J. LOOSEN.

VARIABLE SPRAY NOZZLE.

APPLICATION FILED MAY 24, 1913.

1,093,340.

Patented Apr. 14, 1914.

Fig. 1.

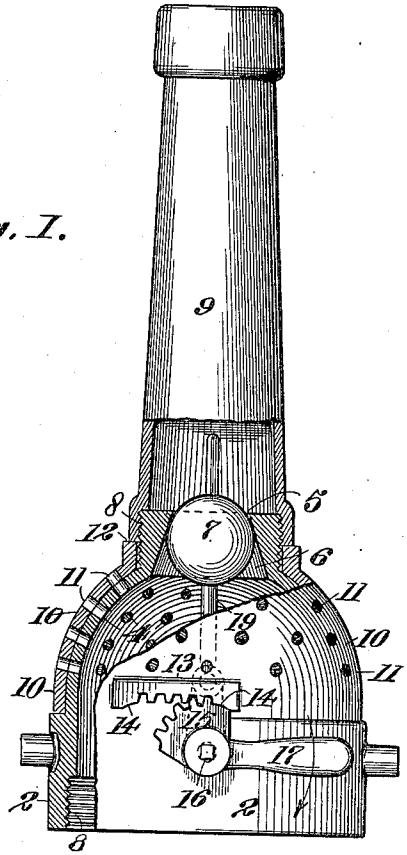
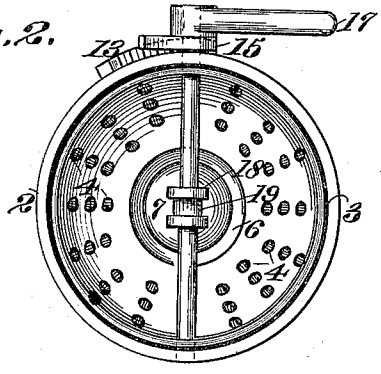


Fig. 2.



WITNESSES:

Charles Fickles

F. E. Maynard.

INVENTOR

Jacob Loosen.

BY G. H. Shong.

ATTORNEY

UNITED STATES PATENT OFFICE.

JACOB LOOSEN, OF OAKLAND, CALIFORNIA.

VARIABLE-SPRAY NOZZLE.

1,093,340. Specification of Letters Patent. Patented Apr. 14, 1914.

Application filed May 24, 1913. Serial No. 769,580.

To all whom it may concern:

Be it known that I, JACOB LOOSEN, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented new and useful Improvements in Variable-Spray Nozzles, of which the following is a specification.

This invention relates to nozzles, and particularly to a nozzle with elements adjustable relatively for the production of a shower spray, or, as may be desired, for the production of a substantially solid compact stream.

One of the objects of the present invention is to provide a nozzle comprising a body portion having one relatively large discharge aperture for discharging a solid stream of water, when the nozzle is connected to a source of supply, and having a multiplicity of smaller apertures arranged throughout its surface for the discharge of a number of small streams, producing a shower or spray effect.

It is a further object of the invention to provide means whereby the nozzle can be readily adjusted to discharge a compact stream or discharge a shower spray, with means for cutting out one of the streams or sprays as the other is brought into play.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings, in which—

Figure 1 is a partial sectional side elevation of the improved nozzle with its parts adjusted in position to discharge a shower spray. Fig. 2 is an underneath plan view of the nozzle.

The present nozzle comprises a body portion 2, which may be hemispherical, conical, or of other suitable form, having a threaded portion 3 for attachment to a hose or other source of supply. The body portion 2 is provided throughout its area with a multiplicity of radially directed apertures 4 of suitable size. At the top of the body part 2 is formed a large discharge aperture 5, the walls of which form a seat 6, whereupon may seat a suitable valve or plug 7. The upper or smaller portion of the body 2 is provided with a threaded neck 8, upon which may be removably attached a tip or discharge member 9.

Circumferentially inclosing the body 2 of the nozzle is a shell or valve member 10 having a form approximating that of the body 2, and also having divers apertures 11 of substantially equal area with the apertures 4 of the body 2; the shell being turnably held upon the body between an annular shoulder 12 at the larger part of the body and the lower end of the nozzle tip 9 where it is screwed onto the neck 8. For the purpose of circumferentially revolving the shell or valve part 10 about the body of the nozzle, any suitable means may be provided, which in this instance is shown as consisting of a section of a rack 13 formed with a suitable number of teeth and having stop shoulders 14 at its ends; the rack teeth 13 being normally intermeshed with a sector 15 secured upon a diametral shaft 16, turnably supported in the band or shell 2 of the nozzle by means of a suitable handle or lever 17.

In operation, when the nozzle is attached to a hose or other source of supply and a solid stream is desired to be projected from the nozzle, then the operator manipulates the handle or lever 17 to cause the quadrant 15 and the intermeshed rack 13 to move in unison; the rack causing the shell or valve member 10 to turn circumferentially about the body 2 and thus carrying the apertures 11 of the shell out of registration with the apertures 4 of the body 2. This cuts off the discharge of spray therefrom and throws the volume of water from the source of supply through the large aperture 5 of the nozzle body into the nozzle tip 9 from whence it is projected in the direction required in a solid compact stream.

For the purpose of closing the nozzle aperture 8 when a shower spray is to be projected from the nozzle as when the shell 10 is left with its apertures in registration with the apertures 4, the valve plug or member 7 is movable against the seat 6 of the nozzle body by any suitable means, here shown as comprising a crank 18 formed in the diametral shaft 16; the crank being connected to the valve by a connecting link or rod 19. When the lever or handle 17 is turned to cause the quadrant 15 to turn the shell 10 to bring the apertures 11 and 4 into registration, then the crank 18 is thrown upwardly to force the valve 7 firmly into the seat 6 of the nozzle. Conversely when the apertures 11 and 4 are to be disalined and the shower spray cut off, then the handle 17 is turned in the opposite di-

rection; the shell 10 moving around the circumference of the body 2 cutting off the small streams from the apertures 4, and at the same time the crank 18 withdraws the valve member 7 from in juxtaposition with the seat 6 allowing the water from the nozzle to flow freely through the aperture 8 and be discharged in a strong compact stream from the nozzle tip 9. The stop shoulders 14 on the shell 10 prevent the ultimate disengagement of the intermeshing rack and quadrant members.

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

A nozzle for producing a shower spray or discharge a solid stream, comprising a suitably shaped body member provided with a plurality of apertures, and having a large aperture, with means for closing the smaller apertures and opening the large aperture to cause the discharge of the fluid therethrough to form a solid stream, or to close the large aperture and open the smaller apertures to form a shower spray, said means comprising a movable valve member encompassing the body of the nozzle and having apertures adapted to coincide with the smaller apertures of the body, and a plug or valve member movable coincidently therewith for controlling the discharge of fluid through the larger aperture of the nozzle body.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JACOB LOOSEN.

Witnesses:
JOHN H. HERRING,
W. W. HEALEY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."