

HYDRANT.

Patented Dec. 28, 1875.

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atty:



# UNITED STATES PATENT OFFICE.

STEPHEN BLACKIE, OF ST. LOUIS, MISSOURI, ASSIGNOR OF ONE-HALF HIS  
RIGHT TO ROBERT CHARLES, OF SAME PLACE.

## IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **171,499**, dated December 28, 1875; application filed  
October 8, 1875.

*To all whom it may concern:*

Be it known that I, STEPHEN BLACKIE, a resident of the city and county of St. Louis, State of Missouri, have invented new and useful Improvements in Hydrants, of which the following is a full, clear, and exact description, reference being hereby had to the annexed drawing, making a part of this specification, in which—

Figure 1 is a central vertical section, the valve and stem being shown in side elevation; and Fig. 2, a horizontal section on the line *x* *x* of Fig. 1.

Like letters indicate like parts.

My aim is to provide means whereby the seat of the valve of a hydrant can be readily reached for repairs and renewed. It further relates to the valve-stem and the provision for draining the hydrant discharge-pipe.

Referring to the accompanying drawing, A represents the valve-chest, having therein two chambers, *a* and *a'*, arranged one above the other, and separated by the horizontal partition B and the parts immediately therewith connected and hereinafter described. C represents a cap covering the chest, and for that purpose it is provided with a flange, *c*, which rests upon the chest-wall, the joint being suitably packed by means of an interposed elastic washer. D represents a part rigidly connected, by means of the ties *d d d d*, with the cap C above. It is circular in form, and its rim is threaded to screw into an opening in the partition B, and it is also provided with a flange, *d'*, similar to the flange *c* on the cap C, to form a joint with the partition, which joint is packed by means of an elastic washer. The part D is suitably spaced from the cap C, so that both of them can at the same time be put in place. E represents the seat for the valve. It is made to screw (from below) into the part D, and on its inner side is made conical; and, also, its extreme lower edge *e* is rounded, as shown. F represents the valve, made of elastic material. Its upper part *f* is conical, conforming to the inside of the seat E, and its lower part *f'* is made horizontal, and large enough in diameter to come against the rounded edge *e* of the seat when the

valve is closed. G represents the valve-stem, extending upward through the cap C and stuffing-box H. The stem is squared at I, and above at J is rounded, the latter part being larger in diameter than the thickness of the squared portion below. This forms a shoulder at *i*. The opening in the cap C, in which the stem moves, conforms to the stem—that is, in its upper part it is rounded, and below it is made square. The cap also, and at a point above the level of the bench *i*, but below the bottom of the round part of the stem when the valve is closed, is provided with a waste-opening, K. L represents the supply-pipe leading to the chamber *a'*, and M represents the discharge-pipe leading from the chamber *a*.

The operation is as follows: The valve being depressed, (and as shown in Fig. 1,) water passes from the chamber *a'* to the chamber *a* above, and thence up the pipe M to the desired level above the ground in which the hydrant is located. In this position of the valve the stem is depressed, so as to bring its round part against the waste-opening K, closing it. To close the valve the stem is raised, bringing the conical part of the valve against the inside of the seat, and the horizontal part against the rounded edge *e* of the seat. By this means a double bearing is obtained, and the water more effectually cut off. At the same time the smaller squared part of the stem is opposite the waste-opening K, and the water standing in the discharge-pipe M drains down into the chamber *a*, and thence up past the square part of the stem, and out the opening K. A particular advantage of my improvement, however, is the being able for repair to withdraw all the working parts of the construction from their position in the valve-chest, (which is down in the ground,) and to renew the seat without incurring the expense of renewing the remainder of the construction. This is done by means of the squared part of the stem acting upon the cap. By turning the stem backward the cap is unscrewed, and with it the part D and seat E. The latter is detached from the part D by unscrewing it therefrom, and thus a new seat can be inserted at will, while the other parts, upon which no wear comes, and which are not



likely to wear out as speedily as the seat, can be retained. In this manner a construction is obtained whereby any difficulty arising from the non-working of its movable parts can be easily corrected, and also all the parts thereof upon which the most wear comes can be replaced without incurring the expense of a new construction throughout.

What I claim is—

1. The valve-chest A, provided with the chamber *a*, pipe M, cap C, stem G, provided with the square I and round part J, and

waste-port K, combined and operating substantially as described.

2. The stem G, provided with the square part I, cap C, part D, ties *d d*, &c., detachable seat E, and valve F, and chest A, provided with the partition B, combined and operating substantially as described.

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Witnesses:

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