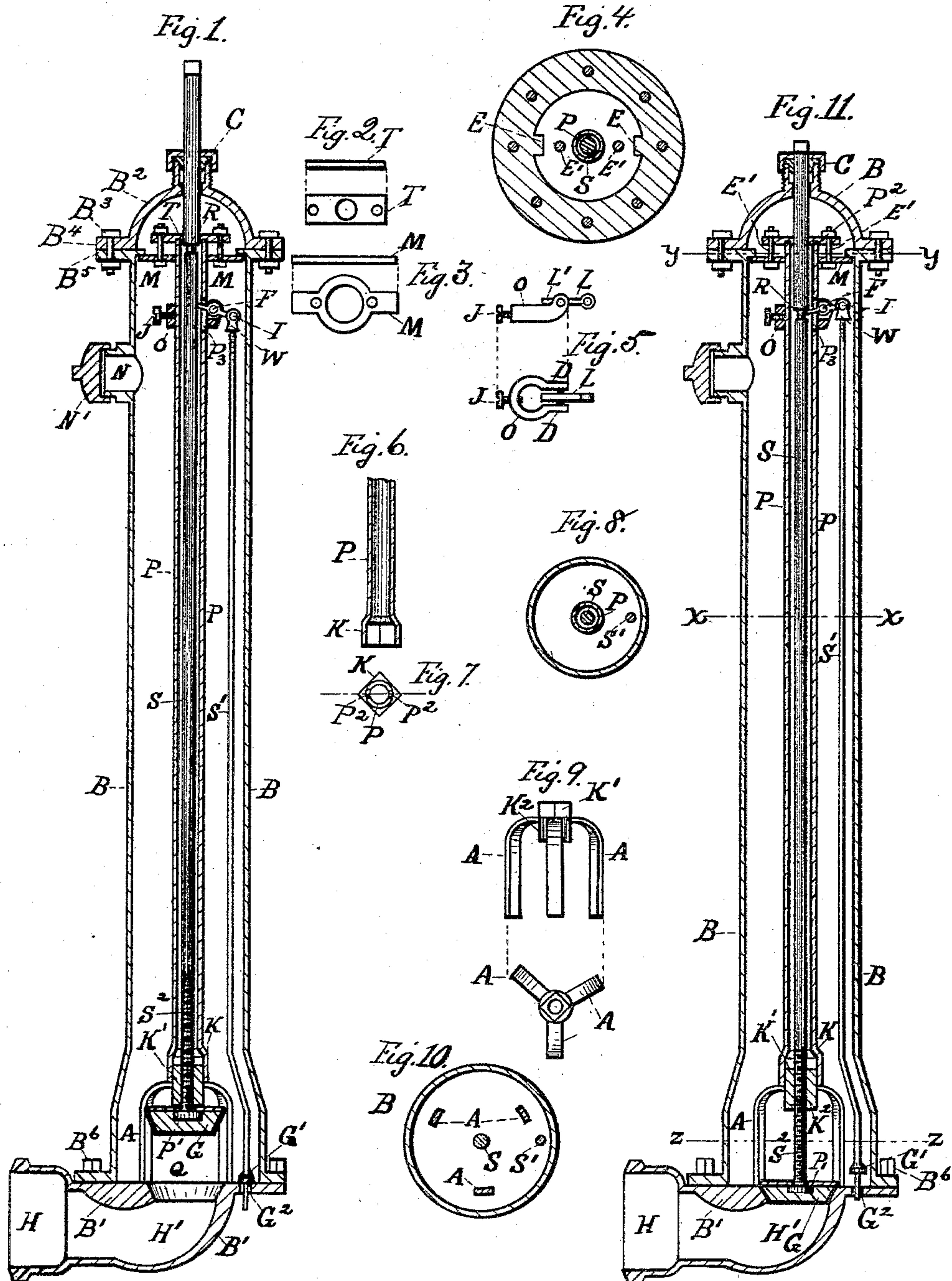


(No Model.)

W. H. BOOTMAN.  
HYDRANT.

No. 414,486.

Patented Nov. 5, 1889.



Witnesses:  
Frank C. Currier  
John T. Booth

Inventor:  
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atty.



# UNITED STATES PATENT OFFICE.

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## HYDRANT.

SPECIFICATION forming part of Letters Patent No. 414,486, dated November 5, 1889.

Application filed February 15, 1889. Serial No. 299,978. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM H. BOOTMAN, a resident of Waterford, in the county of Saratoga and State of New York, have invented certain new and useful Improvements in Hydrants; and I do hereby declare that the following is a full, clear, and exact description of the invention, that 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 the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures.

My invention relates to improvements in hydrants, and more particularly to that class known as "fire-plugs;" and it consists of the novel construction and combination of parts hereinafter described, and pointed out in the claims.

Figure 1 of the drawings is a vertical central section of my improved hydrant, showing the main valve open and the drip-valve closed. Fig. 2 represents in elevation and plan views the follower-plate T detached. Fig. 3 shows similar views of the stay-plate M. Fig. 4 is a horizontal section taken on the broken line *y y* in Fig. 11. Fig. 5 shows in elevation and plan an adjustable collar for supporting the mechanism for operating the drip-valve. Fig. 6 is a central longitudinal section of the lower part of the tubular post, the upper portion being broken away. Fig. 7 is a top plan or end view of the post detached. Fig. 8 is a horizontal section taken on the broken line *x x* in Fig. 11. Fig. 9 shows in elevation and plan the detachable stem-nut and nut-supporting legs. Fig. 10 is a horizontal section taken on the broken line *z z* in Fig. 11. Fig. 11 is a vertical central section similar to that shown in Fig. 1, showing the main valve closed and the drip-valve open.

B represents the stand-pipe, which may be of any well-known form. The lower flanged end of the pipe is secured by screws  $B^6$  to the bottom casting  $B'$ , having an inlet H leading through valved passage-way  $H'$  into the pipe. The upper end of the pipe is closed by cap  $B^2$ , having a stuffing-box C for the passage of

the valve-stem S. The cap is secured to the upper end of the pipe by the bolts  $B^3$ , passed through the flange  $B^4$  on the cap and flange  $B^5$  on the pipe. The upper end of the pipe is also provided with an outlet N, which may be closed by a cap  $N'$ .

The stem-nut  $K'$  is supported by the three legs A, which stand upon the edge walls surrounding the valve-opening in the bottom casting. The stem S, screw-threaded at its lower end to fit the stem-nut, passes up through the stuffing-box and cap, and has its projecting end adapted to receive a socket-wrench or other mechanism for imparting to the stem a rotary movement. The lower end of the stem terminates in a circular head or disk  $P'$ , adapted to rotate in a corresponding socket located centrally of the plug G and opening upward. The plug is adapted to fit the annular seat Q. In operating the hydrant the stem is rotated in one direction to open the valve and the opposite direction to close it, the rotary movement causing the screw to travel up and down through the stem-nut and carry with it the plug. The stem-nut is held in position over the valve-opening by means of the tubular post P, the lower end of which is adapted to receive and fit the nut or a rectangular head  $K'$  thereon. The post extends upward from the nut to the upper end of the stand-pipe, and is held in place upon the nut by means of a centrally-perforated follower-plate T, bolted, as by bolts E, to the centrally-perforated stay-plate M. The latter plate is held in place by the lugs E, projecting interiorly from the upper end of the stand-pipe, with which lugs the plate is brought into engagement by revolving the ends thereunder after it has been slipped onto the post or tube P and passed below the lugs, the post entering its central aperture, which it fits loosely. The central aperture of the follower-plate is adapted to receive the valve-stem, but not large enough to receive the post. This plate therefore engages with the post and forces it down upon the stem-nut with a degree of pressure which may be varied as desired by means of the screw-bolts  $E'$  and their nuts. The nut-supporting legs are thus forced tightly upon the bottom casting, and the nut



held firmly in position and enabled to force the valve-plug and stem up and down to unseat and seat the valve-plug the same as though the nut were rigidly attached to the bottom casting.

When it is desired to remove the stem-nut, stem, and valve-plug for any purpose, it is only necessary to detach the cap B<sup>2</sup> and plates T and M, and then lift them out of the stand-pipe by means of the stem.

I provide the upper end edge of the tubular post with one or more spurs or lugs P<sup>2</sup>, adapted to enter and fit corresponding notches or depressions in the lower side of the lower-plate to prevent the post from rotating, and the lower end of the post having a rectangular socket K, adapted to receive and fit the rectangular head K' on the nut, the latter is positively secured to resist any rotary strain induced by the rotary movements of the threaded stem within the nut. The post incloses the stem, which is rotary within it, and also serves to support the regulating mechanism for the drip-valve G'. This valve is adapted to close the drip-passage G<sup>2</sup>, leading through the bottom casting exteriorly of the hydrant, and is provided with a stem S', leading to the operating-lever L, which is a lever of the first class fulcrumed upon the pin F, supported by the ears D, projecting from the collar O, adapted to be slipped upon the post and movable longitudinally thereon. The collar is provided with a set-screw J, by which it can be adjustably secured at any desired point on the post. One end of the lever is pivotally connected with the upper end of the drip-valve stem, as by pivot I, and the other end passes through the slot P<sup>3</sup> in the post to engage with the edge walls on the main-valve stem formed by the annular groove R. As the main-valve stem moves upward to open the main valve the lower edge wall of the groove R engages with the lever L to depress the stem S' and close the drip-valve, and when the main-valve stem is given a downward movement to close the main valve the upper wall of the groove engages with the lever to open the drip-valve. The upper part of the valve-stem S may be given a slightly-increased diameter to cause the upper edge wall formed by groove R to project beyond the lower edge wall, thereby increasing the upward movement of the drip-valve and insuring a positive engagement of the parts to open the drip-valve. The length of the drip-valve stem is also made adjustable

by threading the upper end of the stem proper, and then screwing the same into a correspondingly-tapped head W, which head is pivoted to the lever L, as shown. It is obvious that if the stem is rotated in one direction it will be forced farther into the head W and shortened, and that it can be correspondingly lengthened by rotating it in the opposite direction.

The height of the collar can be adjusted by set-screw J, as before explained, so as to secure the proper and desired engagement of the lever L with the lever-actuating edge walls formed by groove R.

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

1. In a hydrant, the combination, with a valve and valve-stem, of a detachable stem-nut provided with a plurality of supporting-legs, a tubular post resting upon such legs and engaging the nut at its lower end, and an adjustable post-support secured to the upper end of the hydrant and bearing against the top of the post, substantially as described.

2. In a hydrant having a drip-opening and annularly-grooved vertically-reciprocatory stem for the main valve, the combination, with the edge walls formed by the groove in the main stem, of the drip-valve and stem and a drip-stem-actuating lever fulcrumed upon a fixed support, having one end of the lever pivotally connected with such drip-valve stem and the other end alternately engageable with the edge walls on the reciprocatory main stem, substantially as described.

3. In a hydrant having a drip-opening, an annularly-grooved vertically-reciprocatory stem for the main valve and a tubular stem-inclosing post, the combination, with the edge walls formed by the groove in the main stem, of a drip-valve and stem, a drip-stem-actuating lever having one end of the lever pivotally connected with such drip-valve stem, and a lever-supporting collar vertically adjustable upon such post, whereby the free end of the lever is supported in a position to alternately engage with the edge walls formed by the annular groove upon the main stem, substantially as described.

In testimony whereof I have hereunto set my hand this 13th day of February, 1889.

WILLIAM H. BOOTMAN.

Witnesses:

GEO. A. MOSHER,  
CHAS. L. ALDEN.