

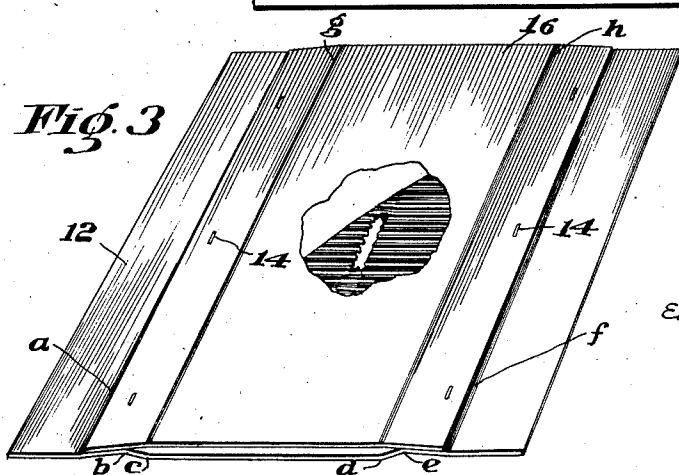
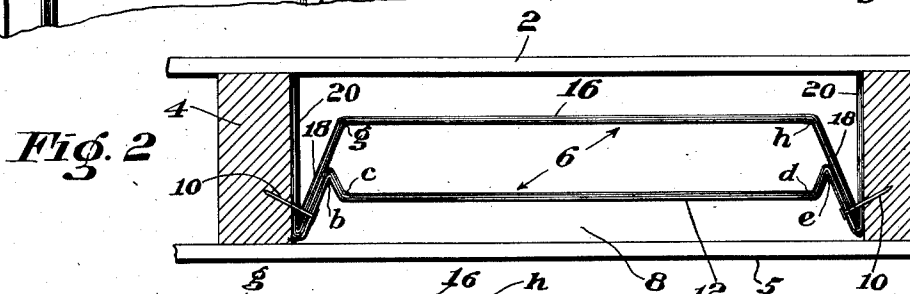
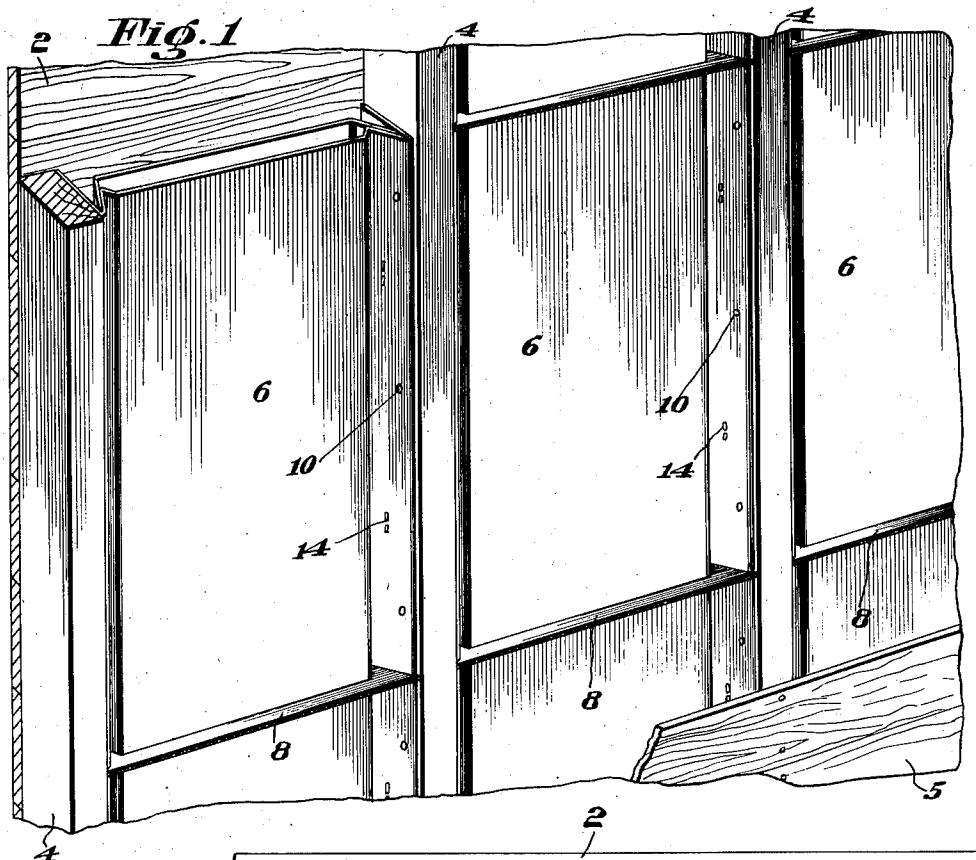
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BUILDING INSULATING MATERIAL AND CONSTRUCTION

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BUILDING INSULATING MATERIAL AND CONSTRUCTION

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This invention relates to building insulating material and construction and is specifically directed to interstud insulation for insulating frame buildings or other buildings having spaced studs, beams, rafters or similar parallel spaced members.

In ordinary frame building construction it is common to space the studding in the walls so that the 2"×4" studs are spaced 16", or 18" on centers. Variations in materials, construction, or both, frequently result in variations in spacing amounting to an inch or even more, plus or minus, and thus the spaces between studs may be say 13 to 15", or 16 to 18", respectively, for studs intended to be spaced 16", or 18" on centers.

It is the object of this invention to provide an efficient heat insulating material and construction which may be readily utilized and assembled without cutting or fitting of the individual units thereof, and at the same time an insulating material which is capable of accommodating itself to the wide variations in structure just referred to.

In the accompanying illustrative drawing:

Fig. 1 is a perspective view of a portion of a wall constructed in accordance with this invention and incorporating therein the improved insulating material described herein;

Fig. 2 is a cross-sectional view of a portion of the wall; and

Fig. 3 is a perspective view of an individual insulating unit in collapsed form and with a portion of the exterior surfacing broken away to better show the interior construction thereof.

Referring to the drawing in which like-numerals represent like-parts,—a portion of a building wall is shown in Figs. 1 and 2, the building having an exterior wall sheathing 2, spaced parallel studs 4, and an interior wall sheathing 5. Between each pair of studs is placed a vertical series of heat insulating units generally designated at 6 with the vertically adjacent units 6 in each series slightly spaced by separating members 8. In Figs. 1 and 2 the insulating units are permanently held in position by nails 10, though such

nails are not strictly necessary for, due to the multiple folded construction of the individual insulating units, the natural resiliency of the folded units holds them in place. In Fig. 3 is shown an individual unit of the preferred type made up of a sheet of corrugated board 12 with six parallel fold lines scored therein as indicated at *a*, *b*, *c*, *d*, *e*, and *f*. The sheet 12 has attached thereto, as by staples 14, a smaller sheet of corrugated board 16 having two fold lines scored therein and designated *g* and *h*. The unit as thus described provides, when expanded and installed, three separate insulating air spaces as clearly shown in Fig. 2. The elongated hexagonal central portion has wing-like extension members 18 extending from the opposite sides thereof. Each of said wing-like extensions 18 has a stud-abutting portion 20 hingedly attached thereto. The stud abutting portions are of such a size that they serve to space the elongated hexagonal air cell approximately centrally between the inner and outer wall sheathing. The width of portions 20 is made somewhat less than the minimum width of standard 2"×4" material commonly used for studding. Thus the insulating units can be readily flexed and thrust into position with the ends of the portions 20 abutting the outer wall sheathing 2 and with the opposite connecting folded edges clearing the inner wall sheathing 5.

It has been found in practice that the preferred form of insulating unit made in accordance with this invention can readily accommodate a range of sizes or variations including at least 4 inches, so that ordinarily but one size unit is required for any standard and usual construction. The units when in collapsed condition (Fig. 3) lie flat and may be stacked or packed in convenient sized bundles for the required shipping and handling, but upon application may be flexed and expanded by an operator grasping the extensions and pushing them towards each other, thus flexing the resilient material on its scored fold lines. The units are sufficiently resilient so that any number of them may be placed in position and there remain fixed with the spacers therebetween. Then,

if desired, units may be nailed as above mentioned and the inner wall sheathing applied.

Though the insulating unit, in its preferred form, includes the stud abutting portions 20, these portions 20 may be omitted and the units, without such portions 20, nailed in position with the nails 10 in the manner shown in Fig. 2. If it is not desired to nail the modified units in place they may be positioned as in Fig. 2, or they may be reversed, back side to front, so that the terminal margins of the unit abut the exterior wall sheathing 2.

It is evident that an insulating unit of the herein described type may be made up so that each of two separate pieces of material provides one wing-like extension as well as one long side of the elongated hexagon, or, the unit may be made a single folded piece of material.

Having described my invention what I wish to claim and secure by Letters Patent is:

1. As a new article of manufacture, a building insulating unit of resilient paper material and having, in cross section, when expanded, an elongated enclosed air cell of variable length, said air cell having wing-like extension members extending from and beyond the opposite ends of the said air cell, each of said extensions having hingedly attached thereto a stud abutting portion.

2. As a new article of manufacture, a building insulating unit of resilient paper material and having, in cross section when expanded, an elongated hexagonal air cell of variable length, said air cell having wing-like extension members extending from the apices of and continuing beyond the opposite ends of the said air cell, each of said extensions having hingedly attached thereto, a stud abutting portion.

3. As a new article of manufacture, a building insulating unit of resilient paper material and having, in cross section, when expanded, an elongated enclosed air cell of variable length, said air cell having wing-like extension members extending from and beyond the opposite ends of the same, each of said extensions having hingedly attached thereto, a stud abutting portion.

4. In a building wall structure or the like, an outer wall sheathing, an inner wall sheathing, a series of parallel stud members spacing said inner and outer wall sheathing, the adjacent stud members having therebetween a vertical series of insulating units separated by spacer members, each of said units providing an elongated enclosed air cell parallel to and approximately centrally spaced between said inner and outer wall sheathing, and having extending from the opposite ends of said elongated cell, wing-like extensions, each of said extensions having hingedly attached thereto stud abutting

portions contacting the opposed sides of the pairs of parallel stud members.

5. In a building wall structure or the like, an outer wall sheathing, an inner wall sheathing, a series of parallel stud members spacing said inner and outer wall sheathing, the adjacent stud members having therebetween a vertical series of insulating units separated by spacer members, each of said units providing an elongated, hexagonal air cell parallel to and approximately centrally spaced between said inner and outer wall sheathing, and having extending from the opposite ends of said elongated cell, wing-like extensions, each of said extensions having hingedly attached thereto stud abutting portions contacting the opposed sides of the pairs of parallel studs, and means attaching said extensions and said abutting portions to said stud members.

6. In a building wall structure or the like, an outer wall sheathing, an inner wall sheathing, a series of parallel stud members spacing said inner and outer wall sheathing, the adjacent stud members having therebetween a vertical series of insulating units separated by spacer members, each of said units providing an elongated enclosed air cell parallel to and approximately centrally spaced between said inner and outer wall sheathing, and having extending from the opposite ends of said air cell, wing-like extensions at the opposite ends of said air cell providing a wall between said inner and outer wall sheathing, each of said extensions having hingedly attached thereto stud abutting portions contacting the opposed sides of the pairs of parallel stud members.

7. As a new article of manufacture, a building insulating unit of resilient paper material and having, in cross section, when expanded, an elongated enclosed air cell of variable length, said air cell having wing-like extension members continuing the plane of an end surface of and extending obliquely from and beyond the opposite ends of the said air cell.

8. As a new article of manufacture, a building insulating unit of resilient paper material and having, in cross section when expanded, an elongated hexagonal air cell of variable length, said air cell having wing-like extension members continuing the plane of an end surface of and extending obliquely from the apices of and continuing beyond the opposite ends of the said air cell.

9. In a building wall structure or the like, an outer wall sheathing, an inner wall sheathing, a series of parallel stud members spacing said inner and outer wall sheathing, the adjacent stud members having therebetween a vertical series of insulating units separated by spacer members, each of said units providing an elongated enclosed air cell parallel to and approximately centrally spaced between

said inner and outer wall sheathing, and having extending from the opposite ends of said elongated cell, wing-like extensions, each of said extensions having its margins contacting said adjacent stud members.

10. In a building wall structure or the like, an outer wall sheathing, an inner wall sheathing, a series of parallel stud members spacing said inner and outer wall sheathing, the adjacent stud members having therebetween a vertical series of insulating units separated by spacer members, each of said units providing an elongated enclosed air cell parallel to and approximately centrally spaced between said inner and outer wall sheathing, and having extending from the opposite ends of said air cell, wing-like extensions providing a wall between said inner and outer wall sheathing, each of said extensions having its margins contacting the opposed sides of a pair of parallel stud members.

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