

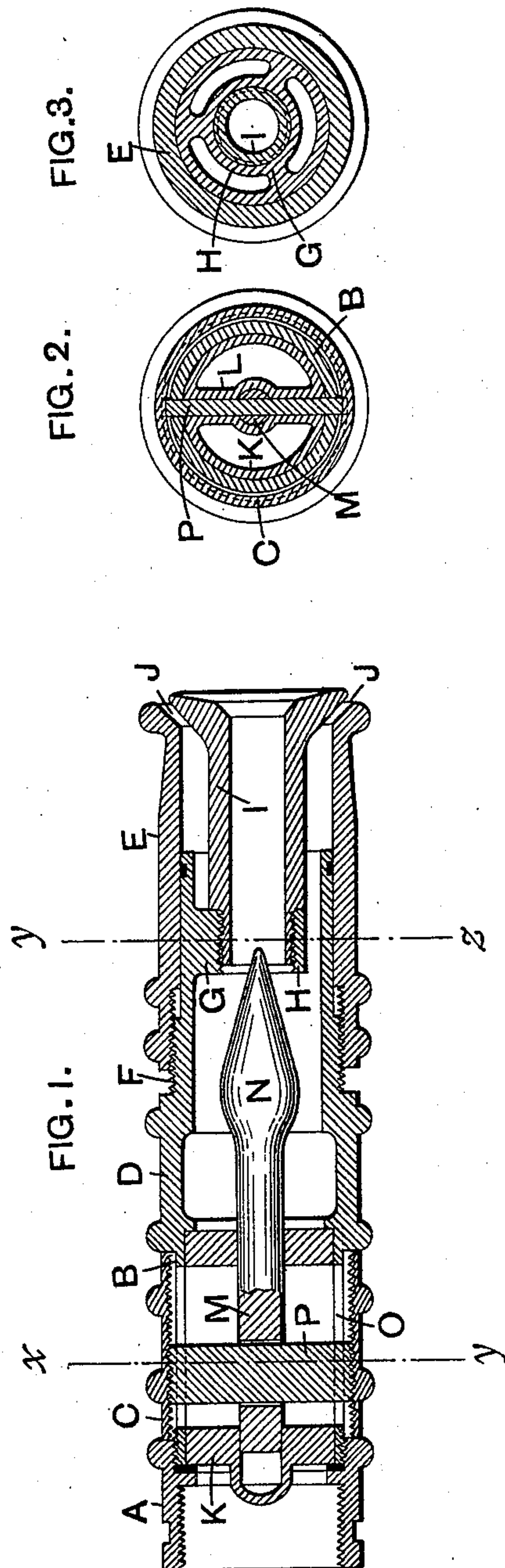
No Model.)

J. SHONE.

CIRCULAR SPREAD AND CENTER JET NOZZLE FOR HOSE.

No. 582,397.

Patented May 11, 1897.



WITNESSES

*W. B. Corwin*  
*C. S. Sturtevant*

INVENTOR

*John Shone*  
*By Geo. A. Shone*  
*Att'y*



# UNITED STATES PATENT OFFICE.

JOHN SHONE, OF CHESTER, ENGLAND.

## CIRCULAR-SPREAD AND CENTER-JET NOZZLE FOR HOSE.

SPECIFICATION forming part of Letters Patent No. 582,397, dated May 11, 1897.

Application filed December 16, 1896. Serial No. 615,892. (No model.) Patented in England April 2, 1896, No. 7,203.

*To all whom it may concern:*

Be it known that I, JOHN SHONE, a citizen of the United Kingdom of Great Britain and Ireland, residing at Chester, in the county of Chester, England, have invented certain new and useful Improvements in Circular-Spread and Center-Jet Nozzles for Hose, (patented in England April 2, 1896, No. 7,203,) of which the following is a specification.

10 This invention relates to hose and pipe nozzles, and more especially to such nozzles as are employed in extinguishing fires. Its object is to construct the nozzles in such a manner that they shall be able to throw a central  
15 solid jet and a shield of water or either of them alone, and so also that both the jet and the shield may be cut off at the nozzle when desired. The shield of water consists of a film adjustable in thickness, having a shape resembling that of the surface of a cone having  
20 its apex within the axis of the nozzle. The use of this shield or circular spread enables a fireman to approach quite close to the locality of a fire, as it both drives the smoke  
25 away and acts as a screen to the heat. Thus in entering a room where there is a fire to be extinguished the fireman first turns on the shield. Then, having by its aid been able to ascertain the position of the fire, he may turn  
30 on the central solid jet and extinguish it with the minimum damage to goods by water.

I will describe my improvements with reference to the accompanying drawings, in which—

35 Figure 1 represents a longitudinal section. Fig. 2 shows a cross-section taken along the line  $xy$ , and Fig. 3 a similar section taken along the line  $yz$  in Fig. 1.

40 At the base of the nozzle there is a nut A, by means of which the nozzle may be attached to the hose or the like. This nut is secured upon the lower cylindrical part B of the nozzle, the surface of which is smooth. Outside this part there is arranged a sleeve C, the inner  
45 surface of which is screwed or chased with a female screw-thread, as indicated.

50 D is the body of the nozzle, upon the end of which farther from the nut there is arranged a tubular part E, capable of longitudinal adjustment parallel with the axis of the nozzle. As shown, this adjustment is effected by means of an external screw thread or threads

F on the body of the nozzle and a corresponding internal screw thread or threads in the part E.

55 Within the upper part of the body of the nozzle wings G carry a ring H, into which is screwed the central-jet tube I, the outside of the outer end of which is flared or trumpet-shaped, as shown. The inner edge of the end  
60 of the outer part E is beveled to fit the flared part of I. Between the flared part and the beveled part there is thus formed an annular opening of conoidal form, J, which may be made narrower or broader or be closed altogether by turning the part E upon the nozzle.  
65

70 Within the lower cylindrical part B there is inserted a second closely-fitting cylindrical part K, in which are constructed two parallel walls L, longitudinally bulged at the center, where an axial bore is made for the reception of the stem M of the valve N. The space between the walls L opens through the wall of the cylinder K on each side, and slots O, corresponding with these openings, are formed  
75 longitudinally through the cylindrical part B. A slot of the same width, but much shorter, is made through the stem M. These slots and openings being brought into line a cross-bar P is passed through. The ends of this cross-  
80 bar are cut or serrated to gear with the screw-thread in the sleeve C, so that when this sleeve is turned it will cause the stem and the valve to move in one direction or the other longitudinally. When moved sufficiently far in  
85 one direction, the valve closes the entrance to the jet-tube I, and when moved in the other direction it opens the entrance to that tube.

90 The central jet issues from the tube I and the water shield or "spread" from the annular space J, and it will be seen that by rotating the parts B and E either or both of them may be opened or closed or that the water may be caused to issue at any rate that may be desired within the capacity of the nozzle  
95 and of the effective pressure.

100 The course of the water through the nozzle is along each side of the walls L and alongside the valve N, then through the jet-tube, if open, and past the wings G to the annular exit J, also if open.

I desire it to be understood that I do not separately claim the valve N with its stem and the described devices for moving it lon-



gitudinally as part of this my present invention.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In hose and pipe nozzles, a tubular body portion having at one end an internal concentric ring supported on wings, a jet-tube having its inner end secured in said ring and its outer end provided with a flared exterior, a tubular part longitudinally adjustable on the body and having a flared mouth to fit the exterior of the jet-tube, a longitudinally-movable valve to enter and close the inner end of the jet-tube, a loose sleeve surrounding the body, and connections between said sleeve and the valve-stem whereby the turning of the sleeve moves the valve, substantially as described.

2. In hose and pipe nozzles, a stationary body portion having at one end a concentrically-fixed jet-tube, and at the other end a longitudinal partition, said partition having an axial hole and a transverse radial slot intersecting said hole, a valve for closing the jet-tube having its stem received in said hole, a bar passing transversely through said slot and stem, and a sleeve loosely surrounding said body between fixed shoulders and adapted to

engage with said bar and to move it lengthwise of said body to close or open the jet-tube, substantially as described.

3. In hose and pipe nozzles, a stationary body portion having at one end a concentrically-fixed jet-tube with a flaring outer end, a tubular part longitudinally movable on said body and having a flaring mouth to fit the outside of the jet-tube, a cylinder fitting inside the body, having a partition slotted transversely and provided with a lengthwise hole intersecting said slot, a valve to close the inner end of the jet-tube, having its stem received in the hole in the partition, a transverse bar passing through the slot and the valve-stem and having serrated ends, and an internally-screw-threaded sleeve surrounding said body and engaging with the ends of said bar, the body being longitudinally slotted to permit the ends of the bar to project, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 3d day of December, 1896.

JOHN SHONE.

Witnesses:

GEORGE SAMUEL NESBITT HULL,  
AUSTIN GREGORY.