Dec. 9, 1930. J. F. LOUCKS 1,784,368

SHEET METAL BUILDING CONSTRUCTION

Filed Nov. 17, 1927

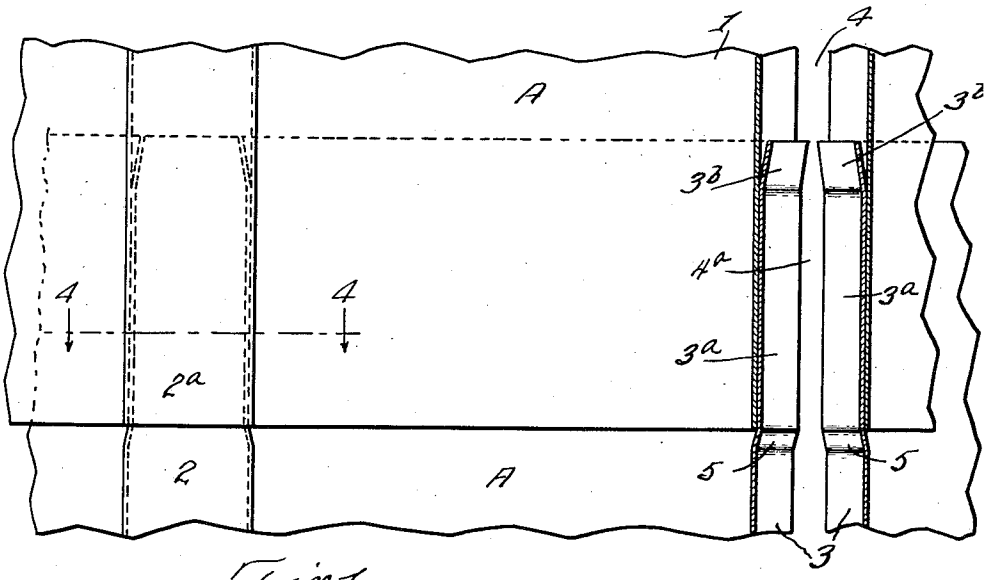


Fig. 1

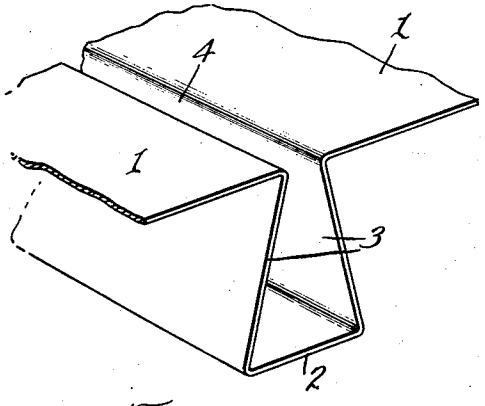


Fig. 2

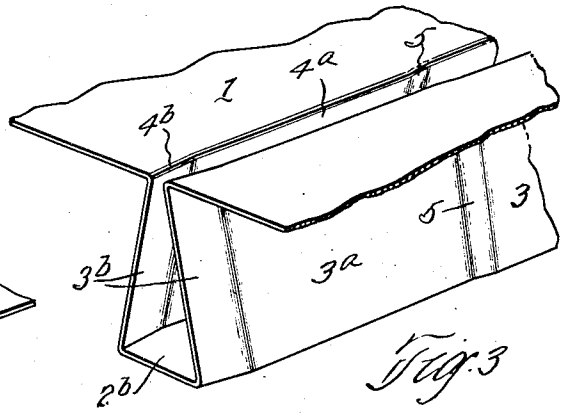


Fig. 3

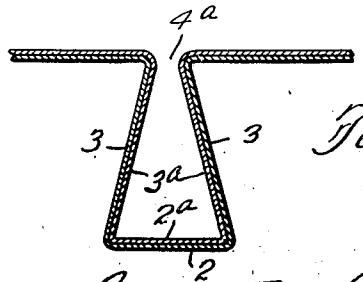


Fig. 4

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UNITED STATES PATENT OFFICE

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SHEET-METAL BUILDING CONSTRUCTION

Application filed November 17, 1927. Serial No. 233,853.

This invention relates to building constructions, and more particularly to sheet metal foundations for roofs, floors, etc., which comprise a plurality of sheet-metal units adapted to be assembled to provide a substantially continuous load-carrying surface at one side, there being triangular hollow ribs projecting from the opposite sides thereof. Sheet metal foundations of the character referred to are shown in the patent granted jointly to Harry Gillett and myself on February 3, 1926, No. 1,574,586.

It is the general purpose and object of the invention to provide a sheet metal construction of the type referred to which will enable the shingling, or assembling by overlapping, of an upper sheet with a lower sheet to be accomplished in a speedy and convenient manner. Further and more limited objects of the invention will appear hereinafter and will be realized in and through the contruction and arrangement of parts shown in the drawing, wherein Fig. 1 represents a bottom plan view of the overlapping ends of a pair of sheet metal units constructed in accordance with my invention, certain parts being shown in section; Figs. 2 and 3 are details in perspective of the opposite ends of a sheet, showing the manner in which the ribs are formed for the purpose of shingling or overlapping; and Fig. 4 a sectional view corresponding to the line 4—4 of Fig. 1.

Describing the parts by reference characters, A, A represent generally a pair of sheet-metal units, each consisting of a flat metal sheet 1 which has hollow triangular ribs pressed therefrom, the ribs preferably extending from one side only of the sheet. Each such rib consists of a base 2 and convergent sides 3 which merge at their ends with the sheet 1, there being a narrow slot 4 provided at one end of the sheet. The ribs extend continuously across the sheet, in the form shown in Fig. 2, until a short distance before the opposite end of the sheet is reached. Each rib is then narrowed, as shown particularly in Figs. 3 and 4 and at the right of Fig. 1, the amount of the narrowing being sufficient to enable the narrowed end of the rib to be received within the end of a rib, of the shape shown in Fig. 2, on another sheet. The sides of the narrowed end of the rib are designated at 3^a and the bottom at 2^a; and the extreme ends of the sides 3^a are tapered toward each other, as shown at 3^b, with a like tapering of the outer end 2^b of the bottom 2^a. This reduction in the width of the ends of the ribs is attended with a corresponding reduction in the width of the slots between the upper ends of the ribs, the narrowed portions of the slots being indicated at 4^a and 4^b. The portions 3^a of the sides are connected with the main portions 3 by beveled surfaces 5.

With the parts constructed and arranged as described, two of the sheets A may be assembled quickly and conveniently by inserting the reduced ends 2^a—3^b of the ribs at one end of a sheet into the open ends 2, 3, of the ribs at the opposite end of a like sheet. The tapering of the sides 3^b and the narrowing of the bottom 2^b of the insertable ribs facilitates the assembling operation; and the inclined surfaces 5 provide a wedge stop which will limit the insertion of the ribs of one sheet within those of another and thereby define a uniform amount of overlapping of one sheet with another.

A further advantage of this invention is that it enables the sheets to be assembled quickly at any place and without the necessity for having their bodies in the same plane when the assembling operation is started. The sheets thus assembled may be taken to the job and there applied to the supporting beams or purlins in the usual manner.

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

1. A sheet metal foundation for roofing construction, the same comprising a metal sheet having hollow triangular ribs extending from one side thereof, there being a narrow slot provided between the sides of each rib and the body of the sheet, whereby the surface of the sheet opposite the said ribs is a substantially continuous load-carrying surface, the end portions of the ribs at one end of the sheet each having their sides and bottoms of less width than the body portions of

such sides and bottom and the ends of such end portions converging toward each other, the sides and bottom of the body portion of each such rib being of substantially uniform width to and including the opposite end of such rib and the bottom portion between such convergent ends being correspondingly tapered, the slots provided between the tops of the sides of such end portions of the ribs being narrower than the slots provided between corresponding portions of the ribs at the opposite end of the sheet, whereby the assembling of the said sheet in overlapped relation with a like sheet is facilitated.

2. A sheet metal foundation for roofing construction, the same comprising a metal sheet having hollow ribs extending from one side thereof, there being a narrow slot provided between each of the ribs and the body of the sheet whereby the surface of the sheet opposite the said ribs is a substantially continuous load-carrying surface, the end portions of the ribs at one end of the sheet diminishing in cross-sectional area toward such end and being provided on each side thereof with a projection constituting a stop to limit the insertion of such reduced ends of the ribs of said sheet into the ribs on the opposite end of a like sheet.

3. A sheet metal foundation for roofing construction, the same comprising a metal sheet having hollow triangular ribs extending from one side thereof, there being a narrow slot provided between the sides of each rib and the body of the sheet whereby the surface of the sheet opposite the said ribs is a substantially continuous load-carrying surface, the end portions of the ribs at the opposite end of the sheet being narrowed and the sides of such end portions being connected with the sides of the bodies of their respective ribs by inclined surfaces, the sides and bottom of the body portion of each such rib being of substantially uniform width to and including the opposite end of such rib and the slots between such end portions of the ribs and the body of the sheet being narrower than the slots provided between the sides of the ribs and the sheet at the opposite end of the sheet, whereby the assembling of the sheets in overlapped relation is facilitated and a uniform amount of overlap in the sheets may be secured.

4. A sheet metal foundation for roofing construction, the same comprising a metal sheet having hollow triangular ribs extending from one side thereof, there being a narrow slot provided between the sides of each rib and the body of the sheet whereby the surface of the sheet opposite the said ribs is a substantially continuous load-carrying surface, the end portions of the ribs at the opposite end of the sheet each comprising a narrower portion the sides whereof are connected to the sides of the body of its rib by inclined portions, and an extreme end portion having convergent sides, the sides and bottom of the body portion of each such rib being of substantially uniform width to and including the opposite end of such rib and the slots between such end portions of the ribs and the body of the sheet being narrower than the slots provided between the sides of the ribs and the sheet at the opposite end of the sheet, whereby the assembling of the sheets in overlapped relation is facilitated and a uniform amount of overlap in the sheet is secured.

In testimony whereof, I hereunto affix my signature.

JAMES F. LOUCKS.