

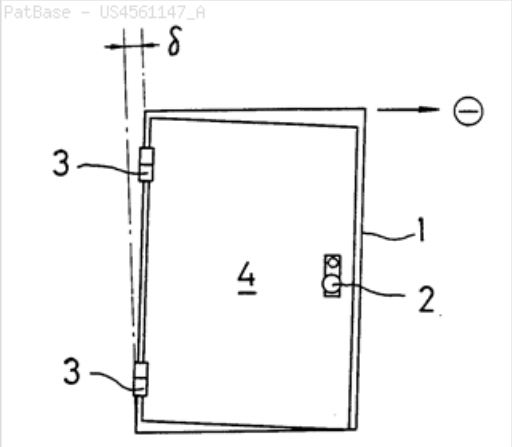
Search history

Search 1: STAC=(door and earthquake and spring) (Results 183)

Search 2: STAC=(door and earthquake and spring) (Results 183)

2) Family number: 29295939 (US4561147A)
Title: HINGE WHICH FACILITATES OPENING DOOR AFTER THE GATE FRAME IS DISTORTED

Abstract:
Source: US4561147A A **door** hinge of the type comprising a first metal plate having one vertical side edge formed integral with a pin and a second metal piece having one vertical side edge formed integral with a second knuckle cylinder into which is fitted the pin. A load plug is slideably fitted into the second knuckle cylinder for engagement with the upper end of the pin and the second knuckle cylinder is formed with an engaging portion for preventing the load plug from being displaced from a predetermined position. A compression **spring** means is loaded in the second knuckle cylinder above the load plug so as to press the load plug against the engaging portion, whereby a load applied axially to the pin is carried by the compression **spring** means through the load plug. When the upper or lower side edge of the **door** interferes with a gate frame due to an **earthquake** or the like, the first and second plate metals are caused to move toward or away from each other so that the interference between the **door** and the gate frame is eliminated and the **door** is moved upwardly or downwardly relative to the gate frame. Therefore even when the gate frame is distorted, the **door** can be positively opened.



International class (IPC 8-9): E05D11/00 E05D5/10 E05D5/12 E05D7/00 (Advanced/Invention);
E05D5/00 E05D7/00 (Core/Invention)
International class (IPC 1-7): E05D11/00 E05D5/10 E05D5/12
CPC: E05D5/12 E05D5/128 E05D7/00 E05Y2900/132 Y10T16/538 Y10T16/553
European class: E05D5/12 E05D7/00 P05D5/12H P05Y900/132
US class: 16/277 16/380
Family:

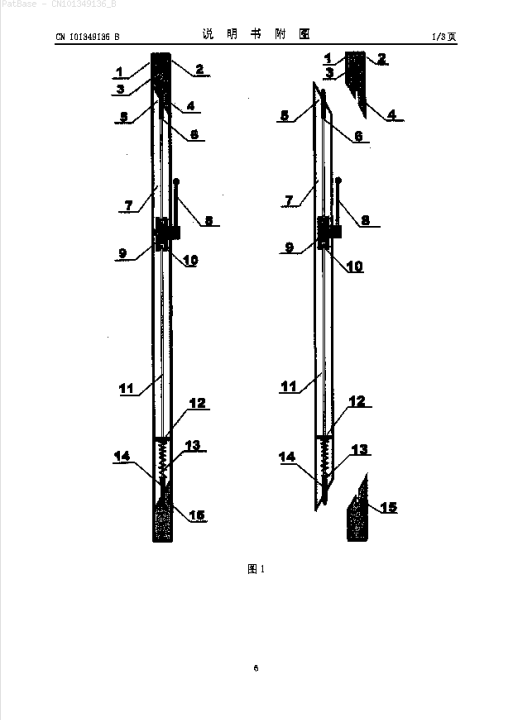
Publication number	Pub. date	Application number	App. date
JP1030995 B4	19890622	JP19820232539	19821227
JP1547159 C3	19900228	JP19820232539	19821227
JP1606244 C3	19910531	JP19830109350	19830620
JP1703403 C3	19921014	JP19830121077	19830705
JP1703404 C3	19921014	JP19830136364	19830725
JP1710701 C3	19921111	JP19830116578	19830627
JP2029832 B4	19900703	JP19830109350	19830620
JP3068196 B4	19911025	JP19830121077	19830705
JP3068995 B4	19911030	JP19830136364	19830725
JP3073709 B4	19911122	JP19830116578	19830627
JP59122679 A2	19840716	JP19820232539	19821227
JP59122680 A2	19840716	JP19830109350	19830620
JP60010084 A2	19850119	JP19830116578	19830627
JP60013179 A2	19850123	JP19830121077	19830705
JP60026789 A2	19850209	JP19830136364	19830725
US4561147 A	19851231	US19830564739	19831222

Priority: JP19820232539 19821227; JP19830109350 19830620; JP19830116578 19830627; JP19830121077 19830705; JP19830136364 19830725;

Cited documents: US698216 A, US4307486 A, US2430942 A, US2207836 A, US114813 A, JP58041876 A2, JP58041875 A2, JP58031365 A2, JP56108476 A2, JP56067264 U1, DE174317 A, DE138969 A, CA634053 A,
Assignee(s): (std) MIWA LOCK CO LTD ; MIWA LOCK KK
Assignee(s): MIWA ROTSUKU KK
Inventor(s): (std) INUZUKA HIROSHI ; KATO YOSHIKI ; KATOY YOSHIKI ; KATOU YOSHIKI

3) Family number: 42892244 (HK1128745A)
Title: ROTARY DETACHABLE BEVELING EARTHQUAKE SAFETY GATE
Abstract:

Source: CN101349136A The invention relates to a rotary operation removable oblique corner edge earthquake safety door, which can be opened even when the doorway is extruded and locked in the earthquake. The earthquake safety door comprises a square frame around the safety door, and a door frame, etc., wherein connections between the inner edges of the square frame are oblique corners, an oblique corner removable safety door is arranged in the square frame, corners around the safety door are also matched with oblique corners, the internal center of the safety door is provided with four bolts which are connected with a connecting rod through movable connection pins, a rotary operation rod for opening the safety door, and a bolt operation telescopic rotary disk; the movable connection of the rotary disk and the connecting rod is provided with four pins; and four connecting rods and four bolt springs and four catch spring bases, four movable bolts and bolt holes for connecting the oblique corner safety door are arranged. The safety door has the characteristics and advantages that if the safety door is additionally arranged in a common door, people can enter the door as usual, but the difference is that the safety door is connected with the square frame by oblique corners, depending on the theory that the oblique corners are hard to lock when the oblique corners are pressed to slide, when an earthquake occurs and the door is pressed, twisted and locked and can not be opened, the oblique corner removable safety door can still be opened; moreover, the operation is easy and fast, and the original functions of beautiful appearance and anti-theft are still maintained; and the safety door can be opened only by pulling the operation rod rightward.



International class (IPC 8-9): E06B5/10 (Advanced/Invention);
E06B5/10 (Core/Invention);
E06B (Subclass/Invention)
Family:

Publication number	Pub. date	Application number	App. date
CN101349136 A	20090121	CN200810128203	20080629
CN101349136 B	20101208	CN200810128203	20080629
HK1128745 A1	20110401	HK20090106572	20090720
HK1128745 A3	20091106	HK20090106572	20090720

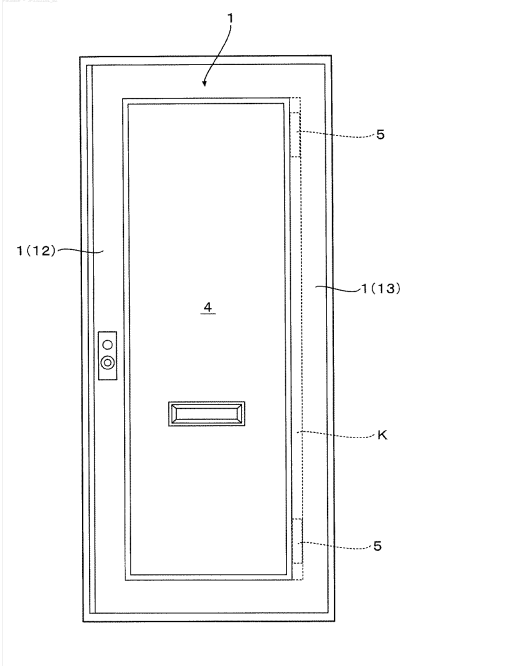
Priority: CN200810128203 20080629;

Assignee(s): (std): ZHU ZUORUI ; ZUORUI ZHU
Inventor(s): (std): ZUORUI ZHU
Inventor(s): ZHU ZUORUI

4) Family number: 49942075 (JP5322181B)
Title: DOOR HAVING ESCAPE DOOR

Abstract:

Source: JP5322181B The invention provides a door with an escape door leaf. With this door, people can escape from the escape door leaf even when the door is deformed at the time of an earthquake. A first fixing plate of a hinge (5) is fixed to an extending portion formed by extending an outer panel of a door body (1) to an escape door leaf (4), and a second fixing plate of the hinge (5) is fixed to the side end face of the escape door leaf (4). A movable plate of the hinge (5) is fixed to an extending portion formed by extending an inner panel of the escape door leaf (4) to the side of the door body (1). A spring (59) is disposed between the second fixing plate and the movable plate. gaps are disposed between the side end face of the door body (1) and the end portion of the escape door leaf (4), and between the side end face of the door body (1) and the side end face of the escape door leaf.



International class (IPC 8-9): A62B99/00 E05D3/02 E05D5/02 E05F1/12 E06B3/36 E06B3/70 E06B5/00 E06B7/32 (Advanced/Invention)
Family:

Publication number	Pub. date	Application number	App. date
CN102235148 A	20111109	CN201010296420	20100929
JP2011226164 A2	20111110	JP20100097302	20100420
JP5322181 B2	20131023	JP20100097302	20100420

Priority: JP20100097302 20100420;

Cited documents: JPS6032317 Y2, JP6032317 Y2, JP60032317 Y2, JP60032317 Y2, JP4634575 B1, JP46034575 B1, JP2529177 Y2, JP2529177 Y2, JP2008285987 A2, JP2008285987,

Assignee(s): (std): NAOMI OBA ; OBA NAOKI ; WUXI MORITEC SPECIAL DOOR CO LTD

Assignee(s): OBA NAOMI ; WUXI MORITEC SPECIAL DOOR CO

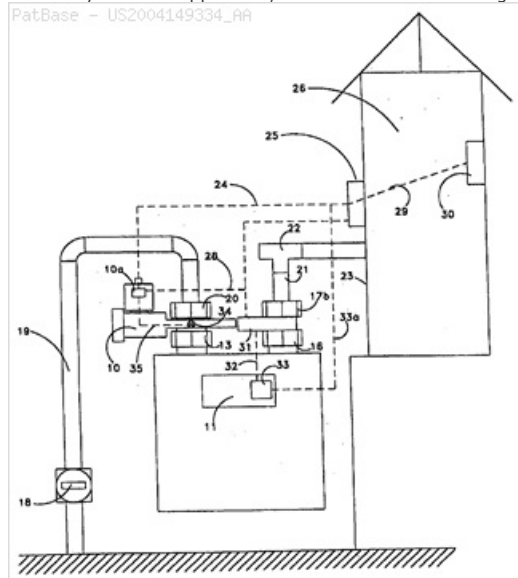
Inventor(s): (std): KATO MIKIO ; OBA NAOMI ; WEIMING WANG ; NAOMI OBA ; MIKIO KATO

Inventor(s): WANG WEIMING

5) Family number: 15436911 (US2004149334A)**Title:** EMERGENCY GAS AND ELECTRICITY SHUTOFF APPARATUS AND CONTROL SYSTEM**Abstract:**

Source: US2004149334A A gas meter installation including gas supply plumbing and point of use plumbing will have a gas meter therebetween. A valve can be installed with the gas meter for shutting off the flow of gas to the point of use. This valve is preferably a gate valve mounted with the a gas meter, and can be retrofitted into existing installations, or installed with the new plumbing installation. The valve can be shut off by remote activation for example due to a seismic sensor causing a controller to send a signal to activate the valve. The control can also interact with electricity shut off apparatus, automatic meter reading apparatus and point of use security systems.

PatBase - US2004149334_AA



International class (IPC 8-9): B21K1/20 F16K17/36 F16K3/00 F16K31/02 F16K31/06 F16K31/12 F16K43/00 F16K51/00 F16L55/07 F17D3/01 G01F1/00 G01F15/00 (Advanced/Invention);

B21K1/00 F16K17/36 F16K31/02 F16K31/12 F16K43/00 (Core/Invention)

International class (IPC 1-7): F16K17/36 F16K3/00 F16K31/02 F16K31/06 F16K31/12 F16K31/44 F16K43/00 F16K51/00 F16L55/07 F17D3/01 G01F1/00 H01H

CPC: Y10T29/49412 F16K3/0209 Y10T137/0413 Y10T137/0753 Y10T137/0777 Y10T137/5997 Y10T137/7761 Y10T137/86389 Y10T137/86397 F16K17/36 G01F15/18 G01F15/005 F16K17/366 Y10T137/8225

European class: F16K17/36 F16K17/36C F16K3/02B G01F15/00C G01F15/18

US class: 137/15 137/15.03 137/315 137/315.06 137/315.06P 137/38 137/39 137/39P 137/487.5 137/553 137/624.11 137/624.12 251/129.01 251/129.010S 251/129.14 251/129.19 251/206 251/328 251/65 251/68 285/30 29/890.124 29/890.124S 73/201

Family:

Publication number	Pub. date	Application number	App. date
AU200120506 A1	20010604	AU20010020506	20001129
AU200120506 A5	20010604	AU20010020506D	20001129
CA2220308 AA	19980505	CA19972220308	19971105
CA2229962 AA	19980821	CA19982229962	19980220
CA2229962 C	20070605	CA19982229962	19980220
US2004149334 AA	20040805	US20030730050	20031209
US2006076053 AA	20060413	US20050155606	20050620
US2009065068 AA	20090312	US20080264512	20081104
US5992439 A	19991130	US19980027197	19980220
US6085772 A	20000711	US19970965014	19971105
US6705340 BA	20040316	US19990449484	19991129
US6938637 BB	20050906	US20030730050	20031209
US7458387 BB	20081202	US20050155606	20050620
WO0139222 A2	20010531	WO2000US32463	20001129
WO0139222 A3	20020321	WO2000US32463	20001129

Priority: CA19972220308 19971105; CA19982229962 19980220; US19960030284P 19961105; US19970038795P 19970221; US19970965014 19971105; US19970038975P 19970224; US20080264512 20081104; US20050155606 20050620; US19990449484 19991129; WO2000US32463 20001129; US20030730050 20031209; US19980027197 19980220;

Cited documents: US6938637 BB, US6705340 BA, US6491062 BA, US6470905 BB, US613990 A, US6085772 A, US5999087 A, US5992439 A, US5960807 A, US5810330 A, US5794667 A, US5694960 A, US5584465 A, US5437300 A, US5409031 A, US5351706 A, US5325881 A, US5209454 A, US5148829 A, US5143110 A, US5119841 A, US5115829 A, US5078172 A, US5074327 A, US5065718 A, US5052429 A, US5050629 A, US5042528 A, US5029601 A, US4960146 A, US4920999 A, US4903720 A, US4844113 A, US4817657 A, US4805657 A, US4799505 A, US4785842 A, US4782848 A, US4779839 A, US4750705 A, US4688592 A, US4671486 A, US4640303 A, US4603591 A, US4485832 A, US4475565 A, US4382449 A, US4349042 A, US4331171 A, US4327760 A, US4261379 A, US4245814 A, US4212313 A, US4207912 A, US4185507 A, US4174729 A, US4165758 A, US4103697 A, US4098284 A, US4028510 A, US4007643 A, US3995651 A, US3946754 A, US3878858 A, US3842852 A, US3805818 A, US3783887 A, US3768497 A, US3747616 A, US3677291 A, US3606242 A, US3296859 A, US3273855 A, US3272009 A, US3266308 A, US3256735 A, US3245257 A, US3238969 A, US3082627 A, US3044741 A, US2927982 A, US2638106 A, US2637331 A, US2601304 A, US2579656 A, US2333370 A, US2215044 A, US2206067 A, US2017274 A, US118008 A, US1085646 A, JP57012172 A2,

Assignee(s): (std): ARDUINI DOUGLAS P ; MCGILL JAMES C

Assignee(s): AFFORDABLE SAFETY SOLUTIONS INC ; DOUGLAS P ARDUINI ; JAMES C MCGILL

Inventor(s): (std): ARDUINI DOUGLAS P ; MCGILL JAMES C

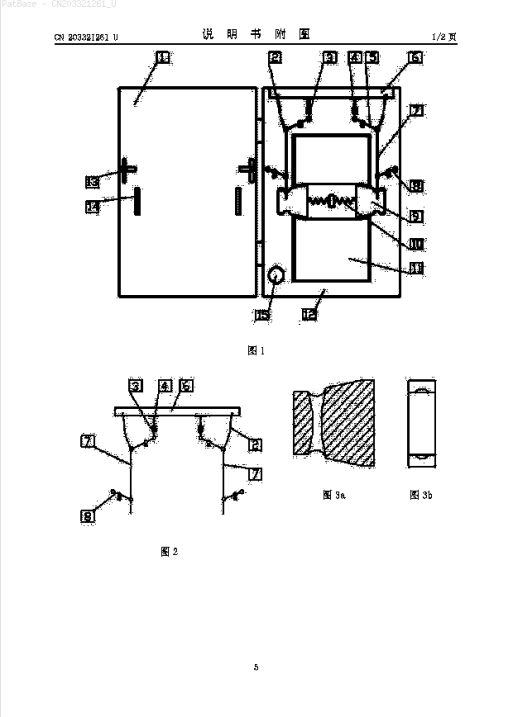
Inventor(s): MCGILL JAMES ; JAMES C MCGILL ; DOUGLAS P ARDUINI

Designated states: AE AL AM AT AU AZ BA BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX MZ NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

6) Family number: 55327087 (CN203321261U)
Title: ESCAPE DOOR

Abstract:

Source: CN203321261U The utility model discloses an escape door, and relates to a safety door. The escape door consists of an inner door plate, an outer door plate and an inner door, wherein the inner door comprises a door body, a reset spring and a cone-shaped wedge. The inner door edge which is higher outside and lower inside is of a certain constant slope. A pressure plate, a connecting rod mechanism and a digging rope are installed on the outer door plate. The inner door is fixed through a control connecting rod in the connecting rod mechanism and the wedge. The inner door plate is provided with a wedge fixing bar and an emergency switch device, wherein the emergency switch device is connected with the connecting rod mechanism. The switch is pulled down, so that the inner door is in a moveable state. According to the escape door disclosed by the utility model, even if the door frame is damaged and the door cannot be opened, people can escape through the inner door. In an earthquake, the pressure plate is stressed to drive the connecting rod mechanism, so that the inner door is in the moveable state, and at the time, the inner door is pushed open for escape. In fire, the emergency switch device on the inner door plate can be pulled down to push the inner door open for escape. When the inner door is opened, an intelligent monitoring device sends information to the security system of a community and a user's mobile phone. The escape door is the safety escape door designed for avoiding the condition that the door cannot be opened or escape is delayed due to door opening when disasters such as an earthquake and fire occur.



International class (IPC 8-9): E06B3/70 E06B5/10 E06B7/28 (Advanced/Invention)
Family:

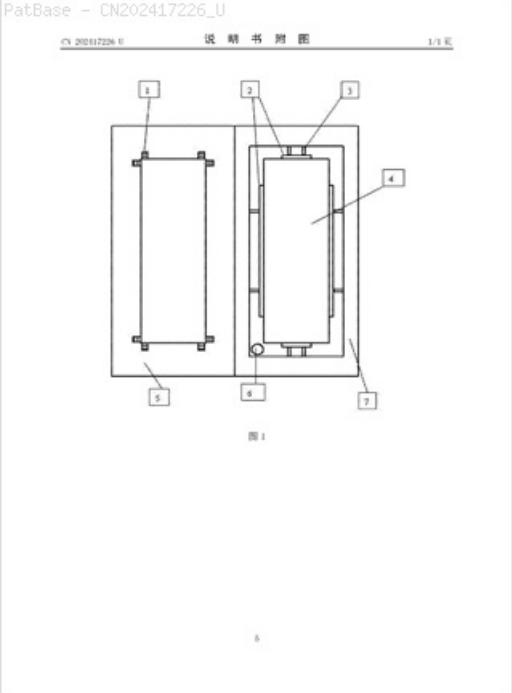
Publication number	Pub. date	Application number	App. date
CN203321261 U	20131204	CN201320330340U	20130608

Priority: CN201320330340U 20130608;

Assignee(s): (std): SHENYANG UNIV OF CHEMICAL TECHNOLOGY ; UNIV SHENYANG CHEMICAL TECH
Inventor(s): (std): E LIANG ; JIAO SHUOBO ; LEI TING ; LI TIEJUN ; LIANG FEI ; LIU HUAYUN ; LIU YANG ; LU JUNSHAN ; WANG HAIXIN

7) Family number: 51899445 (CN202417226U)
Title: Safety escape door

Abstract:
Source: CN202417226U The utility model relates to a **door** and provides a safety escape **door** which comprises an inner **door** plate, an outer **door** plate and a core **door**, wherein the core **door** is arranged in the outer **door** plate and embedded in the middle of the **door** plate; wedge-shaped strips at obverse and reverse inclined planes are arranged at four sides of the core **door** to ensure that the core **door** is clamped between the obverse and reverse wedge-shaped strips; the wedge-shaped strips of an outer doorframe are closely adhered to the outer doorframe; the core **door** is clamped through the wedge-shaped strips at the reverse inclined planes when being pushed from outside to inside; **springs** are connected at the bottom of the wedge-shaped strips of the outer doorframe to ensure that the observe wedge-shaped strips of the escape **door** are in a compression state; a burglar alarm is arranged at the bottom of the **door**; and the **springs** are arranged in **spring** seats. According to the utility model, even if the doorframe is damaged and the **door** cannot be opened, people can escape by utilizing the core **door**; the core **door** can be bounced off when being pressed from the inside to ensure that the core **door** can be automatically bounced off if the pressure inside the **door** is far greater than that outside the **door** during fire; the **springs** are designed to ensure that the normal use of the **door** is not influenced; an automatic alarm is given when the core **door** is bounced off; and therefore, the safety escape **door** is the dedicated escape **door** designed and used for the situation that a common **door** cannot be opened or the escape is delayed for opening the **door** when disasters such as **earthquake**, the fire and the like occur.



International class (IPC 8-9): E06B5/00 E06B7/28 (Advanced/Invention)
Family:

Publication number	Pub. date	Application number	App. date
CN202417226 U	20120905	CN201120549807U	20111226

Priority: CN201120549807U 20111226;

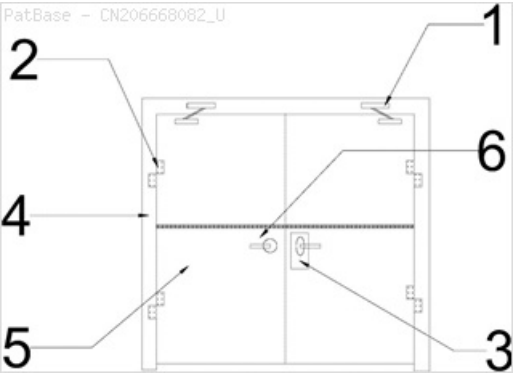
Assignee(s): (std): SHENYANG UNIV OF CHEMICAL TECHNOLOGY ; UNIV SHENYANG CHEMICAL TECH
Assignee(s): SHENYANG UNIVERSITY OF CHEMICAL TECHNOLOGY
Inventor(s): (std): PINGPING LIU ; TIEJUN LI ; TINGTING CHEN ; XINYI BAI ; XU HAN ; ZHENQIAN ZHANG
Inventor(s): ZHANG ZHENQIAN ; BAI XINYI ; CHEN TINGTING ; HAN XU ; LI TIEJUN ; LIU PINGPING

8) Family number: 67611530 (CN206668082U)

Title: A seismic heritage treasury door (Machine translation)

Abstract:

Source: CN206668082U The utility model relates to a seismic heritage warehouse doors, including door closers, door shaft doors, door frames, door locks, doors, door handle; Door frame disposed at an outer side of the door, the door and the door frame by the door shaft is connected; Door shaft of a number of four; The door shaft is provided at the side door; Door shaft by the upper hinge, the lower hinge and springs; Provided at the top of the doors closed doors; Door closers are of a number of two; Through the doors closed doors and door frames connected; Door leaf is divided into left and right two doors; The left door provided with a door handle, middle right middle door provided with a door lock; Doors and door constituted by the two upper and lower damper spring; Damper spring is disposed between the upper and lower two door in the middle; The utility model avoids the door due to the strong earthquake under the action of deformation can not be opened drawbacks, to rescue personnel and rescue cultural relics saves time.



International class (IPC 8-9): E06B3/70 E06B5/00 (Advanced/Invention)
Family:

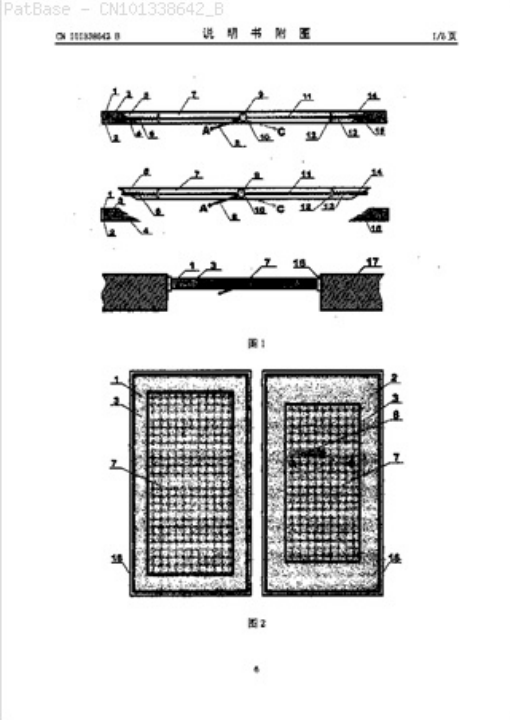
Publication number	Pub. date	Application number	App. date
CN206668082 U	20171124	CN201720428424U	20170423

Priority: CN201720428424U 20170423;

Assignee(s): HUNAN SCIENCE AND TECHNOLOGY DEVELOPMENT CO LTD YINBAO

9) Family number: 42841754 (HK1127794A)
Title: SECTIONAL BEVELING SAFETY DOOR AGAINST EARTHQUAKE WITH REVERSE OPERATION

Abstract:
Source: CN101338642A The present invention relates to an overturning operating disassembly type bevel edge earthquake safety door which can still be opened under the condition that door and windows are extruded to be jammed in earthquake. The earthquake safety door consists of a transversely overturning operating disassembly type bevel edge earthquake safety door and an up-down overturning operating disassembly type bevel edge earthquake safety door. The components of the two doors are all provided with a safety door surrounding pane. The inner edge of the pane is a bevel and is provided with a bevel demountable safety door, the edges of which are all bevels which are matched with the inner edge bevel of the connected pane. Four bolts, pins which are movably connected with connecting rods, a safety door disassembly operating rod, an overturning shaft and two operating bolt flexible overturning plates are arranged in the bevel demountable safety door. Four connecting rods are extended from two overturning plates and are provided with four pins by movable connection. Four connecting rods are mounted with four bolt springs and four spring catch bases. Four movable bolts are exactly opposite to four bolt holes, a doorframe, etc. The invention has the characteristics and advantages that the overturning operating disassembly type bevel edge earthquake safety door is just as adding a safety door in the ordinary door; people can pass through the safety door usually, the difference lies in that the safety door is connected with the pane bevel by the bevel; according to the theory that the bevel is not jammed easily by extruding slide, when earthquake occurs, the ordinary door is extruded, deformed and jammed and can not be opened, the bevel demountable safety door can also be opened; the safety door is simple and fast for operating and also has the prior nice and theftproof functions.



International class (IPC 8-9): E06B3/70 E06B5/10 E06B7/32 (Advanced/Invention);
E06B3/70 E06B5/10 E06B7/00 (Core/Invention);
E06B (Subclass/Invention)
Family:

Publication number	Pub. date	Application number	App. date
CN101338642 A	20090107	CN200810137638	20080701
CN101338642 B	20110629	CN200810137638	20080701
HK1127794 A1	20111028	HK20090105130	20090609
HK1127794 A3	20091009	HK20090105130	20090609

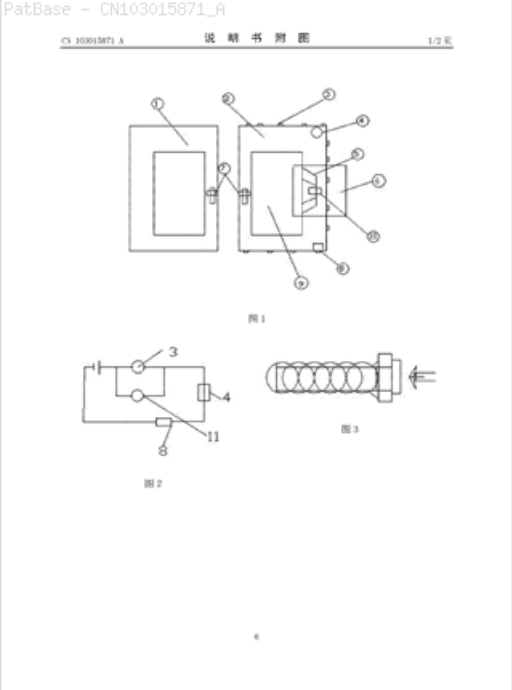
Priority: CN200810137638 20080701;

Assignee(s): (std): ZHU ZUORUI ; ZUORUI ZHU
Inventor(s): (std): ZUORUI ZHU
Inventor(s): ZHU ZUORUI

10) Family number: 53481841 (CN103015871A)
Title: SAFE ESCAPE DOOR

Abstract:

Source: CN103015871A The invention provides a safe escape door and relates to a door. The safe escape door consists of an outer door plate, an inner door and an inner door plate, wherein an automatic alarming device is mounted on the inner side of the outer door plate; the inner door and an escape using device are integrated; and the automatic alarming device is formed in the way that a piezoresistor, a thermistor and an alarm are connected in parallel to a battery. When the circuit is pressurized by earthquake and heated by fire hazard to be switched on, automatic alarming is realized. The escape using device is integrated with the inner door and consists of an imitated dowel structure, a guide shaft, a top nail, spring membranes, a hard elastic part and a zigzag connecting rod. The imitated dowel structure is inserted into the inner door and cannot be removed outside, so the inner door can be prevented from being opened and theft is avoided. When hazard occurs, a zigzag connecting rod handle drives the top nail and the spring membranes to pop up the imitated dowel structure on the upper side, and the top nail pushes the inner door and the spring membranes through the zigzag connecting rod to pull the inner door towards indoors from the part near the guide shaft, so that people can open the inner door and escape. The safe escape door is designed for solving the problem that the door cannot be opened or escape is delayed caused by opening the door when hazards such as earthquake, fire hazard and the like occur.



International class (IPC 8-9): E06B7/28 G08B19/00 (Advanced/Invention)
Family:

Publication number	Pub. date	Application number	App. date
CN103015871 A	20130403	CN201210493059	20121128
CN202937155 U	20130515	CN201220638023U	20121128

Priority: CN201210493059 20121128; CN201220638023U 20121128;

Cited documents: GB618492 A, CN2685474 Y, CN2201447 Y, CN202937155 U, CN202417226 U, CN202047728 U,
Assignee(s): (std): SHENYANG UNIV OF CHEMICAL TECHNOLOGY ; UNIV SHENYANG CHEMICAL TECH
Inventor(s): (std): JIAO SHUOBO ; LI TIEJUN ; LIANG FEI ; LIU HUAYUN ; LIU YANG ; WANG HAIXIN

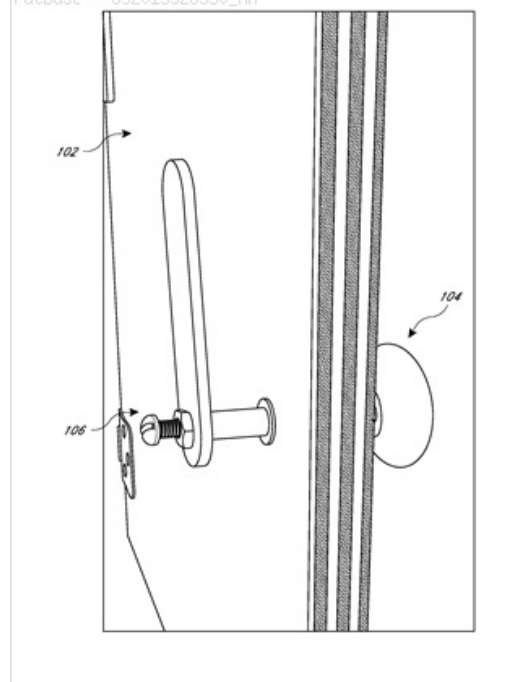
11) Family number: 55322269 (US2013328330A)

Title: LATCH MECHANISM SYSTEM FOR EARTHQUAKE AND CHILD PROOFING A CABINET

Abstract:

Source: US2013328330A A latch mechanism system for **earthquake** and child proofing cabinet **door** is disclosed. The latch mechanism can be connected to a preexisting cabinet **door** and either a preexisting or a new **door** handle. The latch mechanism system can be set with a preferred frictional resistance to increase or decrease the difficulty of turning the **door** handle in order to open the cabinet **door**.

PatBase - US2013328330_AH



International class (IPC 8-9): E05C3/14 (Advanced/Invention)

CPC: E05C3/042 E05B63/0056 E05B65/0014 Y10T292/1083

US class: 292/202 7/138

Family:

Publication number	Pub. date	Application number	App. date
US2013328330 AA	20131212	US20120493869	20120611

Priority: US20120493869 20120611;

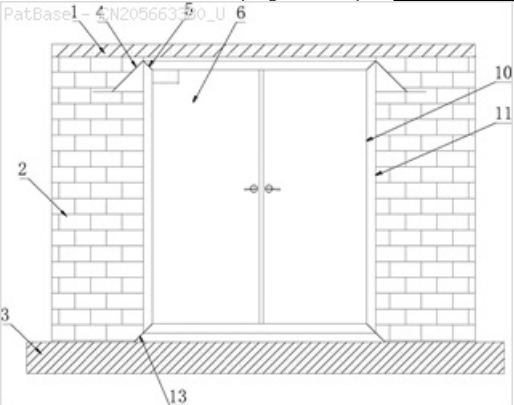
Cited documents: US7360381 BA, US7340928 BB, US6527308 BB, US6224118 BA, US4679835 A, US3314702 A, US3206238 A, US2852926 A, US2011083482 AA, US2009284026 AA, US2008099355 AA,

Assignee(s): (std): MCKENZIE DENNIS

Inventor(s): (std): MCKENZIE DENNIS

12) Family number: 63478504 (CN205663380U)
Title: SHOCKPROOF DOOR OF SUSPENSION TYPE FIRE PREVENTION

Abstract:
Source: CN205663380U The utility model discloses a shockproof door of suspension type fire prevention, including upper steel construction support piece, angle support piece, inner door frame, outer door frame and lower part steel construction support piece, upper steel construction support piece sets up on the wall body, and upper steel construction support piece lies in the below of lintel, and lower part steel construction support piece fixes subaerial, outer door frame upper end fixed connection to upper steel construction support piece, and lower extreme fixed connection to lower part steel construction support piece, and outer door frame is installed in the wall body, inner door frame sets up in outer door frame, and inner door frame's the four corners department and the passing angle support piece of four corners department of outer door frame link to each other, and angle support piece establishes outside compressing rod including a compression section of thick bamboo, compressing rod and connecting rod, a compression section of thick bamboo slip cap, compressing rod bottom and compress and be provided with the spring between the bobbin base portion, and the compressing rod front end passes through ball hinged joint to connecting rod, be provided with the door leaf in the inner door frame. This shockproof door of suspension type fire prevention security performance is high, still can use under the condition of warping naturally in earthquake or house.



International class (IPC 8-9): E06B3/70 E06B3/72 E06B3/964 E06B5/10 E06B5/16 (Advanced/Invention)
CPC: E06B5/16 E06B3/7015 E06B3/72 E06B3/964 E06B5/10 E06B5/162
Family:

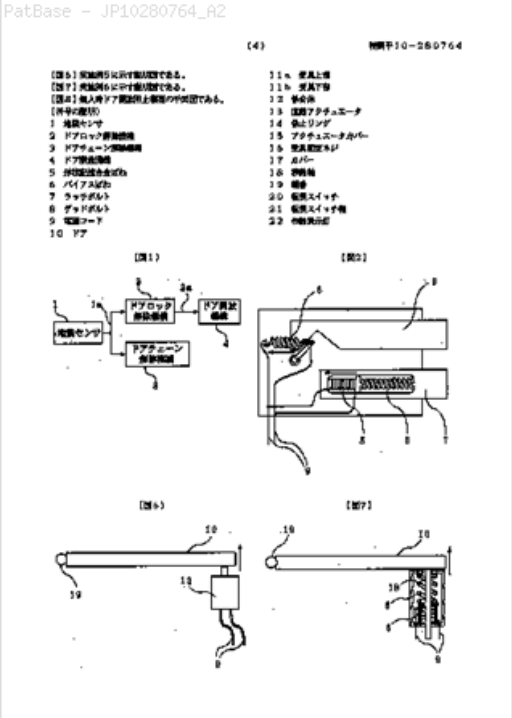
Publication number	Pub. date	Application number	App. date
CN105927120 A	20160907	CN201610408336	20160603
CN105927120 B	20170825	CN201610408336	20160603
CN205663380 U	20161026	CN201620560773U	20160603

Priority: CN201610408336 20160603; CN201620560773U 20160603;

Cited documents: JP11022319, DE3612132 A1, CN2331749 Y, CN205663380 U, CN205100827 U,
Assignee(s): (std): UNIV WEST ANHUI ; WEST ANHUI UNIV
Inventor(s): (std): CHEN FEI ; CHENG RUI ; LI TONGHAI ; TU JINGSONG ; TU JINSONG ; XU HONGYAN ; XU XUEFENG

13) Family number: 11898673 (JP10280764A)
Title: AUTOMATIC DOOR OPENING SYSTEM

Abstract:
Source: JP10280764A PROBLEM TO BE SOLVED: To automatically open a door in case of an earthquake and, at the same time, to prevent the door from being opened when no one is in the house by providing a door lock releasing mechanism acting in correspondence with an earthquake sensor together with a door chain releasing mechanism, and adding a door opening prevention mechanism when no one is in the house. SOLUTION: When an earthquake sensor 1 detects an earthquake exceeding a certain level, a door lock releasing mechanism 2 and a door chain releasing mechanism 3 are operated by an output signal 1a of the sensor, and a door opening mechanism 4 is operated by an operating complete signal 2a of the door lock releasing mechanism 2 to open a door. Those operating mechanisms use form restoring force by heating of a form memory alloy spring or a direct acting actuator. As a door opening prevention mechanism no one is in the house, an inverted switch is operated when a door chain is locked and unlocked by sliding it up and down, and the earthquake sensor 1 is thereby turned ON/ OFF. Accordingly, the door is surely opened in case the earthquake occurs, an evacuation route is ensured and, at the same time, the opening of the door is prevented to secure safety when no one is in the house.



International class (IPC 8-9): E05B47/00 E05B65/00 E05B65/06 E05B65/10 E05F1/10 E05F15/20 E06B5/00 G01V1/00 (Advanced/Invention);
E05B47/00 E05B65/00 E05B65/06 E05B65/10 E05F1/00 E05F15/20 E06B5/00 G01V1/00 (Core/Invention)
International class (IPC 1-7): E05B47/00 E05B65/00 E05B65/06 E05B65/10 E05F1/10 E05F15/20 E06B5/00 G01V1/00

Family:

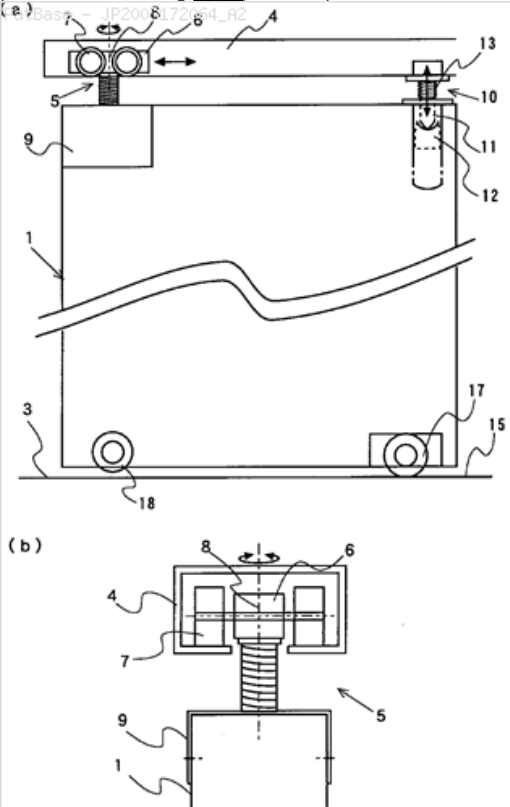
Publication number	Pub. date	Application number	App. date
JP10280764 A2	19981020	JP19970124630	19970409
JP3222799 B2	20011029	JP19970124630	19970409

Priority: JP19970124630 19970409;

Assignee(s): (std): TOKYO METROPOLITAN GOV
Assignee(s): TOKYO METROPOLIS
Inventor(s): (std): KUNIMOTO YOSHITO ; OHARA YOSHIO ; WAKI MASARU

14) Family number: 29101678 (JP2003172064A)
Title: EARTHQUAKE-RESISTANT SUSPENDED SLIDING DOOR STRUCTURE

Abstract:
Source: JP2003172064A PROBLEM TO BE SOLVED: To provide an earthquake-resistant suspended sliding door structure which can be opened or closed in response to a complicated deformation in a travelling path such as a rail even though the rail is deformed complicatedly as a result of an earthquake or the like. SOLUTION: This is an earthquake-resistant suspended sliding door structure installed in a movable manner throughout a door opening portion and storage portions provided at side wall surface regions of a building, which has a top rail laid above the door opening in the moving regions and a bottom rail laid on the sliding door moving floor surface in the door storage region; the door suspending sash roller installed to the door opening side of the upper portion of the sliding door is fitted to the rail and travels along the top rail and is equipped with a vertical turning shaft, and is made rotatable about the shaft, attached to the storage portion side at the top of the sliding door, fitted to the top rail; and a guide shaft mechanism sliding along the top rail accompanying the movement of the sliding door has a pivot with spring at the top rail fitting side and a pivot bearing at the sliding door side; an auxiliary sash roller running on the floor surface as a result of the movement of the sliding door is installed at the opening side at the lower portion of the sliding door; at the storage side of the lower portion of the sliding door, a V-shaped sash roller running along the V-shaped rail groove of the lower rail is installed.



International class (IPC 8-9): E05D15/06 E06B5/00 (Advanced/Invention);
E05D15/06 E06B5/00 (Core/Invention)
International class (IPC 1-7): E05D15/06 E06B5/00
Family:

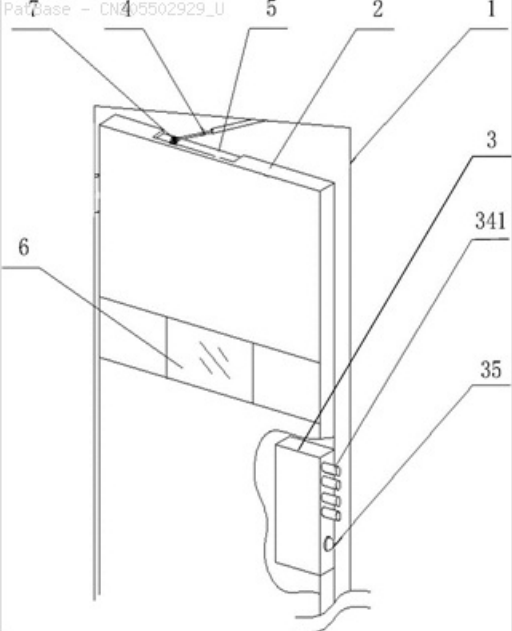
Publication number	Pub. date	Application number	App. date
JP2003172064 A2	20030620	JP20010371693	20011205
JP3533571 B2	20040531	JP20010371693	20011205

Priority: JP20010371693 20011205;

Assignee(s): (std): KADONAKA KOGYO KK
Inventor(s): (std): NAKA AKIO

15) Family number: 62767913 (CN205502929U)
Title: BURGLARY -RESISTING DOOR AND BURGLARY -RESISTING DOOR SYSTEM

Abstract:
Source: CN205502929U The utility model relates to a security protection technical field, concretely relates to burglary -resisting door and burglary -resisting door system, the burglary -resisting door still includes the air spring including the door frame, the door body and the lock that connect gradually, the one end of air spring with the door frame is connected, the other end with the door body coupling, be provided with the controller in the lock, it holds the storehouse to be provided with the air spring on the door body and/or the door frame, the burglary -resisting door system includes foretell burglary -resisting door. The utility model provides a pair of burglary -resisting door and burglary -resisting door system, the use travelling comfort and the automation that have improved intelligent burglary -resisting door, when emergency such as emergence earthquake conflagration, the utility model discloses the burglary -resisting door can be opened automatically, opens the life passageway for fleeing and increases the valuable time of fleeing.



International class (IPC 8-9): E05B15/00 E05B15/10 E05B45/06 E05B47/00 E05B63/14 E05F3/02 E06B5/11 E06B7/28
G07C9/00 (Advanced/Invention)
CPC: E06B5/11 E05B15/00 E05B15/10 E05B15/108 E05B45/06 E05B47/0012 E05B63/146 E05B2045/065 E05B2047/0067 E05B2047/0069
E05B2047/0094 E05F3/02 E06B7/28 G07C9/00563
Family:

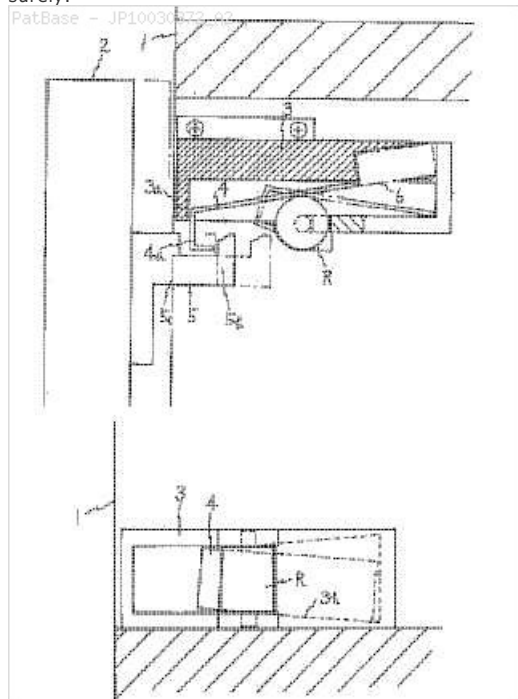
Publication number	Pub. date	Application number	App. date
CN105715174 A	20160629	CN201610210189	20160406
CN205502929 U	20160824	CN201620278988U	20160406

Priority: CN201610210189 20160406; CN201620278988U 20160406;

Cited documents: US6658905 BA, CN2401687 Y, CN205502929 U, CN204695420 U, CN1271052 A, CN1102231 A,
Assignee(s): (std): BEIJING CHUCHUANG WEILAI TECH CO LTD ; BEIJING CHUCHUANGWEILAI TECH CO LTD
Assignee(s): BEIJING CHUCHUANGWEILAI TECHNOLOGY CO ; FUTURE TECHNOLOGY CO LTD BEIJING STARTUPS ; BEIJING CHUCHUANG WEILAI TECHNOLOGY CO
Inventor(s): (std): LIU ZHENHUA ; PANG LIANG ; WANG JINGCHU ; XU HONGRU

16) Family number: 29293270 (JP10030372A)**Title:** LOCKING DEVICE OF HINGED DOOR IN CASE OF EARTHQUAKE**Abstract:**

Source: JP10030372A PROBLEM TO BE SOLVED: To ensure operation, and to prevent the occurrence of false locking at the time of normal usage by moving a sideways movable obstruction to a locking place by the force of the quakes of an **earthquake**. SOLUTION: When an **earthquake** occurs, an engaging means 4 is brought into contact with an engaging tool 5. When the hinged **door** 2 is opened by the force of quakes, the engaging section 4a of the engaging means 4 is retained to the engaging section 5b of the engaging tool 5. The engaging section 4a of the engaging means 4 is stopped by the stopping section 3a of a device body 3 under the state, and the hinged **door** 2 is locked at the place of the hinged **door** 2. The force of quakes naturally works even in the direction that the hinged **door** 2 is closed, but the engaging means 4 is held down by the elastic means 6 of the device body 3 at the place of locking. When the **earthquake** ends and the hinged **door** 2 is pushed strongly for opening the hinged **door** 2, the elastic means 6 is retreated gradually, and hold-down by the elastic means 6 is released when the elastic means 6 is retracted at a fixed value or more. Consequently, the engaging means 4 is returned to an initial state by inertia. Accordingly, even when the warpage of upper and lower sections of the hinged **door** 2 is caused superposition is not affected, and the engaging means 4 can be operated surely.



International class (IPC 8-9): A47B96/00 E05B65/06 E05B65/44 E05C19/02 E05C19/04 E05C19/06 E05C19/08 E05C19/10 E05C19/16 E05C21/02 E06B5/00 G01H1/00 H01F7/02 (Advanced/Invention);

A47B96/00 E05B65/06 E05C21/00 E06B5/00 G01H1/00 H01F7/02 (Core/Invention)

International class (IPC 1-7): A47B96/00 E05B65/06 E05B65/44 E05C19/02 E05C19/04 E05C19/06 E05C19/08 E05C19/10 E05C19/16 E05C21/02 E06B5/00 G01H1/00 H01F7/02

Family:

Publication number	Pub. date	Application number	App. date
JP10030372 A2	19980203	JP19960171559	19960527
JP10266676 A2	19981006	JP19970364251	19971128
JP2004300919 A2	20041028	JP20040197427	20040607
JP2873441 B2	19990324	JP19950301860	19951013
JP2926114 B2	19990728	JP19950210921	19950716
JP3005596 B2	20000131	JP19950143812	19950502
JP3005614 B2	20000131	JP19950287775	19950927
JP3047223 B2	20000529	JP19970364251	19971128
JP3752588 B2	20060308	JP20040197427	19960527
JP3752588 B2	20060308	JP20040197427	20040607
JP8158729 A2	19960618	JP19950147999	19950510
JP8199886 A2	19960806	JP19950210921	19950716
JP8226270 A2	19960903	JP19950147998	19950510
JP8293412 A2	19961105	JP19950346572	19951201
JP9013781 A2	19970114	JP19950143812	19950502
JP9096151 A2	19970408	JP19950346573	19951201
JP9096152 A2	19970408	JP19950327801	19951109
JP9096153 A2	19970408	JP19960142159	19960426
JP9096155 A2	19970408	JP19950287775	19950927
JP9096156 A2	19970408	JP19950287776	19950927
JP9096157 A2	19970408	JP19950287778	19950927
JP9137660 A2	19970527	JP19950156609	19950520
JP9158591 A2	19970617	JP19950301860	19951013

Priority: JP19940136239 19940512; JP19940168556 19940615; JP19940339418 19941215; JP19940257727 19940914; JP19940274214 19941001; JP19940217803 19940808; JP19950147999 19950510; JP19950156609 19950520; JP19950201255 19950704; JP19950147998 19950510; JP19940340871 19941222; JP19950143812 19950502; JP19950077041 19950225; JP19950139833 19950426; JP19950346572 19951201; JP19970364251 19971128; JP19950301860 19951013; JP19950287775 19950927; JP19950216474 19950722; JP19950327801 19951109; JP19950346573 19951201; JP19960142159 19960426; JP19950287776 19950927; JP19950287778 19950927; JP19960171559 19960527; JP19950210921 19950716; JP20040197427 20040607; JP19950287777 19950927; JP19950296344 19951007; JP19960160425 19960516;

Cited documents: US5312143 A, US5152562 A, US5035451 A, JPH0241267 U, JP7305551 A2, JP7305551, JP645582 Y2, JP61223654 A2, JP59065178 A2, JP58013159 U1, JP4048841 U, JP240218 Y2, JP2118873 U, JP2041267 U1, JP2041267,

Assignee(s): (std) HASHIZUME HIDEYA ; HASHIZUME HIROKO

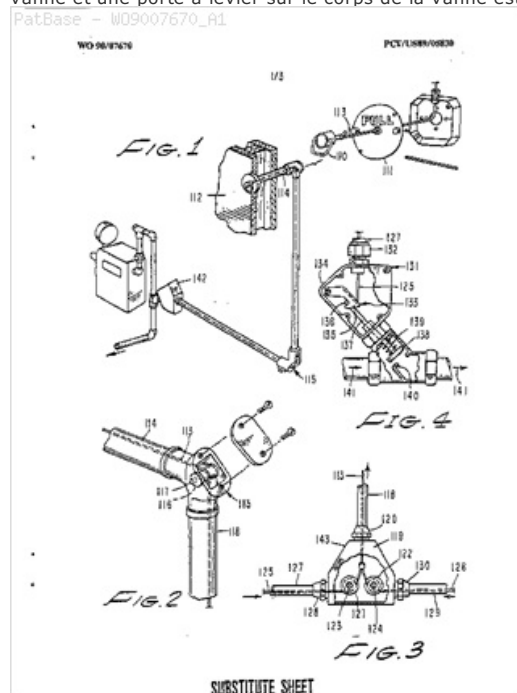
Inventor(s): (std) HASHIZUME HIROKO

17) Family number: 3260616 (WO9007670A1)

Title: UTILITY SHUTOFF VALVE

Abstract:

Source: WO9007670A1 A device for turning off a valve for a utility such as gas or water includes a **spring** loaded valve assembly (131) and a valve stem (137) held away from a valve seat (140) by a latch (133). When the latch (133) is tripped, the valve closes. In one embodiment, there are two such devices (131, 142). Cables (125, 126) are passed from a pull ring (110) accessible to the operator and pass through conduits (114, 118, 127 and 129) to the **spring**-loaded valves. In the event of an **earthquake** or other emergency, the pull ring is pulled and the utilities are shut off. In a second embodiment, an elongated handle (23) is pulled to trip the catch of **spring**-loaded valve. In another structure, a short cable between the valve assembly and a levered **door** to the valve casing is manually operable to trip the catch. Un dispositif pour fermer une vanne d'alimentation publique telle qu'une alimentation en gaz ou en eau comprend un ensemble de vanne (131) armé par ressort et une tige de vanne (137) maintenu à l'écart d'un siège (140) au moyen d'un loquet (133). Lorsque le loquet (133) est déclenché, la vanne se ferme. Dans un mode de réalisation, deux de ces dispositifs (131, 142) sont prévus. Des câbles (125, 126) partent d'un anneau de traction (110) accessible à l'opérateur et passent au travers de conduits (114, 118, 127 et 129) jusqu'à des vannes armées par ressort. Dans le cas d'un tremblement de terre ou autre situation d'urgence, on tire de l'anneau de traction et les alimentations publiques sont coupées. Dans un second mode de réalisation, une poignée allongée (23) est tirée pour déclencher l'arrêt de la vanne armée par ressort. Dans une autre structure, un câble court entre l'assemblage à vanne et une porte à levier sur le corps de la vanne est actionnée manuellement pour déclencher l'arrêt.



International class (IPC 8-9): F16K13/00 F16K31/46 F16K31/56 (Advanced/Invention); F16K13/00 F16K31/44 (Core/Invention)

International class (IPC 1-7): F16K13/00 F16K31/46

CPC: F16K31/465 F16K31/56

European class: F16K31/46B F16K31/56

Family:

Publication number	Pub. date	Application number	App. date
AU199048220 A1	19900801	AU19900048220	19891226
CA2010251 AA	19910626	CA19902010251	19900216
KR19917000428 A	19910315	KR19907001903	19891226
WO9007670 A1	19900712	WO1989US05830	19891226

Priority: CA19902010251 19900216; US19880290569 19881227; WO1989US05830 19891226;

Cited documents: US4425823 A, US3692046 A, US3378081 A, US3035605 A, US2722945 A, US2665714 A, US2630818 A, US1648662 A, US1607343 A, US1173966 A,

Assignee(s): (std): ROBERT M SANCHEZ ; SANCHEZ ROBERT M

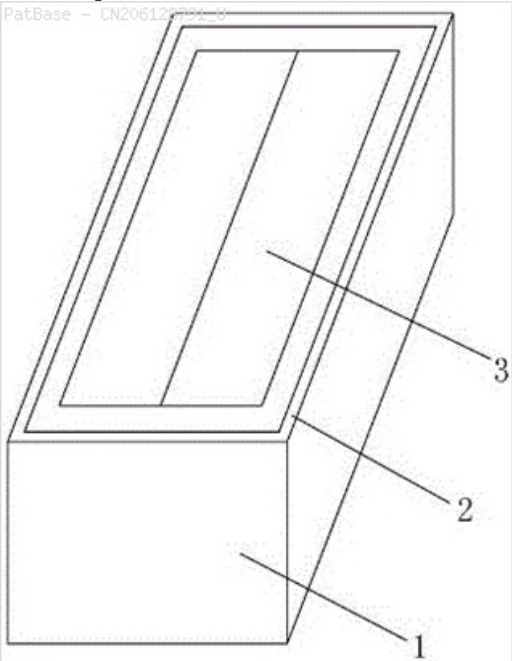
Inventor(s): (std): SANCHEZ ROBERT M

Inventor(s): ROBERT M SANCHEZ

Designated states: AT AU BB BE BF BG BJ BR CF CG CH CM DE DK ES FI FR GA GB HU IT JP KP KR LK LU MC MG ML MR MW NL NO RO SD SE SN SU TD TG US

18) Family number: 65545779 (CN206128791U)
Title: DOMESTIC EARTHQUAKE SURVIVAL CAPSULE

Abstract:
Source: CN206128791U Domestic **earthquake** survival capsule, leave the open -ended box formula cabin body and cabin body top frame including the top, cabin body top frame is located the opening of cabin body upper end, be provided with the hatch **door** that can inwards open and shut of symmetry in the opening of cabin body top frame, the hinge that one side of every hatch **door** is passed through respectively to set up in the internal portion in cabin is connected with the frame inside wall rotation of cabin body top, every hatch **door** hinge one side is provided with the hatch **door** fixed rotating shaft respectively, the other end of every hatch **door** fixed rotating shaft is located the pivot fixing base of cabin body top frame separately respectively, it has the pivot bearing still to overlap respectively on every hatch **door** fixed rotating shaft, the upper and lower both ends of every hatch **door** are provided with hatch **door** resilience extension **spring** respectively, the inboard of every hatch **door** is provided with the hatch **door** bracing piece through the turning block respectively. As long as on jumping to the hatch **door** during **earthquake**, just the hatch **door** can be opened, the hatch **door** bracing piece plays the effect of supporting the hatch **door**, can be better prevent the **earthquake** time weigh down the life safety that hatch **door**, the internal personnel of portion in better protection cabin were broken to the thing.



International class (IPC 8-9): E04H9/02 (Advanced/Invention)
Family:

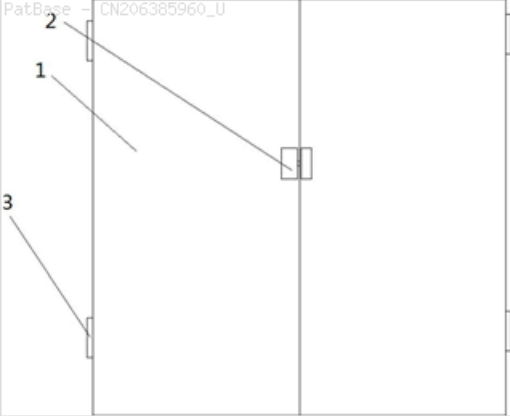
Publication number	Pub. date	Application number	App. date
CN206128791 U	20170426	CN201621105837U	20161009

Priority: CN201621105837U 20161009;

Assignee(s): (std): SHAANXI UNIV OF TECHNOLOGY ; UNIV SHAANXI TECHNOLOGY
Inventor(s): (std): GUO LICHENG

19) Family number: 66571035 (CN206385960U)
Title: SEAL DOOR AND AUTOMATICALLY, OPEN SUBASSEMBLY THEREOF
Abstract:

Source: CN206385960U The utility model discloses a seal **door** and automatically, open subassembly thereof for closed analog **earthquake** experiences the shop, including setting up **door** opener and the **door** lock device on sealing the **door** respectively, the **door** opener sets up in the rotatory department that seals the **door**, the **door** opener is the elastic construction, **door** lock device include **spring** bolt portion and with complex joint portion of **spring** bolt portion, **spring** bolt portion is electromagnetic mechanism, **spring** bolt portion rigid coupling is on sealing the **door**, the **spring** bolt direction of motion of **spring** bolt portion with seal the **door** to open the direction perpendicular, joint portion rigid coupling in with seal **door** complex subassembly on, **door** lock device and the interior power intercommunication of enclosure space. This simple structure appears cutting off the power supply in experiencing the shop or during equipment trouble, and the experience crowd is orderly withdrawing from accessible time, avoids appearing trampling, malignant accident's such as extrusion emergence.



International class (IPC 8-9): E05B47/00 E05F1/12 (Advanced/Invention)
Family:

Publication number	Pub. date	Application number	App. date
CN206385960 U	20170808	CN201720037931U	20170113

Priority: CN201720037931U 20170113;

Assignee(s): (std): SY EDUCATION TECH BEIJING CO LTD
Assignee(s): SY EDUCATION TECHNOLOGY BEIJING CO ; SHANG YING EDUCATION TECHNOLOGY BEIJING CO LTD
Inventor(s): (std): REN YING

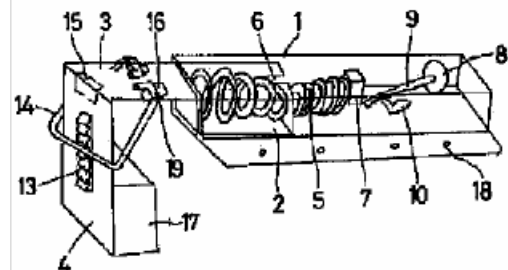
20) Family number: 12559354 (JP11062354A)

Title: DEVCE FOR PREVENTING DOOR OPEN-CLOSE AS EARTHQUAKE COUNTERMEASURE

Abstract:

Source: JP11062354A PROBLEM TO BE SOLVED: To provide a device for preventing **door** open-close as an **earthquake** countermeasure to be operated at an **earthquake** and preventing the opening of a **door**. SOLUTION: A **spring** box 2 having the same shape as a box body 1, a support plate 3 integrally molded at the front end of the top plate of the box 2 in the same width as the box 2, and a **door** push plate 4 connected in a downward bendable manner through a hinge are incorporated slidably into the flat square cylindrical box body 1, in which both ends are opened, the **spring** box 2 is urged so as to be extended by a coil **spring** 5, and the coil **spring** 5 is retained at a compressed place by a hooked clamp installed at the front end of a **spring** 9 with a weight 8. When the clamp is slipped off by an **earthquake**, the **spring** box 2 is projected forward, the **door** push plate 4 with a cushioning material 17 for protecting a **door** is bent downwards, and the opening of the **door** of a cupboard or the like is prevented. The **door** push plate 4 is held at a bent place by a rack lever 13 mounted on a rear and a rod-shaped **spring** 14.

PatBase - JP11062354_A2



International class (IPC 8-9): A47B96/00 E05C19/00 E05C21/02 (Advanced/Invention);

A47B96/00 E05C19/00 E05C21/00 (Core/Invention)

International class (IPC 1-7): A47B96/00 E05C19/00 E05C21/02

Family:

Publication number	Pub. date	Application number	App. date
JP11062354 A2	19990305	JP19970267654	19970825

Priority: JP19970267654 19970825;

Assignee(s): (std): CENTRAL MACH KK

Inventor(s): (std): MIURA KOJIN