Feb. 19, 1929. 1,702,609

E. W. LESHER

ROOF OR WALL COVERING

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FIG. 1.

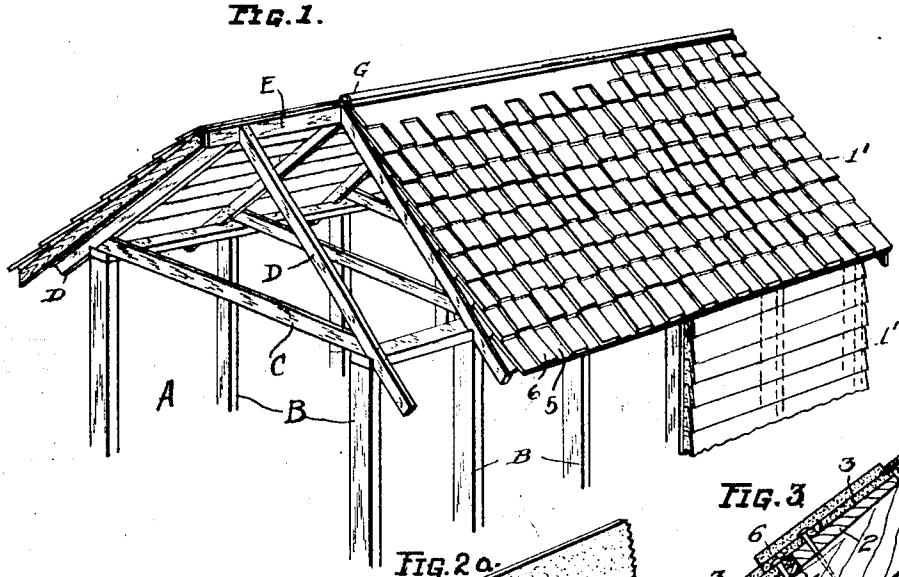


FIG. 2.

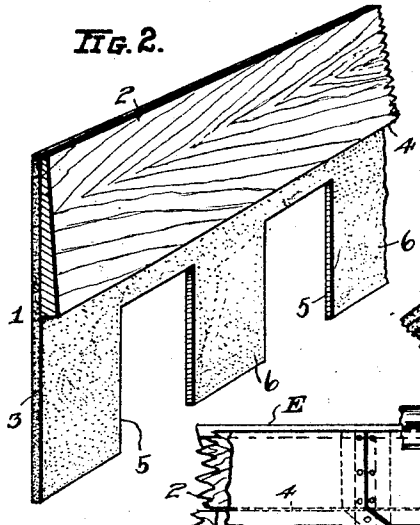


FIG. 2a.

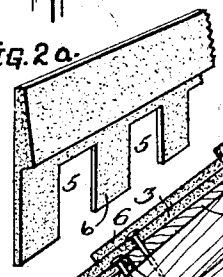
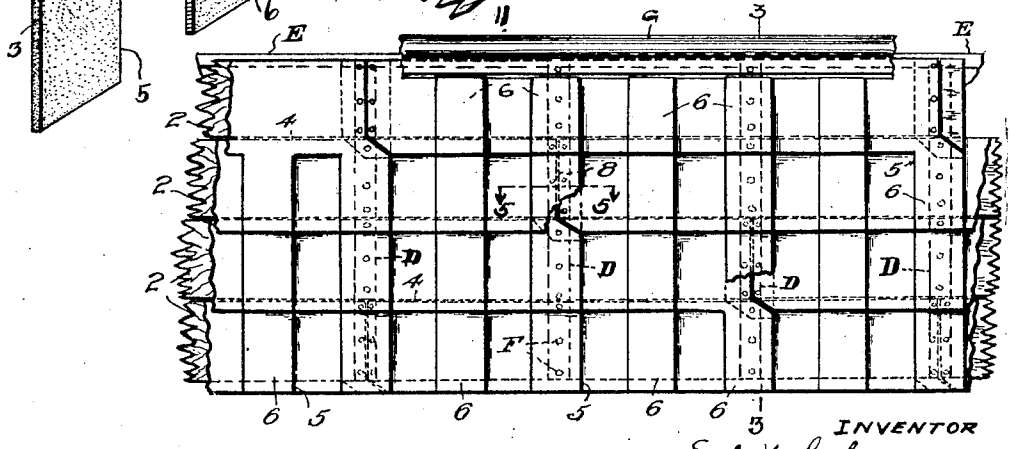


FIG. 3.

FIG. 5.

FIG. 4.



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Fig. 6.

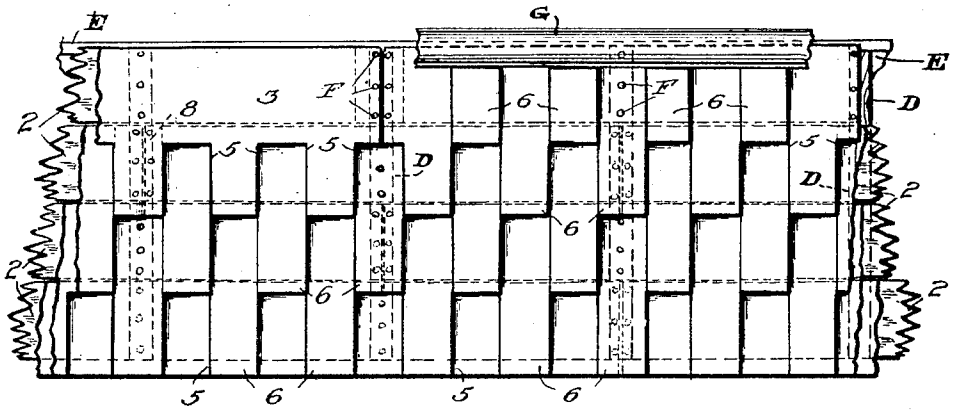


Fig. 7.

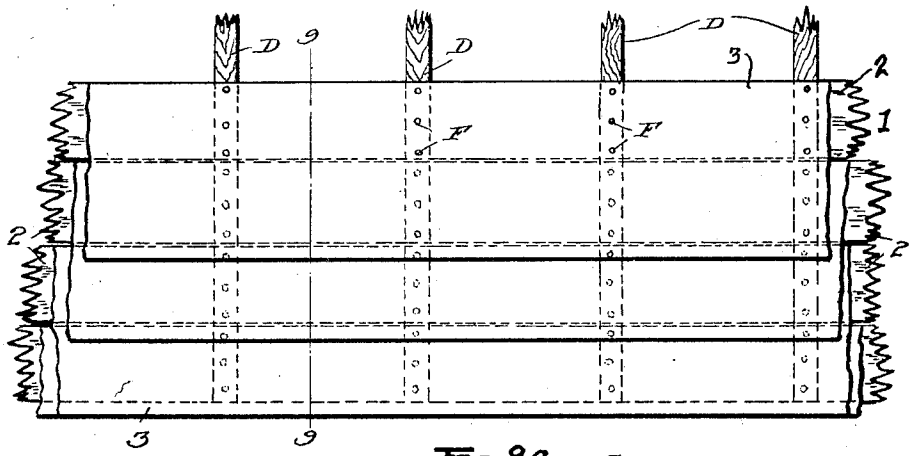


Fig. 8.

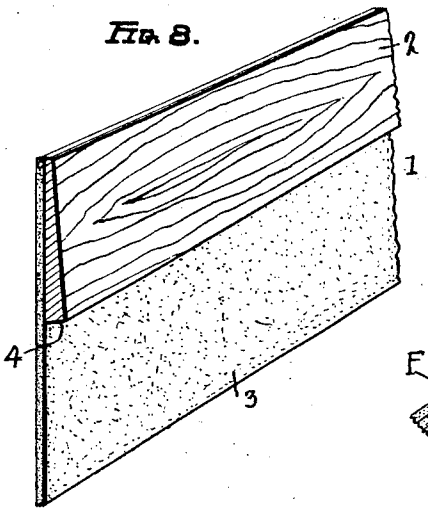


Fig. 8a.

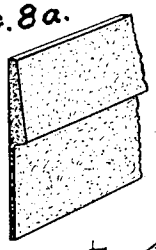


Fig. 9.

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FIG. 10.

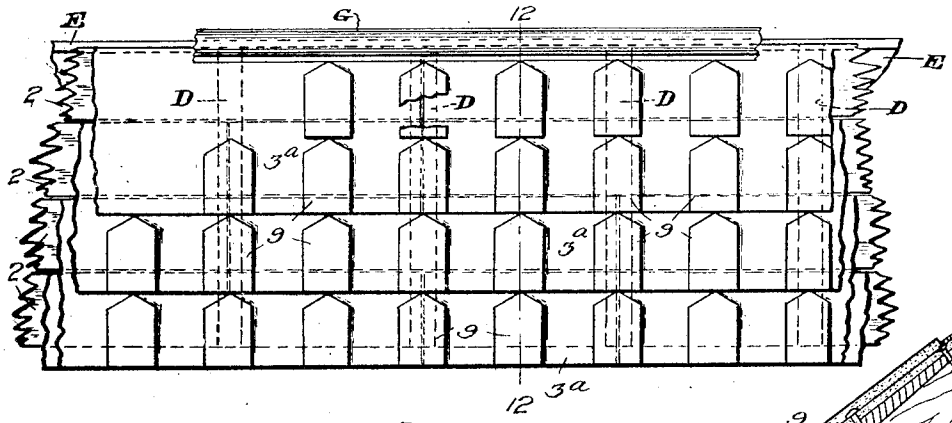


FIG. 11.

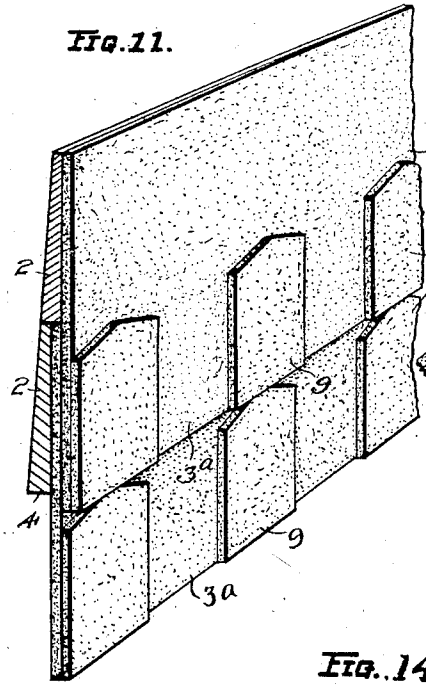


FIG. 12.

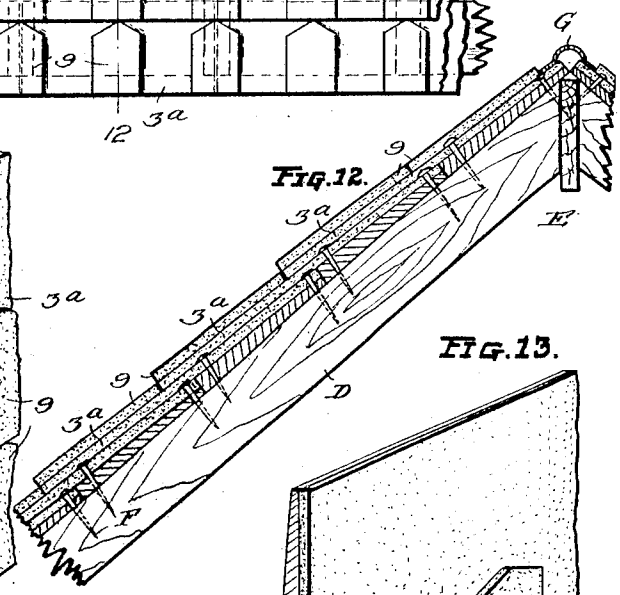


FIG. 13.

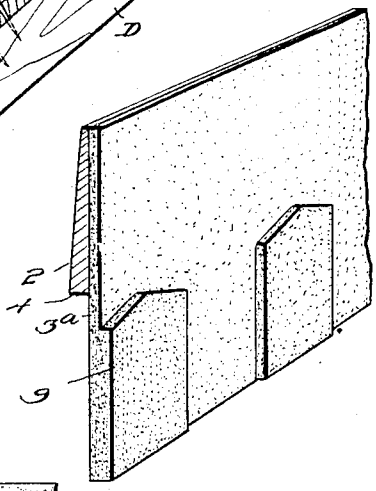
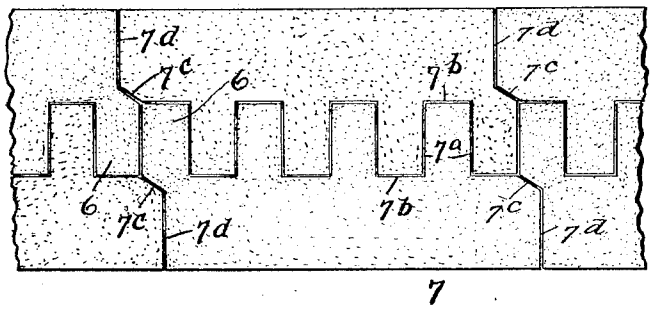


FIG. 14.



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Patented Feb. 19, 1929. 1,702,609

UNITED STATES PATENT OFFICE.

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ROOF OR WALL COVERING.

Application filed December 14, 1925. Serial No. 75,336.

This invention relates to a covering for a building and process of laying or constructing same; being adapted for use as a roofing or siding.

One object of the invention is to provide an improved covering, whereby cost of the materials is materially reduced and the operation of applying same is simplified.

Another object of the invention is to provide an improved covering which is relatively cheap, durable and gives the appearance of tile.

Another object of the invention is to provide a new construction of covering, whereby different tile effects with respect to arrangement or color may be readily produced.

Another object of the invention is to provide an improved covering for the roof or side wall of a building, comprising a supporting section and an insulation section capable of being permanently positioned by a single operation.

A further object of the invention is to provide a new covering material which is cheaply fabricated, is relatively light and resistant to changes in temperature.

A further object of the invention is to provide an improved process of covering one or more walls or the roof of a building, whereby saving of material and labor results.

Other objects of the invention will be apparent to those skilled in the art to which my invention relates from the following description taken in connection with the accompanying drawings, wherein

Fig. 1 is a perspective view of a building having a covering embodying my invention over a portion of the top and side walls.

Fig. 2 is a fragmentary perspective view of a covering member embodying my invention; the form shown in this view being of the composite type.

Fig. 2ª is a view similar to Fig. 2, but showing a type of roofing member molded or otherwise formed from a suitable insulating material.

Fig. 3 is a section on the line 3—3 of Fig. 4 but taken at the upper end of the roof.

Fig. 4 is a view of the parts shown in Fig. 3, looking downwardly in a direction perpendicular to the plane of the roof.

Fig. 5 is a section on the line 5—5 of Fig. 4.

Fig. 6 is a view similar to Fig. 4 but showing a slightly different form of construction and a different arrangement of the covering members to give a different tile effect.

Fig. 7 is a view similar to Fig. 4, but showing another form of covering member.

Fig. 8 is a fragmentary perspective view of a member of the construction shown in Fig 7.

Fig. 8ª is a view similar to Fig. 8, but showing a type of covering member molded from a suitable insulating material.

Fig. 9 is a section on the line 9—9 of Fig. 7.

Fig. 10 is a view similar to Fig. 4 but showing another form of covering member and its arrangement to form a roofing.

Fig. 11 is a fragmentary perspective view of two associated roofing members of the form shown in Fig. 10.

Fig. 12 is a section on the line 12—12 of Fig. 10.

Fig. 13 is a fragmentary perspective view of a roofing member such as shown in Fig. 10, but of slightly different construction.

Fig. 14 is a view illustrating the method of cutting out roofing members without waste of material.

In the drawings, A indicates a building or structure of any desired size, that shown being of a conventional type having uprights B, cross members or beams C, inclined rafters D and a top rail or ridge board E, these structural elements being connected together in any well known way. In carrying out my invention, these elements may be constructed in any desired manner and of any kind of material, it being only necessary to provide some means to receive the means (such as nails F) which secure the roofing or siding in position. In ordinary buildings, the framing is usually constructed from wooden elements, such as shown in Fig. 1, so that under normal conditions the covering is applied directly thereto.

My improved roofing is constructed from a plurality of members (indicated as an entirety at 1') each of which may be molded or otherwise formed or made into a composite structure, as desired, being constructed in a manner and shape to serve both as a sheathing and a covering for the roof and side walls of a structure, as will later appear. Each member 1 may be of any desired length; that is, each member may extend from side edge to side edge of a wall or a roof or they may be of less length and laid end to end, but jointed, preferably in a

manner to prevent leakage, as will later appear. The covering members 1 are laid in overlapping relation directly upon the rafters D or beams B, as the case may be, this arrangement eliminating the necessity for a sheathing of any charcater, including boards, felt, paper or other material. Each member 1 comprises a basal section 2 and a covering section 3. In Figs. 2^a and 8^a these sections are integrally formed as by molding or compression from a suitable material, for example, pulp, such as cane pulp, wood pulp, with or without leather findings, or a pulp having other cellulose materials as a base, suitably combed, dried and treated. These materials may be molded or otherwise formed into the shape shown in Figs. 2^a and 8^a; but preferably I obtain this material in sheet form and cut it into the desired shape to form the sections 3 and form the basal sections 2 from wood and then secure the sections 2, 3, together by cement or other binding material. In practice I have used sheet material of this character generally known as Celotex and also sheet material of this character generally known as Insulite. These materials are resistant to temperature changes and sound and largely water-proof. To make it entirely water-proof, I may impregnate it with asphalt which also acts as a cementing material to secure the sections 2, 3, together. Furthermore, I also cover the exposed surface of the sections 3 with ground mineral, such as slate, thereby making it weather resisting, adding to it sufficient weight to prevent the wind from blowing it out of position and facilitating color effects to give the appearance of roofing tile. This composite form of construction also permits me to construct the basal sections 2 from a grade of lumber cheaper than that ordiarily used in building without impairing the strength of the roofing or side walls.

The basal section 2 is of less width than the roofing section 3 and arranged along its upper edge, thereby forming a shoulder 4 which engages the upper edge of the next lower member 1, and permitting the roofing sections 3 to overlap this latter member. The roofing section 3 is preferably wide enough to overlap that portion of the next lower covering member 1 above its basal section 2, but also a portion of the next adjacent member 1, that is, the covering section is wider than two of the basal sections when arranged side edge to side edge, so that over each joint between one member 1 and the shoulder 4 of the basal section 2 for the adjacent member 1 there are two thicknesses of the covering sections 3, to insure flow of water past the joints. This arrangement also (1) permits two nails F to be driven through each member into each beam B or rafter D, one near the upper edge of the basal section 2 and the other near the lower edge thereof and both nails covered by one or two thicknesses of the roofing sections, and (2) in the form of construction shown in Figs. 1, 2, 2^a, 3, 4 and 6, it disposes the joint above the inner end walls of the cut-aways 5, so that heat within the structure cannot escape past the joint due to its tendency to rise rather than drop. Aside from the leak-proof form of construction thus insured, the roof when constructed from the covering members 1 is improved in appearance and more closely resembles tile. To provide for a face to face relation between the upper surface of each covering section 3 and the under surface of the overlapping portion of the next upper section 3, the lower surface of the basal section 2 is inclined toward its upper free edge, so that the combined width of the basal section 2 and the roofing section 3 along their free edges is equal to the width of the shoulder 4 along the inner or lower edge of the basal section.

In Figs. 7, 8, 8^a and 9 I have shown covering members 1 in which the lower or overlapping portions of the sections 3 thereof are continuous from end to end, this form of construction being particularly adaptable as a siding since it gives the appearance of weather boarding; whereas in Figs. 1, 2, 2^a, 3 and 4 the lower portions of the covering sections are formed with cut-away sections 5, to provide spaced projections, preferably equal in width to the width of the cut-away sections and equal in length to the width of the basal section 2, which makes this form advantageous for use as a roofing. In this latter form of construction, the covering members 1 may be arranged with the projections 6 in alignment, as shown in Figs. 1, 3 and 4, or they may be staggered as shown in Fig. 6, thereby providing for different sorts of tile effect. As shown in these illustrated arrangements, the projections 6 of one member terminate on lines coincident with the inner end walls of the cut-away sections 5 of the next lower section, the result of which is to make the tile appearance more effective.

As already set forth, the members 1 may be of any desired length, but are preferably constructed in lengths to meet standard or adopted dimensions as to the spacing between the rafters D or beams B, so that they will terminate on the centers of two such elements. Where the roofing sections are of the form shown in Figs. 1, 2, 2^a, 4 and 6, I may construct two such sections simultaneously by taking a sheet of material 7 (see Fig. 14) and cutting it on the transverse lines 7^a and longitudinal lines 7^b, thereby forming the two sections without waste of material, since as already set forth the cut-away sections 5 and projections 6 are of equal width. Also, by projecting one of the transverse lines 7^a of the cut outwardly and laterally in opposite directions, as shown at 7^c, to a point midway between the result-

ing adjacent projections 6 and then continuing such line of cut transversely to the side edges of the sheet 7, as shown at 7^a, the resulting sections may be jointed end to end, with the lower end of the joint terminating on or above the surface of the next lower roofing section 3, as shown in Fig. 4. In this arrangement, I insert between the sections 2 and sections 3 a relatively thin plate or sheet of suitable material 8, such as asphalt or asbestos, which overlaps the joint between the ends of two members 1 (see Fig. 5), this sheet 8 having a length equal to the width of the member 1 and a width equal to that of a projection 6, so that if any water flows in between the ends of the sections 3, it will flow downwardly and be discharged on the surface of the lower section 3. Except for the sheet 8, water which might be forced by wind under that projection 6 interposed above a joint, could flow therethrough and escape between the engaging side edges of the basal sections immediately below the joint. This construction is particularly advantageous where alternate rows of members 1 are jointed in alignment by accident or otherwise. Or, if desired, each projection 6 that becomes superposed above a joint between two members 1 may be cemented thereto to effectively prevent the escape of water into and through the joint.

In constructing a roofing, I first form the roofing members in the manner already set forth; next I lay a member 1 or a plurality of members 1 in end to end relation along the lower ends of the rafters D. If the form of construction shown in Figs. 1 to 6, inclusive, be used, then the first row of members 1 is so laid that the inner end walls of the cut-away sections 5 thereof substantially align with the free ends of the rafters D and the projections 6 are cut or sawed off, so as to leave a straight, unbroken terminal edge for the roof; next, a row of members 1 is laid above the first row, with the shoulders 4 of the basal sections 2 engaging the upper or free edges of the first row of members 1, which arrangement will align the free ends of the projections 6 with the terminal edge of the roof—see Figs. 1 and 4; next, this last operation is repeated until the entire side of the roofing is complete; next, these operations are carried out for the other side of the roofing; then a flashing G is positioned over the upper free edges of the uppermost members 1 and secured in any desired manner. As shown at the left hand end of Fig. 1, the upper portion of the last laid members is plane and not consistent with the resulting assembly of roofing members 1. To avoid this condition and undesirable appearance, I take the projections 6, which were sawed off from the first row of members 1 and position them on the last row of members (see right hand side of Fig. 1), so that the same construction as well as eye appearance is maintained throughout all portions of the roof.

In constructing and applying a siding, it will be understood that the same steps are carried out.

While either form of construction may be used for finishing a side wall or a portion thereof or either form may be used for the roofing, the forms shown in Figs. 2, 2^a, 3, 4 and 6 are preferable for the roofing due to the tile and color effects that may be produced thereby.

Figs. 10, 11 and 12 illustrate another form of construction making it possible to produce a further eye appearance for decorative or tile effect purposes. In this form of construction the lower portion of each covering section 3^a is provided with superimposed sections or tabs 9, which may be formed with the section 3^a, integrally as shown in Fig. 13, or cut out separately and secured by suitable means in position thereon, as shown in Figs. 11 and 12. The tabs 9 may be spaced apart a distance substantially equal to their width. The covering members 1^a are preferably laid to bring the tabs 9 in alignment. The upper ends of the tabs 9 are inclined to insure drainage of water; otherwise water would accumulate between one tab and the section 3^a of the next member 1^a and cause damage, especially due to freezing in cold weather. To give a symmetrical appearance, these ends are inclined downwardly from their centers in opposite directions.

From the foregoing description it will be seen that my improved covering members constitute the complete covering or wall for a building either as its roof or a side wall or a portion of a side wall, serving as a combined supporting means and exposed or weather surface, and eliminating completely the cost of materials and labor in sheathing the studding or rafters of the structure preparatory to laying the covering, such as weather boards, shingles or tile. As the sheathing and covering are made and laid as units, both operations are effected in and by one operation. My construction of covering provides for economical construction not only because it is cheaper in cost, but because it can be made in relatively long sections, which facilitates its handling, laying and securing in position. Due to the insulation qualities of the material as well as its adaptability to waterproofing, the covering members provide a durable, air tight and liquid tight wall or cover as a roof or side wall for a building.

Preferably, the covering sections are formed from sheet material having a thickness of approximately one-half inch, so that the members when laid give the appearance of tile. By covering these sections with ground mineral of different colors and laying them with the colors in alternate arrangement

or according to some design the tile or decorative effect is increased.

Where the sections are molded or compressed, their surfaces may be shaped other than flat and the projections 6 may be of convex-concave form if desired.

To those skilled in the art to which my invention relates, many changes in construction and widely differing embodiments and applications the invention will suggest themselves without departing from the spirit and scope thereof. My disclosures and the description herein are purely illustrative and are not intended to be in any sense limiting.

What I claim is:

1. A composite cover member comprising a basal section formed of relatively rigid material and a rigid covering section formed of interlaced open-work fibers highly insulating as compared to wood and secured to said basal section in face to face relation, said covering section extending beyond one side edge of the basal section to overlap the covering section of an adjacent cover member and the side edges of the basal section being arranged to engage the side edges of adjacent basal sections of the next upper and lower rows of cover members.

2. A wall construction consisting of spaced, parallel arranged supporting elements and cover members, each cover member comprising a relatively rigid basal section arranged to lie on said supporting elements and engage side edge to side edge the basal sections of adjoining members and a relatively rigid covering section formed of interlaced open-work fibers highly insulating as compared to wood, said covering section being extended beyond one side edge of said basal section and terminating in spaced projections.

3. A relatively long wall section adapted to engage spaced supports, comprising a relatively thick portion forming a truss and a substantially rigid thin portion formed of interlaced open-work fibers highly insulating as compared to wood and extending beyond one longitudinal edge of said thick portion a distance greater than the transverse width of said thick portion to form a covering, the longitudinal edges of said thick portion being arranged to engage the opposite longitudinal edges of the thick portions of adjacent sections to form a sheathing and the inside face of said thick portion being inclined from the longitudinal edge from which said thin portion extends to its opposite longitudinal edge so that said edges are equal in thickness, whereby said apron has face to face relation with an adjacent apron.

4. A relatively long insulating composite building unit for a roof or wall comprising relatively rigid sections of different widths in face to face relation to form a relatively thick portion and a relatively thin portion composed of interlaced open-work fibers highly insulating as compared to wood and extending beyond one longitudinal edge of the thick portion, said relatively thick portion being arranged to engage edge-to-edge the edges of corresponding portions of other units and co-operate therewith to form a sheathing and the relatively thin portion extending over the joint between said relatively thick portion and the corresponding portion of an adjacent unit, said relatively thick portion serving as a truss for the unit, whereby the latter may be supported on spaced supports.

5. A relatively long insulating building unit for a roof or wall comprising a relatively thick portion and a relatively thin portion extending beyond one longitudinal edge of the thick portion, said relatively thick portion being arranged to engage edge-to-edge the edges of corresponding portions of other units and co-operate therewith to form a sheathing and the relatively thin portion extending over the joint between said relatively thick portion and the corresponding portion of an adjacent unit, said relatively thick portion serving as a truss for the unit, one end of the unit having a perpendicular portion co-extensive with said thick portion transversely and an inwardly offset perpendicular portion connected with said perpendicular portion by an intermediate angularly disposed portion and the opposite end of the unit being of complementary shape, whereby the unit when in position covers the joint between units of the next adjacent lower row of units.

6. A combined sheathing and cover unit for the roof or wall of a building, comprising a pair of relatively rigid members cemented together in face to face relation, the inner member cooperating with similar members of other units to form a sheathing and the outer member being extended relative to one longitudinal edge of the inner member to form an apron and one of said members being formed of heat insulating material.

7. A combined sheathing and cover unit for the roof or wall of a building, comprising a pair of relatively rigid members cemented together in face to face relation, the inner member cooperating with similar members of other units to form a sheathing and the outer member being extended relative to one longitudinal edge of the inner member to form an apron and the outer member being formed of heat insulating material.

8. A roof or wall building unit comprising a main portion and projecting members along one edge thereof, disposed in spaced relation, one end of said unit having a perpendicular portion arranged to align with similar end portions of the immediate adjacent upper or lower units and an inwardly inclined portion terminating at the upper edge of the adjacent space and the opposite end having a perpendicular portion arranged to align with

similar end portions of the immediate adjacent upper or lower units and an outwardly inclined portion terminating at the upper outer end of the adjacent projecting member, whereby the latter member covers the joint between units immediately below it and each end of the unit is complementary to the opposite end of the adjoining unit.

9. A building wall or roof comprising spaced supports and rows of cover units mounted on said supports, each unit comprising a basal section arranged to engage edge to edge the basal sections of upper and lower units and an apron terminating in spaced members; the members on the lowermost row of units being removed and secured to the basal sections of the uppermost row of units.

10. A relatively long wall section comprising a relatively thick portion forming a truss and a substantially rigid thin portion composed of interlaced open-work fibers highly insulating as compared to wood and forming an insulating apron and extending beyond one edge of said thick portion a distance greater than the transverse width of said thick portion to form a covering, the edges of said thick portion being arranged to engage the longitudinal edges of the thick portions of adjacent sections to form a sheathing and the inside face of said thick portion being inclined from the longitudinal edge from which said relatively thin portion extends to its opposite longitudinal edge so that said edges are equal in thickness, whereby said apron has face to face relation with an adjacent apron.

In testimony whereof I have hereunto affixed my signature.

EARL W. LESHER.