July 27, 1965 H. A. ANDERSON 3,197,059

METAL CAN END

Filed June 19, 1963

FIG. 1.

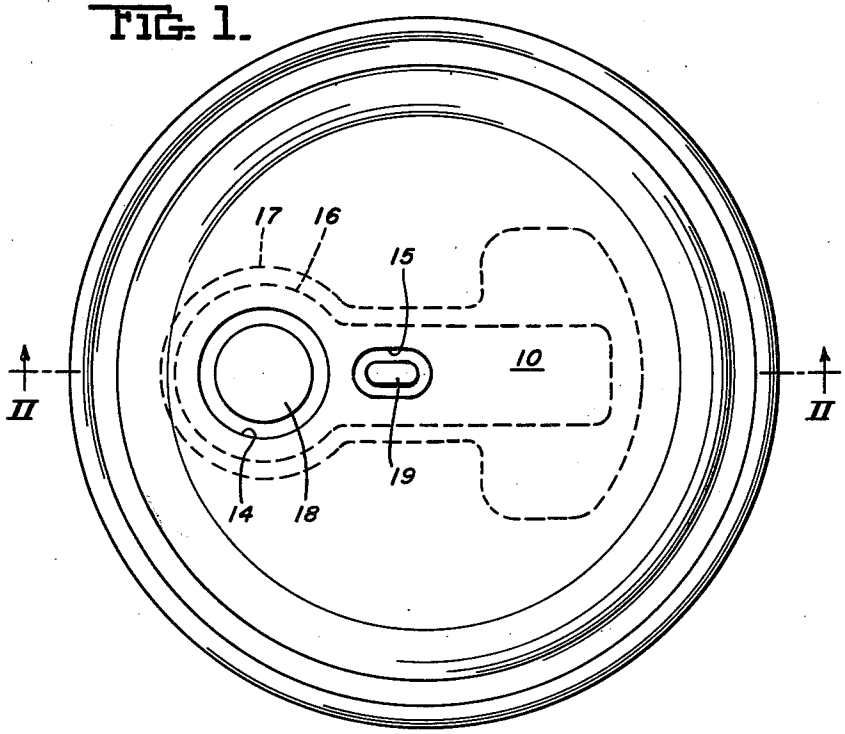


FIG. 2.

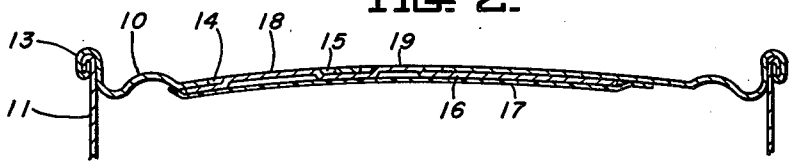


FIG. 3.

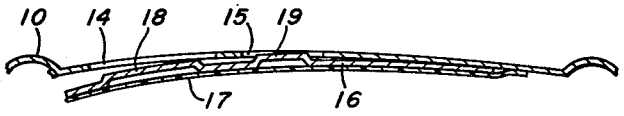
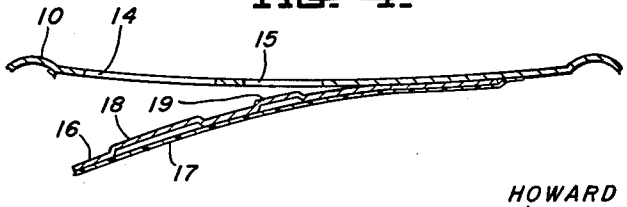


FIG. 4.



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METAL CAN END

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4 Claims. (Cl. 220—24)

This invention relates to an improved end for a metal can and, more particularly, to a can end having an outlet therein and a manually operable closure for the outlet.

An object of the invention is to provide a can end of the character described, the closure of which affords an effective seal for liquid contents of a can, yet may be readily opened by hand without using any sort of tool.

A further object is to provide a can end which affords the foregoing advantages, yet may be made of a strong, relatively stiff metal, such as tin plate.

A more specific object is to provide a can end which has an outlet and a readily openable closure member therefor of the push-button type. The end, furthermore, is of a reversible dish shape whereby it may be snap sprung inwardly, like the bottom of the conventional oil can. I utilize this characteristic to move the closure to an out-of-the-way position, after opening, where it does not interfere with pouring of the liquid contents from the can.

A complete understanding of the invention may be obtained from the following detailed description and explanation which refer to the accompanying drawing illustrating the presently preferred embodiment. In the drawing:

FIGURE 1 is a top plan view of a metal can having an end constructed in accordance with my invention;

FIGURE 2 is a vertical section on line II—II of FIGURE 1;

FIGURE 3 is a section similar to FIGURE 2, but showing the closure partially open; and

FIGURE 4 is another similar section showing the closure fully open.

My invention comprises an end 10 for a sheet-metal can with a conventional cylindrical body 11. The end is shown as double-seamed to the body with the usual joint 13, but these details of course may vary. The end 10 has a pouring opening or outlet 14 near its edge and a vent opening 15 nearer the middle. A sheet-metal closure 16 for both openings lies flush with the end on its underside. A strip of frangible sealing sheet 17 adhesively secured to end 10 overlies the closure 16 around its entire periphery and holds it in place. The sealing sheet may be of lightly plasticized vinyl resin or a polyester such as Goodyear "Videne" resin. The closure has an upwardly projecting embossment 18 which fits within the pouring opening 14 and, preferably, a second such embossment 19 which fits within the vent opening 15. The end 10 and closure 16 are slightly dished upwardly, as shown in FIGURE 2.

My improved can end is particularly suited for cans holding liquids which generate internal pressure, such as malt beverages or carbonated soft drinks. Such internal pressure, of course, holds the adhesive tape 17 firmly against the under surface of the end and thus assures the maintenance of an airtight seal between the closure member 16 and end 10. To exclude dirt from the crevices around the openings 14 and 15, a removable sticker (not shown) may be placed thereover. To open the can, the embossment 18 may be forced inwardly through the pouring opening 14 by finger pressure. A portion of the adhesive tape at the sides and outer end of the closure is sheared through or pulled loose from the underside of

the end. The portion of the tape at the inner end of the closure, however, continues to adhere to the end 10 and acts as a hinge for the closure as it moves to a position in which the openings 14 and 15 are partially uncovered as shown in FIGURE 3. The final step in opening a can provided with my invention is to deform the dished end 10 inwardly by finger pressure as shown in FIGURE 4, with a snap spring action in the manner of working the bottom of a conventional oil can. As a result, the closure portions covering openings 14 and 15 move farther from the end and thus avoid any interference with liquid pouring from the can through opening 15 or the admission of air through opening 15 to replace the liquid. Both steps are performed manually with ease requiring no tool of any kind. Since there is no need to puncture or tear the metal of the end, it may be formed of a relatively stiff metal, such as tin plate, which furnishes good mechanical strength.

While I have shown and described only a single embodiment of my invention, it is apparent that modifications may be made therein. Therefore, I do not wish to be limited to the disclosure set forth but only by the scope of the appended claims.

I claim:

1. A can end comprising a dished sheet-metal piece which has an outwardly directed convex face and an inwardly directed concave face, said piece having a pouring opening near one edge and a vent opening nearer the middle, a sheet-metal closure lying against a portion of the concave face of said piece and covering said openings, and flexible adhesive means holding said closure in place but permitting it to be displaced inwardly to uncover both said openings in one motion by manual pressure applied through said pouring opening, said piece being actuable by manual pressure to reverse the dish thereof for moving said closure free of said openings to allow the contents of the can to be removed through said pouring opening.

2. A can end comprising a dished sheet-metal piece shaped to fit the body of a can and having an outwardly directed convex face and an inwardly directed concave face, said piece having a pouring opening near one edge and a vent opening nearer the middle, a sheet-metal closure lying against a portion of the concave face of said piece and conforming with the shape thereof and covering both said openings, and a frangible sealing member lying against the concave face of said closure and a portion of the concave face of said piece, whereby the seal at both said openings can be broken in one motion by manual pressure applied against said closure through said pouring opening and said piece can be manually sprung inwardly to move said closure away from said openings and allow the contents of the can to be removed through said pouring opening.

3. An end as defined in claim 1 in which said closure has an upwardly projecting embossment which fits within said pouring opening.

4. An end as defined in claim 3 in which said closure has a second upwardly projecting embossment which fits within said vent opening.

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THERON E. CONDON, *Primary Examiner.*