No. 683,945. Patented Oct. 8, 1901.

M. T. KENNEDY.

DRAINING DEVICE FOR HYDRANTS.

(Application filed Jan. 11, 1901.)

(No Model.)

Fig. 1.

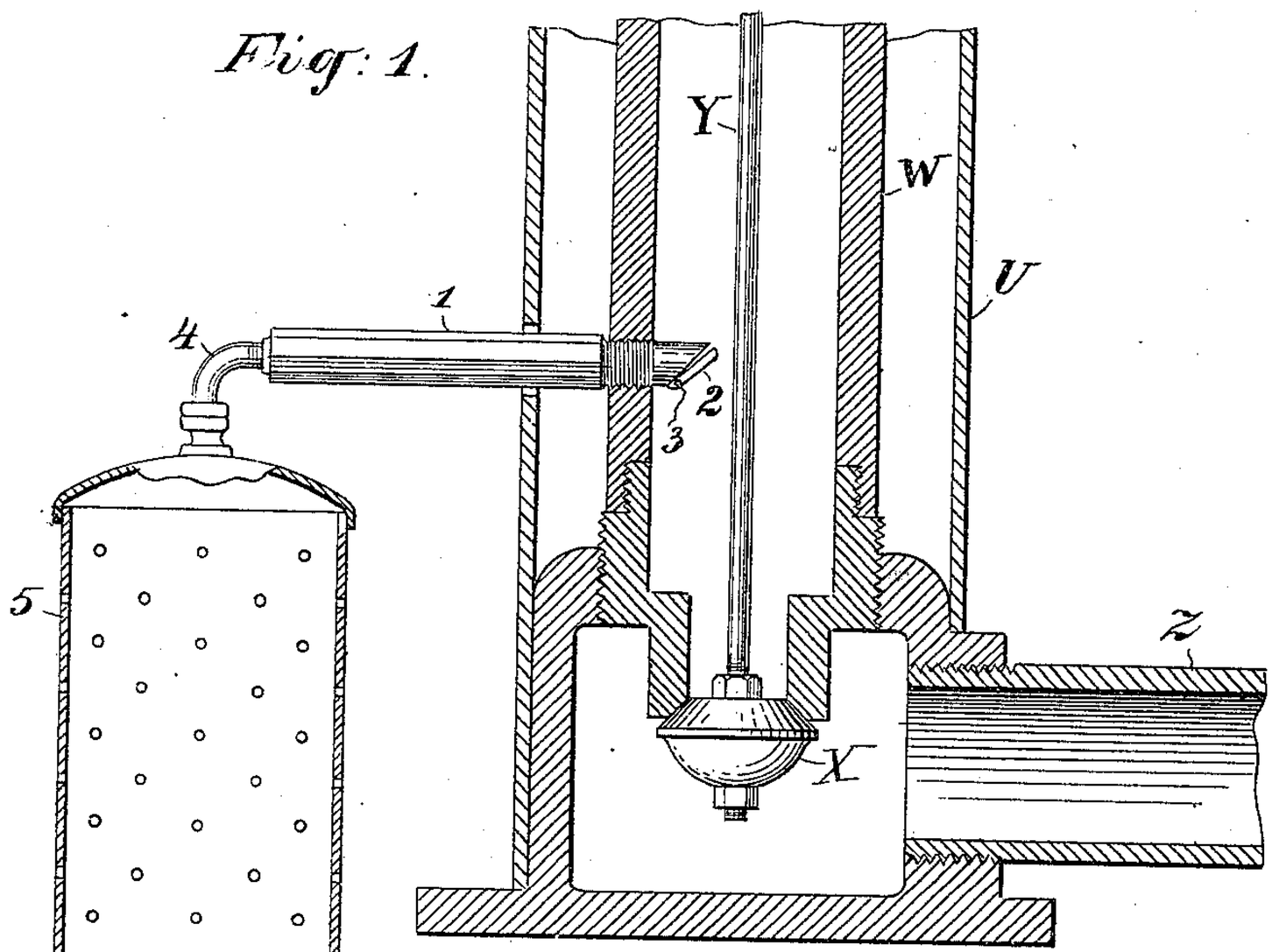


Fig. 2.

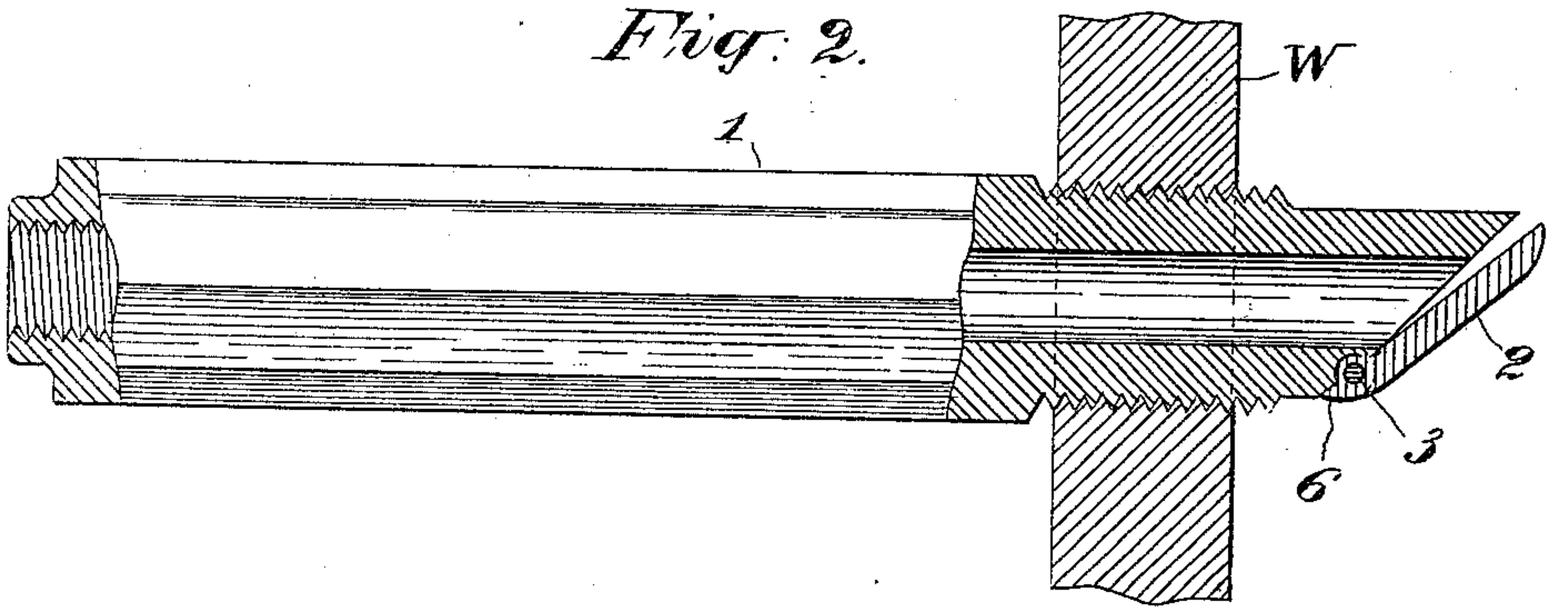
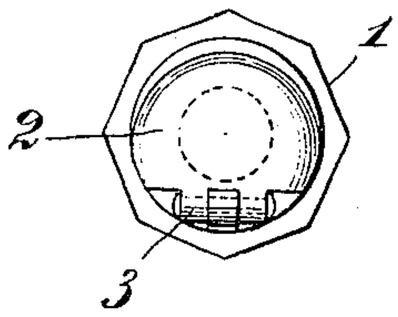


Fig. 3



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DRAINING DEVICE FOR HYDRANTS.

SPECIFICATION forming part of Letters Patent No. 683,945, dated October 8, 1901.

Application filed January 11, 1901. Serial No. 42,879. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL T. KENNEDY, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings and city and State of New York, have invented certain new and useful Improvements in Draining Devices for Hydrants, of which the following is a specification.

This invention relates to hydrants in general, but more particularly to fire hydrants or plugs for city use. In the class of hydrants in general the barrel is set in the ground usually about four feet deep, so that its lower part will be below frost. The service-pipe from the main taps the barrel at or near its bottom, and a valve at the lower part of the barrel controls the influx of water to the barrel. Obviously when the controlling-valve is closed after use the barrel will stand full of water from the valve up to the point where the delivery-hose is coupled on; and the object of the present invention is to get rid of this water or so much of it as is above frost or the freezing depth, so as to prevent it from freezing, and thus rendering the hydrant useless in cold weather. The freezing of the water in the barrel of the hydrant is also apt to injure the barrel. All of this is well known, and the purpose of this invention is to provide an automatic drainage device which may be applied to any hydrant even after it has been set, as the drainage device is not in any way connected with the controlling-valve or its stem.

In the drawings, which serve to illustrate my invention, Figure 1 is a sectional elevation of the lower portion of a hydrant, showing the drainage device in position on a relatively small scale. Fig. 2 is a sectional view of the drainage tube and valve on a larger scale. Fig. 3 is an end view of the valve and drainage-tube, showing the valve-hinge.

W represents the barrel of the hydrant; X, the valve; Y, the valve rod or stem; Z, the service-pipe, which supplies water from the main, and U an outer casing about the barrel W. All of these features are common in hydrants, and as they are variously constructed and arranged in hydrants now in use this present invention is not restricted to any of the various hydrant constructions. It is applicable to any hydrant.

The drainage device will now be described in detail.

1 is a drainage-tube, which is screwed into the wall of the barrel W, its inner or receiving end being beveled and provided with a valve 2, which is hinged at 3 and drops away by gravity from its seat on the beveled extremity of the tube. This is the normal position of the valve. At its outer end the tube 1 is connected by a suitable pipe 4 with a perforated receiving vessel 5, set in the ground at any desired distance from the hydrant. The tube 1 may tap the barrel W of the hydrant at any point below frost or the depth to which freezing extends and above the valve X, and the vessel 5 may, if desired, be surrounded by gravel or broken stone, especially if the soil of the locality is such as to resist absorption.

The operation of the device is as follows: When the main valve X is opened, the upward rush of the water in the barrel W closes the drainage-valve 2 upward to its seat; but when the valve X is closed for shutting off the flow of water the upward flow in the barrel W ceases, and the drainage-valve 2 will drop away from its seat and allow the water in the barrel above the level of the valve to flow off to the receiver 5 through the tube 1 and connecting-pipe 4. The receiver or vessel 5 will be by preference of sufficient size to contain all the water that drains from the hydrant-barrel in order that the latter may be quickly evacuated in cold weather, and as the vessel 5 will be below the limit of frost the water will drain away from it through the perforations therein at leisure.

Preferably the tube 1, its valve 2, and connecting-pipe 4 will be of brass or bronze and the receiving vessel 5 of copper; but the particular metal employed is not essential to my invention. Also, the body of the tube 1 will be by preference of prismatic form, like a nut, so as to receive a wrench for screwing it in; but obviously this is not essential, as a pipe-wrench might be used.

For convenience in setting the tube 1 in a hydrant-barrel already set in the ground the valve 2 is so made and hinged as to pass through the hole bored and tapped in the side wall of the barrel from the outside; but any form of valve which will be closed to its seat

on the tube 1 by the upward flow of water in the barrel may be employed. The hinged valve shown will have a shoulder at 6, Fig. 2, to prevent the valve from dropping away too far from its seat.

I am well aware that specially-constructed hydrants have heretofore been provided with valves for drainage-outlets, said valves being connected for operation in some manner with the movable parts of the hydrant. In my construction the drainage-valve is not in any manner connected with the movable parts of the hydrant and is closed by the direct impact of the upward-flowing current of water thereon and not by mechanism. This construction is very advantageous, as it permits the drainage device to be applied readily to any ordinary form of hydrant. No change of mechanical structure is required.

Having thus described my invention, I claim—

1. The combination with the barrel of a hydrant, and a main valve controlling the admission of water to the lower part of same, of a drainage-tube extending into said barrel above said main valve, and a gravity drainage-valve controlling the influx of water at the inner end of said drainage-tube, said valve being closed upwardly by direct impact of the water in its upward flow through the hydrant-barrel.

2. The combination with the barrel of a hydrant, and a main valve controlling the admission of water to the lower part of same, of a drainage-tube extending laterally into said barrel, a perforated receiving vessel coupled to the outer end of said drainage-tube, and a gravity-valve at the inner end of said tube, said valve being held slightly open, normally, and adapted to be closed upwardly to its seat by the flow of water upwardly in said barrel.

3. The combination with a hydrant-barrel, of a tube 1 extending into the hollow in same and having at its end, a beveled seat which faces obliquely downward, a valve 2 hinged to the end of said tube at the lower part of said seat and closing upwardly thereto, and means for limiting the extent of opening of said valve.

4. A hydrant-barrel having a drainage-outlet in its side provided with a valve-seat which faces obliquely downward, and a hinged valve which closes upwardly to said seat by the impact of the water rising in said barrel, said valve, when open, occupying a position inclined to a less degree than its seat.

5. A hydrant-barrel having a drainage-outlet at its side provided with a valve-seat which faces downwardly, and a valve which closes said outlet when acted upon directly by the water flowing upwardly in the barrel.

In witness whereof I have hereunto signed my name, this 7th day of January, 1901, in the presence of two subscribing witnesses.

MICHAEL T. KENNEDY.

Witnesses:
HENRY CONNETT,
PETER A. ROSS.