Oct. 28, 1952 C. F. GARDNER 2,615,211

PANEL OF WOOD OR LIKE MATERIAL FOR BUILDING CONSTRUCTION

Filed May 20, 1949

Fig. 1

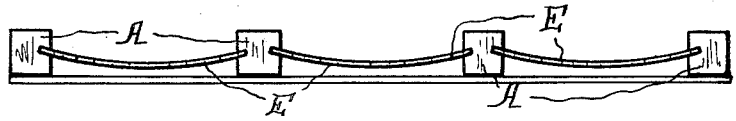


Fig. 2

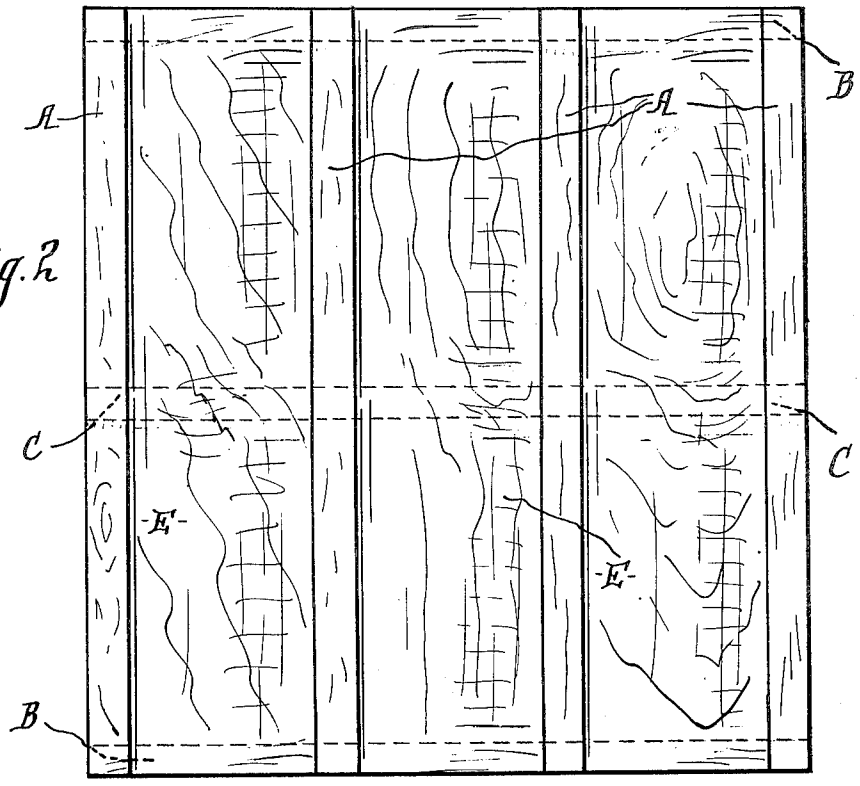


Fig. 3

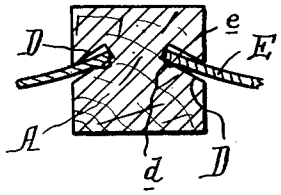
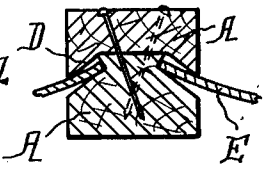


Fig. 4



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PANEL OF WOOD OR LIKE MATERIAL FOR BUILDING CONSTRUCTION

Charles Fisher Gardner, Aukland, New Zealand

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1 Claim. (Cl. 20—15)

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This invention has been devised with the object of providing a new manner of constructing the walls and roofs of buildings or structures of all forms in which such walls are made of wood but which may be adapted also to the use of other materials, such as plastic materials, either by themselves or in combination with wood.

The manner of construction devised embodies the formation of a wall, or roof, from panelling material, as thin boards, plywood, sheets of plastic and such, by the combination of lengths of such material, of any desired width, with frame forming runners extending longitudinally with and between these lengths. Such formation is adapted in the erection of a structure, to be made up into prefabricated panels or sections of any standardized area, or to be assembled at the job.

The invention provides for a construction which is light in weight and is economical in cost and also by reason of its novel characteristics ensures of a watertight and weathertight surface being obtained. In its application for the erection of a building, it is adapted to form the wall and roof coverings for a frame erection upon any approved foundation and when such coverings are made up in prefabricated sections of standard sizes, for the quick assembly of such upon the frame and also for the necessary openings being left for doors, windows and so on.

It has previously been proposed to construct panels or sections adapted for use in the formation of the walls or roof of a structure by combining with a number of spaced and parallel frame forming runners, lengths of thin wood, as laminated wood, which are disposed to extend across the spaces between the runners for the length thereof and having their edges fitted into grooves or rebates formed in the edges of the runners.

It has also been known to provide in such a formation of panel or section for the said lengths of wood having a transverse curving formation and being retained in such formation by means of cross battens between the runners shaped to fit against the concave and convex surfaces and to which the lengths are made fast. This fixture of the battens and wood lengths serves to prevent the wood lengths from bending so that when they are subjected to the action of heat and (or) rain they are liable to crack and otherwise to be distorted and damaged.

The present invention follows in its general features this manner of constructing panels or sections adapted for use for forming the walls and roofs in the erection of buildings. It is, however,

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an important feature in respect to such construction of the panels or sections according to this invention, that the outer concaved surfaces in between the runners are left fully unimpeded throughout their full lengths and also that such lengths are entirely free from attachment to any fixture other than the engagement of their longitudinal edges with the edges of the runners. This ensures that the wood lengths are left free to bend or warp under weather action without liability of cracking or being damaged. Also it provides that when a panel is used in a roof forming assembly the wood lengths form unimpeded drains for the effectvie running off of rain water or other moisture, and when a panel is used in the formation of a wall and arranged to extend with the wood lengths extending vertically, rain beating upon its surface may run off to the ground without any hindrance.

The invention therefore consists in a manner of constructing roof or wall forming panels sections in which each of such sections is made up of a number of longitudinal runners spaced distances apart in parallel alignment and connected together by cross braces, and lengths of flexible panelling material arranged to extend across between each two runners in a transversely curving formation throughout the length of such runners with their side edges fitted into grooves formed in the sides of the respective runners, such lengths of material being held in position solely by the engagement of their edges with the runners. The said transverse curving formation of the lengths of material may be effected by the free-bending thereof to the desired curve or may be effected by making the lengths for assembly in the runners of somewhat greater width than the spaces between the runners and then causing the insertion of their edges in the grooves of the runners by bending the lengths and forcing them between the runners to assume the curving formation.

In fully describing the invention and the manner in which it is carried out, reference is made to the accompanying drawings, in which—

Figure 1 is a plan of a panel or section as made in accordance herewith.

Figure 2 is an inside face view thereof.

Figures 3 and 4 are enlarged sectional details showing respectively alternative manners of engaging the edges of the sheets of material in the runners.

In the formation of a panel or section, the longitudinal runner members A are embodied in a frame forming structure by being disposed in

parallel alignment at regular space intervals apart and secured together across their ends by means of cross members B, and if desired, by intermediate cross tension members C. Each runner is formed with a groove D extending in each of its side edges and such groove is given, preferably, an inward set as shown in Figures 3 and 4. In some instances and for a purpose hereinafter referred to, the runner may be made up of inner and outer longitudinal parts secured together by nailing or screws and the adjacent engaging faces of which are shaped to form the grooves between them, as shown in Figure 4.

The lengths E of thin wood plywood or other material are combined in the said frame structure by being disposed to extend lengthwise across the spaces between the runners A.

These lengths are either preformed into the transversely curved formation shown in the drawings or in their association with the said runners are subjected to a curving when being combined with the runners. In each instance the edges of each length of material between each two runners are inserted into the grooves in the adjacent inner edges of the runners and the length held between them. In the latter instance the length is made of slightly greater width than the space to be spanned and is bent to cause its edges to enter the grooves by springing thereinto when, by the distension of its width as it tends to regain the normal condition, it will be held firmly in position in the grooves. The formation of the runner of two parts, as shown in Figure 4, will allow of the length being laid with its edge along the inner part and then secured by fastening the outer part upon the inner part. In this form a length of material may readily be removed from a panel and replaced at will. The said grooves in all instances are so formed as to extend into the runners at angles corresponding with the curvature of the lengths of material fitted in the grooves.

If desired, provision may be made for retaining the edge of the lengths of material in the groove by forming one face of the groove with a recess *d* (Figure 3) along its length and by shaping the face of the length with a projection *e* near its edge which will engage in the said recess.

The lengths of material are thus held only by their engagement with the runners so that they are free to bend or warp transversely as weather

changes occur, without affecting their anchorage in the runner grooves. If desired, however, the joints thus made may be treated with any suitable weatherproofing composition.

Panels or sections as thus made, and constructed of the required surface area are adapted to be assembled as units in the erection of a structure to form the outer walls, or division walls, and also the roof thereof in any manner that will suit the circumstances concerned with the erection.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

A panel forming surfacing section adapted to be secured upon a frame building structure, comprising longitudinal runners, cross members securing said runners together in spaced parallel longitudinal relationship, said runners having grooves along their side edges, and lengths of panelling material extending across the spaces between the runners throughout the length thereof with their edges fitting into the runner grooves, said lengths of panelling material being of flexible bendable nature and of a width slightly exceeding the width of the spaces between the bottoms of the grooves in the said runners, so that said panelling material will bulge out of the plane of said sections intermediate the side edges of said panelling material in said grooves and said grooves having their side walls inclined to corresponding to the curvature of the bulged panelling material.

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