May 24, 1932. T. W. SIMPSON 1,859,996

INSULATING BLANKET AND METHOD OF CONTROLLING THE DISTORTION THEREOF

Filed June 16, 1930

Fig. 1.

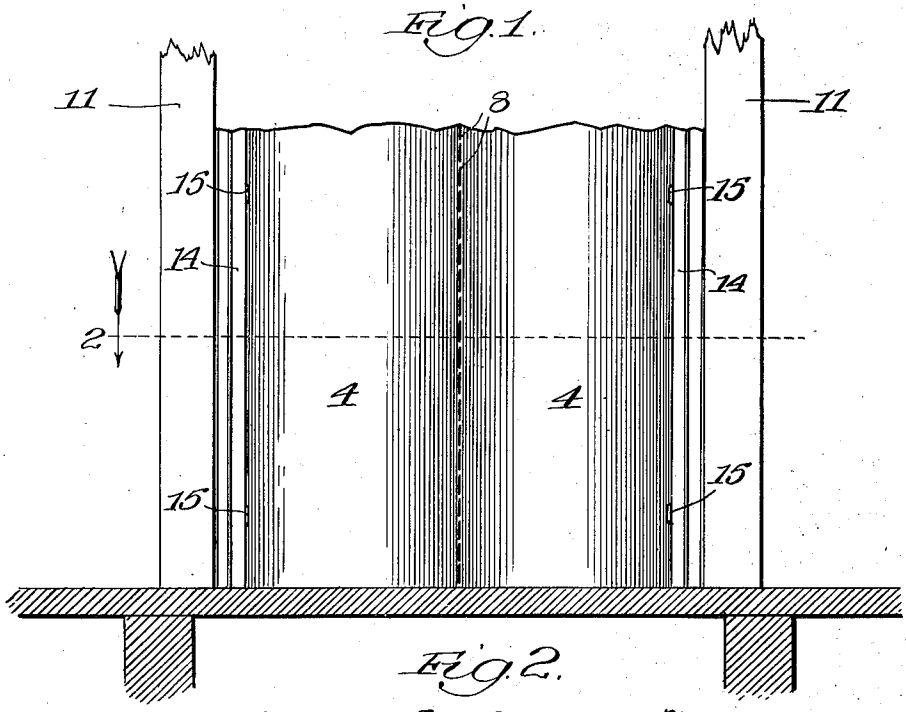


Fig. 2.

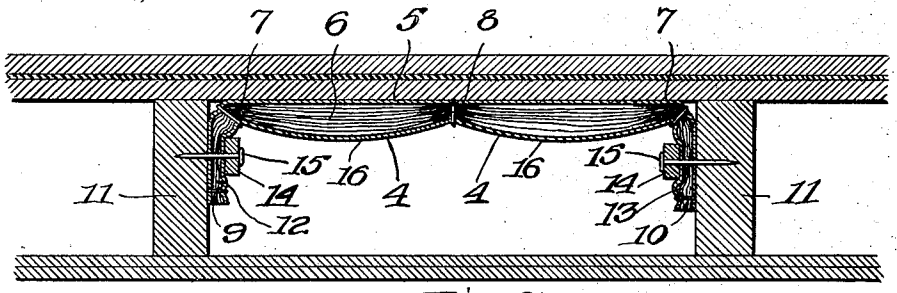
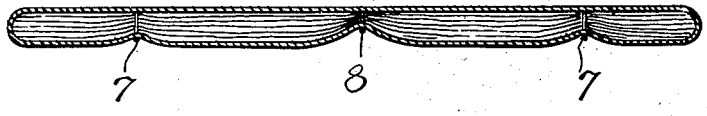


Fig. 3.



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UNITED STATES PATENT OFFICE

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INSULATING BLANKET AND METHOD OF CONTROLLING THE DISTORTION THEREOF

Application filed June 16, 1930. Serial No. 461,618.

My invention relates more particularly to insulating material of the kind commonly known as blanket insulating material and comprising separated layers of sheet material, usually paper, with a body of insulating material interposed therebetween and commonly of a character possessing such resistance and natural springiness that it tends to full out, or fluff, unless restrained, as for example jute, hair or a combination of these materials.

The invention further relates to blanket insulating material which, in its installation for use, is interposed between spaced supports, such as the vertical spaced studding of a building wall, and its opposite marginal edge portions,—its vertical edge portions in the case of its installation between vertical studding,—bent at substantially right angles to the intermediate portion of the blanket to flatwise oppose the sides of the supports, the blankets thus being of substantially channel shape in cross section.

It has been found in practice that the effectiveness of insulating material of the character above referred to is inversely proportional to the density of the mass; namely that insulating material of the character stated is more resistant to the transmission of heat therethrough when permitted to become fulled out or fluffed by the exertion of its natural springiness than when in a more densified condition in which the material is more or less compressed, my invention contemplating the availing of this phenomena in insulation for practical use.

One of my objects is to provide for the augmenting of the insulation properties of insulating material of the character above stated.

Another object is to accomplish the above stated purpose in an economical and simple manner.

Another object is to provide for the accomplishment of the purpose above referred to by a construction of blanket which automatically deforms, in installing it into operative position, into such a condition that the insulating filling is permitted to expand and thereby become less dense; and other objects as will be manifest from the following description.

Referring to the accompanying drawings:—

Figure 1 is a face view of a portion of a wall framework shown as equipped with insulation in accordance with my invention.

Figure 2 is a section taken at the line 2 on Fig. 1 and viewed in the direction of the arrow; and

Figure 3, a cross-sectional view of a modified form of the blanket.

Referring to the insulation-blanket of Figs. 1 and 2, it comprises two layers 4 and 5 of sheet material such as paper which are spaced apart, with a layer 6 of any suitable insulating material interposed therebetween and of such character that it possesses inherent resiliency or elasticity, as for example, jute, hair or a mixture of these materials.

The blanket is produced in flat form and is provided adjacent the lines along which its marginal edge portions are bent, as and for the purpose, hereinafter described, with parallel lines of relatively loose stitching 7 which extends through the sheets 4 and 5 and the interposed layer 6 of insulating material.

Where the blanket is to be assembled between the studding of building-walls spaced in accordance with common practice, the blanket is preferably stitched along its medial line, as represented at 8, to prevent undue settling of the insulation material forming the layer 6.

The blanket is preferably tightly stitched close to its marginal edge portions along parallel lines as represented at 9 and 10.

In the particular illustrated construction, the insulating blanket is provided for insulating a wall-structure formed of a series of studding 11 spaced apart horizontally in accordance with common practice, the blanket being installed into the spaces between adjacent studding 11.

In the installing of the blanket, in accordance with the illustrated embodiment of the invention, the operator bends back the marginal edge portions of the blanket substan-

tially along the lines 7 of stitching to cause these bent-back portions to extend substantially at right angles to the main portions of the blanket, as represented at 12 and 13, and in such condition introduces the blanket into the space to be filled as shown in the drawings, the portions 12 and 13 flatwise opposing the sides of the studding 11. The portions 12 and 13 are then secured to the studding 11 as for example by means of cleats 14 secured, against said portions, to the studding, as by the nails represented at 15.

In the bending of the marginal edge portions of the blanket to form the angularly-disposed portions 12 and 13, as above stated, the sheet 4 becomes distorted in a cross-wise direction, the loose stitching 7 operating to permit restricted bodily movement of the sheet 4 inwardly from both edge portions thereof toward the medial line of the blanket, under the force tending to deform this sheet, and thus, by the restraining action produced thereby, forcing the deformation of the sheet 4 into the buckled condition as represented at 16, the stitching 9 and 10, which is preferably employed, preventing relative shifting of the sheets 4 and 5 at the portions thereof adjacent these lines of stitching.

It will be understood that, if desired, the stitching 9 and 10 may be omitted in which case, if the buckling of the sheet 4 to the extent obtainable automatically by providing the stitching 9 and 10 is desired, the operator will manually shift the sheet 5 to cause its upright edges to become substantially flush with the corresponding edges of the sheet 4 in which position of adjustment of the sheet 5 the cleats 14 will be driven into place.

The material of which the sheet 4 is formed may be of any suitable kind provided it possesses sufficient stiffness to compel it to deform into buckled condition as above explained, as for example, and preferably, what is commonly known as building paper. The outer sheet 5 also may be formed of any suitable material and while not requiring the same properties of stiffness as the inner sheet 4 may be also, and preferably, formed of what is commonly known as building paper.

In the buckling of the sheet 4 as stated the insulating material forming the layer 6 is thus permitted to full out, or fluff, due to its inherent resistance or springiness thereby rendering it less dense with resultant increase in efficiency in preventing the transmission of heat therethrough.

If desired the sheet material may be provided to completely enclose or envelop the layer of insulating material, such being provided for in the modified construction of blanket shown in Fig. 3, wherein the enveloping sheet is represented at 17 and where formed of a single sheet of paper its free edges lapped and secured together in any suitable way.

While I have described one method of practicing my invention and have illustrated and described certain forms of structure in which the invention may be embodied, I do not wish to be understood as intending to limit it thereto as my new method may be practiced in other ways and the invention embodied in other forms of structure without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is:

1. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and means whereby in the bending of opposite marginal edge-portions of the blanket the sheet material which becomes innermost will buckle between said bent portions in a direction away from the other sheet material.

2. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and means tying said sheet material together adjacent the marginal edge portions of said blanket and operating, in the bending of said edge portions, to cause the sheet material which becomes innermost to buckle between said means in a direction away from the other sheet material.

3. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and means loosely tying said sheet material together adjacent the marginal edge portions of said blanket and operating, in the bending of said edge portions, to cause the sheet material which becomes innermost to buckle between said means in a direction away from the other sheet material.

4. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and loose tying means engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, the sheet material which is innermost when the marginal edge portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material.

5. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, means tying said sheet material together adjacent the marginal edge portions of said blanket and operating, in the bending of said edge portions, to cause the sheet material which bocomes innermost to

buckle between said means in a direction away from the other sheet material, and means located outwardly beyond said first-named means tying said sheet material against relative sliding.

6. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, loose tying means engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, the sheet material which is innermost when the marginal edge portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material, and means located outwardly beyond said first-named means tying said sheet material against relative sliding.

7. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and lines of stitching engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, the sheet material which is innermost when the marginal edge portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material.

8. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and lines of loose stitching engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, the sheet material which is innermost when the marginal edge-portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge-portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material.

9. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, lines of stitching engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, the sheet material which is innermost when the marginal edge portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge-portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material, and means located outwardly beyond said stitching tying said sheet-material against relative sliding.

10. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, lines of loose stitching engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, the sheet material which is innermost when the marginal edge-portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge-portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material. and means located outwardly beyond said stitching tying said sheet-material against relative sliding.

11. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, means tying said sheet material together adjacent the marginal edge portions of said blanket and operating, in the bending of said edge portions, to cause the sheet material which becomes innermost to buckle between said means in a direction away from the other sheet material, and relatively tight stitching located outwardly beyond said means tying said sheet material against relative sliding.

12. The method of controlling the distortion of the inner one of spaced apart layers of sheet material with insulation interposed therebetween and forming a blanket, in the bending of the marginal edge-portions of the blanket to cause the inner sheet material to buckle which consists in exerting a restraining action on the inner sheet material adjacent the planes along which said edge-portions are bent.

13. In combination, spaced apart supports, and an insulating blanket formed of sheet material spaced apart with a body of insulating material interposed therebetween, said blanket being positioned between said supports with its marginal edge-portions bent to extend in the same direction and flatwise oppose said supports, the sheet material which is innermost being buckled in a direction away from the other sheet material.

14. In combination, spaced apart supports, an insulating blanket formed of sheet material spaced apart with a body of insulating material interposed therebetween, said blanket being positioned between said supports with its marginal edge-portions bent to extend in the same direction and flatwise oppose said supports, the sheet material which is innermost being buckled in a direction away from the other sheet material, and means securing said bent portions to said supports.

15. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and means loosely tying said sheet material together adjacent the marginal edge portions of said blanket and approxi-

mately coincident with the lines along which said edge portions are bent in the installing of the blanket in place.

16. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and loose tying means engaging said sheet material adjacent the opposite marginal edge portions of the blanket, and approximately coincident with the lines along which said edge portions are bent in the installing of the blanket in place, the sheet material which is innermost when the marginal edge portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material.

17. Blanket insulating material comprising sheet material spaced apart, a body of insulating material interposed between said sheet material, and lines of stitching engaging said sheet material adjacent the opposite marginal edge-portions of the blanket, and approximately coincident with the lines along which said edge portions are bent in the installing of the blanket in place, the sheet material which is innermost when the marginal edge portions of the blanket are bent into angularly extending portions being of such stiffness that when said edge portions are so bent said last-referred-to sheet material will buckle between said means in a direction away from the other sheet material.

TRACY W. SIMPSON.