H. J. KURRUS.

HAND PUMP.

APPLICATION FILED AUG. 28, 1908.

950,549. Patented Mar. 1, 1910.

Fig. 3

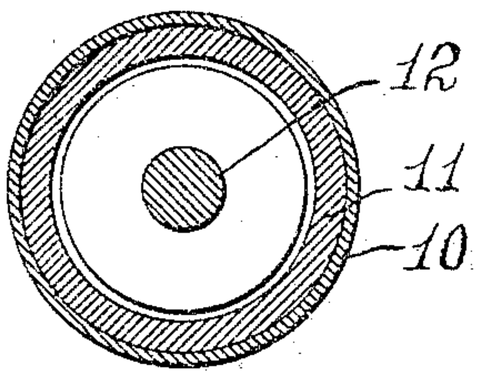


Fig. 2

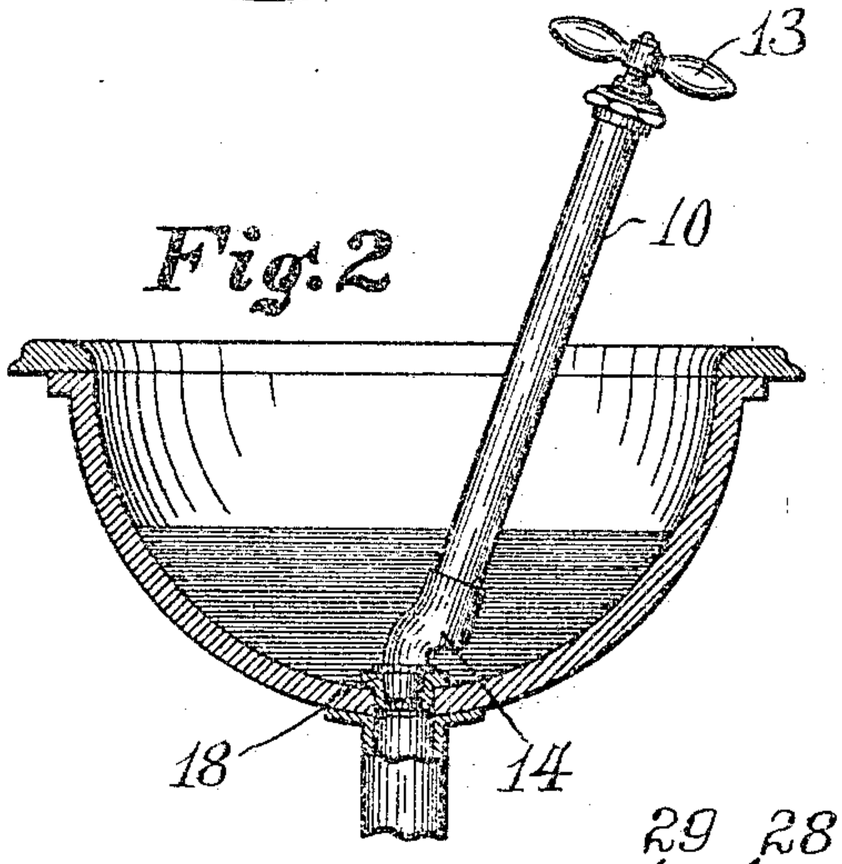


Fig. 4

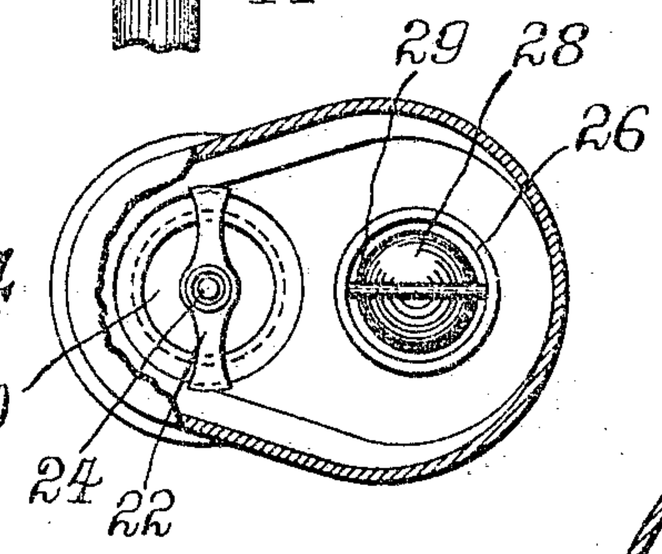


Fig. 5

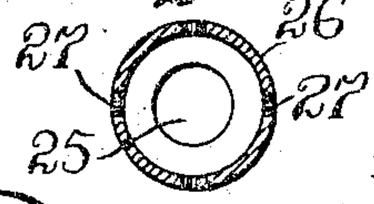





Fig. 1

WITNESSES:

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# UNITED STATES PATENT OFFICE.

HENRI J. KURRUS, OF NEW YORK, N. Y., ASSIGNOR OF ONE-HALF TO DANIEL O'SULLIVAN, OF NEW YORK, N. Y.

## HAND-PUMP.

950,549. Specification of Letters Patent. Patented Mar. 1, 1910.

Application filed August 28, 1908. Serial No. 450,755.

*To all whom it may concern:*

Be it known that I, HENRI J. KURRUS, of the city, county, and State of New York, have invented a new and useful Improvement in Hand-Pumps, of which the following is a full, clear, and exact description.

My invention relates to improvements in pumps, and more particularly to hand operated pumps which are adapted for use in forcing temporary plugs or clogging material from pipes such as flush pipes, sinks, drains, and similar places. It is well known that pipes of this nature often become clogged with material which collects sometimes gradually and forms a stoppage which make the connected sink, water-closet, or other article overflow, thus doing a good deal of damage and causing considerable annoyance.

The object of my invention is to produce a very simple and inexpensive form of pump which can be easily applied to the sink, closet, or other receptacle connected with the pipe which is stopped, and by which sufficient hydraulic force can be applied to the stopped pipe to cause the clogging material to be ejected.

My invention is intended to furnish a pump which can be easily applied to such places, which can be conveniently operated by hand, and which will enable sufficient pressure to be created for the intended purpose.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference characters indicate corresponding parts in all the views.

Figure 1 is a broken view partly in section and partly in longitudinal section, showing my improved pump. Fig. 2 is a view on a reduced scale, showing the application of the pump to a sink drain. Fig. 3 is a cross section on the line 3—3 of Fig. 1. Fig. 4 is a broken sectional plan on the line 4—4 of Fig. 1, and Fig. 5 is a cross section on the line 5—5 of Fig. 1.

The pump has the usual barrel 10, piston 11, piston rod 12, and handle 13, these parts being substantially like the ordinary hand air pump, but the construction of said parts can be varied indefinitely, as these features I do not claim in detail. The essential thing is to have a pump barrel with a reciprocating piston therein. The barrel 10 is off-set at the lower end as shown at 14, and for convenience this off-set part can be a separate piece from the barrel, but this is not essential. Below the off-set portion 14 the barrel is reduced as shown at 15, and is provided with an external flange 16 below which is a nozzle portion 17 which can be provided with a washer 18 so as to take up the space between the nozzle and the outlet of the sink or other receptacle in which the pump is used. Obviously the only necessary thing is to get a reasonably tight connection between the nozzle part 17 and the pipe in which it is inserted, and any suitable washer or a wrapping of cloth, waste, or other material can be used for the purpose. The lower end of the pump has also an internal flange 19 which serves as a seat for the check valve 20 which is arranged below the seat, and is normally closed by the spring 21 which is arranged between the cross-bar 22 and the head 23 of the guide post 24 which is secured to the back of the valve. The object of the valve 20 is to permit water to be forced downward into the pipe, but to prevent it from coming back, and while I have shown a valve suitable for this purpose, it will of course be understood that any suitable check valve can be used instead of that illustrated.

Through the off-set 14 is a water in-take 25 which delivers into an inner cylinder or box 26, this having side ports 27 discharging into the lower part of the pump barrel. In the box 26 is a valve 28 preferably a ball valve, which rises above the ports 27 when water is sucked into the box and barrel, and which is prevented from rising too high by the cross-bar 29. I find this check valve and box best suited for the purpose intended, but as stated with regard to the valve 20, I do not limit the invention to the use of any particular valve. It is necessary, however, to have the opposed valves 28 and 20, and to provide the intake below the water line in the receptacle in which the pump is used, so that when the water comes into the barrel 10 the valve 28 is opened and the valve 20 closed, but when the water is expelled, the valve 20 opens and the valve 28 closes. The off-set at the lower end of the pump barrel is also necessary, as it is this peculiar formation of the barrel end, together with the valves, which enables the reduced end of the

pump barrel to be readily inserted in the pipe to be cleared, and the water to be sucked in and expelled as required. When the pump is used, the lower end of the barrel is inserted in the pipe to be cleared, a suitable packing being placed around the pump nozzle so as to make a reasonably tight joint, sufficient water is placed in the receptacle above the pipe to fill the pipe and extend above the opening 25, and then the pump is worked precisely as usual with hand pumps. It will be seen that at every down pressure of the piston, water will be forced past the valve 20, while at the up stroke of the piston the water cannot come back, and so hydraulic pressure will be created below the valve 20 which, as is well understood, can be made considerably heavy, and this pressure is sufficient to ordinarily remove matter which has clogged the pipe.

It will be seen that I have provided a very simple, easily operated and easily applied pump, which is well adapted to the purposes referred to.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent:—

1. A pump comprising a barrel, a plunger operative therein, an offset laterally extending portion at the lower end of said barrel and in continuation thereof, said laterally extending portion bent downwardly and inwardly and contracted to form a nozzle, an outwardly opening valve in said nozzle, and an inwardly opening valve in the underside of said laterally extending portion.

2. A pump comprising a barrel, a plunger operative therein, an extension mounted upon the lower end of said barrel, said extension first bent laterally, then downwardly and inwardly, the end of said extension contracted to form a nozzle, an outlet valve in said nozzle, and an inlet valve in the underside of said laterally bent portion in proximity to said nozzle.

HENRI J. KURRUS.

Witnesses:
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