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V. T. MANAS ET AL
CARRIER AND FITTING

3,020,565

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3 Sheets-Sheet 2

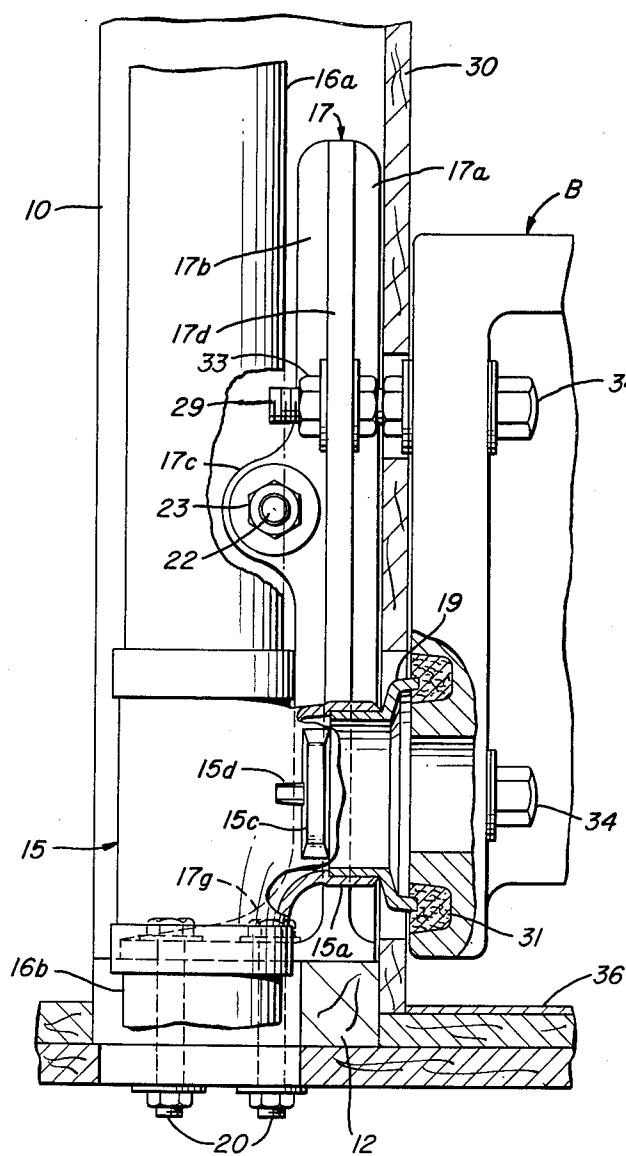


FIG. 2

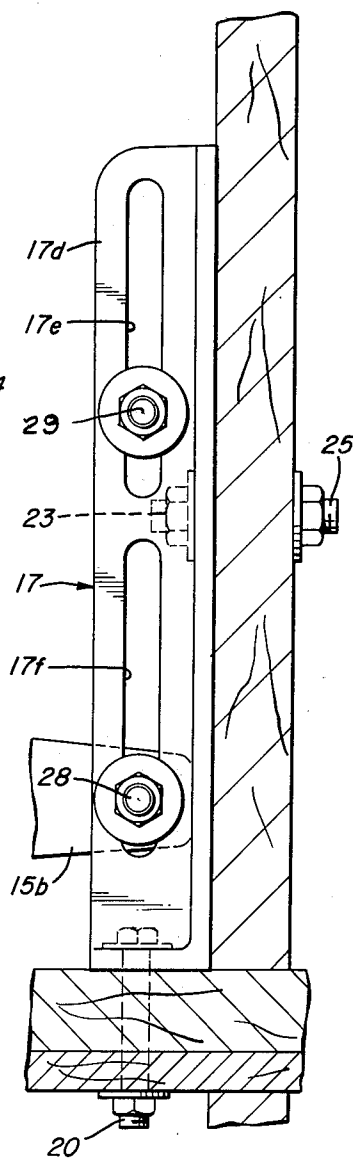


FIG. 3

INVENTORS
VINCENT T. MANAS
GEORGE J. FLEGEL
BY *Gobrick & Gobrick*

ATTORNEYS

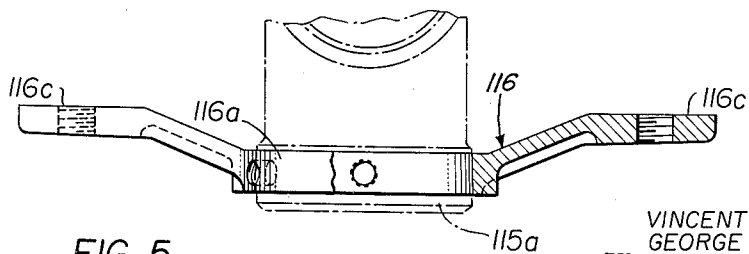
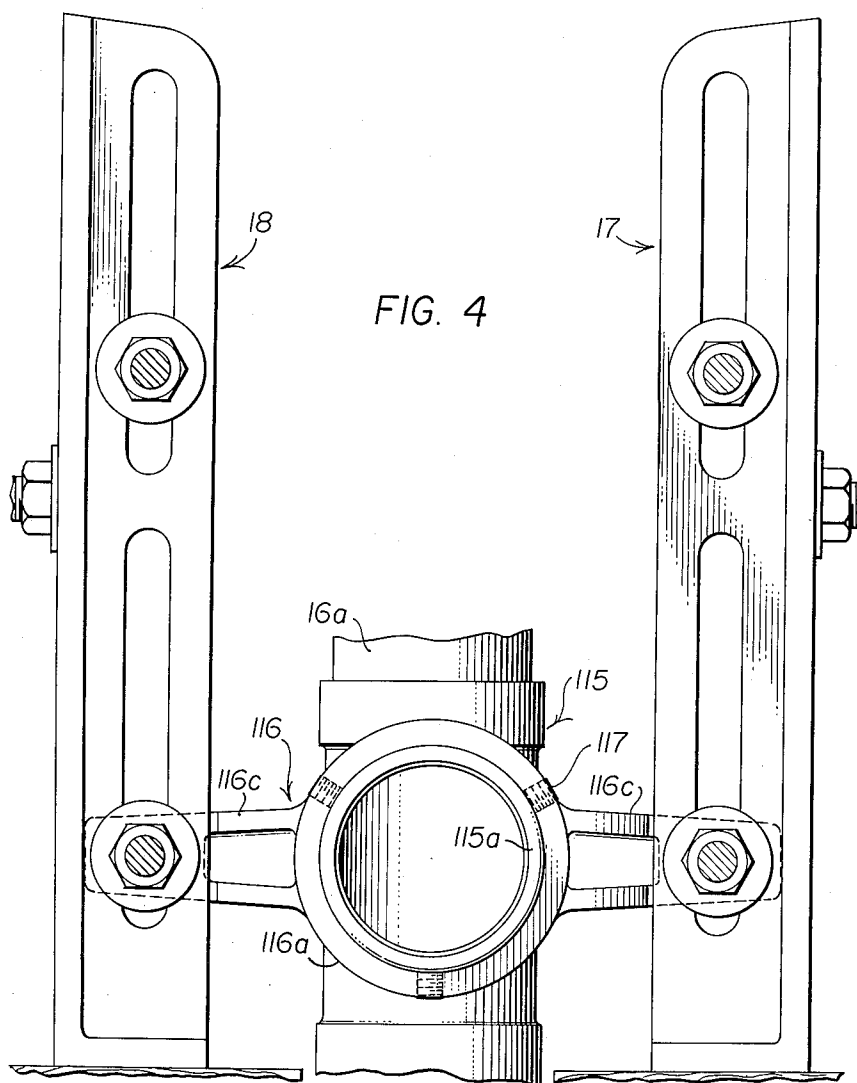
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GEORGE J. FLEGEL
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ATTORNEYS

1

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CARRIER AND FITTING

Vincent T. Manas, Washington, D.C., and George J. Flegel, Michigan City, Ind., assignors to Josam Manufacturing Co., Michigan City, Ind., a corporation of Delaware

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6 Claims. (Cl. 4-252)

The present invention is generally concerned with improvements in the structure for connecting a closet bowl fixture to a soil stack and mounting of the same to a wall structure, particularly in wooden framed buildings or similar environments.

It is the general object of the present invention to provide an improved structural combination, particularly adapted to and useful in residential type building construction, whereby wall hung closet bowl fixtures are installed with suitable connection to a soil stack and support by frame members of the building. A more particular object is the provision of a structure of the character described including a close closet fitting connection of the toilet bowl fixture to a soil stack. Another object is the provision of unitary carrier and foot elements in combination with a soil stack closet connection fitting whereby a closet bowl fixture of a wall hung type may be readily mounted in proper position at the wall and connected to the soil stack. Another object is the provision of a structure of the character described of novel adjustability of the cooperating parts for ready fitting in various building environments. A still further and important object is the provision in a structure of the character described of combined carrier and foot units assuming major ultimate support of a fixture by horizontal floor or wall plate members of the building framing rather than by the wall studding.

Other objects and advantages will appear from the following description and the drawings, wherein:

FIG. 1 is a perspective view taken from above and left front of the fixture location showing in solid lines the general disposition of a closet carrier and fitting combination relative to wall studding and plate, floor line and soil stack, as installed for mounting a closet bowl fixture represented by the dashed outline;

FIG. 2 is an irregular vertical section through a finished wall at which a closet bowl fixture is supported by means of the closet carrier and fitting structure of FIG. 1, with certain parts of the fixture and fittings broken away for clarity of representation;

FIG. 3 is a fragmentary view taken as FIG. 1, showing an alternate manner of installing the carrier relative to a stud or studs;

FIG. 4 is a front elevation of a modification; and

FIG. 5 is a top view of a fitting and adapter of FIG. 4.

In the drawings, there appears only the immediate region of installation of a wall hung siphon jet type closet bowl fixture B for a typical modern residential wall construction, whereof a pair of adjacent studs or vertical frame members 10, 11 and the underlying and supporting bottom plate or horizontal frame member 12 (interrupted or notched to accommodate the stack) are represented in fragmentary form. The front view (FIG. 1) of a roughed-in installation of the closet fixture supporting carrier structure of this invention shows the studs on 16 inch centers with the vertical 3 inch copper soil stack equi-spaced therebetween.

The carrier installation comprises as principal elements the soldered joint type cast bronze or brass closet fitting 15, here a sanitary T connecting the upper and lower vertical copper stack pipes 16a, 16b; the right and left hand combined carrier and foot units 17, 18 secured to the bottom plate member 12 and to the respectively ad-

2

jacent studs 10, 11; the copper adjustable extension member 19 included in the fitting inlet branch, whereby the outlet (or horn) of the closet fixture B is connected to the fitting 15; and upper and lower pairs of closet mounting studs.

The fitting 15 has the general form of a standard solder joint drainage T fitting, the centerline of its inlet branch 15a extending perpendicular to the wall at the desired level of the fixture outlet, but is provided with integral elongated broad flat apertured lugs or arms 15b, 15c extending from opposite sides of the branch 15a. The fitting is symmetrical about a vertical centerplane (as viewed in FIG. 1); and the lugs, each reinforced from behind by cast rib or gusset formation 15d have flat vertical front faces approximately coplanar for attachment to the backs of the units 17, 18 as hereinafter detailed. The spacing of the arm apertures is chosen to correspond to the standard spacing of siphon jet closet bowl mounting apertures.

The elongated pedestals or combined carrier and foot units 17, 18, mirror images of each other, advantageously from viewpoint of cost are iron castings. Considering unit 17, it is generally of a T cross-section in the vertically extending carrier portion; the flange of which has a straight uniform front part 17a and a back part 17b with a perforated ear or extension 17c somewhat above mid-height; while the web 17d has a pair of aligned elongated vertical slots 17e, 17f. An integral horizontal flat bottomed apertured foot portion 17g, into which the T-section merges, is extended rearwardly to afford an anchor base by which the unit is rigidly secured by a pair of anchor bolts 20 passed through the foot and plate or horizontal framing member 12. Similar parts of unit 18 are designated with like literal subscripts.

Each unit is bolted to the adjacent vertical frame member or stud (in FIG. 2) by a spacer assembly comprising a threaded rod 22 passed through the stud and the ear, as 17c; and pairs of nuts 23, 23 and 24, 24 with washers, for engaging therebetween respectively the unit and stud. In an appropriate situation the unit may be secured directly against the stud (FIG. 3) by a bolt 25 in place of the spacer assembly.

In any case the fitting 15 is roughed-in with the branch centerline at the proper height for the intended bowl fixture, the arms 15b, 15c of the fitting substantially parallel or equidistant from the plane of the intended wall, and the adjustable extension 19 of the inlet branch means soldered in place so that the outer broad end thereof is aptly located relative to the finished wall line. The units 17, 18 are thereafter installed in upright parallel relation, with the fitting arms 15b, 15c behind the webs 17d, 18d to which they are each afterwards secured by a pair of nuts and washers on respective lower closet mounting studs 28 passed through lower carrier slots 17f, 18f and the arm apertures. A pair of upper closet mounting studs 29 is secured in like manner at adjusted position in the top slots 17c, 18e, the vertical spacing of the top from the bottom stud in each lateral pair being selected to correspond to the vertical spacing of the lateral pair of parallel apertures through each side of a mounting back flange B-1 of the fixture. In some situations it may be advantageous to install the units 17 in proper position for the desired closet bowl location, and thereafter use the same for temporary support of a fitting 15 while installing a lower stack portion of proper length and position, thereafter sweating the joints with the fitting finally secured on the units with the branch at desired final disposition.

After the wall 30 is finished, the fixture with outlet or horn gasket 31 in place is hung on the studs, preferably with a slight spacing of the fixture back away from the wall, by means of an inner or back clamping nut 33 and an outer decorative finish cap nut 34 as appears in FIG.

2, the closet outlet or horn and its gasket 31 being thereby drawn up into compression sealed relationship with the outer end of extension 19.

From the foregoing description, it is apparent that considerable flexibility is available in the closet mounting structure to accommodate manufacturing variations in the closet fixture, variations in the stud spacing, in the thickness of the plaster and in location of the fitting or desired height of the fixture; the installed height of fitting 15 relative to the finished floor line 36 however being essentially determinative of the height of any given fixture. Where the stack is not centered between the studs, the threaded rods or studs 22 permit proper spacing adjustment over a range from the condition of FIG. 3 with a pedestal unit against a stud (or filler) to the limit of rod length 22. The projection of extension 19 may of course be varied by selection of the distance of insertion into the soldered joint in branch 15a. Further the greater fixture load is carried by the floor or plate member rather than by the studs. The projection of the fixture mounting studs beyond the wall surface may of course be varied by changing the degree of insertion through the carrier units, as required by the thickness of the perforated mounting back flange of the fixture, and desired spacing thereof from the finished wall.

Although the combined carrier and foot units may be made symmetrical about the web portion so that one form of unit serves for both right and left hand sides, by providing a spacer assembly engaging ear also in the front portion of the web similar to 17c with the web widening in cross section to the flat foot projection equally on either side of the web to receive a single bolt 26 on each side thereof, entailing then location of arms 15b, 15c at the vertical transverse center plane of the body of fitting 15, the above described form is preferred, since the span of the pairs of fixture mounting studs is shorter.

For a cast iron pipe soil stack installation, the fitting 15 would of course be of bell and spigot form for the vertical run, so that the bottom of the fitting be received in a bell top of the lower stack portion 16b, and a bell top of the fitting will receive the bottom end of 16a in the usual lead caulked joints; while the side branch would be provided with a female straight threaded opening adapted to adjustably receive a straight threaded nipple of, say, a nominal four inch diameter to engage the gasketed horn in an adjustable length connection.

In FIG. 4 there is shown a modification of the structure wherein there is used a standard sanitary type fitting 115, here again a T for a soldered joint installation in a copper stack with an adapter element 116 to provide means for connecting the fitting to the upright pedestals or carrier units 17, 18. The rest of the structure, omitted for clarity in showing the particular point of modification, is identical with that previously described relative to FIGS. 1-3, including an extension element.

The adapter 116 may be made of an iron casting or other suitable material with a central body or collar portion 116a and oppositely extending arms 116c. The body has a large round opening therethrough to fit in collar-like fashion on the "hub" 115a, i.e., the thickened end region of the fitting side branch into which the extension is sweated. At least three equi-spaced threaded holes through the collar portion receive the set screws 117 whereby the adapter is secured on the fitting hub. The oppositely extending arm portions 116c are both off-set into a common plane parallel to and behind the body portion, to dispose the same at the general location of the arms 15c in FIG. 1 relative to the rest of the fitting.

The adapter is simply secured in proper position on the side branch hub by the set screws, before the extension is applied, and the rest of the installation procedure is the same as for FIGS. 1-3. Just as an elbow, a double side or inlet branch fitting or other fitting having integral arms 15c may be used in particular cases for a closet installation including the carriers of FIGS. 1-3, so also

corresponding standard fittings may be used in conjunction with this adapter.

We claim:

1. For support of a wall hung closet bowl fixture relative to spaced vertical frame and horizontal frame members in a wall enclosing a soil stack to which the bowl fixture is connected, said fixture having at the back thereof a mounting flange having on each side thereof a lateral pair of vertically spaced parallel mounting stud receiving apertures, said soil stack including a fitting with inlet branch means adapted to a compression sealed connection with a gasketed horn of the fixture, said fitting carrying thereon oppositely extending lateral arms apertured near the ends thereof, fixture supporting means transmitting the major part of the fixture weight to and supporting the fixture locally on a horizontal frame member, comprising: a carrier and foot unit entirely within the wall at either side of the fitting, each said unit having an apertured flat-bottomed foot portion adapted for support on and bolted securement to a horizontal frame member and having also an upright carrier portion of a cross section providing a web and a flange integral with the foot portion and merging into an end of the foot portion, the flange of the carrier portion having at a level above mid-height of the unit an aperture for bolting the same parallel to a vertical frame member, the web of the carrier portion having elongated aligned vertical slots therethrough and extending over the major length thereof, a pair of vertically spaced fixture mounting studs secured to each said unit in spatially and vertically adjustable positions for engaging a corresponding lateral pair of apertures of a fixture flange and whereby the apertured arms of said fitting may be secured to respective units by the lowermost studs, and bolt-like means through the flange aperture of each unit for securing the unit to a respective vertical frame member.

2. For support of a wall hung closet bowl fixture relative to spaced vertical frame and horizontal frame members in a wall enclosing a soil line to which the bowl fixture is connected, said fixture having at the back thereof a mounting flange having on each side thereof a lateral pair of vertically spaced parallel mounting stud receiving apertures, the combination comprising: a soil line fitting with inlet branch means adapted to a compression sealed connection a gasketed horn of the fixture, said fitting having thereon oppositely extending lateral arms apertured near the ends thereof; a carrier and foot unit entirely within the wall at either side of the fitting, each said unit having an upright carrier portion with a cross section providing a web and a flange, the flange of the carrier portion being disposed parallel to a vertical frame member and the web of the carrier portion being vertically slotted over the major length thereof; each said unit also including an integral flat-bottom foot portion across said web and flange for support on, and apertured for securing bolts engaged in, a horizontal frame member; a pair of vertically spaced fixture mounting studs secured to each said unit for engaging a corresponding lateral pair of apertures of the fixture flange, each lower stud having an inner end extending through and secured to a lower slotted portion of a corresponding said unit and secured to a corresponding arm of said fitting, each upper stud extended through and secured in an upper slotted portion of a corresponding said unit, whereby the fixture and fitting may be secured to said units at a desired vertical location; and means extending through the flange of each said unit and an adjacent vertical frame member for rigidly securing the unit thereto.

3. The combination of claim 2, wherein said arms are provided by an adapter element having a collar-like body portion on the said branch means of the fitting and arm portions extending from opposite sides thereof, the body portion having set screws bearing on said branch means to secure the adapter thereto.

5

4. The combination of claim 2, wherein said arms are integrally cast with said fitting.

5. The combination of claim 2, wherein the last said means comprises for each unit a threaded stud element and two pairs of nuts thereon, the nut pairs respectively clamping the flange of the unit and a respective vertical frame member, whereby each said unit is bolted to a corresponding frame member in rigidly selectively spaced relation. 5

6. The combination of claim 1, wherein the last said means comprises for each unit a threaded stud element and two pairs of nuts thereon, the nut pairs respectively 10

6

clamping the flange of the unit and a respective vertical frame member, whereby each said unit is bolted to a corresponding frame member in rigidly selectively spaced relation.

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UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,020,565

February 13, 1962

Vincent T. Manas et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 34, for "vertcal" read -- vertical --;
column 4, line 45, after "connection" insert -- to --.

Signed and sealed this 3rd day of July 1962.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents