(No Model.)

G. B. BASSETT.

SYSTEM OF WATER DISTRIBUTION.

No. 349,202. Patented Sept. 14, 1886.

Fig. 3.

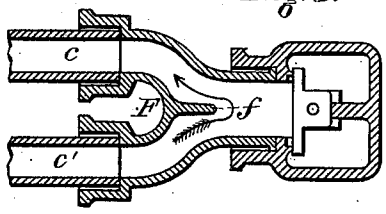


Fig. 1.

Fig. 4.

Fig. 5.

Fig. 2.

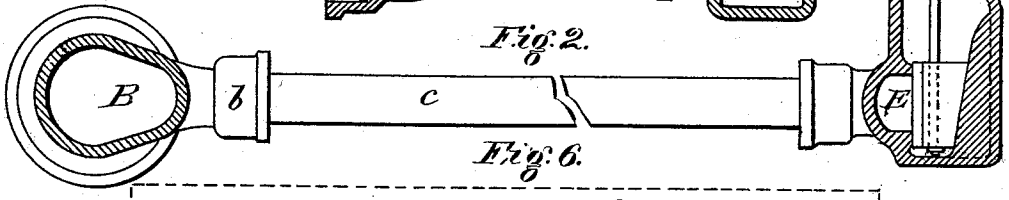
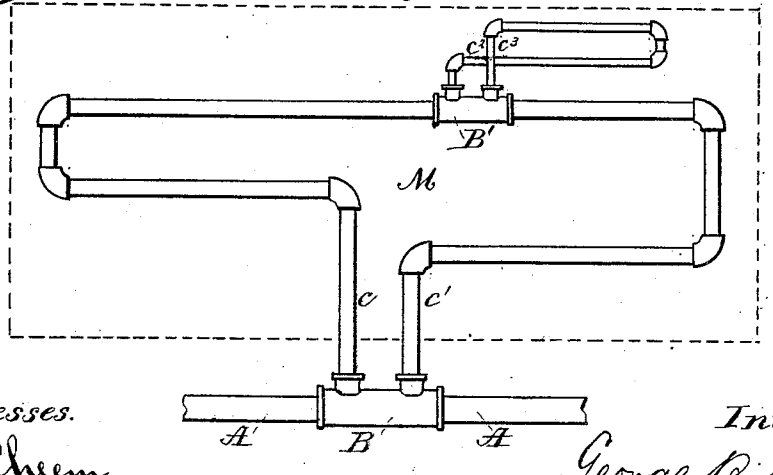


Fig. 6.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE B. BASSETT, OF WATERTOWN, NEW YORK.

SYSTEM OF WATER-DISTRIBUTION.

SPECIFICATION forming part of Letters Patent No. 349,202, dated September 14, 1886.

Application filed February 27, 1886. Serial No. 193,498. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. BASSETT, a citizen of the United States, residing at Watertown, in the county of Jefferson and State of New York, have invented a new and useful Improvement in Systems of Water-Distribution, which improvement is fully set forth in the following specification.

This invention relates more particularly to systems of water-distribution in towns and cities, and has for its object to prevent freezing or stagnation of the water in branch or service pipes leading from a main to houses, fire-hydrants, and other points of use, which object is accomplished by keeping the water between the main and such point of use in constant motion.

It has been proposed heretofore to maintain a constant circulation of water in a branch or service pipe by dividing the branch or pipe into two passages or channels, and causing the water from the main to flow continuously into the one and out by the other. This was accomplished by a longitudinal partition in the branch or lateral, said partition projecting into the main a sufficient distance to offer an obstruction to the flow of water and to divert the current force of the main in part into the lateral or branch.

According to the present invention, I provide the main with a special casting having two lateral openings, to each of which a branch pipe is connected. These pipes run to the chamber of a fire-hydrant, or to any other desired point, where they are in communication with each other. The water in these two pipes is kept in constant circulation by the action thereon of the body of water flowing through the main instead of by diverting the current force in part into the branch, the action being analogous to that of a rack upon a pinion. In this construction there is no projection into the main to obstruct the flow of water therein, which, as well understood, would be very undesirable in a system of water-distribution.

In the accompanying drawings, which form a part of this specification, Figure 1 is a horizontal section, and Fig. 2 a vertical section, showing part of a water-main with the lateral or branch pipes connected therewith in accordance with this invention. Figs. 3, 4, and 5 illustrate details and modifications, as more fully explained hereinafter; and Fig. 6 is a diagram illustrating one application of the invention.

Referring to Figs. 1 and 2, A represents the water-main, and B a casting of special construction, which is laid with the main and forms part thereof. This casting has two lateral openings, *b b'*, to which branch pipes or laterals *c c'* are connected. The part *d*, between the two openings *b b'*, is preferably of curved form in horizontal section, as shown, and the diameter of the casting is enlarged between the two openings. The laterals or branch pipes *c c'* extend to the chamber E of a hydrant of any ordinary or suitable construction, said chamber having two openings, with which the pipes *c c'* are respectively connected. By this construction and arrangement the body of water flowing in main A in the direction of the large arrows acts by attrition upon the water in and between the two arms of casting B, creating a secondary circulation through pipe *c'*, chamber E of the hydrant, and pipe *c* back to the casting B, as indicated by the small arrows. Thus in the enlarged part of the casting B there are two distinct streams, flowing one through the main and the other through the laterals.

In a system operating by a projection at the point *d* between the arms *b b'* into the main, so as to obstruct and divert the current in part, the flow would be from the main by pipe *c*, and back by pipe *c'*, whereas by the special construction of the casting B, as shown, the circulation through the laterals is in the reverse direction.

The hydrant represented in Figs. 1 and 2 is of the vertical slide-valve type; but the invention is obviously applicable to fire and other hydrants generally—as, for example, to the depression-valve type of hydrant represented in horizontal section in Fig. 4 and in vertical section in Fig. 5.

To apply the invention to hydrants that have but a single opening in the bottom for connection of a branch, the arrangement shown in Fig. 3 may be adopted. As there shown, the two branches *c c'* are connected at

their inner ends to a casting, F, which consists of a Y-joint having a web or projection, *f*, as shown. The purpose of this part *f* is simply to throw the current in toward the valve of the hydrant, so that no space may be left where water would be allowed to stand, and thus be liable to freeze. The length of the web *f* would depend upon the kind of hydrant used, and in many cases could be dispensed with altogether.

The advantage of having two separate and distinct pipes, *c c'*, is that I am thereby enabled to carry out the invention practically with iron pipe of ordinary construction, and also to extend the system to any desired distance and in any direction, so as to make connection with houses, mills, factories, and the like for fire protection and for domestic and industrial uses. Thus, referring to Fig. 6, the rectangular space M indicates the outline of a mill or other structure. The branches *c c'*, leading from the casting B, forming part of main A, are carried in divergent directions, as may be desired, a constant circulation being maintained therein in the manner explained. Minor systems could be established, as at B', which indicates a casting similar in construction to casting B and forming part of branch *c*. Sub-branches c^2 c^3 are connected to casting B'.

All parts of the system described may conveniently be made of cast-iron and be put together with lead packing, as in laying ordinary water-pipe. The branches *c c'* are shown as of the same diameter; but they could be of different sizes, and other modifications could be made in details of construction and arrangement without departing from the spirit of my invention.

Having now fully described my said invention, and the manner in which the same is or may be carried into effect, what I claim is—

1. The combination, with the main, of the two lateral or branch pipes communicating at their inner ends and connected with the main in close proximity to each other, the diameter of the main between the two pipes being enlarged, substantially as described.

2. The combination, with the water-main, of the casting having two openings on the same side, the diameter of the casting between the openings being greater than that of the main, substantially as described.

3. The combination of the main, the casting forming part thereof and having two separate lateral openings on the same side and in close proximity, and the two branch pipes leading from said openings, respectively, and communicating at their inner ends, so as to form a continuous passage or channel, substantially as described.

4. The combination of the hydrant and two lateral or branch pipes leading thereto and connected with the main in close proximity to one another, so that the attrition of the water in the main will cause a constant flow through the branches, substantially as described.

5. The combination of the main, the casting having two lateral openings and being of enlarged diameter between the openings, the two branch pipes connected to said openings, respectively, and the hydrant, substantially as described.

6. The combination of the water-main, the two lateral branches connected therewith, the Y with which the inner ends of the branches are connected, and the hydrant, substantially as described.

In testimony whereof I have signed the foregoing specification in the presence of two subscribing witnesses.

GEORGE B. BASSETT.

Witnesses:

FRANCIS S. PECKE,

CLARENCE A. HOUSE.