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E. W. N. BOOSEY
BACK WATER FLOOR DRAIN
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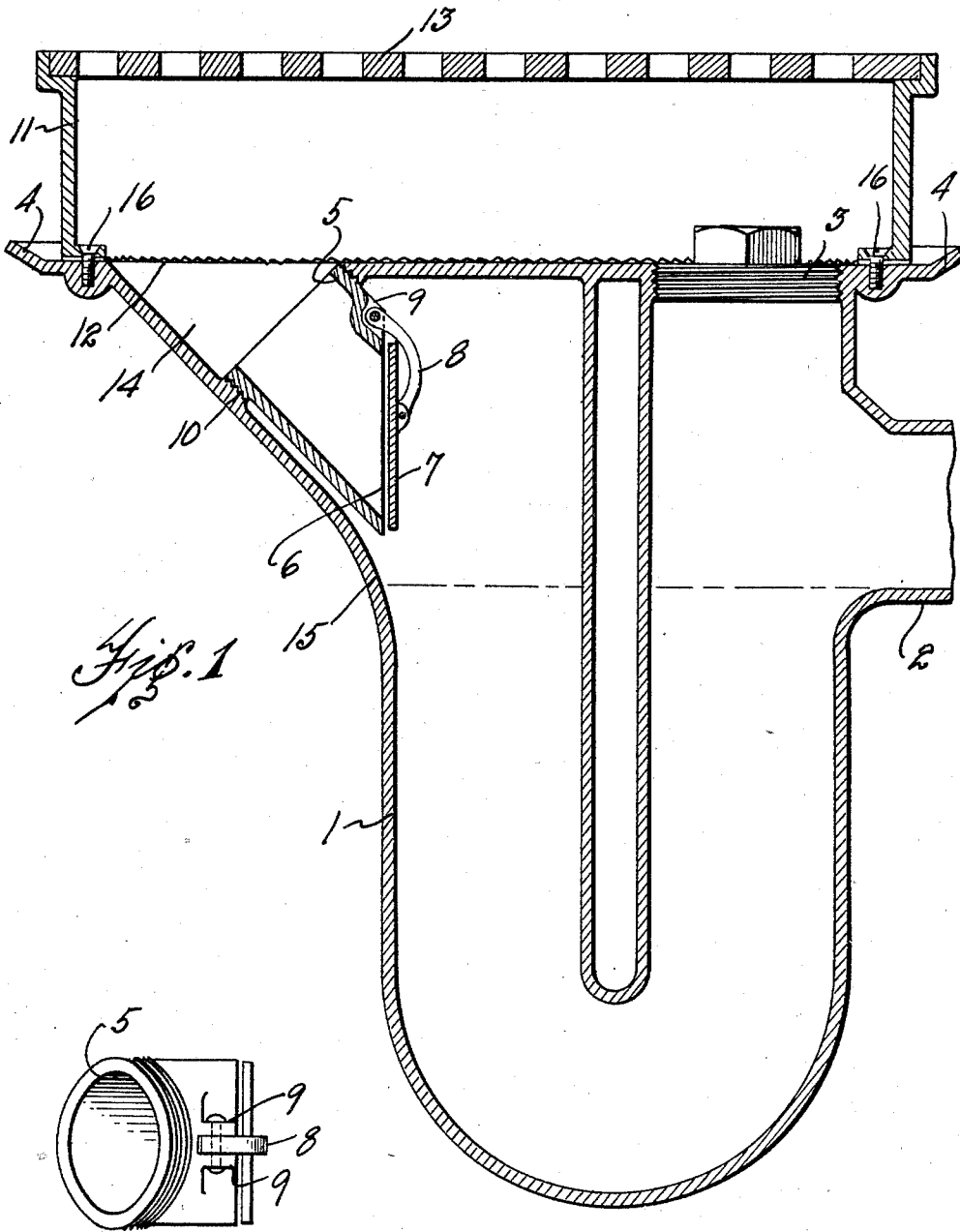


Fig. 1
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Fig. 2
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INVENTOR.
EDWARD W. N. BOOSEY
BY
Charles E. Wainwright
ATTORNEY.

UNITED STATES PATENT OFFICE.

EDWARD W. N. BOOSEY, OF DETROIT, MICHIGAN.

BACKWATER FLOOR DRAIN.

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This invention relates to back water floor drains and the object of the invention is to provide a floor drain which will stop water from backing up through the drain onto the floor of the building in which the drain is installed.

Another object of the invention is to provide a floor drain which may be readily cleaned out and which is provided with an inlet valve adapted to automatically close against back pressure and against back water flow.

Another object of the invention is to provide a floor drain having a flange on which the drain plate is supported, the flange being arranged to catch any seepage around the drain plate and carry it into the drain.

Another object of the invention is to provide a back water floor drain having an inlet valve adapted to be threaded into position in the drain inlet and being readily removable to allow cleaning of the drain.

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 drawings in which—

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

Fig. 2 is a plan view of the inlet valve and seat member.

The device consists of a U shaped body portion 1 shown in Fig. 1 and having an outlet 2. The body or trap 1 is provided with a clean-out plug 3 above the outlet and a peripheral flange 4 is cast integrally with the upper end of the body portion 1 and extends upwardly at an angle at the outer edge as shown in Fig. 1. A valve member 5 is threaded into the inlet end of the body portion 1 and is provided with a valve seat 6 against which the valve 7 normally seats by gravity. The valve 7 is pivotally secured to an arm 8 which is pivotally mounted between the lugs 9 on the valve member 5 as shown in Fig. 2. These lugs 9 as will be noted from Fig. 1 are within the circumference of the member 5 so that the valve member 5 and the valve 7 may be inserted through the threaded flange 10 in the inlet 14 and threaded into position. This arrangement allows the valve member and valve to be

removed at any time for cleaning out the inlet side of the trap or body portion 1 and the clean-out plug 3 may be removed for cleaning out the outlet side of the trap. As will be noted from Fig. 1 an annular member 11 is secured to the flange 4 by the screws 16 and is of smaller diameter than the said flange. This member 11 is provided with a radially corrugated lower edge 12 and at the upper edge supports a drain plate 13 which may be cast integrally therewith or made separately as shown and together with the member 11 encloses the inlet 14 and clean-out plug 3.

This device is set into a floor with the drain plate flush with the floor level. Any seepage between the annular member 11 and the floor surrounding the said member is caught by the flange 4 and passes through the corrugations 12 in the lower edge of the member 11 and into the inlet opening 14.

The ordinary drainage passes through the drain plate 13 and through the inlet 14 into the valve member 5. This flow swings the valve 7 off from its seat so that the drainage will pass into the trap 1, the trap 1 being formed on a long arc at 15 so that there is no opportunity for matter to collect below the valve 7. The water normally remains in the trap 1 at about the level shown in Fig. 1 forming an effective seal. Should the water attempt to back up through the drain it more firmly seats the valve 7 against its seat 6 and prevents the water from backing up through the floor drain onto the floor. The valve 7 also prevents back pressure by gas or air as this type of back pressure also more firmly seats the valve 7 and at the same time the valve is free to open as the drainage passes into the trap through the inlet. The valve 7 and member 5 are so arranged that the drainage enters the body of the trap at less than a right angle and above the water level therein and thus the drainage enters practically directly into the seal in the direction of flow through the trap.

From the foregoing description it becomes evident that the device is very simple and efficient in operation, provides a means for catching seepage around the outside of the drain plate as well as the ordinary drainage 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. A back water floor drain comprising a hollow U-shaped body member having an integral flange at the upper end, the body member being provided with an inlet opening at an angle through the said flange into the body member, a valve member threaded into the inlet, a valve pivotally supported on the valve member within the inlet and adapted to normally close the inlet by gravity, the said valve being adapted to open upon flow of drainage therethrough, the said valve member and valve being removable from the inlet to allow cleaning of the body member, a clean-out plug in the opposite end of the body member, an outlet opening from the body member beneath the said flange, an annular member of smaller diameter than the flange and having a corrugated lower edge resting on the said flange and a perforate drain plate carried by the said annular member.

2. A back water floor drain comprising a hollow U-shaped body member having an integral flange at the upper end, the body member being provided with an inlet opening at an angle through the said flange and into the side wall of the body member, a valve member threaded into the inlet and carrying an inlet valve normally closing by gravity, a clean-out plug in the end of the body member opposite the inlet, an outlet opening from the body member beneath the said flange, an annular member of smaller diameter than the flange having a corrugated lower edge resting on the said flange, the annular member extending about the inlet and clean-out plug, and a perforate drain plate supported in the upper edge of the annular member, the drain plate being readily removable to allow access to the inlet and clean-out plug.

3. A back water floor drain comprising a hollow U shaped body member having an integral flange formed about the upper end thereof provided with an upturned peripheral edge, an annular member positioned on the said flange within the peripheral edge having a corrugated lower edge through which seepage is adapted to pass into the drain, a drain plate carried by the said annular member, an inlet opening at an angle through the said flange into the body member, a valve member threaded into the said inlet, a valve carried thereby normally closing the inlet but adapted to open upon flow of drainage therethrough, an outlet opening from the U shaped member opposite the inlet and a clean-out plug threaded into the U shaped member above the outlet.

4. A back water floor drain comprising a hollow U shaped body member having an outlet in one side thereof and an angular inlet in the opposite side thereof, the body member being provided with an integral flange about

the upper end thereof having an upturned peripheral edge, an annular member seating in the said flange within the said peripheral edge and having corrugations in the lower edge through which seepage is adapted to flow into the sump, and a drain plate carried by the said annular member.

5. A back water floor drain comprising a hollow U shaped body member having an inlet and an outlet adjacent the opposite ends thereof, a flange formed integrally with the body member, an annular member having a corrugated lower edge seating on the said flange, a valve member threaded into the inlet, an inlet valve supported by the valve member within the inlet and normally closing by gravity, the valve being adapted to open by flow therethrough into the body member and adapted to close upon flow in the opposite direction.

6. A back water floor drain comprising a hollow U shaped body member having an outlet in one side thereof and an angular inlet in the opposite side thereof, the body member being provided with a flange formed integrally with the upper edge thereof, the angular inlet opening through the said flange, a clean-out plug threaded into the body member adjacent the outlet and an annular member carrying a perforate drain plate adapted to be positioned on the said flange to enclose the inlet and clean-out plug.

7. A back water floor drain comprising a trap of substantially U shape having an outlet on one side and inlet opening on the other, a tubular member secured in the inlet to extend into the trap, a swing check valve at the inner end of the tubular member on a line substantially in a vertical plane adapted to close the inlet by back flow of fluid in the trap, said parts being arranged with the check valve above the normal level of water in the trap, a flange at the upper end of the trap, a hollow body secured thereon having an open upper end, a grating for the said open end, the said hollow body and grating providing an inlet chamber discharging to the trap through the tubular member.

8. A backwater floor drain comprising a trap of substantially U shape having an outlet on one of its sides and an inlet opening on the other, a chambered body above the trap inlet having an opening to receive fluid, a grating covering the opening, a tubular member into which the fluid is discharged from the chambered body, a swing check valve on the discharge end of the tubular member lying substantially in a vertical plane and positioned to be closed by back flow through the trap, the tubular member being so supported that the swing check valve is positioned above the normal level of water in the trap.

9. A back water floor drain comprising a trap substantially U shaped in form having an outlet in one of its legs near the top, there

being a wall integral with the trap extending across the upper end of the inlet leg, said wall having a threaded aperture, a tubular member extending into the leg and supported in the said opening, a swing check valve at the inner end of the tubular member closable by back flow to the trap, a chamber above the trap having substantially vertical walls, the said tubular member providing a discharge outlet for the chamber, and a grating providing a cover for the chamber through which fluid may be discharged thereinto.

In testimony whereof I sign this specification.

EDWARD W. N. BOOSEY.