

Aug. 27, 1929.

F. M. OLSON
INSULATING MATERIAL
Filed Feb. 8, 1928

1,726,040

2 Sheets-Sheet 1

Fig. 1

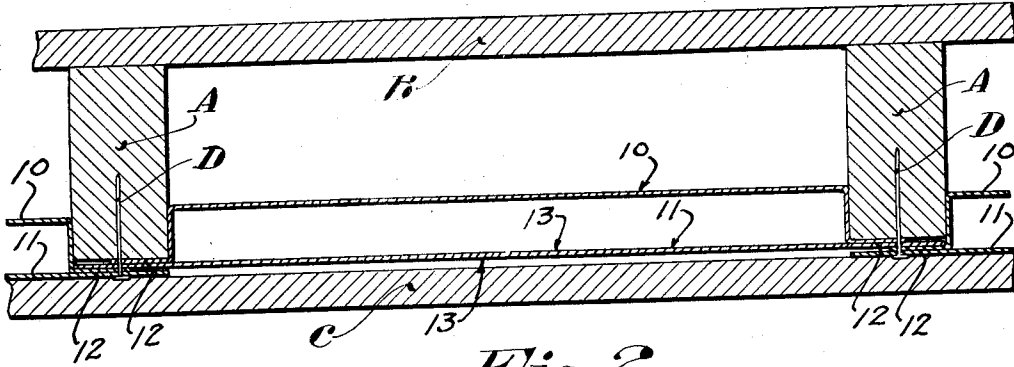


Fig. 2

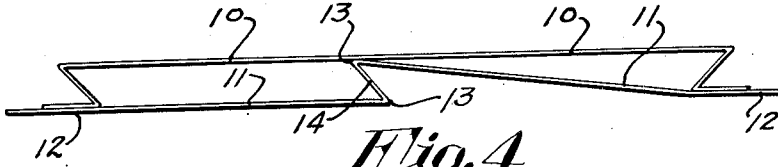


Fig. 4

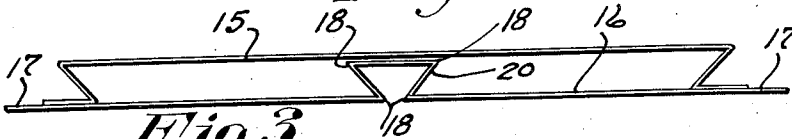
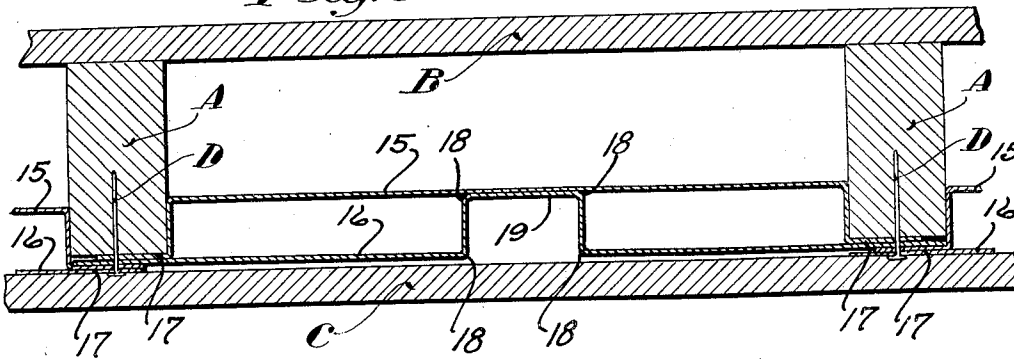


Fig. 3



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1,726,040

2 Sheets-Sheet 2

Fig. 5

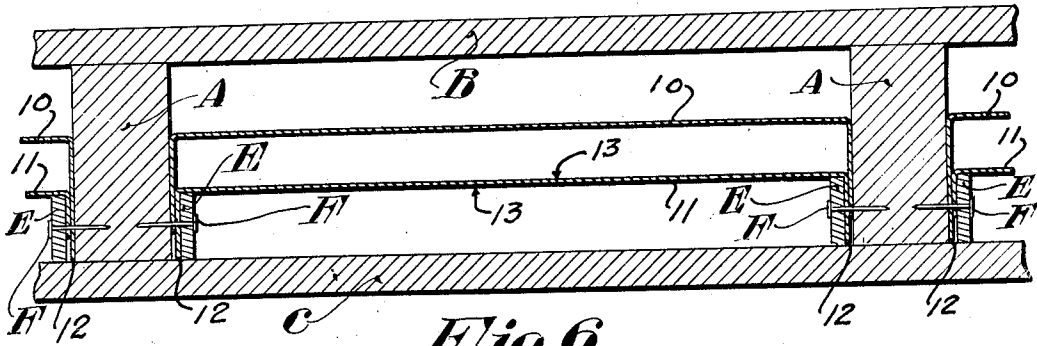


Fig. 6

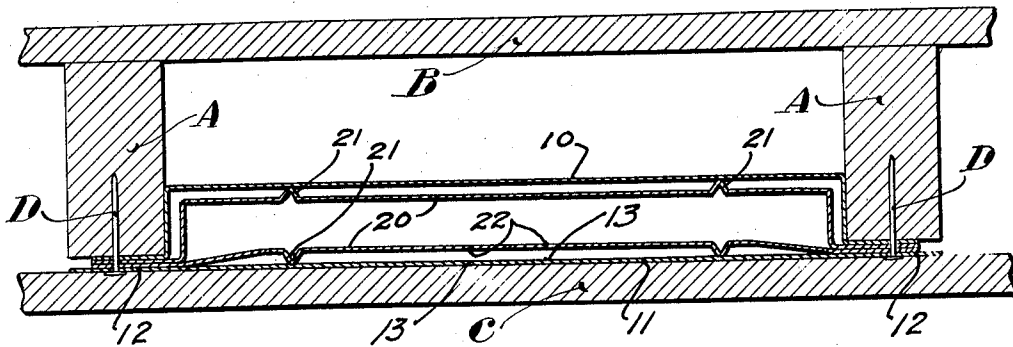


Fig. 7

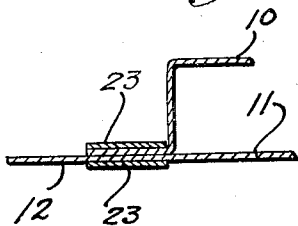
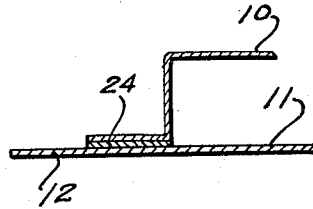


Fig. 8



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UNITED STATES PATENT OFFICE.

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INSULATING MATERIAL.

Application filed February 8, 1928. Serial No. 252,783.

My present invention relates to an insulating material and is in the nature of an improvement or refinement of the insulating material disclosed and broadly claimed in my United States Letters Patent No. 1,651,539, of date December 6, 1927.

To the above end, generally stated, the invention consists of the novel devices and combinations of devices hereinafter described and defined in the claims.

In the accompanying drawings, which illustrate the invention, like characters indicate like parts throughout the several views.

Referring to the drawings:

Fig. 1 is a view in horizontal section showing one form of the insulating material applied between the walls of a building and secured to the studdings thereof;

Fig. 2 is a sectional view of the insulating material shown in Fig. 1, before applied to the building, and partly collapsed;

Fig. 3 is a view corresponding to Fig. 1, but showing another form of insulating material;

Fig. 4 is a section view of the insulating material shown in Fig. 2, before applied to the building, and partly collapsed;

Fig. 5 is a view corresponding to Fig. 1, but showing the insulating material applied to the building in a different manner;

Fig. 6 is a view corresponding to Fig. 1, but showing a slight modification; and

Figs. 7 and 8 are fragmentary detail views showing reinforcing strips applied to the attaching flaps.

The wall structure illustrated in the drawings for the purpose of showing the different forms of insulating material applied thereto, comprises studdings, sheeting, lathe, and plaster having the same identifying characters in the several views, to wit: A, B and C, respectively.

Referring first to the invention shown in Figs. 1 and 2, the numerals 10 and 11 indicate, respectively, inner and outer sheets having substantially parallel portions and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions. As shown, the inner sheet 10, inward of its edge portions, is folded to form the perpendicular portions, and said edge portions are glued or otherwise secured to the outer sheet 11.

The extensions of the sheets 10 and 11, outward of the perpendicular portions, afford attaching flaps 12 that extend in the plane of the outer sheet 11. Primarily, the sheets 10 and 11 are of the same width, but the folding of the inner sheet 10 to form the perpendicular portions brings the edges of the flap-forming portions of the inner sheet 10 inward of the edges of the flap-forming portions of the outer sheet 11.

The insulating material, of course, is applied to the wall structure before the lathe and plaster C are applied thereto, and in applying said material, the body thereof is inserted between the studdings A with the flaps 12 overlapping the inner faces of said studdings and secured thereto by nails D.

To collapse the insulating material so that the same may be easily handled and occupy a minimum amount of space when carried in stock or shipped, the sheet 11 is longitudinally scored at transversely spaced points to afford two folding lines 13. These folding lines 13 are spaced substantially the same distance apart as the width of the perpendicular portions, and the scores forming said lines are so arranged as to cause the sheet 11 to fold by forming a pleat 14. This pleat 14, when the parallelogram is collapsed, permits the adjacent edge portions of the sheet 11 to move past each other and thereby foreshortened with the sheet 11 substantially the width of the combined two perpendicular portions, and permits said portions to fold between the two sheets 10 and 11. When the parallelogram is collapsed, the two sheets 10 and 11 rest, the one upon the other, with the perpendicular portions and the pleat 14 therebetween.

To open the collapsed parallelogram, prior to placing the insulating sheet in the wall structure, the mechanic simply takes hold of the two flaps 12 and pulls outward thereon, which straightens out the pleat 14, thus extending the sheet 11 to the same width as the sheet 10, between the proper portions. This straightening of the sheet 11 causes the perpendicular portions to lift and thereby separate the parallel portions. By arranging the flaps 12 so that they may be placed against the edges of the studdings C and nailed thereto, the insulating material may be very quickly

placed in a wall structure and secured thereto.

Referring now to the insulating material shown in Fig. 3, the construction thereof is the same as that shown in Figs. 1 and 2, with the exception of the method of collapsing the parallelogram, and the inner and outer sheets and the attaching flaps are indicated by the numerals 15, 16 and 17, respectively. In this construction, the sheet 16 is scored at four different points to afford spaced folding lines 18 on which said sheet may be folded to form a relatively wide spacing rib 19 that is channel-shaped in cross-section. This rib 19 engages the inner sheet 15 and holds the two sheets 15 and 16 spaced apart. The combined width of the sides of the rib 19 is substantially the same as the width of the perpendicular portions, and the bottom of the channel forming said rib is substantially the same width as the two sides thereof, so that said sides may be folded thereon when the parallelogram is collapsed.

In collapsing the parallelogram, the scored folding lines 18 are so arranged as to cause the sides of the rib 19 to fold onto the bottom thereof and form a double fold 20, as shown in Fig. 4. During the collapsing of the parallelogram, the perpendicular portions fold in the same manner as the perpendicular portions of the sheets 10 and 11, to permit the parallel portions to move, the one upon the other. When the parallelogram is collapsed, the edge portions of the sheet 16, at the rib 19, substantially abut, and to open the collapsed parallelogram, an outward pull on the two flaps 17 will separate the two sections of said sheet and thereby lift the folded sides of the rib 19 and the folded perpendicular portions.

The insulating material shown in Fig. 5 is the same as that shown in Figs. 1 and 2, with the exception that it is secured to the studs C in a different manner. In this view, the flaps 12 are turned perpendicular to the parallel portions to extend between the studs C and bear against the opposing faces thereof. The flaps 12, in this method of attaching the same to the studs C, are secured thereto by cleats E and nails F. By thus securing the flaps 12 to the studs C, the sheet 11 is spaced from the lathe and plaster C to leave an air space therebetween.

The construction shown in Fig. 6 is the same as that shown in Figs. 1 and 2, with the exception that lining sheets 20, of deadening felt or other suitable material, are provided for the sheets 10 and 11, and are secured thereto by having their edge portions inserted between the end portions of the sheets 10 and 11 forming the flaps 12 and secured thereto. Relatively shallow ribs 21, pressed from the lining sheets, engage

the sheets 10 and 11 and hold the same spaced therefrom. These lining sheets 20 are also provided with scored folding lines 22 that form pleats like the pleats 14, when the parallelogram is collapsed.

Referring to the modification shown in Fig. 7, reinforcing strips 23, of linen or other suitable material, are secured to the outer faces of the flaps 12 through which the nails D are driven to secure the flaps to the studs.

In Fig. 8, a reinforcing strip 24, of the same material as the reinforcing strips 23, is interposed between the plies of the flap 12.

From the above description, it is evident that the insulating material, when collapsed, may be easily handled and, when stored or during transportation, occupies a minimum amount of space. Furthermore, the arrangement of the attaching flaps is such that the insulating material may be very quickly applied to a wall structure.

What I claim is:

1. An insulating material made up of a plurality of correlated sheets having substantially parallel and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions, and extensions on the sheets affording attaching flaps, one of the sheets having a foldable section arranged when folded to collapse the parallelogram.

2. An insulating material made up of a plurality of correlated sheets having substantially parallel and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions, and extensions on the sheets affording attaching flaps, one of the sheets having a foldable section arranged when folded to collapse the parallelogram by shortening the normal width of the respective sheet and causing the perpendicular portions to be folded between the parallel portions and draw said parallel portions together.

3. An insulating material made up of a plurality of correlated sheets having substantially parallel and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions, and extensions on the sheets affording attaching flaps, one of the sheets being scored to afford a foldable section arranged when folded to form a pleat and collapse the parallelogram.

4. An insulating material made up of a plurality of correlated sheets having substantially parallel and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions, and extensions on the sheets affording attaching flaps, one of the sheets having two scores spaced substantially the same distance apart as the width of the perpendicular

lar portions and forming a foldable section arranged when folded to form a spacing member and collapse the parallelogram.

- 5 5. An insulating material made up of a plurality of correlated sheets having substantially parallel and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions, and extensions on the sheets
10 affording attaching flaps, linings for the sheets, and spacing ribs between the sheets and linings, said sheets and linings having foldable sections arranged when folded to collapse the parallelogram.
15 6. An insulating material made up of a plurality of correlated sheets having sub-

stantially parallel and perpendicular portions forming a parallelogram, said perpendicular portions serving to space the parallel portions, and extensions on the sheets
20 affording attaching flaps, one of the sheets having a foldable section affording a spacing member for the parallel portions and arranged when folded to collapse the parallelogram.
25

7. The structure defined in claim 6 in which the spacing member is arranged to fold between the parallel portions when the parallelogram is collapsed.

In testimony whereof I affix my signature.

FLETCHER M. OLSON.