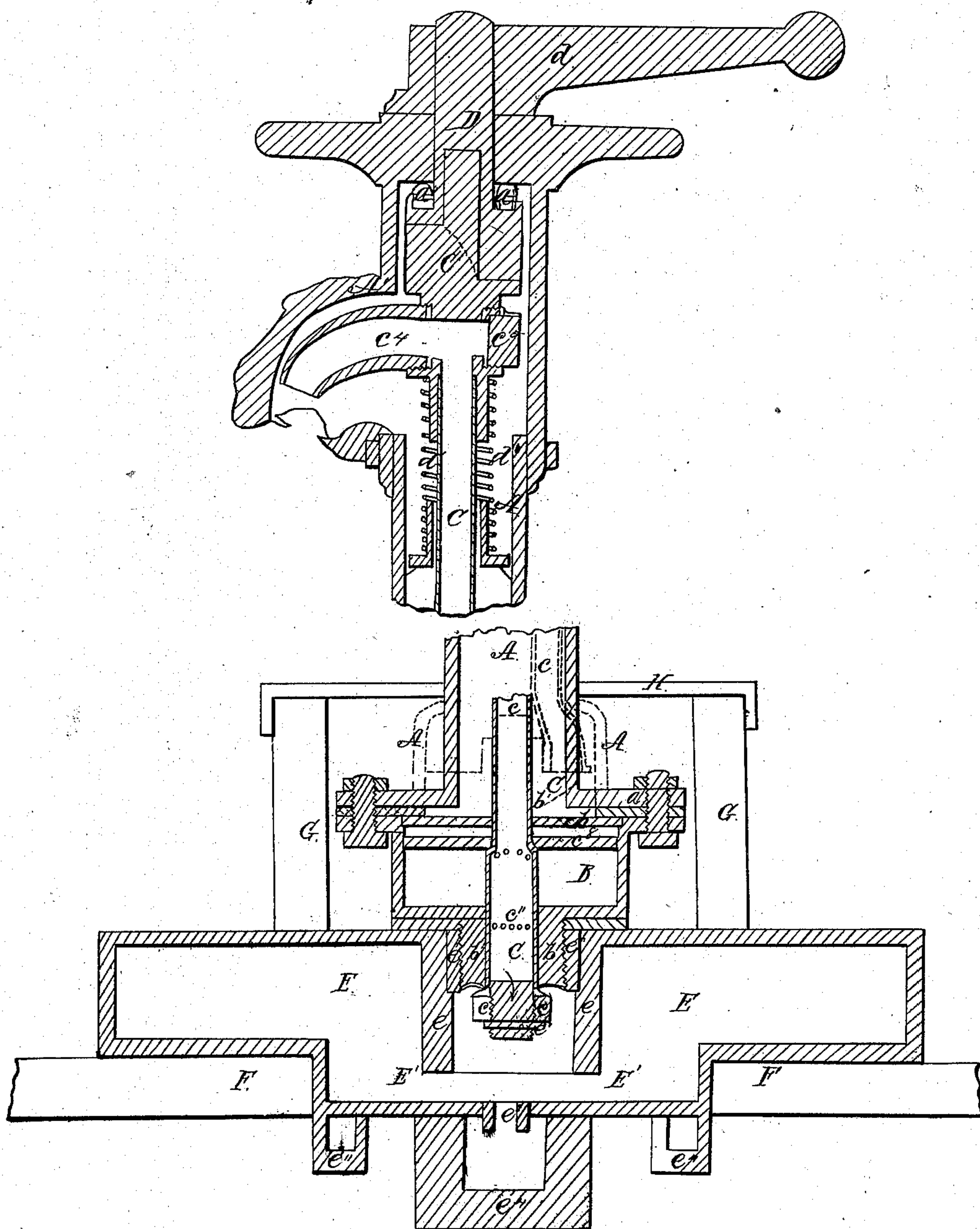


S. C. Higbie,

Hydrant.

N^o 3240.

Patented Sep. 1, 1843.



UNITED STATES PATENT OFFICE.

S. C. HIGBIE, OF OPPENHEIM, NEW YORK.

HYDRANT.

Specification of Letters Patent No. 3,240, dated September 1, 1843.

To all whom it may concern:

Be it known that I, S. C. HIGBIE, of Oppenheim, in the county of Fulton and State of New York, have invented a new and useful Improvement in Hydrants, and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, is a vertical section; Fig. 2 detached parts.

The nature of my invention consists in fitting a tubular valve into the hydrant having two series of holes in it, with a spring to close the lower ones. The lower set communicate with the water pipe, the other with the leak; and in connecting therewith a vacuum chamber to receive the water from the eduction pipe and prevent its freezing up, which vacuum chamber can also be made to act and close the induction valve.

The exterior case A, of the hydrant is similar to those now in common use, above the valves; and is a straight tube; on the lower end of which is a flange (a) below this is a cylindrical box or chamber B, with a flange around its upper edge by which it is screwed to (a); a plate (b) is let into a recess around the top of chamber B over which and the flange is a leather ring to pack the joint between the two flanges above named; the plate (b) has a hole through its center for a purpose hereafter described. From the bottom of chamber B, a tube (b') descends on the outside of which a screw is cut, the bore of this tube is smooth for a valve to fit and slide up and down in, the lower part being countersunk to receive the packing on said valve.

The valve, C, is a cylindrical tube made of composition metal, the lower end of which is solid and has a screw cut on it which receives a nut (c) and has a key (c') passing through it underneath to hold the nut on; a recess is cut in around the upper face of the nut in which a leather ring is put that projects up and fits into the countersink in the end of the tube (b'). All around the valve there is a row of holes (c'') at such a height above the nut (c) as not quite to reach the top of the tube when the packing is up to its place. Near the top of the chamber B when the valve is shut there is a piston (c³) which is attached to and surrounds the tube C. This piston fits the chamber in which it works up and down perfectly tight the tube

C, just below this piston, has another row of holes similar to those already described. The tube C continues up to the top of the hydrant where it terminates in a spiral inclined plane or segment of a screw thread C', the upright tube is intersected below this with a horizontal one into which a spout (c⁴) is screwed on one side, that projects through the case and which may be covered by a shield A', on the other side a plug (c⁵) is inserted for a purpose hereafter named the whole of this apparatus can be sustained by a spring (d') when necessary. In the cap of the case there is a spindle D, inserted that projects above it and has a handle (d) affixed thereto; below the cap it is enlarged and its under side is formed like the thread of a screw to fit C', on the upper side next the cap there is a series of friction rollers (d''); a spindle on C' enters a recess in D for the purpose of steadying it. By this construction it is evident that as the handle (d), is revolved the tube C, is forced down by the inclined planes coming in contact, this creates a vacuum in the upper part of the chamber B, and when far enough down the holes (c'') are below the tube (b') and afford a free ingress to the water below; when the handle d is returned to its place by the pressure on the under side of piston (c³) which forces up the tube C; and as soon as the holes (c'') are stopped the water from tube C, rushes into the chamber B thereby freeing the tube and preventing its freezing. When the tube is again forced down the piston throws the water out of this chamber again—where a common leak is used instead of this chamber the spring (d') is used to raise the valve and in summer time when the leak is not required the spout can be unscrewed and changed to the other side by turning the tube around and stopping off the leak the plug (c⁵) being also changed.

Another mode of construction which I sometimes contemplate using is to have the valve connected with a solid rod instead of the tube at the red line (c) in which case the water will be conducted off as shown by the red lines at C, the lower part of the case is enlarged at A and the plate (b) is made thicker as shown by the line (b) the plate extending from (b) up to (b) at that point a slot (c') admits the water through a hole (b) in plate (b) into the tube C which is thence carried up the case beside the valve rod and connects with a stationary spout.

The apparatus constructed in either of the above described ways has below it air chambers of the following construction: A horizontal chamber E, has a recess E', extending down below the bottom at the center about half the length and depth of the chamber. In the top of this chamber there is a circular aperture in the center from which a tube (e) projects downward nearly to the bottom. Into this tube a composition metal ring (e') is fixed having a female screw cut in it, into which the bottom tube (b') of the hydrant can screw. On the bottom of the lowest part of the air chamber are cast two staples (e'') one at each end and at the center there is an induction tube (e³) to which the supply pipe is attached this is surrounded by a staple (e⁴) into which the supply pipe (not shown in the drawing) is put and fastened up against the pipe (e³) by a wedge.

A plank F, is inserted in the ground and the air chamber E firmly keyed to it by means of the staples (e''). Over this a box G is fitted down around the air chamber to the plank; this box extends up nearly to the top of the ground around outside of the case A, and chamber B. Outside of this box dirt is filled in and rammed tight. On top

of the box a plate of iron H fits having projections downward on each side of the box. In the center of this plate there is a polygonal hole which just fits the outside of the case A and prevents its turning. Over this earth and the pavement is placed; when the hydrant is to be removed the place is opened to this plate which is taken up and the case A can then be unscrewed without the trouble or expense of removing the earth entirely from around the hydrant.

What I claim as my invention and desire to secure by Letters Patent is—

1. The tubular valve C, having two rows of holes in it one above the other and a packed valve (c) attached to the end constructed and arranged as herein specified.

2. In combination with the chamber B and piston (c³) by means of which the valve is raised, and which forms a reservoir for the water in the pipe, when the supply is cut off.

3. I claim the combination of the air chambers E with the hydrant constructed and combined in the manner set forth.

S. C. HIGBIE.

Witnesses:

J. J. GREENOUGH,
B. K. MORSELL.