

M. V. FARRELL & H. L. MAIER.
 MEANS FOR THAWING FROSTED FIRE HYDRANTS, WATER MAINS, AND THE LIKE.
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1,294,888.

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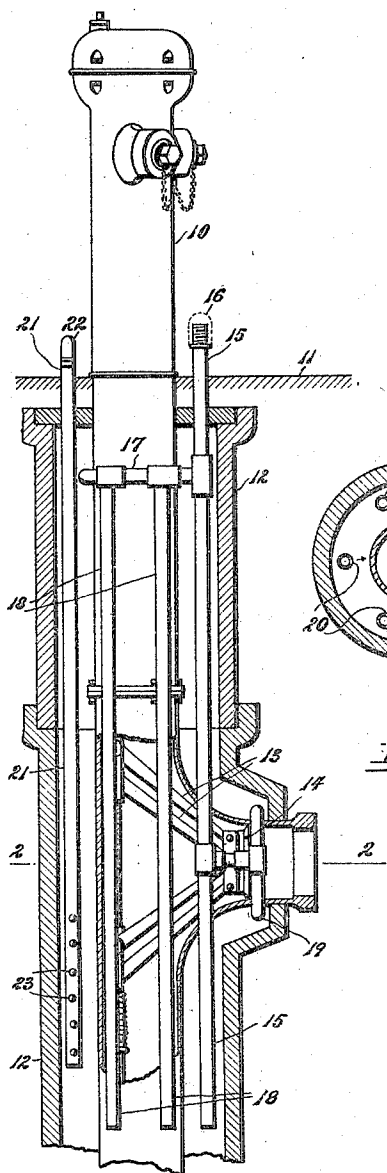


FIG. 1

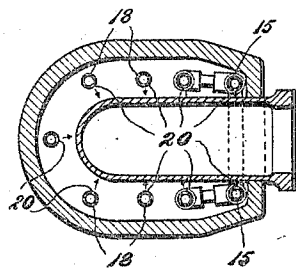


FIG. 2

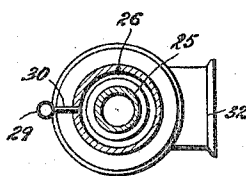


FIG. 4

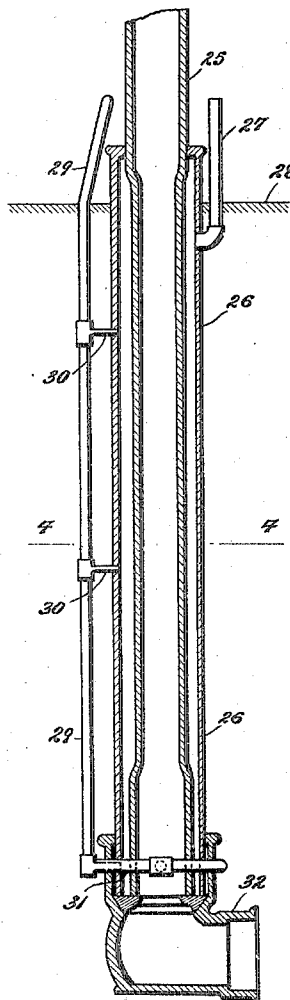


FIG. 3

Witness

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MEANS FOR THAWING FROSTED FIRE-HYDRANTS, WATER-MAINS, AND THE LIKE.

1,294,888.

Specification of Letters Patent.

Patented Feb. 18, 1919.

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To all whom it may concern:

Be it known that we, MARTIN V. FARRELL and HARRY L. MAIER, citizens of the United States, residing at 229 N. Connell St., Wilmington, in the county of New Castle and State of Delaware, have invented new and useful Improvements in Means for Thawing Frosted Fire-Hydrants, Water-Mains, and the like, of which the following is a specification.

The invention relates to fire or other kinds of hydrants, water mains, service pipes and the like, and has for an object to provide a means for thawing out hydrants or conduits of this character when the same become frozen.

Among other features, the invention comprehends primarily a means arranged in juxtaposition to a fire hydrant or the like, whereby a quantity of steam from some suitable source of supply as, for instance, from a steamer fire engine, can be injected into the frost casing or casing of the hydrant, to thaw out the same, or the exhaust gases from an automobile engine may be similarly employed.

Although we are aware that heat has been used heretofore to thaw out fire hydrants and service pipes and the like, in the majority of these cases the method employed is to supply a coil of pipe around or adjacent to the hydrant, and then have a quantity of hot water or heat passed through the pipe to thaw out the hydrant by radiation. This is a method we have found to be slow and cumbersome, and therefore we employ a structure whereby the steam is brought directly into contact with the part to be thawed out, so as to accomplish the result quickly and effectively.

In the further disclosure of the invention, reference is to be had to the accompanying drawing, constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a fragmentary elevation of a hydrant with the frost casing shown in section, with our invention applied thereto.

Fig. 2 is a horizontal sectional view taken on the line 2—2 in Fig. 1.

Fig. 3 is a fragmentary vertical sectional view of a slightly modified form of our

device, as applied to a modified form of hydrant, and

Fig. 4 is a horizontal sectional view taken on the line 4—4 in Fig. 3.

Referring more particularly to the views, 10 indicates a fire hydrant of any standard or improved type, and 11 the ground level, the hydrant extending into the ground, as shown, with a casing 12 encircling the lower part of the hydrant in the ground below the ground level and which casing is usually termed the frost casing. A valve mechanism 13 of the hydrant and valve 14 are of course arranged to lie within the frost casing, and in fact, within the hydrant body, and it will be seen that between the frost casing and the hydrant body there is considerable space. We employ a main pipe 15, which projects upwardly from the ground level and is normally closed by a suitable cap 16, said pipe 15 extending downwardly within the frost casing, and having a circular branch pipe 17 encircling the hydrant within the frost casing. From this circular pipe there are provided a series of depending branch pipes 18 which might be termed auxiliary pipes, the pipe 15 as well as the auxiliary pipes 18 extending downwardly toward the lower end of the frost casing, and of course adjacent to the hydrant body, with an additional auxiliary pipe 19 of circular configuration, encircling the valve 14 of the hydrant and connected to the main pipe 15. All of the pipes mentioned are perforated as indicated by the numeral 20, and we also provide an exhaust pipe 21, which extends from the lower end of the frost casing upwardly to a point slightly above the ground level, said pipe 21 being normally closed by a cap 22, and also provided with perforations 23.

Now in the operation of our device, when a fire occurs in the winter and the chances are that the fire hydrant to which the fire apparatus desires to connect, is frozen up, the steamer of the fire apparatus can connect a hose or couple up in some manner from the boiler of the steamer to the pipe 15, after the cap 16 has been removed, and then a quantity of steam under pressure can be forced into the pipes 15, 18 and 19, causing the steam to spurt in jets through the perforations or holes in the pipes, and come in

direct contact with the fire hydrant body, to thaw out any frozen condition within the body, or at the valve or within the frost casing. Fire hydrants as a general rule have a quantity of water in the frost casing at the bottom thereof, and aside from thawing out any frozen condition within the hydrant, our arrangement will thaw out any frozen condition in the frost casing, because the steam from the pipes will come in direct contact with the hydrant body, and will fill the frost casing with hot live steam. By providing an exhaust pipe, the steam injected into the casing will, when it comes under pressure by the amount that is injected therein, pass out through the exhaust pipe to the surface, and thus it will be seen that in a very short space of time after the fire apparatus reaches the hydrant, the hydrant can be made serviceable and placed in condition for use.

In Figs. 3 and 4 we show a slightly modified form of our invention, and in which instance the hydrant body is indicated by the numeral 25 and a surrounding casing by the numeral 26, with a pipe 27 from above the ground level 28, passing into the ground and connecting with the casing 26, below the ground level, another pipe 29 being also arranged above the ground level and passing into the same to connect by means of auxiliary pipes 30 with the interior of the casing 26, an additional circular pipe 31 being provided to pass around the point of connection of the hydrant body and casing 26 with the main 32. The pipe 29 is the inlet pipe and the pipe 27 is the outlet pipe, and it will be seen that when steam is injected into the

inlet pipe 29 it will fill the casing 26 and thaw out any frozen condition at the base of the hydrant, and the steam can pass out through the pipe 27.

As mentioned heretofore, our object is attained by having the steam come in direct contact with the frozen conditions, and we have found that this method is far superior to any form of radiation methods used heretofore, it being very important to obtain results in the shortest possible space of time, especially in cases of a fire where a fire hydrant is to be placed in use.

We claim:

A means for thawing frosted fire hydrants or conduits having a part thereof projecting beyond the level of the ground, and another part thereof extending into the ground, comprising in combination with the valve of the hydrant and a casing encircling the body of the hydrant below the level of the ground, a steam inlet pipe having its inlet end above the level of the ground and adjacent to that portion of the hydrant above the level of the ground and having outlet into said casing, an outlet pipe having its open inner end in said casing, said outlet pipe extending from the casing to a point above the level of the ground and adjacent the external portion of the hydrant body to provide an exterior outlet, and a valve-encircling supplementary pipe connected to the first-mentioned pipe and closely encircling the valve of the hydrant body adjacent the casing thereof.

In testimony whereof we affix our signatures.

MARTIN V. FARRELL.
HARRY L. MATER.