(No Model.)

F. MOORE.

NOZZLE.

No. 356,598. Patented Jan. 25, 1887.

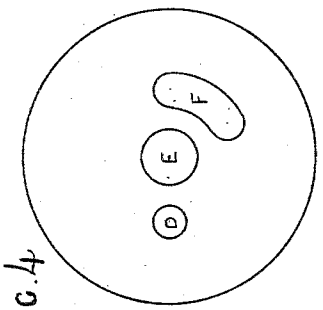


FIG. 4.

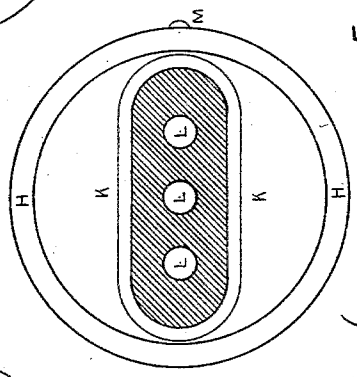


FIG. 2.

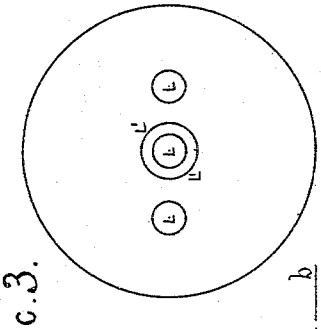


FIG. 3.

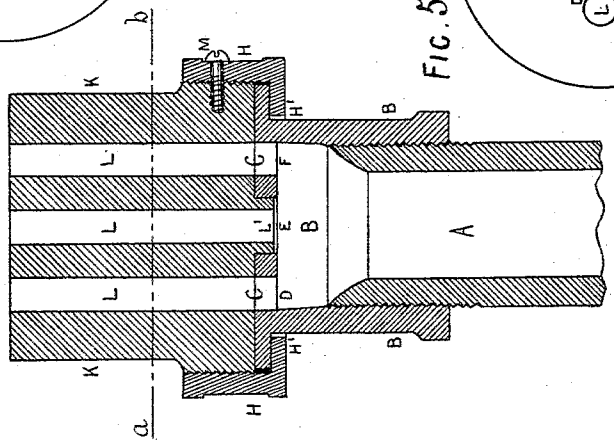


FIG. 1.

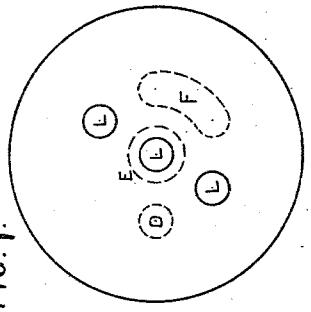


FIG. 7.

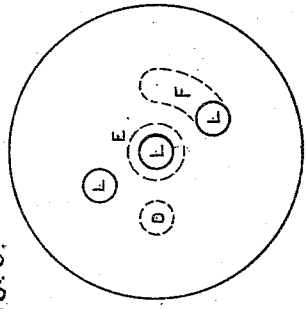


FIG. 6.

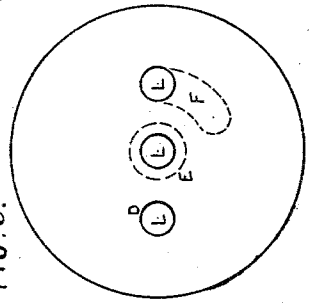


FIG. 5.

Witnesses:
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David S. Williams.

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by his Attorneys.
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UNITED STATES PATENT OFFICE.

FRANK MOORE, OF LONDON, ENGLAND.

NOZZLE.

SPECIFICATION forming part of Letters Patent No. 356,598, dated January 25, 1887.

Application filed August 19, 1886. Serial No. 211,267. (No model.) Patented in England May 28, 1886, No. 7,175, and in Belgium August 12, 1886, No. 74,202.

To all whom it may concern:

Be it known that I, FRANK MOORE, a subject of the Queen of Great Britain and Ireland, and a resident of London, England, have invented an Improved Nozzle, of which the following is a specification.

The object of my invention is to produce a nozzle by which one, two, or three, or more, jets or streams of water or other liquid can be produced and ejected at pleasure, and shut off, when required, very simply, quickly, and easily; and this my improved nozzle is applicable with all fire-engines, hydrants, hoses, pipes, and other similar appliances for whatever purposes the same may be used, though it is more especially applicable with portable fire-extinguishers, which are now so continually and increasingly coming into general use. To carry out this object I form a nozzle with two, three, or more passages therein, which nozzle is secured in a ring or collar, a flange on which engages under a shoulder formed therefor on a cap secured on the end of the pipe. In the closed end of the cap are formed such apertures that on turning the nozzle with the ring or collar round on the cap one or more of the passages therein are open to the passage of the water or other liquid, whereby one or more jets or streams thereof are produced and ejected, as may be desired.

In order to explain my invention, I refer to the accompanying drawings.

Figure 1 is a longitudinal section of this nozzle. Fig. 2 is a transverse section of the same, taken at *a b* in Fig. 1. Fig. 3 is an inverted plan view of the nozzle detached. Fig. 4 is a plan view of the cap with the nozzle and retaining-collar removed; and Figs. 5, 6, and 7 are diagrams illustrating the different positions of the nozzle with reference to the cap.

On the end of a pipe, hose, branch, or other similar appliance, A, is secured a cap, B, the top or end of which is closed, and the face C thereof is turned or made a true flat face. In this face C and through the closed top or end of the cap B are formed three apertures, D, E, and F, as shown in Fig. 4, which is a plan of this face C. A ring or collar, H, is passed up round this cap B, and an internal flange, H′, on the lower edge of the ring or collar H engages a shoulder formed therefor round the top or end of the cap B. Into this ring or collar H is screwed or otherwise secured the nozzle K, wherein are formed or which consists of three passages, L, for the liquid that is to be ejected, which passages L may either be parallel with each other, as shown in the drawings, or may diverge from or converge toward each other, and may be of the same diameter throughout, also as shown in the drawings, or may be tapered or may be otherwise arranged and formed as I may deem expedient in each particular case; but the lower or entrance mouths of these passages L in the base of the nozzle K in all cases are so formed and arranged as duly to correspond or to communicate with the apertures D, E, and F, as is hereinafter more particularly explained, and as is shown in Fig. 3, which is a plan of the under side of the said nozzle K. A central stud or pivot is made on the under side of the nozzle K, or, as in this case, where there are three passages, a projecting collar, L′, is formed round the central passage, L, which can enter a central socket in the face C of the cap B, or, as in this case where there are three passages, the central aperture, E, in the face C is made large enough to receive the collar L′, or the pivot may be formed on the cap and the socket in the nozzle, as may be desired.

The base of the nozzle K is and must be circular to screw into or fit the ring or collar H; but the upper part of the nozzle K may be formed in any convenient style and shape, that shown in the drawings being very suitable. When the ring or collar H is passed into position, the nozzle K is screwed thereinto until the base of the nozzle K, on which also is turned or made a true flat face, is in contact with the face C of the cap B, when a set-screw, M, is passed through the ring or collar H into a recess made therefor in the nozzle K, or in other usual or convenient manner the nozzle K is firmly and tightly fixed and secured in the desired position in and to the ring or collar H. Thus the nozzle K, with the ring or collar H, can obviously be turned round on the cap B, as desired, being regulated and assisted in such revolution by the central pivot, L′, and to render such movement the easier of accomplishment the outside of the ring or collar H can be roughed or be otherwise treated to enable the operator to obtain a firm grasp thereon.

In Figs. 5, 6, and 7 I have shown diagrams of the various positions of the two meeting faces of the nozzle and of the cap hereinbefore described, to produce the desired effect of delivering one and two and three jets or streams of water or other liquid, as may be desired. In Fig. 5 the passages L coincide with and are opposite to the apertures D, E, and F, and therefore three jets are delivered. This position is also shown in Fig. 1. When the nozzle K is turned into the position indicated in Fig. 6, the aperture D is no longer coincident with and opposite to the corresponding passage, L; but the central aperture, E, still coincides with and is opposite to the central passage L, as, obviously, when the apparatus is made as shown in the drawings and as described, must always be the case, as the projecting mouth L′ of the central passage, L, constitutes the pivot on which the nozzle K turns, and the elongated aperture F is so formed as to be still coincident with and opposite to the third passage, L, and therefore only two jets are delivered. When the nozzle K is turned into the position indicated in Fig. 7, the central aperture, E, as aforesaid, still coincides with and is opposite to the central passage, L; but the other apertures, D and F, are not coincident with and opposite to the other passages L, and therefore only one jet is delivered. Thus and in this manner the number of jets or streams that issue from this nozzle can be increased or diminished at will without interfering with the antecedent flow of the liquid or disconnecting the nozzle from the pipe or tube or other appliance through which the liquid is delivered into this nozzle, as is desired.

In like manner I can fit, as indeed is sufficiently obvious, any other number of apertures and passages in the nozzle, producing a corresponding number of jets; but I preferably always use an odd number, so that the central passage and aperture may form the central pivot and socket, as is hereinbefore described and as is shown in the drawings. It is also very obvious that I do not limit myself to the exact shapes and proportions and details of construction as shown in the drawings, for all the several parts of this nozzle may be made of such shapes and proportions and be so fitted and connected together as may be expedient or desirable or convenient in each particular case.

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

1. The combination of a delivery-pipe and cap having a number of openings with a nozzle having a corresponding number of openings and centrally pivoted on the said cap, and a flanged collar to retain the nozzle on the cap while leaving it free to turn thereon, all substantially as described.

2. The combination of a delivery-pipe and cap having a number of openings with a nozzle having a corresponding number of openings, the central one of which has a projecting mouth, *l′*, adapted to the central opening in the cap to form a pivot and a retaining flanged collar, all substantially as and for the the purpose described.

3. The combination of the delivery-pipe and cap having three openings, of which one, F, is elongated, with a nozzle adapted to turn on the cap, and with three openings, *l l l*, all substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FRANK MOORE.

Witnesses:
JAS. HART,
HOOD BARRT.