

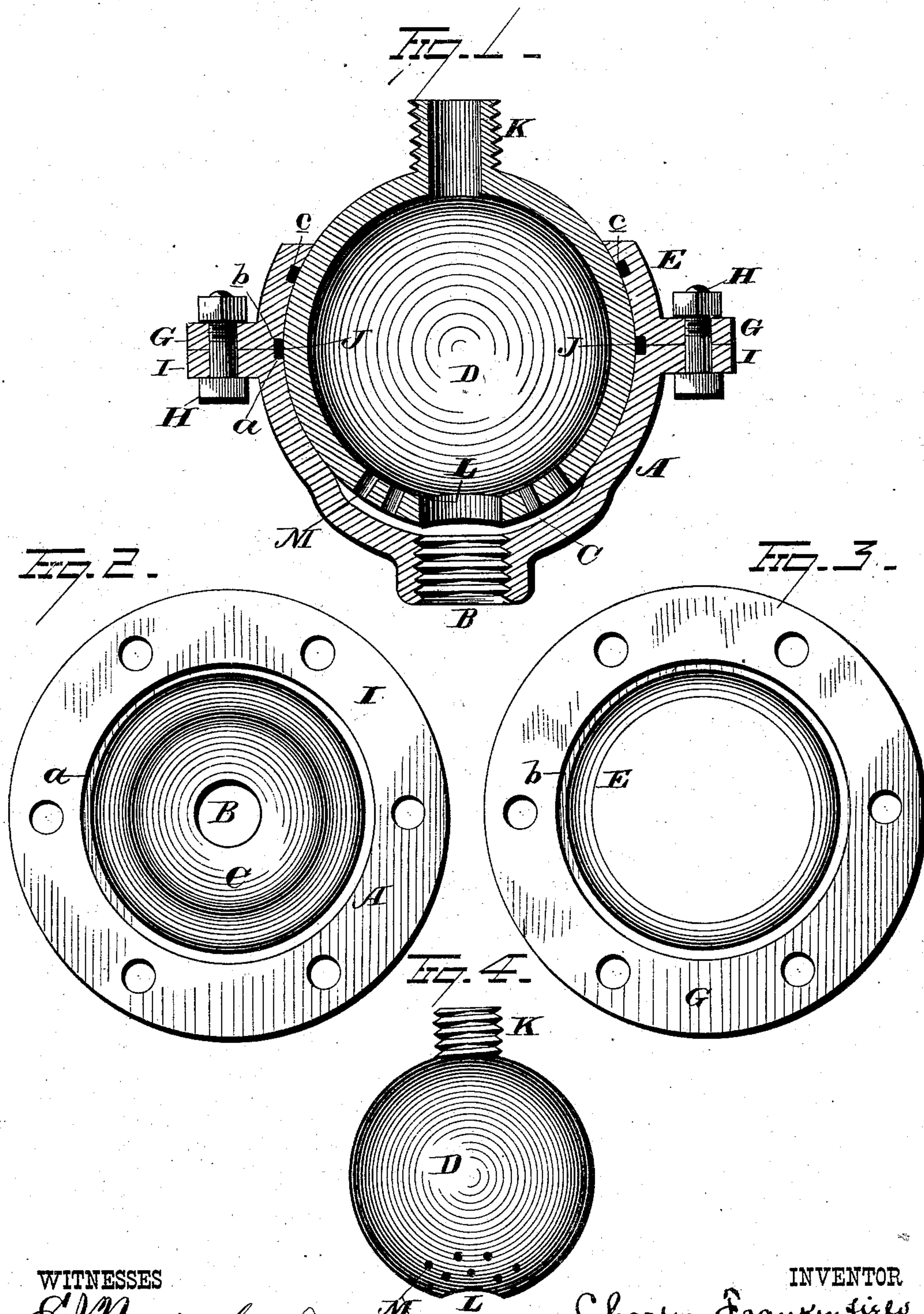
(Model.)

C. FRANKENFIELD.

Nozzle.

No. 242,768.

Patented June 14, 1881.



WITNESSES

*O. S. Nottingham*  
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# UNITED STATES PATENT OFFICE.

CHARLES FRANKENFIELD, OF STROUDSBURG, PENNSYLVANIA.

## NOZZLE.

SPECIFICATION forming part of Letters Patent No. 242,768, dated June 14, 1881.

Application filed March 22, 1881. (Model.)

*To all whom it may concern:*

Be it known that I, CHARLES FRANKENFIELD, of Stroudsburg, in the county of Monroe and State of Pennsylvania, have invented certain new and useful Improvements in Nozzles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in nozzles, the object being to provide an article of the character designated which will be adapted to be attached to stand-pipes and hydrants, and to be employed in other situations where it is desired to throw a stream of water at varying angles from an inflexible pipe as a source of supply.

With this object in view my invention consists in certain details of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in vertical cross-section of a nozzle constructed in accordance with my invention. Fig. 2 is a plan view of the hemispherical cup. Fig. 3 is a plan view of the under side of the retaining-ring; and Fig. 4 is a perspective view of the ball or sphere which is received within the cup shown in Fig. 2, and to which the nozzle proper is attached.

Let A represent a hemispherical cup, provided with an internally-screw-threaded perforation or inlet, B, by means of which the said cup, which constitutes the lower portion of the nozzle, is secured to the stand-pipe from which the water is derived. Inlet B is surrounded by an annular depression, which forms a water-chamber, C, in the cup, and subserves an important function in my invention.

D is a hollow sphere or ball, adapted to fit snugly within the cup A, and to be held therein by a ring, E, having a concave inner face, F, and provided with a flange, G, by means of which it is secured, by bolts H, to the flange I, encircling the upper edge of cup A. The cup A and ring E are grooved at *a* and *b*, respectively, to admit a rubber or equivalent packing, (shown at J,) said packing being designed to prevent the escape of water from the nozzle at

any point other than the provided outlet. The ring E is also provided with a groove, *c*, to receive packing material, to further insure the nozzle against the escape of water from other than the proper exit.

The sphere D is provided with a short exteriorly-screw-threaded pipe, K, secured thereto or made integral therewith, having open communication with the interior thereof and designed for the attachment of the nozzle proper, through which the water is thrown. As will be seen, nozzles may be readily attached to and detached from the pipe K, and thus exchanged, as the necessities of the particular use may demand those of different characters and apertures.

Inlet for water into the sphere D from the chamber C is made through perforations L and M in the lower portion of said sphere. The perforation L is the larger and registers with the inlet B of the cup when the sphere is in a vertical position. Perforations M, located in a small circle encircling perforation, L, provide ready access of water into the sphere when out of a vertical position.

A view of the drawings will render it clearly apparent that the sphere D will have a universal movement limited only by the engagement of pipe K with the upper edge of ring E. Water entering the sphere D from a vertical or fixed stand-pipe can thus be thrown in different directions, as may be desired. The advantages of such a nozzle will be readily appreciated and cannot be overestimated. The different parts composing it may be made of iron, cast or malleable, of brass, or of other suitable metal.

By adding one or more nozzles together, as by screwing the cup A of a second nozzle to the pipe K, and so on, a flexible metallic pipe can be obtained, having an almost unlimited movement in all directions. My improved nozzle may also be used to advantage as a joint for a sectional metallic hose by connecting lengths of pipe, say three or six feet in length, and winding them on a square reel hose-carriage.

I would have it understood that I do not limit myself to the exact construction shown and described, but hold myself at liberty to make such slight changes and alterations as

fairly fall within the spirit and scope of my invention.

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

1. The combination, with a hemispherical cup having an inlet-opening and a water-chamber in its lower portion, of a hollow sphere provided with inlet-opening on one side and outlet-opening on its opposite side, said hollow sphere having a bearing on the cup, and a ring secured to the cup and adapted to hold the hollow sphere against displacement, substantially as set forth.

2. The combination, with a hemispherical cup having an inlet-opening and a water-chamber in its lower portion, of a hollow sphere provided with a series of inlet-openings on one side and a single discharge-opening on its opposite side, said sphere being secured within the cup by a ring, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 16th day of March, 1881.

CHARLES FRANKENFIELD.

Witnesses:

JOHN N. SHIVELY,  
JOHN GORDON.