

(No Model.)

S. PALMER.
NOZZLE VALVE.

No. 576,762.

Patented Feb. 9, 1897.

Fig. 1.

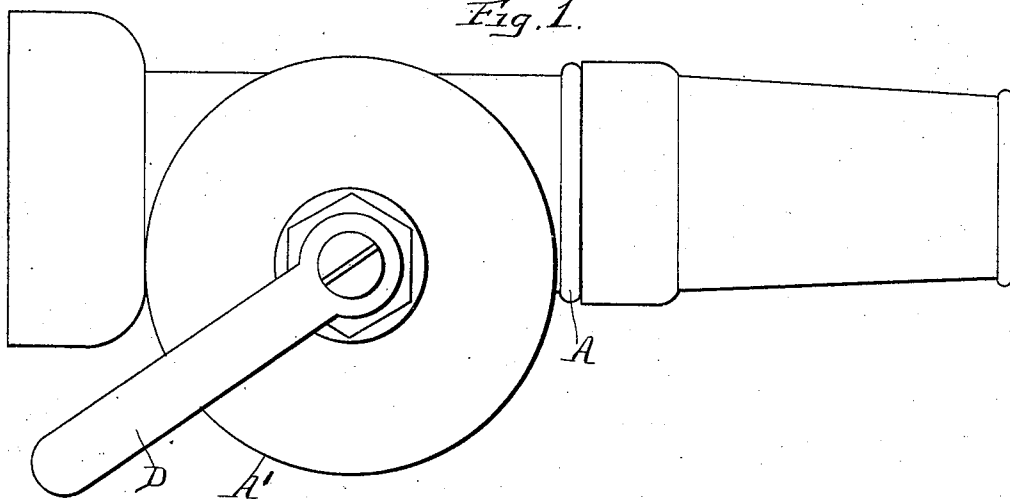


Fig. 2

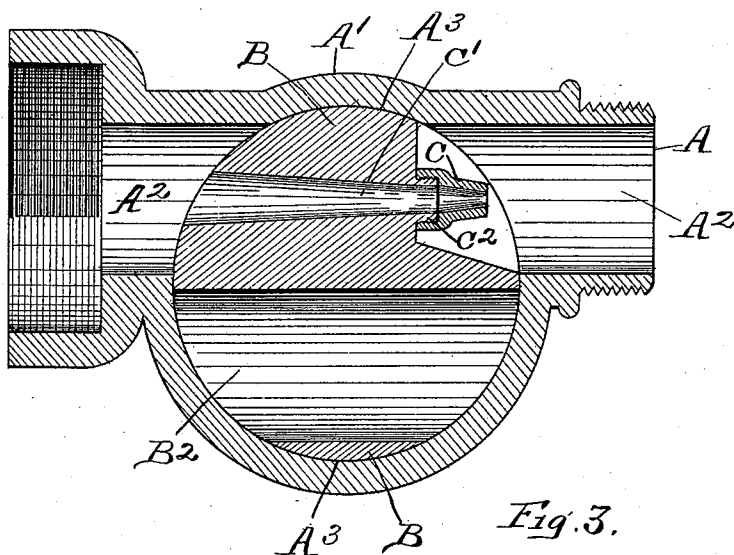
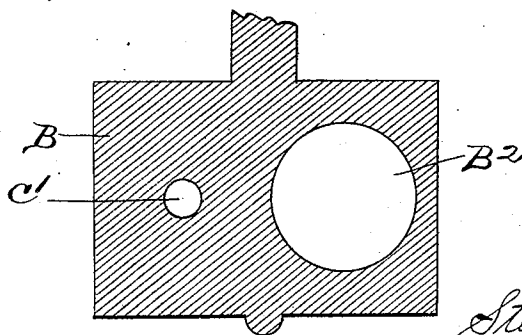


Fig. 3.



witnesses:

J. G. Curtis.

G. L. Curtis.

Inventor:

Stephen Palmer

By Mosher & Curtis
attys

UNITED STATES PATENT OFFICE.

STEPHEN PALMER, OF LANSINGBURG, NEW YORK.

NOZZLE-VALVE.

SPECIFICATION forming part of Letters Patent No. 576,762, dated February 9, 1897.

Application filed June 17, 1896. Serial No. 595,898. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN PALMER, a citizen of the United States, residing at Lansingburg, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Nozzle-Valves, of which the following is a specification.

The invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a view in side elevation of my improved nozzle-valve. Fig. 2 is a horizontal section of the same, taken on the axial line of the nozzle-passage and with the outer section of the nozzle detached. Fig. 3 is a central vertical cross-section of the valve-plug with a portion of the stem broken away.

The nozzle A and case A' are formed of an integral casting provided with the straight-way nozzle-passage A² and a cylindrical aperture inclosed by the circular seat A³, adapted to receive the valve-plug B.

The nozzle and case, taken separately, do not differ essentially from the ordinary well-known types.

The case-aperture is so located that the axial line of the plug is on one side of the nozzle-passage, the axial planes of the plug-aperture and nozzle-passage being at right angles to each other, with the aperture intersecting the passage. The valve-plug is provided with a transverse way B², adapted when the valve is opened to register at its opposite ends with the inlet and outlet of the nozzle-passage and form therewith a straight-way passage extending continuously through the nozzle-valve of the full capacity of the nozzle. This passage can be cut off by rotating the plug in the usual manner. In carrying out my invention I locate this way B² on one side of the center of the plug, and on the opposite side of the plug I provide a small nozzle C, secured thereto at the outlet of a

small aperture C', extending through the plug on such opposite side.

The small nozzle C is contained wholly within the contour of the plug, and the aperture C', with which it communicates, is preferably tapered, so that the small nozzle has all the functions of a nozzle independently of the main nozzle; and by locating the small nozzle and the main way B² on opposite sides of the plug and the axis of the plug at one side of the axis of the main-nozzle passage I am able, by rotating the plug, to bring either the main way B² or the small independent nozzle into line with the main-nozzle passage. The latter position is shown in Fig. 2, in which position a stream ejected by the small independent nozzle will pass centrally through the main-nozzle passage without engaging the passage-walls.

A half-rotation of the plug from the position shown in Fig. 2 will bring the main way B² into position to register with the main-nozzle passage, and a quarter-rotation of the plug from either of such positions serves to entirely cut off the passage through the nozzle-valve.

The independent nozzle C may be an integral part of the plug, or, as shown in Fig. 2, it may be a separate detachable nozzle adapted to screw onto an exteriorly-threaded nipple C² on the plug, whereby nozzles of different capacity may be attached to such nipple, when desired.

My improved nozzle-valve is especially adapted for use on a fire-hose.

By means of the handle D, fixed upon the stem of the valve-plug, the plug can be turned and the size of the stream easily and quickly changed from the capacity of the main nozzle to that of the small independent nozzle.

It frequently happens that the continued application of a small stream of water will be as effective in extinguishing a small fire as the use of a larger stream, and much less damage is occasioned by a small stream. When a large stream is employed, the water damage frequently exceeds the damage by fire. By turning the plug so that the axial line of the stream passing through the plug is inclined to the axial line of the main-nozzle passage the stream is deflected against

one side of the inner surface of the main nozzle and thereby caused to spray and extend over a considerable area at short range. I am thus able with a single plug and case to deliver streams differing in capacity and character.

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

1. The combination with a valve-case and nozzle having a discharge-passage and a transversely-intersecting valve-plug aperture, with the axial line of the aperture on one side of the passage, of a valve-plug rotatively seated in the aperture and provided with a transverse way of a capacity approximately the same as the discharge-passage, a relatively small nozzle secured to the plug in communication with a small aperture therethrough, which way and small nozzle are adapted to be successively brought into line with the discharge-passage by the rotation of the plug, and means for rotating the plug, substantially as described.

2. In a valve-nozzle, the combination with the case having a straightway nozzle-passage,

and a plug-aperture on one side of the passage, of a rotary valve-plug having on one side a transverse way corresponding in size and form, and adapted to register, with the nozzle-passage, and on the opposite side with a small tapered aperture therethrough and a relatively small nozzle at the contracted outlet of the aperture wholly contained within the contour of the plug and adapted to be brought into line with the main-nozzle passage, and means for rotating the plug, substantially as described.

3. In a valve, the combination with the plug having a relatively small transverse aperture, and a nipple at its outlet, of a nozzle detachably secured to the nipple, and a valve-case having a relatively large outlet, substantially as described.

In testimony whereof I have hereunto set my hand this 15th day of June, 1896.

STEPHEN PALMER.

Witnesses:

FRANK C. CURTIS,
C. S. ALLEN.