Jan. 24, 1961 F. J. HORNIK 2,968,815

RETAINING STRUCTURE FOR KITCHEN SINKS

Filed Aug. 16, 1957

FIG. 1

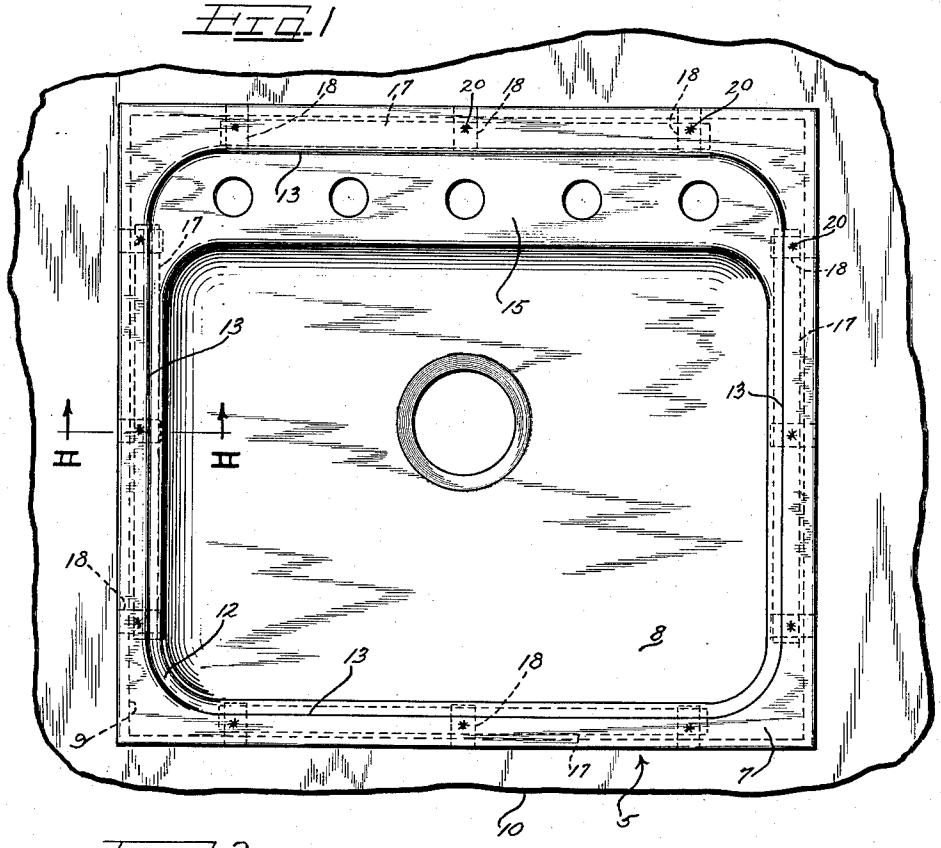


FIG. 2

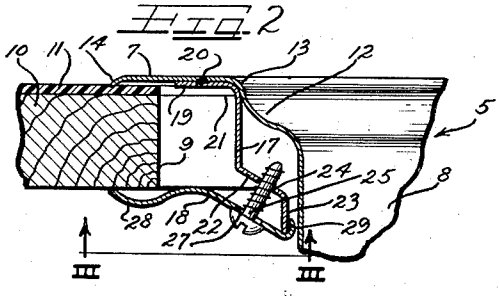


FIG. 3

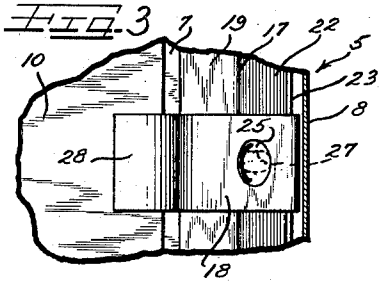
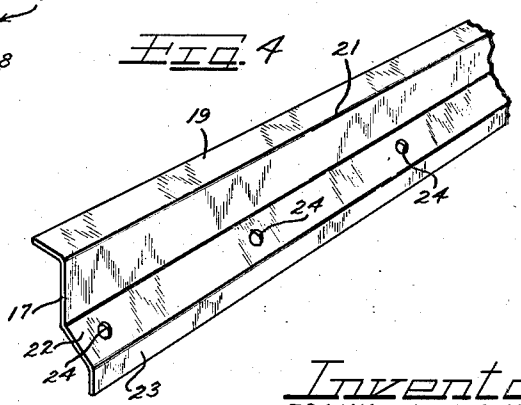


FIG. 4



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RETAINING STRUCTURE FOR KITCHEN SINKS

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8 Claims. (Cl. 4—187)

The present invention relates to improvements in retaining structures for kitchen sinks and more particularly concerns means for conveniently and efficiently retaining stainless steel or like sink bowls in position with respect to supporting sink top or deck structure.

An important object of the present invention is to provide improved means for quickly and effectively securing in place sinks of the self-rimming type.

Another object of the invention is to provide novel retaining bracket and securing clip structure for sink assemblies.

A further object of the invention is to provide improved retaining clip means for kitchen sink assemblies.

Still another object of the invention is to provide simple, inexpensive and easily installed retaining means for kitchen sinks adapted to be made from sheet metal stock.

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

Figure 1 is a fragmentary top plan view of a sink assembly showing details of the present invention;

Figure 2 is a fragmentary sectional detail view taken substantially on the line II—II of Figure 1;

Figure 3 is a bottom plan sectional view taken substantially on the line III—III of Figure 2; and

Figure 4 is a fragmentary perspective view of a bracket strip which may be utilized in attached relation to the rim flange of a sink member for engagement with the retaining clips by which retention of the sink bowl is effected.

Having reference to Figure 1, a sink bowl **5** which includes a continuous marginal rim flange **7** includes a bowl portion **8** depending below the rim flange and adapted to extend generally telescopically down into a suitable opening **9** in a deck or sink table top **10** which may be made of wood with a top veneer of hard plastic material or surfacing **11** which may be a thermosetting resin (Fig. 2). The construction and relationship are such that there is a substantial space between the edge defining the sink receiving opening **9** in the top member and the sink bowl portion **8** below the supporting continuous marginal rim flange **7**. At the front and sides of the sink bowl **5**, the upper margin of the sink bowl **8** has an out turned and inwardly sloping drain groove **12** which merges on a reinforcing rib juncture **13** with the lateral rim flange **7**, the latter having its extremity turned down as at **14** to effect a biting sealing engagement with the upper surface of the deck top surface **11**. At the back of the sink bowl, the drain groove is substantially widened to provide a ledge or shelf **15** for accommodating plumbing or the like.

After the sink bowl **5** has been assembled with the top deck **10** and with the bowl portion **8** depending in generally aligned relation through the top opening **9**, retaining, clamping structure including bracket means **17** carried by the sink and clip means **18** attached thereto secure the sink bowl against upward displacement from the

deck or top **10** and effect strong sealing engagement of the downturned extremity lip **14** of the sink rim with the deck surface material or layer **11**. To this end, the bracket means **17** may comprise, as shown, respective rolled strips of suitable gauge sheet metal of a length in each instance to accommodate a suitable plurality of the clips **18**. One longitudinal margin of the bracket strip is provided with an attachment flange **19** (Figs. 2 and 4) which is adapted to engage the underface of the rim flange **7** of the sink and is adapted to be attached thereto as by means of spot welding **20** (Figs. 1 and 2). A juncture rib **21** between the flange **19** and the angularly related body portion of the bracket **17**, in this instance depending below the marginal attachment flange **19**, is adapted to engage in nested position-locating relation within the downwardly and outwardly opening or facing groove within the reinforcing rib juncture **13** of the sink as best seen in Figure 2. This assures that the bracket strip **17** will be properly disposed in parallel relation with the respective edge of the sink with which the strip bracket is associated in each instance.

On its lower portion, the body panel or flange portion of the strip bracket **17** is provided with an oblique angular clip attachment flange panel **22** extending to the opposite side of the vertical portion of the bracket body panel from the marginal flange **19** and adapted in assembly with the sink to underlie the drain groove **12** and extend toward the adjacent vertical wall of the sink bowl portion **8**, with a depending angular lower marginal flange **23** lying in adjacent spaced relation to the sink bowl vertical wall. As shown in Figure 2, the depending lower marginal flange **23** projects below the lower face of the deck panel **10** in the assembly.

For attaching the retaining clips **18** to the bracket strip **17**, the bracket flange **22** is provided at suitable intervals with holes **24** into which the shanks of retaining screws **25** are adapted to be secured. The edges defining the apertures **24** may be tapped if preferred, but in a convenient arrangement the retaining screws **25** may be of the self-tapping sheet metal screw type so as to be self-retainable in the apertures **24**.

Effective retaining gripping engagement of the retaining clips **18** with the sink deck **10** to draw the sink rim **7** and more particularly the turned extremity **14** thereof against the top of the deck is promoted by a construction and relationship of the clips **18** to the bracket structure **17** to afford a more or less pivotal, pincers jaw relationship. To this end, the respective clips **18** are of generally elongated form but nevertheless of substantial width and are provided adjacent to one end of the body thereof with a preferably transversely centered and somewhat longitudinally elongated clearance aperture **27** through which the shank of the attaching screw **25** in each instance is adapted to pass freely while the head of the screw is engageable with the opposing face of the clip body about the aperture. Through this arrangement, the retaining clip is adapted to be drawn up by the screw **25** toward the bracket **17** and more particularly toward the intermediate oblique generally downwardly facing panel portion **22** of the bracket.

By having the adjacent end portion of the clip **18** engageable with the edge of the depending bracket marginal flange **23** to serve as a fulcrum or pivot bearing, so that the clip **18** can swing about the pivot bearing as a clamping lever or pincers jaw, the major extent of the clip **18** beyond the aperture **27** and projecting generally away from the bracket **17** in spaced relation below the sink rim flange **7** is grippingly drivable by the screw **25** into engagement with the underside of the deck or top **10** for thereby drawing the sink rim down tightly against the upper surface of the deck. To facilitate the drawing up action upon the clip, the apertured body portion there-

of is adapted to extend obliquely more or less parallel to the intermediate bracket panel flange 24, while a generally reversely, ogee curved gripping extremity or terminal portion 28 of the retaining clip has the end thereof turned to project generally upwardly into firm gripping engagement with the underside of the sink deck. Possible relative distortional slippage between the edge of the depending bracket fulcrum flange 23 and the engaged end portion of the clip 18 is avoided by a turned up interlock terminal 29 on the clip engageable behind the margin of the bracket flange in the space between such bracket flange and the adjacent vertical wall of the sink bowl portion 8, and affording a bearing groove.

It will be appreciated that by virtue of the described arrangement, assembly of the sink bowl portion 8 with the deck 10 is easily and conveniently effected by initially assembling the sink bowl by inserting the depending bowl portion into the deck opening 9 with the sink rim 7 overlying the margin of the deck defining the opening 9. The underside of the sink rim flange 7 carries the bracket strips 17 which due to their length and angular cross-section are fairly rigid and also reinforce the sink rim flange 7. Then, since the screw holes 24 in the intermediate bracket flange portion 22 are preferably located in some predetermined spaced order, such as for example three inches on center throughout the length of the strip bracket, the clips 18 can be conveniently located with respect to any obstructions, plumbing, or the like which might preclude locating any particular clip in a predetermined or fixed location along the sink rim as might be occasioned should individual brackets be provided for the individual clips. This does not mean that the use of individual brackets or the individual clips, generally similar to the instant disclosure may not be desirable in some instances, and it should be understood that the scope of the present invention contemplates such individual bracket arrangement. However, the strip form of the bracket 17 lends itself not only to economical rolling manufacture, but affords the indicated flexibility as to placement of the respective retaining clips 18, and in addition, of course, affords the desirable reinforcing of the sink rim mentioned hereinbefore. The strip form of the bracket 17 also lends itself well to either the nested aligned relationship with respect to the shoulder 21 thereof within the groove of the rib 13 of the sink bowl member along the sides and front as shown in Figures 1 and 2, but also lends itself to an easily jigged assembly arrangement where, as at the back of the sink in Figure 1 the space between the reinforcing rib 13 and the edge of the rim flange 7 is too great to warrant such internested relationship. In both instances, the elongated strip form of the bracket 17 can be conveniently mounted in proper relation to the edge of the sink rim flange and substantially parallel with the adjacent rim edge. Thereby a standard length of retaining clip can be used all around the sink.

By virtue of the simple attachment screw connection of the clips 18 to the brackets 17, attachment of the clips and tightening thereof can be effected easily by means of a simple screwdriver. By having the axes of the screws angled toward the sink bowl substantially as shown, convenience in applying the screwdriver is afforded. Furthermore, the elongated form of the screw aperture 27 in the retaining clips enables ready longitudinal adjustment of the retaining clips in the pivoted, pincers clamping engagement action thereof adjustably with respect to various thicknesses of the table or counter top 10 within a substantial range. Moreover, due to the resilience of the elongated clips 18 they are adapted to be drawn up under substantial resilient tension, being thereby somewhat resiliently intermediately flexed, and thus automatically compensate for or take-up with respect to any shrinkage that may eventually occur in the counter or deck or table top 10.

Any transverse shifting adjustments of the sink bowl relative to the counter top 10 or more especially with respect to the edges defining the sink opening 9 in the counter top can be readily effected during assembly to accommodate plumbing or other installation requirements, should that be necessary, by simply loosening the attaching screws of the several retaining clips and then retightening the same after the adjustment has been effected.

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 a sink construction including a sink bowl having a lateral rim flange, a bracket member including a flange attached to the underside of said rim flange and depending from said flange spaced from said bowl, with a lower portion of the bracket engageable by a retaining clip by which a counter top is clampingly engageable between said rim flange and such clip, said sink bowl and rim flange having an angular juncture and said bracket having on the upper portion thereof a shoulder at juncture of said attachment flange and the remainder of the bracket internested in said angular junction to establish the relative location of the bracket to the sink.

2. In a bracket strip of substantial length to be utilized in attached relation to the underside of a self-rimming sink rim flange, an upper flange extending lengthwise of the strip and engageable against the underside of the sink rim flange for attachment thereto, a depending body portion of the bracket strip along one edge of said flange and having a lower portion thereof angled obliquely away from said flange, said oblique angular lower portion having a depending terminal flange for engagement thereagainst of a retaining clip, said oblique angular portion having a spaced series of apertures therethrough for receiving clip attaching means.

3. In a sink structure including a sink bowl having a laterally projecting rim flange on the upper end thereof for engagement with the top of a counter top or deck, a bracket having a flange attached to the underside of said rim flange and having a depending body portion spaced from said sink bowl, said body portion having a lower angular portion directed generally toward the sink bowl but terminating in spaced relation thereto and having a depending flange terminal spaced from the sink bowl and adapted to receive thereagainst a fulcrumed end of a retaining clip, said angular lower portion of the bracket body portion having means for engagement by clip attaching means.

4. In a sink assembly including a top member, a sink having a bowl depending below an edge of the top member and the bowl having a lateral rim flange overlying the top member and resting thereon, the sink bowl being spaced from the edge of said top member a limited distance, a bracket having a flange secured to the underside of the rim flange and having a body portion depending below the rim flange in spaced relation to the sink bowl, said body portion having a lower obliquely angled portion directed generally toward the sink bowl but spaced therefrom and with a depending terminal flange spaced from the sink bowl, said obliquely angled body portion facing generally downwardly and away from the sink bowl, a retaining clamping clip having an end portion in fulcrumed engagement with said depending terminal flange, a leg projecting therefrom into engagement with the underside of the top member, and means secured between the clip and said obliquely angled portion of the bracket and drawing said leg into clamping engagement with the underside of the top by fulcruming about said fulcrumed engagement with said depending terminal flange.

5. In a sink assembly including a top member, a sink having a bowl depending below an edge of the top member and the bowl having a lateral rim flange overlying the top member and resting thereon, the sink bowl being spaced from the edge of said top member a limited

distance, a bracket having a flange secured to the underside of the rim flange and having a body portion depending below the rim flange in spaced relation to the sink bowl, said body portion having a lower obliquely angled portion directed generally toward the sink bowl but spaced therefrom and with a depending terminal flange spaced from the sink bowl, said obliquely angled body portion facing generally downwardly and away from the sink bowl, a retaining clamping clip having an end portion in fulcrumed engagement with said depending terminal flange, a leg projecting therefrom into engagement with the underside of the top member, the clip having an aperture therethrough, said angled bracket portion having an aperture therethrough, and a screw extending through the aperture of the clip and threadedly engaging in the aperture in the angled bracket portion and drawn up to engage said leg clampingly against the underside of the top member and drawing said sink flange thereby against the upper side of the top member.

6. In a sink structure including a sink bowl having a lateral rim flange at the top thereof, a bracket member secured to the sink structure immediately under the rim flange and spaced from the free margin thereof to enable engagement of the free margin of the rim flange upon a table top, said bracket member having a portion thereof facing generally downwardly and being located substantially outwardly relative to the sink bowl, said portion being provided at its inner side adjacent to but spaced from the sink bowl with a depending fulcrum portion which provides a downwardly directed fulcrum spaced substantially below the downwardly facing portion, a retaining clip having on one end portion thereof a bearing rockably engaging the fulcrum and including means to retain the fulcrum and the bearing against lateral displacement, the inner terminus of said one end portion being accommodated in the space between the sink bowl and the depending fulcrum portion, the principal extent of the clip projecting outwardly beyond said bearing, away from the sink bowl and spaced below said downwardly facing bracket portion into underlying relation to said free margin of said lateral rim flange for engaging under the marginal portion of a table top upon which the rim flange free margin rests, and means extending through the space between and connecting said downwardly facing portion of the bracket and said principal portion of the clip and spaced outwardly from said fulcrum and manipulable to draw the clip upwardly pincers-like about said fulcrum to effect a clamping engagement of the clip with the underside of the table top marginal portion interposed between the clip and said free margin of the rim flange.

7. A sink structure as defined in claim 6 wherein said bearing of the one end portion of the clip comprises a groove within which said fulcrum is engaged.

8. In a sink structure including a sink bowl having a lateral rim flange at the top thereof adapted to rest in sink supporting relation upon the upper side of the margin of a table top having an edge below which the sink bowl depends, a bracket member carried by the sink structure in position to be adjacent to such a table top edge and having a generally downwardly facing bracket portion located outwardly from the sink bowl and provided at its inner side with a fulcrum portion providing a fulcrum spaced a substantial distance below said downwardly facing bracket portion, an elongated resiliently flexible retaining clip having an inner end portion rockably engaging said fulcrum and projecting outwardly below and in substantially spaced relation to said downwardly facing bracket portion and outwardly therebeyond for engagement at the outer end portion of the clip with the underside of a counter top margin on which said rim flange rests, and a draw-up member extending through the space between said clip and said downwardly facing bracket portion and connecting the same and manipulable to draw the clip rockably upwardly about said fulcrum into pincers-like coaction relative to said rim flange to grip various thicknesses of table top, said draw-up member being in engagement with the inner end portion of the clip spaced outwardly from the point of engagement with said fulcrum and with the major extent of the clip projecting outwardly beyond the take-up member whereby the clip is adapted to be drawn up under substantial resilient tension and resilient intermediate flexing for thus automatically compensating for or take-up with respect to any shrinkage that may eventually occur in the table top, whereby to maintain the rim flange in firm sealing engagement with the top of the table top.

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