May 9, 1939. S. F. TAPMAN 2,157,359

BUILDING CONSTRUCTION

Filed June 19, 1936 2 Sheets-Sheet 1

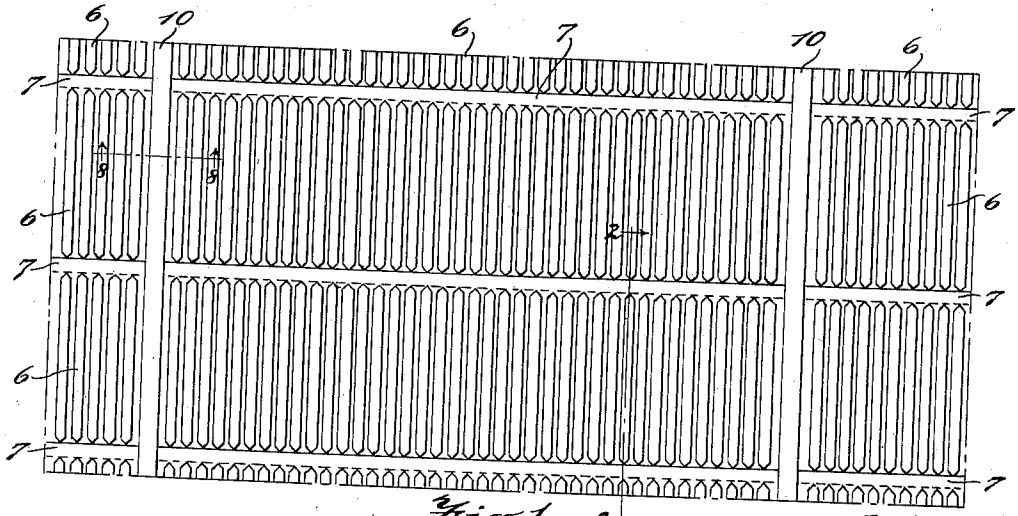


Fig. 1.

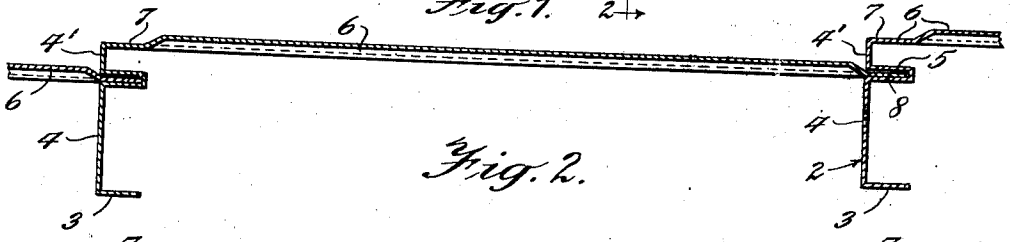


Fig. 2.

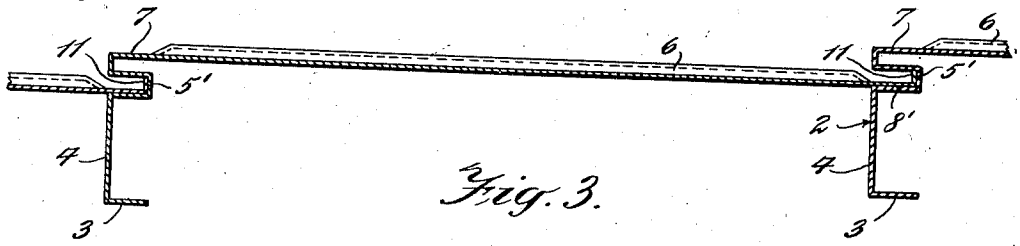


Fig. 3.

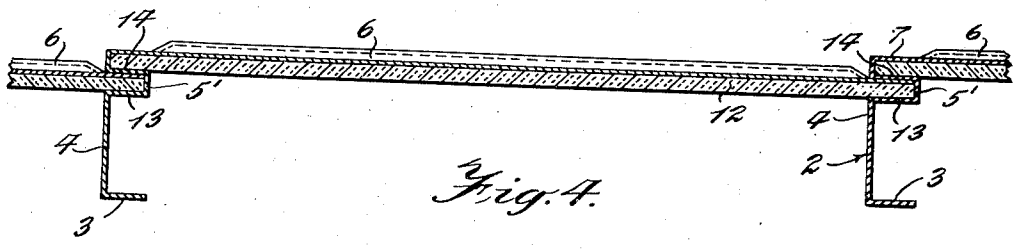


Fig. 4.

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BUILDING CONSTRUCTION

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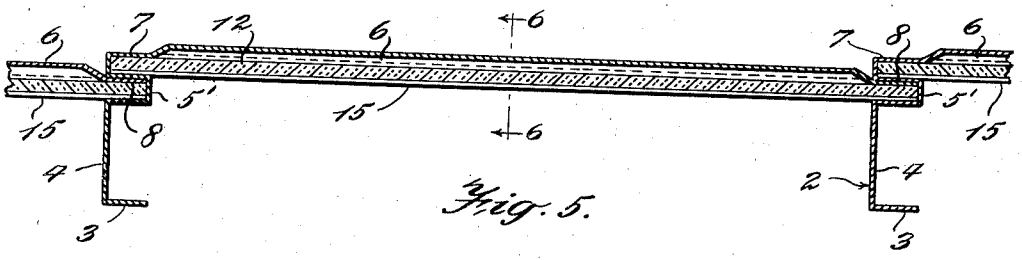


Fig. 5.

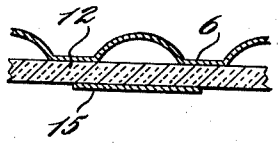


Fig. 6.

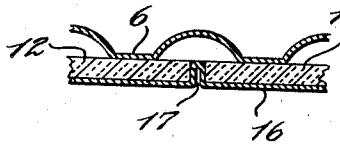


Fig. 7.

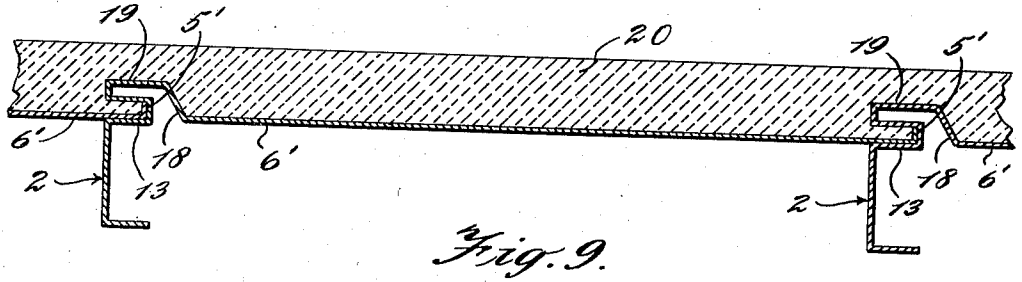


Fig. 9.

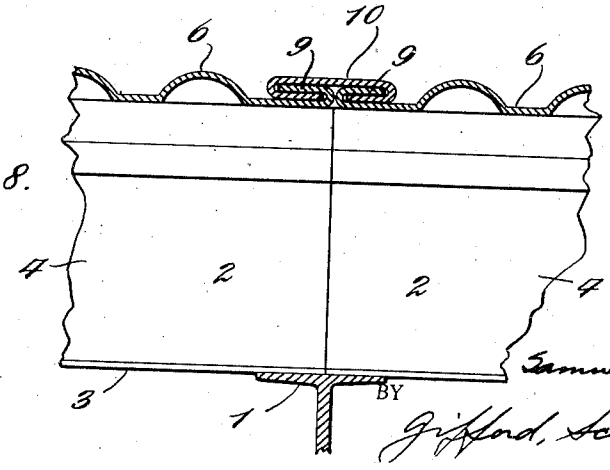


Fig. 8.

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2,157,359

BUILDING CONSTRUCTION

Samuel F. Tapman, Richmond Hill, N. Y.

Application June 19, 1936, Serial No. 86,044

3 Claims. (Cl. 108—13)

This invention relates to a novel and improved type of building construction which may be employed in a wall, roof or other part of a building and which, for the sake of convenience, will be shown herein as embodied in a roof. The details and advantages of the invention will be best understood from the following description and the annexed drawings, in which I have shown selected embodiments of the invention and in which:

Fig. 1 is a plan view of a portion of a roof constructed according to the invention;

Fig. 2 is a section on an enlarged scale on the line 2—2 of Fig. 1;

Figs. 3, 4, and 5 are views similar to Fig. 2 but showing different embodiments of the invention;

Fig. 6 is a section on the line 6—6 of Fig. 5;

Fig. 7 is a view similar to Fig. 6, showing a different form of supporting strip;

Fig. 8 is a view on the line 8—8 of Fig. 1;

Fig. 9 is a view similar to Fig. 2, but showing a different form of the invention and a particular use which may be made of that form.

As noted above, the invention is shown as embodied in a construction of roof, and for the sake of convenience I shall refer to the various parts as horizontal or vertical, as they would be in a roof, although it is to be understood that those and similar terms are used only to bring out the relation between the parts, and are not used in a limiting sense, since the construction may be equally well used in a wall extending vertically, horizontally, or in any other direction.

Assuming that the invention is used in a construction of a roof, and referring particularly to Figs. 1, 2, and 8, I have shown the roof as formed of the usual rafters 1, which may be of any form desired, and resting upon which are purlins in the form of beams 2. Each purlin is shown as having a bottom flange 3 adapted to rest upon a rafter or other support, or, in case the construction is used in a vertical wall, for example, the flange on the purlin will act as a stiffening means. The beam has a vertically extending portion 4, in the face of which is a recess 5 formed by bending the portion 4 back on itself, as plainly shown. The portion 4 has an upper part 4' above the recess, and at its upper edge this portion is bent back to form a sheet 6, here shown as corrugated for the major part of its width, but provided with relatively flat parts 7 and 8 adjacent the opposite edges. One edge of the sheet adjacent the portion 8 is free, by which is meant that there is no beam or the like connected thereto, whereas the opposite edge adjacent the portion 7 is integral with a beam 2, the sheet and beam being integral at their meeting edges.

When a roof is to be formed, the beams 4 may be placed on the rafters 1, with the edge portion 8 of one sheet received in the recess 5 in the face of the next adjacent beam so as to form a continuous horizontally extending or inclined roof. Preferably, the adjacent edges of the sheets are bent back as indicated at 9, to receive a cleat 10 to form a joint between adjacent sheets extending along the rafters. The edge portion 8 is of sufficient extent so that it may be readily received in the recess 5, as indicated.

The joint at the recess 5 may be made more complete by a seaming operation performed on the wall of the recess to press it against the portion 8 of the adjacent sheet, and a suitable caulking material may be inserted in the recess either by a spray gun or any other suitable and usual apparatus.

The above construction is one which, it will be seen, avoids the necessity of using rivets or other fastening means which require the formation of holes in the wall or roof which is being formed, and likewise avoids the necessity of any welding operation. The unitary construction of beam and sheet avoids the necessity of forming any joint whatsoever between these two parts, and the joint between a sheet and the adjacent beam is readily formed by merely slipping the edge portion of the sheet into the recess of the beam, thus permitting rapid assembly of the building.

In the form shown in Fig. 3, the recess 5' is made deeper or of greater height than in Fig. 2, and the edge portion 8' of the sheet 6 is bent up to form an upwardly extending flange 11, thereby forming a trough to receive the caulking material and also to prevent leakage of water past the edge of the sheet.

In Fig. 4, the recess 5' is similar to what is shown in Fig. 3, but the extra depth or height of the recess is here employed to place a sheet of insulating material 12 beneath the sheet and resting on the lower wall 13 of the recess at one end, and on the upper wall 14 of the recess in the adjacent beam at the other end.

In Fig. 5, the same form of the invention is shown as in Fig. 4, except here the insulating sheet 12 is shown as being somewhat thinner with relation to the depth of the recess 5', and it may be supported by a strip 15 extending lengthwise of the insulation.

In Fig. 7 is shown an arrangement in which, in place of a narrow strip 15, I may use a con-

tinuous strip 16 extending from one rafter to the other and provided at intervals with ribs 17 in order to form a rigid sheet or strip capable of supporting itself and of holding the insulating sheets 12 against the sheet 6.

In Fig. 9 is shown a still further form of the invention which may be used where it is desired to avoid the stepped appearance of the form previously described. Here the beams 2 may be of the same form as any one of the embodiments previously described, but the sheet 6' is provided with a downwardly extending shoulder 18 so that the principal part of the sheet 6' will be slightly above the plane of the bottom wall 13 of one of the recesses 5 or 5', as the case may be, so that the upper edges 19 of the various beams 2 may be in the same horizontal or vertical plane.

If desired, the space 20 thus formed between the shoulder 18 and an adjacent beam may be filled with any suitable filling material, such as the refractory material shown. The beams and sheets may be used as forms to support this material while it is setting. After setting, the forms may be left in place, if desired.

From the above, it will be seen that the construction is one which may be readily made of sheet material bent to the desired shape, and which may be readily and speedily assembled. While I have shown the invention as embodied in specific forms, it is to be understood that various changes in details may be made without departing from the scope of the invention, as defined by the appended claims.

I claim:

1. In combination, two parallel spaced beams of sheet material, each beam having in its face a recess extending back from its face and disposed adjacent the upper edge of the beam, the sheet material of one beam being bent back from the face of the beam at said upper edge thereof in a continuous sheet extending to the other beam and having its edge portion disposed substantially in the plane of the sheet and located in the recess in the face of said other beam to close the space between the beams.

2. In combination, two parallel spaced beams of sheet material, each beam having in its face a recess extending back from its face and disposed adjacent the upper edge of the beam, the sheet material of one beam being bent back from the face of the beam at said upper edge thereof in a continuous sheet extending to the other beam and having its edge portion disposed substantially in the plane of the sheet and located in the recess in the face of said other beam to close the space between the beams, said edge portion being of less thickness than the height of the recess, and a sheet of insulating material extending between said beams and into said recess.

3. In combination, two parallel spaced beams of sheet material, each beam having in its face a recess extending back from its face and disposed adjacent the upper edge of the beam, the sheet material of one beam being bent back from the face of the beam at said upper edge thereof in a continuous sheet extending to the other beam and having its edge portion disposed substantially in the plane of the sheet and located in the recess in the face of said other beam to close the space between the beams, said edge portion being of less thickness than the height of the recess, and a sheet of insulating material extending between said beams and having one edge portion thereof supported on the outer surface of the upper wall of the recess of said one beam and having its opposite edge portion disposed in the recess of said other beam beneath the edge portion of said continuous sheet.

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