J. T. HAYDEN.
Hose-Pipe Nozzle.

No. 205,267. Patented June 25, 1878.

Fig. 1.

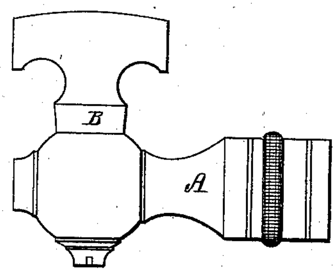


Fig. 2.

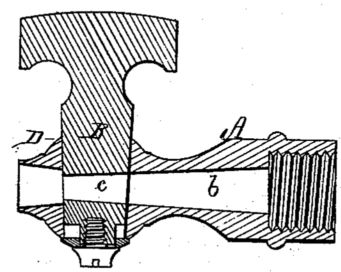
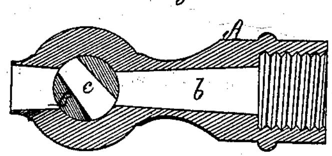


Fig. 3.



Witnesses.

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IMPROVEMENT IN HOSE-PIPE NOZZLES.

Specification forming part of Letters Patent No. **205,267**, dated June 25, 1878; application filed May 16, 1877.

To all whom it may concern:

Be it known that I, JAMES T. HAYDEN, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Hose-Pipe Nozzles; and I do hereby declare that the following is a full, clear, and exact description thereof, which 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 of reference marked thereon, which form a part of this specification.

In said drawing, Figure 1 is a side elevation, and Fig. 2 is a vertical and longitudinal section, of a hose-pipe nozzle constructed in accordance with my invention, the valve in both of such figures represented as open. Fig. 3 is a transverse section taken through the valve or cock, the latter being represented as slightly open, or arranged to discharge the water in the form of spray.

The object of my invention is to provide a simple, cheap, and effective device to be attached to the eduction end of a hose-pipe, whereby the issuing stream may be either a solid one or sent forth in the form of spray, at the will of the operator, and at the same time readily changed from one to the other, as circumstances may require; and my invenvention consists in the peculiar construction, combination, and arrangement of the parts of the device, as hereinafter described and claimed.

I am aware that a hose-pipe nozzle capable of delivering either a solid or a divided stream is not new. Therefore I lay no claim to such in the abstract, my invention being an improved manufacture, simpler, cheaper, and more easily operated than devices of this character as ordinarily constructed.

In the drawing, A denotes the body or main part of the nozzle, the same having the external form as shown in Fig. 1. B is the valve or cock, which extends down through the globular part of the nozzle. This nozzle has a passage, *b*, formed axially through it, a hole, *c*, being formed transversely through the valve, which, when brought into the position as shown in Fig. 2, produces a clear unobstructed passage through the nozzle. The bore of this nozzle is of a peculiar construction—that is to say, from the inner or eduction end and extending through the cock the bore is of a tapering or frusto-conic shape, the larger base being at the induction end and the lesser base at the outer perimeter of the cock, as shown in Fig. 2.

The bore of the outer end of the nozzle from the extremity of the passage through the valve or cock is made larger than the bore at the outer perimeter of the valve or cock, and is of a cylindrical or slightly outwardly-tapering form, so that a smooth stream will pass therefrom. The opening should be made in all respects like the nozzle of the common garden-hose. The nozzle actually terminates at the cock, for the water ceases to come in contact with the passage upon leaving it, and passes in an unbroken stream therefrom, provided the cock is set with the opening on a line with the pipe. That portion of the nozzle extending beyond the cock is so enlarged that the stream does not come in contact with it unless the cock is turned sufficiently to throw the stream against its side, breaking it into spray, and delivering it in that form by having the enlarged extension beyond the cock very short to prevent the stream from becoming united by reflection from the sides.

In operating with my improved nozzle, one end thereof is to be connected with a hose-pipe in the usual manner. If we desire a solid stream, the cock is to be turned into the position as shown in Fig. 2. To shut off the stream, the cock is to be turned into a position at a right angle to that shown in Fig. 2.

In order to produce a divergent or spray stream, we have only to slightly turn the cock from either its open or closed state, so that the water, after passing through the cock, shall impinge upon the sides of the larger passageway through the outer end of the nozzle, thus breaking the solid stream and forming a spray, the opening of the valve to a greater or less extent serving to give a stream of spray of greater or less area, according to the extent the valve may be opened.

Having described my invention, what I claim is—

The herein-described hose-pipe nozzle A, having the cock B near the end of delivery, and having the single open passage beyond said cock so enlarged that the stream may pass without coming in contact with it, when desired, but which may be deflected against its side by slightly turning the cock, breaking the stream into spray, all arranged substantially as and for the purpose specified.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

JAMES T. HAYDEN.

Witnesses:
LEWIS A. HOKE,
JOHN R. BAKER.