# United States Patent [19]

**Onesta**

[11] **3,886,603**

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[54] **DEVICE TO FACILITATE THE CLEARANCE OF A BLOCKED DRAIN**


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[52] **U.S. Cl.** ..... **4/255;** 134/24
[51] **Int. Cl.** ..... **E03d 11/00**
[58] **Field of Search** ..... 4/255, 256, 257; 134/24



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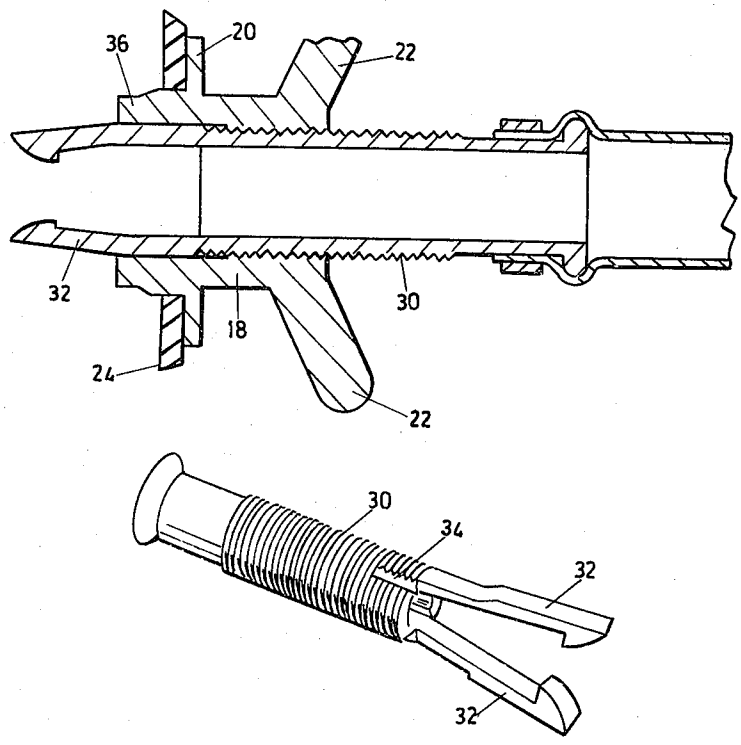
[57] **ABSTRACT**

This invention relates to apparatus for clearing a blocked drain and consists of a plug having a body adapted to close and opening into the drain, a core including two opposed resilient hooked formations which are integrally formed with the core and which project from its one end, passing through and movable relatively to the body, the formations being adapted to be moved towards each other by the body to engage fixed structure in the drain when the body is moved relatively to the core and means on the body to move the body relatively to the core.


**4 Claims, 7 Drawing Figures**



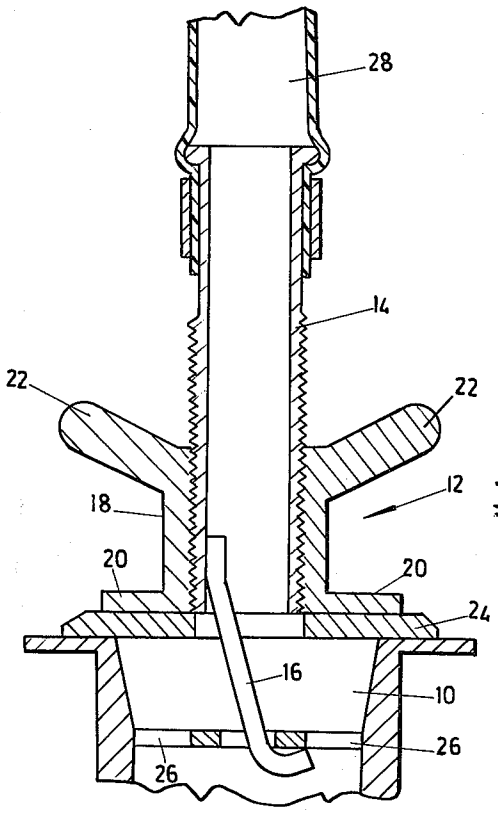



Fig. 1

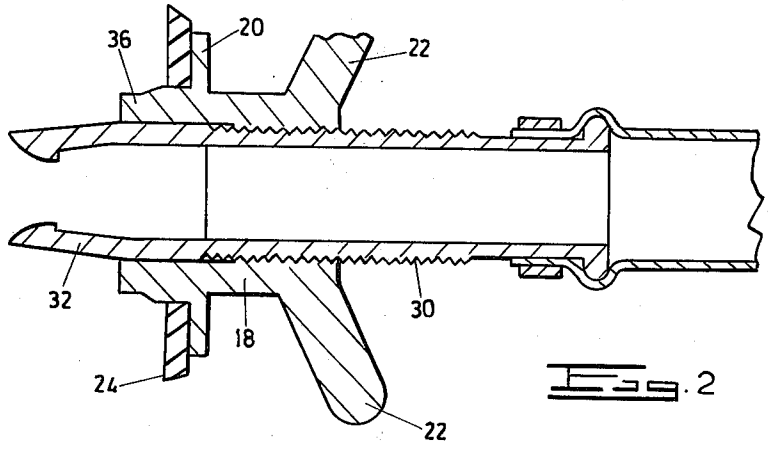



Fig. 2

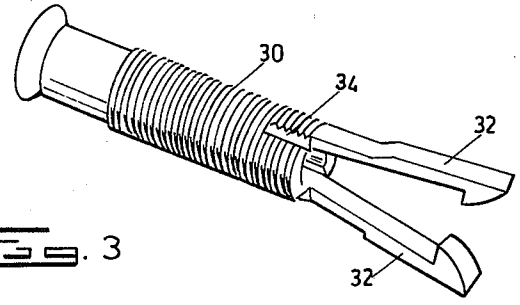



Fig. 3

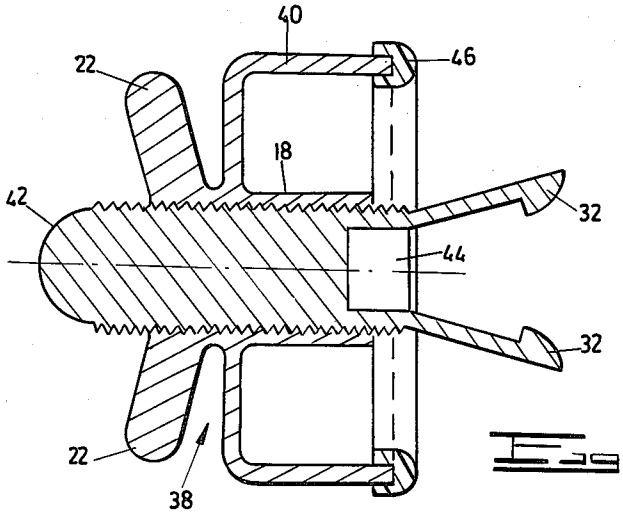



Fig. 4

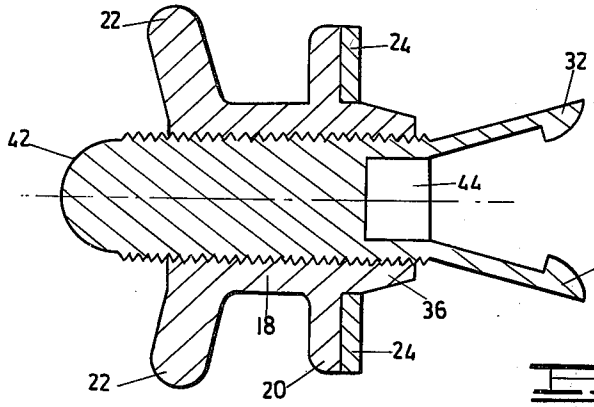



Fig. 5

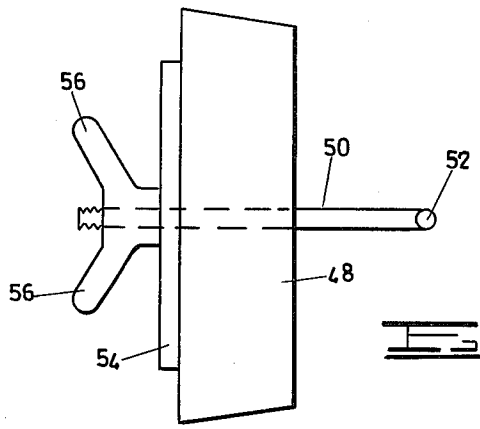



Fig. 6

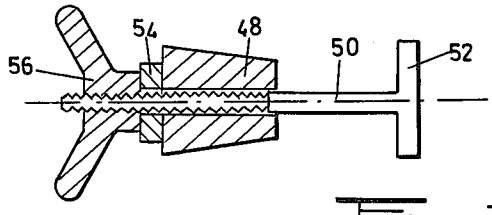



Fig. 7

# DEVICE TO FACILITATE THE CLEARANCE OF A BLOCKED DRAIN

This invention relates to a device to facilitate the clearing of blocked drains or waste water pipes such as those employed on domestic sinks, baths and the like.

Drains such as those mentioned above are used to drain water containing soap and fatty deposits which adhere to and pack on the walls of the drain pipes. This is an accumulative process and the drains eventually become blocked. This problem also arises as the result of solid waste such as fluff from a washing machine, pieces of soap and scraps of food being washed down the drain and being lodged therein.

To the applicants knowledge the only device available to housewives for clearing or attempting to clear a blockage as described above is a rubber suction cup which is held over the mouth of the drain and moved up and down to create a pressure to move the blockage. This device is only useful with blockages of a minor nature and any reasonably secure blockage will require far more pressure than can be supplied by the device to clear it.

It is the object of this invention to provide a device to facilitate the clearing of a blocked drain method of clearing a blocked drain and to provide a device for carrying out the method.

A plug for an orifice, such as an inlet to a drain, according to the invention consists of a body adapted to seat over or in the orifice, a core passing through the body and movable relatively to it, at least one hook formation on the core arranged, on movement of the body relatively to the core to grapple fixed structure in the orifice and press the body against its seat, and means to move the body relative to the core.

The core of the plug may be hollow and include means to connect a hose to it. The plug may, however, be provided with a solid core to enable it to seal an overflow or the like into the drain.

The core of the plug preferably includes two resilient hooked formations at its one end which are adapted to move towards each other when the body is moved on the core over the formations. This inward movement enables the hooked formations to engage and grip on a spider in the drain.

The invention will now be described with reference to the drawings in which;

FIG. **1** is a sectioned side elevation of one embodiment of the plug of the invention;

FIG. **2** is a sectional side elevation of another embodiment of the plug;

FIG. **3** is a perspective view of the core of the plug of the second embodiment;

FIG. **4** is a sectional side elevation of a plug having a cup shaped body,

FIG. **5** is a sectional side elevation of the plug of FIG. **2** with a solid core; and,

FIG. **6** and **7** are relatively a plan view and a sectional side elevation of yet another embodiment of the plug.

Referring to FIG. **1**, the device is shown situated in psotion in the mouth of a drain **10**, and comprises a rigid body **12**, a hollow core **14** and a hook formation **16** fixed to the core **14**.

The body **12** comprises a cylindrical body portion **18** having at its lower end an annular flange **20** and at its upper end two flat radially extending wings **22**. A resilient sealing washer **24** is attached to the lower face of the flange **20**. The body **18** is axially bored and threaded to accommodate the core **14**.



In use, the core **14** is screwed through the washer **24** and the hooked formation **16** is engaged with an element of a spider **26** in the mouth of the drain **10**. the wings **22**, which form a handle, are then turned to screw the body **12**, relatively to the core **14**, down over the mouth of the drain. The plug is firmly held in position by the tension on the formation **16**. A hose **28** is then attached to the upper end of the core **14** by means of a suitable hose clip. The other end of the hose is connected to a tap. The tap is opened, and water under pressure flows through the hose **28** and core **14** into the drain to clear the blockage.

The embodiment of the plug seen in FIG. **2** has a core **30**, seen in FIG. **3**, which is made from a resilient plastics material, and includes two outwardly disposed inwardly hooked arms **32**. To facilitate flexing of the arms and the insertion of the core **30** into the body **18** the core is slit for a short distance at **34** on either side of each arm.

In addition to the body **12** of the first embodiment the body of the plug of the second embodiment includes a rim **36** which extends through the washer **24**.

In use, the body **18** of the plug is screwed upwardly on the core **30** until the rim **36** clears the slits in the core. The hooked arms **32** are then placed through the elements of the spider in the drain. When the body is now screwed down over the mouth of the drain, the rim **36**, as it passes over the arms **32**, will force the arms inwardly against the inherent bias of the material from which they are made untill they hook behind the elements of the spider and pull the plug firmly against its seat on the mouth of the drain.

The plug of this embodiment is used in the same manner as that of the first embodiment.

The plugs thus far described will only function if the mouth which they seal is the only opening and on the upstream side of the blockage in the drain. Domestic plumbing such as baths and handbasins generaly, however, have an overflow outlet. These outlets, for the device described above to function, have to be blocked. This is the function of the plugs shown in FIGS. **4** to **7**.

The plug of FIG. **4** comprises a body **38** which includes an annular flaired cup portion **40**. The core **42** of this plug is solid with the exceiption of a blind bore **44** which accommodates the slits adjacent the arms **32**. A resilient sealing seat **46** is located on the rim of the cup portion **40**.

Most baths have an overflow which is guarded by a spider, and a chain, to which the bath plug is attached, is anchored to the spider. In use the plug of FIG. **4** is employed to obturate an overflow opening of this type. The plug and chain are placed in the hollow of the cup **40**. The arms **32** are engaged with the elements of the spider in the manner described above and the body screwed down over the opening effectively to seal it.

The plug shown in FIG. **5** has a substantially identical body to the embodiment seen and described with reference to FIG. **2** and has a solid core as described with reference to the plug of FIG. **4**. This plug is employed to block one of the two mouths in a dual outlet system such as is found in a double sink. The overflow of some hand basins is a narrow slit and the plug shown in FIGS. **6** and **7** is used to obturate orifices of this type. The plug consists of a body **48** made from a resilient material, a solid threaded core **50** having at its one end a

transverse bar **52,** a solid backing member **54** and a winged nut **56.**

In use the core **50** is turned till the bar **52** is moved through 90° from the position shown in the drawings. The plug is then positioned in the overflow opening of the hand basin and the core moved to the position shown in the drawings; with the core in this position the winged nut is tightened so moving the bar **52** toward the body **48** until it abuts the shoulder of the opening and wedges the plug firmly in place.

I claim:

**1.** Apparatus for clearing a blocked drain consisting of a plug having a body adapted to close and opening into the drain, a core, including two opposed resilient hooked formations which are integrally formed with the core and which project from its one end, passing through and movable relatively to the body towards and away from each other, the formations being adapted to be moved towards and away from each other by the body to engage and release respectively fixed structure in the drain when the body is moved longitudinally relatively to the core and means on the body to move the body relatively to the core.

**2.** Apparatus as claimed in claim **1** in which the core is molded from a resilient plastic material.

**3.** Apparatus as claimed in claim **1** in which the core is hollow and its end remote from the formations is adapted to be secured to a hose.

**4.** Apparatus as claimed in claim **1** in which the moving means is a handle which is made integral with and projects from the body.

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