

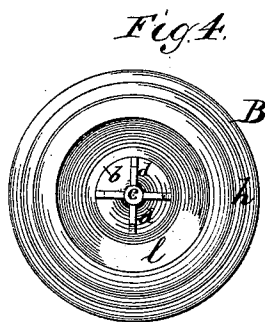
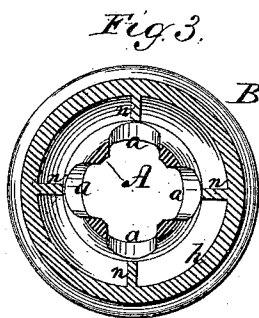
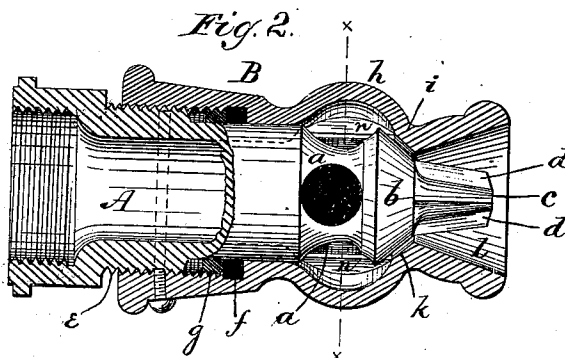
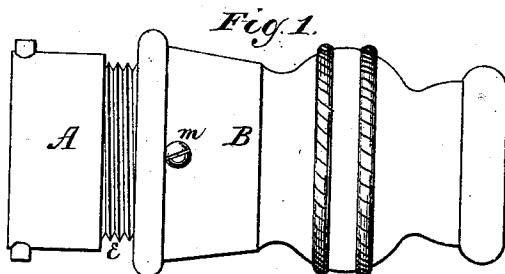
(No Model.)

F. W. ROBERTSHAW.

HOSE NOZZLE.

No. 254,048.

Patented Feb. 21, 1882.



WITNESSES:
T. J. Patterson
Sam. Cunningham

Frederick W. Robertshaw
INVENTOR,
Connelly, Root & Whighe

ATTORNEYS

UNITED STATES PATENT OFFICE.

FREDERICK W. ROBERTSHAW, OF PITTSBURG, PENNSYLVANIA.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 254,048, dated February 21, 1882.

Application filed October 3, 1881. (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 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, in which—

Figure 1 is a side elevation of my improved nozzle. Fig. 2 is a vertical section of same. Fig. 3 is the section *xx* of Fig. 2. Fig. 4 is an end view.

This invention has for its object the construction of a hose-nozzle especially intended for fire-engine hose, whereby the quality of the stream and quantity of delivery may be readily regulated.

The invention consists in a nozzle having in its interior a conical plug centrally disposed and a conical surface on the shell; further, in making said plug and surface or valve and valve-seat adjustable toward each other; further, in combining therewith a flaring mouth for delivery; further, in combining with said plug or valve a core-piece to produce friction in the interior of the water and control the character of the stream; and, further, in the construction and combination of parts, all substantially as hereinafter fully described and claimed.

I construct as follows: Upon the coupling at the end of the hose I screw the tubular piece A, provided with the lateral openings *a*, beyond which the piece A terminates in a solid plug, *b*, or conical valve, and is fitted or cast with the projecting nib or core *c*, preferably of an elongated conical form or taper. The core *c* is provided with vanes or wings *d*, as shown, or it may be made square or triangular in section. All the water coming from the hose passes through the tubular piece A and its openings *a*. Piece A has on its outside the threaded portion *e*.

A hollow shell, B, is threaded internally to screw over the piece A, as shown, and is provided with the packing-ring *f*, which is retained by means of the ring-nut *g*, so that no

water can find egress backwardly between the parts A and B. Shell B is enlarged into a globe, *h*, opposite the openings *a* of piece A, and then contracts, and at the point *i* is formed with a conical surface or valve-seat, *k*, from whence it flares outwardly to form the mouth *l*. By screwing shell B toward or from the piece A the opening between valve *b* and seat *k* may be regulated to any area within reasonable limits, or may be closed altogether. To hold it in any desired position within the limits of adjustment, I cut away one or more of the threads *e* on piece A and insert a set-screw, *m*, through shell B. The set-screw *m*, when slacked, travels in the groove formed by cutting away the threads on the exterior of piece A, and when any desired adjustment has been made it may be fixed by tightening set-screw *m* until it jams against said smooth surface of groove in piece A. The water emerging into shell B from openings *a* is deflected by the enlargement *h* and directed through the opening between the valve *b* and seat *k*, by which its volume is regulated. Thence it takes a converging course till it strikes the core *c*, when it finally emerges from the nozzle in a stream whose character depends upon the relations of the valve *b* and seat *k*. When this opening is very small the stream takes the character of a thin solid stream or pencil. When the opening is maximum and the head or valve *b* withdrawn its fullest extent it no longer has any influence on the stream, which then emerges in the form of either a spray or a "wash" with little projectile force but great quantity. Between these extremes of adjustment are various degrees of a standard stream or jet of varying thickness and solidity, according to the adjustment.

The globe *h* may have guiding-wings *n* to insure uniform movement and coincidence of position of the shell B on piece A.

The vanes *d* serve to keep the water in a body and prevent undue scattering. This function may also be obtained by making the core *c* with flattened sides in any form, or by grooving the core longitudinally.

I claim as my invention—

1. A hose-nozzle constructed with a central conical valve and a surrounding conical valve-seat, the adjacent surfaces of both valve and valve-seat converging toward the discharge end

of the nozzle, said valve-seat being formed in a shell placed around the central valve and confining the discharge to the space between the valve and seat, substantially as described.

5 2. A hose-nozzle constructed with a central conical valve and a surrounding conical valve-seat, the adjacent surfaces of both valve and valve-seat converging toward the discharge end of the nozzle and adjustable to and from each
10 other axially, substantially as described.

3. In a hose-nozzle, the piece A, having lateral openings *a* and solid plug *b*, in combination with the movable outer shell, B, having

internal enlargement, *h*, and convergent discharge-surface *k*, substantially as described. 15

4. The combination of piece A, threaded externally and having part of its thread cut away, with shell B, provided with set-screw *m*, substantially as specified.

In testimony that I claim the foregoing as my
own I have hereto affixed my signature in pres-
ence of two witnesses. 20

FREDERICK W. ROBERTSHAW,

Witnesses:

T. J. McTIGHE,

D. E. DAVIS.