No. 692,375. Patented Feb. 4, 1902.

C. A. SNIDER.

NOZZLE.

(Application filed Apr. 23, 1901.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

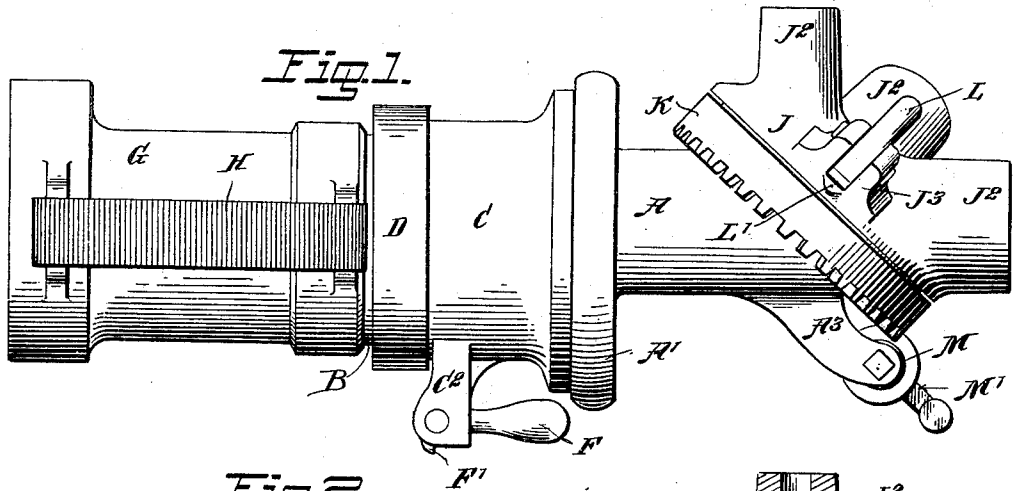


Fig. 2.

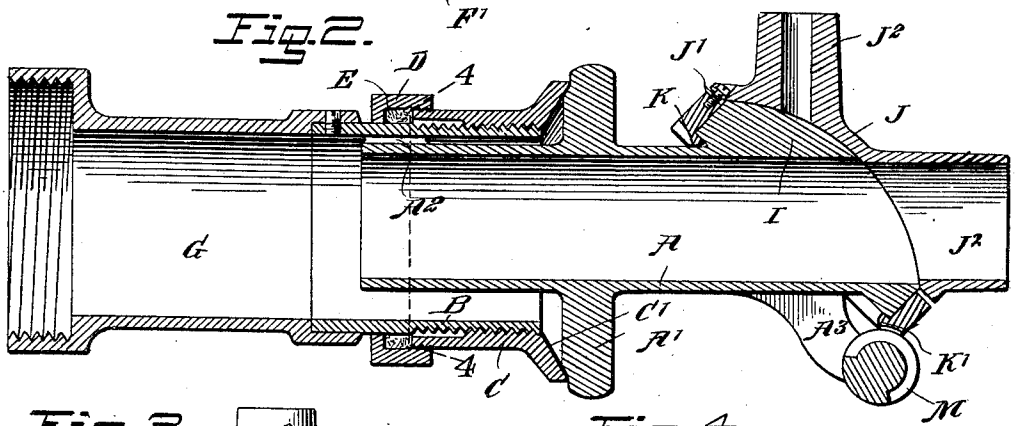


Fig. 3.

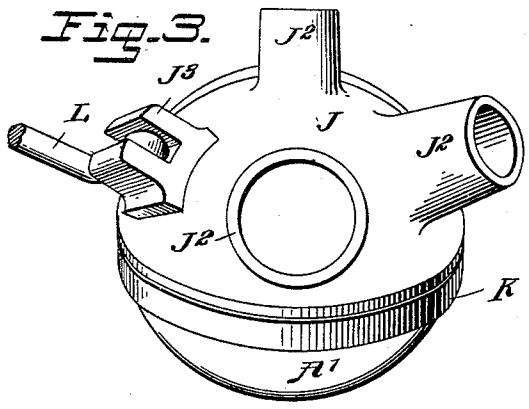
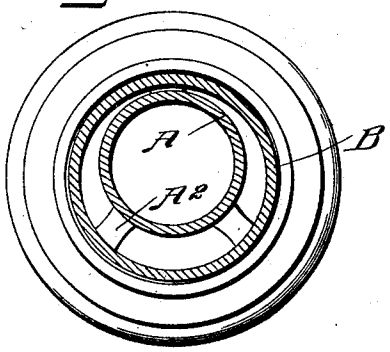


Fig. 4.



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(No Model.) 2 Sheets—Sheet 2.

Fig. 5.

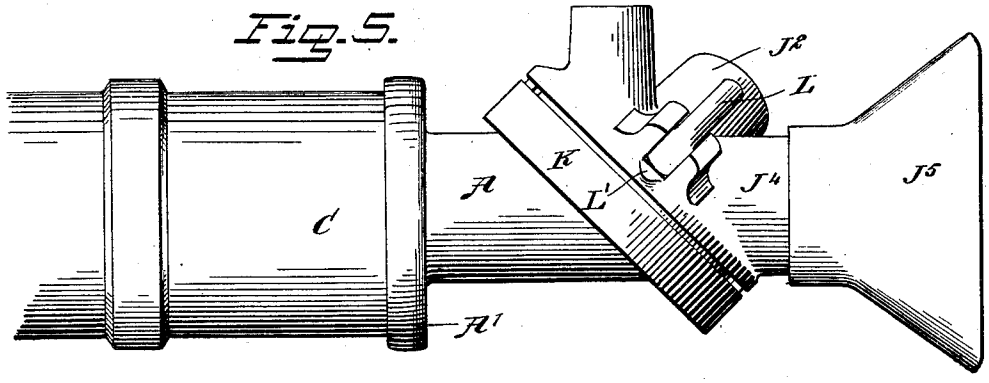


Fig. 6.

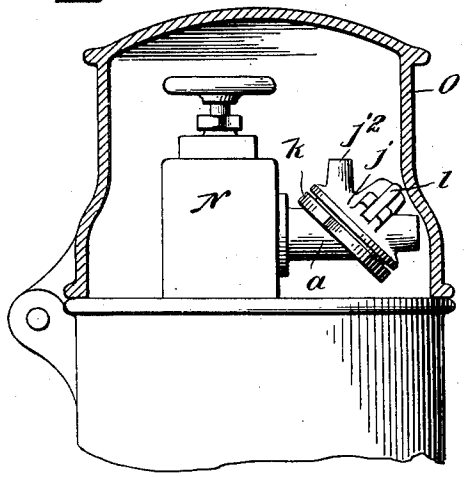


Fig. 7.

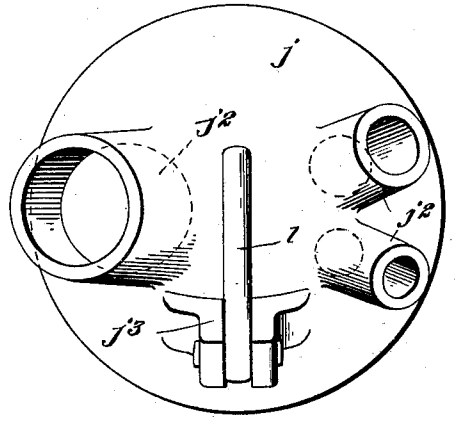


Fig. 9.

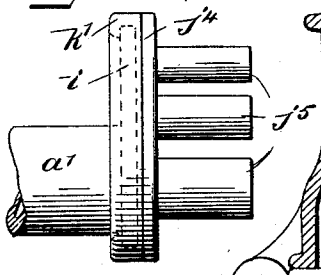


Fig. 8.

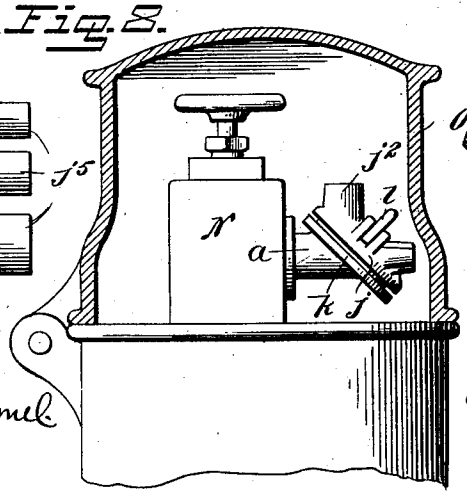
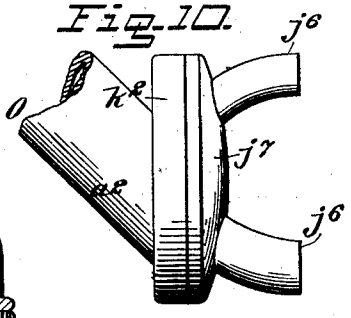


Fig. 10.



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UNITED STATES PATENT OFFICE.

CHARLES ALBERT SNIDER, OF JERSEY CITY, NEW JERSEY.

NOZZLE.

SPECIFICATION forming part of Letters Patent No. 692,375, dated February 4, 1902.

Application filed April 23, 1901. Serial No. 57,103. (No model.)

To all whom it may concern:

Be it known that I, CHARLES ALBERT SNIDER, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented new and useful Improvements in Nozzles, of which the following is a full, clear, and exact description.

My invention relates to devices in which a carrier provided with a plurality of different articles is movably mounted upon a support in such manner that by moving the carrier any one of said articles can be brought into an operative position.

The invention is particularly applicable to nozzles for fire-hose or for hydrants, and has for its object to provide a simple and compact construction of the above-indicated class which will be readily adjustable and the parts of which will be of easy access.

To this end I employ the particular construction of parts described hereinafter with reference to the accompanying drawings and then defined as to novelty in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of a fire-hose nozzle provided with my improvements. Fig. 2 is a longitudinal section thereof. Fig. 3 is a front end view. Fig. 4 is a cross-section on the line 4 4 of Fig. 2. Fig. 5 is a partial side view of a slightly-different form of nozzle. Fig. 6 is an elevation of a hydrant with my improvements attached thereto. Fig. 7 is a front end view of the hydrant-nozzle. Fig. 8 is an elevation similar to Fig. 6, but with the parts in a different position; and Figs. 9 and 10 are side elevations of still other forms of my invention.

As illustrated by Figs. 1 to 4, the invention comprises a support A, here in the nature of a tube, provided with an eccentric exterior flange A′ and with outside lugs or ribs A^2, connecting it rigidly with a pipe-section B, surrounding said support eccentrically, the axes of the pipe-section B and of the flange A′ coinciding. On said pipe-section is mounted to screw centrally a ring C, having an inclined surface C′, adapted to become seated upon a similar surface of the flange A′, it being understood that said flange and ring are coaxial. With the ring is rigidly yet adjustably connected (as by screw-threads) a stuffing-box D, arranged to contain a suitable packing E. The ring C may be turned by means of a handle F, pivoted between ears C^2 and provided with a stop-lug F′ to limit its motion. The pipe-section B is rigidly connected or formed integral with a coupling-section G, having at its free end a screw-threaded socket for connection with the end of a fire-hose. This section also has means for conveniently holding it—as, for instance, leather straps H.

The discharge end of the support or tube A is formed with a spherically-curved flange or head I, and on this head is mounted to rotate about an axis inclined relatively to that of the support a cap or carrier J, connected by screws J′ with a collar K, having a flange K′, which takes under the edge of the head I. This carrier is formed with or has secured to it a series of articles, such as nipples or nozzles J^2, projecting therefrom at such an angle that each of them when in registry with the discharge end of the supporting-pipe A will aline axially with the bore thereof. The nipples or nozzles, as shown, are preferably of different interior diameters, so that the thickness of the jet discharged can be varied by turning one nozzle or the other into the active position. For this purpose the carrier J may be provided with a handle L, pivoted between ears J^3 and provided with a stop-lug L′ to limit its motion. As another means of turning the carrier J, particularly when water is discharged under high pressure, I may form crown-teeth on the collar K, said teeth being engaged by a worm M, journaled in brackets A^3, projected from the supporting-pipe A. A crank M′ may be provided on the worm-shaft.

It will be observed that the bore of the support A is smooth and of the same diameter throughout, so that the water discharged will not be deflected laterally or given a whirling motion. With the parts in the position shown in Fig. 3 water will be discharged (in a straight direction) only through the nipple or nozzle J^2, temporarily in alinement with the pipe A. The thickness of this jet, as stated, can be

varied by bringing the different nipples J^2 into the active position. If now the ring C is screwed away from the flange A', the water will also pass out in an annular spray between the said flange and ring. By turning the cap or carrier J into such a position that none of the nipples J^2 will aline with the pipe A, I can cause water to be discharged in an annular jet only, which often is a convenience in wetting a large surface in a short time to prevent the spread of fire.

In some cases I may omit the parts by which the annular jet is formed—that is, the flange A' and ring C. In this event the screw-threaded socket shown on the coupling-section G would be provided directly at the receiving end of the pipe A.

The construction shown in Fig. 5 differs from that described above only by the addition of an external screw-thread on one of the nipples J^4, said screw-thread serving to secure a discharge-nozzle J^5 of any desired shape—for instance, a flat flaring nozzle. With this construction it becomes possible to readily attach nozzles of different shapes, so as to vary the effect.

In Figs. 6, 7, and 8, N designates a hydrant with a pipe *a*, (corresponding to the supporting-pipe A of the construction first described,) the cap or carrier *j*, having nipples j^2, the lever *l*, pivoted between the ears j^3, and the collar *k*, which may be formed as a nut, so as to be readily turned with a wrench in case the lever *l* does not afford sufficient purchase, or the collar may, as before described, be made with crown-teeth engaged by a worm. O is the casing of the hydrant. A particularity of this construction is the relative size and arrangement of the nipples j^2, of which three are shown. One of these is of about the same internal diameter as the supporting-pipe *a*. The other two are of smaller diameters and are located so closely to each other that they may both communicate at the same time with the bore of the pipe *a*, and as these two nipples are of different diameters and may, of course, also be brought into active position singly it follows that with the described arrangement of three nipples four different degrees or adjustments can be obtained in the discharge of the water.

In another form of my invention, as shown in Fig. 9, the supporting-pipe *a'* has the carrier j^4 mounted to swing about an axis eccentric to that of the pipe *a'*, but parallel therewith. The ring *k'* is of substantially the same construction as before described. The nipples j^5 are all parallel with the axis. The operation of this construction will be readily understood from the description above given.

Finally, as shown in Fig. 10, the nipples j^6 instead of being parallel with the axis might be arranged at an angle to the axis, but in such a manner that every nipple at the moment of its registry with the supporting-pipe will be in alinement with the supporting-pipe a^2. The carrier j^7 is spherical in this case, the head at the end of the pipe a^2 being of a like shape. This form of the invention is provided with a ring k^2.

While I have shown my invention applied to nozzles, I desire it to be understood that the invention is capable of other applications.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the support, the carrier mounted to turn thereon and formed with teeth, articles projected from the carrier on the side opposite to the support and each arranged to aline therewith axially when in registry therewith, and a worm journaled on the support and engaging the teeth of the carrier.

2. The combination of the tubular support having an eccentric exterior flange, the carrier mounted to rotate on the support in advance of the flange and provided with outwardly-leading apertures adapted to register with the tubular support, the pipe-section surrounding said support eccentrically, but concentric with the flange thereof, and the ring arranged on the said pipe-section concentrically and movable lengthwise thereof toward and from said flange.

3. The combination of a tubular support having an eccentric exterior flange, a nozzle device carried by the tubular support at a point beyond the flange, a pipe-section surrounding the tubular support, the pipe-section being disposed eccentrically to the tubular support and concentrically to the flange thereof, and a ring arranged on the pipe-section concentrically to and movable lengthwise thereof toward and from the flange of the tubular support.

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

CHARLES ALBERT SNIDER.

Witnesses:
JOHN LOTKA,
EVERARD B. MARSHALL.