Dec. 25, 1934. F. J. O'BRIEN 1,985,793

METHOD OF FORMING AN HERMETICALLY SEALED EASY OPENING CONTAINER

Filed June 18, 1932

FIG. 1.

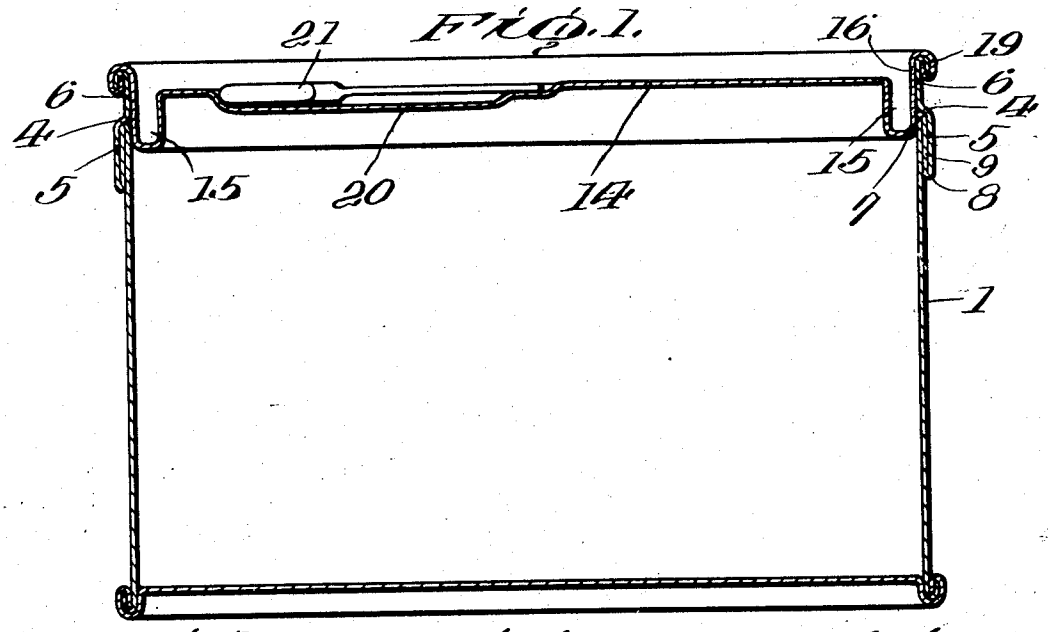


FIG. 2.

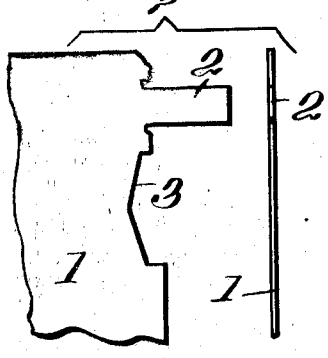


FIG. 3.

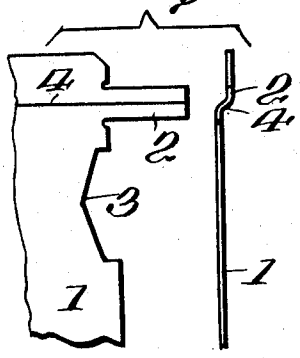


FIG. 4.

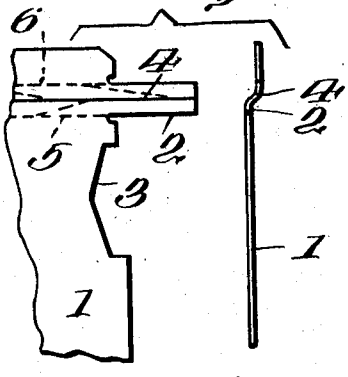


FIG. 5.

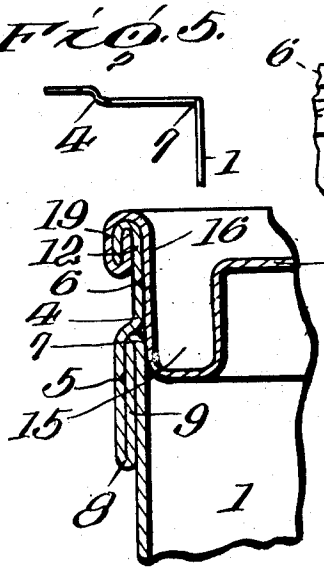


FIG. 6.

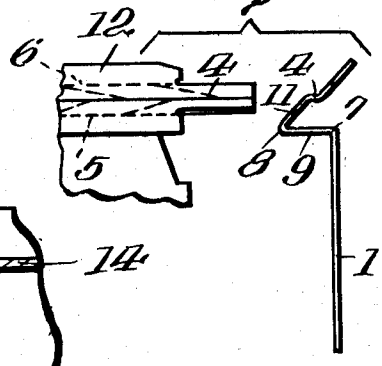


FIG. 7.

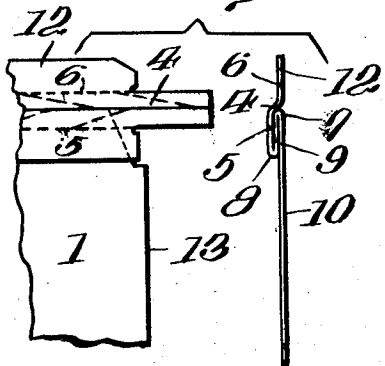


FIG. 1a.

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METHOD OF FORMING AN HERMETICALLY SEALED EASY OPENING CONTAINER

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Application June 18, 1932, Serial No. 618,047

1 Claim. (Cl. 113—15)

The invention relates to a method of forming an hermetically sealed easy opening container.

It has been a common expedient in the art to construct an easy opening container wherein the body wall is folded to provide a collar on the outer face of the container and to provide the outer wall of said collar with score lines. The outer wall of the collar extends to the double seam and is of uniform diameter throughout. This produces a container which is non-symmetrical for the reason that the diameter of the double seam at the end adjacent the collar is greater than the diameter of the double seam at the opposite end of the container. The score lines are formed in the body blank before the blank is shaped into cylindrical form and before the body blank is folded to form the collar. It is not practical to bend the collar wall inwardly where the container body is formed for producing a container wherein the double seams at both ends are of the same diameter, as the strain on the collar incident to offsetting it inwardly in the region of the score lines is likely to rupture the metal at the score line.

An object of the invention is to provide a method of forming a container of the above type which consists in the bending of the body blank to form the offset prior to the scoring of the body blank and the folding of the same to form the collar.

In the drawing which shows by way of illustration one embodiment of the invention:

Figure 1 is a sectional view through a container embodying the invention;

Fig. 1*a* is an enlarged vertical section through a portion of the container;

Fig. 2 is a view showing in plan and in edge view a portion of the body blank;

Fig. 3 is a similar view showing the body blank after it has been bent to form the offset;

Fig. 4 is a similar view showing the body blank after it is scored;

Fig. 5 is an edge view of the blank showing the body blank bent substantially at right angles preparatory to the forming of the collar;

Fig. 6 is a view similar to Fig. 5, showing the body blank as again folded as a further step in the forming of the collar, and

Fig. 7 is a view similar to Fig. 1, but showing a portion of the blank in side and in edge elevation, after the fold has been completed and the collar formed in the blank.

The improved method will now be described. A blank of sheet metal is cut to the shape shown in Fig. 2, preparatory to the making of the improved container. Said blank is indicated at 1, and is provided with a projecting portion 2 which finally produces a tearing tongue. The body is cut away as indicated at 3 so as to provide a proper shaping of the ends of the collar. The body blank shown in Fig. 2 is first submitted to suitable devices which form an offset 4 in the body blank. This offset 4 is substantially twice the thickness of the metal of the blank, for reasons which will be noted later. The offset 4 is located in the blank so that it intersects the tearing tongue 2 substantially midway between the side edges thereof. After the body blank has been provided with this offset, it is then passed between scoring rolls and score lines 5 and 6 formed therein. These score lines are of the usual character and form a tearing strip which is rolled on to a key attached to the tearing tongue 2. The tearing strip is preferably provided with the diagonal score lines to aid in the rupturing of the metal along the side edges only of the tearing strip. After the blank has been scored, it is then submitted to a machine for folding the blank along the line 7 (see Fig. 5), so as to place the portion of the blank above the fold substantially at right angles to the portion of the blank below the fold. The blank is then again folded along the line 8 to place the portion above the fold line 8 substantially at an angle to the portion thereof below the fold 8. It is then submitted to devices for further folding the blank along the lines 7 and 8 so as to lay the portion 9 tight against the outer face of the body wall 10. The portion 11 above the fold 8 and below the offset 4 is laid flat against the portion 9 and this brings the portion 12 above the offset into alinement with the portion of the body wall 10 beneath the fold 7. The fold 7 is located right at the offset, and the offset, as noted above, is substantially twice the thickness of the metal, and this is what brings the portions 10 and 12 into alinement. The score line 5 is below the fold 7 and the score line 6 is above the fold 7.

After the blank has been offset, scored and folded as above described, the side edges 13 of the blank are provided with the usual hooks which are interlocked to form the locked portion of the side seam. The ends of the collar are abutted, and the portions of the blank above the collar are lapped, and thus the side seam is formed which joins the side edges of the blank and produces a cylindrical body. After the cylindrical body is formed, the ends of the body are flanged in the usual way. A can end 14 is provided with a depression 15, and this produces a vertical wall 16 extending downwardly from the usual depression in the end for the chuck used in double seaming. The depression in the cover forms a wall

16 which extends into the container body below the top edge 7 thereof. When the rip strip is being torn away, even if the container is inclined, this wall 16 makes a sealing contact with the inner wall of the container and prevents spilling of the contents of the container.

This finishes the container body as formed by the manufacturer of the can. After the can is filled, then the end 17 is attached thereto by a double seam 18. The end 14 is attached to the flanged body wall by a double seam 19. The double seams 18 and 19 are of the same diameter, and therefore, the two ends of the can are symmetrical as to size. The end 14 which is removed by rupturing the wall through the aid of the tearing strip is provided with a depression 20 in which a key 21 is placed and secured in any suitable way to the end. This is the key that is attached to the tongue 2 and on which it is rolled for rupturing the metal along the score lines 5 and 6.

From the above it will be apparent that a container has been produced by the improved method wherein the double seams at the opposite ends thereof are of the same diameter. A container is also produced wherein the body wall is of uniform diameter on the interior face thereof from one double seam to the other. There is also a fold in the body wall producing a smooth edge at the upper end of the body wall when the tearing strip is removed, and this fold is formed in the body wall and produces a collar lying on the outer face of the body wall. The upper score line is close to the double seam so that the raw edge of metal left in the portion of the collar which is connected to the detached end is practically covered by the double seam and the depressed portion in the end so that the hand of the operator will not contact therewith. The end has a depending portion making an inside slip reclosure with the body wall, and the lower end of this depressed portion is smooth and unbroken.

By the method described, the body portion of the container can be made on a bodymaker. The blank from which the body is made is, however, subjected to a bending means for forming an offset, and to a scoring device for scoring it, and then it can be folded to form the collar in the bodymaker, the hooks formed and interlocked and bumped, and the side seam soldered in the usual way. In other words, the container body and collar when they leave the bodymaker are merely flanged and the ends attached thereto without requiring any bending strains for reshaping the body wall or collar, other than the flanging which is of the usual well-known character.

It is obvious that minor changes in the details of the steps of the method may be made without departing from the spirit of the invention as set forth in the appended claim.

Having thus described the invention, what I claim as new and desire to secure by Letters-Patent, is:

The method of forming an hermetically sealed easy opening container consisting in shaping a body blank so as to provide a projecting tongue thereon, bending the body blank along a line parallel with the upper edge of the blank and intersecting said tongue lengthwise thereof to form an offset in the blank of substantially twice the thickness of the metal, subsequently scoring the blank at each side of said offset and in alignment with the side edges of the tearing tongue and while said blank is flat, double folding said blank to place the body wall at one side of the fold therein in alignment with the portion of the body wall at the other side of the offset, forming said blank with the fold therein into cylindrical shape and joining the edges by a side seam to form the can body and subsequently joining a can end to the upper end of the can body adjacent the score lines.

FRANK J. O'BRIEN.