May 12, 1959 E. L. MORRIS 2,885,689

COMBINATION DRAIN AND SUPPORT FOR FREESTANDING AND THROUGHSTANDING STANCHIONS

Filed Oct. 21, 1957

2 Sheets-Sheet 1

FIG. 1.

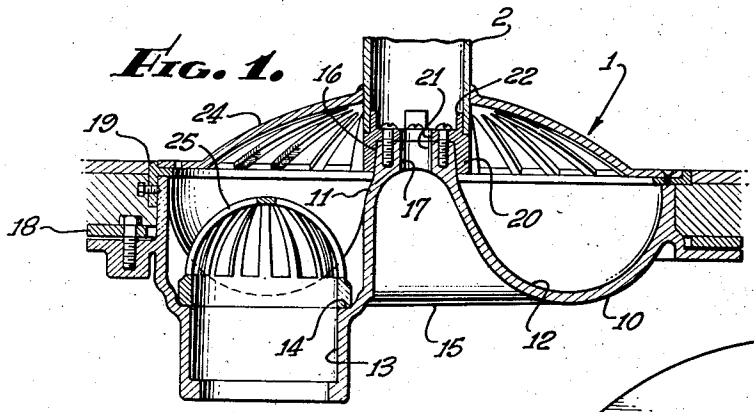


FIG. 4.

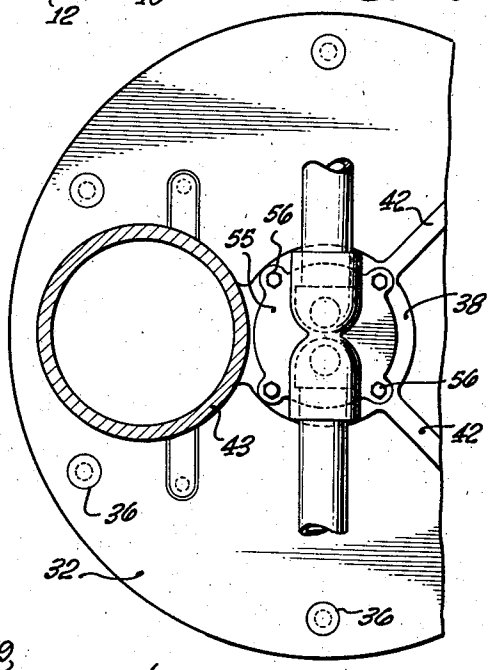


FIG. 5.

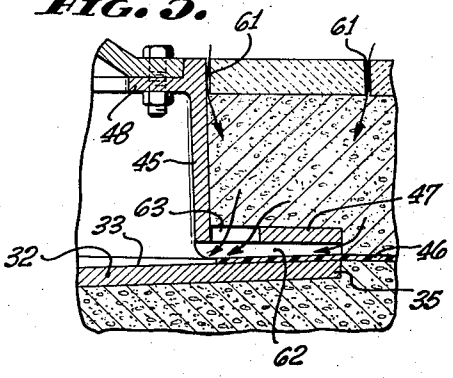


FIG. 6.

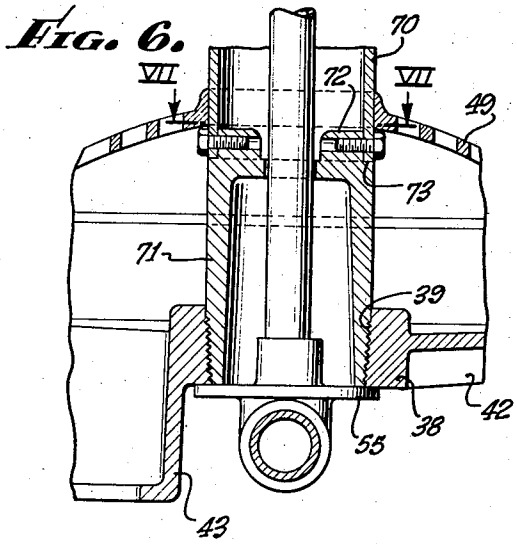
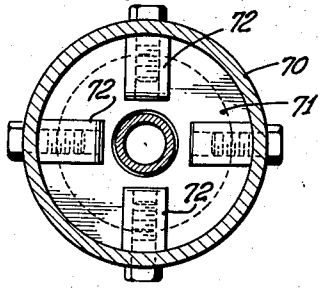


FIG. 7.



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COMBINATION DRAIN AND SUPPORT FOR FREESTANDING AND THROUGHSTANDING STANCHIONS

Filed Oct. 21, 1957 2 Sheets-Sheet 2

FIG. 2.

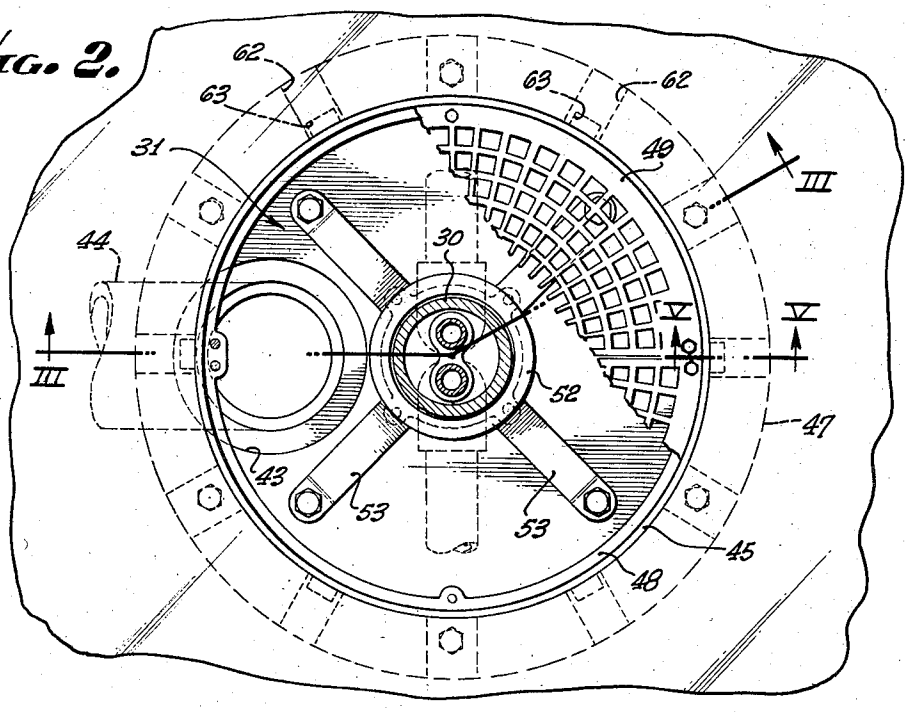
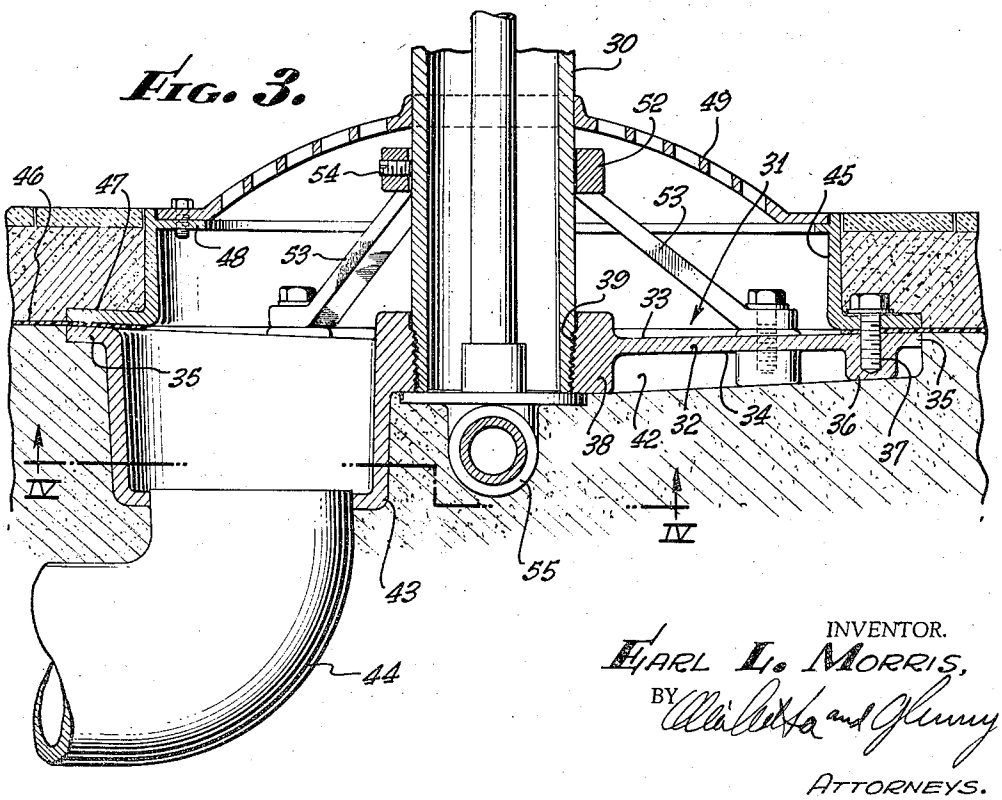


FIG. 3.



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COMBINATION DRAIN AND SUPPORT FOR FREESTANDING AND THROUGHSTANDING STANCHIONS

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Application October 21, 1957, Serial No. 691,432

9 Claims. (Cl. 4—145)

This invention relates to a combination drain and support for freestanding and throughstanding stanchions particularly adapted for use with multi-person showers.

This application is a continuation-in-part of Serial No. 490,590, filed February 25, 1955, now Patent 2,825,909, issued March 11, 1958.

Heretofore, showers were generally mounted on a wall with little difficulty in supporting them or in supplying them with drains. The showers were generally arranged around the edges of a shower room and the floor of the shower room was inclined to allow the water to run into drains provided therein. However, with the advent of a multi-person shower, as disclosed in my copending application, Serial No. 490,590, filed February 25, 1955, now Patent 2,825,909, issued March 11, 1958, draining and supporting problems arose.

A multi-person shower, as disclosed in my copending application, is adapted to be supported on a stanchion located in the middle of a shower room. A plurality of these stanchions may be positioned in a shower room each carrying a plurality of shower heads to provide as many showers as possible per available square footage. The stanchions are generally of two types: freestanding and throughstanding. In the freestanding type, the stanchion is supported by means on the shower room floor and terminates short of the ceiling. The water supply pipes are thus furnished from the floor upwardly through the stanchion to the shower heads. In the throughstanding type, the stanchion is supported by means on the floor and ceiling to conceal water supply pipes that run from floor to floor in a building. In each instance the stanchion carries a housing provided with mixing valves, shower heads, soap dispensers, etc. It is thus seen that it would be advantageous to have a single stanchion supporting means for supporting either the freestanding or throughstanding stanchions. In addition, the cost of the shower installation would be greatly reduced if the stanchion supporting means included a drain. Therefore, a combination drain and stanchion support which can be used to support either a freestanding or throughstanding stanchion of a multi-person shower would provide a standard drain and support for use by workers in this field.

In the present invention, a combination drain and stanchion support for multi-person showers is provided which overcomes the problems hereinbefore mentioned and is a continuation-in-part of my copending application referred to above.

Generally speaking, the construction provides a relatively thin, circular body portion having a central boss into which the lower end portion of a freestanding or throughstanding stanchion may be selectively firmly connected, and an eccentrically disposed downwardly extending drain port. A thin body is made possible without loss of strength and with added advantage that it can be firmly seated in the usual concrete floor opening by the provision of strengthening ribs on the lower surface of such body. In order to provide a catch basin of adequate depth and to simultaneously permit moisture from floor areas around such drain to flow into the drain (and not saturate the floor) a clamping and supporting ring is

provided so that marginal portions of a waterproof membrane (normally between the rough floor and tile seating grout) may be clamped between the ring and the circular drain body. The ring is preferably provided with grooves or passageways which permit moisture collecting on the membrane to flow into the drain. The ring also includes means for supporting a slotted strainer which surrounds the stanchion and admits surface water to flow from the floor into the drain. This construction also permits the use of spiders to firmly hold a freestanding stanchion or, in the alternative, a throughstanding stanchion, thereby allowing economies in manufacture, reducing the number of different parts required etc. while at the same time a better, more efficient, more flexible, and more readily and positively installed unit is provided.

An object of the present invention is the provision of a combination drain and support which is usable with either a freestanding or throughstanding stanchion for multi-person showers.

Another object is to provide a combination drain and support for freestanding and throughstanding stanchions which allows moisture from the outside of the drain to pass into the drain body.

A further object of the invention is the provision of a combination drain and support for freestanding and throughstanding stanchions which can be used with water supply pipes running from the floor or with water supply pipes extending from the floor to the ceiling.

Still another object is to provide a combination drain and support for freestanding and throughstanding stanchions for multi-person showers which has a clamping and strainer supporting means which compresses a water proofing membrane upon the drain body, supports a slotted strainer over the drain body, and permits moisture to pass from the outside of the drain into the drain body.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

Fig. 1 shows a longitudinal section view of a combination drain and stanchion support shown in my copending application.

Fig. 2 illustrates a top view, partly in section, of another embodiment of the device.

Fig. 3 shows a transverse section of the device taken along III—III of Fig. 2, supporting a freestanding stanchion.

Fig. 4 shows a bottom view of the device taken along plane IV—IV of Fig. 3.

Fig. 5 shows an enlarged, transverse section of the device taken along plane V—V of Fig. 2.

Fig. 6 illustrates a partial transverse section of the device similar to Fig. 3 except a throughstanding stanchion is supported.

Fig. 7 shows a transverse section of the device taken along plane VII—VII of Fig. 6.

Referring now to the drawings, wherein like reference characters designate like or corresponding parts throughout the several views, there is shown in Fig. 1 a combination drain and stanchion support 1 supporting the lower portion of a stanchion or standard 2 of a multi-person shower.

The standard 2 is preferably a hollow pipe of stainless or chromium plated steel so as to have an attractive appearance and be easily cleaned. This standard 2 is supported upon the combined drain and stanchion support 1 having a circular cast metal drain 10 provided with an upstanding central boss 11, the internal surface 12 of such drain being preferably enameled and smoothly curved so as to form an upwardly concave, annular or semi-toroidal surface. One portion of such annular

drain surface is provided with a downwardly extending outlet 13 which presents an upwardly directed circular shoulder 14, such shoulder being somewhat below the level of the lowermost portion of the annular drain 12, the bottom of the annular drain 12 being inclined, as indicated at 15 toward the outlet port 13. The lower end of outlet 13 is connected to suitable traps and soil pipe.

The upper end surface portions 16 of the boss 11 are not enameled. The boss 11 may be provided with an axial opening 17 through which water supply lines may extend, if desired. It is to be understood drain and stanchion support 1 is rigidly and firmly imbedded in and supported by a floor, a concrete floor being indicated in the drawing. An anchor ring 18 may be used in positioning the drain and support and a rim ring 19 may be clamped to the upper edge of the combined drain and support 1.

The lower portion of the standard or stanchion 2 rests upon a circular cap 20 which includes a downwardly extending skirt portion which encircles the upper end of boss 11, an inwardly extending flange portion 21 rests upon the unenameled end surface 16 of the boss 11. This inwardly extending flange of the cap 20 is provided with a series of openings permitting adjustment of the cap to the boss by means of machine screws. The inwardly extending flange 21 of the cap 20 also carries a plurality of circular spaced lugs 22, these lugs being spaced from the outer edge of the cap 20. The stanchion 2 rests upon the cap 20, lugs 22 extending inwardly into and centering the lower end of the standard. Set screws or the like extending through the lower portion of the standard may be used to connect the lower end of the standard to the lugs 22. The weight of the standard is thus distributed over the boss 11 and not localized, preventing damage to the enameled surfaces of standard support 1.

Surrounding the lower end of the standard is a domed, slotted strainer 24 which extends from the standard 2 downwardly toward the outer lip of drain 10. This domed strainer 24 is preferably made in two sections, edge areas of the strainer being connected by means of screws or the like to rim ring 19 or outer edge areas of the drain 10.

Below the strainer 24 is a one-piece, slotted secondary strainer 25 resting upon the inwardly directed shoulder 14 surrounding the drain outlet port 13. It may be noted at this point that the dome construction of the strainer 24 and the radially extending slots in such strainer permit large quantities of water to pass therethrough and users of the multi-person shower cannot block all of the passages or openings in the strainer dome with their feet. The secondary strainer 25 is particularly useful in preventing small articles of jewelry, hair, and the like from passing into the outlet port even though such articles have passed through the larger openings of the dome strainer 24. As shown in Fig. 1, the secondary strainer has a continuous, unperforated lower edge portion which prevents small objects from freely passing from the bottom 12 of the annular drain into outlet 13.

The stanchion 2 in Fig. 1, is of the throughstanding type as described above, but a freestanding type stanchion could easily be used by eliminating the cap 20 and moving the lower end of the stanchion 2 downwardly and fastening it to the boss 11 by any suitable means. A freestanding type stanchion is illustrated in Fig. 3 and will be described in greater detail hereinafter.

Referring to Figs. 2 and 3, another embodiment of the present invention is presented having a stanchion 30 of the freestanding type supported at its lower portion by a combination drain and support 31. It should be understood, that the combination drain and support 31 is adapted to support a stanchion 30 of the freestanding type or a stanchion 70 (Fig. 6) of the throughstanding type. The combination drain and support 31 may have a circular drain body 32 provided with an upper, slightly concave, drain face 33, a lower face 34, and a circumferential seat 35. The drain body can be made of any suitable material, preferably cast metal. A plurality of circumferentially spaced, downwardly extending lugs 36 may be formed in the lower face 34 of the body 32 beneath the seat 35. Each of the lugs 36 may be provided with an internally threaded socket 37.

A centrally disposed means 38 may be provided in the drain body 32 extending above and below the upper and lower faces 33 and 34 for receiving and supporting either the freestanding or throughstanding stanchions. This means may be a boss provided with an internally threaded through port 39 which is adapted to threadedly receive the lower threaded portion of a stanchion. A plurality of strengthening ribs 42 may be provided on the lower face 34 of the body 32 cooperating with the boss 38. An eccentrically disposed downwardly directed outlet port 43 is provided on the body 32 and is adapted to receive a suitable drainage pipe 44 which may be connected to suitable traps or soil pipe.

A clamping and strainer supporting ring 45 may be provided to engage the circumferential seat 35 and compress a water-proofing membrane 46 therebetween. The ring 45 may have a radially and outwardly extending lower flange 47 adapted to rest upon and compress the membrane 46 upon the seat 35 and an inwardly extending flange 48 adjacent its upper margin to receive and support a slotted strainer 49 over the drain body. Any suitable connecting means may extend through the lower flange 47 and cooperate with the internally threaded sockets 37 to compress the membrane 46 upon the circumferential seat 35. Also any suitable means may be provided to secure the edges of the strainer 49 upon the inwardly extending flange 48.

The freestanding type stanchion 30 may have its lower end threaded and received within the threaded boss 38 to be adequately supported. However, additional means can be supplied to support the lower end of the stanchion. An exemplary means comprise a spider 52 having an upper collar adapted to be connected to the lower portion of the stanchion 30 above the central boss 38 and downwardly diverging legs 53 adapted to rest on the upper face 33 of the body 32 in position correlated to the location of the strengthening ribs 42 whereby the spider 52 may be rigidly connected to the body by any suitable means. The collar of the spider 52 may be provided with locking screws 54 for engaging the lower portion of the stanchion 30 and suitable fastening means can be provided for securing the ends of the spider legs 53 to the ribs 42.

As best seen in Figs. 2 and 3, vertical water supply lines run upwardly through the stanchion 30 and have L-fittings 55 connected on their lower ends. The L-fittings 55 may be connected to the lower surface of the boss 38 by any suitable means such as machine screws 56 (Fig. 4). It should be noted that the body 32 is firmly positioned within a floor (generally made of concrete), and the weight of the multi-person shower supported on the stanchion 30 is transmitted to the bottom surfaces of the ribs 42, boss 38, and the outlet port 43. As it is not desired to have any strain or weight placed on the horizontal water supply pipes running beneath the body 32, the L-fitting 55 is so designed as to extend above the lower surface of the outlet port 43 thereby eliminating any possibility of strain being placed on the incoming horizontal water supply lines.

After a shower drain has been installed in a shower room, it is quite common after a period of time for cracks to appear in the shower room floor around the drain. Water and moisture seep downwardly through these cracks and accumulate around the outside surface of the drain below the floor. This accumulation of moisture and water can cause serious damage if some means is not provided for correcting this condition. Referring to Fig. 5, the above-referred-to cracks are shown at 61 in the floor surrounding the combination drain and support 31. As indi-

cated by the arrows, water draining downwardly through these cracks 61 would normally accumulate around the ring 45 and cause corrosion. However, the lower flange 47 of the ring 45 is provided with spaced open-ended grooves 62 and vertical openings 63 to permit the water or moisture which accumulates above the membrane 46 to drain into the drain body 32. As best seen in Fig. 2, these openings 62 and 63 in the lower flange 47 are spaced around the periphery of the ring 45 thus allowing any water or moisture accumulating around the drain to pass into the body regardless of where the cracks 61 occur in the shower room floor.

While the combination drain and support 31 in Figs. 2–5 was described as supporting the freestanding type stanchion 30, it should be understood that the same structure for the combination drain and support 31 is used to support the throughstanding type stanchion 70 as shown in Figs. 6 and 7. In Fig. 6, it can be seen that the lower portion of the stanchion 70 includes an adaptor or a hollow, elongated cap 71. The lower end of the cap 71 may be threaded to engage the threaded boss 38. The upper end of the cap 71 may be provided with a plurality of spaced lugs 72 (Fig. 7) which are spaced from the edge of the upper end of the cap 71 to provide a seating shoulder 73. The lower end of the main portion of the stanchion 70 is thus received on the shoulder 73 and centered on the cap 71 by means of the lugs 72. Any suitable fastening means may be provided for connecting the lower end of the main portion of the stanchion 70 to the lugs 72. The water supply lines are received in the lower end of boss 38 and run upwardly through the cap 71 and the main portion of the stanchion 70 in the same manner as described for the freestanding stanchion 30.

As far as installation goes, the drain body 32 is firmly positioned within the concrete floor or the like in the same manner whether the throughstanding stanchion 70 or the freestanding stanchion 30 is to be used. As can best be seen in Fig. 3, when the freestanding stanchion 30 is to be used, its lower portion is threadedly received directly into the threaded boss 38. Whereas when the throughstanding stanchion 70 is to be used, its lower portion is modified slightly by the addition of the cap 71 which may be secured on the boss 38, and then the main portion of the freestanding stanchion 70 is positioned on the upper end of the cap 71 as described hereinabove. It is therefore seen that the same combination drain and support structure 31 can be used to support either the throughstanding stanchion 70 or the freestanding stanchion 30. As is well known to workers skilled in the art, homes, buildings, etc., are provided with water supply lines which either run from only the floor and terminate short of the ceiling or run from floor to floor when it is desired to have the shower rooms positioned directly above each other. By means of the combination drain and support disclosed in the present invention, there is provided a single means which can be used to support a stanchion having a multi-person shower or the like connected thereto in either of the above described shower rooms.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood that within the scope of the appended claims the invention may be practiced otherwise than as specifically described.

I claim:

1. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multi-person shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a clamping and strainer supporting ring having a radially and outwardly extending lower flange adapted to rest upon and compress a waterproofing membrane upon said circumferential seat; said ring having an inwardly extending flange adjacent its upper margin to receive and support a strainer over the drain body; connecting means extending through said lower flange and cooperating with said circumferential seat to compress the waterproofing membrane upon said circumferential seat; a centrally disposed upstanding boss in said drain body having an internally threaded through port with a substantially vertical axis, the lower end of said boss port being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body; a hollow stanchion having a lower end portion threadedly held in said boss port; and a dome-like strainer resting on the inwardly extending flange of said ring.

2. The combination floor drain and support as stated in claim 1 wherein said lower end portion of said stanchion comprises a cap having a lower threaded portion for engagement with the threaded boss port and an upper portion having a circular seating shoulder means to center the hollow stanchion on said shoulder and means for removably connecting the cap to the stanchion.

3. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multi-person shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a clamping and strainer supporting ring having a radially and outwardly extending lower flange adapted to rest upon and compress a water-proofing membrane upon said circumferential seat, said ring having an inwardly extending flange adjacent its upper margin to receive and support a strainer over the drain body; connecting means extending through said lower flange and cooperating with said circumferential seat to compress the waterproofing membrane upon said circumferential seat; said lower flange being provided with spaced open-opended grooves to permit moisture from above said membrane to drain into said drain body; a centrally disposed upstanding boss in said drain body having an internally threaded through port with a substantially vertical axis, the lower end of said boss port being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body; a hollow stanchion having a lower end portion threadedly held in said boss port; a spider supporting means having an upper collar adapted to be connected to and encircle the lower portion of said stanchion above said central boss and downwardly diverging legs rigidly connected to the upper face of the body; and a dome-like strainer resting on the inwardly extending flange of said ring.

4. A combination floor drain and support mountable in an opening in a shower room floor for free-standing and throughstanding stanchions for multi-person shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a clamping and strainer supporting ring having a radially and outwardly extending lower flange adapted to rest upon and compress a waterproofing membrane upon said circumferential seat, said ring having an inwardly extending flange adjacent its upper margin to receive and support a strainer over the drain body; connecting means extending through said lower flange and cooperating with said circumferential seat to compress the waterproofing membrane upon said circumferential seat; said lower flange being provided with spaced open-ended grooves to permit moisture from above said membrance to drain into said drain body; a centrally disposed upstanding boss in said drain body having an internally threaded through port with a substantially vertical axis, the lower end of said boss port being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body, said fluid outlet

port being isolated, disconnected from and independent of said boss port; a hollow stanchion having a lower end portion threadedly held in said boss port; radially extending strengthening ribs provided on said lower supporting face of the drain body between said central boss and said circumferential seat of the drain body; a spider supporting means having an upper collar adapted to be connected to and encircle the lower portion of said stanchion above said central boss and downwardly diverging legs rigidly connected to the upper face of the body in position correlated to the location of said strengthening ribs; and a two member, dome-like strainer resting on the inwardly extending flange of said ring, each strainer member covering one-half of the circular drain body and having a central semicircular opening therethrough for receiving and encircling said stanchion.

5. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multi-person shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a centrally disposed upstanding boss in said drain body having an internally threaded through port, the lower end of said boss port being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body; a hollow stanchion having a lower end portion threadedly held in said boss port; and a spider supporting means having an upper collar adapted to be connected to and encircle the lower portion of said stanchion above said central boss and downwardly diverging legs rigidly connected to the upper face of the body.

6. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multi-person shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a centrally disposed upstanding boss in said drain body having an internally threaded through port with a substantially vertical axis, the lower end of said boss port being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body, said fluid outlet port being isolated, disconnected from and independent of said boss port; a hollow stanchion having a lower end portion threadedly held in said boss port; radially extending strengthening ribs provided on said lower supporting face of the drain body between said central boss and said circumferential seat of the drain body; and a spider supporting means having an upper collar adapted to be connected to and encircle the lower portion of said stanchion above said central boss and downwardly diverging legs rigidly connected to the upper face of the body in position correlated to the location of said strengthening ribs.

7. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multi-person shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a clamping and strainer supporting ring having a radially and outwardly extending lower flange adapted to rest upon and compress a waterproofing membrane upon said circumferential seat, said ring having an inwardly extending flange adjacent its upper margin to receive and support a strainer over the drain body; connecting means extending through said lower flange and cooperating with said circumferential seat to compress the waterproofing membrane upon said circumferential seat; said lower flange being provided with spaced open-ended grooves to permit moisture from above said membrane to drain into said drain body; a centrally disposed upstanding boss in said drain body extending above and below said upper and lower faces and having an internally threaded through port with a substantially vertical axis, the lower end of said boss being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body and having an axis substantially parallel to said port axis, said fluid outlet port being isolated, disconnected from and independent of said boss port; a hollow stanchion having a lower end portion threadedly held in said boss port; a spider supporting means having an upper collar adapted to be connected to and encircle the lower portion of said stanchion above said central boss and downwardly diverging legs rigidly connected to the upper face of the body; and a dome-like strainer resting on the inwardly extending flange of said ring.

8. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multiperson shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a clamping and strainer supporting ring having a radially and outwardly extending lower flange adapted to rest upon and compress a waterproofing membrane upon said circumferential seat, said ring having an inwardly extending flange adjacent its upper margin to receive and support a strainer over the drain body; connecting means extending through said lower flange and cooperating with said circumferential seat to compress the waterproofing membrane upon said circumferential seat; said lower flange being provided with spaced open-ended grooves to permit moisture from above said membrane to drain into said drain body; a centrally disposed upstanding boss in said drain body extending above and below said upper and lower faces and having an internally threaded through port with a substantially vertical axis, the lower end of said boss being uncovered and adapted to receive water supply pipes; an eccentrically disposed, downwardly directed fluid outlet port formed in said body and having an axis substantially parallel to said port axis, said fluid outlet port being isolated, disconnected from and independent of said boss port; a hollow stanchion having a lower end portion threadedly held in said boss port; said lower portion of said stanchion comprising a cap having a lower threaded portion for engagement with the threaded boss port and an upper portion having a circular seating shoulder means to center the hollow stanchion on said shoulder and means for removably connecting the cap to the stanchion; and a dome-like strainer resitng on the inwardly extending flange of said ring.

9. A combination floor drain and support mountable in an opening in a shower room floor for freestanding and throughstanding stanchions for multiperson shower comprising: a circular drain body provided with an upper, slightly concave drain face, a lower supporting face, and a circumferential seat for resting on the bottom of a floor opening; a centrally disposed upstanding boss in said drain body having a through port with a substantially vertical axis, the lower end of said boss port being uncovered and adapted to receive water supply pipes; and an eccentrically disposed, downwardly directed fluid port formed in said body and having an axis substantially parallel to said axis of said central boss port, said fluid outlet port being isolated, disconnected from and independent of said boss port.

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