No. 694,365. Patented Mar. 4, 1902.

J. E. GARRISON.

HOSE NOZZLE.

(Application filed June 1, 1901.)

(No Model.)

Fig. 1.

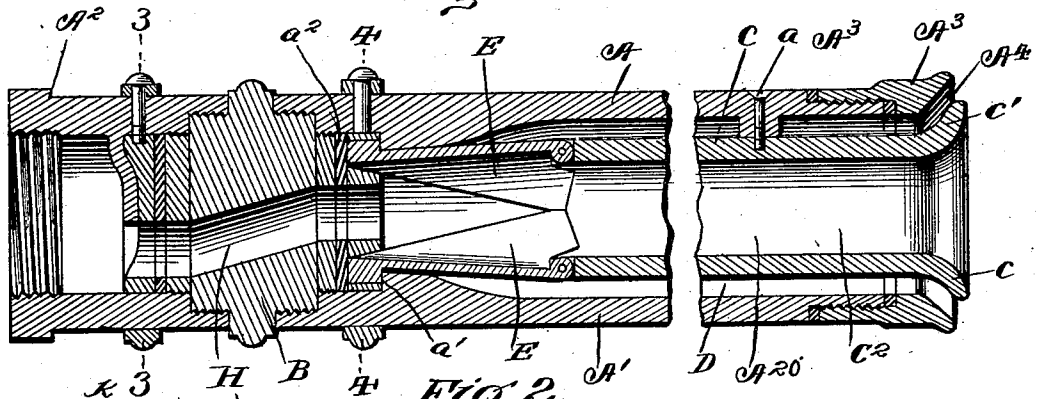


Fig. 2.

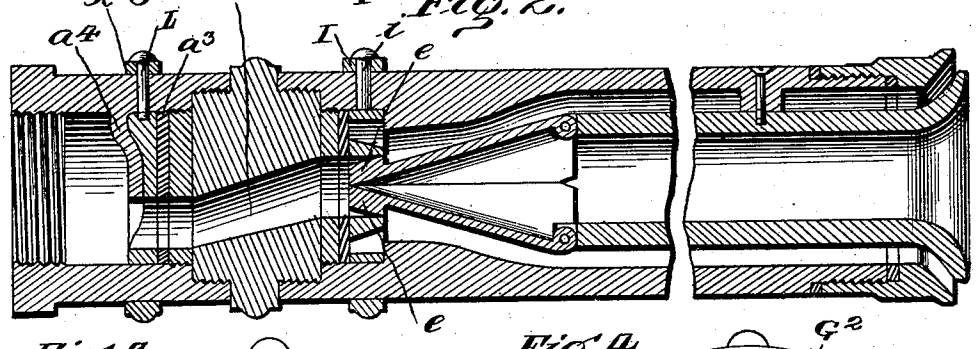


Fig. 3.

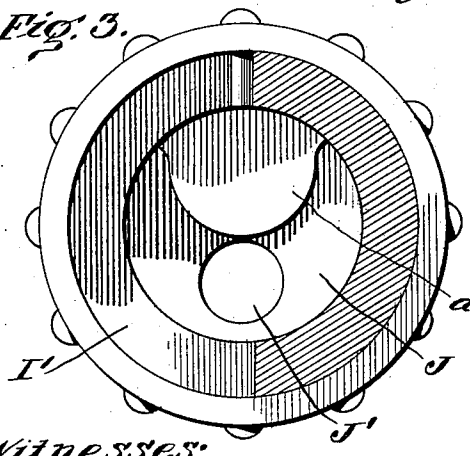
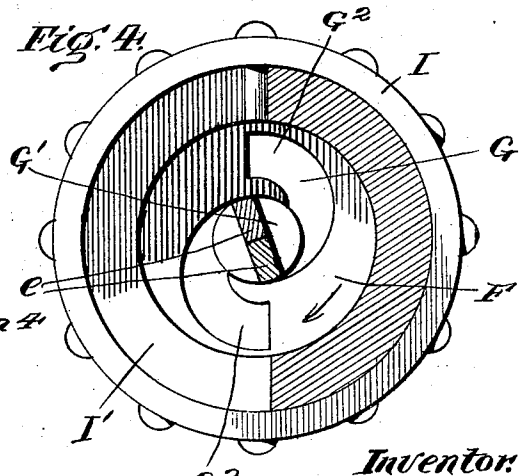


Fig. 4.



Witnesses:
Fred J. Hartman.
L. A. Morrison

Inventor:
Joseph E. Garrison.
By
W. Preston Williamson.
Atty.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOSEPH E. GARRISON, OF PHILADELPHIA, PENNSYLVANIA.

HOSE-NOZZLE.

SPECIFICATION forming part of Letters Patent No. 694,365, dated March 4, 1902.

Application filed June 1, 1901. Serial No. 62,766. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH E. GARRISON, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented a certain new and useful Improvement in Hose-Nozzles, of which the following is a specification.

My invention relates to a new and useful improvement in hose-nozzles, and has for its object to provide a hose-nozzle which is designed more particularly for fire-hose, and I provide my hose-nozzle with a central opening for the purpose of throwing a straight stream of water and an annular passage surrounding the central opening, which passage is flared at its outer end, so as to throw a thin sheet of water from a considerable surface.

My invention relates more particularly to means for causing the water to either flow through the central opening or through the surrounding passage.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawing, forming a part of this specification, in which—

Figure 1 represents a longitudinal section of my hose-nozzle, showing the valve in position for allowing the water to pass through the central opening; Fig. 2, a similar view to Fig. 1, showing the valve in the position closing the central opening to allow the water to pass into the surrounding passage. Fig. 3 is a section on the line 3 3 of Fig. 1, and Fig. 4 a section on the line 4 4 of Fig. 1.

In carrying out my invention as here embodied, A represents the outside casing of the nozzle, which is composed of the two members A′ and A^2, the part A′ constituting the nozzle proper, and A^2 is a portion which is adapted to be secured to the hose. These two parts A′ and A^2 are secured together by being screwed upon the exterior threaded plug B. The outer end of the part A′ of the nozzle is formed with a longitudinal opening A^{20}. C is a tube which is placed in this opening A^{20} of the part A′ and is secured in such a manner that it will be held in the center of the opening A^{20}, so as to leave an annular passage D surrounding such tube. This tube will be held in this central position by means of lugs A^3, which extend inward from the walls of the part A′ and bear against the outer surface of the tube. These lugs are of sufficient number to hold the tube securely in place, and screws *a* are threaded in the tube from the outside of the part A′ to hold the tube in place longitudinally. This tube C is flared at its outer end at the point C′, and the part A′ has threaded upon its outer end a sleeve A^3, which is beveled at the point A^4 to correspond with the flare C′ of the tube C. Thus any water traveling through the annular passage D will come in contact with the flare C′ of the tube C and be turned at an angle from the axle in a circular sheet of water. The part A^3 is threaded upon the part A′ of the nozzle for regulating the distance between the bevel portion A^4 and the flare of the tube C. To the inner end of the tube C are hinged the two valves E. These two valves when brought together will form a cone and when so brought together will close the central passage C^2 through the tube, but will allow the water to pass into the annular passage D, surrounding the tube. When the valves E are spread to their limit, the annular passage D will be closed, but the central passage C^2 will be opened, or if the valves E are placed in position intermediate of the two limits the water may pass through both the annular passage D and the straight passage C^2. For the purpose of actuating the valves E, so as to control the flow of water, I provide a disk F, which is confined in the part A′ between the shoulder *a′* and the packing a^2. An S-shaped opening G is formed through the disk F, the central opening G′ of such opening adapted to register with the passage H, which extends from the interior of the part A^2 to the interior of the part A′ and allow for the passage of the water therebetween. The ends *e* of the valves E are formed as shown in Fig. 4 and always lie within the S-shaped opening G. The disk F is connected with a ring I upon the outside of the nozzle by means of the pin *i*, which is adapted to travel in a semicircular slot I′, formed through the wall of the part A′. Thus

when the ring I is turned it will also rotate the disk F, and when the disk F is placed in such position that the ends *e* of the valves E will lie within the central portion G′ of the opening G the valves E will be held close together and close the central passage C^2, but the water will be allowed to pass from the passage H around each side of the ends of the valves E into the annular passage D; but when the disk F is rotated in the direction of the arrow the ends *e* of the valves E will be separated, and each of the ends E will be carried into the portions G^2 of the opening G. This will cause the valves E to resume the position shown in Fig. 1, which will close the annular passage D to allow the water to pass through the central passage C^2. The disk F in turning to separate the ends *e* will separate such ends gradually, and of course the valves can be opened to any point between the two extremes, in which case it will allow more or less water to enter both of the passages C^2 and D.

For the purpose of shutting off the supply of water entirely I provide a circular plate J, which is secured in the part A^2 between the washer a^3 and the extension a^4, which extends inward from the walls of the part A^2. This circular plate J has a hole J′ formed therethrough, which hole is adapted to register with the passage H to allow the flow of water.

For the purpose of turning the disk J, I provide a ring K upon the outside of the part A′, which is connected to the circular plate J by a pin L, which is adapted to travel in the semicircular slot L′, formed through the wall of the part A^2. Thus the ring can be turned so as to bring the hole J′ in or out of alinement with the passage J, and when the water is entirely shut off the hole J′ will be underneath the projection a^4, which will give double protection against the liability of the water leaking through.

Slight modifications could be made in this invention without departing from the spirit thereof. Therefore I do not wish to be limited to the exact construction here shown.

Having thus fully described my invention, what I claim as new and useful is—

1. In combination with a hose-nozzle having a central passage and an annular passage surrounding the same, two valves hinged to the walls of the central passage, said valves adapted to close the central passage and open the annular passage when brought together, and open the central passage and close the annular passage when spread, a rotatable disk rotated within the nozzle, said disk adapted to engage the ends of the valves to open and close the same as the disk is rotated, means connected with the disk and extending to the exterior of the nozzle for rotating said disk, a rotating valve also located within the nozzle and adapted to open or close the supply, means extending to the exterior of the nozzle for rotating said valve, substantially as described and for the purpose specified.

2. In a hose-nozzle, a casing, a straight passage formed in the center of the casing, an annular passage formed in the casing and surrounding the central passage, said annular passage being deflected at the mouth so as to cause the water to be thrown at an angle and in a circular sheet, a sleeve threaded upon the exterior of the casing for the purpose of regulating the width of the mouth of the annular passage, two valves hinged to the walls of the central passage, said valves adapted to form a cone when closed together for the purpose of closing the central passage and opening the annular passage, said valves adapted to be spread to open the central passage and close the annular passage, means adapted to be actuated upon the exterior of the nozzle for opening or closing said valves, a passage leading from the supply end of the nozzle to the valve, a circular valve arranged within the casing, a hole formed through said valve adapted to be brought in or out of alinement with the supply-passage for opening or closing the same, and means extending to the exterior of the nozzle for rotating said rotary valve, substantially as described and for the purpose specified.

3. In combination with a hose-nozzle having a central passage and an annular passage, two valves hinged to the walls of the central passage, said valve adapted to be brought together to close the central passage and open the annular passage, and when spread to open the central passage and close the annular passage, a rotatable disk arranged within the casing, an opening formed through said disk, the end of the valve adapted to lie within said opening, the walls of said opening so formed as to spread the valves when the disk is rotated in one direction and close the valves when it is rotated in the opposite direction, or hold said valves in position between these two extremes so as to allow water to enter both the central and annular passage, a ring adapted to surround the exterior of the nozzle, a slot formed through the wall of the casing and extending one-half of the diameter of the same, a pin secured in both the rotatable disk and the ring for the purpose of rotating the disk when the ring is turned, substantially as described and for the purpose specified.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

JOSEPH E. GARRISON.

Witnesses:
H. B. HALLOCK,
L. W. MORRISON.