C. L. JONES.

Compound Hose-Pipe Nozzle.

No. 162,388. Patented April 20, 1875.

Fig. 1.

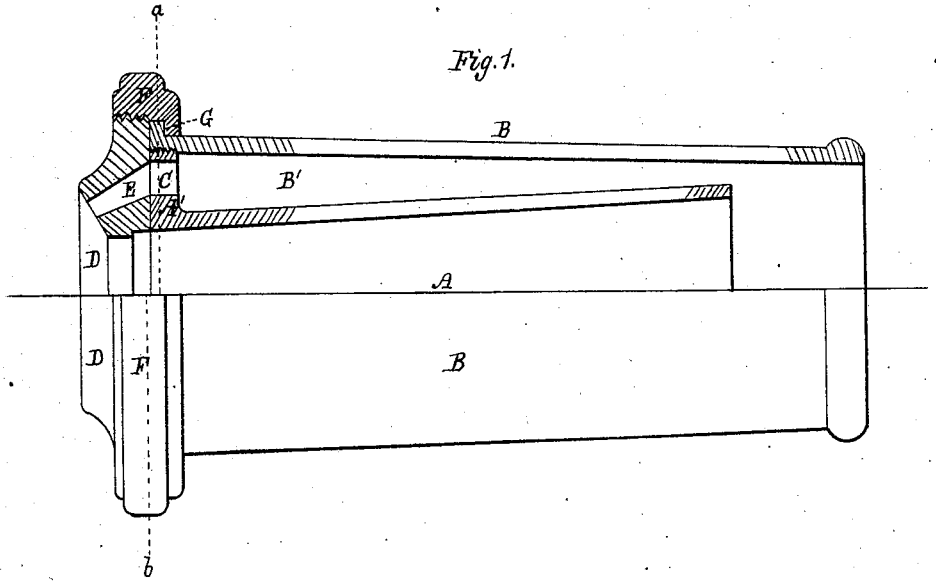


Fig. 2.

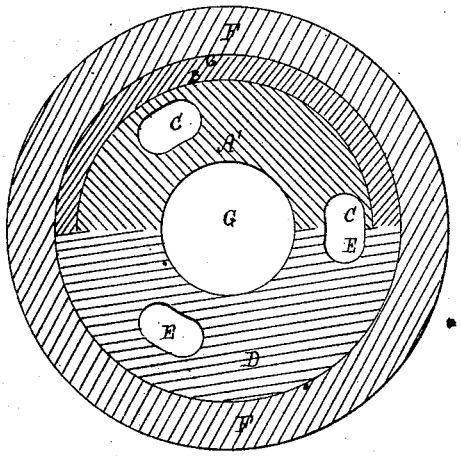
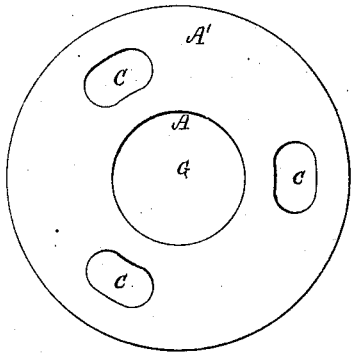


Fig. 3.



WITNESSES.
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H. C. Boardman.

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UNITED STATES PATENT OFFICE.

CHARLES L. JONES, OF WAKEFIELD, MASSACHUSETTS.

IMPROVEMENT IN COMPOUND HOSE-PIPE NOZZLES.

Specification forming part of Letters Patent No. **162,388**, dated April 20, 1875; application filed December 7, 1874.

To all whom it may concern:

Be it known that I, CHARLES L. JONES, of Wakefield, Middlesex county, Massachusetts, have invented a Compound Hose-Pipe Nozzle, of which the following is a specification:

This invention relates to means whereby the stream of water delivered upon a fire from any suitable head or pressure may be instantly and readily changed in character from a solid cylindrical column to a flattened sheet, or any intermediate condition between these two streams; the purpose of my invention being to enable a body of water to be thrown a long distance and cover a limited surface, or to a comparatively short distance and embrace an extended surface, the latter effect being of especial value in extinguishing fires which are confined to apartments or contracted localities. My invention consists in a nozzle in which I combine with the ordinary discharge-tube a second tube, or annular concentric partition, by which I create an annular chamber about such central or primary tube, the outer end or bottom of the annular chamber being perforated and provided with a rotary gate or valve, by which the perforations may be partially or entirely opened or closed, the arrangement of the whole being substantially such that when the said perforations or ports are open water rushes through them from the annular chamber at an angle, and impinges against and incorporates itself with the column issuing from the central tube, the result being that the entire stream is diverted into a flat sheet of greater or less extent, according to the extent to which the said ports are opened.

The drawings accompanying this specification represent, in Figure 1, a longitudinal sectional elevation, and in Fig. 2 a transverse section, of the same, taken on the line *a b* of Fig. 1. Fig. 3 is an end view of the nozzle with its sliding gate removed.

In these drawings, A represents a tube, which is practically a straight cylinder, or slightly reduced in diameter at its outer or discharge end, to contract and increase the force of the stream after the manner of hose-nozzles in general, said tube being, in fact, an ordinary nozzle. In carrying out my invention I cast upon the end of the nozzle or tube A an annular collar, A′, and within this collar I create several ports or orifices, C C, &c., in number and size as future practice or conditions may determine necessary or proper. B, in the drawings, represents a second tube or cylinder, of a diameter somewhat greater than that of the tube A, and straight or tapering, as the case may be, the outer ends of the two tubes A and B being united in a suitable manner, by which an annular chamber, B′, is created between the two tubes. D, in the drawing, represents an annular plate or gate, laid flatwise upon the outer face of the collar A′, the bore of this gate constituting a continuation of the bore of the tube A. The gate D is formed with a series of inclined ports, E E, &c., of a size and number to correspond with the ports C of the chamber B′, and is confined to the collar A′ in such a manner as to rotate upon it, and at the same time preserve a tight joint between the two, to prevent leakage from the chamber B′ when the outlets of the latter are closed. The means I have shown in the present instance wherewith to confine the gate D to the collar A′ and tube B consists in a second annular plate or ring, F, which is screwed to the outer edge of the said gate, and overlaps a lip, G, by which it maintains itself and the gate in position.

The operation of this compound nozzle is as follows: When the ports C and E coincide, partially or entirely, water issues through the former from the chamber B′ at an acute angle with the axis of the main column, and, as it issues, impinges against and unites with such main column as it issues from the central tube A, the effect of which, as before stated, is to transform the entire body of water into a flat or approximately flat sheet, according to the extent to which the ports are opened. The ring F provides a ready means whereby the hoseman may instantly change the character of the stream of water which he is directing upon a fire, and gives him a control over the latter never before possessed.

I do not in any sense confine myself to the details of means whereby I combine the two tubes A and B, or control the water issuing from the latter, as these may be varied to a great extent without losing sight of the es-

sential feature of my invention, which consists of a compound nozzle so constructed that the water from one portion may be permitted to impinge against and unite with that issuing from the other.

I claim—

1. The combination, in a hose-nozzle, of a central tube, constituting the main discharging-nozzle, and an exterior tube, provided with discharge-openings, controlled by a valve and set at an angle, so that the water discharged from them shall impinge the central stream as it issues from the main nozzle, as shown and set forth.

2. A nozzle composed of the two tubes A and B, united at their outer ends, and provided with the gate D and ports C and E, substantially as and for purposes stated.

CHARLES L. JONES.

Witnesses:

F. CURTIS,

W. E. BOARDMAN.