J. M. AUBERY.

MEANS FOR THAWING OUT WATER PIPES.

APPLICATION FILED APR. 6, 1912. RENEWED OCT. 24, 1914.

1,140,864. Patented May 25, 1915.

Fig. 1.

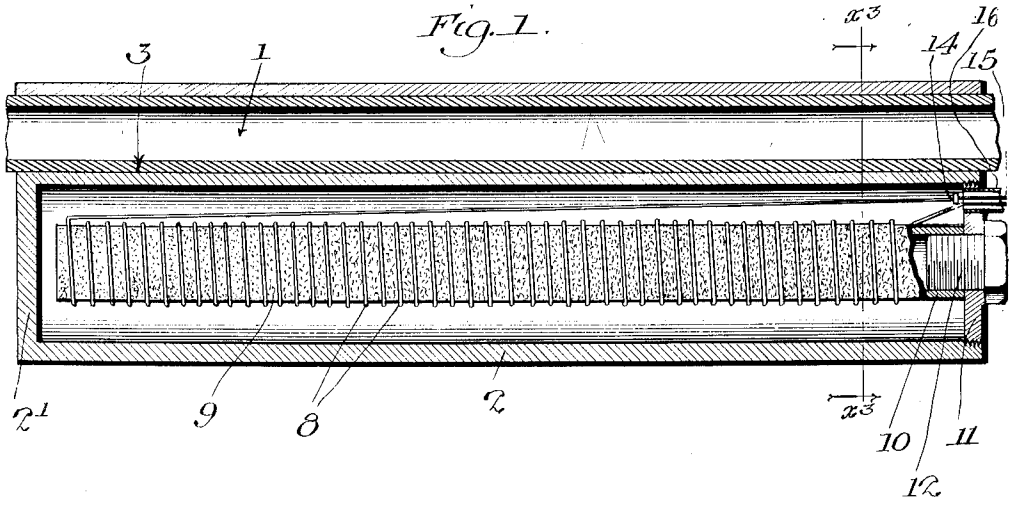


Fig. 2.

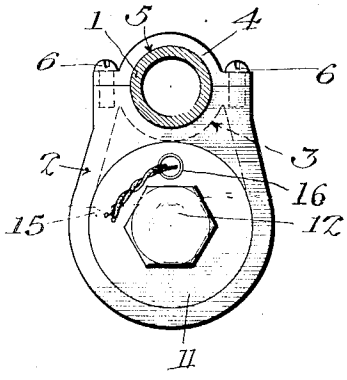
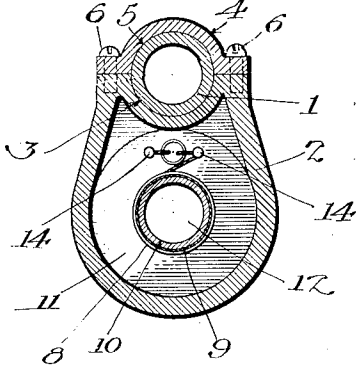


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MEANS FOR THAWING OUT WATER-PIPES.

1,140,864. Specification of Letters Patent. Patented May 25, 1915.

Application filed April 6, 1912, Serial No. 689,037. Renewed October 24, 1914. Serial No. 868,527.

To all whom it may concern:

Be it known that I, JAMES M. AUBERY, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Means for Thawing Out Water-Pipes, of which the following is a specification.

This invention relates to means for thawing out frozen water pipes in countries where the climate is of such severity that water pipes are liable to freeze during cold spells, particularly near the point where the service pipes leave the ground and enter the house, or in other exposed positions.

The invention is intended for application to such exposed situations, and comprises an electric heating element arranged in proximity to the portion of the pipe to be heated and in heat conducting relation with such pipe.

Other objects of the invention will appear hereinafter.

The accompanying drawings illustrate an embodiment of the invention, and referring thereto: Figure 1 is a longitudinal section of the device. Fig. 2 is an end elevation thereof. Fig. 3 is a transverse section on line x^3—x^3, Fig. 2.

1 designates the portion of the pipe which is to be warmed or thawed out and 2 designates the casing for the electric heating element, said casing being provided with a groove 3 in its top and a cap plate 4 fitting over the casing 3 being also provided with a semi-circular groove 5 so that when said members 2 and 4 are placed together, they will completely encircle or embrace the pipe and be in contact therewith, the parts being held in this relation by screws 6 fastening the cap plate 4 to the member 2. The member or casing 2 preferably consists of a tube of metal formed with a longitudinal chamber and having a portion of its wall curved to form the groove 3 as stated and having its lower portion rounded to receive and inclose the electric heating element. Said electric heating element may consist of resistance wire 8 wound over an insulating layer 9 on a core 10, said core being, for example, a metal tube secured to an end plate or plug 11, said plug 11 screwing into and closing one end of said casing 2, and the other end of said casing being permanently closed as indicated at 2′. The core 10 may be secured to the plug 11 in any suitable manner, for example, by means of a screw 12. The end of resistance wire 9 may lead to connection posts 14 from which the cable or wires 15 of electric supply circuit lead through a conduit 16 to any suitable means for supplying electric current.

The operation is as follows: When the water in the portion of the pipe to which the device is to be applied, has become frozen, the current is turned on through the wires 15 and heats the resistance wire 8, the heat being radiated and convected from said resistance wire to the casing 2, and being conducted by said casing to the pipe 1, so as to melt the ice in the pipe. A comparatively small amount of heat is required as it is only necessary to melt the surface or outer portion of the ice in the pipe, whereupon the pressure and heat of the water in the mains will clear the pipe.

The casing or chamber 2 completely incloses the resistance element, so that the latter is effectively protected from excess of water or moisture thereto from the ground or air, the only communication from the outside being through the conduit 16 for containing the electric supply wires. By this means the resistance or heating element is protected from deterioration by the elements.

The device may also be used as a means for preventing the water in the pipes from freezing, the current being turned on at times of severely cold weather, so as to furnish a small current to apply sufficient heat to the pipe to prevent the water from freezing.

The fact that the device is in permanent position on the pipe renders the preventive operation and also the thawing operation to be performed at any time without trouble or delay.

The heating unit or element is removable from the device by simply unscrewing the plug 11 from the casing, so that in case any accident or defect occurs in the insulation or wiring of the device, it may be withdrawn for repairs or replacement without disturbing the casing or other parts.

What I claim is:

Means for thawing out water pipes, comprising in combination with the pipe, a tu-

bular casing extending alongside the pipe, a removable screw plug in one end of said tubular casing, a core supported on said plug, and extending longitudinally in the tubular casing, parallel to the pipe, a resistance wire wound around said core, electrical connections for said resistance wire, said connections passing through said screw plug, a cap plate, said cap plate and tubular casing being grooved to fit the pipe, and means securing the cap plate to the tubular casing to clamp the pipe between said cap plate and tubular casing.

In testimony whereof, I have hereunto set my hand at Los Angeles, California this 1st day of April 1912.

JAMES M. AUBERY.

In presence of—

MARY E. BLASDEL,

A. P. KNIGHT.