Oct. 5, 1937. E. W. N. BOOSEY 2,095,024

FLOOR DRAIN

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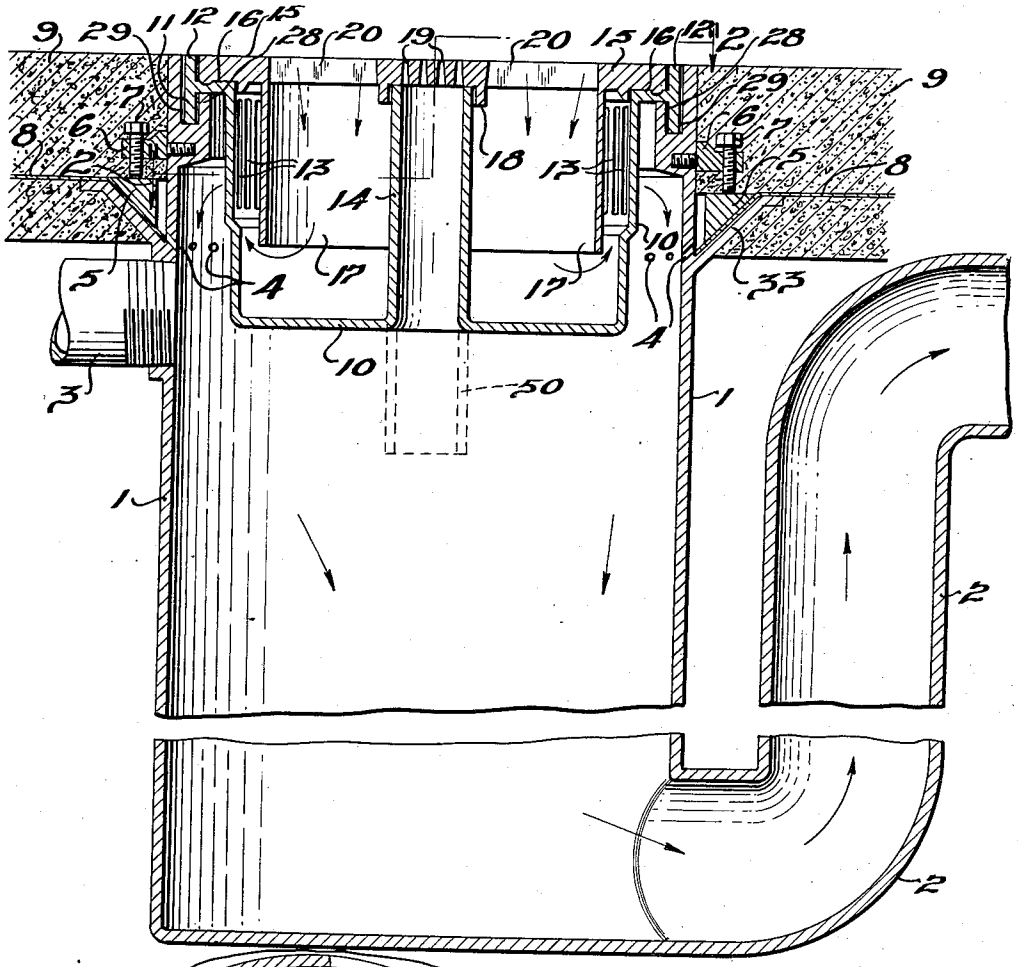


FIG. 1.

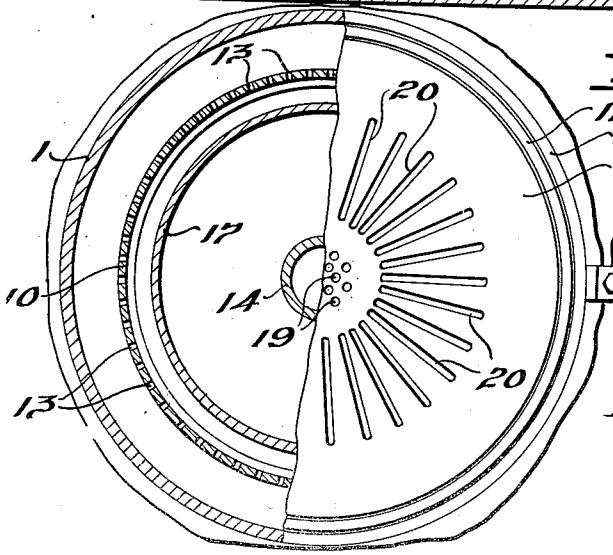


FIG. 2.

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FLOOR DRAIN

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9 Claims. (Cl. 182—31)

This invention relates to floor drains and the object of the invention is to provide a non-clogging floor drain having a sediment intercepting basket and arranged to allow flow through the drain even when the basket is clogged with sediment.

Another object of the invention is to provide a floor drain having a sediment intercepting basket provided with a tubular central portion over which the grating extends, the arrangement being such that upon clogging of the sediment basket the water may still flow through the grating and through the tubular portion of the basket.

A further object of the invention is to provide a floor drain in which the grating cannot be used unless the sediment intercepting basket is in position.

Another object of the invention is to provide a floor drain having a flashing clamp and arranged so that any seepage will pass into the interior of the drain.

A further object of the invention is to provide a floor drain having a sediment intercepting basket formed of metal and provided with overflow apertures and having a grating fitting over the top of the basket and provided with an annular apron extending into the basket, the basket being also provided with a tubular portion at the center opening into the drain body at the lower end and the grating being provided with an apertured portion fitting over the upper end of said tubular portion.

These objects and the several novel features of the invention are hereinafter more fully described and claimed and the preferred form of construction by which these objects are attained is shown in the accompanying drawing in which—

Fig. 1 is a longitudinal section through a floor drain embodying my invention.

Fig. 2 is a section taken on line 2—2 of Fig. 1.

As shown in Fig. 1, the drain comprises a cylindrical drain body 1 having an outlet 2 at the bottom and provided with a vent connection 3 near the top. This drain body is provided with an angular flange 33 extending thereabout and with a series of seepage apertures 4 above the junction of the flange with the drain body. A clamping ring 5 is provided having an angular face extending at the same angle as the flange 3 and a series of supporting brackets 6 are secured about the upper end of the drain body. Each bracket 6 carries an adjustable screw 7 and in the usual floor construction a lead flashing 8 is embedded in the concrete floor 9 and is fitted over the flange 3 so that by tightening the screws 7 the clamping ring 5 will be pressed downwardly to engage the flashing tightly against the angular flange 3. The clamping ring 5 has its inner face spaced from the upper end of the drain body 1 and water may pass through the concrete into the space 3 and thence through the seepage apertures 4 into the interior of the drain body.

On the inside of the drain body near the top is an annular flange 28 shaped to provide a channel 29 as shown. The sediment intercepting basket 10 is provided with a flange 11 fitting in the channel 29 and with a flange 12 extending flush with the upper edge of the drain body when mounted in position as shown in Fig. 1.

This sediment intercepting basket is provided with a series of vertical slots 13 in the outer wall spaced above the bottom thereof and at the center is provided with a tubular portion 14 opening at the bottom into the interior of the drain body.

The grating 15 shown in Figs. 1 and 2 is seated on the shoulder 16 of the sediment basket and is provided with a skirt 17 extending downwardly into the seepage basket below the overflow slots 13. At the center, the grating 15 is provided with a flange 18 fitting about the upper end of the tubular portion 14 of the seepage basket and this grating is provided with a series of drain apertures 19 over the tubular portion 14.

By this arrangement, any seepage through the floor 9 will pass along the flashing 8 and downwardly through the apertures 4 into the interior of the drain body. The surface water will pass through the slots 20 in the grating into the seepage intercepting basket and as this water rises above the bottom of the slots 13 it will pass through the slots into the interior of the drain body.

As the bottom of the slots extend above the lower edge of the skirt 17, water is maintained in the seepage basket above the lower edge of the skirt 17 and provides a trap for sediment such as sticks, coal, ashes, mud, sand, bottle caps, broken glass, feathers, clippings, etc. which will remain in the sediment basket and when the sediment basket becomes clogged with such sediment so that water will not pass therethrough the surface water will fill the seepage basket up to the level of the grating and will then pass to the center of the grating and through the apertures 19 and thence through the tubular portion 14 into the interior of the drain so that drainage is provided even when the sediment basket is clogged.

To clean the sediment basket it is merely neces-

sary to lift the grating 15 and then lift the basket out and dump it, at which time, the parts may be replaced in position for further use. It is to be noted that the grating cannot be used without the sediment basket in place as the grating will not properly fit when the sediment basket is removed. This drain body, sediment intercepting basket and tubular portion 14 shown in full lines in Fig. 1 are serviceable in many installations where escape of gases through the apertures of the cover is not important. However, where the escape of gases is an important factor, the flange 11 in the channel 29 should be sealed as by any appropriate sealing material and the bottom edge of the slots 13 in the sediment intercepting basket are above the lower end of the skirt 17 which is below the water level in the basket.

This arrangement prevents gases from passing from the drain body through the slots 13 upwardly through the skirt 17 and grating. To prevent gases escaping through the central apertures 19 of the grating the tubular member 14 should be formed, as indicated by dotted lines 50 in Fig. 1, to extend downwardly into the drain body below the normal water level determined by the outlet. By the described arrangement of parts including that indicated by the dotted lines 50, escape of gases through the grating into a room of a building is prevented.

From the foregoing description it becomes evident that the device is very simple and efficient in operation, provides a floor drain which may be readily cleaned at any time without tools, will prevent sediment from passing into the drain and provides a device which accomplishes the objects described.

Having thus fully described my invention, its utility and mode of operation, what I claim and desire to secure by Letters Patent of the United States is:—

1. In a floor drain, a drain body having an inwardly extending flange near the top, a sediment intercepting basket supported on said flange and having a tubular portion extending vertically through said basket, the upper edge of the sediment intercepting basket being provided with a shoulder, a grating mounted on said shoulder, the said grating having a perforated central portion over the upper end of the tubular portion of the sediment intercepting basket and the grating also being provided with openings arranged about said perforated central portion, an angular flange about the exterior of the drain body, a clamping ring having an angular face corresponding to the face of the angular flange and a series of adjusting screws supported on the exterior of the drain body and engaging said clamping ring, the drain body being provided with seepage apertures through the wall above the connection of the angular flange with the drain body.

2. In a floor drain, a drain body having an inwardly extending flange near the top, a sediment intercepting basket supported on said flange, said sediment intercepting basket being provided with a series of overflow apertures spaced above the bottom thereof, a grating fitting over the sediment intercepting basket and provided with a skirt extending downwardly into the said basket below the overflow apertures therein, said grating being provided with a series of openings at the center, a tubular portion extending upwardly from the bottom of the sediment intercepting basket and beneath said apertures in the grating, the lower end of the tubular portion discharging directly into the drain body and the grating being provided with a series of apertures between said central apertures and the skirt of the grating.

3. In a floor drain, a drain body having an inwardly extending flange near the top, a sediment intercepting basket supported on said flange and having a tubular portion extending vertically through the sediment basket, the upper edge of the sediment intercepting basket being provided with a shoulder, a grating seating on said shoulder, the said grating having a perforated central portion seating on the upper end of the tube and the grating also being provided with openings over the basket about the tube.

4. In a floor drain, a drain body having an inwardly extending flange near the top, a sediment intercepting basket supported on said flange and having a tubular portion at the center open at both ends, a grating fitting over the sediment intercepting basket and having a skirt extending into the basket in spaced relation with the outer wall of the basket, the said grating having a perforated central portion seating on the upper end of the tubular portion of said basket.

5. In a floor drain, a drain body, a sediment intercepting basket supported in the upper end of the drain body, a central tubular portion in said basket communicating with the interior of the drain body and a perforated grating extending over the sediment intercepting basket and over the tubular portion thereof.

6. In a floor drain, a drain body, a sediment intercepting basket having a flange supported at the upper end of the drain body in sealed relation therewith, a grating member having a skirt portion extending into the basket, said basket having apertures opening peripherally to the interior of the drain body in a plane above the lower end of the skirt whereby said skirt end is below the normal water level of the basket, and a central tubular portion in the said basket extending below the bottom thereof to below the normal water level in the body as determined by the outlet member, said grating extending over the upper end of the tubular portion and having apertures therein through which liquid may flow into the said tubular portion.

7. In a floor drain, a drain body, a grating extending over the upper end thereof, a sediment intercepting trap comprising a basket supported in the upper end of the body, and a skirt supported by the grating and extending into the basket in spaced relation with the wall thereof and having an open end terminating above the bottom thereof, the wall of the basket above the lower end of the skirt having openings for discharge of liquid to the drain body, the arrangement providing that accumulation of sediment in the basket to a depth to engage the lower end of the skirt seals the basket to flow through the apertures thereof, and means providing for flow of liquid through the grating to the interior of the body.

8. In a floor drain, a drain body having an open upper end, a grating extending over the said end to receive sewage from a floor surface, a sediment intercepting trap comprising a basket supported in the upper end of the body, and a skirt depending from the under side of the grating and extending into the basket in spaced relation with the wall thereof and terminating above its bottom, the wall of the basket above the bottom of the skirt having openings through which fluid may flow from the basket into the drain body, the accumulation of sediment in the

bottom of the basket to a depth to engage the skirt seals the basket to a flow of fluid through the apertures therein, the grating further having a series of apertures sealed to the basket through which liquid may flow directly into the body.

9. In a floor drain, a drain body having an open upper end, a grating extending over the said end to receive sewage from the floor surface, a sediment intercepting trap comprising a basket supported in the upper end of the body, and a skirt integral with the grating and extending therebelow into the basket in spaced relation with the wall thereof and terminating above its bottom, the wall of the basket above the bottom of the skirt having openings through which fluid may flow from the basket into the drain body, the arrangement providing that accumulation of sediment in the bottom of the basket to a depth to engage the bottom end of the skirt prevents flow of fluid through the said apertures of the basket, the grating further having a series of apertures opening directly to the body and providing for a flow of liquid through the grating thereinto when the basket is sealed to flow of liquid therethrough by an accumulation of sediment therein.

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