

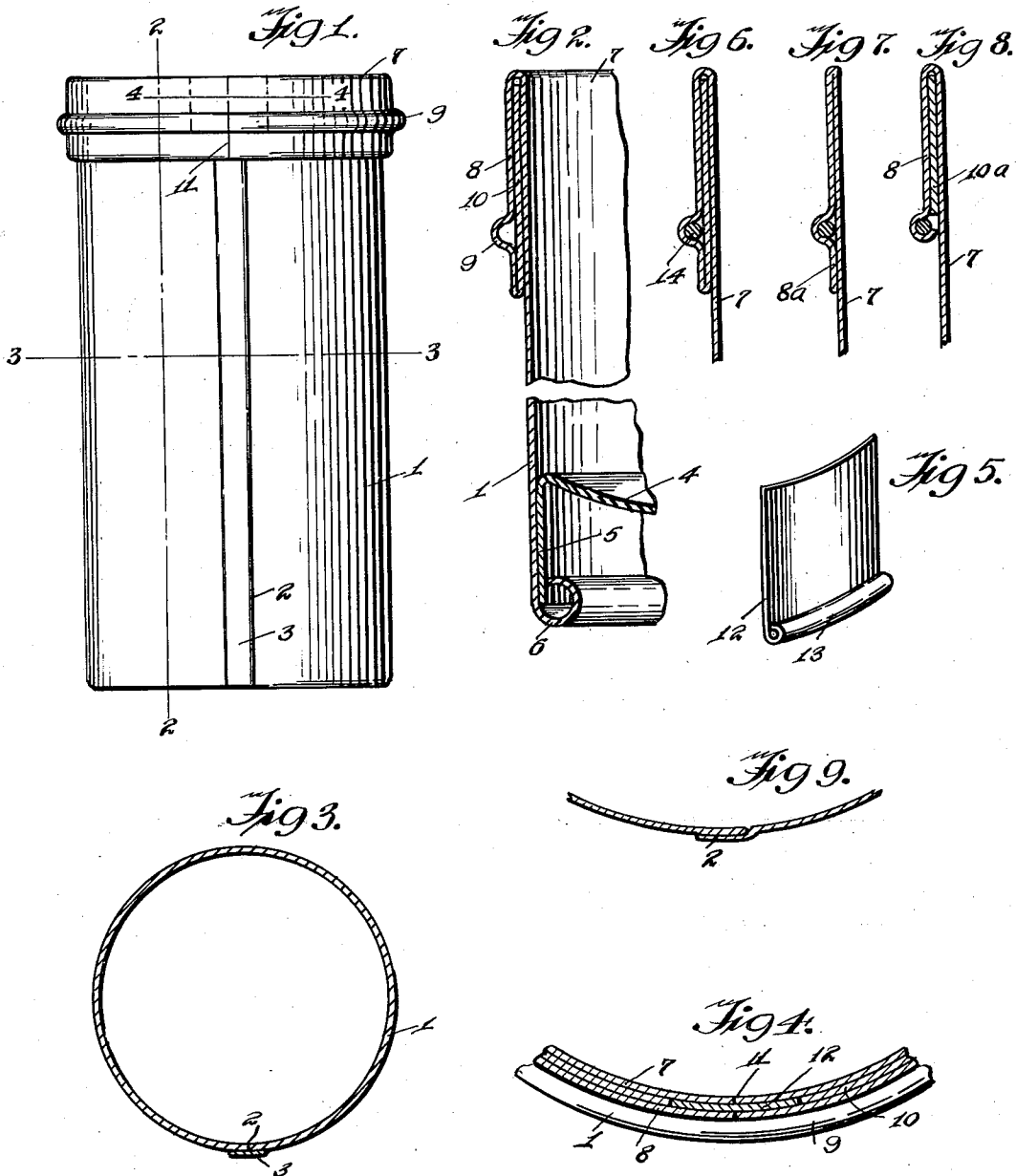
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METALLIC RECEPTACLE

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UNITED STATES PATENT OFFICE.

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METALLIC RECEPTACLE.

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To all whom it may concern:

Be it known that ARTHUR MILLER, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, has invented certain new and useful Improvements in Metallic Receptacles, of which the following is a specification.

This invention relates generally to metallic receptacles, and has particular reference to an improved metallic can wherein is embodied improved features of construction for strengthening the can structure as a whole and in this manner to promote and lengthen its period of usefulness.

Another object of the invention resides in a sheet metal receptacle wherein is employed a tubular body having one end closed by means of a suitable bottom and the opposite end open in order that various commodities may be positioned within the can or receptacle, and the open end thereof being provided with an overlapping portion which extends downwardly and in parallel relation with the wall of the receptacle for a suitable distance so that said wall around the open end will be substantially doubled and in this manner prevented from bending or twisting in a distorting manner, the lower extremity of the overlapping portion being provided with a bead in which a reinforcing member is positioned, said member being disposed to extend around the body of the receptacle so that the general rigidity of the latter will be considerably enhanced.

Other objects of the invention reside in a metallic can structure which may be formed from relatively inexpensive thin sheet metal and yet by being reinforced in accordance with the principles of the present invention, said structure will possess the durability and general rigidity of a similar structure formed from much heavier material, to provide simple and effective means for uniting the adjoining vertical meeting edges of the can and in the provision of a reinforcing band between the overlapping portions of the open upper end and the wall of the receptacle which further assists in strengthening this portion of the receptacle, and in the provision of an improved bottom for the can structure, which bottom is formed to provide a depending annular flange which lies adjacent to and in parallelism with the wall of the receptacle so as to strengthen the latter and has its lower end encased by

means of a bead formed upon the lower end of the receptacle, said bead serving as a base for the receptacle as a whole.

For a further understanding of the invention, reference is to be had to the following description and to the accompanying drawings, in which:

Figure 1 is a side elevation of the receptacle comprising the preferred form of the invention,

Figure 2 is a fragmentary vertical section taken through the receptacle on the line 2—2 of Figure 1,

Figure 3 is a horizontal sectional view taken along the line 3—3 of Figure 1,

Figure 4 is a similar view taken through the reinforcing structure at the upper open end of the receptacle, the plane of which being disclosed by the line 4—4 of Figure 1,

Figure 5 is a perspective view of the bridge plate,

Figure 6 is a detailed sectional view showing a slightly modified form of the invention,

Figure 7 is a similar view setting forth a still further modification,

Figure 8 is a further modification of the reinforcing structure, and

Figure 9 is a sectional view disclosing a modification of the method for uniting the vertical meeting edges of the receptacle:

Similar characters of reference denote like and corresponding parts throughout the several views of the drawing.

Referring more particularly to the form of the invention disclosed in Figures 1 to 5, inclusive, use is made of a metallic can or receptacle 1, which may be employed for any number of varying purposes and may contain any suitable materials. In the embodiment of the invention under discussion, the receptacle is formed from a blank of sheet material of relatively thin gage, and this blank is bent preferably to assume a substantially tubular contour. By thus forming the receptacle, the vertical edges of the blank of material unite in a joint, as is indicated by the numeral 2 and this joint is sealed by means of a vertical strip 3, which may extend substantially the full length or height of the receptacle. Through the medium of a spot welding process, or its equivalent, the strip 3 may be securely united with the edges of the material forming the joint 2, so that the desired tubular formation

may be maintained and rigidity in connection established. This manner of securing a joint 2 also possesses a considerable commercial advantage in that it is very economical to produce.

Inserted in one end of the receptacle is a bottom 4, which is of substantially dish shaped cross sectional formation and by being thus formed compensates for inequalities caused by the expansion and contraction of the metallic materials and also serves to impart a formation of maximum rigidity and strength. The bottom member in this instance is formed with a depending annular flange 5, which is disposed to lie contiguous to and parallel with the inner wall of the receptacle 1, and this flange by reason of its somewhat extended length, considerably reinforces the lower end of the receptacle and enables the latter to withstand the usually severe jolting and jarring consequent to general service. The bottom member is secured in place within the receptacle by spot welding the flange 5 to the adjacent wall of the receptacle or by the use of suitable fastening elements, such as rivets. The extreme lower end of said receptacle is bent to provide a substantially circular scroll shaped bead 6, which is of relatively enlarged contour and provides a substantial resting base for the receptacle 1 and serves in a great measure to prevent undue tilting of the latter. The bead terminates in engagement with the wall 5 so as to seal the lower end of the latter and at the same time to serve in preventing undue separation of said flange from its established relationship with the inner wall of the receptacle.

In order to reinforce the open upper end portion 7 of the receptacle and to overcome a weakness found in many of the receptacles of the particular form to which this invention relates, the wall of said receptacle terminates in an overlapped and downwardly extending portion 8, which is disposed to lie parallel and in spaced relation with respect to the adjoining portions 7 of the receptacle and the portion 8, intermediate of its length, is preferably provided with a reinforcing bend 9 which materially contributes to the rigidity of the upper end of the receptacle. The portion 8 terminates in an upwardly directed wall 10, which is disposed to lie between the portions 7 and 8 and said wall 10 terminates contiguous to the upper end of the receptacle. Through the provision of the walls 7, 8 and 10 a structure is provided around the open upper end of the receptacle of considerable thickness and consequently marked strength and rigidity is imparted to this usually weak portion of the receptacle, in this manner the latter is enabled to withstand the knocks and wear of hard usage and will not be likely to lose its original shape or form. It will be observed that the

portion 8 and the wall 10 lie in physical contact with the wall of the receptacle, so that when the latter is dipped with a suitable galvanizing material the latter will not be likely to drip or collect objectionably around points contiguous to the lower terminating end of the reinforcing structure. In the manufacture of the receptacle, the parts forming the reinforcing structure are bent to assume their proper positions before the receptacle is shaped to resume its tubular formation, and consequently a vertical joint 11 is formed in said reinforcing structure in alignment with the joint 2. To strengthen this joint 11, use is made of a bridge plate 12 which is positioned so as to be located between the outer overlapped portion 8 and the wall 7 of the receptacle. This plate bridges the joint 11 and by means of a spot welding or riveting process the same may be securely retained in place. If desired, the wall 10 could be recessed to receive the plate 12 so that bulging in the reinforcing structure will be eliminated but, obviously, said plate may be inserted between the walls 8 and 10 if found expedient. The lower edge of the plate 12 may be crimped as is indicated by the numeral 13, and this crimped portion is adapted to be received within the bend 9 of the wall 8.

The principles involved in the reinforcing structure above described may be carried out in many other different physical embodiments. For instance, as shown in Figure 6 the bend 9 may be equipped with a reinforcing wire 14, which is arranged to encircle the upper end of the receptacle. Through the provision of this wire, it will be manifest that the general strength of the reinforcing structure will be enhanced. Also, as shown in Figure 7 the overlapping wall 8^a terminates immediately adjacent to the inner wall 7 of the receptacle, and in this form the wall 10 is omitted. In certain light structures, the use of the wall 8^a in combination with the reinforcing wire 14 is sufficient to impart all required rigidity to a receptacle wherein the same is not obliged to withstand severe distorting stresses. Again, as shown in Figure 8, the wall 10^a may be formed separately from the overlapping portion 8. This structure may be economically produced in that the wall 10^a may be formed from scrap material.

From the foregoing it will be manifest that the present invention provides means for substantially and efficiently reinforcing a receptacle so as to overcome the damaging effects of hard service, so that a receptacle will be provided which will be capable of imparting relatively extended service. Moreover, through the reinforcement described a receptacle may be formed from relatively thin sheet metal and yet will possess a maximum degree of general strength and rigid-

ity. In the modification disclosed in Figure 9, the vertical joint 2 is produced by simply overlapping the meeting edges of the wall of said receptacle, which overlapped edges may be secured in any suitable manner. This construction eliminates the use of the strip 3. In the preferred forms of the invention, it will be observed that the reinforcing structure as a whole terminates in contact with and immediately adjacent to the outer wall of the receptacle, and by positioning the parts in this manner streaks or other objectionable disfigurations will be eliminated from the receptacle after the latter is galvanized.

What I claim is:

In a receptacle of the class described, the combination with a sheet metal body comprising a closed lower end and a normally open upper end, of means for reinforcing said upper end, comprising an overlapped outer wall arranged to extend parallel with the main wall of said body, a vertical joint formed in said walls, and a bridge member located between said overlapped outer wall and the main wall of said body, said member serving to bridge said joint.

In testimony whereof I affix my signature.

ARTHUR MILLER.