Jan. 29, 1952 R. R. FULTON 2,583,694

DRAIN CLEANING DEVICE

Filed Jan. 26, 1948 2 SHEETS—SHEET 1

Fig. 1.

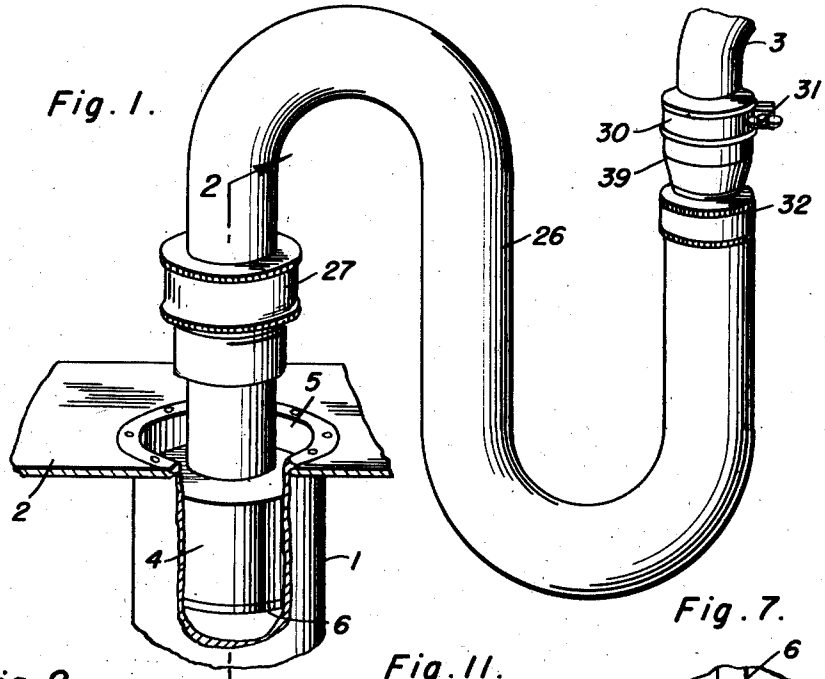


Fig. 9.

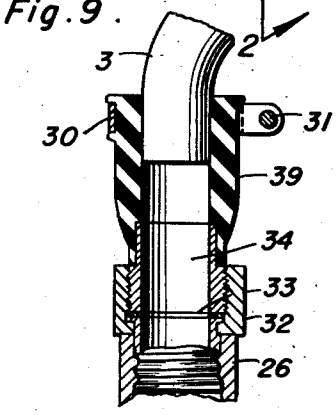


Fig. 11.

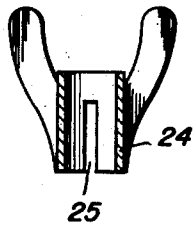


Fig. 7.

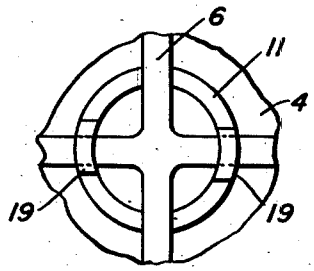


Fig. 6.

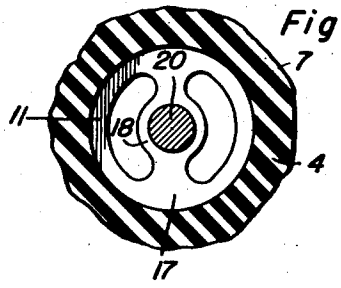
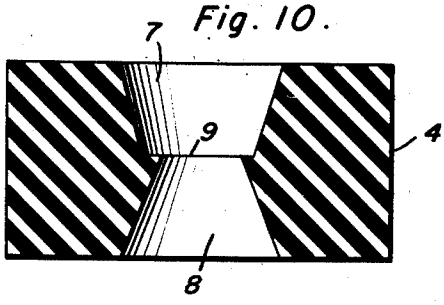


Fig. 10.



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Jan. 29, 1952 R. R. FULTON 2,583,694

DRAIN CLEANING DEVICE

Filed Jan. 26, 1948 2 SHEETS—SHEET 2

Fig. 2.

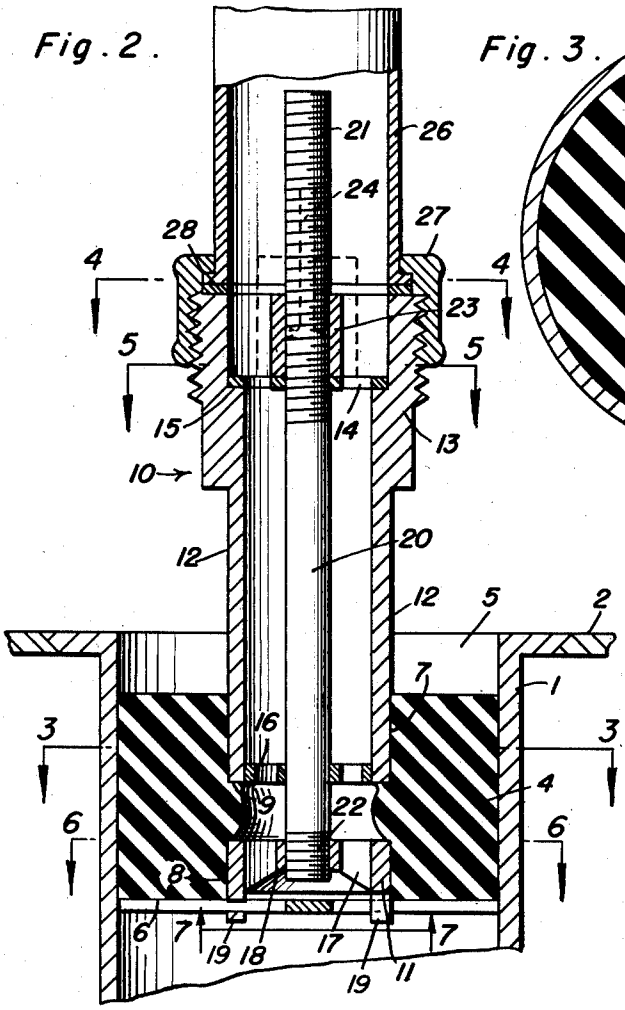


Fig. 3.

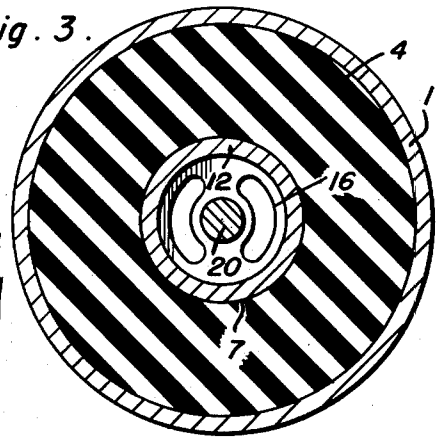


Fig. 4.

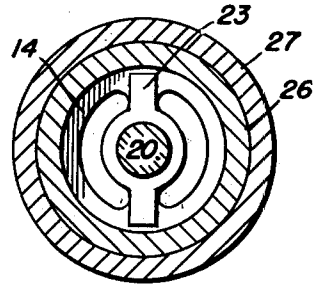


Fig. 8

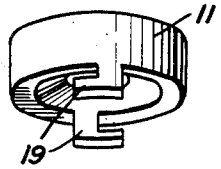
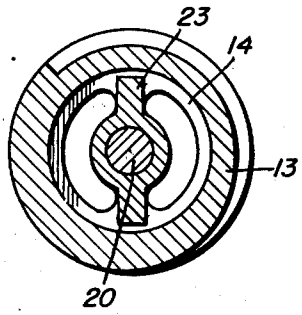


Fig. 5.



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Patented Jan. 29, 1952 2,583,694

UNITED STATES PATENT OFFICE

2,583,694

DRAIN CLEANING DEVICE

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Application January 26, 1948, Serial No. 4,362

1 Claim. (Cl. 4—256)

1

My invention relates to improvements in drain cleaning devices for the drain pipes of sinks, bathtubs, showers and the like.

The primary object of my invention is to provide an efficient, simple, inexpensive device for attachment in the mouth of the usual drain pipe of sinks and the like, and to a faucet, for cleaning out the drain pipe under water pressure and which is easy to apply, will not become detached from the mouth of the drain pipe as a result of back pressure in said pipe, and will not get out of order from frequent use.

To the accomplishment of the above, and subordinate objects presently appearing, a preferred embodiment of my invention has been illustrated in the accompanying drawings, set forth in detail in the succeeding description, and defined in the claim appending hereto.

In said drawings:

Figure 1 is a view in perspective, partly broken away and shown in section, of my improved drain cleaning device applied in the preferred embodiment thereof;

Figure 2 is a fragmentary view in vertical section taken on the line 2—2 of Figure 1 and drawn to a larger scale;

Figure 3 is a view in horizontal section taken on the line 3—3 of Figure 2;

Figure 4 is a similar view taken on the line 4—4 of Figure 2;

Figure 5 is another similar view taken on the line 5—5 of Figure 2;

Figure 6 is another similar view taken on the line 6—6 of Figure 2;

Figure 7 is still another similar view taken on the line 7—7 of Figure 2;

Figure 8 is a view in perspective of one of the pipe sections of the sectional water discharge nozzle and expander;

Figure 9 is a fragmentary view in longitudinal vertical section of the connection between the hose line and the faucet;

Figure 10 is a view in transverse section of the plug before the same is expanded;

Figure 11 is a detail view in longitudinal section of the wing wrench.

Referring to the drawings by numerals, my improved drain cleaning device has been shown therein as applied to the usual drain pipe 1 of a sink 2 and to a sink faucet 3 for the purpose of illustrating one use of the invention and will now be described in detail.

The basic element of my improved drain cleaning device is a cylindrical, expansible, plug 4 of rubber, preferably, and of a suitable diameter,

2

normally, to fit in the mouth 5 of the drain pipe 1 and seat on the usual cruciform bar strainer 6 in the pipe, although, as will presently appear, the plug 4 is adapted for use in such drain pipes without such strainers. As best shown in Figure 10, the plug 4 is formed with a pair of axial top and bottom openings 7, 8 of frustro-conical shape tapering to an annular shoulder 9 in the diametrical center, substantially, of the plug 4 and communicating to form a through passage in said plug.

A sectional water discharge nozzle and expander is provided for expanding the plug 4 in the mouth 5 and passing water through said plug, and which comprises a pipe section 10 for insertion in the top opening 7, a band like pipe section 11 for insertion in the opening 8, and means to draw said sections together, as presently described.

The pipe section 10 has a main portion 12 of substantially the same diameter as that of the larger end of the opening 7, an enlarged externally threaded upper coupling end 13, a centrally apertured guide spider 14 in said coupling end 13 seating on an internal shoulder 15 in said end, and a centrally apertured guide spider 16 fixed in the end of said portion 12.

The pipe section 11 is, like the portion 12 of the pipe section 10, of a diameter to fit substantially in the larger end of the opening 8, but, is proportioned to be drawn completely into said opening, provided with an internal spider 17 having an internally threaded hub 18, and is formed with a pair of diametrically opposite bottom edge lugs 19 of hook form turned oppositely, relatively, for a purpose presently explained.

A draw rod 20 with upper and lower ends 21, 22 oppositely threaded, relatively, is provided to slidably extend through the spiders 14, 16 to extend the same through the section 10 with the lower end 22 of said rod turned tight into the hub 18 of the spider 17 of the pipe section 11.

A wing nut 23 fits in the coupling end 13 of the pipe section 10 and is adapted to be turned down on the upper end 21 of said rod 20 against the spider 14 to thereby cause said pipe sections 10, 11 to be moved toward each other.

A wing type wrench 24, with side slots 25 therein is provided for sliding on the upper end 21 of said rod 20 into straddling relation to the wing nut 23 for turning said wing nut from the outside of the coupling end 13 of the said pipe section 10, and as shown in dotted lines in Figure 2.

A hose line 26 provides for connecting the coupling end 13 of the pipe section 10 to a smooth

faucet, or the like. The hose line 26 has the usual coupling 27 on one end thereof for turning onto the coupling end 13 of the pipe section 10 with a gasket 28 in said coupling. The other end of the hose line 26 is especially equipped for connection to a smooth, plain faucet. For this purpose, said other end of the hose line 26 is attached to a rubber nipple 39 fitting the faucet 3 and provided with a split band clamp 30 with a tightening bolt 31 for squeezing the nipple tight on said faucet. The usual coupling 32 with a washer 33 therein connects said hose line to a threaded metal fitting 34 to which said nipple 39 is suitably secured.

In attaching the described drain cleaning device, the pipe section 10 is inserted in the larger end of the opening 7, and the pipe section 11 similarly inserted in the large end of the opening 8 with the draw rod 20 extended through the spiders 16, 14; said rod being, of course, tightly turned into the hub 18 of the spiders 17 of the pipe section 11. The plug 4 is then inserted in the mouth 5 of the drain pipe 1 and the draw rod 20 rotated to hook the hooks 19 under bars of the strainer 6, as best shown in Figure 7. The wing nut 23 is then turned down on the upper end 21 of the draw rod 20 to cause the pipe sections 10, 11 to be drawn together. This draws said sections 10, 11 into the tapered holes 7, 8 causing the plug 4, in a manner which will be clear, to expand tight against the wall of the drain pipe 1 in the mouth 5. At the same time, since the pipe section 11 is anchored by the lugs 19 to the strainer 6, the pipe section 10 is drawn against the shoulder 9, thereby forcing the plug 4 down in the mouth 5 of the pipe 1 tight against the strainer 6, thus facilitating expansion of said plug and forcing the pipe section 11 into the hole 8. The shoulder 9 is pinched and bulged inwardly between the pipe sections 10, 11 and maintains said sections, spaced apart. After the device has thus been attached to the drain pipe 1, the hose line 26 may be coupled to the coupling end 13 of the pipe section 10 and to the faucet 3 in the manner already described. Now, by opening the faucet 3, water under pressure will pass through the hose line 26, pipe section 10, plug 4, and pipe section 11 to clean out the drain pipe 1 by the pressure of water therein and in a manner which will be clear.

The foregoing will, it is believed, suffice to impart a clear understanding of my invention, without further explanation.

Manifestly, the invention, as described, is susceptible of modification without departing from the inventive concept, and right is herein reserved to such modifications as fall within the scope of the appended claim.

Having described my invention, what is claimed as new is:

A drain cleaning device for attachment to a faucet and to the mouth of a drain pipe to introduce water under pressure into said pipe comprising an expansible plug adapted to fit in said mouth, means to expand said plug against said pipe and pass water therethrough comprising pipe sections having like ends spaced apart and movable toward each other into said plug from opposite sides thereof, manipulative means for moving said sections to move said ends toward each other, and a hose line for connecting one pipe section to said faucet, said plug having oppositely tapered openings therein with which said pipe ends coact when moved toward each other to cause said plug to be expanded, said plug having an annular shoulder therein betwen said openings for bulging inwardly between said ends of the pipe sections to limit movement of said ends toward each other.

ROY R. FULTON.

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