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METHOD OF REENFORCING SINK DRAINBOARDS AND THE LIKE AND THE PRODUCT RESULTING THEREFROM

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Fig. 1.

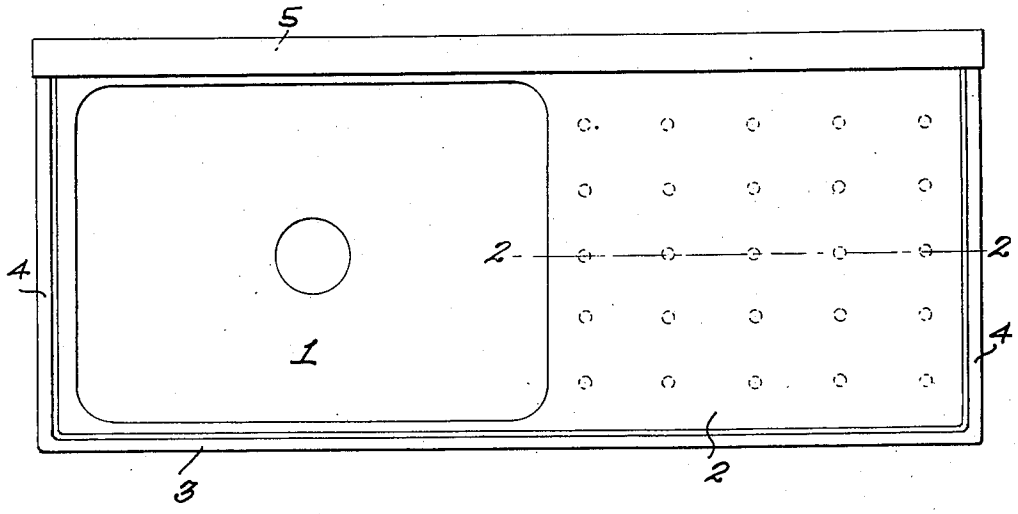


Fig. 2.

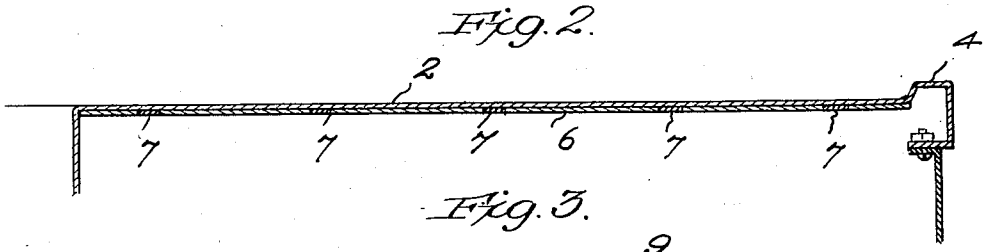
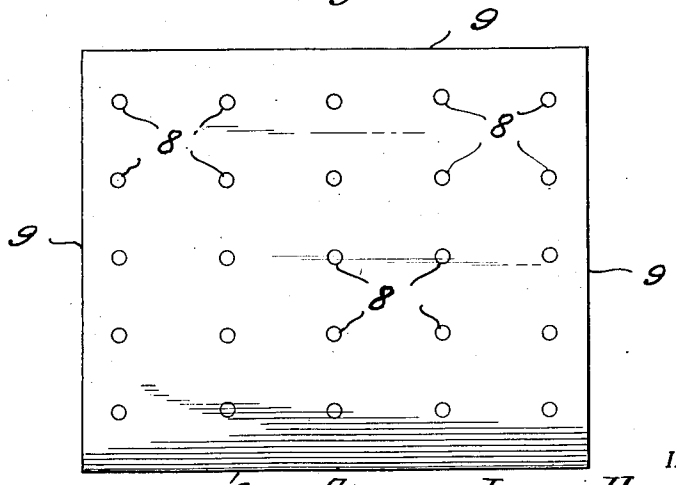


Fig. 3.



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METHOD OF REENFORCING SINK DRAINBOARDS AND THE LIKE AND THE PRODUCT RESULTING THEREFROM

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18 Claims. (Cl. 4—189)

The present invention relates to a method of reenforcing sink drainboards and the like and to the products resulting therefrom and more particularly to a method of reenforcing and sound deadening sheet metal drainboards and the like and to products resulting therefrom.

It is an object of the present invention to provide a method of reenforcing sheet metal drainboards in such a manner as to not only reenforce the drainboard but also to sound deaden it.

It is a further object of the present invention to provide a method of reenforcing a sheet metal drainboard to produce a flat surface substantially flat.

It is also within the contemplation of the invention to provide a reenforced drainboard made of relatively light gauge corrosion resistant sheet metal.

Other objects and advantages of the invention will become apparent from the following description, taken in conjunction with the drawing in which:

Fig. 1 is a top flange view of a single drainboard sink embodying the present invention;

Fig. 2 is a sectional view, partly fragmentary, taken on the line 2—2 of Fig. 1; and

Fig. 3 is a plan view of a reenforcing plate used in reenforcing the sink illustrated in Fig. 1.

Referring more particularly to Fig. 1, the reference character 1 designates a sink which is provided with a right hand drainboard 2. On the front of the sink an apron 3 of the conventional type is located and on the sides of the sink customary side aprons 4 are provided. A splashback 5 is located in the rear of the sink in the usual manner. Of course, the sink is provided with all of the conventional auxiliaries and accessories (not shown) as those skilled in the art will readily understand.

In the present embodiment, a flat drainboard is illustrated. On the underside of the drainboard 2, a reenforcing plate 6 is secured. It has been found that the provision of a plurality of unions or bonds 7 when constituted of a soldering material is capable not only of fixedly securing reenforced plate 6 to the underside of drainboard 2, but also is capable of sound proofing or sound deadening the metallic drainboard.

In practice, unions 7 are made in a plurality of apertures 8 which are herein illustrated as circular holes. Of course, other suitably shaped apertures may be used but it is preferred to employ a circular hole which can be made very easily and conveniently by means of conventional drills, etc. It has been found that the apertures 8 must have a certain size and must be spaced a certain distance from each other in order to secure the new results of the present invention. For practical and industrial operation, it has been found that the apertures 8 when in the form of circular holes should not have a diameter less than about $\frac{1}{16}$ of 1 inch and not larger than a diameter of $\frac{1}{2}$ of 1 inch. These apertures are preferably spaced from each other a distance varying from about 2 inches to about 6 inches, depending upon the size of the holes, the gauge of the sheet metal constituting drainboard 2, the thickness of the reenforcing plate 6 and the area to be reenforced and sound proofed. In practice, it has been found that for kitchen sinks and the like, the drainboards, when constituted of sheet metal, can be reenforced with a steel plate or the like having holes preferably $\frac{1}{4}$ of 1 inch in diameter and spaced about 4 inches from each other. It is preferred that the holes are located some distance from the sides 9 of the reenforcing plate 6. In some instances, the spacing of the holes in one direction can be a little smaller or larger than the spacing of the holes in the other direction. Thus, for example, in the embodiment illustrated in the drawing, the transverse spacing of the holes is slightly less than the longitudinal spacing of the holes.

When a corrosion resistant metal such as Monel metal or the like is used to make the sheet it has been found that the gauge may be reduced to 16 gauge. In some instances lighter gauge may be employed. A drainboard constituted of sheet metal having this gauge can be reenforced and sound proofed by the use of a steel plate of about 14 or 16 gauge. In other instances, a steel plate having a thickness of about 20 gauge or so may be employed. Monel metal and steel plate of the aforesaid gauges have been satisfactorily employed in the production of kitchen sinks having drainboards with an area of about 18 by 24 and the like. Of course, the area of the drainboard may vary as those skilled in the art can readily understand.

In carrying the present invention into practice, the sink is laid on a flat form which conforms to the top surface of the sink and especially with the drainboard of the sink. A reenforcing plate, such as a steel plate, having the appropriate number of suitable apertures or holes, is then laid on the underside of the drainboard and is clamped in position. The unions or bonds are then made in the apertures or holes in a suitable manner, thus, the unions or bonds may be made when

Monel metal or a copper nickel alloy constitutes the sheet material of the drainboard and steel plate constitutes the reenforcing plate by the use of solder, such as half and half plumber solder and a suitable flux, such as an acid soldering flux. The solder fills the apertures and joins the metal of the underside of the drainboard as well as regions adjacent thereto into fixed and rigid relation with respect to the steel reenforcing plate. It has been found that the unions or bonds do not show through on the finished side or top surface of the sheet metal drainboard. In addition, all of the buckling, warping, wavering or the like, is removed from the surface of the drainboard and a substantially flat uniform surface is produced. Furthermore, contrary to common conceptions of the prior art, it has been found that the reenforcement of a sheet metal drainboard with a metal reenforcing plate when carried out in accordance with the principle of the present invention continually deadens the ring and actually sound proofs the metal drainboard. As yet, no explanation has been found of this peculiar and curious phenomenon. It is believed that the unions of solder or other bonding material interferes with the transmission of sound and breaks up, modifies or absorbs the sound waves emanating from the metal drainboard when articles such as dishes, pots, pans, utensils, etc. are laid upon it.

In some instances, it is preferred to completely seal the sides 9 of the reenforcing plate 6 to the underside of the drainboard. By sealing the reenforcing plate to the underside of the drainboard, it is impossible for vermin, dirt, or the like to collect in the crack between the reenforcing plate and the underside of the metal drainboard. It is preferred to solder the side 9 to the underside of drainboard 2. In this manner, the reenforcing plate 6 cannot only be completely bonded by means of union 7 to the underside of the drainboard 2 but also can be completely sealed to insure a sanitary condition throughout the life of the same.

It is to be observed that the present invention can be used in conjunction with sinks having fluted drainboards as well as plain or flat drainboards. When a fluted drainboard is to be reenforced and sound proof, it is merely necessary to use a reenforcing plate having flutes pressed or stamped therein which conform to the flutes in the drainboard. A fluted reenforcing plate can be secured to a fluted drainboard in the manner described hereinabove and a reenforced and sound proof fluted drainboard will be obtained.

In the event that it is desired to use a flat plate in conjunction with a fluted drainboard, the apertures in the reenforcing plate are located so as to match with and meet the underside of the flutes. The reenforcing plate may thus be applied to the drainboard in the same manner as heretofore set forth. In some instances, it may be desirable to fill the spaces, occurring between the flutes and the underside of the metal drainboard and the top of the reenforcing plate with an appropriate material, such as felt impregnated with asphalt or the like. By filling the spaces with asphalt, felt or the like, the drainboard is further sound proof and the space between the underside of the drainboard and the top of the reenforcing plate is maintained in a sanitary condition, due to the fact that asphalt and similar material possesses preservative and antiseptic properties.

Although the present invention has been described in connection with the preferred embodiment of the invention, it is to be observed that variations may be resorted to as those skilled in the art will readily understand. Thus, in place of Monel metal, other corrosive resistant metals such as stainless steel, zinc, nickel, copper alloys, etc., etc. can be employed for the sheet material from which the sink is made. Similarly, in place of steel plate other materials may be used as the reenforcing plate.

What is claimed is:

1. A reenforced and sound proof drainboard having an imperforate sheet metal top, a strong, tough metal reenforcing plate having a relatively high tensile strength for said sheet metal top and a plurality of unions adapted to secure said reenforcing plate to the underside of said top without penetrating the same and to sound proof the same.

2. A reenforced and sound proof drainboard having a relatively thin, imperforate sheet metal top, a strong, tough ferrous reenforcing plate having a relatively high tensile strength and located on the underside of said top, and a plurality of unions of leaden material rigidly uniting said reenforcing plate to the underside of said top without penetrating the same and sound proofing said top.

3. A reenforced and sound proof drainboard having an inperforate top made of relatively thin corrosion resistant sheet metal, a strong, tough steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said drainboard.

4. A reenforced and sound proof drainboard having an imperforate top made of relatively thin sheet of a copper nickel alloy, a relatively heavy steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, and a plurality of unions of solder associated with said apertures and adapted to unite said reenforcing plate to the underside of said top and to sound proof said top.

5. A reenforced and sound proof drainboard having an imperforate top made of relatively thin corrosion resistant sheet metal, a steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, said apertures varying in size from approximately $\frac{1}{8}$'' to about $\frac{1}{2}$'', and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said drainboard.

6. A reenforced and sound proof drainboard having an imperforate top made of relatively thin corrosion resistant sheet metal, a steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, said apertures being spaced from each other by a distance varying from about 2'' to about 6'', and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said drainboard.

7. A reenforced and sound proof drainboard having an imperforate top made of relatively thin

corrosion resistant sheet metal, a steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, said apertures being spaced from each other of about 4" and having a diameter of about ¼", and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said drainboard.

8. A reenforced and sound proof drainboard having an imperforate plurality of flutes incorporated therein, a steel reenforcing plate having a relatively high tensile strength and having a plurality of flutes incorporated therein corresponding to the flutes in said top, said reenforcing plate located on the underside of said top and having the flutes match with each other, a plurality of apertures positioned in said steel reenforcing plate on said flutes, and a plurality of unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

9. A reenforced and sound proof drainboard having an imperforate top with a plurality of flutes incorporated therein, a flat reenforcing plate having a relatively high tensile strength and located on the underside of said top, a plurality of apertures in said reenforcing plate in alignment with the underside of said flutes, a plurality of unions associated with said apertures to unite said reenforcing plate to the underside of said top, and felt impregnated with asphalt substantially filling the spaces between said flutes and the underside of said top without penetrating the same and the upper surface of said reenforcing plate.

10. A reenforced and sound proof, imperforate, sheet metal top having a metal reenforcing plate for said sheet metal top and a plurality of unions adapted to secure said reenforcing plate to said top and to sound proof the same, a reenforced sound proof drainboard having a top made of relatively light gauge corrosion resistant metal, a metal reenforcing plate located on the underside of said top, and a plurality of unions of relatively soft metal adapted to bond said reenforcing plate to the underside of said top without penetrating the same and to absorb sound and to deaden the structure.

11. A reenforced and sound proof thin imperforate sheet metal top having a ferrous reenforcing plate located on the underside of said top, and a plurality of unions of leaden material rigidly uniting said reenforcing plate to the underside of said top without penetrating the same and sound proofing said top.

12. A reenforced and sound proof top made of relatively thin, corrosion resistant, imperforate sheet metal having a steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

13. A reenforced and sound proof top made of relatively thin, imperforate, sheet of a copper-nickel alloy having a relatively heavy steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, and a plurality of unions of solder associated with said apertures and adapted to unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

14. A reenforced and sound proof thin corrosion resistant sheet, imperforate, metal top having a steel reinforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, said apertures varying in size from approximately $\frac{1}{16}$" to about ½", and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

15. A reenforced and sound proof top made of relatively thin corrosion resistant sheet, imperforate, metal having a steel reenforcing plate having a relatively high tensile strength and located on the top underside of said top and having a plurality of spaced apertures, said apertures being spaced from each other by a distance varying from about 2" to about 6", and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

16. A reenforced and sound proof top made of relatively thin corrosion resistant, imperforate, sheet metal having a steel reenforcing plate having a relatively high tensile strength and located on the underside of said top and having a plurality of spaced apertures, said apertures being spaced from each other of about 4" and having a diameter of about ¼", and a plurality of leaden unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

17. A reenforced and sound proof, imperforate, top having a plurality of flutes incorporated therein and having a steel reenforcing plate having a relatively high tensile strength and having a plurality of flutes incorporated therein corresponding to the flutes in said top, said reenforcing plate located on the underside of said top and having the flutes match with each other, a plurality of apertures positioned in said steel reenforcing plate on said flutes, and a plurality of unions associated with said apertures to rigidly unite said reenforcing plate to the underside of said top without penetrating the same and to sound proof said top.

18. A reenforced and sound proof, imperforate, top with a plurality of flutes incorporated therein having a flat reenforcing plate having a relatively high tensile strength and located on the underside of said top, a plurality of apertures in said reenforcing plate in alignment with the underside of said flutes, a plurality of unions associated with said apertures to unite said reenforcing plate to the underside of said top without penetrating the same, and felt impregnated with asphalt substantially filling the spaces between said flutes and the underside of said top and the upper surface of said reenforcing plate.

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