Jan. 7, 1930. P. D. MALLAY 1,742,775

PIPE COVERING

Filed Aug. 11, 1926

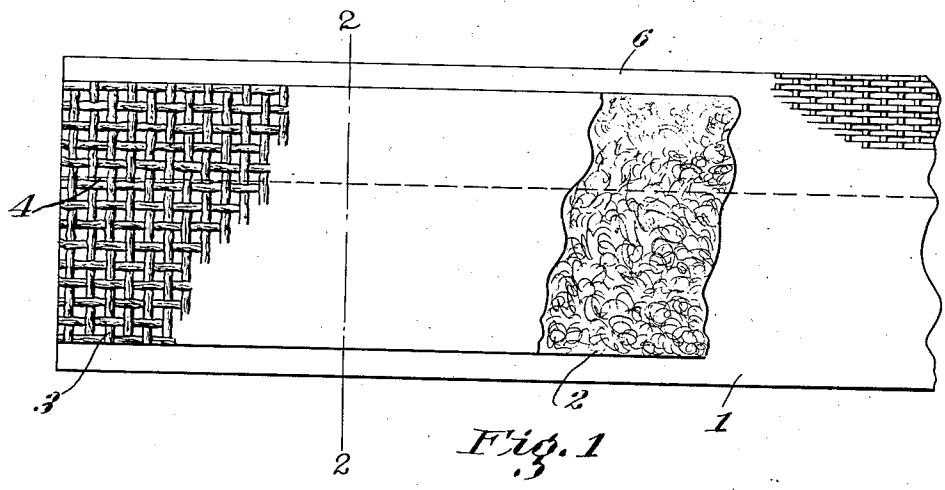


Fig. 1

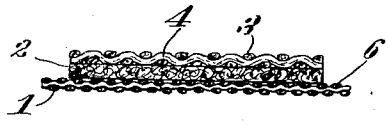


Fig. 2

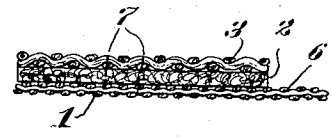


Fig. 3

Fig. 4

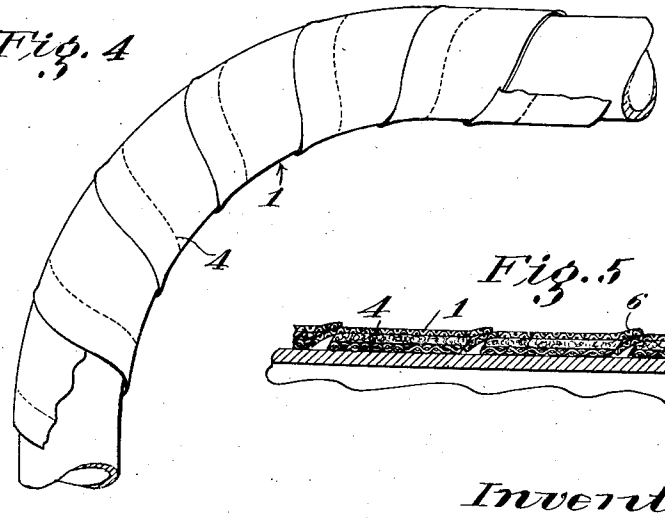


Fig. 5

Inventor:
Paul D. Mallay
by Roberts, Cushman & Woodberry,
Atty's.

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Patented Jan. 7, 1930

1,742,775

UNITED STATES PATENT OFFICE

PAUL D. MALLAY, OF MOUNT VERNON, NEW YORK, ASSIGNOR, BY MESNE ASSIGNMENTS, TO JOHNS-MANVILLE CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

PIPE COVERING

Application filed August 11, 1926. Serial No. 128,565.

This invention relates to a flexible pipe covering which is composed of heat resistant material of low heat conductivity and which is adapted to reduce the conduction of heat to or from the contents of pipes.

A protective covering of this character is particularly adapted for application to small curved pipes, such as are common about steam locomotives or the like; the covering being advantageous not only in preventing loss of heat and thus aiding the thermal efficiency of the engine, but also providing an effective protection for the hands of engineers, firemen, hostlers, and shop men. Due to the hard usage to which a protective covering of this type is ordinarily subjected, it is highly essential that it be of a tough and enduring nature so that it will not be readily fractured by blows or worn away by friction.

In order to fulfil these requirements, the invention in its preferred form comprises an intermediate filler of flexible fibrous material which may be of comparatively low tensile strength but which may confine a considerable body of dead air in its numerous interstices in order to provide suitable insulation, while at either side of the fibrous filler is located a strip of comparatively strong, heat resistant fabric. These various layers or laminations of material are preferably secured to each other in a manner to permit the ready adaptation of the covering to the various contours and curvatures of the pipe surfaces to which it may be applied.

The above and further objects and advantages of the invention will be apparent to those skilled in the art upon a reading of the subjoined description and claims in conjunction with the accompanying drawings, in which:

Fig. 1 is a plan view of a piece of the improved covering with the ends of different laminations broken away;

Fig. 2 is a section on line 2—2 of Fig. 1;

Fig. 3 is a view simliar to Fig. 2 of another form of the invention;

Fig. 4 is an elevational view of a curved pipe with the improved covering wound thereon; and

Fig. 5 is a sectional detail.

Referring to the accompanying drawings it may be seen that the flexible pipe covering comprises an outer layer of comparatively closely woven asbestos cloth or fabric 1. Disposed upon the fabric 1 is an intermediate layer of flexible asbestos felt 2 which has a width somewhat less than that of the strip 1 so that the finished covering may be provided with outstanding marginal portions 6 formed by the edges of the strip 1. Secured upon the opposite side of the felt filler 2 is a strip of asbestos fabric 3 which may be loosely woven so as to have a texture resembling ordinary burlap or the like, this strip preferably having a width similar to that of the felt 2. The felt and the loosely woven fabric may be cemented together by any suitable fire-proof adhesive, while strips 1 and 3 are preferably secured to one another and to the asbestos filler 2 by a single line of longitudinal stitching 4 which is spaced from the margins of the protective covering.

Fig. 3 illustrates a similar protective covering composed of heat resistant and non-conducting laminations, but is provided with two lines of stitching 7, 7 which are centrally located in spaced relation to the margins of the strip. When desired, an outstanding marginal extension 6 may be provided upon one side only of the covering strip as shown in Fig. 3.

When protective covering of this character is to be applied for example to small curved pipes, it is first preferably wet, whereby it is rendered more plastic and readily conformable to the particular installation. The protective covering may then be wound in a spiral about the pipe preferably with the outstanding marginal portions 6 providing suitable overlaps between adjoining windings as disclosed in Fig. 5. Obviously a marginal extension upon one side only of the protective covering (Fig. 3) may be similarly useful. Drying of the wet covering strip will cause it to shrink into firm engagement with the pipe. The central portions of the elongate strip of material are held in comparatively firm engagement with one another by the central line or lines of stitching, but their margins are free to be independently twisted,

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stretched or compressed, whereby ease of application to a curved pipe is greatly enhanced (Fig. 4). Not only may the outer covering 1 have its marginal portions move independently of the adjoining portions of the felt filler, but the adhesive connection between the latter and the loosely woven inner fabric may be loosened, while the various portions of the felt itself may be relatively moldable to a considerable degree in order to be conformable to different shapes and curvatures.

It is evident that the covering strip disclosed herein is adapted to provide a suitable protective winding for pipes of various curvatures and shapes, forming a flexible, plastic, and readily conformable covering, which, however, is provided with a suitable degree of toughness and with a fairly definite form by the fabric strips secured to the loose felt filler, and furthermore that only a single thickness of this covering need be wound about a pipe in most installations in order to provide satisfactory heat insulation and protection. Any desired type of clamping elements may be applied at suitable intervals to hold the covering in place.

I claim:

1. An elongate covering of low heat conductivity adapted to be wound about curved steam pipes, comprising a strip of asbestos fabric, an intermediate layer of asbestos felt, and a strip of loosely woven asbestos fabric, said first named strip having a width somewhat greater than that of the layer of felt and the loosely woven strip, and a single line of longitudinal stitching spaced from the margins of the cover and holding the strips and the layer of felt together.

2. An elongate covering of low heat conductivity adapted to be wound about curved steam pipes, comprising outer strips of woven asbestos fabric, an intermediate layer of flexible asbestos felt, said strips and layer being secured to each other by longitudinally disposed stitching confined to the intermediate portions of the strips and layer and spaced from the longitudinal margins thereof in such a manner that the margins of the strips and layer are free to flex independently of one another to conform to the shape of curved steam pipes and the like.

3. An elongate covering of low heat conductivity adapted to be wound about curved steam pipes, comprising outer strips of woven asbestos fabric, an intermediate layer of flexible asbestos felt, said strips and layer being secured to each other by a single longitudinally disposed row of stitching confined to the intermediate portions of the strips and layer and spaced from the longitudinal margins thereof in such a manner that the margins of the strips and layer are free to flex independently of one another to conform to the shape of curved steam pipes and the like.

4. An elongate covering of low heat conductivity adapted to be wound about curved steam pipes, comprising an outer strip of loosely woven asbestos fabric, a layer of flexible asbestos felt, said strip and layer being secured to each other by longitudinally disposed stitching confined to the intermediate portions of the strip and layer and spaced from the longitudinal margins thereof in such a manner that the margins of the strip and layer are free to flex independently of one another to conform to the shape of curved steam pipes and the like.

Signed by me at New York, New York, this ninth day of August, 1926.

PAUL D. MALLAY.