Oct. 13, 1942. G. W. REESE 2,298,311

CONTAINER

Filed Dec. 30, 1939

Fig. 1

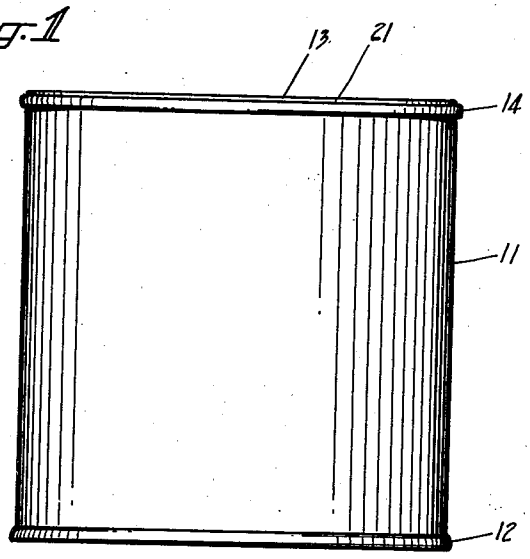


Fig. 4

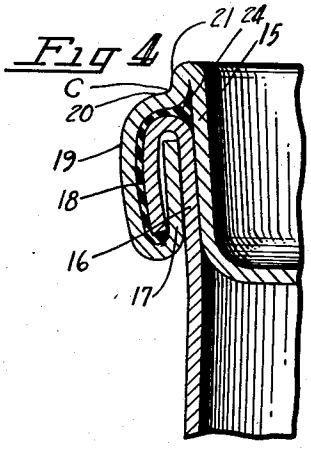


Fig. 2

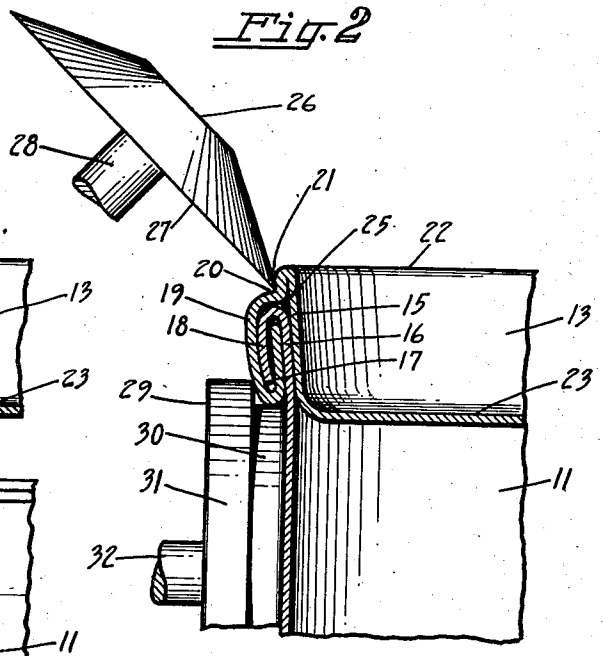
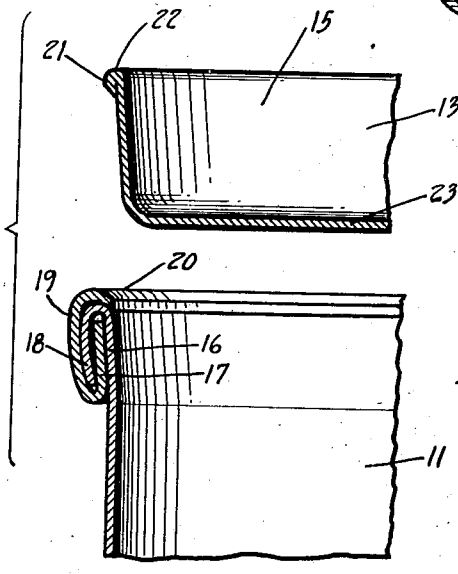


Fig. 3



INVENTOR
Garland W. Reese
BY Evan D. Thornburgh
Charles H. Lyne
ATTORNEYS

Patented Oct. 13, 1942

2,298,311

UNITED STATES PATENT OFFICE

2,298,311

CONTAINER

Garland W. Reese, Chappaqua, N. Y., assignor to American Can Company, New York, N. Y., a corporation of New Jersey

Application December 30, 1939, Serial No. 311,873

1 Claim. (Cl. 220—48)

This invention relates in general to containers and more particularly to a novel end seam which secures a container end closure to a container body and which is readily severable to open the container, after which the end closure may be used as a convenient reclosure.

An object of the invention is the provision of a sanitary container having a novel end seam at either or both ends thereof which provides a cutting portion which may be readily cut 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 food containers.

Another object of the invention is the provision of such a novel end seam which will permit ready cutting and at the same time result in smooth non-ragged cut edges both on the remaining seam portion and also on the remaining reclosure portion, thereby protecting the hands of the ultimate consumer.

Still another object of the invention is the provision of such a novel end seam construction having a necked-in annular rim portion or shoulder which provides a 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 end seam having its cutting or severing line so located that the remainder of the seam functions as a support for the various parts of the cutting tool.

Yet another object of the invention is the provision of a novel end seam which can be formed economically with only a slight change in existing seam forming devices, such as first and second operation seaming rollers, and which results in 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 section through the upper part of the container including the novel seam and also shows in perspective the cutter and feeding portions of a rotary cutter in position for the cutting operation;

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

Fig. 4 is an enlarged sectional view of the end seam made hermetic by the inclusion of a sealing compound.

Referring now to the drawing in more detail, a preferred embodiment of the invention as illustrated 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 member 13 secured to the body 11 by the novel end double seam 14.

The end double seam 14, as illustrated in detail in Fig. 2, is formed by the interfolding or interlocking of the marginal flanges of the body 11 and the end closure 13, providing, in case sheet metal is used in the construction, five thicknesses, walls or layers of metal, namely an inner layer 15, which is provided by the vertical wall of the countersunk end closure 13, an adjacent layer 16, which is part of the container body wall 11, an adjacent layer 17, which is the outer marginal part of the flange of the end closure 13, an adjacent layer 18, which is the outer marginal part of the flange of the can body 11, and an outer layer 19, which is the inner marginal part of the flange of the end closure 13. The outermost layer 19 of the double seam 14 merges at the top into a substantially horizontal inwardly extending shoulder 20 defined by an inwardly set or necked-in vertical wall part 21 of the end closure member, which in turn is pinched upon and against the vertical wall portion or inner layer 15 of the end closure member to form a vertically projecting annular top rim 22 of double thickness, which together with a centrally disposed horizontal wall part 23 of the end closure, completes the end seam construction of the container.

When this end seam is required to be liquid or air tight it is desirable to interpose a gasket, packing or sealing compound material 24 between the parts 18, 19 and 20 as clearly illustrated in Fig. 4. When such a sealing material is used the small annular opening or space 25 (Fig. 2) is preferably filled with the sealing material.

In order to open the container above described a rotary cutter opener, of which there are several types available, is used or may be readily adapted for use. The opener illustrated and exemplified in Fig. 2 essentially comprises a rotary cutter roller 26, of hardened or tempered steel, which is preferably tapered and has a sharp an-

nular cutting edge 27, and is operatively supported on a roller shaft 28, which is journalled in parts and driven by parts not here shown but which are well known in the art. A propelling or feeding roller 29, having a reduced or smaller diameter portion 30 and a larger diameter or flange portion 31 and mounted on a shaft 32 is adapted to frictionally engage the lower and outer faces of the double seam 14 and cooperates with the cutter roll 26, assisted by well known connecting parts (not shown) to propel the cutter roll 26 and itself around the whole periphery of the double seam 14.

When the cutter roll 26 is in the cutting position illustrated in Fig. 2, the cutting edge 27 coincides with a line of cut or severance C which follows the corner between the parts 20 and 21 of the seam 14.

By reference to Fig. 3 it will be seen that the cut edges remaining after the cutting operation are smooth and non-ragged and the hand of the ultimate consumer is protected from the cut edge remaining on the reclosure 13 by the rounded rim 22, and the cut edge on the remaining double seam still attached to the body 11 is shielded by the horizontal part or shoulder 20, which is slightly rounded or reformed by the cutting operation.

From the foregoing it will also be readily appreciated that the invention provides an end seam for sanitary containers which may be effectively cut to disconnect the end closure from the container body along a clean line of severance and without bringing the cutter parts or the cut container parts in contact with the container contents at any time and which has all the advantages mentioned herein and other advantages which have not been specifically mentioned.

After the end closure 13 has been severed as described, the detached portion thereof may be utilized as a convenient reclosure as best seen in Fig. 3, the vertically extending wall portion or inner layer 15 thereof having snug frictional engagement with the inner surface of the can body wall portion 16.

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 sanitary sheet metal food container adapted to be opened by a rotary cutting tool without contacting the contents, comprising a container body having an end flange, and an end closure also having a flange, said flanges being interlocked to produce an end double seam for securing said end closure to said body, said end seam comprising five closely contacting layers of metal, the innermost layer consisting of an inner body engaging wall and the outermost layer consisting of a depending flange portion of the end closure, and a gasket material interposed between said innermost and outermost layers, said innermost and outermost layers being projected axially beyond the intermediate layers in a reversely folded closely contacting pinched rim of double thickness at the outer extremity of the seam to provide a reenforced solid backing for a cutting tool, said outermost layer being bent inwardly at substantially right angles to the said innermost layer and over the intermediate layers to provide with the base of said rim a comparatively wide shoulder constituting a definite annular track for a rotary cutting tool to follow without slipping off, a cavity formed above said intermediate layers between said shoulder and said innermost layer for receiving the cutting edge of said tool, a portion of said gasket material being confined in said cavity, whereby said end closure may be severed from the body while the container contents are shielded from said cutter and any cut container parts.

GARLAND W. REESE.