Oct. 10, 1944. V. A. CARDARELLI, SR 2,360,107

JOINT FOR METAL SHEETS

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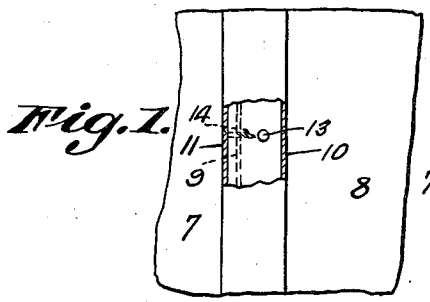


Fig. 1.

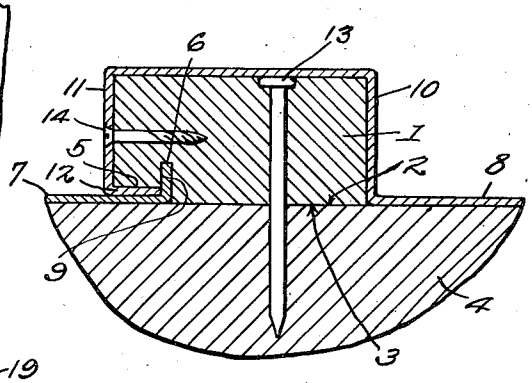


Fig. 2.

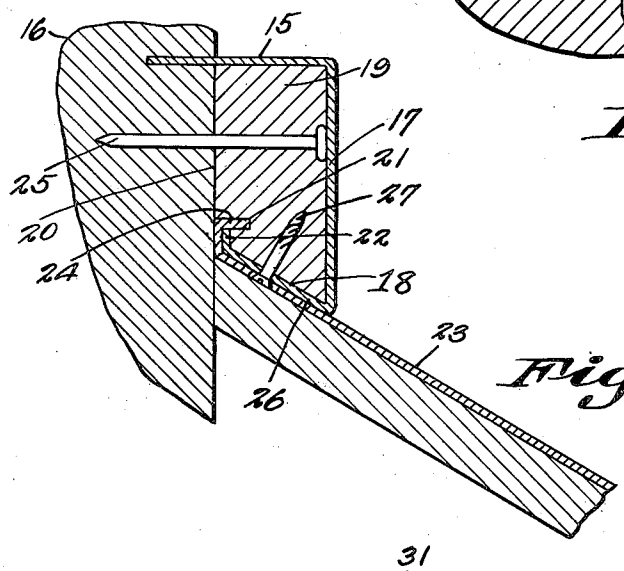


Fig. 3.

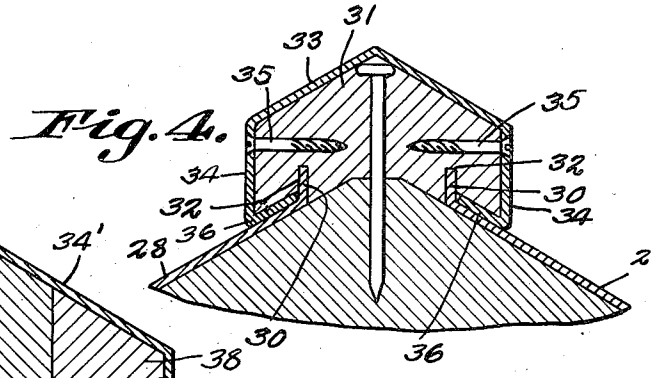


Fig. 4.

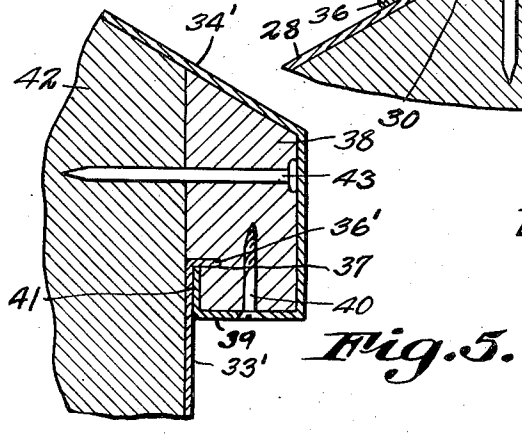


Fig. 5.

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JOINT FOR METAL SHEETS

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Application July 6, 1943, Serial No. 493,656

4 Claims. (Cl. 108—13)

This invention relates to joints for sheets of metal such as used for roofing, siding, and similar purposes.

It is an object of the invention to provide a joint which not only seals against the seepage of moisture between the sheets but also obviates the necessity of perforating the sheet metal at points where moisture is likely to penetrate.

Another object is to utilize in these joints a strip of wood or other suitable material which can be fastened to the supporting structure at any point most convenient, thus rendering the joint not only useful for attaching sheets of roofing in place but also for fastening metal sheets to joists, beams, etc., wherever located relative to each other.

Another object is to provide a joint which is both water-tight and windproof and which can be quickly and accurately assembled.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing the preferred forms of the invention have been shown.

In said drawing

Figure 1 is a view of a portion of a roof utilizing the present improvement, a portion of the joint being in section.

Figure 2 is an enlarged section on line 2—2, Figure 1.

Figure 3 is a section through a modified form of joint.

Figure 4 is a section through another modified form.

Figure 5 is a section through another modification.

Referring to the drawing by characters of reference, 1 designates an elongated strip preferably rectangular in cross-section although other configurations can be used. This strip can be made of wood or any material meeting the requirement and should, if possible, be of a length equal to the length of the joint forming a part of the invention. Otherwise two or more of these strips could be placed end to end so as to extend lengthwise of the joint. The strip has a bottom face 2 adapted to fit snugly on the flat surface 3 of the structure 4 to which the joint is to be fastened and a portion of this flat face is cut away longitudinally along one edge, as at 5 and is also grooved longitudinally as at 6, the groove extending into the strip preferably at right angles to the flat face 2.

The strip 1 is used in connection with front metal sheets 7 and 8 adapted to rest on the surface 3 of the supporting structure 4. Sheet 7 has a longitudinal flange 9 along one edge the height of which is substantially equal to the distance between surface 2 and the inner or closed end of the channel 6. Sheet 8 is provided along one edge portion with a channel portion 10 proportioned to embrace and fit snugly upon the strip 1, the outer side wall 11 of this channel portion being provided with an inturned longitudinal flange 12 adapted to extend between the sheet 7 and the surface of the reduced or cut-away portion 5 of the strip.

In assembling the joint the plate 7 is placed in position. Strip 1 is then placed on the surface 3 so that the flange 9 will thus be seated in the channel 6. Said strip is then attached to the supporting structure 4 by means of nails 13 which can be driven into the material at any points found most convenient. Thereafter the channelled portion of sheet 12 is slipped longitudinally onto the strip 1 so as to embrace it with flange 12 extending between said strip and the sheet 7. After sheet 8 has been brought to the proper position on the surface 3, it is fastened at desired points to the strip 1 by means of screws 14 or the like forced through the side 11 of the channel portion 10 and into the strip 1 at a point well out of line with the channel 6.

As strip 1 and the parts associated therewith are adapted to be extended substantially in the direction of the flow of water on a roof or other structure, it will be apparent that this water cannot flow over the flange 9 and into the space beneath the strip 1. On the contrary the joint produced will operate efficiently to seal the roof against the action of water and wind. While the joint is especially suited for inclined roofs, under some conditions it could be used effectively on flat roofs.

Attention is called to Fig. 3 illustrating how the invention can be adapted for the purpose of connecting roofing sheets to a flashing. In this modified form of structure the flashing strip 15 extending outwardly from the wall 16 is bent downwardly and inwardly so as to cover the outer surface 17 and the inclined bottom surface 18 of a strip 19. The inner surface 20 of this strip has a channel 21 corresponding with channel 6 and the flashing strip 15 has a flange 22

which is extended between strip 19 and the wall 16 and toward channel 21. A roofing sheet 23 is extended between strip 19 and the wall 16 and has a flange 24 corresponding with flange 9 which is seated in the channel 22. Strip 19 is fastened to the wall by means of suitably located nails 25 or the like and the inturned portion 26 of the flashing strip 15 is held to strip 19 by screws 27 or the like extending upwardly into the strip 19. Obviously with an arrangement such as shown in Fig. 3 a roofing sheet and a flashing strip can be joined without danger of leakage.

Where opposed roofing sheets 28 and 29 are to be joined on a hip roof, the two sheets are formed at their upper longitudinal edges with upwardly extended flanges 30. A strip 31 of wood or the like having spaced channels 32 is fastened on the hip portion of the roof structure and these channels 32 receive the flanges 30 on the two sheets 28 and 29. A channelled strip 33 is fitted snugly on and embraces the strip 31 and has side portions 34 held to the respective sides of strip 31 by screws 35 or the like. From these side portions are extended longitudinal flanges 36 which are extended inwardly between the strip 31 and the respective roofing sheets 28 and 29 so as to project toward and close to the flanges 30.

Where siding sheets 33' are to be connected to roof sheets 34' or the like, the parts could be arranged as shown for example in Fig. 5 wherein the siding strip has an outwardly extended flange 36' projecting into a channel 37 in a strip 38. The roofing sheet 34' is extended downwardly along the outer side of strip 38 and then under the strip, as at 39 where it is fastened by screws 40 or the like. A flange 41 is extended upwardly from the portion 39 between strip 33' and the wall structure 42. Thus the assembled parts form a joint which is waterproof and windproof as will be obvious. It is to be understood of course that strip 38 is to be attached to the wall 42 by nails 43 or other suitable fastening means.

Obviously various other modifications of this joint could be used. In every case the wooden coupling strip is completely encased by the metal sheets and the supporting structure to which it is attached so that it is thus protected from moisture which otherwise might rot it and cause rapid deterioration of the roof. The fastening means 14 are all located at points where moisture will not be able to flow into the joint because these fasteners are located out of the path of flowing water when the roof is properly laid.

While the improvements are designed primarily for use in connection with metal roofs, it is to be understood, as before stated, that they can be used for other purposes. Among these uses are the connection of sheets forming metal ceilings, the connection of metal sheets forming house sidings, etc. Such uses will all be obvious.

What is claimed is:

1. The combination with an attaching strip having a channel extending thereinto and longitudinally thereof, said strip being cut away between the channel and one side, and means extending through the strip for fastening the channelled side of the strip to a supporting structure, of a metal sheet having a longitudinal flange seated in the channel, a metal sheet having a portion embracing and fitted snugly on the strip and provided with a flat longitudinal flange extending between the first-named sheet and the strip and toward the first-named flange, said embracing sheet overlying and concealing the strip-fastening means, and means for fastening said embracing sheet to the strip at a point out of line with the channel.

2. The combination with a metal sheet having a longitudinal flange extending outwardly therefrom, a second metal sheet having a channelled portion and a flat flange extending from the said channelled portion and extending toward the first-named flange, of a strip embraced by the channelled portion, said strip having a longitudinal channel proportioned to receive the first-named flange, and means extending through the strip for fastening the strip to a supporting structure, said strip constituting means for binding the second-named flange onto the sheet of the first flange, said second metal sheet constituting means for overlying and concealing the strip-fastening means.

3. The combination with a structure having a flat surface, of metal sheets mounted on said surface, one of said sheets having a longitudinal channelled portion and a flat inturned flange at one edge of the channelled portion, the other sheet having an outwardly extended flange extending across the first-named flange, an attaching strip engaging the supporting structure and embraced by and fitted snugly within the channelled portion, said strip being proportioned and positioned to bind the inturned flange of one sheet upon the other sheet, a strip fastening means extending through the strip, there being a longitudinal channel in the strip proportioned to receive and provide a seat for the outwardly extended flange, said channelled sheet constituting means for overlying and concealing the fastening means.

4. The combination with a structure having a flat surface, of metal sheets mounted on said surface, one of said sheets having a longitudinal channelled portion and a flat inturned flange at one edge of the channelled portion, the other sheet having an outwardly extended flange extending across the first-named flange, an attaching strip engaging the supporting structure and embraced by and fitted snugly within the channelled portion, fastening means extending through the strip, said strip being proportioned and positioned to bind the flat inturned flange of one sheet upon the other sheet, there being a longitudinal channel in the strip proportioned to receive and provide a seat for the outwardly extended flange, and means remote from the plane occupied by the sheet for fastening the channelled portion of one of the sheets to the strip, said channelled sheet overlying and concealing the strip-fastening means.

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