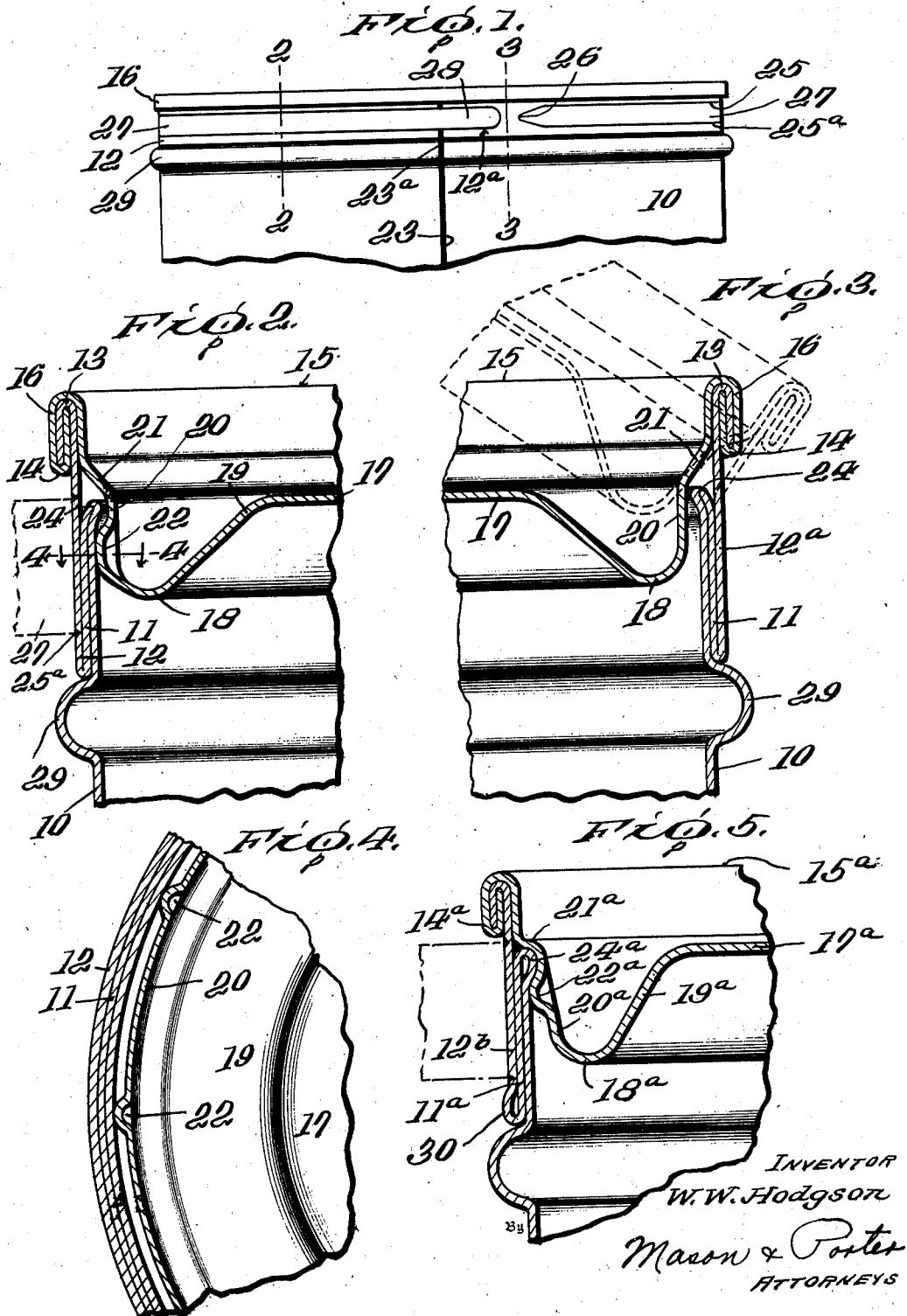


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SHEET METAL CONTAINER

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1 Claim. (Cl. 220—54)

The present invention relates to new and useful improvements in sheet metal containers, and more particularly to improvements in a sheet metal container which is adapted to be hermetically sealed and which includes a hinged cover adapted to be opened relative to the container upon removal of a rip or tearing strip.

In general, the invention is concerned with the provision of a sheet metal container wherein the cover is hingedly connected to the body portion of the container in such a manner that it may be hingedly opened after removal of the tearing strip. The cover can serve as a reclosure for the container after the hermetic seal has been broken. More specifically, the invention is concerned with the provision of such a container wherein the body wall thereof is folded to form an integral reinforcing band around the upper end thereof. This reinforcing band is disposed around the outside of the container end and preferably consists of three layers of metal, including the body wall as the inner layer. The free edge of the outer layer is secured to the cover by a conventional double seaming operation, and any suitable form of hinge connection may be employed between the cover and the body portion. The outer layer is provided with a tearing strip which may be removed to break the hermetic seal and permit easy opening of the container.

In using containers of the above type, it is sometimes difficult to maintain the cover accurately and tightly seated when employed as a reclosure for the container after the hermetic seal has been broken, and it is the principal object of the present invention to provide a container of the above type wherein the cover can be more accurately seated and more effectively held in proper position on the body portion when the cover is employed as a reclosure.

A further object of the invention is to provide a container of the above type wherein the upper end of the body wall of the container is provided with an inwardly extending portion with which an outward projection on the cover is adapted to cooperate for effectively holding the cover in a closed position when the container is to be reclosed after the hermetic seal is broken.

A further object of the invention is to provide a container of the above type wherein the inner layer or layers of the reinforcing band around the container end are shaped to provide an inwardly extended shoulder with which projections on the cover are adapted to cooperate for holding the cover seated in reclosing position.

A still further object of the invention is to provide a container of the above type wherein the inwardly extending portion at the upper end of the body portion of the container is shaped so as to eliminate any sharp angles whereby

to prevent chipping or cracking of the coating material.

The above and other objects of the invention will in part be obvious and will be hereinafter more fully pointed out.

In the accompanying drawing,

Figure 1 is a fragmentary side elevation of the container with the cover secured thereto and showing the score lines which form the rip or tearing strip.

Figure 2 is an enlarged sectional view taken along the line 2—2 of Figure 1, and showing the tearing strip partially removed in dotted lines.

Figure 3 is a similar enlarged sectional view, taken along the line 3—3 of Figure 1, and showing, in dotted lines, the position of the cover when hingedly opened relative to the container after the tearing strip is removed.

Figure 4 is a sectional view taken along the line 4—4 of Figure 2.

Figure 5 is an enlarged sectional view, similar to Figure 2 but showing a modified form of the invention.

Referring more in detail to the accompanying drawing, and particularly to Figures 1 through 4, the container includes a body portion 10 which is preferably cylindrical although it may be of any desired shape. The body portion is provided with the usual bottom end (not shown) which may be secured thereto by a conventional double seam or any other suitable manner. As shown in Figures 2 and 3, the metal blank from which the body portion 10 is formed is folded downwardly and upwardly upon itself to provide an intermediate layer or folded portion 11 and an outer layer or folded portion 12. Thus, the upper end of the body portion of the container is provided with an integral outer reinforcing band which extends around the end of the container. The inner wall of the body portion serves as the inner layer of this reinforcing band which thus includes three layers of metal.

The free edge 13 of the outer layer 12 extends upwardly above the end of the body wall 10 and is adapted to be secured to the free edge 14 of a cover 15 by a conventional double seam 16. The cover 15 is provided with a central depressed portion 17 which is disposed below the top edge of the double seam 14. Around the outer edge of the central portion 17, the cover 15 is shaped to provide an annular depressed channel portion 18 which is defined by inner and outer wall portions 19, 20, respectively. The outer wall portion 20 extends outwardly, as at 21, above the end of the body wall, and this outwardly extending portion 21 merges into the edge 14 of the cover and thus into the double seam 16. The outer wall portion 20 on the cover 15 is provided with outwardly extending projections or detents 22 which are normally disposed below the top edge of the body wall. Any suitable form of pro-

jection may be employed for this purpose, but preferably the projections are spaced apart around the wall portion 20.

The vertical edges of the body wall 10 are preferably joined by a locking side seam 23 throughout the major portion thereof. However, within the area of the reinforcing band around the top of the body wall, there is preferably provided a lapped side seam 23a. A solder bond may be employed between the lapping surfaces, and this solder bond may also be disposed between the adjacent surfaces of the inner and outer reinforcing layers 11, 12.

The upper end of the body wall 10 and the intermediate reinforcing layer 11 are bent inwardly, as shown in Figures 2 and 3, to provide an inwardly extending shoulder 24 which may extend entirely around the body wall. In forming this inwardly extending shoulder, the adjacent surfaces of the body wall 10 and the intermediate layer 11 are maintained tight against one another and these two layers are then bent inwardly as a unit to provide the desired shoulder portion. The outer layer 12 of the reinforcing band is provided with upper and lower score lines 25, 25a, which extend from the lapping side seam 23a around the container and are joined, as at 26. The joining point 26 is spaced from the lapping side seam 23a so that an integral portion 12a of the outer layer remains between the ends of the score lines. These score lines define a rip or tearing strip 27 which is provided with the usual tab portion 28 extending laterally of the lapped seam 23a toward the joining point 26.

When it is desired to open the hermetically sealed container, it is merely necessary to employ a suitable form of opening key which is adapted to engage the tab portion 28 on the tearing strip so that the entire tearing strip can be removed. When this tearing strip has been thus removed, there remains the portion 12a of the outer reinforcing layer 12, and this portion 12a continues to join the body wall of the container to the cover 15 by means of the double seam 16. Thus, the cover is hingedly connected to the body wall, and the cover may then be hingedly opened relative to the container, as shown in Figure 3, and the portion 12a of the outer layer serves as an integral hinge connection between the cover and the body wall. This form of hinge connection is shown and particularly described in the co-pending application of James H. O'Neil, Serial Number 318,745, filed February 13, 1940, and forms no part of the present invention. It is to be clearly understood that other forms of hinge connections between the cover and the body wall may be employed.

After the hermetic seal has been broken and the cover hingedly opened, it may be desirable to reclose the container. Because of the bending of the hinge connection, it is sometimes difficult to keep the cover properly seated when employed as a reclosure. According to the present invention, the cover can be reclosed, and in reclosing the same, the projections or detents 22 on the cover will snap beneath the shoulder portion 24 on the body wall of the container. Thus, the detents on the cover and the inwardly extending shoulder on the body wall cooperate to prevent the cover from springing open, although the cover can be again opened by forcibly turning it about its hinge connection. The body wall 10 is

also provided with an outwardly extending strengthening rib 29 which is disposed immediately below the reinforcing band, and this rib serves to strengthen the body wall and to maintain the proper shape of the open end so that the cover will properly fit within the open end.

According to Figure 5, there is shown a modified form of the invention. The inwardly directed shoulder 24a around the upper end of the body wall is formed by gradually curving the top of the body wall outwardly and then inwardly so as to merge into the intermediate reinforcing layer 11a. Thus, the shoulder portion 24a is in the form of an inwardly extending bead, and the adjacent surfaces of the body wall 10 and the intermediate reinforcing layer 11a are spaced apart. This form of shoulder is advantageous in certain instances where the coating for the body wall is of a type which is likely to become cracked or chipped due to the presence of very sharp or angular surfaces. This shoulder portion 24a provides a smooth curved surface without any sharp angles. Similarly, the outer layer 12b is shaped at the bottom edge thereof to provide an outward bead 30 which presents a smooth curved surface so that any lithographing which may be applied to the outer surface of the container will not be chipped or cracked.

The cover 15a in this form of the invention is provided with a central depressed portion 17a and a depending annular channel portion 18a defined by inner and outer walls 19a, 20a, respectively. The outer wall 20a is slightly inclined and is provided with spaced outward projections or detents 22a or the like. The outer wall 20a extends at substantially right angles, as at 21a, directly above the body wall and then merges into the edge 14a of the cover. In this form of the invention (Figure 5), the cover 15a can also be hingedly opened relative to the container, as described above. When the cover 15a is employed as a reclosure, the projections 22a thereon will snap beneath the curved shoulder portion 24a so as to maintain the cover in its seated position.

It is to be clearly understood that minor changes in the details of construction and arrangement of parts may be made without departing from the scope of the invention as set forth in the appended claim.

I claim:

A container comprising a body portion having an integral reinforcing band consisting of a plurality of integral folded layers around the upper end thereof, the upper end of the body wall and an inner folded layer of said reinforcing band being directed inwardly to provide an inwardly directed shoulder, a cover sealed to the outer folded layer of said reinforcing band and having a depending wall portion adapted to fit within the upper end of the body wall when the container is closed, score lines on the outer folded layer of the reinforcing band defining a rip strip extending only partially therearound whereby to leave a bendable hinge connection between the cover and the body wall when the rip strip is removed, and spaced outward projections on the depending wall portion of said cover and adapted to engage beneath the shoulder on the body wall when the container is closed whereby to maintain the cover properly seated.

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