F. H. Bartholomew,

Hydrant.

No. 4410. Patented Mar. 7, 1846.

Fig: 1.

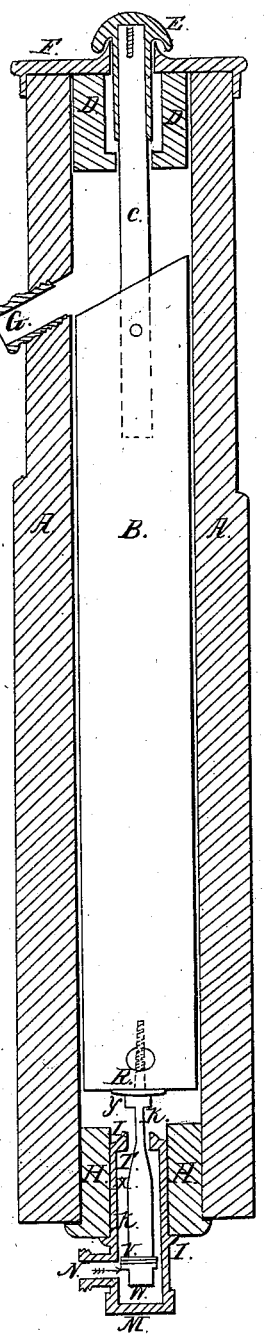


Fig: 2.

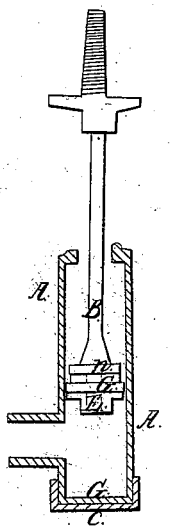
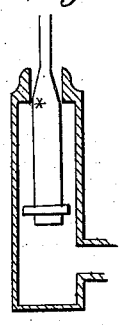


Fig: 4.



UNITED STATES PATENT OFFICE.

FREDK. H. BARTHOLOMEW, OF NEW YORK, N. Y.

HYDRANT.

Specification of Letters Patent No. 4,410, dated March 7, 1846.

To all whom it may concern:

Be it known that I, FREDERICK H. BARTHOLOMEW, of the city, county, and State of New York, have invented a new and useful improvement in the construction of stop cocks or valves and their application of and combination with hydrants for the purpose of introducing water or other fluids from aqueducts or otherwise; and I do hereby declare that the following is a full, clear, and exact description of the construction and application of the same, reference being had to the annexed specification and drawings, making a part of this specification.

The nature of my invention consists in an improvement in the construction of pistons for valves or stop cocks which by the action of the water and atmosphere shall close so gradually and gently as not to destroy lead pipe by concussion and by which also when applied in combination with a plunger for hydrants shall form a chamber into which a portion of water in the hydrant may recede below the action of frost and not waste into and saturate the earth.

Figure 1, is a sectional view by which A A represents the stock of a hydrant which may be of wood or metal say 5 or 6 feet long having a hole straight through it of say 4 inches diameter.

B is a plunger of wood or other material of proportionate length to the stock and about one eighth of an inch smaller than the bore through the stock, the top end beveled and inclined toward the spout G having a handle C, of sufficient strength extending up through the cap F and on which is fitted and secured an iron handle or knob E. D D, a hollow plug inserted into the top of the stock about 5 in. long for the purpose of preventing the waste from dashing against and wetting the part of the handle exposed to the weather when the hydrant is closed and so prevent the handle from being frozen fast. This object may also be effected by constructing the cap F with a hollow hub cast with the cap (if made of metal) extending from the lower side downward about four or five inches—and also the same object may be effected by attaching a dasher or collar onto the handle between the cap F and the top of plunger or piston B.

F is a cap of iron or wood secured by screws or otherwise and having a square hole or other shaped hole in the center with the handle E working through it and so fitted to it as not to admit of being twisted around by a groove and tooth or by being square.

G is a metallic spout of $1\frac{3}{4}$ in. bore which screws into the stock and inclines downward about one foot from the top of the stock.

H, H, is a wood plug driven up tight into the bottom of the stock about five inches long, having a hole in its center of suitable size to admit the valve or stop cock I I.

I, I, is a metallic tube or cylinder of about six inches length and one and a half inches diameter inside, being closed at the top except an aperture of about three fourths of an inch. The bottom being closed by a screw cap M.

N is an arm or elbow to which is attached by a coupling or otherwise the pipe or tube conducting the water, and of same capacity as the pipe or conductor.

K, K is a metallic turned piston or plunger about nine inches long including the shank R, having a shoulder or flange fitting the bottom end of plunger B. A part of this flange Y is square for the purpose of its being screwed into the plunger B. Below the shoulder or flange and extending about $1\frac{1}{2}$ inches is a stem about $\frac{3}{8}$ in size, thence extending downward about one inch the size is increased to about $\frac{3}{4}$ inch, extending downward of same size about 3 inches the size of this last 3 inches being adapted to and just filling the aperture T in the top of the tube or box I, I, so as to work through the aperture easily. Below this part of the piston is a stem or screw about $\frac{3}{8}$ in. thick and one in. long, onto which is put the leather or india rubber washer V which is fastened and secured by nut W.

Fig. 2, is a sectional view of another mode of constructing a value or stop cock. A A the barrel or tube. B the piston. E nut securing the washers D, G. C, cap screw on the bottom. This will require more force to open it than that in Fig. 1.

The hydrant as shown in Fig. 1, is in an open position (to discharge) the water being received in through elbow or joint N, passing up through box I, I, through aperture T, thence up through the space between the plunger B and the hole in the stock A A out of spout G.

The hydrant is made to discharge by pressing down upon the handle E, which

with the plunger B and the piston or plunger K K must be depressed about four inches to produce a full discharge and which upon removing the pressure will rise upward and close by means of the floating of the plunger B (if light enough) and the pressure of the water against the bottom of the piston K, K, and when the plunger B and piston K, K, have risen up until at the point X Fig. 4, the piston then cutting off the communication of water by closing or filling up the aperture T, and still rising move together with the plunger above (the communication being closed) form at the bottom of the plunger and above the cylinder I I, a chamber or space into which the water contained in the space between the stock and plunger B, falls below the action of the frost while at the same time it is retained within the stock of the hydrant and not permitted to waste into and saturate the ground at its base.

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

1. The combination of the plunger B with the piston or valve cock K K in the manner and for the purpose described.

2. Also I claim the combination of the plunger and piston with the hydrant substantially as described said combination effecting the double purpose of checking the concussion from the water and of furnishing a variable chamber in which the waste water may descend away from the influence of frost, and not waste away into the ground.

3. I also claim the construction of the piston K K by which the aperture T is closed before the full closing of the valve and which when combined with the plunger shall furnish a variable chamber for the purpose herein set forth.

In testimony whereof I the said Frederick H. Bartholomew hereunto subscribe my name in the presence of the witnesses whose names are hereto subscribed, this 27th of February, 1846.

FREDERICK H. BARTHOLOMEW.

Witnesses:
Henry Stone,
Chas. G. Page.