J. K. RUGG.

HYDRANTS.

No. 189,790. Patented April 17, 1877.

Fig. 1.

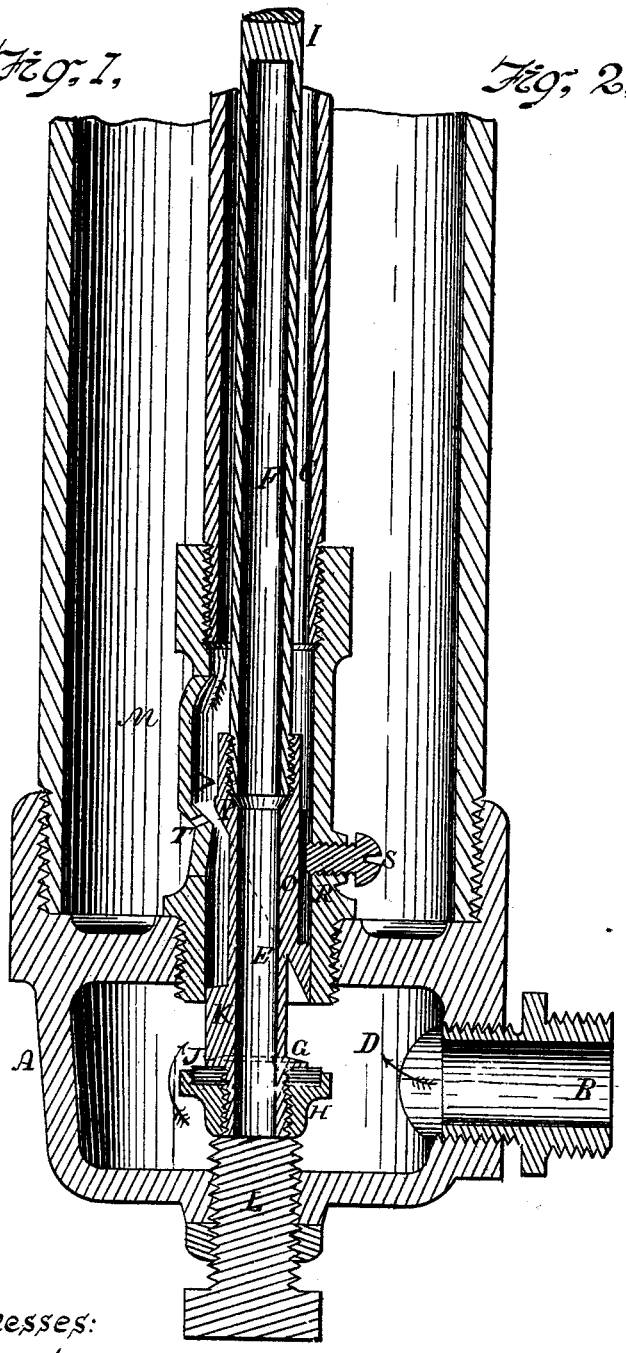
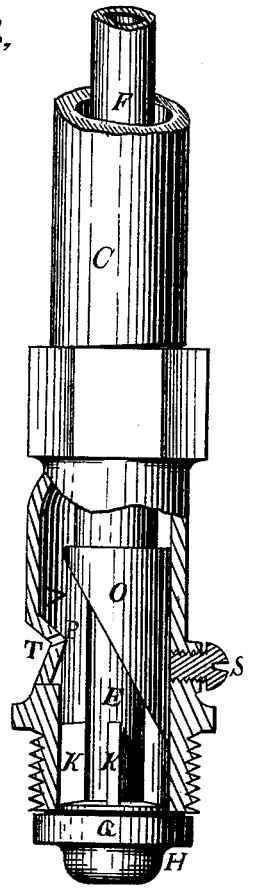


Fig. 2.



Witnesses:

J. Hood Wagner.

A. H. Norris.

Inventor:

Joseph K. Rugg.

By James L. Norris.

Attorney.

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

UNITED STATES PATENT OFFICE.

JOSEPH K. RUGG, OF NEWPORT, KENTUCKY.

IMPROVEMENT IN HYDRANTS.

Specification forming part of Letters Patent No. **189,790**, dated April 17, 1877; application filed September 11, 1876.

To all whom it may concern:

Be it known that I, JOSEPH K. RUGG, of Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improved Hydrant, of which the following is a specification:

My invention relates to an improved hydrant; and consists in the construction and arrangement of the parts hereinafter described.

Figure 1 is a sectional elevation, taken through the center of my improvement, and Fig. 2 is a side elevation of the valve and stem, also a section of lower end of discharge-pipe with the valve closed against its seat.

A represents the base of the hydrant; B, the supply-pipe; C, the discharge-pipe; D, the supply-chamber, into which the supply-pipe B enters and the valve G opens. E is a hollow valve-stem projecting from the valve G up into the discharge-pipe C. F represents a valve-rod, connecting the valve-stem E with some suitable device at the top of the hydrant, by which the valve G is operated. G represents a disk-valve, which seats against the end of discharge-pipe C. J represents a leather packing, constituting the face of the valve G, and is kept in place by the cap H screwing onto the valve-stem E. K represents wings, cast on the valve-stem E, and project to correspond with the area of discharge-pipe C, and serve as guides for the valve G. L represents a screw-plug, passing up through the bottom of the base A into chamber D, against which the valve G opens. O represents an annular plug, beveled on its under side and surrounding the valve-stem E, the area of which conforms to the area of the lower end of the discharge-pipe C, excepting on the side where the bevel terminates. It is flattened or cut away to form port P, which makes the water-passage connecting chamber D with pipe C. R represents a groove cut into the annular plug O, into which the screw S projects to keep the stem E from turning when the valve G is opened or closed. M represents a chamber or reservoir, made by surrounding the discharge-pipe C with a metallic tube of sufficient area to hold the waste-water, and long enough to reach from the surface of the ground down to a point out of reach of frost, to the lower end of which the base A is secured by a screw-thread or other suitable fastening, and any form of hydrant-stock may be secured to the top end thereof. T represents a port, communicating between reservoir M and pipe C through the enlargement V, and is placed adjacent to port P. V represents an enlargement made in one side of pipe C, just above ports T and P, to allow the water free passage into the pipe C above the annular plug O.

The valve-stem E may be operated at the top of the hydrant by any lever movement now in common use.

Mode of operation: The hydrant is designed to be attached to the water-pipe at a sufficient depth below the surface of the ground to prevent freezing. When the valve G is is opened, as shown in Fig. 1, the water enters the lower end of pipe C from chamber D, and, coming in contact with the bevel on the under side of the annular plug O, is forced to pass through the port P and out through the pipe C. The peculiar shape of the annular plug O forms a guide, which throws the water across the throat of port P at an acute angle therewith, and as the force of the incoming current is greater than the normal pressure of the air in reservoir M, the water or air contained therein coming in contact through port T with the water entering obliquely through the port P is carried out with it through the discharge-pipe C.

When the valve G is closed the water in the pipe C runs down through port T, and partially fills reservoir M, which is so arranged as to at all times keep the surface of the waste-water in the same below freezing-point. Every time the valve G is opened the water in the reservoir M is drawn out through port T, thereby only leaving in the reservoir M, when the hynrant is closed, the water contained in the pipe C, from the valve G to the point of discharge.

It is obvious that the discharge-pipe C, with its valve G and annular plug O, may be used as a waste-hydrant, in which case port T is dispensed with, and a waste-port placed in the opposite side of pipe C, so as to be closed by the annular plug O, when the valve is open, and opened when the valve is closed.

The valve-rod F and valve-stem E are made