

Feb. 1, 1927.

W. E. BURNS

1,615,930

CAN AND METHOD OF FORMING

Filed Aug. 4, 1926

Fig. 1A.

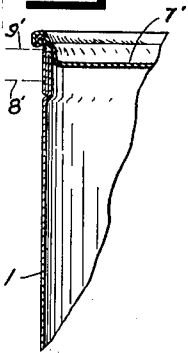


Fig. 1.

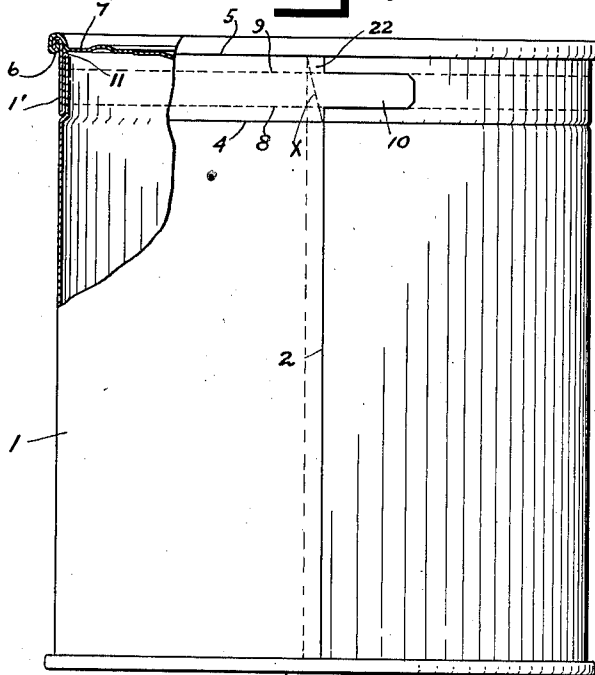


Fig. 2.

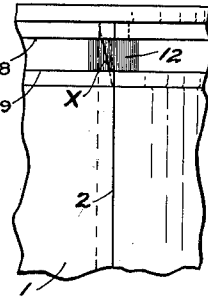


Fig. 4.

Fig. 5. Fig. 6.

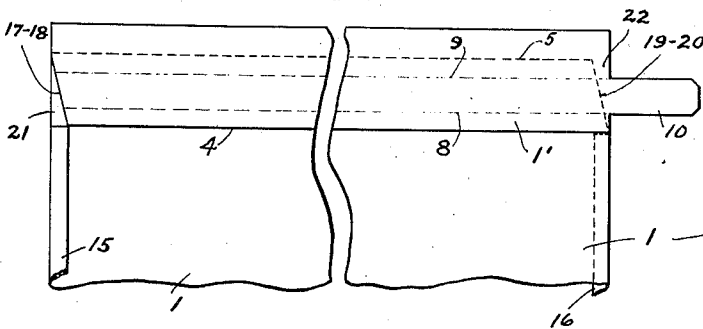
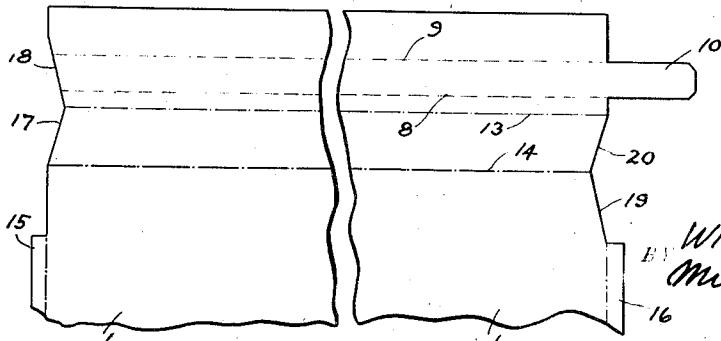


Fig. 3.



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UNITED STATES PATENT OFFICE.

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CAN AND METHOD OF FORMING.

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This invention relates to the manufacture of tin cans as used for preserving foods and other perishable material, and particularly to specific can construction through which a can is provided with a tearing strip so arranged that the lid of the can may be of service on the can after the tearing strip is removed.

The principal objects of the invention are to provide an improved manner of forming such cans and overcoming some of the manufacturing difficulties heretofore encountered so as to make this type of can cheap and practicable for the common use to which cans are generally put.

Other objects and advantages of my construction will appear in the following description.

In the drawings hereto Figure 1 is an elevation of a finished can in accordance with my invention and having the upper portion broken away to reveal the inner relation of the layers of metal at the upper portion where the invention particularly resides.

Figure 1^A shows in section the layers of metal as in Figure 1 but with a slight modification of the lid of the can.

Figure 2 is a fragmentary portion of the upper portion of the can adjacent the vertical seam after the tearing strips has been removed.

Figure 3 shows the upper portion of the blank from which the can body is formed. Figure 4 shows the folding of the upper margin of the blank before forming the body. Figure 5 is an edge view of Figure 4 and Figure 6 is a similar view after the folded blank has been rolled or pressed to bring the outer surfaces of the body flush or in line so that the outer diameter will be of uniform diameter when the tubular body is formed from the folded blank.

Briefly described, my invention provides a can with a tearing strip at its upper end which when torn off leaves a lid fitting on the can and in place thereon. Through slight modification of the lid and position of the tearing strip the lid may either be a slip lid telescoping over the outside of the can as shown in Figures 1 and 2, or it may be a friction lid wedging tightly within the upper end of the can as shown in Figure 1^A.

In the drawings 1 designates the tubular shell or can body vertically seamed at 2 and

provided with a bottom 3 flanged, soldered, or otherwise secured thereto in the known manner.

At the upper portion of the can the thickness of metal shown in section has been much exaggerated to more clearly indicate the relation of the parts and from which it will be seen that the body is reversely folded twice to form a band of triple thickness from the line 4 to the line 5.

Above the line 5 the body is outwardly flanged and inter-locked at 6 with a lid member 7 in the known manner and may incorporate soldering or any of the packing or sealing materials as commonly used in these joints as may be desired, all depending on the particular use to which the can will be put.

Around the inner surface of the outer layer 1' of the triple layers of the can body are scored lines 8 and 9 terminating in a freely extending strip 10 adapted for engagement with a key for tearing off in the known manner, and when torn off will leave lid 7 with a neck extending down to the upper score line 9 telescoping over the upper end of the can of reduced diameter. The depth of the telescoping neck may of course be arranged to suit any requirement by suitable positioning of the score lines in combination with the depth of the triple layer of metal. Also it should be noted, this upper end of the can over which the lid telescopes is of doubled metal with a rounded smooth upper edge at 11.

If the vertical seam 2 has been soldered the lid will not be free for accidental removal after tearing off the strip but will be held in place by a slight area of solder 12 which extends up under the depending neck of the lid, but which is easily broken by first lifting the lid from an opposite point.

If a can with an internal friction lid is desired, it is simply necessary to elevate the score lines to the points 8' and 9' so as to bring the upper one close to the upper crimped edge of the can, and to depress the top of the lid to the position 7' all as shown in Figure 1^A, and through which slight variations the tearing off of the strip leaves a lid tightly fitting the interior, the depth or angle of the internal extension of the lid being arranged to suit the requirements.

In case of either type of lid it will be

noticed that the lid is substantially in the same position after tearing off the strip as it was before and therefore has no tendency to force out a lot of liquid from well filled
5 cans as would a lid which assumed a considerably lower position.

In making my can the upper end of the body blank is cut to the shape shown in Figure 3, scored on the far side at 8 and 9
10 and folded away from the observer along the line 13, and toward the observer along the line 14 as indicated in Figure 4 so as to form respectively the bends 4 and 5. This folding is done on a folder or by passage through rolls before making the tubular body, and would through ordinary folding operations result in the upper layers of metal extending forwardly from the outer surface 1' of the final can body, but
20 preferably before forming into a tubular body the upper triple layers of metal are forced back by any suitable means to the position shown in Figure 6 so as to make the outer surface of the outer layer 1' flush
25 with the outer surface of the can body.

This operation may of course be done at the time of forming the tubular body if desired.

Vertical extensions 15 and 16 are provided and reversely hooked as indicated in Figure 4 for forming the common lock seam 2 from the line 4 down to the bottom of the can.

The bevel portions 17 and 18 form when
35 folded a bevel abutting joint α with the reversely beveled portions 19—20 lying intermediate an inner overlapping wall 21 portion and an outer overlapping wall portion 22, and above which abutting bevel joint
40 the outer wall portions 22 simply overlaps the inner wall portion 21.

After forming the tubular body of the can with the joints and portions in the relations described the body is passed over a soldering
45 roll and soldered from end to end along the line of the seam 2 and after which the tube thus formed is outwardly flanged at the ends and the heads secured thereto in the known manner.

I am aware of attempts to produce the type of can described by first forming a tubular body with a lock seam extending from end to end and then by means of rolls forcibly working a ring of the metal inwardly and upwardly within the tubular
55 body, but it is to overcome the great difficulties of such operations, especially in passing over the seam, and the injurious cracking of the metal and scaling of the tin coat-

ing therefrom that I have devised my
60 special blank avoiding the lock seam at the point of the folds, yet providing an overlap of the ends of the body wall above the lock seam, and by my method of first forming the folds before forming the tubular body
65 I have eliminated all injury to the metal and made it possible to determine with accuracy the depth of the folds and overlap or fit of the lid.

It is of course obvious without further
70 illustration that my invention as described for round cans, may also be applied to cans other than round if desired and the terms of my appended claims are to be construed as covering such other shapes to
75 which the invention may be applied.

I claim:

1. A can of the character described having a body wall formed of a single thickness of metal for the major part and a band of
80 triple layer thickness at the upper end, said body wall being joined by a lock seam from said band to the lower end of the can only and the inner and outer members of said triple layer being in simple overlapping
85 relation at the joint.

2. A can of the character described having a body wall formed of a single thickness of metal for the major part and a band of
90 triple layer thickness at the upper end, said body wall being joined by a lock seam from said band to the lower end of the can only and the inner and outer members of said triple layer being in simple overlapping
95 relation at the joint with the intermediate layers abutting at their ends.

3. A can of the character described having a body wall formed of a single thickness of metal for the major part and a band of
100 triple layer thickness at the upper end, said body wall being joined by a lock seam from said band to the lower end of the can only and the inner and outer members of said triple layer being in simple overlapping
105 relation at the joint with the intermediate layers abutting at their ends at a line extending at an angle to said seam.

4. In a can of the character described a plurality of layers of metal forming the side wall at one end thereof, a tearing strip circumferentially formed around the outermost of said layers arranged to release upon removal an end lid fitting said can, said lid being held against accidental displacement by a localized soldered area adapted for
110 breaking by lifting the opposite edge of said lid.

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