April 11, 1950 L. B. WILLIS 2,503,982

SINK MOUNTING

Filed March 18, 1949 2 Sheets-Sheet 1

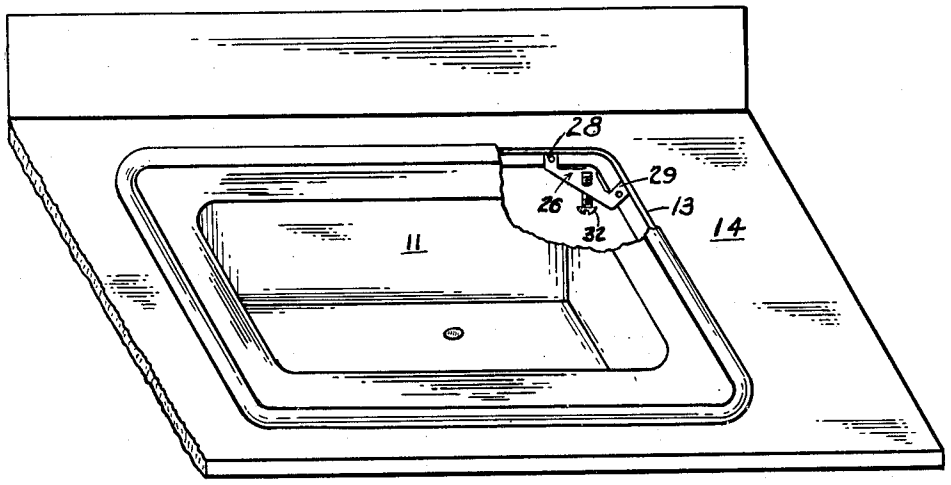


FIG. 1

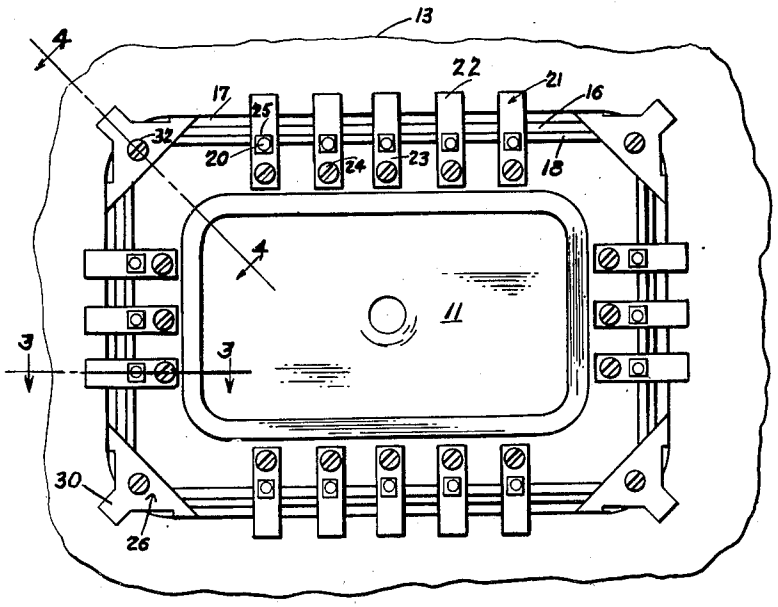


FIG. 2

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SINK MOUNTING

Filed March 18, 1949 2 Sheets-Sheet 2

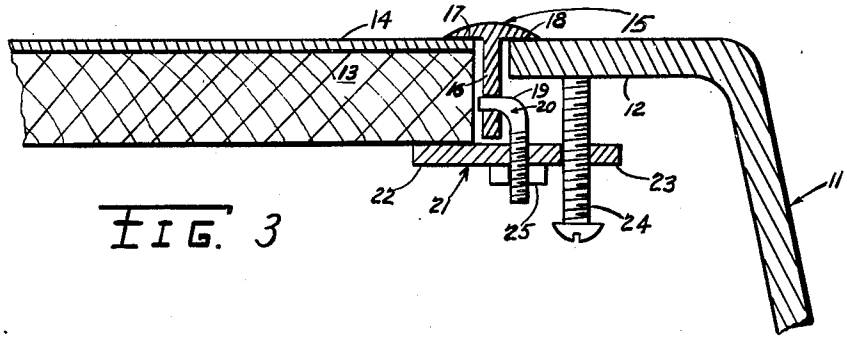


FIG. 3

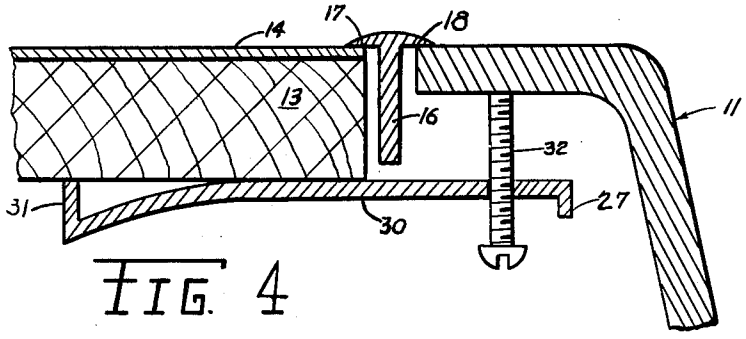


FIG. 4

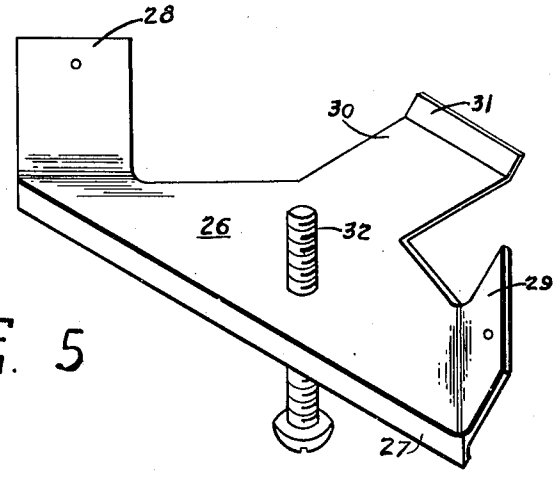


FIG. 5

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SINK MOUNTING

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10 Claims. (Cl. 4—187)

1

The present invention relates to an improved sink mounting for securing a flanged sink bowl to a drainboard.

Prior-art mountings well known to the art comprise a sink ring or frame and a plurality of lugs and clips for clamping together the sink frame, sink bowl and drainboard. In commercial practice, the following disadvantages and limitations have become apparent in the use of the devices shown in prior-art patents and publications:

First, such prior-art devices are not adjustable to fit and clamp various thicknesses of drainboard and they are of such a nature that attempts to alter them to make them more versatile and adaptable would render them inoperable;

Second, such prior-art devices are premised on the use of sink frames having specially fabricated continuous hook portions, the production cost of which is expensive;

Third, prior-art devices of the above-mentioned character comprise specially-formed lugs having bent-out portions, the cost of which is rendered large by the several cutting and bending operations required for their formation;

Fourth, such prior-art devices suffer fundamentally from a lack of reconciliation between the conflicting requirements of a firm clamping action on the sink bowl flange and a strong clamping action on the drainboard, without slipping of the adjusting screws or tilting of the sink frame section and consequent lack of water-tightness of the joint between drainboard and sink frame;

Fifth, it has been found in practice that, because of the failure to maintain proper secure clamping action on both drainboard and sink bowl flange, the lugs of the prior art slip from the drainboard when the sink bowl is subjected to impacts such as occasionally occur in normal use, as by the placement of a substantial weight in the bowl;

Sixth, it has also been observed that the inherent tilting action of the prior-art lugs of such devices causes annoying slipping of the adjusting screws;

Seventh, prior-art mountings include corner clips which may easily be tilted to put the flanged bowl out of proper alignment with the drainboard.

The broad objects of the invention are to overcome these disadvantages and limitations of the prior-art sink mountings and to provide:

(1) A sink mounting which is adjustable to fit drainboards of a wide range of thickness;

2

(2) A mounting which preserves its effective mode of operation throughout a range of adjustments;

(3) A mounting which does not require the formation of lips or hooks on the sink ring or frame;

(4) A mounting which exercises secure clamping action on both the drainboard and the sink bowl flange;

(5) A mounting which does not produce tilting or twisting of the sink ring sections;

(6) A mounting which utilizes inexpensive and easily fabricated or procured components;

(7) A mounting which assures a water-tight fit between sink bowl and drainboard even when the bowl is subjected to severe strains;

(8) A mounting having corner clips which do not readily tilt.

In accordance with the invention and in the attainment of the foregoing objects, there is provided, in a flanged sink bowl and drainboard mounting of the type including a T-section sink frame, a device for securing said bowl, drainboard and frame in assembly comprising a lug having portions extending beneath the drainboard and the sink flange, adjustable means on that one of said portions near to said bowl for clamping said bowl between said sink frame and said lug, and an adjustable latch interconnecting said lug and said frame for clamping said drainboard between said frame and the other portion of said lug. There are also provided a plurality of these lug assemblies, a novel drainboard and sink bowl assembly including said plurality and novel corner clips, and a novel method for installing a sink bowl in a drainboard.

For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following description of the accompanying drawings in which there is shown a preferred illustrative embodiment of the invention, and to the appended claims.

In the drawings:

Fig. 1 is a perspective view of a sink and drainboard assembly in accordance with my invention, with parts broken away to show the novel corner clip construction;

Fig. 2 is a bottom view of the Fig. 1 assembly, showing the mounting clamps and corner clips in place greatly expanded in relative proportions for purposes of clarity in description;

Figs. 3 and 4 are sectional views showing a mounting clamp and a corner clip, respectively,

as taken along lines 3—3 and 4—4, respectively, looking in the direction of the arrows, with Fig. 2 inverted; and

Fig. 5 is a perspective view of a novel corner clip per se.

Referring first to Figs. 1, 2 and 3 of the drawings, there are shown a conventional sink bowl 11 having the usual mounting flange 12, and a conventional drainboard 13 having a metallic top 14. The drainboard is suitably apertured to receive the flanged sink bowl, the flanges terminating in spaced relation to the edges of the opening in the drainboard. The elements 11, 12, 13 and 14 are of the prior art and they or their equivalents are shown, for example in many patents such as U. S. Patent 2,440,741 to Herbert D. Drain, issued May 4, 1948.

The problem to which the present invention is directed and for which the invention is believed to provide a satisfactory solution is the convenient and inexpensive mounting of sink 11 on drainboard 13 in such a way as to present a neat appearance, assure proper alignment, prevent slipping of parts, effect a water-tight seal, and to avoid all of the disadvantages mentioned above.

For this purpose I provide a T-section sink frame or ring 15 having a flat straight-sided vertical section and a top section having flat bottom-surfaces 17 and 18 on each side of the vertical section. For convenience, the frame section will be referred to as having a vertical trunk and generally horizontal arms. The ring 15 is preferably an extruded metallic element. It is to be observed that the vertical section 16 has no hooks or bent-out formations and it is apertured as desired. Each aperture receives the hooked end 19 of an anchor bolt 20. The sink frame is positioned in encircling embrace with the sink bowl flange, one arm of the ring continuously overlapping the top surface of flange 12. The other arm of the ring continuously overlaps the top surface of drainboard cover 14. The trunk of the T-section ring is disposed between the outer edge of the sink flange and the walls of the drainboard opening.

The ring, drainboard and sink are secured together by a plurality (Fig. 2) of clamps shown in Fig. 3 and provided in accordance with the invention. In the preferred embodiment shown in Fig. 3, for example, a clamp member or lug 21 has a portion 22 which underlies drainboard 13 and cooperates with surface 17 of the ring 15 to clamp the ring and drainboard together. The lug 21 has another portion 23 which underlies flange 12 and cooperates with surface 18 of the ring 15 and screw 24 to clamp the ring and sink together. Thus, it is due to the cooperative action of clamp members 22, 20, 25, 17 and clamp members 23, 24, 18 that the sink bowl and drainboard are secured in rigid assembly.

Portion 23 of flat plate or lug 21 is threaded to receive an adjusting screw 24, one end of which bears on the under side of flange 12 and compresses the flange 12 against surface 18 of frame 15. It will be observed that an increase of this compression on flange 12 would, if not compensated for, tend to tilt the ring section 15 in a counterclockwise direction, decreasing the effectiveness of the seal between surface 18 and flange 12 and causing the screw 24 to depart from perpendicularity relative to flange 12. The failure of prior-art devices to compensate for this tendency is a significant factor in causing slipping of the screw on flange 12, and "springing" of the joint between the sink bowl and the drainboard, as well as leakage of water about the sink frame.

In accordance with this invention, there is provided means for adjusting the compression between surface 17 and portion 22 of lug 21. This means comprises an anchor bolt 20, the threaded end of which freely passes through an opening in lug 21, the curved head end 19 of which frictionally engages and bears against the lower surface of an opening in trunk 16 of ring 15. The threaded end of bolt 20 is received in an adjusting nut 25.

It will now be noted that an increase of the compression on drainboard 13, caused by a tightening down of nut 25, tends to prevent ring 15 from tilting in a counterclockwise direction, thereby compensating for the tendency noted above and eliminating the undesirable results.

As best shown in Fig. 2 a plurality of the clamp assemblies shown in Fig. 3 are employed in household and commercial practice.

Referring now to Figs. 1, 4 and 5, four corner clips such as that indicated by the reference numeral 26 are secured in place as the first step of the installation process. Each clip is provided with an integral downwardly turned stiffening flange 27, adapted to be diagonally disposed across a corner of the drainboard opening, integral upwardly turned tongues 28 and 29, apertured and adapted to be nailed or screwed on to intersecting side walls of that opening, and an integral rearward extension 30 terminating in a short upwardly turned marginal portion 31 which presses against the under side of the drainboard 13 to prevent tilting of the clip. Each clip is threaded to receive an upwardly directed adjusting screw 32, which bears against the under side of flange 12 and elevates or lowers it to the position desired.

While I do not desire to be limited to any specific dimensions, the following have been found entirely satisfactory:

Item	Dimensions
Wood counter top with 24 ga. stainless steel covering or linoleum covering.	¾" thick.
Sink frame	¾" x ¾" stainless steel or aluminum T-bar rounded on top and apertured or slotted to receive the anchor bolts.
Lug 21	A piece of mild steel ⅛" thick, ¾" wide and 1½" long with one ¼" hole and another hole threaded to receive a 5/32" adjusting screw.
Adjusting nut 25	A standard 5/32" square nut.
Anchor bolt 20	5/32" bolt formed with a rounded portion 19 as shown.
Adjusting screw 24	A standard 5/32" x 1" bolt.

In making an installation the opening is prepared in the counter top or drainboard 13 to allow the frame 15 to fit as shown in Figs. 1, 2 and 3. A clip 26 is nailed in each corner of the opening to hold the sink 11 until the adjustable clamping members are installed. The sink is placed in proper alignment by adjustment of bolts 32. Next, each lug 21 is set in place and each bolt 20 has its rounded head pressed into the opening in frame 15. Adjustments for different thicknesses of counter tops or drainboards are made by loosening or tightening nut 25. Then the sink bowl, the sink frame and the counter top or drainboard are finally clamped tightly in unison by tightening bolts 24. The nuts 25 and bolts 24 may be independently adjusted to adapt the clamping devices to a wide range of drainboard thicknesses and to prevent any tilting action of

the sink frame, thus assuring a neat water-tight joint between sink and drainboard. These results are accomplished with inexpensive and easily fabricated or procured components. The mounting maintains the sink and drainboard in rigid assembly even when they are subjected to very severe strains. The corner clips do not tilt under the weight of the sink bowl. Thus, it will be seen that the present invention successfully avoids the disadvantages and limitations of the prior art.

While there has been shown and described what is at present considered to be the preferred embodiment of the invention, it will be understood by those skilled in the art that many modifications and changes and substitutions of equivalents may be made therein without departing from the true scope of the invention as defined in the appended claims.

Having thus described my invention, I claim:

1. In a flanged sink bowl and drainboard assembly of the type including a T-section sink frame, a device for securing said bowl, drainboard and frame in assembly comprising a clamping member having portions extending outwardly beneath the drainboard and inwardly beneath the sink flange, adjustable means on the inner portion for clamping said bowl to said frame, and an independently adjustable coupler interconnecting said member and said frame for clamping said drainboard between said frame and the other portion of said member.

2. In an assembly of the type set forth in claim 1, a device in accordance with that claim, in which said adjustable coupler comprises a bolt having a hooked end extending through an aperture in said frame and a nut bearing against the underside of said clamping member for cooperating with said bolt to clamp a wide range of thicknesses of drainboard.

3. In an assembly of the type set forth in claim 2, a device in accordance with that claim, in which said bolt is located inwardly of said frame and in which said coupler prevents undesired frame tilting that would otherwise be caused by the adjustable means on said inner portion.

4. In a sink and drainboard assembly, a plurality of corner supporting elements each having upturned tongues attached to the intersecting sides of the drainboard opening and adjustable sink-elevating means projecting therethrough and an integral extension underlying the drainboard to prevent tilting, a flanged sink bowl adjustably positioned thereon, a sealing member having portions bearing downwardly against the top surfaces of the sink and drainboard and a depending portion therebetween, a plurality of spaced clamping members having independent coupling with openings in said sealing member, each clamping member having portions extending outwardly beneath the drainboard and inwardly beneath the sink flange, each clamping member having adjustable sink clamping means on the inwardly directed one of said portions, each clamping member being provided with means including the outer portion and an independently adjustable anchor between said sealing member and said clamping member for clamping said drainboard.

5. A clamping device for installation in a flanged sink, frame and drainboard assembly comprising a clamping member having independent coupling with said frame and provided with portions extending outwardly beneath the drainboard and inwardly beneath the sink, adjustable clamping means on said inwardly extending portion, and independent clamping means including the inwardly extending portion and an adjustable anchor between said member and an aperture in said frame for compressing said frame against the top of said drainboard.

6. In an assembly of sink and drainboard, a corner support for the sink comprising a member having upwardly turned tongues adapted to be independently secured to intersecting sides of the drainboard opening, an integral stiffening flange extending diagonally across the corner formed by said sides, and an integral tongue extending beneath the drainboard and contacting it to prevent tilting.

7. A clamping device for installation in a flanged sink, frame and drainboard assembly comprising a clamping member provided with portions extending outwardly beneath the drainboard and inwardly beneath the sink flange, adjustable clamping means on that one of said portions extending beneath the sink flange, and an anchor bolt mounted for independent adjustment between said frame and said clamping member, to draw together said frame, drainboard and clamping member.

8. A clamping device in accordance with claim 7 in which said anchor bolt has a portion passing through an aperture in said frame.

9. A clamping device for installation in a flanged sink, frame and drainboard assembly comprising a clamping member formed with horizontally extending portions passing under the sink flange and frame, adjustable sink-flange clamping means on one of said portions, and independently adjustable clamping means including the other of said extending portions and an adjustable tension element between said member and frame for compressing said frame against the top of said drainboard.

10. In a sink and drainboard assembly, a drainboard having an opening formed therein, a flanged sink bowl adapted to be adjustably supported in said opening, a sealing frame positioned in bearing relationship with the top surfaces of said sink bowl and said board and depending between them, a plurality of clamping members having independent coupling with said frame and each provided with portions extending outwardly beneath said board and inwardly beneath said sink flange, each member having adjustable clamping means compressing the sink flange on the inner one of said portions, and each member having means including the outer extending portion and an independently adjustable tension bolt between said frame and member for clamping said drainboard.

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The following references are of record in the file of this patent:

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