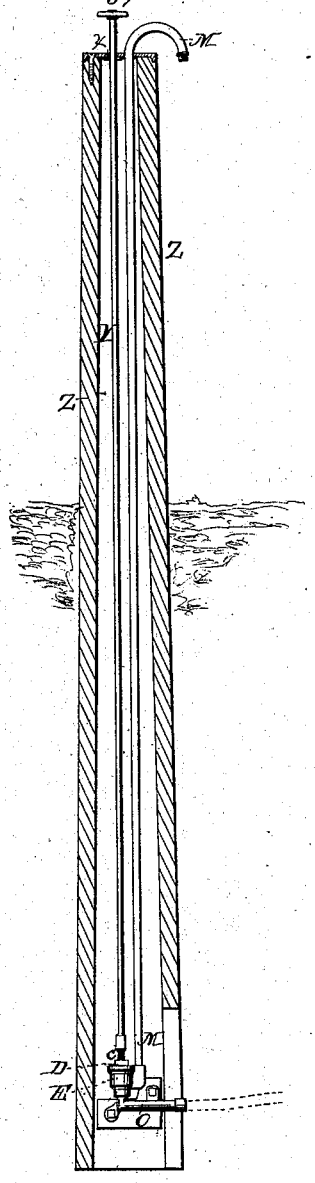
W. Bailey,

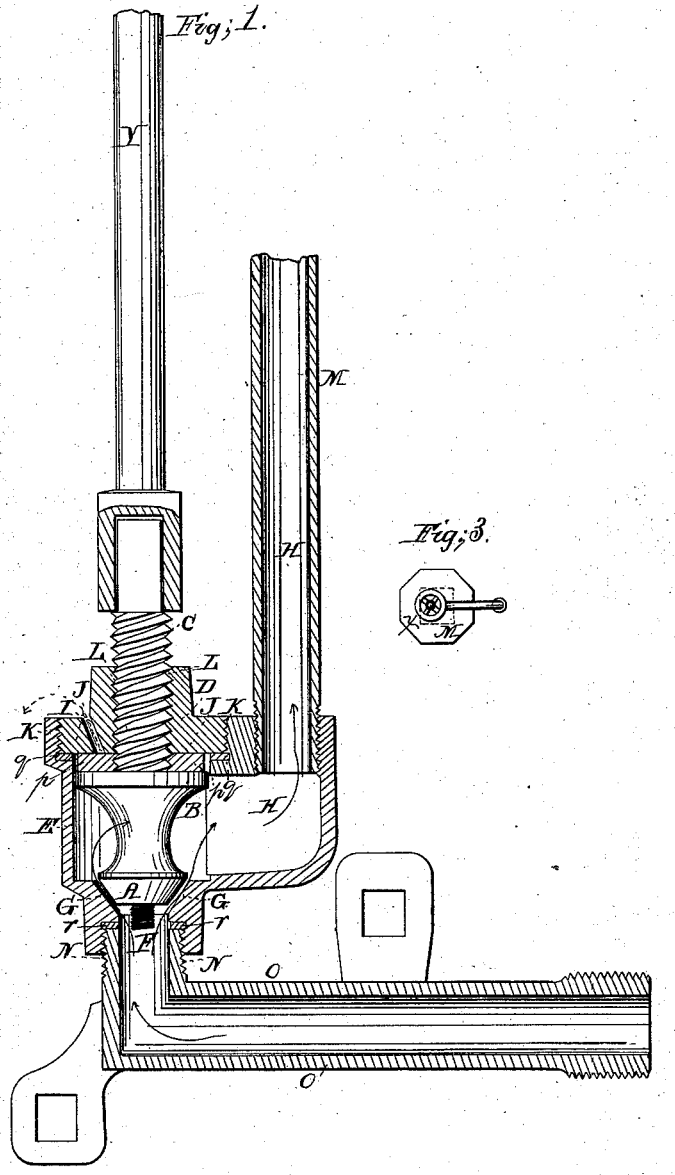
Hydrant.

No. 48,504. Patented July 4, 1865.

Fig; 4.

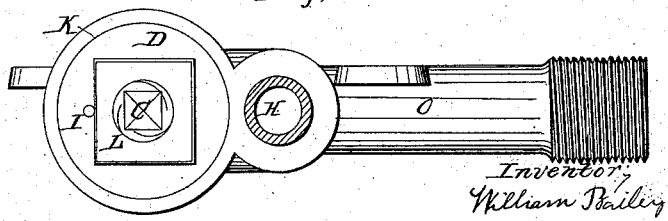


Fig; 1.



Fig; 3.

Fig; 2.



Witnesses;
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UNITED STATES PATENT OFFICE.

WILLIAM BAILEY, OF TROY, NEW YORK.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **48,504**, dated July 4, 1865.

To all whom it may concern:

Be it known that I, WILLIAM BAILEY, of the city of Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Hydrants, of which the following is a full, clear, and exact description, reference being had to the annexed drawings, in which—

Figure 1 is a central sectional elevation, and Fig. 2 a top view, of that portion of the hydrant which embodies my invention; and Fig. 3 is a top view, and Fig. 4 a sectional elevation on a reduced scale, of my improved hydrant incased for use, like parts being marked by the same letters in all the figures.

This invention relates to that well-known class of compression-hydrants in which the water is let on and shut off by a valve, which is opened with and closed directly against the current of water issuing from the supply-pipe by means of a screw, which is turned by hand from the top of the hydrant-box by the use of an intervening key; and as the motion of the scew-operated valve in such compression-hydrants is necessarily quite slow in shutting off the current of water, the supply-pipe in such hydrants is far less liable to be burst by the momentum of the moving water in the supply-pipe on closing the shut-off valve than in other kinds of hydrants in which the shut-off valve is closed instantly, or nearly so, by means of a reacting spring or lever, or by the current of water itself on releasing the opened valve, and consequently such screw-operated compression-hydrants are often preferred to the other kinds above mentioned. However, in using such compression-hydrants the operating-screw, or the valve, or the valve-seat, or the valve-chamber is sometimes liable to get out of order or worn, so as to need renewal or repairs, and the delivery-pipe, which conducts the water from the valve-chamber up through the hydrant-box, is sometimes liable to be burst by water freezing in it, or, when of iron, to become rusted out near the valve-chamber, so as to require the old pipe to be replaced by a new one; and in the screw-operated compression-hydrants hitherto in use the valve-chamber, with the valve-seat, was commonly cast or formed in one piece with the supply-pipe, which was permanently fixed at the bottom of the hydrant-box, so that in such previously-made compression-hydrants it was necessary to dig up the ground around and down to the bottom of the hydrant-box to get at and repair or renew the valve-seat, valve-chamber, or delivery-pipe. In order to avoid that defect, I make the valve-chamber E, Figs. 1 and 3, with the main or inlet valve seat G therein in a separate piece from the fixed supply-pipe O, and connect the said valve-chamber and supply-pipe together by means of upright male and female screws N, Fig. 1, so formed and arranged on the said valve-chamber E and supply-pipe O that the valve-chamber, with the lower valve-seat, G, therein, the compression shut-off valve A, with its operating-screw, and the delivery-pipe M can be all readily unscrewed together at the screw-joint N from the fixed supply-pipe O and drawn up through and out of a suitable hollow hydrant-box, Z, having an open or removable top, X, and then repaired or renewed in any required part, and all put back down through the hydrant-box and rescrewed to the fixed supply-pipe, in proper condition for use (all from the top of the hydrant-box) without taking up or disturbing the latter or digging up the ground around it.

When the discharge-pipe M is of iron all of the working parts of the hydrant may commonly be unscrewed from and rescrewed upon the fixed pipe O by means of the pipe M itself; but in case the discharge-pipe shall not be strong enough for that purpose I use any suitable key to reach down to and engage with and unscrew the valve-chamber E from and rescrew it upon the said fixed supply-pipe O at the screw-joint N, of which I make either the male or the female part on the supply-pipe.

In the screw-operated compression-hydrants heretofore in use the main valve, which lets on and shuts off the water, and also the waste-valve, which closes and opens the vent through which the water that is left in the delivery-pipe on closing the main valve runs out, are both commonly formed or fastened on a movable nut, into which the operating-screw screws in and out, and thereby slides the nut, with the two valves thereon, on or between fixed guides in the valve-chamber so as to thus let on and shut off the water, and also close and open the said waste-vent in the hydrant; but, instead of

thus making the valves fast on a movable or sliding screw-nut, I make the main or inlet valve A, Fig. 1, and the waste-valve B each fast on the operating-screw C itself, and make that screw to screw up and down through a stationary nut, D, which forms the top of the valve-chamber E of the hydrant, all in such manner that upon turning the screw C in one direction the screw will then raise the inlet-valve A off from its seat G, so as to let the water rush from the supply-pipe O or inlet-passage F into the valve-chamber E, and from there up and out through the delivery-pipe M, and will also at the same time and operation raise the waste-valve B against its seat J, so as to thereby prevent the escape of water out through the waste-passage I, and also in such manner that upon turning the said screw C in the opposite direction the screw will then force the valve A down onto its seat G, and thereby shut off the water, and will also at the same time and operation lower the valve B away from its seat J, so as to let the water that is then left in the discharge-pipe M run down back and out through the waste-opening I. By thus making the main valve A and the waste-valve B each fast upon or in one piece with the operating-screw C itself, and with the latter screwing through the top D of the valve-chamber E, as above described, I make the hydrant of fewer parts or pieces and of more simple construction than if the valves were fast on a screw-nut that was slid in ways or guides by the screw, as in the aforesaid compression-hydrants heretofore in use, and also avoid the considerable friction and wear that attend the sliding movements of the said screw-operated valve-nut in such previously-used compression-hydrants.

In the annexed drawings, Y is a key or rod for turning the screw C from the top of the hydrant-box to open and close the valves A B.

I make the valves and valve-seats of any suitable materials, and either flat or circular, as at B J, or conical, as at A G, or of other suitable forms, and either with or without india-rubber or leather packings *p* on the valves or valve-seats, and generally arrange leather or india-rubber packing-rings *q r*, Fig. 1, at the screw-joints K and N, to prevent leakage at those places.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The detachable valve-chamber E, with its discharge-pipe M, inlet-valve seat G, and screw-operated inlet-valve A, in combination with the fixed supply-pipe O, united to the said valve-chamber by male and female screws N, and arranged in the hydrant-box Z, Fig. 4, substantially as herein described.

2. The valves A and B and screw C, all fast together, in combination with the stationary screw-nut D, valve-chamber E, inlet-passage F, discharge-pipe M, waste-opening I, and valve-seats G and J, as herein described.

WILLIAM BAILEY.

Witnesses:
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