(No Model.)

3 Sheets—Sheet 1.

C. H. PHILLIPS.

NOZZLE.

No. 550,643. Patented Dec. 3, 1895.

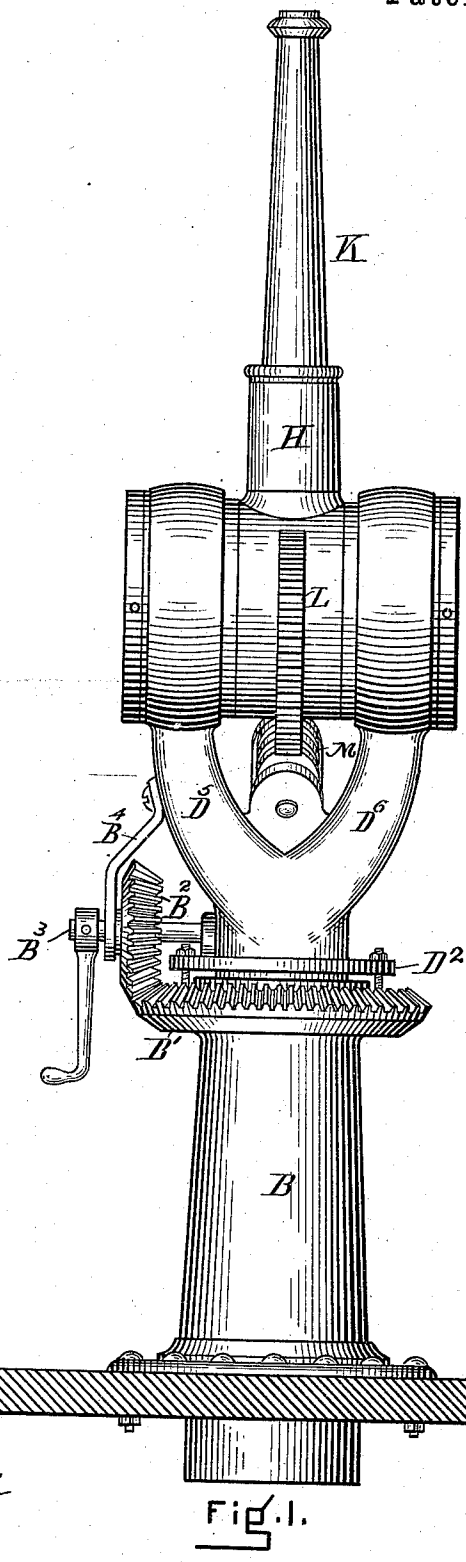

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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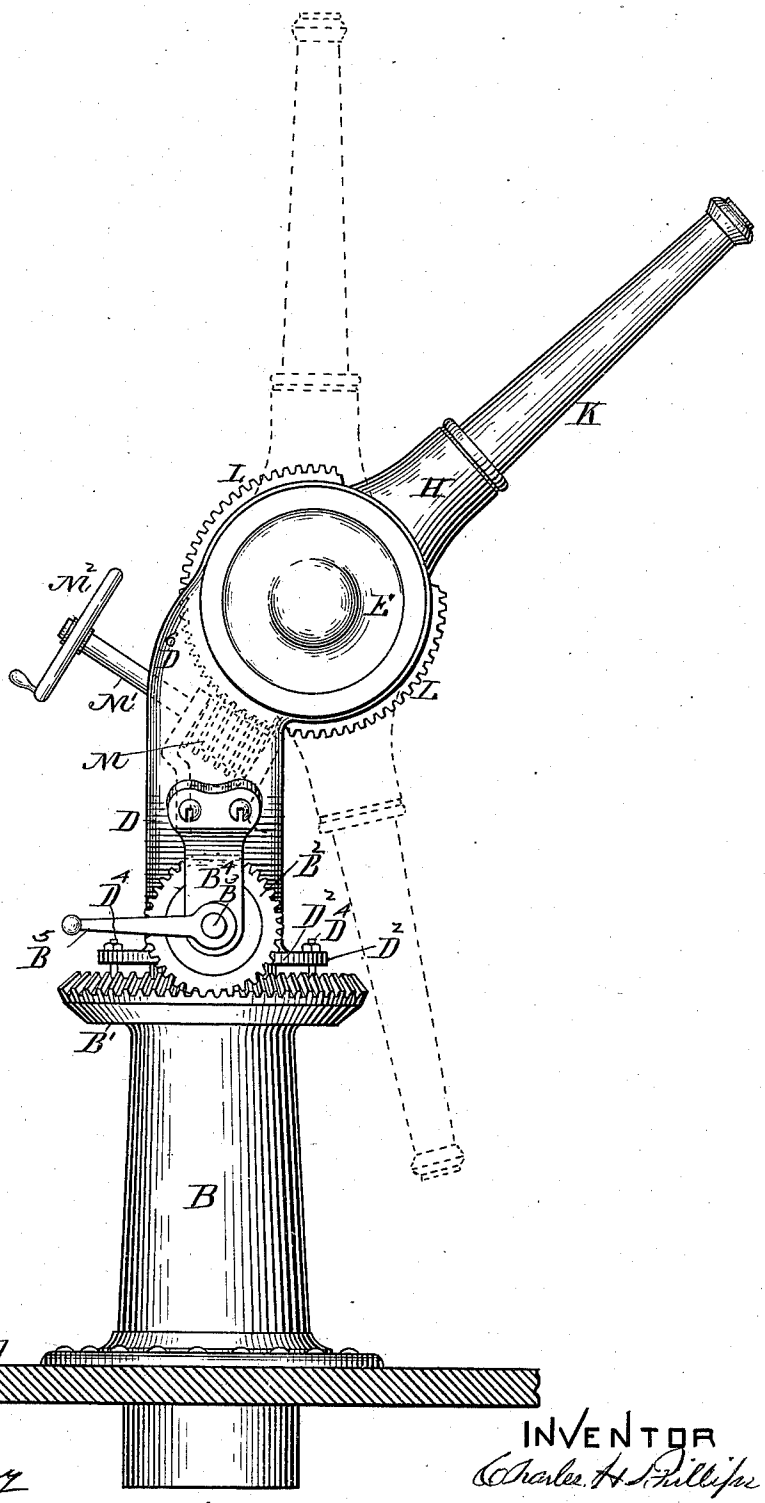

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Fig. 2.

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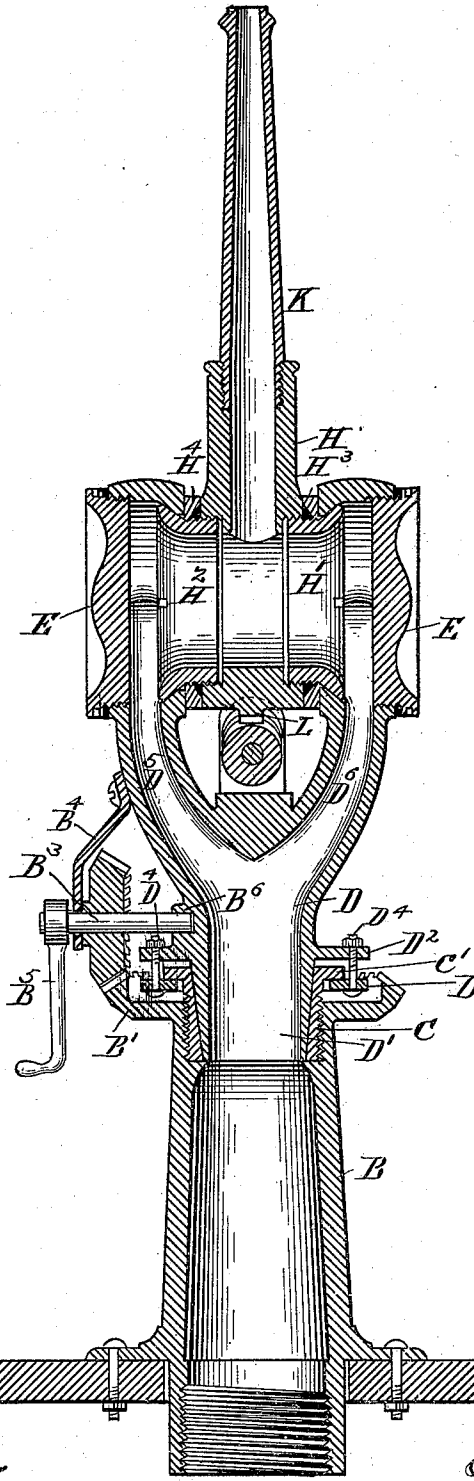

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Fig. 3.

UNITED STATES PATENT OFFICE.

CHARLES H. PHILLIPS, OF MALDEN, MASSACHUSETTS.

NOZZLE.

SPECIFICATION forming part of Letters Patent No. 550,643, dated December 3, 1895.

Application filed November 26, 1894. Serial No. 530,015. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. PHILLIPS, of Malden, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Nozzles, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to that class of water-nozzles that are attached to fixed bases and are adjustable as to direction of discharge, the object being to so construct the device that the nozzle may be adjusted to stand in any desired position and to discharge a stream of water in any desired direction without interfering with or diminishing its water-way. This object I attain by the mechanism shown in the accompanying drawings, in which—

Figure 1 is a front elevation of my device. Fig. 2 is a side elevation of the same. Fig. 3 is a vertical section of the same.

In the drawings, let A represent a base-floor or foundation of any kind, to which I attach a base-piece or standard B, which is hollow and is connected with the water-supply.

B′ is a beveled gear forming a part of or attached to the standard B.

D is a pipe having at its lower end a flange D^2 and a coned terminal D′, adapted to fit into and form a water-tight joint with the screw-bushing C. The bushing C has a flange C′ at its upper end, as shown, and is adapted to engage with a clamping-ring D^3, which is adjustably held by screw-bolts D^4 D^4 to the flange D^2 of the bifurcated pipe D. The upper end of the pipe D has two branches D^5 D^6, each of which is formed with an opening extending laterally through it. These openings are adapted to receive annular bushings H′ H^2 for connecting interiorly the branches D^5 and D^6 to the nozzle-piece H. The nozzle-piece H has an opening extending laterally through it, into which the bushings H′ H^2 are screwed, as shown in Fig. 3. The bushings H′ H^2 serve as trunnions (journaled in the circular openings made in the branches D^5 D^6 of the pipe) for the nozzle-piece H to turn upon.

H^3 H^4 are packing-rings, which serve, together with some suitable packing, to make a tight joint, and also serve as check-nuts to prevent the bushings H^2 and H′ from unscrewing and thus becoming loose in the nozzle-piece H.

K represents the nozzle, which is screwed into the nozzle-piece H.

The lateral openings in the branches D^5 D^6 of the pipe are closed by head-pieces E E. (See Fig. 3.)

The fact that the bushings H′ H^2 overhang the openings in the branches D^6 D^5, as shown in Fig. 3, insures the tightening of the joint between the said bushings and the branches when the pressure of the water forces the branches apart.

By the above-described arrangement of the several parts it may be seen that the nozzle may freely swing from the vertical upright position indicated by dotted lines in Fig. 2 to the nearly or quite vertically downward position, also indicated by dotted lines.

Motion in the vertical plane is given to the nozzle by the following-described device: A ring worm-gear L is formed on the periphery of the nozzle-piece H and adapted to engage with the worm M, as shown. The worm is turned by the hand-wheel M^2 on the shaft M′ of the said worm. The worm M, acting on the worm-gear L, not only serves to turn the nozzle in the direction desired, but it also serves to hold it rigidly in place.

I will now describe the mechanism for turning the nozzle in a horizontal plane.

B^2 is a beveled gear having a shaft B^3, which has bearings in the pipe D at B^6, Fig. 3, and in the bracket B^4, which is bolted to the branch D^5 of the pipe D. A crank B^5 serves to turn the gear B^2. As the gear B^2 engages with the fixed gear B′ on the stand B, it is evident that by turning the gear B^2 the pipe D D′ D^2 and all parts connected to it will be turned. Thus the nozzle K may be turned in any desired direction.

If thought desirable, one of the branches D^5 D^6 may be omitted—that is, the pipe D may be single, having an opening on one side only, to which the nozzle-piece H can be attached by a bushing, like H^2, and a screw-ring, like H^4. In this case the nozzle H also has but one side opening.

I claim—

In combination a delivery nozzle interiorly connected to an annular nozzle-piece, said nozzle-piece being provided with lateral bushings adapted to serve as trunnions as well as water ways and journaled in the branches of

a bifurcated pipe, and the bifurcated pipe, the said bushings being so made as to overhang the openings in the bifurcated pipe as described, whereby the pressure of the water will have a tendency to make the joints between the said bushings and the bifurcated pipe draw together and become tighter as the pressure of the water increases, substantially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 22d day of November, A. D. 1894.

CHARLES H. PHILLIPS.

Witnesses:
EDWARD S. DAY,
WM. P. PERRY.