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BUILDING CONSTRUCTION

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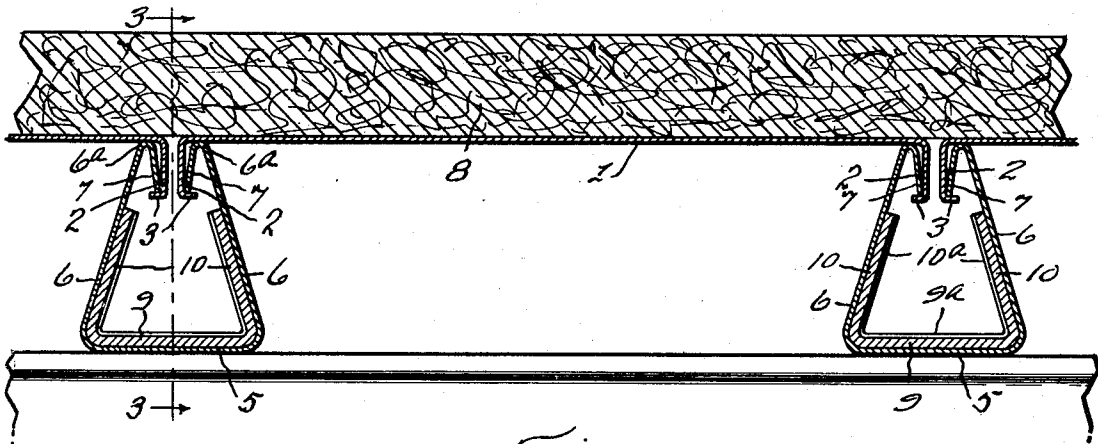


Fig. 1

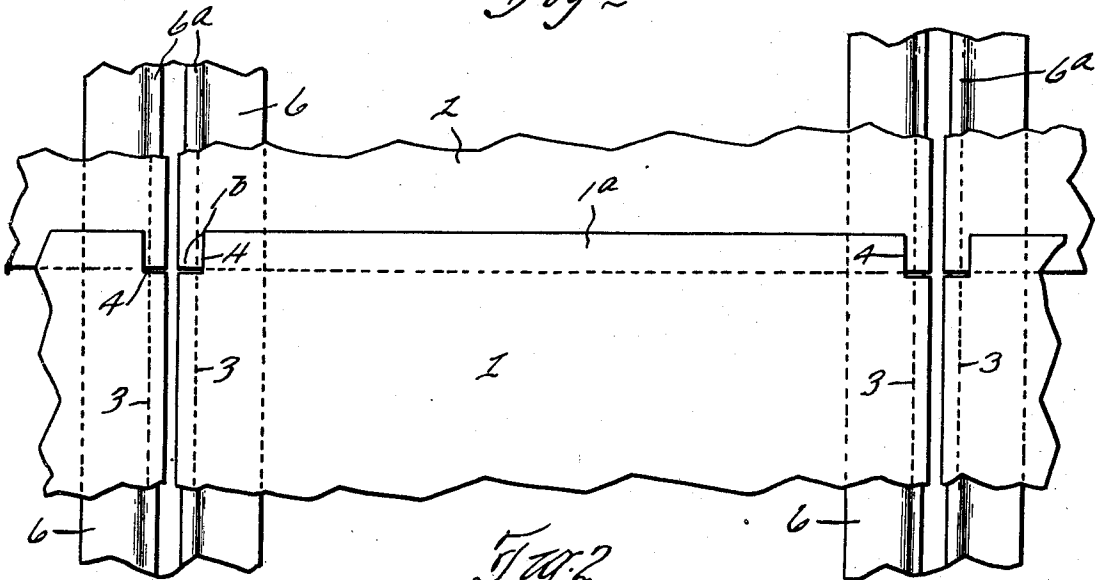


Fig. 2

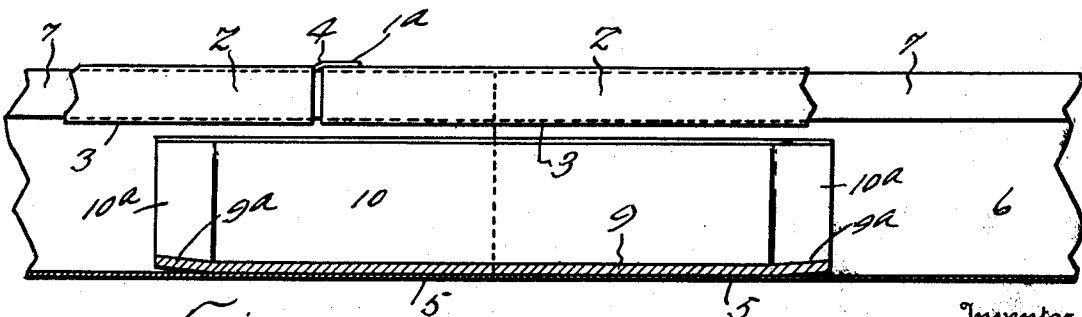


Fig. 3

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BUILDING CONSTRUCTION

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3 Claims. (Cl. 189—34)

This invention relates to building constructions, and more particularly to constructions embodying sheet metal units which are adapted, when assembled, to produce a light but strong metal foundation for roofs, floors, etc. The embodiment of my invention as illustrated and described herein is particularly adapted for use in the production of light insulated roofs; and the invention has for its general object to provide a foundation of the character described which will not only be light and strong, but which will realize this object with a minimum expense of production; also to provide a foundation of the character described which is readily and conveniently adaptable for varying conditions of installation; also to provide a foundation wherein the sheet metal parts may be quickly and conveniently applied to supporting ribs, as well as to provide a foundation wherein the ribs may be made of ample strength to withstand the loads imposed thereupon while employing light metal sheets therewith. A further and more limited object of the invention is to provide, for foundations of the character referred to, efficient means for connecting the various units together and for effecting a shingling operation.

The objects of the invention will be realized in and through the construction and arrangement of parts shown in the drawing and description hereof, and embodied in the claims hereto annexed.

Referring to the drawing, Fig. 1 represents a sectional view through a sheet metal foundation of the character referred to, having insulation applied thereto, the top of one of the supporting beams being shown in elevation; Fig. 2 a detail in plan of the structure shown in Fig. 1, the insulation being removed; and Fig. 3 a detail in section corresponding to the line 3—3 of Fig. 1, the insulation being removed.

Describing the various parts herein by reference characters, 1 represents a sheet metal unit, the same being preferably of light-gauge steel, the dimensions of the sheet varying with the particular installation with which it is to be used. Each lateral edge of the sheet is provided with a downwardly extending flange 2 at the bottom of which there is a short flange 3, extending at right angles from each flange 2 and beneath the body of the sheet thereabove. Each sheet is provided with a notch 4, at each lower corner thereof, the notches being limited in width, for a purpose to be described hereinafter.

Cooperating with the metal sheet units 1 are triangular hollow ribs, each comprising a base

5 and upwardly inclined sides 6. At its upper end, each side 6 is bent upon itself, as shown at 6^a, thereby providing a downwardly and inwardly inclined flange 7. The bottoms of the flanges 7 are spaced apart, and the flanges are of a depth such that, when the lateral flanges 2 of two adjacent sheets 1 are inserted between the flanges 7, the flange 3 at the bottom of each flange 2 will be in substantial engagement with the bottom of the corresponding flange 7, while the double metal at the top of each side 6 will be in engagement with the body of the sheet 1 adjacent to the lateral flange 2. The bottoms of the flanges 7 of each rib will be spaced apart a sufficient distance to provide therebetween a slot which will enable the flanges 2, 3 of adjacent units 1 to be inserted into such slot. However, should the width of the slot formed between the bottoms of the flanges 7 be somewhat less than the combined width of the two flanges 3, 3, the former flanges may be sprung apart, by the operation of inserting the flanges 2 and 3 therebetween, until the flanges 3 pass beneath the bottoms of the flanges 7.

Reference has been made heretofore to the notches 4 which are formed at the lower corners of each sheet 1 and to the fact that these notches are narrow in lateral width. The purpose of making the notches narrow in this direction is to prevent them from extending outwardly beyond the tops of the flanges 7 so that, in securing the insulating covering 8 to the sheets 1 by asphalt, the hot molten asphalt cannot run through the notches and drop below the roof, but will be caught within the ribs 5—7. The notches are provided for the purpose of "shingling" the sheets, enabling the lower notched edge 1^a of each sheet to overlap the upper edge 1^b of the sheet therebeneath, as shown more clearly in Fig. 2, while the bottom of the notches serve to limit the overlapping of one sheet by another.

The ribs may be made of any desired length, and they may be connected to form a complete rib of greater length, preferably by means of sleeves, such as shown in Figs. 1 and 3, wherein each sleeve comprises a base 9 and sides 10, the base and sides being shown as of such extent and shape as to enable a sleeve to be driven into an end of one of the ribs and the next adjacent rib to be driven or forced over the protruding portion of the sleeve. As will appear clearly from Figs. 1 and 3, the bottom 9 of each sleeve bears against the bottoms of the two adjacent ribs and the sides 10 of the sleeve engage the sides 6 of two adjacent ribs. At their ends, the bottoms and

sides of each sleeve are deflected inwardly, as shown at 9°, 10°, to contract the ends of the sleeve and thus facilitate their insertion into the ribs.

By the construction shown and described herein, I am enabled to produce a foundation for roofs, etc. which is economical of production, in that it enables me to use comparatively narrow commercial sheet metal strips, which may be flanged at their sides by a commercial rolling operation, and which rolling operation is comparatively inexpensive. Furthermore, I am enabled to vary the width of these strips as desired, with a corresponding variation in the spacing of the supporting ribs, thereby readily accommodating my construction to the conditions surrounding any particular installation.

Having thus described my invention, what I claim is:—

1. A foundation of the character described, composing a hollow rib developed from a sheet of metal terminating at the free ends thereof in flanges extending into the rib in lateral spaced relation and inclined toward each other, a pair of sheet metal plates arranged in juxtaposition and having laterally extending flanges upon adjacent edges thereof insertable into the rib between the converging flanges aforesaid, and shoulders upon the flanges of said sheets having a snap engagement with the free ends of said converging flanges.

2. In a foundation of the character described, the combination with a hollow rib formed of a plurality of rib members having a slot in one

side thereof and having converging flanges projecting from opposite sides of the slot into the rib, of means for uniting adjacent ends of said members located entirely within the latter, said means comprising sleeves having one wall engaging the inner surfaces of the base portions of adjacent rib members and having walls projecting from the wall aforesaid conforming to and engaging a portion of the inner surfaces of the side walls aforesaid.

3. In a foundation of the character described, the combination with a hollow rib formed of a plurality of rib members having a slot in one side thereof and having converging flanges projecting from opposite sides of the slot into the rib, and metallic sheets associated with the ribs having laterally directed flanges at opposite edges thereof provided with lateral shoulders adapted to cooperate with the first-mentioned flanges to form a snap engagement therewith, of means for uniting the adjacent ends of said rib members located entirely within the latter, said means comprising sleeves having one wall engaging the inner surfaces of the base portions of adjacent rib members and having side walls projecting from the wall aforesaid conforming to and engaging the inner surfaces of the side walls aforesaid, the sides and bottom and each end of said sleeves converging to facilitate the insertion of the sleeves into the adjacent ends of such rib members.

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