

Search history

Search step	Result(s)	Query
3	2620	..SIMILARITY REFINE SS 2 RANKED 1
2	109897	..SEMSEARCH "CENTER PANEL" 100 "METAL CONTAINER" 100 "METAL END" 100 "LONGITUDINAL AXIS" 86 "HINGE" 66 "OUTER CURL" 38 "TAB" 29 "RIVET CENTER" 22 "TAB OPERATION" 21 "RUN THROUGH" 20 "SECURING RIVET" 20 "A CENTER PANEL" 19 "A CENTERLINE" 19 "PERPENDICULAR" 19 "APERTURE" 18 "APART END" 17
1	578	(ALKYLPOLYGLUCOSIDE AND SALT AND METAL AND TITANIUM AND ZIRCONIUM)/TI/AB/TX

100 Documents

Publication numbers	Title	Current assignees
GB201521700 D0	Can end with venting feature	CROWN PACKAGING
US6234336 B1	Stay-on-tab container closure having tear panel with low-relief contour features on the upper surface	METAL CONTAINER
BR9504036 A1	Stay-on-tab can end with bead on tear panel enabling wide contact with tab to enhance propagation of score line rupture	BALL
WO9901351 A2	End closure with improved openability	REXAM BEVERAGE CAN
SE7609483 L	Easy-open ecology end	FRAZE MARTHA L EXECUTRIX, ...
WO201218549 A1	Container end closure with secondary vent opening	BALL
US5129541 A	Easy open ecology end for cans	BANK ONE MILWAUKEE NATIONAL ASSOCIATION, ...
WO200058161 A1	Can end	DEUTSCHE BANK
US4024981 A	Easy-open ecology end	FRAZE ERMAL C
US20040056032 A1	Improved large opening beverage container	BALL
US4015744 A	Easy-open ecology end	FRAZE MARTHA L EXECUTRIX, ...
WO200037323 A1	End closure with improved non-detachable opening panel	REXAM BEVERAGE CAN
US20090200306 A1	Easy-open pull tab container lid	BREUNIG BRIAN
US20150367984 A1	Ecology can end with pressure equalization port	REXAM BEVERAGE CAN
US20130134065 A1	Wing shaped beverage can pull tab	WINGTAB
CA2985249 A1	Lid for a beverage can	BALL BEVERAGE PACKING EUROPE
KR200289188U Y1	Easily openable can lid	CROWN PACKAGING
WO201504965 A1	Can lid and beverage can	SHOWA ALUMINUM
WO9730902 A1	Can end with emboss and deboss score panel stiffening beads	REXAM BEVERAGE CAN, ...
GB8523263 D0	Methods of making metal can ends with plastics closures	MB, ...
CA2956783 A1	Vented container end closure	BALL
ES1086604U U	Easy open closure with improved pressure performance	CROWN PACKAGING
US20150251803 A1	End closure with large opening ring pull tab	BALL
US20120205378 A1	Can end	REXAM BEVERAGE CAN
US20140263333 A1	Vented beverage can and can end	CROWN PACKAGING
US3967752 A	Easy-open wall	REYNOLDS METALS
US3836038 A	Easy-open wall	REYNOLDS METALS
WO9822356 A1	Can end having score groove with thickened residual area	MILLERCOORS

Publication numbers	Title	Current assignees
WO201431832 A1	Easy pour spout	STOLLE MACHINERY
GB9826602 D0	Small diameter can end with large opening	CROWN PACKAGING
WO200251710 A1	Can End for a Container	REXAM BEVERAGE CAN
US20140263334 A1	End closure with a ring pull actuated secondary vent	BALL
US5653355 A	Anti-impact easily opened can lid	TOYO SEIKAN KAISHA
GB8432712 D0	Can end with retained tear strip	FRAZE ERMAL C, ...
WO200389167 A1	Can end	DEUTSCHE BANK
US4320850 A	Easy opening end unit with tapered score.	CONTINENTAL
WO201126900 A1	Full aperture beverage can end	CROWN PACKAGING
US20170029165 A1	Beverage can end frangible score geometry	REXAM BEVERAGE CAN
CA2854320 A1	Vented metallic container end closure	BALL
WO200990171 A1	Can end	CROWN PACKAGING
US20100044383 A1	Can end	CROWN PACKAGING
WO2014200098 A1	Can lid	SHOWA ALUMINUM
US6138856 A	Container end closure	GHIM; YONGJAE, ...
US6079583 A	Vented container end apparatus and method	BALL CORPORATIOIN
US3744667 A	Can end with retained tear strip	FRAZE ERMAL C
US20040099664 A1	Modified score for smooth openability	REXAM BEVERAGE CAN
US5011037 A	Container end member	MILLERCOORS
CA2121205 A1	Easy-open container end	DRT MANUFACTURING
DE2553835 A1	END WALL HAS RAPID OPENING OF CONTAINER	REYNOLDS METALS
WO200069735 A1	Beverage can lid with easy opening feature	CHANG CHARLES, ...
WO2011156140 A1	Full aperture beverage can end	CROWN PACKAGING
US5692636 A	Easy-open container end	DRT MANUFACTURING
IL--61249 A	Easy opening container.	CONTINENTAL
US20110031256 A1	Can shell and double-seamed can end closure	CONTAINER DEVELOPMENT, ...
DK8401592 D0	Pull tab for easy open can end-method of manufacture thereof	ALCOA
WO9419246 A2	Container end closure.	David Robert, ...
CA2872448 A1	Metallic end closure with tear panel having improved rigidity	BALL
US20080099480 A1	Beverage container construction	TOPLINE PRODUCTS
GB2280165 A8	Can top with an overturnable tab	MITSUBISHI MATERIALS, ...
EP--80775 A2	Container closure	CROWN CORK & SEAL
NO9005402 D0	Easy openable cover of sheet, especially sheet metal	BALL PACKAGING EUROPE
AR-223275 A1	Non-detach easy opening container unit	CONTINENTAL

Publication numbers	Title	Current assignees
EP2612823 A1	Can comprising a maxi-dispense opening and a vent opening	ANHEUSER BUSCH INBEV
IT8049041 D0	Fracture resistant retained lever tab and method of manufacture	AMERICAN CAN
WO201473350 A1	Can lid and beverage can	SHOWA ALUMINUM
CA2930010 A1	Full aperture end	CROWN PACKAGING
WO200290189 A2	Container lid and container	ADVANCED TECHNOLOGY INDUSTRY
WO9729960 A2	Easy open container end, method of manufacture, and tooling	STOLLE MACHINERY
GB9510515 D0	Can end and method for fixing the same to a can body	DEUTSCHE BANK
WO9926741 A1	Container-end tab and method of manufacturing same	REXAM BEVERAGE CAN
US20110147382 A1	Tab with reinforced rivet hole, and tooling and associated method for providing same	STOLLE MACHINERY
IT8049035 D0	Fracture and tear-resistant retained tab	AMERICAN NATIONAL CAN CHICAGO
US4130074 A	Tab system	REYNOLDS METALS
US4399925 A	Pouring spout steel can end construction	VAN DORN
EP--40277 A1	Easy-open can cap with a ring pull tab	TOYO SEIKAN KAISHA
IT7829625 D0	Tab construction for easy opening container	CONTINENTAL
US6161717 A	End closure with reverse bead on opening panel	REXAM BEVERAGE CAN
IT8121077 D0	Tab and ecology end	DAYTON RELIABLE TOOL & MANUFACTURING
IT8248236 D0	Detachment resistant retained lever tab	REXAM BEVERAGE CAN
US3977561 A	Can end with nondetachable tear tab and opening ring	WELLS VERA T
US3762598 A	Thermally treated container wall	ALCOA
EP2557051 A1	Can end	DRT MANUFACTURING
US4930658 A	Improved easy open can end and method of manufacture thereof.	STOLLE
WO200146025 A1	Vented container end apparatus and method	BALL
US5738237 A	Easy open container end, method of manufacture, and tooling	STOLLE MACHINERY
US3843011 A	Container with attached closure	PERRY W
US5064087 A	Self-opening can lid with improved contour of score and means for making	KOCH SYSTEMS DAYTON OH
US3795342 A	Stowable tab and tear strip	ASHTON M
WO9602432 A1	Score line groove for container end members	MILLERCOORS
US3730379 A	Easy opening can end with nonremovable tab	FRAZE ERMAL C

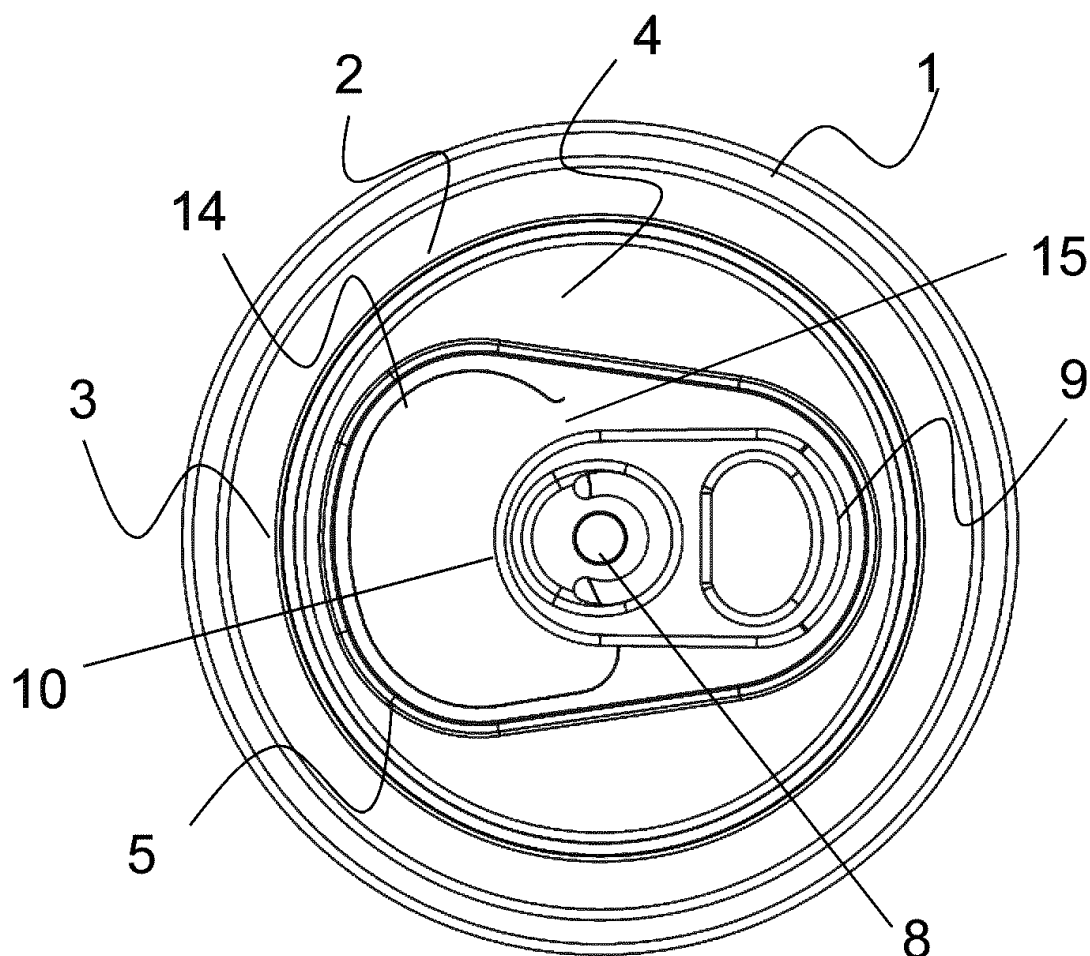
Publication numbers	Title	Current assignees
WO200112513 A1	Beverage can	JONSCHER RAINER
EP-564725 A1	Anti-impact easily openable can lid and method of making the same	TOYO SEIKAN KAISHA
JP06179445 A	Easily openable can lid	TOYO SEIKAN KAISHA
US20030150866 A1	Can end and method for fixing the same to a can body	DEUTSCHE BANK
US9637269 B1	Resealable container lid and accessories including methods of manufacturing and use	POWERCAN HOLDING
US20030198538 A1	Can end and method for fixing the same to a can body	CROWN PACKAGING
CA2881397 A1	Resealable beverage containers and methods of making same	POWERCAN HOLDING
WO201153776 A1	Vented beverage can end	CROWN PACKAGING
US4733793 A	A system for forming an opening in a container end member	MOLSON COORS BREWING
US4148410 A	Tab for easy-open ecology end	FRAZE MARTHA L EXECUTRIX, ...

Family 1/100 - FAMPAT - ©Questel

Title

(EP3386878)

Can end with venting feature

Images**Publication data including kind & date**

GB201521700	D0	2016-01-20	GB201521700
CA3007522	A1	2017-06-15	CA3007522
WO2017097903	A1	2017-06-15	WO2017097903
GB2545403	A	2017-06-21	GB2545403
BR112018011566	A1	2018-06-19	BR112018011566
AU2016366496	A1	2018-06-21	AU2016366496
SG11201804382Q	A	2018-06-28	SG11201804382Q
CO2018006523	A2	2018-07-10	CO2018006523
CN108430878	A	2018-08-21	CN108430878
MX2018006514	A	2018-09-06	MX2018006514
EP3386878	A1	2018-10-17	EP3386878
BR112018011566	A2	2018-11-27	BR112018011566
JP2018536592	A	2018-12-13	JP2018536592
US20180362209	A1	2018-12-20	US20180362209
GB2545403	B	2019-04-10	GB2545403

**Abstract**

(EP3386878)

A metal end for seaming onto a metal container body. The end comprises an outer curl, a centre panel within the outer curl, and a tab having a longitudinal axis (A). The end further comprises a rivet securing the tab to the centre panel, and a score in the centre panel having two spaced apart ends which define a hinge therebetween, the hinge lying on one side of said longitudinal axis (A), such that operation of the tab fractures the score and causes the region of the centre panel within the score to pivot about the hinge and provide an aperture in the centre panel. The score extends into a region of the centre panel that is behind a centre line (B) running through the centre of the rivet and perpendicular to said longitudinal axis (A), and on the other side of the longitudinal axis (A) from the hinge.

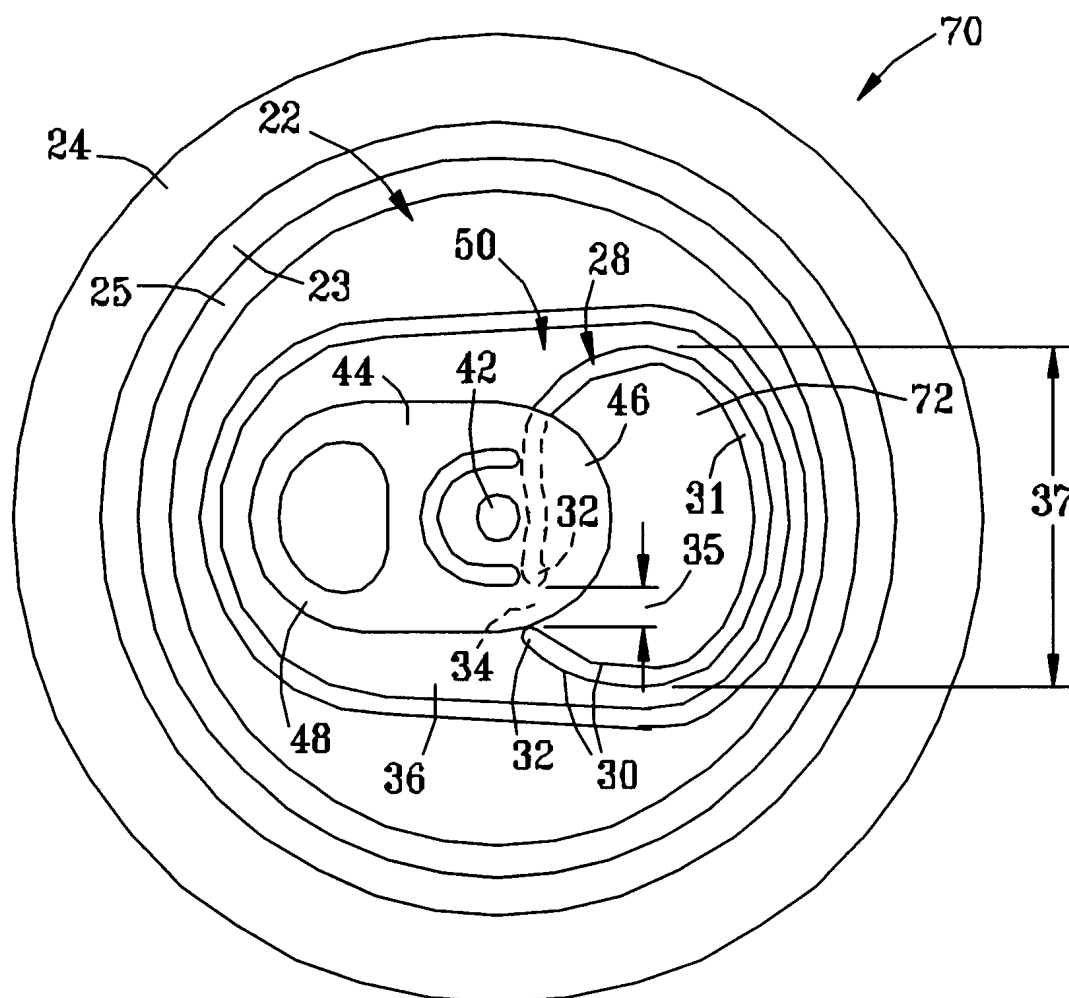
Family 2/100 - FAMPAT - ©Questel

Title

(US7165696)

Stay-on-tab container closure having tear panel with low-relief contour features on the upper surface

Images



Publication data including kind & date

US6234336	B1	2001-05-22	US6234336
US6405889	B1	2002-06-18	US6405889
US20020104842	A1	2002-08-08	US20020104842
US7165696	B2	2007-01-23	US7165696



Abstract

(US7165696)

A stay-on-tab container closure suitable for use on beverage cans and the like, said closure including an center panel with an downwardly displaceable tear panel, which, in one aspect, has a smooth upper surface having no visually perceptible

contour features, and which, in another aspect, has low-relief contour features on its upper surface. Closures according to the invention have reduced stresses across the score defining the tear panel, thereby reducing the likelihood of stress-induced fatigue cracking which can lead to score failure when the container closure is joined to a can body and the resulting can is internally pressurized.

Family 3/100 - FAMPAT - ©Questel

Title

(EP-704382)

Stay-on-tab can end with bead on tear panel enabling wide contact with tab to enhance propagation of score line rupture

Images

Fig. 1

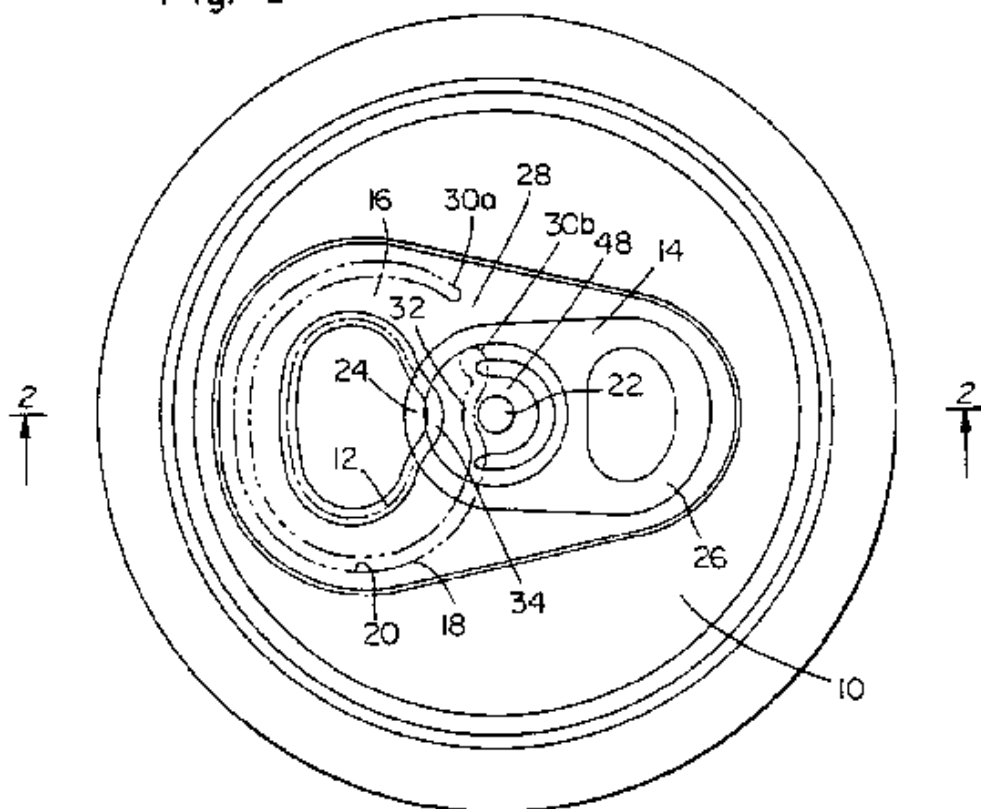
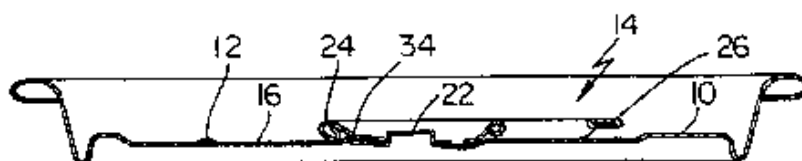


Fig. 2



BRPI9504036	A1	1995-10-24	BR9504036
CA2158379	A1	1996-03-16	CA2158379
AU3172195	A	1996-03-28	AU9531721
EP0704382	A2	1996-04-03	EP-704382
PE6796	A1	1996-04-10	PE9600067
CN1125679	A	1996-07-03	CN1125679
BR9504036	A	1996-09-24	BR9504036
EP0704382	A3	1996-10-02	EP-704382
JP08268429	A	1996-10-15	JP08268429
US5711448	A	1998-01-27	US5711448
AU705788	B2	1999-06-03	AU-705788
JPH11255236	A	1999-09-21	JP11255236
JP2957930	B2	1999-10-06	JP2957930
BRPI9504036	B1	2000-01-25	BR9504036
CN1058460	C	2000-11-15	CN1058460C
CA2158379	C	2001-04-17	CA2158379



Abstract

(EP-704382)

An easy-open construction for a container wherein a panel principally defined by a rupturable score line (18) in a wall (10) is opened by operating a tab (14) having one end adapted to press against the panel (16) at a position spaced from the score line (18) and overlying only a small portion of the opening (20) left by the panel (16) in its open position. The other end of the tab (14) is liftable to open the panel (16) and is returned directly to its original position next to the wall (10). The tab (14) and panel (16) remain secured to the wall (10) after the panel (16) has been moved to its open position. To ensure complete rupturing of the score line (18), particularly during initial rupturing past the 3:00 position, a bead is formed to extend beneath the tab (14) to create a point of contact between the bead with the tab (14) which is located towards the 3:00 position of the score line (18) relative to another point of contact between the tab (14) with the tear panel located further away from the 3:00 position. This another point of contact acts as a fulcrum for the first mentioned point of contact to generate a shearing force to propagate the rupture. <IMAGE>

Family 4/100 - FAMPAT - ©Questel

Title

(EP1318077)

End closure with improved openability

Images

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U.S. PATENT DOCUMENTS					
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AT320979	T	2006-04-15	ATE320979				
AT320978	T	2006-04-15	ATE320978				
DE69833890	D1	2006-05-11	DE69833890				
DE69833887	D1	2006-05-11	DE69833887				
ES2260572	T3	2006-11-01	ES2260572				
ES2260529	T3	2006-11-01	ES2260529				
DE69833890	T2	2007-02-22	DE69833890				
DE69833887	T2	2007-03-01	DE69833887				

Abstract

(EP1318077)

The present invention provides an end closure (10) for a container having a central panel wall (12) with a displaceable tear panel (20) defined by a frangible score (22) with a sloping segment and a non-frangible hinge segment (24). A tab (26) is attached to the panel wall by a rivet (28), the tab (26) having a nose extending over a portion of the tear panel, a lift end (32) opposite the nose (30), and a central webbing (42) with a hinge region (44) and a rivet island (46) surrounding the rivet (28). A bead (52) is formed entirely in an exposed area of the central panel formed by a void region of the webbing (42). The invention further provides a sloping segment (110) surrounding the score (22) having a first bend (116) and a second bend (120).

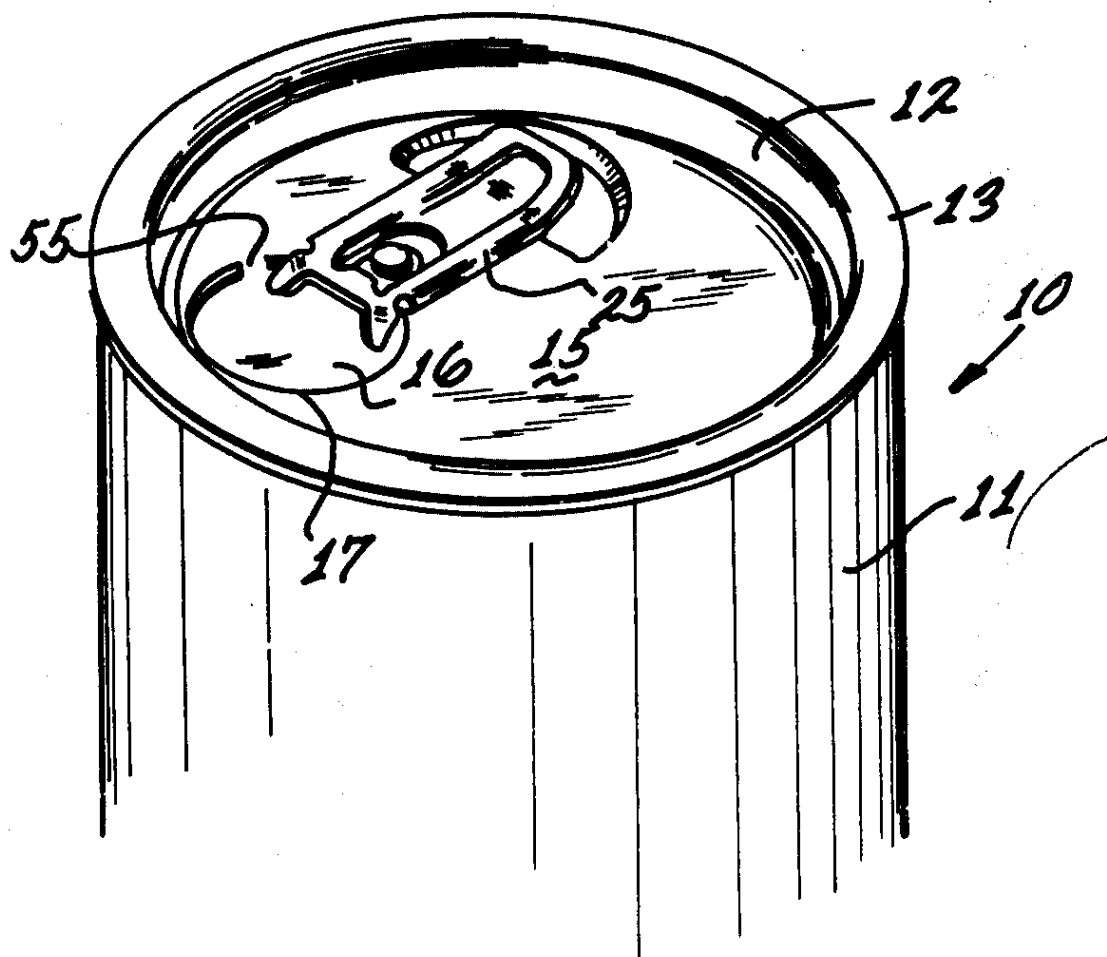
Family 5/100 - FAMPAT - ©Questel

Title

(US4030631)

Easy-open ecology end

Images



Publication data including kind & date

SE7609483	L	1977-02-28	SE7609483
NL7609120	A	1977-03-01	NL7609120
JPS5229385	A	1977-03-05	JP52029385
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CA1041927	A	1978-11-07	CA1041927
AU497563	B2	1978-12-14	AU-497563
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NL174447	B	1984-01-16	NL-174447
JPS5924939	B2	1984-06-13	JP84024939
NL174447	C	1984-06-18	NL-174447
JP1252180	C	1985-02-26	JP1252180
IT1065804	B	1985-03-04	IT1065804
DE2637420	C2	1987-08-27	DE2637420



Abstract

(US4030631)

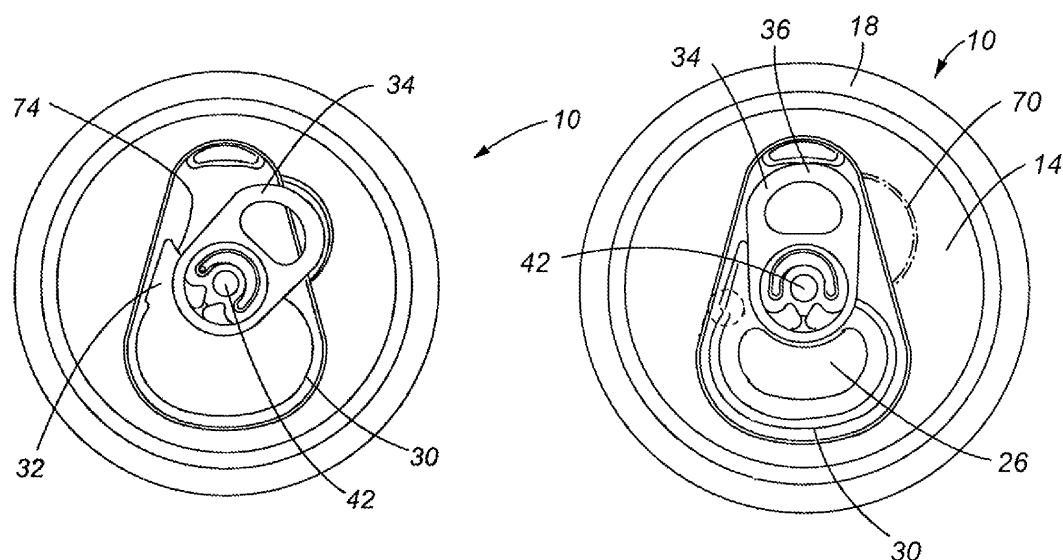
An improved easy-opening end structure for use with a container includes a retained tab and a captured panel which is also retained. The end structure includes a scoreline of an improved pinched score variety, defining a pour opening formed by fracture of the scoreline to release the panel formed by the scoreline. Preferably, the panel is retained on the end. The tab is affixed to the end, other than to the panel and includes an opening end positioned over the panel, but not secured thereto, and a lifting end spaced from the panel which is preferably downwardly dished and generally circular in shape. As the lifting end is raised, the portion of the scoreline between the opening end of the tab and the attachment is popped by an upward lift of the end through essentially a class 2 lever action and thereafter the opening end bears against the panel as the tab is raised further to complete rupture of the scoreline by essentially a class 1 lever action and to push the panel downwardly and laterally through the formed opening. The panel may be hinged or fall free into the container. Various types of tabs as well as a method of forming a scoreline and various end structures are described.

Family 6/100 - FAMPAT - ©Questel

Title

(EP2601109)

Container end closure with secondary vent opening

Images**Publication data including kind & date**

WO2012018549	A1	2012-02-09	WO201218549
CA2806879	A1	2012-02-09	CA2806879
US20120031056	A1	2012-02-09	US20120031056
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AU2011286291	B2	2014-04-17	AU2011286291
EP2601109			



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CA2806879	C	2015-04-28	CA2806879				
CN103140423	B	2015-08-26	CN103140423B				
US20150329238	A1	2015-11-19	US20150329238				
RU2573284	C2	2016-01-20	RU2573284				
MX337754	B	2016-03-17	MX-337754				
BR112013002863	A2	2016-06-07	BR112013002863				
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DK2601109	T3	2017-01-09	DK2601109T				
ES2601810	T3	2017-02-16	ES2601810				
PL2601109	T3	2017-03-31	PL2601109				
RS55892	B1	2017-08-31	RS--55892				
VN0018389	B	2018-03-26	VN--18389B				
US10017295	B2	2018-07-10	US10017295				

Abstract

(EP2601109)

The present invention relates to an opening device for a beverage container. More specifically, the invention relates to a metal end closure having a primary opening area and at least one optional secondary vent opening which can be opened with the same pull tab. The primary opening area of the metal end closure may be opened by utilizing a pull tab interconnected to a central panel, the pull tab being adapted for applying a downward force to form a first opening. Subsequently, the pull tab is rotated and the tail end lifted to form a second opening in the end closure.

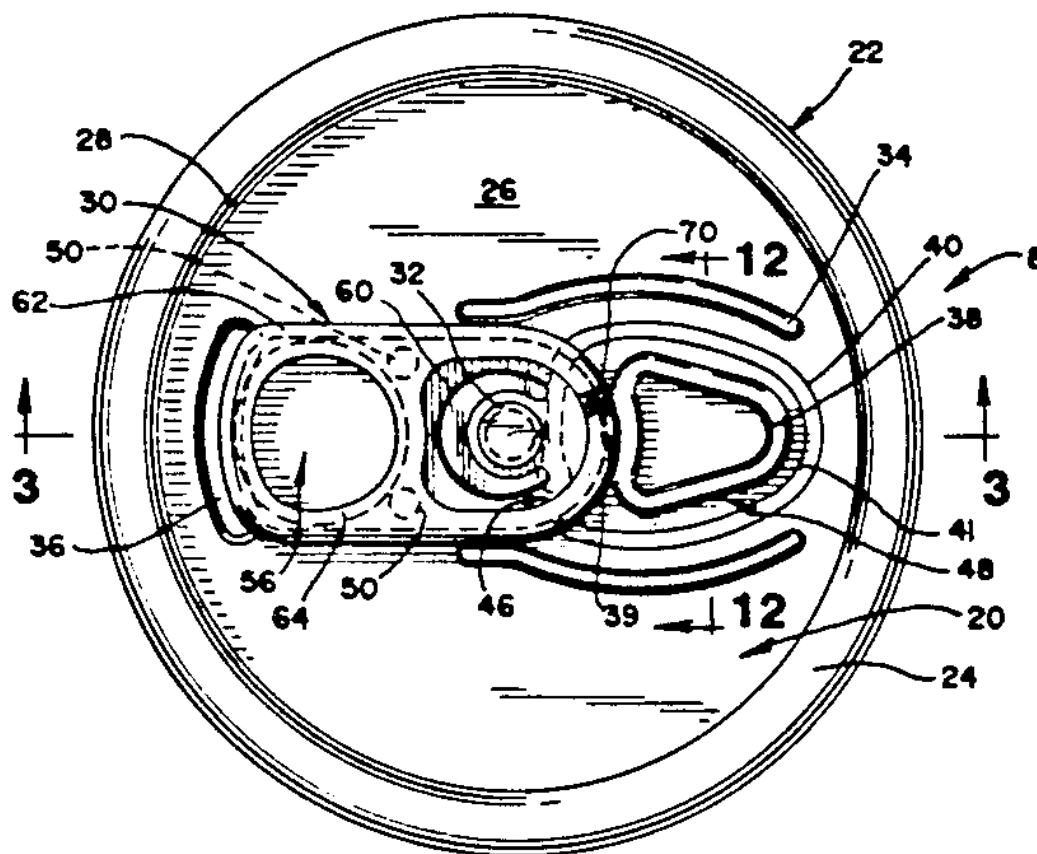
Family 7/100 - FAMPAT - ©Questel

Title

(US5129541)

Easy open ecology end for cans

Images



Publication data including kind & date

US5129541	A	1992-07-14	US5129541
JP05162761	A	1993-06-29	JP05162761
JP2549227	B2	1996-10-30	JP2549227



Abstract

(US5129541)

An easy open can end is disclosed having an attached tear strip across a portion of the can end outlined by a score line, and a round-shaped pull tab secured to the can end adjacent the attached tear strip, the pull tab including a nose portion having a clevis formed in an offset location relative to the pull tab's longitudinal centerline, the can end including a pivot ridge member formed in a centered position relative to the longitudinal centerline of the attached pull tab for assisting in maximizing the offset forces applied by the pull tab's nose portion. The offset clevis operates to create reduced opening forces when opening the can end, including a reduced initial "pop" pressure and a reduced "tear" pressure. These reduced forces result by having the offset clevis cause the initial "pop" opening to occur along only one side of the tear strip's score line and then the opening tear occurs sequentially along the remainder of the score line. This permits use of a score line of reduced depth, thereby leaving additional residual metal at the score line area, which increased residual metal results in less can leakage due to less incidents of unwanted score line fracture. The present invention's offset clevis tab pull is usable with can ends formed of steel and aluminum.

Family 8/100 - FAMPAT - ©Questel

Title

(WO200058161)

Can end

Images

matching arcuate side walls, and has a sloped bottom surface. The rivet (16) is offset from a centre of the end. The tongue (17) is disposed between the rivet and end panel perimeter where the rivet is closest to the perimeter. The emboss (22) is uniformly spaced from the score. An embossed ridge (28) is uniformly spaced from the score outside of the score. In another embodiment, the second deboss is replaced with a contact emboss. A die insert (11) for forming the first deboss, emboss, and second deboss (and, alternatively, contact emboss) is also disclosed.

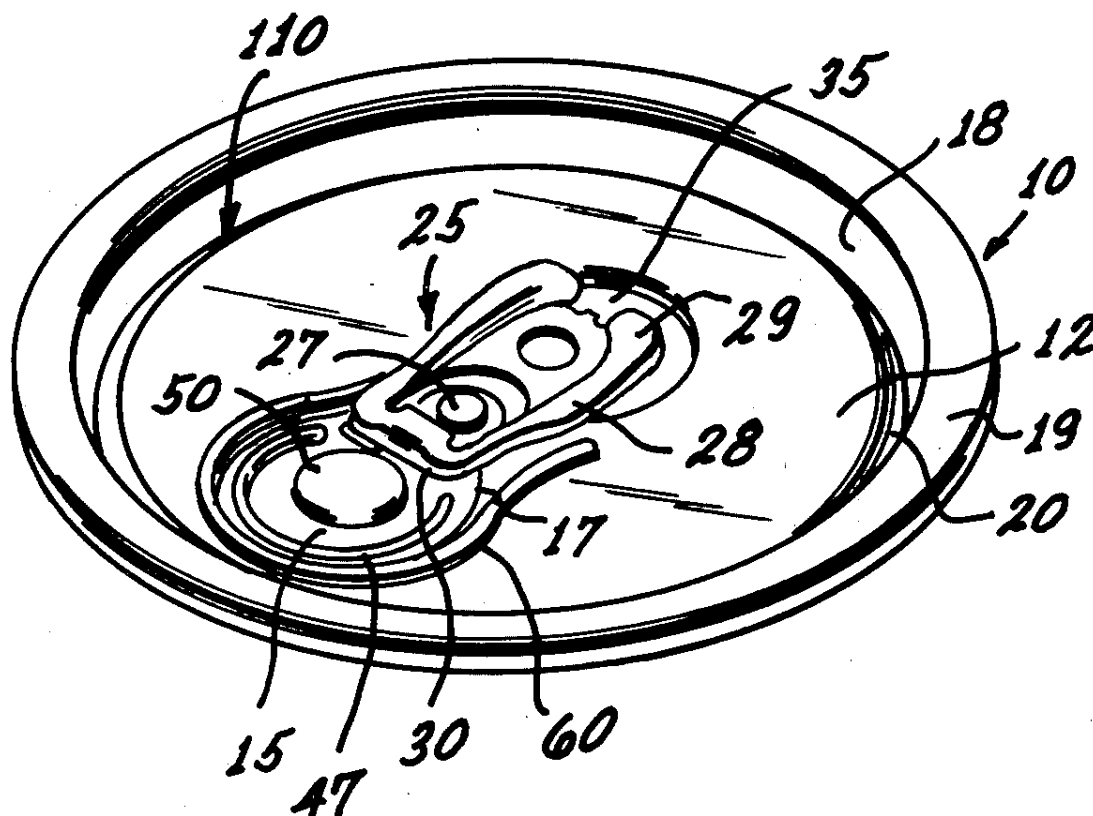
Family 9/100 - FAMPAT - ©Questel

Title

(US4024981)

Easy-open ecology end

Images



Publication data including kind & date

[US4024981](#)

A 1977-05-24 US4024981



Abstract

(US4024981)

An improved easy-opening end structure includes a retained tab and a captured, retained panel, the latter defined by a scoreline and forming a pour opening upon fracture of the scoreline. The tab is fixed to the end wall, other than to the panel, and includes an opening end positioned over the panel and a lifting end spaced from the panel. The panel is connected by a retaining strip to the end wall, the retaining strip being formed between scoreline segments which are laterally located relative to the rivet. The rivet is surrounded by a rivet well of reduced thickness of material, a portion of the scoreline passing through the rivet well, while a coined formation defining a transition zone extends laterally of the rivet and overlies the portion of the scoreline located laterally of the rivet. The panel includes a depression formed therein forward of the retaining strip and located between the ends of a bead which is formed in the panel. The end wall also includes a bead which terminates in coined end sections, the end wall bead surrounding a portion of the scoreline and the coined sections being spaced on each side of the rivet. The tab operates to effect opening of the end structure by fracturing the portion of the scoreline forward of the rivet and thereafter bearing against the panel to effect progressive rupture of the scoreline by essentially a class 1 lever action, and to push the panel downwardly and laterally through the formed opening. The panel is

joined to the end wall by the retaining strip and subsequent to rupture of the panel, the tab may be pushed back against the end wall and retained thereon.

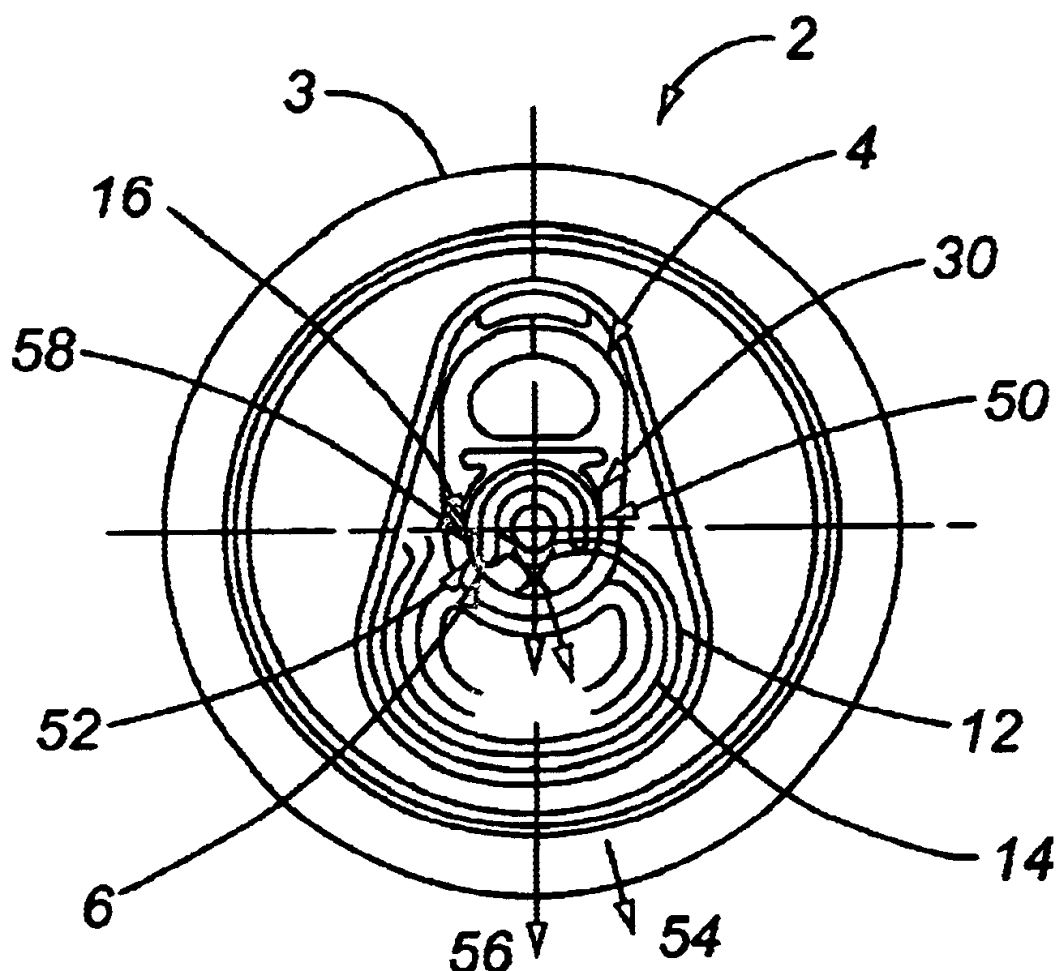
Family 10/100 - FAMPAT - ©Questel

Title

(EP1556287)

Improved large opening beverage container

Images



Publication data including kind & date

US20040056032	A1	2004-03-25	US20040056032
WO2004026712	A1	2004-04-01	WO2004026712
CA2496666	A1	2004-04-01	CA2496666
AU2003273325	A1	2004-04-08	AU2003273325
US6889862	B2	2005-05-10	US6889862
MXPA05002940	A	2005-06-03	MX2005PA002940
BR0314439	A	2005-07-19	BR200314439
BRPI0314439	A1	2005-07-19	BRPI0314439
EP1556287	A1	2005-07-27	EP1556287
CN1681711	A	2005-10-12	CN1681711
TH71721	A	2005-11-03	TH--71721
EP1556287	A4	2006-09-06	EP1556287
EP1556287	B1	2008-01-16	EP1556287
AT384005	T	2008-02-15	ATE384005
DE60318730	D1	2008-03-06	DE60318730



ES2298559	T3	2008-05-16	ES2298559
CN100396570	C	2008-06-25	CN100396570C
DE60318730	T2	2009-01-15	DE60318730
TH27380	B	2010-02-01	TH--27380B
BRPI0314439	A2	2012-04-10	BR200314439
BR0314439	B1	2013-05-28	BR200314439

**Abstract**

(EP1556287)

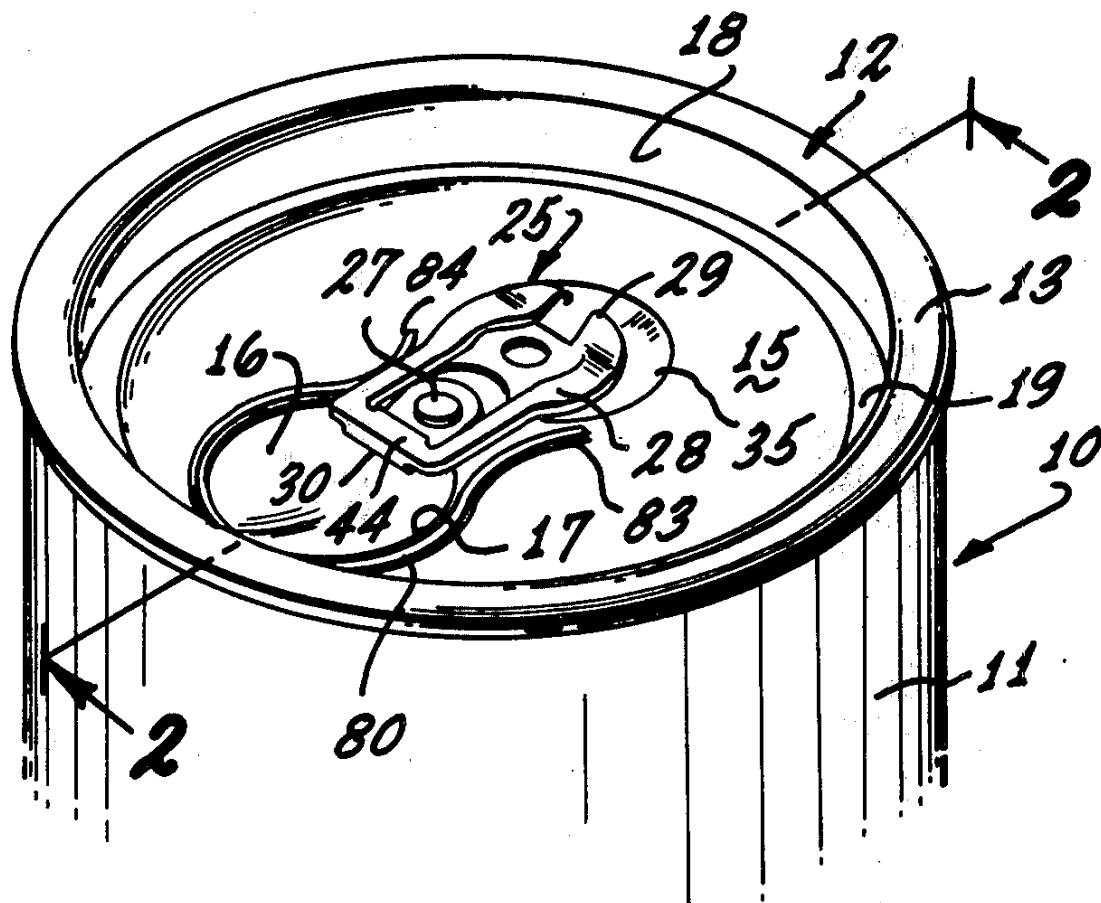
The present invention relates to an improved opening end closure (2) which is adapted for interconnection to a beverage container to prevent premature rupturing and detachment of the tear panel (36) from the center panel (24). More specifically, the present invention includes an improved cent bead (30), an enlarged score origination loop (16), and a pull tab (4) with a cut-out portion (46, 48) with one leg longer than the other leg for selectively orienting the direction of force created on the tear panel (36) away from the hinge portion (19) of the tear panel.

Family 11/100 - FAMPAT - ©Questel

Title

(US4015744)

Easy-open ecology end

Images**Publication data including kind & date**[US4015744](#) A 1977-04-05 US4015744**Abstract**

(US4015744)

An improved easy-opening end structure for use with a container includes a retained tab and a captured panel which is also retained. The end structure includes a scoreline of defining a pour opening formed by fracture of the scoreline to

release a downwardly dished panel formed by the scoreline. The tab is affixed to the end, other than to the dished panel and includes an opening end positioned over a bead on the panel, and a lifting end spaced from the panel. As the lifting end is raised, the portion of the scoreline between the opening end of the tab and the attachment is popped and thereafter the opening end bears against the panel as the tab is raised further to complete progressive rupture of the scoreline by essentially a class 1 lever action and to push the panel downwardly and laterally through the formed opening. The panel may be hinged or fall free into the container.

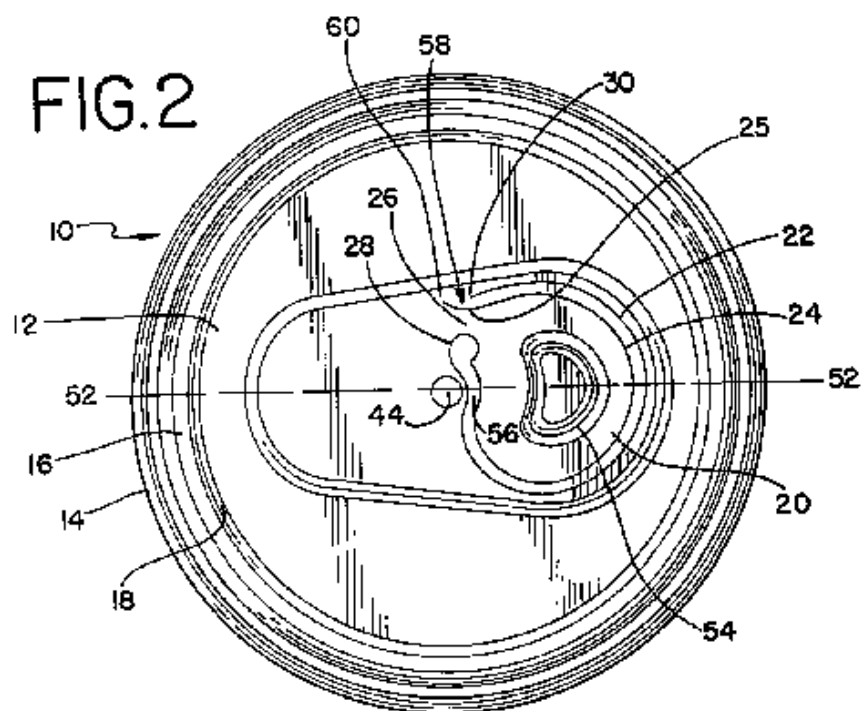
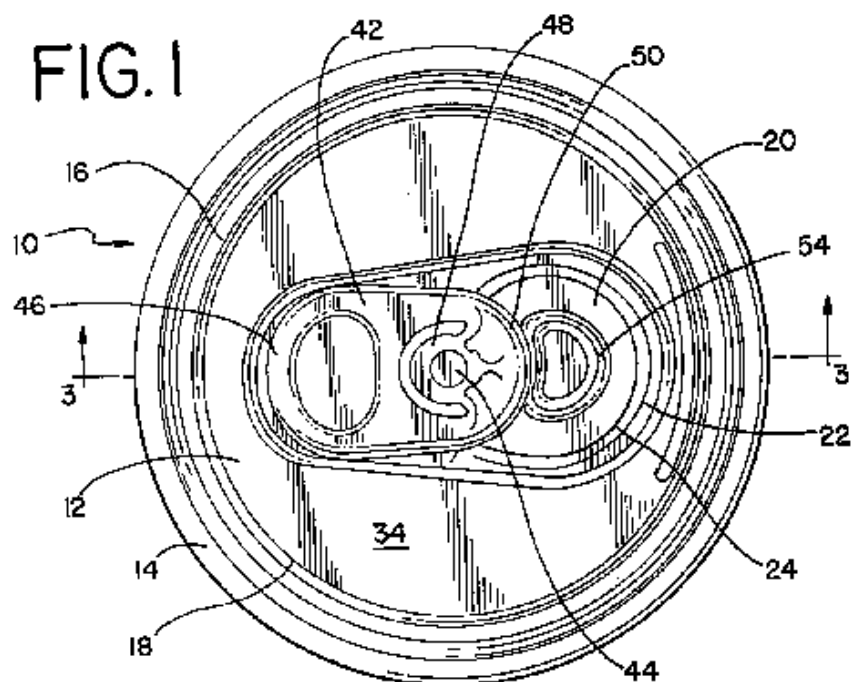
Family 12/100 - FAMPAT - ©Questel

Title

(EP1165384)

End closure with improved non-detachable opening panel

Images



Publication data including kind & date

WO200037323	A1	2000-06-29	WO200037323
AU4311599	A	2000-07-12	AU9943115
US6129230	A	2000-10-10	US6129230
US6260728	B1	2001-07-17	US6260728
BR9916803	A	2001-10-23	BR9916803
BRPI9916803	A1	2001-10-23	BRPI9916803
EP1165384	A1	2002-01-02	EP1165384
AU761490	B2	2003-06-05	AU-761490
MXPA01006192	A	2005-02-17	MXPA01006192
EP1165384	B1	2005-08-10	EP1165384



[AT301585](#)

T 2005-08-15 ATE301585

[DE69926660](#)

D1 2005-09-15 DE69926660

[ES2244249](#)

T3 2005-12-01 ES2244249

[DE69926660](#)

T2 2006-06-08 DE69926660

**Abstract**

(EP1165384)

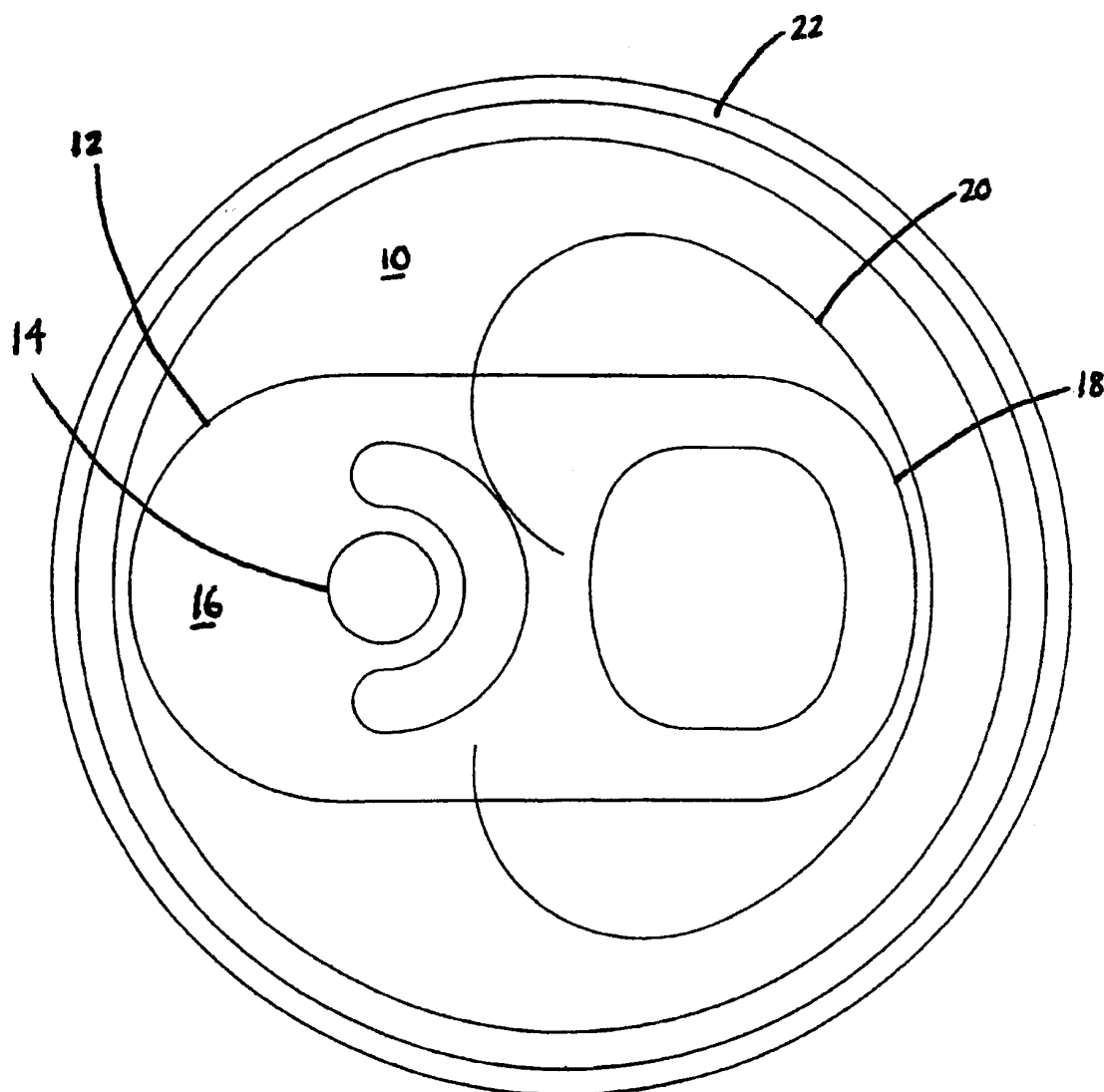
A stay-on-tab container end (10) having a panel wall (12) with a tab (42) attached by a rivet (44) and having a tear panel (20). The tear panel (20) being defined by a frangible score (22) with a first end (28) and a second end (30) and a non-frangible hinge segment (26). A second groove (24) is formed in the panel wall with a tail portion (25) extending from the tear panel through the hinge segment (26). The second groove tail portion (25) has a reduced residual differential compared to the frangible score residual (38). Also, the tail portion (25) includes a curved terminal end (60) that partially surrounds the second end (30) of the score.

Family 13/100 - FAMPAT - ©Questel

Title

(WO2009102793)

Easy-open pull tab container lid

Images**Publication data including kind & date**[US20090200306](#)

A1 2009-08-13 US20090200306

[WO2009102793](#)

A1 2009-08-20 WO2009102793



Abstract

(WO2009102793)

Disclosed is a lid having a perimeter, a pre-scored line that defines a rupturable tear panel, and a pull tab rotatably and pivotally attached to the lid. The pull tab is rotatable between a closed position in which the entire length of the pull tab is contained within the perimeter of the lid, and an opening position in which the handle portion of the pull tab extends beyond the perimeter of the lid. In the opening position, the lid-piercing portion of the pull tab is juxtaposed with the pre-scored panel and is configured to pierce the rupturable tear panel when the handle portion of the pull tab is lifted.

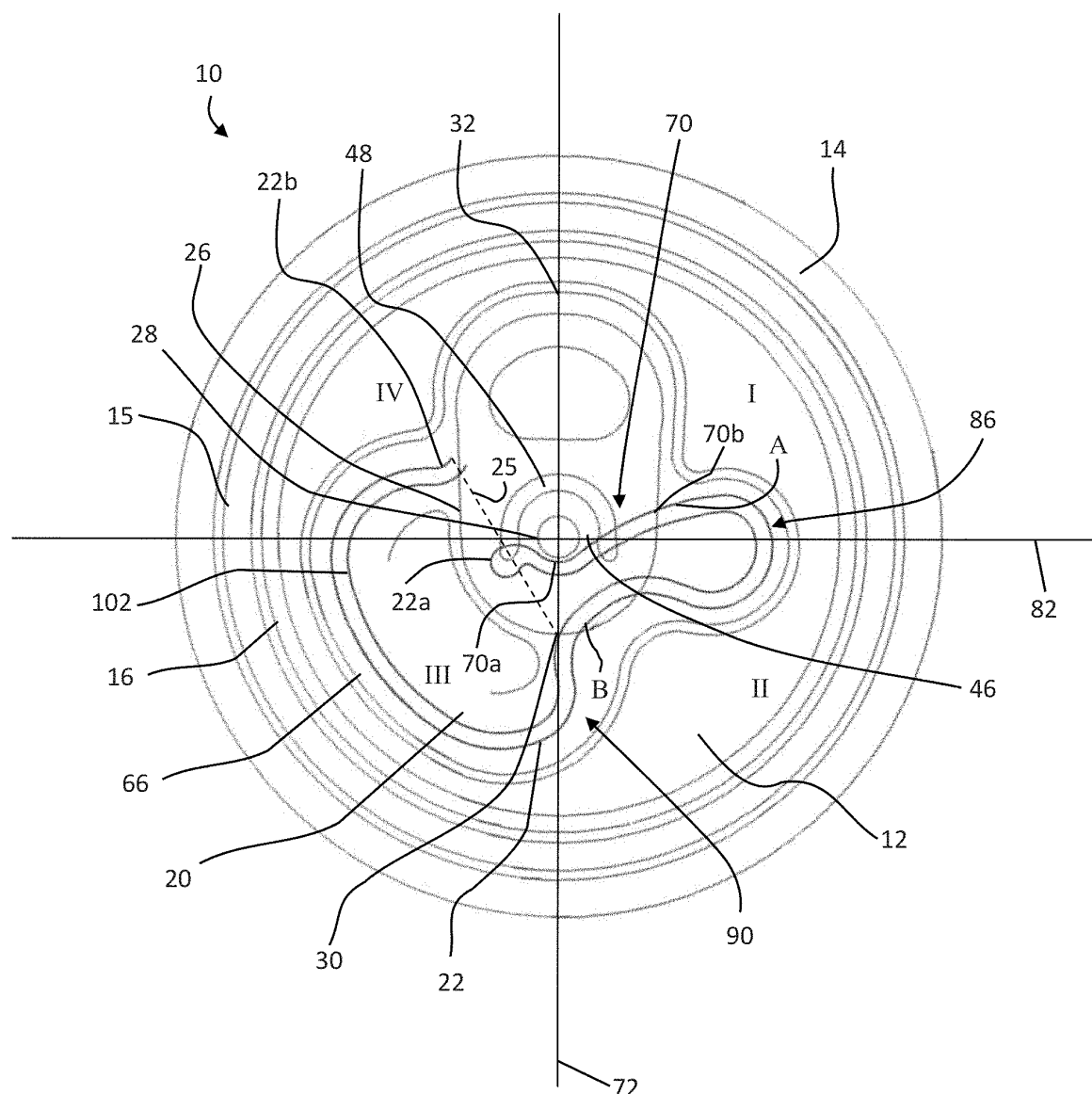
Family 14/100 - FAMPAT - ©Questel

Title

(EP3157826)

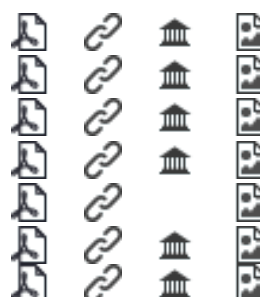
Ecology can end with pressure equalization port

Images



Publication data including kind & date

US20150367984	A1	2015-12-24	US20150367984
CA2951394	A1	2015-12-30	CA2951394
WO2015200301	A1	2015-12-30	WO2015200301
BR112016030113	A1	2017-01-10	BR112016030113
MX2016015817	A	2017-02-27	MX2016015817
CN106536358	A	2017-03-22	CN106536358



EP3157826	A1	2017-04-26	EP3157826				
BR112016030113	A2	2017-08-22	BR112016030113				
US9884701	B2	2018-02-06	US9884701				
CN106536358	B	2018-09-18	CN106536358B				
CA2951394	C	2019-03-12	CA2951394				

Abstract

(EP3157826)

An ecology stay-on tab beverage can end (10) has a first curvilinear segment of frangible score (70) severable to form a vent region (70a) and a pressure equalization port (70b). A second curvilinear segment of frangible score (86) has opposing terminal ends (22a,b) separated by a hinge segment (25) of the center panel (12). The second curvilinear segment of frangible score (86) is severable to form a pour opening. A lifting of a lift end (32) of a tab (26) actuates an opening sequence in which the first curvilinear segment of frangible score (70) is severed causing the vent region (70a) and the pressure equalization port (70b) to form before the pour opening is completely formed.

Family 15/100 - FAMPAT - ©Questel

Title

(EP2750981)

Wing shaped beverage can pull tab

Images



RU2558345	C1	2015-07-27	RU2558345				
USD739728	S1	2015-09-29	USD739728				
TN2014000198	A1	2015-09-30	TN2014000198				
TH143454	A	2015-10-12	TH-143454				
ZA201402582	B	2015-11-25	ZA201402582				
NZ623043	A	2016-01-29	NZ-623043				
GT201400103	A	2016-06-29	GT201400103				
AU2012345554	B2	2016-10-06	AU2012345554				
JP6097304	B2	2017-02-24	JP6097304				
USD781707	S1	2017-03-21	USD781707				
BR112014012593	A2	2017-06-13	BR112014012593				
UA114609	C2	2017-07-10	UA-114609				
EP2750981	B1	2018-03-07	EP2750981				
PL2750981	T3	2018-08-31	PL2750981				
MX359708	B	2018-10-02	MX-359708				

Abstract

(EP2750981)

A wing shaped beverage can pull tab (10) that is wide and tall enough to accommodate advertisements, logos, slogans, contest announcements, graphics, website addresses, etchings, or other marketing, promotional or informational messages targeting the consumer of the beverage. The wing shaped can pull tab (10) can be detached from the can and stored in a pocket without causing injury because of its smooth round edges and compactness. The wing shaped can pull tab (10) is large enough that it does not fall into the can when detached and create injury or choking hazard. The wing shaped can pull tab has a U shaped lift end (IOC) that accommodates the insertion of a finger to lift the tab to actuate the opening of a can more easily. The contoured U shaped lift end (IOC) of the wing shaped can pull tab also accommodates the septum of the nose to allow consumption of the beverage from the can without having to tilt the head too far back.

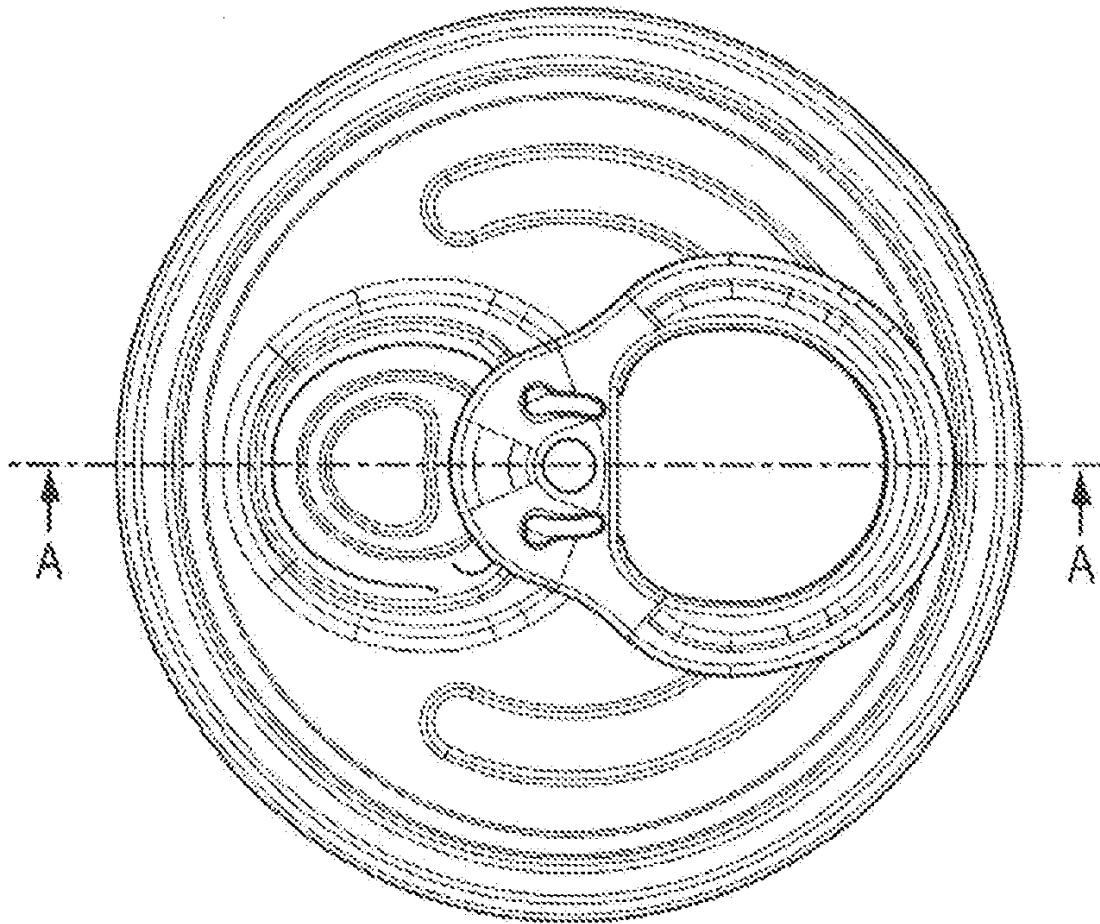
Family 16/100 - FAMPAT - ©Questel

Title

(EP3292051)

Lid for a beverage can

Images



Publication data including kind & date

CA2985249	A1	2016-11-10	CA2985249
DE102015208558	A1	2016-11-10	DE102015208558
WO2016/177754	A1	2016-11-10	WO2016177754
AU2016256989	A1	2018-01-04	AU2016256989
EP3292051	A1	2018-03-14	EP3292051
BR112017023958	A1	2018-04-03	BR112017023958
US20180148219	A1	2018-05-31	US20180148219
BR112017023958	A2	2018-07-17	BR112017023958
AU2016256989	B2	2018-08-16	AU2016256989
CN108473230	A	2018-08-31	CN108473230



Abstract

(EP3292051)

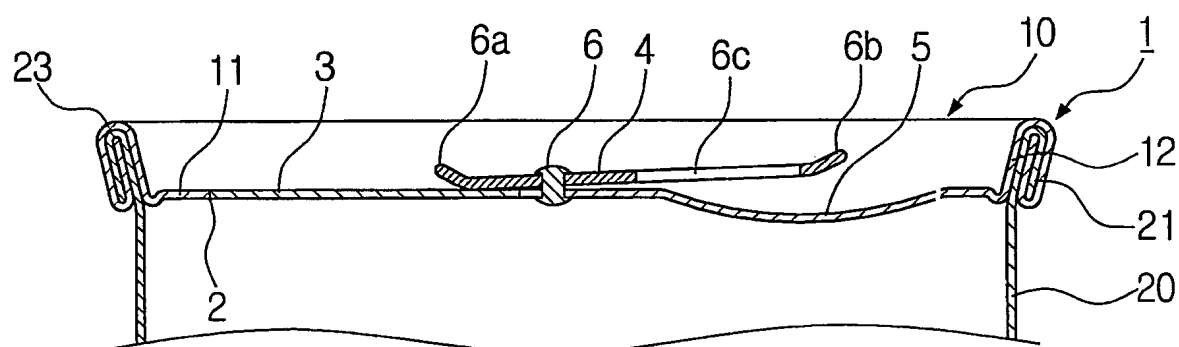
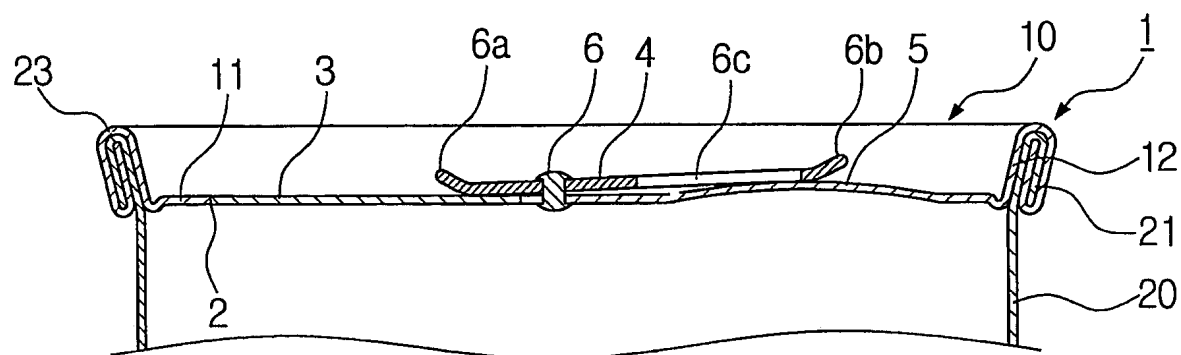
The invention relates to a lid (10) consisting of metal, in particular of aluminium, for a beverage can or the like, which lid is designed to be permanently connected to a can body and has a lid panel (20) in which a rivet (40) for a grip tab (14) is formed and in which a predetermined breaking line (34) defining a breaking-open area is impressed, along which line an opening in the lid panel (20) can be opened by means of the grip tab (14), wherein a rivet base (47), which has resulted from a formation of the rivet (40), is present around the rivet (40), within which base the metal of the lid (10) is thinner and/or more brittle than in adjoining regions of the lid panel (20). The particular feature of the invention consists in the fact that the predetermined breaking line (34) runs outside the rivet base, and a material-thinning embossment (44), which likewise runs outside the rivet base, is provided at least in a lid panel region which is situated between the rivet base (47) and a predetermined pressing point (48) of the breaking-open area onto which a breaking-open edge of the grip tab presses to open the drinking opening, wherein the predetermined breaking line (34) overlaps the material-thinning embossment in the lid panel region and the embossing depth of the predetermined breaking line is greater than the embossing depth of the material-thinning embossment (44).

Family 17/100 - FAMPAT - ©Questel

Title

(EP1919786)

Easily openable can lid

Images**Publication data including kind & date**

KR200289188	Y1	2002-09-13	KR200289188U
WO03104092	A1	2003-12-18	WO2003104092
AU2003241187	A1	2003-12-22	AU2003241187
US20050224497	A1	2005-10-13	US20050224497
US7168586	B2	2007-01-30	US7168586
US20070108209	A1	2007-05-17	US20070108209
EP1919786	A1	2008-05-14	EP1919786
EP1919786	A4	2008-05-14	EP1919786
EP1919786	B1	2009-09-09	EP1919786
AT442307	T	2009-09-15	ATE442307
DE60329242	D1	2009-10-22	DE60329242
ES2332128	T3	2010-01-27	ES2332128
US8113375	B2	2012-02-14	US8113375
US20120193361	A1	2012-08-02	US20120193361
US8371467	B2	2013-02-12	US8371467
US20130126528	A1	2013-05-23	US20130126528



US8733576

B2 2014-05-27 US8733576

Abstract

(EP1919786)

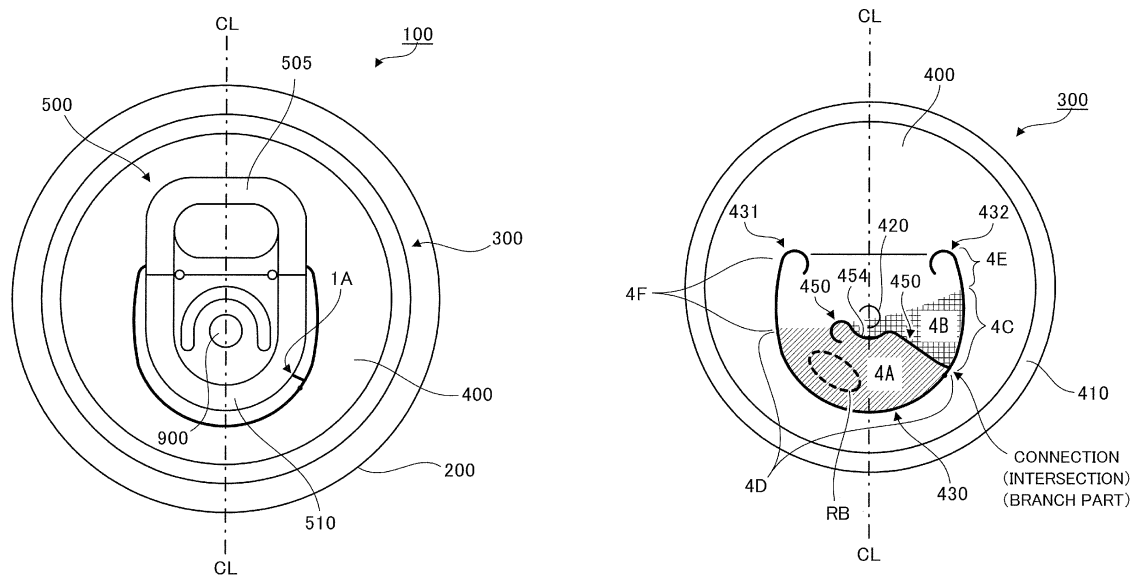
A can lid of a can provided with an easily openable opening means is disclosed wherein the can lid is equipped with a can lid which is fastened by winding tightly on the can main body and the top end opening of the can main body, a score section installed around the territory of the prearranged opening area and a tab for severing the score section. In the can lid, there is formed a protrusion protruding upward from the can lid in front of the can opening during manufacturing of the can lid, in which it is a collapsing protrusion where the protrusion elastically deforms into the can main body by depressing motion of the user and thereby enables forming of a concave section for easy insertion of the user's finger.

Family 18/100 - FAMPAT - ©Questel

Title

(EP3020645)

Can lid and beverage can

Images**Publication data including kind & date**

WO2015004965	A1	2015-01-15	WO201504965
JP2015034058	A	2015-02-19	JP2015034058
CN105339278	A	2016-02-17	CN105339278
EP3020645	A1	2016-05-18	EP3020645
VN46960	A	2016-05-25	VN--46960
US20160145000	A1	2016-05-26	US20160145000
EP3020645	A4	2017-03-01	EP3020645
CN105339278	B	2017-05-31	CN105339278B
US9850025	B2	2017-12-26	US9850025
JP6502625	B2	2019-04-17	JP6502625

**Abstract**

(EP3020645)

A first score line (430) is provided with a modified groove width portion (435) in which the groove width differs from the groove width of other portions. This modified groove width portion (435) is formed by imparting curvature to a point of a first side surface (430B) and this portion of a second side surface (430C) are respectively distended in an outward direction. To describe further, the modified groove width portion (435) is formed by forming respective recessed portions in the first side surface (430B) and the second side surface (430C). In so doing, rupture of a panel can take place in satisfactory fashion

along a score line having a branched portion.

Family 19/100 - FAMPAT - ©Questel

Title

(EP-929450)

Can end with emboss and deboss score panel stiffening beads

Images

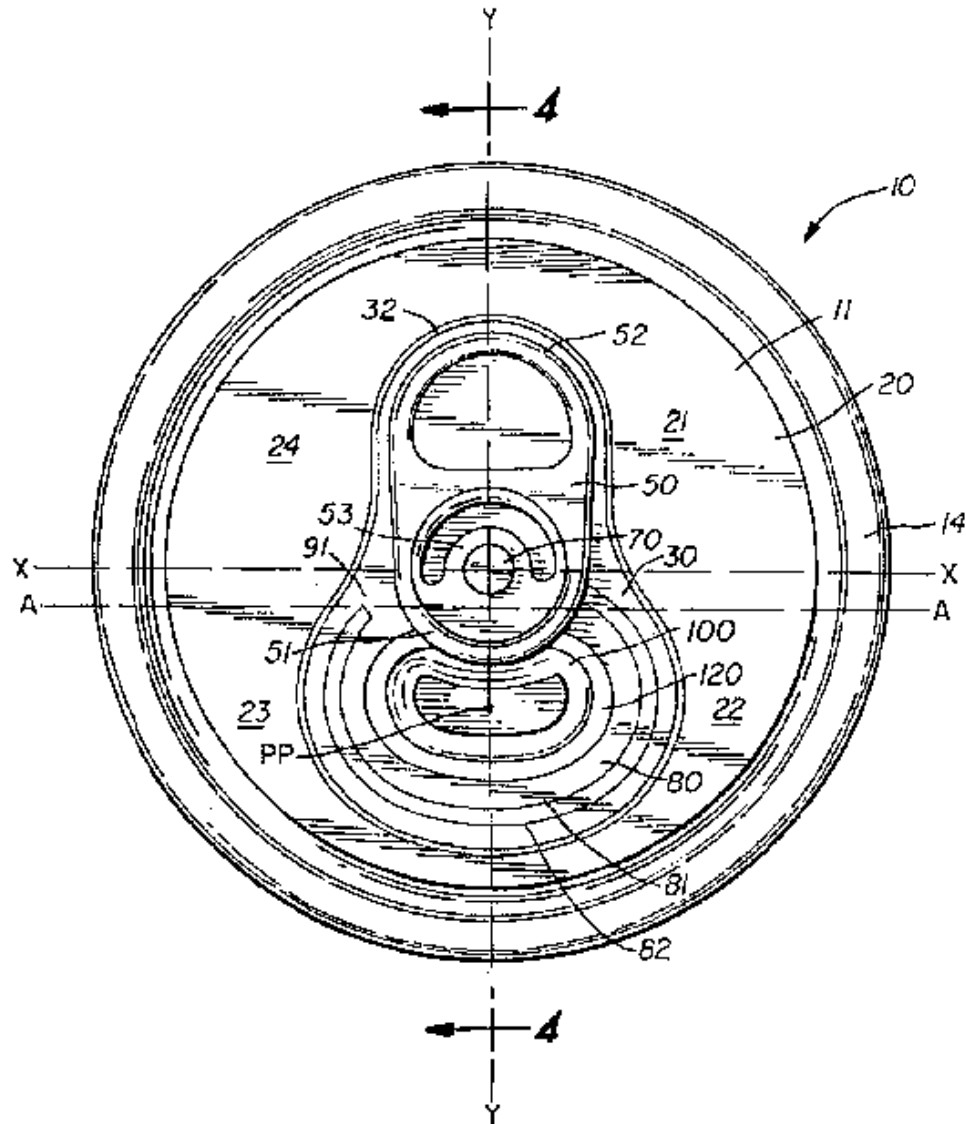


FIG.1

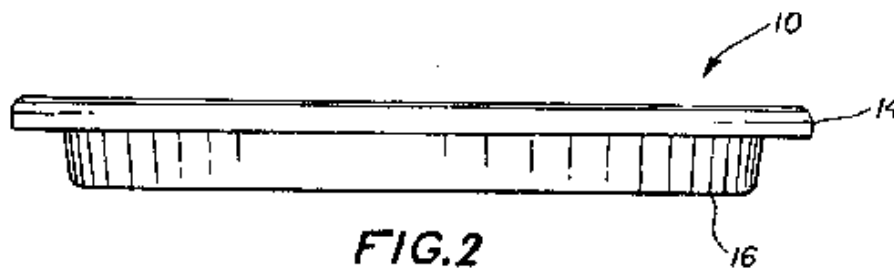


FIG.2

Publication data including kind & date

WO9730902	A1	1997-08-28	WO9730902
AU1969897	A	1997-09-10	AU9719698
US5715964	A	1998-02-10	US5715964



AR005988	A1	1999-07-21	AR---5988				
EP0929450	A1	1999-07-21	EP-929450				
BR9707662	A	2000-01-04	BR9707662				
BRPI9707662	A1	2000-01-04	BRPI9707662				
US6330954	B1	2001-12-18	US6330954				
EP0929450	B1	2002-08-28	EP-929450				
AT222872	T	2002-09-15	ATE222872				
DE69715017	D1	2002-10-02	DE69715017				
BRPI9707662	B1	2002-11-26	BRPI9707662				
DE69715017	T2	2003-04-03	DE69715017				
ES2184993	T3	2003-04-16	ES2184993				
IN0551/DEL/1997	A	2007-11-23	IN1997DE00551				
IN220798	B	2008-07-25	IN-220798				

Abstract

(EP-929450)

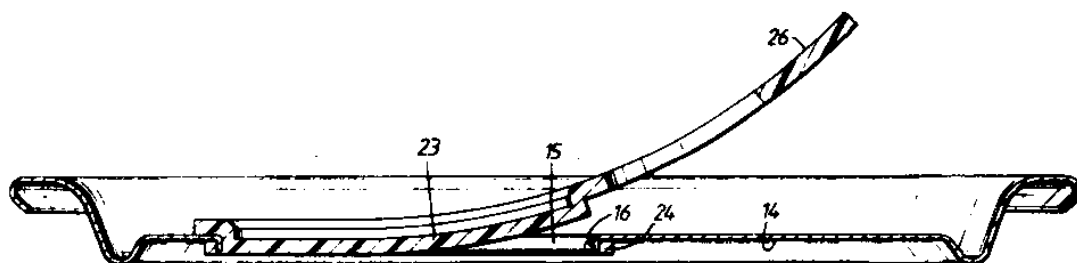
A can end (10) for a two-piece beverage can including a generally flat radially extending portion (30); a score panel (80) defined in the generally flat radially extending portion (30) by an arcuate score (82), the score panel (80) having a central, longitudinal axis projecting in a first axial direction (71) and a second axial direction (73) opposite the first direction; an annular emboss bead (100) formed in the score panel (80) and projecting in a first axial direction (71); and an annular deboss bead (120) formed in the score panel (80) and projecting in the second axial direction.

Family 20/100 - FAMPAT - ©Questel

Title

(EP-215671)

Methods of making metal can ends with plastics closures

Images**Publication data including kind & date**

GB8523263	D0	1985-10-23	GB8523263				
NO863726	D0	1986-09-18	NO8603726				
GB8622261	D0	1986-10-22	GB8622261				
GR862395	B	1987-01-20	GR-862395				
NO863726	L	1987-03-23	NO-863726				
EP0215671	A2	1987-03-25	EP-215671				
AU6257786	A	1987-03-26	AU8662577				
GB2180520	A	1987-04-01	GB2180520				
JPS6278050	A	1987-04-10	JP62078050				
BR8604497	A	1987-05-19	BR8604497				
CN86107457	A	1987-06-17	CN86107457				
ZA8606897	B	1987-06-24	ZA8606897				
NZ217628	A	1988-02-29	NZ-217628				

ES2000902	A6	1988-03-16	ES2000902
EP0215671	A3	1988-05-18	EP-215671
TR22950	A	1988-12-09	TR--22950
US4813837	A	1989-03-21	US4813837
AU585644	B2	1989-06-22	AU-585644
SU1491328	A3	1989-06-30	SU1491328
GB2180520	B	1989-08-31	GB2180520
US4893725	A	1990-01-16	US4893725
CA1266838	A	1990-03-20	CA1266838
CA1266838	C	1990-03-20	CA1266838
CN1007232	B	1990-03-21	CN1007232B
EP0215671	B1	1990-04-25	EP-215671
AT52235	T	1990-05-15	ATE052235
DE3670618	D1	1990-05-31	DE3670618
IN167884	B	1991-01-05	IN-167884
JPH0329671	B2	1991-04-24	JP91029671



Abstract

(EP-215671)

A method of making a metal can end with a tear-open plastics closure, for a can intended to be resistant to leakage when subject to internal pressures, such as arise from carbonation of a beverage or thermal processing, wherein the undersurface of the can end is provided with a plastics coating (14), and the can end is pierced to form an aperture (15) with a peripheral downturned flange (16) at an angle of 80 DEG. to 120 DEG. to the plane of the can end and having a flat end. A one-piece ring pull closure is injection moulded on to the can end (10) from a plastics material resistant to softening at up to at least 65 DEG.C, without additional heating of the metal, so as to fill the aperture (15), bond with the coating (14), and enclose the flange (16), with a residual thickness below the flange of 0.08 to 0.5 mm. The thickness of the plastics material of the closure is such that it can be sheared against the flange when the ring pull (26) is pulled manually. The residual thickness of the plastics material may be varied around the aperture to increase resistance of the closure to creep, and the aperture may be pear-shaped or may be circular with a separate vent hole.

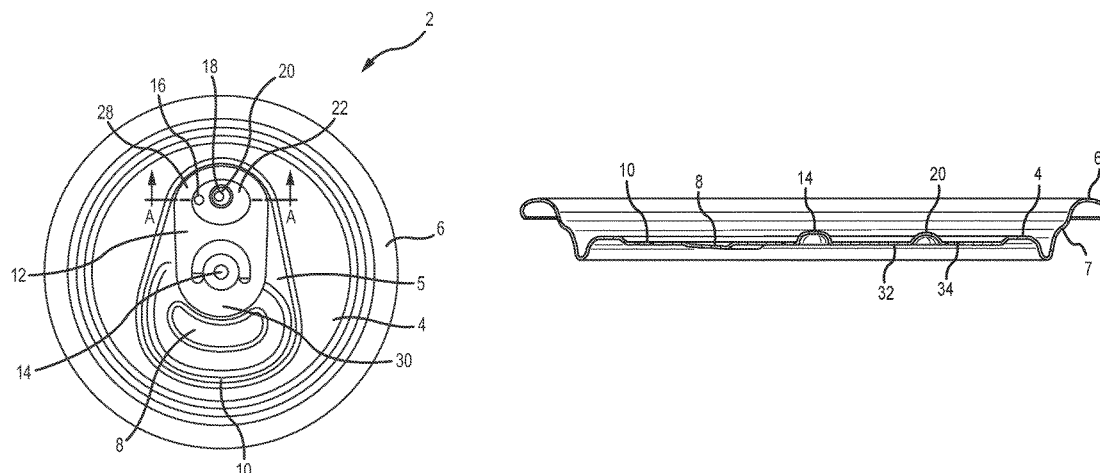
Family 21/100 - FAMPAT - ©Questel

Title

(EP3174807)

Vented container end closure

Images



Publication data including kind & date

CA2956783	A1	2016-02-04	CA2956783
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US20160031613	A1	2016-02-04	US20160031613
WO2016018977	A1	2016-02-04	WO201618977
BR112017001768	A1	2017-02-21	BR112017001768
CN106604871	A	2017-04-26	CN106604871
MX2017001233	A	2017-05-08	MX2017001233
EP3174807	A1	2017-06-07	EP3174807
US9714115	B2	2017-07-25	US9714115
US20170320619	A1	2017-11-09	US20170320619
BR112017001768	A2	2017-11-21	BR112017001768
EP3174807	A4	2018-03-21	EP3174807
CA2956783	C	2018-05-30	CA2956783
MX357385	B	2018-07-06	MX-357385



Abstract

(EP3174807)

A metallic container end closure is provided that generally comprises a dispensing opening and a vent opening. The vent opening improves pourability through the dispensing opening and provides an alternative option for consuming the contents of the container. The end closure may include features to ease opening of the vent opening, such as stiffeners and/or vent form features.

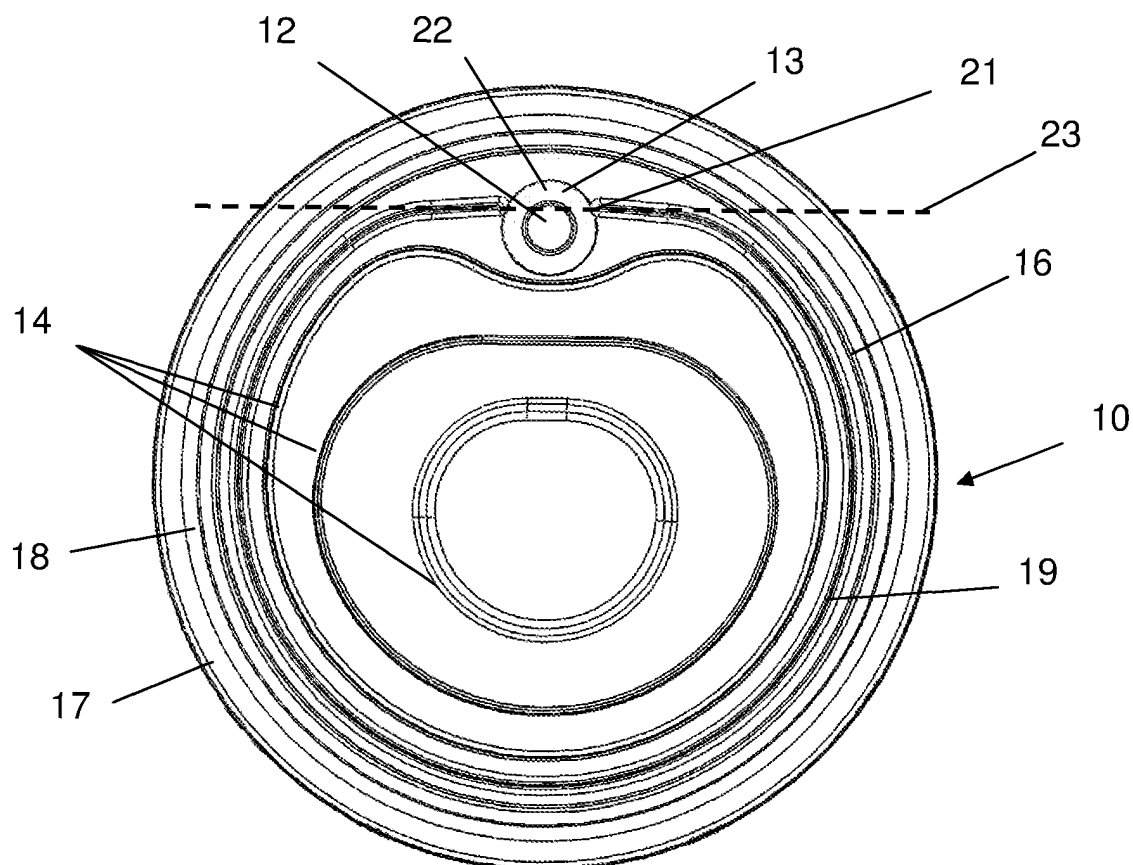
Family 22/100 - FAMPAT - ©Questel

Title

(EP2858911)

Easy open closure with improved pressure performance

Images



ES1086604	U	2013-08-02	ES1086604U				
DE202013005048	U1	2013-08-22	DE202013005048				
ES1086604	Y	2013-10-29	ES1086604Y				
ITMI20130217	U1	2013-12-08	IT2013MI0217U				
EP2671813	A1	2013-12-11	EP2671813				
CA2875902	A1	2013-12-12	CA2875902				
WO2013182354	A1	2013-12-12	WO2013182354				
VN2375	A	2013-12-25	VN---2375				
PL122110	U1	2014-01-20	PL-122110U				
CN203428158	U	2014-02-12	CN203428158U				
AU2013270890	A1	2015-01-22	AU2013270890				
MA20150079	A1	2015-02-27	MA20150079				
BR112014030461	A1	2015-03-24	BR112014030461				
EP2858911	A1	2015-04-15	EP2858911				
MX2014014827	A	2015-05-11	MX2014014827				
US20150144633	A1	2015-05-28	US20150144633				
JP2015518802	A	2015-07-06	JP2015518802				
US9376233	B2	2016-06-28	US9376233				
RU2014150491	A	2016-07-27	RU2014150491				
AU2013270890	B2	2016-11-10	AU2013270890				
MX347141	B	2017-04-17	MX-347141				
JP6126213	B2	2017-05-10	JP6126213				
BR112014030461	A2	2017-06-27	BR112014030461				
EP2858911	B1	2017-07-12	EP2858911				
PL69332	Y1	2017-09-29	PL--69332U				
RU2632034	C2	2017-10-02	RU2632034				
ES2642856	T3	2017-11-20	ES2642856				
MY164253	A	2017-11-30	MY-164253				
PL2858911	T3	2017-12-29	PL2858911				
VN0001686	U	2018-05-25	VN---1686U				
HUE036904	T2	2018-08-28	HUE036904				

Abstract

(EP2858911)

An easy open closure (10) for food or beverage containers and comprising a centre panel (27) surrounded by a circumferential score (16) and an outer seaming panel (17). The closure further comprises a tab (11), the tab being fixed to the centre panel by a rivet (12) formed in the centre panel (27) such that lifting of a radially inner region of the tab (11) forces a nose portion (24) of the tab into contact with a region of the centre panel adjacent to a radially inner edge of the circumferential score (16), thereby causing the score to fracture. A bead (19) is formed in and extending circumferentially around the centre panel inside and adjacent to the circumferential score (16) and at a radius outside of the rivet (12), the bead deviating inwardly from its circumferential path as it approaches the region in which the rivet (12) is formed, and the bead terminating adjacent to and on either side of the rivet.

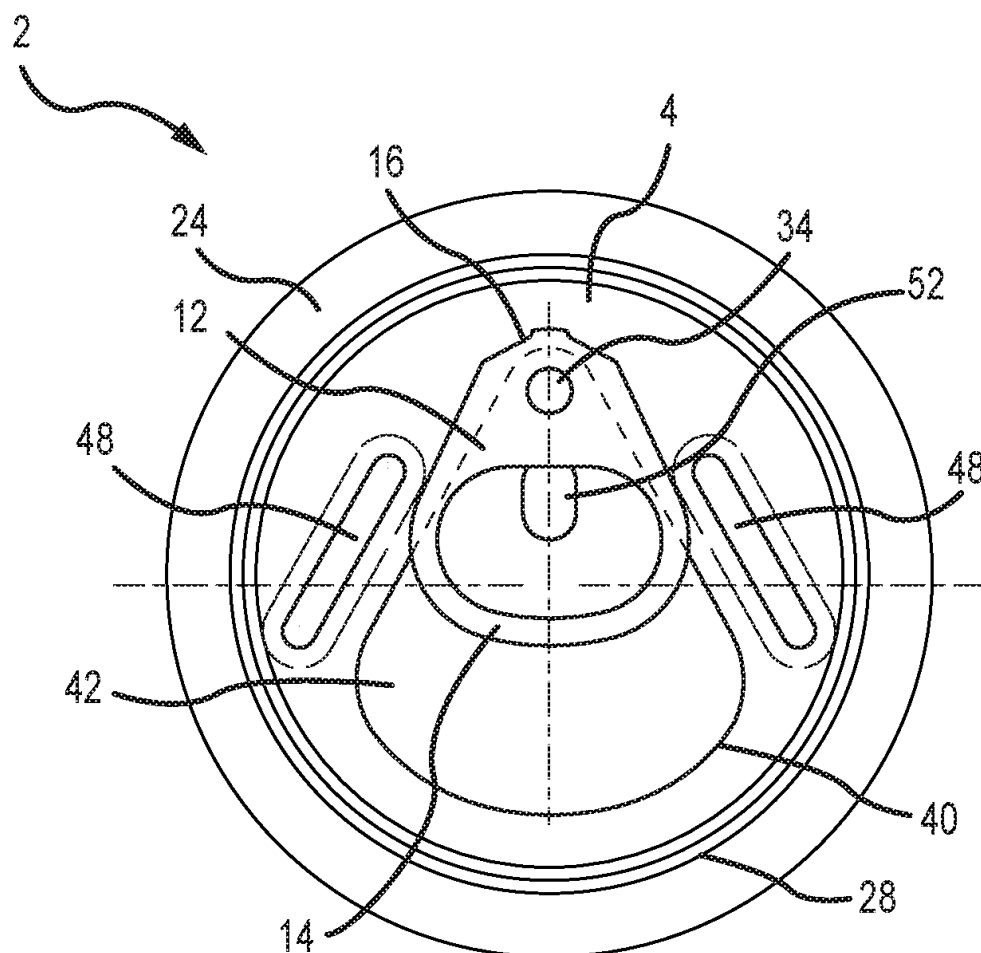
Family 23/100 - FAMPAT - ©Questel

Title

(WO2015134913)

End closure with large opening ring pull tab

Images



Publication data including kind & date

US20150251803	A1	2015-09-10	US20150251803
WO2015134913	A1	2015-09-11	WO2015134913
CN106132837	A	2016-11-16	CN106132837
JP2017512163	A	2017-05-18	JP2017512163
US9901972	B2	2018-02-27	US9901972
US20180126442	A1	2018-05-10	US20180126442
CN106132837	B	2019-05-14	CN106132837B



Abstract

(WO2015134913)

An end closure for food and beverage containers is provided. The end closure comprises a central panel with a large opening defined by a score line. The end closure further comprises a ring pull tab operably interconnected to the central panel proximate to a peripheral edge of the central panel. Prior to opening the end closure, a tail end of the ring pull tab is positioned over the tear panel. In some embodiments, the tear panel may completely detach from the end closure upon opening.

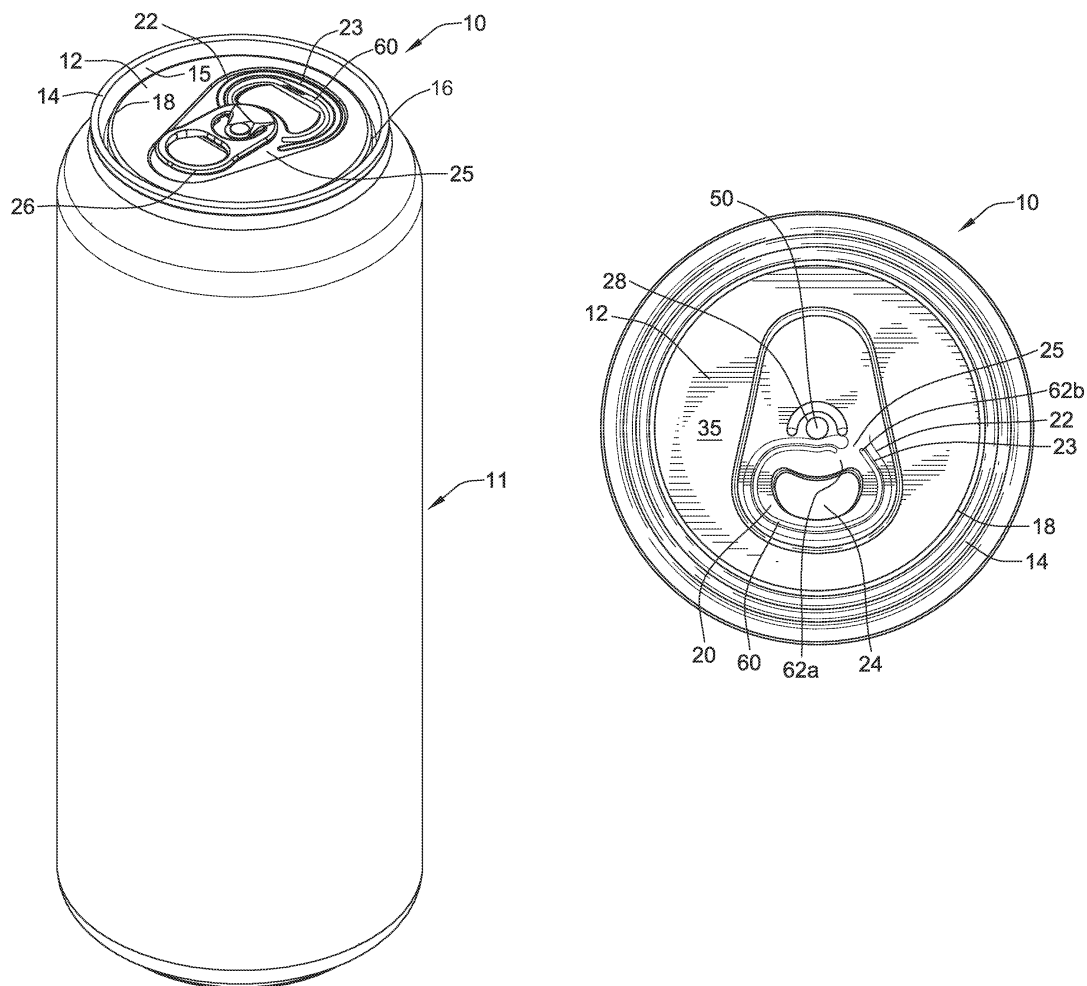
Family 24/100 - FAMPAT - ©Questel

Title

(EP2675717)

Can end

Images



Publication data including kind & date

US20120205378	A1	2012-08-16	US20120205378
WO2012112487	A1	2012-08-23	WO2012112487
EP2675717	A1	2013-12-25	EP2675717
US8783495	B2	2014-07-22	US8783495
EP2675717	B1	2017-11-01	EP2675717



Abstract

(EP2675717)

A can end (10) for a beverage container (11) has a circumferential curl (14) positioned about a longitudinal axis (50), a wall (15) extending downwardly from the curl (14), a strengthening member (16) joined to the wall (15), and a center panel (12) joined to the strengthening member (16) and extending radially inwardly relative to longitudinal axis (50). A rivet (28) is located at a center position of the center panel (12). A frangible score (22) has terminal ends located on a common side of the rivet (28). The terminal ends are separated by a non-frangible hinge segment (25). A displaceable tear panel (20) is defined by the frangible score (22) and the non-frangible hinge segment (25). A non-detachable tab (26) has a nose (30) and a lift end (32). The nose (30) overlies a portion of the displaceable tear panel (20). A deboss groove (60) is located on the public side (34) of the center panel (12) and extends downwardly in a direction towards the product side (35). The deboss groove (60) is located adjacent the score line (23).

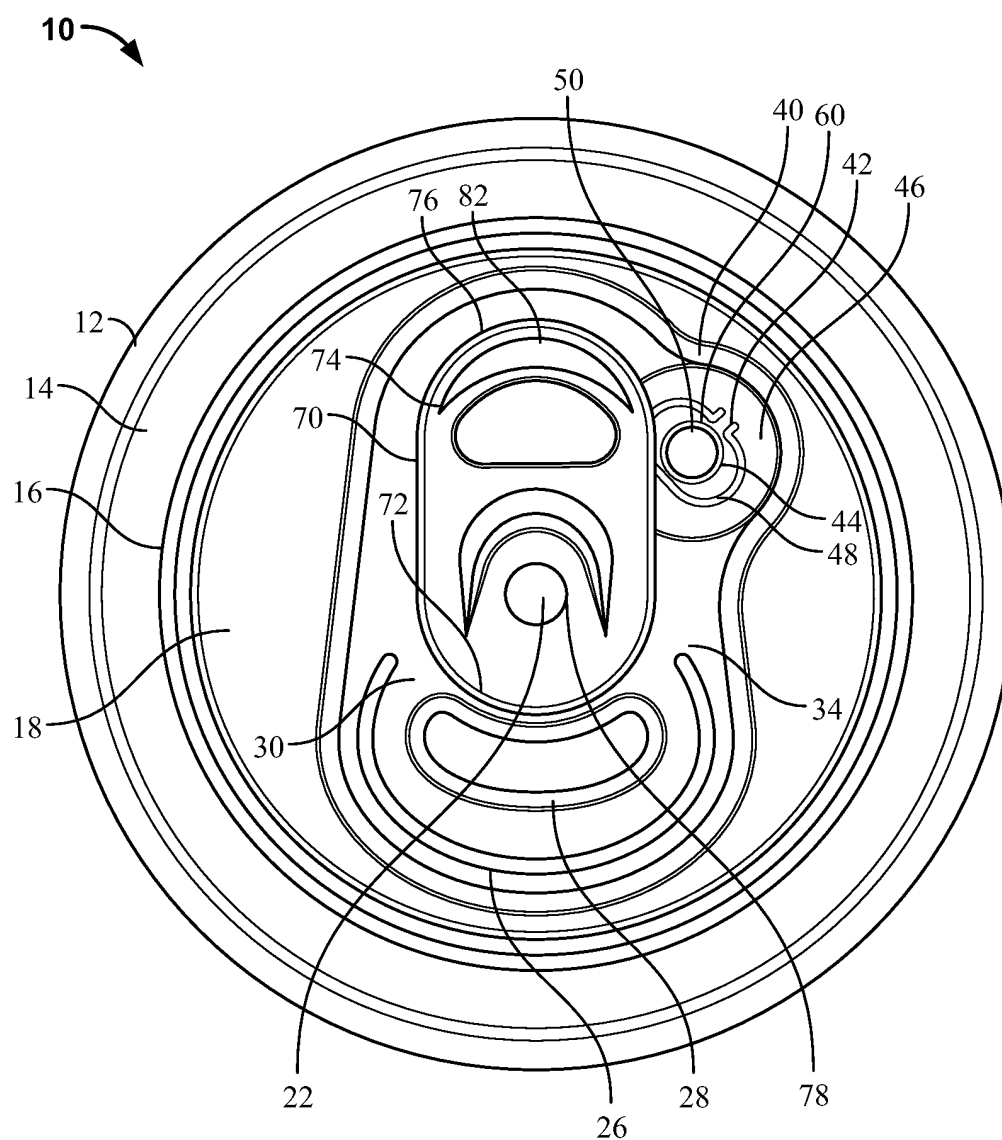
Family 25/100 - FAMPAT - ©Questel

Title

(EP2969794)

Vented beverage can and can end

Images



Publication data including kind & date

US20140263333	A1	2014-09-18	US20140263333
CA2905292	A1	2014-10-02	CA2905292
WO2014159208	A1	2014-10-02	WO2014159208
MX2015012259	A	2015-12-01	MX2015012259
BR112015023167	A1	2015-12-08	BR112015023167
EP2969794	A1	2016-01-20	EP2969794
CN105473455	A	2016-04-06	CN105473455
JP2016518984	A	2016-06-30	JP2016518984
US9403628	B2	2016-08-02	US9403628
TH158320	A	2016-11-29	TH-158320
BR112015023167	A2	2017-07-18	BR112015023167
JP6416186	B2	2018-10-31	JP6416186
CN105473455	B	2018-12-28	CN105473455B



Abstract

(EP2969794)

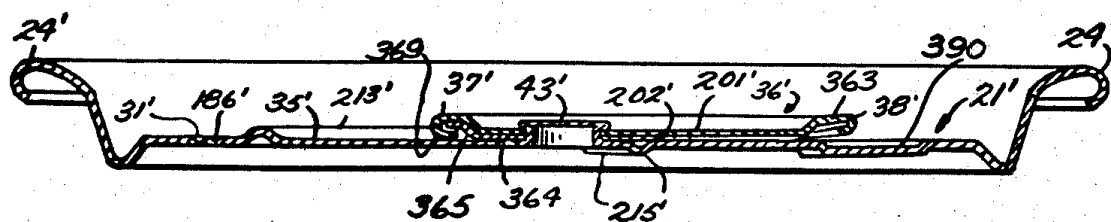
A beverage can end (10) has a vent (40) that includes a button (50). The vent is actuated by downward force of a pull tab (70) that is transmitted to the vent score (42) through the button.

Family 26/100 - FAMPAT - ©Questel

Title

(US3967752)

Easy-open wall

Images**Publication data including kind & date**[US3967752](#)

A

1976-07-06

US3967752

**Abstract**

(US3967752)

An easy-open construction for a container wherein a panel principally defined by a rupturable score line in a wall is opened by operating a tab having one end adapted to press against the panel at a position spaced from the score line and overlying only a small portion of the opening left by the panel in its opened position. The other end of the tab is liftable to open the panel and is returnable directly to its original position next to the wall. The tab and panel remain secured to the wall after the panel has been moved to its open position.

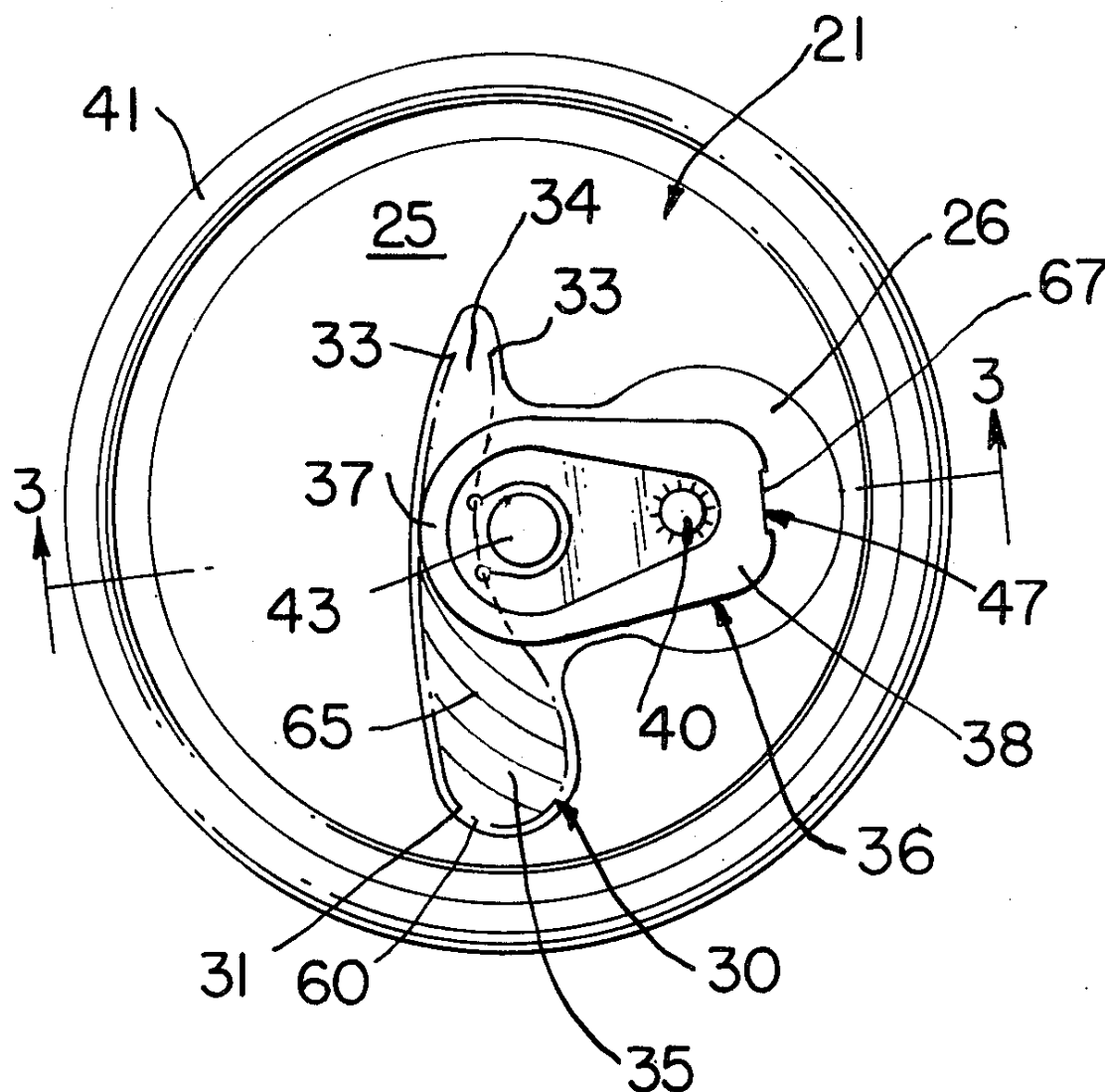
Family 27/100 - FAMPAT - ©Questel

Title

(US3967753)

Easy-open wall

Images



Publication data including kind & date

US3836038	A	1974-09-17	US3836038
US3967753	A	1976-07-06	US3967753



Abstract

(US3967753)

An easy-open wall is provided for a container and comprises curvilinear score means in such wall defining at least the major part of the peripheral outline of a panel which is partially severable from the wall to define a dispensing opening in the wall. A tab is attached in a nondetachable manner against the wall outwardly of the panel with the tab having a forward portion which overlies part of the panel and having a rear portion. The rear portion is easily grasped and lifted to urge the forward portion against the panel to thereby sever the major portion of said panel along the score means and move it within the container with a portion of the wall holding the panel securely thereto. The tab may be provided with means for fastening it flatly against the wall after using the tab to sever the panel.

Family 28/100 - FAMPAT - ©Questel

Title

(WO9822356)

Can end having score groove with thickened residual area

Images

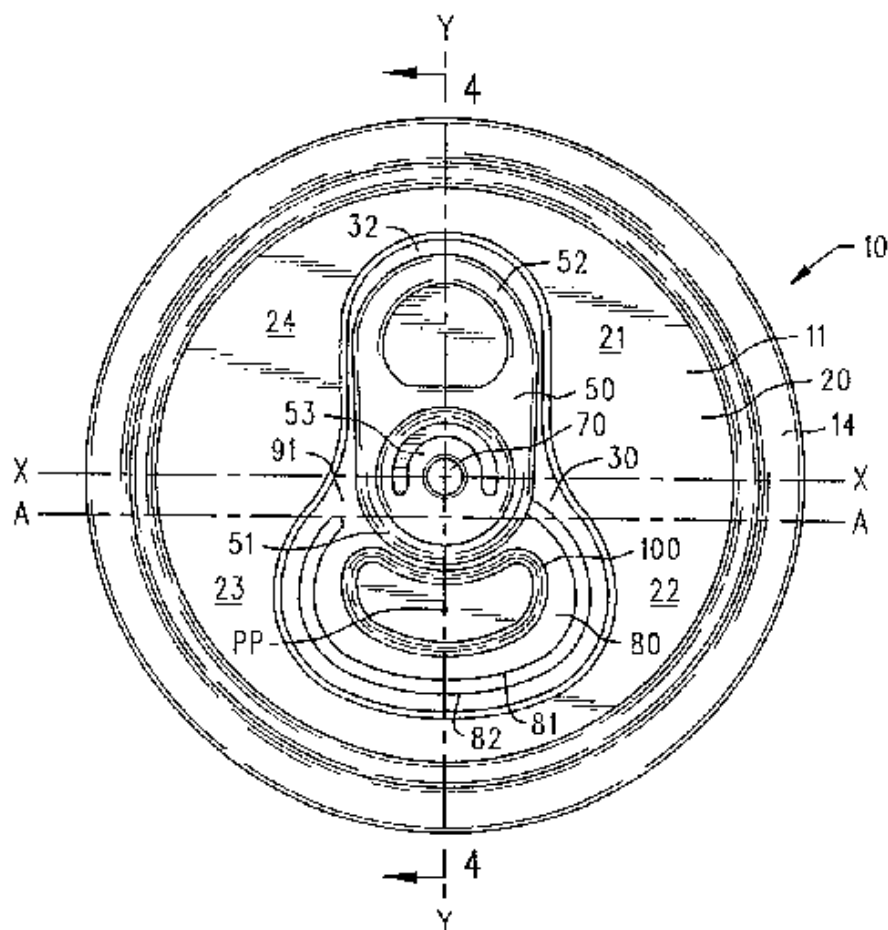


FIG. 1



FIG. 2

Publication data including kind & date

WO9822356	A1	1998-05-28	WO9822356
AU5155298	A	1998-06-10	AU9851552
US5964366	A	1999-10-12	US5964366

**Abstract**

(WO9822356)

A can end (10) for a two-piece beverage can including a score panel (80) defined by an arcuate score line (82) which comprises a score groove (168) and a score residual portion (93). In order to control the opening speed of the score panel (80), the thickness of the score residual (93) is varied along the score line (82). A thickened score residual area or areas (186) may generally be located opposite the rivet area (70) of the can end (10). The remainder of the score residual (93) may be formed having a relatively smaller thickness, thus allowing opening of the end (10) to be accomplished without the

need for excessive force.

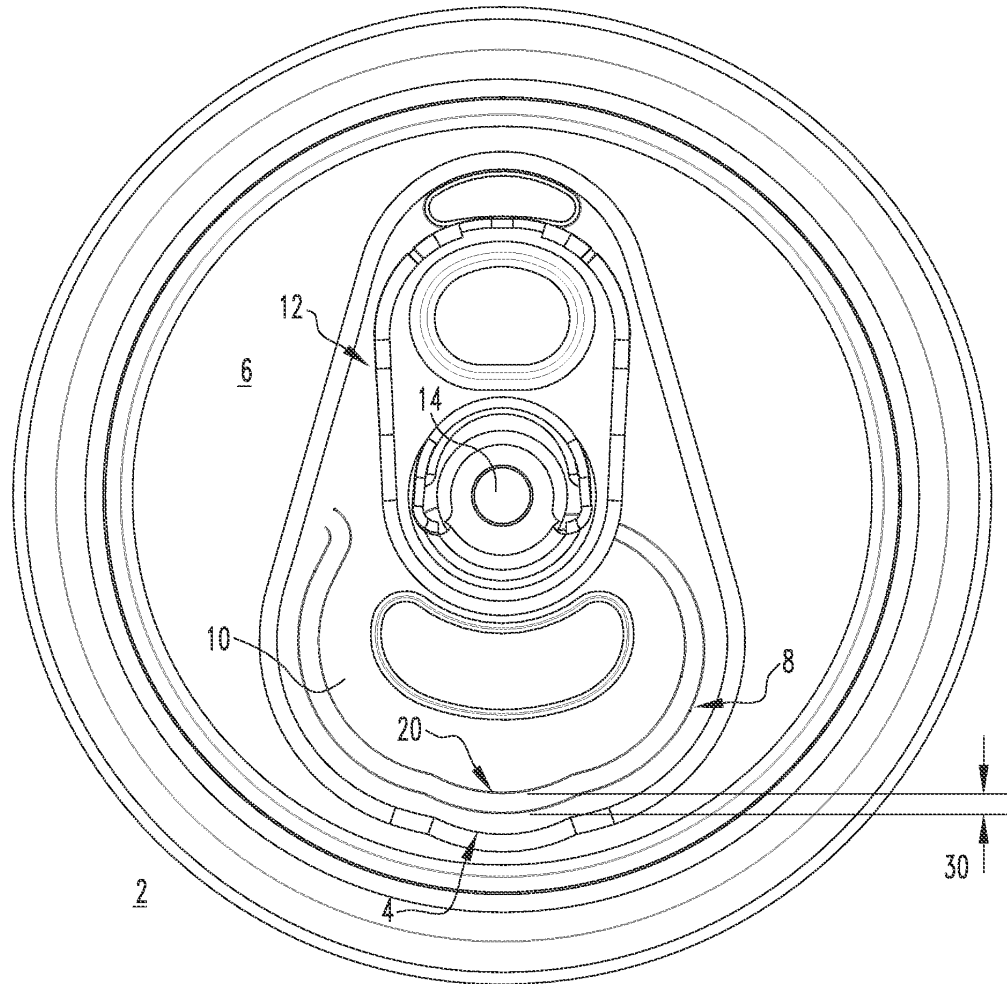
Family 29/100 - FAMPAT - ©Questel

Title

(EP2888172)

Easy pour spout

Images



Publication data including kind & date

WO2014031832	A1	2014-02-27	WO201431832
US20140054332	A1	2014-02-27	US20140054332
CN104684813	A	2015-06-03	CN104684813
EP2888172	A1	2015-07-01	EP2888172
JP2015526353	A	2015-09-10	JP2015526353
US9254945	B2	2016-02-09	US9254945
EP2888172	A4	2016-03-23	EP2888172
CN104684813	B	2017-09-22	CN104684813B
EP2888172	B1	2018-12-26	EP2888172



Abstract

(EP2888172)

A can end is provided, which includes a center panel having a radius, a tab fastened to the center panel, and a scoreline

defining a tear panel in the end panel. The tab is operable to sever the scoreline and open the tear panel to provide an opening in the can end. The tear panel includes an enlarged portion extending outwardly toward the center panel radius, thereby enlarging the opening. The enlarged portion forms an easy pour spout.

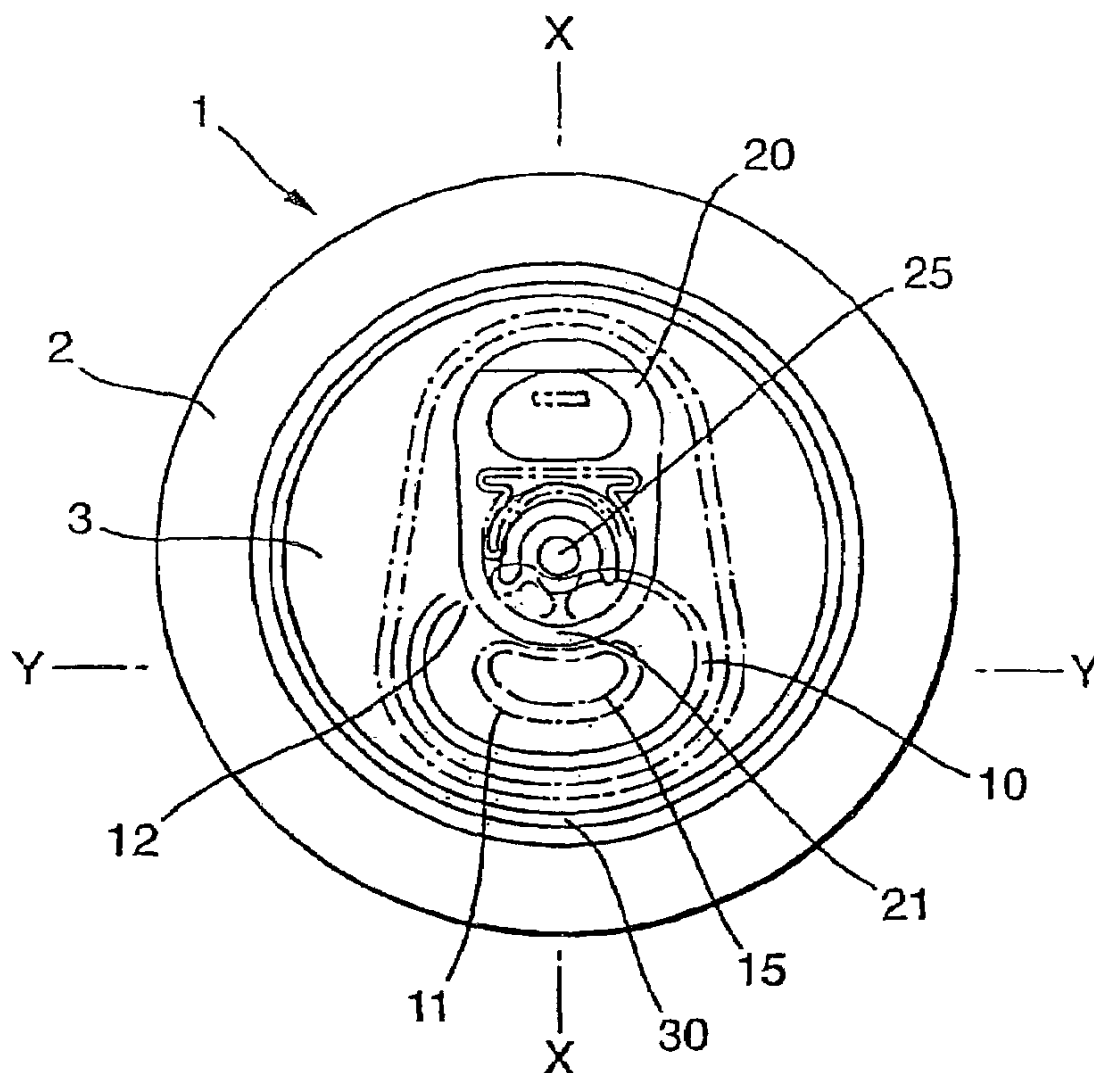
Family 30/100 - FAMPAT - ©Questel

Title

(EP1135300)

Small diameter can end with large opening

Images



Publication data including kind & date

GB9826602	D0	1999-01-27	GB9826602
WO200034137	A1	2000-06-15	WO200034137
CA2352764	A1	2000-06-15	CA2352764
AU1283500	A	2000-06-26	AU200012835
BR9915892	A	2001-08-21	BR9915892
BRPI9915892	A1	2001-08-21	BRPI9915892
EP1135300	A1	2001-09-26	EP1135300
KR20010101127	A	2001-11-14	KR20010101127
CN1329559	A	2002-01-02	CN1329559
MXPA01005571	A	2002-04-24	MXPA01005571
PL348032	A1	2002-05-06	PL99348032



EP1135300	B1	2002-07-31	EP1135300				
AT221492	T	2002-08-15	ATE221492				
ZA200104181	B	2002-08-22	ZA200104181				
DE69902404	D1	2002-09-05	DE69902404				
JP2002531345	A	2002-09-24	JP2002531345				
DK1135300	T3	2002-10-28	DK1135300T				
DE69902404	T2	2002-11-14	DE69902404				
CN1094869	C	2002-11-27	CN1094869C				
PT1135300	E	2002-11-29	PT1135300				
ES2179685	T3	2003-01-16	ES2179685				
AU762618	B2	2003-07-03	AU-762618				
VN0003984	B	2004-01-26	VN---3984B				
MY121819	A	2006-02-28	MY-121819				
KR100632450	B1	2006-10-09	KR100632450				
CA2352764	C	2007-11-20	CA2352764				
PL198788	B1	2008-07-31	PL-198788				
US7594585	B1	2009-09-29	US7594585				
US20100065568	A1	2010-03-18	US20100065568				
JP2010241508	A	2010-10-28	JP2010241508				
JP4689832	B2	2011-02-25	JP4689832				
EP1135300	B2	2012-02-01	EP1135300				
DK1135300	T4	2012-03-12	DK1135300T				
ES2179685	T5	2012-03-28	ES2179685				
US8196767	B2	2012-06-12	US8196767				
DE69902404	T3	2012-06-28	DE69902404				
US20120228296	A1	2012-09-13	US20120228296				

Abstract

(EP1135300)

A can end having a small diameter centre panel (3) and an opening (11) of particular aspect ratio to improve the pourability and drinkability characteristics of the opening, compared to can ends having conventional openings.

Family 31/100 - FAMPAT - ©Questel

Title

(EP1857370)

Can End for a Container

Images

EP1857196	B1	2010-02-17	EP1857196				
AT457839	T	2010-03-15	ATE457839				
DE60141367	D1	2010-04-01	DE60141367				
EP1857370	B1	2010-05-26	EP1857370				
AT469041	T	2010-06-15	ATE469041				
DE60142262	D1	2010-07-08	DE60142262				
ES2345007	T3	2010-09-13	ES2345007				
BRPI0116603	A2	2011-08-23	BR200116603				
BR0116603	B1	2012-11-27	BR200116603				

Abstract

(EP1857370)

A can end (10) comprising a central panel (12) with a tear panel (20) defined by a frangible score (22). The frangible score (22) has a thickened residual (64) at its venting portion and a vent coin (65) adjacent the venting portion. The thickened residual (64) slows down the propagation of the fracture. The vent coin (65) creates compressive stress at the frangible score (22). The compressive stress forces the tear panel (20) during venting to underlap the central panel (12), thus delaying the advance of the fracture. These features allow the container pressure to be fully relieved before the fracture propagates beyond the venting portion, preventing missiling, i.e. a jutting upward of the tear panel (20) due to the internal pressure of the container.

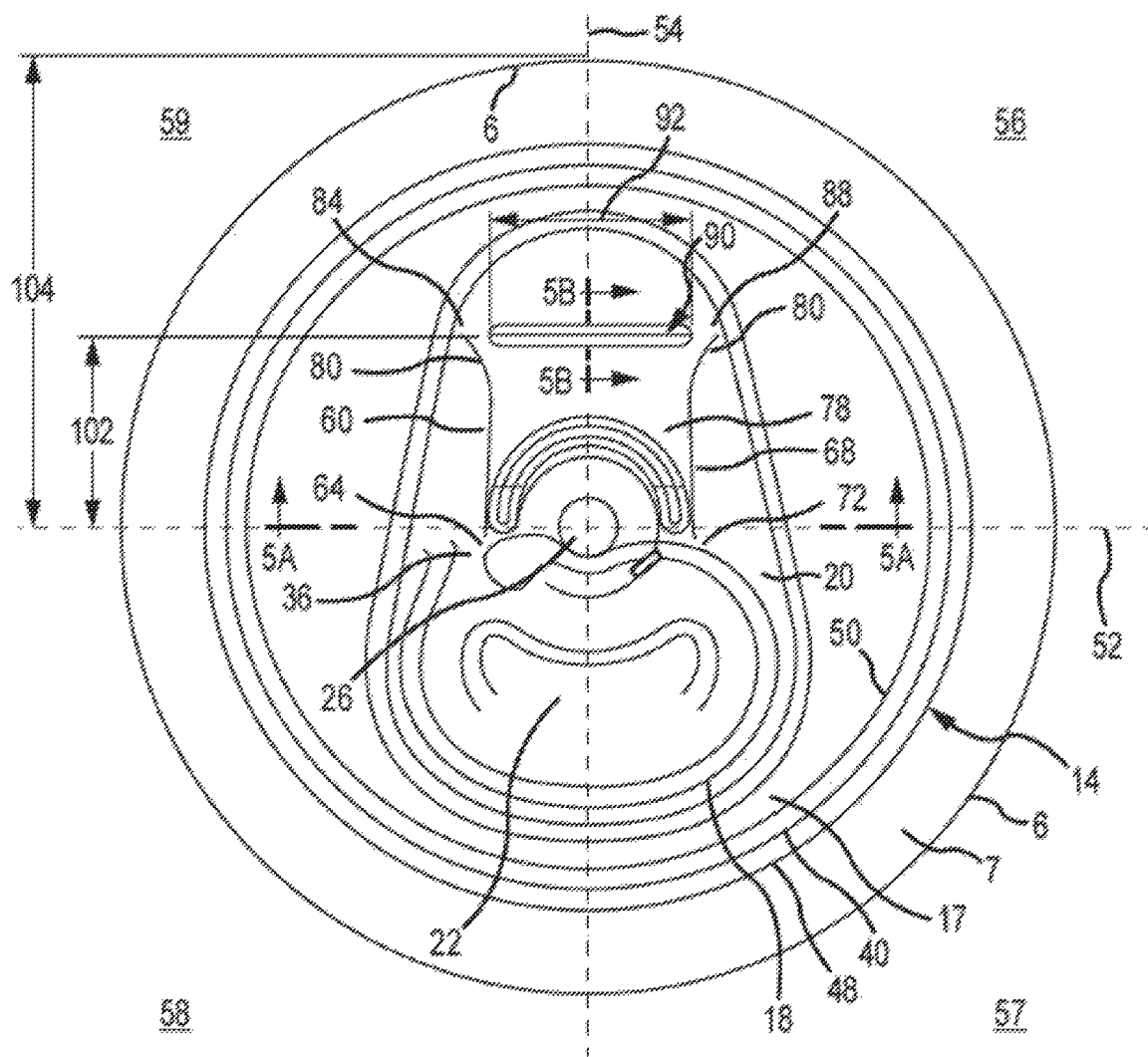
Family 32/100 - FAMPAT - ©Questel

Title

(WO2014149768)

End closure with a ring pull actuated secondary vent

Images



Publication data including kind & date

US20140263334	A1	2014-09-18	US20140263334
WO2014149768	A1	2014-09-25	WO2014149768
CN105102332	A	2015-11-25	CN105102332
CN105102332	B	2016-12-28	CN105102332B
US9694935	B2	2017-07-04	US9694935
US20170232497	A1	2017-08-17	US20170232497



Abstract

(WO2014149768)

The present invention relates to a container end closure that generally comprises a pour opening and a secondary vent opening which improves venting during emptying of contents from the container. In particular, the present invention relates to an end closure for a container having scores defining a secondary vent opening which may optionally be opened. The secondary vent opening has a significantly larger area than vents of prior art designs and thereby improves pour rate and smoothness of pour. After the pour opening is opened using a pull tab interconnected to the end closure, a consumer may selectively open the secondary vent opening by pulling back on the tab.

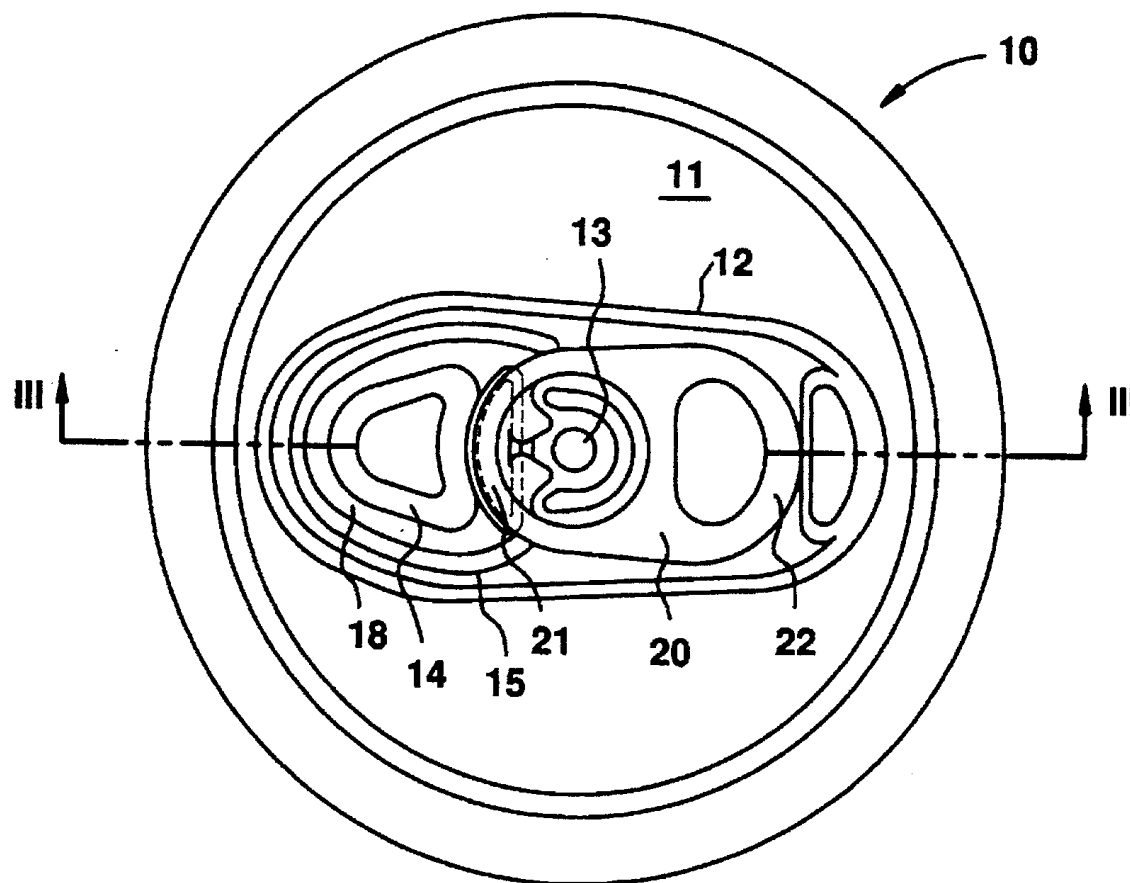
Family 33/100 - FAMPAT - ©Questel

Title

(US5653355)

Anti-impact easily opened can lid

Images

**Publication data including kind & date**[US5653355](#)

A

1997-08-05

US5653355

**Abstract**

(US5653355)

A can lid for a can, including a top plate to which a tab having a tab nose is coupled by a rivet at the substantial center thereof, a tab nose recess formed in the top plate underneath the tab nose and having a smooth bottom surface with no step part, and a score formed in the top plate surrounding around the tab nose recess and having a start point and an end point located in front of the rivet and defining therebetween a hinge space.

Family 34/100 - FAMPAT - ©Questel

Title

(US4503989)

Can end with retained tear strip

Images

GB2153330	A	1985-08-21	GB2153330
NL8500036	A	1985-09-02	NL8500036
ZA8410071	B	1986-02-26	ZA8410071
CA1225345	A	1987-08-11	CA1225345
FR2558799	B1	1988-10-21	FR2558799

**Abstract**

(US4503989)

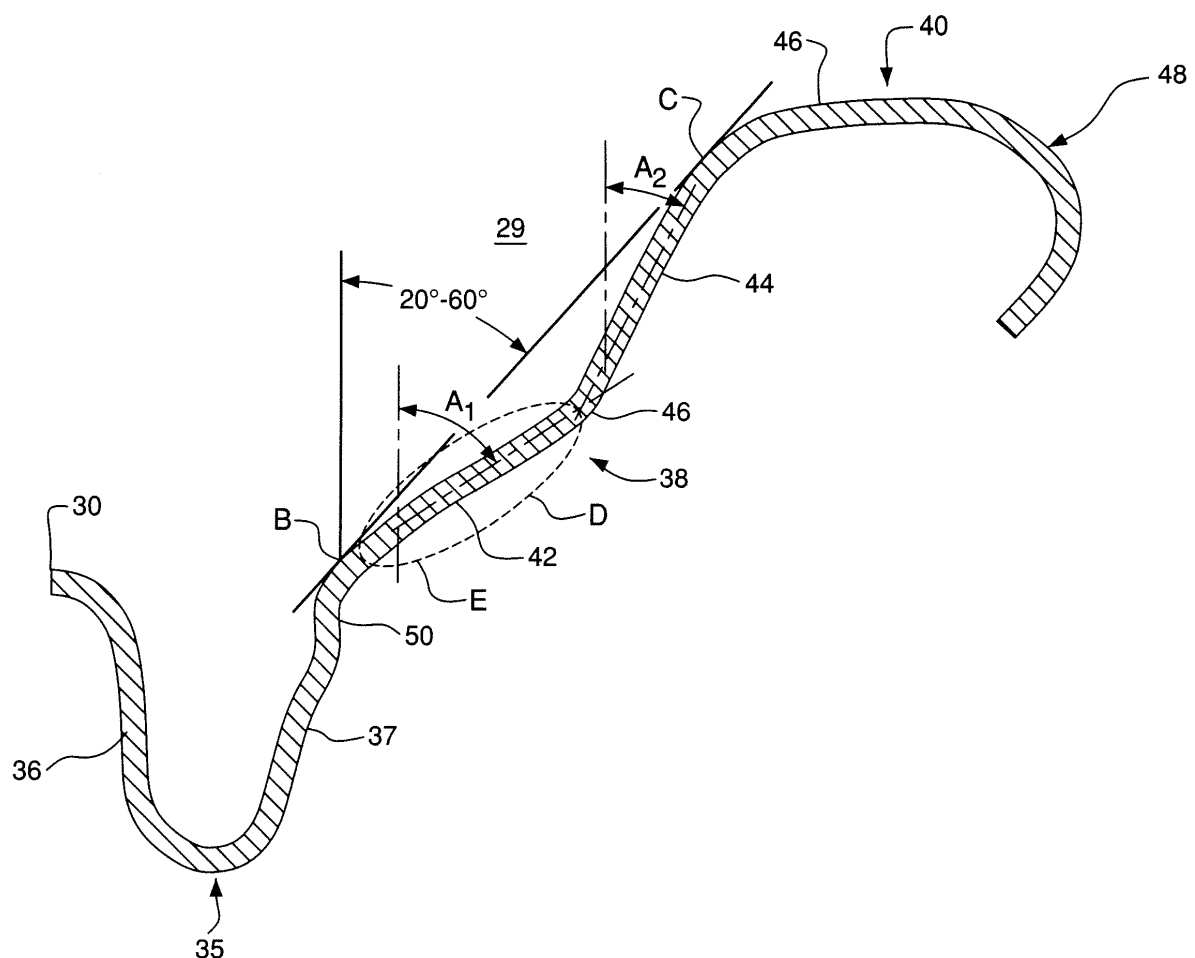
An end structure for an easy opening container includes a rivet formed in a pour panel defined by a non-continuous scoreline. Upon rupture of the scoreline by a tab, which is affixed to the panel by the rivet, both the tab and pour panel are retained on the end wall. The scoreline may include a region of minimal residual in the region which is initially popped and regions of increased residual along the length of the scoreline in the direction of the fracture. The scoreline forward and adjacent to the rivet is of a configuration which includes changes of direction rather than being a smooth continuous curve and cooperates with the stepped scoreline to reduce blow-off. Also provided is a coined region radially outward of the rivet and the panel radius to create slack such that when the container is pressurized, the lifting end of the tab is forced downwardly. Associated with the coined region is a localized coined panel radius which controls the location of the possible end buckle to reduce scoreline fracture due to buckle. Provision is made to reduce laceration and an improved ring-pull tab acting as a Class 2 lever is disclosed.

Family 35/100 - FAMPAT - ©Questel

Title

(EP1497054)

Can end

Images**Publication data including kind & date**[WO03089167](#)

A1 2003-10-30 WO200389167



CA2482984	A1	2003-10-30	CA2482984				
AU2003229636	A1	2003-11-03	AU2003229636				
EP1361164	A1	2003-11-12	EP1361164				
TH61404	A	2004-04-07	TH--61404				
US20040238546	A1	2004-12-02	US20040238546				
EP1497054	A1	2005-01-19	EP1497054				
BR0309446	A	2005-02-09	BR200309446				
BRPI0309446	A1	2005-02-09	BRPI0309446				
US20050115976	A1	2005-06-02	US20050115976				
MXPA04010456	A	2005-07-14	MX2004PA010456				
CN1646243	A	2005-07-27	CN1646243				
RU2004133891	A	2005-09-10	RU2004133891				
ZA200408419	B	2005-11-30	ZA200408419				
JP2006514595	A	2006-05-11	JP2006514595				
RU2319571	C2	2008-03-20	RU2319571				
CN100393443	C	2008-06-11	CN100393443C				
AU2003229636	B2	2008-06-26	AU2003229636				
EP1497054	B1	2008-11-26	EP1497054				
AT415217	T	2008-12-15	ATE415217				
DE60324910	D1	2009-01-08	DE60324910				
JP4280645	B2	2009-03-19	JP4280645				
ES2318126	T3	2009-05-01	ES2318126				
HK1080782	A1	2009-07-17	HK1080782				
US7591392	B2	2009-09-22	US7591392				
CA2482984	C	2012-06-26	CA2482984				
TH33349	B	2012-08-01	TH--33349B				
BRPI0309446	A2	2013-10-15	BR200309446				
BR0309446	B1	2014-10-07	BR200309446				

Abstract

(EP1497054)

A can end having a countersink bead (25), an inclined chuck (24) wall and a strong seam, resists distortion from its circular profile when subjected to thermal processing or when packaging carbonated beverages. This high hoop strength affects the manner in which the can end ultimately fails when placed under extreme abuse conditions, even if buckle pressure performance is within industry specified standards. The can end of the invention has control features introduced which control the failure mode whilst maintaining specified buckle pressure performance. In one embodiment, the control feature comprises expansion of the countersink bead to act as a trigger for local peaking, together with a groove in the chuck wall which prevents the peaking force from being concentrated at a single point which could result in leaking by the production of a pin hole.

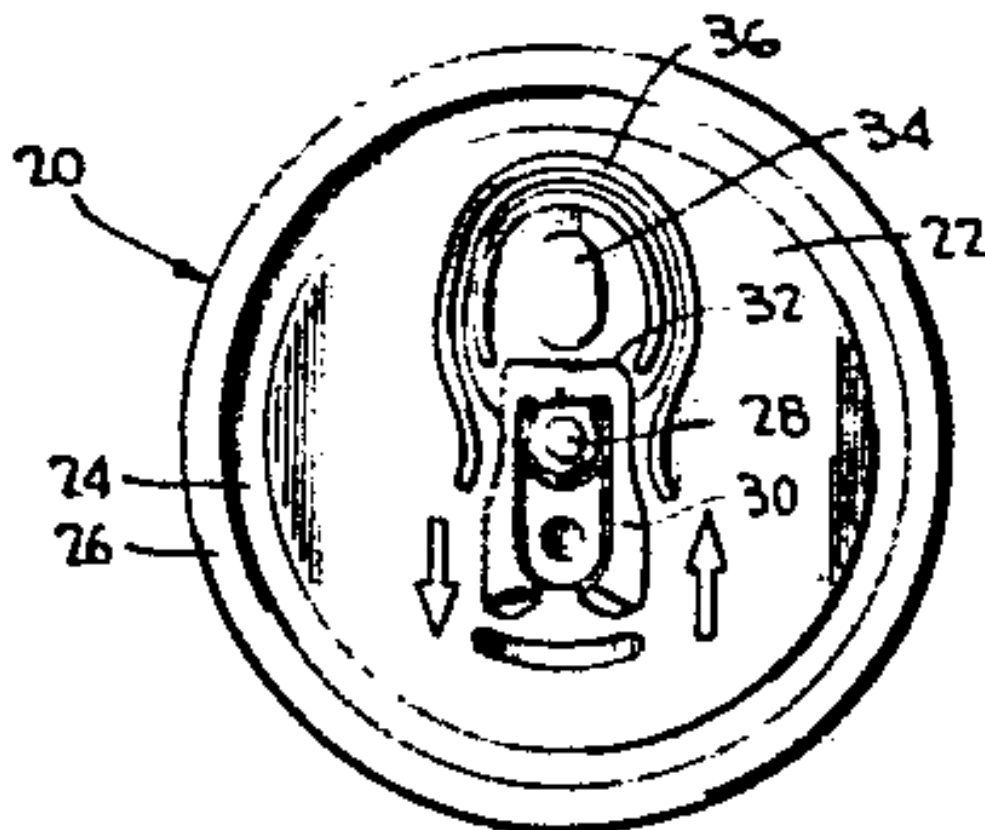
Family 36/100 - FAMPAT - ©Questel

Title

(EP--50713)

Easy opening end unit with tapered score.

Images

FIG. 1**Publication data including kind & date**

US4320850	A	1982-03-23	US4320850
AR225683	A1	1982-04-15	AR-225683
AU7332581	A	1982-04-29	AU8173325
EP0050713	A1	1982-05-05	EP--50713
GB2085836	A	1982-05-06	GB2085836
JPS5774125	U	1982-05-07	JP57074125U
BR8105473	A	1982-09-08	BR8105473
KR830006088	A	1983-09-17	KR19830006088
CA1163933	A	1984-03-20	CA1163933
GR75105	B	1984-07-13	GR--75105

**Abstract**

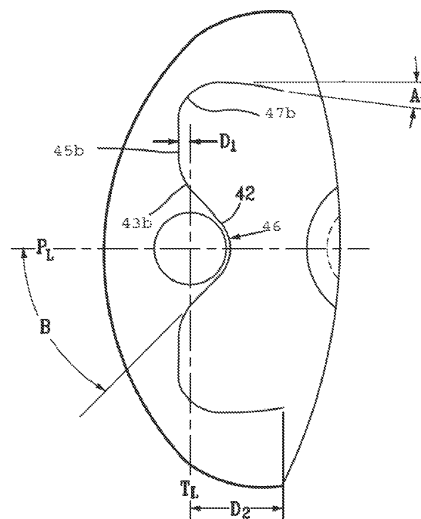
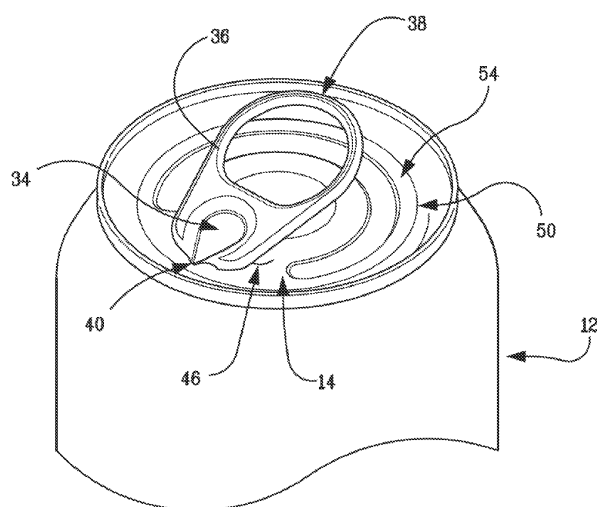
(EP--50713)

In an easy opening end unit (20) for beverage and like liquid containers wherein the opening tab (30) and displaceable panel portion (34) are non-detachable and the displaceable panel portion is pushed into the interior of the associated can, if the required opening force is not maintained constantly uniform, then there is a tendency for a very rapid movement of the opening tab so as to cause the inwardly displaced panel portion to slap the liquid and to agitate the same, frequently to the extent that part of the liquid is splashed out through the newly formed dispensing opening. The opening force can be made more uniform by varying the score residual.

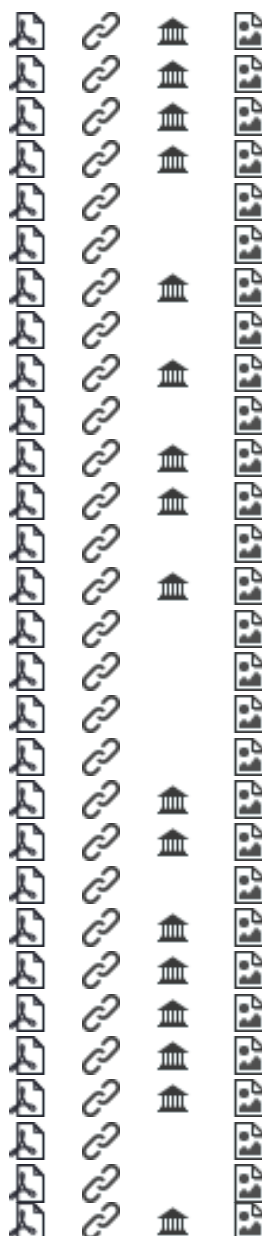
Title

(EP2878547)

Full aperture beverage can end

Images**Publication data including kind & date**

WO2011026900	A1	2011-03-10	WO201126900
CA2772712	A1	2011-03-10	CA2772712
US20110056945	A1	2011-03-10	US20110056945
AU2010291195	A1	2012-03-22	AU2010291195
MX2012002712	A	2012-04-19	MX2012002712
SG178957	A1	2012-04-27	SG-178957
EP2473414	A1	2012-07-11	EP2473414
VN30444	A	2012-07-25	VN--30444
CN102625769	A	2012-08-01	CN102625769
CO6511215	A2	2012-08-31	CO6511215
US20120269934	A1	2012-10-25	US20120269934
BR112012004865	A1	2012-11-06	BR112012004865
ZA201201609	B	2012-11-28	ZA201201609
JP2013503788	A	2013-02-04	JP2013503788
TH121544	A	2013-02-28	TH-121544
TN2012000098	A1	2013-09-19	TN2012000098
RU2012112951	A	2013-10-10	RU2012112951
SG10201405480P	A	2014-10-30	SG10201405480P
US8939308	B2	2015-01-27	US8939308
EP2878547	A1	2015-06-03	EP2878547
RU2558341	C2	2015-07-27	RU2558341
CN102625769	B	2016-01-13	CN102625769B
EP2878547	B1	2016-04-13	EP2878547
ES2575203	T3	2016-06-27	ES2575203
US20160207661	A1	2016-07-21	US20160207661
DK2878547	T3	2016-07-25	DK2878547T
HK1174313	A1	2017-03-17	HK1174313
HUE030328	T2	2017-05-29	HUE030328



US20170190462	A9	2017-07-06	US20170190462
PL2878547	T3	2017-08-31	PL2878547
BR112012004865	A2	2018-06-12	BR112012004865
US10053260	B2	2018-08-21	US10053260

**Abstract**

(EP2878547)

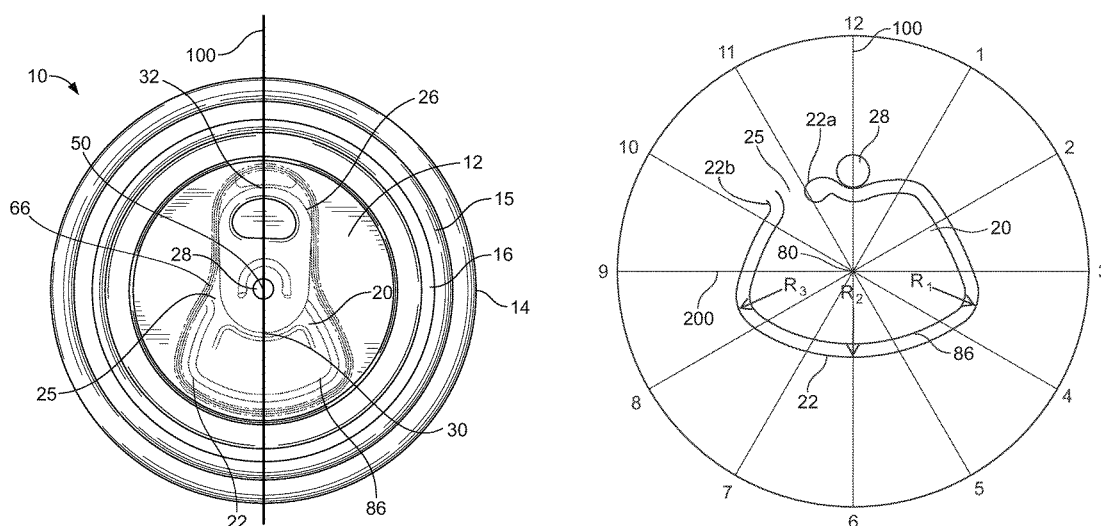
A full aperture beverage end (14) has a centre panel (30), a countersink (22) surrounding the centre panel (30), a main score (50) arranged in proximity to the countersink (22) to define a removeable aperture panel (54) and a vent score (46). The beverage end (14) is adapted for use with products that are pressurised to over 200 kPa when opened and during opening the vent score (46) is adapted to sever first, controlling the pressure differential between the external surface and internal surface of the centre panel (30), thereby allowing the main score (50) to tear in a controlled and reliable manner. The centreline of the main score 50 is located between 0.000 and 0.508 mm (0.020 inches) from the centre (C) of the transition radius (R) between the countersink (22) and the centre panel (30).

Family 38/100 - FAMPAT - ©Questel

Title

(WO201723846)

Beverage can end frangible score geometry

Images**Publication data including kind & date**

US20170029165	A1	2017-02-02	US20170029165
WO2017023846	A1	2017-02-09	WO201723846
US9950832	B2	2018-04-24	US9950832

**Abstract**

(WO201723846)

An ecology stay-on tab beverage can end has a first axis extending through a rivet. A tear panel is defined by a frangible score and a non-frangible hinge that joins a first end of the frangible score with a second end of the frangible score. The first axis forms a line of asymmetry of the tear panel. A second axis intersects the first axis at a right angle. An intersection of the first axis with the second axis defines a center point of a clock-like reference having a 12 o'clock position at the first point and a 6 o'clock position at the second point. A first radius of curvature of the frangible score between a 5 o'clock position and a 7 o'clock position is at least 3.6 times larger than a second radius of curvature between a 7 o'clock position and a 9 o'clock position.

RU2598999	C2	2016-10-10	RU2598999				
AU2012332214	C1	2016-12-22	AU2012332214				
TH159062	A	2017-01-06	TH-159062				
BR112014010657	A2	2017-06-13	BR112014010657				
CA2854320	C	2017-08-08	CA2854320				
CN104364164	B	2017-08-22	CN104364164B				
ZA201403932	B	2017-08-30	ZA201403932				
AU2016201855	B2	2017-09-07	AU2016201855				
ZA201509347	B	2017-11-29	ZA201509347				
ZA201509349	B	2017-11-29	ZA201509349				
RU2638502	C1	2017-12-13	RU2638502				
MX354928	B	2018-03-26	MX-354928				
VN0018878	B	2018-05-25	VN--18878B				
TH67556	B	2019-01-18	TH--67556B				

Abstract

(EP2773572)

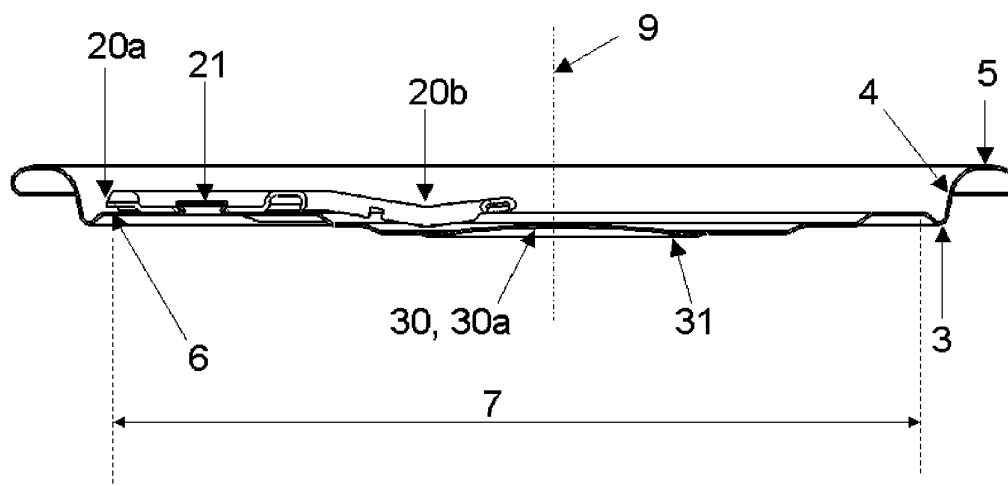
A metallic container end closure is provided that generally comprises a dispensing opening and a vent opening. The vent opening improves pourability through the dispensing opening and provides an alternative option for consuming the contents of the container. The end closure may include features to ease opening of the vent opening, such as stiffeners and/or vent form features. Additionally, the end closure may include various safety features, such as a safety fold. In some configurations, the container end closure does not include a pull tab for opening.

Family 40/100 - FAMPAT - ©Questel

Title

(EP2252522)

Can end

Images**Publication data including kind & date**

WO2009090171	A1	2009-07-23	WO200990171				
CA2711387	A1	2009-07-23	CA2711387				
AU2009204845	A1	2009-07-23	AU2009204845				
MX2010007834	A	2010-08-11	MX2010007834				

EP2252522	A1	2010-11-24	EP2252522				
CN101910008	A	2010-12-08	CN101910008				
MA32079	B1	2011-02-01	MA--32079				
ZA201004581	B	2011-03-30	ZA201004581				
US20110186575	A1	2011-08-04	US20110186575				
RU2010134424	A	2012-02-27	RU2010134424				
CN101910008	B	2012-05-23	CN101910008B				
JP2012515118	A	2012-07-05	JP2012515118				
UA99944	C2	2012-10-25	UA--99944				
RU2486118	C2	2013-06-27	RU2486118				
AU2009204845	B2	2013-11-21	AU2009204845				
JP5520232	B2	2014-04-11	JP5520232				
EP2252522	B1	2015-09-02	EP2252522				
ES2550780	T3	2015-11-12	ES2550780				
US9199763	B2	2015-12-01	US9199763				
CA2711387	C	2016-06-07	CA2711387				
HUE026682	T2	2016-07-28	HUE026682				
BRPI0907216	A1	2017-05-23	BRPI0907216				
BRPI0907216	A2	2019-01-29	BRPI0907216				
BRPI0907216	B1	2019-04-02	BRPI0907216				

Abstract

(EP2252522)

This invention relates to a can end (1) providing improved tab access for a consumer. A further aspect of the present invention relates to a container incorporating such a can end (1). The can end (1) includes a moveable portion (30) located beneath all or part of the handle (20b) of the can end, with the moveable portion deformable from an 'up' position (30a) to a 'down' position (30b) to provide increased tab access for a consumer. The can end (1) is provided with one or more downwardly inclined annular steps (31), which has been found to greatly increase the force required to deform the panel from the 'down' to the 'up' position, therefore resulting in a far greater likelihood of the consumer receiving a container (40) incorporating the can end (1) with the moveable portion (30) in the 'down' position (30b), thereby facilitating tab access.

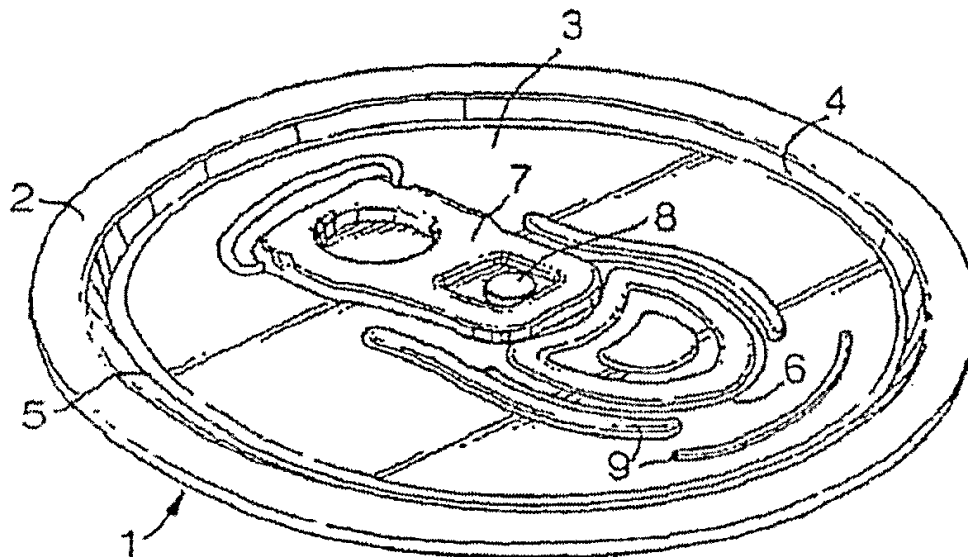
Family 41/100 - FAMPAT - ©Questel

Title

(US8851323)

Can end

Images



Publication data including kind & date

US20100044383	A1	2010-02-25	US20100044383
US8157119	B2	2012-04-17	US8157119
US20120175376	A1	2012-07-12	US20120175376
US8496132	B2	2013-07-30	US8496132
US20130306658	A1	2013-11-21	US20130306658
US8851323	B2	2014-10-07	US8851323



Abstract

(US8851323)

A can end having a countersink bead, an inclined chuck wall and a strong seam, resists distortion from its circular profile when subjected to thermal processing or when packaging carbonated beverages. This high hoop strength affects the manner in which the can end ultimately fails when placed under extreme abuse conditions, even if buckle pressure performance is within industry specified standards. The can end of the invention has control features introduced which control the failure mode while maintaining specified buckle pressure performance. In one embodiment, the can end has a two part wall and a control feature that comprises expansion of the countersink bead to act as a trigger for local peaking, together with a groove in the chuck wall which prevents the peaking force from being concentrated at a single point which could result in leaking by the production of a pin hole.

Family 42/100 - FAMPAT - ©Questel

Title

(EP3366601)

Can lid

Images

[EP3366601](#)

A1 2018-08-29 EP3366601

Abstract

(EP3366601)

A can lid 300 comprising: - a panel 400 attached to an aperture of a can barrel; - a tab 500 including one end section 505 and other end section 510, a portion of which positioned between the one end section and the other end section being fastened to the panel by a rivet 900, and pressing a predetermined pressed location of the panel with the other end section; and - a score line 440 formed on the panel, which includes a first portion 440A that passes one side 581 of the tab to head toward the one end section 505 side of the tab, a second portion 440B that passes other side 582 of the tab to head toward the one end section 505 side of the tab, and a third portion 440C that is formed to connect the first portion 440A and the second portion 440B and passes outside of an outer peripheral edge of the tab on the other end section 510 side of the tab, - wherein each of the first portion 440A and the second portion 440B heading toward the one end section 505 side is formed to reach any of a location beyond the one end section 505, a location where the one end section 505 is positioned, and a location positioned beside the one end section 505.

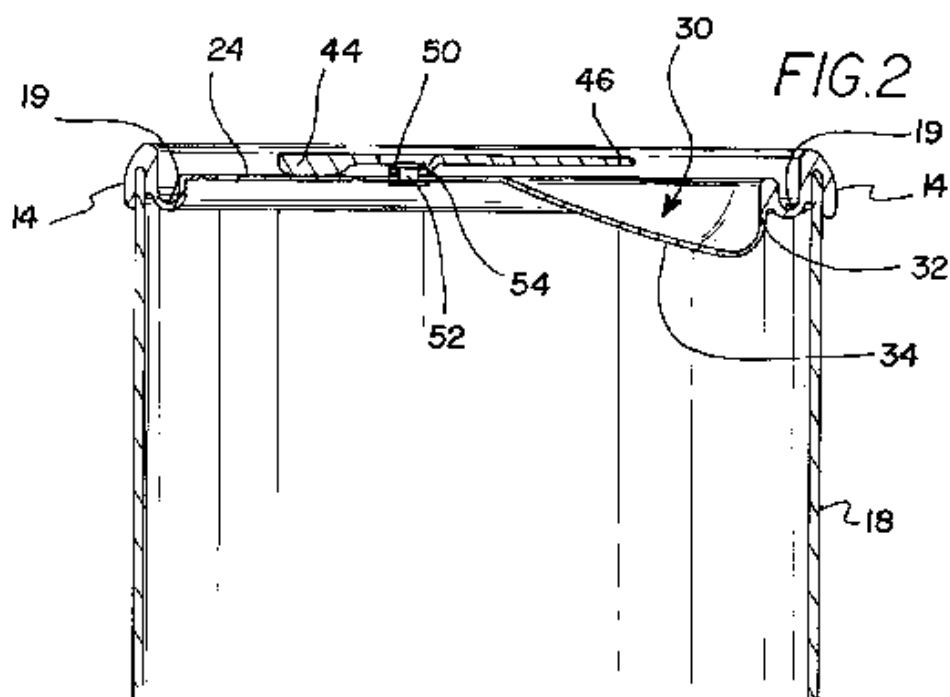
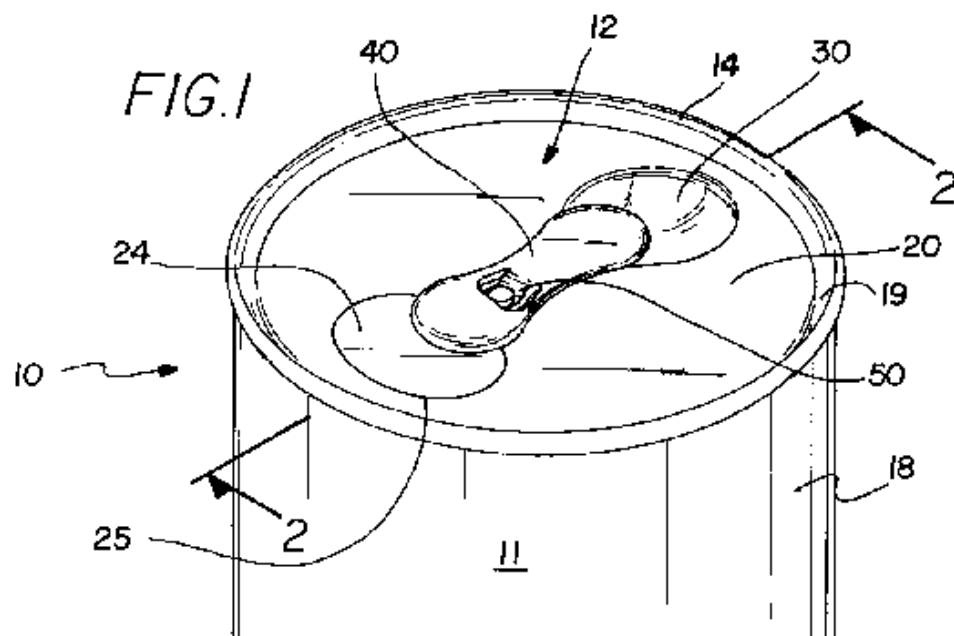
Family 43/100 - FAMPAT - ©Questel

Title

(US6138856)

Container end closure

Images



Publication data including kind & date

[US6138856](#)

A 2000-10-31 US6138856



Abstract

(US6138856)

A container end closure for facilitating the opening of a pressurized container. The container end closure includes a non-detachable tab having a bulbous end proximate a frangible section of the end closure and a recess in the end closure proximate an opposite end of the tab.

Family 44/100 - FAMPAT - ©Questel

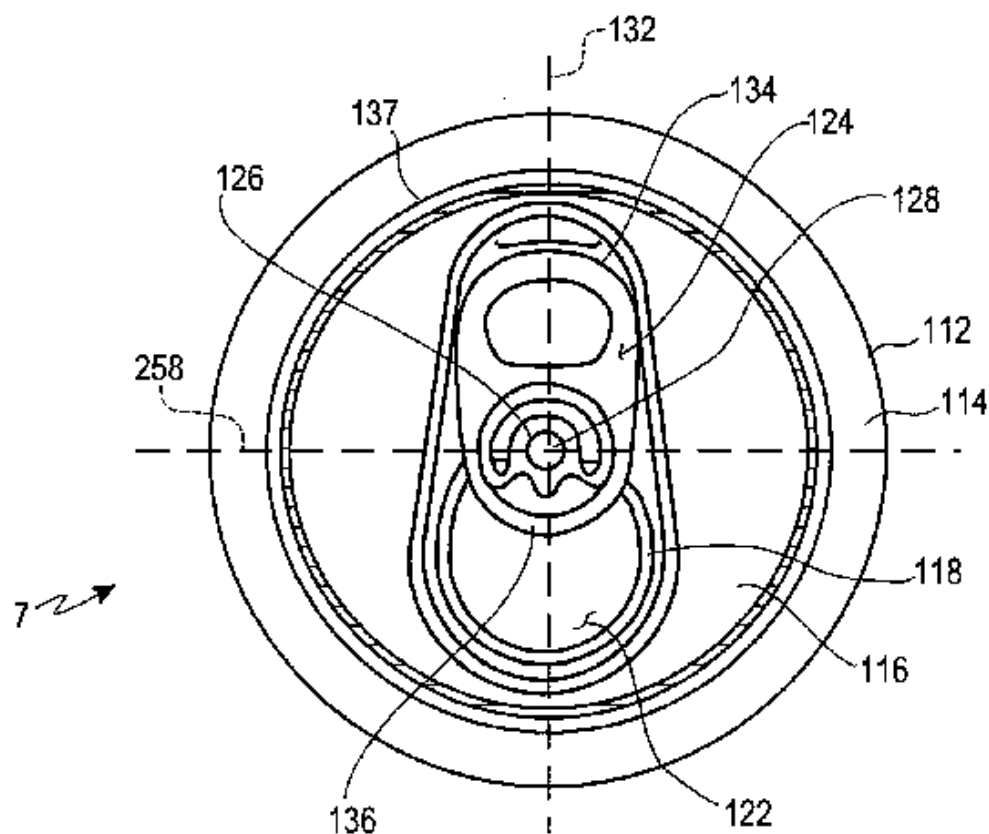
Title

(US6079583)

Vented container end apparatus and method

Images

FIG. 1
Prior Art

**Publication data including kind & date**[US6079583](#)

A

2000-06-27

US6079583

**Abstract**

(US6079583)

A container end is provided so that upon opening, a generally triangular vent region is formed with an apex pointing rearwardly toward the head space to vent the container, e.g. during pouring. A container is provided that achieves a fast and smooth pour with a relatively small increase (relative to certain previous configurations) in the opening area and achieves a superior pour without increased bursting, buckling or opening failures associated with relatively larger openings.

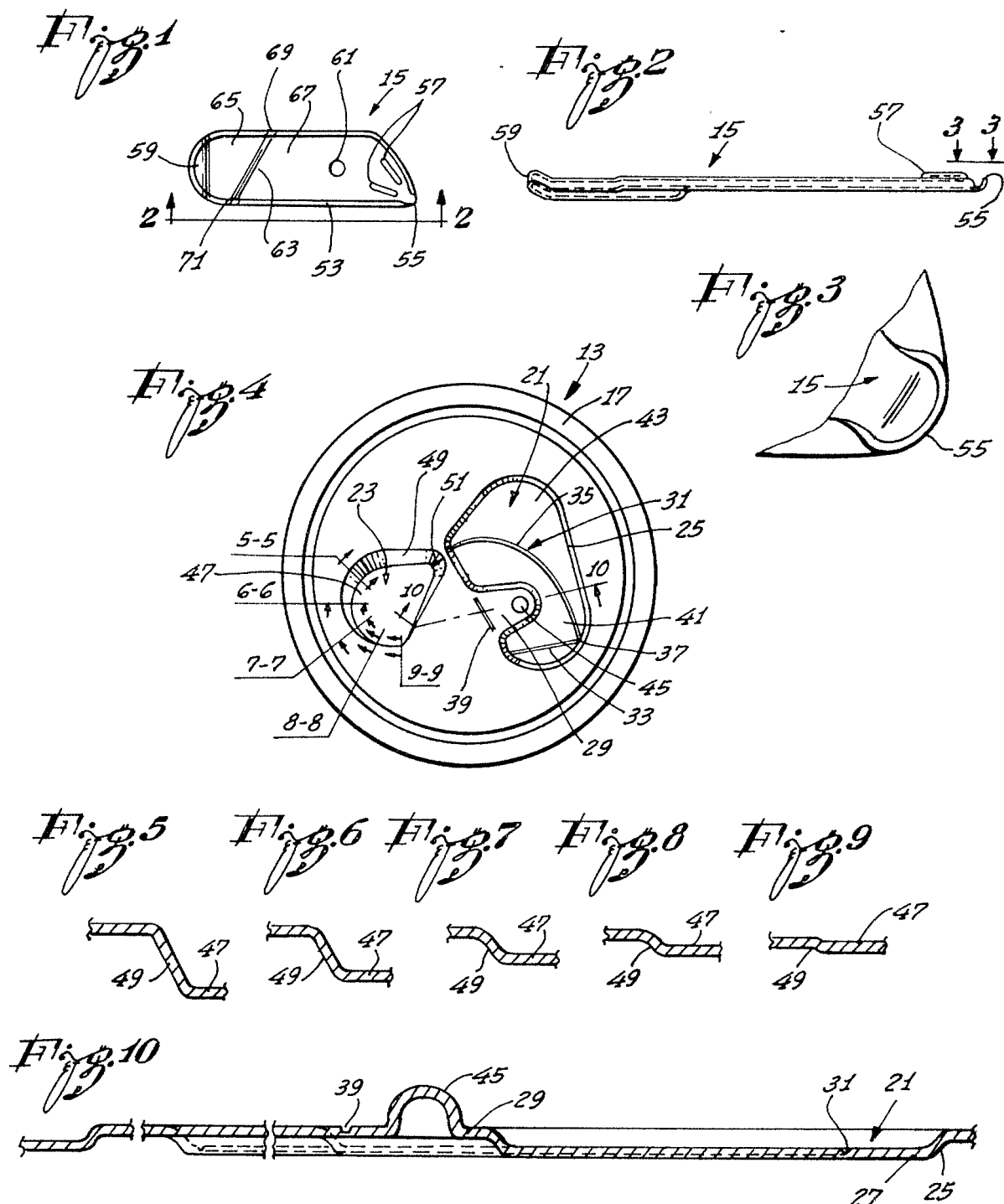
Title

(US3744667)

Can end with retained tear strip

Images

SHEET 1 OF 4



Publication data including kind & date

US3744667

A 1973-07-10 US3744667



Abstract

(US3744667)

An easy opening container wall comprising a container wall of sheet material which is weakened in a preselected zone to define a wall segment bendable inwardly of the container wall about a bend line and a tab attached to the container wall for bending the wall segment inwardly. The tab can be pivoted through approximately 180 (degree) to thereby bend the wall

[BRPI0316736](#)

A2 2014-03-05 BR200316736

[BRPI0316736](#)

B1 2015-05-12 BR200316736

**Abstract**

(EP1601580)

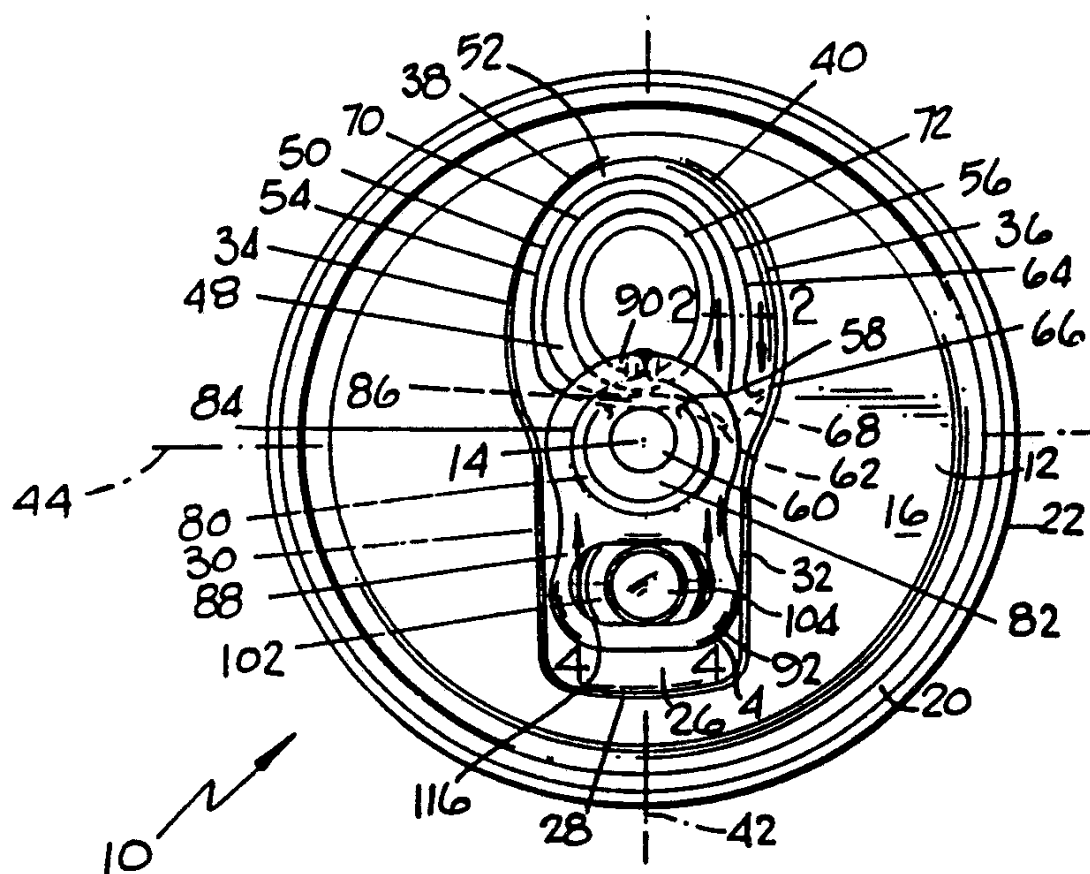
An ecology end member (10) for a beverage container (8) has a central panel wall (12) with a product side, a public side, and an outer peripheral edge (18). A non-detachable tab (32) is secured to the public side of the central panel wall (12) by a rivet (34). A displaceable tear panel (20) is located in the central panel wall (12) adjacent the rivet (34). The tear panel (20) is defined by a frangible score (22) and a non-frangible hinge segment (24). The frangible score (22) has a tear panel geometry with an outer periphery defined by a curvilinear score length. The tear panel geometry is asymmetrically skewed having a large radius of score curvature (RQT.) in a first outer quadrant (44, 46) of the tear panel (20) to provide low resistance to opening the tear panel (20) at the large radius (RQT).

Family 47/100 - FAMPAT - ©Questel

Title

(EP-502985)

Container end member

Images**Publication data including kind & date**[US5011037](#)

A 1991-04-30 US5011037

[CA2067346](#)

A1 1991-05-31 CA2067346

[WO9108143](#)

A1 1991-06-13 WO9108143

[EP0502985](#)

A1 1992-09-16 EP-502985

[JPH05504318](#)

A 1993-07-08 JP05504318

[EP0502985](#)

A4 1993-08-18 EP-502985

[US5307947](#)

A 1994-05-03 US5307947

[CA2067346](#)

C 2001-04-03 CA2067346



Abstract

(EP-502985)

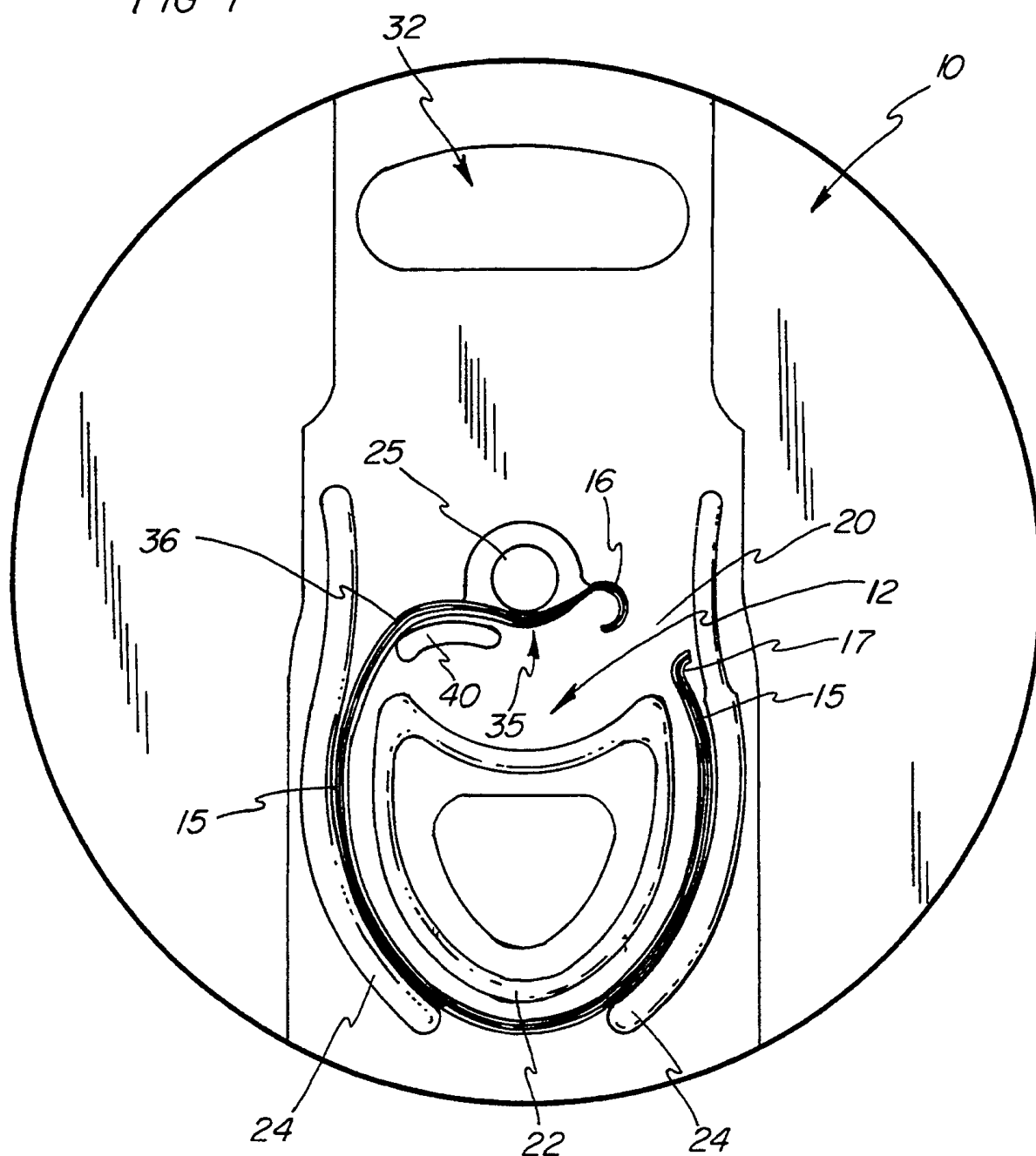
A container end member (10) is provided and has a first severable tab portion (48) which is defined by a score line groove (50) and has an integral hinge portion (68) for permanently securing it to the container end member and a force applying tab portion (90) permanently pivotally mounted on the container end member and used to apply a force on the first severable tab portion to form a pour opening in the container end member and a second severable tab portion (102) having an integral hinge portion (108) for permanently securing it to the container end member and having a raised surface (104) projecting outwardly from the container end member so that a force may be applied thereto to sever the second severable tab portion and form a vent opening in the container end member.

Family 48/100 - FAMPAT - ©Questel

Title

(EP-621195)

Easy-open container end

Images*FIG - 1*

CA2121205	A1	1994-10-22	CA2121205
EP0621195	A2	1994-10-26	EP-621195
AU6051394	A	1994-10-27	AU9460513
JP06321238	A	1994-11-22	JP06321238
US5375729	A	1994-12-27	US5375729
EP0621195	A3	1995-04-26	EP-621195
TW271425	B	1996-03-01	TW-271425
ZA9402546	B	1996-05-13	ZA9402546
EP0621195	B1	1998-09-16	EP-621195
AT171134	T	1998-10-15	ATE171134
DE69413286	D1	1998-10-22	DE69413286
DE69413286	T2	1999-05-06	DE69413286
JP3578797	B2	2004-07-23	JP3578797



Abstract

(EP-621195)

The invention, relating to an easy-open metal container end, places a portion of the metal of the tear panel (12), in the region where a score stop otherwise would be located, under compression by forming a short coined depression or bead (40) in the tear panel, preferably in the public side, close to the score line (15) at least at the end of the vent region (35) opposite from the inner hook (16), which is located at the radially inward end of the tear panel score line. During initial opening or venting action, as the rivet (25) is lifted by initial tab motion, separation proceeds along the score line, beneath the nose (28) of the tab (27). The metal adjacent and in this coined depression tends to move partially underneath the metal on the opposite side of the score line from the coined vent bead. This action provides sufficient disruption or retarding of the score line separation or rupture, during venting, to confine such separation to the vent region until internal pressure is vented. Further separation of the tear panel can proceed under control of continued raising tab motion and resulting opening force. By providing such a coined vent bead, the score stop may be made considerable less deep leaving adequate residual metal along score line (15), or the score stop can be entirely eliminated in some cases, thereby making it possible to achieve consistent and proper venting in ends made of thinner metals, e.g. in the order of 0.009--0.008 inch.

Family 49/100 - FAMPAT - ©Questel

Title

(FR2293369)

END WALL HAS RAPID OPENING OF CONTAINER

Images

ZEICHNUNGEN BLATT 1

Nummer: 25 53 835
 Int. Cl.2: B 65 D 17/24
 Bekanntmachungstag: 14. Februar 1980

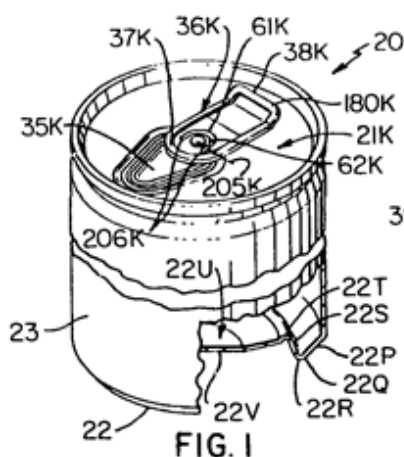


FIG. 1

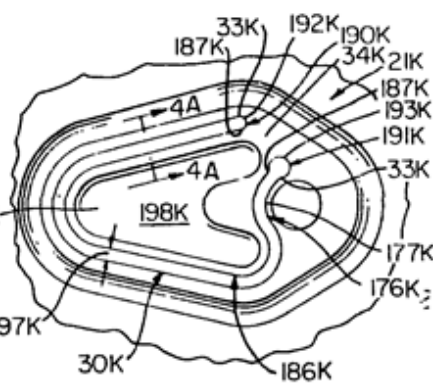


FIG. 4

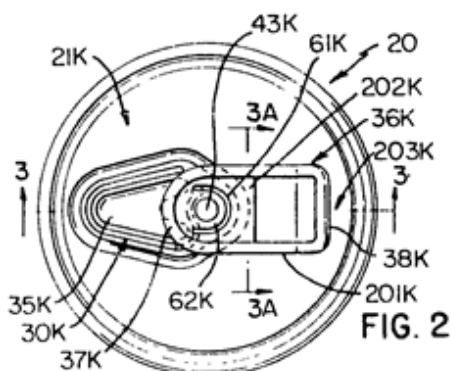


FIG. 2

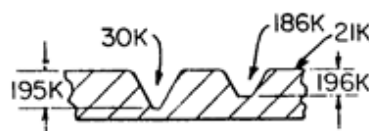


FIG. 4A

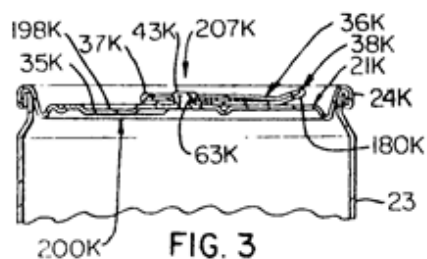


FIG. 3

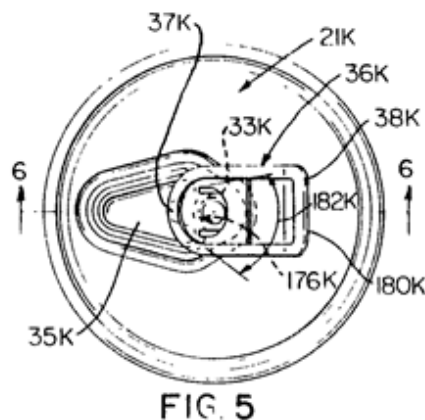


FIG. 5

Publication data including kind & date

DE2553835	A1	1976-06-10	DE2553835
FR2293369	A1	1976-07-02	FR2293369
JPS5182188	A	1976-07-19	JP51082188
AU8720575	A	1977-06-09	AU7587205
BR7602984	A	1977-11-16	BR7602984
CA1034520	A	1978-07-11	CA1034520
GB1540229	A	1979-02-07	GB1540229
AU498737	B2	1979-03-22	AU-498737
DE2553835	B2	1980-02-14	DE2553835
FR2293369	B1	1980-04-11	FR2293369
HK4482	A	1982-02-12	HK8200044
IT1060391	B	1982-07-10	IT1060391
JPS5742544	B2	1982-09-09	JP82042544



JP1150186

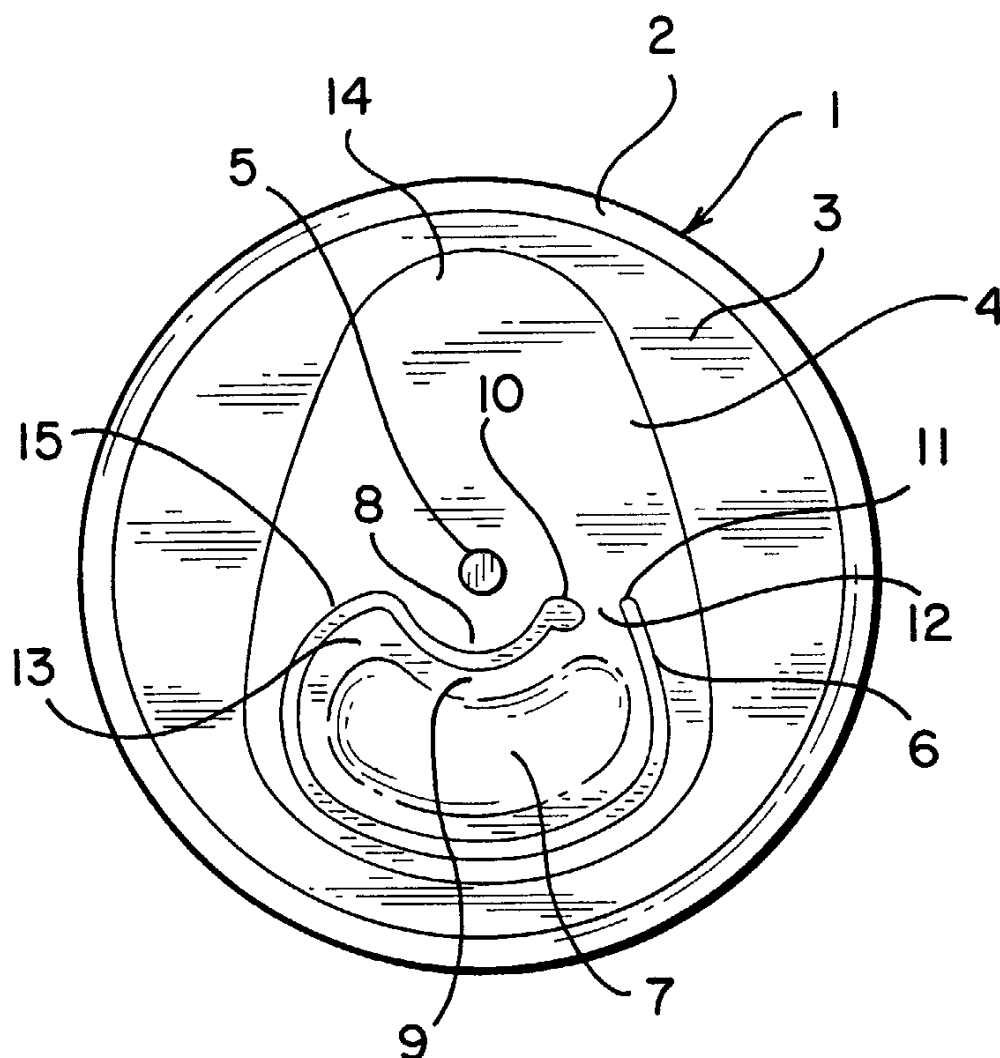
C 1983-06-14 JP1150186

Family 50/100 - FAMPAT - ©Questel

Title

(EP1194337)

Beverage can lid with easy opening feature

Images**Publication data including kind & date**

WO200069735	A1	2000-11-23	WO200069735
AU5587600	A	2000-12-05	AU200055876
EP1194337	A1	2002-04-10	EP1194337
EP1194337	A4	2004-12-15	EP1194337

**Abstract**

(EP1194337)

A beverage can lid (1) has a scored portion (7), a pull tab (18), a rivet (5) and an initial contact point (9). The contact point (9) is positioned in close proximity to the rivet (5) to minimize the required lifting force of the pull tab (18). The puncture point (8) of the lid is also positioned in close proximity to the initial contact point (9). The pivot line (12) of the scored portion is also positioned in close proximity to the contact point (9). This reduces the amount of force necessary to open the container which allows the pull tab (18) to be formed from thinner gauge metal and to allow the size of the pull tab to be decreased.

SA3933	B1	2015-03-09	SA---3933				
ZA201209642	B	2015-07-29	ZA201209642				
AU2011264511	B2	2015-12-10	AU2011264511				
JP5921532	B2	2016-04-22	JP5921532				
EP2580135	B1	2016-09-21	EP2580135				
BR112012031527	A2	2016-11-08	BR112012031527				
DK2580135	T3	2017-01-16	DK2580135T				
CN103221314	B	2017-03-01	CN103221314B				
ES2607602	T3	2017-04-03	ES2607602				
HUE031011	T2	2017-06-28	HUE031011				
PL2580135	T3	2017-08-31	PL2580135				
VN0017605	B	2017-11-27	VN--17605B				
MY164637	A	2018-01-30	MY-164637				
JO3214	B1	2018-03-08	JO---3214				
CA2802053	C	2018-03-14	CA2802053				

Abstract

(EP2580135)

A vent score lacks features to arrest score propagation. Rather encourages fast score propagation upon initial rupture. Venting is achieved through a flap configuration formed by the vent score.

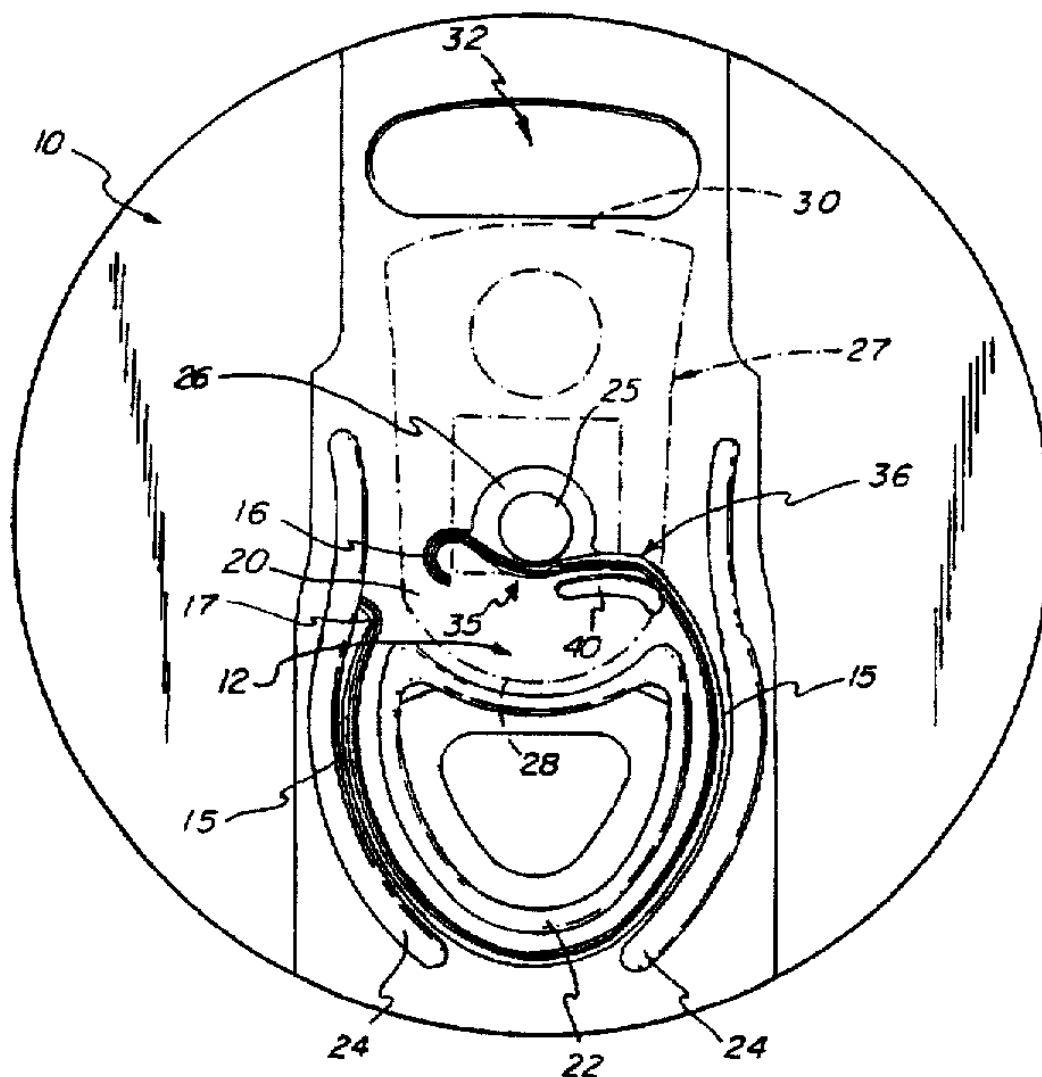
Family 52/100 - FAMPAT - ©Questel

Title

(US5860553)

Easy-open container end

Images



Publication data including kind & date

US5692636	A	1997-12-02	US5692636
US5860553	A	1999-01-19	US5860553



Abstract

(US5860553)

The invention, relating to an easy-open metal container end, places a portion of the metal of the tear panel (12), in the region where a score stop otherwise would be located, under compression by forming a short coined depression or bead (40) in the tear panel, preferably in the public side, close to the score line (15) at least at the end of the vent region (35) opposite from the inner hook (16), which is located at the radially inward end of the tear panel score line. During initial opening or venting action, as the rivet (25) is lifted by initial tab motion, separation proceeds along the score line, beneath the nose (28) of the tab (27). The metal adjacent and in this coined depression tends to move partially underneath the metal on the opposite side of the score line from the coined vent bead. This action provides sufficient disruption or retarding of the score line separation or rupture, during venting, to confine such separation to the vent region until internal pressure is vented. Further separation of the tear panel can proceed under control of continued raising tab motion and resulting opening force. By providing such a coined vent bead, the score stop may be made considerable less deep leaving adequate residual metal along score line (15), or the score stop can be entirely eliminated in some cases, thereby making it possible to achieve consistent and proper venting in ends made of thinner metals, e.g. in the order of 0.009-0.008 inch.

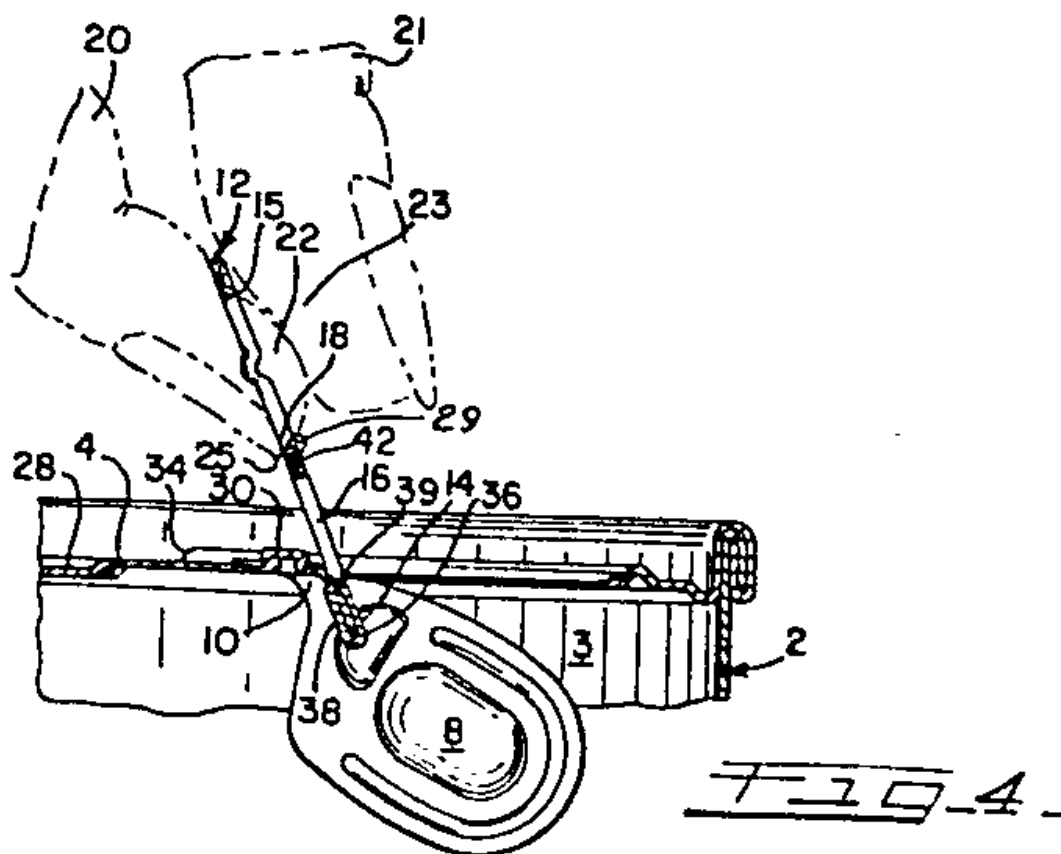
Family 53/100 - FAMPAT - ©Questel

Title

(EP--27340)

Easy opening container.

Images



Publication data including kind & date

IL61249	A	1980-12-31	IL--61249
BR8006524	A	1981-04-14	BR8006524
AU6264680	A	1981-04-16	AU8062646
EP0027340	A1	1981-04-22	EP--27340
JPS5656734	U	1981-05-16	JP56056734U
US4276993	A	1981-07-07	US4276993
ZA8006110	B	1981-08-26	ZA8006110
AR226076	A1	1982-05-31	AR-226076
GR69991	B	1982-07-23	GR--69991
CA1130227	A	1982-08-24	CA1130227
JPS6340439	Y2	1988-10-21	JP63040439Y



Abstract

(EP--27340)

An easy opening container (2) having an end panel (4) with push-in section and a non-detachable tab (12) secured to the end panel and formed with a uniquely shaped lift end portion having an aperture therein sufficient to admit the nodes of the user's grasping fingers (20, 21) but of a size less than would permit inserting a finger therethrough and the novel construction of the tab and presenting a finger placement limiting edge which is adapted to position the fingers of the user such as to prevent the user's fingernail (25) from being broken in attempting to open said container (2).

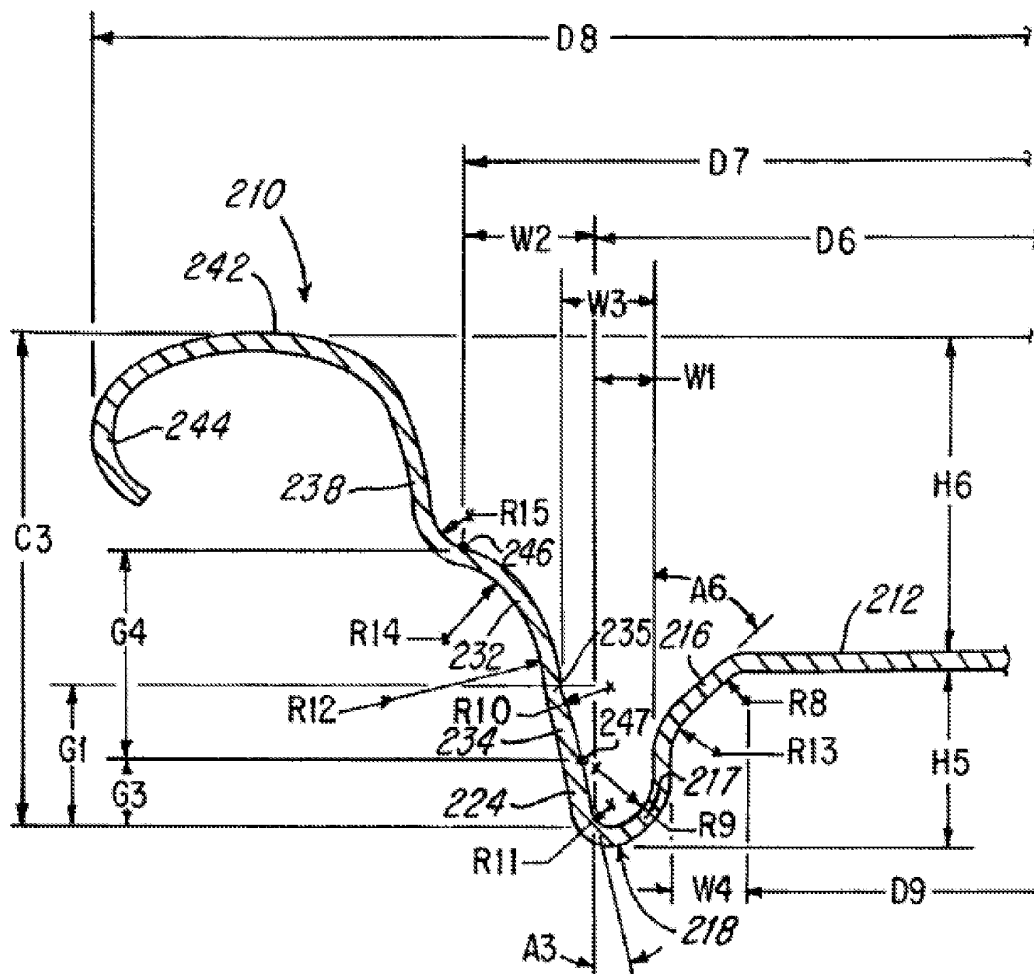
Family 54/100 - FAMPAT - ©Questel

Title

(US9771177)

Can shell and double-seamed can end closure

Images



Publication data including kind & date

US20110031256	A1	2011-02-10	US20110031256
US8313004	B2	2012-11-20	US8313004
US20130175280	A1	2013-07-11	US20130175280
US8931660	B2	2015-01-13	US8931660
US20150122829	A1	2015-05-07	US20150122829
US9371152	B2	2016-06-21	US9371152
US20160264288	A1	2016-09-15	US20160264288
US20160297564	A1	2016-10-13	US20160297564
US9771177	B2	2017-09-26	US9771177
US20170341807	A1	2017-11-30	US20170341807
US20180127145	A1	2018-05-10	US20180127145
US10246217	B2	2019-04-02	US10246217



Abstract

(US9771177)

A drawn aluminum can shell has a peripheral crown which is double-seamed with an end portion of an aluminum can body to provide a can end having a generally flat center panel connected by an inclined curved or straight panel wall to an inner wall of an annular U-shaped countersink. The countersink has an outer wall which connects with a lower wall portion of a chuck wall, and the chuck wall has an upper wall portion which connects with an inner wall of the crown. The chuck wall

also has an intermediate wall portion forming a break, and the inner bottom width of the countersink is less than the radial width of the panel wall.

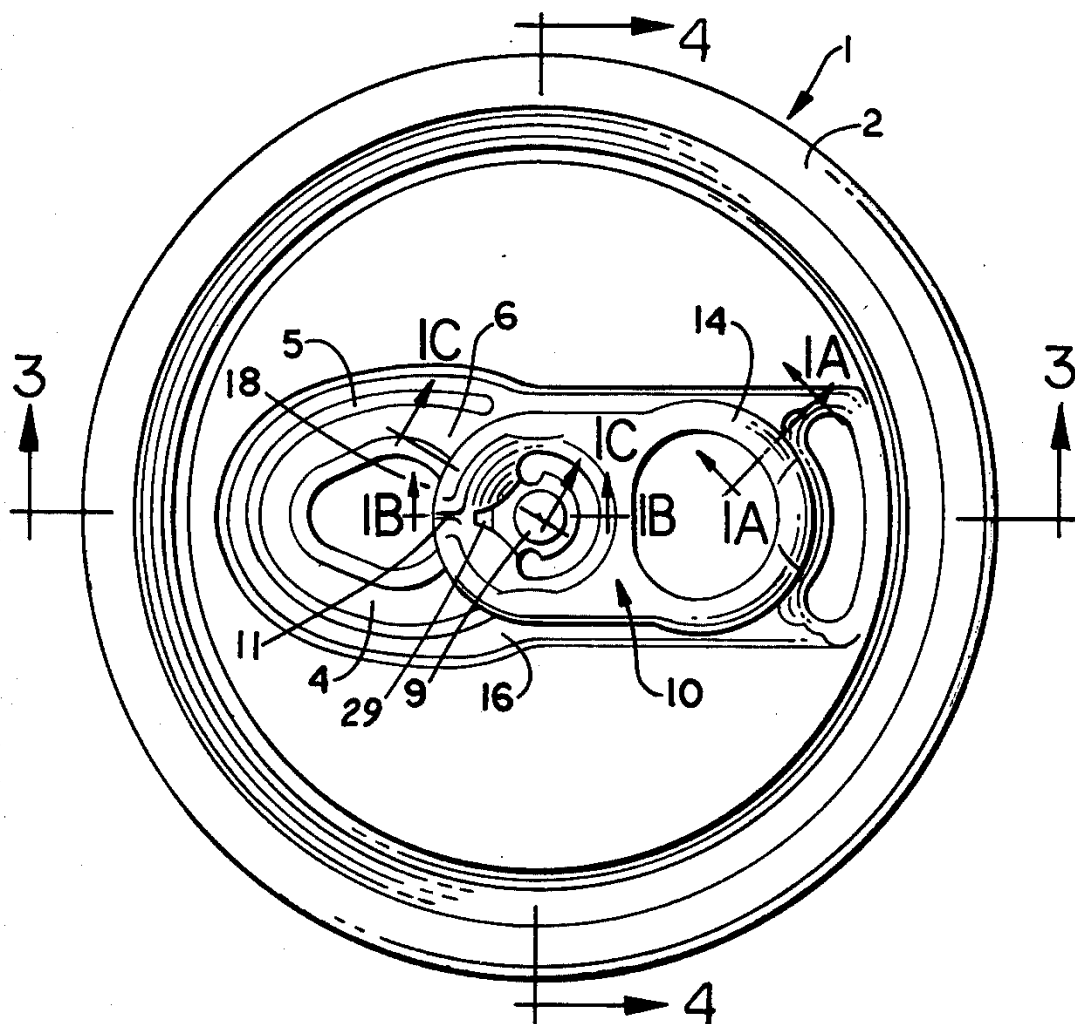
Family 55/100 - FAMPAT - ©Questel

Title

(US4530631)

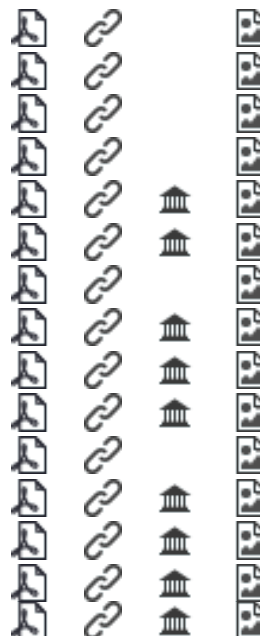
Pull tab for easy open can end-method of manufacture thereof

Images



Publication data including kind & date

DK159284	D0	1984-03-19	DK8401592
SE8401659	D0	1984-03-26	SE8401659
GB8407981	D0	1984-05-10	GB8407981
IT8467648	D0	1984-06-26	IT8467648
US4465204	A	1984-08-14	US4465204
BE899515	A	1984-08-16	BE-899515
SE8401659	L	1985-01-14	SE8401659
DK159284	A	1985-01-14	DK8401592
AU2629284	A	1985-01-17	AU8426292
DE3415643	A1	1985-01-24	DE3415643
NL8400872	A	1985-02-01	NL8400872
JPS6023145	A	1985-02-05	JP60023145
GB2143202	A	1985-02-06	GB2143202
FR2550767	A1	1985-02-22	FR2550767



BR8402027	A	1985-03-26	BR8402027				
US4530631	A	1985-07-23	US4530631				
CA1208145	A	1986-07-22	CA1208145				
GB2143202	B	1987-05-13	GB2143202				
AU562930	B2	1987-06-25	AU-562930				
IT1178985	B	1987-09-16	IT1178985				
CH664539	A5	1988-03-15	CH-664539				
FR2550767	B1	1988-07-01	FR2550767				
MX160925	A	1990-06-19	MX-160925				
DK161762	B	1991-08-12	DK-161762				
DK161762	C	1992-01-27	DK-161762C				
JPH0659897	B2	1994-08-10	JP94059897				
NL192736	B	1997-09-01	NL-192736				
NL192736	C	1998-01-06	NL-192736				

Abstract

(US4530631)

An easy open can end having a retained tear strip extending diametrically partly across the can end defined by a score line, and a graspable pull tab adjacent and outside the open end of the score line. The pull tab is provided with a nose portion to initiate a tear along the score line upon lifting of the pull tab. The edges of the nose portion are curled into a cylindrical cross-sectional shape to provide a high beam strength and to rigidize the nose portion and to prevent failure by bending before the tear strip is opened. A method for manufacture of the pull tab includes forming at least one relief notch in the peripheral edge of the pull tab blank at the nose end thereof, whereby to relieve compressive forces when the edge is curled, and curling the peripheral edge of the nose portion in successive steps to form an edge portion of continuous cylindrical cross-sectional shape.

Family 56/100 - FAMPAT - ©Questel

Title

(EP-683746)

Container end closure.

Images

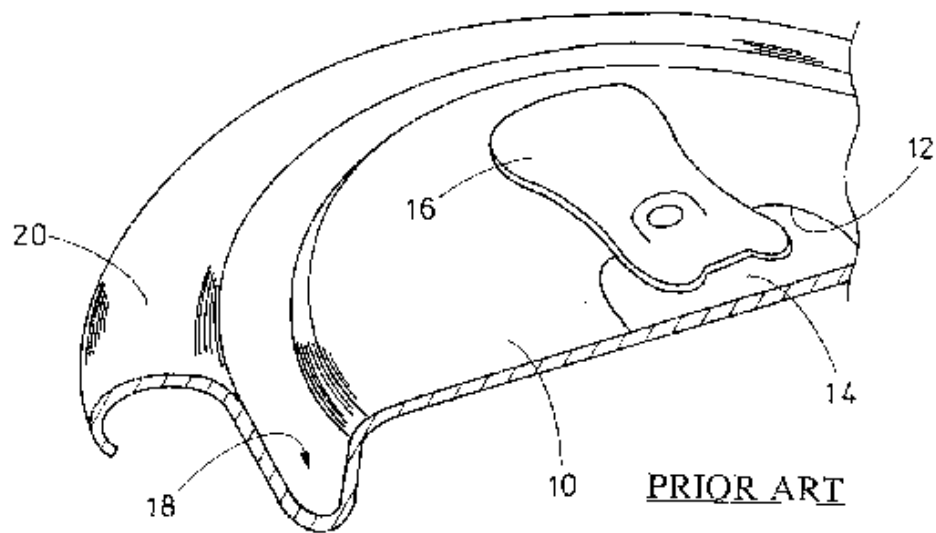


FIG. 1

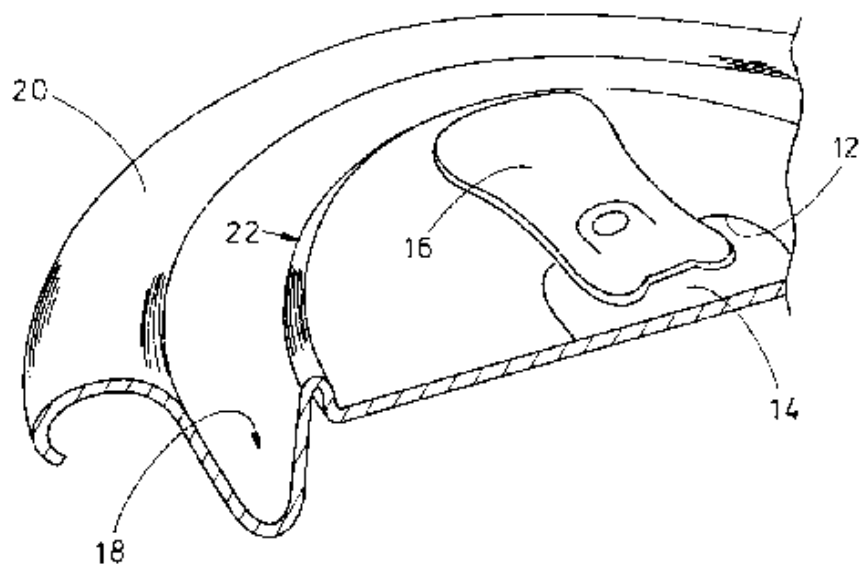


FIG. 2

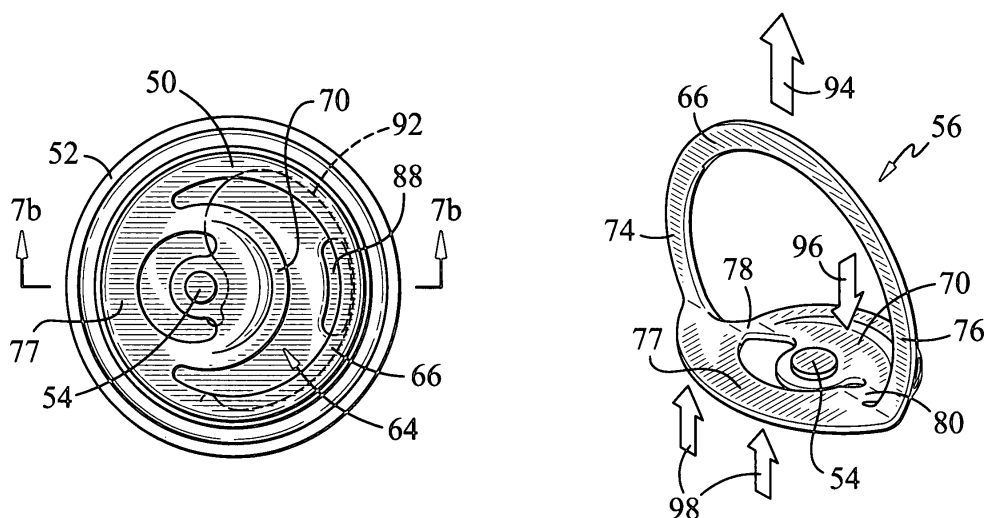
Publication data including kind & date

WO9419246	A2	1994-09-01	WO9419246
AU6040894	A	1994-09-14	AU9460408
WO9419246	A3	1994-10-13	WO9419246
EP0683746	A1	1995-11-29	EP-683746
KR19960700937	A	1996-02-24	KR19967000937
CN1118150	A	1996-03-06	CN1118150
JPH08506786	A	1996-07-23	JP08506786
AU687378	B2	1998-02-26	AU-687378
CN1041188	C	1998-12-16	CN1041188C
US5950858	A	1999-09-14	US5950858



(EP2076445)

Beverage container construction

Images**Publication data including kind & date**

US20080099480	A1	2008-05-01	US20080099480
WO2008057207	A2	2008-05-15	WO200857207
WO2008057207	A3	2008-08-21	WO200857207
EP2076445	A2	2009-07-08	EP2076445
CN101568474	A	2009-10-28	CN101568474
US8109406	B2	2012-02-07	US8109406
CN101568474	B	2012-05-02	CN101568474B

**Abstract**

(EP2076445)

A beverage container (10) includes a can body (12) having a side wall, a neck portion (16) of reduced diameter, a closure lid (14) and an anchor structure (18) on the closure lid (14). The anchor structure (18) is offset with respect to the center of the closure lid (14). A pull tab (20) has a mounting hole (32) which fits onto the anchor structure (18). One end of the pull tab (20) has a grip handle (26), and the other end has a puncturing nose (28). The pull tab (20) is turnable on the anchor structure (18), and thus also turnable with respect to the closure lid (14). The pull tab (20) just fits between the opposite locations of a peripheral groove (24) on the closure lid (14).

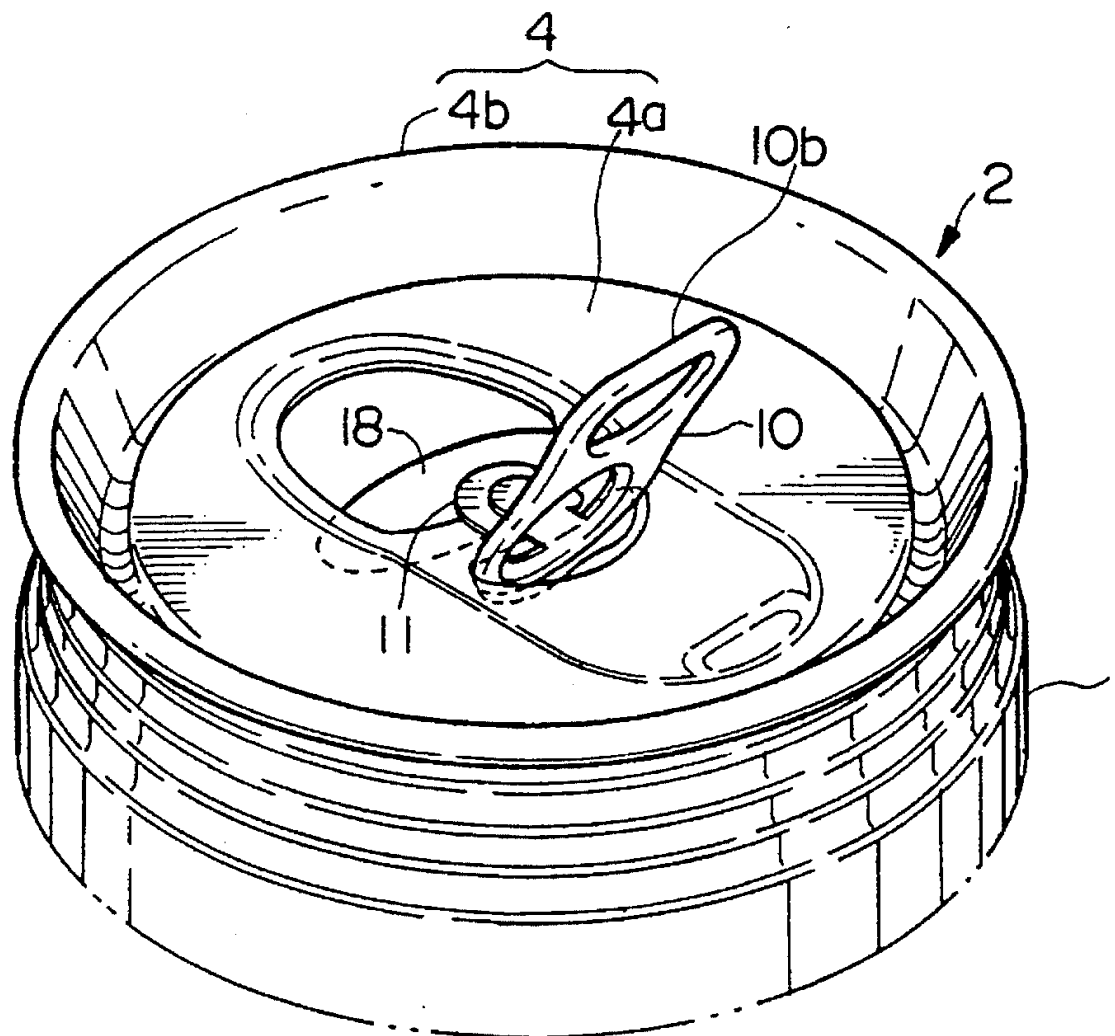
Family 59/100 - FAMPAT - ©Questel

Title

(US5494184)

Can top with an overturnable tab

Images



Publication data including kind & date

GB2280165	A8	0	GB2280165
GB9413061	D0	1994-08-17	GB9413061
JP07017540	A	1995-01-20	JP07017540
GB2280165	A	1995-01-25	GB2280165
US5494184	A	1996-02-27	US5494184
GB2280165	B	1997-02-05	GB2280165
JP3468548	B2	2003-11-17	JP3468548



Abstract

(US5494184)

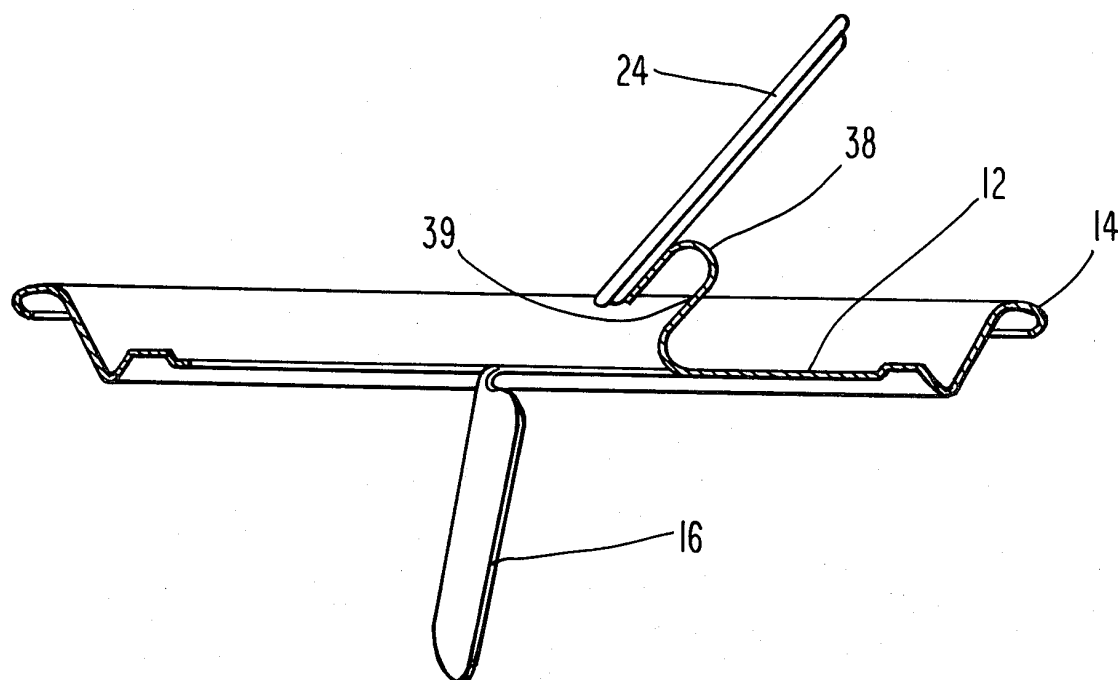
A can top end includes a disc-shaped panel having a disc-shaped flat section an outer periphery to be engaged with an upper end of a can body, and a stay-on type tab attached on the flat section of the panel. The disk-shaped flat section has a primary score to define a primary scored portion surrounded by the primary score and the flat section further includes a secondary score to define a secondary scored portion surrounded by the secondary score. The tab has a connecting portion rotatably connected to a center portion of the flat section around an axis perpendicular to the flat section and the tab has both a pull-up end and a push-down end. The primary scored portion is located below the push-down end of the tab to enable the primary scored portion to be opened by pulling up the pull-up end of the tab. The secondary scored portion is located at a position facing the push-down end of the tab when the tab is rotated to a predetermined angle from an initial position, so that the secondary scored portion is opened by pulling up the pull-up end of the tab.

Family 60/100 - FAMPAT - ©Questel

Title

(EP--80775)

Container closure

Images**Publication data including kind & date**

EP0080775	A2	1983-06-08	EP--80775
US4387827	A	1983-06-14	US4387827
ZA8207686	B	1983-08-31	ZA8207686
US4402421	A	1983-09-06	US4402421
EP0080775	A3	1983-09-07	EP--80775
CA1195267	A	1985-10-15	CA1195267

**Abstract**

(EP--80775)

An improved easy opening container end is disclosed of the type wherein an opening tab is attached to a wall of a can end closure at a fulcrum adjacent a primary score line. The primary score line circumscribes a pour opening panel except at a hinge area. The forward portion of the opening tab is adapted to depress the pour opening panel into the container to expose a pour opening when the opening tab is pivoted about the fulcrum. The opening tab is attached to the wall by means of a rivet. One secondary score line intersects with the primary score line and projects away from the pour opening panel on one side of the rivet and another secondary score line, also intersects with the primary score line, and projects away from the pour opening panel on the other side of the rivet. In this manner, after the primary score line is severed and the pour opening panel is depressed, the opening tab may be retracted from the vicinity of the pour opening panel by severing the secondary score line so as to provide easy removal of the contents of the container and to expose an underportion of the wall for the reading of promotional indicia. In another embodiment, a region of the wall contiguous with the pour opening panel and further defined by a secondary score line may be provided such that after depression of the pour opening panel, the pour opening panel, and the region attached thereto by means of a hinge area may be severed from the container end along with the opening tab.

Family 61/100 - FAMPAT - ©Questel

Title

(EP-432659)

Easy openable cover of sheet, especially sheet metal

Images

Abstract

(EP-432659)

An easily openable cover 1 of sheet metal, in particular sheet steel, is provided in which the opening part, which is undetachably connected to the cover sheet, and the gripping tab 10, which is undetachably connected to the cover sheet, are so designed and have contact areas interacting with each other in such a way that, during opening particularly favourable lever conditions, and hence particularly favourable force conditions, exist for the initial operation of breaking in the notched line 4 on the one hand and for the further tearing of the notched line on the other hand.

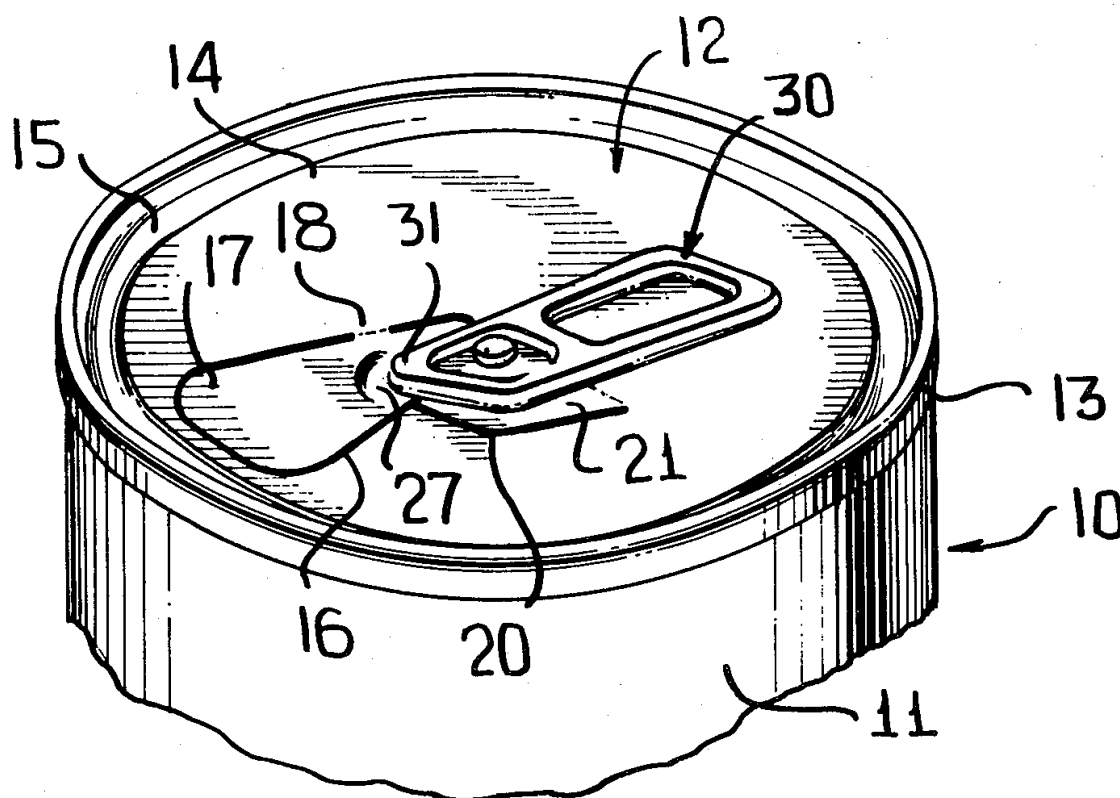
Family 62/100 - FAMPAT - ©Questel

Title

(US4289251)

Non-detach easy opening container unit

Images



Publication data including kind & date

AR223275	A1	1981-07-31	AR-223275
US4289251	A	1981-09-15	US4289251
AU6934581	A	1981-11-12	AU8169345
GB2075463	A	1981-11-18	GB2075463
JPS56161941	A	1981-12-12	JP56161941
BR8102887	A	1982-02-02	BR8102887
KR830006087	A	1983-09-17	KR19830006087
GR75667	B	1984-08-02	GR--75667



Abstract

(US4289251)

This relates to an easy opening container unit wherein a panel of a container is provided with a first line of weakness defining a first displaceable panel portion which, when displaced, defines a dispensing opening in the container. A second line of weakness extends from the first line of weakness and defines a second displaceable panel portion to which an opening tab is secured with the second displaceable panel portion functioning as a hinge element for the opening tab. the

arrangement of the lines of weakness permits the use of a substantially rigid tab which permits a greater leverage advantage while at the same time minimizing tab failure.

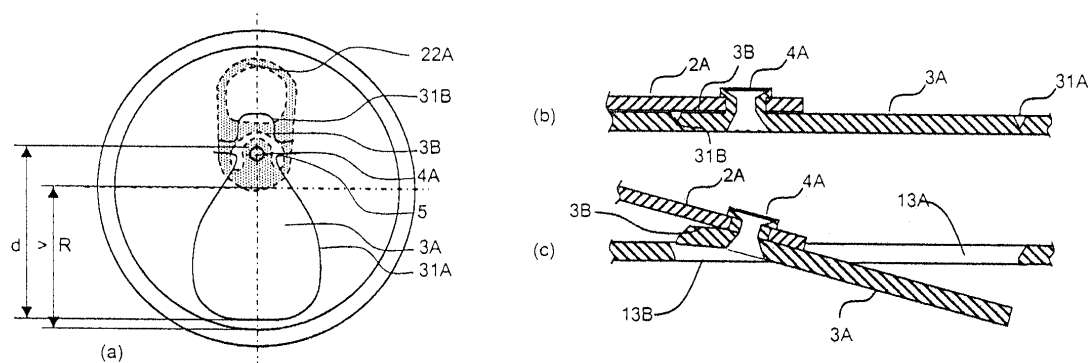
Family 63/100 - FAMPAT - ©Questel

Title

(EP2800705)

Can comprising a maxi-dispense opening and a vent opening

Images



Publication data including kind & date

EP2612823	A1	2013-07-10	EP2612823
CA2862777	A1	2013-07-11	CA2862777
WO2013102594	A1	2013-07-11	WO2013102594
AU2012364345	A1	2014-07-17	AU2012364345
BR112014016451	A1	2014-08-19	BR112014016451
AR089524	A1	2014-08-27	AR--89524
CN104144858	A	2014-11-12	CN104144858
EP2800705	A1	2014-11-12	EP2800705
MX2014008150	A	2014-11-25	MX2014008150
US20140367382	A1	2014-12-18	US20140367382
US9181006	B2	2015-11-10	US9181006
RU2014127700	A	2016-02-20	RU2014127700
AU2012364345	B2	2016-11-10	AU2012364345
MX344156	B	2016-12-07	MX-344156
RU2607175	C2	2017-01-10	RU2607175
UA113746	C2	2017-03-10	UA-113746
BR112014016451	A2	2017-06-13	BR112014016451
BR112014016451	A8	2017-06-13	BR112014016451
BR112014016451	A8	2017-07-04	BR112014016451
CN104144858	B	2017-09-01	CN104144858B
EP2800705	B1	2017-09-20	EP2800705
DK2800705	T3	2017-12-11	DK2800705T
ES2650728	T3	2018-01-22	ES2650728
BR112014016451	A8	2018-12-04	BR112014016451



Abstract

(EP2800705)

The present invention concerns a can for containing a liquid comprising a top end, said top end comprising : (a) A dispense area (3A) defined on said top end by a first score line (31A), (b) A vent area (3B) defined on said top end by a second

(500). The second main body section slit (732) and the third main body section slit (733) each have one end section (751) and the other end section (752). The one end section (751) is located closer to a second edge section (502) of the tab (500) than the insertion hole (540). As a result of this configuration, a can lid enables a panel to be smoothly broken and enables the broken section produced by the breakage of the panel to be smoothly pressed in by the tab.

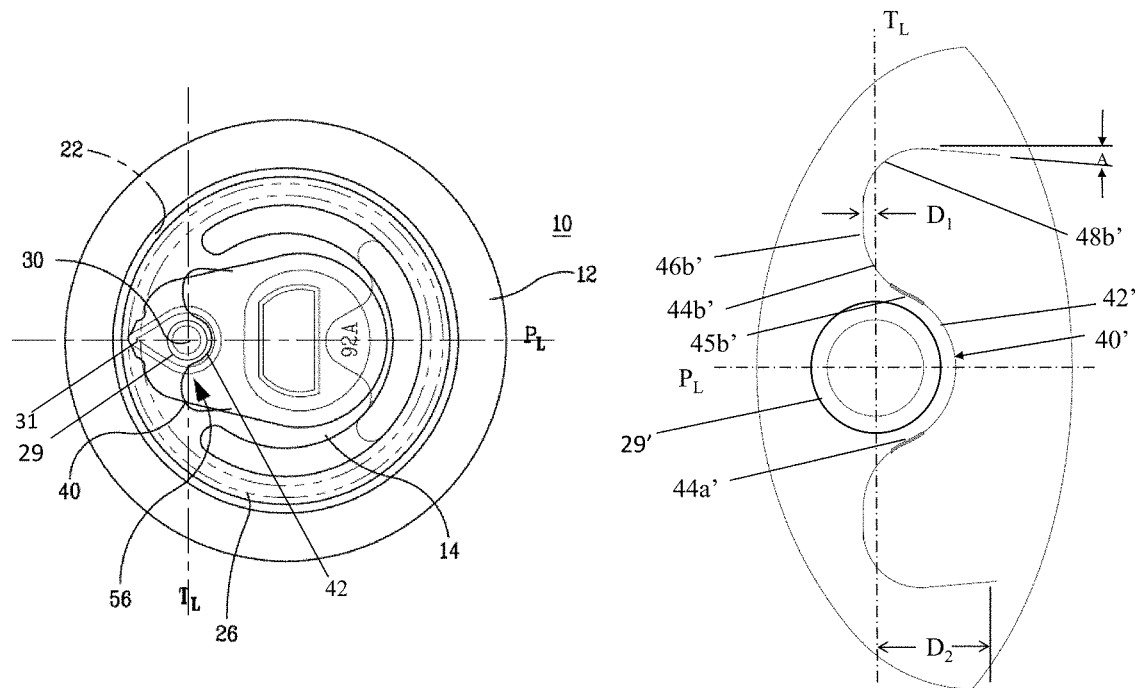
Family 66/100 - FAMPAT - ©Questel

Title

(EP3066015)

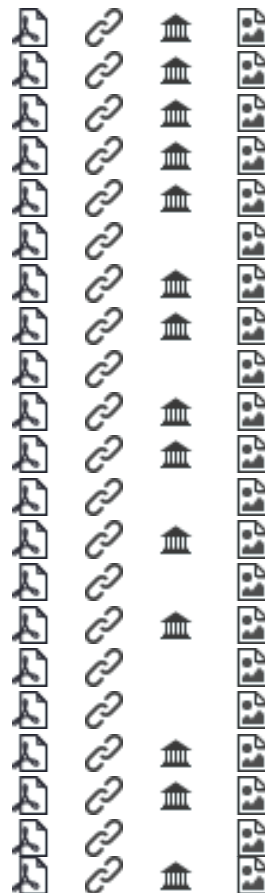
Full aperture end

Images

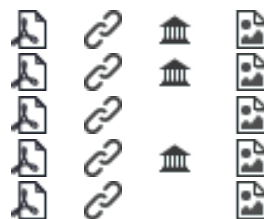


Publication data including kind & date

CA2930010	A1	2015-05-14	CA2930010
US20150129595	A1	2015-05-14	US20150129595
WO2015070051	A1	2015-05-14	WO201570051
BR112016010339	A1	2016-05-17	BR112016010339
AU2014346528	A1	2016-05-19	AU2014346528
MX2016005812	A	2016-07-18	MX2016005812
KR20160086352	A	2016-07-19	KR20160086352
CN105873830	A	2016-08-17	CN105873830
VN48296	A	2016-08-25	VN--48296
EP3066015	A1	2016-09-14	EP3066015
JP2016539866	A	2016-12-22	JP2016539866
TH160899	A	2017-03-23	TH-160899
US9714114	B2	2017-07-25	US9714114
ZA201602924	B	2017-07-26	ZA201602924
BR112016010339	A2	2017-08-08	BR112016010339
TN2016000144	A1	2017-10-06	TN2016000144
RU2016122459	A	2017-12-13	RU2016122459
AU2014346528	B2	2018-05-10	AU2014346528
EP3066015	B1	2018-08-08	EP3066015
RU2666677	C2	2018-09-11	RU2666677



CN105873830	B	2018-09-21	CN105873830B
DK3066015	T3	2018-11-26	DK3066015T
ES2694136	T3	2018-12-18	ES2694136
RS57902	B1	2019-01-31	RS--57902
JP6480927	B2	2019-03-13	JP6480927
PL3066015	T3	2019-03-29	PL3066015

**Abstract**

(EP3066015)

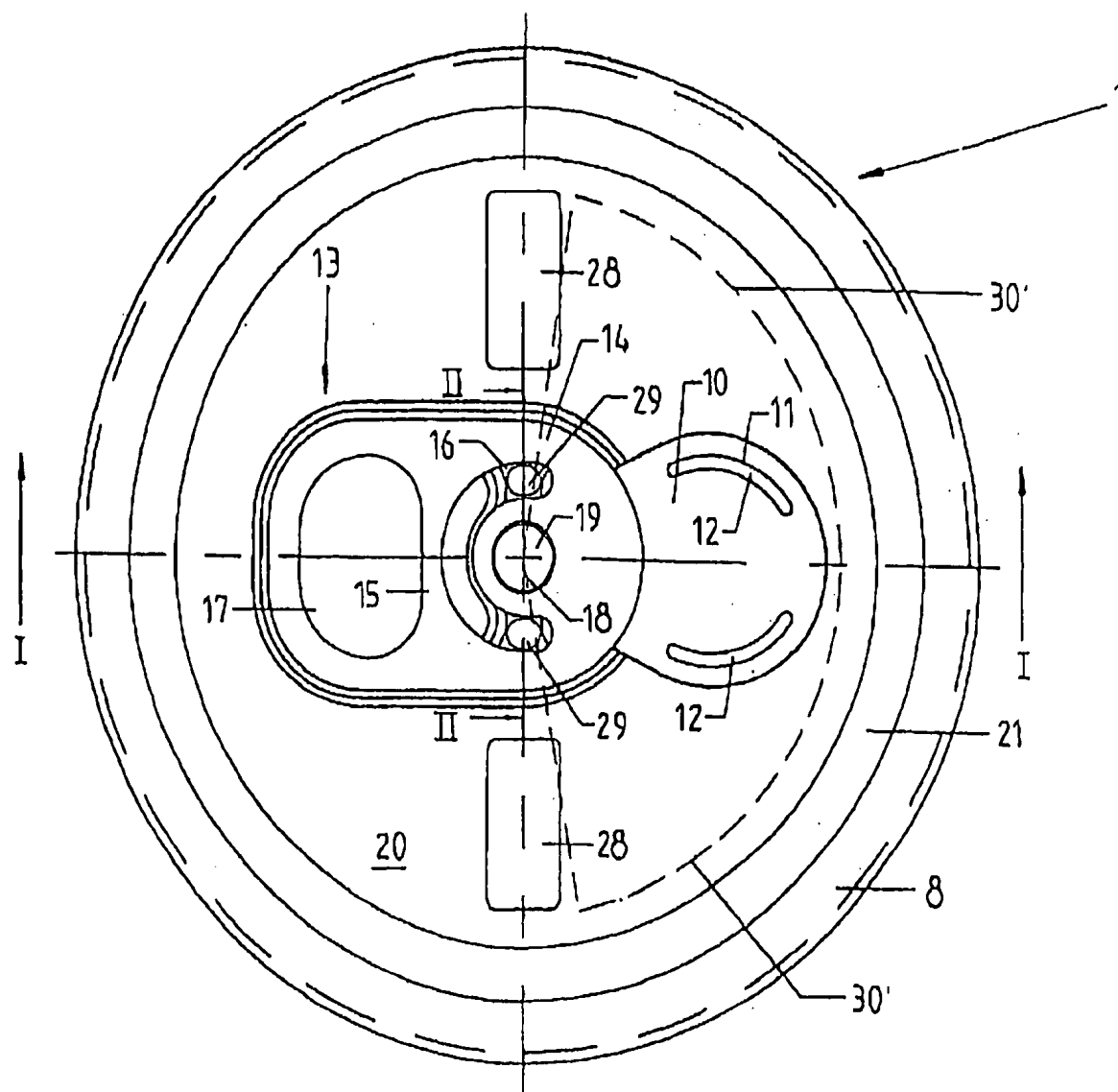
A full aperture unseamed can end having a vent test rating of at least 90 psi comprising a center panel (24) having an periphery and including a coined portion proximate a rivet (30), a first score (26) defining a removable panel (34), a tab (32), including a nose (31), mounted to the removable panel (34), and a second score (40) disposed on the removable panel, the second score having (i) a central portion (42) spaced apart from the coined portion; (ii) a pair of check slots (45a, 45b) disposed on either side of the central portion; (iii) a pair of lateral portions that extend from the check slots; and (iv) a pair of side portions (50a, 50b) that extend from the lateral portions, respectively.

Family 67/100 - FAMPAT - ©Questel

Title

(EP1385745)

Container lid and container

Images

Publication data including kind & date

WO02090189	A2	2002-11-14	WO200290189				
AU2002317663	A1	2002-11-18	AU2002317663				
WO02090189	A3	2003-01-23	WO200290189				
EP1385745	A2	2004-02-04	EP1385745				
DE10291934	D2	2004-04-29	DE10291934				
US20040188440	A1	2004-09-30	US20040188440				
EP1385745	B1	2005-12-14	EP1385745				
AT312764	T	2005-12-15	ATE312764				
DE50205282	D1	2006-01-19	DE50205282				

Abstract

(EP1385745)

The invention relates to a container, particularly a drinks can, which is closed by a lid which has a tear-off opening. Additionally, a rotationable covering element is provided and used to close the tear-off opening for a consumption seal and/or which covers a symbol and/or a sign which can only be seen after opening the seal.

Family 68/100 - FAMPAT - ©Questel

Title

(EP-958178)

Easy open container end, method of manufacture, and tooling

Images

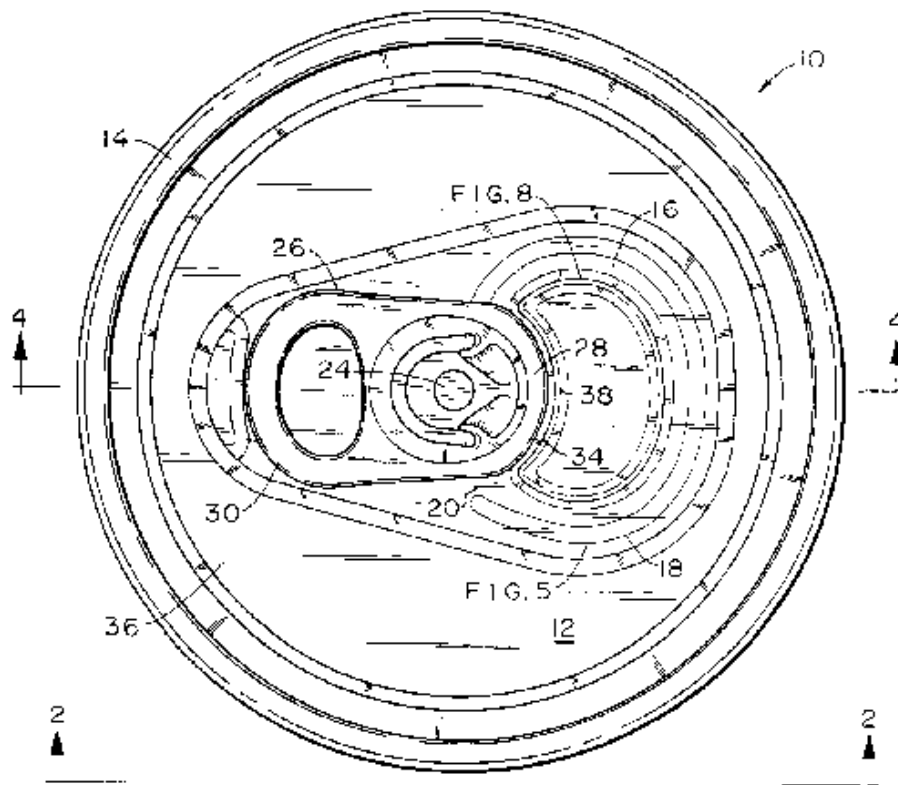


FIG. 1

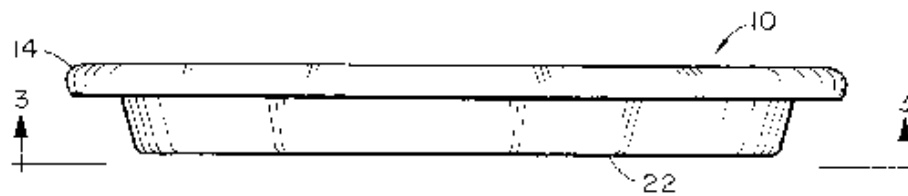


FIG. 2

Publication data including kind & date

WO9729960	A2	1997-08-21	WO9729960
AU2275797	A	1997-09-02	AU9722757
WO9729960	A3	1997-10-02	WO9729960
EP0958178	A2	1999-11-24	EP-958178
JP2000504659	A	2000-04-18	JP2000504659
US6050440	A	2000-04-18	US6050440

**Abstract**

(EP-958178)

An easy open can end has an improved structure for facilitating the opening operation of the tear panel, a method of further forming a can end to have the improved structure, and tooling for accomplishing the method. The further formation of the

can end is particularly useful in easy-open can ends having enlarged tear panels.

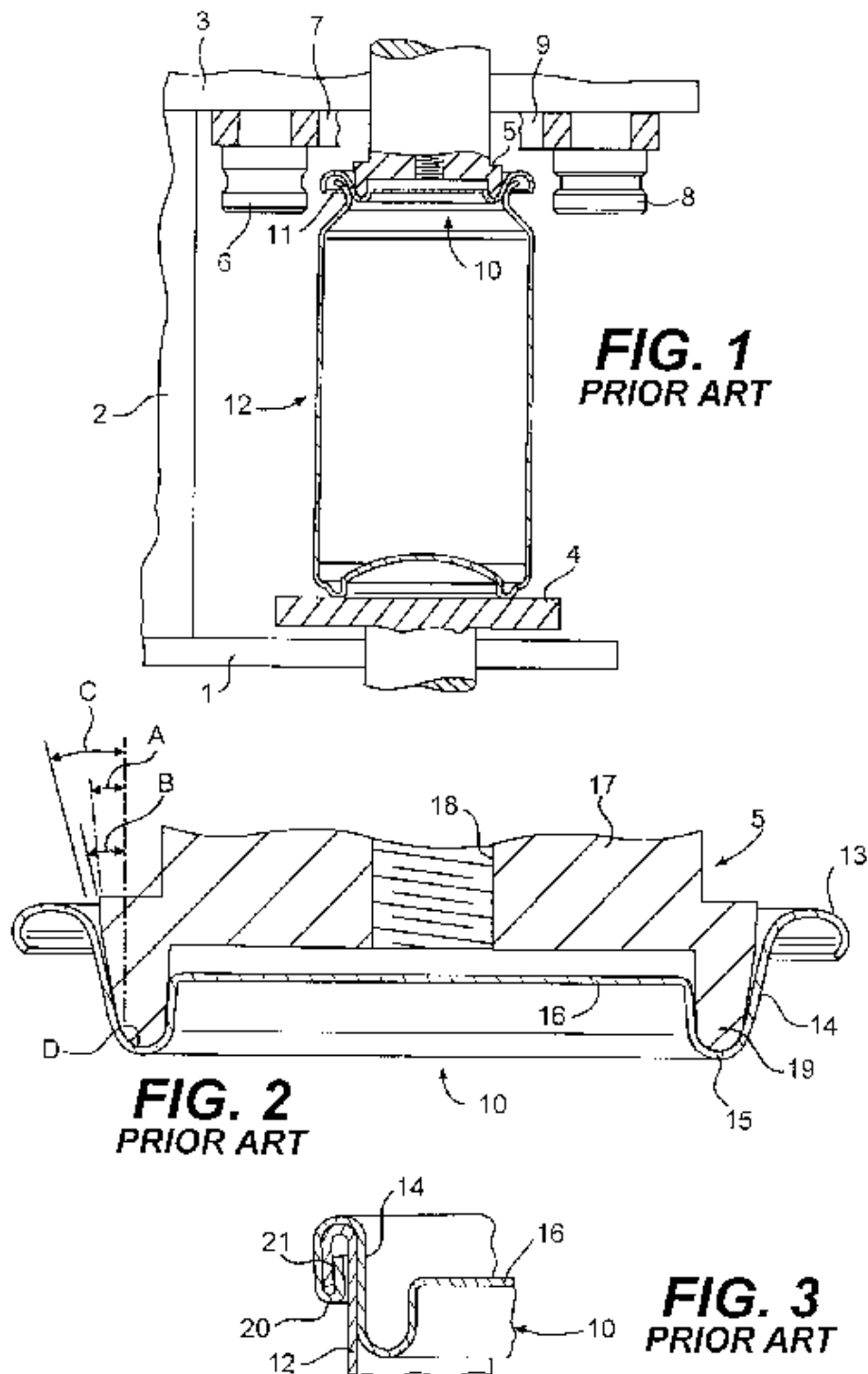
Family 69/100 - FAMPAT - ©Questel

Title

(EP-828663)

Can end and method for fixing the same to a can body

Images



Publication data including kind & date

GB9510515	D0	1995-07-19	GB9510515
IL117756	A	1996-08-04	IL-117756
ZA9603243	B	1996-10-25	ZA9603243



WO9637414	A1	1996-11-28	WO9637414				
CA2467039	A1	1996-11-28	CA2467039				
CA2222014	A1	1996-11-28	CA2222014				
TW292998	B	1996-12-11	TW-292998				
AU5153396	A	1996-12-11	AU9651533				
PE30097	A1	1997-09-08	PE9700300				
AR001817	A1	1997-12-10	AR---1817				
EP0828663	A1	1998-03-18	EP-828663				
PL323455	A1	1998-03-30	PL96323455				
MX9709042	A	1998-03-31	MX9709042				
AU695640	B2	1998-08-20	AU-695640				
CN1191513	A	1998-08-26	CN1191513				
KR19990021927	A	1999-03-25	KR19990021927				
IL117756	B	1999-04-11	IL-117756				
JPH11505791	A	1999-05-25	JP11505791				
BR9608906	A	1999-06-15	BR9608906				
BRPI9608906	A1	1999-06-15	BR9608906				
EP0828663	B1	1999-12-22	EP-828663				
AT187944	T	2000-01-15	ATE187944				
DE69605789	D1	2000-01-27	DE69605789				
ES2140074	T3	2000-02-16	ES2140074				
DE69605789	T2	2000-04-27	DE69605789				
US6065634	A	2000-05-23	US6065634				
GR3032571	T3	2000-05-31	GR3032571				
PL180411	B1	2001-01-31	PL-180411				
VN0002171	B	2001-08-27	VN---2171B				
CN1076300	C	2001-12-19	CN1076300C				
EG21902	A	2002-04-30	EG--21902				
BRPI9608906	B1	2002-09-03	BR9608906				
KR100398029	B1	2003-12-31	KR100398029				
CA2222014	C	2004-09-14	CA2222014				
EP0828663	B2	2005-09-14	EP-828663				
ES2140074	T5	2005-12-16	ES2140074				
CA2467039	C	2006-01-17	CA2467039				
JP2006052023	A	2006-02-23	JP2006052023				
JP2006052024	A	2006-02-23	JP2006052024				
JP3809190	B2	2006-05-26	JP3809190				
DE69605789	T3	2006-06-01	DE69605789				
SA1289	B1	2006-09-20	SA---1289				
JP4083186	B2	2008-02-22	JP4083186				
JP4083187	B2	2008-02-22	JP4083187				

Abstract

(EP-828663)

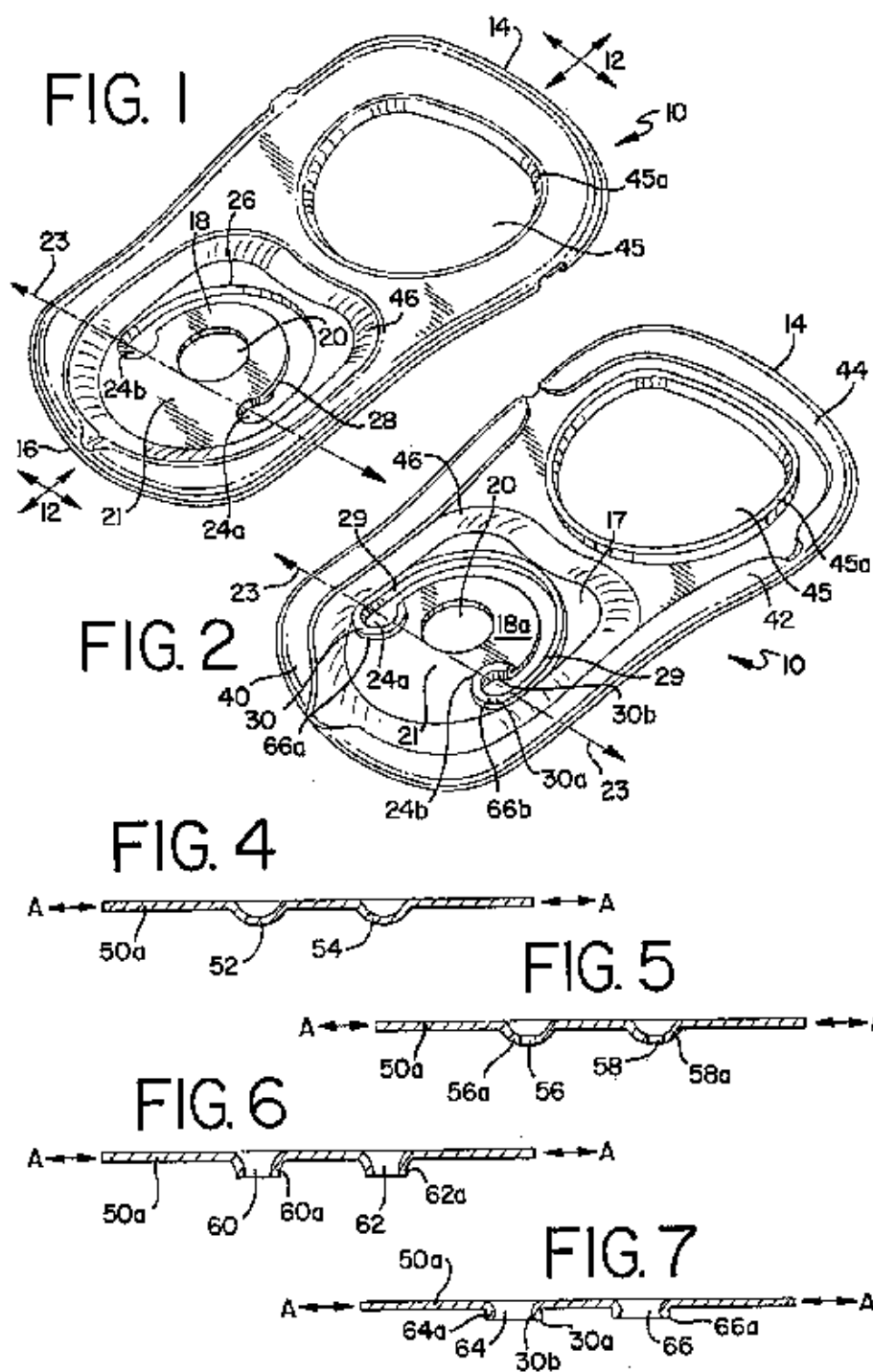
A can end (22) comprising a peripheral cover hook (23), a chuck wall (24) dependent from the interior of the cover hook, an outwardly concave annular reinforcing bead (25) extending radially inwards from the chuck wall, and a central panel (26) supported by an inner portion (27) of the reinforcing bead, characterised in that, the chuck wall (24) is inclined to an axis perpendicular to the exterior of the central panel at an angle between 20 DEG and 60 DEG , and the concave cross-sectional radius of the reinforcing bead (25) is less than 0.75 mm.

Family 70/100 - FAMPAT - ©Questel

Title

(EP1034054)

Container-end tab and method of manufacturing same

Images**Publication data including kind & date**

WO9926741	A1	1999-06-03	WO9926741
AU1597099	A	1999-06-15	AU9915970
US5967726	A	1999-10-19	US5967726
EP1034054	A1	2000-09-13	EP1034054



BR9812796	A	2000-10-17	BR9812796				
BRPI9812796	A1	2000-10-17	BRPI9812796				
EP1034054	B1	2002-03-27	EP1034054				
AT214985	T	2002-04-15	ATE214985				
DE69804496	D1	2002-05-02	DE69804496				
DE69804496	T2	2002-11-14	DE69804496				
BRPI9812796	B1	2005-06-21	BR9812796				

Abstract

(EP1034054)

The product and method of manufacturing a tab (10) having a rivet island window (22) and adapted to be secured to a container end, including the steps of forming a first dimple (52) at a first end position (24a) of the window (22) and a second dimple (54) at a second end position (24b) of the window (22), formed as depressed regions of metal residing outside the central plane of the metal. The method includes punching a first blank (56) in the first dimple (52) and a second blank (58) in the second dimple (54), and subsequently bending the edge regions (56a, 56b) around the first (56) and second blank (58) to form a bend of the metal away from the central plane. The central region of the window (22) is formed between and joining the blanks, and a rivet opening (20) is formed, adapted to receive a rivet for staking the tab (10) to a container end.

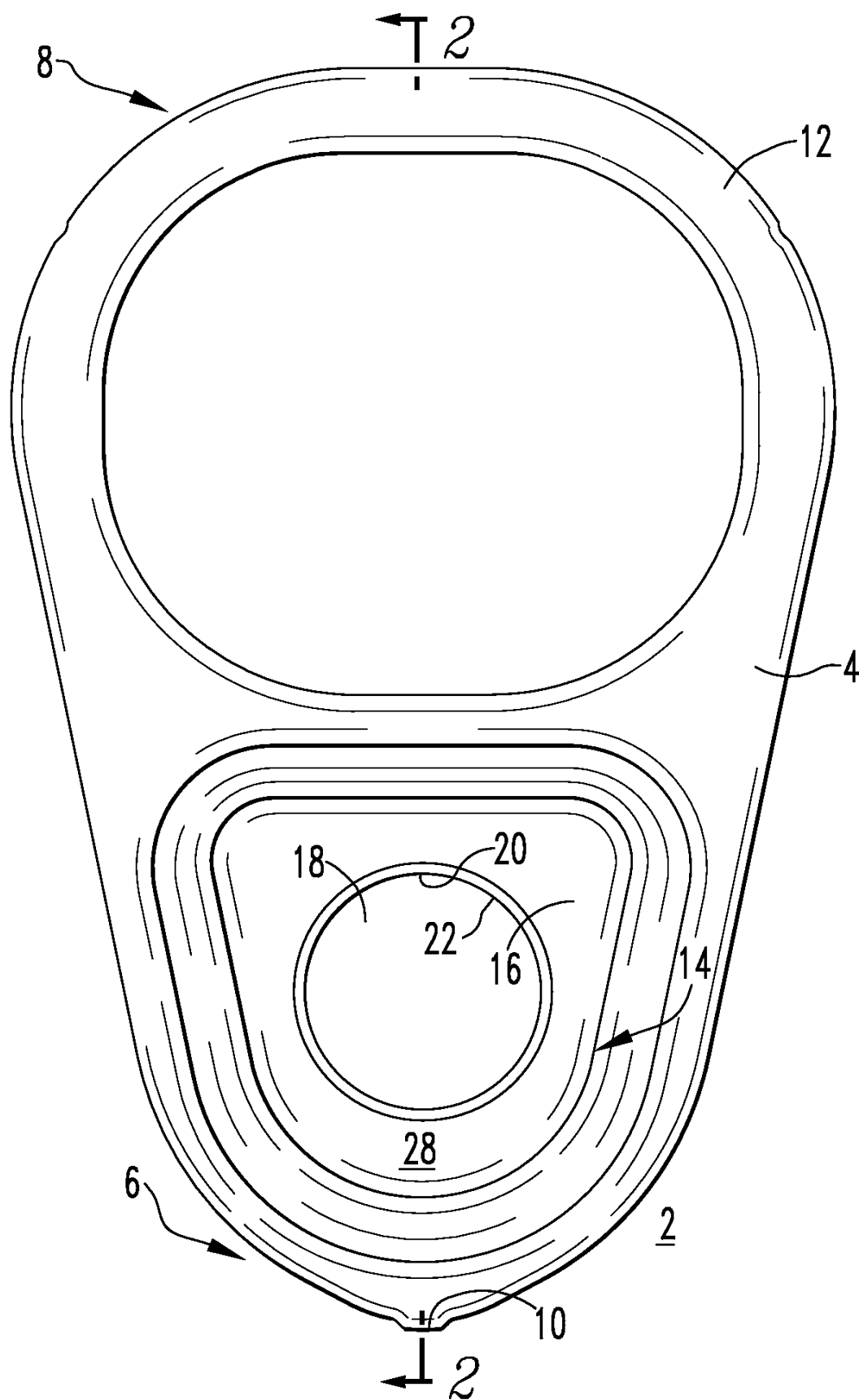
Family 71/100 - FAMPAT - ©Questel

Title

(EP2516284)

Tab with reinforced rivet hole, and tooling and associated method for providing same

Images

**Publication data including kind & date**

US20110147382	A1	2011-06-23	US20110147382
WO2011/079003	A1	2011-06-30	WO201179003
CN102725199	A	2012-10-10	CN102725199



EP2516284	A1	2012-10-31	EP2516284
JP2013514952	A	2013-05-02	JP2013514952
CN102725199	B	2014-06-18	CN102725199B
EP2516284	A4	2015-10-07	EP2516284
JP5870034	B2	2016-01-15	JP5870034
US9573724	B2	2017-02-21	US9573724
US20170113835	A1	2017-04-27	US20170113835



Abstract

(EP2516284)

A tab is provided, which includes a body having first and second opposing ends, a nose portion disposed at or about the first end of the body, a lift portion disposed at or about the second end of the body of the tab, and a rivet receiving portion disposed proximate the nose portion. The rivet receiving portion includes a generally planar portion, a rivet hole having a perimeter, and an upturned portion extending upwardly from the generally planar portion about the perimeter of the rivet hole. The upturned portion reinforces the rivet hole and has an arcuate cross section profile. An integral rivet extends through the rivet hole and is staked to affix the tab to a can end. The upturned portion is devoid of any corners or edges both before and after the integral rivet is staked.

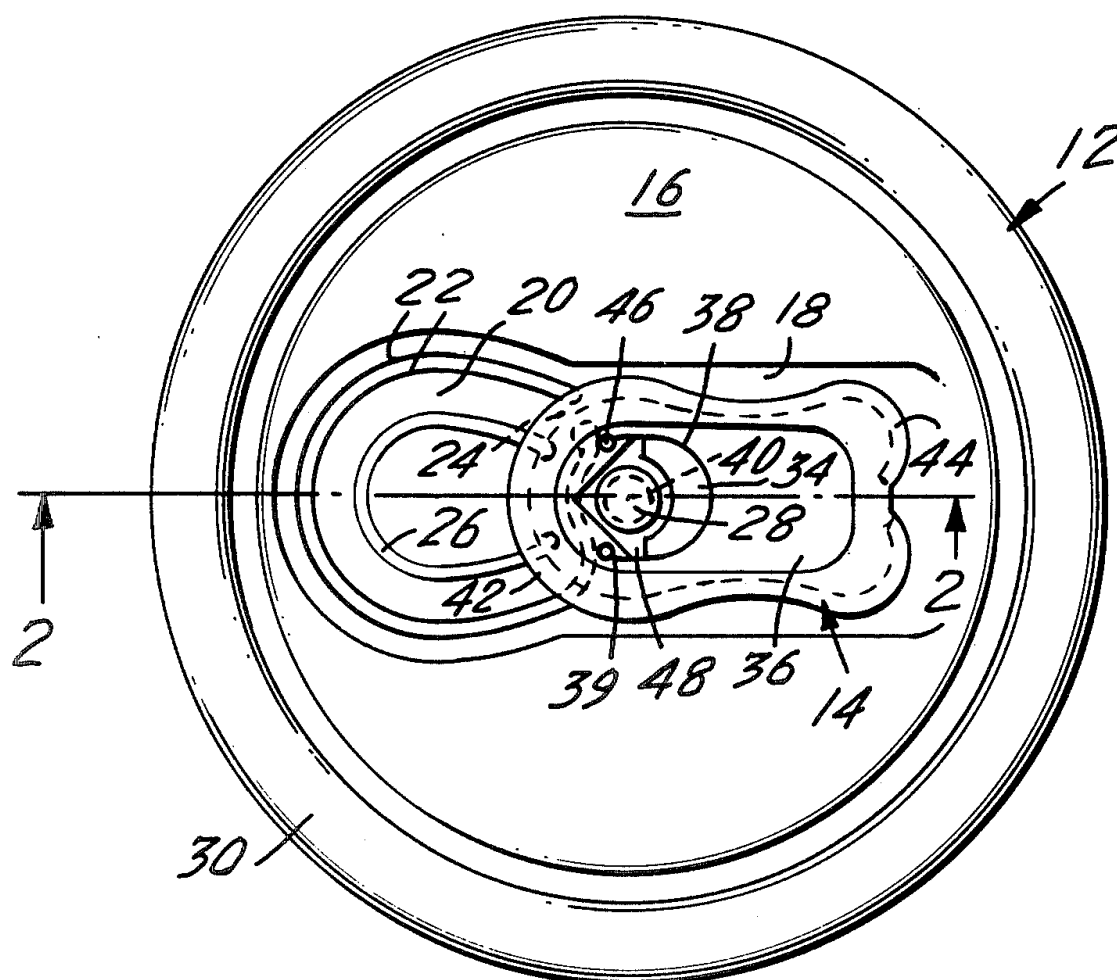
Family 72/100 - FAMPAT - ©Questel

Title

(US4210257)

Fracture and tear-resistant retained tab

Images



Publication data including kind & date

[IT8049035](#)

D0 1980-06-20

IT8049035



US4210257	A	1980-07-01	US4210257				
FR2459181	A1	1981-01-09	FR2459181				
JPS563828	U	1981-01-14	JP56003828U				
GB2050993	A	1981-01-14	GB2050993				
GB2050993	B	1983-02-09	GB2050993				
FR2459181	B1	1983-08-26	FR2459181				
IT1129016	B	1986-06-04	IT1129016				
JPS6119057	Y2	1986-06-09	JP61019057Y				

Abstract

(US4210257)

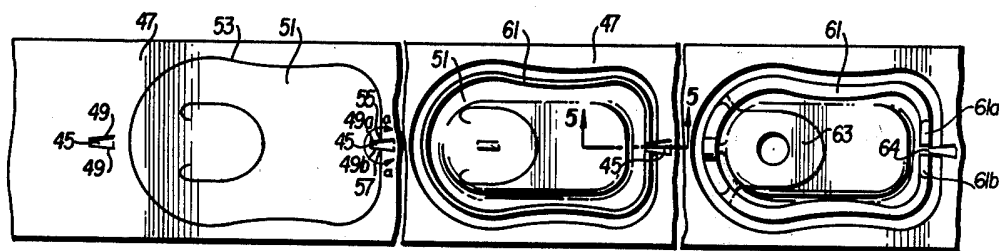
A non-detachable lever tab for easy open container ends with a tongue, the tip of which is staked to the central panel wall by means of an integral rivet. The lancing which forms the tongue terminates in a pair of nail piercings, which afford a high resistance to tear through. The tongue of the lever tab is coined to substantially increase its resistance to fracture under repeated bending.

Family 73/100 - FAMPAT - ©Questel

Title

(US4162743)

Tab system

Images**Publication data including kind & date**

US4130074	A	1978-12-19	US4130074				
IT7831444	D0	1978-12-29	IT7831444				
AU4245378	A	1979-07-05	AU7842453				
GB2011342	A	1979-07-11	GB2011342				
DE2855037	A1	1979-07-12	DE2855037				
FR2413277	A1	1979-07-27	FR2413277				
US4162743	A	1979-07-31	US4162743				
JPS5497192	A	1979-08-01	JP54097192				
BR7808553	A	1979-08-28	BR7808553				
CA1083985	A	1980-08-19	CA1083985				
AU519266	B2	1981-11-19	AU-519266				
GB2011342	B	1982-04-15	GB2011342				
MX147769	A	1983-01-11	MX-147769				
FR2413277	B1	1985-03-15	FR2413277				
IT1101550	B	1985-10-07	IT1101550				
DE2855037	C2	1987-11-26	DE2855037				
JPS649227	B1	1989-02-16	JP89009227				
JP1522573	C	1989-10-12	JP1522573				

Abstract

(US4162743)

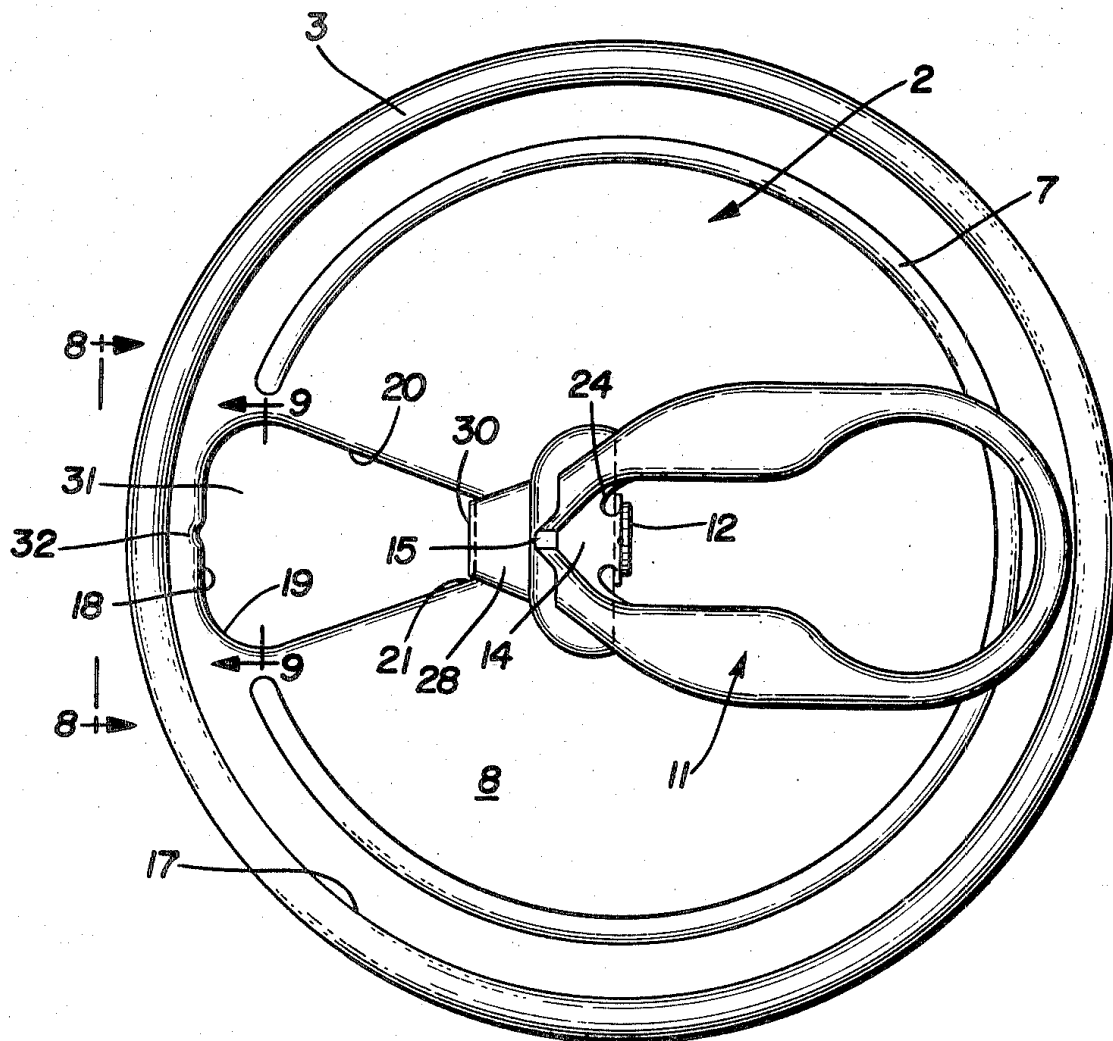
A method of manufacturing a tab (43) of the type attachable to an easy-open contained wall to initiate severance of a tear panel of the contained wall, including an initial step of placing a protruding stitch (45) in a sheet metal strip (47) from which the tab is to be formed. Thereafter, a tab blank (51) is cut in the strip of sheet metal, with this cut starting and ending immediately adjacent to opposite sides of the stitch, but the cutting die is separated slightly from the stitch. Thereafter, the outer periphery (61) of the tab blank is curled onto the inner surface of the tab blank. The stitch is then severed adjacent the tab.

Family 74/100 - FAMPAT - ©Questel

Title

(US4399925)

Pouring spout steel can end construction

Images**Publication data including kind & date**

US4399925	A	1983-08-23	US4399925
CA1218024	A	1987-02-17	CA1218024

**Abstract**

(US4399925)

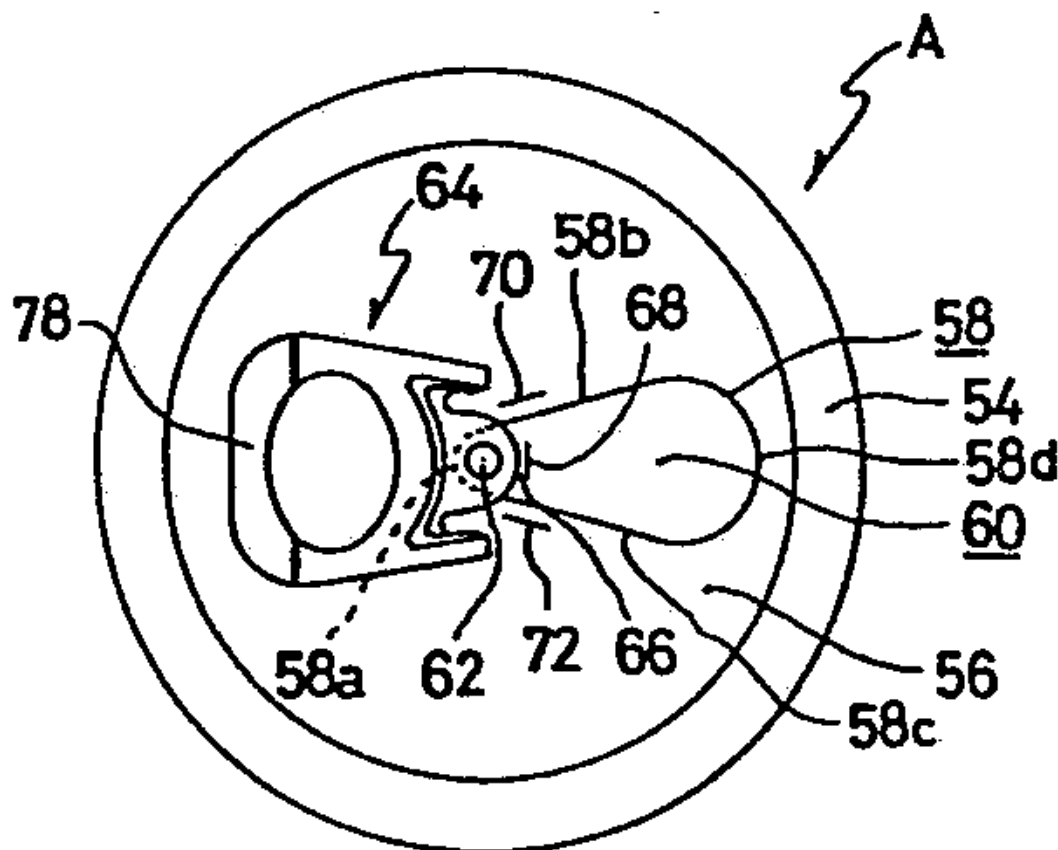
A pouring spout steel can end construction for liquid human food products in which a steel can end is provided which may be opened easily with an aluminum pull tab riveted to a flat panel portion of the can end. The flat panel portion has a pouring spout opening defined by a score line when panel metal is torn from the can end along the score line. The torn metal does not contaminatingly project into the container during opening and remains connected to the can end.

Family 75/100 - FAMPAT - ©Questel

Title

(EP--40277)

Easy-open can cap with a ring pull tab

Images**Fig.9****Publication data including kind & date**

EP0040277	A1	1981-11-25	EP--40277
JPS56172534	U	1981-12-19	JP56172534U
US4350262	A	1982-09-21	US4350262
EP0040277	B1	1984-04-18	EP--40277
DE3067557	D1	1984-05-24	DE3067557

**Abstract**

(EP--40277)

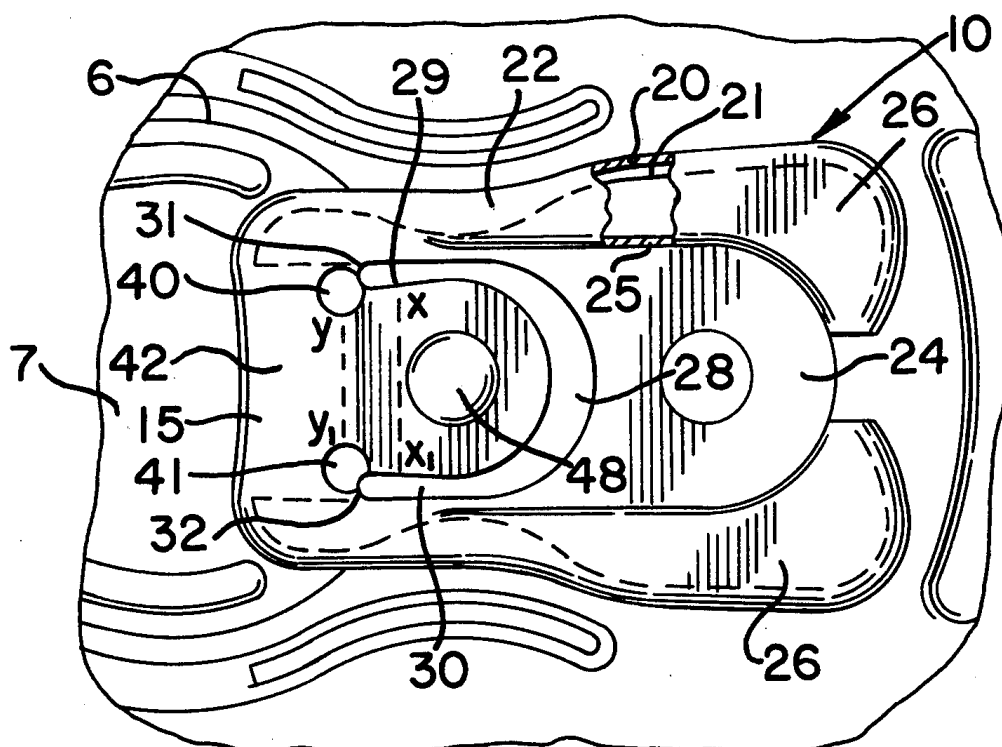
In an easy-open can cap (A) with a ring pull tab (64) riveted in a small-diameter semicircular portion of a tear-opening portion (60) which is defined on the cap surface by a deformed ellipse-shaped score (58), a score (68) is formed perpendicular to the axial larger-diameter direction of the said tear-opening portion (60) and in the vicinity of a circular arc-shaped nose portion (66) of the ring pull tab, and further the score residual in a predetermined transitional area from where a second opening operation is started by pulling up the ring pull tab (54) after the small-diameter semicircular portion (58a) has been broken by an initial opening operation until where the second opening operation becomes stable, is made smaller than the score residual at least in the said small-diameter semicircular portion (58a).

Family 76/100 - FAMPAT - ©Questel

Title

(US4150765)

Tab construction for easy opening container

Images**Publication data including kind & date**

IT7829625	D0	1978-11-09	IT7829625
US4150765	A	1979-04-24	US4150765
BE871831	A	1979-05-08	BE-871831
DK499578	A	1979-05-11	DK7804995
NL7811094	A	1979-05-14	NL7811094
ES239336	U	1979-05-16	ES-239336U
AU4136578	A	1979-05-17	AU7841365
DE2841688	A1	1979-05-17	DE2841688
GB2008533	A	1979-06-06	GB2008533
FR2408530	A1	1979-06-08	FR2408530
JPS5476387	A	1979-06-18	JP54076387
ES239336	Y	1979-11-01	ES-239336Y
ATA803278	A	1982-04-15	AT7808032
GB2008533	B	1982-08-11	GB2008533
JPS5742545	B2	1982-09-09	JP82042545
AU524326	B2	1982-09-09	AU-524326
AT368969	B	1982-11-25	AT-368969
JP1151790	C	1983-06-30	JP1151790
IT1101034	B	1985-09-28	IT1101034

**Abstract**

(US4150765)

A non-detachable tab adapted to be secured to the end panel of a container which comprises a securing lug formed from

the sheet metal of the tab, the lug having an attachment to the nose portion of the lug in an area which has not been work hardened and also which has been formed to provide several axes of hinging and thereby increasing the number of times that the tab can be hinged back and forth without breaking off.

Family 77/100 - FAMPAT - ©Questel

Title

(US6161717)

End closure with reverse bead on opening panel

Images

FIG. 1

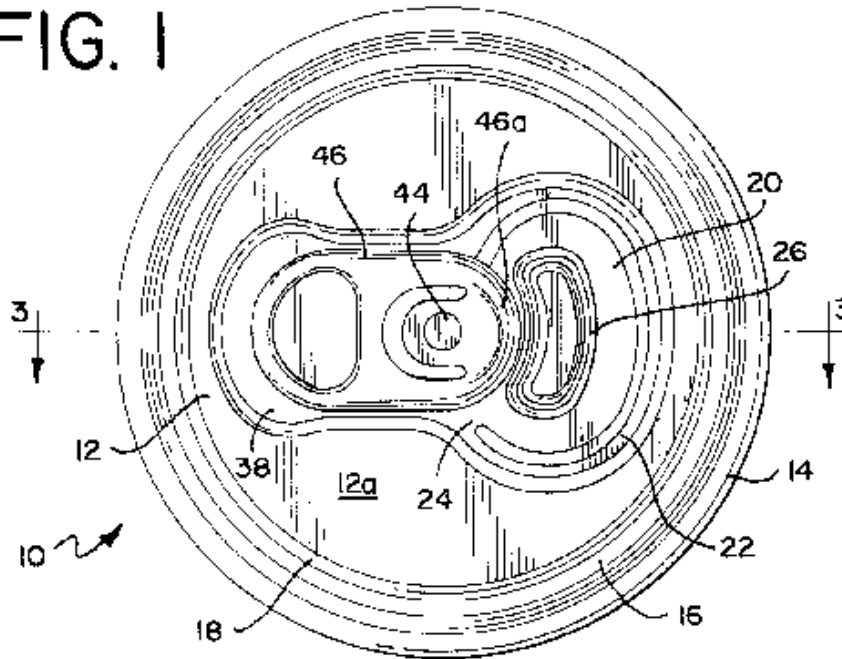
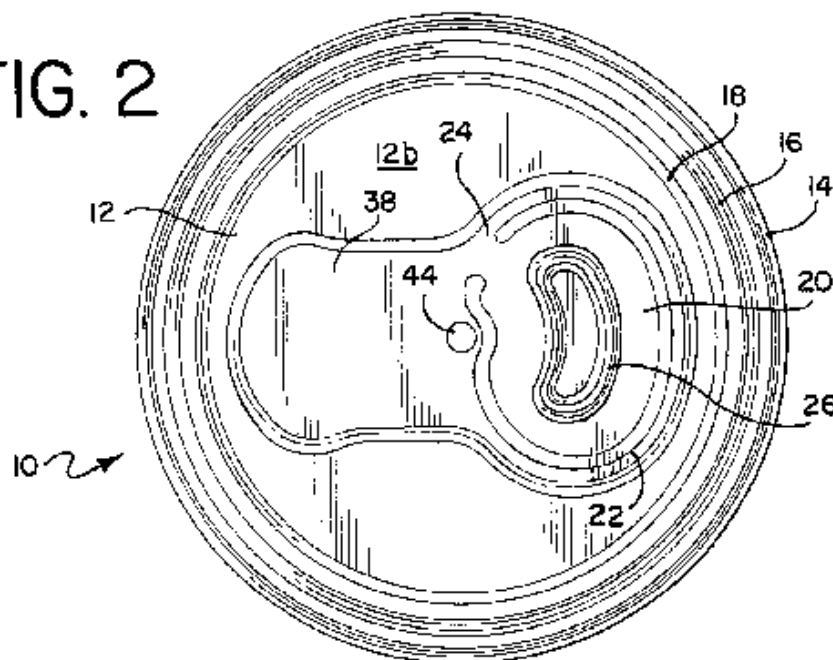


FIG. 2



Abstract

(US6161717)

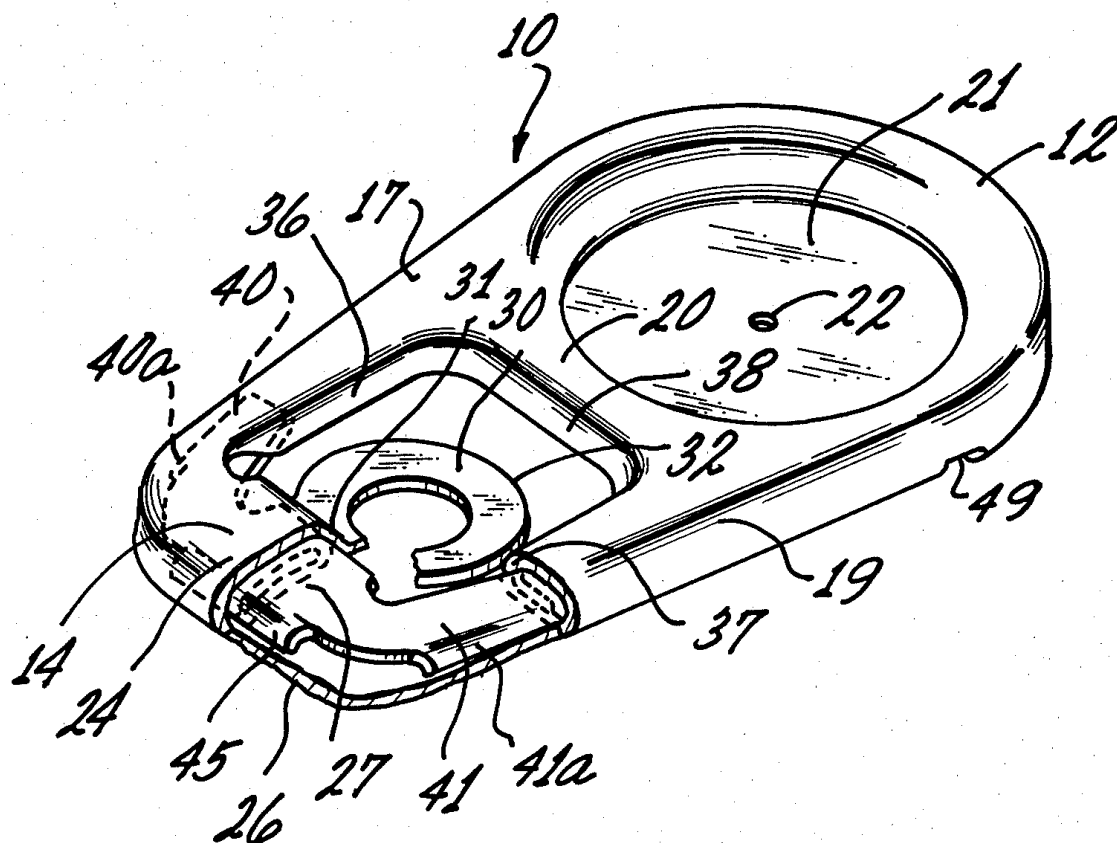
The present invention provides an end closure for a container having a central panel wall with a displaceable opening panel defined by a frangible score and a non-frangible hinge segment. A tab is attached to the panel wall by a rivet, the tab having a nose extending over a first area of the opening panel, the remainder of the opening panel which is exposed from the tab defining the second area of the opening panel. A deboss bead resides in the opening panel, formed in the second area. The deboss bead being curvilinear in shape, formed as a narrow channel in the opening panel. The narrow channel preferably being formed as a U-shaped bead with a first wall and a generally opposed second wall, with the first and second wall being joined by an arcuate intermediate segment. The end closure further has a deboss panel residing in a plane below the remainder of the panel, the deboss bead extending below the plane of the deboss panel. The deboss bead is formed in the manufacturing operation of the score formation and is formed simultaneous with the formation of the score to draw up loose metal from the score incising of the metal.

Family 78/100 - FAMPAT - ©Questel

Title

(US4286728)

Tab and ecology end

Images**Publication data including kind & date**

IT8121077	D0	1981-04-10	IT8121077
BE888124	A	1981-07-16	BE-888124
US4286728	A	1981-09-01	US4286728
IE810705	L	1981-10-11	IE8100705
NO811246	L	1981-10-12	NO-811246
FI811124	L	1981-10-12	FI8101124
SE8102295	L	1981-10-12	SE8102295
DK128281	A	1981-10-12	DK8101282



BR8102142	A	1981-10-13	BR8102142				
AU6871881	A	1981-10-15	AU8168718				
GB2073700	A	1981-10-21	GB2073700				
NL8101400	A	1981-11-02	NL8101400				
FR2482074	A1	1981-11-13	FR2482074				
DE3110770	A1	1982-01-14	DE3110770				
JPS5728753	A	1982-02-16	JP57028753				
ZA8102401	B	1982-04-28	ZA8102401				
CA1132470	A	1982-09-28	CA1132470				
ES265894	U	1983-03-01	ES-265894U				
KR830005033	A	1983-07-23	KR19830005033				
ES265894	Y	1983-09-01	ES-265894Y				
DE3110770	C2	1983-09-01	DE3110770				
GB2073700	B	1984-01-25	GB2073700				
AU535278	B2	1984-03-08	AU-535278				
JPS5934581	B2	1984-08-23	JP84034581				
HK84884	A	1984-11-09	HK8400848				
FR2482074	B1	1984-11-30	FR2482074				
PH17761	A	1984-12-05	PH--17761				
SG48884	G	1985-03-29	SG--48884				
JP1257679	C	1985-03-29	JP1257679				
MX152309	A	1985-06-26	MX-152309				
NO153093	B	1985-10-07	NO-153093				
DK148878	B	1985-11-04	DK-148878				
NO153093	C	1986-01-15	NO-153093				
DK148878	C	1986-06-02	DK-148878C				
IE50784	B1	1986-07-09	IE--50784				
FI70853	B	1986-07-18	FI--70853				
IT1137126	B	1986-09-03	IT1137126				
FI70853	C	1986-10-27	FI--70853				
SE450244	B	1987-06-15	SE-450244				

Abstract

(US4286728)

A tab for easy opening ends including a lifting end and an opening end and spaced side legs is improved by the use of finger means extending from the opening end towards the lifting end, the finger means including flanges which stiffen the finger. The lifting end is formed of a smooth unbroken curl of sheet material.

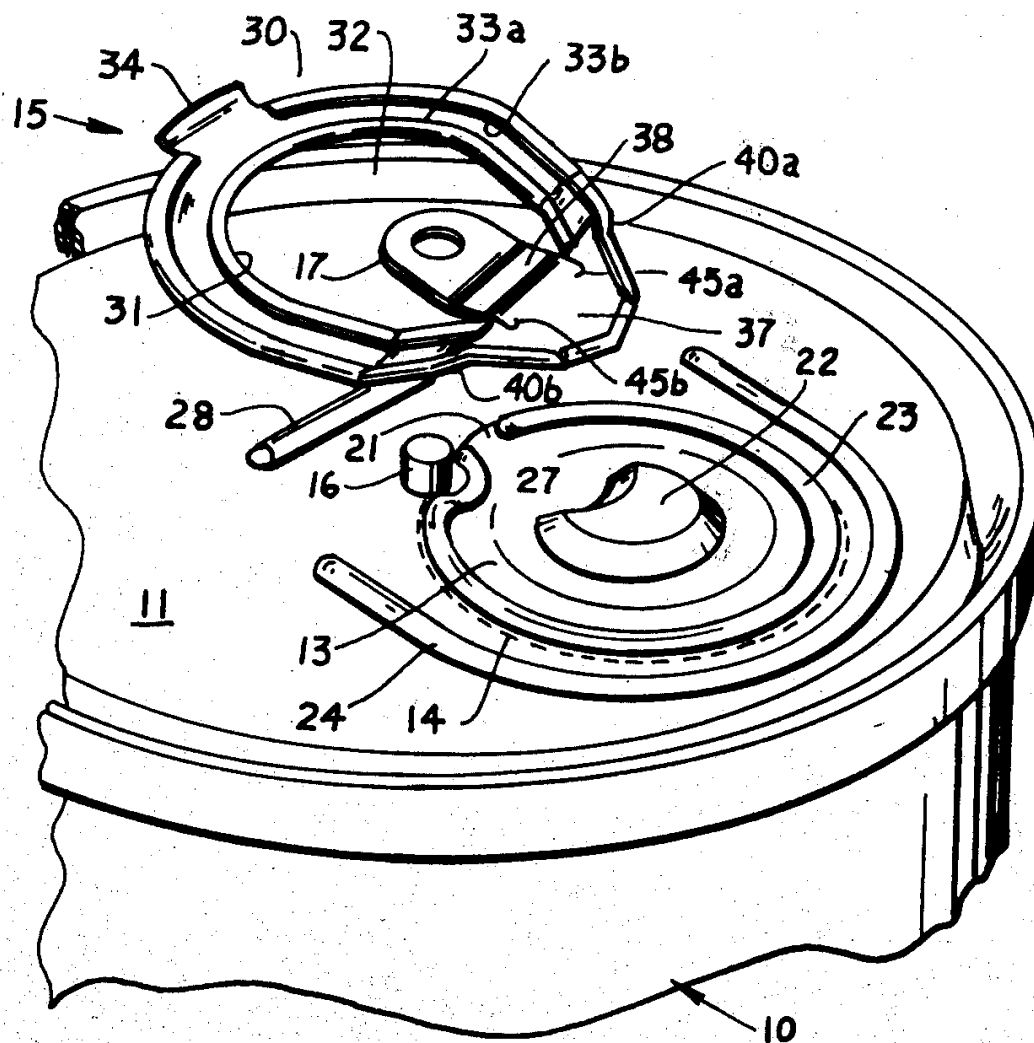
Family 79/100 - FAMPAT - ©Questel

Title

(US4361251)

Detachment resistant retained lever tab

Images



Publication data including kind & date

US3977561

A 1976-08-31 US3977561



Abstract

(US3977561)

An easy opening container having a wall in which a tear tab is formed which is nondetachably removable from the wall. An opening tab lies alongside the wall with a nose portion overlying the tear tab, and with a handle portion lying alongside the wall at a location spaced from the tear tab portion. The opening tab is nondetachably connected to the wall by a bendable member having a bend line which permits the handle portion to be moved away from the wall, so that the nose portion moves inwardly into contact with the tear tab. The bendable connection between the handle and the wall remains on the wall at all times, and the opening tab is provided with means which permit only a limited extent of the opening tab to enter into the opening defined by tearaway and inward bending of the tear tab. An air vent into the opened container is provided.

Family 81/100 - FAMPAT - ©Questel

Title

(US3762598)

Thermally treated container wall

Images

SHEET 1 OF 2

FIG. 1.

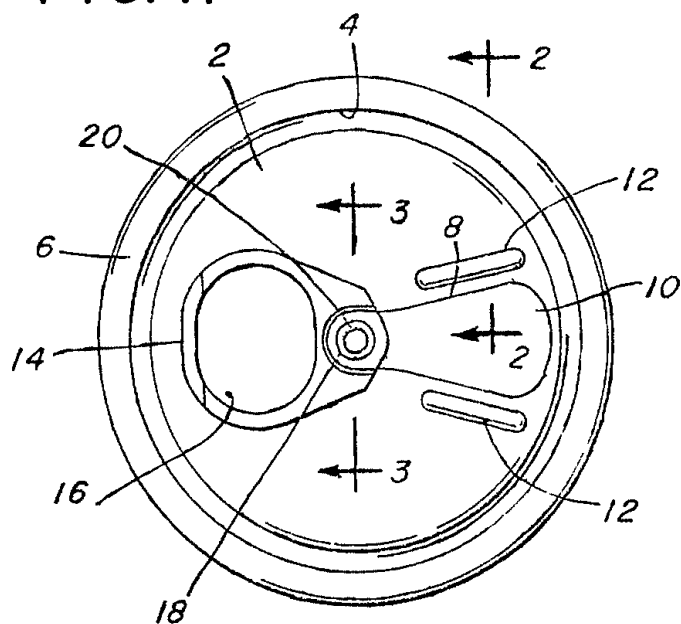


FIG. 2.

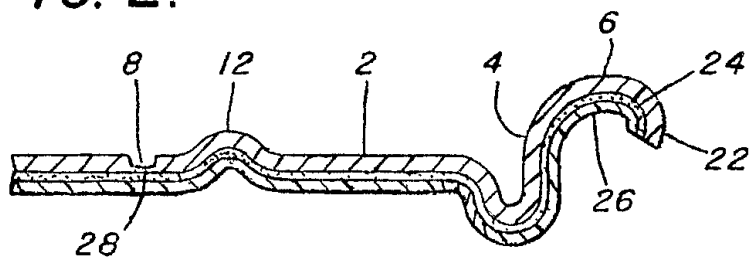


FIG. 3.

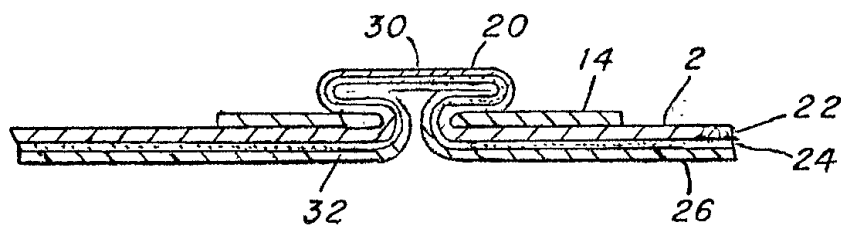
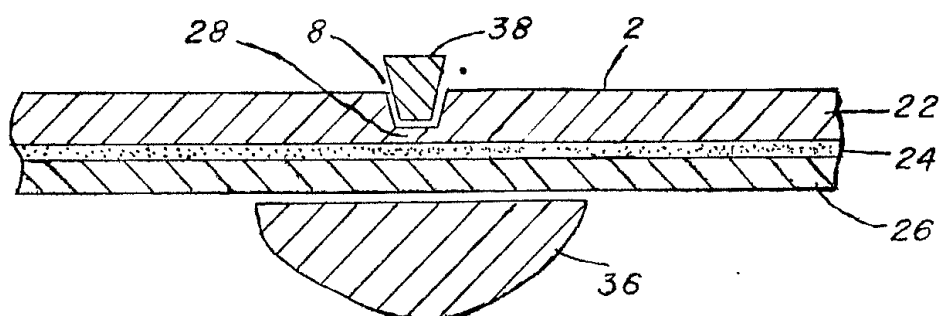


FIG. 4.



Publication data including kind & date[US3762598](#)

A 1973-10-02 US3762598

**Abstract**

(US3762598)

A method of fabricating a container wall having an integral opening device by providing a metal sheet having an adhesive material secured to one surface thereof. The adhesive secures a continuous protective layer to the metal sheet. The protective layer is selected from the group consisting of partially crystalline polyolefin, partially crystalline polyolefin-ethylene copolymers, polyethylene acrylate and ionomers of polyolefin. Scoring the sheet to define a removable sector therein while preventing fracture of the adhesively secured protective layer. Subsequently heating the composite metal sheet to a temperature of about 275 (degree) to 375 (degree) F for a period of about 0.2 second to 4 minutes and preferably about 300 (degree) to 350 (degree) F for about 0.5 to 3 minutes. The protective layer is stress relieved by this thermal treatment which substantially completely eliminates microvoids established in the protective layer during the scoring operation. Effecting the heating operation in such a fashion as to improve adhesive bonding of the protective layer, resist diaphragming of the protective layer and reduce feathering of the protective layer along the line of severance when the removable sector is fractured.

A container wall structure made by the process of this invention including the adhesive being selected from the group consisting of epoxy, polyester and polyurethane. The protective layer having a crystallinity in excess of about 50 percent. The adhesive bond between the protective layer and the metal sheet removable sector being of greater strength than the shear strength of the protective layer in regions underlying the score line to prevent substantial diaphragming and to limit feathering to less than about one-thirty-second inch.

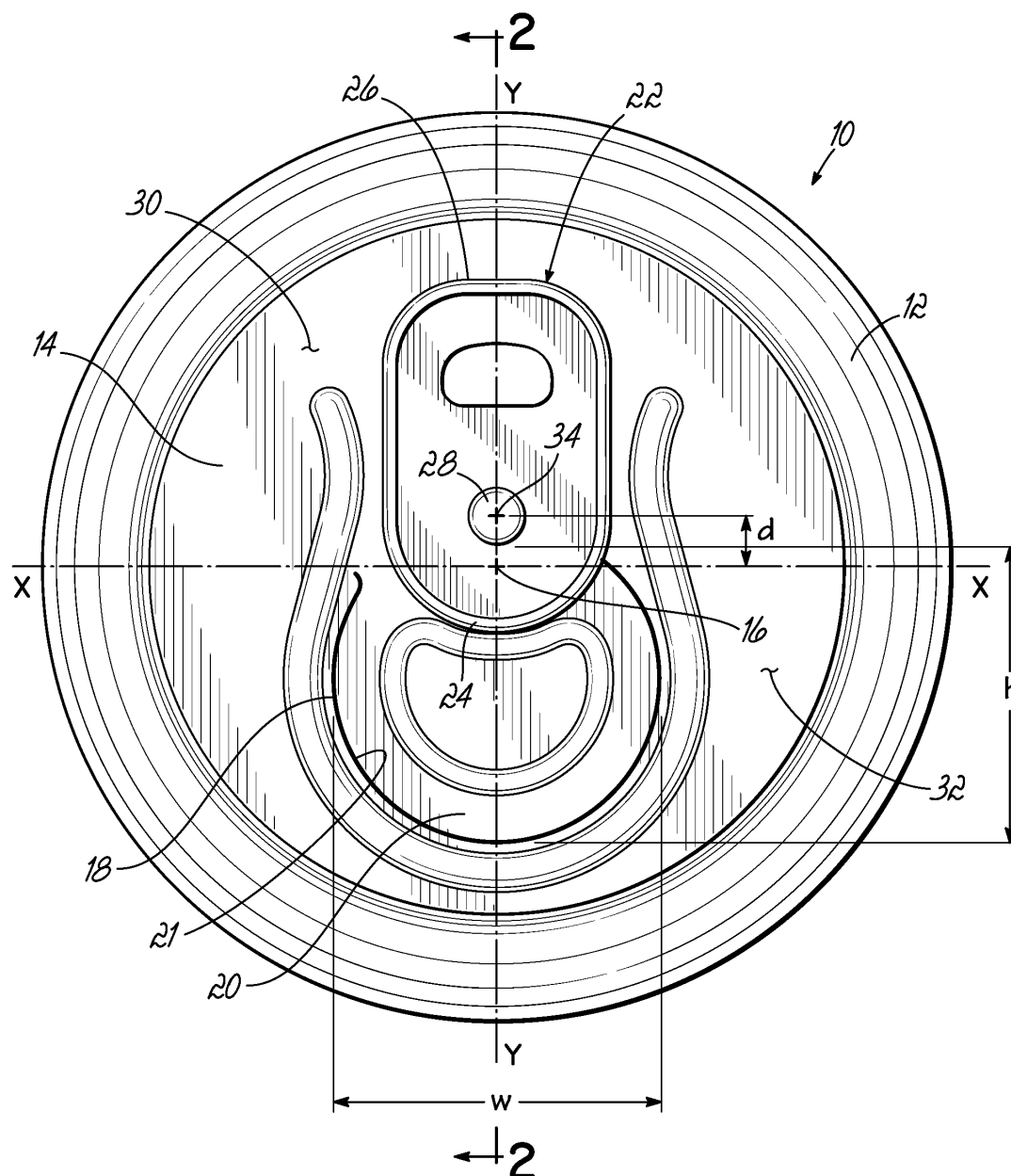
Family 82/100 - FAMPAT - ©Questel

Title

(EP2557051)

Can end

Images



Publication data including kind & date

EP2557051	A1	2013-02-13	EP2557051
US20130037542	A1	2013-02-14	US20130037542
CN102951343	A	2013-03-06	CN102951343



Abstract

(EP2557051)

A can end (10) comprises a center panel (14) having a diameter, a geometric center (16) lying on a transverse axis of symmetry (X-X) of the center panel (14), a score line (18) defining a periphery of a tear panel (20), a lift tab (22), and a rivet (28) attaching the lift tab (22) to the center panel (14) and permitting a nose portion (24) and lift (26) portion of the lift tab (22) to pivot out of the plane of the center panel (14), the rivet (28) located on a first side (30) of the transverse axis of symmetry (X-X) and the tear panel (20) located substantially on a second side (31) of the transverse axis of symmetry (X-X) opposite the first side (30).

Family 83/100 - FAMPAT - ©Questel

Title

(EP-381888)

Improved easy open can end and method of manufacture thereof.

Images

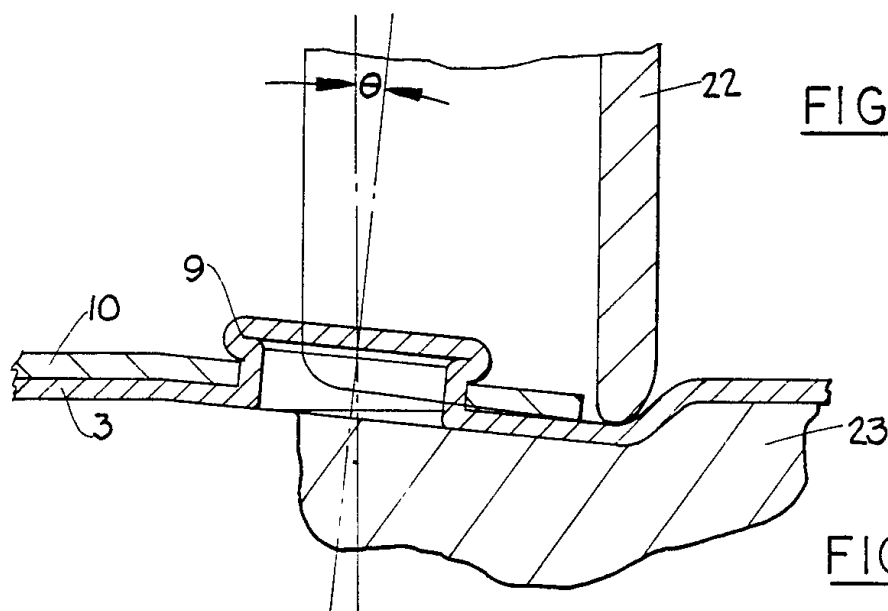
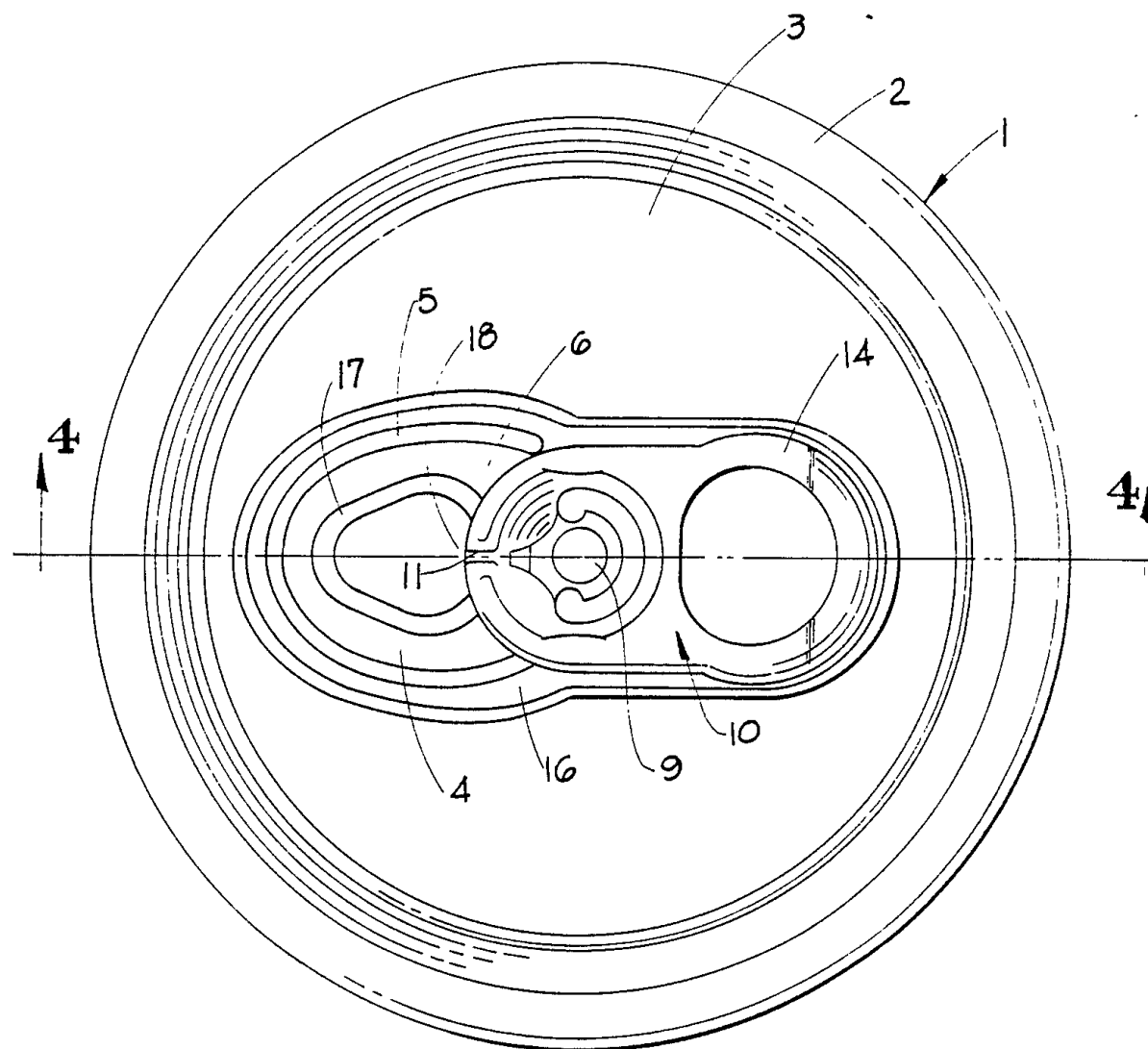


FIG. 1

FIG. 3

Publication data including kind & date

US4930658	A	1990-06-05	US4930658
AU4280989	A	1990-08-16	AU8942809
EP0381888	A1	1990-08-16	EP-381888
JPH02219745	A	1990-09-03	JP02219745
US4994009	A	1991-02-19	US4994009



AU620156	B2	1992-02-13	AU-620156
MX167013	B	1993-02-22	MX-167013
EP0381888	B1	1994-01-19	EP-381888
AT100404	T	1994-02-15	ATE100404
DE68912565	D1	1994-03-03	DE68912565
DE68912565	T2	1994-05-05	DE68912565
JPH0641301	B2	1994-06-01	JP94041301
CA1331354	C	1994-08-09	CA1331354
ES2056224	T3	1994-10-01	ES2056224
JP1911511	C	1995-03-09	JP1911511



Abstract

(EP-381888)

An improved easy open can end having a retained tear strip (18) extending diametrically partly across the can end defined by a score line, and a graspable pull tab (10) adjacent and outside the open end of the score line. The pull tab is attached to the can end by means of a rivet (9), the can end around the base of the rivet being deformed so as to slightly tilt the rivet (9) toward the finger end of the pull tab (10). Accordingly, initial lifting of the pull tab is fully directed to the initial fracture of the score in line (16) immediate in front of the rivet, thereby ensuring desirable venting action of internal pressure and allowing opening of the can end with less effort.

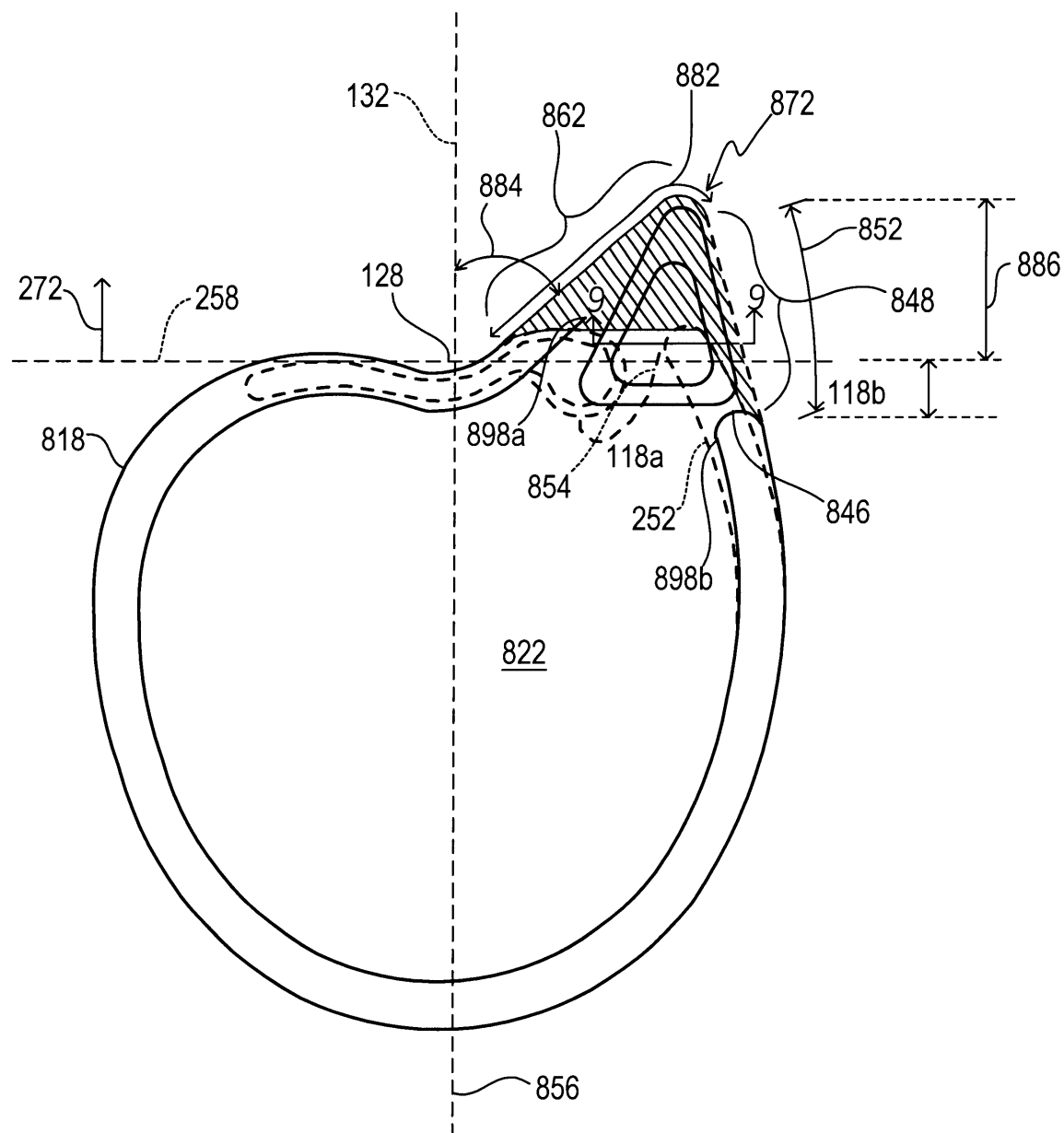
Family 84/100 - FAMPAT - ©Questel

Title

(EP1259435)

Vented container end apparatus and method

Images



Publication data including kind & date

WO200146025	A1	2001-06-28	WO200146025				
CA2394246	A1	2001-06-28	CA2394246				
AU2447001	A	2001-07-03	AU200124470				
US6354453	B1	2002-03-12	US6354453				
BR0016455	A	2002-11-26	BR200016455				
BRPI0016455	A1	2002-11-26	BRPI0016455				
EP1259435	A1	2002-11-27	EP1259435				
MXPA02006147	A	2003-01-28	MX2002PA006147				
JP2003517974	A	2003-06-03	JP2003517974				
PL356663	A1	2004-06-28	PL2000356663				
AU778250	B2	2004-11-25	AU-778250				
EP1259435	A4	2006-01-11	EP1259435				
PL203068	B1	2009-08-31	PL-203068				
BRPI0016455	A2	2010-07-20	BR200016455				
BR0016455	B1	2011-10-18	BR200016455				

Abstract

(EP1259435)

A container end is provided so that upon opening, a generally triangular vent region (862) is formed with an apex (872) pointing rearwardly (272) toward the head space to vent the container, e.g. during pouring. A container is provided that achieves a fast and smooth pour with a relatively small increase in the opening area (822) relative to previous configurations and achieves a superior pour without increased bursting, buckling or opening failures associated with relatively larger openings.

Family 85/100 - FAMPAT - ©Questel

Title

(US5738237)

Easy open container end, method of manufacture, and tooling

Images

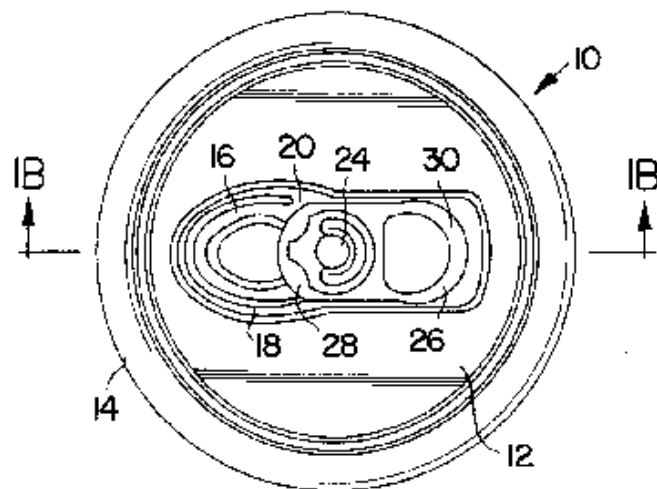


FIG. 1A

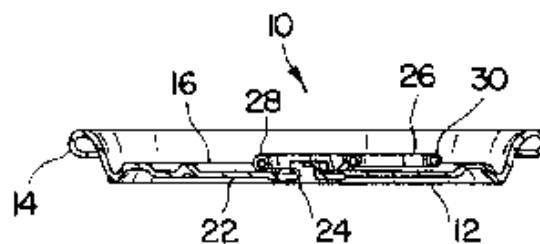


FIG. 1B

Publication data including kind & date[US5738237](#)

A 1998-04-14 US5738237

**Abstract**

(US5738237)

An easy open can end having an anti-missiling score integrally formed thereon, a method of further forming a can end to incorporate the anti-missiling score, and tooling for accomplishing the method.

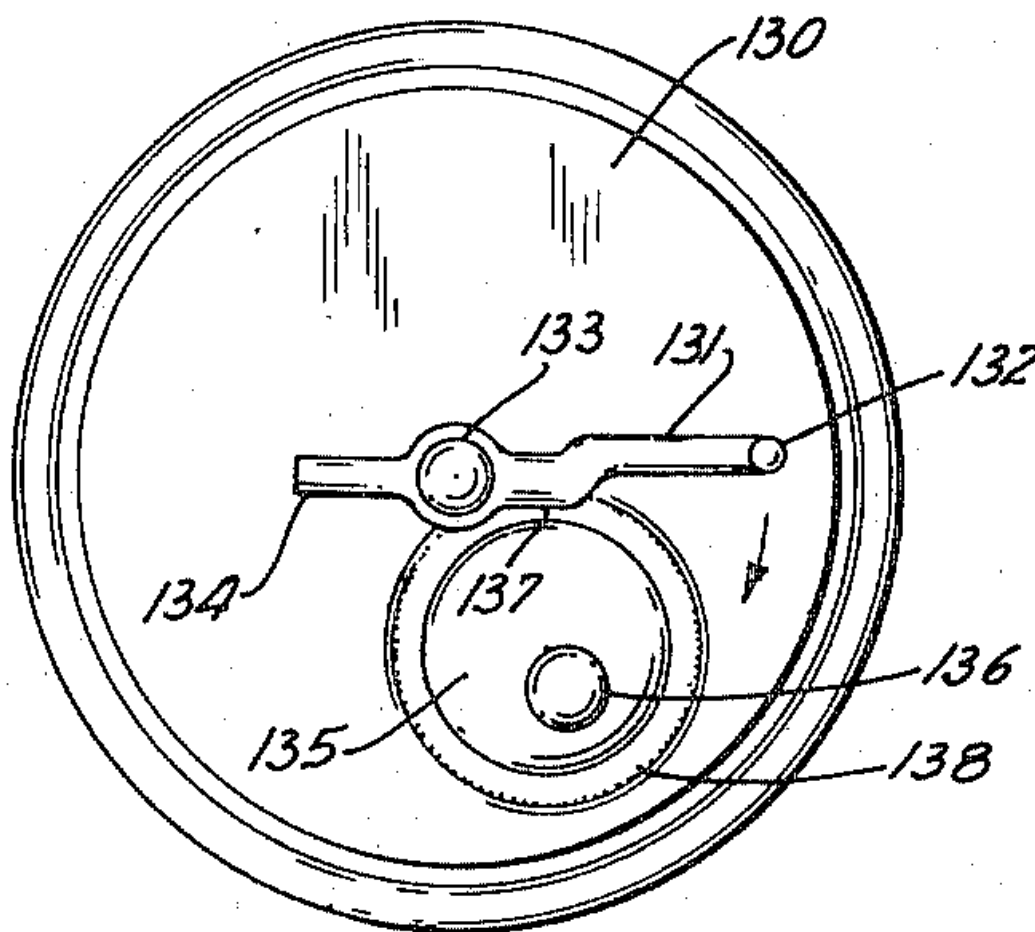
Family 86/100 - FAMPAT - ©Questel

Title

(US3843011)

Container with attached closure

Images



Publication data including kind & date

[US3843011](#)

A 1974-10-22 US3843011



Abstract

(US3843011)

An improved method for forming the self opening closure used for containers of liquid materials, especially those used for carbonated beverages, and arranged for consumption direct from the container. One means comprises a segment formed from the material of the container top and arranged to be pushed opened inwardly and with means to anchor it to the top after opening. Sealing means are adhesives, or alternatively a thin, breakable membrane. Option-leverage means are provided to assist in breaking the adhesive. Another closure means is a gasketed plug, also arranged for inward opening and with anchorage to the top. A further means is a slide gate opening device with membrane sealing underneath. Still another means is a segment outlined by a score line and with leverage means for initiating breaking of the score line and with completion of the opening by pushing the segment into the container, also with top attaching means. Still another variation is a segment with part score line and part through cut, with sealing means for the latter. The primary objective of these closures is to eliminate the litter of the presently used tear-out tab.

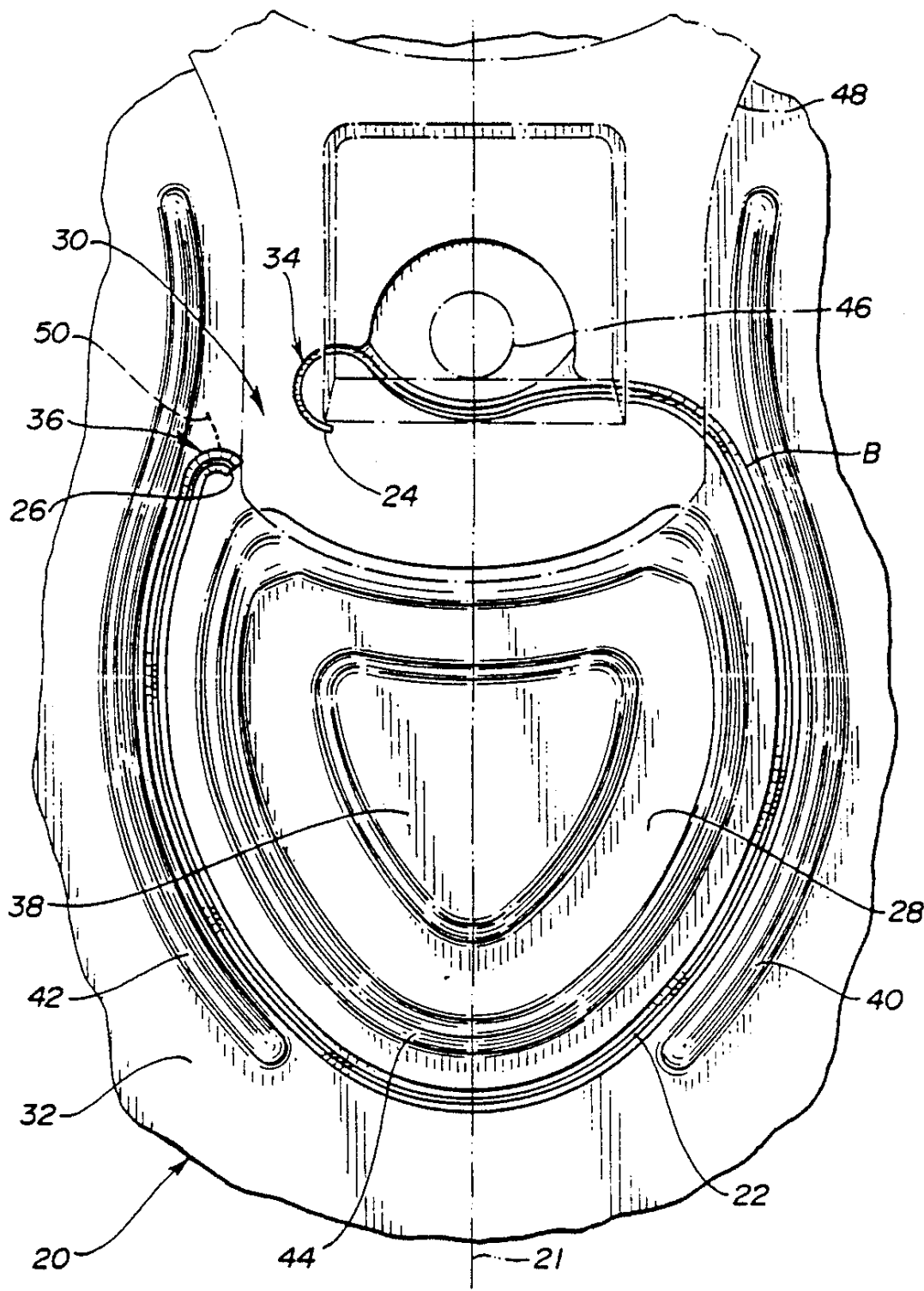
Family 87/100 - FAMPAT - ©Questel

Title

(US5219257)

Self-opening can lid with improved contour of score and means for making

Images



Publication data including kind & date

US5064087	A	1991-11-12	US5064087
US5219257	A	1993-06-15	US5219257



Abstract

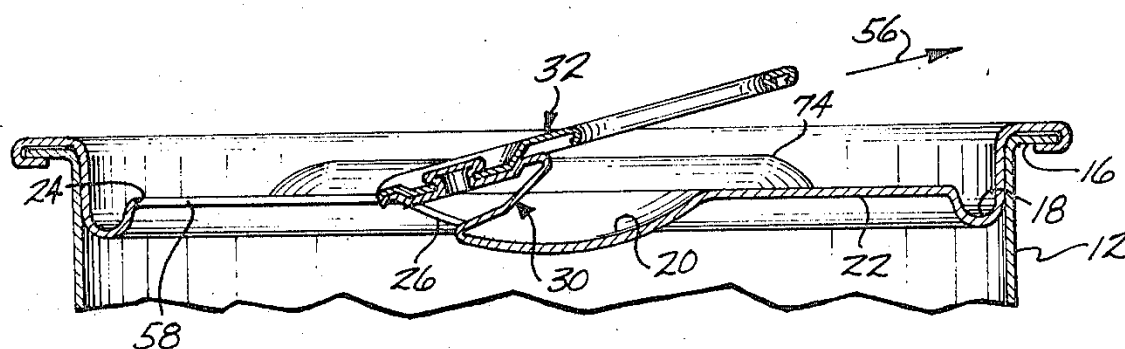
(US5219257)

An easy-open container end includes a displaceable panel defined by a score line having curved tails which is in parallel relationship with adjacent means for reinforcing, thereby reducing opening failures, while controlling tearing. A score die and anvil is further provided wherein a four bolt pattern provides greater resistance to distortion and more even mounting stress distribution, resulting in more even score line residuals and reduced opening failures.

(US3795342)

Stowable tab and tear strip

Images

**Publication data including kind & date**[US3795342](#)

A 1974-03-05 US3795342

**Abstract**

(US3795342)

A stowable tab for use with an aluminum end closure for a beverage container includes a pull ring having a ring handle portion and a lever portion attached to a tear strip, the latter of which is formed by scoring lines in the top of the end closure. A centrally located depressed region and, preferably, a volume compensating raised region spaced from the depressed region is formed in the end closure. The score lines terminate in spaced-apart relationship at or near the depressed region. The tear strip is formed with a leading edge adjacent the periphery of the end closure and has two spaced side portions which extend from the leading edge of the tear strip toward and preferably partially into the depressed region. The tear strip and lever portion of the pull tab are designed such that the forward half of the tear strip bends inwardly from the end closure, while the rearward half of the tear strip bends outwardly from the end closure. The tear strip bends along two areas, a first laterally disposed area centrally located on the tear strip and a second area located near its root end in the depressed region. When the tear strip has been severed along its score lines, it will be resting above the depressed region. By exerting a slight pressure on the top of the tear strip, it will bifold along the two areas into the depressed region. Thus the tear strip is stowed in the depressed region while the pull ring is stowed at a location where it will not interfere with the use of the can.

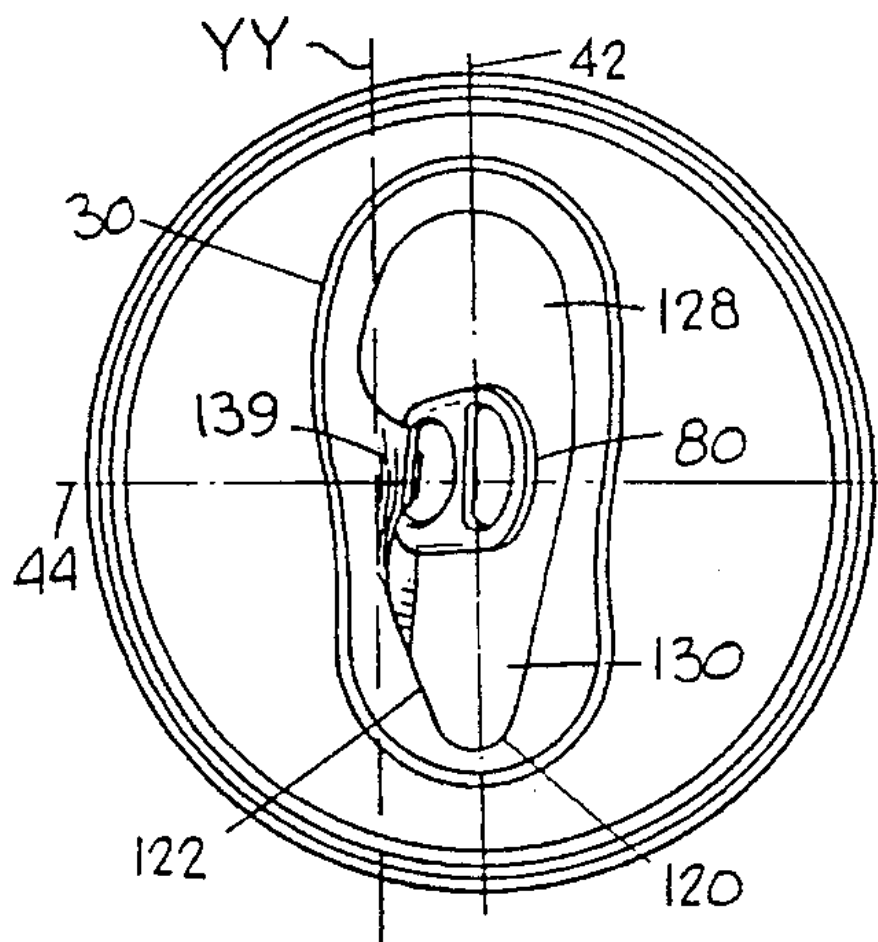
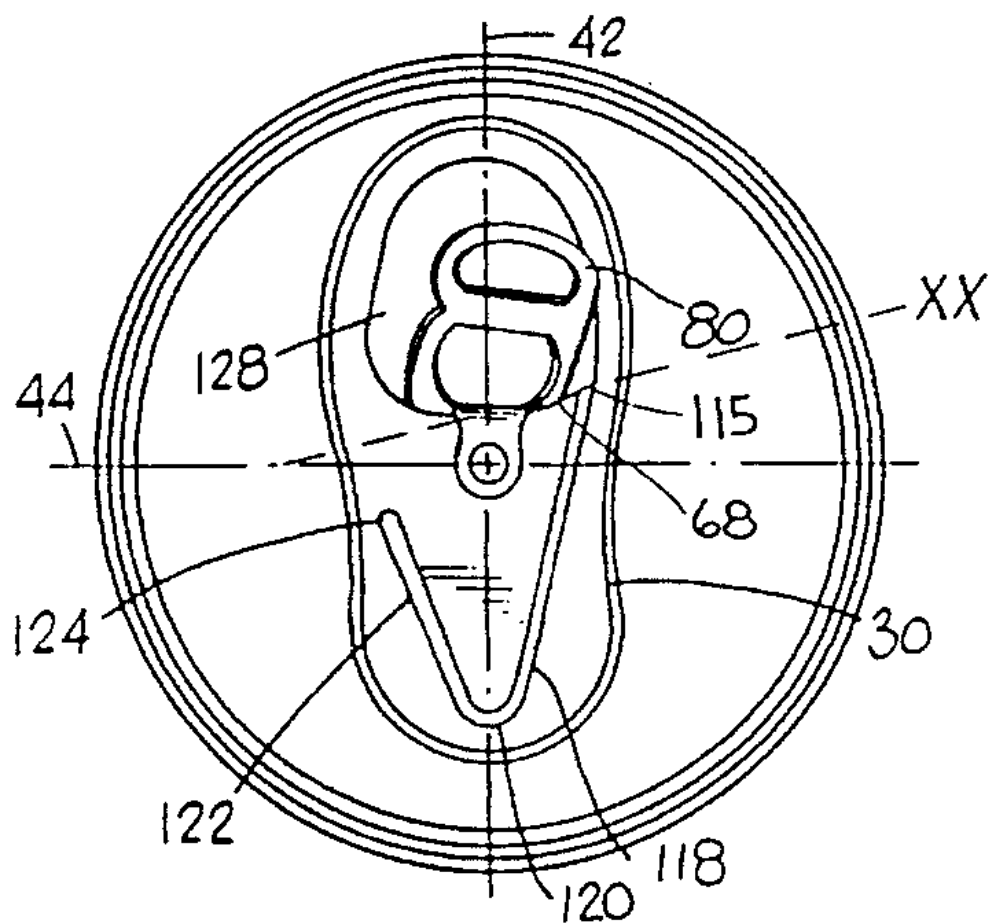
Family 89/100 - FAMPAT - ©Questel

Title

(WO9602432)

Score line groove for container end members

Images



Publication data including kind & date

WO9602432	A1	1996-02-01	WO9602432
AU2970695	A	1996-02-16	AU9529706
US5555992	A	1996-09-17	US5555992

**Abstract**

(WO9602432)

A container end member (102) has a peripheral wall and integral central end wall portion with a stay-on-tab (80) mounted on the central end wall portion for pivotal and rotational movement and a score line groove (104) defined by two spaced apart terminal ends formed in the central end wall portion for defining a severable panel portion that is large enough so that when severed will provide an elongated opening that vents the container to permit pouring of the beverage in the container (10) at faster pour rates than now available.

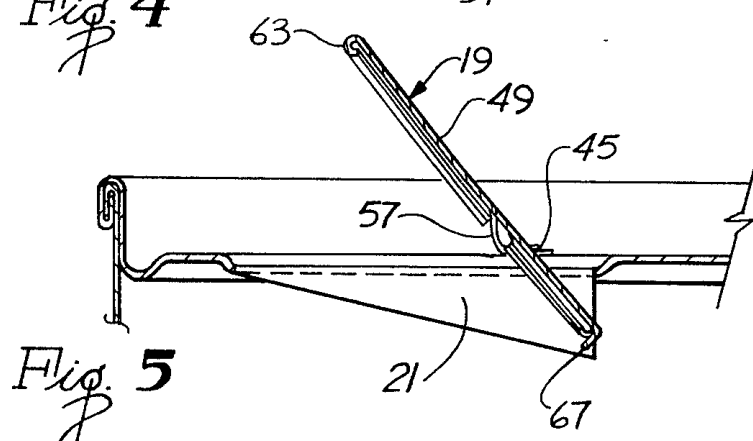
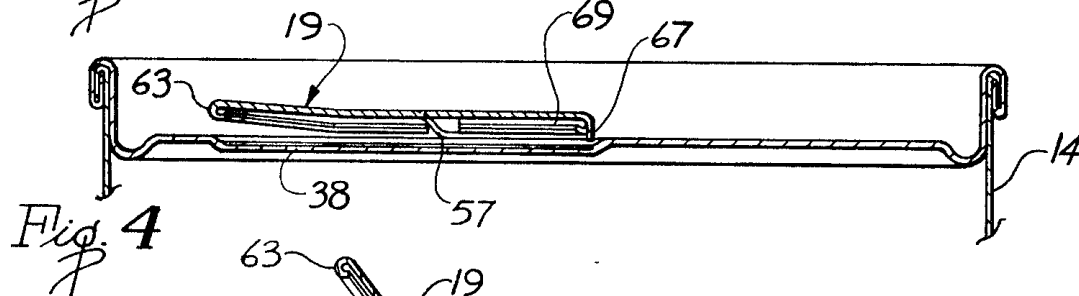
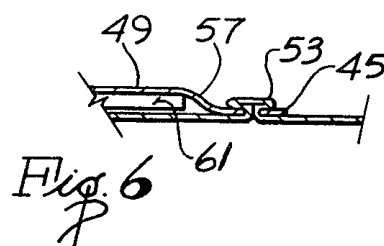
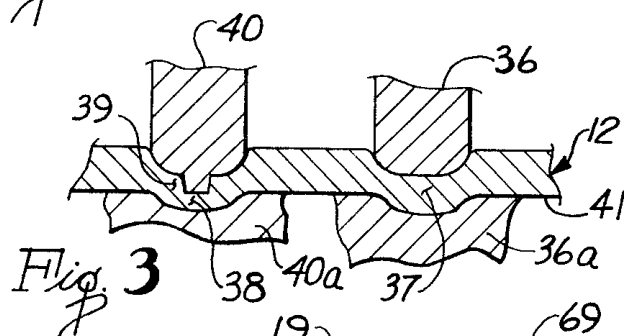
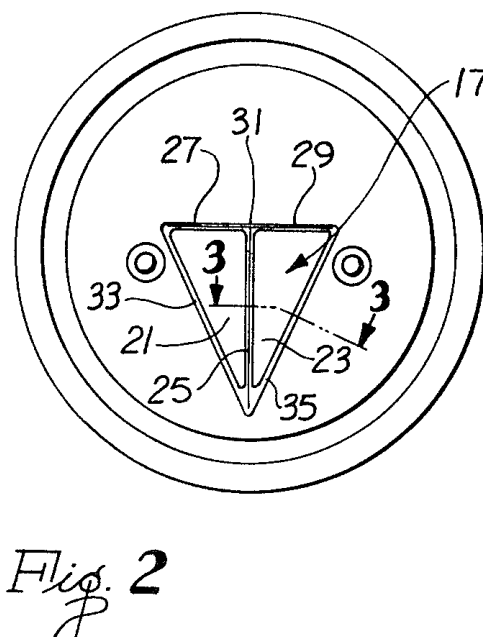
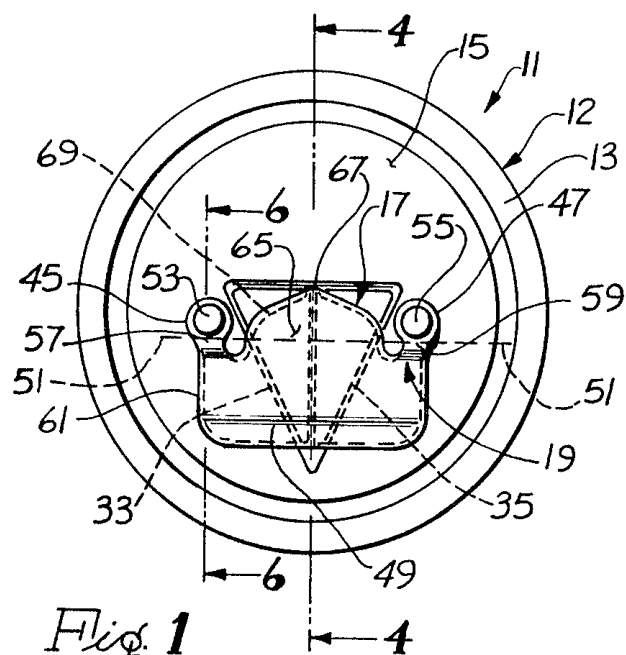
Family 90/100 - FAMPAT - ©Questel

Title

(US3730379)

Easy opening can end with nonremovable tab

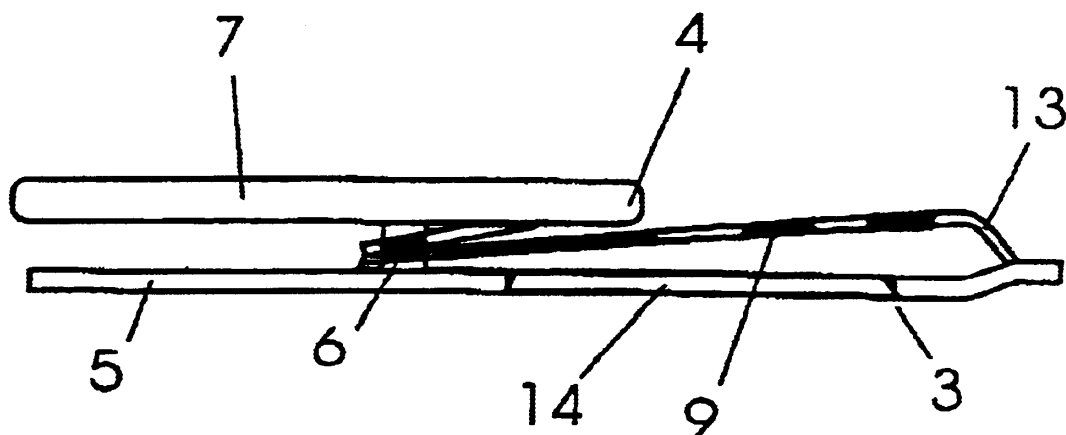
Images



INVENTOR:
Omar L. Brown
By: Smyth, Poston & Pavitt
ATTORNEYS

An easy opening container wall comprising a container wall of sheet material, a line of weakness in said container wall at least partially defining a tear portion, a tab having an attachment portion joined to a lever portion for pivotal movement of the lever portion relative to the attachment portion. The lever portion has a rupturing section and the attachment portion is attached to the container wall outside of the tear portion on opposite sides thereof with the rupturing section overlying a region of the tear portion. Pivotal movement of the lever portion causes the rupturing section to bear on the tear portion and rupture the line of weakness. Further pivotal movement of the tab folds the tear portion inwardly to form an opening in the container wall without removing the tab or the tear portion from the container wall.

Images



T 2006-06-15 ATE325044

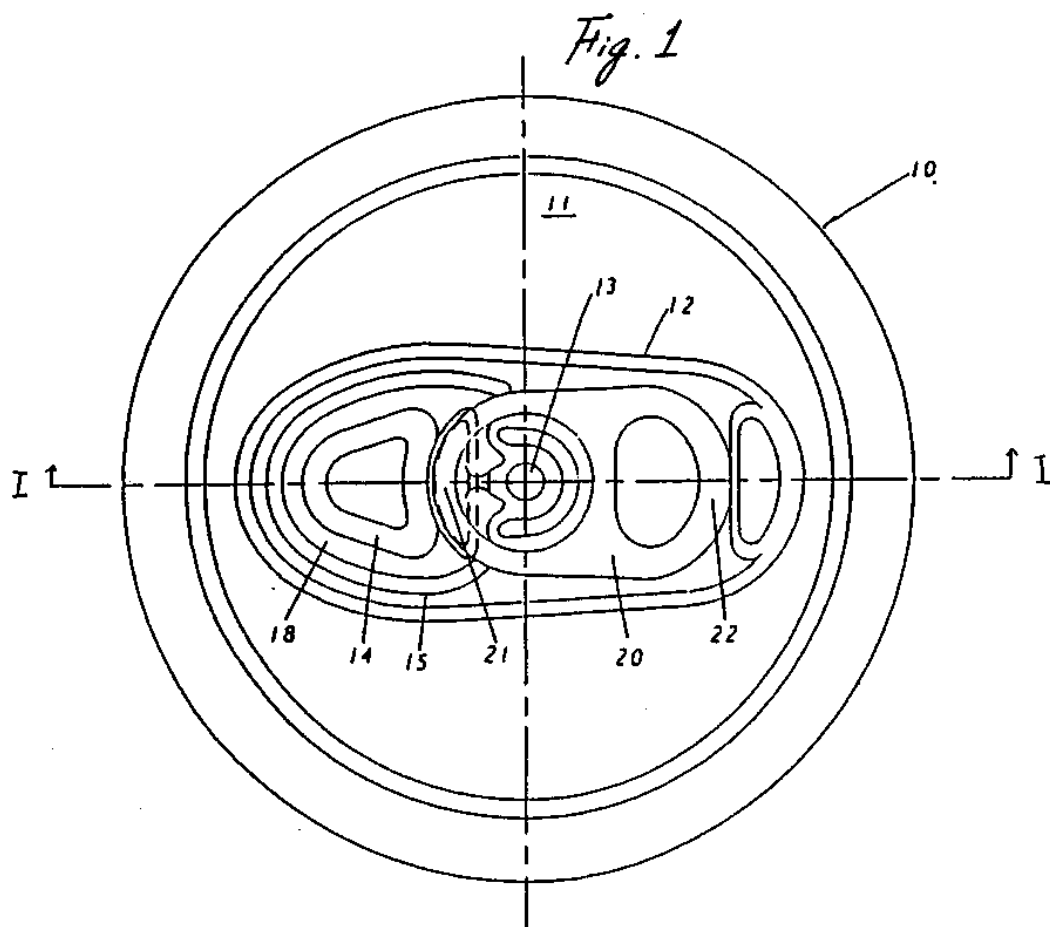


The invention relates to a beverage can with a press-in closure (2) whereby a lid area is surrounded by a separating line (3) which can be pressed down into a partial area by means of an actuation tab (4) of a grip lug (7) that is fixed to the lid (5) by means of a riveted joint (6), and forming a hole (8) in the interior of the can for pouring out said beverage. According to the invention, the hole (8) can be covered with a perforated external lid (9) which is also attached to the lid (5) by means of a riveted joint (6). When the grip lug (7) is actuated, the actuation tab (4) of the grip bracket (7) gets inserted into the perforated external cover (9) by means of a groove (10). The invention prevents insects such as wasps or the like from penetrating into the beverage can.

(EP-564725)

Anti-impact easily openable can lid and method of making the same

Images



Publication data including kind & date

EP0564725	A1	1993-10-13	EP-564725
EP0564725	B1	1998-07-01	EP-564725



Abstract

(EP-564725)

A can lid (10) for a can, including a top plate (11) to which a tab (20) having a tab nose (21) is coupled by a rivet (13) at the substantial center thereof, a tab nose recess (19) formed in the top plate underneath the tab nose and having a smooth bottom surface with no step part, and a score (15) formed in the top plate surrounding around the tab nose recess and having a start point (16) and an end point (17) located in front of the rivet and defining therebetween a hinge space.

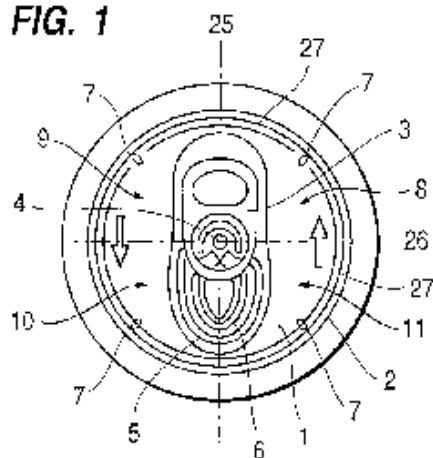
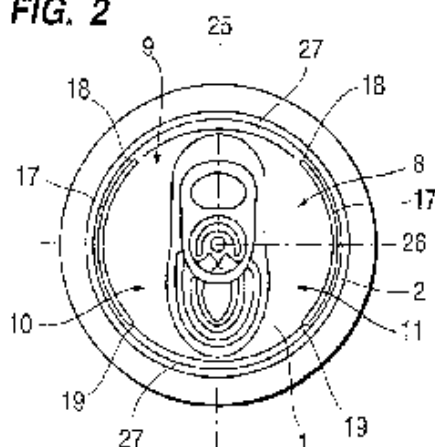
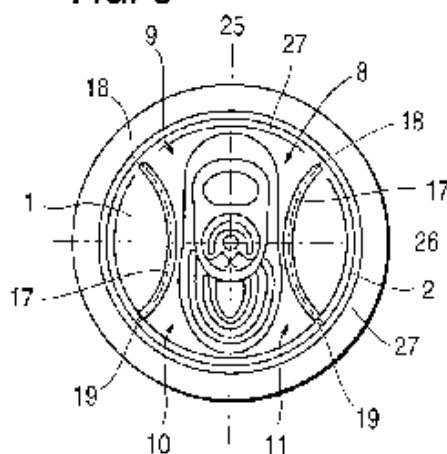
Family 93/100 - FAMPAT - ©Questel

Title

(US5829623)

Easily openable can lid

Images

FIG. 1**FIG. 2****FIG. 3****Publication data including kind & date**

JP06179445	A	1994-06-28	JP06179445
TW260649	B	1995-10-21	TW-260649
JP2570560	B2	1997-01-08	JP2570560
US5829623	A	1998-11-03	US5829623

**Abstract**

(US5829623)

An easily openable can lid wherein buckling parts are provided nearby a peripheral groove formed on the can lid in a range of 25 to 65 degrees from the center of the top plate from a line between the tip end of the openable member and the center of the top plate in all sector segments formed when the can lid is divided into four sector segments by a line between an extreme end of the openable member and the center of the top plate and a line which passes through the center of the top

plate and orthogonally intersects the above described line. A reinforcing part with a reinforcing effect smaller than a buckling effect is provided at a coupling part between the top plate and the peripheral groove or near said coupling part except for the buckling part at an opposite side of the openable member and its neighborhood to provide a difference of strength between the buckling part at the openable member side and the buckling part at an opposite side of the openable member.

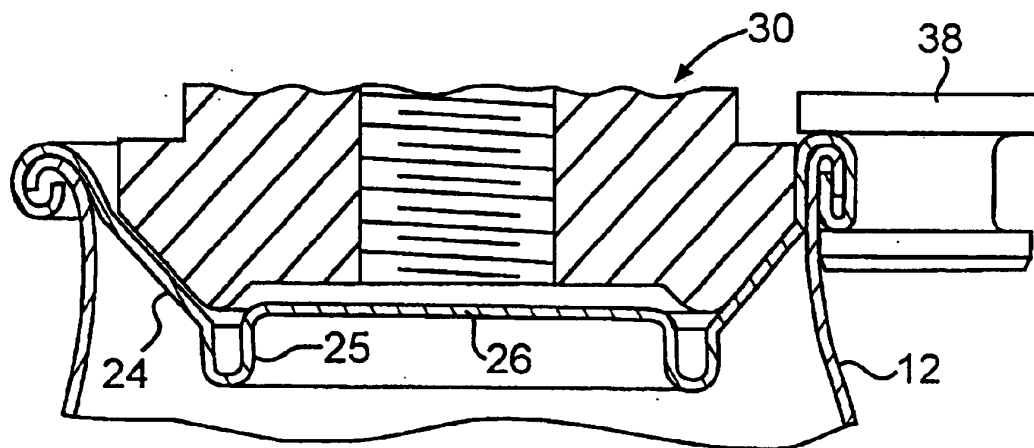
Family 94/100 - FAMPAT - ©Questel

Title

(US6848875)

Can end and method for fixing the same to a can body

Images



Publication data including kind & date

US20030150866	A1	2003-08-14	US20030150866
US6848875	B2	2005-02-01	US6848875



Abstract

(US6848875)

A can end comprising a peripheral cover hook, a chuck wall dependent from a first point on the interior of the cover hook, an outwardly concave annular reinforcing bead extending radially inwards from a second point on the interior of the chuck wall, and a central panel supported by an inner portion of the reinforcing bead, characterized in that, a line connecting the first point and the second point is inclined to an axis perpendicular to the exterior of the central panel at an angle between 30° and 60°.

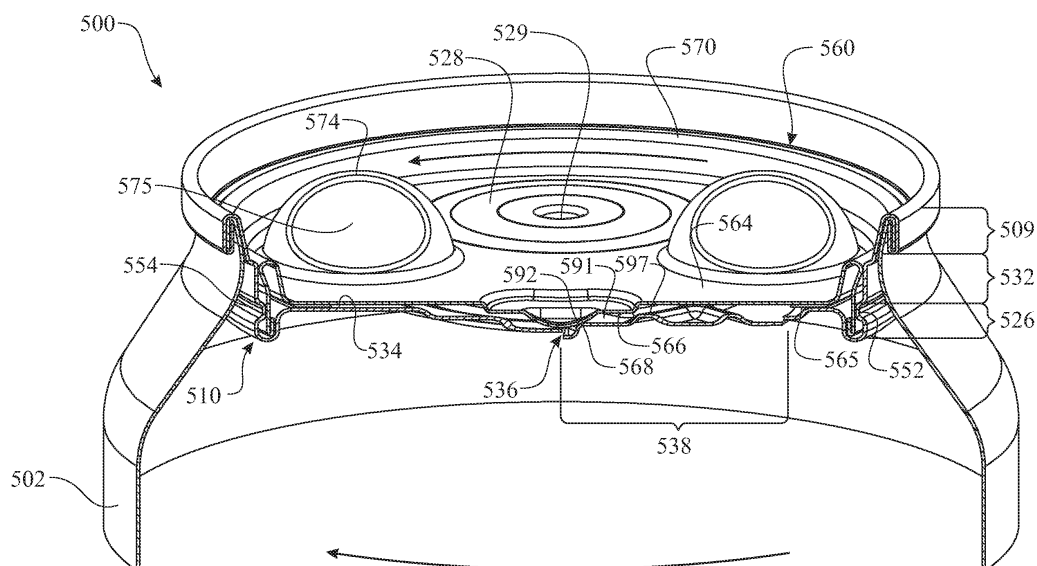
Family 95/100 - FAMPAT - ©Questel

Title

(US9637269)

Resealable container lid and accessories including methods of manufacturing and use

Images

**Publication data including kind & date**

US9637269

B1 2017-05-02 US9637269

**Abstract**

(US9637269)

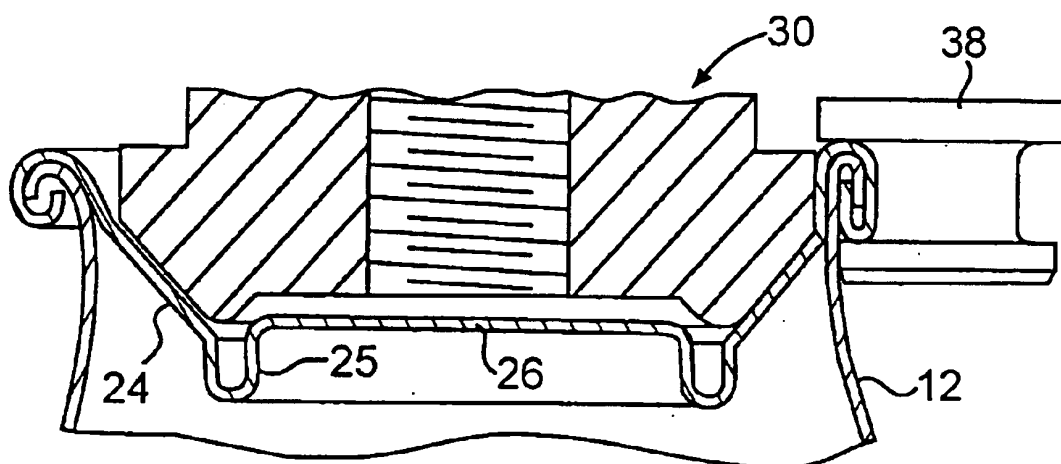
A resealable container lid assembly including a cap rotationally assembled to a lid. The cap rotates between storage, opening, removal and resealing positions. Operation between the cap and the lid employs any suitable mechanical interface, such as cam tracks and cam followers. The lid includes a tear panel defined by a score line. Features of the cap are used to impinge upon the lid to fracture the score line and open the tear panel. Once opened, the cap can reseal the container. The seal can be provided between a bottom surface of the cap and the top surface of the lid, a feature of the sidewalls of the cap and the lid, or any other sealing interface. The cap can include a tamper indicator. The cap can be replaced with any of a variety of specialized caps and/or accessories designed for different functions.

Family 96/100 - FAMPAT - ©Questel

Title

(US8328041)

Can end and method for fixing the same to a can body

Images

Publication data including kind & date

US20030198538	A1	2003-10-23	US20030198538				
US20030202862	A1	2003-10-30	US20030202862				
US20040026433	A1	2004-02-12	US20040026433				
US20040026434	A1	2004-02-12	US20040026434				
US20040129710	A1	2004-07-08	US20040129710				
US6877941	B2	2005-04-12	US6877941				
US6935826	B2	2005-08-30	US6935826				
US20050247717	A1	2005-11-10	US20050247717				
US8328041	B2	2012-12-11	US8328041				
US20130277377	A1	2013-10-24	US20130277377				

Abstract

(US8328041)

A can end includes a peripheral cover hook a chuck wall dependent from the interior of the cover hook, an outwardly concave annular reinforcing bead extending radially inwards from the chuck wall, and a central panel supported by an inner portion of the reinforcing bead, characterized in that, the chuck wall is inclined to an axis perpendicular to the exterior of the central panel at an angle between 20° and 60°, and the concave cross-sectional radius of the reinforcing bead is less than 0.75 mm.

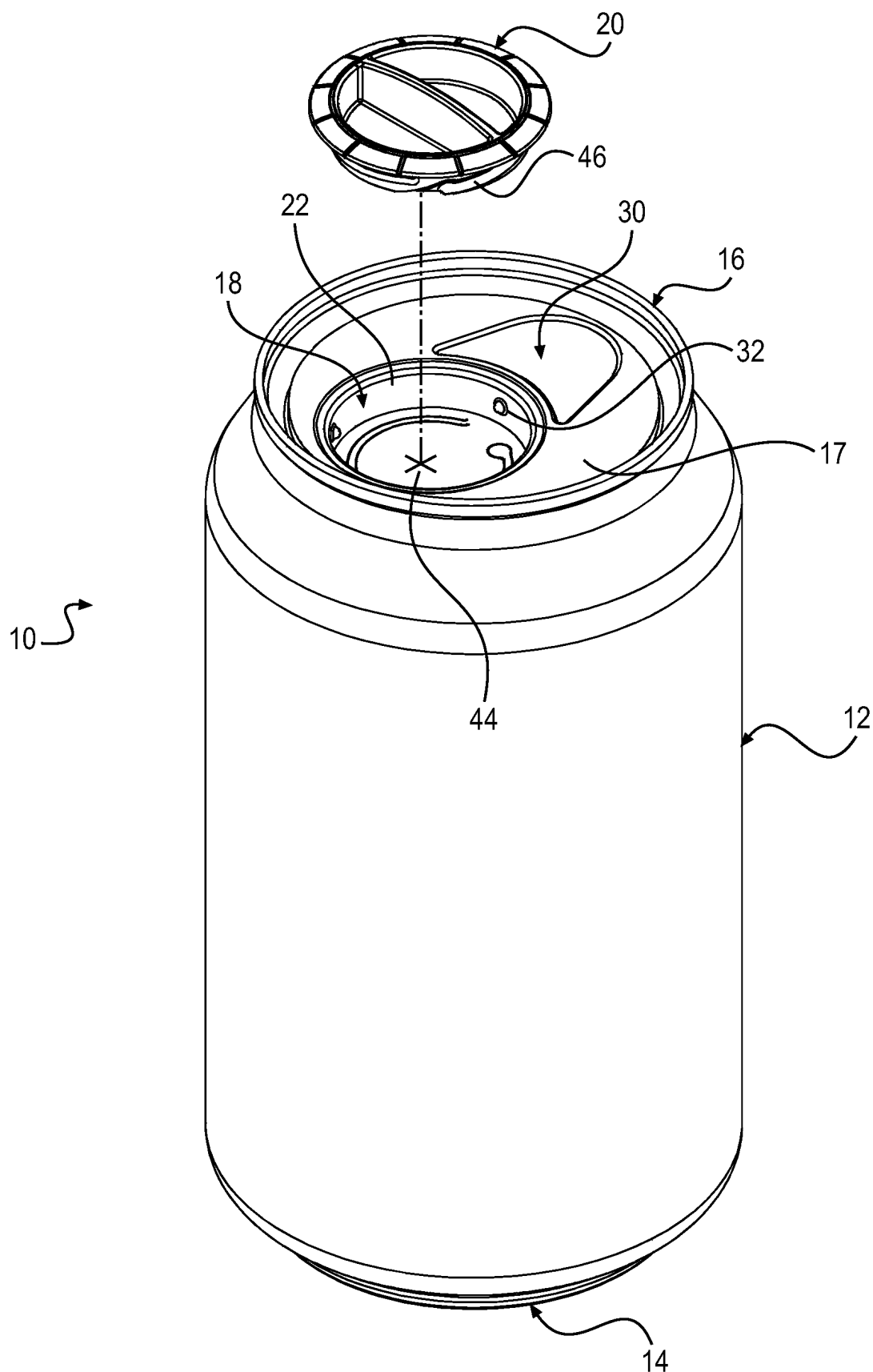
Family 97/100 - FAMPAT - ©Questel

Title

(EP2882657)

Resealable beverage containers and methods of making same

Images

**Publication data including kind & date**[CA2881397](#)

A1 2014-02-13

CA2881397

[WO2014026047](#)

A1 2014-02-13

WO201426047



US20140042164	A1	2014-02-13	US20140042164				
US20140041338	A1	2014-02-13	US20140041338				
US8844761	B2	2014-09-30	US8844761				
AU2013299540	A1	2015-02-19	AU2013299540				
SG11201500703W	A	2015-02-27	SG11201500703W				
AP201508247	A0	2015-02-28	AP201508247				
US8985371	B2	2015-03-24	US8985371				
CN104520202	A	2015-04-15	CN104520202				
KR20150042209	A	2015-04-20	KR20150042209				
PH12015500283	A1	2015-04-27	PH12015500283				
PH12015500283	B1	2015-04-27	PH12015500283				
EA201590226	A1	2015-05-29	EA201590226				
EP2882657	A1	2015-06-17	EP2882657				
MX2015001777	A	2015-08-14	MX2015001777				
JP2015528424	A	2015-09-28	JP2015528424				
HK1203469	A1	2015-10-30	HK1203469				
MA20150434	A1	2015-11-30	MA20150434				
IN0480/MUMNP/2015	A	2016-01-22	IN2015MN00480				
US9272819	B1	2016-03-01	US9272819				
ZA201501479	B	2016-04-28	ZA201501479				
EP2882657	A4	2016-05-18	EP2882657				
VN46839	A	2016-05-25	VN--46839				
MA37889	B1	2016-06-30	MA--37889				
TH154193	A	2016-07-11	TH-154193				
BR112015002642	A1	2016-11-01	BR112015002642				
EP2882657	B1	2017-02-15	EP2882657				
CA2881397	C	2017-02-28	CA2881397				
JP6144345	B2	2017-06-07	JP6144345				
NZ704887	A	2017-06-30	NZ-704887				
BR112015002642	A2	2017-07-04	BR112015002642				
CN106986082	A	2017-07-28	CN106986082				
AU2013299540	B2	2017-08-17	AU2013299540				
MX356424	B	2018-05-29	MX-356424				
KR10-1984348	B1	2019-05-30	KR101984348				

Abstract

(EP2882657)

A resealable beverage container includes a cap that moves between storage, opening, removal and resealing positions. Ramps are used to enhance an opening force generally delivered by the engagement between the socket and the cap. An elastomeric sealing element is disposed between the cap and the socket so that when the cap is in the fully seated or sealed position, an airtight or at least substantially airtight seal is created to prevent the contents of the container from leaking out. Further enhancements are disclosed that include a score line structure in the socket bottom wall that facilitates a predictable and repeatable opening of the container along the score line. A grip is provided that includes a gap or space into which a coin or other implement can be inserted to allow the consumer a better grip to provide adequate opening force.

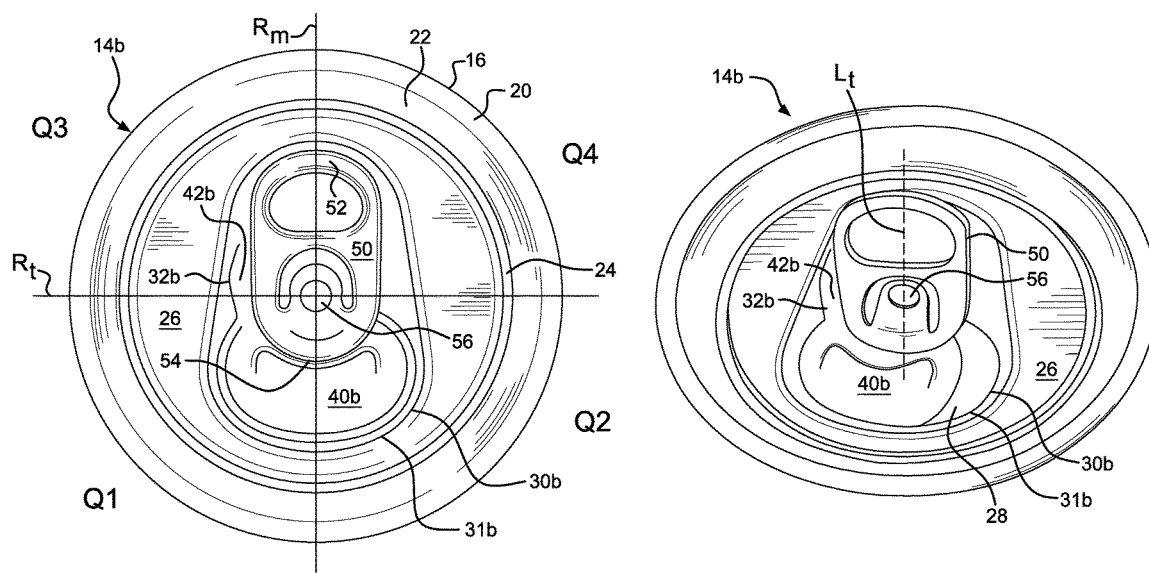
Family 98/100 - FAMPAT - ©Questel

Title

(EP2493776)

Vented beverage can end

Images



Publication data including kind & date

WO2011/053776	A1	2011-05-05	WO201153776
CA2777915	A1	2011-05-05	CA2777915
USD650277	S1	2011-12-13	USD650277
USD650278	S1	2011-12-13	USD650278
USD650276	S1	2011-12-13	USD650276
EP2493776	A1	2012-09-05	EP2493776
US20130126529	A1	2013-05-23	US20130126529
BR112012010300	A1	2014-01-07	BR112012010300
BR112012010300	A2	2016-03-29	BR112012010300
US9561888	B2	2017-02-07	US9561888
EP2493776	B1	2017-08-02	EP2493776
CA2777915	C	2017-11-07	CA2777915
PL2493776	T3	2017-11-30	PL2493776
ES2645111	T3	2017-12-04	ES2645111
JO3303	B1	2018-09-16	JO---3303



Abstract

(EP2493776)

A beverage can end for seaming onto a can body may include a peripheral wall, a center panel, a tab attached to the center panel by a rivet (56), a tear panel (41b), a main reference line (RM), a transverse reference line (RT), and a score (31b). The score may include arcuate main score (31b) that defines a main portion of the tear panel (41b) and a score extension (32b) that defines a vent portion. The score may be configured such that actuation of the tab from its horizontal rest position to an intermediate position ruptures the main score portion (31b) to pivot the tear panel main portion (40b) about the hinge and further actuation of the tab by twisting from the intermediate position ruptures the score extension (32b).

Family 99/100 - FAMPAT - ©Questel

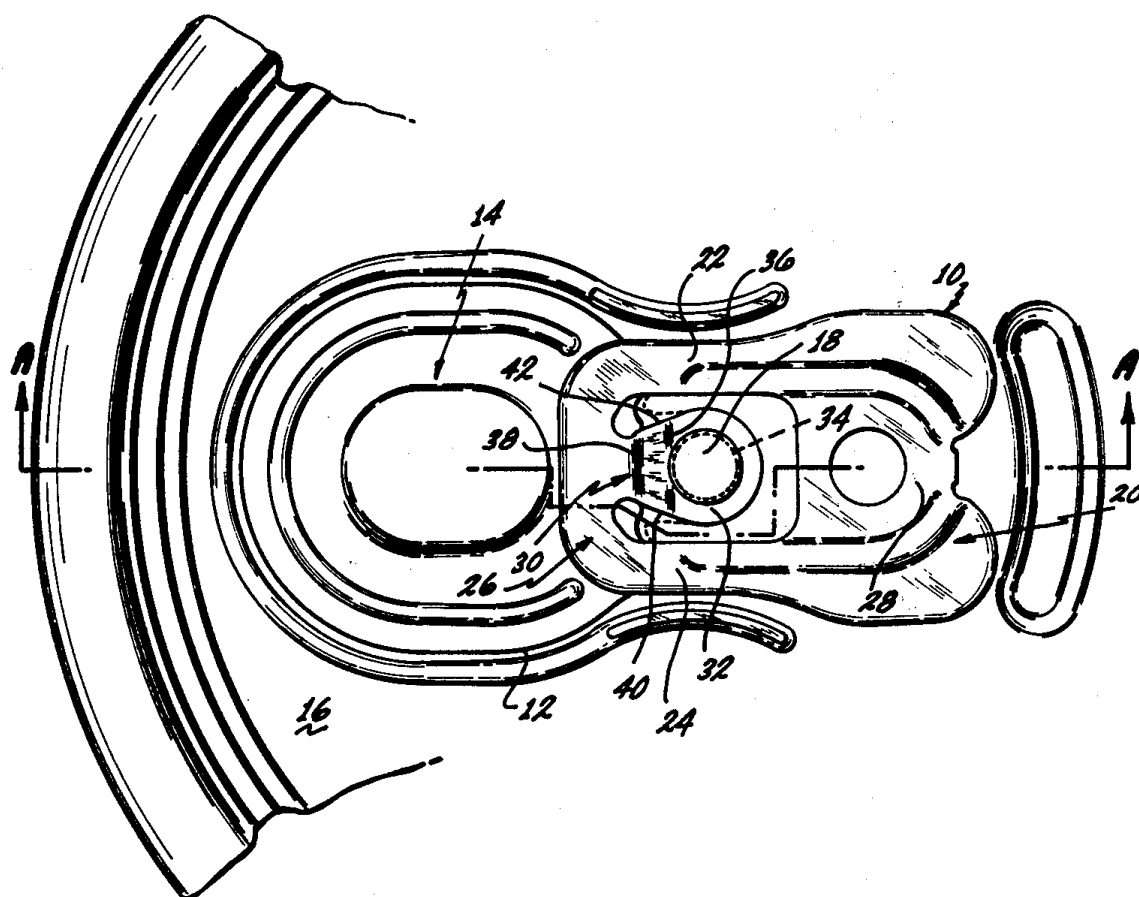
Title

(EP-289022)

A system for forming an opening in a container end member

Images

Images



Publication data including kind & date

US4148410	A	1979-04-10	US4148410
USRE31702	E	1984-10-09	USRE31702



Abstract

(USRE31702)

When the improved tab is lifted by its lifting end, its opening end ruptures a scored line defining a panel, and this opens the container. The tab is retained to the container by a flap extending from the opening end toward the lifting end and including an affixing portion which is riveted to the container. After the container has been opened, the lifting end of the tab is depressed toward the end of the container. In prior art tabs, flexing of the flap occurred at a first bending region adjacent the affixing portion during both the lifting and depressing motions. In contrast, in the present invention the flap is shaped to provide a second bending region adjacent the opening end, in addition to the first bending region adjacent the affixing portion. When the lifting end is lifted, the improved tab flexes in the first bending region, and when the lifting end is depressed, the improved tab flexes in the second bending region. In this manner the flexing is shared between the first and the second bending regions.