Sept. 16, 1941. C. W. KRAUS 2,256,435

CONSTRUCTION UNIT

Filed Nov. 22, 1939 2 Sheets-Sheet 1

Fig. 1.

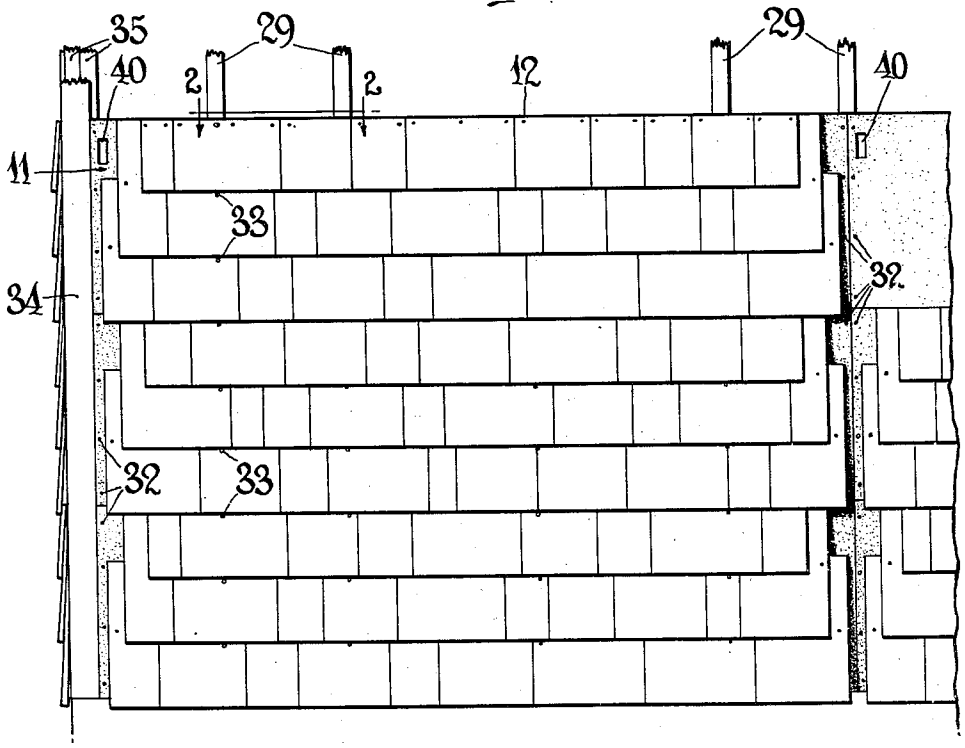


Fig. 2.

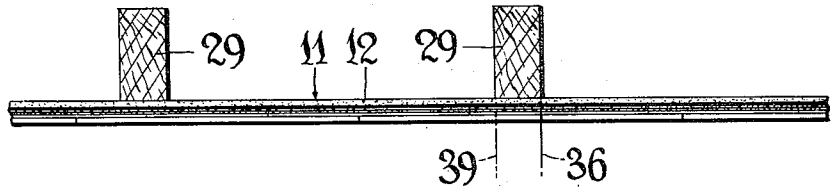
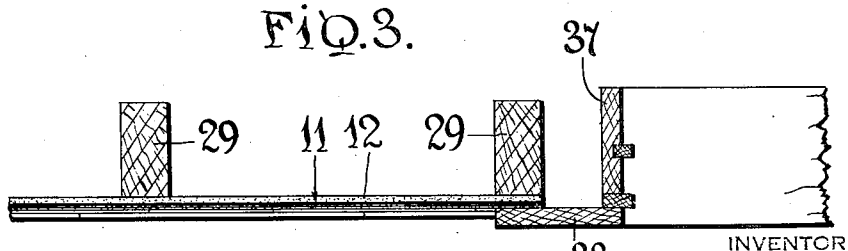


Fig. 3.



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Fig. 4.

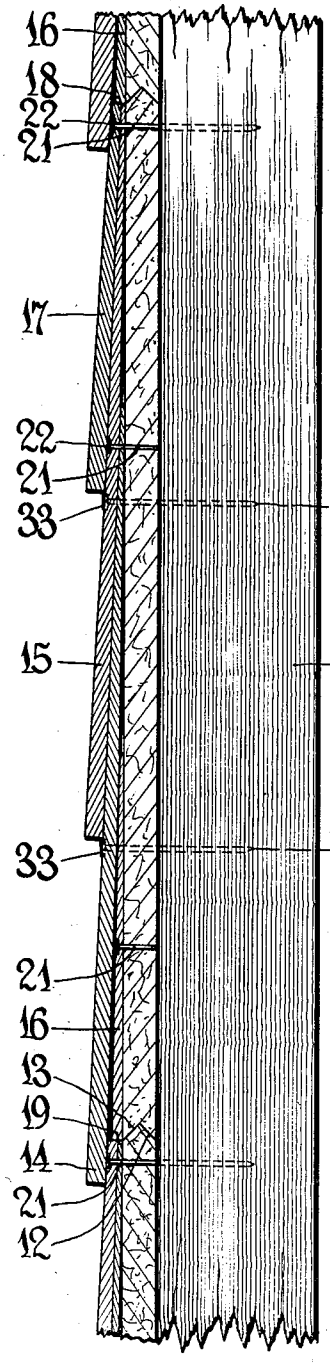
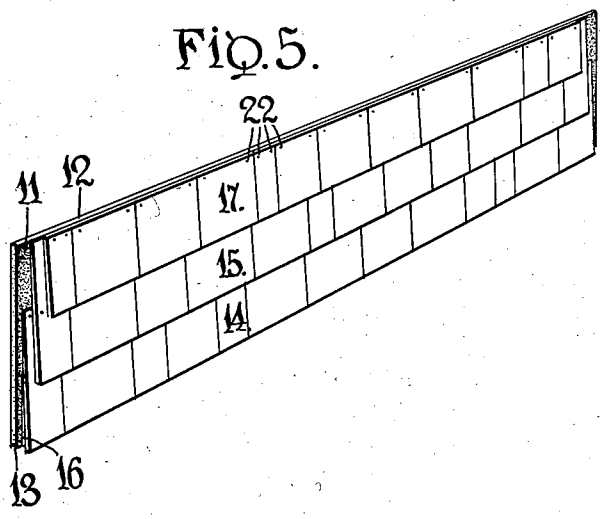


Fig. 5.



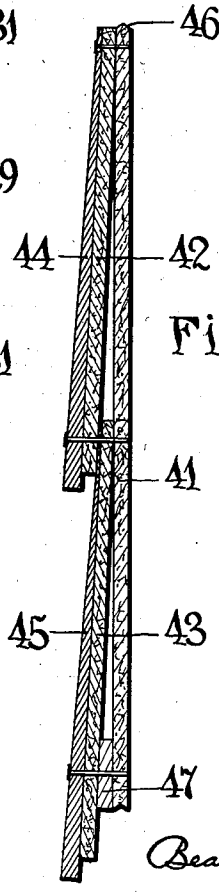


Fig. 6.

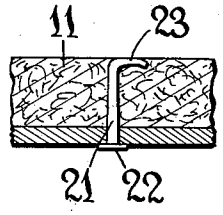
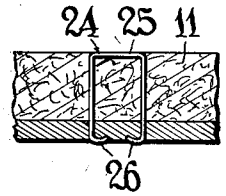


Fig. 8.

Fig. 7.



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UNITED STATES PATENT OFFICE

2,256,435

CONSTRUCTION UNIT

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Application November 22, 1939, Serial No. 305,687

6 Claims. (Cl. 20—5)

The present invention relates to building constructions and has particular relation to constructions employing prefabricated sheathing and siding units, and to a method of producing such constructions.

In certain types of constructions it is desirable to employ low density fibre board for sheathing because of its relatively low cost, ease of handling and good insulating characteristics. When shingles are employed on such constructions, difficulty arises by reason of the inability of the low density fibre board to retain shingle nails driven in the usual manner. Accordingly, in order to attach shingles to constructions sheathed with such fibre board, it is conventional to first attach furring strips to the frame structure of the building, over the sheathing, and then to secure the shingles to the furring strips. This procedure, of course, requires additional material and is expensive of labor.

The present invention contemplates the prefabrication of units comprising both sheathing and siding, the sheathing being of low density fibre board or other material in panel form, and the siding being of shingles of wood or other suitable material. The invention further contemplates novel arrangements of the covering or siding elements upon the backing or sheathing portions of the prefabricated units, and further contemplates a novel erection procedure whereby construction of a building employing the units is both expeditious and inexpensive.

The foregoing and other objects and advantages will appear from the following description of typical embodiments of the invention shown in the accompanying drawings, wherein:

Fig. 1 is a fragmentary side elevational view of a partially completed building construction;

Figs. 2 and 3 are horizontal sectional views taken along line 2—2 of Fig. 1, at different stages of the construction;

Fig. 4 is a fragmentary vertical sectional view through the construction;

Fig. 5 is a perspective view of one of the prefabricated construction units;

Figs. 6 and 7 are fragmentary sectional views illustrating two types of fasteners employed in prefabrication of said units; and,

Fig. 8 is a vertical sectional view through a modified form of prefabricated unit.

As shown in the drawings each unit may comprise a backing panel 11 of low density fibre board of any suitable size, the board in the example illustrated being approximately two feet high, eight feet wide and three quarters of an inch thick, and preferably provided at upper and lower edges 12 and 13 with tongue and groove formations. To this backing are secured plural courses of shingles, three courses being employed in the first illustrated example, the butt edges of shingles 14 of the lowermost course overhanging and projecting about one inch below the lower edge 13 of the backing element 11, and the tip edges of the shingles 15 of the intermediate course being substantially flush with the upper edge 12 of the backing member. The tip portions 16 of shingles 17 of the uppermost course are severed along the line 18 and are secured beneath shingles 14 with their lower edges 19 substantially flush with lower edge 13 of the backing member 11.

The shingles 14, 15, 16 and 17 may be secured to the backing 11 by headed, nail type fasteners 21, the heads 22 of the fasteners being adjacent the shingles and the stems 23 thereof being clenched over upon the rear face of the backing as shown in Fig. 6. Or, if desired, staple type fasteners 24 as shown in Fig. 7 may be employed. Such staples are preferably driven first through the backing and then through the shingle or shingles, so that the relatively wide bight portion 25 engages the low density backing material and the clenched-over prongs 26 of the staples engage the more dense shingle material. By either of these two methods of fastening the shingles are permanently joined to the backing.

As shown in Figs. 1 and 5, the shingles of each course are staggered with respect to shingles of adjacent courses, so that the vertical lines of juncture are broken; and the outside vertical edges of the end shingles of each course are inset from the side edges of the backing 11. For example, the side shingles of the lower course may be inset from the side edges of the backing panel approximately one inch, the end shingles of the second course approximately three inches, and the end shingles of the upper course approximately five inches.

After the unit shown in Fig. 5 has been constructed it may be stained, painted, varnished or otherwise coated. A saving of approximately seventy-five per cent of the coating material is effected over the conventional method of completely coating the individual shingles before attachment of them to a building construction.

The completed, prefabricated units may be secured to the studding 29 or other frame members of a building construction by conventional headed, nail type fasteners 31, the latter being driven, as indicated at 32 in Fig. 1, through the marginal portions of the backing 11 which are exposed by

reason of the insetting of the end shingles into the members 29, and also being driven, as indicated at 33, through intermediate parts of the unit into other of the members 29.

Separate shingles, coated similarly to the exposed surfaces of shingles 14, 15 and 17, are then fitted into shingled relation between the end shingles of laterally adjacent units, these shingles being secured directly to the members 29, as for example by fasteners 31 driven through the shingles and backing into the frame members.

At the corners of the building vertical strips of wood 34 of the same thickness as panels 11 are preferably secured to the corner frame members 35, the construction being finished by securing individual shingles in the usual manner over the strips 34 and in complementary relation to the adjacent shingles of the prefabricated units.

Window and door openings may be conveniently formed by cutting an opening through the sheathing and siding, as for example by cutting along the line 36 in Fig. 2; by then making a trial insertion of the window or door frame 37 into the opening; by marking upon the shingles the outline of the outside casing 38 of the frame; and by then cutting away the shingles along such marked outline, which is indicated by line 39 in Fig. 2. The frame 37, including the outer casing 38, may then be set into the opening and secured.

The insetting of the side marginal shingles from the side edges of each panel, and the staggering of the marginal shingles of one course with respect to those of adjacent courses, not only permits fasteners 32 to be completely concealed, but also provides at corners of the panels relatively large areas, uncovered by shingles, through which openings 40 may be cut for the purpose of attaching to the frame members 29 hooks for supporting scaffolding on the side of the building. When such scaffolding is removed, the openings 40 may be filled with the material removed therefrom before the individual shingles are secured over the uncovered portions of panel 11.

A construction unit similar to that shown in Fig. 5, but in which there is a double coursing of shingles, producing a heavy shadow effect, is illustrated in Fig. 8. In this illustrated arrangement the backing panel, 41, of low density board, may be thinner than that shown in Figs. 1 to 5, and additional insulation is provided by panels 42 and 43, which also may be of fibre board, and which are disposed under shingles 44 and 45 of the upper and lower courses, respectively.

The shingles 44 of the upper course have their tip edges substantially flush with the upper edge 46 of the panel 41 and the upper edge of panel 42, and their butt edges slightly overhanging the lower edge of panel 42. The lower edge of the latter overlaps the tip edges of shingles 45 which are substantially coincident with the upper edge of panel 43. Similarly shingles 45 slightly overhang the lower edge of panel 43, while the latter extends below the lower marginal portion of the backing panel 41 and is spaced outwardly therefrom by a strip 47. The several parts of the unit are preferably connected by fasteners of the type shown in Figs. 6 and 7.

It will be understood that the units illustrated in Figs. 5 and 8, and similar units, may be fabricated and painted or otherwise coated quickly and inexpensively in a shop, the assembly being expedited by the use of suitable jigs and fixtures, and the fastening being accomplished with a stapling machine or with a hammer and suitable anvil.

It will be understood further that the structures and procedures herein specifically illustrated and described are merely illustrative of the inventive principles involved, and that these may be otherwise embodied without departing from the spirit of the invention or the scope of the appended claims.

What is claimed is:

1. In a construction unit, a backing sheet of low density insulating material, and a plurality of courses of wooden shingles secured thereto, the shingles of an intermediate one of said courses having their tip edges adjacent the upper edge of said sheet, the shingles of the uppermost course also terminating adjacent the upper edge of said sheet, and the butt edges of the shingles of the lowermost course depending below the lower edge of said backing sheet for overlapping the uppermost course of shingles of a subjacent unit, and a course of shingle tips underlying said lowermost course of shingles, the lower edge of said tips being adjacent the lower edge of said backing sheet.

2. In a construction unit, a backing sheet, a plurality of courses of wooden shingles secured thereto, the shingles of the uppermost of said courses having their tip portions removed and their upper edges substantially coincident with the upper edge of said sheet, and the shingles of the lowermost of said courses having their butt edges extending below the lower edge of said sheet, tip portions removed from upper shingles being shingled under the shingles of the lowermost course.

3. In a construction unit, a backing sheet, a plurality of courses of wooden shingles secured thereto, the shingles of the lowermost course being full length and having their butt edges overhanging the lower edge of said sheet to a predetermined extent, and the shingles of the uppermost course being shorter than the shingles of the lowermost course, said shingles of the uppermost course when the unit is assembled with a superjacent unit being longer than their exposed portions by approximately said predetermined extent and having their upper edges adjacent the upper edge of said sheet.

4. In a construction unit for attachment to the studding of a building construction, a unitary, rigid and nailable backing panel of length substantially equal to a multiple of the pitch of said studding, a plurality of tapered shingles secured to said panel, the upper edge of the panel being substantially flush with tips of shingles thereon and butts of shingles thereon overhanging below the lower edge of the panel, the outer side edges of the shingles being inset from the ends of the panel to provide marginal portions along said ends of the panel between the upper and lower edges thereof not covered by shingles and through which nails may be driven into said studding, and means disposed between the panel and shingles adjacent the lower edge of the panel spacing the shingles therefrom to provide space beneath the overhanging butt edges for receiving the adjacent tips of shingles of a subjacent panel.

5. In a construction unit for attachment to the studding of a building construction, a rigid and nailable backing panel of length substantially equal to a multiple of the pitch of said studding, at least two courses of tapered shingles secured thereto, the shingles of the upper of said courses having their tip portions removed and their upper edges substantially coincident with the upper edge of said panel, the shingles of the lower course

having their butt edges extending below the lower edge of said panel, tip portions removed from upper shingles being shingled under the lower course, and the outer side edges of the shingles of each course being inset from the end edges of the panel to provide marginal portions therealong not covered by said shingles and through which nails may be driven into said studding.

6. In a construction unit for attachment to the studding of a building construction, a rigid and nailable backing panel of length substantially equal to a multiple of the pitch of said studding, at least two courses of tapered shingles secured thereto, the shingles of the upper of said courses having their tip portions removed and their upper edges substantially coincident with the upper edge of said panel, the shingles of the lower course having their butt edges extending below the lower edge of said panel, tip portions removed from upper shingles being shingled under the lower course, and the outer side edges of the shingles of each course being inset from the end edges of the panel to provide marginal portions therealong not covered by said shingles and through which nails may be driven into said studding, the outer side edges of the shingles of the upper course being inset to a greater extent than the outer side edges of the shingles of the lower course.

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