Jan. 4, 1966 E. L. GORDON 3,227,853

DOWNSPOUT DE-ICER

Filed Nov. 23, 1964

Fig.1.

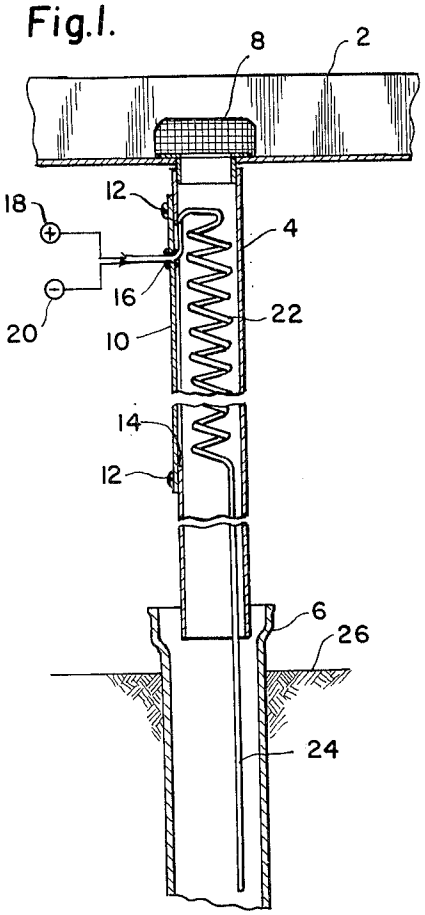
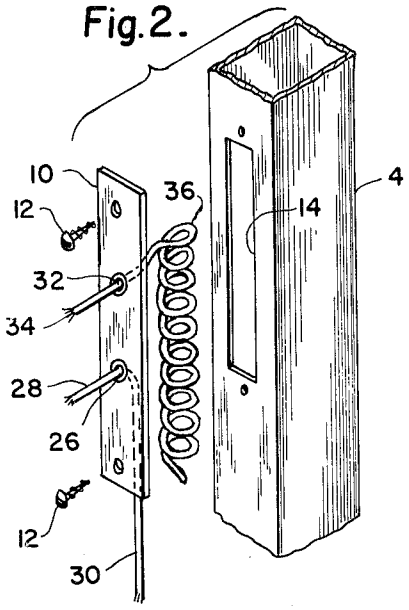



Fig.2.




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# DOWNSPOUT DE-ICER

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1 Claim. (Cl. 219—213)

This invention relates to a device for preventing the accumulation of ice in roof downspouts during freezing weather and the resulting stoppage thereof. This application is a continuation-in-part of my application Serial No. 352,549 filed March 17, 1964.

Damage to the exteriors and interiors of buildings has been caused by the stoppage of roof downspouts as a result of freezing, with the attendant backing up of water from the melting of snow collected on the roof and the subsequent re-freezing thereof.

It is accordingly the object of my invention to prevent such stoppage by providing an electric heater of moderate capacity, effective to maintain a current of warm air ascending through the downspout which will forestall the initial freezing with which ultimate stoppage is initiated.

A further object of the invention is to provide a simple, inexpensive de-icer which can easily be installed in existing downspouts and will serve its intended purpose at a low consumption of energy without requiring attention or inspection.

A complete understanding of the invention may be obtained from the following detailed description of a present preferred embodiment illustrated in the accompanying drawings. In the drawings:

FIG. 1 is a vertical section through the device showing parts in elevation and a part broken away; and

FIG. 2 is an enlarged, perspective exploded view of the heater unit assembly.

Referring more particularly to FIGS. 1 and 2 of the drawing, numeral 2 denotes an eaves trough or gutter having a downspout 4 connected thereteo at a junction in which is fitted a screen 8 to prevent entry of leaves and other debris. The downspout 4 leads into a pipe 6 which projects into the ground 26. A vertical slot 14 is provided on one side of downspout 4, as shown more clearly in FIG. 2, through which there may be projected a heating coil, such as 22 of FIG. 1 or 36 of FIG. 2. Such coil is mounted as a unit on a removable plate 10 which may be attached to the downspout by means of screws 12 which may be of the self-tapping type. Thus the unit may be installed in conventional downspouts merely by forming a slot therein, such as 14.

Referring to FIG. 1, the coil 22 is made up of two wires separated by insulation, much the same way as television lead-in-wires,—that is, in the form of a flat strip of plastic whose opposite longitudinal edges have embedded therein heater wires. Heating coil 22 is in helical form and extends through a substantial part of the entire length of the downspout 4 and its lower end portion 24 projects into pipe 6 and below the ground surface. The lowermost ends of the two wires in portion 24 are joined together to provide a series circuit. Thus, household potential is applied to terminals 18 and 20 which pass



through the insulating mounting ring 16 so as to pass current through the two wires forming coil 22 and thereby heat any ice or snow accumulating in the gutter so as to melt the ice or snow and cause it to flow through the downspout 4. Coil 22 does not contact the inner surface of downspout 4 but is in close proximity thereto.

FIG. 2 shows a modification wherein instead of a single coil 22 with a dependent portion 24, as shown in FIG. 1, there are provided two separate heater coils, namely, 36 and 30, each provided with two closely spaced wires extending in parallel relationship on opposite edges of a flat strip of insulation, such as in conventional television lead-in wires. A household source of potential, will be connected across the two wires forming the lead-in 34 as well as across the two wires extending along lead-in 28, which lead-in wires are surrounded by insulating collars 32 and 26, respectively. The heater unit 30 extends downwardly through the downspout 4 and through pipe 6 which extends in the ground. Lead-ins 34 and 28 may be connected in parallel to the source of household potential.

Thus it will be seen that I have provided an efficient, electrical heater unit which will heat the entire inner surface or interior of a downspout and which will also heat the portion extending into the ground and thus assure that any collected ice or snow in the eaves trough will be melted and drained away, instead of being permitted to clog the flow of rain water.

While I have illustrated and described several embodiments of my invention, it will be understood that these are by way of illustration only, and that various changes and modifications may be made within the contemplation of my invention and within the scope of the following claim.

I claim:

In a downspout, a de-icer comprising a helical heater coil mounted in said downspout and confronting the inner walls thereof throughout substantially the entire length of the downspout, a longitudinal slot formed in the upper portion of said downspout, and a cover plate which serves as a mounting for lead-in wires for said heater coil, said cover plate being detachably connected to said downspout in a manner so as to completely cover said slot.

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