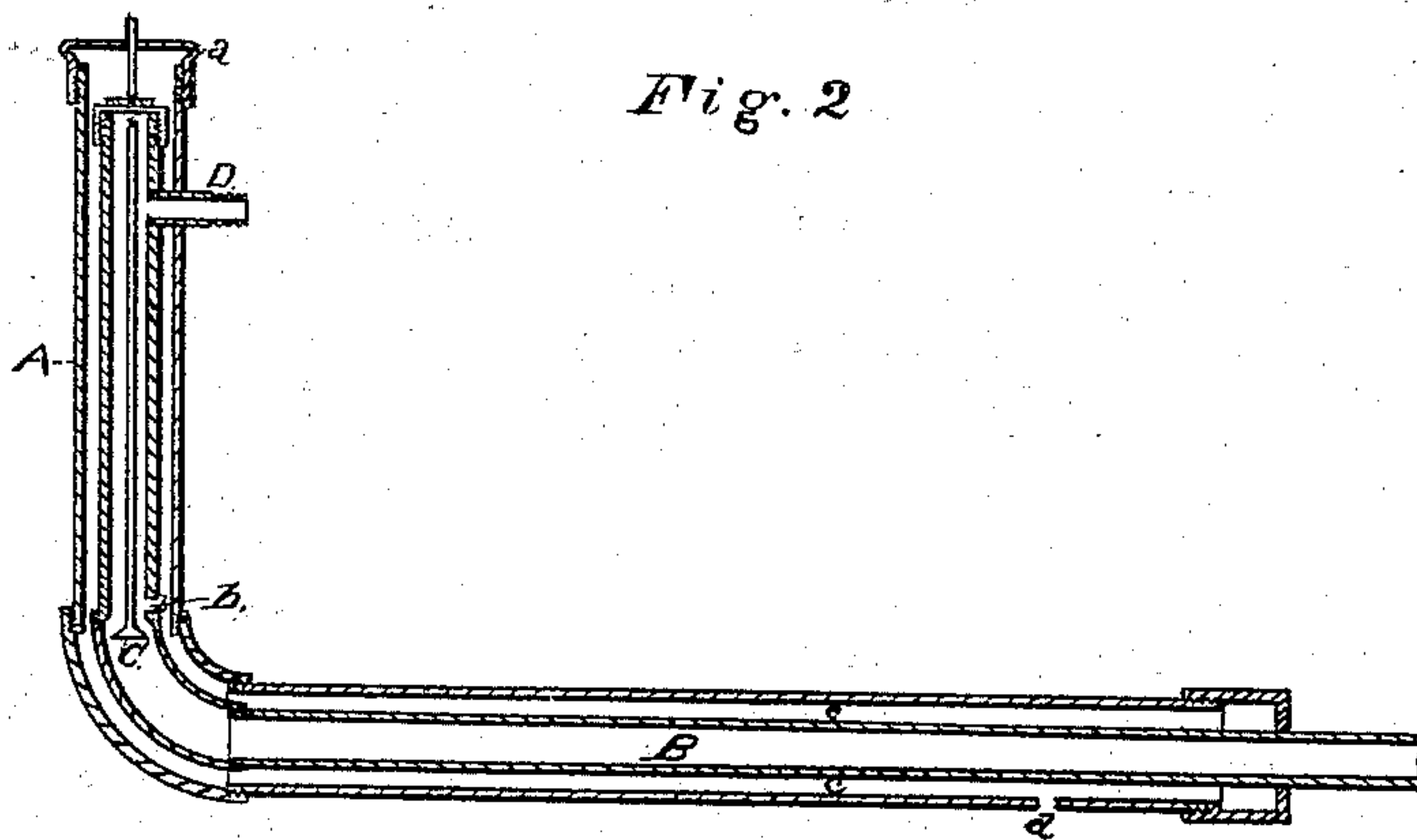
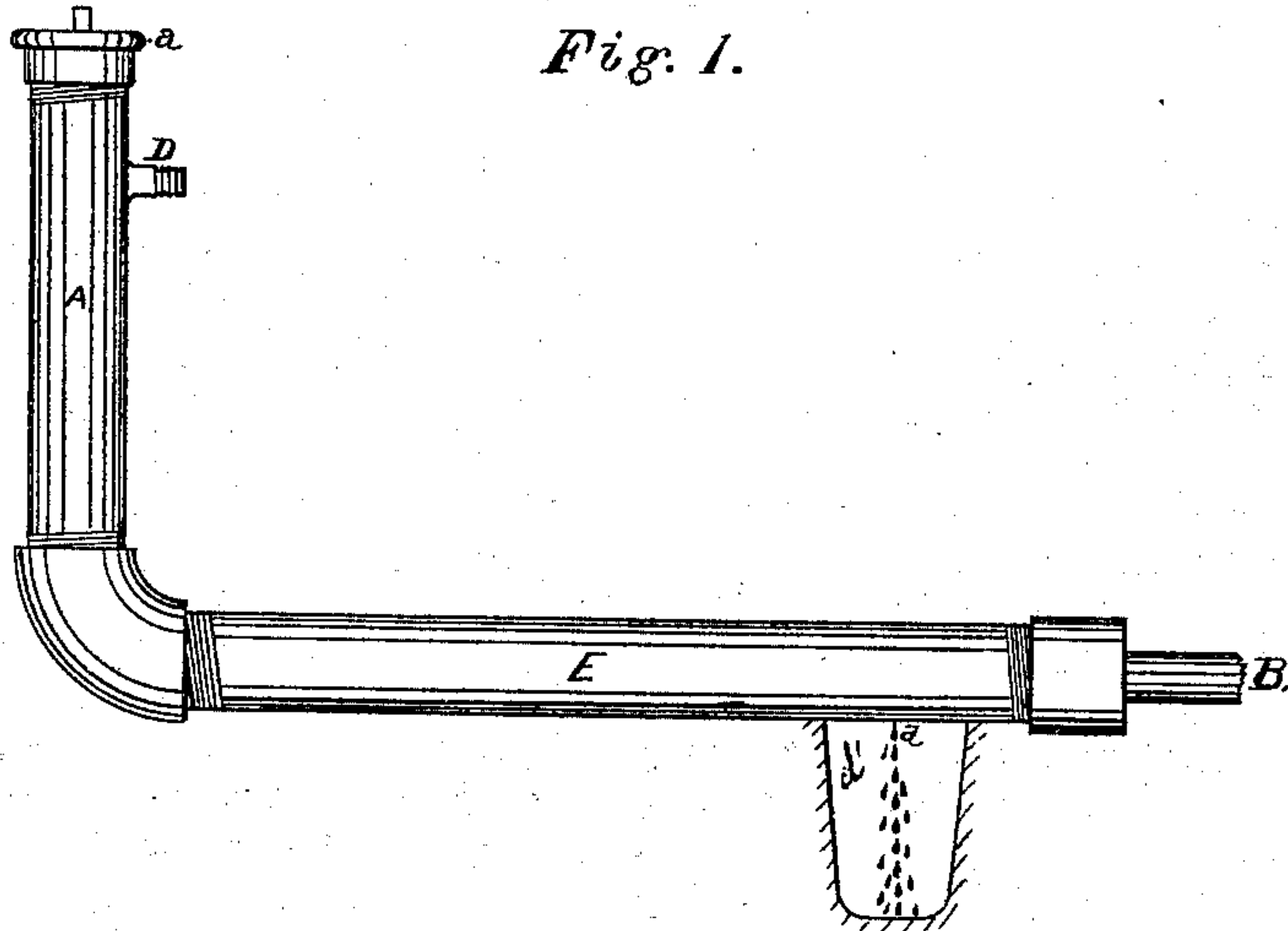


B. KENT.

PREVENTING HYDRANTS FROM FREEZING.

No. 171,228.

Patented Dec. 21, 1875.



WITNESSES

H. C. Merrick
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IMPROVEMENT IN PREVENTING HYDRANTS FROM FREEZING.

Specification forming part of Letters Patent No. **171,228**, dated December 21, 1875; application filed March 1, 1875.

To all whom it may concern:

Be it known that I, BRAZILLA KENT, of the city of Binghamton, in the county of Broome and State of New York, have invented certain Improvements for Preventing Hydrants from Freezing, of which the following is a specification:

My invention is designed to prevent hydrants from freezing; and to this end it consists in providing the hydrant with an inclosing case or shell which surrounds it upon all sides and at the top, and extends below the surface of the ground, where it is connected with a warm-air pit, in such manner that there may be a circulation of air produced by the temperature of the air or the ground which surrounds the upper portion of the inclosing shell falling below the temperature of the air in the bottom of the warm-air pit.

Figure 1 in the accompanying drawings is a view of a hydrant embodying my invention, showing the excavation under the supplementary pipe. Fig. 2 is a transverse section of the same, showing the water-pipe incased in the supplementary tube and their connections.

A is the shell of the hydrant, which is similar in form to others now in use, and constitutes a casing for the elevated end of the water-pipe B. The top of the shell A has a screw-cap, *a*, which has a hole in the top for the stem of the discharge-valve C to work in. The projecting end of this stem is squared for the purpose of operating the valve with the ordinary wrench. The seat of the valve C is in the lower end of the upright section of the water-pipe B, and the two parts are connected in the usual manner, so that the discharge-valve C may be readily removed for examination or repairs without disturbing the shell A. Near the upper end of the vertical section of the pipe B there is a screw opening for the spout D, which is entered through an orifice in the shell A. Just above the valve C there is a drip-hole, *b*, for the discharge of the standing water above the valve. E is the supplementary pipe, which incases the water-pipe B from the hydrant to the main. This pipe is

of sufficient size to leave a chamber, *c*, around the pipe B, and has an opening, *d*, from the under side of the pipe into the chamber *d'*, for the discharge of the drip water, and the reception of warm air from the ground, when the temperature is low above the surface. For this purpose an excavation is made at a suitable point under the supplementary pipe E, as shown by Fig. 1 in the accompanying drawings.

Should the water in the pipe B freeze from undue exposure to frost, it may be readily thawed out by simply removing the cap *a* and introducing through the shell A hot water or steam into the chamber C in the supplementary pipe E, the condensed steam and water passing off through the opening *d* into the excavation below.

From an examination of the drawings, it will be readily seen that whenever the temperature of any portion of the hydrant-pipe or its inclosing-shell becomes reduced to such an extent that the air within the shell is rendered colder than the air in the warm-air pit or chamber *d*, such cold air will pass downward through the aperture *a*, the warm air from the chamber rising and taking its place. When such cold air reaches chamber *d'* it will be warmed by its contact with the walls of the chamber, and will, in turn, be displaced by air which has been cooled by contact with the water-pipe or the shell A. Thus a continuous ascending current of warm air will be maintained, there being no outlet at the upper part of shell A, and the hydrant will be kept from freezing.

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

The combination, with the inclosing-shell A, which is closed at the upper end and is provided with an opening, *d*, of the warm-air chamber *d'*, substantially as set forth.

BRAZILLA KENT.

Witnesses:

PERRY P. ROGERS,
JOHN P. WORTHING.