March 10, 1970

G. L. ADAMS

3,499,573

FLEXIBLE TAB FOR EASY OPENING CAN

Filed July 29, 1968

2 Sheets-Sheet 1

FIG. 1.

FIG. 2.

FIG. 3.

INVENTOR

BY GUY L. ADAMS

Eckhoff and Hoppe

ATTORNEYS
FLEXIBLE TAB FOR EASY OPENING CAN

Guy L. Adams, San Francisco, Calif., assignor to MJB Company, a corporation of Delaware

Filed July 29, 1968, Ser. No. 748,542

Int. Cl. B65d 17/24

U.S. Cl. 220—54

1 Claim

ABSTRACT OF THE DISCLOSURE

A tab for an easy opening can is provided wherein the tab has at least one pair of V shaped notches in its upper surface, allowing the tab to flex upwardly for a distance until the notches close, making the can easier to open.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

There is shown a can 9 having an end generally designated 11. The end 11 is made of a soft metal such as aluminum and has a main scoreline 13 and may have an anti-fracture scoreline 15. Mounted on the end 11 is the tab generally designated 17 which has a nose end 19 which terminates just inside of scoreline 13 and a finger engaging end 21 which can conveniently be made in the form of a ring. The tab itself is formed of a relatively thin sheet of metal and in flat form the metal would not have sufficient rigidity to rupture the scoreline and provide a means for opening the can. To provide rigidity the metal is formed by rolling the edges as at 23 and 25 leaving a central flat portion 27.

In the embodiment illustrated, the tab is fastened to the end at two points and two auxiliary scorelines are employed although it will be apparent that this is only one configuration which might be employed and that the principles of the invention could be carried out without this specific fastening means. The tab is fastened to the end 11 by a small self rivet 29 and a circular scoreline 31 surrounds the rivet. The tab is further fastened by means of a second self rivet 33 and a secondary scoreline 35 is placed between the two points of attachment as is shown.

In accordance with the present invention, the tab is provided with a series of at least two opposite V shaped notches with the wide ends of the Vs at the center portion of reinforcing portion of the tab, the bottoms of the Vs terminating at the center flat portion of the tab. Thus, in the embodiment illustrated, there are three pairs of such V shaped notches namely, a first pair 37 and 39, a second pair 41 and 43 and a third pair 45 and 47.

The manner in which the device operates can be seen in FIGURES 4 through 8. In FIGURE 4, the can end is shown as it would normally be received by the consumer, i.e. none of the scorelines has been ruptured and the tab lies flush against the end of the container. Now as the end 21 is lifted as is shown in FIGURE 5, substantially no strain will be put on rivet 29 at first since the center portion 27 will merely flex. However, as movement continues the walls of notch 39 (and naturally 37) will come together as is shown in FIGURE 5 and at this point, the tab becomes rigid with respect to its first segment and as one continues lifting, scoreline 31 will be broken and at this point, the slots of slot 43 have come together as is shown in FIGURE 6. Now the second segment has become rigid and as one continues lifting, pressure will be exerted on rivet 33 raising the end and eventually the slots 47 will close, now rendering the entire tab rigid. As one continues the upward movement as is shown in FIGURE 8, none of the scorelines 13 and once scoreline 13 is fractured, continued movement on the tab will lift off the entire end. It will be readily apparent from a study of FIGURES 4 through 8 that a sequencing operation has been provided and that one progressively ruptures various of the scorelines as the tab is raised yet the balance of the tab is flexible until the appropriate pair of V notches is closed, and also that the tab has moved through a considerable distance before it is called upon to do its main job, namely rupturing scoreline 13. This provides a very smooth flowing, easy opening action.

Although a specific configuration has been shown with a double rivet construction and with three pairs of V notches, it should be understood that this is for purposes of illustration only. Thus, in some simple cans, only one pair of notches might be provided so that an initial rock-
ing action of the tab is provided until a single pair of V notches closes whereupon the nose of the tab would rupture a scoreline.

The flexibility of the tab can be altered within wide limits by changing the angles of the V's. All of the V's have been illustrated as having the same angle or width, but the various pairs might have different angles to control the sequencing in a desired manner.

What is claimed is:

1. A container adapted to be opened with the fingers comprising in combination:
   (a) a container top with a scoreline therein,
   (b) a pull tab attached to the container top having at one end a substantially rectangular nose portion adjacent said scoreline and a finger engaging opposite end,
   (c) spaced rivets arranged along the longitudinal line of said tab in said nose portion, and securing said tab to said top, one of said rivets being encircled by a scoreline,
   (d) said tabbing having a reinforcing roll at each side thereof and a substantially flat intermediate portion,
   (e) a plurality of pairs of V-shaped transversely aligned longitudinally spaced notches in said reinforcing roll on each side of said nose portion, the bottoms of the notches terminating at the flat intermediate portion, each pair of said aligned notches defining a bend line transversing the flat of said nose, and said bend lines traversing said nose on each side of said rivets,
   (f) whereby said tab can be lifted and will bend on the flat portion until the walls of the V notches close, placing the uppermost portion in compression and the intermediate flat portion of the tab in tension.

References Cited

UNITED STATES PATENTS

3,289,880 12/1966 Wilkich -------------- 220—48
3,411,662 11/1968 Silver --------------- 220—54

GEORGE T. HALL, Primary Examiner