

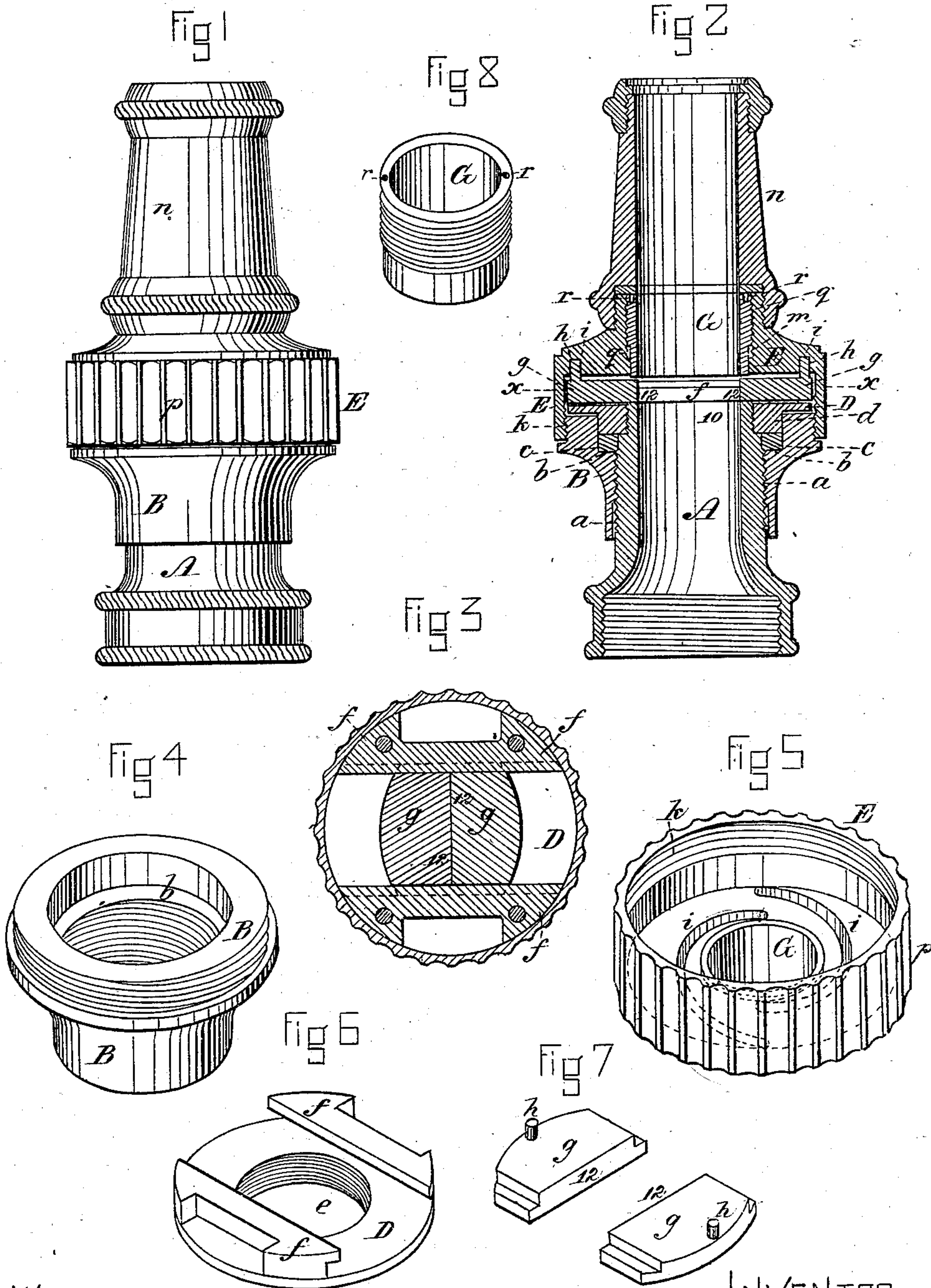
(No Model.)

T. HALEY.

NOZZLE FOR HOSE PIPES.

No. 278,008.

Patented May 22, 1883.



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UNITED STATES PATENT OFFICE.

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NOZZLE FOR HOSE-PIPES.

SPECIFICATION forming part of Letters Patent No. 278,008, dated May 22, 1883.

Application filed March 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HALEY, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain Improvements in Controlling or Shut-Off Nozzles for Hose-Pipes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is an elevation of my improved controlling-nozzle for hose-pipes. Fig. 2 is a vertical section through the center of the same. Fig. 3 is a horizontal section on the line *x x* of Fig. 2, the position of the parts being changed; Figs. 4, 5, 6, 7, and 8, details in perspective.

My invention relates to certain improvements on the controlling-nozzle for hose-pipes for which Letters Patent of the United States No. 177,239 were granted to me May 9, 1876. The construction of the nozzle described in the aforesaid Letters Patent did not admit of the stream being entirely shut off, but only enabled the diameter of the stream to be changed; and my present invention has for its object to enable the stream to be entirely shut off when required, as hereinafter described.

My invention also has for its object to render the sliding blocks or gates which shut off or control the stream perfectly water-tight when closed together, and take up any wear that would occasion leakage at this point; and it consists in the combination, with the cap, of an adjustable bushing screwed into the cap in front of the sliding blocks or gates and adapted to be turned by a wrench or other suitable implement to cause its inner end to take a firm bearing against the sliding blocks when closed together, and thus take up wear and maintain a tight joint, whereby all leakage is prevented at this point.

My invention also consists in certain details of construction, as hereinafter more fully set forth, whereby leakage between the cap and the movable sleeve is avoided and the taking apart and putting together of the nozzle facilitated.

In the said drawings, A represents the main portion of the nozzle of a hose-pipe, which is provided on its outer surface with a screw-thread, *a*, over which fits a corresponding screw-thread on the interior of a movable sleeve,

B, the upper enlarged end of which is bored out, forming a shoulder, *b*, upon which rests a leather washer or packing-ring, *c*, over which fits a flange, *d*, on the under side of a ring, D, which is firmly screwed onto the upper end of the portion 10 of the nozzle A, so as to be stationary thereon, the enlarged end of the sleeve B being adapted to turn on the flange *d*.

The ring D is provided on its upper surface, on each side of its aperture *e*, with a segmental piece, *f*, these two pieces, which are cut away on the under side, forming guideways for the reception of blocks or gates *g g*, which slide therein, these blocks, instead of having each a semicircular recess at the end, as shown in my aforesaid patent of May 9, 1876, being made square or straight at the ends 12, so that when brought into contact they will butt squarely together and completely close the passage through the hose-pipe to entirely shut off the stream of water as required. These blocks *g g* are provided with pins *h h*, which project into cam-grooves *i i*, formed in the under side of a cap, E, which is provided on its interior with a screw-thread, *k*, which fits over a corresponding screw-thread on the outside of the upper enlarged end of the sleeve B, and by thus screwing together the cap E and the sleeve B, instead of making a smooth joint and securing these parts together by a series of screws, as described and shown in my aforesaid Letters Patent of May 9, 1876, a much tighter joint can be formed at this point with less labor, and liability of leakage thus avoided, while the operation of putting together the nozzle and taking it apart is greatly facilitated.

Through the outer end of the cap E is formed a circular aperture, *m*, for the passage of the water to the tip or outer end, *n*, of the nozzle, from which it is discharged in a stream of the desired diameter. The tip *n* is made removable, so that it can be taken off and replaced by another having an orifice of different diameter, and is preferably of a little less interior diameter than that of the lower portion of the nozzle, in order to condense and solidify the stream.

The outside of the cap E is fluted, as seen at *p*, to facilitate its being turned by the hand, and when the parts are in the position seen in Fig. 2 and it is desired to shut off the stream, as is often required, it is simply necessary to turn the cap E by hand a quarter of a revolu-

tion, which causes the cam-grooves *i i* to act on the pins *h h* and bring the blocks or gates together, thus instantly arresting the passage of the water, a quarter-revolution in the opposite direction again opening the gates to their full extent and letting on the stream, and by turning the cap *E* more or less to increase or diminish the distance between the edges *12* of the gates *g* the force of the stream and the distance to which the water is projected may be augmented or reduced, as desired. When the cap *E* is turned to shut off the water, the blocks *g*, as they are closed together, are brought down upon the upper end of the main portion *A* of the nozzle, the surfaces of the parts in contact being ground to prevent the escape of water laterally into the cap.

The aperture *m* at the outer end of the cap *E* is provided with a screw-thread, *g*, for the reception of a corresponding thread on the outside of an adjustable bushing, *G*, which is screwed into the aperture *m* until its inner end projects slightly beyond the inner face of the cap *E*, so that when the latter is turned to close the sliding gates *g* together the upper surfaces of the latter are brought firmly into contact with the projecting end of the bushing *G*, thus forming a perfectly water-tight joint and preventing all leakage and consequent damage resulting therefrom; and it will be apparent that any wear of the end of the bushing or the surfaces of the gates can be taken up or compensated for by simply screwing in the bushing by means of a wrench having pins adapted to enter the apertures *r* in its outer end, which is readily accessible when the tip *n* is removed, the employment of this adjustable bushing rendering it easy to maintain a tight joint, which would otherwise be difficult, owing to the

necessity of bringing the inner ends of the cam-grooves *i* as close as possible to the edge of the aperture *m*, to avoid making the cap *E* of larger diameter than is absolutely necessary.

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

1. The combination, with the nozzle *A*, of the movable sleeve *B*, the ring *D*, with its guideways, the sliding blocks or gates *g g*, having square ends *12*, and adapted, when closed together, to entirely shut off the water, the pins *h h* on the gates, and the cap *E*, with its cam-grooves *i i*, all constructed and arranged to operate substantially in the manner and for the purpose set forth.

2. In a controlling-nozzle for hose-pipes, the combination, with the cap *E* and the sliding blocks or gates *g g*, operating as described, of an adjustable bushing, *G*, screwed into the cap in front of the sliding gates, and adapted to bear thereon at its inner end, substantially in the manner and for the purpose set forth.

3. In a controlling-nozzle for hose-pipes, the combination of the nozzle *A*, the movable sleeve *B*, with its shoulder *b* and washer *c*, the ring *D*, with its sliding gates *g g*, provided with pins *h h*, and the cap *E*, with its cam-grooves *i i*, and having on its interior a thread, *k*, to adapt it to be screwed onto the upper end of the sleeve *B*, all constructed and arranged to operate substantially as and for the purpose described.

Witness my hand this 9th day of March, A. D. 1883.

THOMAS HALEY.

In presence of—

P. E. TESCHEMACHER,
W. J. CAMBRIDGE.