CA V J.i i7l1 TI

I.1

ABO GAD OS

TelØfono: (57-1) 347 3611
EDIFICIO 5(8K) Telefax: (57-1) 211 8650
www.cavelier.com CARRERA 4 No. 72 -35 ir,-7-11 ’°O 4814 cavelier@cavelier.com BOGOTA 8, C 7743 SUPERINI ENDENCIA DC INDUSTRIA Y COM CR010

IIIIIIIIIIII1IIIIIUIUIIIIUIIIUI
No. 09-010551- -00005-0000
Fecria: 2010-08-17 16:19:12 Dep. 2020 DIR.NUEVASCR
ira. 2 PATENTES Eve: I REGDEPOSOO

Seæora Directora Act. 329 CO)NFORMACION Foos: 106 DIRECCIÔN DE SIGNOS DISTINTIVOS

Superintendencia de Industria y Comercio
E. S. D.

TrÆmite: 002
Evento 001
Actuación: 400

Referenda Expediente No. 09.01,0551
Asunto Oposidión a soLtcitud de patente pars: TAPÔN
DE SEGURIDAD PARA BOTELLAS Y SIMILAPSES CON
DISPOSITIVO ANTIRELLENO
Opos:Ltor : GUALA CLOSURES PATENTS B.V.
DEMANDADO : PLASTIVIT S.A.

I. PRESENTACIóN DE PRUEBAS

Yo, Luz Ciemencia DR PAEZ, en mi condi.ción de apoderada de La

sociedad GUALA CLOSURES PATENTS BV., parte opositora en ci asunto de

la referenda y estando dentro del tØrmino de la prOrroga soii,citada. en

ci memorial de opos–dión, comedidamente solicito al Despacho toner en cuenta las siguientes pruebas qu.e demuestran que la solicitud do patente titulada: TAPON DR SEGURIDAD PARR BOTELLAS Y SIMILARES CON

DISPOSITIVO ANTIRELLENO incurnple los requisitos de patentabi.lidad, do

acuerdo con las disposiciones de la Decision 486.

II. PETICIóN

En vista de los argumentos que se presentarÆn a continuación, solicitamos la negaciOn do is patente para el exped.iente de La referenda, toda vez que no cumple con los requerimientos estabiecidos

en in Decision 486 y en particular, carece de nivei inventivo.

NIT. 860.041367-3

37

and then returned to an upright position.

27. A closure as claimed in any one of the preceding claims, characterised in that the pouring member affords a radially outwardly extending annular abutment surface which serves as a stop for the screw cap and the retaining tube.

28. A closure as claimed in Claim 2 or any subsequent claim when dependent thereon, characterised in that the pouring member includes an internal tubular guide portion which, in use, constrains the valve member to travel substantially in the axial direction only.

29. A closure as claimed in Claim 21 or Claim 23, characterised in that the pouring member has an axially central aperture through which a rod, depending from the screw cap, extends and engages the valve member, holding it in contact with the valve seat.

30. A closure as claimed in Claim 29, characterised in that the pouring member affords a radially outwardly directed annular pouring orifice whose upper side is defined by a radially extending top plate which is continuous apart from the said aperture
in its centre.

31. A closure as claimed in Claim 29 or Claim 30, characterised in that the valve member has an upwardly open recess into which a projection on the end of the rod extends and engages, whilst deforming the walls of the recess, so that, in use, the valve member turns

38

with the cap when the cap is unscrewed.

32. A closure as claimed in any one of Claims 2
to 31, characterised in that the top surface of the valve member is an annular radially extending surface which is engaged by a corresponding surface on the rod.

33. A closure as claimed in Claim 28 or any claim
when dependent thereon, characterised in that the valve member has upper and lower substantially axially extending cylindrical surfaces which cooperate, in use, with the internal surface of the said tubular guide portion of the pouring member.

34. A closure as claimed in Claim 29 or any claim
when dependent thereon, characterised in that the said rod is generally cylindrical and the said aperture in the top plate of the pourer is circular.

35. A closure as claimed in any one of the preceding claims, characterised in that the cap has depending from the inside surface of its top wall an annular sealing ring and that there is a hermetic seal
between this ring and the pouring member, in use,
preventing liquid from passing out of the bottle..

36. A closure as claimed in Claim 25 or any claim
when dependent thereon, characterised in that the thread ridges on the cap have upper and lower faces which are inclined to the vertical and/or curved to facilitate the production of the cap by moulding.

37. A closure as claimed in Claim 4 or any claim

39

when dependent thereon, characterised in that the ring has an internal annular locking collar.

38. A closure as claimed in Claim 37, characterised in that the lower surface of the locking collar is inclined to the vertical and/or curved s that, when the closure is being assembled, the locking collar may slide over an external retaining ridge on the pouring member and locate beneath it.

39. A closure as claimed in Claim 38, characterised in that the retaining ridge on the pouring member affords an annular upper surface, inclined to the axis, and a radially extending lower surface, beneath which the ring is located.

40 A closure as claimed in Claim 38 or Claim 39, characterised in that the minimum diameter of the locking collar of the ring is smaller than the maximum diameter of the retaining ridge.

41. A closure as claimed in any one of Claims 38
to 40, characterised in that the ring has on its upper surface a series of upwardly extending lugs whereby, when the closure is being assembled and the locking collar slides past the retaining ridge, the said frangible portions are deformed and the lugs engage the body of the screw cap, limiting the deformation of the frangible portions and preventing them from breaking

42. A closure as claimed in Claim 4, characterised in that the ring has a series of downwardly directed locking teeth on its internal

40

surface which mesh with a corresponding series of locking teeth on the pouring member, whereby, in use, the ring is prevented from turning when the cap is unscrewed from the pouring member, causing the frangible portions connecting the ring with the body of the cap to break, when the cap is first unscrewed.

43. A closure as claimed in Claim 42, characterised in that the thread on the cap has a plurality of entry points, as has the thread on the pouring member, and in that the entry points of the threads on the cap and pouring member each coincide with a locking tooth on the ring or pouring member respectively.

44. A closure as claimed in Claim 43, characterised in that each thread has four entry points.

45. A closure as claimed in Claim 3, characterised in that the ring is radially divided into a plurality of sectors which, prior to assembly of the closure, were joined by frangible portions which were broken during assembly, which sectors are retained in place between the screw cap and the pourer and, in use, are released when the cap is unscrewed for the first time.

46. A closure as claimed in Claim 42 or Claim 43
or Claim 44, characterised in that, in use, once the ring is separated from the body of the cap by the breaking of the frangible portions and once the cap has been removed from the pouring member the ring is freely

41

removable from the pouring member.

47. A closure as claimed in Claim 45, characterised in that the screw cap has an internal annular chamfered surface around its rim against which an external annular chamfered surface of the ring is located.

48. A closure as claimed i.n Claim 47, characterised in that the pouring member has a series of breaking teeth on its outer periphery whose purpose
is, during assembly of the closure, to break the
frangible portions of the ring, separating it into several parts.

49. A closure as claimed in Claim 48, characterised in that the pourer has an external annular abutment ridge on whose upper surface the said teeth are moulded and against which the said portions of the ring are retained.

- 50. A closure as claimed in any one of Claims 3,
4 or 48, characterised in that the ring has a lower
annular portion which is retained between the lower end of the screw cap and an upwardly directed annular surface of the pouring member.

51. A closure as claimed in Claim 3, characterised in that the ring comprises an upper and a lower annular member connected together by frangible portions. -

52. A closure as claimed in Claim 51,

42

11

characterised in that the screw cap has an internal annular chamfered surface around its rim which carries a series of grooves.

53. A closure as claimed in Claim 52, characterised in that the upper member of the ring has an external annular chamfered surface which carries a

series of grooves which engage the grooves on the cap, whereby, in use, the ring is caused to turn with the cap.

54. A closure as claimed in Claim 53, characterised in that the lower member of the ring carries a series of teeth each tooth having a surface inclined to the axis and an axially extending surface, and in that the pourer includes a corresponding series of teeth whereby, during assembly, the inclined surfaces of the respective series of teeth may slide
over each other when the cap is screwed onto the pourer
but, in use, when the cap is unscrewed the inter-
engagement of the axially extending surfaces prevents
the ring from turning with respect to the pouring
member, causing the frangible portions to break.

a55 . A closure as claimed in Claim 54,
characterised in that the toothed lower annular member
is retained between the lower end of the screw cap and
a radially outwardly extending surface of the pouring
member.

56. A closure as claimed in any one of the
preceding claims, characterised in that the component parts of the closure are retained together without the

Patents Act 1977

Examiner’s report to the Comptroller under Section 17 (The Search Report)

ik

Relevant Technical fields

(i}UKC((Edition K B8T TBB,TTB,TTC,TTT,
B8D DFD

(ii) Cl (Edition 5) B65D

Databases (see over)

(i) UK Patent Office

(ii)

Application number

9118768.2

Search Examiner

HIKE HCKINNEY

Date of Search

Documents considered relevant following a search in respect of claims 1-60

Category Identity of document and relevant passages (see over)

Y

X
Y

SF2(p)

10 JANUARY 1992

GB 2219570 A (GRUPO STEW SA) see Figure 1

GB 2158424 A (GELO GUALA SPA) see
Figure 1 and page 2 lines 67-117

GB 2136408 A (NASSMOULD HOLDINGS LTD) see
Figure 1 and 4

EP 0014319 A (BAUER ROLMD) see Figure 1

US 4497415 A (ADRW1O G AROWA DELONGRI) see
Figures 1 and 2

Relevant to
claim(s)

1,2,3,
26,35,
36,45,
11 & 12

25,35,36
42 & 43

3,35,36
& 42

1,2,4-10,
14-19,21
- 24,28-34
37-40,46,
56-59,3,

11, 12,25,
26, 35, 36,
42 & 43

sf - c\wp51\doc99\fil001277

Categories of documents
X: Document Indicating lack of novelty or of P: Document published on or afterthe declared
inventive step, priority date but before the filing date of the

Y: Document indicating lack of Inventive step If present application.
combined with one or more other documents of the E: Patent document published on or after, but with
same category. priority date earlier than, the filing date of the

A: Document indicating technological background present application.

and/or state of the art. &: Member of the same patent family,
corresponding document.

Databases: The UK Patent Office database comprises classified collections of GB, EP, WO and US patent specifications as outlined periodically in the Official Journal (Patents). The on-line databases considered for search are also listed periodically in the Official Journal (Patents).

Published 1992 at The Patent Office. Concept House, Cardiff Road. Newport. (IwOrit NP9 1RH. Further copies mac be obtained front
Sales Branch. Unit 6. Nine Mile Point, Cwmfelinfach, Cross Heys. Newport. NPI 7HZ. Printed by Multiplex techniques lid. St Mary Crv. Kent

OFICINA ESPANOLA DE 'N. de publicaci6n: ES 2 072 679 PATENTES Y MARCAS
@lnt. Cl.’;, B65D 41/34

ESPARIA B65D 55/02

TRADUCCION DE PATENTE EUROPEA

86 Nimero de solicitud europea: 92116454.7
Fecha de presentación 25.09.92

(7) Niimero de pub cac6n de 12 soIcitud: 0 537 530
Fecha de publicaci6n de la solcitud: 21.04.93

TItulo: Cierre a prueba de violación o manipulación indebida para botellas y similares.

PHoridad: 17.10.91 IT M1912754

Fecha de la publicaci6n de la mención BOPI
16.07.95

045 Fecha de la publicaci6n del folleto de patente:
16.07.95

E7TituIar/es: Guala S.p.A.
Via San Giovanni Bosco, 28
1-15100 Alessandria, IT

Inventor/es: Battegazzore, Piero

' Agente: Ruiz Tome, Francisco Fernando

T3

Avso: En ci plaza de nueve rneses a contar desde a fecha de publicaci6n en el E3oIetin europea de patentee, de la menei6n de concesi6n de la patente europea, cualquier persona podr6 oponerse ante la Oficina Europeade Patentes a Ia patente concedida. La oposición deber6 formularse por escrito y estar motivada; s610 se considerar6 coma formulada una vez que Sc haya realiz.ado el pago de la tasa de
oposicicn (art 99.1 del Convenio sabre concesión de Patentee Europeas).

VonL d frieuI: Ou1ina Epaæola Patentes y Maras. C/PunamÆ, 1 29036 Madrid

ES 2 072 679 f3

DESCRTPC(ON

Esta invencidn se reficre a un cierre a prueha de violacidn o manipiilación indobida para bo-tc]Ias y sirnilares, taT corno so define on ci pro-antb 1110 de la rejvindjcaciOn principal.
Dichos cierres, bien conocidos y ampliarnente aceptados, proporcionan la cvidencia do que t.tna botcila ha sido abiorta por el hecho de que, con el desenroscado inicial dc su tapón, una banda a prueba de manipulación iridebida y ci taport se separan a lo largo do ima I Inca debilitada (vØase, por ejempict, el documer(o FR-A-2134618). Sc ha encontraclo, sin embargo, que la manipulación in-debida puecie disirnularse ajustanclo la banda do ni.]evo contra el tapon. Dc esta forma, Lill Coin-praclor poco atento picdc Lerier la impresi6n de que, se le ha ofrecido una bote.11a intacta.
El prohierna suhyacente dc esta lflVCflClOfl CS proporcionar in cierre del tipo aiiteriorrnente es-peci licado, que Lenga unas caracteristicas cons-truciivas y operativas tales cjue evitcn Ia (lcsvon-taj a antcriormonte rn e nd on atIa.
La idea que soluciona los problcrrias tØcnicos anl.eriores es Ia consistciite en quo la banda contra manpuiacidii indebida quede permanentemnente deforinada durante la accion dc desenroscado, do tal forma quo ya no puoda, scm restabicoida SI apa-riencia original.
Para resolver este pmo}.)leina tØcuico, y basada en la idea rest)] iU va anteriorm.ente mencionada, esta invenciOn proporc:iona im cierre dc acuerdo con la clÆusiila caractcrizadora tie la reiviridi-caciorl principal
Las caracteristicas adicionales y las ventajas de cut ce-nrc de acuerdo con la invención se hardn eviclentes a partir do la sigilie] te d.escripcidu de-tallada dc una realización preterida de La misrna, dada a rondo tie ejeTnplo y no I rn i tati Va, con re-ferencia a los clihc.ijos que oc acc)Trlparlarl, cii los cuales:

La Figura I cit un aizado en sección de un cierre dc acuerdo con la invención;

La Figura 2 cit una vista en planta seccionada, dibujada en escaia aml.)liacla y LOtIiLt.Ia i-i lo largo die la linca I I-il, del ciorre dc: la Figura,

Las Figuras 3, 4 y 5 son Vistas en planta seccio-nada.s, clihujadas en una oscalaafin imis are-pliada, do no dotallo del cierre de la Figura
1 en distintas etapas dc su funcionamicnto;

La Figura 6 es una vista en perspectiva dc un detalle del cierre de la Figura 1 on una etapa adicional dc su funcionarnicnt;o; y

La Figura 7 es un aizado on sec:cidri do tin detalie tic urj cierre de acucido con la invencidn, do aciietdo con una realizacidn modificada dc
I invencidn,

Con referencia ahora a los dibijos gendrica-monte clesigitado por I existe un cierre contra ma-nipulación indebida tie una boteila 2, dc la cual dn]camcnto so ha rnostrado la porción dc boca.

El cierre I. comprende all. cuerpo cii iridrico 3 airedeclor dc un eje X-X, asociado con I hoca dc la botella 2 y que, inciuye una vdlvula ariti-rellenado 1, basicamniente una vØlvula de reLenc6n, tin cuerpo colado 5, y un manguito 6 que se ajusta sobre]a hoc:ts dc la botella con ci fin tie ret.ener la vØlvula anti.-rellenado 4 y ci cuerpo colado 5 dc fömuia segura sobre la hoca dc Ia hoteila,
El cierre 1 conipronide Lain hiØii ito obturaclor 7
10 on iorrna do tapdn. Una rosca exterior 8, pmact.L-
en ci cuerpo colado 5 y una rosc:a interna 9,
hecha en ci tapdn 7, lorman una conexión roscada
10 para ci cnroscado y desenroscado del tapdn en/del cuerpo ciiind.nico medianlc tin rrawimiento
15 rotatorio alrededor del eje x-x, en cI sentido tie
la flecha F para ci desenroscado, y en ci sentido contrarlo para ci cirosoaclo.
Idea banola ariciar contra manipulacior ride-
hicla 12 se hace dc una pieza con cI tapdn 7 a traves de una ilnea dehilitada 1 1.
Una cuhiorta 13 del tripdri se enca.ja do forma apistada sobre cI tapOn 7, y se extiendo hast;a la barida contra manipulacidn indebida 12, haciØn-dose prcfcriblemnente dc un material cuyo color
25 ccsntrasta con ci del material del que so liace ci
tapón y la banda contra rnanipulaciOn indebida.
El dicrrc 1 liene i]na pluralidad die dicntcs 14,
catorce dc ellos en este ejcinplo, los octaics se ha-
ccii dc nna pieza con ci manguito 6 del cuerpo
30 cilIncirico 3, y so clistri hi iyen airededor del cucrpo
cilIndrico a ciistancias dc paso angulares A, c in-clinados hacia atrÆs con rospecto a la, direcciOn de desenroscado del tapdn F.
Id. dome I comnprc’ride, aderri una plural]-
dad correspcncliorit,e dc levas.15, las cualcs estØn formadas Intcgiamcnte con is banda.12 y se, dis-Lrihiyeri a,lredcdor de la banda con clistancies dc past) angul ares B qu.c varfan gradi.ialmentc clesde
ma distancia dc paso minima B MIN, ligerarnente
4() mayor que, la distancia nic paso A, hast.a uiia dis-
tancia de paso maxima B MAX.
Cada leva 15 se sitda antes del rcspcctivo
diente 14 scgfin ci sentido tie desenroscado del tapdn Id, 0 ifltcrac:ciOTuI con el diente 14 durante
45 la oporación tie desenroscado, por lo que -to seth
clespl azado haca afucra en ci scntido dc 1a fiecha
M, con Cl fin do provocar 1 a d.ctormacióu Local dc
la banda en la forma dc Lin sal icntc W.
El. cierre I comprendo taioliiØn UTNIL pl iralidad
5o conrespondi cute dc cliontes anl.agonisttis 17, los
cualcs cstÆn hechosdo uria pieza con la banda 12
y so distnihuyeni airededor dc la, bands. 12 cori las mismas distancias dc paso Ii, va,ria,rjdo entre una longitud minima y una longitud md.ximna, comno
55 as icvas 15.
Cada diorito artagortista 17 Sc sitda dcspuds de sic respectiva leva. 15, a una corta distancia. predeterrrinada. A travis do esta distancia, la banda 1.2 ha rcducido su espesor para dcfinirunia
60 junta cieformablc 18.
Cada diente anitagonista 17 so intcrpondrÆ, durantc la oporacidri tic desenroscado, a su res-pectivc) diente 14, y scrÆ empujado bacia dentro
en ci sentido de la ilccha N, coni ci Lie Provo-
65 car Ia dcforniación local dc in banda on Ia forum
dc una deprcsión 19. Cuan.do se emnpuja hacia el interior, la cabeza do cacia diente antagonista en-
en ciii rebajc I 4a provisto on ci nianguito 6

Ej

ES 2 072 679 T3

delante dc cada diente 14.
Cuarido la, banda se (lelorrna en La form a de Un salierite.16 y Lola (iepreslón 19, la junta 18 se diapon.e por si 01 isnia diagonairriente desde so posición original, orientada ci mcuitlerencialirtcrtle. Eiitre el tapón 7 y los e.x.treiiios dc los d.ientes antagonistas 17 de la banda, Se extienden puen-tes de ruptitra, tocios ciba (lesignaclos por 20, los cuales se hacen de una sola pieza con ci tapdn Ia banda, IorTnando clichos pientes 20 con jmta-Tnente, la 11riea debilitacla 11.
En ulia pOSiCióll CT] Lee la prirnera leva de la piuralidad de levas 15 y ci (1 Limo diente anl;ag n aLa dc La pl oral idad dc dicites an tagonistas 17, la banda Sc liace inis deigada hasta forenar an puente dc ruptura deb1itado, designado por 21 UT] Lope 21 sobresale dcl cuerpo ci] indrico 3, con ci coal in terfØriril art Lope antagonista 23 que sobresale de la banda 12, cuando ci tapón e,,, -,t6 siendo desenroscado.

13 Lope antagonista 23 esti situado arites del puente, 21 a iina cierta distancia dcl tope 22, m.s pequeha qite ci paso Imnirric) B MIN.
Al desenroscar, el acopiamicnito del tope anta-gonista 23 con ci tope 22 da lugar a que el puente 21 se rompa y La banda cc abra forrnando una coil 6 guración cr1 I oem a de C.
Situada en las proxirrudades dcl puente 21,
ci tope 22 y ci tope antagonista 23, cxistc una lcngüeta 24 qiic se extiende ci rcuniereiicialmerite Y que tienc ari extreino 25 dirigido hacia cI tapóri 7, y on extremo opuecto 26, dirigido hacia la banda 12 en ima posici Ti despucs dcl puent.c de ruptura 21.
La Icrigiieta. 24 ticoc na longitud y secciOn transversal scl.cccionadas (Iota] Forma que penn-ten a La lengileta, sufnir UTI cierto grado de a1arga miento sin rornperse.
Esta cstablecc una conexitn cntrc ci tapon. y ia banda, con ci lint de evitar quc Ia barida se afloje con Ia riiptura del piicnte 21 y dc Los pientes que formari la linca clehi litada,
En una rcalización mociificada (vØase la Fl-gura 7), el manguito 6 est6 foninado con una porciOn tubular 27 y outs porcidn anular 28 so]- clacias entre si tat como mnediantc soidadura por ul trasonidos.
La porción tubular 27 ticne an horde supe-rior 29 at curd se sueida la porción anular 28, y unas pcqueSaa ienguas 30, las cuaics so extieriden hacia arriba hasta. la intad del camino, aproxirna-danictite, y estad onentadas intcnorrnuente, hacia el horde superior.
La porción anular 28 que rcticnc el cuierpo co-Jado y Ia vdivul a aruti-relienado contra Ia hotel a, ac suelda externamente at horde 29 y se clota de una extension tubular 31 insertada coaxialmente en là pOrCiOTI tubular 27, definicrido, con]unta-merute con la misina, tin cspacio intermcdio ant-lar 32. La extension tubular 31 tiene forma die peinc, y cstÆ dotada dc dientes 33clue se ajustan sobrc la boca de la hotcbla.

I-’referiblcmcnte, its porcidn tubular 27 y la porcioT] anular 28 se hacen dc or plristico rigido, por cj cinpI o poliestircno.
Al aplicar et cierre 1 a la hotella, las lcnguas 30 se saltarÆn eló.sticarnerite sobrc là boca die là

ixitelia y maruteTudran of cierre axjalmcnte con rcs

pecto die La hotella, mientras que Los dcntes 33 se ajustan sobre la boca, siendo fibres iara dobtarse hacia afuiera gracias al espacio intermedjo 32 exis-tenite, con ci fin tie sujetar ci cierre radisiniente (xiii respccto a la, botelia.
El luiiucioriamicu to del cicero 1 se diescri bird, a continuacion con referencia a una r:ondicion

cial., tab comb se mucstra en las Figuuras 1, 2 y 3.

Cuando ci tapdn cc desenrosca Tor prurncra yes on ci SCntido de la Ilecha F, la banda serti arrastrada en ci nnismnio sentido por los puentes 20.

Coma prirriera consccuencia, ci Lope antago-
TasLa 23 so acopia coil ci Lope 22 y t-]l puente 21
xc roripc die in nuediato.
A riuedicia clue ci desenroscado continua, con
la atencidn centrada en ci pruner tiiente i’l, la, prirnera leva 15 so acoplarc con cste dieritc y pro-
20 vocara la formación de.l saiiente 16, to quo con-
ferirut a la banda en eats posicióo el aspecto del vØrtice dc iiii poligono (vdasc la Figuira 4). En-tonces, ci primer dicntc antagonista 17 se acopla
con cain dientc y miii forma là depresion 19 (vdase
its Figuira 5). 1)che observarse que ci dhcntc anta-gonista 1.7 es arrastrado por ci puente, 20, to cual lavorece la formnuac:ion die la depresión en actuiacidn conjunta con, la mclinacion dc los dientes, propor-cioiiando ma invitaciru para la incliriacion de los
30 duentes aritagonistas, hasta que, a mncdida diOC Cl.
desemiroscado progress., el puente so rorripe bajo
los csfuerzos tic tracciOn y cizaliadura.
Dc ic>rmna concuirrente cori Øste, la junta IS adoptard utna posicidn rruoiutada 0 diagonal, por
35 to c1uc Ia comnbinacidn de la dcprcsidn., ci sal terute
.y là junta coriliere la apariencia de la hetra Z a. la banda en esa posicion.
Lo que ha OcLirrido con ci primer diente 14
se repitc de forma idcntica con toclo ci resto de
40 los dienutes, con UT1 retraso critic cada diente y
ci siguienute dehiclo a los cambios en los pesos de
la leva y ci cleric antagonista. Dc esta forma,
c-uI esfuerzo que dehe ejercerse para desemuroscar el tapÆn dehe ser suave en iugar de, estar conucen-trado en mi misnuo p1cc).
Una vex que toclos los pucrites, desde ci puerute
21 pasando Poe los pucrutes 20, han i(lo rotos, la ixiTx]a, on este nuomento aberta en onus; configu-radon en forrrua de C, penruianecerut umnida at tapciru
50 mediante la iengücta 2’I (vØase la I’igura
La baTuda, debido a los sucesivos sahiertes y clepresiorues, quo cunu ligucran las regiones eli Forma
de Z, creaclas axI en la i’nisrrua, tornarut cmi conjunto
la apariencia dc mints 1 (rica discorui.unua en diemute de
55 SRin-iL hastante difcrcntc dc mm aparicncin original
and ar.

l.,iTla ventaja lumnclamental de 1111 cierre de acucrclo con Ia mnvenucidn es cI hecho de que la ma-nipuia.ción irudebida so hace bastantc cvidentc por
n la aparicncia deformnada que aciquiere la banida
contra no ani pulacidri in debida.
Una ventaja adicionai del cierre do ecta in-vencion cs qiie no puede ser restituncla on its pr:utctica sit condiciOn original, mu siquiera me-
o5 chantc its actuadión muts haiti I y pacienite, dc-
hiendo a La cleformación tie la banda ei:i sahcntex y cicpresioimes ci hecho de quo ci material de banda quecic en ru estado irreversible tic-u defonnuacidn,

S

ES 2 072 679 T3

Otra vcntaa de un cierre de acuerdo con la invención es que tanihiØn es favorable desde el punto dc vista de la seguriclad y prOle(XIOT1 rue-dioambientaL De heclio, 1111a yes ablerto, iiiri-guna de sus partes caeni alrededor o sa]tarri, (e-a qime la liarida contra nnanipul.aciOii irideb.ida perrnanecerÆ junto at tapón, al cual so mantieno i.mi da niediantc la lengueta.
lI cierre de esta invcnci61.1 tambiØn es yen-tajoso dosde un punto do vista ergondniico, ya (pie, puede ser abicrto con un csfucrzo moderado y suave.
Adicionalrnienie, el clerIC pi-:de iabricarsc rue-cliante un proceso de rim oldeo por inyeccidri, con plÆsticos aclecuados y de rn rondo ra]:)ido y ecoriorri leO, 10 C1SLaI no es iflI105 ventajoso cii un articulo Clue debe labricarse en caiiti jades iruly grarides.
Otra vcntaja de un cierre de acuerdo coii Ia invencióri radica on Sri rcsistcncia mejoracla a la maniprmiaeion indohicla do la botci La. Debido al liecho de quo el manguito so forma dc porcio-nec liechas de un piÆslix> rigido, &te 00 puede

ser fiIci]rnerte delorrriado, ta] comb rneclianfe in-mnersióri prc)Iorigm-mxIa en agila n:aiienl,e, (:on ci firm de, niesalojarlo de. la botelia, y es por ci cc>TitrarIo, practicarnente I odoformabic.
Atirri otra vcnitaja (IC! C:icrre (5 quo puecle adal)-.
Larse a botellas con un tarnaæo de boca npie varia dentro do un amp]io intorvalo do to]orancias. Do hediio, (IeE)i do a] espaci 0 ir(terrnmedio provisto, los dientes de extension son libres de fiexionarse coino
10 cc req here sin pre Sc cornimniqi]e n iriglina ci.efor-
maciOn a la porción tubular,
Dc cstc hccho rcsriita Ia ventaja afiaclida de to-
nor toclos estos cicrres perfcctarnente soniejaritcs
y aparerilerriente sin nielectos iiiduso eu hote]]as
15 que lionel] un tarriano de boom-i proximo a] 1 Ini Ic
superior dc tolerancia.
Con.iprcnsiblcrncnte, ci 010110 CbcSCritC) auto-. riormerite pm-de sex aiterado o inodi licado de ixim.r-ohas form as por los expertos en là teen Ca, (iOU ci
20 fin de satisfacer los requerimientos especIficos y
eventuales, sin salir del drnbito de protecciOn de
[a invenciOn, tal com.o cc define on las reivindica-ciones quo so acompafian.

25

30

05

40

45

50

55

65

ES 2 072 679 T3

RETVINDICACIONES

1. Un cierre contra ma.nipulación inde.bida (1) para boteLtas (2) y simiiarcs, que comprende un cuerpo ciLtridrico (3) destinado a su unidn con la botcila (2), Un tapdn (7), una conexidn roscada
(10) entre ci tapón (7) y el cuerpo cii Iudrico (3) para dcsenroscar y enroscar el tapOn (7) de/en el cuerpo ciiudrico (3), y una banda a prueba de manii:nii ación indehida (12) hecha de una pieza con ci ta.pdr, (7) a travis de una lInca dcbili tada (Ii), caracterizado porque coinprcndc una pluralidad de dientes (14) distribnidoe alredcdor del cuerpo cLhndrico (3) y una piuralidad de le-vas corresponchcntcs (15) distrihuidas aired ec.lor de la banda (.12), estando situada cacia lcva. (15) ailtcs del respectivo diente (.14) segiin ci scitido de deseriroscado del tapóri (7), c intcrponiØndose at diente (14) durajite la operacidn dc dcscnros-cado, dc tat forma que es desplazada hacia aliera y deforma permanenternente la banda (12) en la forma de un saliente (16).
2, Un cierre contra rnariipiil acidn incicbicla (1) (Ic acuerdo con la reivindicaciori 1, caracteri-zado POL1LiC los dientes (14) estiin inciina.dos ha-cia atr.s con respecto at seritido de desenrosnado del tapdn (7), y porque comprende una piurali-dad Lie ii ientcs antagonistas corresponclientes (17) quo sobrcsalen hacia afuera. desde la banda (12), estando situa.clo cada dieTfl,e antagoitieta (17) an-tea de ma leva respcctiva (15) y a una distancia prcdcterminada (IC djcha leva (15), catarido di-cho dicntc antagonista inclinado hacia adelante con rcspecto at sentido de deseiirosc.ado e inter-ponienclose al diente (14) durantc la opera.cidn de (icScflrOSCadO, para --,or cntonces arrastrado hacia adentro cle tal modo que deformc la banda en la forrna de urni depresión (19).
3, t Jri cierre contra rnanipulacidn indehida (1) de acuerdo con Is. reivindicacion 2, caracteri-zado porque Ia banda (12) ha reducido so espesor a tra.vØs de dicha distancia entre ci diente antag nuta (17) y la icva (15), at objeto dc definir una junta deic>rrriabic (18) que so cstablece diagonai-rncntc entre ci saliente (16) y is. depresidri (19) COT) ci dcseriroscado.
4. in cierre contra manipulacion indebida (i
de acuerdo con la reivindicacidn 3, caracteri-zado porque entre los dien.tes antagonistas (1 7) y ci tapón (7) se extienderi pilentes dc riiptura (20) que constituyen la linea debil itada (ill).
5, Un cierre contra rrianipidac:ion indcbida (i
de acuerdo con a reivindicación 4, caracteri-zado porque los dier.ites (lid) Se diatribuycn con unas distancias de paso regularcs (A), y porque las levas (15) y los dicntcs antagonistas (17) se chstribuyen en distancias augulares que aulnen-tan gradualrnente desde 11T1 valor rn IniTrio (H MIN) hasta un valor rnilxirno (B MAX).
6. Un cierre contra Trianipillacion indcbida (1) de acuerdo con la rei vindicacidn 5, caracteri-zado jxrqilc cornprcudc Liii pLlcnte dc ruptura
(21) formado sobre Ia bands. (12) CT) ima pc)si(:ioTi entre la prinlera levis y el ill Limo diente an-tagonista (17), Un tope (22) que sobresale hacia ci exterior del cuerpo cilIndrico (3), y tin Lope an-tagonista (23), quo sobresaie hacia, ci exterior Lie la banda (12), antes del puente (IC riiptiira (21),

estando situado dicho tope antagonists. (23) antes del tope (22) a una distanci a rn curia pie dich a clistancia To intrria (B MIA), con ci fin de acoplarse at Lope (22) y hacer quc ci pLtcnte dc ruptLlra (21)
de la haricla (12) se rompa con ci desenroscado y
iil baTida se abra en uria con fig tirac:ion CT) forms.
(IC C.
7. Un cieTre contra. ToaIi.ipulacion indebida (1)
dc acuerdo con la reivindicacidn 6, caracteri-
10 zad o porcine (5)TY11)rcndc i 11)5, lcngiicta (24) ciit’
interconecta ci tapón (7) y la banda (12) en una posicion sobre 1)1 Ti) isTria Si tiiada antes (ICI pueriLe
(IC riiptiira (21), con el fin dc evitar quc la bands.
(12) se afloje at romperse Ia lInes. debilitada.
15 8. Un cierre contra manipulation imidebida (IC acuci-do con Ia rcivmdcacion 1, caracterizado porque ci cuerpo cilhidrico 3 inciuye un inariguito
6 consistente en una porcidn tubular (27) y una porción anular (28) solclaclas entre si.
20 9. 1311 (Terre contra nianipiilación indebida de acuerdo con li-i, rd vindicacion 8, caracterizado P0FC111C is. porciómi Li ihiil at (27) ticne lcngtictaa
(30) dirigiclas interiormente hacia ci horde supe-
rior para retener ci cierre axialmnente contra Is.
25 botclla.
10. Un cierre contra manipuiaciOri indebida Lie acuerdo con is. rejviudicacion. 9, caracterizado porque la porción anular (28) est. dotada dc una prolonga-ir tubular (31) insertada coaXialllLcntc
30 dcntro de la porción tubular (27) y que define un
espaclo intermedio (32) con j untamn.enite coil dsta,
con ci fin Lie retener ci cierre radialrxienite contra
is. lioteila.

H. TJn cierre contra maniptilacion iTidehida, de
:3 5 actierdo con 1a rei vindication 10, caracterizado
porque la proiongación tubular (31) tiene forma
de peine y coritpteride (]ieTiteS (33) destinac]os a
aj I istarse sobre Is, hOca (IC la botel I a.
12. Un cierre de acuerdo con is. rei.vindi-
canon 11, caracterizado porque is. porcion Lu-
l:nil at (27) y ia porcion anular (28) estan hechas
de on piastico rigido, tal corno Pui estireno.

IN

It)

NOTA1NFORMATIVA;Couldrmcaiareserva
del art. 167.2 dcl Convenio do 1-’atentes Euro

peas (CPE).y a is Dlsposicidn Ti’ansitoria del 11,7) 2424/1986, de 10 de octubre, reiativo a la apiicacidn
60 dcl (0TiV(1IV’ (IC i’iitentc I4uropca, las patcntcs curo-
que d,ir’i Lspana y icitadas antcs dci 7-10-1992, no pi-oducirin mungón efecto en Espai’ia
en la medida en que confieran proteccidn a produc-
los qitirnicos y farm aceiiticoa coffi)) Lit lea,

Esta inf’ormacidn no prejuzga clue is patente estØ 0
no tncluicla en la mencionada reserva.

I..

United States Patent [191

Goldberg et al.

[54] SAFETY CHAMPAGNE CORK

[75] Inventors: James R. Goldberg, 315 Grandview
Ave., Novato, Calif. 94947; Albert J.
Kurtz, Marshall, Calif.

[73] Assignee: James H. Goldberg. Novato, Calif.

[21] AppI. No.: 548,313

[22] Filed: Nov. 3, 1983

[51] Jut. CL....................... B65D 41/34; B65D 41/48
[52] U.S. Cl..................................... 215/256; 215/258;
215/306
[58] Field of Search.......................2 15/256, 258, 306;
220/270,375

[56] References Cited
U.S. PATENT DOCUMENTS

773,34510/1904

Scheldt
2,265,263 5/1918 Sharpe -
3,235,117 2/1966 Mason, Jr.
3,994,409 11/1976 Nightengale

Prima,y ExaminerGeorge T. Hall

[iii Patent Number: 4,474,302

[45] Date of Patent: Oct. 2, 1984

Attorney, Agent, or FirmFitch, Even, Tabin & Flannery

[57] ABSTRACT

A molded tethered safety closure device for use on bottles containing pressurized liquids such as cham-pagne or sparkling wines comprising a cork or closure element and a retainer collar joined by an intercoupling section. The intercoupling section is comprised of a tabbed tear strip and a tether strip that are integrally formed in a helical configuration extending in a plural-ity of turns from the cork to the collar. The tether strip and the tear strip are interconnected by a pair of grooved frangible webs that can be torn by pulling on the tear strip. This allows the tear strip to be manually removed from the intercoupling section. Following removal of the tear strip, the helical tether strip inter-connects the cork and the retainer collar, thus enabling the cork to be released from the bottle without flying free.

9 Claims, 4 Drawing Figures

I

0

US. Patent Oct. 2, 1984

 tI1 iIiIIi

Idil

52

18

34-
62

8 14

FIG. 2

38
14 L

42

4,474,302

FIG. 4

 Io

\\\ 40
- 1124

28
- I8

- - - 60

FIG. 3

4,474,302
2

Which the tether is always attached to the cork while SAFETY CHAMPAGNE CORK. also permitting the manipulation necessary to extricate
BACKGROUND OF THE INVENTION

the cork from the bottle. Ironically, especially if the
champagne is properly chilled and therefore at reduced
This invention relates generally to closurà devices pressure, removal of the cork is sometimes difficult.

and more specifically to a safety closure device for use It is an object of the present invention to provide an on bottles. containing pressurized beverages such as improved closure device for a bottle or the like which is

champagne or sparkling wines. particularly well suited for use in connection with The drinking of champagne or sparkling wine is usu- champagne and sparkling wines. ally associated with happiness and frivolity. Unfortu- 10 It is another object of this invention to provide a nately this, happiness and frivolity has all too often safety closure device for bottles containing pressurized ended in tragedy because of injuries caused by flying liquids such as champagne or sparkling wines. corks. Because of pressure inside a bottle of champagne

or sparkling wine, particularly if the wine has been It is a another object of this invention to provide a
shaken or is warmer than recommended, a cork can be 15 tethered safety closure device for use on bottles con-
propelled from the bottle at a velocity of well over 100 taming pressurized liquids such as champagne or spar-
mph. Tjnattentive individuals opening the bottle or per- kling wines which will enable the cork to be easily
sons standing nearby can be seriously injured by these released from the bottle but which will restrain the cork
flying corks. from flying free.
Since the shape of a champagne cork is compatible 20 It IS another. object of this invention to provide a
with the adult eye socket, injuries resulting from flying safety closure device for champagne or sparkling wine
champagne corks are typically eye associated. Severe that eliminates the need for secondary applications of
eye damage, or even complete loss, of eyesight, can additional restraining devices such as wire baskets,
result from these accidents. Of course, other injuries are shrink wraps or other retainer devices.

possible, such as injuries to teeth, or damage to adjacent 25 It is a further object of this invention to provide a property such as glasses or windows. safety cork device that eliminates the need to manually The problem of premature or inadvertent explosive restrain the champagne cork as it is being removed from release of champagne corks is exacerbated by the fact the bottle.
that many lower priced champagnes and sparkling it is a still further object of this invention to provide wines are closed by molded plastic corks. Such plastic 30 a safety cork device incorporating a tamperproofsafety corks possess an even greater tendency than natural

corks to become dislodged as a result of internal pres-

seal that unmistakeably indicates when the seal has been

sure in the bottle. In addition, the slipperiness of plastic
is sometimes increased when the cork is.molded because

tampered with.
Other objects of the Invention will become apparent

of a residue of the release agents often used to facilitate 35 from the following description and drawings.
removal of a hot plastic cork from the mold in which it BRIEF DESCRIPTION OF THE DRAWINGS

is made. Wetness on the glass surface of the bottle as a result of condensation or seepage of the contents can. FIG. 1 is a partially sectional side view of a safety
also reduce friction between the surface ofthe glass and closure device of time present invention;
the surface of the plastic cork. .. 4I HG. 2 is a partially sectional side view ofthe device
Bottlers of champagne and sparkling wines have uti- of FIG. 1 illustrating partial removal of a tabbed tear
lized a variety of techniques to prevent inadvertent strip;

release of corks from bottles. These techniques have FIG. 3 is a partially sectional side view of an inter- included the employment ofwire and plastic wrappings coupling means on the device of FIG, 1 further illustrat-
and metal restraining devices, most of which are corn- 45 ing partial removal of a tabbed tear strip; and
plex, expensive, and require care in their removal. FIG. 4 is a side view of the safety closure device of

Moreover, with nearly all of these devices, once the the present invention showing the device as it appears restraining device has been removed, the cork is free to following removal ofthe tabbed tear strip arid release of fly out of the bottle if it is not manually restrained, the cork.

Although many champagne bottlers now include "fly- 50
ing cork" warning notices and restraining device re- SUMMARY OF THE INVENTION moval instructions on their labels, unfortunately, in
situations where champagne and sparkling wines are Very generally the tethered safety closure device of
typically used, it is not always reasonable to expect the the present invention, for use on bottles containing

pressurized liquids such as champagne or sparkling exercise of care and caution that is required to avoid 55 wines, comprises a cork or closure element and a re- injury.

Various types of tethers for bottle stoppers are well tamer collar joined by an intercoupling means. The
known in the prior art. Examples of these are shown in intercoupling means is comprised of a tabbed tear strip
U.S. Pat. No. 773,345 (1904), U.S.. Pat, No. 1,265,263 and a tether strip that are integrally formed in a helical
(1918) and U.S. Pat. No. 3,235,117 (1966). Moreover,60configuration extending in a plurality of turns from the
the use oftear strips in molded closures in order to form cork or closure element to the collar. The tether strip
integral tethers is also well known (see for example, and the tear strip are interconnected by a pair of
U.S. Pat. No. 3,994,409 (1976)). Although the foregoing grooved frangible webs of a thickness preselected to
patents and other prior art may be satisfactory for cer- permit the tear strip to be manually removed by pulling
tain types of closures, the peculiar characteristics of 65 on the tabbed end. When the tear strip is removed, the
containers with pressurized ingredients, such as cham- helical tether strip interconnects the cork and the re-
pagne and sparkling wines, make prior art efforts unsuit- tamer collar thus enabling the cork to be released from
able. This is because of the need for a closure device in the bottle without flying free.

4,474,302
3

DESCRIPTION OF THE PREFERRED EMBODIMENT

The presently preferred embodiment of the present invention is illustrated in FIGS. 1-4. A preferred teth- 5 ered safety closure device 10 is shown mounted on the neck of a bottle 12 designed to hold pressurized liquids such as champagne or other sparkling wines. The teth-ered safety closure device 10 includes a cork or closure element 14 and a retainer collar 16 connected by an 10 intercoupling means 18.
Element 14 is adapted to close the mouth of a bottle
or the like by frictional engagement with the interior facing surface of the mouth. Element 14 is further com-prised of a cup-like cap 20 and an inner plug 22. The 15 intercoupling means 18 is further comprised of a tabbed 24 tear strip 26 and a tether strip 28 that are integrally formed in a helical configuration extending in a plural-ity of turns from element 14 to collar 16. The tether strip 28 and the tear strip 26 are interconnected by a pair 20 of grooved frangible webs 30 and 32. The thickness of the pair of grooved frangible webs is preselected to be less than the thickness of the tether and tear strips. Tear strip 26 also contains an integral pull tab portion 24 which provides an easy and convenient means for 25 grasping tear strip 26 prior to its removal.
When pull tab portion 24 of tear strip 26 is grasped and pulled by one wishing to open a bottle of sparkling wine, tear strip 26 separates from tether strip 28 because of a tearing of frangible webs 30 and 32 along the path 30 of the grooves between the tether and tear strips. When helical tear strip 26 is removed, helical tether strip 28 remains to interconnect element 14 and collar 16 thus enabling element 14 to be released from bottle 12 with-out flying free. 35 Bottle 12 in FIGS. 1-4 is typical of bottles used to contain champagne and sparkling wines. Such bottles often have elongated, tapered, cylindrical necks con-taining a circumferential bulge or ridge 34 (known to the trade as a "finishing or bead ring") just below a lip 40 36 at the top of the bottle. Circumferential ridge 34 protrudes from the side of the bottle with sufficient radius to provide a means for restraining or impeding objects or devices, fastened above or below it, from moving up or down the neck of the bottle. In the past, 45 such objects and devices have included woven wire baskets used to restrain champagne corks. In the present invention, circumferential ridge 34 is used to restrain retainer collar 16.

The tethered safety closure device 10 is preferably 50 formed of a molded unitary piece of a suitable resilient substance. While polymerized plastic is a preferably resilient substance, other resilient substances are suit-able as long as they are weak in shear when thin but strong in tension when thick. As used herein, "weak in 55 shear when thin" means a substance that is manually tearable when used at the preselected thickness of the thin frangible webs connecting the tear and tether strips. "Strong in tension when thick" means that, at the thickness of the tether strip, the substance is strong 60 enough to withstand longitudinal strain caused by sud-den release of the cork from the bottle.

For purposes of this invention, a suitable resilient substance will be moldable. A suitable resilient sub-stance will also have sufficient resiliency to allow ta- 65 pered retainer collar 16 to stretch but not break as it is inserted over the neck of the bottle, including circum-ferential ridge 34. Following the expansion necessary to

allow tapered retainer collar 16 to pass over circumfer-ential ridge 34, a suitable material will still have suffi-cient resiliency to allow the collar to assume a shape that conforms generally to the contour of the outside of the bottle.

Element 14 is preferably comprised of a cup-like cap 20 and an inner plug 22. The cup-like cap 20 is com-prised of a circular disk-like top portion 38 integrally molded with a hollow cylindrical side portion 40. The diameter of the cap’s circular top portion 38 is greater than the diameter of top of the bottle neck. The inner circumference of the caps hollow cylindrical side por-tion is greater than the Outer circumference of the lip 36 at the top of bottle.
The top of cork’s inner plug 22 is connected to the inside of the circular disk-like top portion 38 on cup-like cap 20. Inner plug 22 is preferably hollow having an outer circumferential wall surface 42 and an inner cir-cumferential wall surface 44. In the preferred form of the present device, three thin radial ribs, spaced approx-imately 120 apart, protrude from the plug’s top circum-ferential outer wall surface 42. One such radial rib 46 is shown in FIG. 1. The top portion of the radial ribs fuse with the inside surface of the circular disk-like top por-tion of cup-like cap 20. The ribs’ inner sides extend down and are fused with the outer circumferential wall surface of inner plug 22. The area of the inner plug where the radial ribs are located is referred to herein as "the anterior portion" 52 of the inner plug 22.
The radial ribs are slightly shorter in length than the length of cylindrical side portion 40 of the cup-Like cap
20. The ribs are of sufficient diameter to assure that the combination of inner plug plus radial ribs will have a diameter greater than the diameter of the opening at the top of the bottle. This is to allow the bottom of the radial ribs to come into contact with lip 36 at the top of bottle 12 thus preventing the anterior portion 52 of inner plug 22 from being pushed down into the neck of the bottle as a result of a downward force on cork cap 20.

While three ribs spaced approximately 120 apart are preferred, two ribs spaced approximately 180’ apart, or four or more ribs spaced around the circumference of the inner plug, can be used as long as they function to prevent the anterior portion 52 of inner plug 22 from being pushed down into the neck ofthe bottle as a result of downward force on cork cap 20.
Cylindrical inner plug 22 has an outer diameter very slightly smaller than the diameters of the opening at the top of the bottle and the upper inner portions of the bottle neck. This allows the plug to fit tightly down into the neck of the bottle.
Just below the anterior portion 52 of inner plug 22, the plug contains a series of parallel annular ridges that protrude slightly from the plug’s outer wall surface 42. The area of the inner plug where the annular ridges are located is referred to herein as ’the annular ridge area" 54 of inner plug 22. The width and height ofthe annular ridges are approximately equal. The annular ridges extend down the outer wall 42 of the plug to a point approximately in line with the bottle’s circumferential ridge 34 when the cork device 10 is in place in a bottle
12. When in place, the circumferential wall of the inner plug 22 supports the annular ridges against the inner wall of the bottle neck. As a result, the annular ridges grasp against the side of the bottle helping to seal its
contents.

JP

4,474,302
6

The outer wall surface 42 of inner plug 22 is smooth thickness. The tapered shape ofretainer collar 16 gener- below annular ridge area 54. This area is referred to ally mirrors the contour of the taper on the champagne

herein as "the smooth area" 56 of inner plug 22. When or sparkling wine bottle At its anterior end, where the

the tethered safety device is. placed on a bottle, smooth tether strip merges with the collar material, retainer area 56 will be in contact with the neck of the bottle 5 collar 16 contains a small circumferential ridge 60 that near the bottle’s circumferential ridge 34 is lo- protrudes from the outer surface of the collar wall. Just

cated. The area of the inner plug that extends down below ridge 60, on the inner surface of the collar wall,
below the smooth area 56. is referred to herein as "the the collar contains a circumferential groove 62. The

tapered end portion" 58 of inner plug 22. As its name shape and size ofinner circumferential groove 62 gener- -implieS, the tapered end portion 58 of inner plug 22 is 10 ally mirrors and approximates the shape and size of
tapered so that its outer diameter is progressively less circumferential ridge 34 on the outer surface of the than the outer- diameter of the rest of the plug. The champagne or sparkling wine ’bottle. Below the area of
thickness of the plug’s wall also progressively dimin- inner circumferential groove 62, the collar’s cylindrical isjies in the tapered end portion 58 area. This narrowing wall has maximum thickness. This maximum thickness
and thinning at the bottom of the plug helps guide the 15 extends down the collar approximately the longitudinal plug down into the neck of the bottle. length of circumferential groove 62. When the tethered

An intercoupling means 18 joins element 14 and re- safety closure device 10 is installed on a champagne or - tamer collar 16. The intercoupling means is further sparkling wine bottle, the collar’s circumferential comprised of a tabbed 24 tear strip 26 and a tether strip groove 62 fits around the circumferentialridge 34 on 28. Tab 24 on tear strip 26 contains a series of parallel 20 the neck of the bottle thus holding the collar in place. protruding ridges that help prevent the tab from slip- Security of the collar on the bottle neck is assured be. ping when grasped by a person wishing to remove the

tear strip from the present safety closure device. cause the collar wall’s maximal thickness below groove
-Tear strip 26 and tether strip 28 are integrally formed 62 prevents upward movement of collar 16,
The length of retainer collar 16 is preferably greater in a helical configuration extending in a plurality of 25
-turns from element 14 to collar 16. The tear and tether than the combined lengths of element 14 and intercou-
strips do not begin at the:same region on the cork or pling means 18. Below the region of maximal thickness
closure element, or do they end in the same region on beneath circumferential groove 62, the collar’s cylindri-
the collar. They preferably begin or end separated from cat wall gradually gets thinner. This tapering of the
one another by an arc Of approximately 60. Such an arc 30 wall’s thickness makes it easier to insert the tethered
permits separation of the tear strip from the tether strip safety device on a champagne or sparkling wine bottle.
without comprising the attachment of the tether strip to This taper in thickness, along with the taper in shape,
the cork or closure element and the collar, assures a tighter fit between collar 16 and the neck of
The tear and tether strips extend in a plurality ofturns bottle 12,
from element 14 to collar 16. Any plurality ofturns can 35 Because of the design of the tethered safety closure
be used in the present device as long as they allow the device and the resiliency of the material used to con-
fl -tether strip to permit removal of the cork while still struct it, the unitary tethered safety closure device of
adequately restraining the cork from flying free. A the present invention can easily be inserted on bottles
plurality of between two and four turns is preferred. containing champagne or sparkling wine. The thinness
Tether strip 28 and tear stri’p 26 are interconnected by at the bottom of the retaining collar facilitates placing
a pair of grooved frangible webs 30 and 32. The grooves the device on the wine bottle. The resiliency of the
between the tether strip and the tear strip, formed by material used to make the tethered safety closure device
the frangible webs, extend from cap 20 to collar 16. allows it to expand and contract as necessary to fit
Tear strip 26 is removable by manually causing the securely in and around the neck of the bottle. This
webs to tear. Following removal oftear strip 26, tether 45 resiliency can be increased with heat ifthe properties of
strip 28 remains attached to cap 20 and collar 16 by the material so warrant.
means of a merging brought about by a gradual diminu- From the foregoing description and drawings it can
tiôn of the depth of the groove separating the cap or be seen that the present invention provides a tethered
collar material from the initial or final tether turns, safety cork device that utilizes a tether strip to restrain
Frangible webs 30 and 32 separating tear strip 26 and 50 the cork to the neck of the bottle following its removal.
tether strip 28 are comprised of the same resilient mate- This enables the cork to be released from champagne or
rial used to make the molded tethered safety device 10. sparkling wine bottles without flying free. Because the
Frangible webs 30 and 32 are thinner, than either tear tethered safety cork device is a unitary device the need
strip 26 or tether strip 28. Frangible webs 30 and 32 can for secondary -applications of additional restraining
be of any preselected thickness that permits tear strip 26 55 devices is eliminated. The tethered safety cork device
to he manually torn away from tether strip 28, as long as also eliminates the need to manually restrain the cham-
at that thickness interconnecting means 18 is able to pagne cork as it is removed from the bottle. In addition,
retain its integrity in an unopened state. the tethered safety cork device provides for a tamper-
In addition to providing the means for connecting proof safety seal that unmistakeably indicates when the
element 14 to retainer collar 16, intercoupling means 18 60 seal has been tampered with. Thus the tethered safety
creates an integral tamperproof safety seal between cork device of the present invention provides a truly
element 14 and collar 16 because it unmistakably mdi- safe cork for bottles containing pressurized liquids such
cates by dismemberment ifthe product has been prema- as champagne or sparkling wines.
turely opened or tampered with anywhere between the Various modifications of the invention will become
bottler’s facilities and the end user’s location. 65- apparent to those skilled in the art from the foregoing
Retainer collar 16 is comprised of a hollow tapered description and drawings. Such modifications are in-
cylinder that fits around the top outside portion of the tended to fall within the scope of the appended claims.
bottle neck. The cylinder is tapered both in shape and in What is claimed is

4,474,302
7 8
1. A molded tethered safety closure device compris- 4. A molded tethered safety closure device according
ing a closure element adapted to close the mouth of a to claim 1 wherein said closure element is comprised of
bottle or the like by frictional engagement with the an Outer cup-like portion that extends over and around
interior facing surface of the mouth, a retainer collar, the opening at the top of the bottle or the like, and an
and an intercoupling means connecting said collar to 5 inner ribbed plug portion that fits in the mouth of the
said closure element and forming a unitary structure bottle or the like to form a seal therewith,
with said closure element and said collar, said intercou- 5, A molded tethered safety closure device according
pling means comprising a tabbed tear strip and a tether to claim 1 wherein said retainer collar comprises a ta-
strip, said tear strip and said tether strip being integrally pered cylindrical structure having a circumferential
formed in a helical configuration extending in a plural- 10 groove adapted for engaging a corresponding circum-
ity ofturns from said closure element to said collar, said fereinial ridge on the outside of the bottle or the like.
tether strip and said tear strip being joined by a pair of 6. A molded tethered safety closure device accordingto
frangible webs of a preselected thickness to permit said claim 1 wherein said preselected thickness of said
tear strip to be manually removed, leaving said helical 15

frangible webs is less than the thickness of said tether

and tear strips. tether strip interconnecting said closure element and 7. A molded tethered safety closure device according said retainer collar thus restraining said closure element to claim 2 wherein said resilient substance is plastic. from flying free of the bottle or the like when removed 8. A molded tethered safety closure device according therefrom, to claim 4 wherein said outer cup-like portion of said 2. A molded tethered safety closure device according 20 closure element is comprised of a circular disk-like too

to claim 1 wherein said closure element, said retainer portion integrally molded with a hollow cylindrical side

collar and said interconnecting means are composed of portion. a resilient substance. 9. A molded tethered safety closure device according 3. A molded tethered safety closure device according to claim 4 wherein said inner plug is composed of an to claim 1 wherein said closure element, said retainer 25 anterior portion, an annular ridge portion, a smooth

collar and said interconnecting means are integrally portion and a tapered end portion.
molded as a single unit.

30

35

40

45

50

55

60

65

I.

United States Patent

Goldberg

[54] SAFETY CLOSURE DEVICE

[763 Inventor: James R. Goldberg, 315 Grandview
Ave., Novato, Calif. 94947

[21] AppL No.: 656,781

[22] Filed: Oct. 1, 1984

Related U.S. Application Data
[63] Continuation-in-part of Ser. No. 629,369, Jul. 10, 1984.

[51) mt. C1.4.. E65D 41/52
[52] U.S. Cl..................................... 215/256; 215/306;
215/320

[58] Field of Search...............2 15/256, 258, 306, 320,
215/354

[56] References Cited
U.S. PATENT DOCUMENTS

773,345 10/1904 Scheidt................................215/306 2,265,263 5/1918 Sharpe.................................215/306 3,235.117 2/1966 Mason, Jr....................... 215/306X
3.599,821 8/1971 Eggert............................215/320X
3,904,062 9/1975 Grussen...............................215/252

3,946,891 3/1976 Picoyetal...................... 215/320X
3,994,409 11/1976 Nightengale........................215/306
3,995,762 12/1976 Pfefferkorn et al............ 215/320 X
4,429,799 2/1984 Zaltsman.........................215/306 X
4,474,302 10/1984 Goldberg............................2151256

466.... 47

47

cii] Patent Number: 4,583,652
[451 Date of Patent: Apr. 22, 1986

Primary ExaminerDonald F. Norton
Attorney. Agent, or FirmFitch, Even, Tabin & Flannery

[57] ABSTRACr

An improved safety closure device and a method for making same are described. A cylindrical closure ele-ment adapted to close the mouth of a bottle or the like by frictional engagement with the interior facing sur-face of the mouth is joined via a cap portion to a cylin-drical retainer collar, extending substantially coaxial

with the closure element, by an intercoupling means comprising a tabbed tear strip and a tether strip. The tear strip and the tether strip are integrally formed in a helical configuration extending from the closure ele-

ment to the collar. The tether strip and tear strip are joined by a pair offrangible webs of a preselected thick- ness which permit the tear strip to be manually re- moved. The collar and intercoupling section, including

the cap portion thereof, are molded as a unitary struc-ture. The closure element is formed as a separate unitary structure and is secured mechanically to the intercou-pling means preferably by a snap-fit means about the periphery of one end of the closure element.

4 Claims, 7 Drawing Figures

42/

47/ 472 1/

20

474

473

4/6

I

U.S. Patent Apr. 22, 1986 Sheet I of2 49583,652

FIG.1

38

14
42
44

FIG. 3

54

- -

60

FIG. 2 JJ.12

20
40

 168 172
171
- 24
18 114

I /

FIG. 4

124

- I6O

. 116

U.S. Patent Apr. 22, 1986

264

260-

2/6

272
273
274

220

270 ,-268

2/4

Sheet 2 of 2 415839652

2/8

F/G.5
275

3/8\

FIG

471 472 466 475

477
474
473

- 460

416

FIG

364

366

360

/6

4,583652

SAFETY CLOSURE DEVICE

This application is a continuation-in-part of U.S. 5cr.
No. 629,369, filed July 10, 1984. 5
This invention relates generally to closure devices
and, more specifically, to an improved safety closure device for use on bottles containing pressurized bever-ages such as champagne or sparkling wines.
The drinking of champagne or sparkling wine is usu- 10 ally associated with happiness and frivolity. Unfortu-nately the happiness and frivolity has all too often ended in tragedy because of injuries caused by flying

corks. Because of pressure inside a bottle of champagne or sparkling wine, particularly if the wine has been 15

shaken or is warmer than recommended, a cork can be propelled from the bottle at a velocity of well over 120 kph. As a consequence unattentive individuals opening the bottle, or persons standing nearby, can be seriously
injured. 20
The problem of premature or inadvertent explosive release of champagne corks is exacerbated by the fact that many lower priced champagnes and sparkling wines are closed by molded plastic corks. Plastic corks possess an even greater tendency than natural corks to 25 become dislodged as a result of internal pressure in the

bottle. In addition, the slipperiness of plastic is some- times increased when the cork is molded because of a residue of the release agents often used to facilitate

removal of a hot plastic cork from the mold in which it 30

is made. Wetness on the glass surface of the bottle as a result of condensation or seepage of the contents can also reduce friction between the surface ofthe glass and

the surface of the plastic cork.
A novel closure device for a bottle or the like which 35 is particularly well suited for use in connection with champagne and sparkling wines is shown and described in co-pending U.S. application Ser. No. 548,313. The device shown and described therein is a unitary device that employs a plug or a cork as well as a tabbed tear 40

strip and a tether strip that are integrally formed in an outer retaining collar which fits over the neck of the
bottle. When the tear strip is torn away, a helical tether strip remains interconnecting the plug or cork and the retainer collar. The cork or plug may thus be easily 45 released from the bottle but is restrained from flying
free.

The foregoing device provides a significant advance-

ment in the art of closures for bottles and other Contain- ers containing pressurized liquids such as champagne or 50
sparkling wines. The need for additional restraining devices such as wire baskets, shrink wraps, or the like is eliminated. Moreover, it is unnecessary for the person opening the bottle to manually restrain the champagne
cork as it is being removed from the bottle. 55

The new closure device of the aforementioned co- pending application has a cap portion, a cylindrical plug

portion extending therefrom, and a cylindrical collar extending substantially coextensively and coaxially with the plug portion. The collar and the plug are 60 spaced from each other to provide an annular cavity for receiving the open end of the container to be closed. Thus, with the plastic closure mounted in place, the plug extends into the opening in the container and the collar surrounds the outside of the container at the 65 opening to retain the plug in position.
The molding of a plastic closure device is typically carried out in an injection molding machine. Such ma-

2

chines usually employ a plurality of die plates and, in

appropriate cases, a movable core. The die plates and core move once the device is molded to separate and
enable removal of the molded device from the molding machine. Where, as is the case with the new plastic closure device which is the subject matter ofthis inven-tion, there are two portions extending substantially coextensively and coaxially with each other, the mold-

ing procedure and die may be extraordinarily complex. With a cylindrical device, a collapsible mold core may typically be provided making removal of the molded

part after molding relatively simple. However, in the present case, a collapsible core is not practical due to the presence of the plug portion of the unitary closure

device coextensive and coaxial with the surrounding cylindrical collar. This problem is exacerbated where
the collar is provided with an annular recess for mating with a retaining ring on the bottle or other container because of the difficulty the needed core shape presents in withdrawing the core from the annular cavity be-tween the plug portion and the cylindrical collar.

It is an object of the present invention to provide an improved safety closure device for use on bottles con- taining pressurized beverages such as champagne or sparkling wines.

Another object of the invention is to provide an im-proved safety closure device and an improved method for making same which facilitates manufacture of the device.

Another object of the invention to provide an im-proved safety closure device and an improved method

for making same, wherein the device includes a cylin- drical plug or closure element extending coaxially with an outer cylindrical collar, the latter serving to retain

the closure device on the container.

A still further object of the invention to provide an improved safety closure device and an improved
method for making same wherein the safety closure device is manufactured in two separate operations with

subsequent automated assembly ofthe separately manu- factured parts.
Other objects of the invention will become apparent to those skilled in the art from the following descrip-tion, taken in connection with the accompanying draw-ings wherein:
FIG, 1 is a partially sectional side view of a safety closure device constructed in accordance with the pres-ent invention;
FIG. 2 is a partially sectional side view ofthe device of FIG. 1 illustrating partial removal of a tabbed tear Strip;
FIG. 3 is an exploded view of the device of HG. 1 illustrating the manufacture of the device in two sepa-rate parts; and
HG. 4 is an exploded view similar to FIG. 3 illustrat-ing a first alternate embodiment of the invention. FIG. 5 is an exploded view similar to FIG. 3 illustrat-ing a second alternate embodiment of the invention. FIG. 6 is a view in section a third alternate embodi-ment of the invention.
FIG. 7 is a view in section a fourth alternate embodi-ment of the invention.

Very generally, the safety closure device of the in-vention comprises a cylindrical plug or closure element

adapted to close the mouth of a bottle or the like by frictional engagement with the interior facing surface of

the mouth ofthe container. A cylindrical retainer collar is provided and an intercoupling means connect the

4,583,652
3
collar to the plug element with the plug element and the collar extending substantially coaxially with each other.
The intercoupling section comprises a tabbed tear strip
and a tether strip. The tear strip and the tether strip are integrally formed in a helical configuration extending 5 from the closure element to the collar. The tether strip and the tear strip are joined by a pair of frangible webs of a preselected thickness to permit the tear strip to be manually removed. The collar and the intercoupling means, including a cap portion, are comprised of a uni- 10 tary molded structure. The plug or closure element is comprised of a separate unitary structure that is me-chanically secured to the intercoupling means. In a preferred form, the plug or closure element is secured to the intercoupling means about the periphery of one end 15 of the plug or closure element by means of an annular rib mating in a corresponding annular recess.
A closure device of the type to which the present invention relates is illustrated in FIGS. 1 and 2. As shown, the safety device includes a closure element or 20 plug. Those skilled in the art will realize that the plug per Sc is not a material limitation ofthe disclosed safety device. As a result the safety device also comprises the separate combination of a cap portion, an intercoupling means and a collar when the combination is made or 25 used to restrain a separately manufactured plug or do-
sure element.

The safety closure device 10 is shown mounted on the neck of a bottle 12 designed to hold pressurized liquids such as champagne or other sparkling wines. The de- 30 vice 10, as shown, includes a closure element or plug 14 and a retainer collar 16 both connected to a cap portion
20. The plug 14 is adapted to close the mouth of the bottle by frictional engagement with the interior facing surface of the month. An intercoupling section 18 is 35 attached to collar 16. Intercouphing section 18 is com-prised of a tabbed 24 tear strip 26 and a tether strip 28 that are formed integrally in the intercoupling section as parallel helices extending one or more turns from the cap 20 to the collar 16. The tether strip 28 and the tear 40 strip 26 are interconnected by a pair of grooved frangi-ble webbed sections 30 and 32. The thickness and con-figuration of the pair of grooved frangible webs are preselected to be less than the thickness of the tether and tear strips. The tear strip 26 also contains the bite- 45 gral pull tab portion 24 which provides an easy and convenient means for grasping the tear strip 26 prior to its removal as described below.
When the pull tab portion 24 of the tear strip 26 is grasped and pulled by one wishing to open a bottle of 50 sparkling wine, the tear strip 26 separates from tether strip 28 because of a tearing of the frangible web sec-tions 30 and 32 along the path of the grooves between the tether and tear strips. When the helical tear strip 26 is removed, the helical tether strip 28 remains to inter- 55 connect element 14 and collar 16 thus enabling element 14 to be released from the bottle 12 without flying free. The bottle 12 in FIGS. 1 and 2 is typical of bottles used to contain champagne and sparkling wines. Such bottles often have elongated, tapered, cylindrical necks 60 containing a circumferential bulge or ridge 34 (known to the trade as a "finishing or bead ring") just below a lip 36 at the top of the bottle. The circumferential ridge 34 protrudes from the side of the bottle with sufficient radius to provide a means for restraining or impeding 65 objects or devices, fastened above or below it, from moving up or down the neck of the bottle. In the past, such objects and devices have included, for example,

4 woven wire baskets used to restrain plugs or corks. In
the present invention, the circumferential ridge 34 is used to restrain the retainer collar 16.
In a preferred form the closure device 10 is entirely formed of a moldable resilient substance. Alternate embodiments which utilize plug portions 14 formed of "natural" or "wood" cork or cork-like substances are discussed supra.
While polymerized plastic is a preferable resilient substance for use in the present invention other resilient substances are suitable as long as they are weak in shear when thin but strong in tension when thick. As used herein, "weak in shear when thin" means a substance that is manually tearable when used at the preselected thickness of the thin frangible webs connecting the tear and tether strips. "Strong in tension when thick" means that, at the thickness of the tether strip, the substance is strong enough to withstand longitudinal strain caused by sudden release of the cork from the bottle.
For purposes of this invention, a suitable resilient substance will be moldable and will have sufficient

resiliency to allow the retainer collar 16 to stretch but not break as it is inserted over the neck of the bottle, including the circumferential ridge 34. Following the expansion necessary to allow the retainer collar 16 to pass over the circumferential ridge 34, a suitable mate-rial will still have sufficient resiliency to allow the collar to assume a shape that conforms generally to the con-tour of the outside of the bottle.
The cap 20 is of generally cup-like shape and is com-prised of a circular disk-like top portion 38 integrally molded with a hollow cylindrical side portion 40. The diameter of the cap’s circular top portion 38 is greater than the diameter of top of the bottle neck. The inner circumference of the cap’s hollow cylindrical side por-tion is greater than the outer circumference ofthe lip 36 at the top of bottle.
Pursuant to the present invention, the plug 14 is formed as a separate unit from the remainder of the device, namely, the collar 16 and intercoupling means 18, including cup-like cap portion 20. The device is then assembled as explained supra, prior to mounting on the bottle being closed. Alternatively, if a plug has been inserted into a bottle, it may be desirable to then attach the separate combination of the cap portion, the inter-coupling means and the collar.
In a preferred form plug 14 is comprised of a syn-thetic moldable resilient material such as polymerized plastic. In this form the plug is preferably hollow hav-ing an outer cylindrical wall surface 42 and an inner cylindrical wall surface 44. Alternatively, plug 14 is comprised of a natural material such as cork or a modi-fied natural material such as a composition material containing cork or a cork-like substance. In this alterna-tive form plug 14 will preferably be solid rather than hollow.
In both the preferred and alternative forms, the cylin-drical plug 14 has an outer diameter very slightly smaller than the diameters of the opening at the top of the bottle and the upper inner portions of the bottle neck. This allows the plug to fit tightly down into the neck of the bottle. Also, in both the preferred and alter-native forms, the top of the plug 14 is mechanically connected to the inside of the circular disk-like top portion 38 on the cap 20 as explained in detail below. When plug 14 is comprised of a synthetic moldable resilient material such as polymerized plastic, a series of parallel annular ridges 54 may protrude slightly from

4,583,652

the plug’s outer wall surface 42 about halfway down its length. The width and height of the annular ridges are approximately equal. The annular ridges extend down
the outer wall 42 of the plug to a point approximately in
line with the bottle’s circumferential ridge 34 when the 5 device 10 is in place in a bottle 12. When in place, the circumferential wall ofthe plug 14 supports the annular ridges against the inner wall of the bottle neck. As a result, the annular ridges grasp against the side of the bottle helping to seal its contents. 10 The intercoupling section 18 joins the cap 20 and the retainer collar 16. The intercoupling section is corn-prised of a tabbed 24 tear strip 26 and a tether strip 28. The tab 24 on the tear strip 26 may be suitably rough-ened, not shown, to help prevent the tab from slipping 15 when grasped by a person wishing to remove the tear strip from the closure device.
The tear strip 26 and the tether strip 28 are formed integrally in parallel helices extending from the cap 20 to the collar 16. In a preferred form the tear and tether 20 strips do not begin at the same region, nor do they end in the same region on the collar. They preferably begin or end separated from one another by an arc of approxi-mately 60’. Such an arc permits complete separation of the tear strip from the closure device. 25 The tear and tether strips preferably extend one or more turns from the cap 20 to the collar 16. Any num-ber of turns can be used in the present device as long as they allow the tether strip to permit removal ofthe plug 14 while still adequately restraining the plug 14 from 30 flying free. Between one and two turns is especially preferred.
The tether strip 28 and the tear strip 26 are intercon-nected by a pair of grooved frangible webs 30 and 32. The grooves between the tether strip and the tear strip, 35 formed by the frangible webs, extend from the cap 20 to the collar 16. The webs may be Continuous, or may be broken by a series of openings, not shown, which facili-tate removal of the tear strip. The segments of the webs are selected in size and number to provide sufficient 40 strength to maintain a cohesive structure until removal ofthe tear strip. The tear strip 26 is removable by manu-ally causing the webs to tear. Following removal of the tear strip 26, as shown in FIG. 2, the tether strip 28 remains attached to the Cap 20 and the collar 16. This 45 may be accomplished by means of a merging brought about by a gradual diminution of the depth of the groove separating the cap or collar material from the initial or final tether turns.
In addition to providing the means for connecting the 50 cap 20 to the retainer collar 16, the intercoupling sec-tion 18 creates an integral tamper proof safety seal be-tween the cap 20 and the collar 16 because it unmistak-ably indicates by dismemberment if the product has been prematurely opened or tampered with anywhere 55 between the bottler’s facilities and the end user’s loca-tion.

The retainer collar 16 is comprised of a hollow ta-pered cylinder that fits around the top outside portion of the bottle neck. The cylinder is tapered both in shape 60 and in thickness. The tapered shape of the retainer col-lar 16 generally mirrors the contour of the taper on the champagne or sparkling wine bottle 12. At the lower end ofthe intercoupling section 18, a small circumferen-tial ridge 60 is provided that protrudes from the outer 65 surface of the collar 16. Just below ridge 60, on the inner surface of the collar wall, the collar contains a circumferential groove or annular recess 62. The shape

6
and size of the recess 62 generally mirrors and approxi-mates the shape and size of circumferential ridge 34 on the outer surface of the champagne or sparkling wine bottle. When the tethered safety closure device 10 is installed on a champagne or sparkling wine bottle, the collar’s annular recess 62 fits around the circumferential ridge 34 on the neck of the bottle, holding the collar in place. Security of the collar on the bottle neck is assured by providing sufficient thickness in the wall of the col-lar below groove 62 to prevent circumferential expan-sion and consequent upward movement of the collar 16 as a result of pressure in the bottle.
When the tear strip has been removed from the inter-coupling means, it is possible that someone wishing to remove the "cork" from the bottle of sparkling wine could attempt to do so by "twisting" the cap portion rather than forcing the "cork" up and out of the bottle. Ifthe retainer collar fits very tightly around the outside of the bottle, it is also possible this twisting motion could cause the tether strip to break. To protect against this possibility, in preferred forms retainer collar 16 will fit snugly around the neck of the bottle but retain enough clearance to laterally "twist" with the cap if attempts are made to remove the cork in this manner. Because of the design of the tethered safety closure device and the material used to construct it, the im-proved tethered safety closure device of the present invention can easily be inserted on bottles containing champagne or sparkling wine. The thickness at the bottom of the retaining collar is selected to facilitate placing the device on the wine bottle. The resiliency of the material used to make the tethered safety closure device allows it to expand and contract as necessary to fit securely in and around the neck of the bottle. This resiliency can be increased with heat if the properties of the material so warrant.
According to the invention, the closure element or plug 14 is formed as a separate unitary device from the combination of collar 16, cap 20 and intercoupling means 18. The device may then be assembled as ex-plained below.
As may be seen in FIG. 1, the cap-like portion 20 which extends over the lip 36 of the container 12 and down a short distance on either side formed integrally with the collar 16 and, as such, constitutes a continua-tion of the intercoupling means 18. In preferred forms the interior surface of the cap-like portion 20 is formed with an annular recess 64, leaving a lip 66 ofthe molded material, which is resilient, extending about the periph-ery of the annular recess. (See FIG, 3).
In addition, in preferred forms (see FIG. 3) plug or closure element 14 is molded and is closed at one end by a wall 68 and is provided with an annular protuberance or rib 70 adapted to fit the recess 64 after snapping past the resilient lip 66. A flange 72 molded integrally with plug or closure element 14 abuts the interior sur-face of the cup-like portion 20 below the ridge 66 to stabilize the closure element. Further stability is im-parted by the upper surface of the wall 68 abutting the inner surface of the disk-like portion 38. Thus, in this preferred form the closure device of the invention may be snapped together readily and is well adapted to auto-mated assembly. Further stability may be provided, if desired, by welding the two pieces together where they abut.

Referring to FIG. 4, a first alternative embodiment of the invention is shown. In the embodiment of FIG. 4, elements corresponding to those of FIGS. 1-3 have

4,583,652
7 8
been given identical reference numbers, preceded by recess 364 of cap-like portion 320. Plug 314 may be
the numeral 1. The cup-like cap portion 120 has a circu- joined to cap 320 at regions of contact between cap 320
lar opening 121 therein. An annular rib 166 extends and annular cap portion 315 by any joining means
inwardly at the periphery of the opening 121. Plug or known to the art. Again such means include, but are not
closure element 114 is provided with a corresponding 5 limited to, welding, bonding, gluing and stapling.
annular recess 171 around the periphery near one end Referring to FIG. 7, a fourth alternative embodiment
thereof. A flange 172 projects outwardly from the cir- ofthe invention is shown. In the embodiment of FIG. 7,
cular cap closing the end of the plug or closure element, elements corresponding to those of FIGS. 1-3 have
The plug or closure element is inserted into the opening been given identical reference numbers preceded by the
in the cup-like cap and pushed inwardly until the annu- 10 numeral 4. In this embodiment, plug or closure element
lar ridge snaps into the annular recess. The flange stabi- 414 is also formed of natural cork or a cork containing
lizes the plug or closure element in the cup-like cap composition. In addition, as in a second alternative
portion. Once again, the nature of the two-piece con- embodiment, a circular collar 475 is joined to plug 414,
struction with the snap fit is readily adaptable to auto- thereby providing a means for securing the plug 414 to
mated assembly. Further stability may be provided by 15 cup-like portion 420. However, in the present embodi-
welding in the regions of contact between the plug or merit circular collar 475 has no upper wall surface (see
closure element and the cup-like cap portion. 68, 168) but rather has a circular opening at the top end
Referring to FIG. 5, a second alternative embodiment thereof that is ofslightly smaller circumference than the
ofthe invention is shown. In the embodiment of FIG. 5, circumference of a first end of plug 414. As a result, in
elements corresponding to those of FIGS, 1-3 have 20 this embodiment collar 475 is more "ring like" than
been given identical reference numbers, preceded by "cap-like". In addition, in this embodiment collar 475
the numeral 2. In this embodiment, plug or closure has a side wall 473 which may on its inner side include
element 214 is a solid cylinder that is formed of natural one or more sharp individual protuberances 474, or one
or wood cork or a cork containing composition. One or more sharp annular protuberances (not shown) de-
end of cylinder 214 fits into and is joined to a molded 25 signed to dig into the side surface of plug 414, thereby
resilient capped circular collar 275 closed at one end by providing additional means for securing plug 414 to
a wall 268. As a result, when plug 214 is joined to collar collar 475.
275, a periphery of plug 214 abuts with the inner surface In this embodiment, cup-like cap portion 420 has a
of wall 268. Collar 275 Is preferably provided with an circular opening 421 therein. An annular rib 466 extends
annular protuberance or rib 270 adapted to fit in recess 30 inwardly at the periphery of opening 421. Circular col-
264 on cap 220 after snapping past resilient lip 30 266 lar 475 also has a corresponding annular recess 471
(Sec also FIG. 3). According to the invention, cylindri- around the periphery thereof, and a flange 472 which
cal plug 214 can be joined to collar 275 at regions of projects outwardly from the collar just above annular
contact by any joining means known to the art. Such recess 471.
means include, but are not limited to, welding, bonding, 35 Plug 414 fits into and is joined to ring-like collar 475.
gluing and stapling. Collar 275 may include a circular Any means known to the art, including bonding, can be
side wall 273 that extends down from rib 270. On its used to secure the facing surfaces of plug 414 and collar
inner surface, side wall 273 may further include one or 475 to one another. After plug 414 has been joined to
more sharp individual protuberances 274, or one or collar 475, the resulting assemblage is inserted into
more sharp annular protuberances (not shown) de- 40 opening 421 in the cup-like cap 420 and pushed in-
signed to dig into the side surfaces of plug 214, thereby wardly until the annular rib 466 snaps into the annular
providing additional means for securing plug 214 to recess 411. The flange further stabilizes the plug or
collar 275. closure element 414 in the cup-like cap portion 420.
Referring to FIG. 6, a third alternative embodiment From the various embodiments disclosed herein it
ofthe invention is shown. In the embodiment of FIG. 6, 45 can be seen that the device and method of the invention
elements corresponding to those of FIGS. 1-3 have make it possible to readily manufacture the closure
been given identical reference numbers preceded by the device of the invention by manufacturing the device in
numeral 3. In this embodiment, plug or closure element two separate operations with subsequent automated
314 is also formed of natural cork or a cork containing assembly. Stability is provided between the two sepa-
composition. However, in this embodiment, cylindrical 50 rately formed parts and the integrity of the assembly
plug 314 additionally has an annular cap portion 315 may be enhanced by a further welding operation if
whose diameter exceeds that of the cylindrical ping desired. Once assembled, the device may be installed in
portion that fits down into the neck of the bottle. Such a single step by standard bottling apparatus.
annular cap portions can have a variety of shapes (not Various modifications of the invention in addition to
shown), ranging from flat caps to the more rounded 55 those shown and described herein will become apparent
ones used on "traditional" champagne corks. In one to those skilled in the art from the foregoing description
form of this embodiment, annular cap portion 315 will and accompanying drawings. Such modifications are
be somewhat flat and will have a diameter only slightly intended to fall within the scope ofthe appended claims.
larger than the diameter ofthe cylindrical plug portion. I claim
In this embodiment, the inner contour of cap-like por- 60 1. A safety closure device comprising, a cylindrical
tion 320 will mirror the outer contour of annular cap closure element adapted to close the mouth of a bottle
portion 315. In addition, cap-like portion 320 is formed or the like by frictional engagement with the interior
with an annular recess 364, leaving a lip 366 of molded facing surface of the mouth, a cylindrical retainer col-
material, which is resilient, extending about the periph- lar, and an intercoupling means connecting said collar
cry of the annular recess. The shape and depth of annu- 65 to said closure element with said closure element and
lar recess 364 will mirror the size and shapes of the said collar extending substantially coaxially with each
annular cap-portions 315 of plug 314. As a result, other, said intercoupling means further comprising a
capped plug 314 can be "force fit" into the annular cup-like portion that is shaped to extend over the lip of

0

f

4,583,652 9 10
the1 container, said intercoupling means comprising a mechanically seeming said closure element to said
tether strip integrally formed in a predetermined config- tercoupling means.
uration extending from said cup-like portion to said 2. A closure device according to claim 1 wherein said

collar, said tether strip being joined to and separable cup-like portion of said intercoupling means includes a from the rest of said intercoupling means along a sub- 5 circular recess therein for receiving said one end ofsaid

stantial portion of its length by a pair of frangible webs closure element.
of a preselected thickness to permit said tether strip to 3. A closure device according to claim 1 wherein saidclosure be manually separated, said closure element comprising element and said cup-like portion have annular
a separate unitary structure and being secured to said snap-fit interengaging portions securing said closure

cup-like portion of said intercoupling means about the 10 element to said cup-like portion of said intercoupling means about the periphery of one end of said closure periphery of one end of said closure element said do- element. sure element being cylindrical and being formed of a 4. A closure device according to claim 1 wherein said material selected from the group comprised of cork or a cup-like portion of said intercoupling means includes a cork composition material, said cork or cork COmposi- 15 circular opening therein for receiving said one end of tion closure element being attached to a collar having said closure element. means to mate with said intercoupling means thereby

20

25

30

35

40

45

50

55

60

65

2.tl

PLAN ILLA DE RADICACION DIGITALIZACION DIARIA tridtistna re io RELAdON DE ANEXOS
SUPEP41NOENCA

Dependencia: Fecha: 9jX5j Recorrido:

/io/tx)J it6L

AAAA M M b

Tipo do Radicación: Entrada: o Salida: Ej Traslado: Ej Converilo: D Radicador: Planilla:

ID No. Radicación Consecutivo Item

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

Observaciones:

Item Unidad de

Conservec,Æn
I Bolsa

2 Caja

3 Libro

4 Sobre

5 Tomo

6 Otro

Item Soporte Documental

7 cc

8 Disquete

9 DVD

10 Folleto

11 Foto

12 PeriOdico

13 Piano

14 PublicaciOn PeriOd ca

15 tJSB

16 Otro

www.cavelier.com
cave I i a r5O cave I ie r, co m

CAVELIER

B 0 GAD 0 S
TelOfono: (57-1) 347 3611
EDIFICIO SISKI Telefax: (57-1) 211 8650 CARRERA 4 Nc (57-1) 700 4814

BOGOTA 8, C(S!iPFPcrL, 7743,

Seæor Director
DIRECCION DE SIGNOS DISTINTIVOS

Superintendencia de Industria y Comercio E. S. D.

Referenda
Asunto

Opositor
DEMANDADO
Fecha de Solicitud

UL INDUSTRIA Y COMERCJO

’IlIIIIIIIIIIffIIllIIIIiIlIIIiiii No, 0901O551. -00006.0000 Feche 2011-04-11 17:0743 Dep. I-ra 2 PAIENTES 20200IR,NULVASCR

Act. 352 Eve: 1 REODEPOSITO DESIST1MIENT0 FolIos’ 1

TrÆmite 002
Evento 001
Actuación 352

Expediente No. 09.010.551
OPOSICION - OPOSICION A TAPON DE SEGURIDAD
PARA BOTELLAS Y SIMILARES CON DISPOSITIVO
ANTIRELLENO
GUALA CLOSURES PATENTS B.V.
PLASTIVIT S.A.
04 de febrero de 2009

1. Yo, Luz Clemencia de PAEZ, obrando como apoderado del solicitante, en el asunto antes identificado, debidamente facultado para hacerlo y en cumplimiento de instrucciones de mi poderdante, manifiesto a usted que DESISTO de la oposiciOn presentada a la solicitud en referenda.

SeæorDirector,

COLO-1 2772-263-003-6

j’ SDC\JMS\ID-1 90597\WPC12772
No. M-201 1-1 90597\SDC

LUZ CLEMENCIA DE PAEZ
C.C. 35.456.344 de Usaquen T.P.A. 23.555

NIT. 860041.367-3

IflT ti1O

S UP ER IN I E N U E N CIA

OLARTEMe"
OLARTE MOURE&AOCL

SUPERINTENDLNCIADEINDUSTRIAYCOMLRCIO

iiiiiiiiiiiIIIiIIIIflIflhIIiIIIIIII
No. 09-010551-.00007-0000
Fecha: 201110-31 12:22:19 Dep, 2020 DIR.NUEVASCR
ira. 2 PATENTES Eva: I REGDLFOSITO
Act. 60$ MODIFICASOLICIT Folios: 20

C) Nombre:PLASTIVIT S.A. IDENTIFICACIÔN
SOLICITANTE Dirección: Avda. Vents 9. Esc. A, 40 2, C.C. J NIT I I
(71) 08917 Badalona, Barcelona
Nacionalidad Domicilio: Espahola C. E. Otro

Lugar de Constitución: Espaæa Cual

TelØfono: Fax: Nümero
E-mail:_______________________________

IDENTIFICACION

C) Nombre: CARLOS R. OLARTE

C.C.[_x NIT

REPRESENTANTE Dirección: Carrera 5 No. 34-03
BootÆ, D.C.Colombia C.E.I___ °’° 0 APODERADO I I
Telefono: 601-7700 Fax: 601-7799 Cual
E-mail: office@olartemoure.com Nümero79.782.747 Bta
TP74.295

C) Nümero de expediente:

09-010551

Descripción de la corrección o modificación solicitada Me permito solicitar el
cambio de nombre del solicitante de PLASTIVIT S.A. por el de GROCWELL S.L.
Sociedad UnipersonaL

C) Comprobante de pago No. ii- Fecha

....

. . . . Anexos

Septiembre de 2011

Comprobante de pago de la tasa de modificaciones en trmite

Copia Simple del Poder, si fuere el caso. Copia simple del documento que soporta
la cesión de Derechos. Ver Expediente No. 04-105.257

NOMBRE:CARLOS R. OLARTE FIRMA:________________________

C.C.79.782.747 Btj T.P. 74.295

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT: 800.176.089-2 - I-

RECIBODECAJA No. 11 -106036
1ndu’tria Comeruo
R INT EN D EN C I A Bogota D.C., Octubre 28 de 2011 16:18:45

RECBIDO DE OLARTE MOURE ASOCADOS NI 830.122.870_- Soporte del Pago

TIPO PA(O, BANCO CUENTA No. PACO FECUAPAGO yR PAGD CONSIGNACION BANCO DE BOGOTA 062754387 408398686 28/10/2011 8.482.000.00

Conceptos Pagados
,..ANT__RENTSTICO_CONFPTO UNDITARIO__VrCCNCEPI 1 50005-01-03 CAMBIO CE MODAL1DAD Y M0D)FICACIOflEE1ARCAS V LEMAS COMERCIALES 118.00000 118.00000 $118.0.00

SON:, NTO DIECIOCHO MIL PESOS MONEDA CORRIENTE***

e.

al Expediente No.

SUPERINTLNDLNCIA DE INDUSTRIA Y COMERCIO

09-010551- -00007-0000
Fecha: 2011-10-311212219 Dep. 2020 DIR.NUVASCN
Tra.2 PATENTES Ev:1 REGDEPOSI FO
Act, 608 MODIFICASOLICI Folios. 20

S

Sede Contro: Carrera 13 No. 21-00 PiSQO 3,4,5 10 Bogota, D.C.- Colombia Web: www.aic.gov.co e.mai: iOfo@Sic.gov.eo Conmutador; (571) 5870000 Fax; (571) 5870284 Linear 018000-910165 Call Center: (571) 6513240 Oete0,e Ze d 253

OLARTEMOURE
OLARTE MOUSE & ASOCIADOS LTDA,

Power of Attorney

The undersigned, GROCWELL, SI,, SOCIEDAD UNIPERSONAL

domiciled in Riera Coma Fosca, n° 1, Alella (Barcelona), Espafia

by means of these presents hereby grants to Carlos R. Olarte and/or Juan Guillermo Moure full and sufficient Power of Attorney to file, prosecute, obtain, defend and enforce any and all of the company’s Patents for Inventions, Utility Models, Layout-Designs (topographies) of Integrated Circuits, Industrial Designs, Trademarks, Advertising Slogans, Trade Names, Commercial Emblems, Geographical Indications, Protection of Trade Secrets, Obtainer’s Certificates, Copyrights, Registration of Domain Names, Health Registrations, or any other intellectual property righ, also to file Unfair competition actions and request injunctions in the Republic of Colombia, to which end it empowers them to take all steps necessary before any administrative or judicial authority of any class for the objects stated, to file petitions, recourses, replies and oppositions, pay taxes and annuities, request testimonies, receive documents and securities, abandon applications, collect refunds, desist, settle, conciliate or negotiate. Sufficient power is hereby granted to receive notifications on behalf of the Company, to confer powers on those who are to represent the company judicially and extrajudicially, to answer in court in the matter of all claims and demands that may be presented in connection with the objects stated, giving them likewise power to substitute these presents and revoke such substitutions.

Poiler

El suscrito, GROCWELL, S.L., SOCIEDAD UNIPERSONAL

domiciliado en Riera Coma Fosca n° 1, Alella (Barcelona), Espafla

por medio del presente otorga a Carlos R. Olarte y/o Juan Guillermo Moure poder amplio y suficiente para presentar, tramitar, obtener, defender y hacer respetar todas y cualquiera de]as Patentes de Invención, Modelos de Utilidad, Esquemas de Trazados de Circuitos Integrados, Diseæos Industriales, Marcas, Lemas Comerciales, Nombres Comerciales, Enseæas Comerciales, Denorninaciones de Origen, Protecciôn de Secretos Empresariales, Certificados de Obtentor, Derechos de Autor, Registro de Nombres de Dominio, Registros Sanitarios, o cualquier otro bien de propiedad intelectual y tambiØn para presentar acciones de competencia desleal y pedir medidas cautelares a nombre de la compaflia en la Repüblica de Colombia, a cuyo efecto los faculta para dar todos los pasos necesarios ante cualquier autoridad administrativa o judicial de cualquier jerarquia para cumplir con lo encomendado, elevar solicitudes, recursos, respuestas y oposiciones, pagar impuestos y anualidades, solicitar testimonios, recibir documentos y valores, desistir, transigir, y percibir. Se concede poder bastante para recibir notificaciones a nombre de la compafila, otorgar poderes a quienes vayan a representar a la compaflia judicial y extrajudicialmente, responder en juicio a todas las reclamaciones o demandas que por motivo de lo encomendado se presentaren, dÆndoles asimismo facultad para sustituir el presente y revocar dichas sustituciones,

Signature/Firma: BORVI, S.A., representada por Oriol Bofill Rovira de ViUar

Date/Fecha: 16 de mayo de 2011

City,Coiintry/Ciudad,Pais: BARCELONA, ESPAA

Diagonal 34 No. 5 - 28 Bogota D.C., Colombia. T’..1.L417f14111

Nüm ro 743. - Tes imonio de leitimación de firma. ------------
Yo, GABRIEL SUAU ROSSELLO, Notario del Ilustre olgio de Catalu a, con residencia en esta ciidad, COY FE:

I. Que iegi’timo la firma de Don Oriol Bofill
Rovira de Villar, con D.N.I. nümero
36.980.041-C, estampada en el docume to que
precede, pox su cotejo con otra que consta
en mi pr)tocoio. ----------------------
II. Que el rcre§ente documento queda inooporado
por fot copia a la matriz del acta que,
conforme al Articulo 207 del Regiame to No-
tarial y para surtir efectos fuera d. Espa-
æa, autorizo en esta ciudad, ci dia de hoy
bajo el idmro 644 de protocolo.
Y a instancia dl firmante, expido el p esente
estimoi in del que dejo nota en mi Libro Indcador,
Barcelona, a d ecisØis de mayo de dos mil once.

SELLODE
LEGmMACI JNES V
LEGAUZA(IONES

ZZ NIHIL P

A.

7 -===--
4826

I]

PAl-El. FXCLUSIVO I-APP DOCUMENTOS NO1AALES

g
10/2010
GABRIEL SUAU ROSSELLO
NOTARI
D.N.1. 041.381.427-B

Rbla. Catahmya, 97,2-’, 1.
TelØf. 487 27 78
08008 - BARCELONA

4c)

41, A 15033941

NÜMERO SEISCIENTOS CUARENTA Y CUATRO. -----------
ACTA DE LEGITIMACION DE FIRMA PARA EFECTO EN PATS EX -

EN LA CIUDAD DE BARCELONA, a diecisØis de mayo de
dosmil once. ---------------------------------------

Ante ml, GABRIEL SUAU ROSSELLO, Notario del Ilus-
tre Colegio de Catalunya, con residencia en esta ciu-dad, --
= ==== ==== ==== = OT4 P1\P. F F
DON ORIOL BOFILL ROVIRA DE VILLAR, mayor de edad,
soltero, director comercial, vecino de Barcelona,
calle BerlinØs, 38. ---------------------------------
Con D.N. I. n1mero 36.980.041-C. -----------------
INTERVIENE: -------------------------------------

1.- En riombre y representaciOc de la compaæIa
mercantil denominada "GROCWELL, S.L.’, Sociedad Uni-
personal, domiciliada en la caiLle Riera Coma Fosca,
nØmero 1, de Alella (Barcelona); constituIda por tiempo indefinido, mediante escritura autorizada en
esta ciudad, ci dia 4 de enero de 2011, por el No-

2

ario D n Juan Antonio Anddjr Hurtado, nüme o 10 do
rotoco a; INSCR TA en el Registro Merca til de
aroe10 a, tomo 42360, folio 114, hoja n6riero B-
05261, con C.I.F. ndmero B-65/493439.
Tie e par objeto ostentar la titularidad de de-
!echos de propie ad industrial, expiotarlos y monte-
erlos. - ------ - - - ----- - -

Con forme a 1 d:ispuesto e n ci articulo 4 de la
ey 10/2010, de 28 de abrii, el seæor compa eciente
rianifiesta quo NC eisto titular real de su r presen-
ada ’TGROCWELL, S.L.", Sociedad Uniperson 1, par
uanto la socia ünica, la compaæla "GRUP VEM A 1857,
corece de pattIcipes que de forma drecta o
4ndirecta osten e la propiedad a control de mÆs del
de su capit 1 o de los derechos do -VOtD de la isma------------
2.- Legitima a para este acto, coma persolia fisi-
designada or la campaæia mercantil "BORVI,
Para el ejrcicio do las funciones propias
el cargo do C nscjcra-Delegada de la ociedad
’GROCWLL, S.L.", Sociedad Unipersonal. --------------
En efecto, 1 cbmpania mercantil "BORVI S.A.",
edicac a a la or anización, gestidn y contra de em-
resas y asesora iedto de las mismas; la adqusición,

PAFL EXOLUSIVO PAPA DOCUMENTOS NcCAAALE.S

10/2010

I

Y
A5U33942

UAUç0 III,

3

suscripción, tenencia y yenta de valLores mobiliarios.
domiciliada en Alella, calle Riera Coma Fosca, 1 B;
constituida por tiempo indefinido, mediante escritura autorizada por el Noario de Barcelona Don Eduardo Nebot Tirado, en fecha 27 de abril de 1990; INSCRITA en el Registro Mercantil de Barcelona, al tomo 20211,

folio173,

hoja nümero B-2995, inscripción con
C.I.F. nümero A-59/332478, fuedesignadaConsejera-
Delegada de la cornpaæia Grocwell, S.L.", Sociedad
Unipersonal, con todas las facu.ltades del Consejo de
Administración, salvo las indelegabies, por tiempo
indefinido, por acuerdo del Consejo de Administra-
ción en sesión de fecha 18 de marzo de 2011, formali-
zado en escritura por ml autorizada en esta ciudad, ci dIa 21 de marzo do 2011, nmero 392 do protocolLo, quo causó la inscripción 2’ en el Registro Mercantil. Y en virtud de escritura por ml autorizada en esta ciudad, ci dIe 21 de marzo cIa 2011, nilmero 391 de protocolo, qua, en union de la anterior, causó igualmente la inscripción 2’ en ci Registro Mercan-

4

i1, f e designa o el senor compareciente cc o per-
ona fi ica repr sertante de "BORVI, S.A.", para el
jercico de dich cargo. --------------------
En función de dicho cargo y conforme a la dccc-entaci’n autØntica aportada y exhibida, que Examino,
. iene - tribuIdas facultades de representació i, a ml
uicio y bajo mi responsabilidad bastante, para torgar la prese te Acta de legitimacióri de firma pa -
a ef cto en Pais: extranjero, fundamenta o dicho
uicio en la con ruencia de las facultades que osteri-
fa con el acto que formaliza. ----------------- -
Asevera la v geIìcia de su cargo y que n ha su-
rido lteración la personalidad de las compa las que
epres rita. ------------------
Co forme a 1 dispuesto en el articulo 4 de la
ey 10 2010, de 28 de abril, el seæor compa eciente
anifi1sta que SI existe titular real de su rpresen-
ada "CRVI, segdn declaraciôn formulda por
quØl n documen o privado, cuya firma consta legiti-
ada r ml en esta ciudad, en virtud de te timonlo
1 de mi Libro Ind
cador

Sección Segunda, nü era 209
de 201 sin que dicha titularidad haya sufri o alte-
r a ci
Me

- P:

PAEI F.XCLUSV(> PARA DCCIJM7 NTOS NOTARIAL ES 70
A 1 5033943 h/

10120:10

4UAUfit

C

s.

Pitt Ae

’PE8AC!d

5

tante de su D.N.I. que me ha exhibido, y queda rese-æado, de conformidad con lo prevenido en ci apartada c) del articulo 23 de la Ley del Notariado.
Tiene, a ml juicia, segün interviene, capacidad
legal e interØs leg.ttimo pare instar la presente Ac-ta, y en su virtud, --------------------------------- I. -EXHIBICION DE DOCUMENTO.- Me exhibe un docu-

mento escrito a doble columna en lengua inglesa y es-paæola, extendido en un folio de papel comün mecano-graftado par su anverso, suscrito en nombre "GROC-WELL, S.L.", Sociedad Unipersonal, el die 16 de mayo 2.011, por su Consejera-Delegada la compaæla "BORVI, S.A." y en su nombre ci seæor campareciente, cuyas
circunstancias de identificación ya se han hecho

constar.--

II.- LEGITIMACION DII FIRMA.- Declare que la firma puesta en dicho documento, consta legitimada par ml ci dla de la fecha, con el ndmera 743 del Libro mdi-cador. ____ A los efectas de completer ci aicance de la legi-

macjo, bajo sit rŁsponsabilidad, afirma: qu
el contenido zlel, referido documento; que

cono-

10 ha

rmado libre voilfuntariamente y qua es su v1untad
a sur a los efe to que sean propios del mis o, Se -
la legislaci6n ºspafloia 0 extranjera que le sea
ilicab a. ---------------------
Pre isa el a1cance de la rogaciOn en ci 5entido
le soli itar de ml, el Notarlo, qua haga cons ar Si-
H1te

mente la idetidad del otorgante y la sufi-
iencia de sus fa ultades. ------------------------ Ate diendo al requerimiento efectuado, pr cedo a
ontinu ción a: - - - -

1.- Identific r al otorgante en los tØrmi Os que
esulta de la fe de conocimiento reseæada. ---------
2.- Reiterar que, segün resulta del carqD rela-
ionado en la in erenci6n, el proplo compa eciente
- lena a ribuidas facultades suflcierites, manc munada-
ante con otro g rerite o administrador, para otorgar
poder contenido eh el documento unldo. ---- -------
III. - PROTOCO.IZACION: --------------------------

Y a requerimiento del seæor compareciente, proto-olizo con esta riatriz fotocopia cotejada pox ml con
u oricinal, del reseæado documento que dev elvo al
?ompareciente. --------------------------------------

S

PAPI XCI.JSIVO 1’A1A DOCUMENJTOS NOiAPAiS

AI5O33944
\0\
10/2010
SUAU

’4

IV.- APODERAMIENTO. -

Segün interviene, confiere poder a favor de las personas designadas en el documento protocolizado, todas ellas mayores de edad, atribuyØndoles las fa-cultades contenidas en dicho documento para que pue-dan ejercitarias en la forma prevista en ci mismo, haciendo constar que el objeto para ci cual se con-
fiere este instrumenLo estÆ cornprendido dentro del
de la sociedad. -------------------------------------

AsI lo dice y otorga el seæor compareciente, a quien hago de palabra las reserves y advertencias le -
gales, expresamente: --------------------------------
a) La de qua los datos recabados pare la redac-ción de este instrumento pübiico y su facturación y seguimiento posteriores forman parte de los ficheros existentes en la Notaria, utiiizÆndose para las remi-siones posteriores de obligado cumplimiento legal y serÆn tratados y protegidos segdn la legislación no-
tarial y la Ley OrgSnica 15/1999 de 13 de diciembre
de Protección de DaLos de carÆcter personal, pudiendo

8

,51 titular ejercer los derechos de informació, rec 4ficacón y canc laión segdn la citada Lay.

H b) De conformidad con el articulo 249.1 del Re -
q amentc Notarial de que quedarÆ a su disp sición
ntro de los pro ims cinco dIas hÆbiies, co id au-
tDrizada de esta escritura. ------------------------- Leo

- - - - - - - - - - - - - - - - - -

al seæor compareciente la presente Ata par

4 acue do y ren ncia al derecho de leerla or
le dvicrto ten, y, entcrado de su coat nido e
formao del mis4o, la encuentra conforme, prsta su
1ibre c nsentimie to firma.
UT ORI ZAC I ON ===-------- =======Y
Yy ci Nota io doy fe de que ci consentmiento
sido libremente restado; de qua el otorg miento
adeciia a la legalidad y a la voluntad debi amente
forma a del ot rgante; de lo demÆs conte ido en
te in trumento p0b.1ico, extendido en cuatro folios
pape seilado exdlusivo pare documentos a taria-
]es, niameros ci del preserite y los anteribres en

orden c rreiativo de numeraciOn. -------------- HSig e la firma del compareciente. Signado Sabriel
Sau R. Rubricado seliado.

AI -Et. EXCLUSNO PP -A c)(MENo.; OcP-ALCS Z

10/2010

I

OLARTEMOURE
OLARTE MOURE & ASOCLADOS LTDA.

Power of Attorney

The undersigned, GROCWELL, S.L., SOCIEDAD (JNIPERSONAL

domiciled in Riera Coma Fosca, n° 1, Alella (Barcelona), Espaæa

by means of these presents hereby grants to Carlos R Olarte and/or Juan Guillermo Moure full and sufficient Power of Attorney to file, prosecute, obtain, defend and enforce any and all of the company’s Patents for Inventions, Utility Models, Layout-Designs (topographies) of Integrated Circuits, Industrial Designs, Trademarks, Advertising Slogans, Trade Names, Commercial Emblems, Geographical Indications, Protection of Trade Secrets, Obtainer’s Certificates, Copyrights, Registration of Domain Names, Health Registrations, or any other intellectual property righ, also to file Unfair competition actions and request injunctions in the Republic of Colombia, to which end it empowers them to take all steps necessary before any administrative or judicial authority of any class for the objects stated, to file petitions, recourses, replies and oppositions, pay taxes and annuities, request testimonies, receive documents and securities, abandon applications, collect refunds, desist, settle, conciliate or negotiate. Sufficient power is hereby granted to receive notifications on behalf of the Company, to confer powers on those who are to represent the company judicially and extrajudicially, to answer in court in the matter of all claims and

demands that may be presented in connection with the objects stated, giving them likewise power to substitute these presents and revoke such substitutions.

A 5o3945kç

Poder

El suscrito, GROCWELL, S.L., SOCIEDAD UNIPERSONAL

domiciliaclo en Riera Coma Fosca no 1, Alella (Barcelona), EspaIla

por media del presente otorga a Carlos R.

Olarte y/o Juan Guillermo Moui-e poder amplio y suficiente para presentar, tramitar, obtener, defender y hacer respetar todas y cualquiera de las Patentes tie Invention, Modelos de Utilidad, Esquemas de Trazados de Circuitos Integrados, Diselios Industriales, Marcas, Lemas Comerciales, Nombres Comerciales, Enseflas Comerciales, Denominaciones de Origen, ProtecciOn de Secretos Empresariales, Certificados tie Obtentor, Derechos de Autor, Registro de Nombres de Dominlo, Registros Sanitarios, a cualquier otro bien de propiedad intelectual y tambiØn para presentar acciones de competcncia desleal y pedir medidas cautelares a nombre de la compafila en Ia Rep(iblica de Colombia, a cuyo efecto los faculta para dar todos los pasos necesarios ante cualquier autoridad administrativa o judicial de cualquier jerarqula para cumplir con In encomendado, elevar solicitudes, recursos, respuestas y oposiciones, pagar impuestos y anualidades, solicitar testimonios, recibir documentos y valores, desistir, transigir, y percibir. Se concede poder bastante para recibir notificaciones a nombre de la compallia, otorgar poderes a quienes vayan a representar a la compaæIa judicial y extrajudicialmente, responder en juicio a todas]as reclamaciones a demandas que por motivo de lo encomendado se presentaren, dÆndoles asimismo facultad para sustituir el presente y revocar dichas SustitUciones,

Signature/Firma: BORV1, S.A., representada por Oriol Bofill R.ovira de Vii!

DatetFecha: 16 de mayo de 2011

City,Country/Ciudad,PaIs: BARCELONA, ESPA1A

Diagonal 34 No. 5 - 28 BogotA DC Colomhio

LIBRO IN ICADOR. SECCION SEGUNDA.
Nimero 743.
TestImonio de legitirnación de firma. ------
Yo, GAB IEL SUAU ROSSELLO, Notario de Ilustre
oleglo de ataluæa, con residencia en esta iudad,
DOY FE:

I. Qu legItirno la firma de Don Ori 1 Bofill
Ro Ira de Villar, con D.N.I nlmero
36 9B0.041 -C, estampada en el doc mento que
pr cede, pot su cotejo con otra ue consta
en ml protocolLo. ---------------------------
II. Qu el presente documento queda i corporado
par fotocopia a Lu matriz del cta que,
c nforme al ArtlaulLo 207 del Regi mento No- -
t nial y para surtir efectosfuer de Espa-
autorizo en esta ciudad, el ía de hay
b jo el ni:imero 644 de protocolo. ----
Y a I stancia del finrttante, expido e presente
testimonio del que deja nota en mi Libro Indicador,
en Barcelo a, a diecisØis de mayo de dos mil once.

SELLODE

LEGfl1MACIONES
LEGALIZACIONE

$Al

NIHILP

’A2

4.

S

10/2010

I

POLL EXCLUSVO ’ARA rCLMENTOS JOIARALIS

A 1503394

siJAUft

11

D.A. 3a L. 8/89 DOCUMENTO NO SUJETO

(INSTRUMENTO SIN CUANTIA)
oCo

ES COPIA AUTENTICA y fiel cia su original obrante en ml protocolo general corriente baja ci nümero de or -
den que la encabeza, donde queda anotada. Y a instan-
cia de "GROCWELL, S.L.", Sociedad Unipersonal, la cx-pido en SEIS folios de papel exclusivo para documen-
tos notariales de la serie Al, ndmeros ci del presen-
te y los anteriores en orden correlativo de numera-
cidn, en Barcelona, el mismo dIa de su otorgamie-6
BOY FE.

or

V

APOSTILLE

(Convent:ion de La Hayc du 5 octobre 1961)
LPais ESP

El presenLe documento pOblico _____________________
2ha sido firmado par DON GABRIEL SUAD ROSSELLO------ 3.quien act a en caiidad de Notario, en cop.ia d Acta, nOmero 644/2011, a instancia de GROCWELI, SL. ---------- 4.y
BARCE LONA___

estd re estjdcT del seiio/timbre de su Notar a de ------------

CERTIFIADO

5.en BARCELONA------------ 6.el dia 17 de mayo e 202.1 ------------ 7.por DON JOSÉ ALBERTO NARIN SANCHEZ, Vicedecan de la Junta Directiva del,Ilustre Coiegio Notarial de Cat iuna. ------------ 8.bajo el nO era: -27147/2011_________________________ 9Seiio/timb e: iOFirma:

0c T 45 C3

m pUBLlCA cn CT t4p-VARIAL

7/

01690A

JoaØ Alberta Mann SÆnchz
Vice ecano

S

S

09/2010

PAPE. EXCLSVO PARA DOc2UMEN1OS N(YIARIAIES

ARCO

ESGRITURA DE COMPRAVENTA DE PATENTES>> NEROONCE--
En BARCELONA, mi residencia, a cuatro de Enero de dos milonce--- Ante ml, JUAN ANTONIO ANDUJAR HIJRTADO, Notario de esta Capital y del Ilustre Colegio de Cataluæa.

C 0 M PARE C EN ==

DQNJQEP_LLQRETIFERRANDEZ, mayor de edad, casado, con domicilio profesional en caile Gasp, 31, IQ 24 de Barcelona y con DNJ n9 36.496.218-W, vigente. ---------------- --------- DONONJQLB0F1LLROVIRADEVILLAR, JOAN BOIJLL ROVIRA DE VILI-AR, mayor de edad, empresario, casado, con domicilio en caile Torrent de Can Comulada, 7 L de Alella, 08328 (Barcelona) y con DNJ no 46.225.190-C, vigente. -----------------------------------
Me aseguro de su identidad por la documentación reseflada,--- =INTER VIE NE N

1),- DONJOSEP LLORETIFERRANDEZ, en nombre y representación, como apoderado general, de la Parte

Vend_dora, las me cantiles-------------------------------- --------- I11).- "GRUP VEMSA 1857, S.L.", cuyo domici io social actual estÆ en.Avi guda dels Vents, 9-13, Escalera A, 4Q_ 2a de Badal na (Barcelona). Consta debidamente inscri a en el Regist o Mercant 1 de Barcelona, en ci tomo 37.097, hoja
nüme o B-298.28 es titular del OF B-63663223.
ctüa en ca idad de apoderado general de la sociedad
segün resulta d la escritura püblica de apod ramiento
otorg da en fecha 4 de noviembre de 2004, por el otario de Barce ona, Don D vid Perez Maynar, con ci nümer 2.401 de su pr tocolo qu(causó la inscripción 2g en la hoja a ierta a la

socie ad.-----------------------------

segura dic o apoderado que las facultades il mismo confe idas no le an sido revocadas, suspendidas ni limitadas,
asI co 0 que no ha variado la capacidad de su pnncip 1. -------
e asegura I a vigencia del poder que ostenta, acultades repre entativas la persistencia de la capacidad jurI ica de la entid d que repr senta, exhibiØndorne copia autori ada de su docui ento de rey resentación. ------------------------ ----------- .2).- ’PLAS WIT, S.A.", cuyo domicilio so ial actual
estÆ n Avingud deis Vents, 9-13, Escalera A, - 24 de
Badal na (Barce ona). Consta debidamente inscr ta en el Regis ro Mercan ii de Barcelona, en ci torno 21.948, hoja nüm ro B-29.713 y es titular del OF A-08-323.701 --------------

2

PAPEL EXCLLJSIVC PAPA DOCUMEN1OS N01AFUA1ES

09/2010

El

pNTON/0

ll

9X8331202

Actæa en calidad de apoderado general, segün resulta de la escritura püblica de apoderamiento otorgada en fecha 13 de octubre de 2.004, por ci Notario de Barcelona, Don Gabriel Suau Rosselló, con ci nümero 1.725 de su protocolo y que causó la inscripción 59 en la hoja abierta a la sociedad. .Asegura dicho apoderado que las facultades al mismo conferidas no le han sido revocadas, suspendidas ni limitadas, asI como que no ha variado la capacidad de su principal. -------- Me asegura la vigencia del poder que ostenta, facultades representativas y la persistencia de la capacidad jurIdica de la entidad que representa, exhibiØndome copia autorizada de su docurnento de representación. ------------------------------------ Las anteriores sociedades, GRUP VEMSA 1857, S.L." y "PLASTI\TIT, S.A., serÆn en adelante conjuntamente refeiridas como la ’Parte Vendedora’. -- --------------------------------- 2).- DON JOAN ROVIRA DE VILLAR. en nornbre y representación, como Administrador Unico de 1 parecopdoramil Sociedad ijpsona1", de riacionalidad espaæola, con domicilio social en Barcelona, calle Gasp, 31, 101 2; constituida por tiempo

indefi

con n

el R
oblige

escriti

iido media. te escritura autozada por ml, el d a de hoy, [mero anter or de protocolo, pendiente de insci ipcion en gistro Me cantil de Barcelona, de cuya falta y

oriedad Le dvicrto----------- ------------------- -- -

is facultac s representativas resultan de la citada
ra fundaci nal,; copia autorizada de la cual mc exhibe y

devu ivo. ----------

I e conformi ad-con el articulo 98.1 de la Ley 24/2001 de
27 d Diciembre de Medidas Fiscales, Administrai ivas de
Ordek Social, o, el norario, hago constar que los
comp recientes tienen, a mi juicio, bajo r L1 fe respo isabilidad, n el concepto en que intervienen, capacidad legal facultad s suficientes, para otorgar la presente
ESCPITURA D1 COMPRAVENTA DE PATE ES, al
efecti ----------- ---
EXP ONE N

- Que la in rcamntil "GRUP VEMSA 1857, S.L." es duefla,
por 1 gItimo tltul eh pleno dominio, de la patente que consta
en el Anexo I, ci yos datos identificativos, de inscri ción de
adqu sición const Ln descritos en un folio, impreso r una sola cara, que se ur e a la presente escritura (en a elante, la "Patinte de GRU VMSA 1857, S.L.").------------------ I.- Que la mercantil "PLASTIViT, S.A." es duefla, por legIti nos tItulos en pleno dominio, de las pat mtes que

S

PAPEL EXCLJSIVO PAPA uOOJMENTOS NOTAR ALES

q i I.,)’??

09/2010

I

Nra
IV

j&ARCE

9X8331201

constan en ci Ariexo II, cuyos datos identificativos, de inscripción y de adquisicion, constan descritos en dos folios, impresos por ambas caras, que se unen a la presente escritura (en adelante, las "Patentes de PLASTIV1T, S.A.").---------------- La Patente de GRUP VEMSA 1857, S.L. y las Patentes de PLASTIVIT, S.A. relacionadas, respectivamente, en los Anexos I y II de la presente escritura serÆn en adelante referidas conjuntamente como las "Patentes’, ------------------------------ III.- Maniflesta la Parte Vendedora que todas las Patentes
se hallan vigentes, libres de cargas y responsabilidades, y no estÆn gi-avadas por ningtln derecho u obligación, ni han sido objeto de licencia de uso, ni existe demanda ni reclarnación de terceros alguna sobre las mismas. ----------------------------------- IV.- Los cornparecientes, OTORGAN la cornpraveuta de Patentes convenida con arreglo a las siguientes:------------------- ====ESTIPTJLACIONIES== PRIMERO.- CESION DE LA TITUIARIDAD:------------
La Parte Vendedora TRANSFIERE en este acto la titularidad que ostenta sobre las Patentes relacionadas en los expositivos I y 11 (Anexos I y II) de la presente escritura, asi

como todos los d recos inherentes a su condiciOn le titular regist al, en favoi dela entidad "GROCWELL, S.L. Sociedad Unip rsonal", qi e las ADQUIERE, por medio de su repre entante.------------------------ SEGUNDO.- PATENTES OBJETO DE VENTA: ----------
ue, a trav(s de la presente compraventa, la mercantil GRC CWELL, S.., Sociedad Unipersonal" adquiere 1 derecho exclu ivo de USC en el trÆfico económico de las Patentes
relaci)nadas en 1)S Øxpositivos I II (Anexos I II) de la
prese [te escritun. ------------
dquiere ta nbi’Øn todos los derechos referi os en el ’ritujo VIII, de la Ley 11/1986, de 20 de marzo, de P tentes de Invei ción Y Mod los de utilidad.-----------------------

as Patentes se ceden libres de cargas gravÆ]

y--
ienes al
corn nte de pago de tasas.

ERCERO. RECIO: ----------

Pa

’H pe

) Precio. --F---
1 precio g obal de esta cesión y transmisi ’n de las
tes se fija e i la suma de SETENTA MIL CINC JENTA Y EUROS (ON CUARENTA Y CUATRO C JIMOS

precio se lesgiosa de la siguiente manera:---
Precio de la Patente de GRUP VEMSA U
hir por G1 JP VEMSA 1857, SI.: MIL 03..

6

7, S. L., a

.10

S

PAPEL EXCL)SIVO PAPA DOCLMENTCSTARALES

09/2010

9X8331200 1

CUARENTA Y SETS EUROS (1.546,00 ) (sin IVA)-------------
- Precjo de las Patentes de PLASTIVIT, S.A a percibir por PLASTIVIT, S.A.: SESENTA Y OCHO MIL QUINIENTOS SIETE EUROS CON CUARENTA Y CUATRO CENTIMOS

(68507,44 ) (sin IVA). -- B) Tiempo y forma de pago. PAGO APLAZADO.
- La parte compradora abonarÆ el precio de lasPatentes a
la Parte Vendedora de forma aplazada, en tres (3) plazos anuales de idØntico importe, en cada una de las siguientes fechas: 4 de enero de 2012, 4 de enero de 2013 y 4 de enero de 2014, segün se detalla a continuación:
- En fecha 4deenero de 2012, "GROCWELL, S.L., Sociedad Unipersonal" pagarÆ a GRUP VEMSA 1857, S.L. la cantidad de QU1NTENTOS QUINCE EUROS CON TRE1NTA Y TRES CENTIMOS (515,33 ) y a PLASTIVIT, S.A. la cantidad de VEINTIDOS MIL OCHOCIENTOS TREINTA Y CINCO EUROS CON OCHENTA Y UN CENTIMOS (22.835,81 ).---
- En fecha 4de_enero de20l3, "GROCWELL, SI., Sociedad Unipersonal" pagarÆ a GRUP VEMSA 1.857, S.L. la

cantidad de Qi

Y TRiES CEN
cantic ad de VTETh
CINC) EUROS
(22.8 5,81 ).

[EN] OS QUINCE EUROS CON TREINTA
OS (515,33 ) y a IPLASTIVIT S.A. la
[1DOS MIL OCHOCIENTOS TR INTA Y
CON OCHENTA Y UN CNTIMOS

En fecha de en le 2014, "GROCW] LL, S.L.,
Socie ad Unipers nal" pagarÆ a GRUP VEMSA 1857, S.L. la cantic ad de QUIT TETOS QUINCE EUROS CON RE1iNTA Y TF ES CENTII lOS (515,33 ) a PLASTIVIT, S.A. la cantk ad de VE1TI TI)Os MIL OCHOCIENTOS TR ffNTA
C[NC) EUROS CON OCHENTA Y UN Cl NTIMOS

(22.8 5,81 ).
T icho ap1az niento no devengara intereses a f vor de la Pane Vendedora.
C BLIGACIONES DE LAS PARTES

Lue, en aras a perfeccionar la actual comp aventa a
efect s püblicos, las partes firrnarÆn las auto izaciones
admii istrativas 0J ortunas a fin de poder inscribir la Patentes a no bre de *GR)CWELL, S.L., Sociedad Uniperso ial" en la Oficij.a Espaæola de Patentes Marcas resto d oficinas cone pondientes---_
tal fin, RITTP

_

VEMSA 1857, S.L.’ y P1 &ST1VIT,
en su ca idal de cedentes-vendedores, se obligan expre;amente a (olaborar en lo necesario, a reaiiz r cuantos

8

0

S

PAPEL EXCLLJ$IVO PAPA L)Q(;LJMENTDS 1QTAkIA1ES

09/2010

S

, N1ON

2JR, ’i 1

. 4RcELO

cj7)4’
9X8331199) \

actos y suscribir cuantos docurnentos -pæblicos o privados-sean menester Para la efectiva inscripción de las presentes cesiones de Patentes en la Oficina Espaæola de Patentes y Marcas y ante cuantas otras oficinas u organismos considere oportuno la pane compradora, ’GROCWELL, SL., Sociedad Unipersonal".--- QUINTO- GASTOS:
Todos los gastos de intervención notarial de la presente escritura serÆn de cuenta exciusiva de GRUP VEMSA 1857, SI---

Los impuestos que Se deriven de la presente transmisión serÆn segiin Ley-- SEXTO. RENUNCIA A DERECHOS ANTERIORES

Que, por medio de la presente escritura, la Pane Vendedora, a travØs de su representante, renuncia de forma expresa a todos y cada uno de los derechos que sobre el uso de las Patentes pudo ostentar en su anterior condición de propietario de las mismas, sin tener al efecto en el futuro nada que pedir ni reclamar al respecto.
StPTIMO.- NOTIFICACIONES.---------------------------

Las partes designan como domicilio respectivo a efectos
de nhtificaciones el que consta en las comparecencias de la presente escritura, si bien podrÆn modificarlo mediante noti.ficación remitida a la otra parte. ------------------------------- OCTAVO- LEY APLICABLE Y JURISDICCION. --------

Esta escritura de compraventa se rige por la legislación espaflola. -- Para todas las discrepancias derivadas de la interpretación
y el cumplimiento de presente escritura las partes, con renuncia expresa al fuero que pudiera corresponderles, Se sorneten a la expresa jurisdicción de los Juzgados y Tribun.ales de la ciudad de Barcelona. --

Quedan hechas las reservas y advertencias legales, entre ellas las de carÆcterfiscal y de manera especial: ----------------- Enespecial:
Ley 10/2010, de 28 de abril, de prevención de blanqueo de capitales: Yo, notario, hago constar expresamente que he cum.plido con la obligacion de identificación del titular real de las personas fIsicas y/o juridicas intervinientes en esta escritura, cuyo resuitado consta:
- por escrito privado firmado por el Sr. compareciente, y que conservarØ durante el plazo de 10 ahos------------------------ Ley OrgÆnica15/1999, de Protección de Datos. -----------
De couformidad con la Ley OrgÆnica 15/1.999, de

IN

PAPL XCLU$IVO PAPA DCCLJMENTOS NorAALEs

09/2010

S

pNTON/0

R C

9X8331198.’

Pi-oteccjón de Datos de CarÆcter Personal y la Orden del Mi.nisterio de Justicia 484/2003, por la que se crean los ficheros con datos personales de la profesión notarial, quedan informados y aceptan la incorporación de sus datos personales al fichero de gestión y administración de la NotarIa titularidad del Notario autorizante de esta escritura y al fichero de Protocolo y documeritación notarial de la Dirección General de los Registros y del Notariado. Sus datos se conservarÆn en.la notarIa de forma confidencial, sin perjuici.o de las remisiones de obligado cumplimiento. Su finalidad es realizar la forrnalización de la presente escritura, su facturación y el seguimiento posterior y las firnciones propias de la actividad notarial. Ud, podrÆ ejercer sus derechos de acceso, rectificación, cancelaciÆn y oposición respecto de ambos ficheros en la siguiente dirección: Rambla de Catalunya, 61, 39, 24, CP 08007 Barcelona --- Yo, Notarlo, DOY FE, de que el consentirniento ha sido libremente prestado y de que ci otorgarniento se adecua a la legalidad y a la voluntad debidamente i.nformada de los

Pkir su ele On: les leo este instrumento, d spues de
identi1carles por sus documentos reseæados, lo er4cuentran confo me, prestan su consentirniento y la flrman co amigo, el Notario, que de su Iniegro contenido redactado en eis folios de papel timbrado de ’so exciusivamente notarial, el presente, y los cinco posteriores correlativos en orden, de a misma serie, o el Notari, Doy fe. ------------------------------- E las firmas de los comparecientes. Firmado v signado: Juan Antonio And ’jaI Hurtado. Rubricado y sellado. ----------
ota: a 4 de ne–o de 2011, he librado copia a u Liliclad de
Grup emsa 185S.L, en 9 folios de papel timbrado, de uso exciusvo notarial Aç8951082 y los 8 posteriores. DOY FE. niedial firma del n&ario autorizante.--------------
ota: a 4 de enero de 2011 he librado copia a u ilidad de Plasti it S.A., en 9 folios de papel timbrado, de uso exciusivo notarial, AC8951 73 y los 8 posteriores. DOY FE. media firma del ii tario autori ante.--------------------------------------

ota: a 4 de nero de 2011 he librado copia a u ilidad de
Groc ell S.LU., en 9 folios de papel timbrado de uso exclu. ivo
notari:tario

AC895 1064 y los 8 posteriores. OY FE.
media firma del autorizante.-----------------------------

12

PATENTES D INVENCJON ESPAFOLAS

- Patente esp lola no 200302485 (n° do publicaciOn ES 219969), presentada
el 24 do oct bre de 2003 y concedida el 3 de octubre de 2005, titulada "Perfeccioriam entos en tapones do seguridad para boteflas".

Patente esp æola no 200400384 (n° do publicación ES 2209667), presentada el 18 de febr ro de 2004 y concedida el 21 do febrero de 2005, titulada "Sobretapa para tapones do seguridad irroltonables y procedim onto para so fabrtcacidn

- Patente espan-ola 200402990 (ri° de pubflcación ES 213306--,), presentada
el 16 de dicie bre do 2004 y concedida el 18 do noviembre de 2005, titulada
"TapOn ireifen to porn boteflas do (icores y similaro?.

- Patente espaola no 200403078 (n° do publicación ES 2229959), presentada
el 24 do diciernbre de 2004 y concedida ci 2 do enero do 2006, Ii uiada ’TapOn ire//enable con dobld dispositivo do seguridad".

- Patente espaola no 200800284 (n° de pubiicack5n ES 2302483), presentada el 4 do febrerc de 2008 y concedida el 9 de julio de 2009, titula a "TapOn do seguridad para botellas y similares con dispositivo antirrollono".

- Patente esp rlola no 2334363 correspondiente a a fracciôn e paæola do la
patente euro ea 1679268 (ri° de solicitud 05380267) tltuada "Tapón in-el/enable cor, dobib disposltivo do seguridad",

Patente do a iciônn° 200401788 (n° do publicaciOn ES 2239913 presentada el 21 do julid de 2004 y concedida el 24 de mayo do 2006 titulada "Porfeccionamt ntos on of objeto do In patente principal no 260400384 por Sobretapa pa a tapones do seguridad irro/lonables y procedimiento para so fabricaciOn

- Patente de idici6n no 200401531, presentada el 26 do julio do 2004 y
concedida el 2 3 do mar20 do 2007, titulada "Mejorn on of objto lie in patente principal no 20 302486 por ’Perfeccienarniontos on tapones do seguridad porn bote/las".

- Patente do aicióri n° 200503045 (n° do publicaciOri ES 2255879 presentada
el 12 de dicie be de 2005 y concedida ci 28 do marzo do 007, titulada

09/2010

S

APL EXCLUSVO PAR DOCUMENTOS NOTARALES

pNTON’N

UI

"Mejoras introduciclas en ci objeto do la patente principal n° 200402990 por Tapón irrellenable para botellas do I/cores y similares".

PATENTES EUROPEAS

Solicitud do Patente Europea no 1526086 (ri° de solicitud 04380207), presentada ci 20 de octubre de 2004 y titulada "Tamper-evident closure for bottles".

- Patente Europea 1679268 (n° de solicitud 05380267), presentada ei 16 de
diciembre do 2005 y concedida ci 14 do octubre de 2009, titutada "TapOn Jtrellen able con doble dispositivo de seguridad".

PATENTE FRANCESA

Patente Fraricesa correspondiente a la fracción trancesa do la patente europea 1679268 (n° do solicitud 05380267), titulada "Non refillable stopper with double security device".

PATENTE ITALIANA

- Patente Italiana correspondiente a la fracción italiana de la patente europea
1679266 (n° de solicitud 05380267), titulada ’Non refillable stopper with double security device".

PATENTE BRITANICA

- Patente BrItÆnica correspondientea la fracción britnica de la patente europea
1679268 (n° do solicitud 05380267), titulada ’Non refillable stopper with double security device"- evice".

PATENTE TURCA

- Patente Turca correspondiente a la fracciOri turca de la patente europea 1679268 (ri° do solicitud 05380267), titulada "Non refillable stopper with double security device".

PATENTE POLACA

- Patente Polaca correspondiente a la fracción polaca de la patente europea
1679268 (n° do solicitud 05380267), titulada ’Non refillable stopper with double security device"-

2

4

PATENTES A GEtfliNAS

Patente Arg ntin n° P 040103788, presentada ci 20 de octu re do 2004 titulada "Tape es dŁseguridad pars hotel/as".

Patente ArgE ntinan° P 050105232, presentada ci 14 de diciem re de 2005 titulada "TaPM irrelienable betel/as do I/cores s/mi/ares".

Patente Argentina: P 050105348, presentada el 20 de diciem Dre de 2005 titulada "TapO irre/lenable con doblo dispositivo do.seguridad".

PATENTES B ASILEiAS

Patente Bra iiena no P10404551-3, presentada el 22 de octet re de 2004 titulada "Safet stoppers for bolt/es".

Patente Bras lena n° P10505629-2, presentada of 23 de diciem re de 2005 titulada "Non-refillable stopper with double security device".

Patente Bra henS no P10519516-0, titulada "Non-ref///ab/ec for bottles containing a/c ho! and similar" (corresporidionto a is fase nacion I en Brasil de a solicited into nacinaI PCT/ES05/000676)

- Patente Co1 mbiaia no 04-105257, presentada el 20 do actub e de 2004 y
titulada "Tapo os do seguridad en forma do aranclela adaptable a I golleto tie la
betel/a".

- Patente Col mbiana no 05-047247, presentada ci 17 do mayD do 2005 y concedida el 26 do octubre do 2009, titulada "Tapón irrellenable Dara hotel/as de I/cores y sir i/ares".

- Patente Colombiana no 05-125165, presentada et 12 de diciemt re do 2005 y titulada "Mejor s en rap6n irrelloniable pars betel/as do /icores y sir i/ares".

- Patente Cole ibiarla no 05-126454, presentada el 15 de diciemi re do 2005 y titulada "Tapón irr&/Łnable con doble dispositivo tie seguridad".
- Patente Col mbiana n° 09-010551, presentada ci 4 de febrem de 2009 y titulada "TapO de seguridad pars betel/as y s/mi/ares coh dispositivo
antirre//eno".

PATENTES Rt SAS;

- Patente Rusa no 2004131508, presentada ci 22 de octubrL do 2004 y concedida e12(do enero do 2009, titulada "Safety stoppersforbot/e,s".

3

S

PAPEL EXCLUSLVO PA1A DOCUMO’TOS NOTAA{ALES

0912010

4

p,NTON1 -

Ic\\

8.co7

9X8331195

Patente Rusa n° 2005141807, presentada ci 23 de diciembre de 2005 y titulada "Non-refillable stopper with double security device".

- Patente Rusa n° 2007125674, titulada "Non-refillable cap for bottles containing
alcohol and similar" (correspondiente a la fase nacionai en Rusia de la solicitud internacionai PCTIES05/000676).

- Patente Rusa n° 2008125782, presentada ci 24 de junio de 2008 y titulada
"Safety cap for bottles and the like with anti-refilling device".

PATENTES INDIAS

Patente India n° 2394/KOLNPI2007, titulada "Non-refillable cap for bottles centaining alcohol and similar" (correspondiente a la fase riacionai en India de la solicitud internacioriai PCT/ES05/000676).

- Patente India no 1451K0L/2009, presentada ci 27 de enero de 2009 y titulada "Safety cap for bottles and the like with anti-refilling device"

PATE NTES MEXICANAS

- Patente Mexicana n° PA1a120041010388, presentada ci 21 de octubre de 2004 y concedida el 20 de enero de 2009, titulada "Tapones de seguridad para botellas’

- Patente Mexicana n° PA//2005/014146, presentada el 21 de diciembre de
2005 y titulada ’TapOn irrellonable con doble dispositivo de segLiridad".

- Patente Mexicana n° MX/a/2007/007161, titulada "TapOn lire//enable para hotel/as do licores y similares" (correspondiente a la fase nacionai en Mbxico de la solicitud interr-iacionai PCTIES05/000676).

- Patente Mexicana n° MX/al20D9/001236, presentada ci 30 de eriero de 2009
y titulada ’Tapón de seguridad para byte//as y similares con dispositivo antirrol/cno"

PATENTES VENEZOLANAS

- Patente Venezolana n° 2004-001717, presentada ci 22 de octubre de 2004 y
titulada "Tapones de seguridad para boteflas".

- Patente Venezoiana n° 2005-002594, presentada el 16 de diciembre de 2005
y titulada "TapOn irrel/enable para hotel/as de I/cores y similares".

FS SEGUNDA COPIA DE SU ORIGINAL, y a in tancia de GROCIWELL, S.L. J., la expido, sin efectos ejecutivos, en nueve folios de papel timbrado, exciusivo para d cumentos notariales, el pre: ente y los ocho posteriores cone
de

ativos en

orden numerai ión y de la misma serie. En BARCELONA a dos d mayo de d s mu once. DO FE.----------------?FE

PUBLIC

Cil-

b’ ’ ’ -. -- = - - -

626

[ARANCELNOTARIAL, DERECHOS I EVENGADOS Arancel apcabIe numeros 2 4 7 N2 84. Conceptos AVENTA DE MARPA INUS1RIAL

S

10/2010

PAPEL EXOLUSIVO PAPA DOCLJMNTOS NOTARIALES

AP OS TILL E

(Convention de La Haye du 5 octobre 1961)
1. Pais ESPANA--- -----

El presente docurnento pi2biico --------------------------------
2ha sido firrnado par DON JUAN ANTONIO ANDUJAR HURTADO
3.quicn actda en calidad do Notarlo, en copia de escritura de Compraventa de Patentes, nOrnero 11/2011, atorgada por CRUP
VEMSA 1857, S.L. PLASTIVIT, S.A. Y GROCWELL, S.L., cuya firma - ha sido extendida en ci folio nOmero 9X831195 de papel - exciusivo parc documentos notariales ------------------------- 4.yy estÆ revest,jdo del cello/timbre de su Notaria de ---------------
BARCELONA---
CERTIFIc.ADO

5 -en BARCELONA-------------6e1 dia 17 de mayo do
7.por DON JOSÉ ALBERTO MARN SANCHEZ, Vicedecano de is Junta

Directiva del Ilustre CoJ egio Notarial de Cataluna. ------------ 8.bajo ci nOmero: -27140/2011 -------------------------------------
9Sello/timbro: 10.Firma:

010

CpjkIAL

01690 JosØ Alberta Mario Sanchez
Vice dccc no

dro Castillo Pliieda & Asoclados
ABOGADOS

SUPERINTENDENCIA DE INDUSTRIA Y C Division de Nuevas Creaciones
E S. D.

S’JP ERI NTENDENCIA DE I NDUSTRJA Y COMERCJO (IIIut IIII II.I II IIIII III itIiII1I I1II Ill II1III II Ill ill

No. 09-010551- -00008-0001
Feche 2013-02-28 16:2209 Dep, 2020 DIR.NUEVASCR
Ira 2 PATENTES Eve::323 ANUALIDADE.S
Act. 411 PRESENTACION Fetes: 2

Ref: PAGO DE ANUALIDAD-ExPEDIENTE No.09-010551
Solicitud de Patente a nombre de GROCWELL SL SOCIEDAD
UNIPERSONAL.

Por ResoiuciOn No.49950 del 24 de Agosto de 2012 ese Despacho concedió et privilegio de Patente de lnvención para TAPON DE SEGURIDAD PARA I3OTELLAS Y SIMILARES CON DISPOSITIVO ANTIRELLENO, a nombre de GROCWELL SL SOCIEDAD UNIPERSONAL.

Para cumplir con to dispuesto por el artIculo 80 de la Decision 486 de la Comisiôn
de la Comunidad Andina adjunto el recibo N° , por concepto de la
tasa anual de mantenimiento de la patente, correspondiente at periodo comprendido entre el 04 de Febrero de 2013 yet 04 de Febrero de 2014.

Atentamente,

-. JERONIMO CASTLLO BONILLA C.C. 79.462.057 Bogota
T.P. 104167 C.S. Judicatura

CaVe 93A No. 14-17 Of-311 Tels-2363409-2363493 Fax-2182351 E-mail: infopcastiIIop1neda.com

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO NIT: 800.176.089-2

RECIBO DE CAJA No. 13 -0020035
Inclustria Comercio L
SUPE R I N T E N D [NC IA J Bogota D.C., Febrero27de2Ol3 16:24:22
RECIBIDO DE CASTILLO PINEDA SAS M 860.046.502 Soporte del Pago
TIPO PAGC) BANCOL CUFNTh No PACO EECHA PA(O VR PAGO
CONSIGNACION BANCO DE BOGOTA 062754387 455761445 27/02/2013 1.370.000.00

CONSIGNACION BANCO DE BOGOTA 062754387 455761456 27/02/2013 29.505.000.00

Ccinreptnq Pgdns**
CANT. RENTISTICO CONCEPTO Vr.UNDITARIO Vr.CONCEPTO
1 50005-01-09 OTROS SERVICIOS DE PROPIEDAD 2212 TASA ANUAL AMOS S A 8 PARA 320.000 00 320.000.00
INDUSTRIAL MANTENIMIENTO DE PATENTE OD

..,ON: **TRESCIENTOS VEINTE MIL PESOS MONEDA CORRIENTE***

Responsable: ENC)A DE INDUSTRAY COMERC)O

sUPERINTEND

Recibo de Caja Aplicado al Expediente No.

Fecha 2013-02-28 6.22.09

Eve 323 pNUALI DADE S
t1SENTA0\0NF0o05 2

- - - - - - - - - - - - - - - - -

Sede Centro; Carrera 13 No. 27-00 Plxox 3,4,5 Y 10 BogoUi, D.C.- Colombia Web: www.sic.5ovo e.mai: info@sic.gov.co Conmutador; (571) 5870005 Fax: (571) 5870284 Linea: 010000-910165 Call Center; (071) 0513240

Fabrero 27 do 2013.1024:27

RE

CAVELIER

ABOGADOS
III. LEG–TIMO INTERES

Mi representada, la sociec1ad GUALA CLOSURES PATENTS B.V., tiene ieqItimo interØs para presentar oposición en este asunto por cuanto es
una socLedad que fabrica, vende y cornercialia tapes de seguridad; asi,
de otorgarse a PLASTIVIT S.A. la patente solicitada, se le estaria otorqando ci rnonopoiio de la expiotación exciusiva sin que su solicitud se haya presentado ajustada a derecho y sobre todo, sobre un producto que no redne los requisitos pare ser objeto de patente.

IV. FUNDNENTOS DE LA OPOSICIoN

Tal como se iridicó ariteriormente, consideramos que la solicitud
de patente colombiana, trarnitada hajo ci expediente No. 09.010.551 carece de nivel inventivo.

Seiaia ci articulLo 18 de. la Decisión 486:

Articulo 18.- Se considerarâ que una invenciôn tiene nivel inventivo, Si para una persona del oficio normalmente versada en la materia tØcnica correspondiente, esa invenciôn no hubiese resultado obvia ni se hubiese derivado de manera evidente del estado de la tØcnica.

Por lo tanto, uria solicitud tend-rd nivel inventivo s la invención que se busca pro teger no hubiese resuitado obvia para una persona iiedanamente versada en la materia a la iuz de las enseæanzas del arte previo.

En este sentido es importante poner de presente que cuando la persona medianamente versada en la materia encuenra enseæanzas dares en ci arte previo que le enseflan o sugioren las caracterlaticas tØcnicas particuiares de la invenciOn, se considera que la invención resuita obvia, ye que dicho experto medio no requiere emplear habilidad inventiva para iiegar a la solución reivindicada sino que simpiemente se iimita a combinar caracteristicas ya conocidas en ci arte previo o las mismas resultan de modificaciones suficienternente sencilias resuitando obvias para cuaiquier persona medianarnente versada en la materia que se enfrenta al mismo problema tØcnico.

A este respecto y tenierido en cuenta la. fecha de prioridad de i.e solicitud de patente de la referencia; febrero 04, 2008, desearnos citar

2

CAVELIER

ABOGAD OS

las siguientes anterioridades,
estudio do patentabiliclad:

,1

las cuales resuitan relevantes para el

NO. DOCtJNENTO T–TULO FECHA PUBLICACt6N

Dl JP 200405121.8A CONTAJNER MITT-I SAT-ETY CAP 2004-02-19

02 GB 2249303A TAMPER-EVIDENT CLOSURE 1992-05-06

CIERRE A {’RIJEBA DE
VIOLACION 0 T-4ANIPULACIN
D3 ES 2072679T3 1993-04-21
INDEBIDA PARA GOTELLAS Y

SIW[LZ\RES
04 US 4474302 SAFETY CHAMPAGNE CORE 1984-10-02

05 US 4583652 SAFETY CLOSURE DEVICE 1986-04-22

Se considera que Dl as el documento del estado del arte mBs
cercanc por cuanto revela un tapón de seguridad para botellas que
comprende un manguito cilindrico y una tapa de rosca conectados por una
banda cT-c seguridad helicoidal, dicha, banda de seguridad estÆ conectada
a la tapa y aJ. macquito en sus extreinos, obteniendo asI irna lInea dehilitada con traxado he].icoida]., d]cha.ilnea debilitada se rompe cuando la tape es desenroscada (var pArrafos [0008], [0012] y [0013] de la traducción en inglØs del documento Dl qua se adjunta al presente memorial)

La reivindicaciOn 1 cT-c la solicitud de patente colombiana se
diferencia de Dl solamente por la presencLa de un dispositivo anti-
relleno.

El problema tØcnico a ser resuelto por la solicitud es proveer un
’ tapón para lIquidos valiosos el coal conserve las ventajas del tapón
revelado por Dl.

Ahora hien, el documento 02 revela un tapOn de seguridad para
liquidos valiosos con estructura qua comprende medios anti-r:elleno (H,
C, D)

Para una persona medianamente versada en la materia resultaria
entonces obvio impiementar Jos medios anti-relleno revelados por D2 en

3

CAVELIER

ABOGADOS

la estructura de Di realizando s.irnpiemente pequeæas adaptaciones qua
pueden derivarse de manera ohvia, a partir del conocimiento del experto
media.

La anterior, par cuanto se habia de tapanes destinadas a hoteilas
qua contendrian behidas valiosas tales coma licor, y para las cuales se busca no solo el efecto tØcnico ye revel-ado par Dl (indicador de vioiaciOh del tapón) sino tambiØn ei efecto anti-relieno ampliamente conocido y revelado par ejemplo en D2.

Dc manera alternative, la anterioridad D3 es otro documento que
revela las caracteristicas de la reivindicaciOn 1 de la solicitud de patente colombiana, excepo par el dLspositiva anti-reileno. Esta anteriaridad tamhiØn revela un tapOn de seguridad contra manipuLacion indebida pare hoteliLas y simliares que comprende una banda a prueha de manipulaciOn indehida hecha dc una pieza con ci tapdn a travØs de aria linea debiitada. El objetivo de dicha handa de seguridad es indicar la manipuiación previa de la bateila.

Dc este modo, la persona medianamente versada en la materia
podria Igualmente combiner las anseæanzas de D2 y D3 para. ilegar de manera ahvia a la soluciOn reivindicada par la solicitud colombiana en cues iOn.

Par su parte, se ban citada los documentas D4 y D5 con ci prapOsita de demostrar que cualqu.ier tipa do nervadura de refuerza, es equivalente a la de la solicitud colombiana. La misma sucade con la manera coma se construye la ilnea debilitada, resultanda en pequeios pueftes a en una superficie adelgazada (ver par ejemp.io figura 3 de
D4) Do acuerdo con esta, Se corisidera que las mismas no pueden
coriferirle nivel inventivo al tapOn reivindicado en al solicitud colombiana.

En vista de lo anterior, se cansidera que la solicitud carece de
nivel inventivo, ya que una persona medianemente podria derivar de manera obvia la soluciOn tØcnica reivindicada.

Adicionaimente, ci abjeto reivindicada no constituye una mejora sustancial respecto a los tapanes dc seguridad canocidos en ci estado del arte ni. tamp000 resueive una soiucidn insatisfecha, par la qua ya

S

40

JP 2004 51218 A 2004.2.19

(19)R*1 IM UP) (12)rjfl (A)
M2OO4-51 218
(’04-.51218A)
43) F4162fl19R(O4.2.19)

(51)I nt. Cl. 7 F I ()
B650 55116 B65D 55/16 3E084
365D 41134 B 6 5 D 41/34
B65D 55/08 BGED 55/08

4 (6 A)

(21) 42002-242685 (P2002-242685)
(22) PJ (2002.7.19)

(54) OXV]]

(er) [Tnu
[)ti)> F1j

tot?L),
[2)

21R3fu)4jD1 1
–fflD1 1j4t7-D Z1)7 172ti
y7*2 1 ’1(. –fflD1 1 I11
1r2 1ti 3
}101 1
v71*2.1 4U)
)’:iJP7 1L
[iRl) Rl2

(7 1) 502105672

(7’2) RWff H#

F:4 1.() 32084 AA04 AAJ2 AA22 AA24 AA32
ABO1 BAOI CAO1 CCO3 DAO1

1)803 1)812 DC03 FAOO FBO1
GAOl G801 JA15 1(112

OQ ’ (iJfcfl*L
A-

4 S 1

[9 000]

4 4(fl2JWI ’ S
’ ? {1L Y,- 3ffL4
’J Li.;ii Co 4’ + (0 " (f Co 2 ’ 2.
1 ii 0 0 0]

2I4(o(’
<Co2 ’((2I.i1’’ k ’2I(122*
0 89 0 0 0 0 0 Z L L - L 0 0 Z Wl 4J1 ’---24.
[0000]

flLS > 24c(1jLfl
jC3K(D(k+- ’((1 IWL(0
MC442I4((/ z(tiZ
. 1Co2 ’C2 5U> L’ ’
2’ ’ 8? L 48? 0 k2 (-
’L(iLfl Ef 3E’’ ’ L1 rb2 51iL
4,1

I Co
[3 000]
(D’3
4JCoY4 (1LJk(F#
[8 J
[.000]
(0 F1a

2T

[ii]

1 0

F(4

(0ItF(o(0E4’ 2T /(2T ’2(i2tt.4
OL

4 R 2 4 1 ’ (Co Tit & Y4YI V, 4-
(oL6f(i 4
21 2ICoD8?2T A-
’aE’ k$ ’4u5A5 A-
2ILT ’
I I. if

V BM9 (Z)

’ 3.

09

Z. 11 It (0 ti Z-1 (i Y 0 T 4 L L El WER L L
P T ’L 1 YL M2. 4j 4 ti (i
IF(0To 0Z ’J ’LM2-
I*I4f#(oC ’. 0 L

’L Cl 2 c 0 P f 4 0Z iR tf2C. L
(0 L (1 U Xjj J 4. U 9 (0 L I. LII T 12 T R. (I i4-
Ut 21 L L El WE2T L Z *t.iII’ 4

L fl H6 (O L LUflTI[’2T ’T
LOU]
L fl .i C

5s7 1(2! Co 7 1 T4 (1 ’7 1 k

L L El W0T

’ q 4q 1114 I 4?

[I. LOU]

00 CW W R9 T L L L I[Cc
To2 ’ 4f ’ I[42(L
CoX 0 [4
O 1 0

Y 4Xg f2l’.> X
[6000]
Xg 1114 1-1 9k 1:4

11 L 2! (I f’
U

0 Q 14 ’4$L’’ rl2T ’SJ 204
’’ T ’J L Cl 1 URt
[8

’fl]F2I
1<,V2T

Y4

2I0WIT
’ 42

6L’Z’*00Z Y 91ZL9 tOOZ dF (8)

(4) JP 2004 61218 A 2004.Z.17

[0018]
U7S

5 8)3 3’ L 7 U t). C () 8 8F 2 5U 7. 1) 2. 4 0-8)3 t

7*1* 2 1 t5 AIEVlMAIC-)
i1Yitt i 1,2)31Z5
[0014]

10
7-7S IT 8

E,T*6 El 1 1 Jim 8)3II LS A IMIIIL 1 1 1)J
11XJILY I2jL U 71)
[0015]

IITS
F #13 2. 2. 0 M S 813 2 5 70 tCA Y F 8)3 2 2.

F#)32. 1ffl’iii
[0016] 20

1D11O)5280)117go U
L)E &)) A F 95 2 2 V 7* 2. 1 I ii 77.)) F- 2 ’I t
U, I 8#)32.5Vtft-tL tU7I’’7’*l*2. 1
y774 2 1 fill El 1 1 b 1))L 8)iLD 1 1
– >F8)32 2.S ’I1U7’7

[00 1 7
tD-) 7–\ ’y7*1* 21 1#1L 1 1 Ia13i5t4
80
[0018]
2 8 t V M I M 0 fL Z t 70M 2 0 I’ 0 w 7 2 aI
1J13) y 7- Z 7 U 7. 1- 2. 4t8)’J
t#8)3255 F- CO
1325071x’.J’ F-.24t ItL7u0ICU. CO2J0

’y 7 2 o. 8-i-8I 2 5 ob A> F 8)3 2. 2. 0 PJ 0 ICb 7 A> F 8)3 2. 2 7. ’) ’’
F- 24 Ie5A>F8D2 2o

IC.) 7’ 1 U .cJi AR #8)32. 5o’S t Y v 72007A>

40

v72OICL)75 7.y U7)5 it1L7
1)V 1) CO 2 1O t Y v 7 2. 0) IC M 2

v7)3i1X0
Y 7-;?r\ 4 1 f8) 1 0 12

F

DETAILED DESCRIPTION

[Detailed Description ofthe Invention]
[0001]
[Field ofthe Invention]
This invention relates to the container with a safety cap provided with the function to prevent a cap falling suddenly, and becoming dirty or losing, after unstopping.
[0002]
[Description ofthe Prior Art]
In recent years, the container with a cap called a PET bottle has spread as containers, such as soft drinks. Such a container with a cap has the cap opened and closed at a screw-thread ceremony, it is common to divide contents into multiple times and to take them out, and after it takes out contents, it needs to close a cap again. However, in such a container with a cap, In order to have to perform extraction of contents where it has the cap opened wide in one hand when opening a cap wide and taking out contents, it became the obstacle of work, or this cap had mind taken by extraction, and dropped in many cases, and there was a problem ofit becoming dirty or being easy to lose.
[0003]
So, in the former, what prevented fall of the cap after unstopping is proposed by forming bands successively on a cap and connecting the base end ofthis band with a container as indicated by JP,2001-72120,A, JP,2000-238831,A, etc., for example.
[0004]
However, in the conventional container provided with such a cap with a band, since the above-mentioned band had projected to the side face direction ofthe cap, this band became obstructive at the time of carrying and use, etc., and when it accommodated in a bag, there was a fault of being easy to be caught in other things. Since the shape of a combining form of a cap and a band was complicated, there was also a fault that cost started the manufacture.
[0005]
[Problem(s) to be Solved by the Invention]
There is main technical problem of this invention in providing the container with a safety cap excellent in usability with which the band which stands in a row on a cap projects to the side face direction ofthis cap, and does not become the obstacle at the time of carrying and use, etc.

Other technical problem ofthis invention has the shape of a combining form of a cap and a band in providing the container with a safety cap which it can be easy and can. be formed cheaply.
[0006]
[Means for Solving the Problem]
A package body which has an extraction mouth of a cylindrical shape with which a male screw was formed in a periphery according to this invention in order to solve said SUBJECT, A cap body which can be detached and attached and which equipped inner circumference with a female screw which this cap screws in a male screw ofthe above-mentioned extraction mouth periphery including a cap laminated on the above-mentioned extraction mouth, A container with a safety cap having a supporter ofring shape which rotation on a base end periphery ofthe above-mentioned extraction mouth is free, and fits into a

* * * *

state, and a flexible spiral band part which surround the surroundings ofthe above-mentioned extraction part spirally, and connects these cap bodies and supporters is provided.

2

[0007]
When this invention has the above-mentioned composition, is connected by band part with spiral cap body and supporter in a cap and this cap body is laminated on an. extraction mouth, Since it is located so that the above-mentioned band parts may surround the surroundings of an extraction mouth, and it does not project in the side, this band does not become the obstacle at the time of carrying and use, and it excels in usability.
[0008]
In this invention, a cap body and a spiral band part in the above-mentioned cap, and a supporter, Are formed successively so that one cylinder may be made, and the above-mentioned band part is formed by providing a spiral slit in a position between the above-mentioned cap body and a supporter, and it is desirable to he selectively combined by two or more bond parts which can he cut by rotation of a cap body,
By this composition, joining structure of a cap body, a band, and a supporter becomes easy, and a cap can be formed cheaply.
[0009]
The above-mentioned bond part can be formed so that a part ofslit may be plugged up, or it can he formed so that a slit may be crossed over an inner surface ofthe above-mentioned band part.
[0010]
[Embodiment of the Invention]
Drawing 1
and
drawing 2
show one working example ofthe container with a safety cap concerning this invention, and this container includes the package body 1 which has the extraction mouth 11 ofthe cylindrical shape with which the male screw 12 was formed in the periphery, and the cap 2 laminated on the above-mentioned extraction mouth 11 enabling free attachment and detachment.
[0011]
The above-mentioned package body I is formed so that a fixed form can be maintained as a whole with the raw material of hard, halfrigidity, or elasticity, such as a synthetic resin, glass or metal, but. only the above-mentioned extraction mouth 11 can be formed so that it may have firmness with hard material, and the other portion can change freely with pliability raw materials, such as what laminated the metallic film on the surface of a synthetic resin film, a metallic film, or a synthetic resin film, -- it may form like.
[00 12]
The cap body 21 which equipped inner circumference with the female screw which screws the above-mentioned cap 2 in the male screw 12 ofthe periphery ofthe above-mentioned extraction mouth 11, The supporter 23 ofthe ring shape which rotation on the base end periphery ofthe above-mentioned extraction mouth 11 is free, and fits into a

* * * *

state, It
consists ofthe flexible spiral band part 22 which surround the surroundings ofthe above-mentioned extraction mouth 11 spirally, and connects these cap bodies 21 and supporters 23, and they are formed in one with the synthetic resin. Namely, as shown in
drawing I. these cap bodies 21, band parts 22, and supporters 23 are formed successively by one so that one cylinder may be loimed and among these, the band pail 22 t is lot med b forrnin the spiral slit 24 in the position het\een the above-mentioned cilp body 21 and the supporter 23. And ifthe above-mentioned cap body 21 is rotated and it removes from the extraction mouth 11, it is constituted so that the interval of the above-mentioned slit 24 may open and the band part 22 may develop elastically. Thus, by really forming the cap body 21, the band part 22, and the supporter 23 in tubed, those joining structures become easy and the cap 2 can be formed simply and cheaply.

3

[0013]
Here, as forthe above-mentioned spiral band part 22, at two or more places ofthe above-mentioned slit 24 in order to give mischievous tightness it is desirable to join together sele(t1ve1\ bv to 01 more bond parts 2 which can be L.ui h\ rotation of the cap both 21 at the time of unstopping This bond part 25 is formed so that a part ofslit 24 may be plugged up thoroughly, therefore in. the position ofthis bond part 25, the slit 24 has broken off selectively. By the time the above-mentioned cap body 21 is wide opened first by the proper user by this, when it is opened wide unjustly, it can be discovered promptly.
[0014]
In order to prevent a slide on the periphery ofthe above-mentioned cap body 21 and to make the switching operation easy, two or more slots 26 are formed in longitude. Even ifit is a perfect ring without eye a piece, the above-mentioned supporter 23 may be an imperfect ring which has a notch in part, and this supporter 23 fitted into the base end ofthe above-mentioned extraction mouth ii, and has stopped it at the ****

state to the punctiform or
annular projection formed in the outside surface ofthis extraction mouth ii.
[0015]
The container which has the above-mentioned composition has the above-mentioned spiral band part 22 in the state where it was combined by two or more bond parts 25 until the cap 2 is laminated on the extraction mouth ii and the cap body 21 is wide opened first by the proper user, as shown in
drawing 1. At this time, since the above-mentioned spiral band part 22 is located so that the surroundings ofthe above-mentioned extraction mouth ii may he surrounded, and it does not project in the side, this band part 22 does not become the obstacle at the time of carrying and use, and it is excellent in usability.
[0016]
If it is made to rotate from this state in order to open the above-mentioned cap body 21, this cap body 21 will move in the direction of a tip ofthe extraction mouth 11, but. In order that the supporter 23 may not move only by rotating in the position, the above-mentioned spiral band part 22 is pulled by the cap body 21, the slit 24 is extended, and the above-mentioned bond part 25 is cut. And since this cap body 21 will separate from the extraction mouth ii as shown in
drawing2
ifthe cap body 21 is rotated further, contents can be taken out from this extraction mouth
11. At this time, it elongates elastically, and the above-mentioned spiral band part 22 supports the cap body 21, and prevents it from falling suddenly.
[0017]
If extraction of contents finishes and the above-mentioned cap body 21 is again ****ed to the extraction mouth ii, the interval ofthe spiral ofthe above-mentioned spiral band part 22 will he in the state which shows in narrowing and
drawing 1.
[00 18]
The point that

shows the 2nd example of a cap used for the container ofthis invention, and this cap 2a is different from the 1st-example [above-mentioned] cap 2, In the 1 st-example cap 2, the bond part 25 which combines the slit 24 selectively, To being formed so that a part ofslit 24 may be plugged up thoroughly, and the slit 24 having broken offselectively in the position ofthis bond part 25, in this 2nd-example cap 2a. The bond part 25a is the point of being formed so that this band part 22 and the slit 24 may he crossed over the inner surface ofthe band part 22. That is, two or more above-mentioned bond parts 25a which carried out the shape of a rib were formed in one so that this hand part 22 and the slit 24 might be crossed towards the axial direction ofthe cap 2a, and they have given the both ends to the

4

inner surface ofthe above-mentioned band part 22 to the cap body 21 of the both sides of the band part 22, and the position ofthe supporter 23. Therefore, in this 2nd-example cap 2a, the slit itself is continuing over the whole and it has not broken off on the way. Composition other than this 2nd-example above ofthe cap 2a is substantially the same as the 1st-example cap 2.
[00 19]
[Effect ofthe Invention]
Thus, after according to the container with a safety cap of this invention the cap body and the supporter are connected by the spiral band part and have laminated this cap body on the extraction mouth, Since it is located so that the abovementioned hand parts may surround the surroundings of an extraction mouth, and it does not project in the side, this band does not become the obstacle at the time of carrying and use, and it excels in usability.
By really forming a cap body, a band, and a supporter in tubed, the shape of a combining form of a cap and a band becomes easy, and they can be formed cheaply. [BriefDescription ofthe Drawings]
1Prin lit is a side view of a closing state which shows one working example ofthe container with a safety cap concerning this invention.
[Drawing 2]It is a perspective view of an unstopping state of
drawingJ.
[Drawing-311t is a sectional view showing the 2nd example of a cap.
[Description of Notations]
1 Package body
22aCap
1 1 Extraction mouth
12 Male screw
21 Cap body
22 Band part
23 Supporter
24 Slit
25 25a Bond part
26 Slot

CLAIMS

[Claim 1]
A container with a safety cap characterized by comprising the following.
A package body which has an extraction mouth of a cylindrical shape with which a male screw was formed in a periphery.
A cap body which can be detached and attached and which equipped inner circumference with a female screw which this cap screws in a male screw ofthe above-mentioned extraction mouth periphery including a cap laminated on the above-mentioned extraction mouth.

A supporter ofring shape which rotation on a base end periphery ofthe above-mentioned extraction mouth is free, and fits into a state.
A flexible spiral band part which surround the surroundings ofthe above-mentioned extraction part spirally, and connects these cap bodies and supporters.

[Claim 2]
Are formed successively so that a cap body and a spiral band part in the above-mentioned cap, and a supporter may make one cylinder’ and the above-mentioned hand part is formed

(12) UK Patent Application GB 2 249 30313A

(21) Application No 9118768.2

(22) Date of filing 0309.1991

(30) Priority data
(31) 22219 (32)04.09.1990 (33) MX

(71) Applicant
Grupo Stevi S.A.

(incorporated In Mexico)

Antlguo Camino i Culhuacan no. 120,
Co.Santa Isabel industrial, 09820 Mexico D.F.
Mexico

(72) inventor
Guillermo H Slots Terms

(74) Agent ardor Address for Service
Kilburn & Strode
30 John Street, London, WIN 21)1),
United Kingdom

(54) Tamper-evident closure

(57) A closure of thermoplastics materials, for a bottle or similar container includes means P by which it is evident whether the closure has been. opened since first being fitted to a bottle. The closure may optionally also include means C preventing the boftia from being refilled with liquid after the closure Is first fitted. The closure comprises a retaining tube E adapted to fit and be retained around the neck of a bottle F; a seal member 0 which fits into the opening in the bottle F and forms a seal with it; a pouring member N which provides a pouting orifice and which seals against the seal member 0 and is connected to the retaining tube E; and a screw cap M which fits onto the pouring member N. The tamper-evident means comprise a ring P having frangible portions which are either broken when the closure is first assembled (Fig 32-35), or which are broken when the closure is first removed from the bottle F (Fig 17). The non-refilling mechanism may comprise a gravity valve member C which co-operates with a valve seat on the seal member D and is pressed into position by a depending centre rod on the cap (10-12, Fig 3). The retaining tube E may be adapted to fit a conventional bottle, in use, the assembled closure is fitted on the neck of the bottle by means of vertical pressure, lugs, ridges projections and cavities co-operating to prevent relative rotation of the tube, seal member and pouring member. The tamper evident means may comprise
a separate frangible strip located between the cap and retaining tube (Fig 30), and the pouring member may have
a curved outlet to prevent drips (Fig 5).

M

U

E

F

FIG 36

(43) Date of A publication 08.05.1992

(51) INTCL
BGSD 55/02 53/02 II 5650 49/02

(52) 01< CL (dition K)
BST TIM 11200 11200 T120A 112
880 065855 DFD

(56) Documents died
GB 2219570 A GB 2158424 A GB 2138408 A
EP 0014319 A US 4497415 A

(58) Field of search
UK CL (Edition K) 880 DFD, 88T 128 110 110 111
INT CLI, 8650

ib

q/zL

FIG 1(0

Ip-O1llOhI

V.-

3
6

7

4

FIG (7

22493U

01

TAMPER-EVIDENT CLOSURE

The invention relates to tamper-evident closures (i.e. closures having means for indicating whether they
have been undone since they were first assembled to a
bottle or container) for bottles or similar containers
having necks. The invention also relates to such
tamper-evident closures which also have a mechanism
preventing the bottle from being refilled with liquid
’ after the closure has first been assembled onto the bottle.

Tamper-evident closures are known in the bottling
industry, as are non-refillable closures. Which type
of closure is used depends on the specific needs or
wishes of the bottler, although, in general, it is
highly desirable in the liquid bottling industry for closures to be tamper-evident and non-refillable. For some time, however, there has been a demand for a truly tamper-evident closure in which it is easy to asses whether the closure has previously been undone.
It is an object of the present invention to provide an effective tamper-evident closure, with low manufacturing costs, which is easy to install on a bottle and to use.
According to the present invention, a tamper-evident closure for a bottle or similar container comprises a retaining tube adapted to fit and be retained around the neck of the bottle; a seal member adapted to seal around the inside of the opening in the bottle; a pouring member having a pouring orifice and which is connected to the retaining tube and which forms a seal around the seal member; a screw cap

2

fastened to the pouring member by means of mutually engaging screw threads; and tamper-evident means for indicating whether the screw cap has been unscrewed since the closure was first assembled.
In use, the assembled closure is fitted on the
neck of the bottle by means of vertical pressure, the tube sliding down over the neck of the bottle and being retained thereon.
Preferably, the seal member provides a valve seat which, together with a valve member, constitutes a valve for preventing liquid from entering the bottle. In some embodiments, which may or may not incorporate a valve, the tamper evident means comprises a separate frangible ring located between the cap and retaining tube.
The term "frangible ring" is taken to mean a ring having portions which are easily broken, which are either broken when the cap is first unscrewed or which are broken during assembly of the closure. The "ring" may thus comprise a ring of material with frangible portions or a number of separate portions, arranged in
a ring, retained in place in the closure until the cap
is unscrewed. In either case it is clear to an observer whether the cap has been unscrewed after assembly, either because the ring is broken, or because the parts of the ring have fallen away when the cap was first unscrewed.

Alternatively, the means for indicating whether
the cap has been unscrewed may comprise a ring which is connected to the bottom of the screw cap by frangible portions which are broken when the cap is unscrewed.
In this case the ring itself is not frangible but
is connected via frangible portions or bridging

3

elements to the cap. In use, when the cap is unscrewed for the first time, the frangible portions are broken It is immediately apparent to an observer whether the frangible portions have been broken or not and it is thus easy to determine whether the cap has been unscrewed since assembly of the closure.
The retaining tube preferably has on its inner surface a first series of inward projections which, in
use, engage an annular shoulder on the neck of the
bottle so as to prevent removal of the retaining tube
from the bottle. Each projection preferably has a
surface which is inclined with respect to the axis of the retaining tube whereby, in use, it may be pushed
over the shoulder on the bottle, and a surface
substantially perpendicular to the axis of the retaining tube which, in use, engages the shoulder when the retaining tube is in place and prevents the retaining tube being removed. The tube is ideally moulded from a resilient plastics material, whereby, in use, the projections may be compressed as the retaining tube is placed on the neck of the bottle and partly or totally recover their original shape once they have passed the shoulder on the bottle.
The projections ensure that it is impossible for
the closure to be removed, once placed on the bottle
neck, without being destroyed. The tube also provides
an attractive covering for the upper part of the bottle neck.

The retaining tube also preferably has a series of axially aligned ribs spaced around its internal surface which, in use, engage with a corresponding series of ribs spaced around the neck of the bottle to prevent the retaining tube from rotating relative to the

4

bottle. The tube is thus prevented from rotating with respect to the bottle.
More preferably, a portion at the end of each retaining tube rib remote from the pouring member is of smaller inward extent than the maximum inward extent of the retaining tube rib whereby, in use, the alignment of the retaining tube ribs with the spaces between the bottle ribs is facilitated. Positioning may be further facilitated by rounding the remote end of each rib.
The tube may also have on its inner surface a second series of inward projections each of which extends into one of a series of locating cavities in the periphery of the seal member to prevent rotation of the retaining tube with respect to the seal member. Preferably the lower end of each projection in the said second series is inclined and/or curved, to facilitate the positioning of the retaining tube on the neck of the bottle. More preferably the said locating cavities are partially defined by an annular stop on the seal member with which the projections of the said second series cooperate to prevent axial downward movement of the seal member with respect to the retaining tube.
The seal member, valve member and pouring member
may thus be prevented from rotating relative to the tube and the seal member may be prevented, in use, from passing too far into the tube before the closure is applied to a bottle.
The seal member normally has an annular depending sealing spigot having one or more first external annular sealing collars which, in use, seal hermetically against the inner surface of the bottle when the spigot is pushed into the bottle. It also normally has an upstanding annular sealing wall

carrying one or more second external annular sealing collars which seal hermetically against an internal surface of the pouring member.
Preferably, the seal member has at its upper end a series of locating teeth around its periphery which engage between a series of internal radial locating webs on the pouring member to prevent the seal member from turning relative to the pouring member.
If the closure is non-refillable, the valve member
includes a downwardly facing sealing surface and the valve seat is an upwardly directed surface and the valve member is movable in the axial direction whereby, in use, when the closure is upright, the valve member rests on the valve seat and the respective sealing
surfaces seal against each other. Thus, when the
bottle is upright and the cap is unscrewed, the valve may be kept closed by the influence of gravity and it is then impossible to pour liquid into the bottle.
When the bottle is tilted, the liquid in the bottle may
act against the bottom of the valve member and move it
axially, opening the valve and allowing liquid to pass
out of the bottle.

Preferably also, the valve member is completely

S enclosed within the closure. In this case, it is

impossible to interfere with the valve once the closure
is in place on a bottle. -
The valve seat is preferably provided by an
internal tubular valve seat portion of the seal member
and in that the said valve member has two mutually
inclined annular sealing surfaces which, when the valve is closed, seal against a sealing surface at the end of
the said tubular valve seat portion. Preferably also,
the pouring member includes an internal tubular guide

Ei

portion which, in use, constrains the valve member to
travel substantially in the axial direction only. The
pouring ineither preferably also has an axially central aperture through which a rod, depending from the screw cap, extends and engages the valve member, holding it in contact with the valve seat.’
The pouring member may afford a radially outwardly directed annular pouring orifice whose upper side is defined by a radially extending top plate which is continuous apart from the said aperture in its centre. The valve member may have an upwardly open recess into which a projection on the end of the rod extends and engages, whilst deforming the walls of the recess, so that, in use, the valve member turns with the cap when the cap is unscrewed.
The projection may have e.g. a cruciform shape to enable it to deform the walls of the cavity and therefore transmit a greater torque between the cap and the valve member. Because the valve member turns with the cap when the cap is unscrewed, any adhesion between the valve member and valve seat caused by liquid residues is broken, allowing the valve to operate correctly.
If the closure is refillable, that is to say if it
has no valve, the seal member preferably includes an
axially aligned annular pouring member locating surface which partially defines an annular locating cavity into which an annular axially aligned locating portion on the pouring member extends and forms a hermetic seal between the seal member and the pouring member. Preferably, whether the closure incorporates a valve or not, the thread ridges comprising the said thread on the pouring member have an upper face which

7

is inclined to the vertical and/or curved and the thread ridges comprising the said thread on the screw cap have correspondingly inclined and/or curved lower faces so that, when the closure is initially assembled, the cap may be pressed onto the pouring member without
screwing, the respective threads on the cap and pouring
member overriding each other.
The screw cap of the closure preferably has depending from the inside surface of its top wall an annular sealing ring and there is preferably a hermetic seal between this ring and the pouring member, in use, preventing liquid from passing out of the bottle.
If the screw cap has a ring joined to it by
frangible portions, it is preferable that this ring has
an internal annular locking collar. The lower surface
of the internal locking collar is preferably inclined to the vertical and/or curved so that, when the closure
is being assembled, the locking collar may slide over
an external retaining ridge on the pouring member and
locate beneath it. The retaining ridge on the pouring
member preferably affords an annular upper surface, inclined to the axis, and a radially extending lower surface, beneath which the ring is located. A further preferable feature of the ring is a series of upwardly
extending lugs whereby, when the closure is being
assembled and the locking collar slides past the
retaining ridge, the said frangible portions are
deformed and the lugs engage the body of the screw cap, limiting the deformation of the frangible portions and preventing them from breaking.
The ring may have a series of downwardly directed locking teeth on its internal surface which mesh with a corresponding series of locking teeth on the pouring

B

member, whereby, in use, the ring is prevented from
turning when the cap is unscrewed from the pouring
member, causing the frangible portions connecting the
ring with the body of the cap to break, when the cap is first unscrewed. In this case the thread on the cap preferably has a plurality of entry points, as has the thread on the pouring member, and the entry points of the threads on the cap and pouring member preferably each coincide with a locking tooth on the ring or pouring member respectively.
If the ring is separate from the cap, it may be
radially divided into a plurality of sectors which,
prior to assembly of the closure, were joined by
frangible portions which broken during assembly, which sectors are retained in place between the screw cap and the pouring member and, in use, are released when the cap is unscrewed for the first time. In this case the preferably has an internal annular chamfered surface around its rim against which an external annular chamfered surface of the ring is located. The pouring member preferably has a series of breaking teeth on its outer periphery whose purpose is, during assembly of the closure, to break the frangible portions of the ring, separating it into several parts. The pouring member also preferably has an external annular abutment ridge on whose upper surface the said teeth are moulded and against which the said portions of the ring are retained.
If the ring is separate from the cap, it may alternatively comprise an upper and a lower annular
member connected together by frangible portions. In
this case the screw cap preferably has an internal annular chamfered surface around its rim which carries

a series of grooves. Also the upper member of the ring in this case preferably has an external annular chamfered surface which carries a series of grooves which engage the grooves on the cap, whereby, in use, the ring is caused to turn with the cap. Furthermore, in this case the lower member of the ring carries a series of teeth each tooth having a surface inclined to
the axis and an axially extending surface, and the
pouring member preferably includes a corresponding series of teeth whereby, during assembly, the inclined surfaces of the respective series of teeth may slide over each other when the cap is screwed onto the pouring member but, in use, when the cap is unscrewed the interengagenient of the axially extending surfaces prevents the ring from turning with respect to the
pouring member, causing the frangible portions to

break.

It is generally preferred that all the component parts of the closure are retained together without the use of adhesives. More preferably, the component parts are retained together by screw connections or snap-fitting connections.
Further features and advantages of the invention will be apparent from the following description of four specific embodiments which is given by way of example only with reference to the accompanying drawings, in

which:-

Figure hich:-Figure 1 is a side view, partly in section, of the
first embodiment of closure according to the invention, fitted to a bottle;
Figure 2 is a plan view from below of the screw
cap of the first embodiment;
Figure 3 is a side view, partly in section, of the
cap of Figure 2;

10

Figure 4 is a plan view from below of the pouring member of the first embodiment;
Figure 5 is a side view, partly in section, of the pouring member of Figure 4;
Figure 6 is a plan view from below of the sealing member of the first embodiment;
Figure 7 is a side view, partly in section, of the sealing member of Figure 6;
Figure 8 is a side view, partly in section, of the valve member of the first embodiment;
Figure 9 is a plan view from below of the valve member of Figure 8;
Figure 10 is a partial plan view from below of the retaining member of the first embodiment;
Figure 11 is a side view, partly in section, of
the retaining member of Figure 10;
Figure 12 is a side view, partly in section, of a bottle suitable for use with all the embodiments of closure described;
Figure 13 is a section on the line A-A in Figure
12;
Figure 14 is a scrap view, on an enlarged scale,
of the encircled portion of Figure 13;
Figure 15 is a side view, partly in section, of
the second embodiment of closure according to the invention;
Figures 16 to 21 are views corresponding to Figures 2 to 7, respectively, of various parts of the second embodiment;
Figure 22 is a side view, partly in section, of
the third embodiment of closure according to the invention;
Figure 23 is a plan view from below of the pourer

11

of the third embodiment;
Figure 24 is a side view, partly in section, of
the pourer of Figure 23;
Figure 25 is a side view, partly in section, of
the fourth embodiment of closure;
Figures 26 to 29 are views corresponding to Figures 2 to 5 of the fourth embodiment;
Figure 30 is a side view, partly -in section, of
the fifth embodiment of closure;
Figure 31 is a plan view from below of the screw
cap of the fifth and sixth embodiments;
Figure 32 is a side view, partly in section, of
the screw cap of Figure 31;
Figure 33 is a plan view from below of the ring of
the fifth embodiment;
Figure 34 is a side view, partly in section, of
the ring of Figure 33;
Figure 35 is a scrap perspective view of the ring
of Figure 33;
Figure 36 is a side view, partly in section, of
the sixth embodiment of closure;
Figure 37 is a plan view from below of the screw
cap of the fifth and sixth embodiments;
Figure 38 is a side view, partly in section, of
the screw cap of Figure 37;
Figure 39 is a scrap perspective view of the screw
cap of Figure 37;
Figure 40 is a plan view from bglow of the ring of
the sixth embodiment;
Figure 41 is a side view, partly in section, of
the ring of Figure 40; and
Figure 42 is a scrap perspective view of the ring
of Figure 40.

12

Referring to Figure 1, the first embodiment of closure comprises a tamper-evident screw cap A, a pouring member, or pourer B, a valve member C, a packing member or seal member D and a tubular retaining
member or retaining tube E. The tube E, in use, fits
over the neck of a bottle or container F.
Referring to Figures 2 and 3, the tamper-evident screw cap A has in the lower part thereof an internal
screw thread 1 with one or more, e.g. four, entry
points. The pourer B (see Figures 4 and 5) has an external screw thread 13 on its outer cylindrical surface by means of which the cap may be screwed onto
the pourer. The cap A has a central depending
actuating rod 10 which, when the cap is screwed onto
the pourer, is inserted into a central circular
aperture, or orifice 30 in the pourer and makes contact with the valve member (see Figures 8 and 9) in a circular section cavity or recess 51 in the top of the
valve member. The end of the rod 10 carries a
cross -shaped projection 12 which engages with and
partially deforms the side walls of the cavity 51, whilst the periphery 11 of the end surface of the rod engages a circular rim 49 of the valve member, around the periphery of the cavity 51.
The valve member is thus pressed against the seal member D, whose horizontal circular sealing surface 33 (see Figures 6 and 7) functions as a valve seat, engaging corresponding inclined sealing surfaces 55, 56 on the valve member.
This vertical pressure exerted by the cap A, as it
is screwed onto the pourer B, on the valve member C and the sealing member D ensures a hermetic seal, preventing liquid from coming out through the central

13

circular orifice 46 of the sealing member.
The valve member C tends to adhere or stick to the valve seat (sealing surface) 33 of the sealing member D, due to bonding caused by residues from the liquid contained in the bottle or container F.
When the cap A is turned to unscrew it from the pourer B, owing to the friction of the cross-shaped projection 12 of the rod 10 against the lateral walls 50 of the cavity 51 of the valve member C, the valve member turns with the cap and any bond between the valve member and the sealing surface 33 of the sealing member is broken.

Depending from the inside of the top of the cap is
an annular sealing ring or flange 8 which makes a further seal against the pourer (see Figures 1, 2 and 3). The flange 8 has a curved end 9 to facilitate assembly of the cap to the pourer.
The outer vertical cylindrical surface 2 of the
cap A has a series of vertical grooves allowing the cap to be manually gripped securely and thus to be fastened more securely when screwed onto the pourer B, and unfastened more easily.
The screw cap A has a ring 6 depending from the periphery of the main body of the cap which is connected to the body of the cap by means of frangible, vertically extending bridging elements or segments 3. The upper horizontal face of the ring 6 has a series of upstanding laterally elongate projections or lugs 4 which allow a vertical force to be transmitted between the body of the cap and the ring 6 when the cap is being screwed onto the pourer.
The ring 6 has on its inner face an annular locking collar 7 whose lower annular face 5 is inclined

14

and/or curved- The pourer B has an outwardly directed
annular retaining ridge which has an upper inclined surface 14 and a lower horizontal surface 15. When the

cap is screwed onto the pourer, the collar 7 of the ring 6 slides over the inclined surface 14 and engages an annular cavity 16 between the retaining ridge and another external annular ridge (an abutment ridge) 18
beneath that. A certain degree of force needs to be
exerted in order for the collar 7 to slide over the inclined surface 14. During this process, the bridging elements 3 are deformed and the force between the ring and the cap body is transmitted via the projections 4 on the ring. The bridging elements are thus prevented from breaking when the cap is screwed onto the pourer. When the cap A is unscrewed for the first time from the pourer B, the ring 6 cannot be displaced upwards because the collar engages with the horizontal annular
surface 15. The bridging elements or frangible
portions of the screw cap must thus be broken in order to remove the cap, making it possible for a future user to detect that the cap has previously been unscrewed. This separation of the ring 6 by the breaking of
the frangible bridging elements 3 is the characteristic
which makes the cap A tamper -evident in this
. embodiment. The pourer B includes an inner member comprising a vertical tubular portion 31 on whose inner surface the valve member C is, in use, centred. This ensures that the valve member moves only along its axis, when the bottle or container F is inclined. The inner member Is supported on a series of integral radial supporting webs 25.
At the top of the tubular portion 35 is a top

1.5

plate 29 which defines the circular orifice 30 into
which the rod 10 of the cap A is, in use, inserted.
The top plate 29 also partially defines an annular orifice 28 through which liquid flows out from the bottle or container F.

The upper part 27 of the inside surface 26 of the
vertical outer wall of the pourer is curved. The
purpose of this is, in use, to cut off the stream of
liquid when the bottle is tipped back after pouring is
finished, and prevent it from dripping down the outer
walls of the pourer. The upper part 27 is so shaped
that, when the bottle is returned from an inclined
position to the vertical position, the liquid tends to run back inside the pourer.
The external annular abutment ridge 18 of the pourer limits the downward vertical displacement of the cap when it is screwed onto the pourer, since the ring 6 with its collar 7 has a smaller internal diameter than the diameter of the ridge 18 and thus engages the upper surface 17 of the ridge rather than moving further down the pourer.
The lower surface 19 of the ridge also serves as a stop for the retaining tube E when it is assembled together with the pourer B.
The pourer B, the valve member C and the seal
member D have features which work together to prevent refilling of the bottle or container.. To assemble these components the valve C is first placed inside the seal member and then the seal member is inserted, together with the valve member, inside the pourer.
The upper half of the seal member comprises an
outer, upwardly extending, vertical cylindrical wall
35. The lower portion 37 of the wall 35 has an

16

increased diameter and on this portion are one or more collars 36 of even greater diameter whose purpose is to fit tightly against the internal surface 23 of the lower portion of the pourer and form a hermetic seal. The upwardly directed peripheral surface 48 of the outer vertical cylindrical wall 35 of the seal member, in use, contacts the lower faces 24 of a series of vertical radial segments 32 inside the pourer. These segments 32 extend inwardly from the inner surface of the pourer and are located at equal intervals around the pourer. The engagement between the segments 32 and the wall 35 limits the amount by which the seal member O can project into the pourer B.
In order to prevent the pourer from turning relative to the seal member when the cap is unscrewed, a series of teeth 47 extend upwardly from the peripheral surface 48 of the wall 35 of the seal member which, in use, locate between the radial segments 32 of the pourer B. When the segments 32 of the pourer are engaged between the teeth 47 of the seal member, the pourer is prevented from turning relative to the valve seat.

In order to prevent the seal member D from turning relative to the retaining tube E when the cap is unscrewed, the seal member has a series of locating cavities 40 around its periphery which engage with internal teeth 62 on the tube E (see Figures 10 and 11)
The pourer B has an annular locking flange with an external chamfered face 22 at its base whose purpose is to facilitate assembly of the pourer B to the tube E by enabling it to slide over an internal chamfered face of a corresponding annular locking flange at the top of

17

the tube E, and thus allow an upwardly directed annular locking shoulder 21 on the pourer to hook over a corresponding locking shoulder 60 on the tube E. Between the shoulder 21 and external abutment ridge 18 on the pourer an annular cavity 20 is defined in which the flange on the tube extends.
It is very important that the pourer remains well fastened to the tube, not only to prevent: the tube from being removed or from turning, but also to ensure that the seal member D remains in place and is not displaced or moved prior to the closure being installed on the neck of the bottle or container F. In order to achieve the above, the seal member is provided with an annular flange 39 against which the upper surface 61 of a first series of projections 62 in the tube E act, preventing the seal member D from being displaced down the tube. The circle defined by the radially innermost extent of the projectionS 62 is of a smaller diameter than the outer diameter of the flange 39 of the seal member D. The upper surface 38 of the flange 39 provides a stop for the pourer.
The anti-refilling mechanism of the closure is thus prevented from turning because the projections 62 of the tube E axially restrain the seal member so that they remain meshed with the locating cavities 40 around the periphery of the seal member, preventing the seal member from turning relative to the tube.
Inside of and coaxial with the outer vertical cylindrical wall 35 of the seal member is an inner vertical central portion 35 including an upstanding tubular portion 34 whose upper end face is a sealing surface 33 whose purpose is to prevent liquid from flowing out through the circular orifice 46 defined by

18

the tubular portion 34, when the cap is closed. It does this by contacting and sealing with inclined annular sealing surfaces 54 and 55 on the valve member C, when the valve member is pressed down by the rod 10 of the cap A.
In the lower part of the seal member D a depending annular sealing spigot 43 is provided which has on its outer surface a series of rings 42 whose purpose is to provide a hermetic seal against the inside surface 77 of the bottle or container F (see Figures 12, 13 and 14). A further seal is provided by a radially extending annular surface 41 adjacent the top of the spigot.
In order to facilitate the insertion of the sealing spigot 43 into the neck of the bottle or container F, the spigot has an external chamfer 44 at its lower end which may be curved. The inside surface 73 of the rim 74 of the bottle F is also curved.
The valve member C has a central cavity 56 whose purpose is to facilitate and cut down the time for moulding the member. The cylindrical outermost surface of the valve is designated 53 in Figure 8 and the cylindrical surface which cooperates with the depending tubular portion 31 of the pourer is designated 52. When the closure is placed on the neck of the bottle F, a further set of internal projections, or anchors, 64 on the tube remain firmly fastened underneath a flared portion at the top of the bottle, engaging with the horizontal lower surface 76, or shoulder, of the flared portion. The lower surface 65 of each anchor 64 is inclined to make 1t easier to slide it over the inclined outer surface 75 of the flared portion on the neck of the bottle F and into position with the upper

\’-?’:’S

19

surface 63 of the anchors under the lower surface 76 of the flared portion. because the diameter of the circle defined by the inmost extent of the anchors 64 is less than the greatest diameter of the flared portion of the bottle F, the closure cannot be removed from the bottle F because, if this is attempted, the anchors 64 of the tube E engage with the circular lower horizontal

surface 76.

A series of vertically elongate, radially inwardly projecting segments or lugs 69 are provided on the inside surface of the lower part of the tube E. The maximum radially inward extent of each of these lugs is at a point 67 at which the lugs cooperate with a number of vertical ribs 78 on the outside of the neck of the bottle F, when the closure is in place. The purpose of these is to prevent the tube E from turning relative to the bottle F when the cap A is unscrewed by virtue of
the interengageinent between the lugs 69, at or around
the points 67, with the vertical ribs 78 on the bottle. The lugs 69 have inclined surfaces 66 and 68 above
and below the point 67 whose purpose is to facilitate
their moulding and positioning on the neck of the bottle. The lugs each have a portion of reduced radial extent which extends downwardly ending in a curved

surface 71.

The lower end of the cylindrical wall 70 of the tube E has a curved surface 72 whose purpose is to facilitate the assembly of the tube E on the neck of
the bottle P. When the closure is in place on the
bottle, the tube E ends at a corresponding curved shoulder 79 on the bottle and the tube is thus flush with the surface of the bottle below the shoulder 79. At the top of the tube is an internal upwardly

PM

directed shoulder 57 on which the lower face 19 of the external ridge 18 on the pourer B rests when the
closure is assembled. Adjacent the shoulder 57 is an
upwardly extending annular ridge having a horizontal annular end surface 58 which covers the annular outer
surface of the external ridge 18 on the pourer B so
that it is not visible when the pourer is assembled
with the tube E.
A second embodiment of tamper-evident closure,
shown in Figures 15 to 21, has no anti-refilling
. mechanism. Referring to Figure 15, the closure
comprises a screw cap G, a pourer H, a sealing member
I, a retaining tube E. The bottle is designated F. In
this embodiment the principal function of the closure
that of being tamper-evident, for which reason the
valve member C is not necessary. In addition the cap
has been changed from the first embodiment, eliminating the rod, because the valve member has been eliminated. The pourer has been changed by opening up the central part to provide a circular orifice 83 and the seal member no longer provides a valve seat.
Apart from the features mentioned above the tamper-evident screw cap G is of exactly the same
design as the cap A of the first embodiment, and
operates in the same way as already described.
When the pourer H is assembled with the seal
member I, a depending annular member 82 inside the
pourer locates in a corresponding annular cavity 86
inside the seal member I. The inner cylindrical
surface 87 of the cavity 86 -in the seal member contacts the inner cylindrical surface 81 of the member 82 in the pourer H, forming a hermetic seal to prevent liquid from passing between these two surfaces. The lower end

21

of the annular member 82 of the pourer H has a curved surface 80 to facilitate assembly into the annular cavity 86.
The outer cylindrical wall 35 of the seal member
of the second embodiment is a depending wall which, together with a main annular wall 84, defines an annular cavity 85. The purpose of the cavity 85 is to facilitate the moulding of the seal member. The external diameter of an enlarged diameter lower portion 37 of the external wall 35 is the same as the external diameter of the corresponding portion 37 of the seal member D of the first embodiment. The portion 37 of the seal member in the second embodiment has collars 36, similar to those in the first embodiment, which sea], against the inner surface 23 of the pourer H in a similar manner to the first embodiment.
The remaining features of the seal member I and pourer H including the way they are assembled are similar to those of the seal member D and pourer H of the tamper-evident non-refillable closure of the first embodiment.

. The tube E operates in the same way in the first
and second embodiments and is exactly the same design in each case.
The neck of the bottle or container F, including
the crown, is the same in each embodiment.
Referring now to Figures 22 to 24, the third embodiment is a tamper-evident, non-refillable closure which is the same as the first embodiment in all respects excepting that the annular outlet orifice 89 through which liquid may be poured is in the side of the pourer J, as shown in Figure 24, instead of being in the top of the pourer, as in the first embodiment.

22

The top of the outlet orifice is defined by an annular top plate 88 which also defines a central circular orifice 30 through which the rod 10 of the cap is inserted.

A horizontal annular flange 90 defines the bottom
of the annular outlet orifice.
All the other parts of the pourer J of the third embodiment are the same as in the first embodiment, as are those of the tamper-evident cap A, seal member D, valve member C, tube E and bottle or container P. The way in which these components operate is also the same as in the first embodiment.
Referring now to Figures 25 to 29, the fourth embodiment closure includes a tamper-evident cap K which is the same as that of the first embodiment, with the exception that the design of the tamper-evident ring has been changed. Corresponding changes have been made to the lower part of the pourer L.
The remaining parts of the closure are the same as
the first embodiment, only the screw cap K and pourer L
being different.
The ring 6 of the cap K is different from the ring
6 of the cap A, in that the cylindrical collar 7 of the ring of the cap A has been replaced by four teeth 91 each having an inclined surface 92 and a vertical
surface, or end, 93. The teeth prevent the ring 6 from
turning when the cap K is unscrewed from the pourer L by engaging with four similar teeth 94 on the pourer, each having an inclined surface 95 and a vertical surface, or end, 96.
The cap K has internal thread 1 with four entry
points. The cap may be screwed onto the pourer L by means of a corresponding external thread 13 on the

23

pourer L. The four entry points of each thread are adjacent the ends 93, 96 of the teeth 91, 94 of the cap and pourer respectively. This ensures that, when the cap K is screwed onto the pourer L, the ends 93 of the teeth 91 of the cap come into engagement with the ends 93 of the teeth 94 of the pourer. The ring 6 is thereby prevented from turning when the cap K is unscrewed from the pourer L, and the bridging elements 3 connecting the ring 6 with the body 2 of the cap K may be broken.
The four teeth 91 of the cap K are moulded on the inner face of the ring 6 and the four teeth 94 of the pourer L are moulded on the outer face of the annular external ridge 18 on the pourer L.
When the cap K is screwed onto the pourer L for
the first time, the bridging elements 3 connecting the ring 6 to the body 2 of the cap K are not broken, because the inclined surfaces 92 of the teeth 91 of the
cap K slide across the inclined surfaces 95 of the
teeth 94 of the pourer L until the cap is fully screwed
onto the pourer, at which point the ends 93 of the cap
K and those 96 of the pourer L are engaged.
Once the cap K has been unscrewed from the pourer

S L, the ring 6 is unrestrained in the upward direction
and can be removed without difficulty.
The other parts of the fourth embodiment of
closure operate as already described. The above
described design of ring 6 and corresponding portion of
the pourer may be incorporated into any of the
foregoing embodiments.
Referring now to Figures 30 to 35 and Figure37 to
39, a fifth embodiment of tamper-evident, non-refillable closure comprises a cap K, pourer N and

24

ring 0. The valve member C, seal member D, retaining tube E and bottle F are as in previous embodiments.
In this embodiment, the screw cap M is different
from those described in the foregoing embodiments, in
that the ring 0 is separate from the cap N: the ring and cap are not connected together by frangible bridging elements.
In this embodiment, a portion 97 of the inside
surface of the cap N adjacent the rim, is chamfered
(see Figures 31 to 32). The chamfered surface 97
carries a series of vertical grooves 98 which serve no
purpose in this embodiment, but which are necessary in
the sixth embodiment which also incorporates this
design of cap. In this embodiment the grooves are
optional. An upper annular portion of the ring 0 (see
Figures 33 to 25) fits inside the cap, an external
annular chamfered surface 100 of the said upper portion engaging the surface 97 of the cap.
When this closure is fitted together, once the
tube has been assembled with the anti -refilling
mechanism formed by the pourer N, the valve member C
and the seal member ID, the ring 0 is pushed, with the annular chamfered surface 100 uppermost, down onto the
pourer N. The ring 0 comprises four segments, adjacent
segments being connected together by thin frangible
bridging elements 103. The pourer N (see Figure 39)
has four upwardly directed teeth 104 around its
periphery, with pointed upper ends 105. Before it is
pushed onto the seal member, the ring 0 is rotated so that the four gaps between the segments of the ring, in
which the bridging elements are located, are in
registry with the teeth 104 of the pourer N. The ring is then pushed down and the teeth 104 locate in the

25

gaps.
When the cap M is screwed or pressed onto the
pourer N for the first time, the external annular
chamfered surface 100 of the ring locates against the internal chamfered surface 97 of the cap so that the
cap and ring are concentric. At the same time, the
lower face, or rim, of the cap M makes contact with an
upwardly directed annular shoulder 101 on a lower annular member 99 of the ring 0, displacing the ring 0 downwards and forcing the teeth 104 against the four bridging elements 103 connecting the four segments of
the ring 0, and thus breaking them. The pointed upper
ends 105 of the teeth 104 assist this process.
The upper and lower faces of the ridges comprising
the screw threads 1, 13 on the cap and on the pourer
are inclined and/or curved. This enables the closure
to be assembled by simply pressing the cap onto the pourer. In this embodiment, the cap may be screwed or
pressed onto the pourer until the grooves 98 on the
internal chamfered surface of the cap engage the
corresponding grooves on the ring 0. At this point,
since the ring cannot turn and since the cap and ring
are unable to rotate relative to each other, the cap
’ must be pressed down to break the frangible segments of the ring.
The ridges comprising the screw threads in the
preceding embodiments are the same and it is therefore
also possible in these embodiments to press the cap
onto the pourer during assembly of the closure.
When the cap H is fully screwed/pressed onto the
pourer N, the ring 0, although separated into four
parts, is retained by contact with the chamfered
surface 97 of the cap H, the underneath surface 17 of

the external ridge 18 of the pourer N, and the annular end surface 58 of the tube E. The external chamfered surface 100 of the ring C is also retained against the internal chamfered surface 97 of the cap M this keeps the ring 0 in place while the cap M remains screwed onto the pourer N.
When the cap M is unscrewed for the first time the ring 0 is released and the four sections of the ring 0 fall away sidewards because there is nothing to keep them in place.
When the cap M is screwed back onto the pourer N, there is a gap between the cap and the top of the tube, where the ring 0 had been, making it evident that the cap M has previously been unscrewed.
Referring now to Figures 36 to 42 and Figures 31
and 32, a sixth embodiment of closure will be
described, whose components are identical to those of the fifth embodiment, with the exception of the ring, which in this embodiment is designated P.
The ring P is different from those previously described, in that the ring is toothed, and also in other respects as follows. The ring comprises upper
and lower annular members 106, 108. The upper member
106 has a smaller diameter than the lower member 108, and the lower rim of the upper member is joined to the upper rim of the lower member by horizontal frangible bridging elements 107, spaced at equal intervals around its periphery.
The horizontal bridging elements 107 are designed
to break or fracture when the cap N is unscrewed from
the pourer N for the first time, thus providing an
indication that the cap has been unscrewed. Teeth 109 are moulded into the internal surface of the lower

27

annular member 108, which extend to the lower rim of the lower member. Each tooth 109 comprises a vertical surface 110 and an inclined surface 111. The external
surface of the upper member is chamfered, and the
chamfered surface carries a series of grooves 112.
The screw cap N is the same as that in the fifth
embodiment, but the vertical grooves 98 covering the
whole of the chamfered surface 97, are essential in
this embodiment.
When the closure is fitted together, once the tube
E has been assembled to the anti-refilling mechanism comprising the pourer N, the valve member C and the
seal member D, the ring P is pushed, with the upper
annular member 106 uppermost, onto the pourer N. The
screw cap N is screwed over the pourer N, or pressed
onto the pourer using vertical pressure, the thread 1 of the cap N jumping over the thread 13 of the pourer N. The upper annular member 106 locates inside the cap and the chamfered surface of the member 106 engages the chamfered surface 97 of the lower part of the cap N. The lower annular member 102 of the ring P is located between the cap and the upper surface 17 of the external ridge 18 of the pourer N, with the lower surface 102 of the ring engaging the surface 17 of the pourer.

Once the cap N is screwed or pressed onto the
pourer N, a small turn of the cap N is required to
secure it to the pourer N. The inclined surfaces 111
of the teeth slide across the pointed upper parts 105 of the teeth 104 of the pourer and thus allow the ring to be turned in the direction which tightens the cap N onto the pourer. The ring turns with the cap M because the grooves 112 of the chamfered surface of the upper

28

member 106 engage with corresponding grooves 98 on the
cap. When the cap has been forceably screwed onto the
pourer to its fullest extent the teeth 104 moulded in the upper surface 17 of the external ridge 18 engage with the teeth 109 of the lower member 108 of the ring

P.

Whilst the teeth 109 may jump or slide over the teeth 104 of the pourer when the cap is screwed onto the pourer, owing to the inclined surface 111 of the teeth 109, when the cap N is unscrewed from the pourer N for the first time the vertical faces ill of the
teeth 109 contact the teeth 104 on the pourer, and the
ring is unable to move relative to the pourer. The ring P also cannot turn relative to the cap because of the interference between the grooved surfaces 90 and
112. Thus, the toothed lower member 108 of the ring P
cannot turn and the upper member 106 of the ring P is obliged to turn together with the cap M: the horizontal bridging elements 107 connecting the members 106 and 108 therefore must break, enabling the ring P to separate into two parts. The toothed lower member 108 remains fixed on the pourer N and the upper member 106 of the ring P comes loose, together with the cap N, when the cap is unscrewed from the pourer N for the first time.
After the cap has been unscrewed from the pourer
for the first time, it is obvious to an observer that the bridging elements 107 have been broken. Once the cap has been unscrewed from the pourer, both the upper and lower members of the ring can easily be removed and discarded and then, when the cap is screwed back onto the pourer, there is an obvious gap below the cap. In either case, it is thus clearly evident when the cap

f\y

29

has been unscrewed from the pourer N.
It will be apparent to the skilled man that many
of the parts of the foregoing embodiments are interchangeable to create a tamper-evident/non--refill-
able closure of the desired design, or a simply
tamper-evident closure of the desired design.
Al]. the embodiments of closure are extremely easy
to fit on the neck of a bottle, since in each case all
that is needed is vertical pressure on the closure to fasten it onto the neck of a bottle. As the closure is
pressed onto the bottle, the first series of
projections on the inner surface of the retaining tube engage beneath a shoulder on the bottle neck and the closure is thus retained on the bottle.
In all the embodiments described, the various
parts of the closure may be snap-fitted, screw-fitted
or otherwise fitted together by means only of applied pressure, without the use of adhesives.
The various parts of the closures are manufactured
from various thermoplastic materials, such as
polypropylene, polystyrene and polyethylene. The
precise material in each case is determined in accordance with the requirements and the function of each part.
The tube is moulded using collapsible or folding male mould parts. This is because of the various projections on the inner surface of the tube which require such a mould in order to enable the tube to be released when it is removed from the moilc1.
It will be appreciated that, whilst the embodiments described are designed to function with a bottle having ribs on the outer surface of its neck, the retaining tube could easily be adapted to fit a

31

CLAIMS

1. A tamper-evident closure for a bottle or
similar container comprising a retaining tube adapted to fit and be retained around the neck of the bottle; seal member adapted to seal around the inside of the
opening in the bottle; a pouring member having a
pouring orifice and which is connected to the retaining tube and which forms a seal around the seal member; a screw cap fastened to the pouring member by means of
mutually engaging screw threads; and tamper-evident
means for indicating whether the screw cap has been unscrewed since the closure was first assembled.

2. A closure as claimed in Claim 1 wherein the
seal member provides a valve seat which, together with
a valve member, constitutes a valve for preventing
liquid from entering the bottle.

3. A closure as claimed in Claim 1 or Claim 2
wherein the tamper-evident means comprises a separate frangible ring located between the cap and retaining tube.

4. A closure as claimed in Claim 1 or Claim 2
wherein the tamper evident means comprises a ring which is connected to the bottom of the screw cap by frangible portions which are broken when the cap is

unscrewed.

5. A closure as claimed in any one of Claims 1
to 4, characterised in that the retaining tube has on

I
32

its inner surface a first series of inward projections
which, in use, engage an annular shoulder on the neck - of the bottle so as to prevent removal of the retaining
tube from the bottle.

6. A closure as claimed in Claim 51 characterised in that each projection of the first
series has a surface which is inclined with respect to
the axis of the retaining tube whereby, in use, it may
be pushed over the shoulder on the bottle, and a
surface substantially perpendicular to the axis of the
retaining tube which, in use, engages the shoulder when
the retaining tube is in place and prevents the retaining tube being removed.

7. A closure as claimed in Claim 5 Or Claim 6, characterised in that the retaining tube is moulded from a resilient plastics material, whereby, in use,
the projections may be compressed as the retaining tube
is placed on the neck of the bottle and partly or
totally recover their original shape once they have
passed the shoulder on the bottle.

S. A closure as claimed in any one of the
. preceding claims characterised in that the retaining tube has a series of axially aligned ribs spaced around
its internal surface which, in use, engage with a
corresponding series of ribs spaced around the neck of
the bottle to prevent the retaining tube from rotating
relative to the bottle.

9. A closure as claimed in Claim 81, characterised in that a portion at the end of each

33

retaining tube rib remote from the pouring member is of smaller inward extent than the maximum inward extent of the retaining tube rib whereby, in use, the alignment of the retaining tube ribs with the spaces between the
bottle ribs is facilitated.

10. A closure as claimed in Claim 8 or Claim 9,
characterised in that the said remote end of each
retaining tube rib is rounded to facilitate positioning
of the retaining tube ribs between the bottle ribs.

it 11. A closure as claimed in Claim S or any
subsequent claim, characterised in that the retaining
tube has on its inner surface a second series of inward
projections each of which extends into one of a series
of locating cavities in the periphery of the seal
member to prevent rotation of the retaining tube with
respect to the seal member.

12. A closure as claimed in Claim 11, characterised in that the lower end of each projection in the said second series is inclined and/or curved, to facilitate the positioning of the retaining tube on the neck of the bottle.

13. A closure as claimed in Claim 11 or Claim 12,
characterised in that the said locating cavities are partially defined by an annular stop on the seal member with which the projections of the said second series cooperate to prevent axial downward movement of the seal member with respect to the retaining tube.

14. A closure as claimed in any one of the

34

preceding claims, characterised in that the end of the retaining tube remote from the seal member has an internal curved surface to facilitate positioning and, in use, to enable the retaining tube to fit flush against the neck of the bottle when the closure is in place.

15. A closure as claimed in any one of the preceding claims, characterised in that the retaining tube has at its upper and an internal annular locking flange with a chamfered annular surface, the locking flange defining an annular locking shoulder substantially perpendicular to the axis against which a corresponding locking shoulder on a corresponding external locking flange on the lower end of the pouring member engages to restrain axial relative movement in one direction between the tube and the pouring member.

16. A closure as claimed in any one of the
preceding claims, characterised in that the retaining
tube has an axially extending annular ridge at its
upper end which extends around part of the pourer.

17. A closure as claimed in any one of the
’ preceding claims, characterised in that the seal member
- has an annular depending sealing spigot having one or more first external annular sealing collars which, in
use, seal hermetically against the inner surface of the
bottle when the spigot is pushed into the bottle.

18. A closure as claimed in Claim 17,
characterised in that the end of the sealing spigot of
the seal member is rounded to facilitate its insertion

35

into the opening in the bottle.

19. A closure as claimed in Claim 17 or Claim 18,
characterised in that the seal member has an upstanding
annular sealing wall carrying one or more second
external annular sealing collars which seal
hermetically against an internal surface of the pouring
member.

20. A closure as claimed in any one of Claims 17
’ to characterised in that the seal member has at its upper end a series of locating teeth around its
periphery which engage between a series of internal
radial locating webs on the pouring member to prevent
the seal member from turning relative to the pouring

member.

21. A closure as claimed in Claim 2 or any claim

when dependent thereon, characterised in that the valve member includes a downwardly facing sealing surface and in that the valve seat is an upwardly directed surface and the valve member is movable in the axial direction whereby, in use, when the closure is upright, the valve member rests on the valve seat and the respective sealing surfaces seal against each other.

22. A closure as claimed in Claim 2 or any claim
when dependent thereon wherein the valve member is completely enclosed within the closure.

23. A closure as claimed in Claim 2 or any claim
when dependent thereon, characterised in that the said valve seat is provided by an internal tubular valve

36

seat portion of the seal member and in that the said valve member has two mutually inclined annular sealing surfaces which, when the valve is closed, seal against a sealing surface at the end of the said tubular valve seat portion.

24. A closure as claimed in any one of the preceding claims except Claim 2 or any claim when dependent thereon, characterised in that the seal member includes an axially aligned annular pouring member locating surface which partially defines an annular locating cavity into which an annular axially aligned locating portion on the pouring member extends and forms a hermetic seal between the seal member and the pouring member.

25. A closure as claimed in any preceding claim, characterised in that the thread ridges comprising the said thread on the pouring member have an upper face which is inclined to the vertical and/or curved and in that the thread ridges comprising the said thread on the screw cap have correspondingly inclined and/or curved lower faces so that, when the closure is initially assembled, the cap may be pressed onto the pouring member without screwing, the respective threads on the cap and pouring member overriding each other.

26. A closure as claimed in any one of Claims 1,
3 or 4, characterised in that the pouring member has a central pouring orifice defined by a vertical cylindrical surface which is curved at the top, in use, to prevent liquid from dripping down the side of the pourer after the bottle has been tilted to pour liquid