July 3, 1956 F. C. PHELPS 2,752,609

SINK MOUNTING

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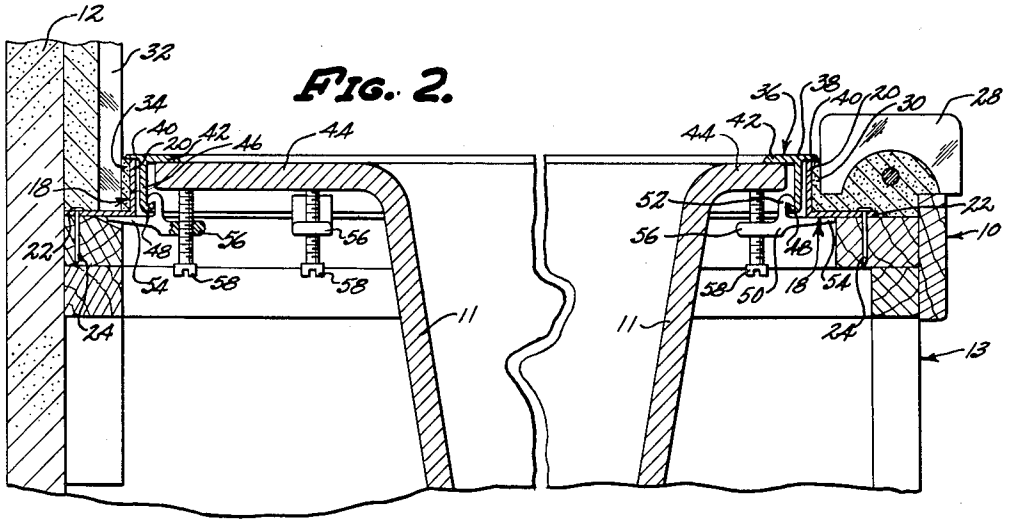


FIG. 2.

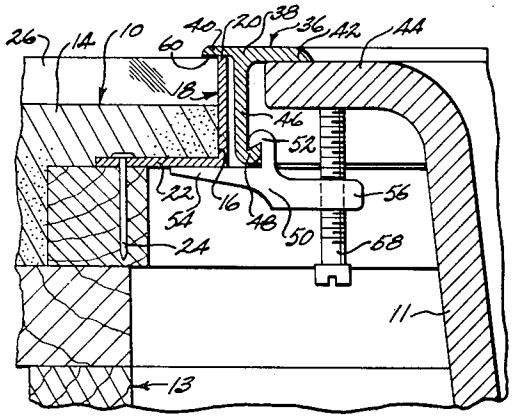


FIG. 3.

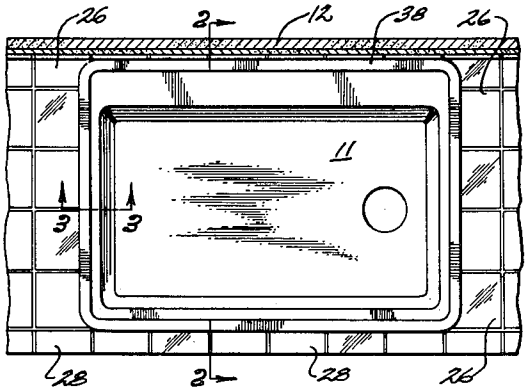


FIG. 1.

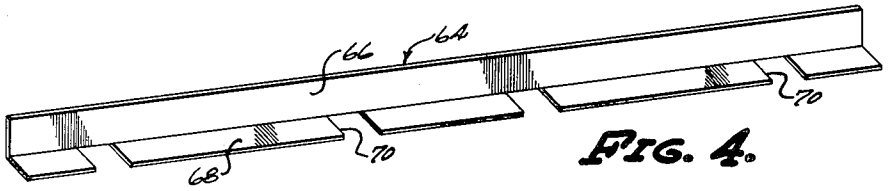


FIG. 4.

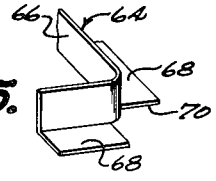


FIG. 5.

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SINK MOUNTING

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9 Claims. (Cl. 4—187)

The present invention relates in general to means for mounting items such as sinks in openings in counters or other supporting structures, the primary object of the invention being to provide an improved mounting means for such items. Since the invention may be used for mounting items other than sinks, such as lavatories, electric ranges, etc., it will be understood that the term "sink" is used broadly herein to cover such other items.

The usual practice in sink installations in residential buildings in particular is to provide a sink opening in a suitable supporting structure, which is customarily a cabinet structure topped by a drainboard, wood ordinarily being used for the drainboard and the cabinet structure. For water-proofing purposes, the drainboard is customarily provided with a suitable covering, such as linoleum, plastic, sheet metal, tile, or the like.

In recent years, it has become the practice to mount a sink in a sink opening in such a supporting structure by a suitable clamping means, the clamping means being engageable with the supporting structure adjacent the sink opening and either being carried by the sink itself, or being a separate device engageable with the sink. While such means of installing a sink works very well where the drainboard is covered with a material such as linoleum, plastic, or sheet metal, it has not been possible heretofore to mount a sink in this manner with a tile covering on the drainboard, one reason being that the clamping means, which is designed to clamp onto the covering material as well as the drainboard, tends to crack the tiling unless the cement used to secure the tiling is allowed to dry thoroughly for several days. A more important reason is that, in laying tile in the contional manner, it is impossible to provide a sink opening having dimensions sufficiently accurate to permit the use of such a clamping means, which requires an accurately dimensioned opening. In view of this, the use of such clamping means for mounting sinks has heretofore been restricted to installations having such drainboard coverings as linoleum, plastic, or sheet metal, and an important object of the present invention is to provide a sink mounting means which permits the utilization of such a clamping means with a tiled drainboard.

More particularly, an important object of the invention is to rim the sink opening with a rigid metallic frame of structural cross section which is secured to the sink supporting structure to provide an accurately dimensioned opening, the clamping means being engageable solely with such frame and not engaging the covering material on the drainboard.

Another object is to provide such a frame formed to fit a particular sink opening.

Still another object is to provide a member of structural cross section having a flange which is notched at intervals proportional to the lengths of the sink edges so that the member may readily be bent into the shape necessary to fit the sink opening.

The foregoing objects, advantages and features of the present invention, together with other objects, advantages

and features thereof which will become apparent, may be attained with the exemplary embodiments of the invention illustrated in the accompanying drawing and described in detail hereinafter.

Referring to the drawing:

Fig. 1 is a plan view of a sink installation embodying the invention;

Fig. 2 is a fragmentary sectional view on an enlarged scale taken along the arrowed line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view on a further enlarged scale taken along the arrowed line 3—3 of Fig. 1;

Fig. 4 is an isometric view of an alternative embodiment of the invention prior to forming; and

Fig. 5 is a fragmentary isometric view showing a portion of the embodiment of Fig. 4 after forming.

Referring to the drawing, the numeral 10 designates generally a supporting structure for a rectangular sink 11, the supporting structure 10 adjoining a wall 12 and including a cabinet structure 13 surmounted by a drainboard 14, Fig. 3, in the particular construction illustrated.

The supporting structure 10 provides an opening 16 for the sink 11, the sink opening 16 being rimmed by a rigid frame 18 of structural cross section, the frame 18 preferably being metallic and continuous. In the particular construction illustrated, the frame 18 is an angle section having a vertical flange 20 and a horizontal flange 22 extending outwardly relative to the sink opening 16. The frame 18 is secured to the supporting structure 10 in any suitable manner, as by nails 24 extending through the horizontal flange 22 and driven into various components of the supporting structure 10 as required. In the particular construction illustrated, the frame 18 is shown as having been installed before completion of the assembly of the supporting structure 10, various components of the supporting structure 10, such as the drainboard 14, Fig. 3, having been installed on top of the horizontal flange 22. As a matter of convenience, the frame 18 may be of aluminum, in which case the nails 24 may be driven through the horizontal flange 22 without any necessity for drilling holes therefor. However, if a metal such as steel is used, holes for the nails, or other fastening elements, may be drilled therethrough.

With the particular construction illustrated after the frame 18 has been assembled with the various elements of the supporting structure 10 in the manner discussed, the drainboard 14 is covered with tiles 26 in the usual manner, the tiles 26 adjacent the ends of the sink opening 16 being shown as abutting the vertical flange 20 of the frame 18. If desired, cement, not shown, may be introduced between the tiles 26 and the vertical flange 20. Trim tiles 28 are cemented in place along the front edge of the sink opening 16 in the usual manner, any space between the trim tiles 28 and the vertical flange 20 of the frame 18 being filled in with cement to the level of the top of the flange, as indicated at 30. The wall 12 is provided with a tile splash 32, again any space between the tile splash 32 and the vertical flange 20 of the frame 18 being filled with cement to the level of the upper edge of the vertical flange 20, as indicated at 34. The net result is that the vertical flange 20 of the frame 18 is rimmed with tile and/or cement to, or substantially to, the level of the upper edge of the vertical flange 20.

While a particular sequence of steps has been discussed heretofore for installing the frame 18 and the tiling, it will be understood that the invention is not limited thereto, it being possible to install the frame 18 in various other ways and at various other times in the assembly sequence. The net result desired is an accurately dimensioned sink opening rimmed by the frame 18, and it will be apparent that this may be accomplished in ways other than hereinbefore discussed.

Considering now the manner in which the sink **11** is mounted on the frame **18**, an illustrative clamping means **36** is provided for securing the sink **11** to the frame **18** preferably without placing any load on the tiling around the sink opening **16**, the clamping means **36** preferably engaging only the frame **18** and the sink **11**, especially where it is desired to install the sink immediately after tiling. The clamping means **36**, which, per se, forms no part of the present invention since it is conventional, is shown as including a T-shaped ring **38** having flanges **40** and **42** which respectively overlie and engage the upper end of the frame **18**, i. e., the upper edge of the frame flange **20**, and the upper surface of a peripheral flange **44** on the sink **11**. The T-shaped ring **38** is provided with a flange **46** which extends downwardly between the sink flange **44** and the frame flange **20** and which is provided with a hook **48** at its lower end. The clamping means **36** includes clamping elements **50** having hooks **52** complementary to and engaging the hook **48** at spaced intervals, the clamping elements **50** having arms **54** which fit under and engage the lower end of the frame **18**, i. e., the lower side of the horizontal frame flange **22**. The clamping elements **50** also have arms **56** through which are threaded screws **58** engaging the lower side of the sink flange **44**. As will be apparent, when the screws **58** are tightened, the sink **11** is clamped to the vertical flange **20** of the frame **18**.

In order to provide a seal along the ends of the sink **11**, cement may be placed between the tiles **26** and the flange **40** of the ring **38**, as indicated at **60** in Fig. 3. If the sink **11** is mounted by means of the clamping means **36** before the cement at **30**, **34** and **60** is completely set, a water-tight seal relative to the flange **40** of the ring **38** is provided all the way around the sink. Also, any excess cement is displaced upon tightening of the clamping means **36** when this procedure is followed, thereby insuring that all of the load represented by the weight of the sink **11** is carried exclusively by the frame **18**.

It will be understood that the particular clamping means **36** shown is illustrative only and that the invention may be utilized with other clamping means, e. g., one carried directly by the sink. In such a case, the sink flange may rest directly on the frame **18**, being secured by clamps carried by the sink flange and engaging the lower side of the frame **18**.

While the frame **18** may be preformed to accommodate a particular sink and sink opening, the frame may also be provided in strip form, such a frame being shown in Figs. 4 and 5 of the drawing and being designated by the numeral **64**. The frame **64** is also shown as an angle section, although other cross sections may be utilized, the frame **64** having a vertical flange **66** and a horizontal flange **68**. The latter is provided with notches **70** therein at intervals proportional to the lengths of the sides of the sink **11** so that the frame **64** may be bent readily at the notches **70** to provide the necessary corners, as shown in Fig. 5 of the drawing. By making the frame **64** of a readily bendable material, such as aluminum, the necessary forming can be done readily on the job without any special tools or equipment, which is an important feature.

Although I have disclosed exemplary embodiments of my invention herein for purposes of illustration, it will be understood that various changes, modifications and substitutions may be incorporated in such embodiments without departing from the spirit of the invention as defined by the claims which follow.

I claim as my invention:

1. In combination: a tiled supporting structure having an opening therein; a rigid frame of structural cross section rimming said opening and secured to said supporting structure, said frame having two ends which are spaced apart in the direction of the axis of said opening and which face away from each other; an object in said opening and encompassed by said frame; and means engageable with said ends of said frame for securing said object to said frame.

2. The combination defined in claim 1 wherein said frame is an angle section having a vertical flange and a horizontal, outwardly directed flange.

3. The combination defined in claim 2 wherein said frame is rectangular and wherein said horizontal flange is notched at the corners of said frame.

4. A rigid frame of structural cross section for supporting an object in an opening in a supporting structure, said frame and object being rectangular and the lengths of the sides of said frame being proportional to the lengths of the corresponding sides of said object, said structural cross section being an angle section having a vertical flange and an outwardly directed, horizontal flange, said horizontal flange being notched at the corners of said frame.

5. A frame for supporting a rectangular object in a rectangular opening in a supporting structure, including a member of structural cross section having a flange provided with four notches at intervals proportional to the lengths of the sides of said object.

6. In an apparatus for mounting an object in an opening in a supporting structure, the combination of: a rigid frame in and rimming the opening and secured to said supporting structure, said frame having two ends which are spaced apart in the direction of the axis of the opening and which face away from each other; a second rigid frame within the first frame mentioned and engaging one of said ends of said first frame, said object engaging said second frame; and clamping means connected to said second frame and engaging the other of said ends of said first frame and the object for securing the object and said second frame to the first frame.

7. In an apparatus for mounting an object in an opening in a supporting structure, the combination of: a rigid frame in and rimming the opening and secured to said supporting structure; a second rigid frame within the first frame mentioned and engaging said first frame, the object engaging said second frame; and clamping means connected to said second frame and engaging the object and said first frame for securing the object and said second frame to said first frame.

8. An apparatus as defined in claim 7, wherein said clamping means is pivotally connected to said second frame.

9. An apparatus as defined in claim 7, wherein said second frame and said clamping means respectively engage ends of said first frame which are spaced apart in the direction of the axis of the opening and which face away from each other, said clamping means comprising a plurality of clamps, each having means engaging one of said ends of said first frame and adjustable means engaging the object.

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