

Oct. 18, 1932.

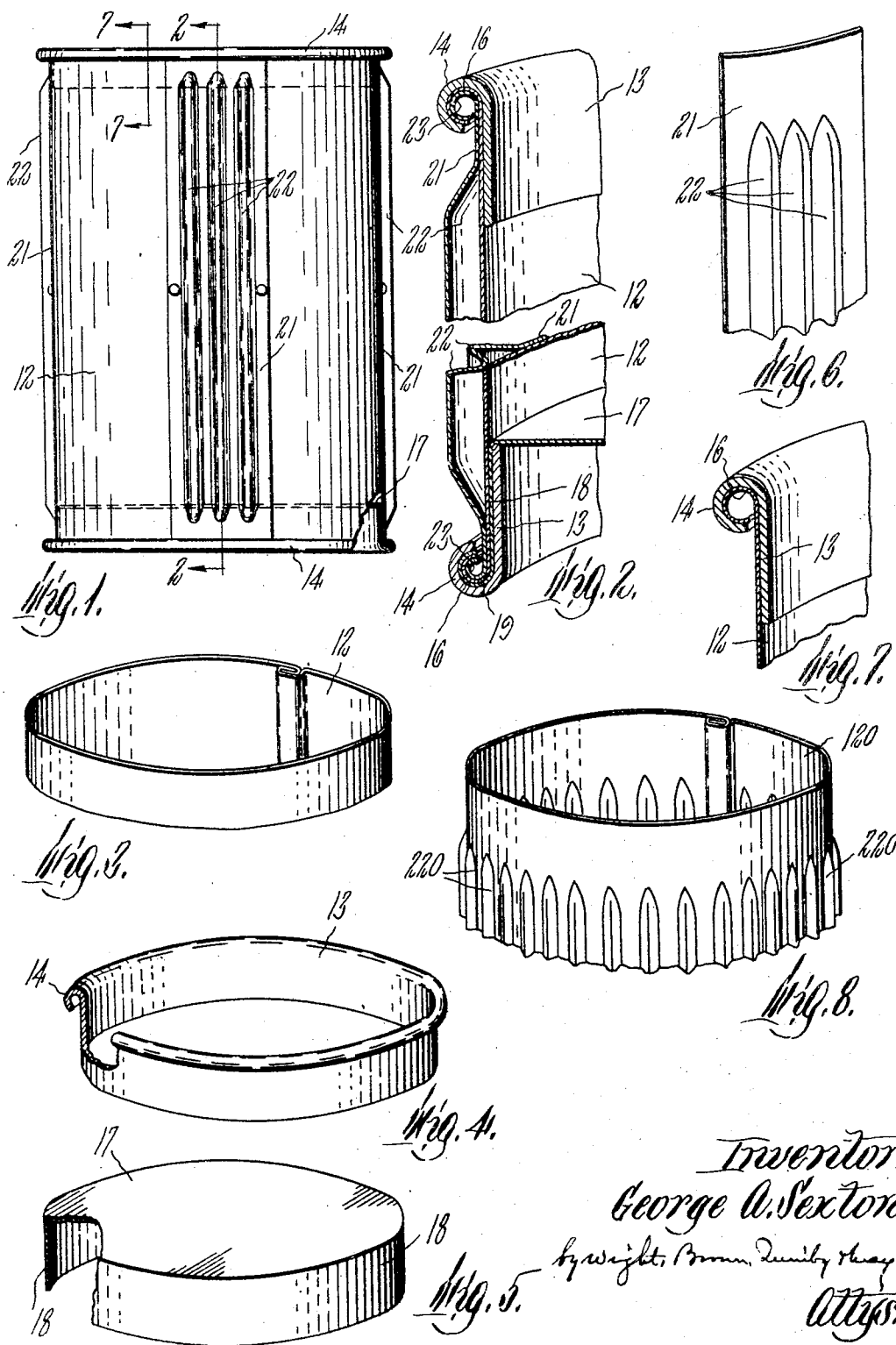
G. A. SEXTON

1,883,003

SHEET METAL RECEPTACLE

Filed Nov. 10, 1930

2 Sheets-Sheet 1



Inventor:
George A. Sexton,
by Wright, Brown, Denny & May
Attys.

Oct. 18, 1932.

G. A. SEXTON

1,883,003

SHEET METAL RECEPTACLE

Filed Nov. 10, 1930

2 Sheets-Sheet 2

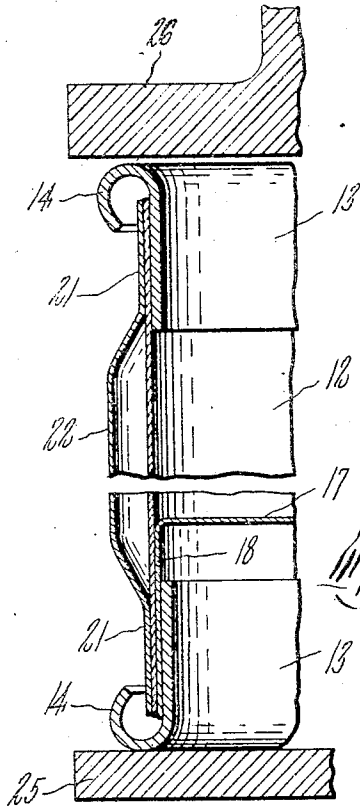


Fig. 9.

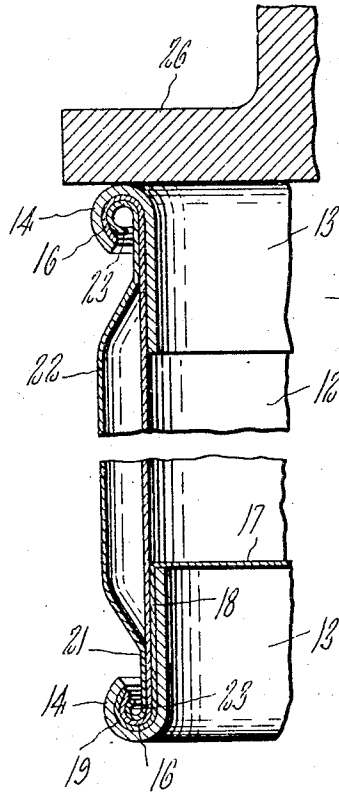


Fig. 10.

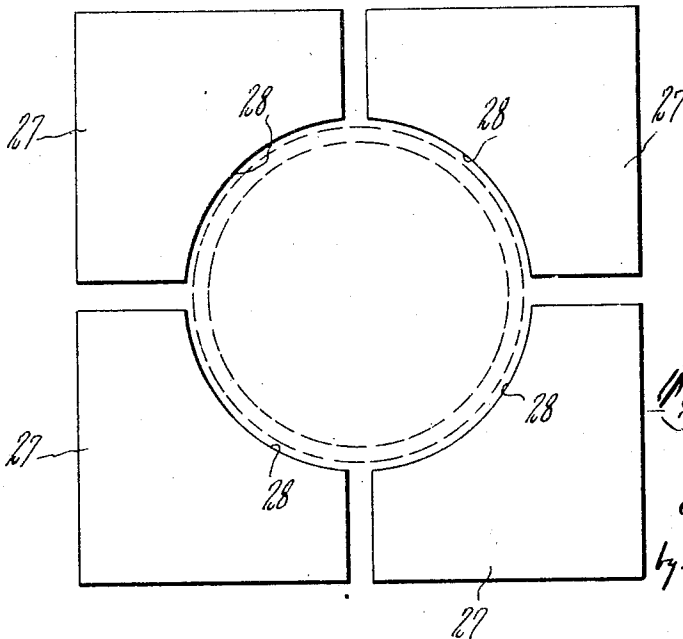


Fig. 11.

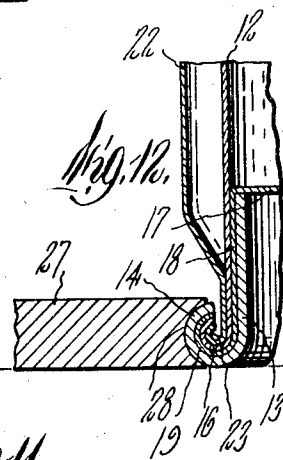


Fig. 12.

Inventor,
George A. Sexton,
by Wright, Brown, Dumbly
Attys.

UNITED STATES PATENT OFFICE

GEORGE A. SEXTON, OF WINCHESTER, MASSACHUSETTS

SHEET METAL RECEPTACLE

Application filed November 10, 1930. Serial No. 494,515.

This invention relates to a receptacle which includes a hollow sheet metal body and a bottom closing one end of the body, and chimes at opposite ends of the body, the receptacle being for example, an ash barrel, or other container not necessarily closed at both ends.

The object of the invention is to provide a strong and durable receptacle, having a minimum number of parts, which are permanently interengaged or interlocked without rivets, and are of such form that they may be rapidly and inexpensively assembled and interlocked.

Of the accompanying drawings forming a part of this specification,—

Figure 1 is a side elevation of a receptacle embodying the invention.

Figure 2 is a fragmentary section on the plane indicated by line 2—2 of Figure 1, and showing portions of the receptacle in perspective, the midlength portion being broken away.

Figure 3 shows in perspective the upper end portion of the sheet metal body as originally formed.

Figure 4 shows in perspective one of the two hoops hereinafter described, a portion being broken away.

Figure 5 is a perspective view showing the bottom as originally formed, a portion being broken away.

Figure 6 shows in perspective the upper end portion of a corrugated reinforcing strip constituting a portion of the reinforced body hereinafter described.

Figure 7 is a fragmentary sectional view on the plane indicated by line 7—7 of Figure 1, portions being shown in perspective.

Figure 8 is a fragmentary perspective view, showing the upper end portion of a jacket constituting an alternative form of the body reinforcing means.

Figures 9 and 10 are fragmentary sectional views illustrating steps in the operation of making a receptacle in accordance with my invention.

Figure 11 shows in plan a group of crimping jaws hereinafter described.

Figure 12 is a fragmentary sectional view

illustrating the operation of one of the crimping jaws.

The same reference characters indicate the same parts in all of the figures.

A composite receptacle constructed in accordance with my invention is provided as hereinafter described with laminated chimes and comprises two sheet metal end hoops 13 and a hollow sheet metal body which may be composed of a single piece of sheet metal united at opposite edges to form a one piece cylindrical body 12, the hoops being within the end portions of the body. The metal of which the hoops are made is considerably thicker and stiffer than that of which the body is made, the thickness of the hoop metal being preferably about one-twentieth of an inch, and the thickness of the body metal about one-eighth of an inch, although these relative thicknesses may be varied.

The hoops have preformed outwardly curled portions 14 constituting approximately tubular formers overhanging the outer surfaces of the hoops and integral therewith, each former being a hollow rolled bead having a free edge which is spaced from the outer surface of the hoop to form an annular mouth adapted to receive an end portion of the body 12. The curled portions 14 also constitute external chime layers.

The hoops 13 are substantially completed before they are assembled with the body, the inner surface of the formers 14 being curved outward from the outer surface of the hoop and presenting deflecting or forming internal surfaces adapted to roll the end portions of the body and form thereon hollow rolled beads 16 constituting internal chime layers nested in the formers by the operation of forcing the hoops toward each other from the positions shown by Figure 9 to those shown by Figure 10. The rolled beads 16 are therefore interlocked with the formers so that the hoops are securely engaged with the body wholly by portions of the material of the hoops and body, no rivets or other additional fastenings being required. The body as originally formed has plain or undeflected end portions which are converted into the beads or enlargements 16.

17 designates a bottom having a continuous downwardly projecting flange 18 and made of relatively thin and flexible sheet material like that of the body 12. The flange 18 is originally formed as shown by Figure 5, and is changed to the form shown by Figure 2 by the operation of forcing the hoops toward each other, this operation causing the former 14 of the lower hoop to form a rolled bead 19 on the lower portion of the bottom flange, said bead being nested, with the bead 16 on the lower end of the body 12, in the former of the lower hoop, so that the bead 19 forms an additional internal layer of the lower chime.

In assembling the described parts the bottom flange 18 is interposed between the lower hoop and the lower end portion of the body as shown by Figure 9, the bottom 17 being spaced above the lower hoop.

The operation of forcing the hoops toward each other forces the bottom against the upper edge of the lower hoop, as shown by Figure 2.

In case the body does not require external reinforcement, the entire receptacle may include only the body, a one piece body such as the body 12, the hoops and the bottom, said parts being united as above described. I prefer, however, to include in the construction of the body suitable reinforcing means to enable it the better to withstand rough usage.

Two forms of reinforcing means are shown by the drawings. The form shown by Figures 1, 2, and 6 includes a plurality of strips 21 of sheet material characterized like that of the body 12, superposed and spaced apart on the one piece body and provided with longitudinally extending corrugations forming stiffening ribs 22. The strips 21 are originally formed with plain end portions projecting from opposite ends of the ribs, one of said end portions being shown by Figure 6. The strips 21 are first assembled with the one piece body 12 and the body and hoops as shown by Figures 1 and 2, and the plain end portions of the strips are changed to the form shown by Figure 2 by the operation of forcing the hoops toward each other, this operation causing the formers of the two hoops to form rolled beads 23 on the end portions of the strips 21, said beads being nested with the body beads 16 and the bottom flange bead 19, as shown by Figure 2, so that they form additional internal layers of the laminated chimes.

The alternative form of reinforcing means comprises a hollow jacket 120 which may be of sheet material characterized like that of the one piece body 12, and proportioned to cover and bear on the external surface thereof, one end portion of said jacket being shown by Figure 8. The jacket may be corrugated to provide longitudinal stiffening

ribs 220. The end portions of the jacket are originally formed as shown by Figure 8, said end portions being adapted to be converted into rolled beads nested with the other beads as are the beads 23 on the reinforcing strips 21. In either case the reinforcing means constitutes a structural part of the body.

When the parts are assembled as shown by Figure 9, the lower hoop may rest on a fixed support 25, and the upper hoop may be depressed by a moving head or presser 26 to decrease the distance between the hoops as shown by Figure 10.

It will be seen that the laminated chimes which include the formers 14 are tubular and substantially cylindrical, and that the layers have free edges spaced from the body 12, as shown by Figures 2, 7 and 10.

The chimes are therefore radially compressible so that their diameter may be reduced by simultaneously forcing the free edges inward toward the body to compact the chimes and increase resistance to force tending to withdraw the inner layers from the outer layers provided by the formers 14. The chimes may be thus compressed by crimping dies 27, (Figure 11), having acting faces 28 adapted to force the free edges of the chime layers inwardly as indicated by Figure 12.

I will now briefly state the distinguishing features of the receptacle.

The end hoops 13 have portions 14 curled therefrom and constituting approximately tubular external chime layers having free edges spaced from the body 12, said body being either reinforced or without reinforcement. The portions 14 have internal forming surfaces extending interruptedly from the junction of the curled portions with the hoops to said free edges. Said edges are free in the sense that they face the body and are movable inward toward it.

The body 12, with or without the described reinforcing means, has relatively flexible end portions curled therefrom by the internal forming surfaces of the portions 14, and constituting approximately tubular internal chime layers having free edges facing and spaced from the body, and outer surfaces extending uninterruptedly from the junction of said curled portions with the body to the free edges, and conformed closely to all portions of the forming surfaces of the curled portions 14.

The curled hoop and body portions form laminated chimes in which all of said free edges are spaced from, and movable simultaneously toward the body, so that the diameter of the chimes may be reduced, as may be seen by comparing Figure 10 with Figure 12, by forcing said free edges toward the body to increase resistance to force tend-

ing to withdraw the curled body ends from the curled hoop ends.

It will be seen that the curled hoop and body portions are interengaged while the hoop portions 14 have a relatively large diameter as shown by Figures 9 and 10, so that their internal forming surfaces offer less resistance to the conformation of the external surfaces of the curled body portions thereto when pressure is exerted to force the body ends into the hoop portions 14, than would be the case if the hoop portions 14 were originally contracted to the final form shown by Figure 11.

It will also be seen that if the hoop portions 14 were allowed to remain permanently in the relatively open condition shown by Figures 9 and 10, the curled body ends could be somewhat easily withdrawn from the curled hoop ends, and that when the hoop portions are contracted, as shown by Figure 12, the resistance to force tending to withdraw the body ends from the hoop ends is greatly increased.

I claim:

1. A composite receptacle having laminated chimes and comprising relatively stiff end hoops having pre-formed outwardly curled portions constituting formers and external chime layers, and a reinforced body composed of an inner member and reinforcing means superimposed thereon, said member and reinforcing means having end portions telescoped into said formers and thereby rolled within the formers to constitute a plurality of internal chime layers and interlock said inner member and reinforcing means with the formers, the end hoops being within, and reinforcing the ends of the body and confined therein wholly by the interlocking of the body ends with the formers.

2. A composite receptacle comprising a hollow sheet metal body, relatively stiff end hoops inserted in the ends of said body, and having end portions curled therefrom and constituting approximately tubular external chime layers having free edges facing, and spaced from said body, and internal forming surfaces extending uninterruptedly from the junction of said curled portions with the hoops, to said free edges, said body having relatively flexible end portions curled therefrom by said forming surfaces, and constituting approximately tubular internal chime layers having free edges facing, and spaced from said body, and outer surfaces extending uninterruptedly from the junction of said curled portions with the body, to said free edges, and conformed closely to all portions of said forming surfaces, said curled hoop and body portions forming compressible laminated chimes in which all of the free edges of said portions are spaced from and movable simultaneously toward the periphery of the body, the diameter of the chimes be-

ing reduced by forcing said edges toward the body, so that resistance to force tending to withdraw the curled body ends from the curled hoop portions is increased.

In testimony whereof I have affixed my signature.

GEORGE A. SEXTON.

75

80

85

90

95

100

105

110

115

120

125

130