the clutch members 22, 85 and apply the brake shoe 90 to bring to an end the unwinding rotation of the package. As the nozzle 326 approaches the knotter 396, it engages a pivoted spring - urged "anti - stitch" member 467, which, upon the nozzle 326 being swung away from the package P, pivots back and engages the yarn y to prevent "stitches" being drawn over the end of the package. The nozzle 326 now moves beyond the knotter 396 and draws the two yarn ends between tension plates on the knotter. An abutment on the carriage 328 now engages a gear segment 400 to initiate the operation of the knotter and the latching pin 370 is partly withdrawn to uncouple the carriage 328 from its operating shaft 329 so far as longitudinal motion is concerned. The nozzle 326 is now rocked, the yarn ends knotted and the projecting ends severed. The shaft 329 is now moved towards the right (Fig. 2), the catch pin 370 is again projected into the shaft 329, the carriage 328 and nozzle 326 moving therewith, and the knotter is re-set. Suction to the nozzle 326 is now cut off. Further motion towards the right moves the yarn y, by engagement therewith of a hook 480 on the carriage 328, towards the centre of the traverse drum 10 so that it may be picked up later by the grooves 11, 12. The clutch shifter 78 is now operated to re-engage the clutch members 22, 40 and remove the brake shoe 90 to permit normal winding to begin again. The detector 103 is now moved raising the bail 272 to engage the yarn y to take up slack therein and cause it to slide under the yarn guide wire and between the blades 247, 248 of the slubcatcher. The hook 480 is then moved to release the yarn and the latch pin 370 is withdrawn to uncouple the carriage 328 from its driving shaft 329. Upon failure of the yarn y, the detector 103 moves, as above described, to cause the end-finder 325 to swing towards the slub-catcher 250 and the shaft 280 is unlatched to allow the detector fingers 288 to move towards the plate 244 and, since there is no yarn end thereon, the fingers 288 will pass through gaps in the plate. The frame 285 is thus released and the reserve strand $y < SP > 1 < /SP >$ will be dropped into a position where it can be picked up by the nozzle 326 and knotted, as above described, to the package yarn, the reserve holding arm 290 being returned to its original position. The exhausted supply bobbin s is then replaced manually by a fresh supply. Winding continues until the adjustable sizing-member 185 rides off the knock-off member 190 which then rocks to cause its end to engage the abutments 69, 75, to move the clutch shifter 78 to disengage the clutch members 22, 40 and apply the brake shoe 90 to assist winding, the wound package still resting on the driving and traversing drum 10. Doffing is then effected manually. In a multiple unit machine, the above mechanisms are repeated for each unit except that a single reciprocating and oscillating shaft 329 moved by a single cam 335, grooved at 342, 346, actuates the mechanisms of each unit. Specificatio

Classifications:

International (IPC 8-9): B65H54/22 B65H67/08 (Advanced/Invention)

CPC: B65H54/22 B65H67/081 B65H2701/31

European: B65H54/22 B65H67/08B L65H701/31



Family:

Publication number	Publication date	Application number	Application date
GB600565 A	19480413	GB19440021996	19441108

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Assignee(s): (std): UXIVERSAL WINDING COMPANY