

No. 827,025.

PATENTED JULY 24, 1906.

G. T. LIDDLE.

DEVICE FOR THAWING FROSTED FIRE HYDRANTS, WATER MAINS,
AND SERVICE PIPES FROM MAINS TO HOUSE HYDRANTS.

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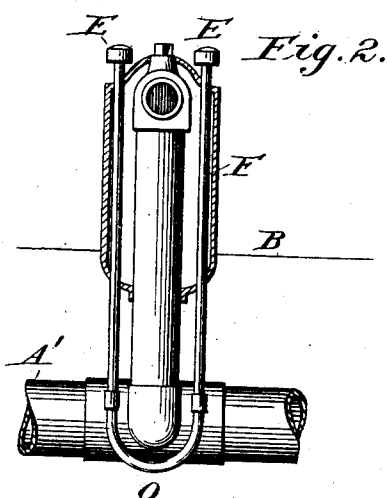
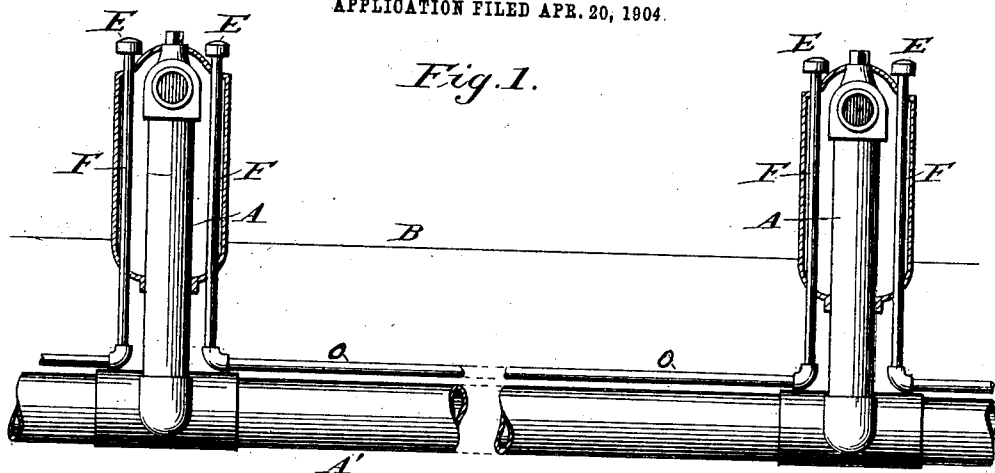
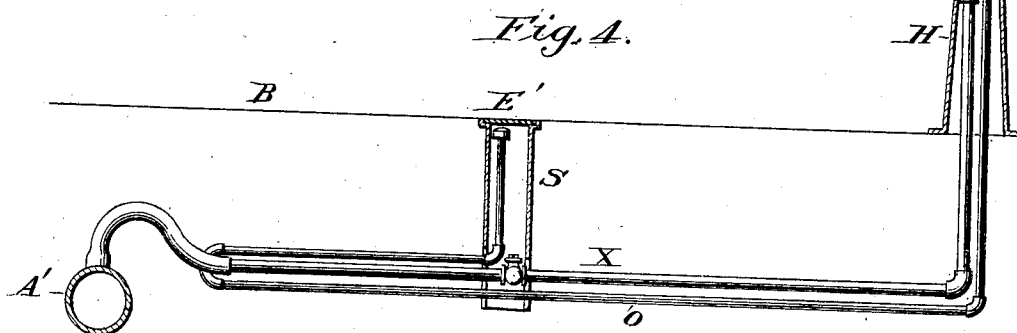
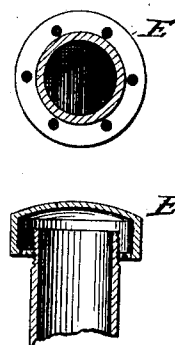


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

GEORGE THOMAS LIDDLE, OF MUSKEGON, MICHIGAN.

DEVICE FOR THAWING FROSTED FIRE-HYDRANTS, WATER-MAINS, AND SERVICE-PIPES FROM MAINS TO HOUSE-HYDRANTS.

No. 827,025.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed April 20, 1904. Serial No. 204,143.

To all whom it may concern:

Be it known that I, GEORGE THOMAS LIDDLE, a citizen of the United States, residing at Muskegon, in the county of Muskegon, State of Michigan, have invented a new and useful Device for Thawing Frosted Fire-Hydrants, Water-Mains, and Service-Pipes from Mains to House-Hydrants, of which the following is a specification.

My invention relates to improvements in means for thawing frosted water-mains, fire, or other hydrants and the like, and has for its special object to produce a device which may be readily applied thereto at a nominal expense.

My invention consists in laying along the main or the like a secondary pipe having its terminals readily accessible and provided with removable perforated caps. With this construction by removing the perforated cap at one end of said pipe and injecting a supply of steam therein an uninterrupted flow thereof is obtained throughout the entire length of the pipe without removing the cap at the other end. In practice it will be found advantageous when applying this construction to mains to employ a series of short steam-pipes to enable any particular part of the main to be thawed without an unnecessary waste of steam.

To enable my invention to be more thoroughly understood, I have illustrated the same in the accompanying drawings, and a full and exact description thereof is contained in the annexed specification.

In the drawings, Figure 1 represents a portion of a water-main and hydrants provided with my improved construction. Fig. 2 represents a hydrant with my improved device applied thereto. Fig. 3 illustrates my improved perforated cap. Fig. 4 illustrates a service-pipe and hydrant provided with my improvements.

In the several views like letters of reference designate similar parts of my improved construction.

A A in the drawings designate hydrants of any well-known form, and A' the main for supplying the same.

F F are secondary pipes of any suitable diameter extending down the hydrants and at a suitable distance therefrom and having their upper extremities preferably above the level of the ground (here designated B) and extending through the hydrant-casing.

O is a pipe, as shown, similar to F F, but extending along the main at a suitable distance therefrom and connecting the lower terminal of one pipe F to the lower terminal of another pipe F at the next hydrant, thus providing means whereby steam may be passed along one section of the main and two hydrants to thaw the same, as shown in Fig. 1. This arrangement of the pipes F F and O is preferable in practice, as by this means any one section of the main or any one hydrant may be thawed without an unnecessary waste of steam; but it should be understood that the sections may be of any desirable length.

E E are hollow caps, preferably of larger diameter than the pipes F F, but provided with openings E' E', adapted to fit over the exposed ends of said pipes F F, said caps being preferably screwed thereon, as shown in Fig. 3, to enable them to be readily attached and detached. E² E² are perforations in the under side of said caps to permit the escape of steam from the pipes F F without necessitating the removal of said caps. Thus it will be seen that when the contents of the main or hydrants freeze it is only necessary to remove the cap E from one terminal of the proper section of piping, introduce a supply of steam therein, and continue the same until the contents have thawed, the steam passing out through the perforations in the cap at the other end of the section.

In Fig. 2, which illustrates my device applied only to a hydrant, two pipes F F extend down the hydrant, preferably one on each side of same, said pipes F F having their lower ends connected by a pipe O', which preferably passes around the joint of the hydrant with the main. The operation of this device is exactly the same as that previously described, except that its influence is restricted to that particular hydrant.

In Fig. 4, which shows my improved construction applied to a service-pipe and hydrant, one pipe F extends along the hydrant, while the other pipe F is located in the shut-off trap S, said pipes F F being connected by a pipe O², extending along the service-pipe and around the connection of the service-pipe with the main.

It will be observed that in all the applications of the invention herein shown the thawing conduit or pipe communicates with the atmosphere at each end through the aper-

tures E² and the caps E. It follows, therefore, that the thawing fluid may be applied at either end of the thawing-conduit, as is most convenient, by simply removing the cap E therefrom, and the said thawing fluid will be permitted to escape through the apertures E² in the cap E at the other end without the necessity of removing the latter, which may be located at a considerable distance from where the thawing fluid is introduced. The caps E being closed at their upper ends and having the vent-openings E² on their under sides prevent the admission of dirt and other foreign matter, which might otherwise clog the thawing-conduit.

What I claim, and desire to secure by Letters Patent, is—

1. The combination with a water-supply pipe and a hydrant connected therewith, of a thawing pipe or conduit having a portion extending adjacent to and outside of the hydrant, a portion extending adjacent to and outside of the supply-pipe and having both ends accessible and removable caps for the ends of said thawing pipes or conduit, said caps being provided with vent-openings on their under sides whereby either of said caps may be removed to permit the admission of a thawing fluid, which escapes through the vent-openings of the other cap, without necessitating the removal of said cap, substantially as described.

2. The combination with a water-supply pipe and a hydrant connected therewith, of a thawing pipe or conduit having a portion extending adjacent to and outside of the hydrant, a portion extending adjacent to and outside of the supply-pipe and having vertically-disposed terminal portions, a removable cap for each of said vertical terminal portions having its upper portion closed and having vent-openings on its under side whereby either of said caps may be removed

to permit the admission of a thawing fluid which escapes through the vent-openings of the cap without necessitating the removal of said cap, substantially as described.

3. The combination with a water-main provided with a plurality of hydrants, of a thawing-pipe having a portion extending parallel to and outside of and adjacent to a section of the main and having vertically-disposed terminal portions one of which is arranged adjacent to a hydrant connected to said main, removable caps engaging said terminal portions of the thawing-pipe, each provided with vent-openings on their under sides whereby a section of the main and a hydrant connected therewith, can be thawed from either end of said thawing-pipe without removing the cap at the other end thereof, substantially as described.

4. The combination with a water-main provided with a plurality of hydrants and casings for said hydrants, of a thawing-pipe having a portion extending parallel to, outside of and adjacent to a section of the main between two hydrants and having vertically-disposed terminal portions, each of which passes through one of said hydrant-casings and is arranged adjacent to the hydrant therein, removable caps engaging said terminal portions of the thawing-pipe, each provided with vent-openings on their under sides whereby a section of the main and two hydrants connected therewith can be thawed from either end of said thawing-pipe without removing the cap at the other end thereof, substantially as described.

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

GEORGE THOMAS LIDDLE.

Witnesses:

WM. MOORE,
GEO. C. VERWAY.