

(No Model.)

W. F. EVANS.  
SPRINKLER HEAD.

No. 600,065.

Patented Mar. 1, 1898.

Fig. 1.

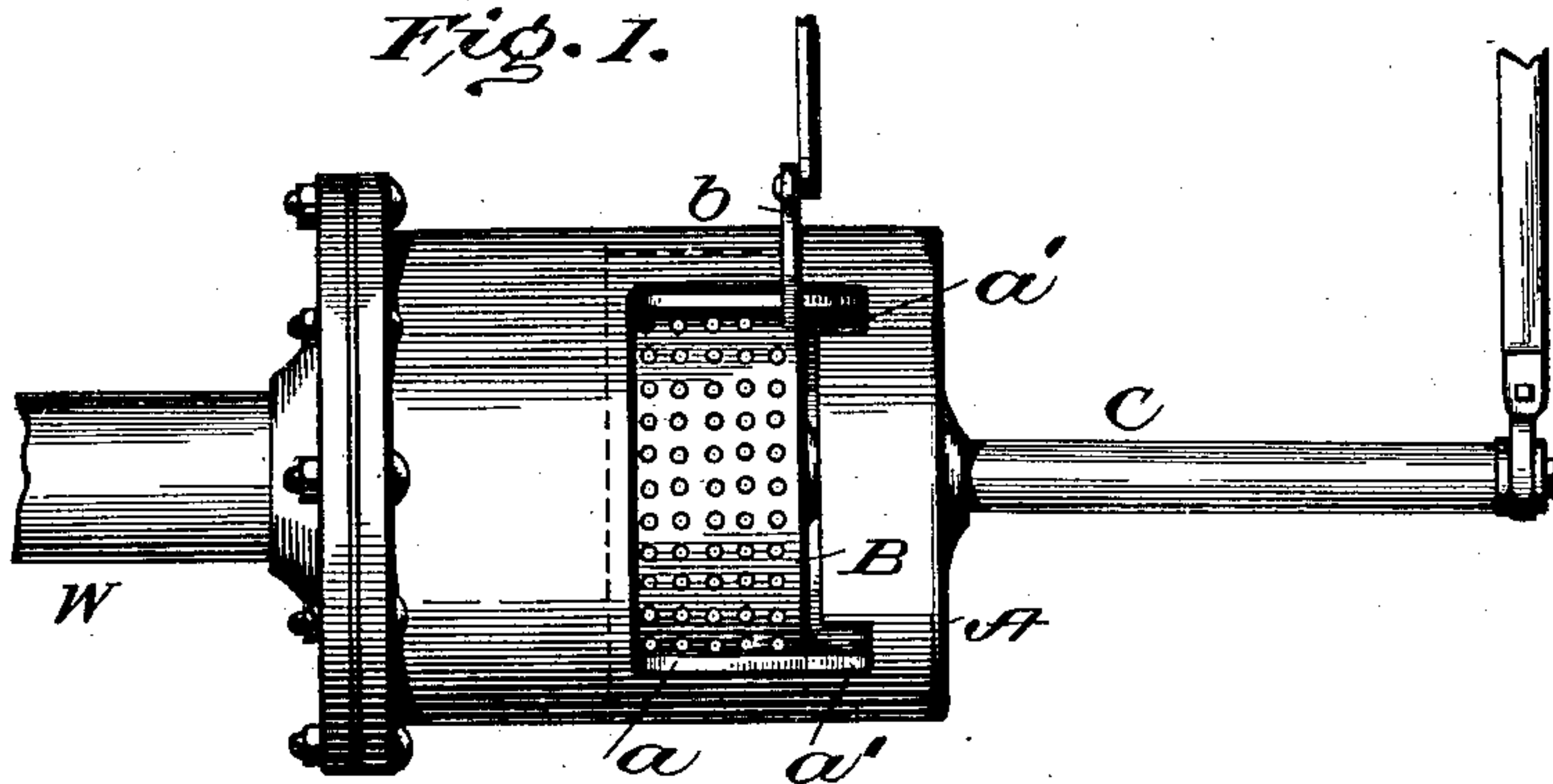


Fig. 2.

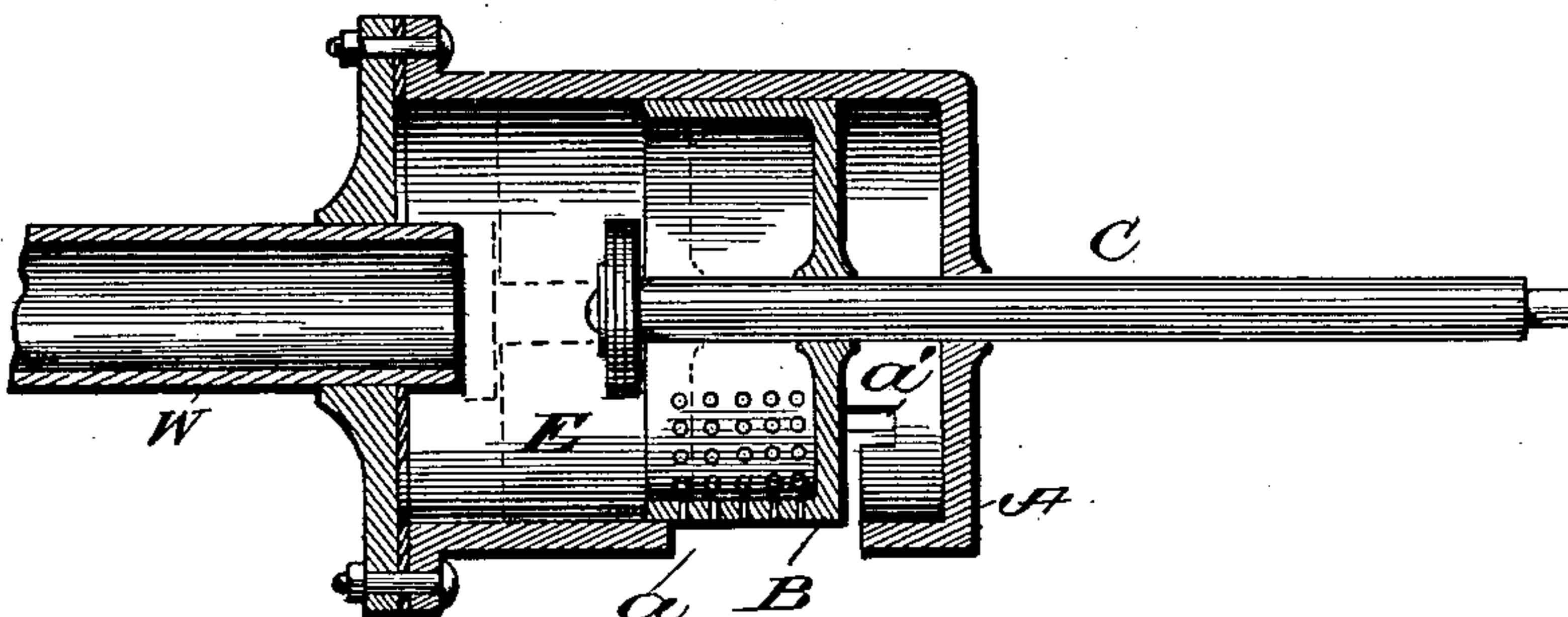


Fig. 3.

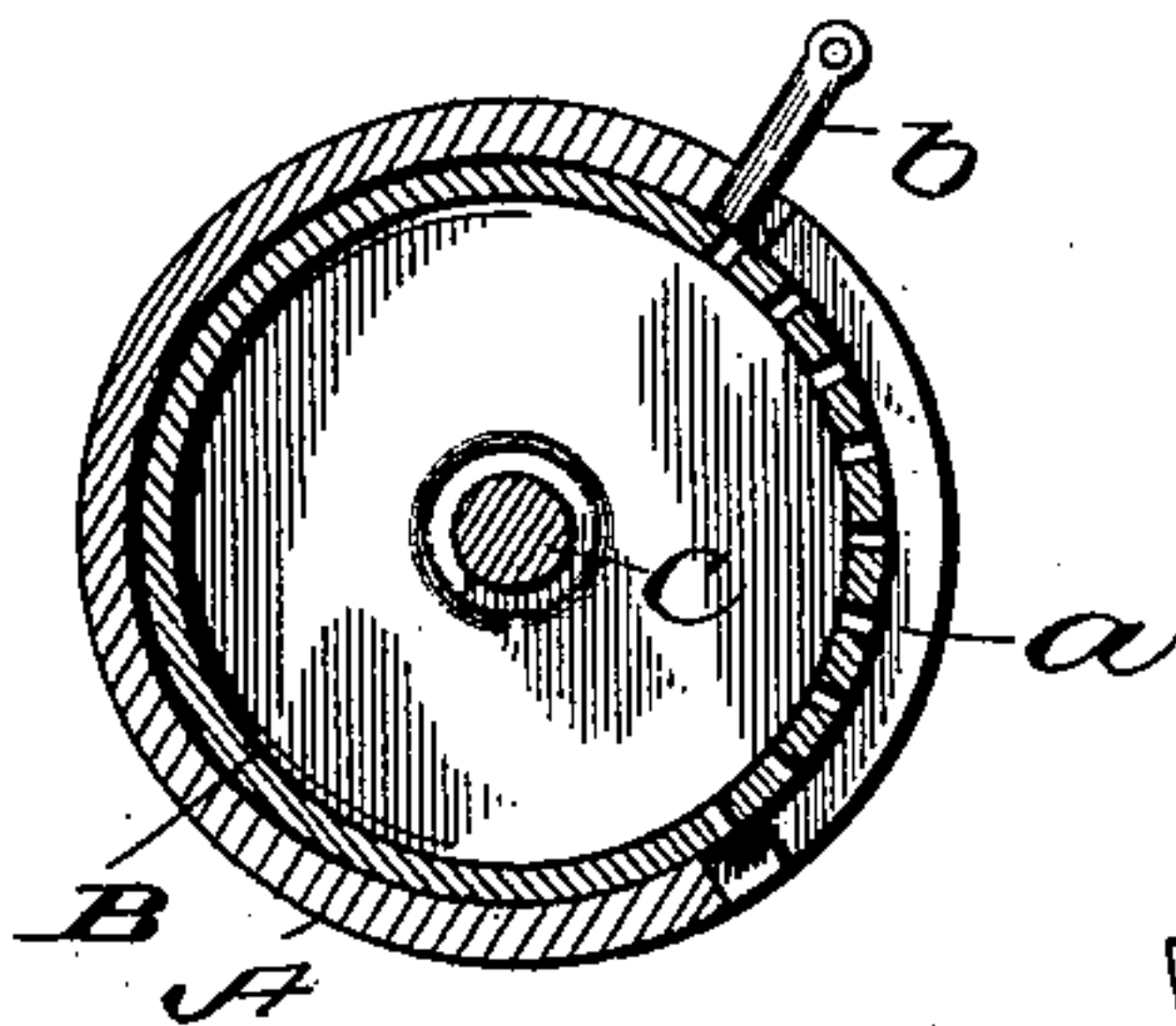
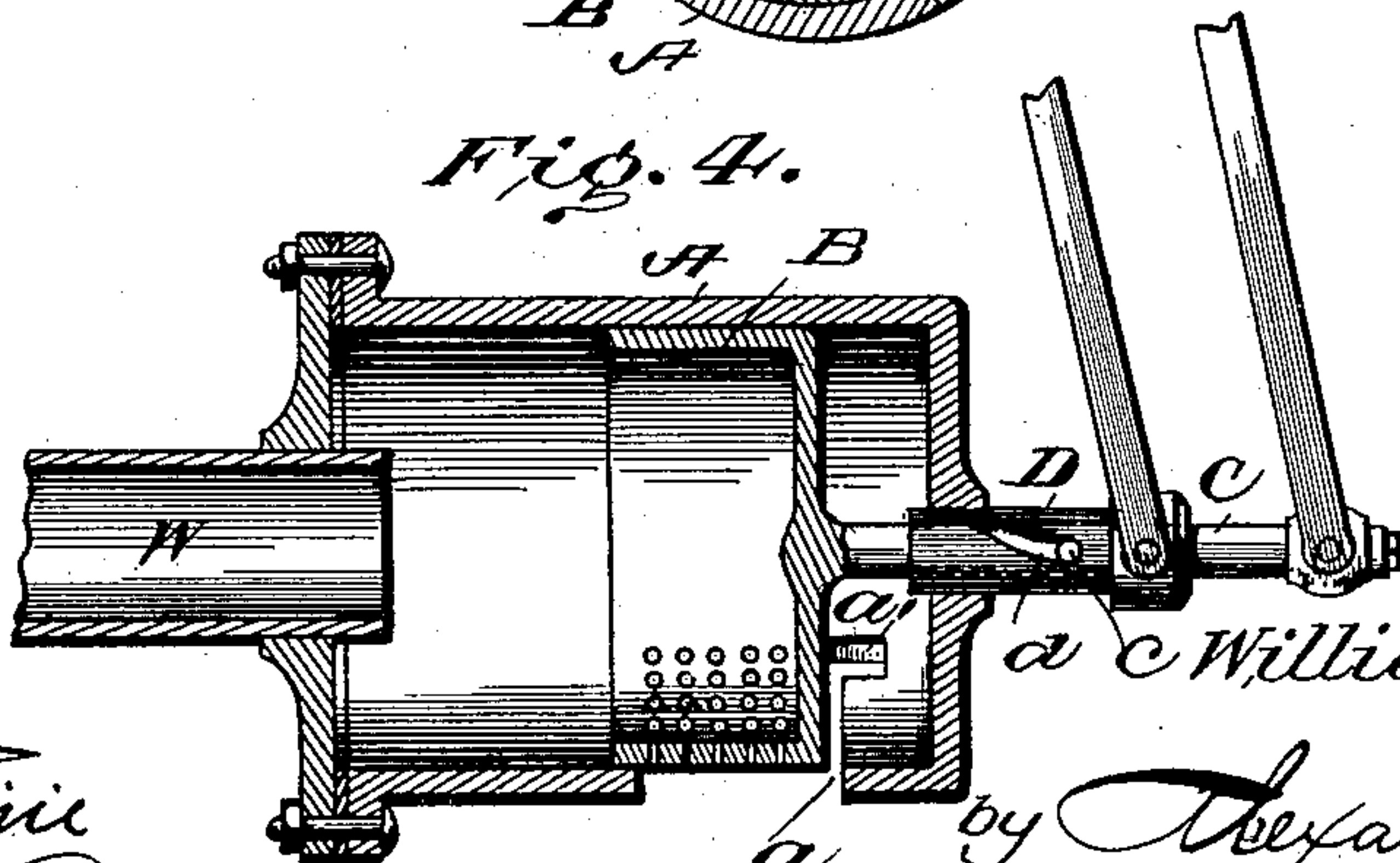


Fig. 4.



Witnesses

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# UNITED STATES PATENT OFFICE.

WILLIAM FRANCIS EVANS, OF SOUTH BEND, INDIANA.

## SPRINKLER-HEAD.

SPECIFICATION forming part of Letters Patent No. 600,065, dated March 1, 1898.

Application filed July 15, 1897. Serial No. 644,699. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM FRANCIS EVANS, of South Bend, in the county of St. Joseph and State of Indiana, have invented certain new and useful Improvements in Sprinkler-Heads; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is an improvement in sprinkler-heads for street-sprinkling machines and other applications in the useful arts; and it consists in the novel construction and combination of parts hereinafter described and claimed, and the best forms of which are illustrated in the accompanying drawings, in which—

Figure 1 is a side plan view of one of the sprinkler-heads in position for sprinkling. Fig. 2 is a vertical longitudinal section through the same on line 2 2, Fig. 1. Fig. 3 is a transverse section on line 3 3, Fig. 2. Fig. 4 is a longitudinal sectional view of a modification.

A designates a cylinder closed at one end and flanged at its other end for attachment to the water-supply pipe W. Preferably the cylinder is of a larger diameter than the supply-pipe. The cylinder has a transverse opening *a* in one side, Fig. 1, for the escape of the water.

Fitted within the cylinder and capable of longitudinal movement therein is a hollow cup-shaped piston B, open at the end next the water-inlet. The shell of the piston at the lower side is numerously perforated, as shown, so that when the piston is drawn forward, as in Fig. 1, to overlie more or less the opening *a*, water can escape in jets through the perforations in the head and the opening in the cylinder. When the piston is pushed back, so that its perforations no longer overlie opening *a*, the escape of water is prevented, and therefore it is obvious that by shifting the piston more or less forward more or less of the perforations therein will be unclosed, so that a greater or less quantity of water will be set free, and thus the quantity of water escaping in a given time is easily controlled.

The position of the piston is easily con-

trolled by the piston-rod C, which projects through the closed end of cylinder A and is connected to the usual system of links and levers, whereby the piston can be shifted and controlled by the foot or hand of the driver or by any suitable manipulating mechanism not forming part of this invention.

The piston may be rotatable on the rod or the rod rotatable with the piston for the purpose of permitting a further regulation or control of the sprinkling capacity of the device. As shown in Fig. 1, the piston has a short arm *b* depending from it through opening *a*, so that the piston can be partly rotated in the cylinder, thereby laterally lessening the number of perforations registering with opening *a* and reducing the area that will be sprinkled. By this means the water can be cut off at either side of the cylinder and the jets confined to only one side thereof, and this feature I consider very useful. The arm *b* may for convenience be connected by any suitable series of links and levers, so that the piston can be rotated by the foot or hand of the driver. Such systems of links and levers or equivalent mechanism not being novel or essentials of the present invention are not illustrated herein.

The cylinder can be flushed out or the water allowed to escape in a body by shifting the piston to the front end of the cylinder, so as to uncover opening *a*. In this position the interior of the piston and cylinder is readily accessible.

In Fig. 4 the piston-rod C passes through a longitudinally-adjustable collar D in the closed end of the cylinder, said collar having a cam-slot *d* engaged by a pin *c* on the rod, so that as the piston is shifted longitudinally of the cylinder it is also rotated on its axis. The collar D may be shifted in or out by a system of levers such as is used to move the piston, (not shown,) so as to be readily controlled by the driver. The object of this collar D is to limit the rearward extension of the piston, and as this collar is shoved in it is evident that fewer rows of perforations will be exposed through the sprinkling-slot, and by means of this lever and collar the play of the piston can be regulated so that one row or two rows or three rows or any given series



of perforations may be exposed by simply drawing the piston backward until the pin in the stem will come to the end of the slot.

In shutting off the water on passing a vehicle the stem of the perforated piston would be pushed in, and the pin *c* in the slot of sleeve *D* will cause the piston to rotate, thus cutting the water off in two directions. The series of perforations will be cut off by the inward movement of the piston, and the length of each series will be shortened by the rotation of the piston within the cylinder, and the direction, it is evident, or the trajectory of the jets of water from the various perforations will be shortened, and they will be caused to strike the ground closer to the wheel of the sprinkling-wagon. This is an advantage in passing a vehicle and sometimes in passing a corner or in sprinkling along a curb.

In Fig. 2 the rod *C* projects through the piston and has a valve *E* on its inner end adapted to close the end of water-pipe *W* when the piston is pushed clear back, thus cutting off the water both by the piston and by said valve.

The operation of the device is as follows: By means of rod *C* the perforated piston is thrown back in the cylinder, cutting off one or more rows of perforations, and thus limiting the discharge of the sprinkling stream. When the head has been entirely forced in, it is evident that the last row of perforations will be also cut off and the sprinkling will cease. The jets discharge through the opening *a* in the side of the cylinder, which is provided with notches *a'*, so that the perforated piston may be withdrawn far enough to allow its rear edge to clear the rear edge of the opening of head *A*, thus leaving a free outlet for the water, by means of which the head may be flushed. By means of arm *b* the head may be rotated, thus cutting off a series of perforated holes and directing the stream through the remaining holes downward or upward, thus making the water discharge closer to the wagon or farther from it. The object of this rotation of the piston is to prevent sprinkling upon passing vehicles. One of these heads is attached to each side of the sprinkling-car,

at the rear of the same, or, if desired, between the wheels in the usual manner, and the streams which are thrown out of the perforations will join at the center of the vehicle and spread from thence as far as the force of the water will carry them.

Obviously various modifications may be made in the shape and construction of parts without departing from my invention, whose principal features are a perforated piston, a perforated rotatable piston, and a longitudinally and rotatably adjustable piston.

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

1. In a sprinkler-head, the combination of the cylinder having a lateral opening, with a hollow piston in said cylinder having lateral perforations adapted to register with said opening, for the purpose and substantially as described.

2. In a sprinkler-head the combination of the cylinder having a lateral opening, with the hollow longitudinally and rotatably adjustable perforated piston in said cylinder, substantially as and for the purpose set forth.

3. In a sprinkler-head, the combination of the cylinder having a lateral opening and connected to the water-supply pipe at one end; with a hollow perforated piston longitudinally adjustable in the cylinder, a piston-rod, and a valve on said rod to close the water-pipe, for the purpose and substantially as described.

4. In a sprinkler-head, the combination of the cylinder, the hollow perforated rotatable piston, the piston-rod, the collar fitted around said rod, and the cam-groove and pin connection between said collar and rod, whereby the rod and piston are rotated simultaneously with their longitudinal movement substantially as and for the purpose described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

WILLIAM FRANCIS EVANS.

Witnesses:

JAMES DUSHANE,  
EDWARD F. DUBAIL.