J. CLIFFORD & J. GIELOW.

HOSE-NOZZLE.

No. 191,934. Patented June 12, 1877.

Fig. 1.

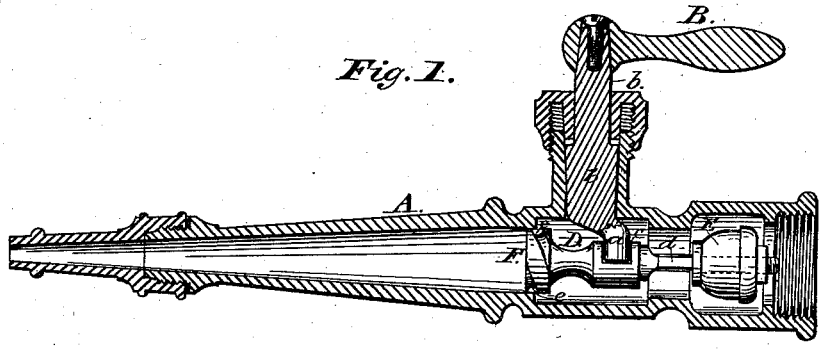


Fig. 2.

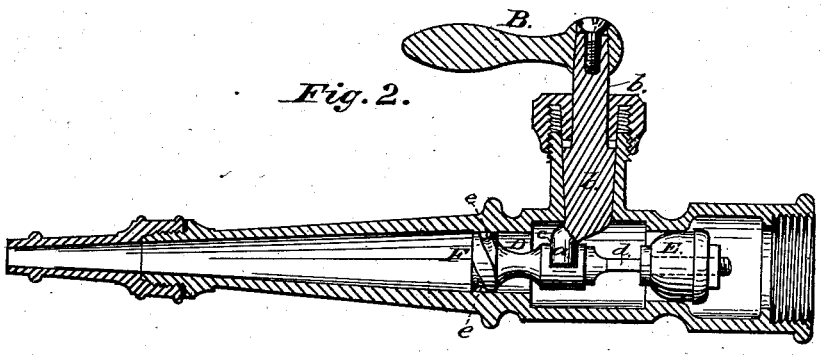
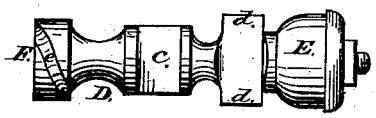


Fig. 3.



Witnesses:
W. C. Gray
Geo. H. Evans

Inventors
John Clifford
John Gielow
Per atty A. H. Evans & Co.

UNITED STATES PATENT OFFICE.

JOHN CLIFFORD AND JOHN GIELOW, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN HOSE-NOZZLES.

Specification forming part of Letters Patent No. **191,934**, dated June 12, 1877; application filed April 7, 1877.

To all whom it may concern:

Be it known that we, JOHN CLIFFORD and JOHN GIELOW, of Chicago, State of Illinois, have invented a new and useful Improvement in Hose-Nozzles, of which the following is a clear, full, and exact description, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal section of a nozzle with my improvement attached. Fig. 2 is a top view of the valve and valve-stem detached from the nozzle.

Our invention relates to that class of hose-nozzles designed to throw either a spray or a solid stream; and it consists in the novel construction of the valve and valve-stem, by which is produced either a spray or a solid stream, as may be desired.

To enable others skilled in the art to make and use our invention, we will proceed to describe the exact manner in which we have carried it out.

In the drawings, A represents a hose-nozzle provided with the handle B, attached to the spindle *b*, and provided with the usual packing to render it water tight. On the lower end of the spindle *b* is an eccentric pin, *a*, fitting in the transverse groove *c* in the valve-stem D, by which means the handle B controls the movement of the stem D or valve E, the valve being located between its seat and the inlet-point, thus securing the opening of the valve against the pressure of the water from the hose. On the opposite end of the valve-stem D we construct a piston, F, provided with the spiral grooves *e*. When the valve E is in position on its seat the piston F fits the cylindrical opening in the nozzle at the point of its location. The stem D is provided with the guides *d d*, running in suitable grooves in the nozzle, to direct the valve and prevent the stem from turning.

The operation of our improved nozzle is as follows: Suppose the water to be shut off when the handle is pointing straight toward the butt or inlet. When the handle is being turned and the nozzle is being opened, the water, rushing through the spiral grooves *e* in the piston F, first forms the spray, with variations depending upon the amount of water discharged, until the handle reaches a position at right angles with the line of the nozzle, when the quantity of water discharged will begin to produce a solid stream, and when the handle is pointing straight forward a full solid stream will be thrown.

Having thus explained our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a hose-nozzle, the piston F, having the stem D, and provided with the spiral grooves *e e*, substantially as and for the purpose set forth.

2. In a hose-nozzle, the valve E, in combination with the stem D and piston F, the latter provided with the spiral grooves *e e*, and all constructed to operate substantially as and for the purpose set forth.

3. In a hose-nozzle, the stem D, provided with the valve E and spirally-grooved piston F, and having the guides *d d*, in combination with the spindle *b*, provided with the eccentric pin *a*, all constructed to operate substantially as and for the purpose set forth.

4. In a hose-nozzle, the stem D, provided with the valve E and spirally-grooved piston F, in combination with the spindle *b*, provided with an eccentric pin, *a*, substantially as and for the purpose described.

JOHN CLIFFORD.
JOHN GIELOW.

Witnesses:
JNO. H. STEINWAY,
AUGUSTUS WELHE.