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WATER PIPE DE-ICER

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Fig. 1

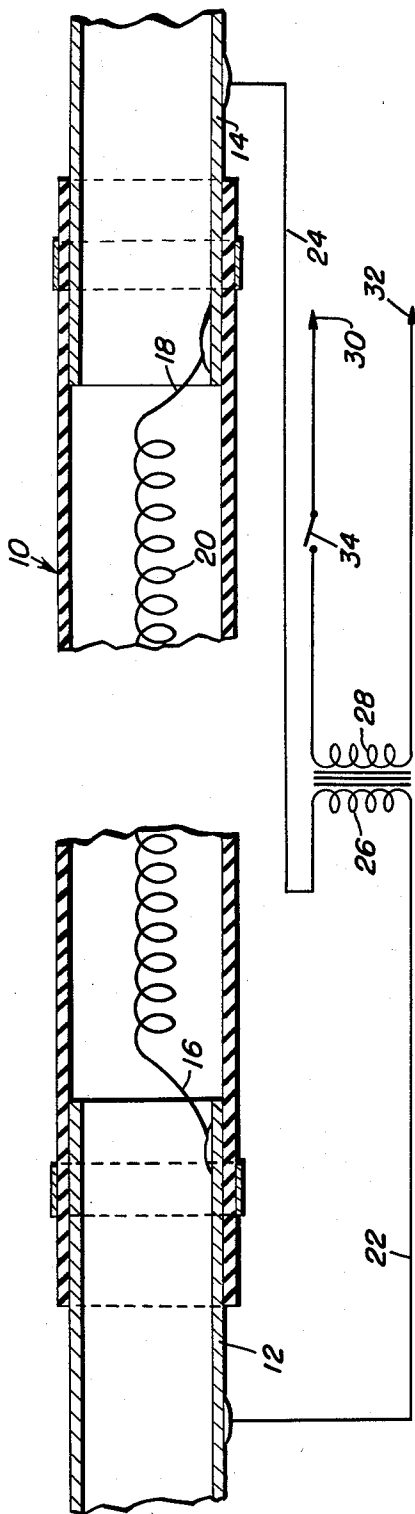
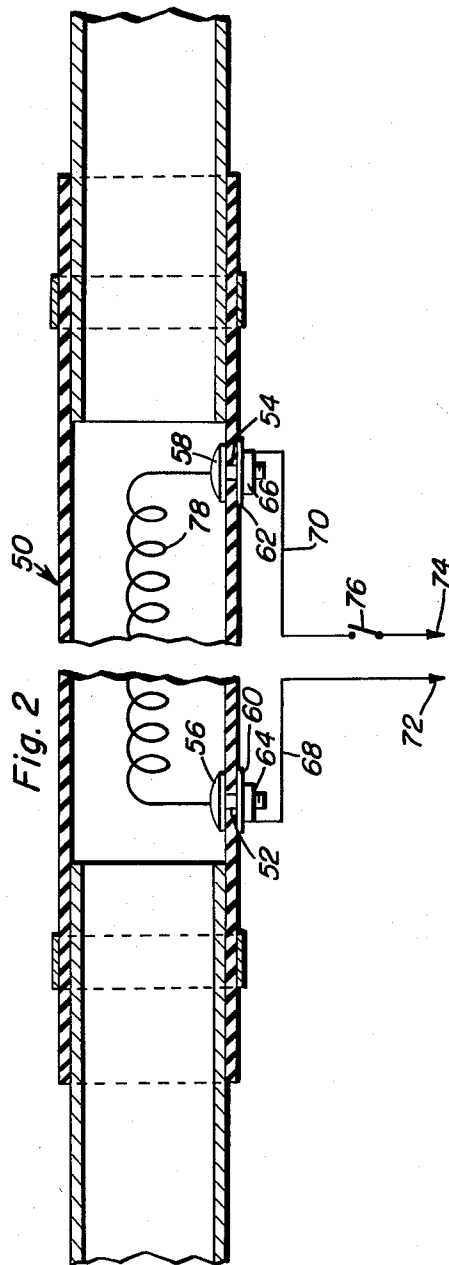


Fig. 2



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## WATER PIPE DE-ICER

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1 Claim. (Cl. 219—19)

This invention relates to a device adapted for frozen pipes and has for its particular object the provision of simple and efficient heating means adapted to extend through a water pipe for use in melting any ice therein.

A further object of this invention resides in the provision of a water pipe de-icer that may be readily plugged into any convenient electric outlet.

Still further objects of the invention reside in the provision of a water de-icer that is strong and durable, simple in construction and manufacture, and which is relatively inexpensive to produce.

These, together with the various ancillary objects and features of the invention which will become apparent as the following description proceeds, are attained by this means for maintaining water pipes free from ice, preferred arrangements thereof being shown in the accompanying drawings, by way of example only, wherein:

Figure 1 is a sectional detail view showing the construction of one arrangement of water pipe de-icer employing a transformer between the source of electrical power and the heating coil; and,

Figure 2 is a sectional detail view similar to that of Figure 1 but showing an electrical circuit arrangement adapted to connect directly to an electrical outlet.

With continuing reference to the accompanying drawings wherein like reference numerals designate similar parts throughout the various views, reference numeral 10 generally designates a water pipe which is made from any suitable electrically non-conductive materials such as rubber, a synthetic plastic, or the like. The water pipe 10 is preferably tubular and inserted in the ends thereof, there are tubular connectors 12 and 14 formed from any suitable electrically conductive material. The connectors 12 and 14 are tubular in shape in order to permit passage of fluid therethrough.

Terminally soldered or otherwise secured to the connectors 12 and 14 are the ends 16 and 18 of heating coils 20 of relatively high resistance. Attached to the connectors 12 and 14 are conductors 22 and 24 which are attached to the secondary turns 26 of a transformer having its primary turns or coil 28 connected to a source of power by means of any conventional plug the terminals of which are indicated by reference numerals 30 and 32. A switch 34 is provided for making and breaking an operative electrical circuit from the source of electrical power to the heating coil 20 when it is desired to thaw the water pipe 10 when filled with ice.

With reference to the arrangement of the invention as

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is shown in Figure 2, it will be noted that herein is illustrated a modified form of the invention employing means to prevent short circuiting of the system were it to be grounded or were it to be exposed during rainy weather.

A water pipe 50 may be provided with apertures 52 and 54 therethrough. Headed bolts forming terminals or connectors 56 and 58 extend through apertures 52 and 54 and washers 60 and 62 are provided to form a watertight seal, the washers 60 and 62 being held in place by nuts 64 and 66 which also hold conductors 68 and 70. The plug contacts 72 and 74 are directly connected to the source of power eliminating the transformer. A switch 76 is supplied for controlling the flow of current to the heating coil 78 and the contacts 72 and 74 are directly electrically connected to the bolts 56 and 58 by means of conductors 68 and 70. The heating coil 78 is secured to the bolts 56 and 58.

It is highly desirable to make the hoses 10 or 50 out of a resilient and electrically insulative material so as to prevent excessive damage due to the freezing of the water contained therein. This resilient and electrically insulative material conductor also prevents the heating coils 20 or 78 from becoming shorted. It is to be understood that the current must be forced into the resistance wire no matter which form of installation is used.

Since from the foregoing, the construction and advantages of this water pipe de-icer are readily apparent, further description is believed to be unnecessary.

However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawings, it is not intended to limit the invention to the precise embodiment shown and described, but all suitable modifications and equivalents may be readily resorted to as desired.

What is claimed as new is as follows:

In combination with a tubular water pipe constructed of an electrically non-conductive substance, a water pipe de-icer comprising a pair of tubular electrically conductive connectors each secured to one end of said water pipe, a high resistance heating coil terminally attached to the inside of said connectors and extending therebetween, and conductors terminally operatively attached to the secondary coil of a transformer, the primary coil of said transformer being connected to means for connection to a source of electrical power, and clamps secured over said water pipe clampingly holding said water pipe to said connectors, said water pipe being constructed of a resilient material.

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