Dec. 15, 1936. L. KIRSCHBRAUN 2,063,935

SIDING MATERIAL

Filed Dec. 16, 1931 3 Sheets-Sheet 1

Fig. 1

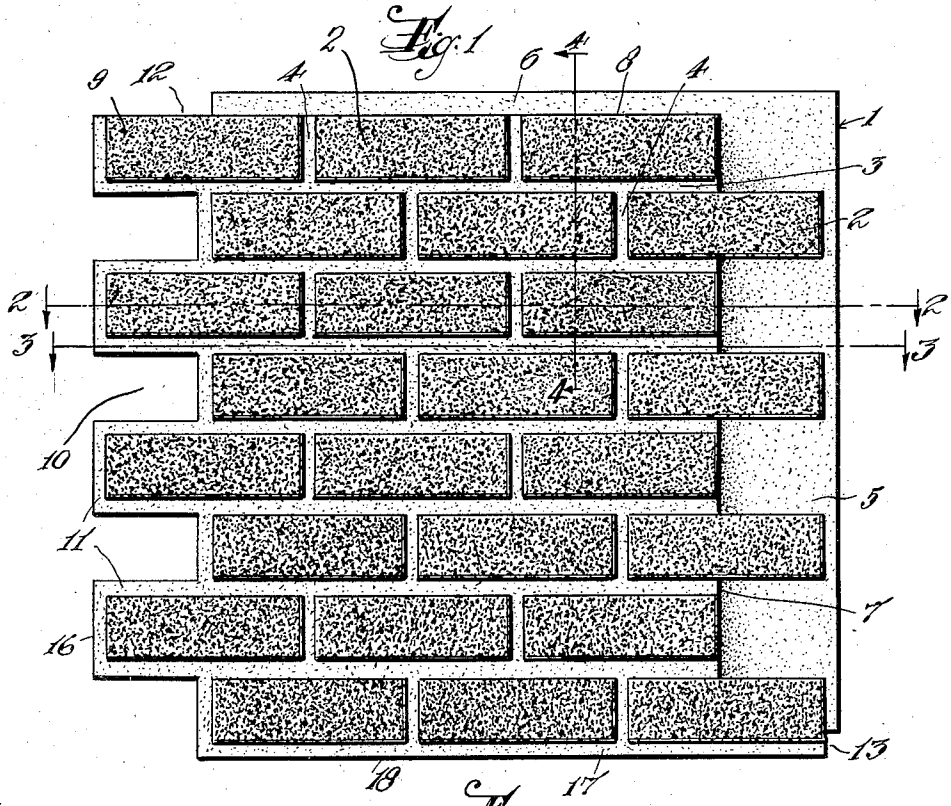
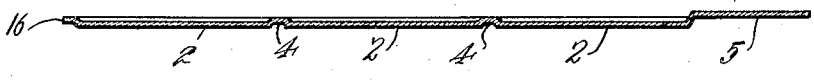
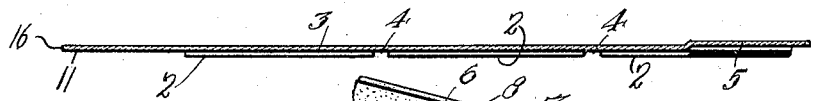


Fig. 2





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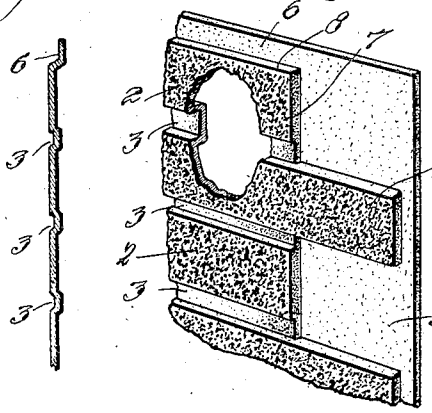

Fig. 5

Fig. 4

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SIDING MATERIAL

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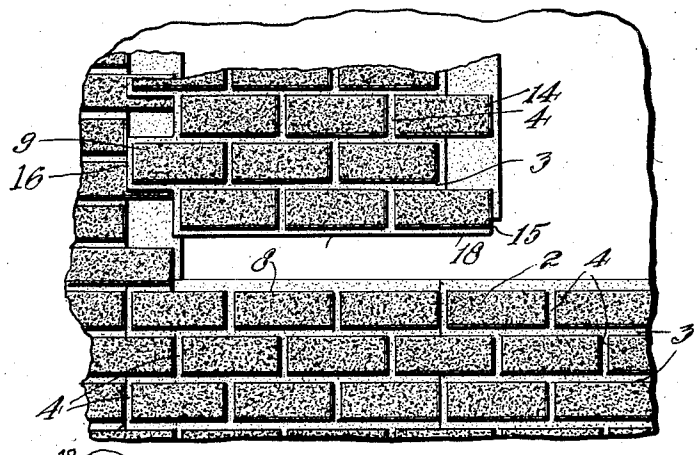

Fig. 8

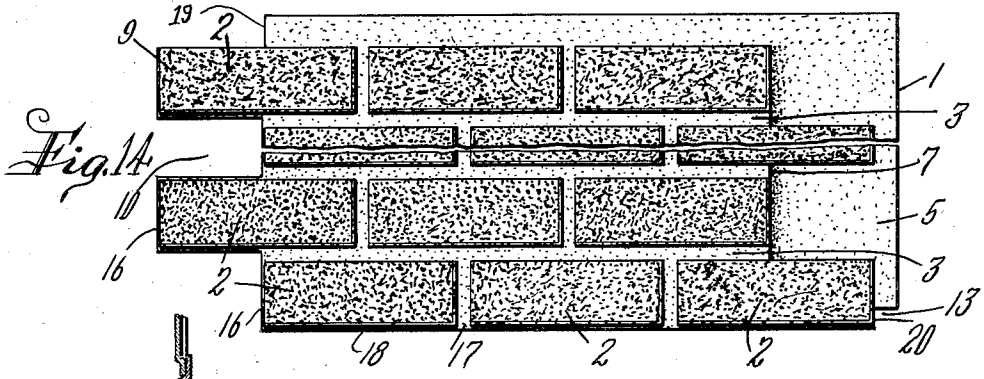

Fig. 14

Fig. 12

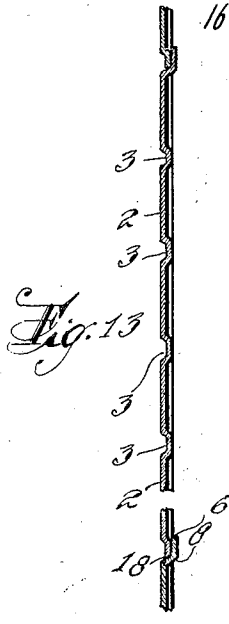

Fig. 13

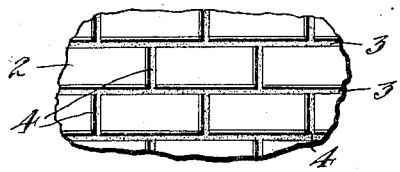

Fig. 6

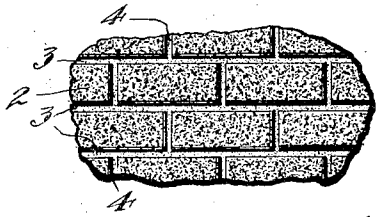

Fig. 7

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SIDING MATERIAL

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Fig. 11

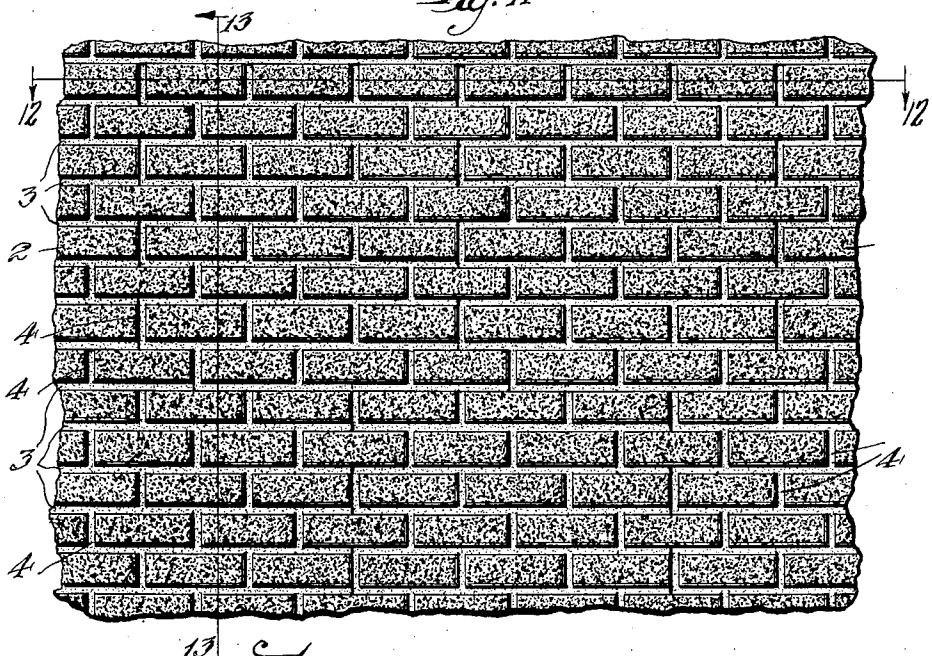


Fig. 10

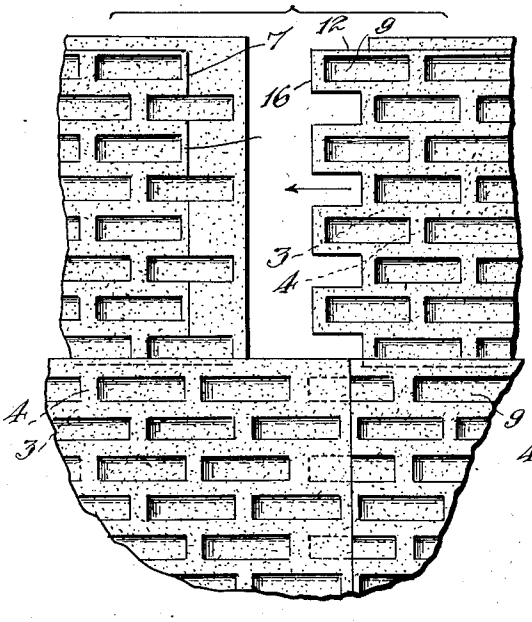
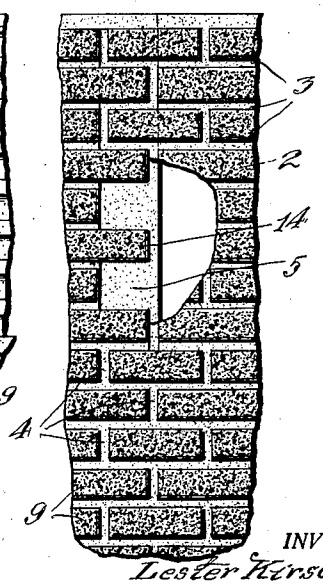


Fig. 9



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Patented Dec. 15, 1936

2,063,935

UNITED STATES PATENT OFFICE

2,063,935

SIDING MATERIAL

Lester Kirschbraun, Leonia, N. J., assignor to The Patent and Licensing Corporation, Boston, Mass., a corporation of Massachusetts

Application December 16, 1931, Serial No. 581,336

7 Claims. (Cl. 20—5)

This invention relates to building material and is more particularly concerned with siding in the form of panels prepared from composition board capable of being embossed or moulded and especially from board made of an aqueous mixture of fibrous stock and waterproofing material.

Heretofore it has been common to make composition siding in the form of strips presenting a single row of brick-simulating faces, composed of felt base roofing stock which has been saturated and coated with asphalt and surfaced with wear-resisting material similar to the well known asphalt roofing strips. These strips are applied in a series of overlapping courses to simulate brick or other siding constructions. The large amount of overlapping necessitates the use of approximately twice as much material as the area to be covered. Moreover, because of the flimsiness and flexibility of the strips, the application of the strips to the sub-structure is awkward and requires a considerable amount of time and skill in order to properly align them and obtain a reasonably acceptable appearance.

In accordance with my invention the panels are preferably composed of a base of thermoplastic composition board which has considerable mechanical strength, yet is light and rigid. Because of the nature of the base, the panels can be made comparatively large in size whereby a plurality of staggered rows of brick or other simulating surfaces can be embossed thereon. The panels thus produced are waterproof and fire-resistant and will satisfactorily resist exposure to the weather. They are easy to handle on account of their stiffness and light weight and can be applied more rapidly than ordinary strips. Since each unit is of considerable size, the amount of overlapping is substantially reduced thereby effecting a large saving of material.

The panels made in accordance with my invention are embossed and cut in such manner as to create a highly artistic appearance when laid in place. Furthermore, the panels are self-aligning and can be applied with facility and speed.

The composition board which forms the base material of my novel product may be prepared from a stock comprising a mixture of an aqueous dispersion of thermoplastic waterproofing material with aqueous fibrous pulp together with suitable fillers, substantially as disclosed in Patent No. 1,536,399, granted to Lester Kirschbraun May 5, 1925, or in the Patent No. 1,785,357 granted to Levin December 16, 1930; or the board may be made from any equivalent waterproof and weather-resistant stock which is capable of being formed into the configuration required for the brick-simulating sheets.

The stock may be sheeted on a wet machine into a web which is then carried by blankets from the forming cylinder to the make-up roll where a sheet of desired caliper may be built up. When the web has attained the desired caliper, it is stripped from the make-up roll and dried. The peripheral dimensions of the make-up roll are preferably such that the sheet stripped therefrom will be of substantially the size of the desired panel or a multiple thereof.

The sheet may then be passed through hot calender rolls, or otherwise treated so as to heat the same to a temperature sufficient to cause the particles of waterproofing material to coalesce and fuse on the fibers, and form a hard, rigid and thermoplastic board-like structure preferably of a thickness ranging from .050" to .080". The board is then placed between heated male and female dies and subjected to an embossing and cutting operation whereby the board is formed into a panel of the desired shape, size and design. The resulting panel is of substantially uniform thickness throughout.

Similarly useful sheets may be produced on multi-cylinder machines from stocks designed to produce rigid as well as mouldable properties. When the production of more highly fire-resistant products is desired, asbestos fiber is employed as the sheet-forming stock.

In order to more clearly comprehend the nature of my invention, reference is made to the following description in conjunction with the accompanying drawings, of which:—

Figure 1 is a plan view of a siding panel made in accordance with my invention.

Figure 2 is a cross-section taken on the line 2—2 of Figure 1.

Figure 3 is a cross-section taken on the line 3—3 of Figure 1.

Figure 4 is a cross-section taken on the line 4—4 of Figure 1.

Figure 5 is a perspective view of a panel made in accordance with my invention, a portion being broken away.

Figures 6 and 7 are fragmentary plan views of the panel before and after the embossed areas have been surfaced.

Figures 8 and 9 are fragmentary front face views illustrating the manner in which the panels are placed on a wall.

Figure 10 is a fragmentary rear face view il-

lustrating the manner in which the panels are placed on a wall.

Figure 11 is a fragmentary view illustrating the appearance of the panels when laid in place.

Figure 12 is a cross-section taken on the line 12—12 of Figure 11.

Figure 13 is a cross-section taken on the line 13—13 of Figure 11.

Figure 14 is a fragmentary plan view of a slightly different embodiment of the invention.

Referring to the drawings and particularly to Figures 1–7, the numeral 1 indicates a panel embodying the invention, this panel having a generally rectangular shape. Embossed or raised areas shaped to simulate common brick are represented by the numeral 2. The raised areas are spaced by areas 3 and 4 in what may be termed the original plane of the panel and which simulate mortar joints. The size of the brick-simulating areas 2 preferably corresponds to that of ordinary brick and the grooves corresponding in width to that of ordinary mortar joints. The marginal areas 5 and 6 along the right hand side and top edge are crimped or depressed along lines 7 and 8 so that they lie in a lower plane than the original plane of the panel, that is, the plane of the areas 3 and 4. The depth of the crimp corresponds substantially to the thickness of the board. Along the left hand side of the panel are lateral projections 9 spaced by recesses or cut-outs 10. The projections represent the half-brick areas in alternate courses extending beyond the nearest mortar joints in the intervening courses when the bricks are stagger-laid in customary fashion. The projections 9 are preferably edged by narrow marginal areas 11 which are on a level with the areas 3 and 4 and also represent mortar joints. Along the right hand side of the panel, raised areas 14 project laterally in alternating courses, a distance of half a brick-length beyond the crimp line 7, but not to the edge of the sheet. These raised areas 14 are bounded on three sides by portions of the depressed area 5, the latter being adapted to be overlapped by the projections 9 of a similar panel laid adjacent thereto in the same course.

After the panel has been embossed and cut to the desired shape and size, it is given a prime coating of weather-proofing substance on its upper face. The coating is preferably applied by spraying onto the face of the panel an aqueous bituminous emulsion; but molten bitumen, such as hot asphalt, may be used in place of the emulsion. This coat serves to increase the weatherproofing properties of the panel especially along the mortar-simulating joints. While the coating is still adhesive, the panel may, if desired, be surfaced with finely divided solid material such as sand or fine slate, particularly in the regions of the grooves or mortar-simulating joints. If surfacing is not applied to the prime coating, the coating is allowed to dry before the panel is subjected to further treatment. The panel is then covered with a stencil, which exposes only the brick-simulating surfaces, and is again coated preferably with a layer of bituminous emulsion. The portions which have received a second coating are then surfaced with granular material to simulate brick of any desired color, such color preferably contrasting with the color of the mortar-simulating joints.

As an alternative method of application, the bituminous material, particularly the second coat, is applied to the elevated portion of the sheet by means of a coating roll. By passing the sheet with the elevated portions downward, these surfaces only are covered with the coating material. The application of grit adheres to the freshly coated section leaving the mortar lines free from the grit covering.

Both the primary coating and the secondary coating operations are preferably effected with an aqueous bituminous dispersion of the type which gives a non-flowing film. The resistance to flow is of great importance in the case of fire since the intense heat encountered causes ordinary asphalt to flow readily thereby destroying the entire wall sheathing. Advantage is also derived from the greatly improved weather-resisting properties of the film resulting from the application and use of this type of dispersed asphalt.

The resulting panel presents a series of staggered rows of brick-simulating surfaces spaced with mortar joints. The panel may vary in size but a convenient size for handling is approximately 25"x 30".

In Figures 8–13, I have shown the manner in which the panels are laid on a side wall. The extensions 9 fit between the embossed areas 14 of the adjacent panel and overlap the marginal area 5 which has been crimped below the level of the grooves 3 and 4. The outermost edges 16 of the extensions abut the crimp shoulder 7. The upper and lower edges of the panels in each course are respectively aligned. The panels in the superjacent course are laid in the same manner but are staggered in relation to the subjacent course in order to carry out the design scheme. Staggering also avoids having all vertical joints in the same line and hence avoids the likelihood of leaks. The marginal portion 17 along the lower edge of the panel, which is in the same plane and of substantially the same width as the grooves 3 and 4, overlaps the crimped marginal portions 6 of panels in the course below, the lower edge 18 of the panel abutting the shoulder at the crimp line 8. The portions 12 and 13 are cut out of each panel in order to provide a smooth lap in overlapping relation. The removal of these portions enables all of the brick-simulating areas to lie substantially in one plane, and all the mortar joint-simulating areas to lie in another plane.

It is apparent from the drawings that the joints between adjacent panels always occur along the simulated mortar joints. This method of joining effectively masks the joints so that the completed siding construction appears to be integral.

The panels are self-aligning since the extensions 9 along one edge of the panel fit accurately between the embossed areas 14 of the adjacent panel in the same course and the lower edge 18 of each panel fits against the crimp line 8 of the subjacent panel.

Figure 14 shows a slightly different embodiment of the invention wherein the mortar-simulating marginal portions at the left and lower edges of the panel are trimmed away, the depressed areas 5 and 6 being widened so that the amount of overlap along the top and sides of each panel is undiminished. When such panels are laid side by side in a course, the edge 19 of each panel abuts the side edge of the depressed portion 5, 6 of the panel next to the left in the same course. This properly spaces the panels.

In addition to acting as a waterproof surface, the siding construction acts as an insulating surface due to the air space between the sub-surface and the embossed areas of the panels. Further-

more, the siding is considerably more fire-resistant than that made from asphalt saturated and coated felted fibrous material.

Because of their rigidity and lightness the panels can be made in comparatively large sizes and hence can be laid with greater speed and accuracy than is possible with ordinary types of siding construction.

The panels may be embossed with other suitable designs to simulate clapboard, rough stone and other building materials without departing from the scope of the invention. When coated with suitable paints and enamels the product may also be used for interior decoration such as tile-simulating walls or design ceilings.

I claim:—

1. A panel comprising an embossed sheet of waterproof fibrous material of substantially uniform thickness, the weather face of said sheet having raised areas spaced by intervening depressed areas, a continuous coating of waterproofing material over the entire weather face of said panel, and a discontinuous coating of waterproofing material on said continuous coating covering and limited to said raised areas.

2. An embossed siding panel having areas in the original plane and other areas raised above the original plane, extensions along one side edge of said panel at spaced intervals, the opposite side edge having the marginal portion depressed below said original plane.

3. An embossed siding panel having areas in the original plane and other areas raised above the original plane, the marginal area along the bottom and one side of said panel being in the original plane, the marginal area along the top and other side edge being depressed below said original plane.

4. A bituminous composition siding panel embossed to represent brick-work with areas in the original plane simulating mortar joints and areas raised above the original plane to represent bricks, said panel having spaced extensions along one side edge and areas along the opposite side edge depressed below said original plane to be overlaid by extensions on an adjacent panel.

5. A panel comprising a thin rigid sheet of uniform thickness composed of pulp fiber and waterproofing material, said sheet being embossed to form a pattern of several courses of brick-work, a continuous coating of waterproofing material covering the weather face of said panel, and a discontinuous additional coating upon said continuous coating covering and limited to the raised areas.

6. A panel comprising a sheet of bitumen-saturated felt of substantially uniform thickness, said sheet being embossed so that portions thereof are elevated above the level of other portions thereof in such a manner as to form on the weather face of the sheet a plurality of vertically-spaced courses of horizontally-spaced raised areas, said raised areas being vertically and horizontally spaced by lower areas of said sheet, and a waterproof coating of substantial thickness covering and limited to said spaced raised areas to augment the elevation thereof.

7. A panel comprising a sheet of bitumen-saturated felt of substantially uniform thickness, said sheet being embossed so that portions thereof are elevated above the level of other portions in such a manner as to form on the weather face of the sheet a plurality of vertically-spaced courses of horizontally-spaced raised areas, said raised areas being vertically and horizontally spaced by lower areas of said sheet, a waterproof coating of substantial thickness covering and limited to said spaced raised areas to augment the elevation thereof, and granular matter covering said areas of coating material.

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