July 4, 1961 C. W. ATTWOOD 2,990,650

ROOFING

Filed April 29, 1957

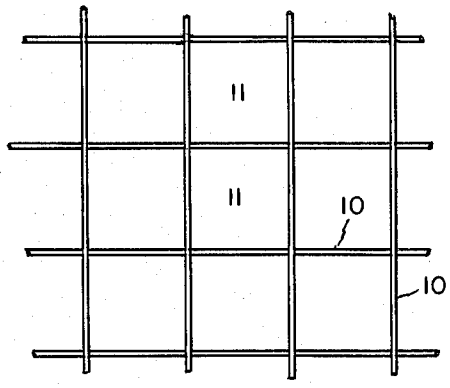


FIG.1.

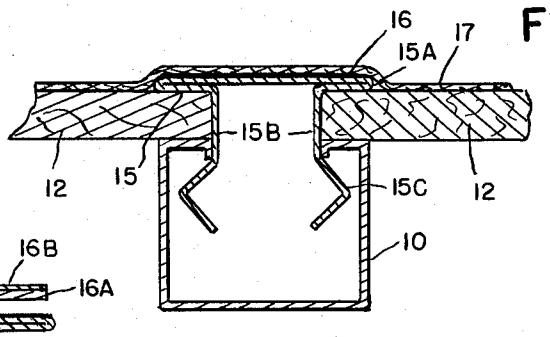
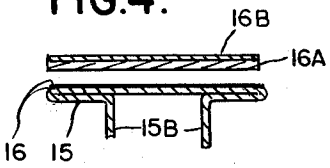


FIG.2.

FIG.4.



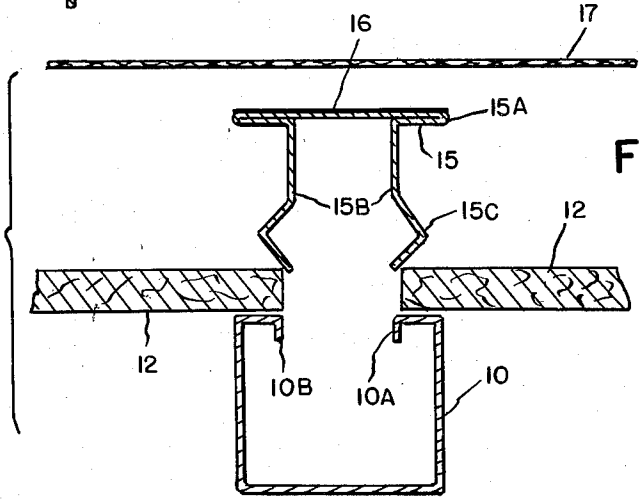


FIG.3.

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ROOFING

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The present invention relates to roofing for buildings and more specifically to a form of roofing that is quickly and easily applied.

Among the objects of the invention is to provide means for quickly and effectively securing the roof covering to the supporting means.

Another object is to provide securing means, permitting the application of the covering from rolls and securing the latter at frequent locations without the use of nails or other means penetrating the covering material.

Another object is to provide a roof structure that permits the escape of any gaseous or vaporous material which may be trapped under the impervious roofing.

Another object is a roof which may be quickly, easily and permanently repaired, if repair should become necessary.

Other objects and advantages will readily occur to those skilled in the art upon reference to the following description and the accompanying drawings in which

FIG. 1 is a plan view, more or less diagrammatic, of a roof supporting frame for a roof of the present construction.

FIG. 2 is a sectional view taken for example on line 2—2 of FIG. 1, and showing the roof structure.

FIG. 3 is an exploded view of the structure of FIG. 2.

FIG. 4 is an exploded view showing a slight modification.

The present invention relates specifically to roofs applicable to and particularly advantageous with structures such as are shown in my prior application Serial No. 481,748, filed January 14, 1955, for "Building Construction," and now abandoned.

As described and claimed in said prior application, a structure is built up of a multiplicity of identical metal channel members fixed together in such fashion as to produce a roof supporting portion consisting of rectangular pyramidal forms some of which are erect and some are inverted and all are so related that each erect pyramid has its slanting edges in common with a slanting edge of an adjacent inverted pyramid. The resulting structure has the rectangular bases of the pyramids in parallel planes connected together by the slanting members forming the edges of the pyramids.

The metal channel members used in this structure are preferably of a form appearing on the market under the name of "Unistrut" and are metal channels rectangular in cross section having their side walls turned in at right angles and the edge portions of such turned in walls again turned in at right angles and the edge portions of such turned in walls again turned in at right angles and sharpened or double beveled. This produces a rectangular channel member having along one face a slot provided at its edges with substantial inwardly projecting flanges.

In the structure so produced, the elements constituting the rectangular pyramid bases are so arranged that the slotted face opens outwardly.

As indicated in FIG. 1 of the drawing, the roof frame members **10** are arranged as rectangles which, in the case above referred to, are square, but it should be understood that other rectangular forms may be used if desired.

Each of the frame members **10**, as mentioned above, shows in cross section the form shown in FIGS. 2 and 3, and is arranged with the slot **10A** opening upwardly.

In producing the roof, a panel **12** of substantially rigid material, such as plywood, asbestos composition board or other material suitable from the standpoint of strength and

stiffness, is placed over the rectangular areas **11**. The panels **12** are of such size as to cover the areas and have their edges rest upon the frame members **10** without covering the slots **10A**.

The panels **12** are then fixed in place by the batten strips **15** which consist of spring metal formed to produce in sectional view a substantially flat head portion **15A** provided with spring tongue portions **15B** each of which has an outwardly extending rib **15c** so located that it will underlie the edge of a flange **10*b*** of a member **10** when the strip is in position. The head portion **15A** will extend over and rest upon the edges of two of the panels **12** as shown in FIG. 2.

When the panels **12** and strips **15** are in place, the exposed upper faces **16** of the strips **15** are coated with a suitable adhesive, and the cover material **17** is applied and pressed against the adhesive coated batten strips and adhere firmly thereto.

In the form shown in FIG. 4, the batten strip **15** has been coated with adhesive **16** and a strip **16A** of roofing material of the same sort as the sheet **17** is then applied along with its protective film **16B**.

In producing the roof above described, the covering sheet material **17** preferred is partially cured neoprene which will adhere very strongly to itself if allowed to, and may be obtained in rolls with one face of the sheet covered with a removable and disposable film to prevent sticking.

In applying the sheet **17**, the protective film will be removed and the neoprene pressed against the adhesive coating on the batten strips or upon the neoprene strips **16A** after, of course, removing the film **16B**.

The adhesive **16** is preferably made by dissolving neoprene in a suitable solvent.

While it is proposed to cause the adherence of the cover **17** only to the batten strips **15**, one or more spots of the adhesive may be applied to the panels for additional adhesion if desired. However, the cover **17** should, for the most part, be left unadhered so that any water-vapor may travel to the bottom strips and escape down around the edges of the panels **12**.

I claim:

1. Roof structures comprising a frame consisting of metallic members each provided with a longitudinal slot in its upper face of less width than the members, substantially rigid panels having their edges resting on marginal portions of said frame members alongside of said slots, batten strips coacting with said slots fixing said panels in position said batten strips consisting of laterally extending portions overlying the edges of said panels and having spring tongues thrust into said slots and maintaining said batten strips in position and a weather resistant cover material extending over said panels and batten strips and cemented only to said strips whereby vapor formed between the panels and the cover material will not remain trapped in place.

2. Roof structures comprising a rectangular frame consisting of metallic members each provided with a longitudinal slot in its upper face of less width than the members, substantially rigid panels having their edges resting on marginal portions of said frame members alongside of said slots, batten strips coacting with said slots fixing said panels in position said batten strips consisting of laterally extending portions overlying the edges of said panels and having spring tongues thrust into said slots and maintaining said batten strips in position and a sheet of partially cured neoprene extending over said panels and batten strips and cemented only to said strips whereby vapor formed between the panels and the cover material will not remain trapped in place.

3. Roof structures comprising a rectangular frame consisting of metallic members each provided with a longitu-

dinal slot in its upper face of less width than the members, substantially rigid panels having their edges resting on marginal portions of said frame members alongside of said slots, batten strips coacting with said slots fixing said panels in position said batten strips consisting of laterally extending portions overlying the edges of said panels and having spring tongues thrust into said slots and maintaining said batten strips in position and a sheet of partially cured neoprene extending over said panels and batten strips and cemented only to said strips whereby vapor formed between the panels and the cover material will not remain trapped in place, there being an intermediate layer of said neoprene between the strips and said sheet.

4. A roof structure comprising a framing member having an upper supporting surface, panel members having substantially parallel edges spaced apart and supportingly carried on said framing member supporting surface, a batten resiliently secured to said framing member intermediate said panel members and comprising a substantially flat closure strip covering said panel edges and the space between said panel edges, a layer of adhesive material disposed only on the upper surface of said closure strip, and a weather resistant substantially air-impervious cover material extending over and carried by said panels and said batten and secured only to the upper surface of

said closure strip whereby to avoid entrapment in place of vapor bubbles formed between the cover material and the panels.

5. A method of constructing roof structures, comprising constructing a framing support, placing roof panels on said support, resiliently securing batten strips to said support to close the spaces between panel edges and to permit escape of entrapped moisture, applying adhesive only to the top surfaces of said batten strips, and covering said panels and batten strips with a weather resistant cover whereby said cover will be supported by said panels and strips but will be secured only to the batten strips.

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