Jan. 2, 1968 W. E. AUMANN 3,360,805

COLLAR FOR ADJUSTABLE MOUNTING OF WATER CLOSET BOWLS OR THE LIKE

Filed Dec. 1, 1965 3 Sheets-Sheet 1

Fig. 1.

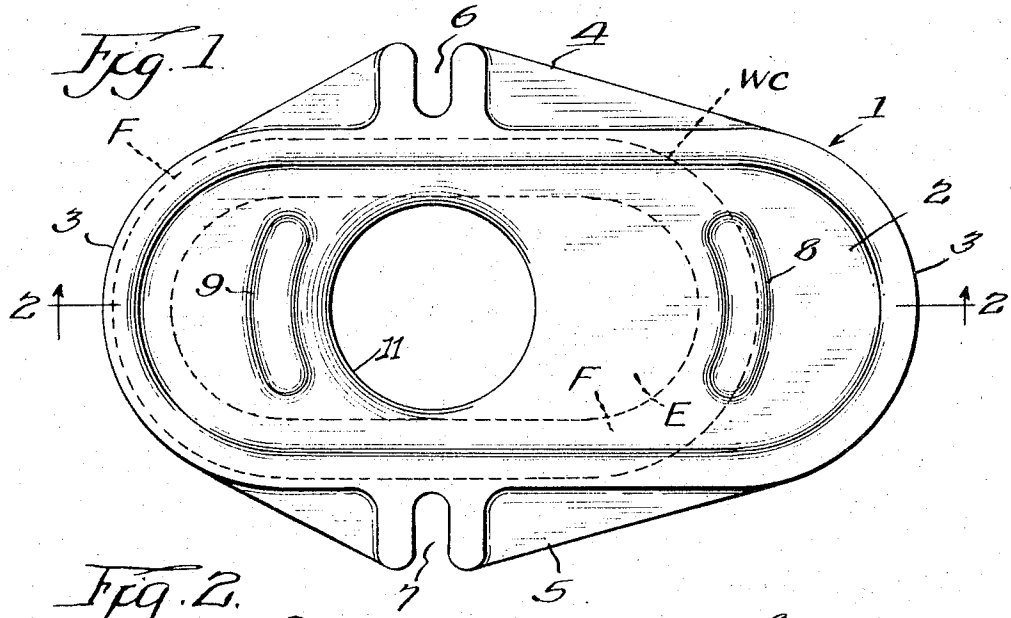


Fig. 2.

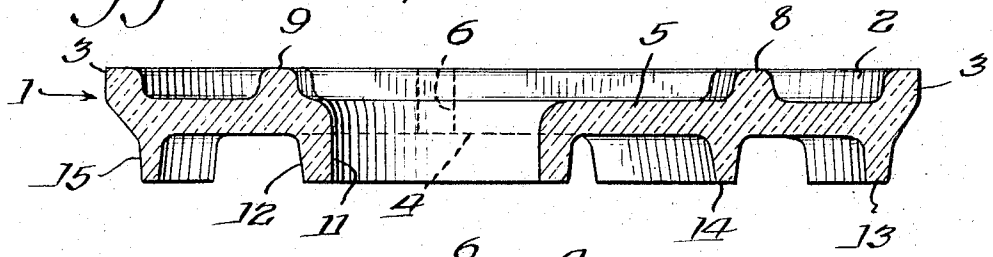
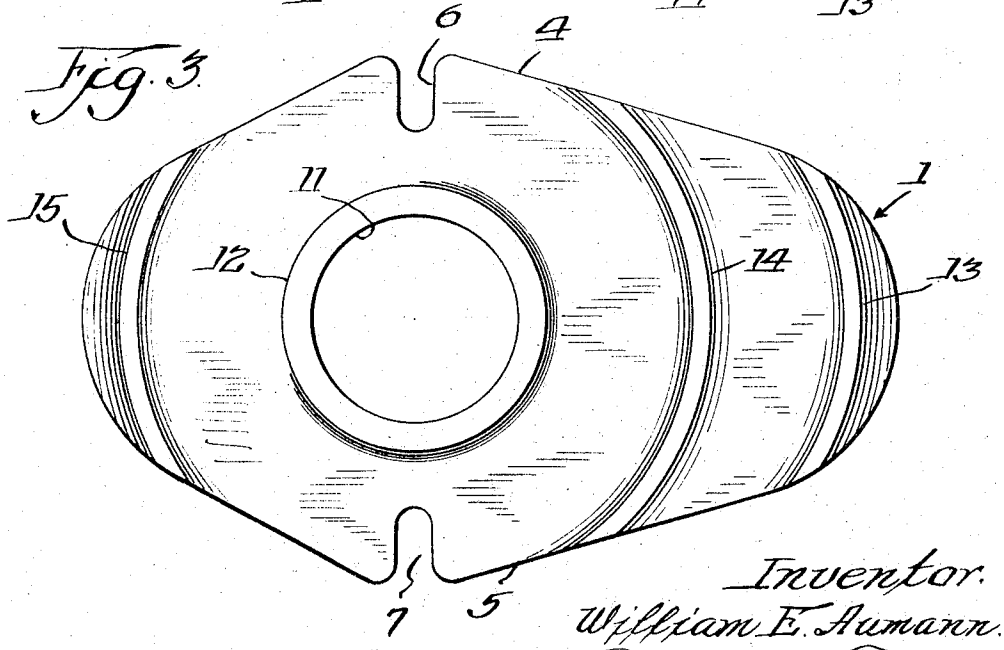


Fig. 3.

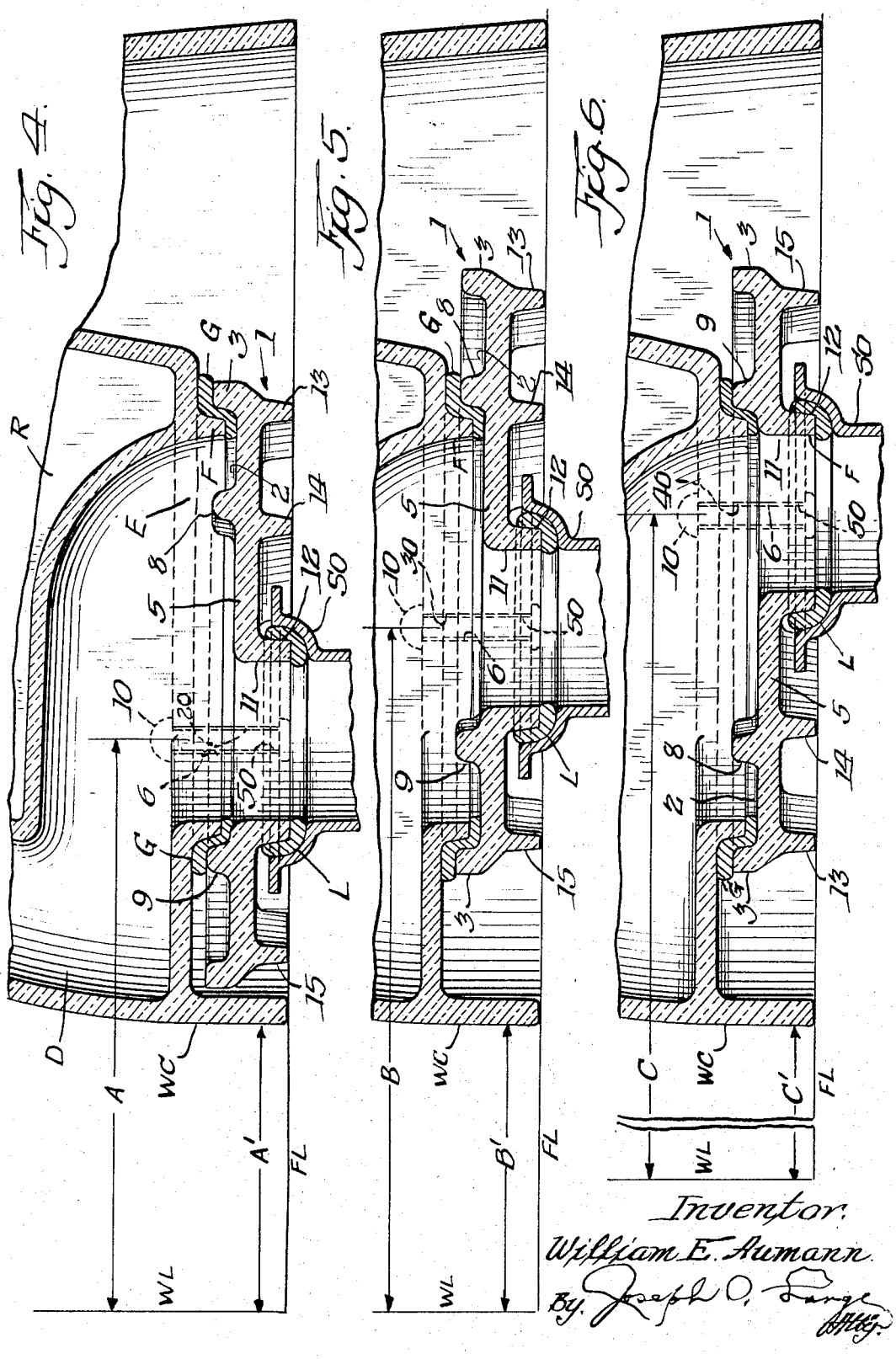


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COLLAR FOR ADJUSTABLE MOUNTING OF WATER CLOSET BOWLS OR THE LIKE

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COLLAR FOR ADJUSTABLE MOUNTING OF WATER CLOSET BOWLS OR THE LIKE

Filed Dec. 1, 1965 3 Sheets-Sheet 3

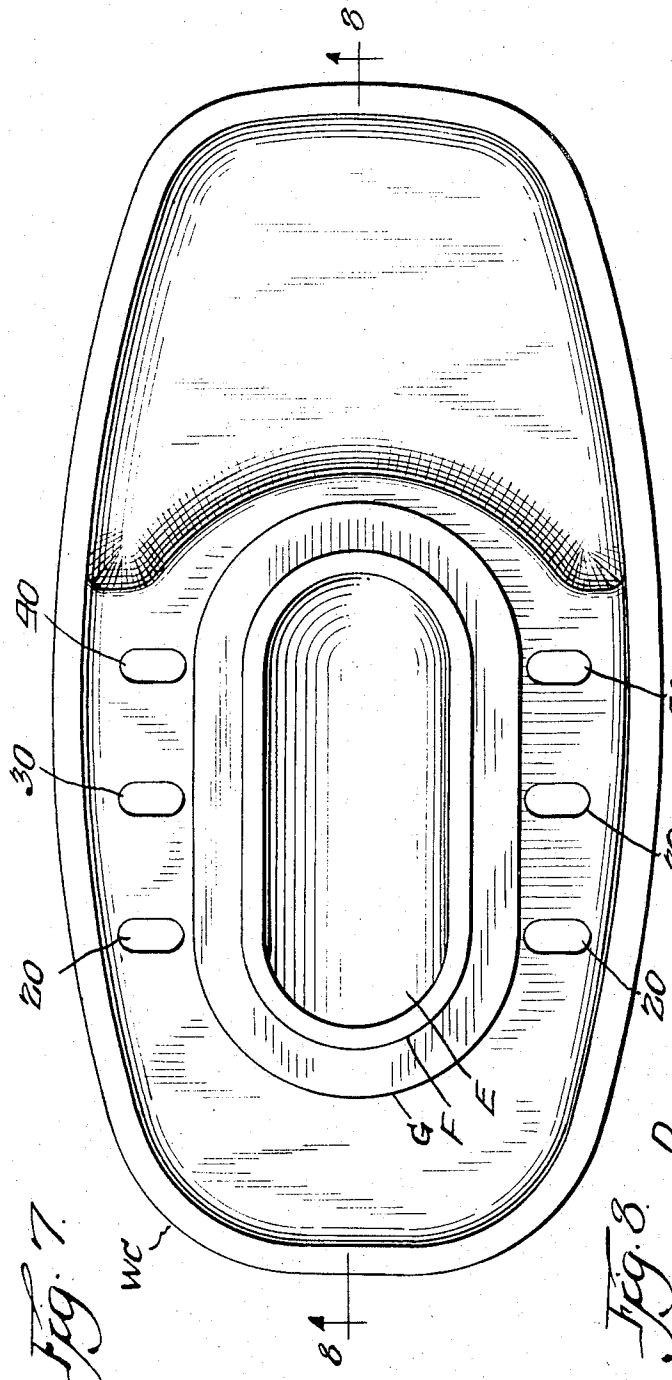


Fig. 7.

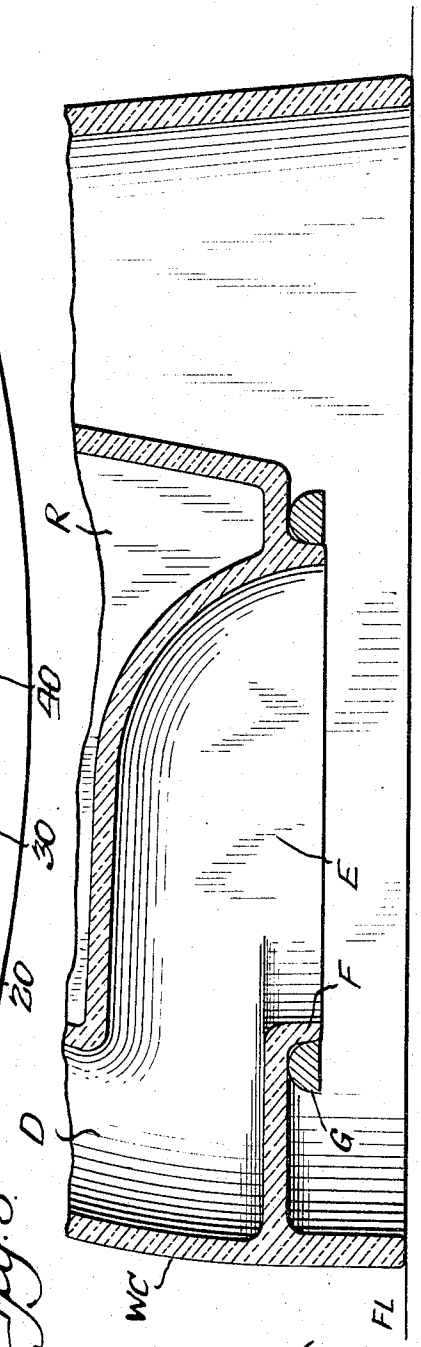


Fig. 8.

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COLLAR FOR ADJUSTABLE MOUNTING OF WATER CLOSET BOWLS OR THE LIKE

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8 Claims. (Cl. 4—252)

This invention relates to a novel adjustable roughing-in adapter or collar suitable for positioning at the discharge outlet lip or pipe of the water closet and useful in the adjustable mounting of the water closet within the conventional bathroom. More particularly, this invention is concerned with an improved adjustment adapter in which the unusual configuration of said collar in cooperation with the outlet lip or discharge of the water closet enables it to be uniquely mounted and adjustably positioned transversely within the limits of the closet base whereby to easily and conveniently enable a floor mounted water closet to be installed in properly fitted relationship over the usually fixed plumbing discharge outlet lip leading to the sewage system or to the discharge pipe bend either at the time of the initial installation or, even more importantly, at the time of replacement of the original plumbing fixture and notwithstanding a plurality of roughing-in dimensions specified. As will hereinafter become more readily apparent, the ultimate benefit derived by the manufacturer is to substantially reduce the number of water closets heretofore required to be kept in stock to meet the varying roughing-in dimensions encountered in service.

In order to have a better understanding of the merits of this contribution to the art, it should be appreciated that adjusting adapters are used to adapt the water closet fixture to the varying dimensions encountered in its cooperation with the mouth of the discharge pipe or sewage outlet during the installation and final mounting of the water closet within the room. Heretofore, such prior flanges, collars or adapters have been provided with suitably slotted portions, the said slots being frequently arcuately extending so that upon suitable rotation of the collar effect the desired cooperation of the adapter with the desired alignment of discharge opening in the base of the closet fixture. In practice, the water closet may be secured by threaded bolts extending through the adapter flange openings and the complementary flange openings of the closet bowl. These types are shown, for example, in U.S. Patents Nos. 2,899,690, 3,015,501 and 3,125,765, among others. However, these prior designs have not lent themselves conveniently to old installations or remodeling jobs due to the necessity for tearing up the tile or other flooring in an expensive operation in order to make the desired fluid-tight connection between the sewage outlet and the water closet.

One of the principal objects of the invention therefore is to provide for an adjusting adapter mountable on or close to the water closet discharge in which either new installations or old ones may be handled more conveniently and economically. In this consideration, it will of course be understood that variations in the dimensional or roughing-in positioning must be allowed frequently from the pre-planned location. Thus, the dimensions of the sewage discharge outlet relative to the base of the fixture must be carefully provided for to assure a sanitary and sturdily mounted installation.

In this connection, it should also be noted that water closet fixtures are designed and manufactured in such a manner that the roughing-in distances between the vertical end wall of the bathroom and the parallel central axis which defines the discharge opening from the water closet are of a certain magnitude. These dimensions are

of the order of ten inches, twelve inches, or fourteen inches, and such dimensions taking into account the water closet tank capacity required and the depth or length of the water closet in relation to the said bathroom wall. This depends upon the design employed and the distance, usually established by the builder or architect, of the adjoining wall of the room from the sewage discharge opening, normally located in the floor of the bathroom.

Therefore, it is another important object to provide for an adjusting insert or collar that is easily used in fluid sealing relation to wide dimensional variations in the roughing-in of water closets and which conveniently may be adjustably moved transversely in relation to the necessary alignment with the sewage discharge opening in the building. The latter opening normally has its upper terminus in relatively close proximity to the level of the floor supporting said water closet.

Therefore, it is a further important object to provide for an adjusting plate-like adapter which overcomes all of the previous disadvantages and yet it may be made economically and preferably integrally from a variety of materials, such as porcelain, ceramics, metals and synthetic compositions or the like.

With the adapter of this invention, a single water closet will take the place of three different roughing-in dimensions of water closets, which the manufacturer and his distributors previously have had to stock as will hereinafter be explained.

A still further object is to provide for a relatively simple adapter construction which lends itself to making said fluid tight seals easily and without requiring special tools for mounting. Yet it is sturdy and durable to withstand rough handling without breakage when being applied to the bottom or the foot area of the closet bowl.

The novel form of the adjusting adapter also permits of predetermined rotation to obtain the desired adjustment.

With the foregoing and other objects in mind, many of which will further appear as the description proceeds, this invention essentially consists of a novel configuration of water closet adapter in which in the accompanying drawings a preferred embodiment is shown. When considered with such presentation, the invention, its mode of construction, its assembly and operation and many of its advantages not hereinabove specifically referred to should be readily understood and appreciated.

Referring now to the drawings in which the same drawing numerals are used to indicate corresponding or similar parts throughout the several figures of the drawings,

FIG. 1 is a plan view of the novel adapter of this invention;

FIG. 2 is a sectional view taken on the line 2—2 of FIG. 1;

FIG. 3 is a plan view in the structure referred to in FIG. 1 when viewed from the underside thereof;

FIGS. 4, 5, and 6 show the adapter of this invention when mounted in the several positions determined by the central axis of the water closet discharge opening required in meeting variable installations in the field;

FIG. 7 is a view showing the underside of a conventional water closet capable of receiving the novel adapter in the manner shown in FIGS. 4 to 6 inclusive; and

FIG. 8 is a fragmentary sectional view taken on the line 8—8 of FIG. 7.

Referring now to FIG. 1, the novel collar or adapter of this invention is generally designated 1 and is shown with the upper surface thereof preferably having the recessed portion 2. The latter is defined on its periphery by the upwardly extending flange portion 3, the dotted lines indicating the discharge outlet E of a preferably floor mounted water closet designated WC. Preferably at oppositely disposed side portions thereof, the adjusting

adapter **1** is provided with the reduced outer extensions or ears **4** and **5**. The latter function as the means for attaching the novel collar to the water closet and to the sewer outlet SO, as hereinafter made clear. The said ribbed areas or outer portions **4** and **5** are formed with the respective relieved or slotted portions **6** and **7** for receiving the attaching bolts **10**, shown in dotted lines in FIGS. 4 to 6.

Arcuately extending as shown, the oppositely disposed guide lugs **8** and **9** are provided for guiding and positioning sealing gasket G as hereinafter described thus to substantially complete the upper surface configuration as shown more clearly in FIGS. 1 and 2.

As shown more clearly in FIGS. 2 and 3, the undersurface of the adapter **1** is provided with the through opening **11** communicating with the water closet discharge E and the depending flange or spud **12** for effecting the fluid sealing connection with the sewage outlet SO of the building, as shown more clearly in FIGS. 4 to 6 inclusive and which will be further described in connection therewith. For purposes of supporting the adapter **1** upon the floor FL, the arcuately extending ribs **13**, **14**, and **15** are provided. Said ribs may of course be of different configurations depending upon the nature of the installation encountered. Thus, the preferred configuration of the novel form of the adapter **1** per se is shown and described in FIGS. 1 to 3 inclusive.

In order to get a better appreciation of the benefits arising in the use of this invention, attention is now directed to FIGS. 4, 5, and 6, in which a water closet WC with adapter **1** applied is shown with the varying required installation centers hereinabove referred to in the description, such as ten inches, or twelve inches, or fourteen inches as designated A, B, and C respectively, the sewage outlet SO fixedly shown with the varying centers above referred to. These installation centers obviously are not readily disturbed once the new building construction has been completed and this of course applies also to old buildings.

The water closet is provided with the usual receptor R and the customary discharge D therefrom communicating with the elongated water closet discharge opening E as shown. Said opening will at all times be within or coincide with the recess **2** of the adapter **1** regardless of the water closet roughing-in dimension required. The limits of the opening E are defined by the lip F, which is preferably of the same elongated configuration when viewed in plan shown more clearly in FIG. 7.

In the twelve-inch roughing-in water closet position designated in FIG. 4, the usual soft and easily movable gasket G thus is guided and positioned for fluid sealing by means of the arcuate protruding portion **9** at one end thereof and by a portion of the rim defined by the flange **3** at the opposite end thereof. In this arrangement, the water closet is mounted so as to cooperate with the sewage outlet SO. Here, the A dimension is the shortest of the roughing-in dimensions previously referred to, namely, of the order of ten inches. In this relative position, the lowermost flange **12** cooperates with the bell-like flanged opening of the sewage outlet SO. The lower limit of said outlet **12** is mounted in gasketed relation to sewage outlet SO as indicated at L. To complete the assembly, the usual bolts **10** are applied, engaging the slotted portions **6** and **7** of the adapter as shown with the complementarily slotted openings **20** of the closet bowl WC as shown more clearly in FIG. 7. The heads of the bolts **10** at **50** engage the flanged bell portion of the sewage outlet SO, as illustrated, whereby to draw up the fluid tight joint between the gaskets G and L and the water closet WC with the adapter **1** interposed therebetween.

Let it now be assumed that the water closet elongated discharge opening E as shown more clearly in FIG. 5 is to be moved to the roughing-in dimension of say twelve inches as indicated by the letter B. In this construction, showing another position of the novel adapter, it will be

noted that the gasket G is now guided in its place as shown by an inner surface on the arcuate projecting portion **8** and at an opposite end thereof on an inner surface of the flange **3**. In effecting such transverse movement and positioning of the insert **1** over the sewage outlet SO and relative to the elongated discharge opening E and the lip F of the water closet, the bolts **10** will thus engage the middle set of apertures as at **30** of the said water closet, through slots **6**. The bolt-head at **50** engages the flange member SO as shown and described previously. As shown more clearly in the underside view of the water closet base in FIG. 7, it will be noted that the said middle set of oppositely disposed bolt holes **30** are positioned to the right of the first described bolt holes **20**. The latter were used for the ten-inch roughing-in positioning of the water closet described in connection with FIG. 4.

Similarly, and as shown now in FIG. 6, let it be assumed that the closet bowl WC is in an adjusted position relative to the wall WL having a roughing-in dimension of say fourteen inches. This is represented graphically by the letter C as dimensionally indicated for said roughing-in figure. Here, also, as previously described in connection with the engagement of the water closet, for the positioning relative to the sewage outlet SO, the bolts **10** engage the next set of elongated openings **40** of the water closet WC as shown. In this particular arrangement, it should be understood that the relative position of the adapter to the water closet is obtained, however, by simply rotating the adapter member **1** around through an arc of 180 degrees in order that the lip F of the closet in this use of the adapter will enable the slots **6** and **7** to be moved transversely to the fourteen-inch roughing-in dimension above referred to.

It will, of course, also be appreciated that by merely moving the adapter member **1** in FIGS. 4 and 5 transversely relative to the fixed discharge outlet SO along the floor line FL, a simple and convenient means for effecting desired roughing-in is accurately obtained. Further, as shown in FIG. 6, by rotating the insert member through 180 degrees about its vertical axis from the position shown in FIG. 4, the arcuate projections **8** and **9** will be reversed from their positions illustrated in FIG. 4 to that shown in FIG. 6. Thus, the largest roughing-in dimensions, say fourteen inches, is conveniently accomplished. The bolts **10** as shown in dotted lines in FIG. 6 will engage the apertures **40** of the adapter-abutting water closet WC substantially adjacent the lip F in the manner similar to that described in connection with the previous figures.

It will also be understood that the manner of making the connections at gaskets G and L is easily accomplished by simply placing said suitable soft gaskets around the elongated discharge outlet lip or spud F of the bowl as shown more clearly in FIG. 8. Later in the compressed condition, and when each assembly is respectively made as shown in FIGS. 4 to 6 inclusive, the adapter has provided for the respective ten-inch, twelve-inch, and fourteen-inch roughing-in dimension, as needed. The bolts **10** are tightened as shown.

Regardless of the differences stated in the roughing-in dimension encountered, it will now be apparent that the dimensions A', B', and C' remain the same, since the adapter of my invention permits such desirable adjustable movement to be easily made relative to the fixed outlet SO as described.

It will also be understood that while the gasket positioning projecting portions at **8** and **9** are preferably employed depending upon the joint or the type and shape of gasket required, the said arcuate projecting portions may in some cases be omitted. In these instances, the recess **2** will of course be made plain and uninterrupted except for flow passage or opening **11**.

While only a single adapter embodiment has been shown and described, it will be understood that this is for purpose of illustration, and not of limitation, because

to one skilled in the art it will be apparent that various changes and modifications may be made in the disclosure without departing from the spirit of the invention as defined by the appended claims.

I claim:

1. An adapter of elongated plate-like configuration for cooperation with a water closet at substantially floor level, the said adapter being transversely apertured to cooperate with the lower depending elongated hollow portion defining a discharge opening lip from the water closet and leading to a sewage conduit, the said adapter having a recess defined by a raised rim on an upper surface thereof substantially establishing its outer peripheral limits, the said rim having at least a surface portion thereof cooperating with said closet bowl lip to effect a fluid seal therebetween, the central axis of said adapter aperture being eccentrically arranged relative to the said rim, said adapter having annular lip means thereon for effecting a fluid tight seal with the water closet discharge opening cooperating with said adapter aperture, and having thereon removable means located outside of the rim for effective selective attachment thereof to the lower lip portion of the water closet defining the discharge therefrom whereby to maintain the adapter in fluid sealing fixed position relative to the said closet discharge opening lip and to the sewage conduit and with the eccentrically positioned aperture of the adapter substantially receiving said closet hollow portion defining said discharge opening lip at a recess thereon defined by said rim to communicate with the eccentrically positioned closet aperture.

2. The combination of a floor mounted water closet and an adjusting adapter therefor whereby to permit of varying roughing-in of the water closet in a room, said adapter being of elongated plate-like configuration for mounting on a water closet or like plumbing fixture at substantially floor level, the said adapter being transversely apertured to cooperate with the lower depending hollow portion defining a discharge opening lip from the water closet and leading to a sewage conduit, gasket means interposed between the closet and said adapter, the said adapter having a raised rim on an upper surface thereof, the rim at least at a portion thereof receiving said gasket means, the vertical axis of said adapter aperture being eccentrically arranged relative to the said rim length, the undersurface of said adapter having annular projecting means thereon for guiding a second gasket means thereon to effect a fluid tight seal between the water closet discharge opening lip and the sewage conduit, and having means thereon effecting selective attachment to a lower portion of the water closet whereby to maintain the adapter in preselected fixed position relative to the closet discharge opening lip and to the sewage conduit and with the eccentrically positioned aperture of the adapter cooperating with said lip of the closet discharge opening to compress the first named gasket means.

3. An adapter of generally elongated plate-like configuration with a water closet at substantially the floor level mounting thereof, the said adapter being apertured to cooperate with the lower depending hollow portion defining a discharge opening lip from the water closet and leading therefrom to a sewage conduit, the said adapter having a raised rim on an upper surface thereof, the central axis of said adapter aperture cooperating with the closet bowl lip and being eccentrically arranged relative to the said adapter rim, the said adapter having means thereon for effecting a fluid tight seal with the water closet whereby to maintain the adapter in selectively fixed position relative to the closet discharge opening lip and to the sewage conduit and with the eccentrically positioned aperture of the adapter substantially receiving said closet hollow portion defining said discharge opening lip, the said adapter having a plurality of protruding portions thereon for selectively attaching the adapter in fluid sealing relation with the closet discharge lip at selected eccentric positions relative to the said lip for adjustably locating the water closet in relation to varying discharge locations relative to the wall of a room, the water closet having a plurality of transversely spaced-apart through apertures defining means for effecting said selective positioning, the discharge lip of the water closet depending upon the water closet position required relative to the room wall.

4. The subject matter of claim 1, the said rim being of substantially elliptical form when viewed in plan.

5. The subject matter of claim 2, the water closet having a hollow base portion substantially receiving said adapter member when the latter member is mounted in fluid sealing position on the water closet discharge lip.

6. The subject matter of claim 2, the said water closet and adjusting adapter therefor being mountable in the plane of a common floor level when said first named gasket means is compressed.

7. The subject matter of claim 2, the water closet having a plurality of apertures for effecting said selective attachment of the adapter to the water closet and sewage conduit.

8. The subject matter of claim 4, the said closet lip being of substantially elliptical form when viewed in plan and being of substantially smaller area than the rim whereby to be received within said adapter rim at all transverse fluid-sealing positions of the adapter relative to the closet discharge lip.

References Cited

UNITED STATES PATENTS

1,354,199	9/1920	Kettingham	4—252
1,676,276	7/1928	Moore	285—56
1,699,983	1/1929	Miller	285—56
2,673,985	4/1954	Gay	285—56
2,743,460	5/1956	Youngstrom et al.	4—68
2,899,690	8/1959	Clifford	4—252
3,015,501	1/1962	Minella	285—58
3,125,765	3/1964	Fay	4—252
3,140,104	7/1964	Cosper	285—59
3,263,244	8/1966	Katz	4—252

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