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ELECTRIC CLEANOUT PLUG WARNING DEVICE

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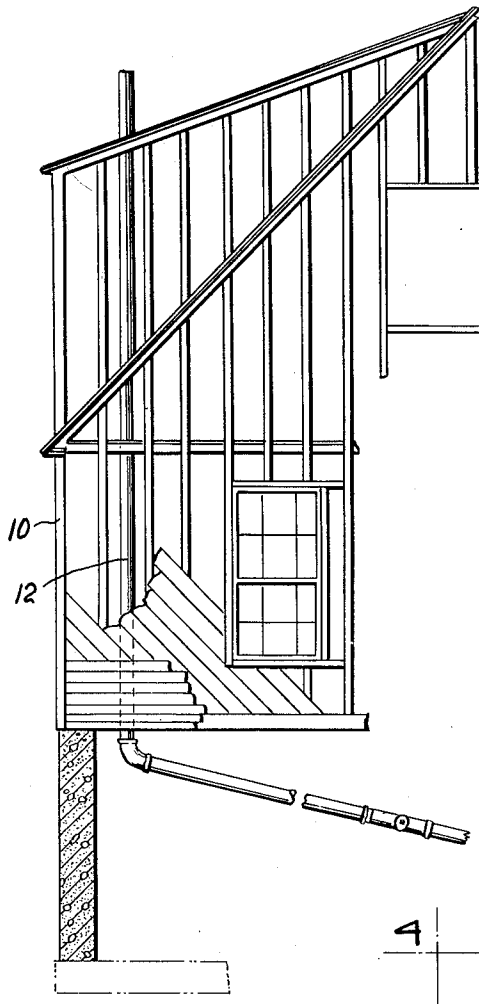


FIG. 1

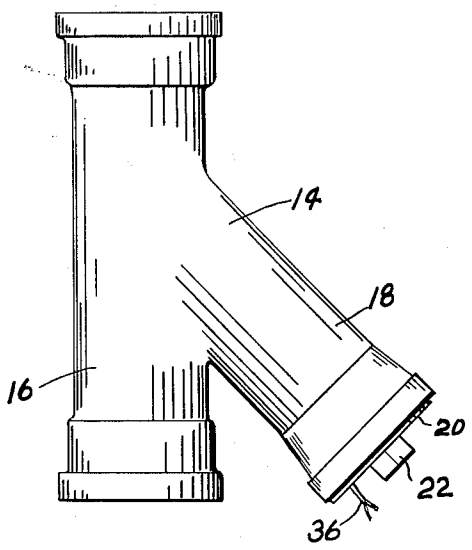


FIG. 2

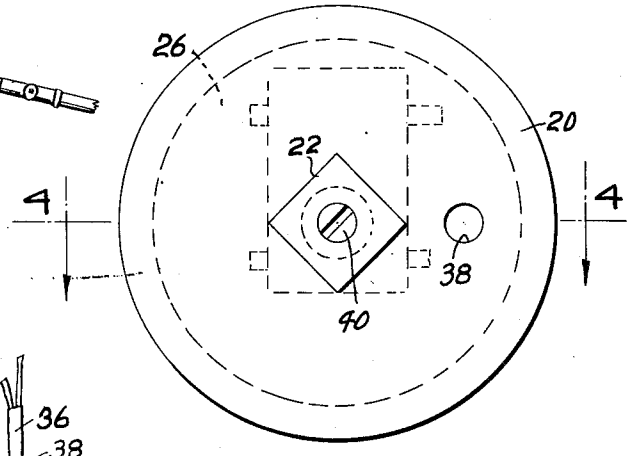


FIG. 3

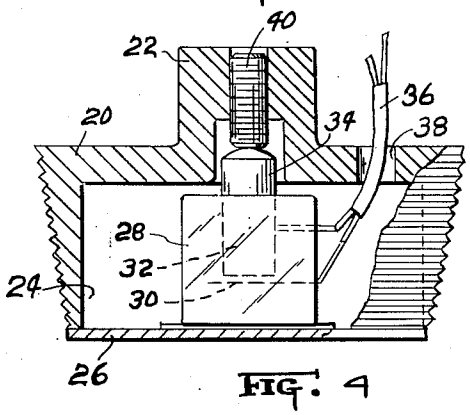


FIG. 4

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ELECTRIC CLEANOUT PLUG WARNING DEVICE

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1 Claim. (Cl. 200—83)

This invention relates to a new and improved electric cleanout plug warning device, and the principal object of the invention resides in the provision of a cleanout plug located in the usual cleanout branch of a sewage pipe and provided with a pressure-responsive plate which is adapted to operate an electric switch at a predetermined pressure, said electric switch closing a circuit to some form of alarm device, such as a bell or light.

Another object of the invention consists in the provision of a sewer cleanout plug which is hollow and contains therein a pressure-responsive electric switch and including a diaphragm or pressure plate mounted so as to conform to the pressure which may be built up in a sewer line that is stopped up, whereby the backing up of the water or sewage causes the diaphragm or pressure plate to operate the electric switch to in turn cause energization of a warning device; and the provision of a device as above stated including adjustable means whereby the switch may be quickly and easily adjusted to be operated at different pre-selected pressure as are desired or convenient in the particular installation at hand.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

Fig. 1 shows a general layout of a sewage pipe located in a building and forming the locus of the invention;

Fig. 2 is a plan view of the Y pipe containing the cleanout plug;

Fig. 3 is a view in elevation of the exposed surface of the cleanout plug; and

Fig. 4 is a section on line 4—4 of Fig. 3.

In Fig. 1 there is illustrated generally a building indicated by the reference numeral **10**, which building may ordinarily have a vertical sewage pipe **12** that operates to draw off the sewage from one or more floors of the building and conduct the same to the sewage run-off. These installations require the use of a Y pipe **14**, the portion **16** of which provides for the sewage flow and the branch **18** providing for cleaning the same out in case of stoppages.

The cleanout pipe or branch **18** is provided with a closure which comprises a threaded plug **20**. This plug may have a square boss or the like **22** for the application of a wrench to both apply the same and back it off when it is necessary to clean out the sewage pipe **12**.

In the present case, the plug **20** is hollow and contains a chamber **24** which is closed at the side opposite the projection **22** by means of a diaphragm or pressure-responsive plate **26**. Mounted at the interior side of this pressure plate, there is a switch-box **28** containing a

contact arm **30** and a relatively movable contact closing element **32**. The elements **30** and **32** are shown by way of illustration only and may take any form desired. Ordinarily, the entire switch **28** will take the form of the well-known microswitch and the button **34** will be the conventional switch-actuating button usually found on these switches. Electric wires **36** enter the plug through a hole **38** and lead to some type of warning device such as a bell or flashing light which will be energized when the contact **32** touches contact **30**.

The projection **22** is drilled and tapped and provided with a screw **40** which is longitudinally adjustable therein by means of a screwdriver from the outside of the installation, even though the plug is in place as in Fig. 2.

It is seen that if the screw **40** is turned up sufficiently, it will eventually close the circuit; but the prime purpose of this adjustable screw is to provide for closure of the switch **28** at different predetermined pressures applied to the diaphragm or pressure plate **26**. The arrangement shown in Fig. 4 is such that the minimum pressure on plate **26**, derived by reason of the height of the sewage in pipe **12**, will operate the switch by moving the entire switch-box **28** backwardly against the screw **40**. If it is desired that the alarm should not sound except under a higher pressure, the screw **40** will of course be backed off to the extent desired and this is possible to be done without removing the cleanout plug or altering it in any way except by turning the screw **40** from the exterior thereof in an appropriate direction.

Having thus described our invention and the advantages thereof, we do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claim, but what we claim is:

Electric cleanout plug warning device for sewer pipes comprising a plug body exteriorly threaded for application to a cleanout branch of the sewer pipe to close the same, said plug body having a hollow chamber open at one side of the plug body, a pressure-responsive diaphragm closing the open side of the chamber at the interior aspect of the plug body as respects the sewer pipe so that back pressure in the latter acts upon the diaphragm to move the same inwardly of the hollow plug body, an electric microswitch mechanism mounted on the diaphragm and inside the hollow plug body, said mechanism having a movable actuator to close the switch when relatively pressed, a nut-like formation on the plug body extending outwardly therefrom opposite the diaphragm for application and removal of the plug body, a screw-threaded bore in the nut-like formation extending from the exterior thereof to the hollow chamber, and a threaded screw in the bore for axial adjustment therein, said screw actuating the movable switch actuator when the latter is pressed thereagainst by the motion of the diaphragm under action of the sewer back pressure.

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