July 20, 1965 J. S. BOZEK 3,195,768

EASY OPENING PULL TAB CAN END WITH WIDE TEAR STRIP

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FIG. 1

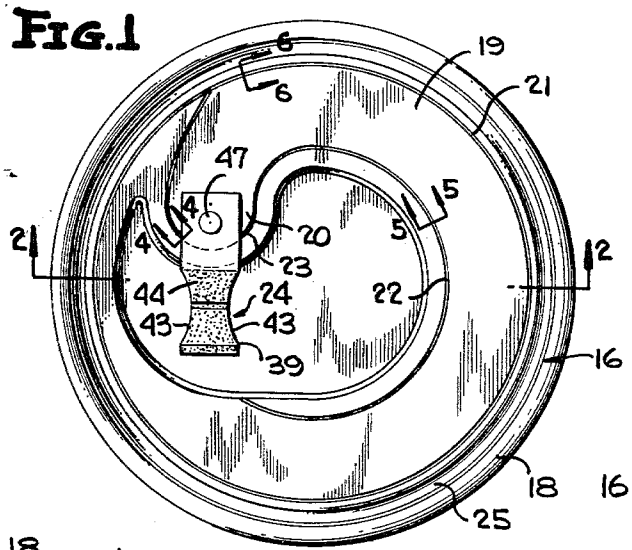


FIG. 4

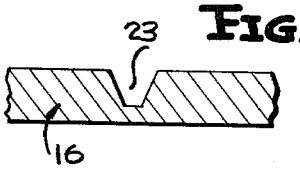


FIG. 5

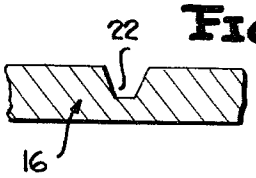
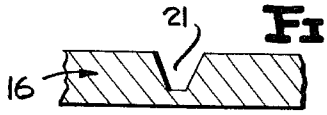


FIG. 6



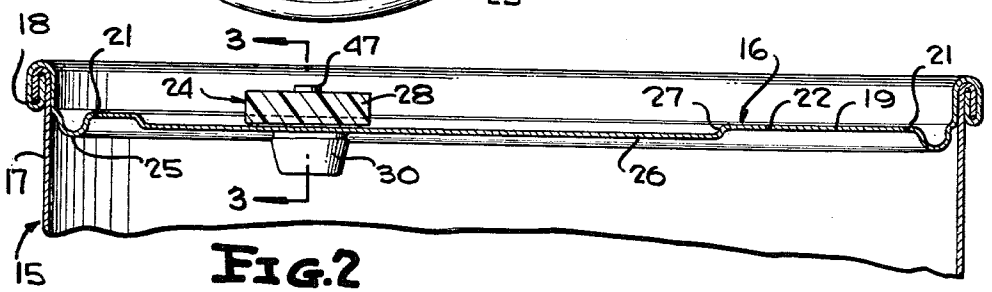


FIG. 2

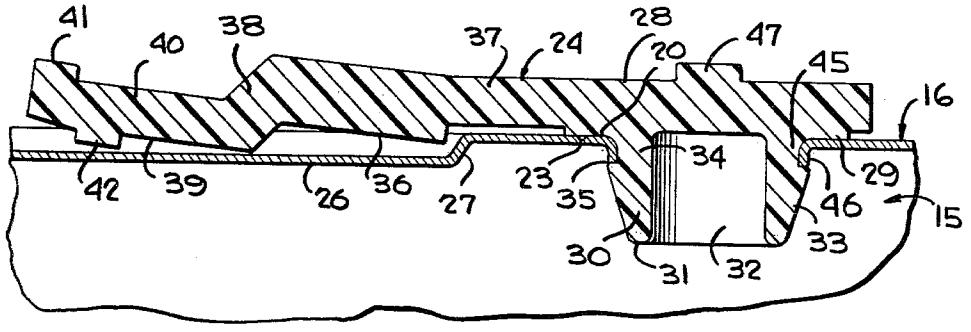


FIG. 3

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FIG. 7

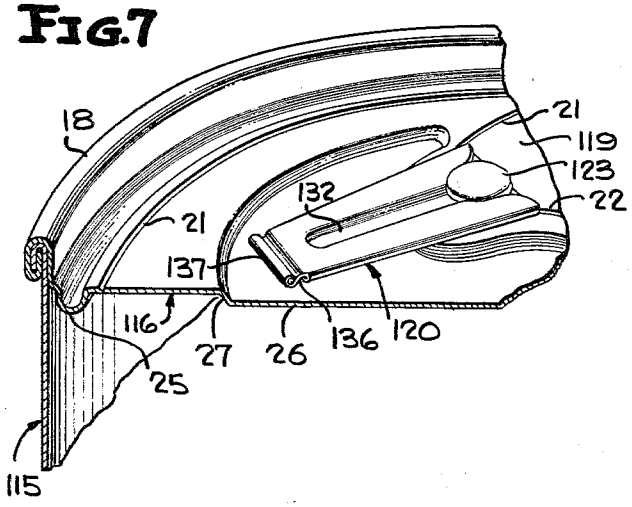


FIG. 8

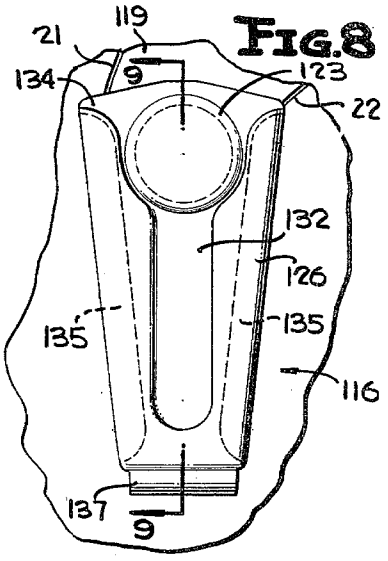
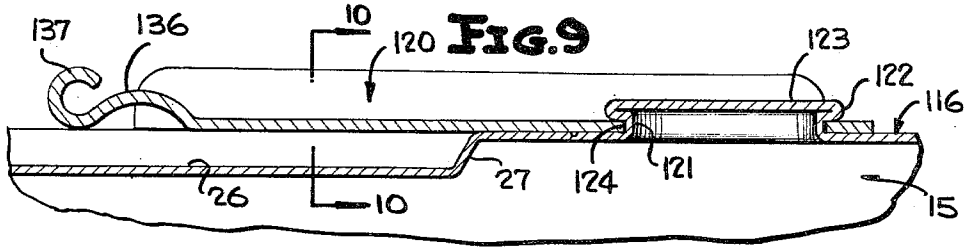


FIG. 9



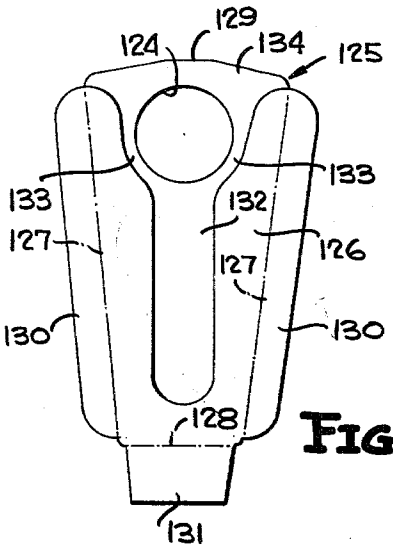
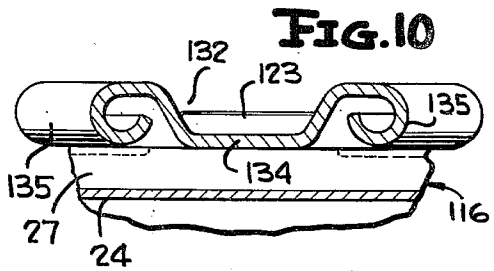


FIG. 11

FIG. 10



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EASY OPENING PULL TAB CAN END WITH WIDE TEAR STRIP

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24 Claims. (Cl. 220—54)

This invention relates in general to new and useful improvements in the manufacture of containers, and more specifically relates to a container end which is particularly adapted for opening without the use of any tools or opening elements other than those which are parts of the container.

In the past, it has been necessary for one to have a special opener in order to open containers of the type wherein products are dispensed through the ends of the containers. Recently, there have been developed container ends with tear strips defined therein by weakening lines and the tear strips have attached thereto pull tabs to facilitate the tearing of the tear strips along the weakening lines. Such container ends have three major deficiencies. The deficiency producing the major problem is that after the container ends have been weakened to define the tear strips, any shock imparted to the container, particularly to the container end, may cause rupture of the container end along one of the weakening lines. On the other hand, if the weakening lines are made too shallow, then the tear strips cannot be removed with the desired ease.

Another problem encountered is the economical attachment of a pull tab to the tear strip in a manner wherein a seal is maintained between the pull tab and the tear strip. The third problem has been in the formation of a proper pull tab which is small enough to be confined within the normal recessed end of a container, such as a can, and at the same time be of sufficient strength and size to be effectively gripped in a manner necessary to effect the tearing of the tear strip from the container end.

In view of the foregoing, it is the primary object of this invention to provide a container end which has a peripherally extending tear strip with the tear strip being defined by an inner weakening line and an outer weakening line, the material of the container end adjacent the inner weakening line being reinforced by offsetting the container end immediately adjacent the inner weakening line and the material of the container end adjacent the outer weakeninig line being similarly reinforced by the offsetting of the material of the container end.

Another object of this invention is to provide a container end of the easy opening type, which container end includes a peripheral tear strip defined by weakening lines, the tear strip being relatively wide as compared to normal tear strips, and being defined by an outer weakening line and an inner weakening line, and the container end being offset adjacent each of the weakeniing lines throughout a major portion of the extent thereof to effect a reinforcing of the can end immediately adjacent the weakening lines so as to greatly reduce and, in most instances, eliminate the possibility of an accidental rupture of the container end along one of the weakening lines due to impact caused by rough handling during the normal shipment and storage of the container.

Still another object of this invention is to provide a novel container end which is circular in outline and which has a wide tear strip extending about the circumference thereof and being defined by weakening lines, the container end having an inwardly projectiing rib surrounding an outer one of the weakening lines to reinforce the container end immediately adjacent the outer weakening line, and the central portion of the container end being inwardly recessed immediately adjacent the inner one of the weakening lines, the central recessed portion being generally kidney-shaped in outline and serving to provide for the reinforcement of the inner weakening line throughout the extent thereof.

A further object of this invention is to provide a container end of the easy opening type wherein the container end is provided with a peripherally extending tear strip which is defined by weakening lines which include an outer weakening line, an inner weakening line, and an intermediate starting weakening line joining together the inner and outer weakening lines, the starting weakening line being the deepest of the three weakening lines, and the inner weakening line being the shallowest of the three whereby opening of the container end is facilitated while the accidental rupture of the container end along one of the weakening lines is, for all practical purposes, prevented.

A still further object of this invention is to provide a novel container end which includes a tear strip extending generally about the periphery thereof and the tear strip being in part defined by an inner weakening line, a central portion of the container end being inwardly offset adjacent to the inner weakening line to reinforce the container end adjacent the inner weakening line, and a pull tab attached to a starting end of the tear strip, the pull tab including a grip portion which overlies the inwardly recessed central portion of the container end wherein gripping of the grip portion is facilitated.

Another object of this invention is to provide a novel plastic pull tab for use with a tear strip of a container end, the pull tab including an elongated body which is provided at one end thereof with a tubular plug portion adapted to be snapped through a flanged opening in a tear strip and form a seal with the tear strip surrounding the opening, the body terminating remote from the plug in a grip portion which has roughened surfaces and which is provided with longitudinally offset transversely extending ribs to facilitate the gripping thereof, the body portion being further provided with a central portion of reduced thickness to permit the initial bending of the pull tab body when gripped so that the necessary gripping of the grip portion may be attained.

Still another object of this invention is to provide a novel plastic pull tab in accordance with the foregoing wherein the pull tab is provided with an aligning pin on the upper surface thereof in alignment with the plug to facilitate the positioning of the pull tab with respect to the tear strip.

Another object of this invention is to provide a novel sheet metal pull tab which is reinforced by means of a central rib wherein the pull tab has a winged channel cross section, the rib being of an increased width adjacent one end of the pull tab and contoured for the reception of a head of a rivet utilized in the attachment of the pull tab to a tear strip.

Another object of this invention is to provide a sheet metal pull tab in accordance with the foregoing, wherein the end thereof remote from the end to which the rivet is attached is reversely curled and bowed transversely of the pull tab to form a grip portion which may be readily and securely gripped.

A still further object of this invention is to provide a sheet metal pull tab of the type set forth above wherein the side edges of the pull tab are reinforced through the longitudinal curling thereof.

With the above, and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following

detailed description, the appended claims and the several views illustrated in the accompanying drawings:

In the drawings:

FIGURE 1 is a plan view of a container or can end formed in accordance with this invention and shows the same attached to a can, the view showing the general outline of both the tear strip and the reinforcement of the can end.

FIGURE 2 is an enlarged fragmentary vertical sectional view taken through the center of the can of FIGURE 1 along the line 2—2 and shows the specific cross section of the can end.

FIGURE 3 is an enlarged fragmentary vertical sectional view taken along the line 3—3 of FIGURE 2 and shows the specific details of a plastic pull tab and the connection between the plastic pull tab and the tear strip of the can end.

FIGURE 4, 5 and 6 are fragmentary enlarged vertical sectional views taken along the lines 4—4, 5—5, and 6—6, respectively, of FIGURE 1 and show the cross sections of the score lines or weakening lines defining the tear strip.

FIGURE 7 is a fragmentary top perspective view of a can with portions broken away and shown in section and shows the specific details of a can end similar to that of FIGURE 1 but provided with a sheet metal pull tab secured to the tear strip by means of an integral rivet.

FIGURE 8 is an enlarged fragmentary plan view of the can end of FIGURE 7 and shows the specific details of the pull tab.

FIGURE 9 is an enlarged fragmentary vertical sectional view taken along the line 9—9 of FIGURE 8 and shows the specific relationship of the pull tab to the tear strip.

FIGURE 10 is an enlarged fragmentary vertical sectional view taken along the line 10—10 of FIGURE 9 and shows the specific cross section of the pull tab.

FIGURE 11 is a plan view of the sheet metal blank from which the pull tab of FIGURES 7 through 10 is formed.

Referring now to the drawings in detail, it will be seen that there is illustrated in FIGURE 2 a container or can, generally referred to by the numeral 15. The can 15 is provided with a can end, generally referred to by the numeral 16. The can end 16 is secured to a can body 17 of the can 15 in a conventional manner by means of a double seam 18. The can end 16, in accordance with this invention, is of the easy opening type which does not require any opener to effect the opening thereof.

In order to facilitate the opening of the can 15, the can end 16 is provided with a peripheral tear strip 19 which has a starting end 20. The tear strip 19 has the outer boundary thereof defined by an outer weakening or score line 21 which includes a continuous circular portion. The inner boundary of the tear strip 19 is defined by an inner weakening or score line 22 which, for the most part, is disposed concentric with the weakening line 21. The starting end 20 of the tear strip 19 is, in part, defined by a starting weakening or score line 23 which connects together inner ends of the weakening lines 21 and 22. The starting end 20 of the tear strip 19 is provided with a pull tab, generally referred to by the numeral 24, to facilitate the rupture of the can end 16 along the weakening lines 21, 22 and 23 and thus facilitate the opening of the can 15. The details of the pull tab 24 will be set forth hereinafter.

It has been found that during shipment and other hanling procedures cans often times receive impacts of a nature which will rupture the same along one of the weakening lines. It is proposed to reinforce the can end 16 in a manner so as to be of a shock absorbing nature and thus greatly increase the capacity of the can end 16 to receive shock as compared to the other existing types of can ends having tear strips incorporated therein. To this end, it is first to be noted that the tear strip 19 is relatively wide as compared to the size of the can end 16 so that the tear strip in itself has a certain degree of flexibility. The can end is reinforced about a major portion of the weakening line 21 by the provision of an inwardly or downwardly projecting bead 25, as is best shown in FIGURE 2. The bead 25 may flex to a certain degree should there be in inwardly directed force on the can in the vicinity of the seam 18, thus preventing the transfer of rupturing force to the can end 16 along the weakening line 21. In a like manner, the central portion of the can end 16 is reinforced by inwardly or downwardly depressing the same to form an offset central portion 26 having an upper peripheral wall or shoulder 27 which is disposed adjacent to the inner weakening line 22 and to the starting weakening line 23 throughout the extents thereof. From the foregoing, it will be seen that by shaping the can end at the time of its forming to provide the internal bead 25 and the inwardly offset portion 26 which does not require any additional forming step, the strength of the can end 16 may be greatly increased over the strength of similar can ends. In a like manner, by making the tear strip 19 wide as compared to customary tear strips, a certain degree of resistance of rupture may be obtained through the flexing of the tear strip 19 without any sacrifice in the opening advantages of the can end as compared to other can ends since the tearing of the tear strip is endwise and the width of the tear strip is immaterial as far as opening forces are concerned. An incidental but advantageous result of the inward offsetting of the central portion 26 of the can end 16 is to provide clearance for a grip portion of the pull tab 24, as is shown in FIGURE 3, to facilitate the gripping thereof.

Reference is now made to FIGURES 4, 5 and 6, wherein cross sections through the several weakening lines are shown. The weakening lines 21, 22 and 23, which are in the form of scores, are of different depths so that the various portions of the can end 16 have various resistances to tearing. It is to be noted that the weakening or score line 23 is the deepest whereby the can end 16 is the weakest along the weakening line 23 and thus the initial tearing of the tear strip 19 from the can end 16 may be facilitated. In a like manner, since it is less important to rupture the tear strip 19 along the inner weakening line 22 and the central portion of the can end 19 is the weakest, the score of the weakening line 22 is of the least depth. The score or weakening line 21 is of an intermediate depth. Thus, the can end 19 is proportionally weakened along the various weakening lines in accordance with the opening requirements.

Referring now to FIGURES 1 and 3, it will be seen that the pull tab 24 is formed of a flexible plastic material and includes an elongated body 28 which is provided at one end thereof with a downwardly projecting part 29 carrying a tubular plug 30. The plug 30 is provided with a rounded lower end 31 which opens internally into a bore 32 and continues externally into a tapered portion 33. The plug 30 is of a reduced cross section, as at 34, to define a shoulder 35.

The body 28 of the pull tab 24 is downwardly thickened, as at 36, so as to leave an intermediate portion 37 which is the thinnest and thus which is the weakest part of the pull tab body 28. The thickened part 36 of the pull tab body is disposed upwardly at a slight angle to the plane of the remainder of the body 28.

The thickened part 36 of the pull tab body terminates at its outer end in a downwardly sloping offset portion 38 which, in itself, may be considered part of a grip portion 39 of the pull tab 24. The grip portion 39 includes a sloping portion 40 which is integrally connected to the connecting portion 38 and which extends generally parallel to the thickened portion 36. The grip portion 39 includes a terminal transversely extending rib 41 on the upper surface thereof. A second trans-

verse rib 42 projects downwardly from the underside of the upwardly sloping portion 40 in longitudinally offset relation with respect to the rib 41.

It is to be noted from FIGURE 1 that the grip portion 39 of the pull tab 24 has concavely curved side edges 43. Further, the upper and lower surfaces of the grip portion 39 are roughened, as at 44, to facilitate the gripping thereof.

The starting end 20 of the pull tab 19 is provided with an opening 45 therethrough which is defined by an inwardly or downwardly directed flange 46. The tear strip is assembled with the pull tab 19 by snapping the plug 30 down through the opening 45 with the shoulder 35 compressively engaging the lower edge of the flange 46. It is to be understood that there is compressive engagement between the plug 30 and adjacent portions of the tear strip 19 so that the plug 30 effectively seals the opening 45.

At this time it is pointed out that the pull tab body 28 is provided with an upwardly projecting centering pin 47 which is co-axial with the plug 30 and may be suitably engaged by a pull tab applying tool (not shown) wherein centering of the plug 30 with the tear strip opening 45 may be assured during the application of the pull tab 24 to the tear strip 19.

It is also to be noted that the relative construction of the pull tab 24 and the can end 16 is such that the grip portion 39 of the pull tab is partially recessed within the recessed central portion 26 of the can end 16, and at the same time gripping of the grip portion 39 may be readily facilitated.

Referring now to FIGURES 7 through 11, it will be seen that there is illustrated a slightly modified form of can end construction. The can end is part of a can, generally referred to by the numeral 115 and in itself is referred to by the numeral 116. The can end 116 is identical with the can end 16 with the exception of a minor variation in the construction of the tear strip thereof, the tear strip being referred to by the numeral 119. Since all other portions of the can 115 are identical with like portions of the can 15 with the exception of a pull tab, which is referred to by the numeral 120, like numerals will be given to like previously described parts.

In lieu of the flanged opening 45 formed in the tear strip 19, the tear strip 119 is provided with an integral upstanding tubular rivet 121 which is crimped, as at 122, to define an enlarged head 123. The rivet 121 passes through an opening 124 in the pull tab 120 and the head 123 serves to retain the pull tab 120 on the rivet 121.

It is to be noted that the pull tab 120 is formed of sheet metal and is formed from a blank generally referred to by the numeral 125. The blank 125 includes a body portion 126 which is generally trapezoidal in outline and includes two diverging side edges 127, a narrow end 128 and a wide end 129. Wings 130 and 131 are connected to the pull tab body 126 along the side edges 127 of the end 128, respectively.

The body 126, for the major portion of the length thereof, is of a winged channel cross section, as is best shown in FIGURE 10. The body 126 is provided with a longitudinally extending depressed rib 132 which is widened adjacent the end 129, as at 133, to provide clearance for the head 123 of the rivet 121. The rib 132 has a base 134, as is shown in FIGURE 10. The base 134 becomes very enlarged and extends the full width of the body 126 at the end 129 thereof. The base 134 has the opening 124 formed therein.

It is to be noted that the rib 132 reinforces the body 126 against bending transversely of the axis of the pull tab 120. The pull tab 120 is further reinforced by means of the curling of the wings 130 to define longitudinally extending curled reinforcing edges 135.

The end of the pull tab 120 remote from the rivet 121 is transversely and upwardly bowed, as at 136. Part of this bow is formed in the wing 131 and part is formed in the body 126. Immediately adjacent the body 136 the wing 131 is upwardly reversely curled to define a curled transverse enlargement 137 which, together with the body portion 136, defines a grip portion of the pull tab 120.

It will be readily apparent that the pull tab 120 may be formed of relatively thin sheet metal and due to the specific configuration thereof, it will have sufficient strength to resist bending when an upward force is directed thereupon during the initial tearing or breaking of the tear strip 119 along the starting line thereof. At the same time, the connection between the rivet 121 and the pull tab 120 will be sufficient to resist any accidental rupture of the pull tab 120 from the tear strip 119. At this time it is pointed out that the grip portion of the pull tab 120 overlies the inwardly offset central portion 24 of the can end and thus facilitates the gripping thereof.

It is to be understood that the can end 116 has all of the structural advantages of the can end 16 and that the difference between the can end 116 as compared to the can end 16 is the difference in pull tab construction and the manner of attaching the two pull tabs to their respective tear strips.

Although only preferred embodiments of the invention have been specifically illustrated and described herein, it is to be understood that minor modifications may be made in the can end construction in accordance with this invention within the spirit and scope of this invention, as defined in the appended claims.

I claim:

1. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, said container end having an axially offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, a portion of said offset central portion conforming in outline and being disposed closely adjacent to a portion of said outer weakening line adjacent a terminal end of said outer weakening line to facilitate the final tearing of that portion of the container end defined by said outer weakening line from the remainder of the container end.

2. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, said container end having an axially offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, and said inner weakening line terminating into said offset portion.

3. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, said container end having an axially offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, said outer weakening line including a circular portion and said offset central portion being generally kidney shaped in outline, and said inner weakening line terminating short of a terminal end of said outer weakening line and into said offset portion.

4. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, said container end having an axially offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, said outer weakening line including a circular portion and said offset central portion being generally kidney shaped in outline, said inner weakening line having a major portion thereof disposed concentric to said outer weakening line, and said inner weakening line terminating short of a terminal end of said outer weakening line and into said offset portion.

5. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining an inwardly directed starting end of said tear strip, said container end having an offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, said offset central portion being axially downwardly offset, and a pull tab secured to said tear strip starting end and forming a generally aligned extension thereof, said pull tab having a grip portion overlying said inwardly offset central portion to facilitate grasping thereof.

6. The container end of claim 5 wherein said pull tab grip portion is downwardly offset and is partially seated in said offset central portion.

7. The container end of claim 5 wherein said tear strip has an inwardly flanged opening therethrough, said pull tab is formed of a resilient plastic material, and said pull tab has a tubular plug portion passing through and sealing said pull tab opening and being locked behind said flange.

8. The container end of claim 5 wherein said pull tab is formed of resilient plastic material and said grip portion has roughened surfaces to facilitate the gripping thereof.

9. The container end of claim 5 wherein said tear strip starting end is formed with an integral headed rivet, said pull tab is formed of sheet material, and said pull tab has an opening receiving said rivet.

10. The container end of claim 5 wherein said tear strip starting end is formed with an integral headed rivet, said pull tab is formed of sheet material, and said pull tab has an opening receiving said rivet, said pull tab having a central depending reinforcing rib and curled reinforced edges, and one end of said rib being enlarged and contoured to receive said rivet head.

11. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, said container end having an axially offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, each of said weakening lines being in the form of a score line, said starting weakening line being of the greatest depth and said inner weakening line being of the least depth with said outer weakening line being of an intermediate depth.

12. A plastic pull tab for attachment to a tear strip having a flanged opening, said pull tab comprising an elongated body having a depending tubular attaching plug adjacent one end and a grip portion at the opposite end, said grip portion having roughened gripping surfaces and upper and lower transverse ribs disposed in longitudinal offset relation.

13. A plastic pull tab for attachment to a tear strip having a flanged opening, said pull tab comprising an elongated body having a depending tubular attaching plug adjacent one end and a grip portion at the opposite end, said grip portion being downwardly offset from said body.

14. A plastic pull tab for attachment to a tear strip having a flanged opening, said pull tab comprising an elongated body having a depending tubular attaching plug adjacent one end and a grip portion at the opposite end, and an aligning pin projecting from said pull tab body opposite from and axially aligned with said plug.

15. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, said container end having an axially offset central portion having a border of which a major portion thereof conforms in outline to said inner weakening line, said offset central portion stiffening said container end and thereby resisting parting of said weakening lines, and a shock-absorbing peripheral rib surrounding said outer weakening line.

16. A sheet metal pull tab for attachment to a tear strip, said pull tab including an elongated body, said body having a central longitudinally extending depending reinforcing rib, with the cross section of said body transversely of and through said rib being that of a winged channel, said rib including a base and said base having an attaching fastener receiving opening adjacent one end of said body.

17. The pull tab of claim 16 wherein said rib is relatively narrow for a major portion of the length thereof and increases in width adjacent said body one end to receive a fastener head.

18. The pull tab of claim 16 wherein said body is further reinforced by longitudinally extending curls along the opposite sides thereof.

19. The pull tab of claim 16 wherein said body is provided at the other end thereof with a curled transversely extending grip member.

20. The pull tab of claim 16 wherein said body is provided at the other end thereof with a curled transversely extending grip member, said grip member being upwardly curled and being connected to the remainder of said body by an upwardly bowed transversely extending body portion.

21. A container end having a major portion thereof removable as a unit, a tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line, said outer and inner weakening lines having inwardly directed inner end portions connected together by a connecting starting weakening line and defining an inwardly projecting starting end of said tear strip, said container end having an axially offset central portion stiffening said container end and thereby resisting parting of said weakening line due to flexing of said container end; said offset central portion having a border which extends around said tear strip starting along a major portion of said inner weakening line, and along said outer weakening line adjacent a terminal part of said outer weakening line.

22. The container end of claim 21 wherein said inner weakening line terminates into said offset portion.

23. A container end having a major portion thereof removable as a unit, a peripheral tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line connected together by a connecting starting weakening line in part defining a starting end of said tear strip, each of said weakening lines being in the form of a score line, said starting weakening line being of the greatest depth and said inner weakening line

being of the least depth with said outer weakening line being of an intermediate depth.

24. A container end having a major portion thereof removable as a unit, a tear strip defined in said container end by an outer peripheral weakening line and an inner weakening line, said outer and inner weakening lines having inwardly directed inner end portions connected together by a connecting starting weakening line and defining an inwardly projecting starting end of said tear strip, said container end having an axially offset central portion stiffening said container end and thereby resisting parting of said weakening line due to flexing of said container end, said offset central portion projecting into a terminal part of said tear strip and serving as a reinforcement for said tear strip during the final separation thereof from the remainder of said container end.

References Cited by the Examiner

UNITED STATES PATENTS

1,704,234	3/29	Young	220—54
2,029,329	2/36	Ljungstrom	220—48
2,172,452	9/39	Rese	220—54
3,080,088	3/63	Corrinet	220—60

FOREIGN PATENTS

18,084	12/06	Norway.

THERON E. CONDON, *Primary Examiner.*