Nov. 9, 1937. H. SEBELL 2,098,763

CAN OR CONTAINER

Filed March 26, 1937 2 Sheets-Sheet 1

Fig.1.

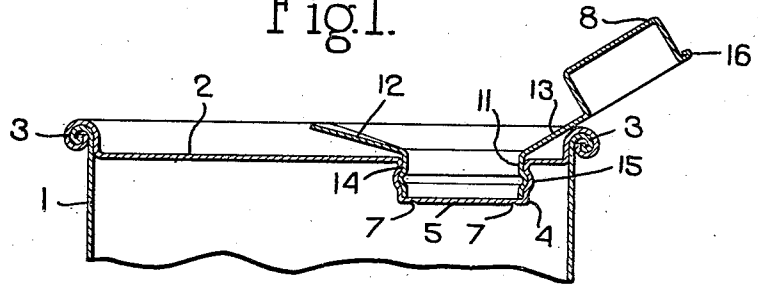


Fig.2.

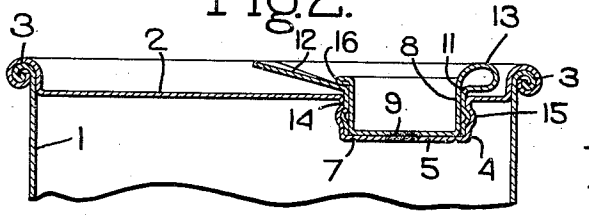


Fig.8.

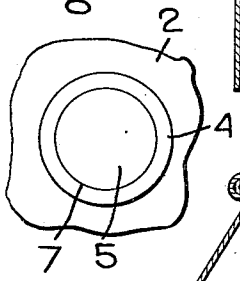


Fig.6.

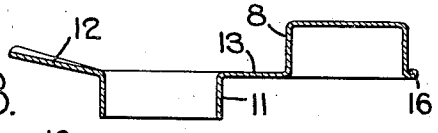


Fig.3.

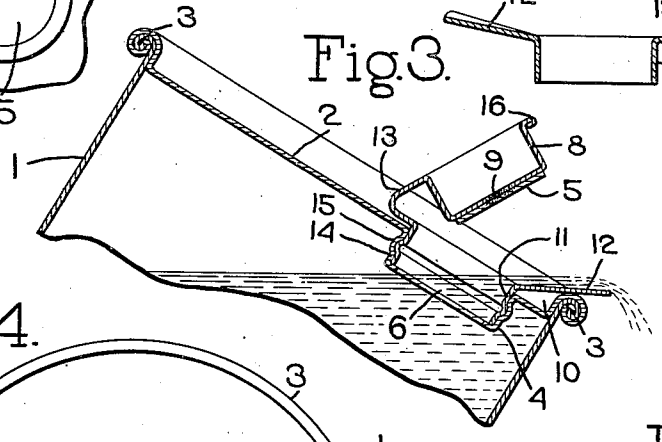


Fig.7.



Fig.4.

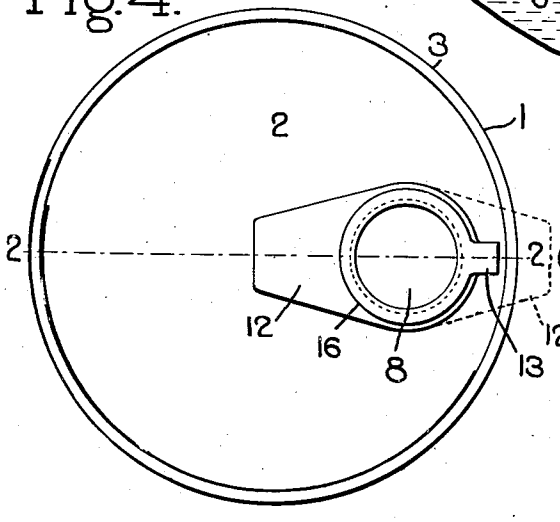
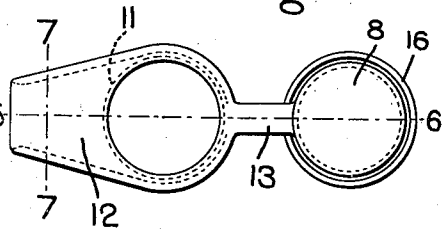


Fig.5.



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Fig. 9.

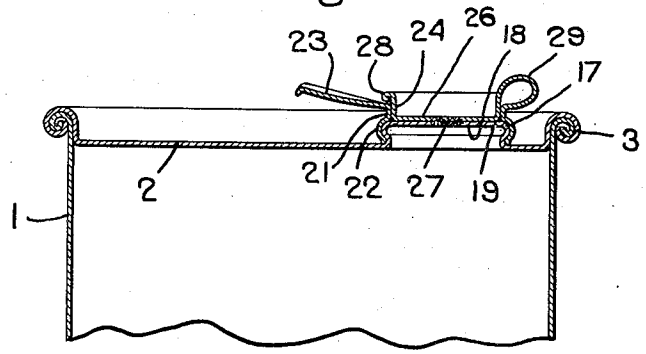


Fig. 10.

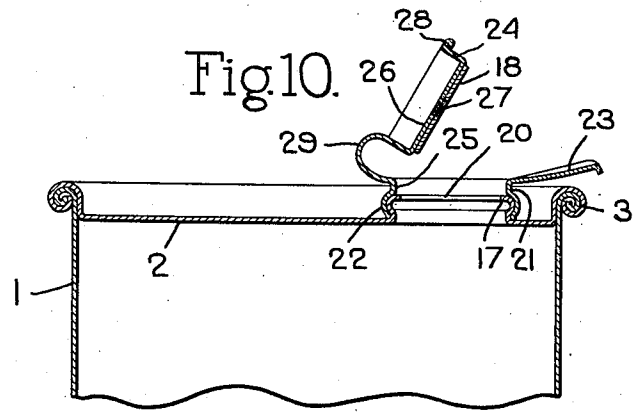
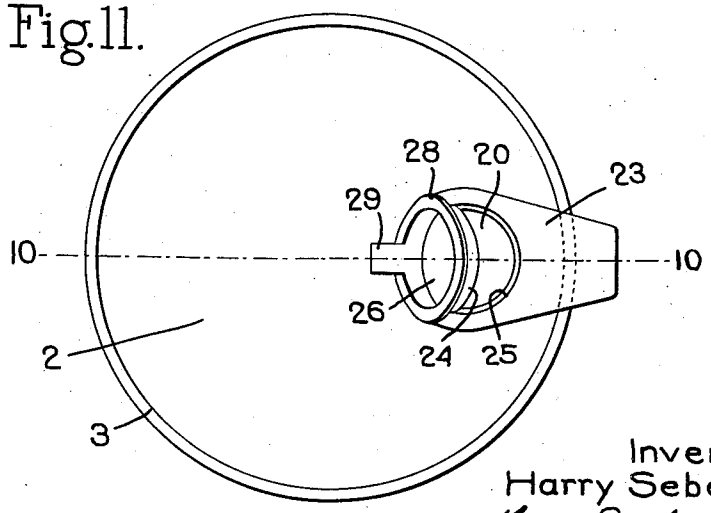


Fig. 11.



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Patented Nov. 9, 1937 2,098,763

UNITED STATES PATENT OFFICE

2,098,763

CAN OR CONTAINER

Harry Sebell, Boston, Mass., assignor of one-half to Arthur H. Parker, Lexington, Mass.

Application March 26, 1937, Serial No. 133,194

6 Claims. (Cl. 221—11)

This invention relates to containers of the type which have provision for a pouring opening through which the contents of the container may be discharged and which are provided with a removable and replaceable closure for the pouring opening.

One object of the invention is to provide a container of this type with a novel form of spout which provides a pouring lip leading from the pouring opening and over which the contents of the container flow as they are being discharged.

A further object of the invention is to provide a container of this type in which the spout or pouring lip can be turned from a position in which it is directed inwardly (which is the position of the pouring lip when the can is being packed or shipped) to its operative position in which it is directed outwardly and in which the removable and replaceable closure for the pouring opening serves, when in closed position, to lock the spout from turning movement.

A further object of the invention is to provide improvements according to which the removable and replaceable closure is connected to the pouring lip member by a hinge connection, thus avoiding the possibility that the closure may become lost or replaced when removed from the can.

Other objects of the invention are to improve containers of this type in the particulars hereinafter set forth.

In the drawings wherein I have illustrated a selected embodiment of the invention;

Fig. 1 is a fragmentary vertical and sectional view through a can showing one stage in the manufacture of the can embodying my invention;

Fig. 2 is a section on the line 2—2, Fig. 4;

Fig. 3 is a fragmentary sectional view showing the can opened and with the contents being discharged over the pouring lip;

Fig. 4 is a top plan view of the can embodying the invention;

Fig. 5 is a plan view of the combined pouring lip and the closure for the pouring opening;

Fig. 6 is a section on the line 6—6, Fig. 5;

Fig. 7 is a section on the line 7—7, Fig. 5;

Fig. 8 is a fragmentary view showing the score line or line of weakness which defines the pouring opening;

Fig. 9 is a fragmentary sectional view through a can showing a different embodiment of the invention;

Fig. 10 is a section on the line 10—10, Fig. 11 showing the can opened and the closure removed from the closure-receiving opening;

Fig. 11 is a top plan view of Fig. 10;

Referring first to the embodiment shown in Figs. 1 to 8 of the drawings, 1 indicates the can body to one end of which a can end 2 is attached in some suitable way as by means of the double-lock seam 3. The can end is shown as formed with a depressed portion 4, the bottom 5 of which is adapted to be removed or punctured for forming a pouring opening. As herein shown the bottom 5 of the depressed portion 4 is formed with an annular line of weakness 7 which may be formed by scoring the bottom, and provision is made for tearing out the portion of the can end which is enclosed by the line of weakness for the purpose of forming the pouring opening 6. A removable and replaceable closure 8, herein shown as of the friction plug type, is employed for closing the pouring opening 6, and one way of providing for tearing out the portion 5 of the can end which is enclosed within the line of weakness 7 for the purpose of forming the pouring opening 6 is to permanently secure the bottom of the closure 8 to said portion 5, so that when the closure is first pried loose from the can the bottom 5 of the depressed portion 4 will be torn free from the can along the line of weakness. I have herein shown the closure 8 as spot-welded to the bottom 5 of the depressed portion 4 as indicated at 9.

The can herein illustrated is of that type having a pouring lip associated with the pouring opening and so connected to the can as to permit it to be turned from an inoperative position in which it is directed inwardly toward the center of the can to an operative position in which it is directed outwardly and projects over the edge of the can. One feature of my present invention relates to a novel construction by which the removable and replaceable closure 8 for the pouring opening functions, when in position to close the pouring opening, to lock the pouring lip from turning movement, and another feature of the invention relates to a novel construction by means of which the closure 8 is permanently attached to the can by a hinge connection which permits it to be readily moved from a position in which it closes the pouring opening. An advantage resulting from the use of the pouring lip is that when the contents of the can are discharged the liquid will be delivered over the edge of the can and will not collect in the angle 10 at the periphery of the can end.

The closure 8 for the pouring opening and the pouring lip may conveniently be made as a single

unit or unitary structure, one form of which is illustrated in Figs. 5 and 6. This combined closure and pouring lip or spout is formed from a sheet metal blank which is deformed to present a neck portion 11 of a size to fit the side walls of the depressed portion 4 in the can end and a pouring lip or spout member 12 extending therefrom. The blank from which this unit is made is also deformed to present the closure plug 8 which is connected to the sleeve 11 by the neck portion 13. This combined closure and pouring lip unit may be initially formed to have substantially the shapes shown in Figs. 5 and 6 and it is then assembled with the can by inserting the neck portion 11 into the depressed portion 4 of the can end. The neck 11 is made of a size to fit the side walls 14 of the depressed portion 4, and said neck 11 and side walls 14 are locked together in some suitable way as by a beading operation which produces the interengaging annular beads 15 in the neck and wall 14. This manner of connecting the neck to the walls 14 retains the neck in place but yet permits it to be turned within the opening as presently to be described. The combined closure and pouring lip unit is first assembled with the can end 2 as shown in Fig. 1, that is, with the pouring lip 12 directed inwardly and with the portion 13 directed outwardly. The closure member 8 is then swung over into its operative position and forced into the neck 11 as shown in Fig. 2, the connection 13 flexing to permit this operation. After the plug closure 8 has been forced home as shown in Fig. 2, then it is spot-welded or otherwise rigidly secured to the bottom 5 of the depressed portion 4 of the can as shown at 9 and the can is then ready for shipment.

It will be understood that the annular score line 7 may be made in the bottom of the depressed portion 4 either before the neck 11 of the pouring lip has been inserted into the depressed portion 4 or after the combined plug and pouring unit has been assembled with and secured to the can as shown in Fig. 1. In any event when the can has been filled and sealed and is ready for shipment it presents the appearance shown in Fig. 2 with the closure 8 fitting within the neck 11 and spot-welded or otherwise permanently secured to the bottom 5 of the depressed portion 4 of the can end.

The opening of the can involves prying upwardly on the closure 8, the latter preferably being provided with a bead 16 at its edge to permit this operation to be performed. The application of an upward prying force on the closure 8 will tear the bottom of the depressed portion 4 along the line of weakness 7 and will result in forcing the closure 8 out of the neck 11 as shown in Fig. 3. The connecting portion 13 constitutes a hinge connection for the closure which permits it to have an upward swinging movement as shown in Fig. 3. The portion 5 of the can end which has been torn loose from the can along the line of weakness will remain attached to the bottom of the plug.

After the can has thus been opened then the combined pouring lip and closure 8 may be turned within the wall 14 of the depressed portion from the position shown in Fig. 2 wherein the pouring lip is directed inwardly to the position shown in dotted lines Fig. 4 and in full lines Fig. 3, wherein the pouring lip 12 projects over the edge of the can.

When the can is thus opened and the combined pouring lip and closure have been turned into the position in Fig. 3 there is provided a pouring opening and a pouring lip leading therefrom and extending over the edge of the can. This pouring lip is preferably slightly concave transversely as shown in Fig. 7 and it forms a spout or pouring lip over which the contents of the can flow as the can is being emptied.

If it is desired to discharge only a portion of the contents of the can, then when the desired amount has been poured out the plug closure may be reinserted into the neck 11 thereby closing the pouring opening with a tight friction fit. The neck connection 13 provides a construction which permits the closure 8 to be repeatedly removed from the pouring opening or replaced therein, and hence the closure will always be connected to the can so long as the can is in use. Since the closure is permanently connected to the sleeve-like neck 11 by the connection 13, said closure will always have the correct position relative to the pouring opening to permit it to be replaced therein whenever the pouring opening is to be closed.

In Figs. 9 to 11 I have shown a different embodiment of the invention wherein the pouring opening is formed in a raised portion of the can end rather than in a depressed portion thereof. In this embodiment of the invention the can body 1 has the usual can end 2 secured thereto and said can end is provided with the raised or upstanding portion 17 which, after the can is opened, is provided with the pouring opening. When the can end is first made this raised portion 17 is imperforate and the pouring opening may be provided by forming the roof or top 18 of the raised portion with an annular score line or line of weakness 19 so that the portion within the score line may be torn out to provide the pouring opening illustrated at 20 in Fig. 10.

The combined pouring lip and closure member for the pouring opening presents a neck portion 21 which encircles the raised portion 17 and is preferably beaded thereto as shown at 22. This neck has a pouring lip 23 extending therefrom. 24 indicates a closure for the pouring opening which is illustrated as of the plug type and which is connected to the neck portion 21 by a narrow connecting portion 29 which functions as a hinge in the same way that the portion 13 of the embodiment shown in Figs. 1 to 8 does. The neck 21 extends above the raised portion 17 so as to provide a circular wall 25 above said raised portion to receive the closure plug 24, the latter preferably fitting the wall 25 with a tight friction fit. When the combined pouring lip and closure is assembled with the can end in the first place the bottom 26 of the closure rests against the roof or top 18 of the raised portion 17 and these two abutting portions are rigidly secured together in some suitable way, one way being by spot welding as shown at 27. The connection between the neck 21 and the raised portion 14 is such that the neck will be retained on the raised portion but will be permitted to turn thereabout so that the pouring lip may be moved from the inoperative position shown in Fig. 9 into its operative or pouring position shown in Figs. 10 and 11.

When the can is to be opened a prying force is applied to the edge 28 of the closure 24 thereby prying the same out of the portion 25 of the sleeve-like neck, and because said closure is permanently secured to the portion 18 of the can end which is circumscribed by the line of weakness 19 the removal of the closure 24 from the open-

ing 25 will tear part of the roof portion 18 of the raised can end from the can, thus forming the pouring opening. After the pouring opening has thus been formed the sleeve-like neck 21 with the pouring opening and closure will be turned around from the position shown in Fig. 9 into the position shown in Fig. 10 wherein the pouring lip extends over the edge of the can. The contents of the can may then be entirely or partially discharged by pouring it over the pouring lip 23, and if it is desired to discharge only a portion of the can contents then when the required amount has been poured out the closure 24 may be replaced in the pouring opening 20, and because said closure fits the wall 25 with a tight friction fit the replacement of the closure will again seal the can.

The hinge part 29 flexes as the closure is removed from or replaced into the pouring opening but because this hinge portion 29 does not have any sharp bend it will withstand repeated flexures without breakage.

In this embodiment of the invention, therefore, there is provided a pouring lip for the pouring opening and a closure for the pouring opening which is permanently secured to the can and which can be repeatedly removed from and replaced into the pouring opening.

In this invention the closure 8 or 24 not only serves to close the pouring opening but also serves to lock the pouring lip from turning movement. It has been stated above that the closure 8 fits the neck 11 with a tight friction fit and this friction fit is sufficient so that when the closure plug is forced into the sleeve-like neck 11 for closing the pouring opening said neck will be expanded slightly and thus frictionally locked to the wall 14 thus preventing the pouring lip from turning. Hence, when the plug is in position to close the pouring opening the pouring lip is held from turning movement.

In the construction shown in Figs. 9 to 11 the pouring opening is closed by forcing the plug 24 into the upper portion 25 of the sleeve-like neck of the pouring lip. The operation of forcing the plug into the wall 25 serves to clamp the lower edge of the neck 21 more firmly about the upstanding wall 17 thereby frictionally locking the pouring lip from turning movement.

While I have illustrated herein constructions in which the closure plug is hingedly connected to the pouring lip, yet so far as the feature of locking the pouring lip from turning by inserting the plug into the neck thereof is concerned it is not necessary that the plug should be hinged to the pouring lip.

I claim:

1. A can having one end thereof deformed to present an annular wall extending at right angles to the can end, the portion of the can end within said wall being provided with an annular line of weakness, a sleeve member concentric with said wall and beaded thereto, and a closure member hingedly connected to the sleeve member and permanently connected to the portion of the can end surrounded by the line of weakness whereby said portion of the can end may be torn free thereby forming a pouring opening by application of force to the closure member.

2. A can having one end thereof deformed to present an annular wall extending at right angles to the can end, the portion of the can end within said wall being provided with an annular line of weakness, a sleeve member concentric with said wall and beaded thereto, and a closure member hingedly connected to said sleeve member and having a friction fit therein and also being permanently connected to the portion of the can end circumscribed by the line of weakness whereby the application of force to said closure member results in tearing the can end along the line of weakness thereby forming a pouring opening which may be subsequently closed by reseating the closure member within the sleeve member.

3. A can having one end thereof deformed to present an annular wall extending at right angles to the can end, the portion of the can end within said wall being provided with an annular line of weakness, a sleeve member concentric with said wall and beaded thereto, a pouring lip extending from the sleeve member, and a closure member hingedly connected to the sleeve member and permanently connected to the portion of the can end surrounded by the line of weakness whereby said portion of the can end may be torn free thereby forming a pouring opening by application of force to the closure member.

4. A can having at its end a pouring opening with a cylindrical annular wall surrounding said opening, a pouring lip having a cylindrical neck concentric with said wall and turnable relative thereto, and a closure for the pouring opening integrally connected to the cylindrical neck by a flexible connecting portion which permits the closure to have a swinging movement to open and close the pouring opening.

5. A can having at its end a pouring opening with a cylindrical annular wall surrounding said opening, a pouring lip having a cylindrical neck concentric with said wall and turnable relative thereto, and a closure of the friction plug type fitting the neck with a tight friction fit and integrally connected to said neck by a flexible connecting portion which permits the closure to have a swinging movement to open and close the pouring opening.

6. A can having one end thereof deformed to present an annular wall extending at right angles to the can end, the portion of the can end within said wall being provided with an annular line of weakness, a sleeve member concentric with said wall and beaded thereto, a pouring lip extending from the sleeve member, and a closure member hingedly connected to said sleeve member and having a friction fit therein and also being permanently connected to the portion of the can end circumscribed by the line of weakness whereby the application of force to said closure member results in tearing the can end along the line of weakness thereby forming a pouring opening which may be subsequently closed by reseating the closure member within the sleeve member.

HARRY SEBELL.