

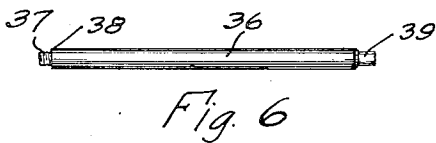
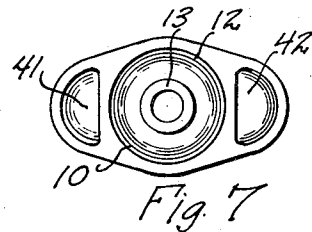
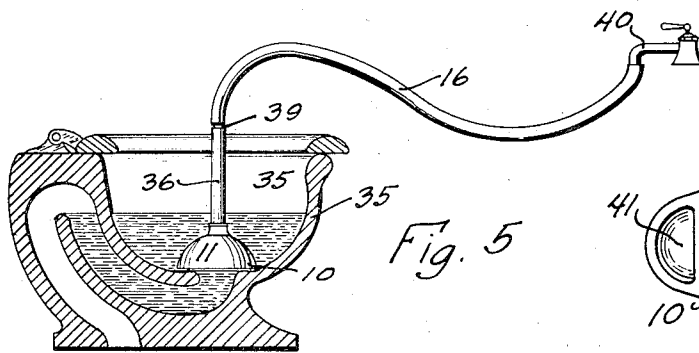
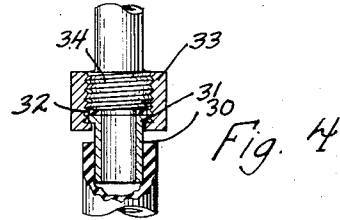
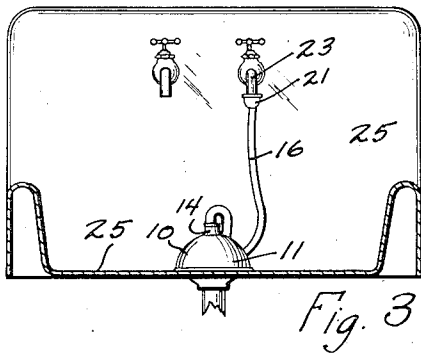
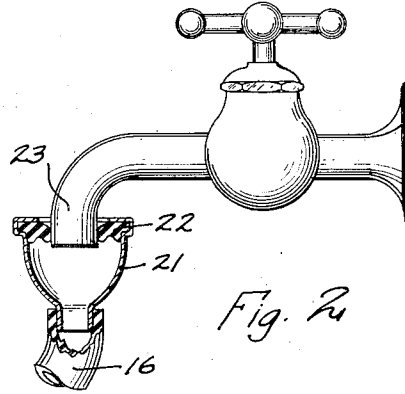
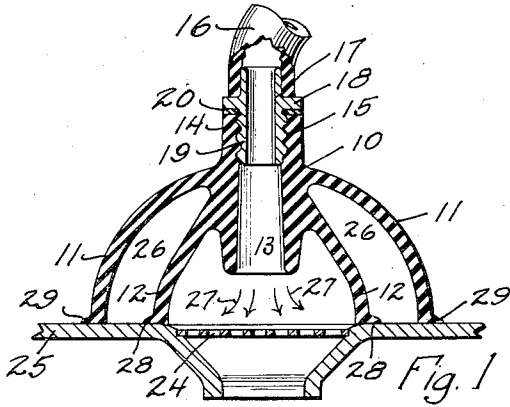
May 5, 1936.

J. W. HARDER

2,039,792

DRAIN CLEANING DEVICE

Filed June 11, 1934



Inventor
Joseph W. Harder
Lyman H. Latta

UNITED STATES PATENT OFFICE

2,039,792

DRAIN CLEANING DEVICE

Joseph W. Harder, Sioux City, Iowa, assignor of
two-fifths to Philip H. Marsh, Sioux City,
Iowa

Application June 11, 1934, Serial No. 729,953

2 Claims. (Cl. 4—257)

My invention relates to a device to be used for cleaning out obstructed drains and the like.

An object of my invention is to provide a device of this character which will not completely necessitate the use of suction means so that the same can be applied to the drain more conveniently.

A further object of my invention is to provide associated with the device, means for retaining the same on to the drain with a positive grip so that it will not slip out of place during the cleaning operation.

A further object of my invention is to provide means for applying a positive water pressure directly to the obstructing medium in the drain so that the same will be cleaned effectively.

A further object of my invention is to provide means for applying the device to lavatory bowls in a manner which will eliminate all objectionable or obnoxious features.

A further object of my invention is to provide adjustable attaching means for the device to a standard faucet or other outlet.

A further object of my invention is to provide all of the above mentioned means in a structure involving as few parts as possible, and which can be manufactured at a very reasonable cost.

With these and other objects in view, my invention consists in the construction, arrangement, and combination of the various parts of my device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawing, in which:

Figure 1 is a sectional view of the cup members taken diametrically thereof.

Figure 2 is a sectional view of the means for attaching to the faucet.

Figure 3 shows the device in use on a standard sink.

Figure 4 is a view of the means for attaching to a faucet having a threaded end.

Figure 5 is a view of a modification of the device and being used in a lavatory bowl.

Figure 6 is a view of the pipe used in connection with the end cup, and

Figure 7 is a modified form of the device.

The usual plunger type of drain cleaning device utilizes the feature of forming a vacuum above the drain or within the drain so that the atmospheric pressure will force the obstruction away. This type of cleaner necessitates the pumping action of the plunger and sometimes this operation must be continued several times before the cleaning takes place.

The principal object of my invention is to eliminate this feature and to provide a cleaning device which will fit over the drain and will allow the injection of water under a standard pressure directly through the drain so that the flow of water will be restricted to the drain and cannot flow outwardly in any way. In this way, the water will transmit its entire force or pressure to the drain directly and clean out the obstructions.

To achieve this result, I use the rubber member 10 which includes the outer cup shaped member 11 and the inner cup member 12. Formed integrally with the member 12 is the projecting nozzle 13 and the upwardly projecting cylindrical portion 14 which includes the moulded threads 15. It will now be seen that the entire member 10 is moulded from one piece of rubber only and that all of the cups, nozzles and the like are integrally formed. The rubber, of course, is any suitable grade having satisfactory resiliency and the like.

Attached to the portion 14 is the rubber tube 16 the bottom of which is firmly fixed to the metal member 17 which includes the shoulder 18 and the threaded portion 19. When the metal member 17 is screwed into the rubber threads 15, the gasket 20 will be compressed making the device water tight.

The tube 16 is usually about two feet in length but, of course, can be supplied in longer lengths when necessary.

The upper end of the tube 16 (see Figure 2) is attached to the metal member 21 which includes the gasket 22 which is adapted to snugly fit over the faucet outlet 23.

In use, as shown clearly in Figure 3 and in a more detailed manner in Figure 1, the member 10 is placed over the drain plate 24 of the sink 25 and forced downwardly and then released. This operation creates a vacuum in the chamber 26 between the cups 11 and 12. The effect of the vacuum created in this manner is to retain the end of the device firmly against the outer surface of the sink surrounding the drain. The faucet is then opened practically to its widest extent allowing a rush of water to pass through the tube 16, down through the nozzle in the direction of the arrows 27 and thence directly downwardly into the drain where the pressure and rapidity of flow of the water will force the obstructions along through the drain pipe.

The nozzle 13 has the effect of concentrating the flow of water in a more direct manner downwardly. It will be noted that the cup shaped

members 11 and 12 include the flared flanges 28 and 29 to insure positive gripping action against the sink.

For connecting the upper end of the tube to a faucet which includes threads at the orifice end, I provide the metal member 30 which includes the shoulder 31 adapted to bear against the gasket 32. The threaded member 33 carries the member 30 against the gasket when the same is screwed upon the threads 34 on the faucet. The member 30 is readily interchangeable with the member 21 so that the type of connection can be changed to suit the conditions encountered.

A modified form of the device is shown in Figure 5 and is usable especially in that case where it is necessary to clean out a toilet bowl such as 35. In this case, the end unit 10 functions in exactly the same manner but instead of running the tube 16 directly to the unit 10, I employ the pipe 36. The pipe 36 includes the threaded end 37 and the shoulder 38 which screws into the rubber threads 15 and the tube 16 is slipped over the reduced diameter portion 39.

It will be seen from this construction that the cup members can be forced downwardly by grasping the upper end of the pipe 36 and in this way the hands will not come into contact with the dirty water in the bowl so that the objectionable feature will be dispensed with. For use for this modification, the tube 16 can be supplied with a greater length so it can be attached to the faucet 40 which is in the same room and which usually is at a little distance from the drain to be cleaned.

Figure 7 shows a plan view of a modified form of the cup member which functions somewhat similarly to that form shown in Figure 1, but which includes the integrally moulded pockets 41 and 42 which are located opposite each other. The rest of the device, of course, follows the same construction throughout with this exception. In this form of device, when the cup is pressed downwardly, vacuums will be formed in the pockets 41 and 42 and that unit will then be held firmly against the drain plate and the water pass through in the usual manner.

It will now be seen that I have provided a drain cleaning device which can be readily applied, it is positive in action and will provide a maximum amount of water under pressure to a drain to be cleaned.

It will be seen further that I have provided means for maintaining the cleaning device in a fixed position with adjustable means for attachment to any type of standard faucet.

It will be seen further that I have provided means for projecting the grasping means for applying the cleaner in any drain having unclean or obnoxious characteristics above the level of the drain so that the cleaner can be effectively applied without fear of soiling the hands, etc.

It will also be seen that I have provided a device of this character formed of a minimum of parts which will not get out of order and which device can be manufactured at a reasonable cost.

Some changes may be made in the construction and arrangement of the parts of my invention without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims any modified forms of structure or use of mechanical equivalents which can be reasonably included within their scope.

I claim as my invention:

1. A drain cleaning device comprising an outer rubber cup adapted to fit about the surface adjacent a drain, an inner rubber cup formed integrally with the outer cup, a downwardly projecting nozzle passing through both cups and projecting substantially from the inner cup thereof, said nozzle being formed integrally with both cups, means for passing water from an outlet to the inner cup including a flexible tube communicating with said nozzle, and means for attaching the tube to a standard faucet.

2. A drain cleaning device comprising an outer rubber cup adapted to fit about the surface adjacent a drain, an inner rubber cup formed integrally with the outer cup, a downwardly projecting nozzle passing through both cups and projecting substantially from the inner cup thereof, said nozzle being formed integrally with both cups, a rigid pipe attached to and adapted to communicate with the said inner cup, means for passing water from an outlet to the inner cup including a flexible tube attached to and communicating with the upper end of said rigid pipe, and means for attaching the said tube to a standard faucet.

JOSEPH W. HARDER.