

## Mascia

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[54] **COMBINED CARRIER AND CAN OPENER**

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224/45 AA, 45 R, 45 BA

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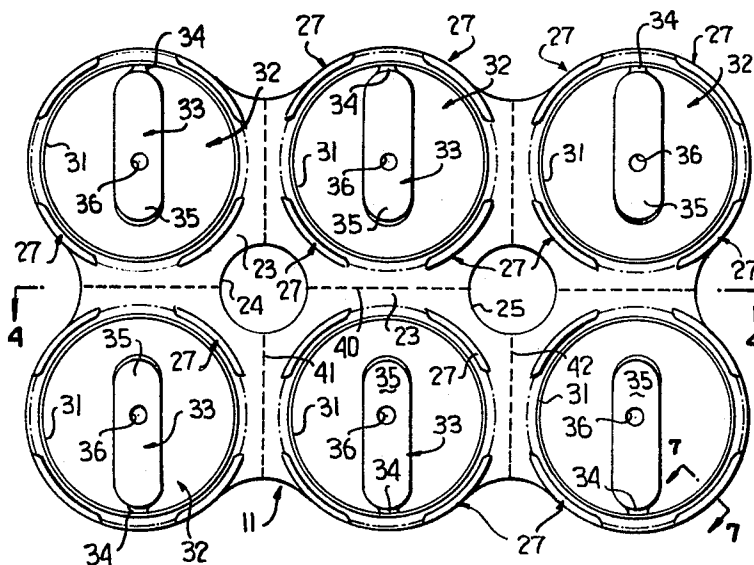
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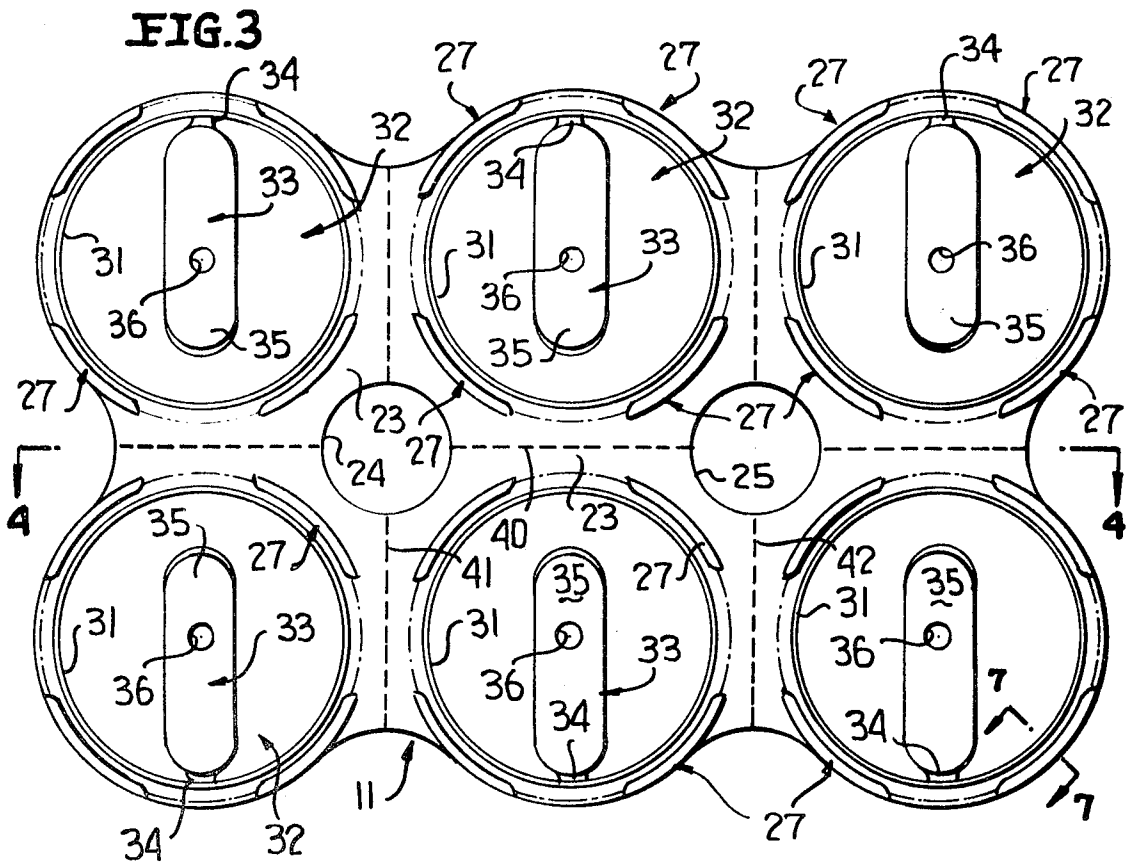
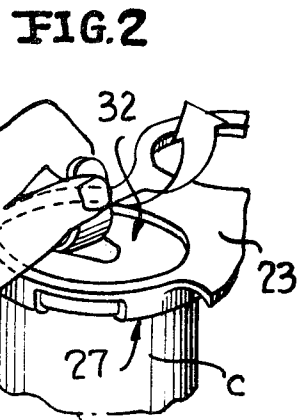
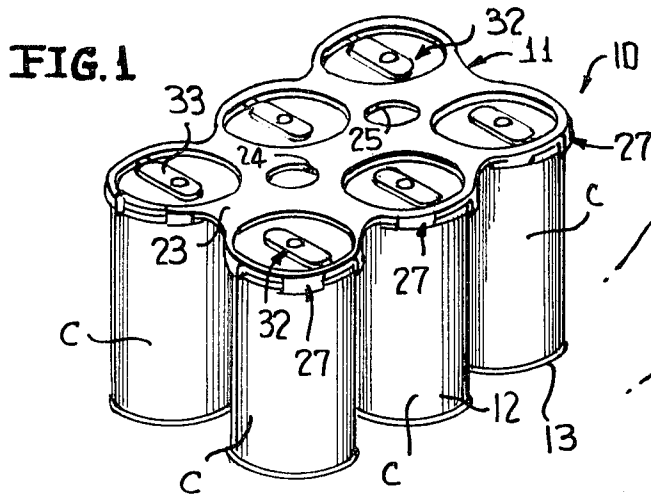
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[57] **ABSTRACT**

This disclosure relates to a carrier and a plurality of containers having ends provided with tear-out portions, the carrier being constructed as a one-piece molded member having a plurality of openings in each of which is adapted to be disposed a container end, and each opening having a pull tab projecting radially therein and being secured to an associated container end whereby upon grasping the pull tab and pivoting the same in an appropriate manner the tear-out portions can be removed in the absence of conventional pull tabs or similar opening means.

### 16 Claims, 9 Drawing Figures





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## COMBINED CARRIER AND CAN OPENER

Containers, such as bottles or cans, are packaged in a variety of carriers or cartons, one of which is the conventional "basket-style" carrier which includes a carrying handle along a longitudinal center line of the carrier and a plurality of container compartments which are normally arranged in pairs to form well known four-pack, six-pack, etc. packages. Carriers of this type are generally used to package glass or similar fragile containers, and are not normally used for packaging metallic cans.

The wrap-around style carriers are generally constructed from paper stock or similar foldable material, and are simply wrapped about a plurality of containers to again form four-pack, six-pack, etc. packages. Such wrap-around carriers are employed both for frangible and nonfrangible containers, be they bottles or cans, and can be used with or without longitudinal and transverse dividers.

More recently metallic containers of the so-called easy opening type have been packaged in carriers formed from apertured heat-shrinkable plastic material. In this case the containers are simply inserted into the apertures of the sheet material, the sheet material is then heated, and the material thereby shrinks to adequately grip the containers to permit the same to be carried by the carrier in four-pack, six-pack etc. arrangements.

Each of the conventional carriers just described has proved relatively efficient for its only purpose, namely, to provide a package for a predetermined number of bottles, cans or similar containers. Apart from performing this function and the ancillary function of maintaining the containers in longitudinal and transverse spaced relationship in some instances, conventional carriers are in no way otherwise associated in a functional manner with their associated containers.

In keeping with this invention, a primary object thereof is to provide a novel package which includes a carrier and a plurality of containers, the containers having ends provided with conventional tear-out portions or tear strips but being devoid of conventional pull tabs, the carrier includes means for securing the pull tab portions integrally formed from the material of the carrier to the tear-out portions of the can ends whereby the tear-out portions can be removed in the absence of conventional pull tabs or similar opening devices by simply applying a relative opening force between the carrier pull tabs and the containers.

A further object of this invention is to provide a novel carrier of the type just described wherein the carrier is constructed from a member having a plurality of openings in each of which is adapted to be disposed a can end, each carrier pull tab projects radially into each opening, and each pull tab is secured in overlying relationship to an associated tear-out portion.

A further object of this invention is to provide a novel carrier and/or package of the type heretofore described wherein each pull tab portion is hingeably connected to the carrier proper adjacent each opening, and each pull tab has an opening interlockably secured to an integrally formed river of each can and/or container end.

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 claimed subject matter, and the several views illustrated in the accompanying drawings.

## IN THE DRAWINGS:

FIG. 1 is a top perspective view of a novel package constructed in accordance with this invention, and illustrates a carrier to which is interlockably secured a plurality of containers with each container including a line of weakness defining a tear-out portion, and the carrier including a plurality of openings in each of which is disposed a pull tab portion hinged at one end to the carrier and secured at its opposite end to the tear-out portion.

FIG. 2 is a fragmentary top perspective view of the package of FIG. 1, and illustrates the manner in which one of the pull tab portions of the carrier is grasped and pivoted to apply an opening force to the associated tear-out portion causing the partial and/or total removal thereof.

FIG. 3 is a bottom plan view of the carrier, and illustrates six annular walls outboard of each of which are four lugs for releasably securing the cans or containers to the carrier.

FIG. 4 is a fragmentary sectional view taken generally along line 4—4 of FIG. 3, and illustrates means for interlockably securing each container to an associated opening by a releasable snap connection between the carrier and the double seams of the containers.

FIG. 5 is a fragmentary cross-sectional view taken generally along line 5—5 of FIG. 4, and more clearly illustrates the connection between the pull tab portions and the tear-out portions, as well as the manner in which a pull tab portion of the carrier is pivotally hinged to open its associated tear-out portion.

FIG. 6 is an enlarged fragmentary sectional view of the encircled portion of FIG. 5, and more clearly illustrates the hinge connection between one of the pull tab portions and its associated tear-out portion.

FIG. 7 is an enlarged fragmentary sectional view taken generally along line 7—7 of FIG. 3, and more clearly illustrates the manner in which the carrier is snap-secured to the container double seams.

FIG. 8 is a sectional view taken generally along line 8—8 of FIG. 5, and more clearly illustrates the relationship between a pull tab portion and the underlying tear-out portion of the associated container end.

FIG. 9 is a fragmentary sectional view of one of the container ends and its associated pull tab portion prior to assembly, and illustrates a headed boss or rivet of the end to which is secured the apertured pull tab portion.

A novel package constructed in accordance with this invention is best illustrated in FIGS. 1, 3 and 4 of the drawings, and is generally designated by the reference numeral 10. The package 10 includes a carrier 11 and a plurality of containers C. Six such containers C are illustrated to form a six-pack package 10, although it is to be understood that more or less than this number may be provided as desired with the carrier 11 modified accordingly.

The containers or cans C are of a conventional construction and each includes a body 12 which may be of a one-piece construction formed by a conventional extruding and wall-ironing operation. As an alternative, a bottom end (not shown) may be secured to each body 12 by a conventional bottom double seam 13. An upper end 14 (FIG. 8) is likewise secured to each can body 12 by a double seam 15 (FIGS. 6 and 7). The end 14 is provided with a line of weakness 16 (FIGS. 6 and 8) setting off a tear-out portion 17 of a rounded triangular configuration. The line of weakness or score line 16 is formed in a conventional manner with its longitudinal axis disposed generally radially to the can body 12 and the ends thereof. At approximately the axis of the can end 14 the material from which the can 14 is constructed is formed into an integral hollow rivet 18 (FIG. 9) which includes a reduced neck 20 and an enlarged hemispherical head 21 which terminates at a radial shoulder 22.

The carrier 11 (FIGS. 3 and 4) is preferably constructed as a unitary one-piece member by an appropriate molding operation, and is constructed from polymeric or copolymeric material. The carrier 11 includes an upper wall 23 of a flat uniplanar configuration (FIG. 4) and includes two circular openings 24, 25 which define finger holds for grasping and carrying the package 10. The outer periphery of the carrier 11 is of a generally undulating configuration (FIG. 3) and includes a peripheral edge 26 (FIG. 6) which projects beyond the outermost peripheries of the double seams 15. Projecting downwardly from the flange 26, as well as downwardly from inboard portions of the carrier wall 23, are a plurality of snap-securing means each of which is generally designated by the

reference numeral 27 (FIGS. 3, 4, 7 and 8). Each of the means 27 includes a peripheral wall 28 and a radially inwardly directed flange 30, the latter of which engages beneath the double seams 15 in the manner self evident from FIG. 7.

The snap securing means 27 are outboard of a plurality of cylindrical or tubular wall portions 31 projecting downwardly from the top wall 23. There are six such walls 31 (FIG. 3) and four securing means 27 associated with each wall 31. Thus, each container C is held positively but releasably secured to the carrier 11 by the interlocked relationship of its double seam 15 with its associated wall 31 and four of the securing means 27 (FIGS. 3 and 8). The walls 31 thereby define six openings, each generally designated by the reference numeral 32 through which each can end 14 is exposed or disposed (FIG. 3).

During the molding of the carrier 11 pull tabs or pull tab portions 33 are integrally formed therewith with each pull tab portion 33 being disposed in a generally horizontal plane parallel to but below the top wall 23, in the manner best illustrated in FIG. 6. Each pull tab portion 33 is connected by a hinge 34 to each wall 31 adjacent its bottom terminal edge (unnumbered), as is best illustrated in FIG. 6. Transverse pairs of the pull tab portions 33 are in general alignment with each other, and the longitudinal axes of all of the pull tab portions 33 are positioned radially with respect to the associated containers C and in alignment with the longitudinal axes of the tear-out portions 17 (FIG. 8). Each pull tab portion 33 is provided with a finger-gripping rounded terminal end portion 35 and an opening 36 which is generally circular and is appreciably smaller than the enlarged head 21 of the rivet 18 (FIG. 9). However, the material from which the carrier 11 is constructed is both deformable and reboundable. Thus, as each opening 36 is forced over an associated enlargement 21, the material adjacent the opening will distend causing the opening to spread until it passes over the largest diameter of the enlarged head 21. Once passing thereover the material will rebound with the edge of each opening 36 now intimately engaging the outer surface of each neck 20 with the upper surface of each pull tab portion adjacent each opening 36 underlying the wall 22, in the manner best illustrated in FIG. 5 of the drawings. In this manner each pull tab portion 33 is secured to an associated one of the tear-out portions 17.

When it is desired to remove any of the tear-out portions 17 of any of the containers C, the terminal end portion 35 of the selected pull tab portion 33 is grasped and pivoted in the manner illustrated in FIG. 2 which is in a direction toward the hinge connections 34. This pivoting action of the pull tab portions imparts an opening force to the starting end (unnumbered) of the tear-out portion 17 adjacent the rivet 21 resulting in the rupture thereat and the progressive rupture along the score line 16 until the entire tear-out portion 17 has been removed from any one of the ends 14. The selected container may now be removed simply by pulling the same outwardly from the securing means 27 which are sufficiently resilient to deflect outwardly to permit the removal of each of the cans C. Once removed it will be noted that the tear-out portion 17 remains with the carrier 11 and cannot be discarded which prevents present hazards of conventionally removed pull tabs and tear-out portions which in most cases are merely discarded in an indiscriminate manner. However, in keeping with this invention if it is desired to remove each pull tab 33 and its associated tear-out portion 17 after the latter has been removed from a can end 14, this may be readily done by merely tearing the pull tab portion 33 across the thinner and weaker hinge connections 34.

In the event it is desired to remove any one of the containers C from the package 10 prior to removing the associated tear-out portion 17 in the manner heretofore described, the top wall 23 of the carrier 11 is preferably provided with a longitudinal weakening line 40 (FIG. 3) and a pair of transverse weakening lines 41, 42. Due to the weakening lines 40, 41 and 42 any one or any selected number of the containers C can be removed from the package 10 merely by selectively breaking the top wall 23 along the weakening lines 40, 41 and/or 42.

While preferred forms and arrangements of parts have been shown in illustrating the invention, it is to be clearly understood that various changes in details and arrangement of parts may be made without departing from the spirit and scope of this disclosure.

I claim:

1. In a package of the type defined by a carrier and a plurality of containers having ends provided with tear-out portions, the improvement comprising means for directly securing the carrier to each tear-out portion in absence of conventional pull tabs or similar conventional manual gripping means whereby an opening force can be applied to the tear-out portions through the securing means to remove the tear-out portions in the absence of conventional pull tabs or similar opening devices, and said securing means being hingeably connected to said carrier whereby pivotal movement imparted to said securing means results in the tearing of said tear-out portions.
2. The package as defined in claim 1 wherein said carrier and securing means are of a one-piece molded construction.
3. The package as defined in claim 1 wherein said carrier includes an opening overlying each container end, and each securing means is disposed within an associated opening.
4. The package as defined in claim 1 wherein said carrier includes a plurality of pull tab portions secured to each tear-out portion by said securing means, each tear-out portion is defined by a line of weakness, and said securing means are each positioned at least in part within the area set off by said line of weakness.
5. The package as defined in claim 1 wherein said carrier includes a plurality of pull tab portions secured to each tear-out portion by said securing means, and each securing means is defined by an aperture formed in one of said container end and pull tab portion interlocked with rivet means of the other of said container end and pull tab portion.
6. The package as defined in claim 1 wherein said carrier includes a plurality of pull tab portions secured to each tear-out portion by said securing means, said pull tab portion and tear-out portion are disposed in overlying relationship with longitudinal axes thereof in coincident relationship.
7. The package as defined in claim 3 wherein said carrier includes a plurality of pull tab portions secured to each tear-out portion by said securing means, and each pull tab portion is disposed within an associated one of said openings.
8. The package as defined in claim 7 wherein each securing means is defined by an aperture formed in one of said container end and pull tab portion interlocked with rivet means of the other of said container end and pull tab portion.
9. The package as defined in claim 8 wherein said pull tab portions and tear-out portions are disposed in overlying relationship with longitudinal axes thereof in coincident relationship.
10. A carrier for a plurality of containers having ends provided with tear-out portions comprising a member having a plurality of openings within each of which is adapted to be disposed a container end, means for securing each container to said member with its end disposed within an associated opening, a pull tab portion integrally formed from the material of said member hingeably connected to said member at each opening and projecting therein, and means remote from said hinged connection for directly securing each pull tab portion directly to an associated tear-out portion in the absence of conventional pull tabs or similar conventional manual gripping means.
11. The carrier as defined in claim 10 wherein said securing means is disposed between each hinge connection and a terminal finger-gripping end of each of said pull tab portions.
12. The carrier as defined in claim 10 wherein said pull tab portions have longitudinal axes disposed radially with respect to said container ends.
13. The carrier as defined in claim 11 wherein said pull tab portions have longitudinal axes disposed radially with respect to said container ends.
14. The carrier as defined in claim 11 wherein said securing means is an opening through each pull tab portion.

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15. The carrier as defined in claim 13 wherein said securing means is an opening through each pull tab portion.

16. A carrier for a plurality of containers having ends provided with tear-out portions comprising a member having a plurality of openings within each of which is adapted to be disposed a container end, a pull tab portion integrally formed from the material of said member hingedly connected to said

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member at each opening and projecting therein, means remote from said hinged connection for securing pull tab portion directly to an associated tear-out portion, and said securing means being defined by aperture means for interlockingly receiving a projection of each tear-out portion.

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