G. F. PALMER.
Hose-Nozzle.

No. 208,330. Patented Sept. 24, 1878.

Fig. 1.

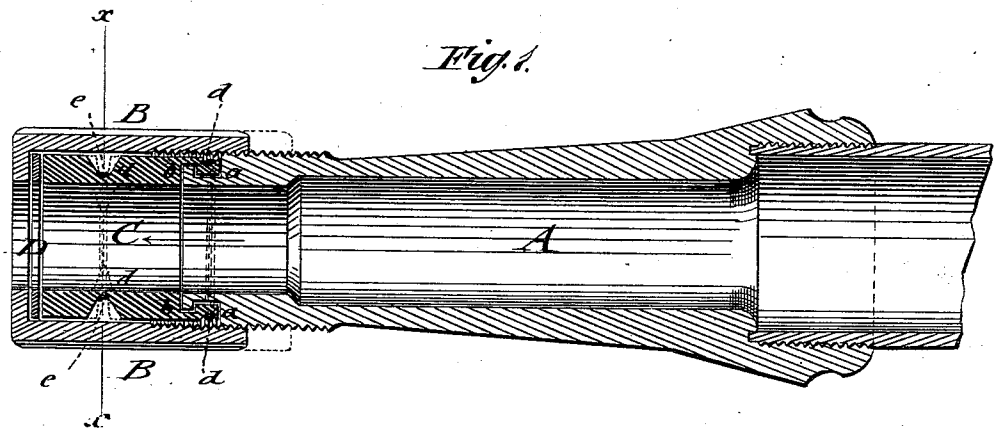
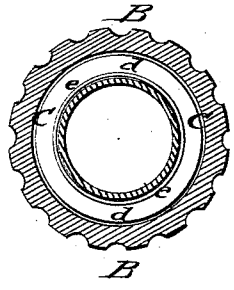


Fig. 2.



WITNESSES:
Frances McArdle.
C. Sedgwick

INVENTOR:
G. F. Palmer
BY Munn & Co
ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE F. PALMER, OF ROCHESTER, NEW HAMPSHIRE.

IMPROVEMENT IN HOSE-NOZZLES.

Specification forming part of Letters Patent No. **208,330**, dated September 24, 1878; application filed June 25, 1878.

To all whom it may concern:

Be it known that I, GEORGE F. PALMER, of Rochester, in the county of Strafford and State of New Hampshire, have invented a new and Improved Hose-Nozzle, of which the following is a specification:

In the accompanying drawings, Figure 1 represents a vertical central section of my improved hose-nozzle; and Fig. 2, a vertical transverse section of the same on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish, for hose of all kinds, an improved adjustable nozzle, by which the quantity of water discharged through the nozzle may be regulated with great facility without changing the nozzles, and without impeding in the least the free passage of the water, whether a large or small stream is used. The discharge may be proportioned to the supply and thrown with the same force in proportion to its size as a full stream, and to the greatest distance, according to the power applied.

The invention consists of a nozzle with an adjustable screw-cap, and with an elastic bushing interposed between nozzle and cap. One or more annular exterior grooves of the bushing serve to give form to the outlet of the nozzle when the bushing is compressed by the screw-cap.

The bushing is secured to the end of the nozzle and protected against friction with the cap by a steel washer.

Referring to the drawings, A represents a nozzle, of the usual shape and size, which is applied to the hose in any approved manner. A cap, B, screws onto the end of the nozzle, and may be adjusted thereon for the purpose of compressing an elastic bushing, C, so as to diminish or enlarge the outlet of the pipe.

The elastic bushing C is preferably made of rubber, and secured to the end of the nozzle by means of an outer annular recess, *a*, and an interior annular recess of the bushing, so that nozzle and bushing interlock. A small cord or wire, *d*, is wound around the outside of the bushing, so as to rigidly retain it on the nozzle.

Between the outer end of the bushing and the front shoulder of the cap is interposed a steel washer, D, that takes off the friction between cap and bushing.

The bushing C is arranged with one or more exterior annular grooves, *d*, which produce the enlarging or diminishing of the size of the outlet or discharge orifice of the nozzle by unscrewing or screwing up the cap. The outlet is contracted, so that a stream of water can be reduced from the full size of the outlet to one-half inch or less diameter with great facility by merely turning the screw-cap. Thus the size of the stream of water is graduated without destroying its force in the least, in proportion to the amount of water used, as the outlet is not obstructed in the least.

A small cord or wire, *e*, is wound around the outer groove, *a*, in the center of the same, for preventing the outward bulging of the bushing when being compressed. The outer surface of the bushing has to be properly lubricated to facilitate the adjustment of the screw-cap, and the consequent regulation of the outlet of the nozzle.

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

1. The combination, with a hose-nozzle, of an elastic bushing attached thereto, of an adjustable screw-cap, and of a washer interposed between front shoulder of cap and outer end of bushing to take up friction, substantially as set forth.

2. In a hose-nozzle, an elastic bushing having one or more exterior annular grooves, for the purpose set forth.

3. In a hose-nozzle, an elastic bushing having one or more exterior annular grooves and an encircling wire or cord in the groove or grooves, to prevent outward bulging of bushing, substantially as described.

GEORGE FARRER PALMER.

Witnesses:

GEORGE H. ROGERS,

NATHANIEL BURNHAM.