May 30, 1944. E. H. KOTCHER 2,350,119

METHOD OF FORMING SINKS

Filed Dec. 13, 1940

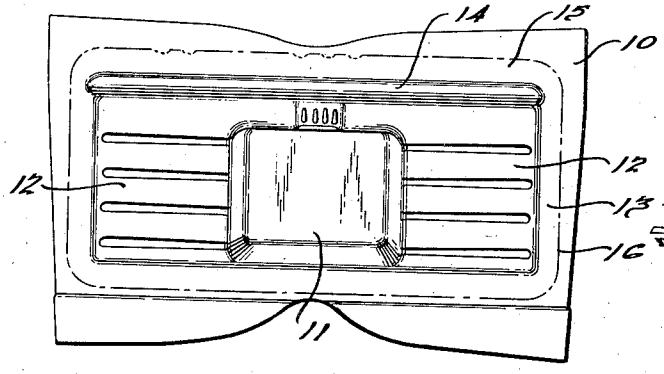


FIG. 1.

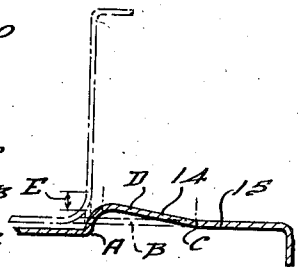


FIG. 6.

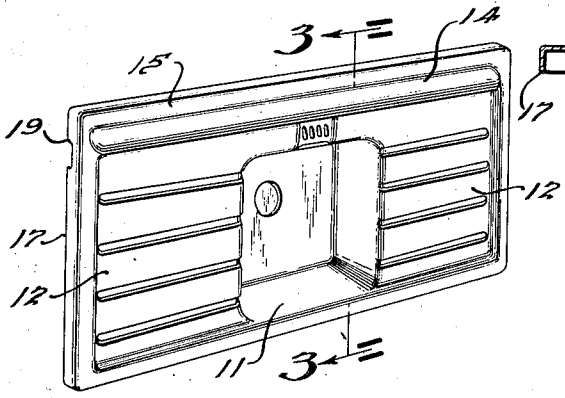


FIG. 2.

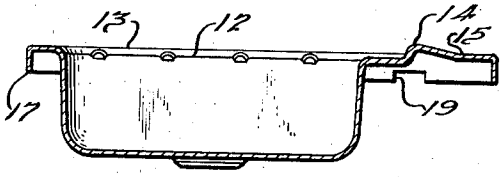


FIG. 3.

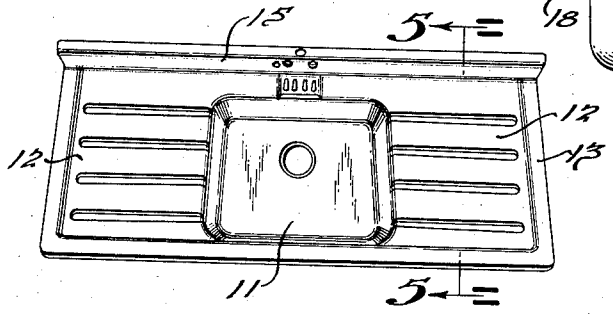


FIG. 4.

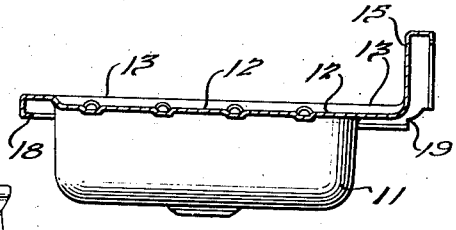


FIG. 5.

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METHOD OF FORMING SINKS

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5 Claims. (Cl. 113—120)

My invention relates to sinks, and particularly to the method of forming the metal between the sump and splashboard portion to have sufficient available to permit a bending operation.

In the art of constructing sinks from a sheet of metal various steps are employed for forming the sump, drainboard, splashboard and rim portions. In some constructions the splashboard is bent upwardly and thereafter flanged to conform with the flange about the apron and sump portions.

In practicing my present invention, I form a sink from a sheet of metal by first stamping out the sump portion and thereafter re-striking the sump portion when forming one or more drainboards as a sub-surface to the rib to be provided about the sink edge. Included within the stamping is metal for the splashboard which is to be broken upwardly at right angles to the drainboard portion and the rim thereabout.

When forming the drainboard portions, metal is embossed during the stamping operation along its rear edge within the border of the side rims to provide additional metal required to successfully perform a bending operation on the splashboard. The edge of the sheet is sheared and flanged, and notches are formed in the flanges at the line of break between the splashboard and drainboard portions and the breaking up operation is then performed while ironing the embossed metal to form a smooth splashboard surface which blends into the drainboard portion. The additional metal is required because of the offset relation of the line of break in the horizontal plane along the drainboard portion and at the side rim portions.

Accordingly, the main objects of my invention are; to form a splashboard portion of a sink upwardly from the offset drainboard and rim portions with a smooth surface by providing additional metal therefor between the rim portions; to emboss the metal along the drainboard portion within the confines of the edge rims so as to have sufficient metal available to form a smooth splashboard portion when bent upwardly; to emboss the metal at the rear of the drainboard portion within the splashboard portion between the side rim portions to provide metal sufficient to form a smooth back portion when the splashboard portion is bent at right angles to the rim and drainboard portions; and in general, to provide a method of providing a splashboard at right angles to the offset drainboard and rim portions of a sink which provides a smooth unwarped surface.

Other objects and features of novelty of my invention will be either specifically pointed out or will become apparent when referring, for a better understanding of my invention, to the following description taken in conjunction with the accompanying drawing, wherein:

Figure 1 is a plan view of a sink stamping, illustrating features of my invention;

Fig. 2 is a perspective view of the stamping illustrated in Fig. 1, with the edges sheared and flanged;

Fig. 3 is an enlarged sectional view of structure illustrated in Fig. 2, taken on the line 3—3 thereof;

Fig. 4 is a perspective view of a sink with a splashboard bent at right angles, as practiced by the method of my invention;

Fig. 5 is an enlarged sectional view of structure illustrated in Fig. 4, taken on the line 5—5 thereof; and,

Fig. 6 is an enlarged sectional view of the structure illustrated in Fig. 3.

Various stamping and forming operations are required to construct the sink in accordance with my method. In Fig. 1 a sheet of metal 10 has the sump portion 11 stamped therein, and the metal is thereafter formed to provide drainboard portions 12 disposed below the rim portions 13 at the front and side and at the rear of the drainboard portion. The metal in the splashboard portion bordering the drainboard portion is embossed at 14 between the side rim portions 13. The embossed metal 14 formed in the splashboard portion 15 is available to be ironed into the offset of the drainboard portion 12 when the splashboard portion is bent up at right angles thereto and to the rim portions 13. The sheet of metal is sheared along the dot and dash line 16 and the edges are bent rearwardly at 17 and flanged inwardly at 18 entirely around the rim portion. At the junction between the splashboard and the drainboard portions, the flanges of the side rim portions are notched at 19 which permit the bending operation to be readily performed edgewise on the remaining flange portion. This eliminates the tearing which occurred when attempting to bend the entire flange and retains a portion of the flange to which a corner plate may be welded.

In Figs. 4 and 5, I have illustrated the sink with the splashboard portion bent at right angles to the rim portions 13 and the drainboard portion 12. It will be noted from Fig. 5 that the drainboard portion is offset downwardly from the rim portions 13. In view of the offset relation be-

tween the two surfaces to which the splashboard portion is disposed at right angles, the embossed portion 14 provides additional metal which prevents the warping of the material of the splashboard portion which would otherwise occur during the bending operation. When being offset the face of the splashboard portion is ironed by a die which passes over the surface when the bending operation is performed by a single stroke of the die. Sufficient metal is provided within the offset portion to produce a smooth surface to the splashboard portion without any warpage to the metal.

In Fig. 6, I have illustrated the splashboard portion 15 and the embossed metal 14 for the purpose of more clearly illustrating the accomplishment of my invention. In dot and dash lines I have illustrated the portion of the splashboard when bent up from the rim. It was found that the metal from the point A through the embossed portion D to C, minus the metal from the point A across the flat portion B to the point C, is equal to one-half of the metal at the point E of the splashboard portion at the rim. From this it will be deducted that I have supplied metal in the embossed portion 14 sufficient to compensate only by one-half the metal required to overcome the deficiency as indicated by the letter E. The additional drawing of the metal during the ironing operation provides the necessary metal to form a smooth splashboard without providing strains which are apparent in the face thereof. It is to be understood that the embossing of the metal at 14 could be extended so as to provide all of the metal to compensate for the deficiency. However, the additional stretching of the metal during the bending up operation assures a smooth face on the splashboard which might otherwise have a wrinkled appearance.

While I have described and illustrated but a single embodiment of my invention, it will be apparent to those skilled in the art that various changes, omissions, additions, and substitutions may be made therein without departing from the spirit and scope of my invention, as set forth in the accompanying claims.

What I claim is:

1. The method of forming a sink which comprises the embossing of metal between the splashboard and drainboard portion between the upwardly offset side rim portions, and of ironing the metal of the embossed portion during the bending upwardly of the splashboard portion to form a smooth surface normal to the offset rim portions.

2. The method of forming a sink which embodies stamping a sump and drainboard portion in a sheet of metal with the drainboard portion disposed below a rim portion, of embossing metal between the side rim portions in the splashboard portion adjacent to the rear edge of the drainboard portion, and of ironing said embossed metal at the time the splashboard portion is bent at right angles to the rim and drainboard portions to provide a smooth surface which blends with said sump and drainboard portion.

3. The method of forming a portion of a sheet of metal at right angles to a base portion which is offset downwardly from the edge portions and which includes the steps, of embossing metal in the sheet portion between the confines of the edge portion and adjacent to the offset portion, and of ironing said metal to form a smooth surface adjacent to the offset base portion when the sheet portion is bent upwardly along a line intersecting the raised edge portions.

4. The method of forming a sink which includes the steps of stamping a sump portion in a sheet of metal, of thereafter offsetting a drainboard portion downwardly from the rim portion, of shearing the edge of the rim portion, of flanging the edge metal downwardly to provide a rim flange, of notching the rim flange at the line of bend to reduce its depth to a degree which will stand an edgewise bend, and of bending the splashboard portion at right angles thereto along a line above said notch.

5. The method of forming a sink which includes the steps of stamping a sump portion in a sheet of metal, of thereafter offsetting a drainboard portion downwardly from the rim portion, of shearing the edge of the rim portion, of flanging the edge metal downwardly to provide a rim flange, of notching the rim flange at the line of bend to be formed between the splashboard portion and the rim and drainboard portions to a depth at which the remaining metal will withstand an endwise bend, of embossing metal in the splashboard portion between the rim portions, and ironing said embossed metal to form a smooth surface when the splashboard portion is bent at right angles to the drainboard and the rim portions.

EDWIN H. KOTCHER.