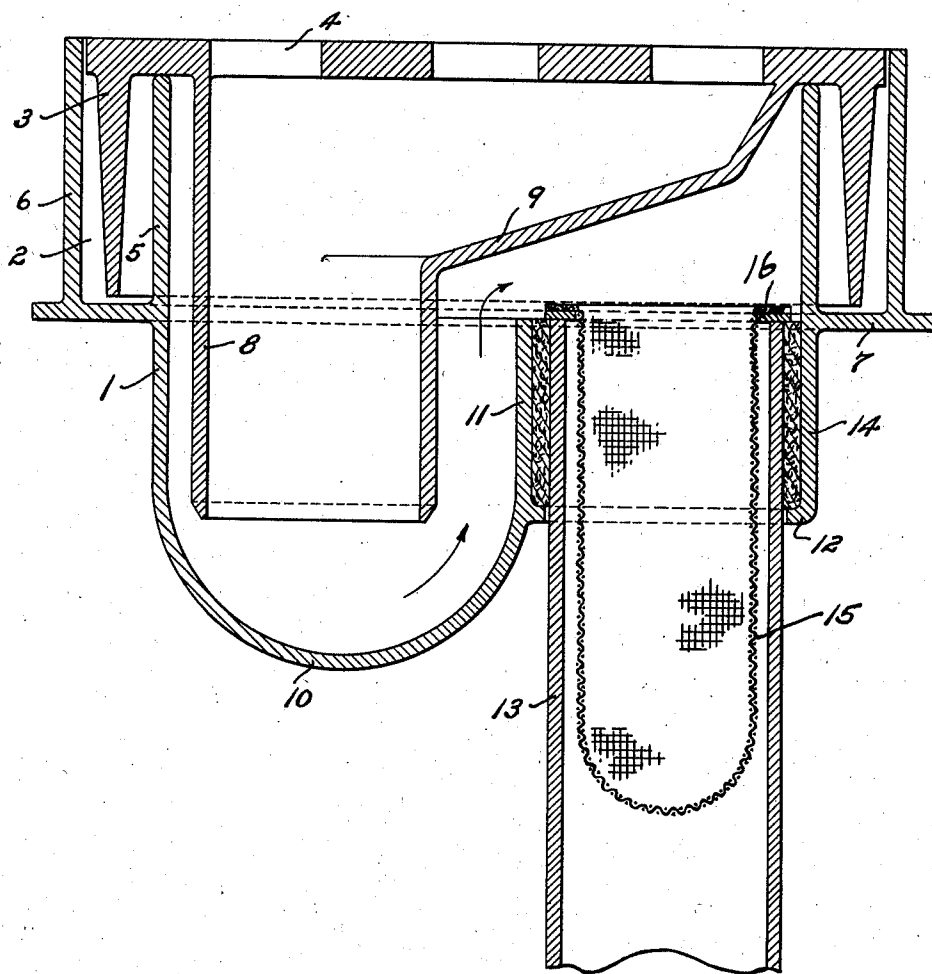


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E. W. N. BOOSEY
SELF-CLEANING DRAIN HEAD
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INVENTOR.
Edward W.N. Boosey
BY
Charles E. Nixon
ATTORNEY.

UNITED STATES PATENT OFFICE

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SELF-CLEANING DRAIN HEAD

Edward W. N. Boosey, Detroit, Mich.

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This invention relates to self-cleaning drain heads for use in association with bodies of various types having an outlet to a sewer.

The principal object and feature of the invention is to provide a drain head which includes a bell trap and a tubular element carried by the grating of the head and extending into the trap below the normal water level therein, said tubular element including an apron extending below the grating and separating the grating from an outlet connected to the body. The head may be used in the floors of buildings, garages and various other places where it is desired to provide a self-cleaning and self-sealing drain head.

It is further a feature and object of the invention to provide a drain head having a body member formed at its upper edge with an open ended channel element to receive a skirt or flange formed integrally with the grating and further to provide an imperforate tubular element formed preferably integrally with the grating member while the bottom of the body is formed at one side for connection with a conduit leading to a sewer and on the opposite side with a bowl-like portion into which the tubular element extends and in which the open lower end of the tubular element is sealed to the outlet and providing a construction in which the liquid, which may contain some solids, passing through the grating is caused to be swept out of the bowl to the outlet.

These and other objects and features of the invention are hereinafter more fully described and claimed, and the preferred form of construction of a drain head embodying my invention is shown in the accompanying drawing which is a vertical section of a drain head in its preferred form.

As shown in the drawing, the drain head comprises a body 1 open at its upper end and formed with a peripheral channel 2 open at its upper edge to receive a depending peripheral flange 3 of a grating member 4 in which channel the flange may be sealed. The channel is formed between the vertical wall 5 of the head and an outer parallel wall 6 which latter wall extends to above the upper end of the wall 5 a distance approximately equal to the thickness of the grating member. The grating member is slightly less in diameter than the diameter of the flange or wall 6 forming the channel and thus in the positioning of the parts, the upper face of the grating member 5 occupies practically the same plane as the upper edge of the flange 6. The body 1 is thus provided with a shoulder 7 forming the bottom of the channel and providing a means for sup-

porting the same upon a foundation which may be of any desired type of construction. Depending from the grating member is a tubular element 8 open at its bottom end and this member is formed on one side with a downwardly inclined wall or apron 9 and the tubular member is therefore disposed on one side of the grating.

The bottom of the member 1 is formed with a bowl-like element 10 open at its upper end and into which the tubular member extends in spaced relation with the bottom and preferably in off-center relation with the bowl as shown. This bowl-like element 10 has an inner practically vertical wall 11 extending upwardly from the bottom of the wall portion 12 of the body which wall 12 is apertured to receive the end of a discharge conduit 13 extending upwardly into the body and terminating in practically the same plane as the upper edge of the wall 11 of the bowl element. The conduit 13 is spaced from the said wall and also from the vertical side wall 14 of the body permitting the conduit to be caulked in place.

Other means of attaching the head and conduit may be employed but in any convenient structural assembly of the conduit 13 with the body, the upper end of the conduit preferably should not be above the upper end of the wall 11 of the bowl.

Another feature and object of the invention is secured by providing the outlet conduit 13 with a bag like screen 15 which has a flange 16 of greater diameter resting on the top of the outlet. Any foreign matter discharging into the drain head is flushed out of the trap 10 and into the said screen 15 and when sufficient foreign matter has accumulated in the screen the grating member 4 may be removed thereby permitting access to the screen for its removal and subsequently clearing the same of accumulated foreign material.

It will be noted that, in the structure described, liquid containing solids flowing through the grating falls into the bowl on one side thereof and the force of the flow tends to sweep the liquid and solids from the bowl bottom up over the inner wall 11 of the bowl with the outlet member. Thus an accumulation of foreign matter in the bowl is prevented and the tubular element, including its angularly disposed wall 9 extending over the outlet member, seals the grating to the outlet by reason of the tubular element being water sealed in the bowl.

By this arrangement of parts therefore, I have secured a simple and comparatively inexpensive structure that serves the dual purpose of being both self-cleaning and self-sealing and further,

by removal of the grating and the attached tubular member, both the bowl element and the outlet conduit are open to inspection. It is also believed evident from the foregoing that the various objects of the invention are attained by the structure described.

Having thus briefly 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 self-cleaning drain head comprising a body having an open upper end, a grating, a bowl-like element formed in the bottom of the body and at one side of its center line, said bottom of the body also having an aperture on the opposite side of its center to receive an outlet member, a tubular element connected with the drain head and extending into the bowl to below the top and in off-center relationship therewith, said tubular element being imperforate and having an inclined portion extending to connection with the grating and preventing gases from passing from the outlet through the grating.

2. A self-cleaning drain head comprising a body having an open upper end, a grating for the said end, the bottom of the said drain body being formed to provide an integral bowl-like element on one side of the center line of the body and to provide an aperture on the opposite side of the center line to receive an outlet member, a tubular element formed integrally with the grating and having an open lower end extending into the bowl to below the top thereof and forming therewith a water seal, the tubular element being otherwise imperforate and preventing gases at the outlet from passing through the grating.

3. A self-cleaning drain head comprising a body having a peripheral flange formed with the body to provide a channel open at its upper edge, said body having on one side of its center line a bowl-like bottom portion formed in continuity with the body at one side thereof and the bottom of the body on the opposite side of the bowl terminating at a point below the top of the bowl and having an aperture, the aperture being less in diameter than the distance between the said inner wall of the bowl and adjacent wall of the body whereby in introducing the end of a discharge conduit therein a sealing space is provided between the conduit and the said wall portions, a grating member having a peripheral flange on its under side for engaging in the peripheral channel for sealing purposes and further having a depending tubular portion extending to below the upper edge of the bowl and in off-center relationship therewith, there being an inclined wall connecting one side of the depending tubular element lying above the upper end of the bowl and of the outlet providing a structure by which the gases from the conduit are prevented from passing through the grating.

4. A drain head comprising a body open at its upper end and having a peripheral channel at its upper edge, a grating for said open end having a depending flange entering the channel, the outer wall of the channel extending to above the inner wall a distance approximately equal to the thickness of the grating and permitting the

positioning of the grating with its upper surface substantially flush with the upper edge of the outer wall, the bottom of the said body having a bowl-like element formed on one side in continuity with the side wall of the body and terminating on the other side above the bottom of the body, said body bottom having an aperture adjacent the opposite wall of the body to receive a discharge conduit, and a tubular element depending from the grating member and extending into the bowl in an off-center relationship therewith, said tubular member having imperforate walls and so associated with the drain member to prevent gases passing from the outlet through the grating, the bowl and the associated tubular element providing a water seal.

5. A self-cleaning drain head comprising a body having an open upper end and a bottom formed to provide an integral bowl-like element on one side of the vertical center line of the body, and having an aperture on the opposite side of the center line, an outlet member supported in the aperture with its open end substantially in the plane of the upper end of the bowl-like element through which the material from the bowl may pass, a grating for the said upper open end of the body, a tubular element secured to the grating through which all material passing through the grating may flow, and having an open lower end extending into the bowl to below the top thereof and forming therewith a water seal, and a screen member of basket like form open at its upper end to receive material flowing from the bowl and separating foreign matter from the liquid.

6. A self-cleaning drain head comprising a body having an open upper end and a bottom wall formed to provide an integral bowl-like element on one side of the vertical center line of the body, an outlet conduit opening through the said bottom wall at one side of the bowl-like element and having an inlet end approximately in the same plane as the upper end of the bowl-like portion, a removable screen in the said outlet, a grating for the upper end of the body, and a tubular element extending downwardly from the grating into the bowl to below the top thereof and forming therewith a water seal preventing gases from passing through the grating, and means providing a water seal between the periphery of the grating and the upper end of the drain head.

7. In a self-cleaning drain head, a body having an open upper end, a grating for the said upper end, means within the body forming a liquid trap through which all material flowing through the grating discharges, an outlet member opening to the body at the outlet end of the trap, and a removable screen member in the outlet for separating solid matter from the liquid.

8. In a self-cleaning drain head, a body having an open upper end and a bottom, a grating for the said upper end, means within the body forming a liquid trap through which all material flowing through the grating discharges, said body having a bottom wall at the level of the trap outlet, and an outlet member open to the body through said bottom wall.

EDWARD W. N. BOOSEY.