Nov. 7, 1950 T. L. LAVERE 2,528,660

SINK TRAP PLUG

Filed June 6, 1947

Fig. 2

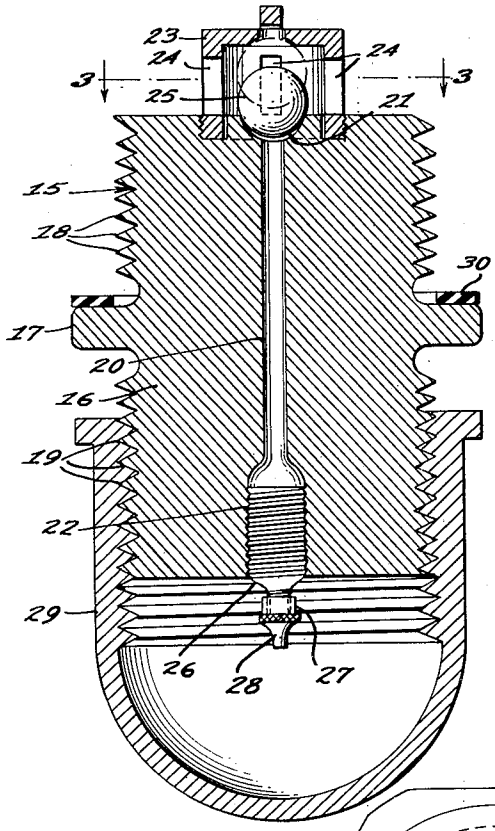
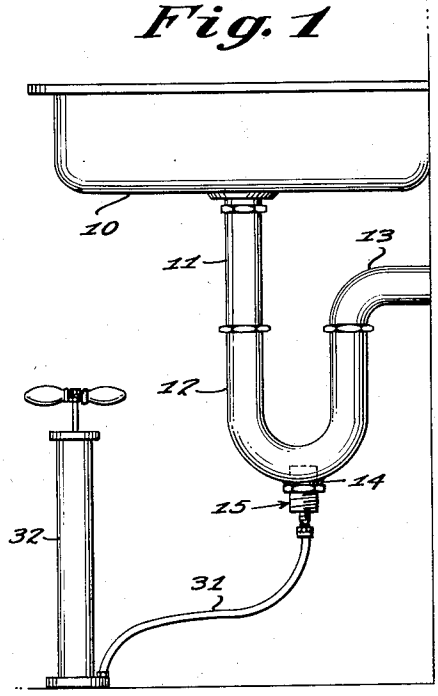


Fig. 1



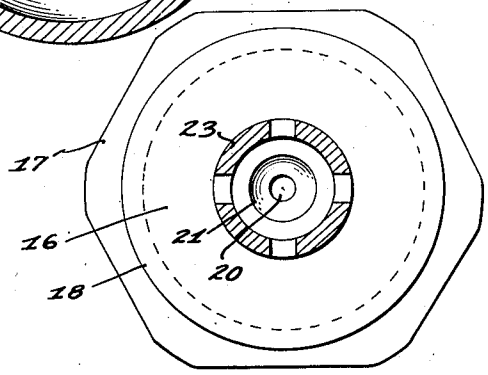


Fig. 3

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SINK TRAP PLUG

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2 Claims. (Cl. 182—7)

1

This invention relates to improvements in plumbing fixture, and more particularly to a plug to be inserted into a sink drain trap clean-out opening to facilitate clearing and cleaning of the sink drain.

It is among the objects of the invention to provide an apertured plug adapted to be inserted into a sink trap clean-out opening in sealing relation therewith and having valves therein so that compressed air or other fluid under pressure can be forced into the sink drain pipe to remove an obstruction in the pipe and clear the drain, which plug is simple and economical to manufacture, easy to install, is effective to admit compressed air or other pressure fluid to the interior of the drain pipe while precluding the leakage of water or other fluid therefrom and which may be left in operative association with the sink trap to constitute a permanent fixture so that pressure fluid can be quickly and conveniently applied to the drain to clear it whenever it becomes clogged.

Other objects and advantages will become apparent from a consideration of the following description in conjunction with the accompanying drawing, wherein:

Figure 1 is a diagrammatic elevation showing the manner in which the improved sink trap plug is used to clear a clogged sink drain.

Figure 2 is a longitudinal cross section of an improved sink drain trap plug illustrative of the invention; and

Figure 3 is a transverse cross section on the line 3—3 of Figure 2.

With continued reference to the drawing, and particularly to Figure 1, the sink 10 is provided with a downwardly-extending drain pipe 11 to the lower end of which is connected one side of a U-shaped trap 12 the opposite side of which is connected to the drain pipe 13 which leads from the trap to a sewer connection.

The bottom of the trap 12 is provided with a boss 14 having an internally-screw-threaded bore which normally receives a screw cap closure which is removable to extract any accumulation of drain clogging material from the bottom portion of the trap 12. Such sink and drain structure are conventional and constitute no part of the present invention except in the combination of the improved cleaning plug therewith.

The improved drain cleaning plug, generally indicated at 15, comprises a cylindrical plug body 16 having at substantially the mid-length location thereof, an annular, externally polygonal wrench receiving portion 17. External screw threads 18 extend from the intermediate portion

2

17 to the upper end of the plug, as illustrated in Figure 2, and similar external screw threads 19 extend from the intermediate portion 17 to the lower end of the plug. The plug is provided with a longitudinal, substantially central bore 20 having at the upper end thereof a partly spherical ball valve seat 21 and at the lower end thereof an internally-screw threaded counterbore 22. A ball retainer 23 having lateral openings 24 therein is secured to the upper end of the plug over the valve seat 21 and a valve ball 25 is disposed in the retainer 23 and maintained thereby in operative association with the partly spherical ball valve seat 21.

An air check valve 26 of a size conventionally employed to retain compressed air in pneumatic tires, is threaded into the counterbore 22 to an extent such that the reduced externally screw threaded end portion 27 thereof projects beyond the corresponding end of plug 16 to provide a portion receiving a compressed air hose coupling. A screw cap 28 may be provided for the end of the valve 26 and an internally-screw-threaded cup-shaped cover or cap 29 is threaded onto the external screw threads 19 to cover these screw threads, the lower end of the valve plug and the valve 26 when the plug is not in use.

In applying the improved plug the upper portion of the plug having the screw threads 18 thereon is threaded into the bottom boss 14 of the drain trap 12 until a gasket 30 carried on the adjacent radial surface of the portion 17 is brought into sealing engagement with the bottom of the boss 14 positioning the ball valve structure inside of the drain 10. With the cover 29 and valve cap 28 removed the end of a pump hose 31 is then connected to the end 27 of valve 26 by the conventional coupling with an air pump 32 connected to the opposite end of the hose and in convenient proximity to the sink 10. The upper end of the drain pipe 11 is then plugged by some suitable means, such as a wet cloth or a rubber plunger, and the pump 32 is then operated to force air into the sink drain. The pressure of the air from the pump 32 will dislodge an obstruction in the sink drain pipe and clear the drain so that water from the sink may pass through the drain. When operation of the pump is discontinued the valve ball 25 seats on the valve seat 21 preventing water from the trap from flowing down through the bore 20 to the valve 26. The air valve 26 cooperates with the pump 32 to build up air pressure in the sink drain pipe and will retain the compressed air in the pipe until

the obstruction is loosened or the sink end of the drain pipe is uncovered.

The valve plug **15** may be used to admit fluid under pressure other than compressed air to the sink drain, if desired, for example the hose **31** might be connected to a water pump or spigot instead of to the pump **32** and the pressure of a domestic water supply thereby utilized to unclog the sink drain.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. A plumbing fixture comprising a trap having a bottom wall provided with an opening therethrough and screw threads surrounding said opening, an externally threaded screw plug threaded at one end into said opening and having a bore extending longitudinally therethrough, a ball check valve carried by said plug on the end thereof within said trap and operative to preclude flow of fluid from said trap through the bore of said plug, said plug having a counterbore in the end thereof disposed outwardly of said trap and screw threads surrounding said counterbore, and externally screw threaded, pneumatic check valve threaded into said counterbore in position to admit compressed air through said plug bore and said check valves into said trap and to retain air under pressure in said trap, said pneumatic check valve projecting at its outer end outwardly of the outer end of said plug to

receive a hose coupling, and a hollow cap having internal screw threads threadable onto said plug to cover the outer end of the latter and the outer end of said pneumatic check valve.

2. A plumbing fixture comprising a trap having a bottom wall provided with an opening therethrough and screw threads surrounding said opening, an externally threaded screw plug threaded at one end into said opening and having a bore extending longitudinally therethrough, a ball check valve carried by said plug on the end thereof within said trap and operative to preclude flow of fluid from said trap through the bore of said plug, said plug having a counterbore in the end thereof disposed outwardly of said trap and screw threads surrounding said counterbore, and an externally screw threaded pneumatic check valve threaded into said counterbore in position to admit compressed air through said plug bore and said check valves into said trap and retain air under pressure in said trap, said pneumatic check valve projecting at its outer end outwardly of the outer end of said plug to receive a hose coupling.

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REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
207,632	Vanderman	Sept. 3, 1878
832,388	Kellogg et al.	Oct. 2, 1906
999,506	Levrant	Aug. 1, 1911
1,040,709	Loftus	Oct. 8, 1912
1,338,432	Foerderer	Apr. 27, 1920
1,904,799	Palmer	Apr. 18, 1933