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H. SEBELL

CONTAINER

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Fig. 1.

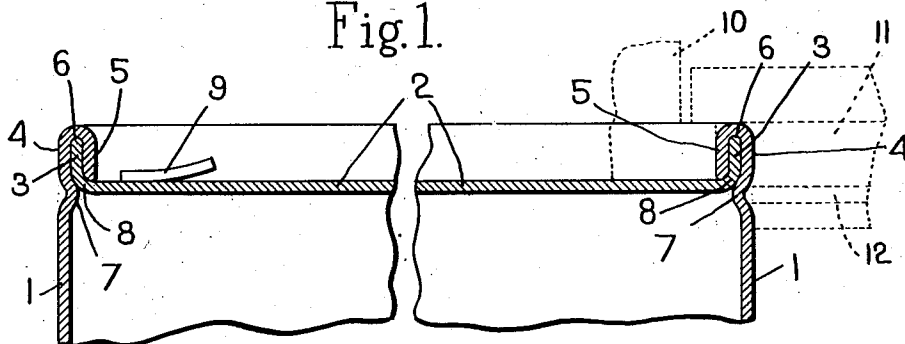


Fig. 2.

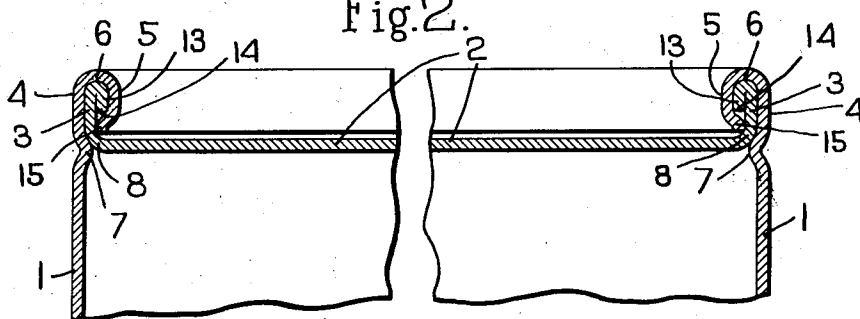


Fig. 3.

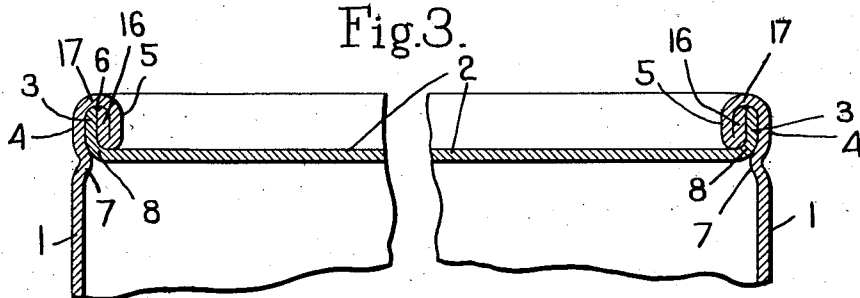
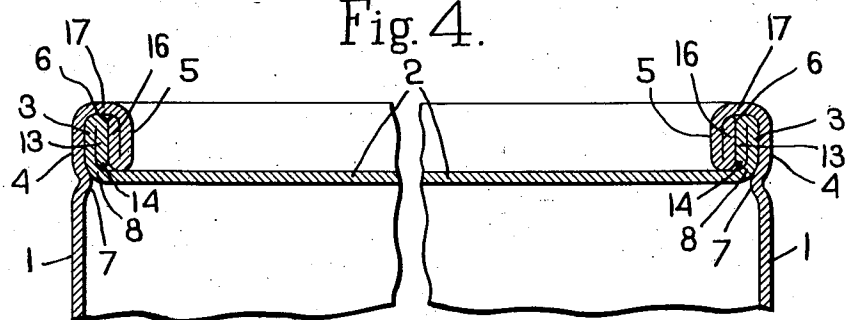


Fig. 4.



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CONTAINER.

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This invention relates to a container or can and the object is to provide a container which may tightly be sealed to preserve the contents thereof but which may easily be opened when it is desired to empty the contents from the container.

A further object of the invention is to provide an easily opened container which has a rim so constructed that even though the container may easily be opened when manipulated in the proper manner it will not open when subjected to rough usage incident to packing, shipping, etc.

A still further object of the invention is to provide a container which is easy and cheap to manufacture both because the closure requires less metal than do the usual closures and also because the container may be made with simple machinery which is not subjected to as hard wear in making the container of the present invention as in making the usual containers.

Other objects and features of the invention will more fully appear from the following description and the accompanying drawings and will be particularly pointed out in the claim.

In the drawings:

Fig. 1 is a section through one end of a container showing the container body with an opening and a closure therefor having an unfolded flange, the end of the body also being unfolded and turned over the flange to hold the closure in the opening;

Figs. 2, 3 and 4 are sections through the ends of containers showing various other forms which the invention may take.

In the usual container can the end or closure for the container is held in position on the body by having the edge of the closure and the adjacent end of the body rolled over and folded upon themselves and upon each other by a spinning of the metal so that the two are inseparably locked. It sometimes happens in the rolling and folding, that both the flange and the body end are so mutilated and wrinkled that even though they are folded several times the joint is not tight and gas is permitted to pass into or out of the container. With the container of the present invention, however, the flange and body end are not rolled over one another and not necessarily folded upon themselves although such folding may be desirable to strengthen the rim of the container. The closure has an upstanding flange and the

end of the body is turned over the flange to catch the flange in between the body and said body end so that upon pressing downwardly on the closure adjacent the flange the closure may be forced downwardly into the container, the flange of the closure sliding from between the body and body end. The closure will not be forced away from the body end, however, except by pressure adjacent the flange because if pressure should be applied to the closure at or near the center, the periphery and flange of the closure tend to move toward the center of the container, which move is resisted by the inturned edge of the body. Also by turning the end of the body over the flange of the closure a recess is provided between the body and body end in which recess a sealing compound may be placed to effectively seal the juncture of the body and closure and prevent the passage of air into or out of the container.

The container illustrated in Fig. 1 is the simplest form in which the invention may be applied. In Fig. 1 the body of the container is designated at 1 and the open end of the container is closed by a closure having a central portion 2 and an upstanding flange 3 around its periphery. The body of the container has an upper portion 4 and the end of the body 5 around the opening is turned over the flange 3. The closure is of such a size that it fits snugly within the body of the container but passes easily through it so that when the closure is put in position during the making of the container or when it is desired to remove the closure by pressing it downwardly into the container the closure will move freely but yet when the sure is in the position shown in the drawings it will frictionally engage the upper portion 4 of the body and the body end and be securely held in place thereby.

Containers having the structure shown in the drawings may be sealed very easily and securely to prevent the passage of gases either out of or into the container as the upper portion 4 of the body and the body end provide a recess 6 to receive and securely hold quite a considerable amount of the sealing compound used in the manufacture of cans. The body end 5 preferably extends down to the surface of the central portion 2 of the closure in order that there be as much contacting surface between the closure flange and the body as possible.

In order more securely to hold the closure

in the opening the projection 7 is formed on the body and extends inwardly below the closure and contacts with the shoulder 8 formed at the juncture of the flange and central portion of the closure. The projection may have any form but is preferably a beading which extends entirely around the body of the container and projects inwardly to such a distance that the projection normally holds the closure in closed position to provide a tight juncture between the closure and the body but the container may be opened by pressing the closure inwardly over the projection. It has been found from experience that the projection should extend inwardly to such a distance and have such a curvature that contact is made between the projection and the shoulder 8 for approximately one-half of the length of the curve of the shoulder.

When opening the container the closure is hit by the end of the knife or other convenient implement around its edge to force the closure downwardly to free the flange of the closure from the end of the container and the closure then may be drawn through the open end of the container so that the contents may be emptied. In order to provide a convenient means by which the closure may be grasped when lifting it out of the container, a finger hold 9 is preferably fastened to the exposed surface of the closure. The finger hold may conveniently be a piece of flexible tin soldered at one end to the upper surface of the central portion 3 of the closure and having the other end free so that it may be bent into the position shown in Fig. 1 or any other position in which it can be conveniently taken hold of to lift the closure out of the container.

In making and assembling the container shown in Fig. 1 the body is first provided without the projection 7 but having the body end 3 turned inwardly approximately to the position shown in Fig. 1. After the body of the container has been formed it is turned up on end so that the recess 6 is downward and then a sealing compound is placed in the recess. This sealing compound is a liquid which is quite fluid when it is made but which becomes viscous when it is exposed to the air. The sealing compound in its liquid state is placed in the recess and the body of the container is permitted to stand until the compound has become quite dry. The closure, having previously been made with the upstanding flange, is then inserted from the bottom of the container and pushed toward the prepared end of the can until the flange seats between the upper portion 4 of the body and the body end 3. As the flange is pushed in between the body and the body end the sealing compound is pressed in the recess between the contacting surfaces of the closure flange and body and

between the contacting surfaces between the flange and body end. The flange and body end are of such length that when correctly placed they have the position shown in Fig. 1 with the end of the flange entirely filling the recess and the body end extending downwardly until it contacts with the upper surface of the central portion of the closure. After the closure has been put in its correct position the container is run through a can machine having a chuck 10 which presses against the body end 5 and a roller 11 which presses against the upper portion 4 of the body and squeezes the body and body end toward each other to press the flange between them. The roller 11 may have a boss 12 thereon which forms the projection 7 on the body end 5 as the flange 3 is caught in its position between the body and body end. Last of all the finger hold 11 may be fastened in its position on the closure.

In making the container shown in Fig. 2 the same general procedure is carried out. In making this form, however, the flange 3 of the closure is folded upon itself at 13 but the folded portion of the flange extends only part way from the top of the flange downward toward the upper surface of the central portion 2 of the closure thus providing a lip at 14. The edge 15 of the body end, at the proper time in the process of manufacture, is forced in under the lip 14 to meet the flange 3, thus providing additional means for holding the closure in position closing the opening. The edge of the body end is turned in by a chuck similar to chuck 10 but having a projection which forces the edge 15 over to meet the flange 3. With a container of this type the recess 6 is quite large and holds a considerable quantity of the sealing compound. This is an advantage since when the flange is forced in between the body and the body end the excess of the compound fills and seals the space under the lip 14 and between the edge 15 of the body end and the flange. This form of the container is quite strong because it has the additional thickness of metal provided by the folded end 13 of the flange and the closure is quite securely held in place due to the additional locking action of the edge 15 of the body and being caught under the lip 14 of the end 13 of the flange. The container may readily be opened, however, in the same way that the container shown in Fig. 1 is opened, that is by tapping around the periphery of the closure. As the closure is forced inwardly the edge 15 of the body end is forced away from the flange 3 and slightly spread to permit the end 13 of the flange to pass by and although the blow required to open this form of the container is harder than the blow required to open the container shown in Fig. 1, the opening may still be easily accomplished.

In the container shown in Fig. 3, the end of the body around the opening is folded upon itself at 16 to provide a very strong rim where such is needed and yet have a container which may be opened more easily than the container shown in Fig. 2. The fold 16 of the body end, together with the flange 3, entirely fill the recess 6 except for a small open space at the point where the fold and flange meet the curved portion 17 of the body. - This open space extends entirely around the rim of the container within the recess and is filled with the sealing compound which forms a sealing ring or gasket entirely around the container.

The form of container shown in Fig. 4 is the one having the strongest rim now deemed desirable with this type of closure. This form of container embodies both the folded body end shown in Fig. 3 and the folded flange shown in Fig. 2 with the exception that the folded portion 13 of the flange extends all the way down until it meets the upper surface of the central portion 2 of the closure. The end of the flange is thus extended not only to obtain the benefit of the added strength but also for the practical reason that the folded end of the container body can not as readily be bent inward under the lip 14 as can a single thickness of metal and also that if the double thickness of metal were bent in under the lip 14 the container would be much harder to open since the double thickness of metal would have to be bent outwardly as the closure was forced downwardly to free the flange of the closure from the end of the container.

Containers of the type shown and described herein may quite readily be opened by tapping around the periphery of the closure but do not readily open unless the closure is tapped at or very near to the periphery. A series of slight blows at the periphery will open the container but a

number of hard blows at the center of the closure will not break the seal. This is due to the fact that when the closure is given a series of blows at its periphery the flange on the periphery receives a large downwardly directed component of the blow which forces the flange downwardly out of the recess, while if the blow is delivered at the center of the closure the flange receives very little, if any, of the downward component of the force of the blow due to the fact that the metal of the central portion 2 of the closure bends and tends to draw the periphery of the closure and the flange toward the center which tendency is resisted since movement of the flange downward by the center would necessitate a buckling of the flange as well as a buckling of the end 5 of the body of the container.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent is:

A metal container comprising a body open at one end and a closure for said open end, said closure having a straight upstanding flange around its periphery, the end of the body around the opening being turned over and pressed against said upstanding flange whereby the flange is frictionally held between the body and the body end, said can body being indented peripherally directly below the closure thereby to form on the interior walls of the body a continuous annular rib which assists in holding the closure in place but which is sufficiently resilient so that when sufficient pressure is applied to the top of the closure adjacent the upstanding flange at any point the rib will yield at said point to permit the upstanding flange of the closure to be withdrawn from the bent over end of the body.

In testimony whereof, I have signed my name to this specification.

HARRY SEBELL.