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SURFACE DRAIN

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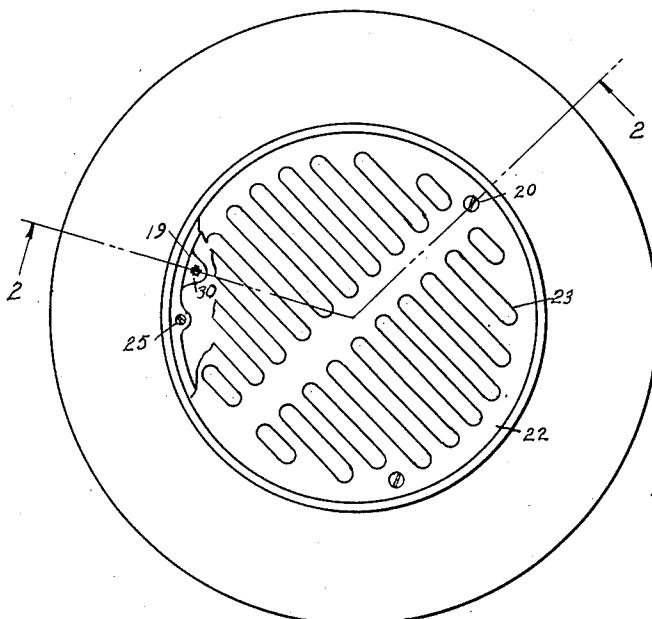


FIG. 1.

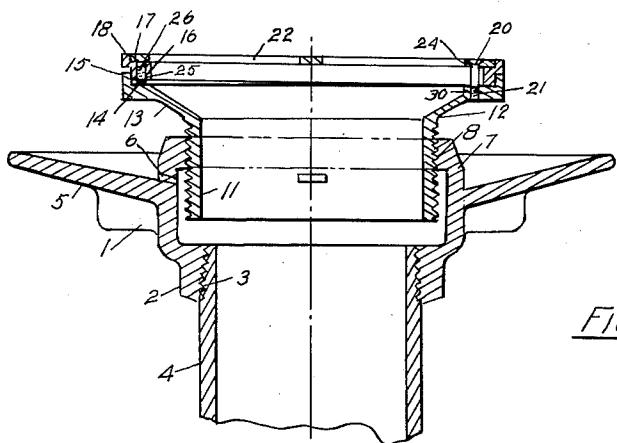


FIG. 2.

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SURFACE DRAIN

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This invention relates generally to surface drains and more particularly to floor drains in which the level of a strainer member thereon is adjustable in a substantially horizontal plane and vertically through successive parallel planes to conform to the level of a floor in which the floor drain is installed.

The tops of present floor drains are adjusted to the level of the floor after which cement is introduced around the periphery of the strainer or surface member of the drain. There is a certain amount of shrinkage of the cement when it hardens and seasons and this leaves the tops of present floor drains out of level with the floor. To remove the strainer members in present floor drains, it is necessary to chip the cement from around the upper strainer member thereof. The tops of present floor drains cannot be adjusted to the plane of an inclined floor. These present floor drains are formed of a number of different parts, making them costly in manufacture and assembly. The throats or mouths of these drains are formed with obstructions which usually extend crosswise thereof, causing stoppages of the drain and making it impossible to pass test plugs thereinto for various required tests. Furthermore, it is extremely difficult to get into these prior floor drains to clean them.

It is, accordingly, an object of my invention to overcome the above and other defects in present floor drains and it is more particularly an object of my invention to provide a floor drain which is simple in construction, economical in cost, economical in manufacture, and efficient in operation.

Another object of my invention is to provide a floor drain with a minimum number of parts.

Another object of my invention is to provide a floor drain with an increased area of unobstructed passageway for the passage of fluid from the strainer to minimize the impedance to the flow of water or other waste material through the drain.

Another object of my invention is to provide a floor drain which has no obstructions to cause stoppages and through which a test instrument may be projected.

Another object of my invention is to provide a floor drain in which the strainer member is adjustable in a substantially horizontal level and through vertically successive parallel planes and it is removable and replaceable at all times.

Another object of my invention is to provide a floor drain with a strainer member which is not cemented in the floor in which it is disposed.

Another object of my invention is to provide

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 an adjustable leveling ring for disposal on a surface drain when the surface to be drained is inclined.

Other objects of my invention will become evident from the following detailed description, taken in conjunction with the accompanying drawings, in which

Fig. 1 is a plan view of my novel floor drain; and

Fig. 2 is a view taken on the line 2—2 of Fig. 1.

Referring now to the drawings, I show in Figs. 1 and 2 a cylindrical member 1 having a depending internally threaded flanged portion 2 for threadable connection with the upper threaded end 3 of a pipe 4 which may have any suitable connection on the lower end thereof for connection to a sewage or other drain pipe. The member 1 has a slightly conical circular shield flange 5 to drain seepage water through laterally extending apertures 6 into the throat of the member 1. The member 1 has an inwardly extending annular flanged portion 7 internally threaded at 8 for threadably engaging the lower threaded cylindrical portion 11 of a sleeve 12. The sleeve 12 has a conical shaped circular flange 13 with a flat annular seat 14 and with the outer side thereof flanged upwardly at 15. The sleeve 12 is initially adjusted to a predetermined vertical position with respect to a floor or roof surface and cement is disposed therearound to hold it firmly in a floor.

When the seating surface 14 is not in a plane with the floor or roof surface in which it is embedded as in an inclined floor or roof surface, I provide an annular leveling ring 16 having a flat annular upper seat 17 and an upwardly extending, outwardly flanged portion 18. The ring 16 seats on the seat 14 of the member 12 with the flanged portion 18 thereof seating on the flange 15 of the member 12. The conical shaped flange 13 on the member 12 has circumferentially spaced, inwardly extending bosses 30 with threaded apertures 21 formed integral with the upper side thereof for threadably receiving screw bolts 20. A circular top surface or strainer member 22 having spaced slots 23 in the face thereof seats on the seating surface 17 of the ring member 16. The strainer member 22 has circumferentially spaced countersunk apertures 24 for receiving the screw bolts 20 which threadably engage the threaded apertures 21 in the bosses 30 to secure the ring member 16 and the strainer member 22 onto the seat 14 of the sleeve 12. The inner side 19 of the leveling ring 16 is outside of the screw bolts 20 so that it may be rotated on the seat 14 to any desired position. It should be

noted that the strainer member 22 will seat on the seat 14 of the member 12 when the leveling ring 16 is not required and it may be secured to the seat 14 by the screw bolts 28 engaging the threaded apertures 21 in the bosses 30. I provide a threaded aperture 25 in the leveling ring 16 for receiving a screw bolt 26 which abuts the seat 14 of the sleeve 12 to raise one side of the leveling ring 16 upwardly from the seat 14 to adjust the horizontal level thereof.

In the disposal of my novel surface drain in a floor or roof, the member 1 and the adjustable sleeve 12 are embedded in whatever floor or roof material is used, such as cement, in a surface which is to be drained. The adjustable sleeve 12 is rotated until the top thereof is level with the proposed surface to be drained before the embedding thereof. If the top of the seat 14 on the sleeve 12 is level with the surface of the embedding material, the strainer member 22 is secured to the seat 14.

In the event that the seat 14 is not in the same plane as the floor surface as in the case of an inclined floor or roof surface, the leveling ring 16 is disposed thereon as shown in Figs. 1 and 2. The screw bolt 25 is then threadably engaged with the threaded aperture 25 in the ring member 16 and it is abutted against the low side of the seat 14 and leveled with the floor surface. The screw bolt 26 is rotated on its own axis and on the seat 14 of the member 12 until the ring member 16 is in the same plane as the floor surface. Additional adjustment may be obtained by rotating the sleeve 12. After the ring member 16 is level, the strainer member 22 is disposed thereon and the screw bolts 28 are threadably engaged with the threaded apertures 21 in the bossed portions 20 of the member 12. There are no obstructions to the flow of fluid through my novel drain and a maximum amount of water 40 may be carried away by it.

It will be evident from the foregoing description that I have provided a novel efficient adjustable floor drain which has a minimum number of parts, which has novel adjustable detachable means for disposal on the upper side thereof for adjusting the top level of the strainer member, which is relatively economical in cost and easy to manufacture, and which is easy to assemble in a floor.

Various changes may be made in the specific embodiment of my invention without departing from the spirit thereof or from the scope of the appended claims.

What I claim is:

1. A surface drain comprising a body member having a depending portion for connection to the end of a pipe and an inner annular threaded portion, a flanged sleeve having a threaded portion engageable with the threaded portion of said body member, the flanged portion of said sleeve having a flat seating surface, a ring member disposed on said seating surface, a screw bolt extending through said ring member and abutting said seating surface for raising one side thereof, a strainer member disposed on said ring member, and means for securing said ring member and strainer member to said flanged sleeve.

2. A surface drain comprising relatively movable cylindrical members for disposal in a floor surface, the upper of said members having a seating surface, means for securing said upper cylindrical member in successive vertical positions, a strainer member disposed on said seating surface, a screw bolt extending through said upper mem-

ber and engaging said seating surface of said upper member for raising one side thereof, and fastening means for securing said strainer member to said seating surface.

3. A surface drain comprising a body member having a portion for attachment to a pipe, a sleeve attached to said body member and movable relative thereto having a flat seating surface, a ring member seated on the seating surface of said sleeve, a screw bolt extending through said ring member and engaging the seating surface of said sleeve for raising one side of said ring member from said seating surface, a strainer member on said ring member, and threaded members for securing said ring member and said strainer member onto the seating surface of said sleeve.

4. A surface drain comprising a body member having a lower portion for engagement to the end of a pipe and an upwardly inwardly directed threaded annular portion, a threaded cylindrical sleeve member threadably engaging the threaded portion of said body member, an outwardly flanged portion on the upper end of said sleeve having a flat seating surface and an upwardly directed marginal flange, a ring disposed on said seating surface, a screw bolt extending through said ring for raising one side thereof upon engaging said flat seating surface on said sleeve, a strainer member disposed on said ring, and screw bolts extending through said strainer member and said ring for attachment to the flanged portion of said sleeve.

5. A surface drain comprising a body member having an outlet for connection to a drain pipe, a cylindrical member having a horizontal seating surface vertically movable in said body member, means for securing said cylindrical member in successive vertical positions with relation to said body member, a leveling ring for disposal on said seating surface, a threaded member extending through said leveling ring and engaging said seating surface to raise one side of said leveling ring, a strainer for disposal on said leveling ring, and fastening members extending through said strainer member and engaging said cylindrical member, said leveling ring being rotatable on said seat and said fastening members being free of and inside of said leveling ring when said strainer member is mounted on said leveling ring.

6. A surface drain comprising a vertically disposed body member having a pipe connecting portion, a flanged member telescopically disposable in said body member, means for securing said flanged member in successive vertical positions relative to said body member, a strainer member supported by said flanged member, means disposed on the upper side of said flanged member for raising one side of said strainer, said means comprising screw means engaging the upper surface of said flanged member, and fastening means for securing said strainer member to said flanged member.

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