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SELF-RIMMING SINK MOUNTING

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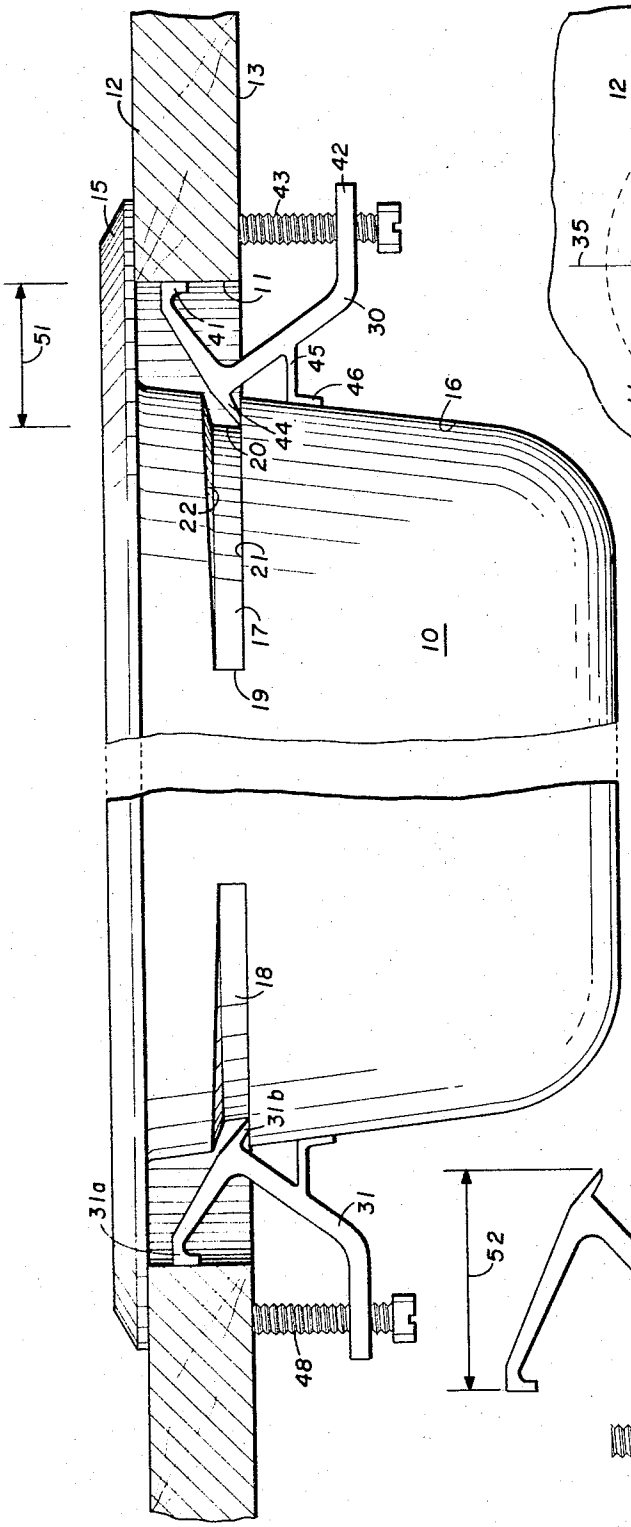

FIG. 1

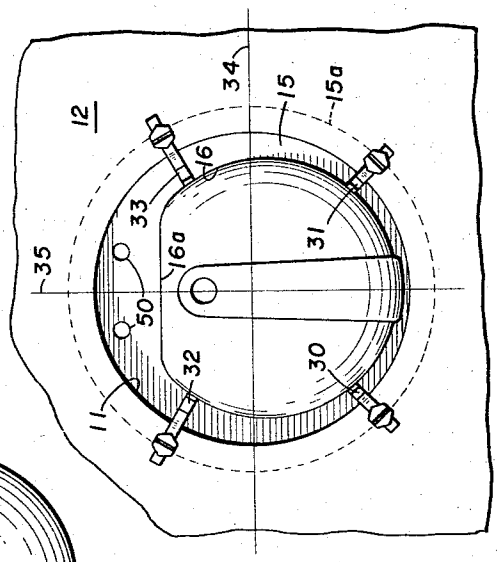

FIG. 2

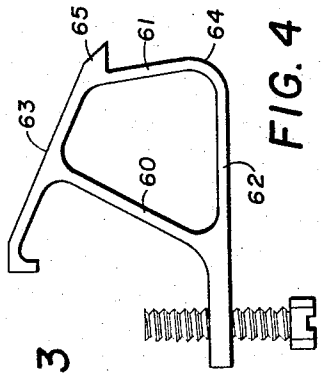

FIG. 4

FIG. 3

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SELF-RIMMING SINK MOUNTING

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ABSTRACT OF THE DISCLOSURE

A mounting system for a sink or lavatory bowl having a flat peripheral rim including a mounting panel having an opening for receiving the bowl. A horizontal groove is formed in the outer wall structure of the bowl having an upwardly and outwardly facing surface spaced below the undersurface of the rim. A pair of C-shaped clamps are positioned in the front quadrants of the bowl and engage the inner surface of the opening at an upper end of each of the clamps. Each of the clamps also engages the upfacing surface of the groove in the bowl at an intermediate point. Each of the clamps has an adjustable screw threadedly received in the lower end thereof for engaging the undersurface of the panel. A strut member extends from an intermediate point of each clamp to abut the side of the bowl. Another pair of similarly configured C-shaped clamps are disposed in the back quadrants of the bowl for engaging the opening in the panel, other grooves formed in the bowl, and the underside of the panel to provide secure support to the bowl.

This invention relates to sink or lavatory installations and, more particularly, to the clamping of rimmed sanitary units.

Various types of fixtures have been heretofore devised for securing sanitary units, such as lavatories and the like, substantially flush in a mounting or supporting panel. In sanitary ware adapted to be flush mounted with a surface, the rim of the unit is positioned inside an opening in the panel. Various frames have been employed with clamping means for securing a unit as to depend from the clamping mechanism, where it is maintained by such clamping mechanism in contact with the under surface of the frame, establishing a substantially watertight joint around the edge of the unit.

Rimmed units adapted to overlie the edge of an opening in a panel have presented a more difficult problem. Various types of fastening means have been employed for clamping such units in place. The present invention represents an improvement over such prior art systems and provides a unique combination of a rimmed unit and a clamp.

More particularly, in accordance with the present invention, a mounting is provided for rimmed sanitary units having a bowl depending from the rim and extending through a hole in a support panel. Structure on the bowl provides for an annular peripheral groove spaced from the under edge of the rim. A C-shaped clamp is provided for three-point contact. The first point is at the center of the clamp where a clamp lug engages the upfacing edge of the peripheral groove. The second point is the corner formed by the under side of the rim and the inner face of the panel opening. The third point is an adjustable contact provided by a screw member which is served through the lower extremity of the C-shaped clamp and engages the underside of the panel immediately under the under surface of the rim.

For a more complete understanding of the present invention and for further objects and advantages thereof, reference may now be had to the following description

taken in conjunction with the accompanying drawings in which:

FIGURE 1 is a front view of a rimmed lavatory mounted on a panel shown in section;

FIGURE 2 is a bottom view of a lavatory installation employing four clamps;

FIGURE 3 illustrates a rear clamp to be employed in connection with the front clamp shown in FIGURE 1; and

FIGURE 4 illustrates a modification of the clamp of FIGURE 3.

Referring now to FIGURE 1, a lavatory **10** is shown mounted in an opening **11** in a panel **12**. The lavatory **10** has a rim **15** which extends as an integral part of, but substantially beyond the periphery of a bowl **16** which is integral with rim **15**. The lavatory is thus adapted to be placed in a circular opening **11** in the panel **12** and to be clamped therein.

The bowl **16** is formed with a pair of grooves **17** and **18**. The groove **17** extends from a point **19**, of zero depth, around the right side of the lavatory **10** to a like point on the rear surface of the basin. The maximum depth point **20** of the groove is found midway along the side of the bowl **16**. The groove **18** similarly is shaped as to be of varying depth as it encircles the left side of the bowl **16**. The groove **17** has a lower or upfacing surface **21** which is planar and parallel to the under surface of the rim **15**. Groove **17** has an upper surface **22** which is slightly beveled upward and outward. Groove **18** is of like configuration.

In the embodiment shown in FIGURE 1, the surface **21** of the groove **17** lies in the same plane as the bottom surface **13** of the panel **12**. It is to be understood that this relationship is not in any way critical. The system may be employed with panels either thicker or thinner than panel **12**.

As best shown in FIGURE 1, the lavatory is clamped in opening **11** by clamps **30** and **31**. Clamps **30** and **31** are shown positioned along line **32**, FIGURE 2, which is transverse to the front-to-back axis **35** of the installation.

Clamp **30** is of C-shaped configuration, having an upper tip **41** which has surfaces facing upwardly and outwardly at right angles one to the other. The upward facing surface engages the under side of the rim **15**. The outwardly facing surface abuts the inner face of the opening **11**. The lower tip **42** of the C-shaped clamp **30** has a threaded opening through which a screw **43** passes. The screw **43** is adjustable and is designed to engage the under surface **13** of the panel **12**. A lug **44** extends outwardly from an intermediate portion of the spine of the C-shaped clamp **30**. The lug **44** faces downward and extends into the groove **17** to engage the lower surface **21** thereof. A strut **45** is provided with a face plate **46** which engages the outer surface of the bowl **16** at a point below the groove **17**.

It will readily be seen that with the lug **44** engaging the surface **21** of groove **17**, movement of the screw **43** upward will exert a downward pressure on the groove **17**. The rim **15** is thus forced down onto the upper surface of the panel **12**. Similarly, the screw **48** in clamp **31** causes a similar force to be exerted on the left side of the lavatory **10**.

Having described the general nature of the lavatory and the associated clamps, reference should now be had to FIGURE 2 wherein a preferred mode of clamping a lavatory has been illustrated.

Bowl **16** is of circular form. Bowl **16** is located as to be eccentric with respect to the circular opening **11** in the panel **12**. That is, the front of the bowl **16** is much closer to the perimeter of the opening **11** than the back. The back portion of the bowl **16** is truncated along line **16*a*** so that there will be adequate room for fittings to be in-

stalled in the supply openings **50** extending through the rear portion of the rim **15**.

The outer perimeter of the rim **15** is represented by the dotted line **15***a*. The flange thus overlies the upper surface of the panel **12**. In practice, the clamps **30** and **31** are positioned at points corresponding with 135° and 225°, respectively, from the longitudinal axis **35**. The lateral span of clamps **30** and **31** may be relatively small, as of dimension **51**. To install, the short clamps **30** and **31** are inserted into the space between the bowl **16** and the inner wall of the opening **11** at the rear of bowl **16**. By sliding the clamps **30** and **31** forward along the respective grooves, they will reach positions where the outer faces of the tip **41**, and its counterpart on clamp **31**, will abut the inner surface of the opening **11**, and flange **46** and its counterpart contact the surface of the bowl **16**.

Preferably, the opening **11** will be sized and the bowl positioned such that the clamps **30** and **31** will register with the bowl and the opening at about the 135° and 225° locations, as shown in FIGURE 2.

Preferably, the installation will involve the use of four clamps. Two of the clamps will be short, having the lateral span **51**. The rear clamps **32** and **33** will be of the type illustrated in FIGURE 3. Clamp **32**, FIGURE 3, has the same general features as clamps **30** and **31**. It differs principally in its greater lateral span **52**. With the greater span, the clamps **32** and **33** are placed in position at the rear of the bowl **16**. By sliding them outward, they will make contact with the opening **11** and with the surface of the bowl **16** at points in the region of 45° and 315° locations. With the clamps thus positioned, the screws **43**, **48** and **53** may be tightened, firmly to clamp the lavatory in position.

From the foregoing, it will be seen that there is provided a combination of a lavatory having a circular bowl and an integral rim, a clamp, and a mounting panel having a circular opening therein. The bowl is characterized by a grooved structure below the rim. The bowl is positioned eccentrically within a circular opening in the panel. Clamps, adapted to engage the corner formed by the lavatory rim and the panel opening, also engage the upper surface of the bowl groove. The clamps are provided with contrasting lateral spans for applying forces to the bowl at points spaced along the periphery of the bowl.

In FIGURE 4, a modified form of the clamp has been shown. While in FIGURE 3 the clamp is shown as being a relatively heavy section, the corresponding support is provided in the system of FIGURE 4 by the struts **60** and **61** which extend between the bottom flange **62** and the upwardly sloping top flange **63**. The shoulder **64** serves to engage the outer surface of the bowl as the lug **65** engages the surface of the groove. It will be noted that the lug **65** is not slotted or relieved as is the case in FIGURES 1 and 3. It will be understood that a lug configuration, as shown in FIGURE 4, may be employed in the lugs of FIGURES 1 and 3, if desired. The lugs of FIGURES 1 and 3 are preferred over the lug of FIGURE 4 primarily because of the ease of extrusion of sections from which the units can be fabricated. However, the lugs may be formed from extruded material, they may be pressed, or otherwise fabricated.

The two grooves **17** and **18** are characterized by depths which are graded from zero depths at the ends thereof to maxima depths at the midpoints thereof. While such grooves have been shown in FIGURE 1, it will be appreciated that, where the wall of the bowl **16** is of sufficient thickness, a continuous groove may be used.

Further, while a round bowl has been shown in FIGURES 1 and 2, it will be appreciated that other shapes may be employed. Oval or square bowls may be mounted in the same manner as illustrated in FIGURES 1 and 2 where a peripheral groove portion of the bowl serves to seat the clamps. Where the clamps are of the configuration illustrated in FIGURES 1, 3 and 4, they may be inserted by sliding a lug along the periphery of the bowl as

to become wedged in a groove. However, they may also be inserted by loosening the screw such as screw **48**, FIGURE 1, and tilting the clamp **31** such that the upper tip **31***a* extends up into the corner bounded by the wall of the opening **11** and the under surface of the rim **15**. The tab **31***b* may then be rotated into the groove **18**. As the screw **48** is then tightened, the end **31***a* will slide downward along the walls of the opening **11**.

Having described the invention in connection with certain specific embodiments thereof, it is to be understood that further modifications may now suggest themselves to those skilled in the art and it is intended to cover such modifications as fall within the scope of the appended claims.

What is claimed is:

1. In an installation of a fixture having a bowl extending through an opening in a support panel and a rim extending from the perimeter of the bowl and engaging the upper surface of the panel, the combination which comprises:

(a) bowl structure having at least one outwardly facing groove with a horizontal upfacing grooved surface spaced a predetermined distance below the lower surface of said rim,

(b) a C-shaped clamp having upper and lower tips, an outwardly facing surface of said upper tip engaging a surface within said opening and said lower tip spaced below said support panel,

(c) a lug extending outwardly from a midportion on said C-shaped clamp a distance below the outwardly facing surface of said upper tip to engage the upfacing surface of said groove,

(d) a strut member extending from said C-shaped clamp a distance below said lug and engaging the side portion of said bowl, and

(e) a screw member engaging and extending through said lower tip of said C-shaped clamp along a line which lies on the side of said upper tip opposite said lug for engaging the lower surface of said panel.

2. The combination set forth in claim **1** in which said groove portion in the bowl has a depth which is graded from zero at the ends thereof to a maximum at the midpoint thereof.

3. The combination set forth in claim **1** wherein the height of said C-shaped clamp is substantially greater than the thickness of said panel.

4. A mounting system for a ceramic flat-rimmed bowl which comprises:

(a) a mounting panel having an opening therein,

(b) an outer wall structure on said bowl having upwardly and outwardly facing peripheral groove means spaced a predetermined distance below the under surface of said rim, said bowl being positioned in said opening in said panel and engaging a portion of the upper surface of said panel,

(c) a first pair of C-shaped clamps positioned in the front quadrants, respectively, of said bowl and engaging the inner surface of said opening at an upper end of each C-shaped clamp, engaging an upfacing surface of said groove means at one intermediate point on each said clamp, engaging a side portion of said bowl at another intermediate point on each said clamp, and having an adjustable screw member threadably disposed in a lower end of each said clamp for engaging the under surface of said panel, and

(d) a second pair of C-shaped clamps similarly engaging said opening, said groove means, and said panel in the back quadrants of said bowl.

5. The combination set forth in claim **4** in which said opening and the upper portion of said bowl are generally circular and are eccentrically oriented, one with respect to the other, and in which the lateral span of the second pair of clamps is substantially greater than the lateral

span of the first pair of clamps to maintain the eccentric relationship between said bowl and said opening.

6. A lavatory adapted to accommodate clamping means comprising a ceramic body having a bowl structure integral with a wide peripheral flange at the upper edge portion of the bowl and integral with structure forming an exterior peripheral outfacing surface below said flange for engagement by said clamping means, said upfacing surface having horizontal widths which are graded from zero at the ends thereof to maxima at the midpoints thereof.

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