

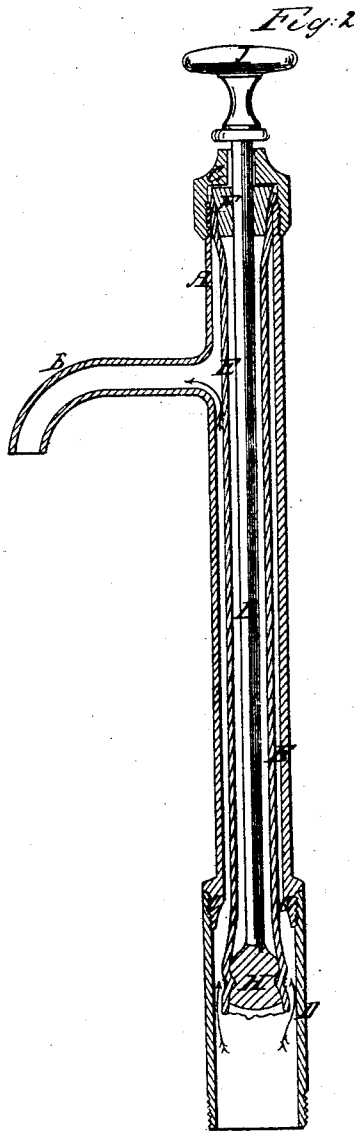
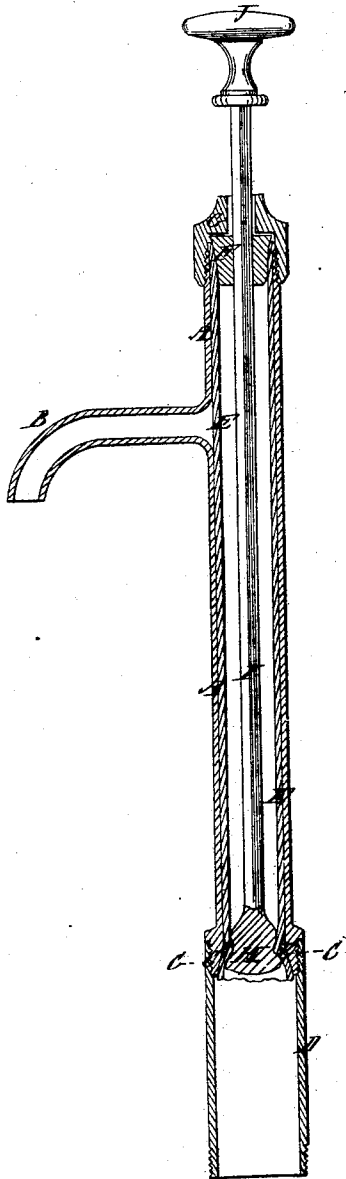
J. Swan,

Hydrant,

No 21,858,

Fig 1

Patented Oct. 19, 1858.



UNITED STATES PATENT OFFICE.

JAS. SWAN, OF BROOKLYN, NEW YORK.

HYDRANT.

Specification of Letters Patent No. 21,858, dated October 19, 1858.

To all whom it may concern:

Be it known that I, JAMES SWAN, of the city of Brooklyn and county of Kings, in the State of New York, have invented certain new and useful Improvements in Hydrants; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 represents a vertical section of the hydrant when closed against the pressure of water; Fig. 2, vertical section of the hydrant open to permit the passage of water.

The design of my invention is to shut off the water from the hydrant below the surface of the earth sufficiently to protect it from freezing and at the same time to exclude it entirely from within the hydrant.

Letter A represents a rigid tube of metal, which may be inclosed in the ordinary wood casing, and which opens the drip or discharge pipe B. The tube A is of uniform interior diameter except near the bottom where the diameter is increased to make room for the conical valve seat C. The tube D is made separate and screwed onto A for the purpose of readily gaining access to the valve, and at the lower end has a screw cut on it for the purpose of coupling it to a service pipe.

E is a vulcanized india rubber tube of somewhat larger original diameter than the interior of the tube A. It is introduced into A while extended in the direction of its length and when allowed to contract its tendency to assume its original diameter causes its outer surface to press with elastic force against the entire interior surface of the rigid tube A above the valve seat. The upper end of the elastic tube is secured firmly within the tube A by the taper plug F which is driven in tightly and held in place by the screw cap G.

H is a conical valve or piston on the end of the rod I which passes up through the elastic tube E and through a hole in the middle of the plug F and cap G terminating in a knob J.

The rubber tube is secured to the conical valve H, which is provided with a groove for the purpose, by binding it firmly thereto with copper or brass wire just above the part that takes against the valve seat and so as to secure a tight valve by interposing the rubber tube between the valve and valve seat. Care must be taken to regulate the tension of the elastic tube so that when the valve is closed the entire outer surface of the tube will press with sufficient elastic force against the interior surface of the rigid tube.

The operation of the hydrant is as follows, viz: To draw water, distend the elastic tube by pressing down the knob J, which reduces its diameter and opens an annular passage-way between it and the tube A for the passage of water to and out of the discharge pipe B. When sufficient water is drawn allow the tube to contract; in doing so it closes the valve and as its exterior surface resumes its contact with the interior surface of the metal tube the water in the annular space is expelled through the discharge pipe B. I will here state that by carrying down the tubes sufficiently below the surface of the earth to escape the action of frost on the service pipe there need be no interruption to the hydrant in the winter, there being no water left in the hydrant to freeze, and also that the use of the conical valve and seat is not absolutely necessary to my invention, the pipe itself being a perfect shut off when contracted.

What I claim as my invention and desire to secure by Letters Patent of the United States is—

The use of the elastic tube E in combination with the metal or rigid tube A for the purpose of excluding water from the entire length of the hydrant when arranged combined and operated substantially as hereinbefore described.

JAMES SWAN.

Witnesses:

JAMES ROGERS,
JACOB K. LOCKMAN.