

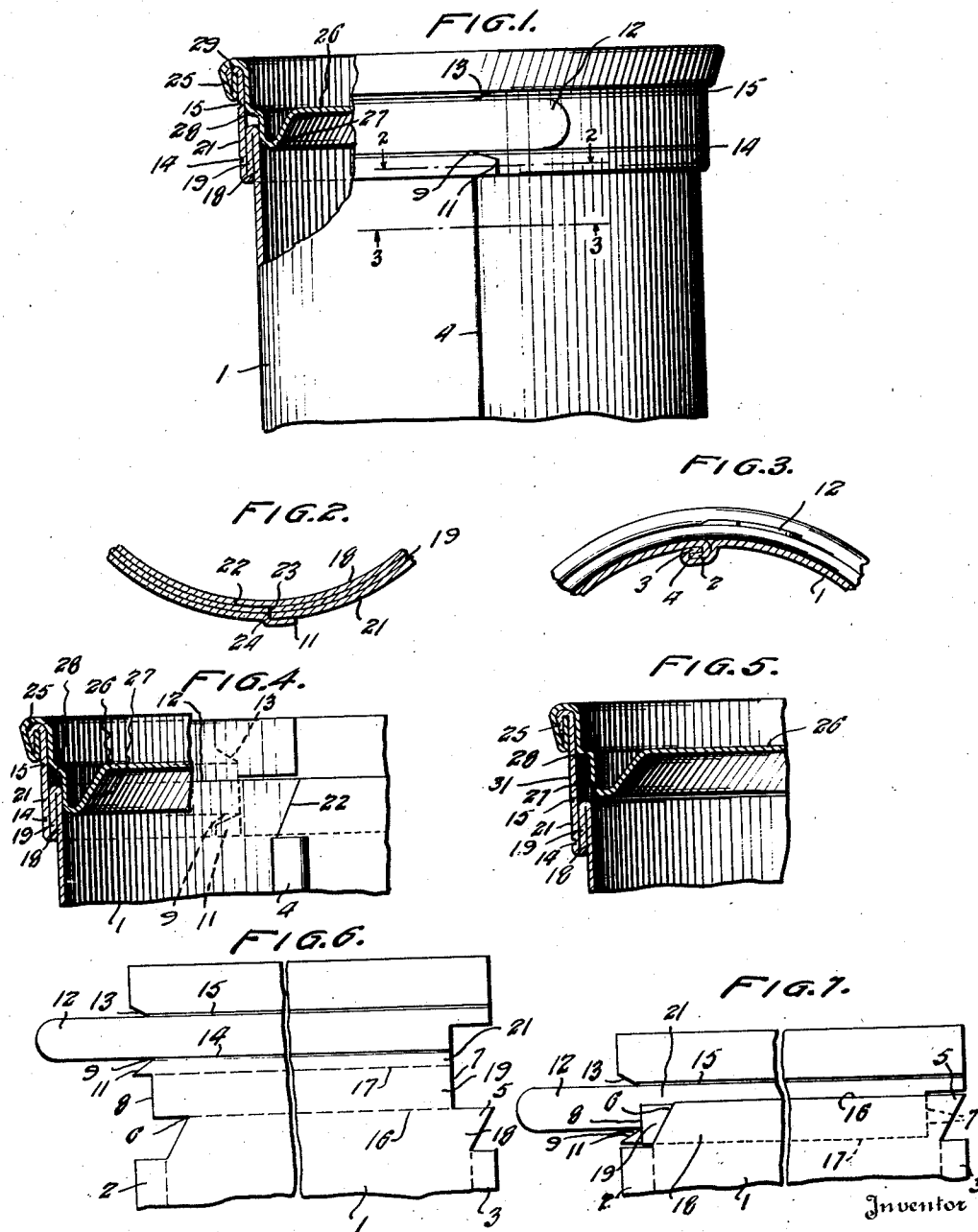
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REPLACEABLE RECEPTACLE CLOSURE

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## UNITED STATES PATENT OFFICE

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## REPLACEABLE RECEPTACLE CLOSURE

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The invention relates to new and useful improvements in metal receptacles and more particularly to a metal receptacle wherein the wall of the body is folded to form a reinforcing band adjacent one end thereof and is also provided with score lines in the region of said band to form a tearing strip by which the receptacle may be opened.

An object of the invention is to provide a receptacle of the above character wherein the blank forming the body of the receptacle is so shaped that the ends of the layers of the reinforcing band may be firmly joined by a bonding material without requiring the overlapping of the ends of the inner layer of the band so that the inner wall of the band of the receptacle will be of uniform diameter throughout to receive and frictionally hold the detached end when the receptacle is opened by the removal of the tearing strip.

A further object of the invention is to provide a receptacle of the above type wherein the ends of the reinforcing band are firmly united by abutting the ends of the inner layer and abutting the ends of the intermediate layer and arranging said abutted ends in staggered or offset relation to each other.

In the drawings forming a part of this specification, Figure 1 is a front elevational view of the container, with one corner broken away, showing the permanent top susceptible for use as a replaceable lid, after the receptacle has been opened by a removal of the tearing strip.

Figure 2 is a top view taken on line 2—2 of Figure 1, looking in the direction of the arrows.

Figure 3 is a bottom view taken on line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is a fragmentary sectional view of one corner of the container.

Figure 5 is a fragmentary sectional view showing a modification of the structure shown in Figure 1, in which the portion of the body above the band is extended and the tear strip positioned higher, so that on the removal of the top the replaceable lid may form an outer slip fit with the body of the receptacle as well as an inner friction fit.

Figure 6 is a plan view of the blank showing the configuration of the ends of the blank.

Figure 7 is a plan view of the blank shown in Figure 6, folded in preparation for forming the body portion of the can.

Referring by numerals to the drawings in which the same and similar elements are designated by like symbols of reference throughout, and more particularly to Figure 1, there is shown the can forming the subject matter of this invention, formed of a sheet metal blank 1. The blank 1 has side edges 2 and 3 as shown in Figure 6, joined for the greater portion of their width in a side lock seam 4 as shown in Figure 3, or an ordinary lap seam may be employed if so desired.

A portion of one edge of the blank is cut away to form a projection 5, and the corresponding portion of the opposite edge cut away to form an indentation 6 somewhat deeper than the projection 5, so that when the edges 2 and 3 are joined, the projection 5 will abut the edge of the blank in the indentation 6 and the edge 2 will overlap the edge 3, the distance of the base of the indentation 6. A portion of the edge 3 of the blank is also cut away above the projection 5 at 7 and the corresponding edge 2 cut away half the height and width of the cut-away portions 7 at 8, so that when the can is formed, the edge of the cut-away portion 8 will abut the edge of the lower half of the cut-away portion 7 at a position displaced from the abutting edges of the inner layer.

The edge 2 above the cut-away portion 8 is cut away at 9, forming a projection 11. The same edge of the blank above the cut-away portion 9 is extended outwardly to form a tongue 12 having the upper edges terminating in a cut-away portion 13 corresponding with the cut-away portion 9, immediately below the tongue to facilitate the removal of the tearing strip.

The outside face of the blank is scored at 14 and 15 on lines parallel with and terminating at the top and bottom edges of the tongue 12. In this manner the portion of the blank above the score 15 may be removed by engaging the tongue with a conventional key

in the usual manner, and the can body separated along the scores 14 and 15.

The blank is adapted to be folded outwardly along the line 16, so that the portion above the projection 5 and the indentation 6 will overlap the remainder of the can body. The blank is also designed to be folded inwardly along the line 17, so that it will overlap the portion of the can body between the lines 16 and 17, thus forming a triple layer band consisting of an inner layer 18, a middle layer 19, and an outer layer 21.

The ends of the inner layer 18, consisting of the projection 5 on the edge 3 of the corresponding cut-away portion 6 in the edge 2, are adapted to abut and form a joint 22 at an angle to the side seam, as shown in Figures 2 and 4. The vertical edges of the inner layer 19 are adapted to abut and form a joint in line with the side seam at 23, as shown in Figure 2, and the edge 2 of the outer layer 21 is adapted to overlap the edge 3 and form a joint 24, as shown in Figure 2.

From the above it will be apparent that the body of the receptacle has been provided with a reinforcing band adjacent one end thereof by the folding of the metal blank which is to form the body. The blank is so shaped that when the edges of the blank are brought together in the side seam the ends of the inner layer of the band will be abutted and this will form a body portion which in the region of the band is of uniform diameter. The ends are very strongly united by the bonding solder as the abutted ends of the inner layer and the intermediate layer are offset or staggered. This produces a construction wherein one end of the inner layer overlaps the opposite end of the intermediate layer. The solder as it flows or sweats into the joint uniting the ends of the band will secure these overlapped parts together and this will form a very strong tie uniting the ends of the band.

Furthermore, the abutted edges of the intermediate layer are inclined to the line of the side seam and this further distributes the strain. The ends of the outer layer of the band are in part lapped and the projecting tongue of the tearing strip overlies the other end of the tearing strip. The side edges beneath the band may be either interfolded to form a lock seam or lapped to form a lap seam, as noted above, and the edges above the band are lapped. The abutted edges of the inner layer and the intermediate layer are disposed within the limits of the side seam so that the bonding solder applied to the outside of the side seam will sweat in between the abutted edges of the intermediate layer and along the lapped end portions of the inner and outer layers and between the abutted edges of the inner layer thus forming a very firm union between the side edges of the body

blank throughout the entire length of the side seam.

After the body has been formed and the side seam soldered, the body is provided with the usual flanges at its ends. An end is secured to the body adjacent the reinforcing band by the manufacturer who completes this portion of the receptacle. After the receptacle is filled then the other end is attached and double seamed thereto by the packer. The end adjacent the reinforcing band is closed by a closing end 26. The body of the container is provided with a flange 25 and this flange and the outer edge of the end closure 26 are rolled into a double seam 29. The end of the receptacle is provided with the usual depression directly in rear of the double seam 29. The closure end is also provided with a depression 27 which is of slightly less diameter. This depression 27 forms a friction wall, the diameter of which is such that said friction wall will fit snugly within the receptacle body at the outer end portion of the band.

When the tearing strip is removed the closing end 26 is released from the receptacle and can be removed. The open receptacle has a very smooth upper edge and the raw edge of metal formed by the lower score line 14 is well beneath said smooth upper edge. The score line 15 at the upper side of the tearing strip is close to the double seam and the raw edge of metal here is well protected by the double seam.

In the form shown in Fig. 1 the friction wall is in engagement with the receptacle body when the double seam is formed. The double seam is directly over the outer layer of the reinforcing band and, therefore, the double seam is offset outwardly from the friction wall which engages within the body of the receptacle. The outset portion is indicated at 28 in Fig. 1 of the drawings.

In Fig. 5 of the drawings, the score line 15 is placed very near the upper edge of the band and the central depressed portion 27 does not make contact with the body of the receptacle until after the receptacle is opened by the removal of the tearing strip. In this form of structure there is both an inside slip produced by the inner friction wall of the depressed central portion 27 and an outside slip 31 provided by the wall of the receptacle which is above the score lines and attached by the double seam to the closure end. When the closure end is replaced on the receptacle body the remaining portions of the band pass in between the vertical wall on the central depressed portion 27 and the vertical wall of the receptacle body 31 and thus the end will be firmly secured to the body portion making a comparatively tight seal.

It is obvious that minor changes in the details of construction and the arrangement of the parts may be made without departing

from the spirit of the invention as set forth in the appended claims.

We claim:

1. A receptacle comprising a body portion  
5 having a side seam extending from end to end thereof and ends secured to said body portion, said body portion having the wall thereof folded to form a triple layer reinforcing band adjacent one end thereof and  
10 score lines forming a tearing strip whereby the end may be separated from the body portion for the opening of the receptacle, the ends of the inner layer of the band being abutted and the ends of the intermediate  
15 layer of the band being abutted and staggered relative to the abutted ends of the inner layer within the limits of the side seam whereby the bonding solder applied to the side seam firmly joins the ends of said band.
- 20 2. A receptacle comprising a body portion having a side seam extending from end to end thereof and ends secured to said body portion, said body portion having the wall thereof folded to form a triple layer reinforcing  
25 band adjacent one end thereof and score lines forming a tearing strip whereby the end may be separated from the body portion for the opening of the receptacle, the ends of the inner layer of the band being abutted and the  
30 ends of the intermediate layer of the band being abutted and staggered relative to the abutted ends of the inner layer within the limits of the side seam whereby the bonding solder applied to the side seam firmly joins  
35 the ends of said band, the end adjacent the reinforcing band having a central depressed portion, the outer diameter of which is substantially the same as the inner diameter of the receptacle whereby said end when released by the removal of the tearing strip  
40 may be inserted in the receptacle body and afford a friction reclosure therefor.

In testimony whereof we affix our signatures.

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