Dec. 28, 1926. 1,611,907

C. C. HALL

INSULATING STRUCTURE

Filed Nov. 2, 1925

FIG 1

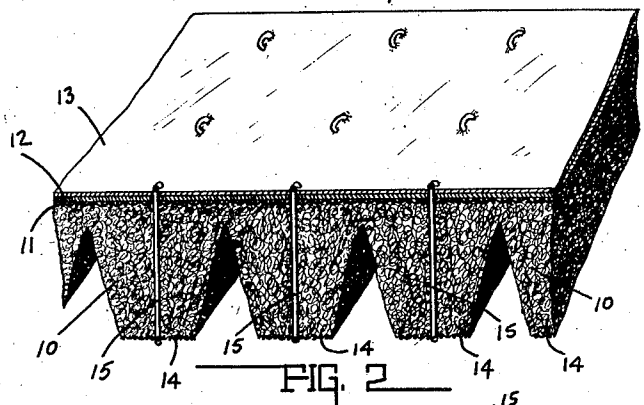


FIG. 2

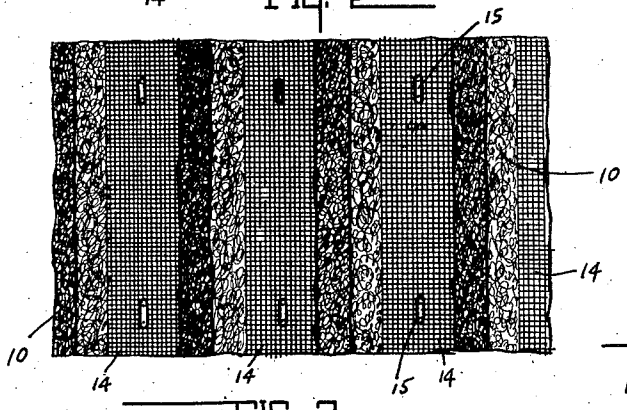


FIG. 3

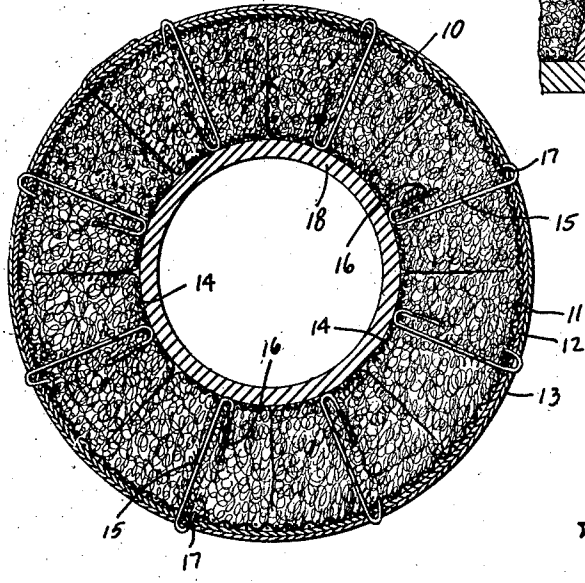
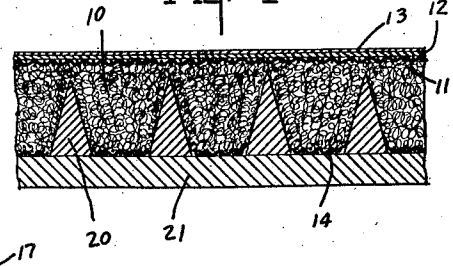


FIG. 4



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Patented Dec. 28, 1926. 1,611,907

UNITED STATES PATENT OFFICE.

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INSULATING STRUCTURE.

Application filed November 2, 1925. Serial No. 66,313.

This invention pertains to the construction of a pre-formed insulating jacket particularly adapted for installation about circular or cylindrical structures such as pipes, boilers and the like.

Heretofore it has been necessary in insulating such structures to form the insulation thereon when in a loose or plastic state, or on the other hand, to secure a pre-formed insulating band or strip about the curved surface whereby the bending will have the effect of breaking or cracking the outer surface or at least vary its density sufficiently to decrease its efficiency as an insulation.

The object of this invention is to preform an insulating jacket or structure whereby it will be readily adaptable for mounting about the periphery of a pipe, boiler or the like, retaining the same density throughout and eliminating any danger of cracking or disintegration of the outer surface.

The full nature of the invention will be understood from the accompanying drawings and the following description and claims.

Fig. 1 is a central vertical section taken longitudinally of the insulating strip showing a perspective view thereof. Fig. 2 is a plan view showing a portion of the inner surface of the insulating strip. Fig. 3 is a section taken through a pipe showing the insulation mounted thereon. Fig. 4 is a sectional view illustrating the method of preforming the insulation.

In the drawings there is shown an insulating strip which is herein illustrated as comprising a rock wool body 10. The outer side of the strip is continuous and has secured thereto a layer of wire mesh 11 adjacent the rock wool body. Covering the mesh 11 there is a layer of tar paper 12 which in turn is covered by a fabric 13 such as cheese cloth, canvas or the like.

The inner surface of the insulation is formed with inwardly extending V-shaped cuts as illustrated in Fig. 1, so that the inner surface of the body 10 is reduced in area and the individual surfaces thereof are separated by the intervening spaces formed by said cuts. Each of the separated inner surfaces of the body 10 is protected by a wire mesh strip 14, said strips, together with the outer coverings 11, 12, and 13, being anchored to the rock wool body by a plurality of anchor pins 15 extending through each section. Said anchor pins are provided with a relatively long shank 16 forming a U-shaped connection at the inner end passing through the wire mesh as shown in Fig. 3. The outer end of each pin is provided with a relatively short shank 17 forming a U-shaped outer bend embracing the layers 11, 12 and 13 and locking them in position.

As shown in Fig. 3, the pipe 18 is surrounded by the insulation which, when placed in position as will be readily observed, causes the intervening V-shaped spaces extending into the body to be closed so that the adjacent separated surfaces thereof will abut each other and form a solid mass of insulation. This arrangement prevents the undue compression or increased density of the material at its inner surface, and on the other hand prevents separating, cracking or decreased density of the outer surface. In other words, the density of the material will remain constant throughout the entire body of the insulation by reason of this construction. It will further permit of the pre-arrangement and suitable binding of both inner and outer protective meshes or fabrics which has not been heretofore possible, stretching or compressing of such protective bindings or layers being eliminated.

One method of forming insulation of this type is illustrated in Fig. 4 wherein a plurality of wooden strips 20 V-shaped in cross section are secured to the table 21. The forming strips 20 are cut in accordance with the desired size and shape of the V-shaped spaces to be formed in the body of the insulation. The height of the strips is slightly less than the desired thickness of the insulation, the bases and intervening space therebetween being sized or arranged according to the curvature of the object to be covered. The strips being secured upon the table in proper size and relation to each other, are filled with rock wool or any other body after the wire mesh strips 14 have been laid on the table intermediate each of the strips. When the intervening spaces between the strips have been filled to an extent slightly exceeding the top thereof, a continuous strip of wire mesh 11 is laid thereon followed by a similar strip of tar paper and then a strip of fabric. Thereupon the staples or binding members 15 are inserted upwardly through the structure through suitable openings in

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the table provided for that purpose, after which they are bent down and clamped in place by a suitable tool for binding the various parts forming the insulation together. The insulation may then be cut to suitable size for packing and shipping.

The invention claimed is:

1. An insulating structure comprising a body of insulating material having one side formed with a continuous surface and the other side divided into a plurality of individual surfaces separated from each other by an intervening space extending substantially to the other continuous surface, a continuous layer of material secured to the continuous surface of said structure, a plurality of separate binding strips secured to the individual separated surfaces of the other side, and a plurality of anchor members extending through each of the separated sections from one side to the other for binding the insulating material forming said separated sections between said materials.

2. An insulating structure comprising a body of insulating material having one side formed with a continuous surface and the other side separated into a plurality of individual surfaces separated from each other by an intervening space extending substantially to the other continuous surface, a wire mesh binder secured to the continuous surface of the structure, a paper mounted thereover, a cloth fabric secured over said paper, and a plurality of separated wire mesh fabrics secured to each of the individual surfaces on the opposite side of the structure.

3. An insulating structure comprising a body of insulating material having one side formed with a continuous surface and the other side separated into a plurality of individual surfaces separated from each other by an intervening space extending substantially to the other continuous surface, a wire mesh binder secured to the continuous surface of the structure, a tar paper mounted thereover, a cloth fabric secured over said tar paper, a plurality of separated wire mesh fabrics secured to each of the individual surfaces on the opposite side of the structure, and a plurality of wire anchor members hooked at each end extending through each separated section of the material and adapted to hook therein through the respective binding fabrics on each side thereof, substantially as shown and described.

In witness whereof, I have hereunto affixed my signature.

CHARLES C. HALL.

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