

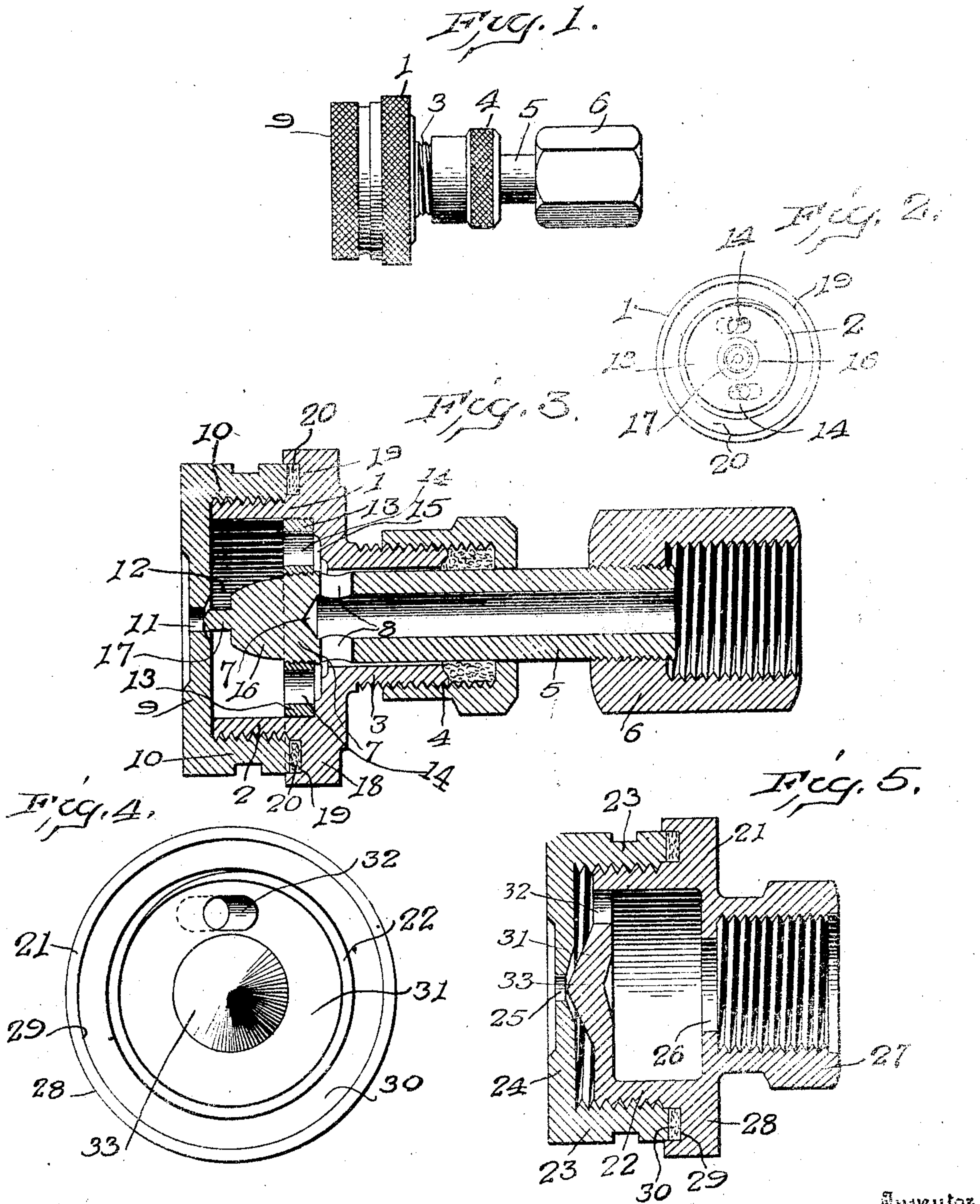
P. A. MYERS.

SPRAY NOZZLE.

APPLICATION FILED OCT. 2, 1908.

935,124.

Patented Sept. 28, 1909.



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# UNITED STATES PATENT OFFICE.

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## SPRAY-NOZZLE.

935,124.

Specification of Letters Patent.— Patented Sept. 28, 1909.

Application filed October 2, 1908. Serial No. 455,833.

*To all whom it may concern:*

Be it known that I, PHILIP A. MYERS, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Spray-Nozzles, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to spray nozzles, and has for its object the production of a nozzle of this character in which the packing will be so arranged, between the body of the nozzle and the cap therefor, that it will be subjected to the pressure of the fluid within the nozzle and will not be liable to be blown out or to be disarranged. Further, to provide such a nozzle with means for controlling the discharge in such a manner as to cause the same to form a spreading or umbrella shaped spray; and further, to provide a nozzle of this character having a disgorger and provided with positive means for limiting the stroke of that disgorger, thus enabling a short, quick stroke to be imparted to the disgorger to free the discharge aperture from foreign matter.

With these objects in view my invention consists in certain novel features of construction and in certain combinations and arrangements of parts hereinafter to be described, and then more particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a nozzle embodying my invention; Fig. 2 is a front elevation of the same, with the cap removed; Fig. 3 is an enlarged longitudinal, sectional view, taken through such a nozzle; Fig. 4 is a front elevation of a modified form of the nozzle, with the cap removed; and Fig. 5 is a longitudinal, sectional view taken centrally of a nozzle, such as shown in Fig. 4.

In Figs. 1, 2 and 3 I have illustrated one embodiment of my invention and have shown the same as comprising a cylindrical body portion 1 having a screw-threaded side wall 2 and provided with an inlet which, in the present instance, comprises a nipple 3 extending outwardly from the rear wall of the body portion 1 and provided with a stuffing box 4 within which is mounted an inlet pipe 5 having a coupling 6 for securing the same to a supply pipe. The pipe 5 is slidably mounted in the nipple 3, has its

inner end closed, as shown at 7, and is provided with outlet apertures 8 arranged near the rear wall of the cylindrical body portion. A cap 9 is removably mounted on that end of the cylindrical body portion opposite the inlet opening, preferably by providing the same with an annular screw-threaded flange 10 forming a side wall adapted to cooperate with the screw-threaded side wall 2 of the body portion. This cap is provided with a centrally arranged outlet opening 11 through which the fluid is discharged. The body portion 1 and cap 9 form between them a chamber 12, within which is mounted a disk 13 having one or more inclined apertures 14 adapted to receive the water from the apertures 8 of the inlet pipe 5 and discharge the same into the chamber 12 with a whirling motion. This disk may be supported in the chamber in any suitable manner, but, in the present instance, I have shown the same as having a central screw-threaded aperture adapted to engage the screw-threaded inner end of the inlet pipe 5. In the present form of the device, this disk 13 lies normally in a position close to the rear wall of the body portion 1 and I have here shown the rear wall as cut away, as shown at 15, at a point adjacent to the apertures 8 in the inlet pipe 5, thus enabling the fluid to be discharged from the inlet pipe through the discharge apertures 14 while the outer edge of the disk 13 rests upon the rear wall of the body portion 1. A conical projection 16 is arranged centrally of the disk 13 on that side thereof adjacent to the discharge aperture 11 in the cap 9 and so affects the movement of the fluid within the chamber 12 that the fluid will be discharged from the nozzle in the form of a spreading or umbrella shaped spray. In the present instance I have shown this projection as formed integral with the inner closed end of the inlet pipe 5 and as having the form of a frustum of a cone. Mounted on the inner end of the projection 16 and in alinement with the discharge aperture 11 is a pin 17 of a length substantially equal to the length of said discharge aperture. Thus, it will be seen that by the movement of the inlet pipe 5 relatively to the body portion 1, the pin 17 will be projected through the discharge aperture 11 and will free the same from any accumulation of matter or sediment which may have formed therein. Further, it will



be apparent that the inner end of the projection 16 forms a positive stop for limiting the movement of the pin or disgorger 17, thus enabling the aperture to be freed by means of a quick, short stroke. In practice, the nozzle is carried at the end of a handle, and, when the discharge aperture becomes so clogged as to interfere with the spray, the face thereof is placed against the limb of a tree and the handle pressed forward to move the inlet pipe and the disgorger or pin 17 toward the aperture 11. As soon as the nozzle is released from the limb or other object against which it has been pressed, the pressure of the fluid within the chamber 12 will move the body portion of the nozzle away from the disgorger and into its operative position. In order to provide a seat for the packing which is employed to render the joint between the body portion 1 and the cap 9 water tight, I prefer to provide the body portion 1 with a seat or recess in which the packing is disposed. In the present instance I have shown the body portion 1 as provided with an annular flange 18 extending outwardly therefrom and having that face which lies adjacent to the screw-threaded side wall 2 of the body portion provided with an annular recess 19 adapted to receive packing 20. This recess 19 is preferably of a width slightly greater than the thickness of the inner edge of the side wall 10 of the cap 9, which edge is adapted to engage the packing which is supported in the recess 19. Thus, it will be seen that the packing is placed at such a point that it is not subjected to the pressure of the water within the chamber 12 and is not liable to be blown out or to become disarranged, but will maintain at all times a water-tight joint between the two parts of the nozzle.

In Figs. 4 and 5 of the drawings I have illustrated another form of nozzle, which is not provided with a disgorger. In this form of the device the body portion 21 is provided with a cylindrical side wall 22 adapted to cooperate with the cylindrical side wall 23 of a cap 24 having a discharge aperture 25 arranged centrally thereof, the adjacent faces of the side walls 22 and 23 of the body portion and cap, respectively, being screw-threaded to permit of the ready separation or adjustment of these parts. The body portion is also provided with a centrally arranged inlet 26 having a coupling 27 for securing the same to a supply pipe. An annular flange 28 extends about the rear portion of the body portion 21 and is provided on the face thereof adjacent the cap 24 with an annular recess 29 adapted to receive a packing 30, the arrangement of the recess and packing relatively to the side wall of the cap being substantially the same as that described above in connection with Figs. 1 to 3. A disk or partition 31 is mounted in the

chamber formed between the body portion 21 and cap 24 and, as here shown, is permanently secured to the cylindrical side wall of the body portion at a point some distance from the inlet 26 and is provided with an inclined aperture 32 adapted to discharge the fluid into that portion of the chamber lying between the disk 31 and the cap 24 with a whirling motion. This disk is preferably provided with a centrally arranged conical projection, as shown at 33, the apex of which is in substantial alinement with the discharge aperture 25 of the cap 24 and serves to control the discharge of the fluid through that opening.

The operation of the device will be apparent from the foregoing description and it will be seen that I have provided a nozzle of this character in which the packing is so arranged that it is not liable to be blown out or to become disarranged, thus maintaining at all times a water-tight joint between the body portion and the cap of the nozzle. Further, it will be seen that I have provided means for so controlling the discharge of the fluid from the nozzle as to cause the same to be discharged in the form of a spreading or umbrella shaped spray; and that I have provided a nozzle with a disgorger having a positive stop for limiting the movement thereof and thus enabling the same to be actuated with a quick, short stroke, materially facilitating the operation thereof.

I wish it to be understood that I do not desire to be limited to the details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

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

1. A nozzle of the character described comprising a cylindrical body portion having an inlet, a cap secured to that end of said body portion opposite said inlet, forming a chamber between said body portion and said cap, and having an outlet, and a disk mounted in said chamber at a point removed from said cap and having an opening therein.

2. A nozzle of the character described comprising a cylindrical body portion having an inlet, a cap secured to that end of said body portion opposite said inlet, forming a chamber between said body portion and said cap, and having an outlet, a disk mounted in said chamber and having an inclined opening therein, and a conical projection arranged centrally of said disk on the side thereof adjacent to said outlet.

3. A nozzle of the character described comprising a cylindrical body portion having an inlet, an inlet pipe slidably mounted in said body portion and having its inner end closed, an outlet aperture in the side wall



thereof, a cap secured to that end of said body portion opposite said inlet and having a discharge opening, a disk mounted on said inlet pipe beyond the aperture therein, and  
 5 a conical projection carried by said inlet pipe and extending beyond said disk.

4. A nozzle of the character described comprising a cylindrical body portion having an inlet, an inlet pipe slidably mounted  
 10 in said inlet, having its inner end closed and having an outlet in the side wall thereof, a cap secured to that end of said body portion opposite said inlet, forming a chamber within  
 15 said body portion and said cap and having an outlet, a disk removably mounted on the end of said inlet pipe beyond the outlet therein and at a point removed from the  
 20 inner end thereof, that portion of the closed end of said pipe lying beyond said disk having the shape of a frustum of a cone.

5. A nozzle of the character described comprising a cylindrical body portion having an inlet, an inlet pipe slidably mounted  
 25 in said inlet, a cap secured to said cylindrical body portion and having a discharge aperture, a disk mounted on said inlet pipe,

a conical projection carried by said inlet pipe, and a pin extending beyond said projection and adapted to enter said discharge aperture when said pipe is moved toward  
 30 said cap.

6. A nozzle of the character described comprising a cylindrical body portion having an inlet, an inlet pipe slidably mounted  
 35 in said inlet and having an outlet in the side wall thereof, a cap secured to that end of said body portion opposite said inlet, forming a chamber within said body portion and  
 40 said cap and having an outlet, a disk mounted on said inlet pipe beyond the outlet therefor, a projection arranged centrally of said disk on the side thereof adjacent to  
 45 said cap, and a pin carried by said projection in alignment with the outlet aperture in said cap.

In testimony whereof, I affix my signature in presence of two witnesses.

PHILIP A. MYERS.

Witnesses:

R. M. TUBBS,

W. W. INGMAN.