May 20, 1952 J. L. FINCK 2,597,309

INSULATING LATH FOR BUILDING AND LIKE STRUCTURES

Filed Aug. 30, 1946

Fig. 1.

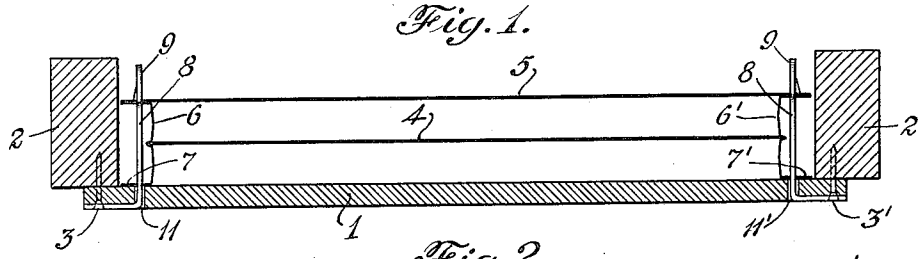


Fig. 2.

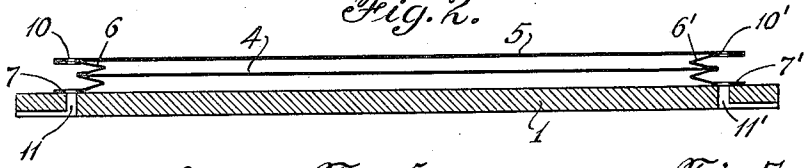


Fig. 3.

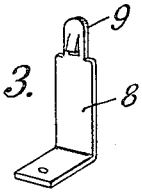


Fig. 5.

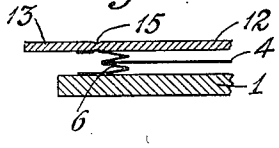


Fig. 7.

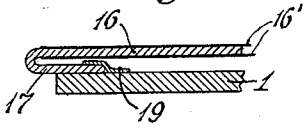


Fig. 4.

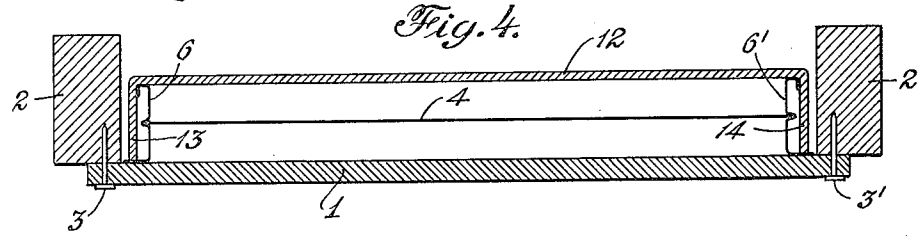


Fig. 6.

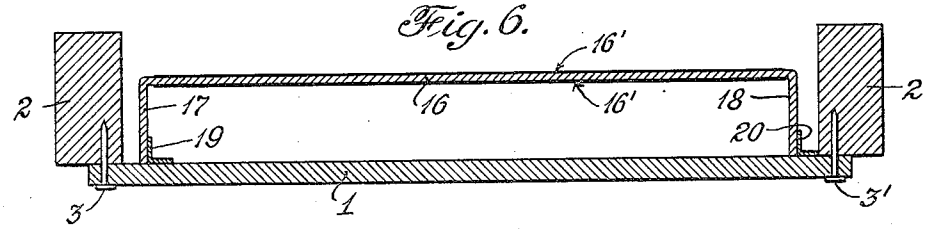


Fig. 8.

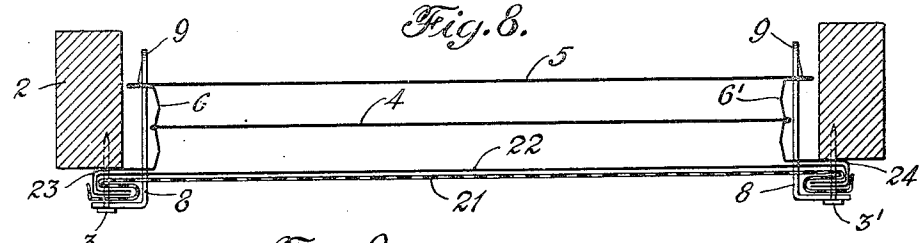
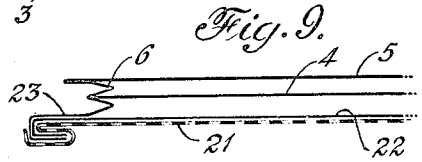


Fig. 9.



INVENTOR.
JOSEPH L. FINCK
BY Robert Alpher
ATTORNEY

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INSULATING LATH FOR BUILDING AND LIKE STRUCTURES

Joseph L. Finck, Brooklyn, N. Y.

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1 Claim. (Cl. 154—45)

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In the building of a house or like structure, it is common practice to install insulation (such as rock wool, aluminum foil, etc.) between the studs of the wall and the beams of the floor and ceiling. After the insulation is applied, the wall or ceiling must be completed by applying a lathing material and then plastered or otherwise finished. This involves two separate operations.

In accordance with the present invention, metallic reflective heat insulation is combined with a lathing material in a building unit so as to reduce the number of operations heretofore required. By the use of this invention, it is possible to obtain an insulation effect equivalent to four, six or even more inches of rock wool, solely by the use of metallic reflective surfaces. The building unit of this invention, described hereinafter, is essentially prefabricated, very compact in form for shipping and storage, and readily installable at very little cost.

Other objects and advantages of this invention will be apparent to those skilled in the art from a reading of the following specification and from the accompanying drawings showing illustrative embodiments of the invention.

In the drawings (wherein like members in the different figures represent like parts):

Fig. 1 is a diagrammatic cross-section of an applied building unit embodying this invention.

Fig. 2 is a diagrammatic cross-section of the building unit shown in Fig. 1, collapsed for storage and transportation.

Fig. 3 is a perspective view of the spreader element of the applied building unit shown in Fig. 1.

Fig. 4 is a diagrammatic cross-section of an applied building unit representing another embodiment of this invention.

Fig. 5 is a fragmentary cross-section of the building unit shown in Fig. 4, collapsed for storage and transportation.

Fig. 6 is a diagrammatic cross-section of an applied building unit representing a further embodiment of this invention.

Fig. 7 is a fragmentary cross-section of the building unit shown in Fig. 6, collapsed for storage and transportation.

Fig. 8 is a cross-section of an applied building unit representing a still further embodiment of the invention.

Fig. 9 is a fragmentary cross-section of the building unit shown in Fig. 8, collapsed for storage and transportation.

In the drawings, Fig. 1 shows a rigid building board 1, such as gypsum board, fiber wall-board,

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etc. nailed to studs (or beams) 2, 2 by means of nails 3, 3'. To this rigid board is attached a multiple layer, 4, 5, of either paper (coated on one or both surfaces with a bright metal) or metallic foil, the layers being schematically shown in the drawing as single unbroken lines. This multiple layer is supported by foldable side elements 6, 6' (of paper or equivalent material) the arrangement being similar to a bellows. These side elements are attached to the rigid building board 1, at 7, 7' by gluing or stapling, for example. In Fig. 2, the bellows arrangement of the multiple layer and side elements is shown in the collapsed form.

In Fig. 3 is shown one of the spreader elements 8, used to expand the bellows arrangement when the unit is to be installed. These elements may be made of sheet iron or other rigid material, and are provided with a hole to receive the nails 3, 3', and with a reduced tip 9. The rigid board has slots 11, 11', to permit the spreader elements to slip through, and may be provided with suitable depressions on its outer surface to receive the arms of the spreader elements, so as to make the arms flush with that surface. On insertion of these elements, the tips engage openings 10, 10' (see Fig. 2) in extensions of the layer 5, thus gripping the multiple layers and spreading them apart, as shown in Fig. 1. The openings 10, 10' may, if necessary, be suitably reinforced; and the tip 9 of the spreader element may be detorsally barbed, for retention in these openings. The applied building unit thus provides parallel air cells each bounded by a metallic heat-reflective surface, and hence producing a wall of high insulating value. (The spreader elements are desirably passed through the rigid board and positioned in the openings 10, 10' before the rigid board is placed against the studs, thus avoiding "fishing" for the openings.)

In Fig. 4 is shown the same rigid building board 1, to which is attached foldable side elements 6, 6'. The middle layer 4 is the same as the corresponding one in Fig. 1. However, in this embodiment of the invention, a sheet 12, of a stiff material, such as corrugated fiber-board or the like, serves as the outer of the multiple layers. To this sheet 12 may be applied a bright metallic coating on one or both sides. This stiff sheet is made wider than the space between the studs, and the extensions are bent along scored lines, providing side members 13, 14, which serve to spread apart and maintain the bellows arrangement. In Fig. 5, this unit is shown in collapsed form, the scored line for folding being indicated as 15.

In Fig. 6 is shown a modification of the embodiment shown in Fig. 4. In this (simpler) modification, a sheet **16**, of a stiff material, such as corrugated fiber-board or the like, carries the bright metallic coating on one or both sides, the coating being illustrated by the heavy lines **16'**, **16'**; and the side members **17**, **18**, formed by folding extensions of layer **16** along scored lines are attached to the rigid board **1** by means of hinges, **19**, **20**, formed of flexible material, for example. Fig. 7 shows one end of this embodiment when in the collapsed form.

Fig. 8 shows a still further embodiment of this invention, in which expanded-metal lath **21** (illustrated schematically by a heavy broken line) replaces the rigid building board while retaining all the advantages of this invention. In this embodiment, the expanded metal lath is backed by a paper layer **22**, which serves to prevent excess plaster from passing through the metal lath, and which may also carry a bright metal coating on the side opposite from the lath. The multiple layers **4**, **5** and foldable side elements **6**, **6'**, are the same as those shown in Fig. 1. In this embodiment, however, the side elements are provided with extensions **23**, **24**, which together with the edges of the paper layer **22** are gripped by the metal lath as the latter is folded over and flattened as shown in Figs. 8 and 9, the flattened folds being so spaced as to rest directly on the studs. Spreader elements **8** are used here in the same manner as in Fig. 1, the elements being passed through the metal lath to grip and open the bellows arrangement, and being nailed to the studs.

Fig. 9 shows one end of the embodiment shown in Fig. 8, in a collapsed form ready for storage and transportation.

In Figs. 1, 4, and 8 are shown only two layers besides the lathing material. If the inter-stud space is closed on the opposite side (as by sheathing, clapboards, etc.) three separate, parallel air cells are provided, each air cell being bounded on one side at least by a bright metallic surface. This invention however, is not limited to the provision of this number of air cells; thus three or more parallel layers can be readily attached to the lathing material in the same bellows arrangement (the spreading elements being made sufficiently rigid so as to open up all the layers and hold them permanently in the expanded form). The spreading elements may be placed at sufficiently frequent intervals

along the studs so as to prevent any possible collapsing of the bellows arrangement.

Although the illustrated embodiments of the invention are adapted to provide insulation between one pair of studs only, it should be obvious that the lathing material could be of such size as to extend over two or more inter-stud spaces and have attached thereto separate insulation for each of the interstud spaces.

The invention may be variously otherwise embodied within the scope of the appended claim.

A building unit capable of providing lath and heat insulation on application, comprising lathing material adapted to be fastened to the edges of two consecutive framing members of a structure, a sheet of substantially stiff material extending substantially parallel to the lathing material and adapted to fit between the two consecutive framing members, side members, spaced and oppositely disposed with respect to each other and coextensive with the sheet and joining the sheet to the lathing material so as to provide a substantially enclosed air space, the side members being flexibly connected with the sheet and lathing material so that the sheet may be collapsed against and spaced from the lathing material, and the sheet having flexibly-connected substantially stiff extensions for maintaining the sheet spaced from the lathing material.

JOSEPH L. FINCK.

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