W. L. CHURCH.

LATERAL WATER-PIPE.

No. 186,411. Patented Jan. 23, 1877.

Fig. 1.

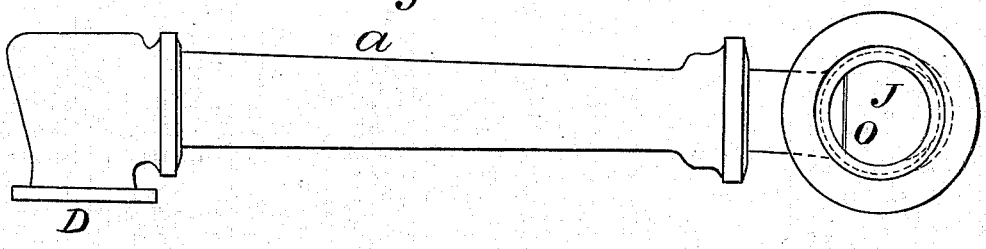
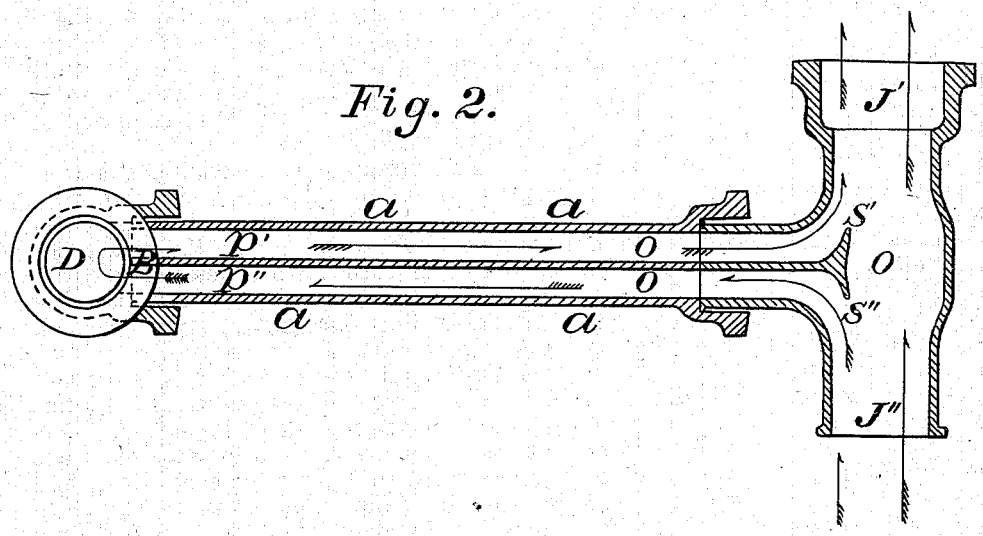


Fig. 2.



Witnesses

John H. Hawkins.

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UNITED STATES PATENT OFFICE.

WILLIAM LEE CHURCH, OF HAVANA, ASSIGNOR TO LUDLOW VALVE MANUFACTURING COMPANY, OF TROY, NEW YORK.

IMPROVEMENT IN LATERAL WATER-PIPES.

Specification forming part of Letters Patent No. **186,411**, dated January 23, 1877; application filed April 20, 1876.

To all whom it may concern:

Be it known that I, WILLIAM LEE CHURCH, late of the town of Lansingburg, State of New York, and now a resident of the town of Havana, Schuyler county, State of New York, have invented a new and Improved Method of Constructing Lateral Water-Pipes that connect hydrants or buildings with a water-supply main, of which the following is a specification:

The object of my invention is to prevent the water in lateral water-pipes from freezing, and so as to avoid the deposit of sediment within them.

It is well known that water-supply mains are less liable to be affected by the action of frost than the laterals which connect hydrants or buildings with the supply-mains. This occurs from the fact that there is a well-established current in the former, while in the latter the water is for most of the time in a quiescent condition, and on this account rendered more liable to freeze. To cause the current-force, which produces the result in the main pipe, to extend into the laterals by means of a mechanical arrangement of co-operating parts constitutes my invention.

I accomplish this result by dividing the area inclosed within the lateral in part longitudinally, and so as to form two circulating-chambers by means of a partition-wall or septum. These two chambers are formed and arranged to connect at any point within the lateral to which it is desired to extend the influence of the circulating current away from the main attachment. This connection between the divided horizontal spaces within the lateral is formed by omitting the septum or partition at such point remote from the main as is deemed necessary to employ the circulating current. Upon the end of the septum or partition, and where the lateral is attached to the water-main, the partition is extended beyond the lateral and projected into the current-force of the main, so as to intercept and divert it in part into the lateral. The end of the partition which enters the current may be bifurcated or divided, so as to form entry and discharge ports for the circulation; or it may be projected into the current-force at right angles to it. Although I prefer to use the former modification of means, yet both constructions will, in degree, perform the same office.

In the accompanying drawing, Figure 1 exhibits a view of the exterior of a hydrant lateral pipe, with a vertical sectional view of the water-main to which it is attached. In this illustration the partition is shown as intruded into the inclosed area of the water-main at O; the lateral is designated at A, and the water-main in section at J, with the lateral fitted to receive the hydrant at D. Fig. 2 illustrates a longitudinal sectional view of the lateral shown at Fig. 1, and also a longitudinal sectional view of the water-main to which it is attached, with the lateral fitted to receive the hydrant.

In this illustration the division-partition or septum is designated at O, and where it intrudes into the water-main, and is bifurcated or divided at S′ and S″. The direction of the current-force of the main is designated by arrows. The partition or septum O is shown as in part dividing the inclosed area of the lateral in two circulating-chambers, p' and p'', with the lateral exterior wall designated at *a a a a*. At the end of the lateral, remote from where it is attached to the water-main, the partition is omitted, so as to leave the space B, with which the circulating-chambers p' and p'' connect. The water-main, in section, is shown at J′ and J″, and the lateral as fitted to receive a hydrant at D.

The operation of the construction thus described is as follows: The current-force of the main, in passing through it, as indicated by the arrows, impinges upon the divided end of the partition O at s'', and is, in part, diverted and directed into the space p'', and along and through which it passes until it reaches the end of the partition, and into the space B. It then passes around the end of the partition into the space p', and returns to the water-main through the delivery-port s', while the circulation receives the direct force of the current to impel it into the lateral; it also receives the aid of the draft capacity of the current exerted upon the delivery-port s', to accelerate its discharge velocity.

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

1. The division-plate or septum O, applied to a lateral water-pipe, so as to divide in part its inclosed area in two circulating-chambers or connected spaces, with the division-plate or septum O extended into the current-force of the water-main to which the lateral is attached, and so as to divert and direct the current-force of the main in part into the lateral, substantially as shown and described.

2. In combination, and applied to the inside area of a water lateral pipe, the septum or partition O, the circulating-chambers p' and p'', with the connecting-space B, arranged within the lateral and connected with a water-main, as and for the purposes described and shown.

3. The entry and delivery ports s' and s'', formed upon the end of the septum or partition which divides the area of a water lateral in two connecting chambers or spaces, and when the before-named partition is intruded into the current-force of the main supply-pipe to which the lateral is attached, as and for the purposes described.

Signed at Havana, New York, this 16th day of March, 1876.

WM. LEE CHURCH.

Witnesses:
S. E. CHURCH,
ALF. D. BUELL.