R. O. BENTON.

THAWING HYDRANTS OR WATER PIPES.

No. 329,881. Patented Nov. 10, 1885.

Fig. 1.  Fig. 2.  Fig. 3.

Witnesses.
James W. Caldwell.
Hugh Sangster.

Inventor.
Russell O. Benton.
By James Sangster.

M. Peters, Printer-Lithographer. Washington, D.C.
To all whom it may concern:  

Be it known that I, RUSSELL O. BENTON, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Thawing Hydrants and Water-Pipes, of which the following is a specification.

The object of my invention is to produce the means whereby a hydrant or water-pipe may be instantly thawed out, if it should at any time become frozen; and it consists in combining with a hydrant or water-pipe one or more smaller tubes, which pass through the side of the hydrant or water-pipe and from thence down through or along the inside of the same to some convenient point beyond the reach of frost, and then out through the side of the water or other pipe, the said auxiliary pipe or tubes having their inlet-opening at some point within easy reach, and provided with an easily-detachable screw-cap, and their outlet opening or openings (which are always open) leading into the sewer or other waste-chamber, the object being to provide a simple means whereby a pipe from some suitable steam-boiler may be readily connected to the inlet end of the tube or tubes, whereby a jet of steam may be sent through the interior of the frozen pipe through the whole length of the frozen portion, thereby thawing it out, all of which will be fully and clearly hereinafter described, claimed, and shown by reference to the accompanying drawings, in which—

Figure 1 is a vertical central section through a common hydrant. Fig. 2 is a side elevation. Fig. 3 is an enlarged central section through a portion of a water-pipe, showing my invention connected thereto, also a modified construction of the pipes; and Fig. 4 is a cross-section through line X X, Fig. 3.

In said drawings, a represents the body of the hydrant; a', the ordinary valve, connected by the rod a', which passes through a stuffing-box, a'', and is provided with a screw, a''' and handle a'' by which it is operated in the usual way. c is the vent-plug, connected to a rod, c', and to the valve-rod a'. The outlet or nozzle c'' is provided with a cap, c'.

I have shown a common hydrant suitable for illustrating my invention; but any other kind of hydrant or water-pipe to which it may be adapted can be used.

To a hydrant or other water-pipe I attach an interior supplementary tube or tubes, c. If it is a hydrant, the tube is connected at the upper part, above ground, passing from the interior through one side of the hydrant, for instance, at or above the point c, (see Fig. 1,) and is provided with an interior cap, d, to close it when not required for use. Cast-iron not being a suitable metal to solder to, I employ a metal plug, d', to which the solder will take easily, and screw it tightly into the metal, as shown, and through the plug I pass the tube or pipe c and solder it thereto, so as to make a tight joint. The opposite end of the pipe c I carry down through the hydrant to some convenient place below the freezing-point, (for instance, at d', Fig. 1,) and pass it through a joint, d'', to which it is soldered, so as to form a tight joint.

The tubes c should be as large as possible without interfering with the flow of water through the pipe. As a general thing, however, the capacity of the pipe is much greater than the opening through the valves or stopcocks attached to them, so that sufficient room is left for the supplementary tube or tubes.

The lower end of the supplementary tube is always left open, so that any water that may condense therein may run out into the sewer or some suitable place; but if the pipes should lie so that water would be liable to settle at any point it should be blown out and kept perfectly free from water when not in use, so as to leave a free passage for steam through it when required.

The tube c may be passed down through one side of the valve a', as shown; or when this is not possible, it may be made to pass out through the side of the hydrant above the valve and into it again below the valve. In some cases it is desirable to use two or more pipes, branching out from one short pipe at the inlet and terminating in one at the outlet.

In this case the short pipe b', (see Fig. 4, in which e represents a water-pipe,) should have the same capacity as the combined capacity of the several pipes c connected to it. When connecting one or more of these pipes to an ordinary conductor-pipe—on a house,
for instance—the plugs $d'$ may be dispensed with, and the auxiliary tube soldered or connected to the main pipe in any well-known way.

5 In operating with my invention with a frozen water-pipe or hydrant, all that is necessary to do is to connect a steam-pipe from a fire engine or other boiler and let a jet of steam (or hot water) flow through it, when it will instantly begin to thaw out. In this way a hydrant or water-pipe can be thawed out in from one to a few minutes.

I am aware that it is not new to pass a small tube through a larger pipe and have its upper end secured to some convenient point near the inlet and having the inlet end provided with a plug, the tube passing down through the pipe and out through the outlet. I am also aware that hydrants have been made having a small pipe passing through the side of the hydrant into and down through an air-chamber to some point above the valve, for the purpose of providing a means for thawing them out when frozen. I therefore do not claim such, broadly, my invention consisting in an arrangement whereby to thaw out parts of continuous pipes at points where there is no open end for the passage of the steam-pipe, and whereby the latter may be used while maintaining the liquid in the main pipe under pressure.

I claim—

A hydrant or water-pipe having an interior auxiliary tube, in combination with the metallic screw-plugs $d'$, through which the inlet and outlet ends of the auxiliary tube pass, and to which they are secured, as and for the purposes described.

RUSSELL O. BENTON.

Witnesses:

JENNIE M. CALDWELL,

JAMES SANGSTER.