Sept. 19, 1944. R. N. WILLIAMS 2,358,550

BUILDING MATERIAL

Filed Oct. 31, 1942

FIG. 1.

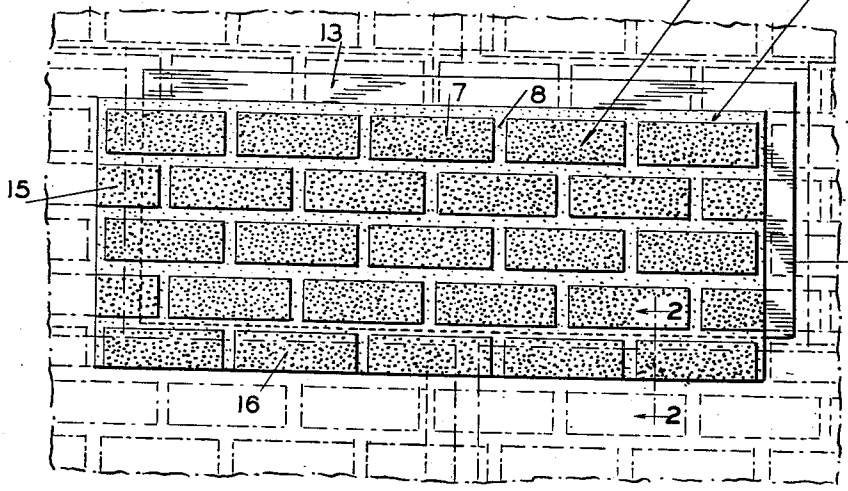


FIG. 2.

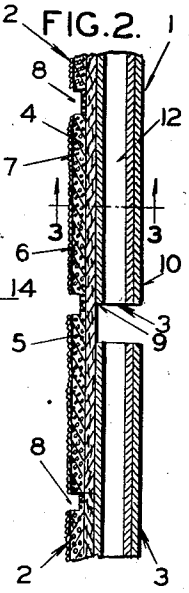


FIG. 3.

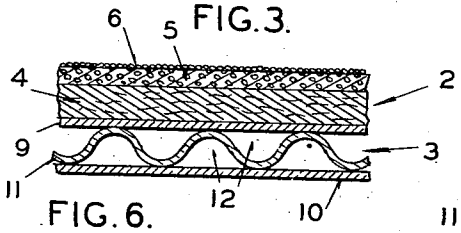


FIG. 4.

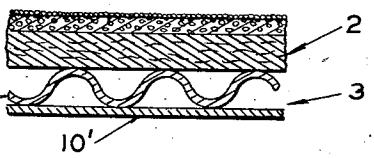


FIG. 6.

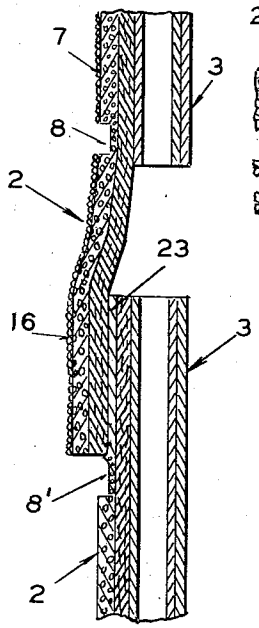
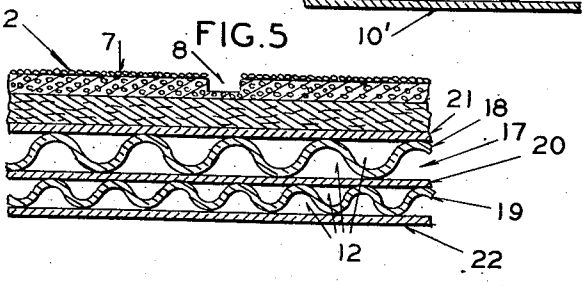


FIG. 5



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BUILDING MATERIAL

Richard N. Williams, St. Louis, Mo.

Application October 31, 1942, Serial No. 464,000

1 Claim. (Cl. 20—5)

My invention relates to building material and more particularly to an improved panel construction which can be used as roofing or siding on a building.

One of the objects of my invention is to construct an improved building material panel which will permit easy application of a flexible bitumen-saturated fibrous material on a building and which will also give additional insulation qualities to a wall or like portion of a building.

Another object of my invention is to construct an improved building material panel which will be easily fabricated, economical to the building as to original cost and cost of application, and which will have a long life.

Other objects of my invention will become apparent from the following description taken in connection with the accompanying drawing in which Figure 1 is a view of a side of a building showing a complete panel embodying my invention applied thereto with adjacent panels in broken lines; Figure 2 is a sectional view taken on the line 2—2 of Figure 1; Figure 3 is a sectional view taken on the line 3—3 of Figure 2; Figures 4 and 5 are sectional views similar to Figure 3 showing modified constructions; and Figure 6 is a sectional view showing a modified overlapping arrangement between the bottom of one panel and the top of another panel.

Referring first to Figures 1, 2, and 3, my improved panel generally indicated by the reference numeral 1 is formed from an outer sheet 2 and a separate inner or backing sheet 3. The outer sheet, which is exposed to the weather, is preferably made of a known construction, being made of a bitumen-saturated fibrous material commonly known in the trade as felt base roofing stock. As best shown in Figure 3, the felt base or equivalent material 4 of sheet 2 is completely saturated with a bitumen material such as asphalt and on top of this is placed a coating 5 of bituminous material. This coating may be covered by small particles or granules 6 of rock, pottery, or the like. The sheet 2, as shown, is made to simulate a brick surface in which there are raised portions 7 to simulate bricks and depressed portions 8 to simulate mortar joints. The sheet is embossed by a roller in a well-known manner. The sheet 2 is obtainable on the market in roll form and is primarily employed as roofing or siding material. The sheet 2 forming part of my improved panel is cut from a roll of this roofing or siding material.

The sheet 3, which forms the backing of the panel, is relatively stiff and is preferably made from a fibrous material such as cardboard. It is desirable that this cardboard or equivalent material be of such construction as to be provided with air containing cells although such is not necessary. A suitable cardboard would be what is known as corrugated cardboard and comprising two imperforate sheets 9 and 10 of heavy paper having positioned therebetween a corrugated sheet of paper 11 forming separated air chambers or compartments 12. This corrugated cardboard is treated so as to be water repellant and resistant to living organisms, a suitable treating substance being a mixture of asphalts and waxes although other substances can be employed. Sheet 3 is thus very light in weight and yet quite rigid. It also will not deteriorate rapidly due to the treating thereof.

To make panel 1, sheets 2 and 3 are adhered together by an adhesive such as a mixture of asphalts or any other suitable adhesive. The result is a relatively rigid panel which does not have the disadvantages of application as a roll of flexible bitumen-saturated fibrous material such as that from which sheet 2 is cut. The backing sheet 3 adds very little weight to sheet 2 yet it makes it very easy to handle and apply to a building either as a panel to put on outside board sheeting or over an old surface. The cardboard, in addition to having the characteristic of making the panel fairly rigid and easy to handle and install, has the further very important advantage of providing insulating qualities to the wall or like portion of a building to which the panel is applied. Due to the air chambers 12 provided by the corrugated cardboard, a dead air space will be established in back of sheet 2 and because of this, heat can be retained better in the building and cold prevented from penetrating to the interior. Since the backing sheet 3 has a smooth surface and maintains a substantially flat surface for the back of the panel, any rough surfaces to be covered will be considerably improved.

In making the panel from sheets 2 and 3, sheet 3 of the cardboard is preferably cut slightly smaller than sheet 2 and when the two are adhered together, the sheets are offset with respect to each other so that the marginal portions 13 and 14 adjacent the top and one end of sheet 3 extend beyond the top edge and like end edge of sheet 2 and the marginal portions 15 and 16 at the bottom and the opposite end of sheet 2 extend beyond the bottom edge and like end edge of the cardboard. This arrangement permits shiplap joints between the panels when they

are applied to a wall surface. Thus, as seen in Figure 1, sheet 2 of the full panel shown will overlap the cardboard sheet 3 of the panels below it and at the left end, and the cardboard sheet 3 will be overlapped by sheets 2 of the panels above it and at the right end. Due to sheet 2 being slightly larger than sheet 3, the marginal edges of sheets 3 when the panels are applied will be slightly spaced from each other. This insures that sheets 2 of adjacent panels will always have abutting edges. This overlapping arrangement insures a smooth finished surface by the plurality of panels and one which will be properly sealed. In applying the panels, the overlapped portions will be adhered together by a suitable adhesive such as that employed in adhering sheets 2 and 3 together.

Although the sheet is shown as formed to simulate brick, it may be smooth on its exposed surface and need not have the granules embedded therein. The sheet 2 is shown as being cut from a roll at the center of the simulated vertical mortar joints and at one edge of a simulated horizontal mortar joint but this is by way of example only. The panels, when applied in abutting relation, should disclose uniform mortar joints.

As shown in Figure 4, the treated corrugated cardboard sheet 3 need not have the corrugated sheet covered on both sides by heavy sheets. In the panel construction shown in Figure 4 the corrugated sheet 11' is provided with a covering sheet 10' on one side only and the other side of the corrugated sheet is adhered directly to the back of sheet 2, said sheet 2 performing the function of the other sheet 9 of the corrugated cardboard shown in Figure 3.

If additional insulating qualities should be desired and more rigidity given to the panel, such can be accomplished by using double corrugated cardboard 17 as shown in Figure 5. The two corrugated sheets 18 and 19 have an interposed common sheet 20 and surface sheets 21 and 22. The back of sheet 2 of the panel means is adhered directly to an outer paper sheet of the double corrugated cardboard such as sheet 21.

Instead of having the top marginal portion of cardboard 3 extending beyond sheet 2 when the sheets are adhered together, sheet 2 may have a continuous depressed portion which will be overlapped by the adjacent panel positioned above. Such a construction is shown in Figure 6 wherein the upper marginal portion of sheet 2 is provided with an integral strip 23 extending to the upper edge of sheet 3. The thickness of this strip 23 is the same as the thickness of the depressed portions simulating mortar joints. The bottom marginal portion 15 of sheet 2 of the panel will be the same as shown in Figures 1 and 2 so that it can overlap the like strip 23 on an adjacent panel. The lower edge of a panel will be so positioned over strip 23 that the mortar groove 8' will be properly indicated.

Being aware of the possibilities of modifications in the particular structures herein described without departing from the fundamental principles of my invention, I do not intend that their scope be limited except as set forth by the appended claim.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

A unitary building material panel comprising a straight-edged rectangular sheet of bitumen-saturated fibrous material coated with bitumen material on one surface, a separately formed straight-edged rectangular sheet of corrugated cardboard provided with its edge surfaces at right angles to its face surfaces and having an imperforate covering on at least one surface thereof and said sheet being treated with a mixture of asphalts in order to repel water and resist deterioration by living organisms, and means for adhering the two sheets together with the bitumen coated surface of the first named sheet and the imperforate covering of the cardboard sheet presented as exposed surfaces of the panel, said bitumen-saturated sheet being slightly wider and longer than the cardboard sheet and said sheets being positioned with respect to each other that the marginal edges of one end and one side of the bitumen-saturated sheet will extend beyond the marginal edges of a like end and side of the cardboard sheet by a predetermined distance and the marginal edges of the remaining end and side of said bitumen-saturated sheet will be short of the marginal edges of the remaining end and side of said cardboard sheet by a predetermined distance less than the first predetermined distance so that when said panel is positioned adjacent like panels the edges of the bitumen-saturated sheets will abut each other and the edges of the cardboard sheets will be in slightly spaced relation.

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