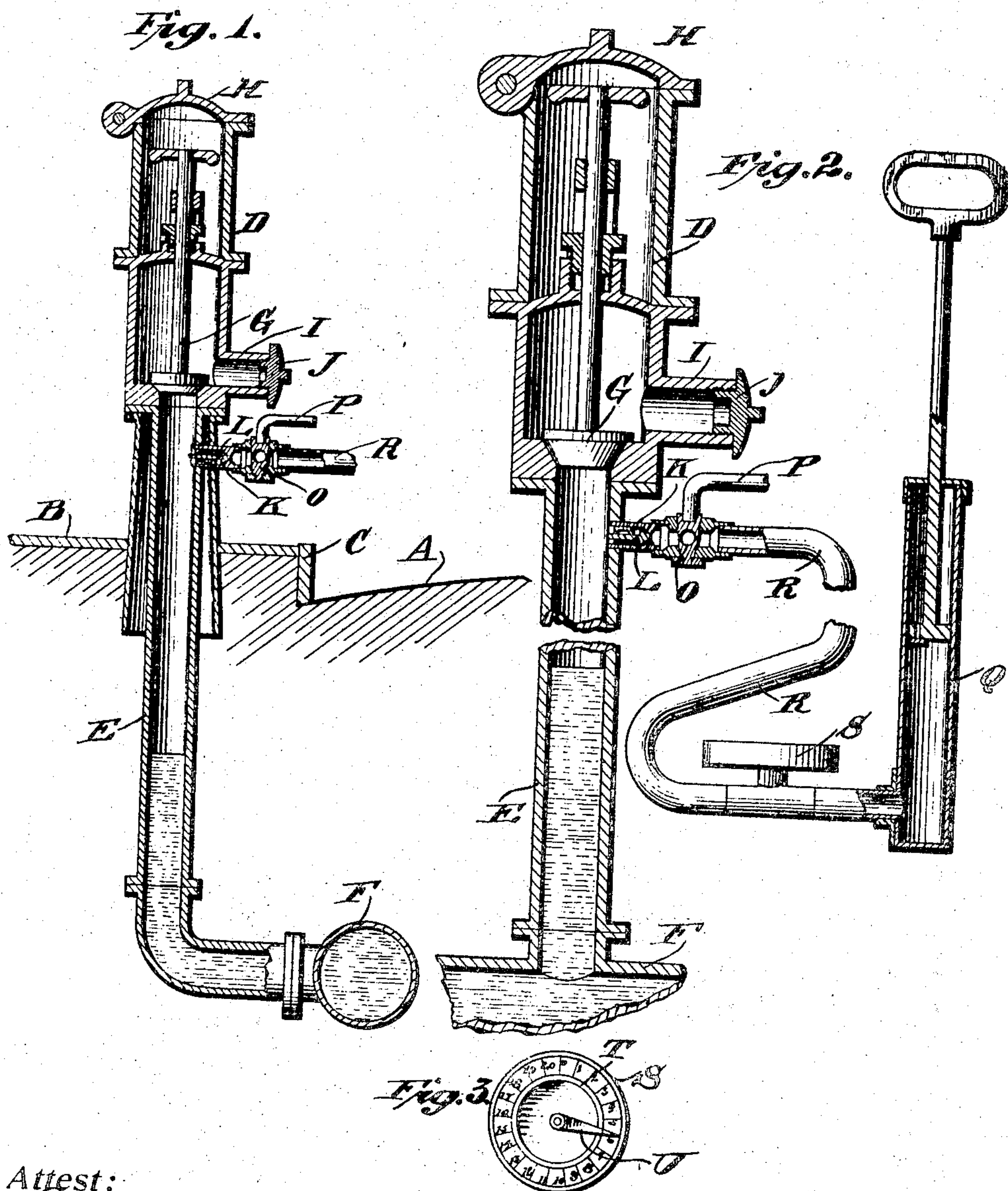


No. 828,597.

PATENTED AUG. 14, 1906.

A. A. COWLES.
FIRE HYDRANT.
APPLICATION FILED MAY 26, 1906.



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ALFRED A. COWLES, OF NEW YORK, N. Y.

FIRE-HYDRANT.

No. 828,597.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed May 25, 1905. Serial No. 262,141.

To all whom it may concern:

Be it known that I, ALFRED A. COWLES, a citizen of the United States, and a resident of the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Fire-Hydrants, of which the following is a specification, accompanied by drawings.

This invention relates to an improvement in fire-hydrants, and has for its object to effectually prevent freezing of the water which would be contained in the fire-hydrant under ordinary conditions and subjected to a freezing external temperature.

Further objects of the invention will hereinafter appear; and to these ends the invention consists of a fire-hydrant for carrying out the above objects embodying the features of construction, combinations of elements, and arrangement of parts having the general mode of operation substantially as hereinafter fully described and claimed in this specification and shown in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal sectional view of a fire-hydrant embodying the invention arranged in proper relation to a street and sidewalk. Fig. 2 is an enlarged vertical sectional view of the fire-hydrant with attachment. Fig. 3 is a top plan view of the pressure-gage used in connection with this invention.

According to this invention fluid-pressure, as that of air or other suitable gas or fluid, is applied to the surface of the water within the fire-hydrant in excess of the water-pressure in the hydrant to force the water down in the pipes below the point at which it would be subjected to a temperature below the freezing-point of water. In this way the water is prevented from freezing when the hydrant is not in use and by releasing the fluid-pressure the water will rise in the stand-pipe of the hydrant ready for use when required.

Referring to the drawings, A represents a suitable city street, B is the sidewalk, and C represents the curbing. The fire-hydrant D is arranged in the usual manner adjacent the curb and is provided with the stand-pipe E, connecting in any suitable manner with the water-main F. The hydrant is provided with the usual valve G, access to which is obtained through the hinged cap or cover H. The outlet I is closed by the removable plug J.

A suitable connection K is provided in the

stand-pipe E for attaching a pump or other device for compressing or for forcing the surface of the water down in the stand-pipe. The attachment K, as shown, is provided with a check-valve L to prevent the escape of the compressed air or other gas and a controlling-valve O, which may be operated by a suitable removable fork or wrench P.

A hand or mechanically operated pump is provided capable of compressing air or other fluid to a pressure in excess of the hydraulic pressure within the fire-hydrant, and in this instance a hand-pump Q is shown provided with a suitable hose or other connection R, adapted to be connected to the connection K in the stand-pipe of the hydrant.

Suitable means are provided for indicating the pressure exerted by the air or gas in excess of the water-pressure contained in the hydrant, and in this instance a pressure-gage S is shown connected to the pipe R and provided with a dial T and indicating-needle U. The pressure-gage is so arranged that the indicator will continue to show an increase in pressure until the water-level is reduced to the water-level of the water-main to which the fire-hydrant connection is attached, so that when this point has been reached the pumping may be stopped. The water will then be maintained below the point at which freezing can occur.

Obviously some features of this invention may be used without others, and the invention may be embodied in widely-varying forms.

Therefore, without limiting the invention to the devices shown and described and without enumerating equivalents, I claim, and desire to obtain by Letters Patent, the following:

1. The combination with a fire-hydrant of means for forcing the water therein to a level below that at which freezing will occur, and means for maintaining the water at such level as long as desired.

2. The combination with a fire-hydrant and its stand-pipe below the surface of the ground, of means for forcing the water in said stand-pipe to a point sufficiently below the surface of the ground to prevent the water from freezing, and means for maintaining the water in the stand-pipe at such place to prevent freezing.

3. The combination with a fire-hydrant of means for exerting fluid-pressure upon the surface of the water in the hydrant and there-

by depressing said water below the surface of the ground to a sufficient depth to prevent freezing, and means for maintaining said water at the desired depth.

5 4. The combination with a fire-hydrant of means for forcing the water therein by air to a level below that at which freezing will occur, and means for indicating the pressure exerted in excess of the water-pressure contained in the hydrant.

10 5. The combination with a fire-hydrant of means for forcing the water therein to a level below that at which freezing will occur, means for maintaining the water at such level as long as desired, and means for indicating the pressure exerted by the air in excess of the water-pressure contained in the hydrant.

15 6. The combination with a fire-hydrant and its stand-pipe below the surface of the ground, of means for forcing the water in said stand-pipe to a point sufficiently below the surface of the ground to prevent the water from freezing, means for maintaining the water in the stand-pipe at such place to prevent
25 freezing, and means for indicating the pres-

sure exerted by the air in excess of the water-pressure contained in the hydrant.

7. The combination with a fire-hydrant of means for exerting fluid-pressure upon the surface of the water in the hydrant and thereby depressing said water below the surface of the ground to a sufficient depth to prevent freezing, means for maintaining said water at the desired depth, and means for indicating the pressure exerted by the air in excess of the water-pressure contained in the hydrant.

8. The combination with a fire-hydrant of means for forcing the water therein to a level below that at which freezing will occur, and means for indicating the pressure exerted in excess of the water-pressure contained in the hydrant.

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

ALFRED A. COWLES.

Witnesses:

T. F. VAN ZANDT,
E. A. NAPIER.