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J. P. BARRERE

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CLEANING DEVICE FOR WASTE OR DRAIN PIPES

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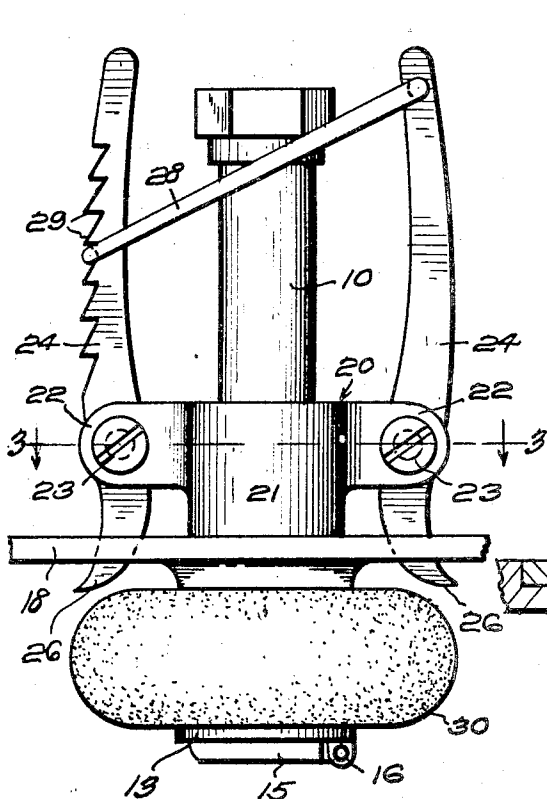


Fig. 1.

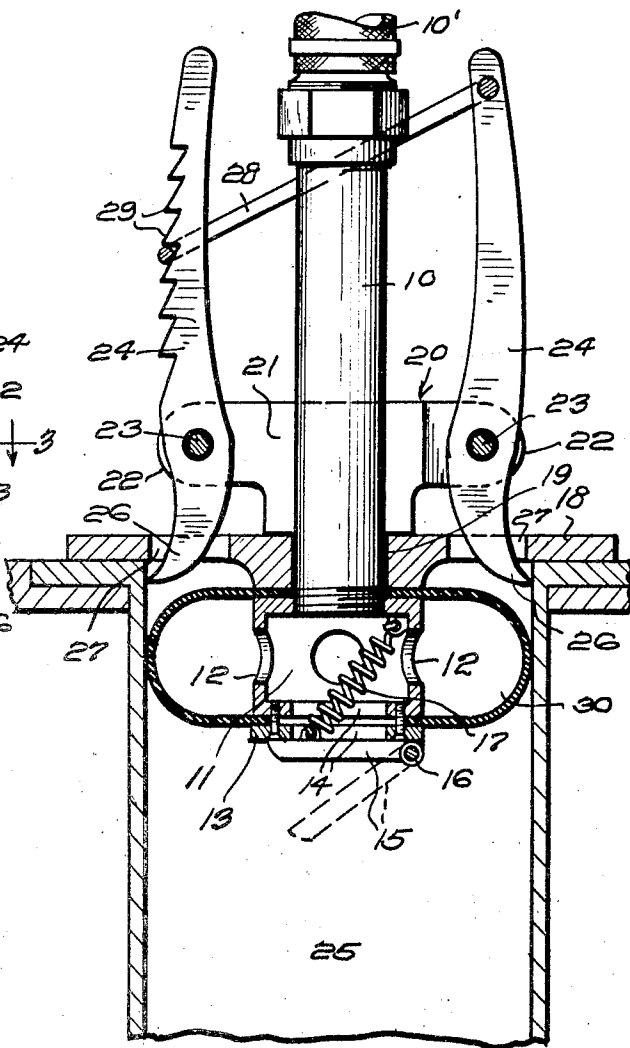


Fig. 2.

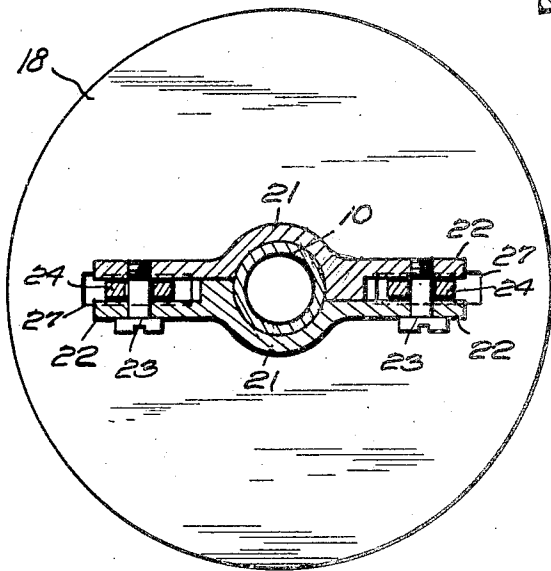


Fig. 3.

Inventor
John P. Barrere,

By Jerry A. Matthews

Attorney

UNITED STATES PATENT OFFICE

JOHN F. BARRERE, OF NYACK, NEW YORK

CLEANING DEVICE FOR WASTE OR DRAIN PIPES

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My invention relates to cleaning devices for waste and drain pipes, or the like.

An important object of the invention is to provide a device of the above-mentioned character, which may be conveniently applied to the waste or drain pipe for closing its intake end and introducing water, under pressure, into the pipe to force the blockage upon the same.

A further object of the invention is to provide a device of the above-mentioned character having an expansible plug or closure element which is automatically expanded by water pressure, prior to the entrance of the water into the pipe.

A further object of the invention is to provide a novel and simple means for holding the device applied to the waste or drain pipe.

A further object of the invention is to provide a device of the above-mentioned character, which is simple in construction, inexpensive to manufacture, and convenient in use.

Other objects and advantages of the invention will be apparent during the course of the following specification.

In the accompanying drawing, forming a part of this specification, and in which like numerals are employed to designate corresponding parts,

Figure 1 is a side elevation of a device embodying my invention,

Figure 2 is a central vertical longitudinal section through the same, and

Figure 3 is a horizontal section taken on line 3—3 of Figure 1.

In the drawing, wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a tubular body portion, formed of metal, or the like, and having a cylindrical shell 11, suitably attached to its free end. This shell is provided upon its periphery with openings 12 for the free passage of the water. The forward end of the shell 11 carries a disc 13, rigidly attached thereto by screws, or the like, and this forward end and the disc 13 are provided with aligned openings 14. An outwardly opening valve 15 is hinged to the disc 13, at 16, and this valve

has connection with a retractile coil spring 17, attached to the rear end of the shell 11, as shown.

The numeral 18 designates a disc, having a central aperture 19 for the passage of the tubular body portion 10. A supporting element 20 is carried by the tubular body portion, and includes companion semi-cylindrical portions 21, carrying radially extending pairs of apertured ears 22, secured together by bolts 23, or the like. These bolts serve to clamp the semi-cylindrical portions 21 to the tubular body portion 10. Arranged between the apertured ears 22 are locking levers 24, fulcrumed upon the bolts or pivots 23. The disc 18 has a larger diameter than the drain or waste pipe 25, while the locking levers 24 have their free ends in the form of outwardly bent jaws 26, operating through slots 27, and these jaws are adapted to engage within the pipe 25. In order that the locking levers 24 may be held in the closed position, a U-shaped link 28 is pivotally mounted upon the free end of one lever 24 and is adapted to engage with teeth 29, formed upon the other lever, as shown. Other suitable means may be employed to hold the locking levers 24 in the closed position, if desired.

The numeral 30 designates an expansible plug or sack, which is annular, and has its inner edges mounted upon the forward and rear ends of the shell 11. The upper edge of this sack is clamped to the top of the shell by the disc 18, while its lower edge is clamped to the top of the shell by disc 13, thereby effecting water-tight joints.

The operation of the device is as follows:

The plug or sack 30 is inserted into the intake end of the pipe 25, in the distended condition, and the valve 15 is then closed. The jaws 16 engage the inner wall of the pipe 25 and have clamping engagement therewith by drawing locking levers 24 inwardly, these levers being then locked in the closed position. The device is, therefore, securely attached to the pipe 25. Water under suitable pressure, is then supplied through the pipe 10 from a hose 10', or the like, which may be connected with a spigot. When the water en-

ters the tubular body portion 10, it passes freely into the expansible plug 30, which is first expanded until it forms a water-tight contact with the inner wall of the pipe 25.

- 5 When this expansion is effected, the pressure will open valve 15 sufficiently to permit of the escape of the water. The spring 17 is of such a tension that it will automatically close the valve 15 before the expansible plug 30 will contract, and this plug is, therefore, maintained expanded during the passage of the water under pressure, past the valve 15. This water under pressure will, therefore, pass through the pipe 25, and remove therefrom the blockage. By releasing the locking levers 24, they may be swung outwardly and the device readily removed from the pipe 25.

It is to be understood that the form of my invention herewith shown and described, is to be taken as the preferred example of the same, and that various changes in the shape, size and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described my invention, what I claim is:

1. A device for cleaning waste or drain pipes, comprising a tubular body portion for the passage of water under pressure, an expansible hollow plug connected with the tubular body portion and in communication therewith and adapted to be expanded by the water pressure, means to permit of the discharge of the water from the tubular body portion into the waste or drain pipe, and locking means carried by the tubular body portion for engagement with the waste or drain pipe.

2. A device for cleaning waste or drain pipes, comprising a tubular body portion for the passage of a fluid under pressure, a hollow expansible plug carried by the tubular body portion for insertion within the pipe and to engage with the inner wall of the same upon being expanded by the fluid under pressure from the tubular body portion, and an automatically seating outwardly opening valve for controlling the discharge of the fluid from the tubular body portion to the pipe.

3. A device for cleaning waste or drain pipes, comprising a tubular body portion, a hollow expansible plug connected with the outlet end of the tubular body portion, there being an outlet opening in communication with the expansible plug, an outwardly opening valve to cover said opening, and yielding means tending to seat the valve.

4. In a device for cleaning waste or drain pipes, comprising a tubular body portion, a shell secured to the outlet end of the tubular body portion, an expansible hollow annular plug surrounding the shell and secured thereto, said shell being provided in its side with opening means and having an outlet opening

at its forward end, an outwardly opening valve to cover the outlet opening, and yielding means to oppose the outward opening movement of the valve.

In testimony whereof, I affix my signature.
JOHN P. BARRERE.

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