April 7, 1931. H. THURBER 1,799,541

SUPPORT AND CLIP FOR RIBBED METAL ROOFING

Filed July 22, 1927

FIG. 1.

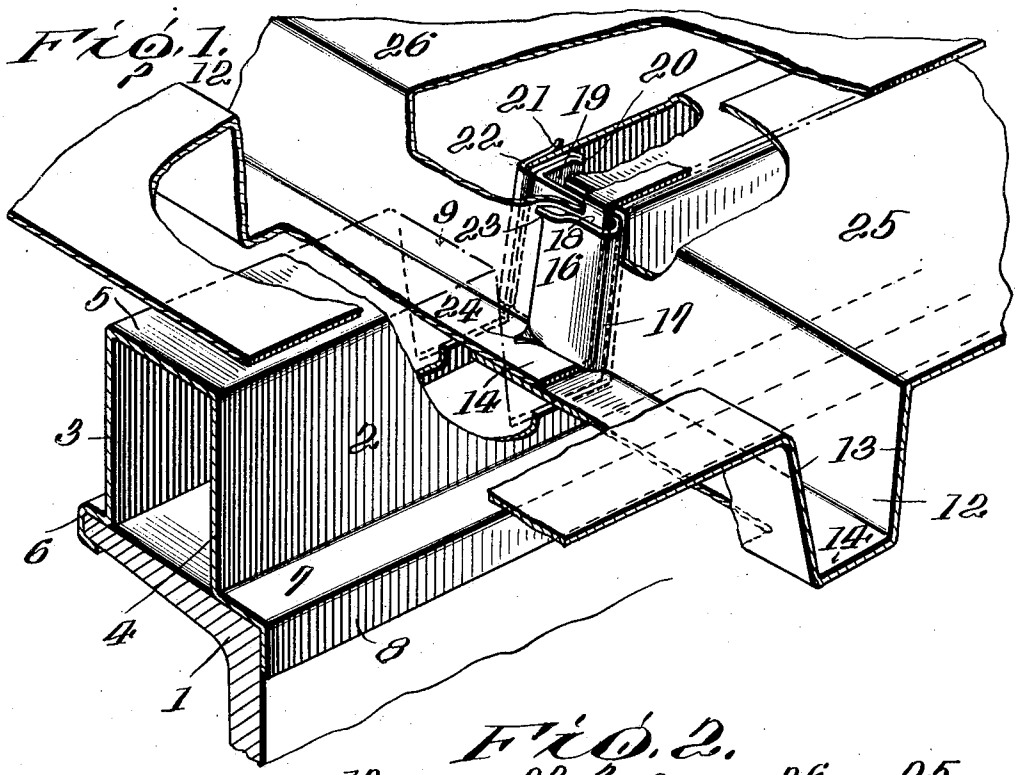


FIG. 2.

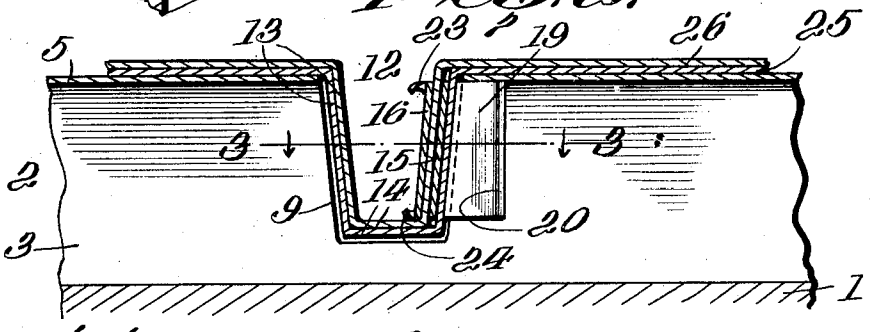


FIG. 4.

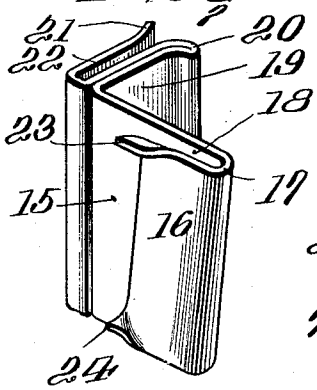
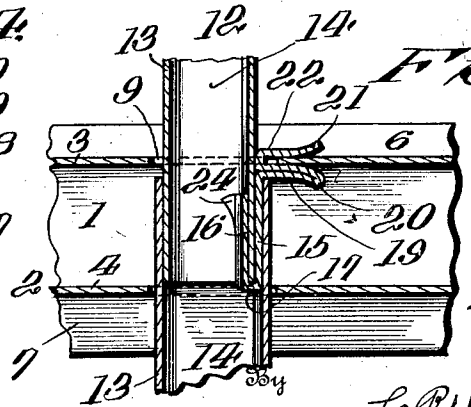


FIG. 3.



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UNITED STATES PATENT OFFICE

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SUPPORT AND CLIP FOR RIBBED-METAL ROOFING

Application filed July 22, 1927. Serial No. 207,740.

My invention relates to improvements in support and clip for ribbed metal roofing.

The object of my invention is to provide means whereby the ribbed metal roofing may be locked to the support so that it can not possibly have any vertical or longitudinal movement and at the same time providing a clip that can be readily applied when assembling the roof sections.

Another object of my invention is to provide a clip of this character, more particularly adapted to be used in connection with my improved roofing shown in my application Ser. No. 185,315, filed April 20, 1927, and the use of said clip requiring no alterations in the roof sections or supporting members.

A further object of my invention is to provide a simple, cheap and effective slip of this character having certain details of structure and combination of parts hereinafter more fully set forth.

In the accompanying drawings:—

Figure 1 is a perspective view of a roof purlin showing the supporting member attached thereto, and showing the two ends of the ribbed sheet roofing locked to the support by my improved slip.

Figure 2 is a vertical longitudinal sectional view of Figure 1.

Figure 3 is a horizontal sectional view taken on the line 3—3 of Figure 2.

Figure 4 is a perspective view of my improved clip.

Referring now to the drawings, 1 represents the roof purlins, which as shown, are of an L shape, but it will be understood that the invention could be used on any shaped purlin. The supporting member 2 is preferably made of stamped sheet metal forming two upright walls 3 and 4 connected at their upper ends by the transverse web 5. The lower end of the wall 3 is provided with a loop portion 6 adapted to pass around the flange of the purlin. The wall 4 is provided at its lower end with a lateral extension 7 having at its outer end the downwardly extending flange 8 adapted to engage the vertical wall of the roof purlin. While I have shown and described this specific means of attaching the supporting means to the L shaped purlin, it will be understood that the lower ends of the supporting members can be made to cooperate with any form of roof purlin.

The supporting member 2, at proper intervals throughout its length, is provided with cut away portions 9, which extend through the web 5, and through a portion of the upright walls 3 and 4. These cut away portions are slightly tapered inwardly, as clearly shown in Figure 2 of the drawings. It will be understood that each purlin of the roof has attached thereto a supporting member 2, and the purlins are spaced apart equal to the length of the roof sections so that the slip joint of the two parallel sections is within the cut out portions 2 of the supporting members. The roof sections 25 and 26 are provided, at proper intervals, with longitudinally extending ribs 12, which have their walls 13 tapering as shown in Figure 2 of the drawings, and said ribs having flat horizontal lower ends 14 forming beams spanning from purlin to purlin. The ribs are of a width less than the cut out portion 9 of the supporting member and are also of a depth less than the depth of the cut out portions so that the ribs are spaced from the side and bottom of the cut out portions to allow for the expansion and thus preventing any distortion of the roof sections. As will be seen, the whole weight and strain on the roof sections is carried by the flat horizontal supporting member between the rib and the cut out portion of the supporting member.

In the form of roof shown in my application Ser. No. 185,315, filed April 20, 1927 provisions have been made to prevent any longitudinal and vertical movement of the roof sections on the purlin, but in this case provision has been made only to prevent vertical movement of the roof sections. My improved clip is designed to prevent any longitudinal movement of the roof sections, and vertical movement of the roof sections, and said clip also provides means whereby the roof sections are locked to the support with a

predetermined overlap, which overlap can be determined by the proportion of the clip.

The clip shown in Figure 4 comprises a main body portion 15 having the end 16 turned as indicated at 17, leaving the space 18 of a width equal to the thickness of the roof sections, and into which space extends one of the roof sections. The main body portion is provided at its opposite end with a loop portion 19 having its outer end flared outwardly as indicated at 20, and said looped portion having the space 21 between the loop and the bent end 22 of the clip. The bent end 16 of the clip has its corners bent inwardly as indicated at 23 and 24. In the application of my improved clip it will be seen that the same is passed over the vertical wall 3 of the support, the vertical wall extending within the space 21 between the loop 19 and the laterally turned end 22, and is frictionally held in position. The roof section 25 is then placed in position with the end thereof tightly engaging the inner face of the main body portion 15, and the end engaging the loop 19. Thus, that roof section is prevented from having any longitudinal movement. The web of the rib extends under the main body portion 15 and the loop portion 16, and is thus prevented from having any vertical movement. The second roof section 26 is next slid into position with its free end extending into the space 18 between the main body portion 15 and the loop 16, and abuts the turned end forming the loop to prevent any longitudinal movement. This section 26 overlaps the section 25, as shown, and when the clip is in position it will be seen that both of the roof sections 26 and 27 are prevented from moving toward each other, and a predetermined lap is given the roof sections. The clip, as heretofore stated, extends under the web 5 of the support, and therefore can not be moved vertically, and the loop portion 16 being above the web of the ribs of the roof sections the web can not possibly be moved vertically whereby a clip is provided having means for preventing any vertical or longitudinal movement of the two overlapping roof sections, and whereby the two sections are locked to the support against vertical movement.

By the heretofore described clip, it will be seen that the roof sections are positively locked against vertical and longitudinal movement not only in respect to each other but also in respect to the support, and the only possible way of separating the sections will be by the longitudinal movement of the sections independent of each other.

While I have shown and described this specific manner of attaching the roof sections to the support it will be understood that this could be varied without departing from my invention, the broad invention is in providing a clip adapted to engage the supporting member and locking the same thereto against vertical movement, and having means for interlocking the two overlapping ends of the roof sections, whereby any movement of the sections is prevented.

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

1. A clip of the character described comprising a body portion having one end bent parallel therewith, to form a loop, said loop having its upper and lower edges flared outwardly and the other end of the body portion bent at right angles thereto and forming a loop having a flared outer end.

2. The combination with a roof support formed of an inverted sheet metal body portion having cut away portions, of a clip having a loop at one end adapted to engage the side wall of the support below the web and the opposite end of the said body portion having a loop extending parallel therewith and adapted to receive the rib of one roof section and the rib of the other roof section arranged on the opposite side of the body portion and abutting the other loop.

3. A clip of the character described comprising a body portion, having one end bent parallel therewith and forming a loop having its upper and lower edges flared outwardly and the other end of the body portion bent at right angles thereto and forming a loop at right angles to the body portion.

4. A clip of the character described comprising a body portion having one end bent back upon itself parallel therewith forming a loop, and the other end bent at right angles to the body portion and forming a loop at right angles to the body portion, and said latter loop having flared outer ends.

In testimony whereof, I have signed this specification.

HARRY THURBER.