Jan. 5, 1937. G. FELICE 2,066,773

DRAIN AND FLUSHING APPARATUS

Filed Dec. 26, 1935

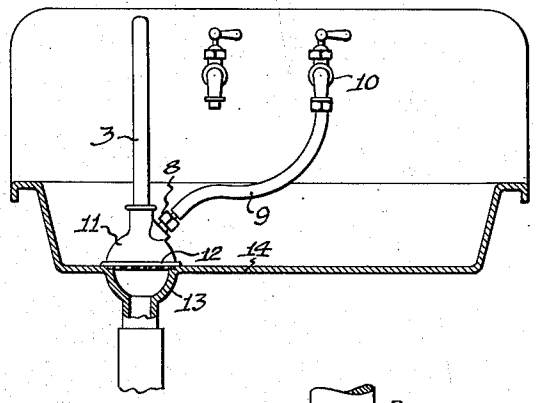


Fig. 1.

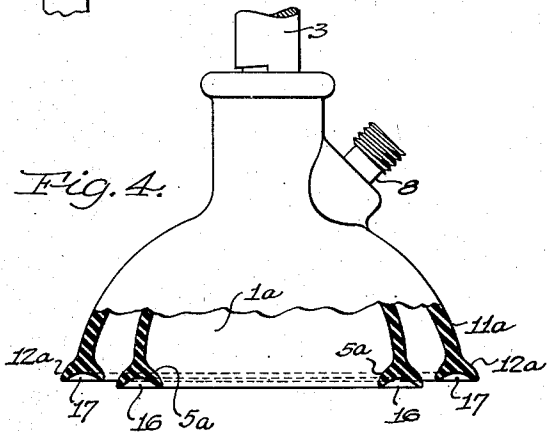


Fig. 4.

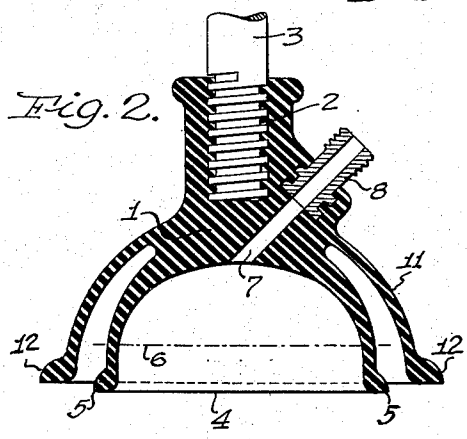


Fig. 2.

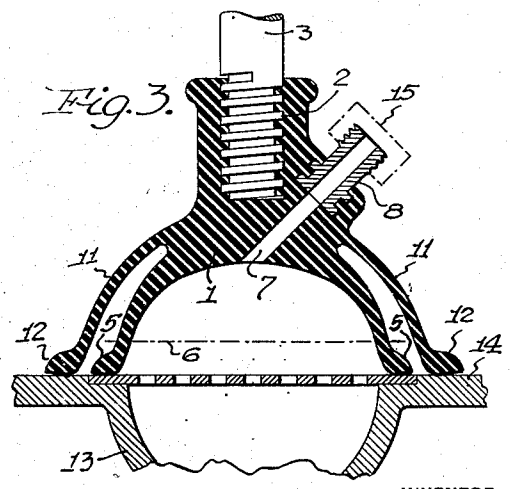


Fig. 3.

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DRAIN AND FLUSHING APPARATUS

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5 Claims. (Cl. 4—255)

The present invention relates to a drain and waste pipe flushing apparatus and comprises a flexible cup adapted to be placed in sealing engagement with the open end of the drain or waste pipe and having means for connecting the flexible member with a faucet adapted to supply water under pressure.

The primary object of the present invention is to provide a drain pipe flusher having an elastic cup with means for connecting it to a source of water pressure and an elastic skirt surrounding the cup and acting to provide a suction chamber when the cup member is fitted into engagement with the open end of a drain pipe and to engage the surrounding surface adjacent the drain pipe to firmly hold the cup in fitted relationship therewith. The cup member, according to the present invention, is formed of rubber of varying hardness, the zone adjacent to the open end being formed of rubber having a higher degree of elasticity than the remainder of the cup, and the end of this comparatively elastic zone projects beyond the open end of the skirt which overlies the cup. In using the device the end of the cup member is fitted over the open end of a drain pipe and manual pressure is applied to the cup member to compress the elastic portion thereof so that the end of the skirt member engages the surface surrounding the end of the drain pipe. In continuing to press the cup member downwardly the elastic portion thereof is deformed and the end of the skirt member is pressed into engagement with the surface surrounding the drain pipe whereby it acts as a suction cup to hold the cup member in sealing engagement with the drain pipe.

Another object of the present invention is to provide a sealing cup and a suction chamber forming element adapted to hold the cup in sealing relation with the drain pipe, and in combination therewith means adapted to receive the end of a hose for supplying water under pressure to the cup or alternately to receive a cap member which permits the device to be used in the same manner as a conventional plumber's suction pump.

Another object of the present invention is to provide an elastic cup with a skirt overlying the same and combining therewith in forming a suction chamber when the device is placed in engagement with the surface surrounding the open end of a drain pipe, the end surfaces of the cup and skirt being formed with annular grooves which provide additional suction means for holding the device with respect to the end of the drain pipe.

With the above and other ends in view the invention is more fully disclosed with reference to the accompanying drawing in which—

Figure 1 is a section of a sink and illustrating the use of the present apparatus;

Fig. 2 is a section of the device;

Fig. 3 is a section of the device in sealing relation with the drain pipe opening, and

Fig. 4 is a view partly in section illustrating a modification.

Like characters of reference are employed throughout to designate corresponding parts.

In the drawing the numeral 1 designates a cup formed of rubber and having an internally threaded bore 2 receiving the screw-threaded end of a plunger 3. The open end 4 of the cup member is provided with an annular bead 5 formed of comparatively soft rubber, the soft rubber extending upwardly a distance approximately indicated by the line 6. The cup member 1 is provided with a passage 7 communicating with a metallic fitting 8 in the side wall thereof and adapted to be connected by a hose 9 to a water faucet 10. Surrounding the cup member 1 is a skirt 11 formed of elastic material and having a bead 12 extending circumferentially around the open end thereof. Upon reference to Fig. 2, it will be observed that the end 4 of the cup member 1 projects outwardly through the end of the skirt 11.

The numeral 13 designates a drain opening in the bottom of the sink 14 and in using the present device in connection therewith the operator presses on the plunger 3 with the bead 5 in a position surrounding the opening 13. The highly elastic portion of the cup member 1 is compressed so that the bead 12 on the skirt 11 engages the surface of the sink surrounding the cup 1. By pressing downwardly to deform the skirt 11 and force the air out of the same a suction condition is set up which tends to maintain the bead 12 in engagement with the surface of the sink 14 and the latter holds the bead 5 on the cup 1 in sealing relation with respect to the drain opening 13. Water may then be supplied from the faucet 10 through the hose 9 into the cup 1 to flush the drain pipe 13.

When it is desired to use the present device in the same manner as a conventional plumber's suction pump the hose 9 is disconnected from the fitting 8 and a cap 15 is placed over the same as indicated in Fig. 3.

In Fig. 4 there is shown a modification where-

in the cup 1a has a bead 5a at its open end provided with an annular groove 16 and the skirt 11a has its bead 12a provided with an annular groove 17. When this modified device is placed with respect to a drain opening in the manner above described the annular grooves 16 and 17 constitute suction chambers which tend to more firmly hold the device with respect to the drain opening.

Although specific embodiments of the invention have been illustrated and described it will be understood that various changes may be made within the scope of the appended claims without departing from the spirit of the invention and such changes are contemplated.

What I claim is:

1. A device of the character described comprising a cup member formed of elastic material and with a screwthreaded fitting in its closed end, a plunger received in said fitting, a passage opening into the interior of said cup and having a fitting at its outer end adapted to receive the end of a hose, and a skirt formed integral with said cup member and overlying a substantial portion of the same, the open end of said skirt being in a plane different from the plane of the open end of said cup, whereby the said cup is adapted to engage a surface surrounding a drain opening in advance of engagement of said skirt therewith, the end surface of said cup surrounding the opening therein having an annular groove providing a suction chamber.

2. A device of the character described comprising a cup member formed of elastic material and with a screwthreaded fitting in its closed end, a plunger received in said fitting, a passage opening into the interior of said cup and having a fitting at its outer end adapted to receive the end of a hose, and a skirt formed integral with said cup member and overlying a substantial portion of the same, the open end of said skirt being in a plane different from the plane of the open end of said cup, whereby the said cup is adapted to engage a surface surrounding a drain opening in advance of engagement of said skirt therewith, the end surface surrounding the open end of said skirt having an annular groove providing a suction chamber.

3. A device of the character described comprising a cup, said cup having the major portion thereof formed of comparatively hard rubber, the zone adjacent to the open end of said cup being formed of rubber having a comparatively high degree of elasticity, the relatively hard portion of said cup having a socket for the reception of a plunger element, and an elastic skirt formed integral with said cup and overlying a substantial portion of the same, the end surface of said cup and skirt each being formed with an annular groove therein.

4. A device of the character described comprising a cup member formed of elastic material, said cup member being closed at one end and open at the other, and an elastic skirt integrally united with said cup at a zone nearer the closed end than the open end and gradually flaring outwardly with respect to the outer wall of the cup, said skirt terminating in a plane spaced inwardly of the open end of said cup.

5. A device of the character described comprising a cup member formed of elastic material, said cup member being closed at one end and open at the other, an elastic skirt integrally united with said cup at a zone nearer the closed end than the open end and gradually flaring outwardly with respect to the outer wall of the cup, said skirt terminating in a plane spaced inwardly of the open end of said cup, and the open end surfaces of said cup member and skirt each having an annular groove extending continuously around the same and providing suction chambers therefor.

GEORGE FELICE.