July 12, 1927. 1,635,311

F. S. CORRIGAN

SINK, WASHBASIN, AND THE LIKE

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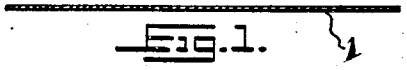


Fig. 1.

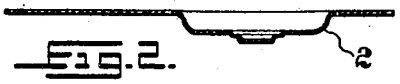


Fig. 2.



Fig. 3.

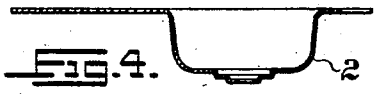


Fig. 4.



Fig. 5.

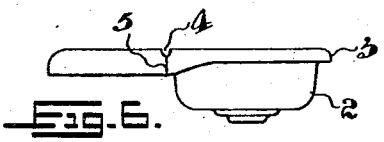
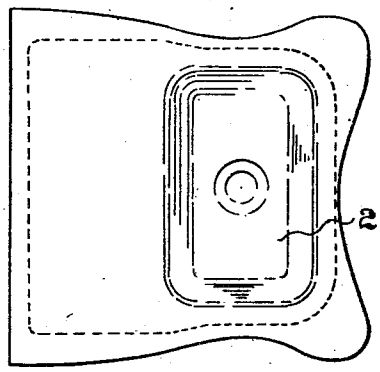


Fig. 6.

Fig. 4.a



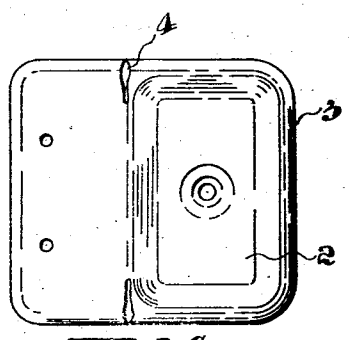


Fig. 6.a

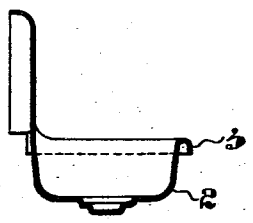


Fig. 7.

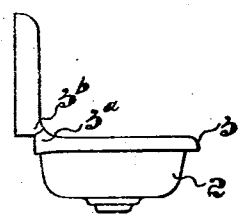


Fig. 7a

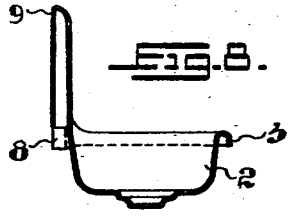


Fig. 8.

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SINK, WASHBASIN, AND THE LIKE

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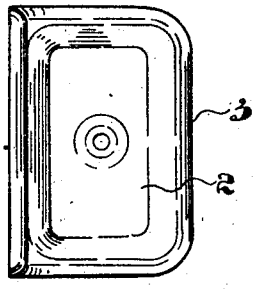


Fig. 9.a

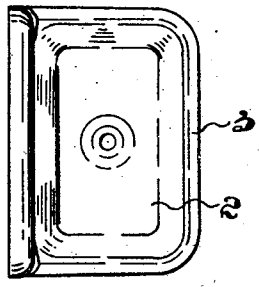


Fig. 7.b

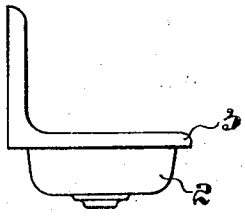


Fig. 9.

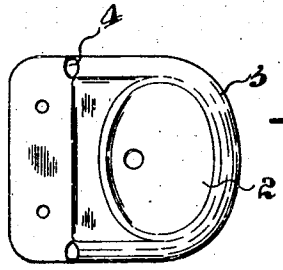


Fig. 11.a

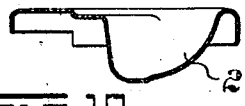


Fig. 10.

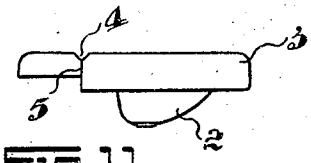


Fig. 11.

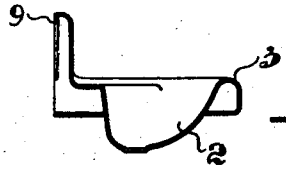


Fig. 13.

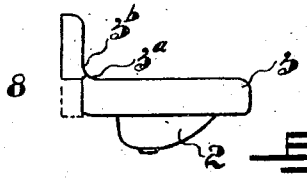


Fig. 12.

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Patented July 12, 1927. 1,635,311

UNITED STATES PATENT OFFICE.

FREDERICK S. CORRIGAN, OF TORONTO, ONTARIO, CANADA, ASSIGNOR TO THE SHEET METAL PRODUCTS CO. OF CANADA LIMITED, OF TORONTO, CANADA.

SINK, WASHBASIN, AND THE LIKE.

Application filed October 30, 1926, Serial No. 145,286, and in Canada October 29, 1926.

This invention relates to the manufacture from sheet metal of sinks, wash basins and the like of the type which are provided with a comparatively high back lying in a plane substantially at right angles to the plane of the top of the sink or basin. Sheet metal sinks and basins have heretofore been made of two types, the first in which the bowl and the back are separate parts bolted together and the second in which the bowl and back are welded together. The appearance of each type is objectionable, the objection to the first type being that the heads of the bolts are visible and that a crack is left between the parts, and the objection to the second type that it is difficult to make a satisfactory welded joint without the joint being more or less noticeable in the finished enameled article.

In the second case there is also another very serious objection and that is, with a back welded on in this manner, there is very little support from the back for the front part of the bowl, and consequently due to the application and removal of weight at the front part of the sink, which occurs in ordinary use, the latter bends at the angle, which results in the early cracking and chipping of the enamel along the line of weld, thus further disfiguring the sink or basin.

These disadvantages have resulted in the restriction of stamped metal constructions to use in places where appearance is an unimportant consideration.

My object, therefore, in the present invention is to devise a stamped metal construction which will retain the advantages of cheapness and light weight which were characteristics of the earlier constructions, as compared with the well known cast iron sinks and wash basins, now in use, but which will be the equal in appearance of the cast iron article.

I attain my object by forming the bowl and back of the sink or basin from an integral sheet of metal according to the processes hereinafter described and illustrated in the accompanying drawings in which

Fig. 1 is a longitudinal section of a sheet of metal from which the sink or basin is formed;

Fig. 2 a longitudinal section of the sheet showing it after the first step of drawing to form the depression or bowl.

Fig. 3 a similar view after the second step of drawing;

Figs. 4 and 4ª, a section and plan respectively, illustrating the sheet with the depression at the finished depth;

Fig. 5 a sectional view illustrating the sheet as it appears after the drawing down of its edge to form the roll on the bowl and back;

Figs. 6 and 6ª are respectively end and plan views showing the sheet ready for the turning up of the back;

Figs. 7, 7ª and 7ᵇ are respectively sectional end and plan views after the turning up of the back;

Fig. 8 a sectional view showing the filling of the gap formed by turning up the back and the formation of the stiffening flange on the back;

Figs. 9 and 9ª are respectively end and plan views of the finished sink;

Fig. 10 a section of a wash basin after the formation of the depression, the roll on the back and the apron;

Figs. 11 and 11ª side and plan views respectively of the basin ready for the turning up of the back;

Fig. 12 an end elevation after the turning up of the back; and

Fig. 13 a sectional view of the finished wash basin.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

1 is a sheet of metal from which the sink or wash basin is to be formed.

In Figs. 2 to 9 I show the various steps in forming a sink. The first step is to form the depression 2. Owing to the depth of the depression, it is found in actual practice that at least three drawing operations are necessary to get the required depth without fracturing the metal, the result of the first stage or operation being shown in Fig. 2, the result of the second stage or operation being shown in Fig. 3, and the final stage or operation being shown in Fig. 4.

These several steps are all of great importance as above mentioned, as only by progressively drawing the metal is it possible to obtain the relatively great depth shown in Fig. 4.

For the sake of appearance, as well as for the purpose of imparting stiffness and

strength to the sink, and to enable it to stand up without warping during the operation of enameling, both the bowl and back are provided with an integral roll or rim 3. The sheet after the formation of the bowl is substantially of the shape shown in plan in Fig. 4ª, but before shaping and drawing the metal to form the roll or rim, it is preferable to trim off the sheet as shown on the dotted line in said figure so as to leave just sufficient material to form the roll or rim. The next step is the shaping and drawing of the metal to form this roll or rim as in Fig. 5. As the back is provided with an inwardly directed flange, the trimmed sheet will be of greater width at this portion. The next step is the shaping and drawing of the metal to form this roll or rim as shown in Fig. 5. This may be done in one or more stages as may be most convenient, having in mind the characteristics of the metal employed. For a roll or rim of the type shown usually one operation will be sufficient.

The roll or rim having been formed, the next step is to notch or cut away a portion of the metal at 4, where the bowl and back meet, the cut being at least substantially as long as the width of the roll or rim, the notch having its greatest width in alinement with the highest part of the roll and narrowing off towards each end.

As, however, the inner corners of the depression 2 are rounded, (see particularly Fig. 6ª) the notch 4 is extended inwardly as a narrow slot to the point where the rounded corner meets the flat portion of the back.

A slit 5 is then cut through the side of the roll or rim as shown in Fig. 6.

The cutting of the metal at 4 is very important as will shortly be apparent.

It will be also noted from Fig. 5 that the metal is drawn down deeper at the back to provide material for the flange 9, hereinafter referred to, and that it merges into the shallower front.

The next step is to bend the back to occupy a position at substantially right angles to the plane of the top of the bowl as shown in Figs. 7, 7ª and 7ᵇ.

Simultaneously the ends 3ª of the roll on the bowl are curved upwardly and the ends 3ᵇ of the roll on the back are curved forwardly so that the ends meet, thus not only closing the gap formed by the notch 4, but also, when welded together as hereinafter referred to, form braces which stiffen the connection between the bowl and back. It will also be noted that by the curving of the ends of the roll to close the notch 4, the extra material provided by merging the roll on the back with the roll on the bowl has at least partially disappeared, and any surplus left is trimmed off later in the process to make the roll of substantially uniform depth all around the bowl.

In the bending-up operation, gaps 6 are formed as shown in Figs. 7 and 7ª. Inserts 8 of metal are placed in these gaps and welded in position and the ends 3ª and 3ᵇ of the rolls on the bowl and back will be welded together.

The edges of the roll are then trimmed, and for the purpose of stiffening the back, the edge of its roll is bent inwardly to form a flange 9, (see Fig. 8). Any final trimming necessary is now done.

All rough parts are then ground smooth and the sink is then ready for enameling in an ordinary manner.

Wash basins will be constructed in substantially the same way as the sink, although in the drawings certain of the intermediate stages are not illustrated.

In Fig. 10 the basin is shown after going through steps corresponding to those shown in Figs. 3 to 5 as applied to the sink. Usually, however, owing to the depth of the apron on the bowl, two operations will be required to get the required depth instead of one as in the case of the sink.

In Figs. 11 and 11ª the basin is shown ready for the bending up of the back after having been notched at 4 and slit at 5 in the same manner as the sink.

Fig. 12 shows the back bent up at right angles to the plane of the top of the bowl and the ends 3ª and 3ᵇ bent to close the notches 4. Any slight drawing up of the rear corners 3ᵈ of the apron due to the upward bending of the ends 3ª which may take place, is taken care of in the trimming of the apron. Owing to the depth of the rim, this drawing up of the rear corners is, however, scarcely noticeable in any event.

Inserts are welded in place to fill the gaps 7 formed by bending up the back just as in the case of the sink hereinbefore described.

As shown in Fig. 13, the edge of the roll on the back is bent in to form a stiffening flange 9, and also the lower edge of the apron is slightly inturned as shown.

After the necessary grinding and cleaning the basin is then ready for enameling.

What I claim is:

1. A process of forming sinks, wash basins and the like which consists in drawing down an integral sheet of metal in a plurality of operations to form the fluid receiving bowl, leaving at one side sufficient metal to form the back; bending the edges of the sheet downwardly to form a roll for the bowl and back; cutting the sheet at opposite sides to permit of the bending of the roll where back and bowl meet; bending the sheet to cause the back to occupy a position at substantially right angles to the main part of the article; bringing the cut edges of the

front of the roll into juxtaposition; and welding together the edges.

2. A process of forming sinks, wash basins and the like which consists in drawing down an integral sheet of metal in a plurality of operations to form the fluid receiving bowl, leaving at one side sufficient metal to form the back; bending the edges of the sheet downwardly to form a roll for the bowl and back; cutting the sheet at opposite sides to permit of the bending of the roll where back and bowl meet; bending the sheet to cause the back to occupy a position at substantially right angles to the main part of the article; bending the adjacent ends of the rolls on the bowl and back in a curve to bring the cut front edges into juxtaposition; and welding said edges together whereby the rolls of the bowl and back are connected by a longitudinally curved brace having approximately the same cross-sectional curvature as the rolls.

3. A process of forming sinks, wash basins and the like which consists in drawing down an integral sheet of metal in a plurality of operations to form the fluid receiving bowl, leaving at one side sufficient metal to form the back; bending the edges of the sheet downwardly to form a roll for the bowl and back; cutting the sheet transversely at opposite sides at the junction between the bowl and back to form a slit through the side of the roll, the roll provided with a wide notch at top and also provided with a narrow slot at the inner side of the notch extending into the sheet; bending the sheet to cause the back to occupy a position at substantially right angles to the main portion of the article; bending the adjacent edges of the front of the rolls on the bowl and back in a curve to bring the front edges into juxtaposition; and welding said edges together whereby the rolls of the bowl and back are connected by a longitudinally curved brace having approximately the same cross sectional curvature as the rolls.

4. A process of forming sinks, wash basins and the like which consists in drawing down an integral sheet of metal in a plurality of operations to form the fluid receiving bowl, leaving at one side sufficient metal to form the back; bending the edges of the sheet downwardly to form a roll for the bowl and back; cutting the sheet at opposite sides to permit of the bending of the roll where back and bowl meet; bending the sheet to cause the back to occupy a position at substantially right angles to the main part of the article; bringing the cut edges of the front of the roll into juxtaposition; welding together the edges; and bending inwardly the edges of the roll on the back to form a stiffening flange.

Signed at Toronto, Canada, this 14th day of February, 1927.

FREDERICK S. CORRIGAN.