Sept. 25, 1962 J. H. GOODWIN 3,055,147

ROOF CONSTRUCTION

Filed June 10, 1955

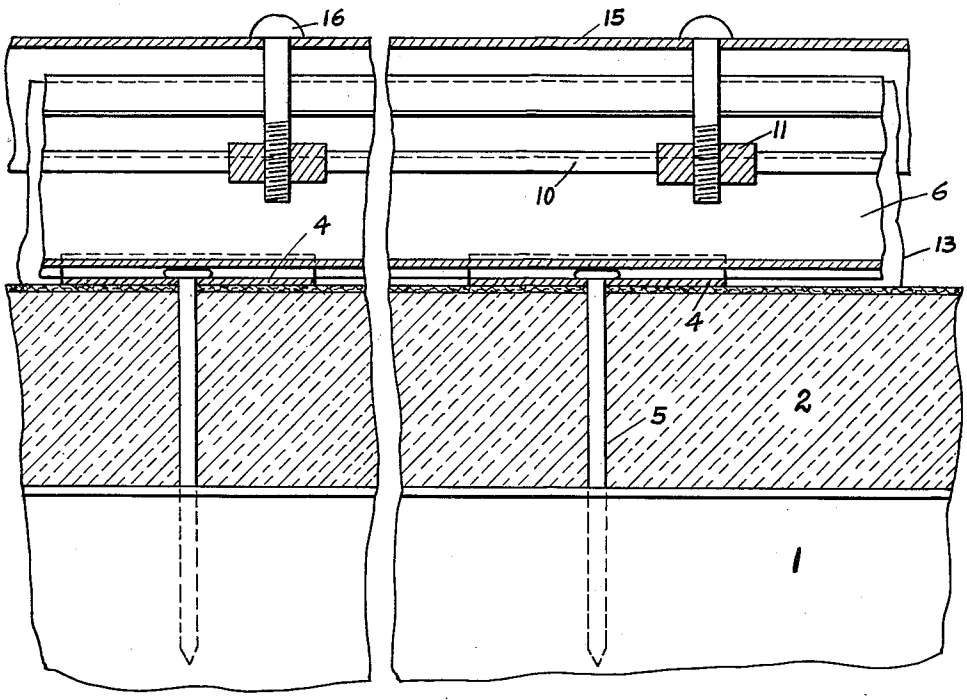


Fig. 1.

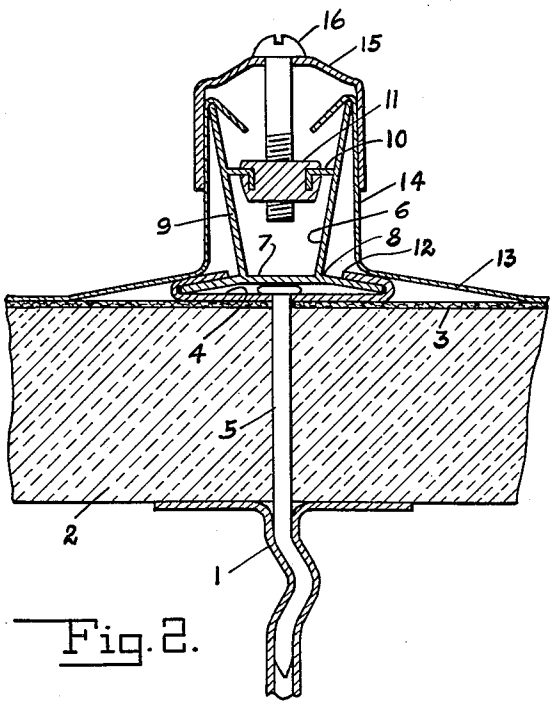


Fig. 2.

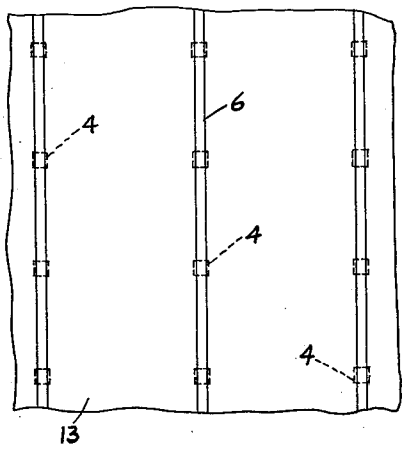


Fig. 3.

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ROOF CONSTRUCTION

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1 Claim. (Cl. 50—200)

The present invention is concerned generally with batten type roof construction and more specifically a novel form of such roofing as applied to large buildings having the area immediately beneath the roofing sheets covered with flexible insulating materials affording no means for attachment of the roof battens.

A batten type roof structure as now known in the art comprises spaced members known as battens extending from the ridge to the eaves of the roof, roofing sheets extending between and overlapping adjacent batten, and cap members mounted upon the top of the battens overlapping the roofing sheets to secure the assembly together. As previously used the battens were supported upon and attached to the roof sub-structure so as to securely hold the batten members in place while permitting longitudinal expansion and contraction of the battens during atmospheric temperature changes. The preferred method of attachment was to provide elongated openings in the batten bottom flanges and insert nails, screws, bolts or other fastening members through the elongated openings into the roof sub-structure.

Structures covering large ground areas such as auditoriums, sports arenas and the like where roof temperatures have a decided effect upon the inside temperatures of the entire structure are now using a sheathing of insulating material between the roof sub-structure and roofing sheets. Such insulating materials are frequently as much as two or more inches in thickness and frequently of a cellular type of construction providing no holding power for fasteners used to secure the roof batten in place. Frequently the insulating materials are provided with a top covering material such as sheet felt or other suitable materials which likewise provide no holding power for the batten fasteners.

The principal object of my invention is to provide a novel form of batten type roof for such insulated structure wherein a separate support for the batten is disposed upon the insulation and secured to the roof substructure providing for attachment of the batten to the support while permitting limited relative movement between the support and batten as aforesaid.

A further object of the invention is to provide a batten support of the character described permitting proper alignment of the battens and attachment of the insulating material to the roof sub-structure.

These and other objects will be made apparent to those skilled in the art upon reference to the following specification and the drawings forming a part thereof wherein;

FIG. 1 shows a partial cross-section through a batten type roof of the invention;

FIG. 2 shows a cross section through one of the roof battens and supporting member thereof illustrating attachment of the support to the batten and roof substructure; and

FIG. 3 shows a partial plan view of the roof and arrangement of the batten supports.

Referring now in detail to the drawings the roof substructure includes the members **1** extending from ridge to eave of the roof which may be of metal providing for reception of nails as shown or of any other suitable material. These members **1** are spaced longitudinally of the building beneath the battens as shown in FIG. 2. Disposed upon the members **1** is the insulation **2** which

may be of semi-rigid form to support its own weight between the members **1** or is otherwise supported in any suitable manner. Such insulating material may have a top covering **3** which may be of sheet felt or other suitable material. Disposed upon the covering **3**, or when not used upon the insulation **2**, are batten supporting and attaching clips **4** which may be rectangular pieces of sheet metal or other suitable material for the purpose. These clips **4** are spaced longitudinally of the members **1** and secured thereto by suitable means such as nails **5** driven through the clip, the insulation and into the member **1**. The preferred procedure is to drive the nail through the clip and then through the insulation into the members **1**. The clips when so positioned are in substantially a single plane parallel to the members **1** to which they are attached. As shown in the drawings the clip **4** is of a width greater than the width of the bottom flange of the batten for a purpose hereinafter set forth.

The batten **6** is comprised of a bottom flange having an intermediate portion **7** and integral side portions **8** extending outwardly and sloping downwardly therefrom, with side walls **9** extending upwardly from the flange. The side walls **9** and bottom flange extend the full length of the batten. Disposed between the side walls **9** are suitable supporting members **10** upon which are mounted a plurality of spaced members **11** having threaded openings therein. The battens **6** are placed upon and span the clips **4** with the flange side portions **8** spacing the intermediate flange portion **7** above the head of the nail **5** or other fastening means. After the batten is properly aligned the protruding edges **12** of the clips **4** are bent upwardly and overlapped upon the batten bottom flange portions **8** to secure the batten in place. In this manner the clip **4** holds the batten against displacement while permitting relative movement between the batten and clip as the length of the batten varies during temperature changes. The roof sheets **13** are then disposed between the battens with the side portions **14** of the sheets **13** inclined upwardly along batten walls **9** and hooked over the upper ends of the walls **9**. The roof cap **15** is then placed in position over the roof sheets and secured to the batten by threaded bolts **16** engaged with the members **11** to complete the roof. The preferred form of the batten as shown herein is the subject matter of my copending application Serial No. 486,366, filed February 7, 1955, now Patent Number 2,885,974, dated May 12, 1959, and of which this present application is a continuation-in-part. Reference is made thereto for any details of construction or function not covered herein.

Having disclosed herein a preferred form of batten, it is not my intention to be limited thereto as other forms of batten may be used, such as in my copending application or other suitable forms. The preferred form of clip is as shown in the drawings, since it is economical and is readily adapted for folding over the batten bottom flange. It will be understood however that other suitable materials may be used to form the clip and the clip may be made longer than shown, may be partially preformed or otherwise varied without departing from the scope of the appended claim. If desired the substructure members **1** may be disposed transversely of the battens.

I claim:

In a batten type insulated metal roof construction, in combination, spaced roof sub-structure members extending between the ridge and eaves of the roof, insulation extending transversely of adjacent roof sub-structure members and supported thereon, a plurality of metal batten bearing members spaced longitudinally of each said roof sub-structure members upon said insulation,

each said bearing member having a fastener extending therethrough and extending freely through the insulation into holding engagement with the underlying sub-structure members, metal roof battens extending parallel to and overlying the said roof sub-structure members and having laterally extending flanges at opposite sides of the batten supported upon said bearing members, said bearing member having its outer edges bent over said flanges of said batten member to retain the flanges in fixed vertical relation to the bearing members, and metal roofing sheets disposed upon said insulation between said battens, each said roofing sheet having its edge portion adjacent each batten bent upwardly into overlapping relation to the batten and connected therewith.

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