

Sept. 22, 1942.

G. C. ERB

2,296,430

CONTAINER

Filed Jan. 6, 1940

Fig 1

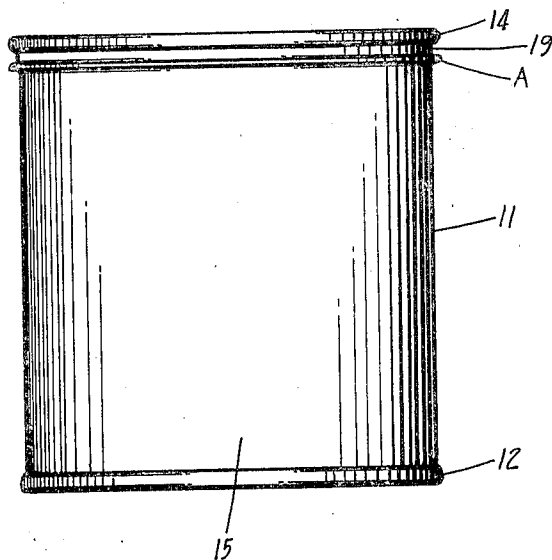


Fig 2

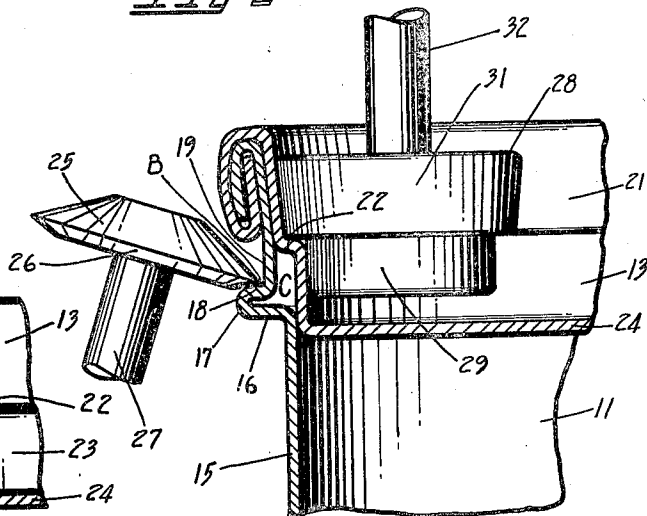
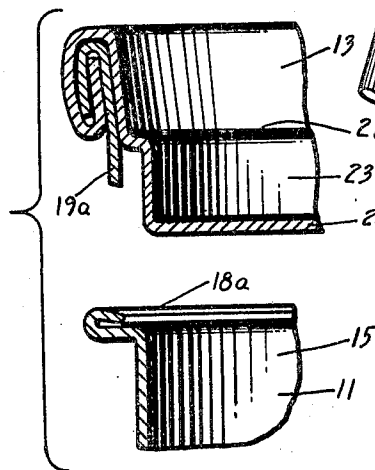


Fig 3



INVENTOR

George C. Erb
By Edgar A. Thompson
Charles H. Erb
ATTORNEYS

UNITED STATES PATENT OFFICE

2,296,430

CONTAINER

George C. Erb, Forest Hills, N. Y., assignor to
American Can Company, New York, N. Y., a
corporation of New Jersey

Application January 6, 1940, Serial No. 312,737

1 Claim. (Cl. 220—48)

This invention relates in general to containers and more particularly to a novel end construction of container body and end closure which is readily severable to open the container, after which the end closure may be used as a convenient re-

closure. An object of the invention is the provision of a sanitary container having a novel end construction, including body and end closure parts, which construction provides a cutting portion which may be readily cut along a definite line of severance without the cutting means or any of the cut parts coming in contact with the contents of the container and for these reasons the invention is especially adapted for embodiment in sanitary food containers.

Another object of the invention is the provision of such a novel container body and end closure construction which will permit ready cutting and provide an accurate and convenient track for a cutting tool such as a rotary container opener.

Still another object of the invention is the provision of such a novel body and end closure construction having its various parts cooperatively arranged and its cutting or severing line so located that the cutting tool is solidly supported and accurately guided during the cutting operation.

Yet another object of the invention is the provision of a novel body and end closure construction which can be formed economically with only a slight change in existing body and end forming devices and which does not interfere with the attainment of a tight and (if desired) a hermetic joint between container body and end closure.

Numerous other objects and advantages of the invention will be apparent as it is better understood from the following description, which, taken in connection with the accompanying drawing discloses a preferred embodiment thereof.

Referring to the drawing:

Figure 1 is a side elevation of a container embodying the invention;

Fig. 2 is an enlarged sectional view through the upper part of the container and end closure construction and also shows in perspective the cutting and feeding parts of a rotary cutter in position for the cutting operation;

Fig. 3 is an enlarged sectional view of the container and end reclosure in separated, superposed position, as they appear separated after the cutting operation is completed.

Referring now to the drawing in more detail, a preferred embodiment of the invention as il-

lustrated and exemplified in the several views, comprises a cylindrical container of sheet metal such as tin plate or other suitable material, having a body 11, a bottom end closure secured to the body 11, as by the usual double seam 12 and a top end closure 13 secured to the body 11 preferably also by the usual double seam 14. When the container is constructed of sheet metal such as tin plate, the bottom and top double seams 12 and 14 comprise the usual interlocked body and end closure flanges forming the usual five thicknesses or layers of body and cover material.

The body 11 for its major part has a straight cylindrical wall 15 but near its top and below the top double seam 14, the material of the body wall is bent outwardly at a substantially right angle to the straight body wall 15 to form a horizontal wall part 16, then slightly upwardly to form a vertical wall part 17, then inwardly a shorter distance than the width or extent of the wall part 16 to form another horizontal wall part 18 slightly spaced vertically from and parallel with the wall part 16, then upwardly again to form a vertical wall part 19 which is parallel with and spaced slightly outwardly from the straight body wall 15 and which merges into the body flange which furnishes two layers of body material for the double seam 14. The body wall parts 16, 17 and 18 thus form a ledge, shoulder or bead A which provides a convenient cutter track and support and defines by the corner B formed by the body parts 18 and 19 a line of severance which may be readily followed and cut by a rotary cutter hereinafter described.

The top cover or end closure 13 inwardly of its marginal flange which is interlocked with the body flange to form the double seam 14, merges into a vertical or countersunk wall part 21 which runs parallel with and tightly hugs the body wall part 19 and is then bent inwardly to form a short substantially horizontal cover wall part 22, which in turn is bent downwardly to form a vertical cover wall portion 23. The latter extends parallel with the body wall parts 19 and 15 and frictionally engages the wall portion 15 for a short distance below the body wall part 16. The cover wall 23 in turn is bent inwardly and continued to form a horizontal cover panel 24, which completes the end closure 13. Such an arrangement of the body and cover wall parts leaves an annular space C between the body and cover adjacent the body bead A, which space cooperates with a rotary cutter now to be described.

In order to open the container above described a cutter of the rotary type is used or may be

adapted for use. The opener illustrated and exemplified in Fig. 2 essentially comprises a rotary cutter roller 25, of hardened or tempered steel, which is preferably tapered and is provided with a sharp annular cutting edge 26, and is operatively supported on a roller shaft 27, which is journaled in parts and driven by parts not here shown. A propelling or feeding roller 28, having a small diameter roller portion 29 which engages the cover wall part 23 and having a large diameter roller portion 31, which engages the cover wall parts 21 and 22 and is supported by the latter, is mounted on a shaft 32 and is adapted to frictionally engage the stated cover wall parts and cooperates with the cutter roll 25, assisted by connecting and driving parts (not shown) to propel the cutter roll 25 and itself around the periphery of the container.

When the cutter roll 25 is in the cutting position on the projecting portion or ledge A illustrated in Fig. 2 and the cutter is operated, the cutting edge 26 coincides with the corner B adjacent the annular space C and severs the material of the container body along a line of severance defined by the corner B, and because of the usual pressure exerted between the cutter roll 25 and the feed roll 28, a clean cut is effected and the cover 13 including a portion of the body wall is separated from the remainder of the body 11.

The result of this cutting operation is clearly shown in Fig. 3, where it is seen that the cutting operation leaves a body flange 18a slightly reformed and bent downwardly by the cutting pressure and also leaves a cover flange 19a. The remaining body 11 and separated cover 13 may then be reassembled, the cover parts 23 and 24 fitting within the straight body wall 15 and forming a friction plug reclosure.

From the foregoing it will be seen that the invention provides a novel body and cover construction especially adapted for sanitary sheet metal food containers, but also applicable to other containers, which may be effectively cut along a clean line of severance without bringing the cutter parts or the cut container parts in contact with the container contents and which has all the advantages heretofore mentioned and other advantages which have not been specifically described.

It will also be appreciated that when the end seams are required to be liquid or air tight it is desirable to interpose a packing or sealing com-

pound material between the interlocked body and end closure flanges in a suitable and well known manner.

Also it is understood that the body and cover construction above described may be used at either bottom or top end of the container or at both ends. Also that the invention is not necessarily limited to the use of sheet metal in the construction of the container but that it may be adapted to other materials.

It is thought that the invention and many of its attendant advantages will be understood from the foregoing description, and it will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention or sacrificing all of its material advantages, the form hereinbefore described being merely a preferred embodiment thereof.

I claim:

A sealed sanitary sheet metal container adapted to be opened by a cutting tool without contacting the contents, comprising a tubular body member including a wall terminating in an outer flange, a countersunk end closure member having a peripheral flange interlocked with said body flange in an end seam joint, said body wall adjacent said seam being bent outwardly and thence inwardly and upwardly to provide an integral peripheral outwardly projecting ledge of double thickness constituting a cutting tool support, said upwardly bent tubular body wall between said ledge and said joint being offset outwardly from the straight major portion of the body wall and merging into said ledge to provide a sharply defined annular track for the tool to engage and cut through, said closure member adjacent said joint extending inwardly in a substantially horizontal wall part and thence downwardly into frictional engagement with the inner surface of the straight major body wall portion so as to shield the container contents from the tool and to set off with said outwardly offset body wall portion a closed annular space disposed inwardly of said ledge for receiving the cutting edge of the opening tool as the latter cuts through the said outwardly offset body wall portion at its juncture with said ledge, such removal of the container end providing a plug reclosure element for frictional engagement with the major straight body wall adjacent said ledge.

GEORGE C. ERB.