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METHOD FOR PREVENTING MOISTURE CONDENSATION ON COLD PIPES

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Fig. 1.

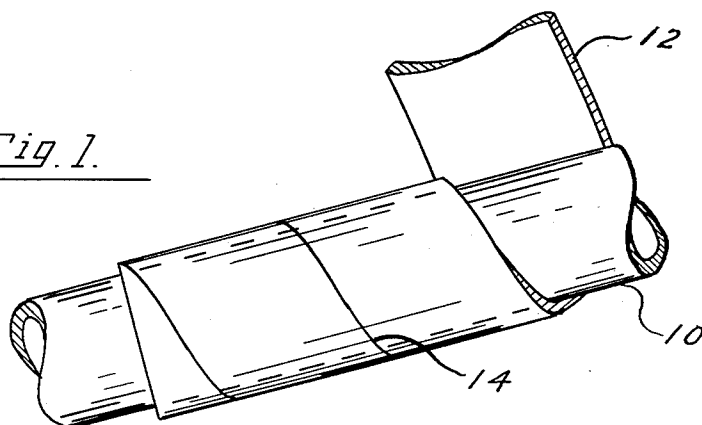
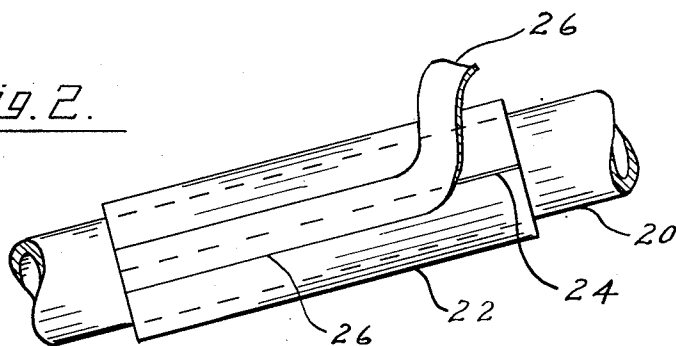


Fig. 2.



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METHOD FOR PREVENTING MOISTURE
CONDENSATION ON COLD PIPES

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2 Claims. (Cl. 154—41)

The present invention relates to a method for preventing the condensation of moisture on cold pipes, e. g., cold water pipes. More particularly, this invention relates to an inexpensive method for preventing the condensation of moisture on cold water pipes than can be practiced by the home owner without the necessity of purchasing special tools.

The problem of moisture condensation on cold water pipes with the accompanying dripping of said water onto the cellar floor is a major annoyance to untold numbers of home owners. The problem is one of long standing in the art and for which no really good solution has been proposed. Lagging of cold water pipes with asbestos tape affords partial relief to the problem, but inasmuch as the asbestos tape is porous in nature water vapor can pass therethrough. In time the asbestos tape becomes saturated with condensed water which then drips on the cellar floor.

It is an object of this invention to provide an improved method for preventing condensation of water on cold pipes.

Other objects and advantages of this invention will become apparent from the following detailed description thereof when read in conjunction with the accompanying drawing in which

Fig. 1 illustrates a pipe carrying a helical wrapping of insulating tape, and

Fig. 2 illustrates a pipe carrying a cylindrical insulating jacket prepared from a single length of insulating tape.

It has been discovered that the condensation of water on cold pipes can be eliminated by wrapping said pipes with a flexible foamed polystyrene tape. The foamed polystyrene tape employed must have a thickness of less than about 0.1 inch, have a density of less than 6 lbs. per cubic foot and have a closed cell structure in which the majority of the cells have the diameter of less than 0.05 inch.

The attached drawings illustrate two methods in which a cold pipe may be covered with flexible foamed polystyrene tape. In Fig. 1 a strip of foamed polystyrene tape 12 is wrapped around pipe 10 in a helical pattern. In the embodiment illustrated, the edges 14—14 of tape 12 are simply butted together. This type of wrapping is satisfactory for nearly all purposes, but improved insulation can be obtained by overlapping the edges of the tape in a known manner. The ends of the polystyrene tape are fastened to the wrapped pipe with pressure sensitive adhesive tape.

In Fig. 2 a single length of foamed polystyrene tape 22 having a width greater than the outer diameter of pipe 20, is placed lengthwise around pipe 20 to form an overlapping joint 24. A strip of pressure sensitive adhesive tape 26 is placed over the overlapping joint 24 thereby sealing the insulating jacket of foamed polystyrene tape. This wrapping pattern is particularly well adapted to the insulation of pipes attached in close proximity to floor joists in private homes where space limitations make it

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virtually impossible to install other types of insulation or to wrap the foamed polystyrene tape on the pipe in a helical pattern.

Example

A test of the method was made during three summer months in a cellar of a private dwelling in which the relative humidity of the cellar frequently reached 90% at 85° F. The dwelling contained approximately 100 feet of ½ inch copper cold water lines and moisture condensation and water dripping from the pipes was a constant problem.

In the test approximately one half the length of the cold water pipes was left unwrapped and the remainder of the line was wrapped with a ¼ inch thick tape of foamed polystyrene having a density of 4 lbs. per cubic foot and having a closed cell structure in which the diameter of a majority of the cells was less than about 0.005 inch. The foamed polystyrene tape employed was prepared by the extrusion method described in copending application of Ardashus A. Aykanian and Frank A. Carlson, S. N. 538,837, filed October 6, 1955. The foamed polystyrene was wrapped on the pipes in the pattern illustrated in Fig. 2. No condensation was observed on the wrapped cold water lines throughout the test period, whereas the unwrapped cold water lines dripped practically constantly.

The flexible foamed polystyrene tape employed in the practice of the present invention has a density of less than 6 lbs. per cubic foot with a closed cell structure in which the diameter of a majority of the cells is less than about 0.05 inch and preferably less than about 0.005 inch. The techniques for preparing foamed polystyrene having the desired density and cell structures are known, see Modern Plastics, Encyclopedia Issue, September 1954, page 481, Plastics Catalogue Corporation, Bristol, Conn. To be operable in the practice of this invention, the foamed polystyrene tape employed must have a thickness of less than about 0.1 inch. The tape may be prepared by cutting thin sheets from blocks or logs of foamed polystyrene by known techniques. Alternatively, a superior tape for the purpose of the present invention can be prepared in continuous lengths by the extrusion process described in copending application of Ardashus A. Aykanian and Frank A. Carlson, S. N. 538,837, filed October 6, 1955.

The above description and particularly the drawings and example are set forth by way of illustration only. It will be obvious to those skilled in the art that many variations and departures therefrom can be made without departing from the spirit and scope of the invention herein described.

What is claimed is:

1. A method for preventing the condensation of water on cold pipes which comprises wrapping the cold pipe with a foamed polystyrene tape, said tape being less than 0.1 inch thick, having a density of less than 6 lbs. per cubic foot and having a closed cell structure in which a majority of the cells have a diameter of less than about 0.05 inch.

2. A method for preventing the condensation of water on cold pipes attached in close proximity to floor joists, which comprises placing a length of foamed polystyrene tape lengthwise on the pipe, the width of said tape being greater than the outer diameter of the pipe, wrapping said lengthwise positioned tape around the pipe to form an overlapping joint and sealing the overlapping joint with pressure sensitive adhesive tape; the foamed polystyrene tape employed being less than 0.1 inch thick, having a density of less than 6 lbs. per cubic foot and having a closed cell structure in which a majority of the cells have a diameter of less than about 0.05 inch.

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