J. W. DOUGLAS.

Water-Hydrants.

No. 166,195. Patented Aug. 3, 1875.

Fig. 1.

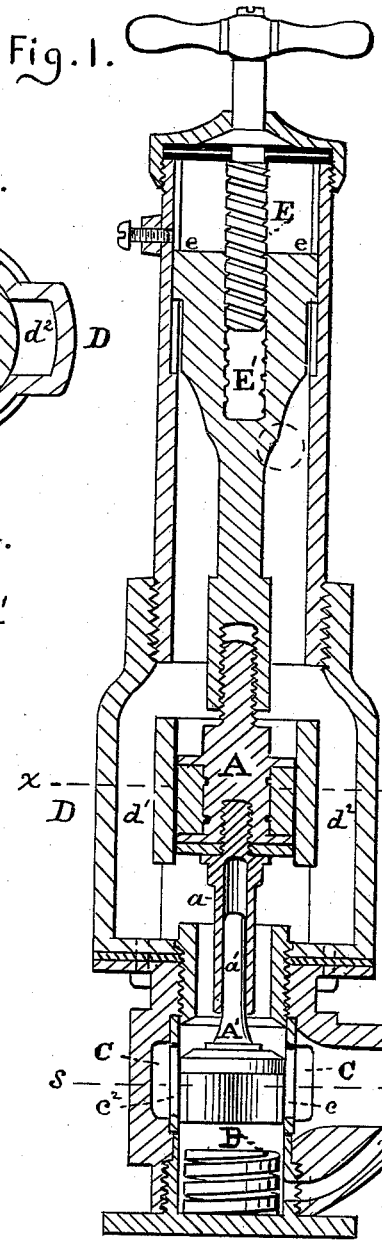

Fig. 2.

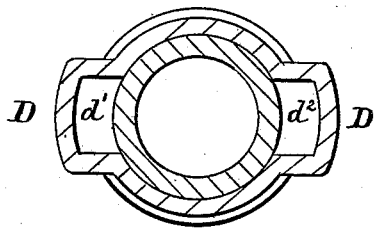

Fig. 3.

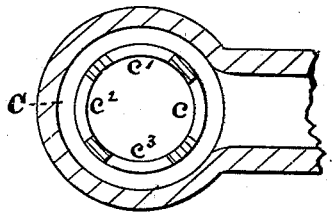

Fig. 4.

Witnesses;
Jno M Douglas
Edwd Douglas

Inventor:
Jno. W. Douglas

UNITED STATES PATENT OFFICE.

JOSEPH W. DOUGLAS, OF MIDDLETOWN, CONNECTICUT, ASSIGNOR OF ONE-HALF HIS RIGHT TO BENJAMIN DOUGLAS, OF SAME PLACE.

IMPROVEMENT IN WATER-HYDRANTS.

Specification forming part of Letters Patent No. **166,195**, dated August 3, 1875; application filed April 29, 1875.

To all whom it may concern:

Be it known that I, JOSEPH W. DOUGLAS, of Middletown, in the county of Middlesex and State of Connecticut, have invented a certain new and useful Improvement in Water-Hydrants; and I hereby declare that the following is a full and sufficient description of the same, reference being had to the accompanying drawings and references thereon, making part of the description.

My invention consists in the means used for shutting off the water in a street-hydrant, so as to enable a workman to examine the internal construction of the hydrant for repairs or for other purposes, without the trouble and expense of extra stop-cocks, or of digging around the base of the hydrant for repairs, &c. More specifically, the invention consists in so arranging two valves, put in mutual combination within the hydrant, that one may stop the flow by the pressure of the water alone, or by both valves acting in combination, as will be explained below.

I provide my hydrant with two valves, an upper one directly over the lower one, both operated by means of a rod extending vertically upward from the valves to the top of the hydrant, and surmounted by a gimlet-handle, all the parts being so adjusted that the water-passage may be closed by the lower valve, and the other interior mechanism may be removed when desirable.

In the accompanying drawings, Figure 1 represents a vertical section of the hydrant through its axis. Fig. 2 represents a cross-section on the line *x x* of Fig. 1. Fig. 3 represents a cross-section on the line *s s* of Fig. 1. Fig. 4 represents a plan view of the bottom of the lower valve.

In the said drawings, A represents the upper valve in the main water-passage upward, and is provided with the tubular downward-projecting stem *a*, as seen in Fig. 1. A′ represents the lower valve, arranged on the same screw-valve rod as the upper valve, and has an upward-projecting stem, *a′*, received into the said downward-projecting tube *a*. B represents a spring at the bottom of the hydrant, to aid in operating the lower valve A′. C is an annular chamber, in the casing, around the lower valve, to receive the water entering the hydrant, and discharges through holes *c* c^1 c^2 c^3, which are small holes within, from chamber C to the valve-chamber, and so on upward. The design of C and *c* c^1 c^2 c^3 is to prevent entrance of solid bodies to valve-chamber, but mainly to equalize pressure on all sides of valve A′. D is an enlargement of the casing along the water-chamber, opposite valve A, to allow room for the water to pass. d^1 d^2 represent the enlarged chambers. E is a screw-rod, with a handle at the top, said rod extending downward with screw-connections, first to the metal portion of the upper part of the hydrant; thence to upper valve A. The part of the hydrant marked E′ has been provided with guides *e e*, which move in corresponding slots in the inner face of the casing and prevent rotation during the operation or other movements.

The operation is as follows: The water-passage is entirely closed off by pressing the upper valve A downward. The water-passage may be also closed by raising the lower valve A′, which closes by the upward movement. When it is desired to shut off the water by means of the lower valve, the rod E is extended by using the screw-coupling shown in Fig. 1, and the upper valve A is moved down, so that the stem *a′* of the lower valve A′ enters the tubular stem *a* of the upper valve until both adhere or bind together by friction. The lower valve is then raised and stops at its closing point, where it is held in position by the upward pressure of water against it. The upper valve and its connections may then be withdrawn from the hydrant for repairs or any other purpose desired. The stem *a* of the upper valve is gradually slightly enlarged at its junction with the valve, so that it readily binds to the tubular stem *a* of the upper valve. It is a fact that in ordinary uses of the hydrant, such as drawing water by the pailful or tubful, the flow is cut off by the turning of the valve-rod E and closing the upper valve A only. But when it is desired to cut off the flow by the lower valve operation, then the work is performed as stated above, namely, by raising the lower valve A′, the rod E is extended by

using the screw-couplings seen in Fig. 1, and the valve A is moved downward till its downward tubular projection meets and receives the upward tubular projecting stem, and both are firmly locked together, the lower valve sitting firmly in its seat and held in place by the pressure of the water below.

Having stated the nature of the invention and shown the method of verifying it, what I claim, and desire to secure by Letters Patent, is—

The combination of the upper and lower valves, acting together by their mutual embrace, in connection with the upward pressure of the water against the bottom of the lower valve, holding it firmly to its seat, to cut off the flow, as specified.

JOS. W. DOUGLAS.

Witnesses:
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