(No Model.)

F. W. ROBERTSHAW.

HOSE NOZZLE.

No. 330,740. Patented Nov. 17, 1885.

Fig. 1.

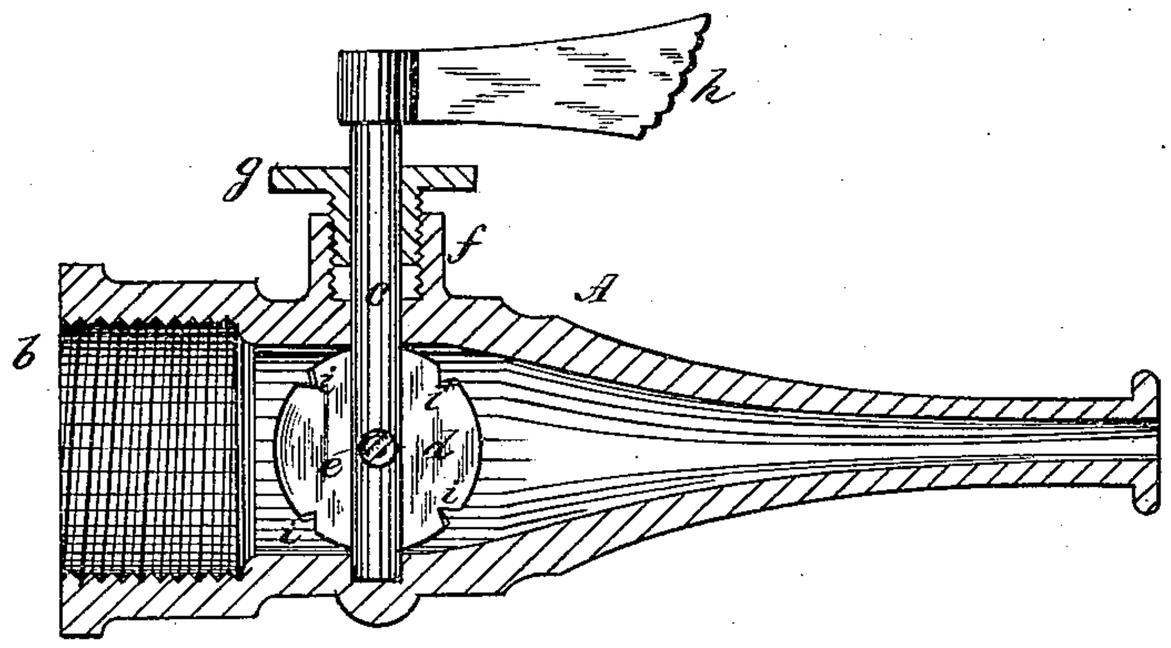


Fig. 2.

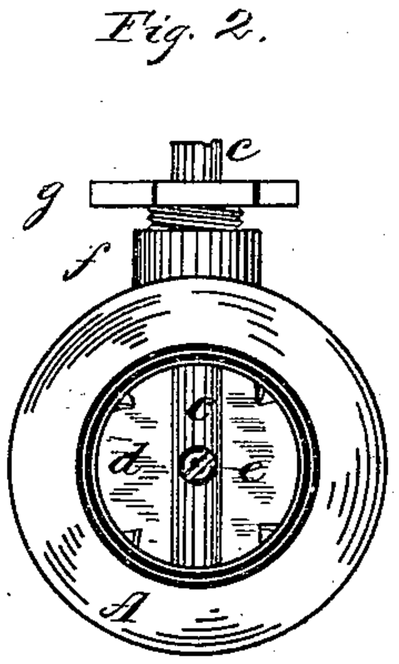


Fig. 3.

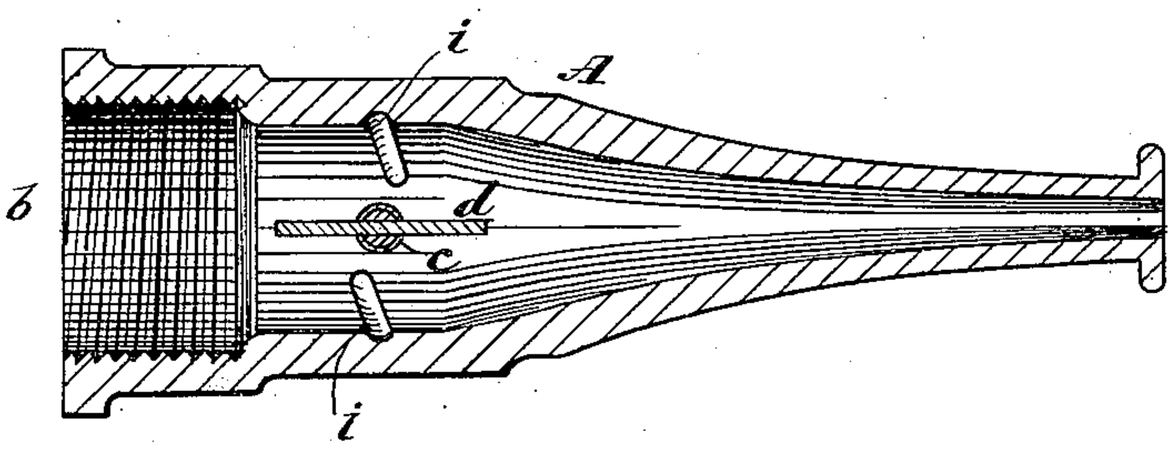


Fig. 4.

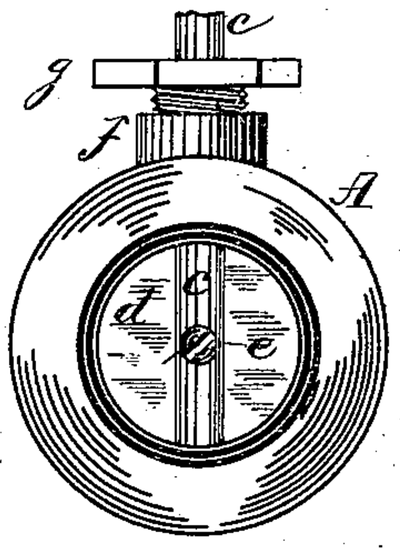
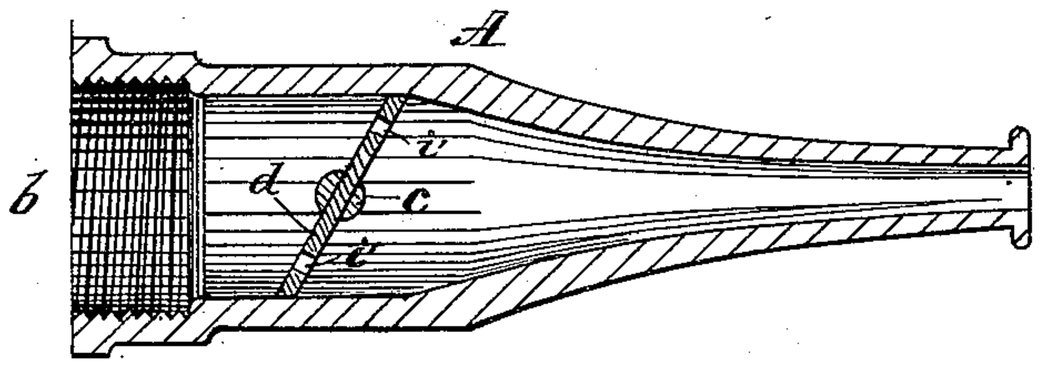


Fig. 5.



Witnesses:—
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UNITED STATES PATENT OFFICE.

FREDERICK W. ROBERTSHAW, OF PITTSBURG, PENNSYLVANIA.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 330,740, dated November 17, 1885.

Application filed May 6, 1885. Serial No. 164,586. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK W. ROBERTSHAW, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Hose-Nozzles; and I do hereby declare that the following is a full, clear, and exact description of the invention, 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, which form a part of this specification.

My invention relates to the construction of an adjustable hose-nozzle in such manner as to adapt it to use in throwing a solid stream, or a rose jet or spray; and it consists in the combination and arrangement of parts substantially as hereinafter described and claimed.

Figures 1 and 2 are respectively a longitudinal section and an end view of my improved nozzle. Figs. 3 and 4 are corresponding views of a modification. Fig. 5 is a view similar to Fig. 3, but showing the gate in a different position and having its valve modified.

The nozzle A is of the usual form, having the fitting *b* for attachment to the hose. A hole is bored through one wall of the body A and partially through the other wall at a point opposite. Into this I insert the valve or gate-stem *c*, which thus is supported at both ends. Stem *c* before insertion is slitted for the reception of the gate or valve *d*, which is in the form of a circular flat disk, substantially corresponding peripherally with the interior of body A. After inserting the stem the disk is passed into the slot therein from within the body, and retained by a central set-screw, pin, or rivet, *e*, as shown. Thus arranged, rotation of the stem *c* carries with it the valve *d*, while the latter prevents the stem from withdrawal from its position. The disk-valve *d* has several notches, *i*, made in its periphery, as shown, and preferably spiral.

To avoid an inconvenient leakage around the stem *d*, the body A may have a stuffing-box, *f*, and gland *g*, as shown, by which to pack the stem. The latter is provided with a handle, *h*, or other suitable means for convenient manipulation.

In the position illustrated by Fig. 1 the valve *d* is in line with the axis of the nozzle, whereby the water has a practically-unobstructed outlet, and is therefore projected in a solid stream.

In Fig. 2 the valve is thrown around transversely of the body A and obstructs the opening more or less, according to its angle, and then the water, acting on the peripheral notches *i*, flows out or is projected in the form of a spray or rose-jet, whose expansion will depend upon the angle given valve *d*.

The nozzle shown in Figs. 3 and 4 is the same in all respects, except that the notches *i* are here made in the wall of the body A, instead of the periphery of the valve *d*, the action of the notches on the stream of water being substantially the same, breaking up its continuous and solid character and projecting the water in a spray or rose jet, since the principle of action is to have one or more portions of the stream deflected to form minor interfering currents in the main current.

In Fig. 5 the body A is furnished with a form of "butterfly-valve", *k*, so proportioned as to close at an angle in the well-known manner; but in this case, owing to the already inclined position of closure, the notches may be merely perforations *i'*, made at right angles to the face of the disk *d'*, with the result the same as before. The nozzle thus formed can be made at an exceedingly low cost, is as simple as possible, can be readily taken apart for cleaning, and forms a very desirable part of the outfit of a fire-engine in order to throw a stream acording to the requirements. They are also especially adapted to garden purposes.

I claim as my invention—

1. In a hose-nozzle, the combination, with the body A, having its interior contracted toward the outlet, of the pivoted gate *d*, consisting of a thin plate of metal having notches in its edge, and the stem *c*, to which said gate is secured and by which it is turned, whereby when the said gate is in one position the water is sprayed through the mouth of the nozzle, and when in another position a comparatively free outlet for the water is provided, substantially as described.

2. In a hose-nozzle, the combination, with body A and revolving stem *c*, of the disk *d*, secured to said stem and provided with in-

clined openings or notches at its edges, substantially as and for the purpose described.

3. In a hose-nozzle, the combination, with body A and stem *c*, passing through said body, of the disk *d*, passing through said stem, and the screw *e*, for securing said disk in position in the stem, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FREDERICK W. ROBERTSHAW.

Witnesses:

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C. L. STRAUB.