(No Model.)

G. SHELLEY.

HYDRANT.

No. 260,904. Patented July 11, 1882.

Fig. 1.

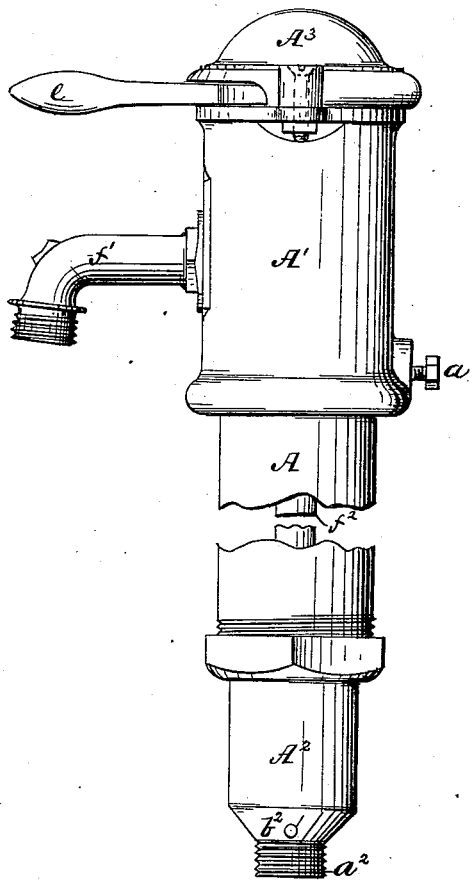


Fig. 2.

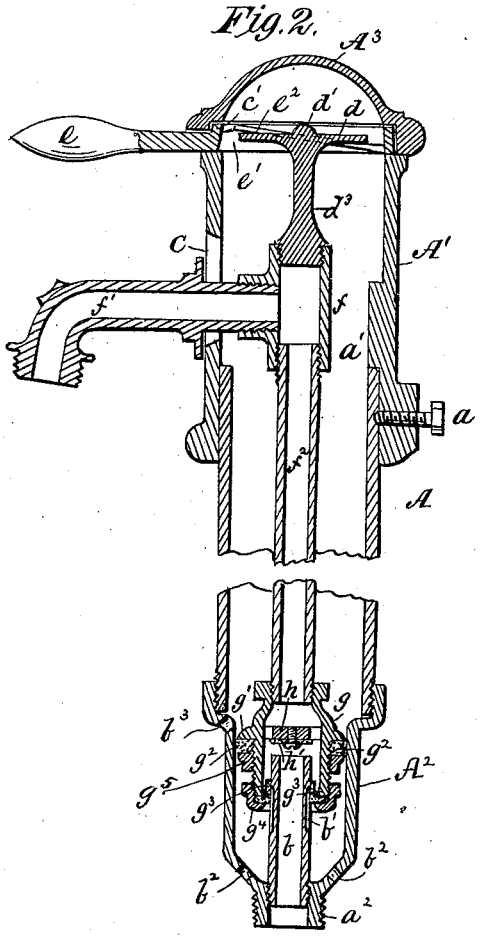


Fig. 3.

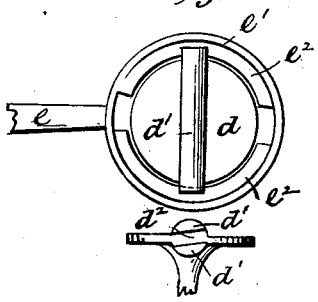
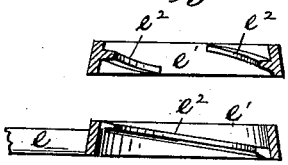


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE SHELLEY, OF WILKES-BARRÉ, PENNSYLVANIA.

HYDRANT.

SPECIFICATION forming part of Letters Patent No. 260,904, dated July 11, 1882.

Application filed March 3, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE SHELLEY, a citizen of the United States, residing at Wilkes-Barré, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in Hydrants; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in hydrants, and has for its object a hydrant that will not freeze, and one that will be efficient and simple in all its operations; and it consists in the construction and arrangement of the several parts, as will be hereinafter fully described, and specifically pointed out in the claims.

In the drawings, Figure 1 is a side view, and Fig. 2 is a vertical section, of a hydrant constructed according to my invention; and Figs. 3 and 4 are detail views, showing the means I employ for elevating and depressing the discharge-pipe.

The outer casing of my hydrant is composed of the central cylinder, A, the upper cylinder, A′, the lower cylinder, A^2, and the top piece, A^3. The top piece, A^3, is secured to the upper cylinder by bolts. The upper cylinder is secured to the middle cylinder by set-screw *a*, passed through threaded opening in cylinder A′, and bearing against upper portion of the cylinder A. On the inner rear side of the upper cylinder I provide a lug, *a′*, the under side of which forms a square shoulder, which rests down on the top of cylinder A, as shown. The middle and lower cylinders are secured together by a threaded joint. The lower portion of the cylinder A^2 is reduced in size, forming the pipe a^2, which is formed with a male thread to provide connection for the supply-pipe. The inside of the upper portion of the pipe a^2 is cut with a female thread to receive the threaded end of tube *b*. The tube *b* is screwed into the inside of upper portion of pipe a^2, and it is extended upward nearly to the joint of the lower and middle cylinders, as shown. In the outer sides of the tube *b′*, I provide a series of two or more grooves, *b′*, extended from near the top of the tube. These grooves may be made an inch or more long, as desired. These grooves are designed to convey off the water contained in the discharge-pipe when the supply is shut off, and the manner in which these grooves operate in connection with the plunger on lower end of discharge-pipe to carry off the water will be hereinafter fully described.

b^2 is an opening leading out through the cylinder A^2 near its bottom.

The front of the upper cylinder, A′, is formed with the opening *c*, through which is passed the discharge-nozzle, and this opening is elongated vertically to permit the upward and downward play of the discharge-nozzle as this nozzle, in connection with the discharge-pipe, is elevated and depressed.

The front portion of the top piece, A^3, is cut away to provide passage for the handle, and so as to permit the motion of the handle from side to side, as is required in the operation of my device. The top piece also is cut with an annular bearing, *c′*, for the top of the circle carrying the curved cams, as shown.

d is a disk. It is provided on its upper and lower side with semi-round ridges or projections *d′*, extended across the disk and slightly beyond it on either side. These ridges are placed one above the other on opposite sides of the disk, and beyond the edges of the disk they form a perfectly-round rod, through which I cut inclined slots d^2 d^2.

e is the handle. It is connected to the circle *e′*, which is placed and bears between the annular bearing *c′* of top piece and the top of upper cylinder, A′. On the inner side of circle *e′*, I provide two threads, e^2 e^2, which are curved with and extend from upper to lower sides of the circle *e′*. The inner side of these threads e^3 is made in the arc of a circle of proper size to permit them to pass freely over the edge of the disk *d*, and the ends of the threads are formed a sufficient distance apart to permit the passage between them of the ridges or projections *d′* on disk *d*. These threads e^2 work in the inclined slots d^2 in the ends of the ridges or projections *d′* on disk *d*, and raise and lower said disk and the dis-

charge-pipe, nozzle, &c., which are properly connected, as will be described, as the handle *e* is turned from side to side.

d^3 is a rod made fast to disk *d*, and extended down and formed with its lower end threaded and screwed into top of T-joint *f*. The nozzle *f'* is connected to side of the said T-joint, and extended through the opening in upper cylinder, and the discharge-pipe f^2 is screwed into lower end of said T-joint *f*.

g is the plunger, secured by threaded joint to the discharge-pipe f^2, and operating within the lower cylinder, A^2. This plunger is formed with a shoulder, *g'*, below which the outer side of the plunger is threaded, forming the threaded extension which receives the annular washer g^2 and jam-nut g^5, as will be described.

g^2 is a washer made to fit snugly the sides of the cylinder A^2, and secured up against the shoulder *g'* by jam-nut g^5. This washer g^2 prevents the waste water from getting into the cylinder A, and also secures for the plunger a steady action and prevents wear of both the plunger and inside of the casing. This washer may be readily replaced when worn.

g^3 is an annular cup-washer, secured to under side of plunger and held by jam-nut g^4. This washer fits closely the sides of the tube *b*, and there is space left between the sides of the upper portion of this washer and the inner sides of the plunger, so that when the pressure of the water is on it the washer hugs closely the sides of the tube and prevents all leakage. When the plunger is forced down in the operation of closing the hydrant this cup-washer straddles the grooves *b'* and permits the water which is left in the discharge-pipe to pass out.

h is a valve cast on inner side of plunger and connected in two or more places, so as to leave space for the water to pass freely when the hydrant is turned on. To the under side of this seat I fix proper packing *h'*. The seat and packing are made of sufficient diameter to cover the opening of tube *b* when the hydrant is shut down, as will be described.

The operation of my device is simple, and will be readily understood on reference to the drawings. When the plunger, &c., are in the position shown in Fig. 2, the water passes freely up and out of the nozzle. Then when the handle *e* is turned and by its connection with the disk *d* forces the discharge-pipe, plunger, &c., downward, the seat and packing rest down over the opening of tube *b* and shut off the supply of water. In the action of shutting off the water by depressing the plunger the cup-washer g^3 is pressed down and straddles the grooves *b'*, and the water contained in the discharge-pipe runs out through the said grooves *b'* into the cylinder A^2 and escapes through the opening b^2, thus obviating the trouble arising by freezing of the water in the discharge-pipe. Ordinarily no water will get in the cylinder A outside the discharge-pipe f^2; but in case any should get in there by reason of leakage or otherwise it will flow out through the opening b^3, which I provide for such purpose.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hydrant having the cylinder A^2 and inlet-pipe *b*, the combination, with the plunger *g*, having the annular shoulder *g'* and threaded extension, of the jam-nut g^5, nut g^4, annular washer g^2, and cup-washer g^3, substantially as and for the purposes set forth.

2. The combination, with the plate or disk *d*, connected with the discharge-pipe, and provided in its sides with inclined slots d^2, of the inclined threads e^2, fitted within the circle *e'*, rigidly connected to the handle *e*, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE SHELLEY.

Witnesses:
PETER FORVE,
JOHN REESE.