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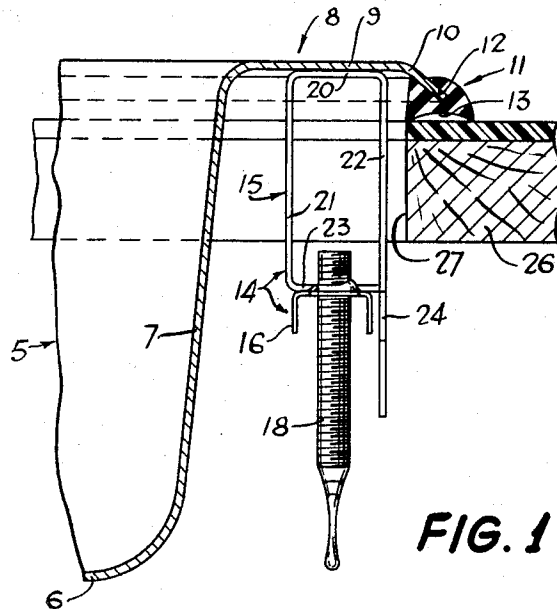
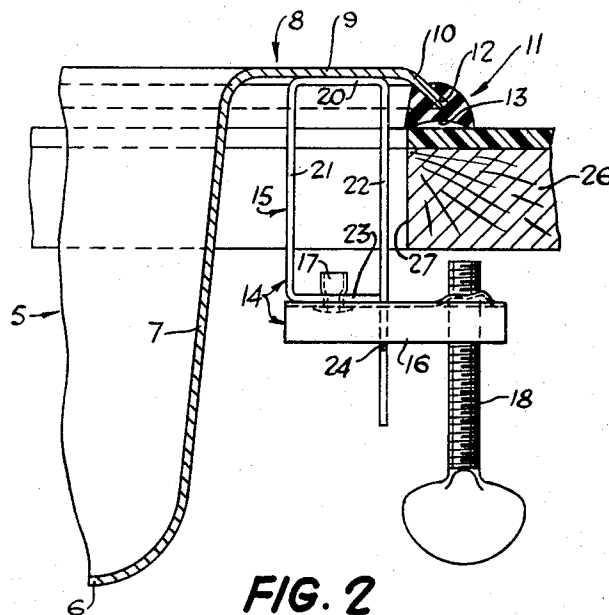
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SELF-RIMMING PLUMBING FIXTURE

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2 Sheets-Sheet 1



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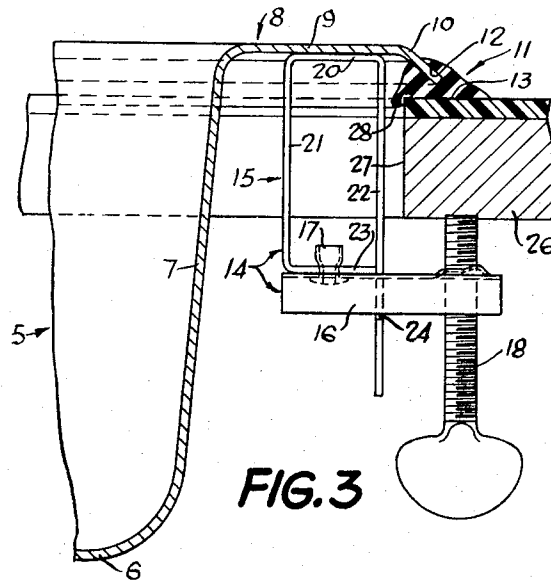
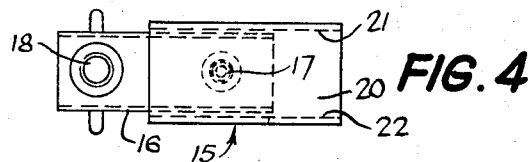
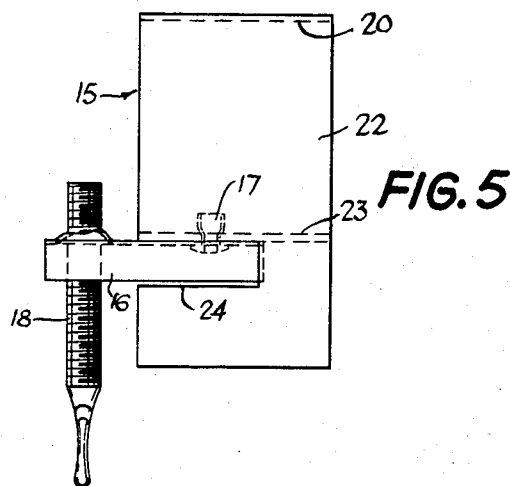
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SELF-RIMMING PLUMBING FIXTURE

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7 Claims. (Cl. 4-187)

This invention relates to improvements in the construction and installation of so-called "self-rimming" plumbing fixtures such as a sink, basin, or the like, comprising an open-top body portion having a bottom wall, a continuous marginal wall extending upwardly from said bottom wall and a continuous peripheral rim formed integral with and projecting outwardly from the upper edge of said marginal wall, said rim being adapted for supporting engagement with the upper surface of a drain-board, cabinet top, table or other supporting structure having an opening in which the body portion of the fixture is fitted.

A salient feature of the invention is the provision of rim-cushioning sealing means enabling a tight seal to be obtained between the rim of the fixture and the upper surface of the supporting structure without the use of the sealing compounds ordinarily employed for this purpose, said sealing means comprising a continuous, non-metallic, resiliently compressible, sealing strip carried by and underlying the rim of the fixture and having a normally transversely curved concave bottom surface adapted to be flattened against the upper surface of the fixture supporting structure in tight sealing engagement therewith, said sealing strip providing a stress reducing cushioning effect which prevents or minimizes flaking of enamel from the rim of the fixture when the latter is secured in place by clamping means serving to clamp the rim and its attached sealing strip to the upper surface of the supporting structure with sufficient pressure to effect the aforesaid flattening of the concavely curved bottom surface of the sealing strip into tight sealing engagement with the upper surface of said supporting structure.

According to another feature of the invention, the bottom curvature of the sealing strip and the positioning thereof is such that when the sealing strip is flattened against the upper surface of the supporting structure, the inner bottom edge portion of the sealing strip is forced into the fixture-receiving opening of the supporting structure in the form of a continuous depending lip-like projection which serves both to center the fixture with reference to said opening and to provide an abutment engaging the marginal wall of said opening to resist lateral movement of the fixture.

A further feature of the invention consists in the provision of improved clamping means for clamping the rim-carried sealing strip of the fixture against the upper surface of the supporting structure after the body portion of the fixture has been passed downwardly through the fixture-receiving opening in said supporting structure, said clamping means comprising a plurality of clamping devices carried by and depending from said rim and suitably spaced around the body portion of the fixture, each of said clamping devices including a hanger secured to and depending from the rim, a clamp plate pivotally secured to said hanger to swing about a vertical axis located adjacent one end of said plate and a vertically extending clamping screw threaded through said clamp plate adjacent the opposite end of said plate, said clamp plate and clamping screw being swingable about the pivotal axis of the clamp plate to a normally retracted position permitting the clamping devices to be passed downwardly through the opening of the supporting structure during the positioning of the body portion of the fixture, said clamp

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plate and screw being subsequently swingable to an operative position in which the screw-carrying end of the clamp plate and the clamping screw are disposed beneath a downwardly facing surface of the supporting structure against which the clamping screw is then jammed to clamp the sealing strip against the upper surface of the supporting structure.

In the preferred execution of the invention selected for illustration, the rim of the fixture is shaped to provide a generally horizontal main section and a downwardly directed outer marginal portion, the latter being preferably, but not necessarily, directed downwardly and outwardly at an oblique angle to said main section. The downwardly directed outer marginal portion of the rim is attached to the sealing strip by securing it in a continuous groove extending downwardly from the upper surface of the sealing strip at an angle corresponding to the angular disposition of the outer margin of the rim with respect to the main portion of the rim. The formation of the rim with an outer marginal portion directed downwardly and outwardly at an oblique angle to the main section of the rim is preferred because this gives the rim a greater degree of flexibility for compensating for irregularities in the upper surface of the supporting structure against which the sealing strip is clamped.

Reference will now be had to the accompanying drawings, in which:

FIG. 1 is a view partly in vertical section and partly in elevation of a fixture designed and installed in accordance with the invention. In this view, the body portion, rim and sealing strip of the fixture and the supporting structure are shown in section while one of the clamping devices carried by the fixture is shown in elevation with the clamp plate and clamping screw in a retracted position which permits the clamping device to be passed downwardly through the fixture-receiving opening of the supporting structure.

FIG. 2 is a view similar to FIG. 1 but showing the clamping plate of the clamping device swung to a position in which the screw carrying end of the clamp plate and the clamping screw are disposed beneath a downwardly facing surface of the supporting structure.

FIG. 3 is a view similar to FIG. 2 but showing the clamping screw in clamping engagement with a downwardly facing surface of the supporting structure.

FIG. 4 is a plan view of one of the clamping devices per se.

FIG. 5 is a side elevational view of the clamping device assembly shown in FIG. 4.

The fixture provided in accordance with the present invention is generally indicated at 5. As previously stated, it comprises a bottom wall 6, a generally vertical continuous marginal wall 7 and a continuous peripheral rim 8 formed integral with and extending outwardly from the upper edge of wall 7. Flange 8 preferably comprises a substantially horizontal main section 9 and a downwardly directed outer marginal portion 10 inclined downwardly and outwardly from the main portion 9.

The continuous, resiliently compressible, non-metallic sealing strip provided in accordance with the invention is generally indicated at 11 and is preferably plastic material such, for example, as poly-vinyl chloride. The downwardly and outwardly inclined marginal portion 10 of rim 8 is secured in a correspondingly inclined continuous groove 12 extending downwardly and outwardly from the upper surface of sealing strip 11 and having its mouth portion positioned closely adjacent the inner upper edge of the sealing strip. The bottom surface of sealing strip 11 is concavely curved in the transverse direction thereof as indicated at 13. As shown in FIGURE 1, the concavely curved surface extends continuously from edge to edge of the strip.

One of the fixture clamping devices provided in accordance with the invention is shown in the drawings and is generally indicated at 14. This clamping device consists essentially of a clamp hanger 15 secured to and depending from the main section 9 of rim 8; a clamp plate 16 pivotally secured to hanger 15 to swing about a vertical pivotal axis 17 located adjacent one end of said plate and a clamping screw 18 extending upwardly through a threaded opening formed in clamp plate 16 adjacent the opposite end of said plate.

In the present instance, hanger 15 is shown as comprising a top member 20 secured to the underside of main section 9 of rim 8, side members 21 and 22 depending from top member 20 and a bottom member 23 interconnecting said side members, the side member 22 extending below bottom member 23 and being provided with a horizontal slot 24 extending inwardly from one vertical edge thereof.

The apertured supporting structure for supporting the fixture 5 is represented in the present drawings by a panel-like top member 26 having an opening 27 through which the body portion 5 of the fixture and the clamping devices 14 are passed downwardly to initially dispose the sealing strip 11 in supporting engagement with the upper surface of supporting member 26. During this initial mounting of the fixture, the component parts of each clamping device are disposed as shown in FIG. 1, the clamp plate 16 being disposed in a retracted position located parallel with and inwardly of the adjacent marginal wall of the supporting structure opening 27 to enable the clamping device 14 as a whole to be passed downwardly through said opening along with the fixture body 5. After the initial mounting of the fixture illustrated in FIG. 1, clamp plate 16 is swung through an angle of 90° to the position shown in FIG. 2. In this position of the clamp plate, the screw carrying end of said plate and the clamping screw 18 are positioned directly beneath a downwardly facing bottom surface of the fixture supporting member 26. The clamping screw 18 is then threaded upwardly through clamp plate 16 into threaded engagement with the opposing downwardly-facing surface of the supporting member 26 to thereby cause the lower transversely curved bottom surface 13 of sealing strip 11 to be flattened against the upper surface of supporting member 26 in tight sealing engagement therewith as shown in FIG. 3. During this flattening thereof, sealing strip 11 is deformed so that its inner lower edge portion is forced downwardly into opening 27 in the form of a continuous downwardly-projecting lip 28 which serves to center the fixture 5 with reference to opening 27 and, at the same time, to provide an abutment lip which resists lateral movement of the sealing strip 11 and the fixture 5 relative to supporting member 26.

Ordinarily, when the rim of a self-rimming fixture of the type to which the present invention relates is forced downwardly into direct sealing engagement with the upper surface of the supporting structure in which the body portion of the fixture is mounted, the stresses set up in the rim are apt to cause flaking of the enamel and possibly other damage to the rim. This is avoided in accordance with the present invention due to the provision of the resiliently compressible, non-metallic sealing strip 11 which acts as a cushioning element between the rim and the upper surface of the supporting structure and also provides a tight seal between the rim and the supporting structure.

When it is desired to remove the fixture 5, this is easily accomplished by slackening off the clamping screws 18 of clamping devices 14 and swinging the clamp plates 16 from the position shown in FIG. 3 to the position shown in FIG. 1 so that the fixture and the clamping devices may be removed upwardly through the opening 27 as a unitary structure.

The inner vertically extending wall of the slot 24 formed in the side member 22 of clamp hanger 15 provides a stop which engages and prevents further swinging

movement of the clamp plate 16 after the latter has been swung through an angle of 90° in an anti-clockwise direction from the position shown in FIG. 1 to the position shown in FIG. 3.

While FIGURES 1-5 of the drawings and the accompanying description of these figures relate to the preferred embodiment of the invention in which a sealing strip is located between the peripheral rim of the fixture and the supporting structure, it should be understood that a fixture incorporating the clamping structure of the invention may be supported directly on the supporting structure 26 without the provision of a sealing strip. When the sealing strip is omitted, the clamping structure will operate in the manner described heretofore except that the fixture rim will be held in engagement with the upper surface of the supporting structure when the clamping screws are tightened.

What we claim is:

1. A plumbing fixture of the self-rimming sink or bowl type comprising an open top body portion adapted to be installed in an opening provided in a supporting structure, said body portion including a bottom wall, a continuous marginal wall extending upwardly from said bottom wall and a continuous rim extending outwardly from the upper edge of said marginal wall and adapted for supporting engagement with an upper surface portion of the supporting structure bounding the opening, in which the body portion of the fixture is fitted and a continuous, non-metallic, resiliently compressible, sealing strip carried by and underlying said rim and adapted for sealing engagement with the portion of the supporting structure underlying said rim, said sealing strip presenting a bottom surface concavely curved in the transverse direction thereof, the concavely curved surface extending continuously from edge to edge of the strip.

2. A plumbing fixture as set forth in claim 1, including clamping means carried by said fixture and engageable with the fixture supporting structure for exerting downward pressure on said sealing strip to cause the bottom surface of the sealing strip to be flattened against the underlying portion of said supporting structure in tight sealing engagement therewith.

3. A plumbing fixture as set forth in claim 1, including clamping means carried by said fixture and engageable with said supporting structure for exerting downward pressure on said sealing strip to cause the bottom surface of the sealing strip to be flattened against the underlying portion of said supporting structure in tight sealing engagement therewith, the curvature of the sealing strip and the positioning thereof being such that when the sealing strip is flattened against the supporting structure by said clamping means the inner bottom edge portion of the sealing strip is forced into the fixture receiving opening of the supporting structure in the form of a continuous depending lip-like projection which serves both to center the fixture with reference to said opening and to provide an abutment engaging the marginal wall of said opening to resist lateral movement of the fixture.

4. A plumbing fixture as set forth in claim 1, including clamping devices carried by and depending from said rim, each of said clamping devices including a clamp hanger secured to said rim, a clamp plate pivotally secured to said hanger for swinging movement about a vertical axis located adjacent one end of said plate and a clamping screw threaded upwardly through a threaded opening provided in the plate adjacent the opposite end thereof, the clamping plates of said clamping devices being normally disposed in a retracted position permitting the clamping devices to be passed downwardly through the opening in said supporting structure along with the body portion of the fixture and being subsequently swingable outwardly about the pivotal axes thereof to position the clamping screws below and in opposing relation to a downwardly facing surface of said supporting structure surrounding the fixture receiving opening, said clamping screws being

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thus disposed for upward movement into clamping engagement with said downwardly facing surface of the supporting structure to thereby force said sealing strip downwardly into tight sealing engagement with the underlying upper surface portion of the supporting structure.

5. A plumbing fixture as set forth in claim 1 in which said rim includes a generally horizontal main section and an outer marginal section directed downwardly and outwardly at an oblique angle to the main section of said rim and in which said sealing strip has a continuous groove inclined downwardly and outwardly at an angle corresponding to the angular disposition of said outer marginal section with respect to the main section of the rim, said groove receiving said outer marginal section and extending to a point adjacent the center of the strip whereby a force pressing said rim and said supporting structure towards each other flattens the bottom surface of the strip to effect a seal between the rim and the upper surface portion of the supporting structure.

6. In a plumbing fixture comprising an open top body portion having a bottom wall, a continuous marginal wall extending upwardly from said bottom wall and a continuous peripheral rim formed integral with and projecting outwardly from the upper edge of said marginal wall, said rim being adapted for engagement with the upper surface of a supporting structure having an opening in which the body portion of the fixture is fitted with said rim overlying the upper surface of the portion of the fixture bordering said opening, an improved clamping device carried by said fixture and engageable with a downwardly facing surface of the supporting structure to draw said rim downwardly toward the upper surface of said supporting structure, each of said clamping devices comprising a clamp hanger secured to and depending from a portion of the rim located inwardly of that portion of the rim which overlies the upper surface of the supporting structure in the installed position of the body portion of the fixture, a clamp plate pivotally secured to the lower end of said clamp hanger to swing in a horizontal plane about a vertical axis located adjacent one end of said plate and a clamping

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screw extending upwardly through a threaded opening provided in the clamp plate adjacent the opposite end thereof, said clamping screw having a substantially flat upper end for contacting the lower surface of said supporting structure, the clamp plates and the clamping screws of said clamping devices being normally disposed in a retracted position permitting said clamping devices to be passed downwardly through the fixture receiving opening of the supporting structure during installation of the body portion of the fixture in said opening, said clamp plates being subsequently swingable outwardly about the pivotal axes thereof to dispose the clamping screws directly below a downwardly facing surface of the supporting structure bordering said opening.

7. A clamping device as set forth in claim 6, in which each clamp hanger includes side members depending from the rim, one side member being longer than the other side member, and a bottom member at the end of the shorter side member and interconnecting lower portions of said side members, the pivoted end of the clamp plate being secured to said bottom member, the longer of the side members of said hanger being provided with a horizontal slot located below the bottom member and extending inwardly from a vertical edge thereof, said slot being positioned to receive the clamp plate therein when the latter is swung outwardly about its pivotal axis to dispose the associated clamping screw directly below a downwardly facing surface of the supporting structure.

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