

(No Model.)

E. HAND.  
HYDRANT.

No. 353,217.

Patented Nov. 23, 1886.

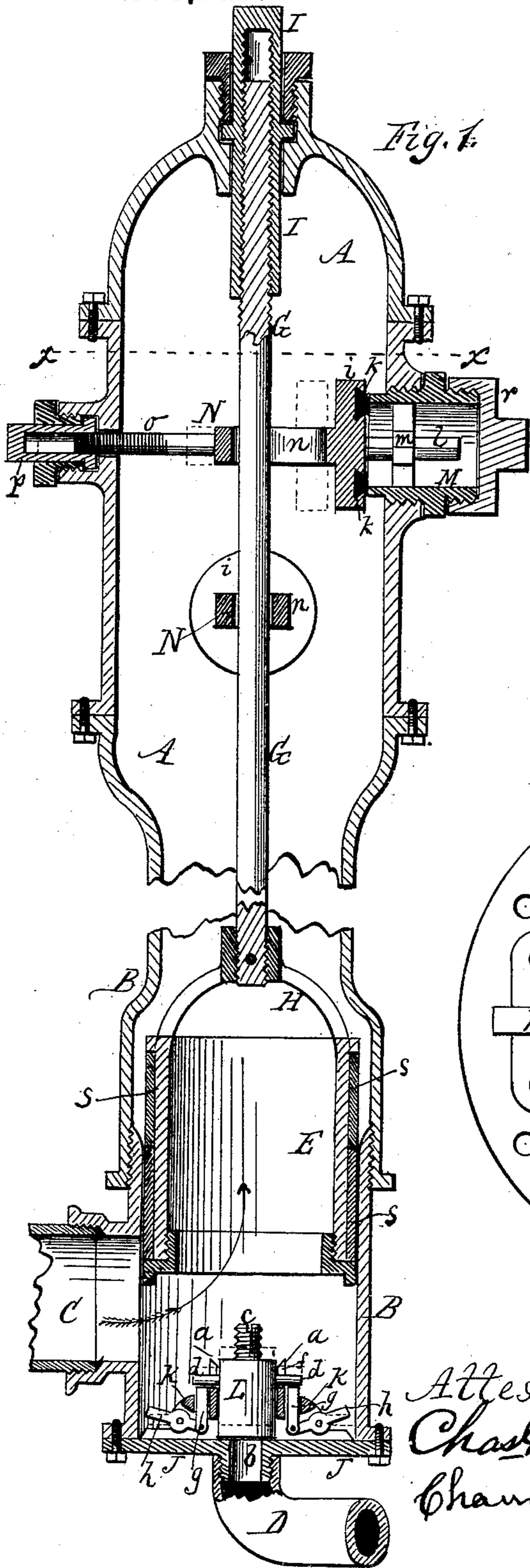


Fig. 1.

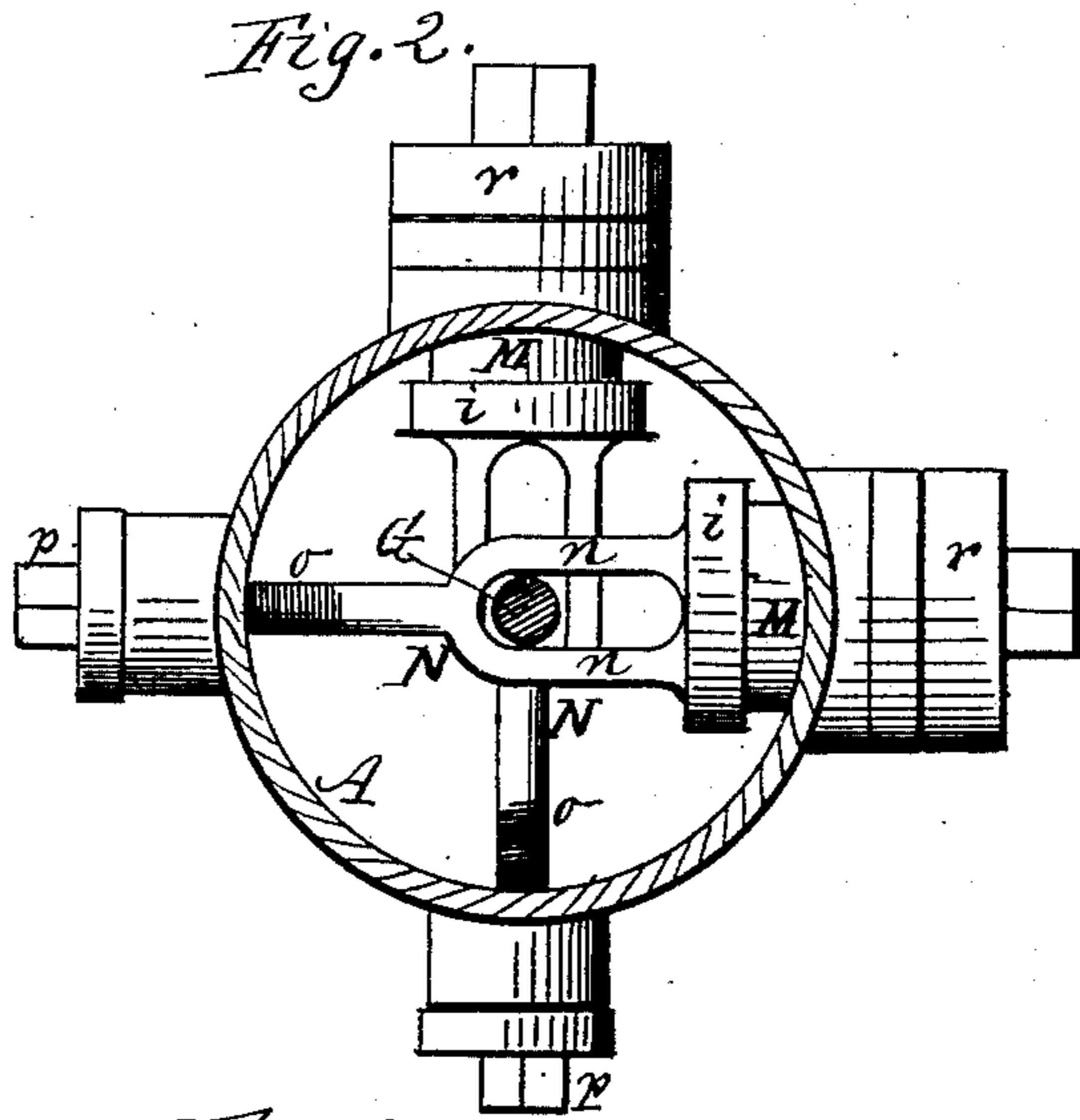


Fig. 2.

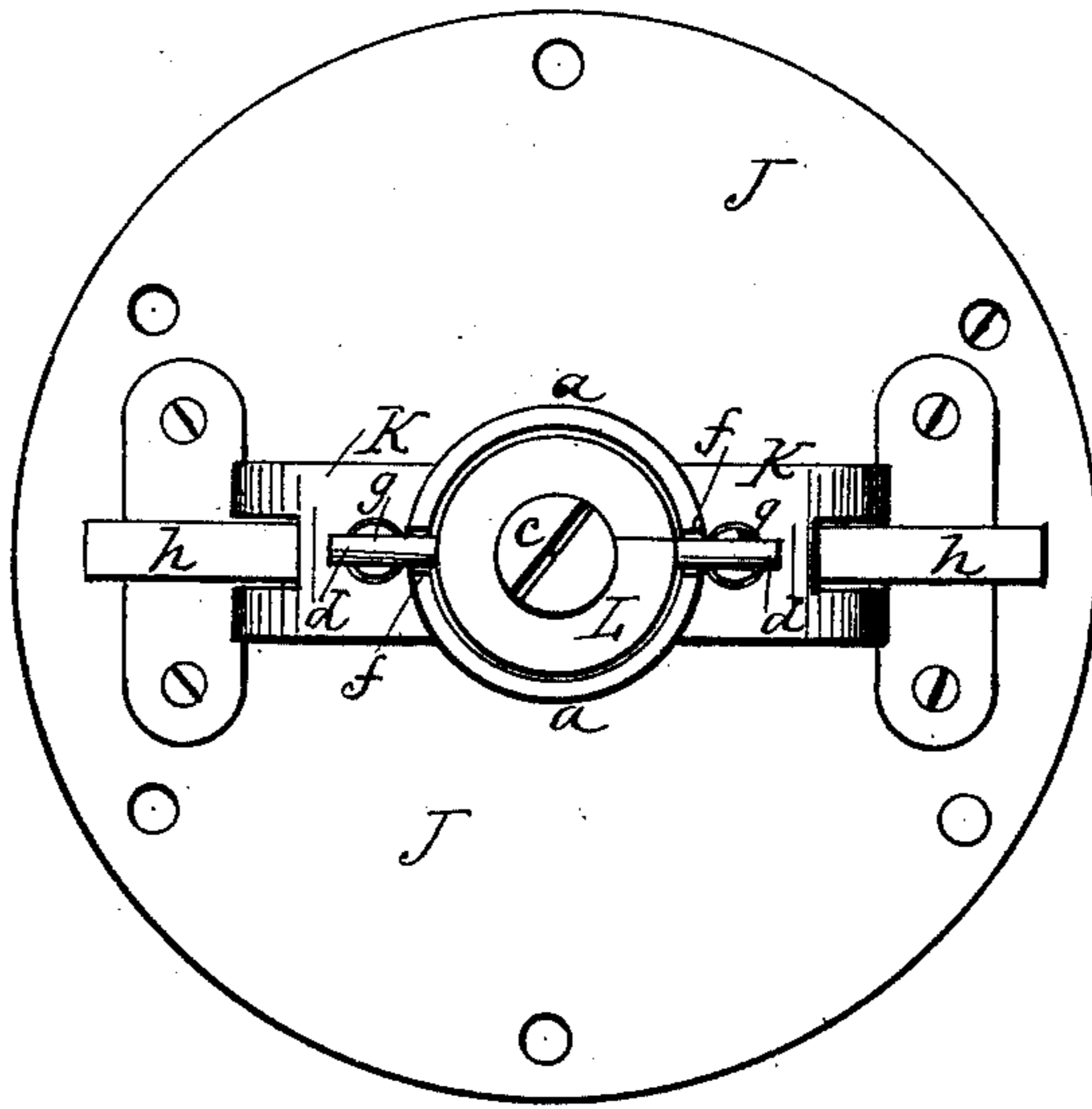


Fig. 3.

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# UNITED STATES PATENT OFFICE.

EKINS HAND, OF ROCHESTER, N. Y., ASSIGNOR OF THREE-FIFTHS TO PETER E. RIVARD AND ROBERT C. KERSHNER, BOTH OF SAME PLACE.

## HYDRANT.

SPECIFICATION forming part of Letters Patent No. 353,217, dated November 23, 1886.

Application filed August 20, 1886. Serial No. 212,164. (No model.)

*To all whom it may concern:*

Be it known that I, EKINS HAND, a citizen of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Hydrants; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

The object of my improvement is to prevent the accumulation of water and the consequent freezing, and also to facilitate the attachment of hose; and the invention consists in the construction and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a central vertical section of a hydrant, showing my invention, the middle portion of same being broken away. Fig. 2 is a cross-section of same in line *x x* of Fig. 1. Fig. 3 is an enlarged plan view of the bottom plate of the hydrant, showing the valve arrangement.

A indicates the top and B the bottom portions of the hydrant, which are of usual form, and are connected by a hollow trunk, which is shown as broken away.

C is the induction-pipe leading from the main, and D is a discharge-pipe at the bottom, leading to a sewer and serving to discharge the waste water, as will presently be described.

My improvement is as follows:

E is a cylinder forming a cut-off, which rests inside the barrel of the hydrant, at the bottom. This cylinder is made hollow and open-ended at both ends, and it is moved up and down by means of a rod, G, attached to it by a bail or arch, H, said rod extending up to the top of the hydrant, and provided with a screw-thread that rests in a long threaded nut, I, which has rotary but not vertical movement. When the cylinder is raised above the induction-pipe C, as shown in Fig. 1, the water passes up through the hollow cylinder to the top of the hydrant and rests under pressure, and is in condition to be discharged through the nozzles; but when said cylinder is forced down below the induction-opening it cuts off the supply of water, and such water as remains in the hydrant passes down through the hollow cylinder, and is discharged through the discharge-pipe D at

the bottom by means of the valve arrangement presently to be described.

J is the bottom plate of the hydrant.

K is a frame or bearing attached to said bottom plate, and provided with a central cylindrical seat, *a*, in which rests a cylindrical valve, L, having a square lower end, which rests over the opening *b*, that leads to the discharge-pipe. The joint is preferably ground to make a close fit. The upper end of the valve is provided with a screw-stem, *c*, by which a rod with a screw-socket can be inserted down through the hydrant at any time to remove the valve. The valve is also provided with radially-projecting studs *d d*, which rest in slots *f f* in the sides of the valve-seat, to prevent the valve from turning out of position with the raising devices.

*g g* are pins resting in sockets under the studs *d d*, and pivoted to the lower ends of rock-arms *h h*. The outer ends of these arms are elevated and rest in such position as to be struck by the rim of the cylinder E when pressed down to the bottom of the hydrant.

It will be seen that when the cylinder is raised the induction-water will be admitted and the discharge-valve will be closed, and when the cylinder is forced down the supply will be cut off and the waste-valve will be opened. By this means all the water can be discharged from the hydrant and there will be no danger of freezing. It obviates the collection of water in the bottom of the hydrant, which occurs where a waste-hole is simply used some distance above the bottom, as in common hydrants.

M M are the nozzles for the discharge of the water at the top of the hydrant. As many of these may be used as desired, two being shown in the drawings.

N N are rods used in connection with the nozzles to cut off the flow. Each of these rods has a head, *i*, inside the hydrant, provided with a packing, *k*, that shuts against the inner end of the nozzle, also a stem, *l*, that slides in a bearing, *m*, of the nozzle, to keep the valve in position. The central part of the rod is slotted, as shown at *n*, this slotted part embracing the piston-rod G and allowing sufficient end movement for the valve to open and close. At the rear is a screw-threaded stem, *o*, which screws into an elongated nut, *p*, turn-

ing freely in a seat in the opposite side of the hydrant from the valve, but having no end movement. By turning this nut the valve can be forced in to close against the end of the nozzle or drawn back to open it.

5 *r* is a closed cap that screws on the outer end of the nozzle. The forked portion *n* of the valve-rod allows the passage of the piston-rod *G*, and this piston rod prevents the valve-rod  
10 from turning as the nut is turned to open or close it.

By the means above described the valves that control the nozzles can be opened and closed from the opposite side of the hydrant  
15 from the valve, and in attaching a hose it is only necessary to remove the outer covering-cap, screw the hose on, and then open the valve; and a hose can be applied to any one of the nozzles without affecting the others, which  
20 in many hydrants cannot be done.

The cylinder *E* is provided with metallic packing-rings *s s*, similar to those in use on the pistons of steam engines.

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

1. In a hydrant, the combination of the open-

ended cylinder, forming a cut-off to the induction-water, the valve covering the discharge-opening at the bottom, said valve provided  
30 with radially-projecting studs, the cylindrical seat in which the valve rests, the vertically-acting pins resting under the studs of the valve, and the rock-arms to which the pins  
35 are pivoted, said rock-arms standing in position to be struck by the cylinder in descending, thus tripping the valve, as set forth.

2. In a hydrant, the combination, with the discharge-nozzle, of a valve-rod constructed  
40 with a valve which shuts against the inner end of the nozzle, a forked central portion that embraces the piston-rod, a guide-stem that rests in a bearing of the nozzle, and a screw-stem that enters a nut on the opposite side of the  
45 hydrant from the valve, as herein shown and described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

EKINS HAND.

Witnesses:

R. F. OSGOOD,  
E. P. FOLLETT.