

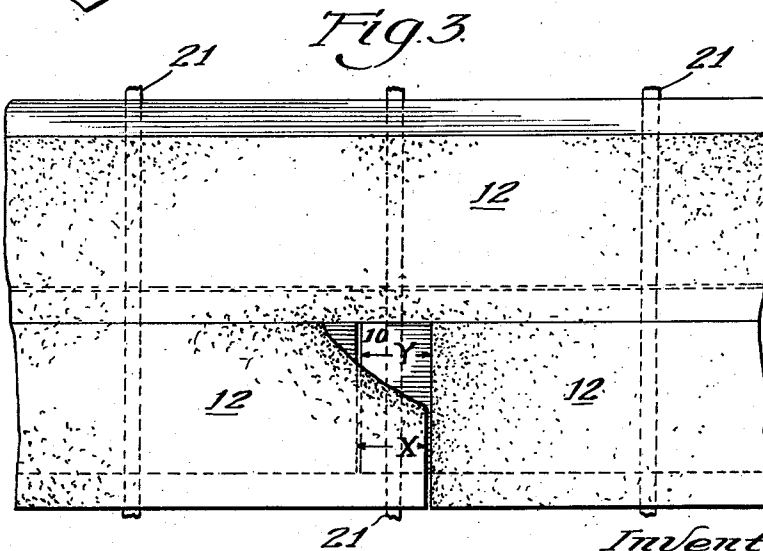
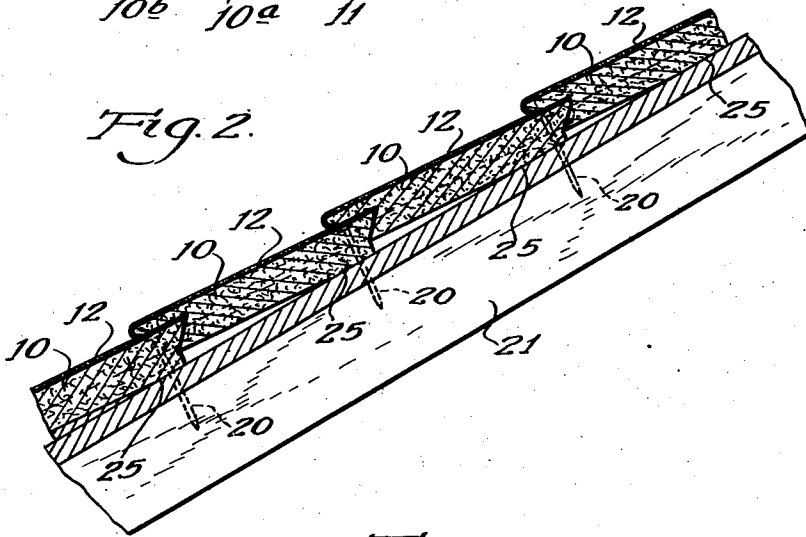
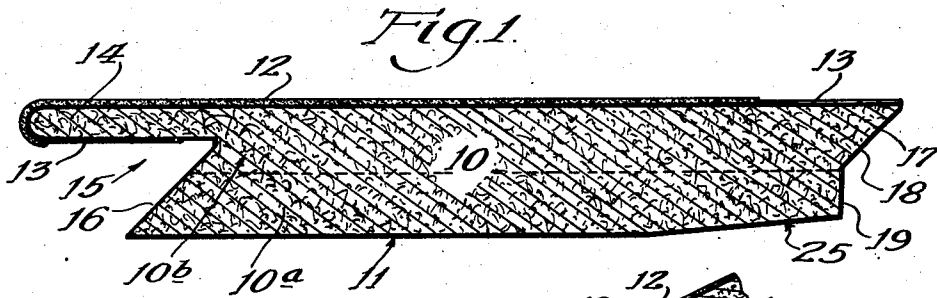
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UNIT FOR ROOFS AND WALLS

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UNIT FOR ROOFS AND WALLS

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4 Claims. (Cl. 20—5)

This invention relates to a new and improved unit for the covering of roofs or side walls or other structural surfaces. The units are preferably of a width to provide an exposure of about 12 inches more or less, and may be made up in long lengths, say 7 to 8 feet in length so that these units may be handled and applied to cover a relatively large area as compared with, for example, the area ordinarily covered by a shingle, such as is very commonly used for roofing.

The roofing or siding units are preferably composed principally of fiber insulation board as the core or base thereof, suitably cut and shaped and provided with a protective covering to serve for the purposes for which the unit has been developed. The units may be applied to rafters, studs or the like directly without underlying sheathing or stripping and they serve both to provide for protection from the weather, that is, the external manifestations thereof, as for example, rain, snow, wind, and the like, and to provide heat insulation to decrease the flow of heat through the roof, wall, or the like formed by their application.

Briefly described the units hereof constitute a suitable base member, preferably a fiber insulation board material, which preferably has applied thereto a moisture proofing surface coating, the unit being formed with interlocking edge portions along the longitudinal edges, including protruding tongue portion to provide a closed joint construction, and the outer surface, or that to be exposed, having applied thereto a highly weather resistant surfacing which conveniently may be a sheet of asphalt roofing material.

The objects of the invention are the provision of relatively large size units for the application to roofs, side walls and the like in building constructions, which units because of their size and construction may be rapidly applied by relatively unskilled labor and which provide not only protection against the weather but also provide heat insulation.

A further object of the invention is to provide a unit covering material which is light in weight, but which is sufficiently rigid for application without underlying sheathing or stripping is, due to its design, simple to manufacture and fabricate and particularly when applied as a roof covering or the like presents a very pleasing appearance, due in particular to the heavy shadow lines resulting from the thickness of the overlapping tongue portions of the units.

Other and further objects of the invention hereof will be readily apparent to those skilled in

the art as the following specific description of the invention is read in the light of the disclosure of the accompanying drawing.

While a specific unit will hereinafter be described, it is to be understood that such a description is the description of the preferred form of the unit and that one skilled in the art to which the inventions thereof pertain will readily perceive, based upon the teachings of the specific disclosure hereof that various minor modifications of the exact construction of the unit may be made without departing from the inventions thereof and without detriment to the advantages which are achieved by the construction of the unit as such is specifically described.

In the accompanying drawing, Figure 1 is a cross sectional view of the preferred form of the structural unit hereof. Figure 2 is a drawing in section illustrating the application of several continuously applied units applied to a roofing rafter or the like and Figure 3 is a plan view of a portion of a surface to which there has been applied a plurality of units.

The siding or roofing unit hereof comprises a base or core portion 10, which preferably is fiber insulation board, either a solid sheet or suitably laminated from a plurality of thinner sheets, and which core is cut to the desired width and length of the unit being manufactured. Preferably the over all width of the unit will be about 15 or 16 inches and the length about 8 feet, however, the width of the unit depends principally upon the artistic effect which is desired for the finished structure and the width of the unit may be substantially any reasonable width as desired depending upon the exposures desired and the length may be any convenient length. In any case however, the surface area of the unit should be large and preferably is, as compared with that of the ordinary shingle or the like, the use of a unit of an appreciable surface area, say one providing a surface coverage of 8 square feet, greatly reduces the number of elements or units to be applied with consequent saving in handling in the installing thereof.

In the drawing a dotted line has been shown extending horizontally about midway of the thickness of the core, which dotted line is shown merely to indicate that the core may readily be composed of two elements instead of being solid, and in connection with such two piece laminated core, it will be readily understood that the two portions thereof, 10A and 10B respectively, may be laminated together either prior to the shaping of the edges of the core or the edges of the laminations

may first be individually shaped and then the two parts 10A and 10B may be suitably glued or otherwise fastened together to form a complete core.

The core 10 is preferably provided with a coating 11 which is a surface coating of asphalt or the like to serve as a surface waterproofing and which surface coating, it is, of course understood, while asphalt is mentioned as the preferred material, may however comprise any other suitable waterproofing. The core is provided along its opposite long edges, along the butt edge with an outwardly extending tongue portion 14, under which there is a rabbet or cutout recess which is indicated at 15, and at the base of which there is an angular face 16 which preferably is at an angle of substantially 45° with respect to the general plane of the core.

At the other or head end of the core member 10 there is provided adjacent the top surface of the core an outwardly extending interlocking portion designated as 17 having a terminal under-face at 45° from the general plane of the core and which terminal under face is designated by the numeral 18. It is to be noted that the incline of the under-face 18 extends only substantially half way through the thickness of the core member and that here the slanting surface 18 merges into a vertical surface which is substantially at right angles to the general plane of the core. It will be seen that this construction provides a solid base for nailing closely adjacent the head edge of the unit, whereas were the bevel carried through the entire thickness such would not be the case and a part of the nail would be exposed. Also as is apparent the bevels may be at an angle other than 45° so long as the head edge and butt bevels are substantially the same.

To the top surface of the core 10 of the unit there is applied a suitable weatherproofing which preferably is a sheet of any suitable roofing 12, which sheet of roofing is however preferably an ordinary asphalt saturated felt base roofing which is suitably coated with asphalt and in which coating there is embedded granular weather resistant material which may be of any desired color for the purpose of decoration. The roofing sheet 12 preferably has along each of the long edges thereof a selvage portion 13 to which the surfacing grit or granules has not been applied or from which applied surface grit or granules has been removed. The roofing strip 12 is suitably adhered as by applying it to a hot coating of asphalt on the upper surface of the core, or is secured by other suitable adhesive, and the such sheet extends from the extreme head edge of the unit, or from immediately adjacent thereto, thence across the upper surface or face of the unit, over and around the outwardly extending tongue portion 14, and the lower edge thereof is suitably adhered to the under face of the outwardly extending tongue portion 14.

The covering sheet or roofing 12 which is applied to the exposed surface of the core 10 is cut to a length which is substantially the length of a roofing unit although preferably fractionally longer than the exact length of the roofing unit, to be exact the roofing 12 is cut to approximately $\frac{1}{4}$ inch longer than the length of the core member to which it is to be applied. This slight excess of length of the roofing 12 is to allow for some slight irregularity in the ends of the core members and for some slight spacing between the ends of adjacent units. The roofing sheet 12

when it is applied to a core 10 is offset longitudinally for covering and sealing over the joint between the ends of adjacent units, this offset being indicated by the dimensions X and Y shown on Figure 3. The roofing sheet 12 is mounted to overlap one side edge of the core 10 by the distance X at one end, consequently there is at the other end a portion of the core of width Y which is not covered by the roofing sheet 12. When two adjacent units are applied the overhanging or outwardly extension X of one roofing sheet overlies the uncovered portion of the next adjacent unit and is preferably cemented in place with the consequence that the joint between the ends of adjacent units overlying such overlap is covered in a weatherproofing manner and due to such construction there is no possibility of the leakage of water or other agent between the ends of adjacently applied units.

A slight improvement may be made in the joint, by applying to the exposed portion of the core Y and extending a short distance under the edge of roofing sheet 12, a sheet of saturated felt which extends from the head edge to around and under the tongue 14. A similar saturated felt in such case should be applied under roofing sheet 12 at the opposite end of the unit.

In the fabrication of the core 10 of the unit at the head end, at the underside, there is provided a slight relief, which relieved surface is designated by the numeral 25. The relief on the underside of the core at the head end of the core serves to bring the head end of the unit, when it is applied, into substantial surface contact with a rafter or the like to which the unit may be applied instead of providing for a mere line contact along the head end edge of the unit, which condition would exist were the relief 25 not provided. This relief 25 should be sufficient to provide for a firm face bearing of the unit on the rafter or the like and the relief is preferably to the extent of about $\frac{1}{4}$ inch at the extreme head edge of the core, that is, on vertical edge 19 and it is provided to the extent of a width of about 2 inches merging into the back face of the core. The relief 25, is of course provided on the core during its fabrication and when the weatherproof coating 11 is applied, face 25 thereof is consequently provided with the weatherproof coating.

The units hereof are applied as is shown in Figure 2 of the drawing wherein there is shown in section three of the units applied to a rafter 21. In this showing no starter strip or the like is shown, but one skilled in the art will readily understand that the application will start with the installation of a suitably prepared starter strip to fill in under the first applied covering unit, or alternatively will be started with a suitably tapered unit having a solid butt edge instead of the recessed or rabbeted butt edge of the units as particularly illustrated in the drawing. Subsequent units are applied as is shown in Figure 2, which units are secured to rafter 21 or the like by nails 20 driven through the head edges of the respective units as they are subsequently applied going upwardly along the surface to be covered. It is readily seen that the tapered extension provided along the head edge of the unit enters into and interlocks with the beveled recess provided under the butt edge of an adjacent unit and that this interlocking of the edges of adjacent units serves a plurality of functions.

The interlocking engagement along the longitudinal edge of adjacent units provides a sealed joint between the units and the interlocking of

the head edge of a unit, secured by the nails 20, with the butt edge of the next adjacent unit, due to the interlocking features which have been described, serves to hold down the butt edge of the adjacent unit and provides for the installation of a surface covered with these units without any exposed visible nailing. All of the nailing of these units is along the head edge as has been described, which nails 20 are covered by the tongue portion 14 of the next subsequently applied unit. The interlocking features provided along the longitudinal edges of the unit furthermore serve to distribute any loading which may be applied to any particular unit adjacent a longitudinal edge thereof since due to the interlocking, any such loading is consequently applied not only to the particular unit to which such loading is applied but it is distributed to adjacent interlocked units and consequently a surface formed of the units of this invention will support a loading much in excess of the loading which might be applied were the interlocking feature along the longitudinal edges not provided.

From the foregoing description it is believed that it is readily apparent that the roofing or wall unit which has been described is one which is simple to manufacture due to the fact that it is readily made from a sheet of material of uniform thickness, by relatively simple fabrications, but however, the unit is a strong and substantial unit which as the core thereof is made of fiber insulating board serves not only the function of providing a roof or wall surface, but additionally provides insulation therefor. Furthermore, it is readily apparent that the unit which has been described may be applied directly to studs, rafters or the like, and that since no sheathing or stripping thereunder is required that in the application thereof there will be an appreciable saving both in labor and materials and that there is also a further saving in the application of these units due to the relatively large size in which they may be applied as compared with the application of shingles or the like to provide a comparable wall or roof surface.

While the core 10 of the unit has been particularly mentioned as preferably formed of fiber insulation board it is, of course, to be understood that substantially any other sheet material can be used for the core, but it must, of course, be understood, that if other material of higher heat conductivity is used for the core that to obtain the insulating effect which is obtained by the use of the preferred form of the invention as described, it will be necessary to additionally provide in connection with the application of the wall surfacing suitable equivalent insulation in the form of fiber insulation board, mineral wool or some more or less like heat insulating material.

It is advisable that there be provided starter units in full and half lengths which are identical with the units specifically described excepting that the weatherproofing or roofing sheet 12 overhangs the core 10 at both ends. As enders or units to finish off the courses it is preferred to have units of various lengths as may be required in each particular installation.

The preferred form of the invention having been above described in detail, including the use or the method of application thereof, it is the intent that those skilled in the art to which the invention pertains may avail themselves not only of the specific form of the invention as described, but that additionally there may be utilized various obvious variations thereof based upon the principles specifically disclosed and that consequently the invention is to be considered as limited only in accordance with the scope of the appended claims.

I claim:

1. A weatherproof covering unit comprising a rectangular body portion, the body portion having head and butt edges and top and bottom faces, the body having an outwardly directed tapering extension along its head edge, a face thereof comprising a prolongation of the top face of the body and having along its butt edge and extending from the bottom face of the body a recess complementing said extension, the unit having a thickness at its head edge exceeding the depth of the recess at the butt edge and the unit when assembled with an adjacent like unit and applied to a rafter or the like taking a position which is angular with respect to the plane of the surface to which applied, the such angularity being determined by the difference of dimensions aforesaid.

2. A weatherproof covering unit as set out in claim 1, wherein the body portion is relieved toward the head edge thereof beginning from intermediate the head and butt edges.

3. A weatherproof covering unit as set out in claim 1, wherein the body portion on its under side is relieved from its head edge toward the butt edge with the taper merging into the bottom face of the unit intermediate the head and butt edges.

4. A weatherproof unit as set out in claim 1 and having a surfacing sheet applied to the top face of the body, extending around the butt edge of the body and terminating in the recess, the surfacing sheet carrying on its surface protective granular material extending over the entire exposed surface of such surfacing sheet excepting for selvage portions along each long edge thereof.

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