July 26, 1932. W. T. SCARRITT 1,869,224

RECEPTACLE AND METHOD OF MAKING THE SAME

Filed Dec. 11, 1929

Fig. 1.

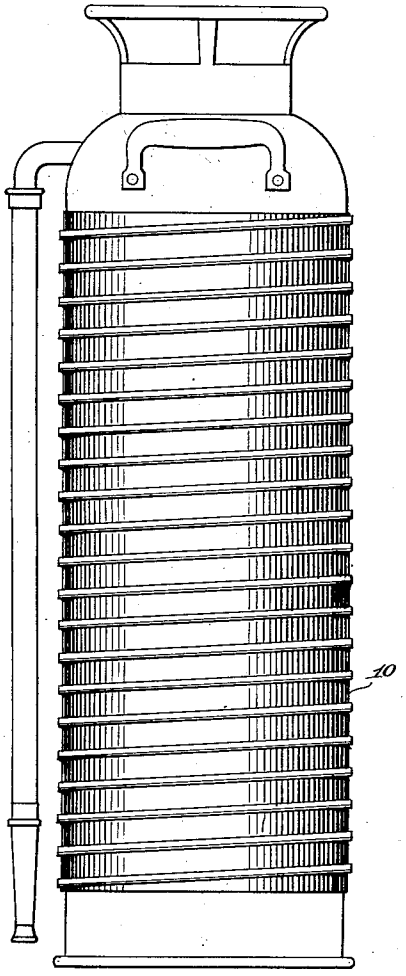


Fig. 2.

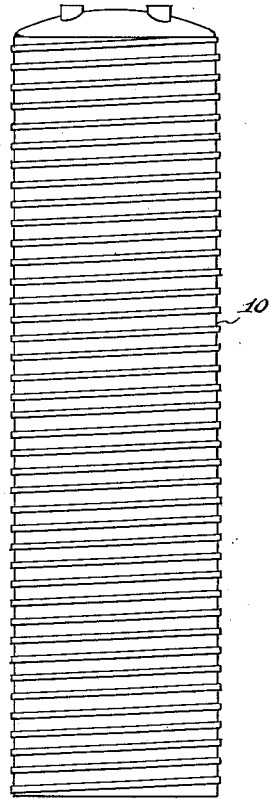


Fig. 3

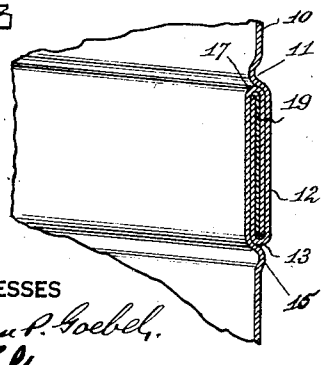
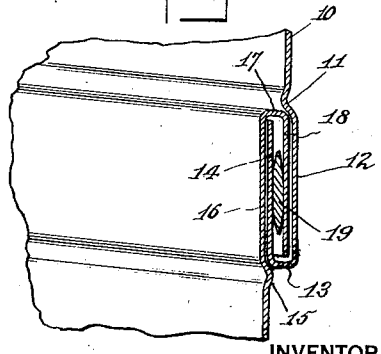


Fig. 4.



WITNESSES

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UNITED STATES PATENT OFFICE

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RECEPTACLE AND METHOD OF MAKING THE SAME

Application filed December 11, 1929. Serial No. 413,413.

This invention relates to receptacles and methods of making the same.

It is among the objects of the present invention to provide a novel and improved receptacle of maximum strength as compared with the material used.

A further object of the invention is to provide novel means for forming such a receptacle.

A further object of the present invention is to provide a receptacle formed by a spiral strip of material, the edges of the strip being joined one to another to form a complete receptacle wall.

Another object of the present invention is to provide in a spirally formed receptacle improved interconnecting means for the adjacent edges of the spirals.

Another important object in the present invention is to provide a spirally formed receptacle having soldered interlocking joints between the spirals thereof.

A further important object of the invention is to provide a receptacle at junctures of wall forming elements which are at an angle other than 180° with respect to the longitudinal stresses or strains of the receptacle, and which are also at an angle other than 180° with respect to transverse stresses or strains in the receptacle.

A further object of the present invention is to provide an interlocking juncture for the connection of wall forming elements of receptacles which includes right-angularly directed abutment faces which will act to prevent telescoping between the elements.

A further object of the present invention is to provide the improved method steps for the formation of a receptacle in embodying the above outlined objects.

Other objects of the present invention will be apparent from a consideration of the following specification taken in conjunction with the accompanying drawing, in which

Figure 1 is a side elevation of a fire extinguisher receptacle body, which is formed in accordance with the present invention;

Figure 2 is a side elevation of a water boiler formed in accordance with the present invention;

Figure 3 is a detailed sectional view of the juncture of the strips of material after the receptacle is formed; and

Figure 4 is a similar view illustrating a relation of the parts before rolling thereof.

In connection with the present invention, it will be seen by referring to Figures 1 and 2, that the invention is applicable to various types of receptacles. The invention is particularly adapted for the formation of receptacles which are subjected to unusual longitudinal and transverse strains.

By way of illustration, the invention is shown in Figure 1 in connection with a fire extinguisher, the receptacle body of which is formed by the spiral wound strips, by which construction the maximum strength of the receptacle is obtained with minimum material of the receptacle body. In connection with Figure 2 the invention is shown in connection with the body of a water boiler. In both illustrations considerable strength in a receptacle body is required.

By the use of the present invention, it has been found that in connection with fire extinguishers the unusually heavy material of the body is not required when the spiral construction is used. It will be understood that the extinguisher is subjected to considerable internal expansion pressure and the present invention has been found to properly care for such pressure without resorting to heavy material or to internal or external braces.

In connection with the water boiler shown in Figure 2 it has been found that the present invention provides for the construction of a boiler with comparatively light material without the use of the normal internal braces which are required in normal construction to prevent collapse of the boiler upon cooling.

From the foregoing it will be readily understood that the invention is not confined to the specific structures herein shown, but is adapted for use in connection with various types of receptacle walls being especially adapted for use in receptacles which are subjected to unusual stresses and strains both of compression and expansion.

In connection with the present invention the cylindrical wall of the receptacle is

formed by a strip of material 10 wound in a helical spiral and having the adjacent edges of the strip interlocked whereby a cylindrical structure is provided.

Referring more particularly to Figures 3 and 4 of the drawing, it will be seen that the lower edge of the strip is provided with an inwardly extending bead or shoulder 11 which turns outwardly to form the outer side 12 of the juncture portion. The side 12 has a return bend 13 terminating in a parallel internal flange 14. The upper edge of the strip is provided with an externally extending shoulder 15 from which the strip extends inwardly to provide the inner side 16, the side being return bent at 17 adjacent to shoulder 11 and terminating in an outer internal flange 18.

In forming the receptacle the adjacent upper and lower edges of parallel adjacent helixes of the strip are loosely connected as shown in Figure 4.

In the formation of receptacles adapted to resist strain it is preferable to provide solder or the like as indicated at 19 in Figures 3 and 4. The solder may be laid in a narrow strip as indicated in Figure 4, and upon rolling of the structure to lightly unite the interlocking bodies to form the finished union as shown in Figure 3, the solder is heated whereby it is pressed out to form an internal solder joint between the internal flanges 14 and 18 as shown in Figure 3.

In connection with the present invention it can be readily seen that the receptacles may be formed of various lengths without materially altering the machine for forming them. The receptacle bodies may be simply cut in the desired length after formation. It will further be seen that the helical spiral formation of the receptacle wall provides for the angular relation of the juncture with respect to the direction of either longitudinal or transverse strains, a substantial bias construction being provided whereby the strains are directed to the juncture on a bias thus materially reducing the danger of rupture of the junctures.

In connection with the shoulders 11 and 15 it will be seen in the finished juncture shown in Figure 3 that the shoulders provide for substantial abutment for the sides of the juncture whereby telescopic collapse thereof or disengagement movement thereof is provided.

In the formation of the invention it will be seen that the method steps include the spiral winding of a flat strip of material, the return bending of the edges of the strip either before or after the spiral winding, the loose interlocking of the return bent adjacent edges of the adjacent helixes of the strip, the association between the flanges of the return bent portion of soldering material, and the subsequent rolling of the junction with the solder therein to press the return bent portions into united relation and to heat the solder to form an interlocked soldering joint at the juncture of the edges of the strip.

From the foregoing it may readily be seen the invention provides a novel, simple and improved receptacle of simple and improved construction adapted to provide maximum strength with minimum material. It will also be seen the invention provides novel method steps by which the forming operation of a receptacle is continuous and economical.

It will be understood that the invention is not confined to the specific structural details herein shown by way of illustration, but that numerous changes, modifications, and the full uses of equivalent may be resorted to in the formation of the present invention without departing from the spirit or scope of the present invention, as outlined in the appended claims.

What is claimed is:

1. A receptacle, comprising a body formed by a spirally formed strip of material, the adjacent edges of the helixes of which include interlocking members comprising return bends adapted to interlock with the return bend of the edge of the next adjacent helix, and a strip of solder fused between said return bend portions adapted to retain said portions in interlocking relation and to provide a seal therebetween.

2. A receptacle comprising a body formed by a spiral strip of material, the adjacent edges of the helixes of which include shoulders and interlocked return bends extending from the shoulders, and a strip of solder fused between the return bends, the return bends being pressed against the solder and the shoulders.

3. A receptacle comprising a body formed by a spiral strip of material, the adjacent edges of the helixes of which include shoulders extending outwardly and inwardly with interlocked return bends extending beyond the shoulders, and a strip of solder fused between the return bends, the return bends being pressed against the solder and the shoulders.

4. A method of forming receptacles comprising the forming of a flat strip into a spiral, uniting adjacent edges of the helixes of said spiral strip in interlocked relation with a strip of solder between the interlocked portions, and heating and rolling the interlocked portions into closed position to seal the joint.

5. A method of forming receptacles comprising the bending of a strip into a spiral, uniting adjacent edges having shoulders and extending return bent portions of the helixes of said spiral in interlocked relation with a strip of solder between the return bent portions, and heating and rolling the interlocked portions into closed position which presses

the interlocked portions against the solder and the shoulders to seal the joint.

6. A method of forming a hollow body comprising the feeding of a strip of material and a strip of solder, bending the strips of material and solder into a spiral, uniting adjacent edges of the helixes of said strip of material in interlocked relation with the strip of solder between the interlocked portions, and heating and rolling the interlocked portions into closed position to seal the joint.

7. A method of forming a hollow body comprising the feeding of a strip of material and a strip of solder, bending the strips of material and solder into a spiral with the adjacent helixes of said strip of material interlocking with one side of the strip of material extending outwardly, then longitudinally of the hollow body in one direction, then inwardly and with its edge extending longitudinally of the hollow body in the opposite direction, the other side of the strip of material extending inwardly, then longitudinally of the hollow body in the said opposite direction, then outwardly and with its edge extending longitudinally of the hollow body in the first mentioned direction and between the first mentioned edge and the first mentioned longitudinally-extending portion of the first mentioned side and with the strip of solder between the said two edges and also between the inwardly-disposed portion of the first mentioned side and the outwardly-disposed portion of the second mentioned side, and rolling the interlocked portions with the said strip of solder to substantially fill with the solder the space between the inwardly-disposed portion of the first mentioned side and the outwardly-disposed portion of the second mentioned side.

8. A method of forming a hollow body comprising the feeding of a strip of material and a strip of solder, bending the strips of material and solder into a spiral with the adjacent helixes of said strip of material interlocking with one side of the strip of material extending longitudinally of the hollow body in one direction, then inwardly and with its edge extending longitudinally of the hollow body in the opposite direction, the other side of the hollow body extending longitudinally of the hollow body in the said opposite direction, then outwardly and with its edge extending longitudinally of the hollow body in the first mentioned direction and between the first mentioned edge and the first mentioned longitudinally-extending portion of the first mentioned side and with the strip of solder between the said two edges and also between the inwardly-disposed portion of the first mentioned side and the outwardly-disposed portion of the second mentioned side, and rolling the interlocked portions with the said strip of solder to substantially fill the space between the said two edges and between the inwardly-disposed portion of the first mentioned side and the outwardly-disposed portion of the second mentioned side.

9. A receptacle comprising a body formed by a spiral strip of material with one side of the strip of material extending longitudinally of the hollow body in one direction, then inwardly and with its edge extending longitudinally of the hollow body in the opposite direction, the other side of the strip of material extending longitudinally of the hollow body in the said opposite direction, then outwardly and with its edge extending longitudinally of the hollow body in the first mentioned direction and between the first mentioned edge and the first mentioned longitudinally-extending portion of the first mentioned side, and solder disposed between the said two edges and substantially filling the space between the inwardly-disposed portion of the first mentioned side and the outwardly-disposed portion of the second mentioned side.

10. A method of forming a receptacle comprising the bending of a strip into a spiral, uniting adjacent edges of the helixes of said spiral strip in interlocked relation with a strip of solder fused between the interlocked portions, and rolling the interlocked portions into closed position.

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