Aug. 26, 1947. J. COYLE 2,426,550

BEVERAGE CAN

Filed March 26, 1945

Fig. 1.

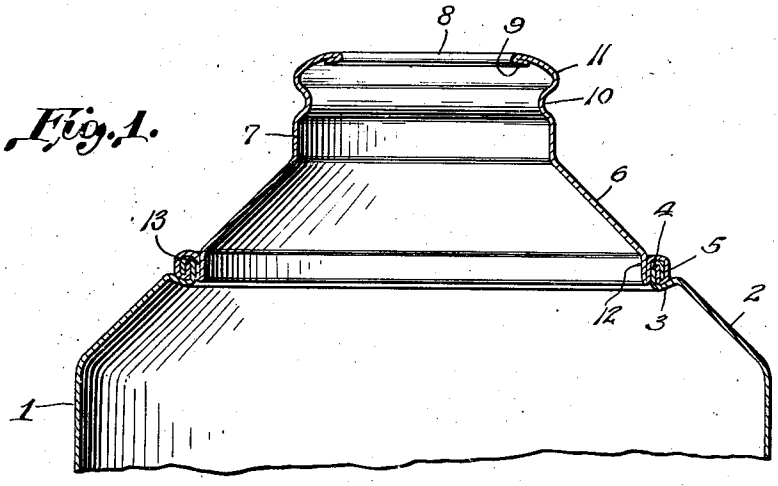


Fig. 2.

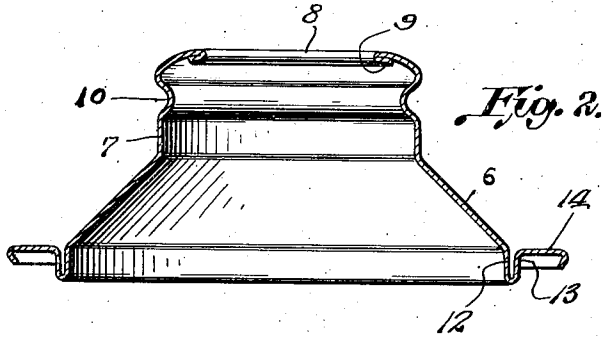


Fig. 3.

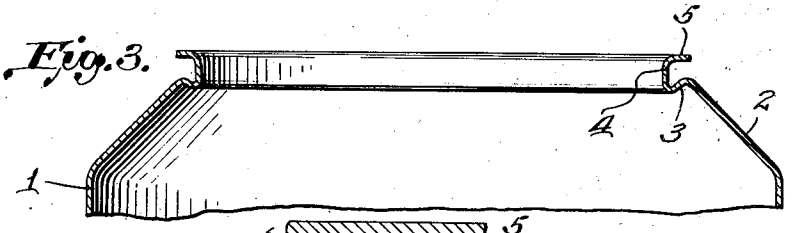
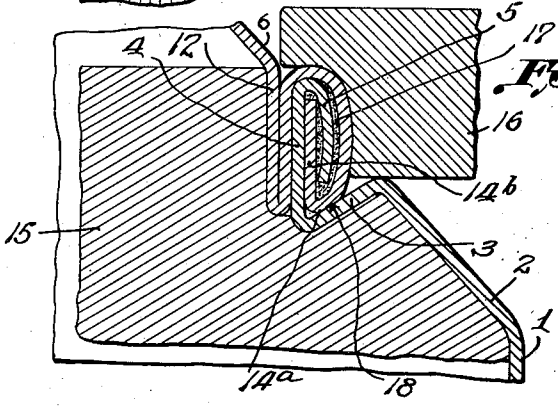


Fig. 4.



INVENTOR.
John Coyle

BY
Mason, Porter & Diller
ATTORNEYS.

Patented Aug. 26, 1947 2,426,550

UNITED STATES PATENT OFFICE

2,426,550

BEVERAGE CAN

John Coyle, Baltimore, Md., assignor to Continental Can Company, Inc., New York, N. Y., a corporation of New York

Application March 26, 1945, Serial No. 584,819

2 Claims. (Cl. 220—1)

1

The invention relates to new and useful improvements in a can which is particularly adapted for the packaging of beverages.

An object of the invention is to provide a can wherein the parts thereof are formed by drawing metal blanks to certain desired shapes, after which the parts are joined by a seam formed by interfolding metal parts and wherein said interfolded parts are so constructed that internal pressure tending to expand the metal parts in the region of the seam will not disturb the tightness thereof.

In the drawings which show by way of illustration one embodiment of the invention,

Figure 1 is a sectional view through the upper portion of the can embodying the improvements;

Figure 2 is a view showing the neck portion of the can which has been drawn from a blank and shaped ready for attachment to the body portion of the can;

Figure 3 is a view in longitudinal section of a portion of a can body drawn from a metal blank and shaped ready for attachment of the neck portion of the can thereto;

Figure 4 is an enlarged view showing the completed seam and indicating more or less diagrammatically the manner of forming the seam.

In the carrying out of the invention the body portion of the can is preferably drawn from a metal blank so that it is free from any side seams. The body includes a cylindrical portion 1 which terminates at its upper end in a cone-shaped portion 2. The cone-shaped portion 2 is bent downwardly as indicated at 3, thence upwardly as indicated at 4, and thence outwardly as indicated at 5 to form a flange. The neck portion of the can is illustrated in Figure 2. This neck portion is drawn from a metal blank and includes a cone-shaped portion 6 which is formed on substantially the same angle as the cone-shaped portion 2 of the can body.

At the upper end of this cone-shaped portion 6 is a member 7 formed integral therewith. This member 7 has a filling opening 8 therethrough. The edge of the metal is preferably turned back at 9 to reinforce the same. An annular recess 10 is formed in this member 7 and so positioned as to provide a shoulder 11. The shaping of this member 7 just described is for the purpose of attachment of a crown cap seal. These parts are of the usual construction and further description thereof is not thought necessary.

At the lower end of the cone-shaped part 6 of the neck is a depending cylindrical wall 12 which is turned upwardly at 13 and thence outwardly at 14. This outwardly projecting part 14 provides a flange which may be joined to the flange 5 of the body by a seaming operation.

2

The body portion and the neck are assembled on an inner chuck 15. This inner chuck 15 is shaped to conform to the cone-shaped portion 2 of the body, downwardly bent portion 3 of the body, and cylindrical portion 12 of the neck. After the parts have been assembled on the chuck, the flanges 14 and 5 are rolled into what is commonly called a double seam by seaming rolls. The seaming head is provided with first and second operation seaming rolls which come into action separately on the flanges, and in Figure 3 of the drawings the second operation seaming roll is indicated at 16. In this figure the parts are rolled into the finished double seam.

The flange 5 of the body in the finished seam extends downwardly and constitutes the inner hook of the seam. The flange 14 extends downwardly, thence inwardly at 14*a* and thence upwardly at 14*b*, which constitutes the outer hook. The inner and the outer hooks are interlocked into a seam which tightly joins the neck to the body portion of the can. A sealing compound is applied to the under face of the flange 14 of the neck in the usual way, and this sealing compound forms a seal for the seam and is indicated at 17 in Figure 4 of the drawing.

It will be noted that during this completion of the seam the metal parts carrying the inner and outer hooks are all forced laterally into intimate contact and they are also forced into intimate contact with the cylindrical part 12 which, in turn, is supported by the chuck 15. It will also be noted that when the flange 14 is rolled downwardly to form the outer hook which is interlocked with the inner hook, these interengaged parts will be forced downwardly into a recess 18 formed between the downwardly extending portion 3 of the body wall and the upstanding portion 4 of the body wall. In other words, the body wall indicated at 3 extends around the base of the outer hook to a sufficient distance so as to securely hold the interengaged hooks in their tight contact with each other.

When the container is used for the packaging of beverages which are carbonated, there is considerable internal pressure brought to bear upon the inner walls of the container. This internal pressure tends to expand the cone portion 2 of the body wall and the cone portion 6 of the neck outwardly. Any expansion of these parts in an outward direction tends to unfold the

hooks and loosen the seam. When, however, the body wall is bent around the base of the outer hook, any unfolding of the seam is restrained and the seam is maintained tight and undisturbed by this internal pressure.

While the invention is shown as embodied in a seam joining the cone-shaped portion of the body to a cone-shaped portion of the neck of the can, it will be understood that the parts joined may be of other shapes, but wherever the seam is formed it is essential that the metal parts shall be shaped so that the body wall carrying the inner hook extends around the base of the outer hook sufficiently to hold the seam parts tightly engaged in opposition to internal pressure which tends to expand the metal parts and unfold the interlocked hooks.

I claim:

1. A metal can comprising a body having an inwardly extending portion at the upper end thereof and a neck having a depending portion at the lower end thereof, said inwardly extending portion of the body being bent upwardly, thence outwardly and thence downwardly to provide an inner seaming hook, said neck portion being bent back upon itself, thence outwardly, downwardly, inwardly and upwardly to provide an outer seaming hook adapted to engage said inner seaming hook, the seaming hooks and the parts carrying the same being in intimate contact with each other, said inwardly projecting portion of the body being bent upwardly into contact with the base of the outer seaming hook and around said base sufficiently so as to prevent the seaming hooks from unfolding due to internal pressure on the walls adjacent the seam.

2. A metal can comprising a body having an inwardly extending cone-shaped portion at the upper end thereof, and a neck having a depending cone-shaped portion at the lower end thereof, said cone-shaped portions being formed on substantially the same angle, said cone-shaped portion on the body being bent upwardly, thence outwardly, thence downwardly to provide an inner seaming hook, said cone-shaped portion on the neck being bent back upon itself, thence outwardly, downwardly, inwardly and upwardly to provide an outer seaming hook adapted to engage the inner seaming hook, the seaming hooks and the parts carrying the same being in intimate contact with each other, said cone-shaped portion of the body being bent upwardly into contact with the base of the outer seaming hook and around said base sufficiently so as to prevent the seaming hooks from unfolding due to internal pressure on the walls adjacent the seam.

JOHN COYLE.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,199,527	Sebell	May 7, 1940
2,101,530	Brenzinger	Dec. 7, 1937
2,346,619	Schrader	Apr. 11, 1944
700,576	Thompson	May 20, 1902
2,002,457	Sebell	May 21, 1935
2,339,763	Calleson et al.	Jan. 25, 1944