Feb. 25, 1947. P. A. VOIGT 2,416,554

METHOD OF MAKING SIDING UNITS

Filed May 19, 1944

Fig. 1.

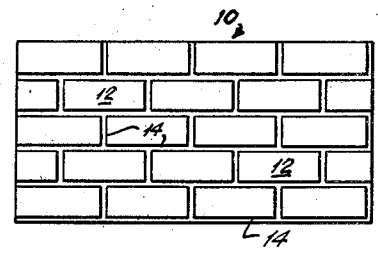


Fig. 2.

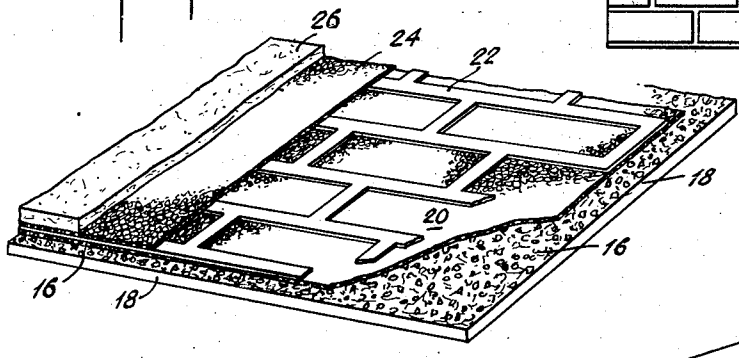


Fig. 3.

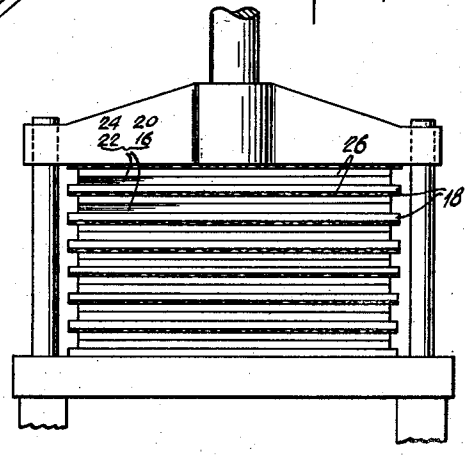


Fig. 5.

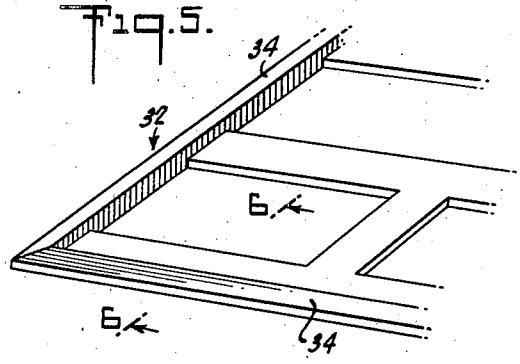


Fig. 6.

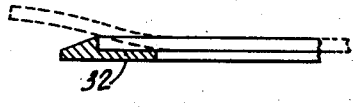


Fig. 4.

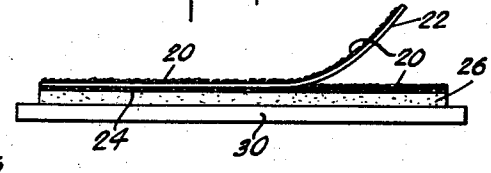
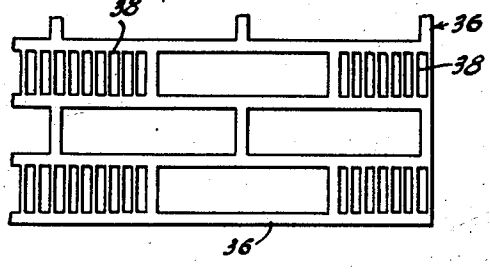


Fig. 7.



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METHOD OF MAKING SIDING UNITS

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10 Claims. (Cl. 18—61)

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The instant invention relates to the manufacture of covering elements and, more particularly, to the construction of units composed of a hardened, compressed, fibre-cement material, the units simulating a plurality of courses of bricks or other construction elements.

The invention has for its principal object, the provision of an improved method of constructing such units to produce a series of raised or intaglio brick or other simulations separated by depressed mortar joints on a base sheet composed of a fibrous-cementitious material.

Another object of the invention is the provision of a method of the type referred to in which a stencil is used to define the mortar joint simulations whereby the appearance of a brick or stone construction can be faithfully simulated. More particularly the invention involves the positioning of a stencil between cementitious surfacing and base layers. After the cementitious components of the layers are activated and the assembly is compressed the stencil is removed by drawing or peeling it through the surfacing layer to remove the surfacing material at the locations of the mortar joints.

A further object of the invention in the preferred form thereof is the provision of a method in which the surfacing layer is initially composed of granular coloring material and a cement binder, and the base layer is initially a wet, unset but pre-formed asbestos-cement sheet whereby, upon pressing of the assembly of layers, the water of the wet sheet hydrates the cement in the surfacing layer and the two unite through the cutouts in the stencil to form a substantially integral body.

A still further object of the invention is the provision of a method in which a stencil is employed, the stencil serving to positively define the dimensions of the siding unit as well as the simulations thereon, to insure a fixed and given relationship between the simulations and the edges of the unit.

A still further object of the invention is the provision of a method of the type described which lends itself to the formation of wire cut simulations in certain of the brick areas to aid in concealing the joint line between adjacent units when the same are laid up on a wall or other surface.

My invention will be more fully understood and further objects and advantages thereof will become apparent when reference is made to the more detailed description of a preferred embodiment thereof which is to follow, and to the accompanying drawing in which:

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Fig. 1 is a face view of a covering element constructed in accordance with the invention;

Fig. 2 is a perspective view, with parts broken away for clearness of illustration, of a unit during its process of formation;

Fig. 3 is an elevational view illustrating a pressing step of the invention;

Fig. 4 is a diagrammatic, elevational view illustrating a further step in the method;

Fig. 5 is a perspective view of a preferred form of stencil;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 5; and,

Fig. 7 is a plan view of a modified form of stencil.

The covering unit made in accordance with the instant invention and illustrated in Fig. 1 is composed of a fibre-cement composition, preferably a highly compressed and densified asbestos-cement material of the type now conventionally used in the manufacture of so-called hard shingles and siding units, asbestos-cement panels and the like. It will be appreciated that unit 10 shown in Fig. 1 may be employed per se as the covering element, or it may be laminated to a backing sheet such as a fiberboard panel or the like, if desired. Suitably, the unit 10 of Fig. 1 is made of a relatively large size to simulate a plurality of partial brick courses whereby rapid erection of the units on the job is promoted, and joints between the adjacent units are reduced to a minimum.

The brick simulations 12 of unit 10 are made of a color and surface configuration to simulate the desired building element, such as a brick or the like, and are separated by depressed mortar joint simulations 14 of the color of the base sheet or of any other desired color contrasting with simulations 12.

Referring now to Figs. 2 to 4 inclusive, in the method of the instant invention granular matter such as crushed slate or other material, for example granules of the type conventionally employed as surfacing material for asphalt roofings, of a selected color are spread to form a layer 16 overlying a supporting sheet or plate 18 of metal or other suitable, relatively rigid material. A second layer 20 of the granules, intermixed with a binder material, preferably Portland cement or the like in suitable proportions, so that the layer is composed of say 30 to 50% of the cement, is then laid over the first layer 18.

A stencil 22, composed of relatively thin sheet

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steel, a hard plastic or the like, the stencil including cut-outs of the shape of the bricks or other elements to be simulated, is laid over layer 18. Preferably a thin, granular layer 24 is laid to overlie the stencil, this layer comprising granules of a color to simulate the mortar joint material. Layer 24 may be concentrated for the most part on the stencil inasmuch as it will have no function in the cut-out areas. However, the layer may be spread lightly over the stencil and cut-outs as well for convenience in application if desired. Layer 24 is composed, for example, of black granules and a black lumnite cement in suitable proportions, say 30 to 50% of the cement, to provide a definite contrast between the mortar joints and the bricks in the completed unit. It will be understood that layer 24 may be omitted if desired, particularly where the base sheet, either because of its natural color or because of added pigment, adequately portrays the mortar joints.

The base layer 26 in the preferred form of the instant invention comprises an unset asbestos-cement sheet formed, for example, by the conventional wet process in which the sheet is built up on an accumulator drum from a multiplicity of thin layers of an asbestos Portland cement slurry or by a conventional filter press operation or the like. The sheet, which should be in a relatively wet state, is laid over the several layers on supporting plate 18. The assembly, built up on plate 18 as described above, is then subjected to relatively high compression. Suitably the pressing step is performed simultaneously on a plurality of the assemblies, by piling them with filter screens interposed between adjacent assemblies, and introducing the pile into a press of standard type as illustrated, for example, in Fig. 3. During this step the applied pressure, say 2500 lbs. per square inch, consolidates the granular layers with the base sheet and forces moisture from the base sheet into the granular layers to hydrate the cementitious content thereof whereby the several layers are welded into a substantially integral mass with the stencil buried therein.

After the pressing step and before the cementitious material has set, the assembly is inverted and placed on a second supporting plate or table 30 and plate 18 removed. The initial layer 16 of granules which contained no cementitious ingredient constitutes a parting layer to permit ready removal of the plate, and also serves to provide a somewhat uneven brick-like texture to the unit as some of its granules will have been adhered by the binder of layer 20. It will be appreciated that the surface of plate 18 may also be contoured, if desired, to increase surface variations in the brick simulations. After removal of plate 18, the stencil is drawn or peeled through layer 20 as illustrated in Fig. 4, thereby removing the overlying surfacing material to expose the material of layer 24, if such layer was employed, or the material of the backing layer 26, leaving a pattern of raised brick simulating areas delineated by depressed mortar joints of contrasting appearance.

The unit, after curing and trimming, may be employed directly as a covering element or may be applied if desired to backing materials such as fiberboard sheets or the like.

In a modified method, in lieu of the wet asbestos-cement sheet for the layer 26, a dry mixture of asbestos and cement, such as Portland or Lumnite cement, with the cement constituting say 50% of the mixture, may be used. When the assembly is completed, and prior to compression, water is sprinkled on layer 26 to hydrate the cement, the water penetrating to layers 20 and 24. The assembly is then compressed and the remaining steps performed as before.

A further feature of the invention for use with a preformed, unset, asbestos-cement backing sheet, is the stencil 32 illustrated in Figs. 5 and 6. In this embodiment the outer edges of the stencil are formed with cutting flanges 34. The wet sheet constituting layer 26 is made somewhat oversize to extend over the cutting flanges as illustrated by the dotted lines in Fig. 6. During the pressing operation the sheet is forced down on the cutting flanges whereby it is severed or substantially severed on the lines defining the outer dimensions of the unit whereby the position of the brick or other simulations with respect to the edges of the unit are positively fixed.

Referring now to Fig. 7, a further modification of the stencil is disclosed. In this instance, the stencil 36 is provided with connecting bars 38 crossing certain of the brick simulating open areas. Bars 38, which are relatively narrow, are of the same thickness as the remainder of the stencil, and hence expose the material of the base sheet, or of the layer 24, to give a wire cut appearance to the corresponding brick simulating units. The wire cut simulations may be employed in any desired arrangement, but have particular merit when employed in the half bricks at the ends of the units as they greatly aid in concealing the joint line between adjacent units.

Having thus described my invention in rather full detail it will be understood that these details need not be strictly adhered to and that various changes and modifications may suggest themselves to one skilled in the art, all falling within the scope of the invention as defined by the subjoined claims.

What I claim is:

1. In the method of making a covering unit comprising a base sheet having an intaglio design thereon, the steps comprising forming an assembly by including a relatively thin cut-out stencil between cementitious base and surfacing layers, pressing the assembly to consolidate said layers and to join them through the cut-outs of said stencil, removing said stencil and setting the cementitious material.

2. In the method of making a covering unit comprising a base sheet having an intaglio design thereon, the steps comprising forming an assembly by including a relatively thin cut-out stencil between a body of fibre-cement base sheet material in unset condition and a layer of surfacing material of contrasting character to said base sheet, pressing the assembly to unite the surfacing material and base sheet material within the cut-outs of said stencil and setting the cementitious material.

3. In the method of making a covering unit comprising a base sheet having an intaglio design thereon, the steps comprising forming an assembly by including a relatively thin cut-out stencil between a body of fibre-cement base sheet material in unset condition and a layer of surfacing material of contrasting character to said base sheet, pressing the assembly to unite the base sheet material and surfacing material within the cut-outs of said stencil, and peeling said stencil from said assembly through said surfacing material.

4. In the method of making a covering unit comprising a base sheet carrying a brick simu-

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lating surface, the steps comprising forming an assembly by including a relatively thin cut-out stencil in the form of the mortar lines of a plurality of brick courses between a body of fibre-cement base material in unset condition and a surfacing material comprising granules and a cementitious binder, pressing the assembly to unite the surfacing material and base sheets within the cut-outs of said stencil and peeling said stencil from said assembly through said surfacing material.

5. In the method of making a covering element comprising a base sheet with an intaglio design thereon, the steps comprising forming a layer of surfacing material and a cementitious binder on a support, laying a relatively thin cut-out stencil to overlie said layer, placing a layer of fibre-cement material to overlie said first layer and stencil, activating said cement material, compressing the assembly and removing said stencil through said layer of surfacing material.

6. In the method of making a covering unit comprising a base sheet with an intaglio design thereon, the steps comprising forming a layer of surfacing material and a cementitious binder on a support, laying a relatively thin cut-out stencil to overlie said layer, laying a wet, unset fibre-cement sheet to overlie said first layer and stencil, compressing the assembly whereby said layer and sheet unite through the cut-outs of said stencil and the cementitious material of said layer is hydrated by moisture from said sheet, removing said stencil through said layer of surfacing material and setting the cement material of said layer and sheet.

7. In the method of making a brick simulating siding, the steps comprising forming a layer of a granular surfacing material and a cement binder on a support, laying a relatively thin cut-out stencil simulating the mortar joints of a plurality of brick courses to overlie said layer, placing a layer of fibre-cement material to overlie said stencil and first layer, wetting said layer to hydrate the cement thereof, compressing the assembly, removing said stencil through said layer of surfacing material and setting the cement of said layers.

8. In the method of making a brick simulating siding, the steps comprising forming a layer of a granular surfacing material and a cement binder

on a supporting member, laying a relatively thin cut-out stencil simulating the mortar joint lines of a plurality of brick courses to overlie said layer, laying a wet, unset fibre-cement sheet over said stencil and layer, compressing the assembly whereby said sheet and layer are consolidated through the cut-outs of said stencil and the cementitious material of said surfacing layer is hydrated by moisture from said sheet, removing said stencil through said layer of surfacing material and setting the cement of said layer and sheet.

9. In the method of making a brick simulating siding, the steps comprising forming a layer of granular surfacing material and a cement binder on a supporting member, laying a cut-out stencil simulating the mortar joints of a plurality of partial brick courses to overlie the layer, forming a thin layer of cementitious binder and coloring material over said stencil, laying a wet, unset fibre-cement sheet over said last named layer, pressing the assembly and removing said stencil through said surfacing layer.

10. In the method of making a covering element comprising a base sheet with an intaglio design thereon, the steps comprising forming a layer of a surfacing material and a cementitious binder on a support, placing a cut-out stencil including cutting flanges defining the extent of said covering element on said layer with the cutting flanges extending away from said layer, laying a wet, unset asbestos-cement sheet to overlie said stencil and extend over said cutting flanges, compressing the assembly of said sheet, layer and stencil, removing said stencil through said layer of surfacing material and setting the cement.

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