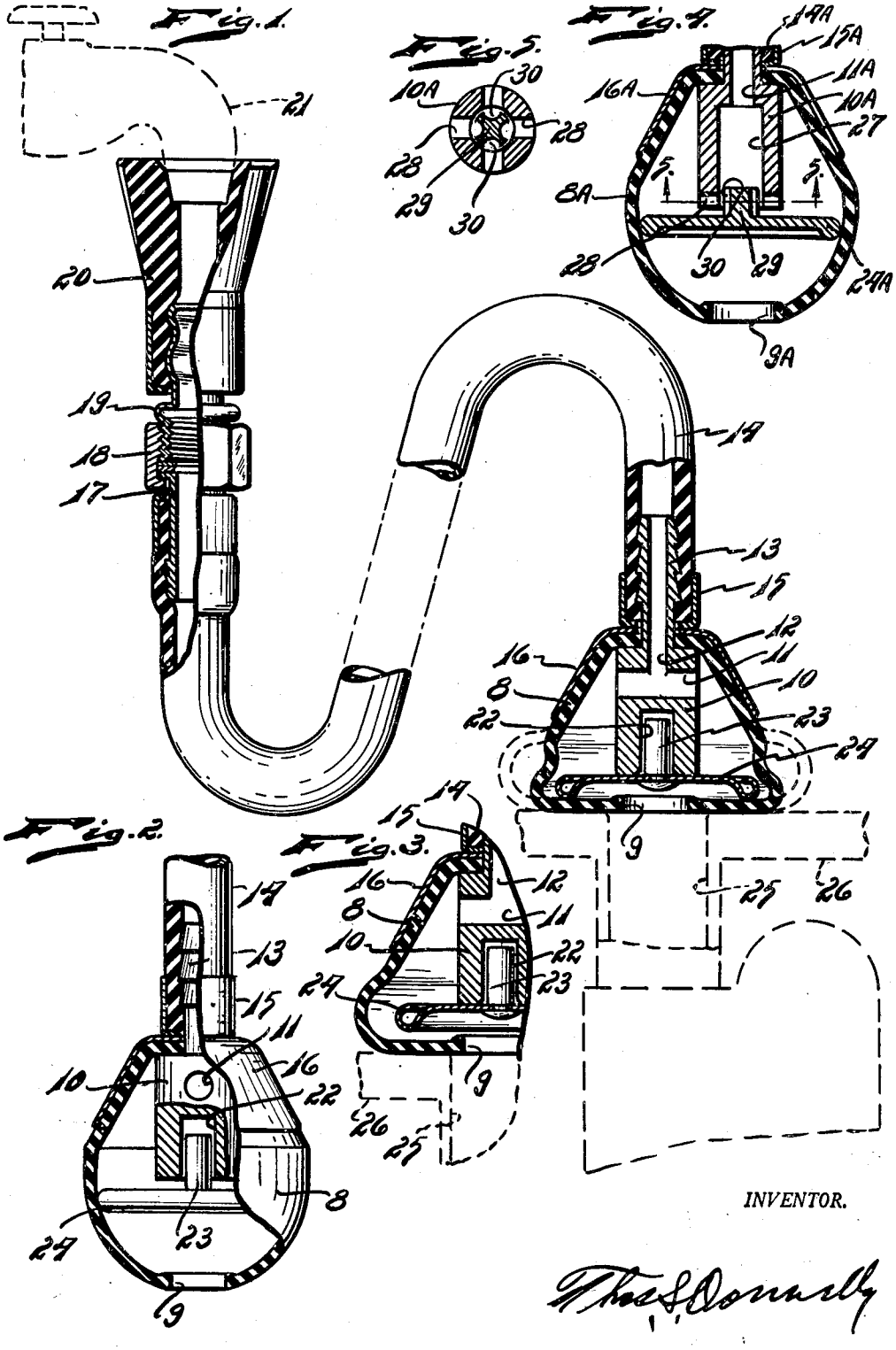
March 14, 1950 T. S. DONNELLY 2,500,404

DRAIN CLEANER

Filed Dec. 13, 1946



INVENTOR.

Thos. S. Donnelly

Patented Mar. 14, 1950

2,500,404

UNITED STATES PATENT OFFICE

2,500,404

DRAIN CLEANER

Thomas S. Donnelly, Detroit, Mich., assignor to Ambory Electric & Manufacturing Company, Hazel Park, Mich., a corporation of Michigan

Application December 13, 1946, Serial No. 715,944

3 Claims. (Cl. 4—256)

1

My invention relates to a new and useful improvement in a drain cleaner adapted for cleaning clogged up drains and particularly drains in kitchen sinks.

It is an object of the present invention to provide a drain cleaner having a flexible bulb provided with a presser disc mounted within the bulb and so constructed and arranged as to float within the bulb.

Another object of the invention is the provision of a drain cleaner having a flexible bulb provided with a fitting extended therein and having a loose disc mounted within the bulb and provided with a portion engaging with said fitting so that the fitting will serve as a guide for the disc in its movements.

Another object of the invention is the provision of a drain cleaner having a bulb provided with a presser disc and so arranged and constructed that a maximum efficiency may be obtained.

Another object of the invention is the provision of a drain cleaner having a flexible bulb provided with a presser disc loosely mounted within the bulb and so constructed and arranged that a free and easy operation of the disc may be obtained.

Other objects will appear hereinafter.

It is recognized that various modifications and changes may be made in the detail of structure illustrated without departing from the invention and it is intended that such shall be embraced within the scope of the claims which form a part hereof.

Forming a part of this specification are drawings in which,

Fig. 1, is a side elevational view of the invention with parts broken away and parts shown in section,

Fig. 2, is a fragmentary side elevational view of the invention with parts broken away and parts shown in section.

Fig. 3, is a fragmentary sectional view similar to Fig. 1, showing the presser disc in another position,

Fig. 4, is a fragmentary central vertical sectional view of a modification of the invention,

Fig. 5, is a sectional view taken on line 5—5 of Fig. 4.

In the drawings I have illustrated the invention comprising a flexible bulb 8 made from rubber or other suitable flexible material and having an outlet opening 9 formed therein. A fitting 10 is projected into the bulb 8 and provided with a

2

lateral opening 11 which communicates with the passage 12 formed in the fitting and extending through the neck 13 which forms a part of the fitting. Fastened to this neck 13 is one end of a flexible conduit 14 held in position by the grommet 15. This flexible conduit 14 is provided with a fitting 17 having the swivel threaded part 18 which may be secured to a water faucet having exterior threads. In the drawings I have shown an adaptor 19 threaded into the portion 18 and having a nipple 20 adapted for fastening over a water faucet 21 which is not externally threaded.

The fitting 10 is provided on its inner end with a socket 22 in which loosely engages a pin 23. This pin 23 is fixedly connected to a presser disc 24 positioned within the bulb 8. The engagement of the pin 23 in the socket 22 serves as a guide for the disc 24 in its movements and prevents excessive tilting of the disc 24.

In normal position the disc 24 would be in the position shown in Fig. 2 in which the pin 23 has ridden slightly downwardly of the socket 22.

When it is adapted to use the device the bulb is placed over the drain opening 25 of a sink 26 and the bulb is pressed downwardly into the position shown in Fig. 1 so that the presser disc 24 is in engagement with the end face of the fitting 10 and serves to press the bulb tightly against the sink 26. In order to prevent flexing inwardly of the bulb 8 at the upper end a cup-shaped covering 16, of rigid material, is provided, the neck 13 projecting through this covering 16, the operator, in pressing the parts into the position shown in Fig. 1, would grasp the end of the conduit 14 and place the hands against the rigid covering 16. When in this position and the water is turned on, the water delivered through the passage 10 and the lateral passages 11 will fill the bulb 8 and bulge it outwardly into the dotted line position shown in Fig. 1 tending to restore the bulb to its original form shown in Fig. 4. When this position is assumed the fitting 10 will move upwardly so that the disc 24 will be free for upward movement and the water pressure flowing under the perimeter of the disc 24 will force it into the position shown in Fig. 3, thus allowing the water to escape through the drain opening 25. When this water has escaped the structure will return to the position shown in Fig. 1 and the same operation will be repeated.

It will be noted that in normal position the disc 24 engages at its periphery with the inner surface of the bulb 8. This is advantageous because after the bulb 8 has bulged outwardly to

the dotted line position shown in Fig. 1, and the water has escaped the disc will be forced downwardly from the position shown in Fig. 2 by the incoming water so that the amount of the bulb which is finally pressed downwardly in the position shown in Fig. 1, is reduced to a minimum and a maximum amount of the bulb is left for bulging. Experience has also shown that as the bulb begins to bulge and the part 10 moves upwardly the disc 24 will remain in its position until further water pressure is delivered within the bulb whereupon it will snap upwardly into the position shown in Fig. 3. This results in a larger amount of water being delivered to the bulb 8 before it is released.

Experience has shown that a drain cleaner of this type is highly efficient and one which may be easily and quickly operated by an inexperienced person.

In Fig. 5, and Fig. 4, I have shown a slight modification in which the bulb 24A is provided with the outlet opening 9A. A fitting 10A projects into the bulb and is provided with a bore 11A extending therethrough. This fitting is connected by the grommet 15A to the flexible tubing 14A and the fitting is provided with the enlarged cavity 27 in the end of which are formed the notches 28. A disc 24A is provided with a neck 29 having the peripheral recesses or grooves 30. The modification relates primarily to the fitting and the disc 24A and the operation of the modification shown in Fig. 4 is the same as that illustrated in Fig. 1.

What I claim is:

1. A drain cleaner of the class described comprising a flexible bulb having an outlet opening formed therein; a fitting extended through the upper end of said bulb and having passages formed therethrough for delivering liquid under pressure into said bulb, said fitting having a socket formed in its inner end; a presser disc mounted within said bulb; and a stem mounted on said presser disk engaging in said socket for guiding said presser disc in its movement toward and away from said fitting.

2. In a drain cleaner of the class described, a flexible bulb having an outlet opening formed therein; a fitting extended at one end into said bulb and projecting at its other end outwardly from said bulb and having a passage formed therethrough for delivery of liquid under pressure into said bulb, said fitting having a socket formed in its inner end; a presser disc positioned within said bulb and normally engaging at its periphery with the inner face of said bulb and being positioned in spaced relation to the end of said fitting; and a guide stem carried by said disc engageable in said socket for guiding said disc in its movements toward and away from said fitting.

3. In a drain cleaner of the class described, a flexible bulb having an outlet opening formed therein; a fitting extending at one end into said bulb and projecting at its opposite end outwardly from said bulb and having passages formed therein for delivery of water under pressure into the interior of said bulb; a presser disc positioned within said bulb and normally engaging at its periphery with the inner face of said bulb and adapted, upon being pressed downwardly by the end of said fitting, for pressing a portion of said bulb surrounding the outlet opening against a stationary body; and means associated with said presser disc and cooperating with said fitting for guiding said disc in its movements toward and away from said fitting.

THOMAS S. DONNELLY.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,471,229	Williston	Oct. 16, 1923
1,977,319	McEwan	Oct. 16, 1934
2,333,288	Benzel	Nov. 2, 1943