Aug. 22, 1961 F. J. HORNIK 2,996,730

SINK STRUCTURE

Filed Dec. 6, 1957

FIG. 1

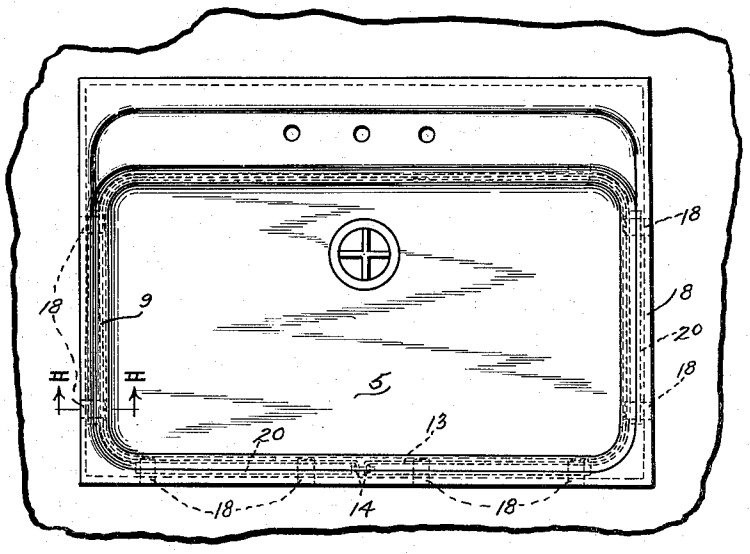


FIG. 2

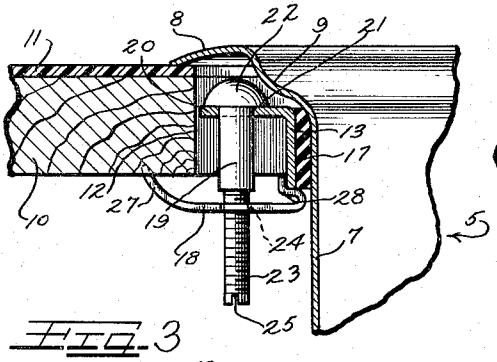


FIG. 4

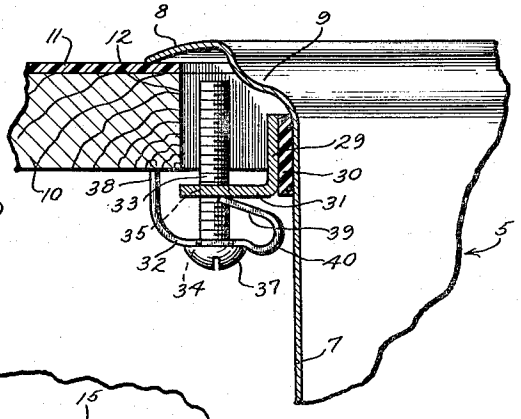
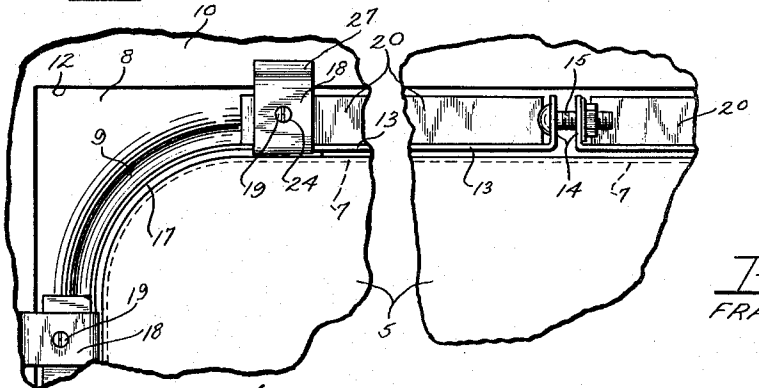


FIG. 3



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SINK STRUCTURE

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The present invention relates to improvements in sink structures and more particularly concerns novel means for securing stainless steel and like sinks in place on counter-tops.

Stainless steel sinks are drawn from relatively thin material. In attaching the sinks to the counter tops within which the bowl portions of the sinks are disposed while the rim flanges of the sink in each instance is drawn against the top of the counter top about the hole that accommodates the sink bowl, considerable pull must be exerted by the securing means. Where the securing means are attached directly to the sink structure as by means of welding, often times undesirable warpage appears either from the welding or from the localized pulling force exerted by the securing means.

It is an important object of the present invention to provide improved securing means for stainless steel and like sinks enabling thorough drawing, clamping attachment of the sink rim against the counter top and fixed retention of the sink with respect to the counter top but with entire freedom from localized warpage of the sink.

Another object of the invention is to provide retaining means for sinks arranged to be applied in a more or less indirect manner to the sink bowl without welding or other attachment that may result in warpage.

A further object of the invention is to provide improved means for attaching stainless steel and like sinks in a cushioned manner.

Still another object of the invention is to provide novel combination sink attaching and sound damping means for sinks.

Other objects, features and advantages of the present invention will be readily apparent from the following detailed description of certain preferred embodiments thereof, taken in conjunction with the accompanying drawing, in which:

FIGURE 1 is a top plan view of a sink structure embodying features of the invention;

FIGURE 2 is an enlarged fragmentary sectional detail view taken substantially on the line II—II of FIGURE 1;

FIGURE 3 is a fragmental bottom plan view of one corner of the sink bowl and associated attaching means and underside of the counter top and showing details of the attaching means; and

FIGURE 4 is a fragmentary vertical sectional detail view similar to FIGURE 2 but showing a modification.

The present invention is especially adapted for stainless steel and like thin sheet metal drawn sinks of the type represented in FIGURES 1 and 2 including a sink bowl 5 defined by upstanding walls 7 provided about the top with a laterally extending overhanging rim flange 8 joined to the vertical wall by a run-back groove and reinforcing structure 9.

For supporting the sink, a counter top 10 is provided which may have a top surface veneer 11 of a thermosetting plastic. A hole 12 in the counter top is dimensioned to receive the sink bowl therein with a space between the edge defining the bowl and the wall 7 of the sink bowl affording a gap within which retaining means are accommodated. Upon the top surface 11 about the counter top hole 12 the downwardly turned edge of the rim flange 8 provides a water tight seal. This type of sink is known as a self-rimming sink.

Improved attaching means are provided for not only drawing the sink rim 8 firmly down against the counter top, but also for holding the sink against upward or lateral displacement relative to the counter top. To this end, there is provided herein a sink embracing metal strip or band 13 (FIGS. 1, 2 and 3) which is preferably in one piece and with angular opposite end flanges 14 adapted to be connected by suitable coupling means such as a screw 15. The length of the attachment band 13 is predetermined to enable the same to be engaged entirely about the sink wall 7 under the indented or set-back juncture structure 9 of the sink rim 8 with the coupling flanges 14 in close but spaced adjacency. While the attachment band 13 may be supplied for assembly purposes preshaped and with the coupling end flanges 14 loosely connected by the coupling screw 15, the band may, of course, be supplied in a flexible length and with the ends disconnected and disposed at opposite ends of the elongated strip which for assembly can be bent into place about the sink wall 7.

Sound damping, cushioning, and frictional gripping interengagement of the attachment band 13 with respect to the sink bowl wall 7 is effected by interposing between the band 13 and the sink bowl wall, and more particularly at each of the vertical corners of the sink bowl wall a rubber pad strip 17. The resilient rubber pad 17 may be natural or synthetic rubber, certain of the synthetic rubbers being desirable due to their relatively non-aging characteristics. The high coefficient of friction of the rubber strips 17 assures firm gripping of the attaching band without danger of slippage. The cushioning provided by the rubber strip 17 assures freedom from uneven gripping pressures from the tightened band as the coupling means is drawn up. Furthermore, the rubber pads 17 provide efficient sound damping for the sink.

Actual attachment of the sink is effected by means of metal clips 18 which may be formed up from suitable gauge sheet or strip metal and are arranged to be connected to the attaching strip 13 by means of draw-up screws 19. For this purpose, the attaching band 13 is provided with overhanging lateral take-up screw carrying flange portions 20, in this instance disposed as integral right angular longitudinally extending flanges along the upper margin of the attaching band 13 as mounted on the sink. The flanges 20 are longitudinally discontinuous at the corner bends of the attaching band 13 and are of a width to be accommodated in the gap between the edge defining the counter top aperture 12 and the adjacent upper portion of the sink bowl wall 7. Thereby the attachment band flanges 20 overhang the space within the gap so that the draw-up screws 19 can depend through and below the gap. At suitable entervals longitudinally therealong each section of the flange 20 has apertures 21 therein through which the shanks of the screws 19 depend, with respective heads 22 on the screws lying slidably rotatably upon the upper surface of the flange 20.

At their lower end portions, the screws 19 are provided with screw threads 23 engageable through complementally tapped respective holes 24 in the flat substantial width body portions of the respective clips 18. While the clips 18 may be assembled in preliminary manner by partially running them up the threaded portion 23 of the respective attaching screws before the sink bowl is put in position, and with the clips disposed lengthwise longitudinally with the attaching band 13, the clips may be assembled with the screws and run up after the sink bowl has been set in place in the counter top. During such time the screws 19 are retained in place against loss because the retaining band 13 is conveniently applied to the sink bowl before it is mounted in the counter top and there is only limited clearance

between the screw heads 22 and the overlying sink rim flange to thereby retain the screws against longitudinal displacement from the supporting flange 20.

In drawing the retaining clip 18 up, a screwdriver may be applied to a lower end screwdriver slot 25 in the draw-up screw 19, and the clip run-up until a turned up counter top engaging terminal end 27 of the clip engages the underside of the margin of the counter top about the sink aperture 12. At the same time, a turned up, reverse bend angular seating flange 28 of generally rabbet groove formation on the opposite or inner end of the clip, seats against the lower edge of the attachment band 13 functioning not only to hold the clip against turning but also to provide a fixed stop fulcrum on the attachment band edge to enable drawing up tightly against the underside of the counter top of the gripping, clamping terminal 27 located generally opposite to the counter top engaging edge of the sink rim flange 8. As a result, the rim flange 8 is drawn tightly against the counter top as the retaining clips 18 are drawn up to effect a more or less pincers jaw engagement of the counter top with the sink rim flange 8. There may be as many of the retaining clips 18 as desirable along and under each length of the overlying rim flange 8. In FIGURE 1, two of the clips 18 are shown as securing each end of the sink and four of the clips 18 are shown as attaching the front margin of the sink.

In the modification of FIGURE 4, details of the sink and counter top are substantially the same as in the form of FIGURES 1–3 and therefore identical parts have been identified by identical reference numerals. In this form, an attachment band 29 is provided which insofar as its attachment to the sink is concerned is substantially the same as the attachment band or collar 13. Cushioning, frictional connecting and sound deadening pad strips 30 of suitable rubber material are interposed between the attachment band 29 and especially the corner encompassing portions of the band and the sink bowl wall 7. Along its lower margin the attachment band 29 is provided with a preferably right angular clip supporting flange 31 which may be sectionally provided similarly as the clip attaching flange 20 of the attachment band 13.

Respective attaching clips 32 formed up from suitable width sheet or strip metal stock are connected to the flange 31 by means of respective attaching screws 33 which project freely up through respective clearance holes 34 in the body portions of the clips 32 and are threaded into respective complementally tapped screw holes 35 in the flange 31. Heads 37 of the respective screws bear against the associated clip body and by drawing up the screw as by applying a screwdriver to the screwdriver slot in the screw head 37 in each instance, the respective clips are drawn up toward the flange 31. In this instance, attachment of the clips 32 can easily be effected after the sink has been set into place in the counter top by first assembling the respective screws with the clips and then running the screws up into the tapped screw holes 35, especially since in this instance the attaching band flange 31 is located for ready accessibility adjacent to the bottom of the gap between the edge defining the counter top aperture 12 and the adjacent upper portion of the sink wall 7.

As the respective clips 32 are drawn up, upwardly directed respective terminal flange finger portions thereon which extend up past the outer edge of the flange 31, engage thrustingly against the underside of the counter top 10. Then as the screw 33 is drawn up further, the attachment band 29 is drawn down to thereby draw the sink rim flange 8 snugly down against the counter top.

For thrust fulcrum pressure and retention against turning, the clip 32 is provided with a generally return-bent upwardly and outwardly angled flange 39 on its inner end which engages the adjacent opposing portion of the screw shank and bears against the underside of the attachment band flange 31. As the clip 32 is run-up into retaining position, the tip of the clip flange 39 is brought into engagement with the underside of the attachment band flange 31 and as the clip is drawn thrustingly through its terminal 38 against the underside of the counter top, the fulcrum flange 39 resists tilting of the clip toward the sink bowl and also by virtue of a substantial connecting loop 40 between the body of the clip and the fulcrum flange leg 39 provides for resilient cushioning take-up, as well as gradual resilient yielding of the clip leg 39 to ultimately jam the tip portion of the clip leg against the screw shank and thus effect substantially a nut lock which will resist turning loose of the screw 33 due to vibrations.

It will be understood that modifications and variations may be effected without departing from the scope of the novel concepts of the present invention.

I claim as my invention:

1. In combination, a counter top having an opening therein, a self-rimming sink having a bowl in said opening and a lateral rim flange on the upper end of the bowl projecting outwardly therefrom and overlying and seated upon the counter top about said opening, the sink bowl having upstanding walls joined on upright corners, an attachment band encompassing and drawn up about the outer perimeter of said sink bowl under said flange, rubber strips engaged between the band and the corners of the sink to serve as cushioning and sound deadening means and holding the band against displacement, said band having lateral flange structure on one margin projecting away from the sink bowl, screws extending through and carried by said flange structure, and retaining clips having the screws extending therethrough, the clips having terminals drawn up thrustingly against the underside of the counter top, said screws acting on the clips to draw the band and thereby the sink bowl downwardly and thereby drawing the rim flange firmly down against the counter top.

2. In a sink structure including a sink bowl having upstanding wall structure comprising portions joined by corners, and on the upper end of the wall structure lateral outwardly projecting self-rimming flange means overhanging the outer side of the wall structure so as to lie sealingly upon the upper side of a counter top about an opening therein into which the sink bowl is inserted, an attaching band disposed about the outer side of the wall structure under the flange means and having end portions thereon drawn up toward one another to engage the band firmly about the sink wall structure, members attached to and carried by the band and engageable adjustably under the counter top for drawing the rim flange firmly down against the top of the counter top, and rubber pads interposed between the band and the corners of the sink bowl wall structure and drawn thereagainst by the band whereby to provide cushioning and friction means and thus holding the band against displacement relative to the bowl wall.

3. A sink structure as defined in claim 2, characterized in that said band has an upper margin provided with an angular flange projecting away from the sink bowl and attachably carrying said members.

4. A sink structure as defined in claim 2, wherein said band has a lower margin provided with a flange projecting away from the sink bowl and attachably carrying said members.

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