May 15, 1951 W. W. WESNER 2,553,227

COMPOSITE SHEATHING BOARD AND METHOD OF MAKING SAME

Filed Oct. 25, 1945 2 Sheets-Sheet 1

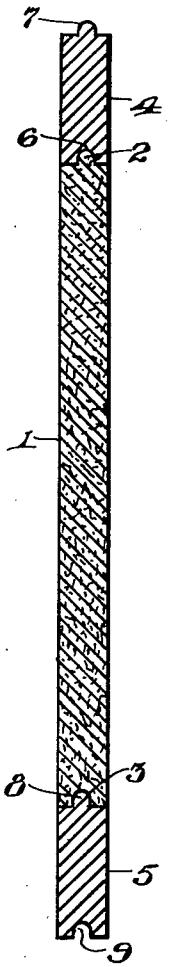


Fig. 2.

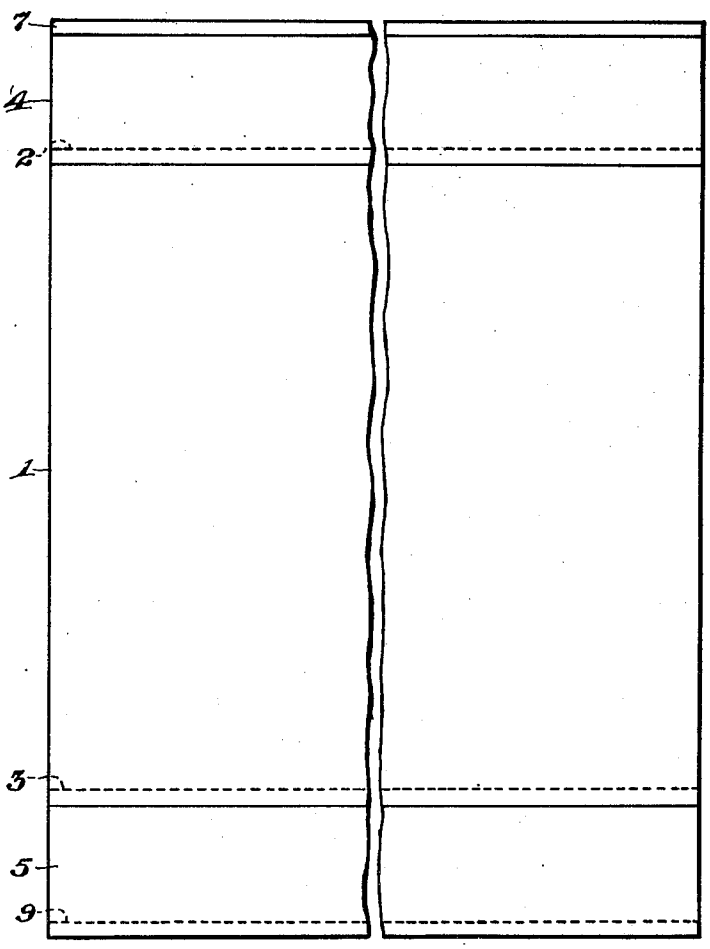


Fig. 1



Fig. 3.

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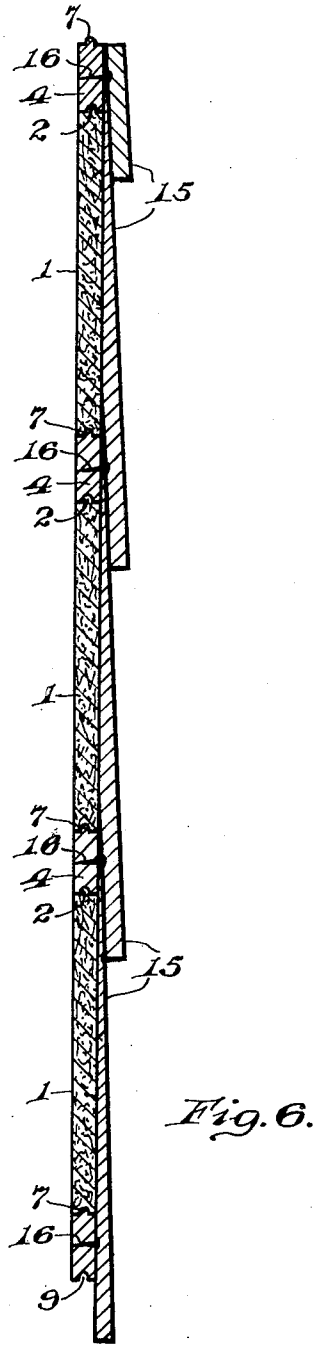


Fig. 6.

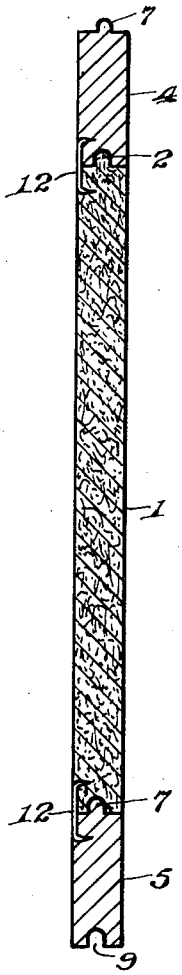


Fig. 4.

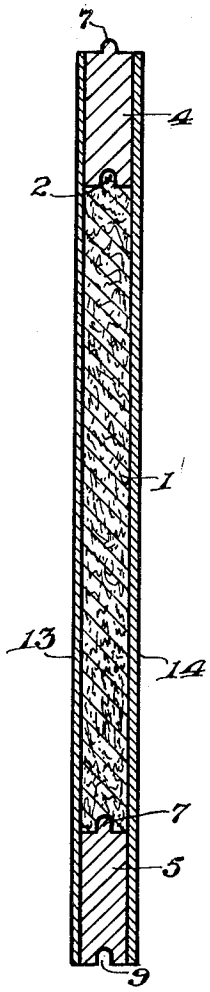


Fig. 5.

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COMPOSITE SHEATHING BOARD AND METHOD OF MAKING SAME

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10 Claims. (Cl. 154—118)

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The object of the invention is to provide improvements in sheathing, and more especially in a composite product composed of alternate strips of wood or wood-like material and some suitable cellular wood substitute, as hereinafter set forth.

For many years the cost of wood has soared, so that today even the relatively low grade timber, usually of twelve inches width, that has long been satisfactory for sheathing which is commonly covered with protective shingles, clapboards, or the like, has increased so in cost that it has become a recognized fact that some means must be found, if possible, to provide a less expensive substitute, that will be at least as heat-insulating as when composed entirely of wood, that will provide the same degree of nail-gripping tendency as wood, and that can be assembled at the factory and shipped as a unit, ready for cutting and installation as easily as ordinary lumber.

Another and more specific object is to provide a composite plank or board, comprising relatively narrow strips of wood or wood-like material of suitable type, sufficiently spaced to provide for nailing thereto standard shingles and clapboards, while between each pair of such strips there is a wider strip of a fibrous material, such as that made from corn husks or other waste substances and sold under the trade-name "Celotex," though the invention is in no wise limited to strips of this particular material, as there are already other types of so-called wallboard available, to which additional types will no doubt be added in the future.

With the broad object of the invention thus briefly stated, the invention comprises further details of construction, which are hereinafter fully brought out in the following description, when read in conjunction with the accompanying drawings, in which Fig. 1 is an elevational view of a unit that comprises one embodiment of the invention, in which two wood strips are used with a single intervening strip of wood-substitute; Fig. 2 is a vertical section of the same; Fig. 3 is a section through a multi-sectional unit joined by shiplap; Fig. 4 shows the same form with the wood and wood substitute strips united by staples; Fig. 5 shows the same type of unit secured together with tarpaper or builders' paper, or with one kind of paper on one side and another kind on the other side; and Fig. 6 is a vertical section showing several composite sheathing units assembled, as on the walls of a house or other building, and with overlapping shingles secured to them in conventional manner.

Referring to the drawings, an intermediate

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strip 1 of manufactured "plank" or "board" is shown as being composed of fibrous material such as that derived from corn husks, sawdust and other waste, and which at the same time is preferably cellular for the resulting heat-insulating characteristics that such material contributes to the finished product. The upper and lower edges of this strip are provided with a conventional tongue and groove combination 2 and 3.

To either or both of the said upper and lower edges of such intermediate strip are secured by suitable adhesive wooden strips 4 and 5, the upper being provided with a groove 6 to receive the tongue 2 and with an upwardly projecting tongue 7, to unite it with a grooved unit placed thereupon, while the lower such strip is provided with a tongue 8 that enters the groove 3, and upon its own lower edge is provided with a groove 9 for receiving the tongue of a lower unit beneath it. However, while for the sake of clarity two wooden strips are shown as being secured to the single intermediate wood-substitute strip, it is to be understood that in practice only a single such wooden strip is best secured to the single intermediate strip, so that when assembling the lower edge of the intermediate strip directly engages the upper edge of the wooden strip of a dual unit beneath it, while the single upper wooden strip in such case directly engages the under edge of the so-called intermediate or wood-substitute strip of a unit above it. Obviously, therefore, the smallest composite unit comprises a single strip of wood and a single strip of wood-substitute, preferably though not necessarily firmly secured together as a single sheathing unit. Also, whereas tongues and grooves have been referred to as the interconnecting means, it is also possible to use the well known shiplap joints characterized by the flanges 10 and 11, in order to indicate that the invention is by no means limited in any way to the means by which the sections are united.

In practice, it may be found by some manufacturers more desirable to positively secure the two or more sections of each unit together, in which case staples 12 may be employed, such as those shown in Fig. 4. On the other hand, as it is customary in erecting buildings and homes of the more expensive kind to use builders' paper or the like in order to still further lessen the amount of air that would otherwise seep through the wall, both inwardly and outwardly, the invention contemplates the assembly of such a medium at the factory as a unitary part of the finished unit. Also in damp climates or when for some particular reason the interior of a

building is intended to be kept drier than usual, it may be desirable to use a tarpaper as a part of the unit, upon one or both sides thereof. In Fig. 5 there is shown a composite unit comprising two spaced strips of wood and an intermediate strip of wood-substitute, which after being firmly united are covered upon one side with a sheet of builders' paper 13 and upon the other side with a sheet of tarpaper 14. However, it is to be further understood that whereas both builders' and tarpapers are shown in Fig. 5, both types of paper (or other desired type of sheets) need not be used simultaneously, but only one and that one upon either the inner or the outer surface of the unit.

The width of the composite unit may be within any feasible limits, but as shingles and clapboards have long been standardized, it is preferable to space the center of the wooden strips so as to best accommodate the accepted spacing at which such shingles 15 and clapboards are secured by nails 16 to ordinary sheathing, whatever that distance may be in various localities. For purposes of illustration, if the accepted distance between nails is determined to be twelve inches, and two-inch wood strips will accommodate such nails, even when applied somewhat irregularly, it will be found that the wood-substitute strip will have to be about ten inches wide, in order to properly space apart the centers of said wooden strips. However, this is a minor detail that might conceivably be altered as conditions vary.

For the so-called intermediate strip of wood substitute there are many substances that can be used, including various compositions of waste materials referred to hereinbefore, pressed fibrous materials, gypsum and the like, probably all of which possess varying degrees of insulation characteristics, whether as to sound or heat, or both. Thus, the exact type of material of which the wood-substitute strip is formed is of no material consequence, so far as the invention is concerned, this being left to the preferance of the manufacturer, or the consumer, or the availability of the various materials that it is possible to use for this purpose.

When tarpaper is used upon one or both sides of the unit, or when some other type of sheet material impregnated with a water- or moisture-repellant substance is employed, and especially when the material with which the sheet is impregnated is heat responsive, it has been found that the impregnated sheet is best secured to the two united strips by means of heat and pressure, and instead of tar-impregnated paper a thin sheet of thermoplastic material may be used, or a sheet of fibrous material such as a porous form of paper impregnated with a suitable heat-responsive plastic, or with a suitable thermosetting material, whichever is best suited to the requirements of a particular installation.

By the terms sheathing board and boardlike sheathing unit is meant a unit, that can be employed in place of ordinary all-wood sheathing lumber, when used as a foundation to which surface finishing materials such as clapboards and shingles are nailed, screwed, or otherwise secured, and which is characterized by a relatively wide strip of cellular wood substitute, a relatively much narrower wooden nailing strip secured to one of the longer edges of said first strip, or a pair of such narrower wooden strips secured to the oppositely directed longer edges thereof, and a relatively thin sheet of non-metallic, that is readily pierced by nails and screws,

adhesively secured to and upon one side of said strips.

Having thus described my invention, what I claim and desire to protect by Letters Patent of the United States is:

1. The method of producing an inherently complete and self-contained boardlike sheathing unit that can be employed in lieu of ordinary all-wood sheathing lumber as a foundation to which clapboards and shingles are secured, which consists in unitarily joining an edge of a wooden nail-receivable strip to one of the longer edges of a strip of cellular wood substitute, and then adhesively securing a flexible fibrous sheet to one side of said wood substitute and nail-receivable strips.

2. The method of producing an inherently complete and self-contained boardlike sheathing unit that can be employed in lieu of ordinary all-wood sheathing lumber as a foundation to which clapboards and shingles are secured, which consists in unitarily joining an edge of a wooden nail-receivable strip to each of the longer edges only of a strip of cellular wood substitute, and then adhesively securing a heat-responsive resinous sheet to one side of the combined wood-substitute and nail-receivable strips.

3. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a wooden nail-receiving strip and a strip of cellular wood substitute secured together along their longer edges only, with a flexible paper sheet adhesively secured to one side of said wooden and wood-substitute strips.

4. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a pair of woolen nail-receivable strips and an intervening strip of cellular wood-substitute unitarily secured together along their longer edges only, with a flexible fibrous sheet adhesively secured to one side of said wooden and wood-substitute strips.

5. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a nail-receivable strip and a strip of cellular wood-substitute secured together along their longer edges only, with a flexible fibrous sheet adhesively secured to one side of said nail-receivable and wood-substitute strips.

6. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a nail-receivable strip and a strip of cellular wood-substitute secured together along their longer edges only, with a flexible heat-responsive resinous sheet adhesively secured to one side of said nail-receivable and wood-substitute strips.

7. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a nail-receivable strip and a strip of cellular wood-substitute secured together along their longer edges only, with a flexible tar-impregnated sheet adhesively secured to one side of said nail-receivable and wood-substitute strips.

8. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a pair of nail-receivable strips and an intervening strip of cellular wood-substitute unitarily secured together along their longer edges only, with a flexible fibrous sheet adhesively secured to one side of said nail-receivable and wood-substitute strips.

9. An inherently complete and self-contained boardlike sheathing unit, comprising the com-

bination of a pair of nail-receivable strips and an intervening strip of cellular wood-substitute unitarily secured together along their longer edges only, with a flexible heat-responsive resinous sheet adhesively secured to one side of said nail-receivable and wood-substitute strips.

10. An inherently complete and self-contained boardlike sheathing unit, comprising the combination of a pair of nail-receivable strips and an intervening strip of cellular wood-substitute unitarily secured together along their longer edges only, with a flexible tar-impregnated paper sheet adhesively secured to one side of said nail-receivable and wood-substitute strips.

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