Dec. 14, 1943. C. L. BROWN 2,336,592

DRAIN CLEANER

Filed Oct. 28, 1941

Fig. 1.

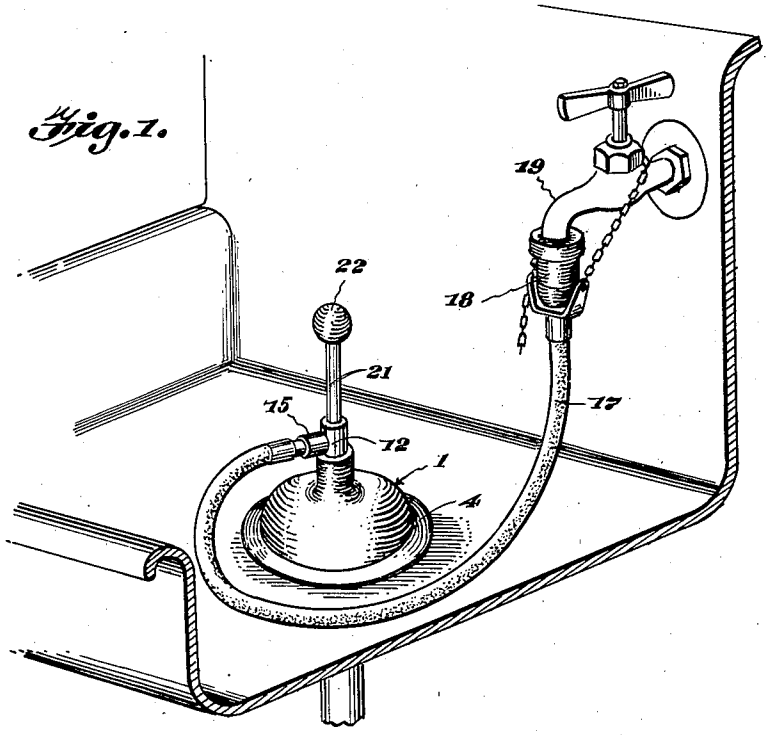


Fig. 4.

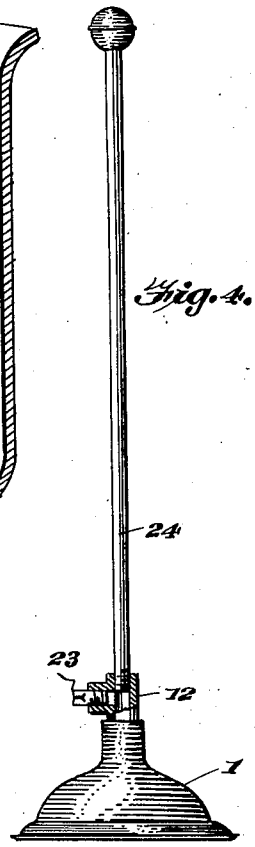


Fig. 2.

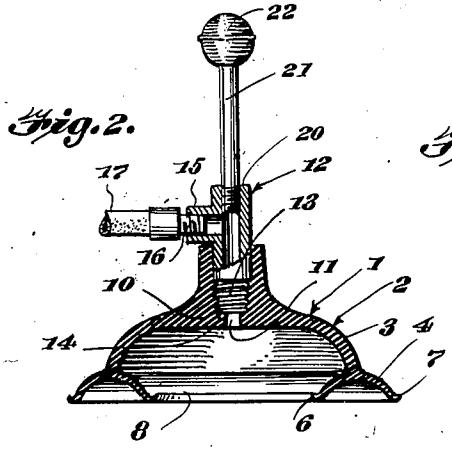
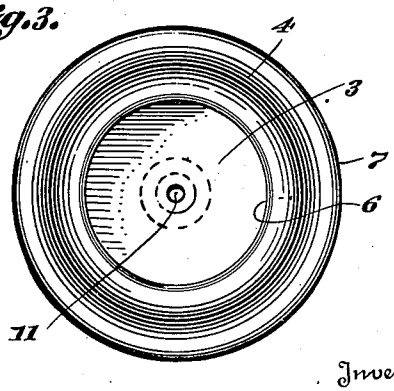


Fig. 3.



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DRAIN CLEANER

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2 Claims. (Cl. 4—256)

This invention relates generally to cleaning devices and more particularly to an improved drain cleaner.

One object of the invention is to provide a drain cleaner wherein the thickness and shape of the wall of the plunger head employed have a definite relationship to the size of the opening therein with the result that collapse of the said plunger head will be prevented.

Another object of the invention is to provide a device of this character wherein the plunger head is formed with a suction ring for retaining said plunger head in an operative position, the edges of the suction ring being rolled to prevent cracking and consequent loss of suction.

A further object of the invention is to provide a drain cleaner having an improved connector mounted on the plunger head for permitting connection of the plunger head with a source of water and also for permitting the mounting of a handle or plunger rod.

A further object of the invention is to provide a drain cleaner which is characterized by simplicity in construction and which will be highly efficient in use.

Other objects of the invention not specifically mentioned hereinbefore will become apparent during the course of the following description.

In the drawing:

Figure 1 is a perspective view showing my improved drain cleaner as it would appear in operative position and with the flexible pipe employed connected with a spigot,

Figure 2 is a vertical sectional view, partly in elevation, better showing the construction of the plunger head and the connector for mounting the handle and receiving the flexible tube,

Figure 3 is a bottom plan view of the plunger head, and

Figure 4 is a side elevation, partly in section, showing the device ready for use without a source of water under pressure.

In the drawing similar reference numerals designate like parts throughout the views. The numeral 1 indicates in general the plunger head of my improved drain cleaner. The plunger head 1 is formed with a cup shaped body 2 having a circular wall 3 which has formed on its free edge a suction ring 4, said suction ring being of substantially inverted U-shape and having its inner and outer edges disposed in the same horizontal plane. As best seen at 6 and 7, the inner and outer portions of the suction ring 4 are rolled to form thin upwardly deflected peripheral edges defining smooth horizontal intermediate contact faces for engagement with a supporting surface so that crinkling of said portions, which would result in the loss of suction, will be prevented. The inner edge 6 of the suction ring 4 defines an axial opening 8 for the plunger head. The plunger head 1 is formed preferably of rubber of a suitable resiliency. It is desired particularly to point out that the wall 3 of the body 2 is of such thickness and the opening 8 is of such size that collapse of the plunger head will be largely prevented. In other words, there is a definite relationship existing between the thickness of the wall 3 and the size of the opening 8 which relationship is required in order that the plunger head may be capable of easy manipulation but without danger of collapse. It should be understood that the plunger head may be made in any of a number of sizes. However, the thickness of the wall 3 will always be proportioned to the size of the opening 8 for assuring sufficient rigidity to prevent collapse.

The plunger head 1 is provided with an integral axially disposed neck 9 which neck is formed with an internally threaded socket 10. A relatively small opening 11 forms a source of communication between the socket 10 and the interior of the plunger head.

The numeral 12 indicates a connector which is of substantially T shape and which includes a tapered threaded portion 13. The threaded portion 13 is normally screwed in the socket 10. As shown at 14, the opening 11 cooperates with the socket 10 for defining a shoulder for receiving the lower end of the threaded portion 13 of the connector. Downward movement of the connector in the neck will thus be limited. The connector 12 includes a socket 15 which is internally threaded and which receives the threaded nipple 16 on the end of a flexible pipe 17. At its opposite end, the flexible pipe is provided with a universal connector 18 for permitting connection to a faucet of any type, a typical faucet being shown at 19. It, of course, should be understood that the pipe 17 is of sufficient length to reach the faucet 19.

The connector 12 also includes a socket 20 which is in the same vertical alinement with the threaded portion 13 and is internally threaded to receive the lower internally threaded portion of a plunger rod 21, said plunger rod carrying, at its upper end, a handle 22.

In use, the device is placed about the mouth of a drain to be cleaned, as shown in Figure 1 of the drawing. The connector 18 is attached to the spigot 19 and the spigot is opened for

allowing full pressure of water to flow through the tube 17 and the connector 12 into the plunger head 1. Inasmuch as the plunger head will effectively prevent escape of water, the water will be forced under full pressure through the drain for removing any obstruction therefrom. The handle 22 may be manually engaged, at the same time, for reciprocating the plunger head and imparting a pumping action thereto for assisting the water to clean out the drain.

It is particularly desired to call attention to the fact that the suction ring 4 will, when the plunger head is pressed into operative position, effectively retain said plunger head in said operative position. In view of the fact that the edges 6 and 7 of the suction ring are disposed in the same horizontal plane and are rolled to prevent crinkling, loss of suction which would be caused by entry of air into the suction ring will be prevented. As pointed out hereinbefore, the thickness of the wall 3 of the plunger head is proportioned according to the size of the opening 8, which surrounds the drain, so that danger of accidental collapse of the plunger will be prevented.

In Figure 4 of the drawing I have shown the plunger head and connector as they would appear when the device is to be used without water flowing therethrough. When the device is used in this manner, a plug 23 is screwed into the socket 15 after, of course, removing the threaded nipple 16. A relatively long plunger rod 24 may be substituted for the plunger rod 21, if desired.

It is desired to emphasize that my improved drain cleaner is characterized by the utmost simplicity in construction. It is also desired to point out that, in view of the fact that water is introduced to the connector at a point directly above the plunger head and remote from the handle, interference with movements of said handle 22 and rod 21 will not be caused.

Having thus described the invention, what is claimed as new is:

1. A device of the class described comprising a plunger head having a substantially dish-shaped body portion provided with a suction chamber and including a circular wall, a concave suction ring formed on the free edge of the circular wall and having inner and outer portions rolled to form thin upwardly deflected peripheral edges defining smooth, horizontal intermediate contact faces for engagement with a supporting surface, the rolled inner portion defining an opening communicating with the suction chamber, said plunger head having a neck formed with a socket and provided with a relatively small opening communicating with the socket and suction chamber and defining a stop shoulder, a connector fitted into the socket and bearing against said stop shoulder, said connector having a laterally disposed socket and a vertically disposed socket, a plunger rod removably engageable with the vertically disposed socket, and a flexible water supply pipe connected with said lateral socket.

2. A drain cleaner including a plunger head having a circular wall defining a suction chamber and provided with an upstanding neck, a concave ring formed on the lower edge of the circular wall and having inner and outer portions rolled to form thin upwardly deflected peripheral edges defining smooth horizontal intermediate contact faces for engagement with a supporting surface, said inner portion defining an opening communicating with the suction chamber, and a plunger rod operatively connected with said neck.

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