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FLASHING FOR CORRUGATED BUILDINGS

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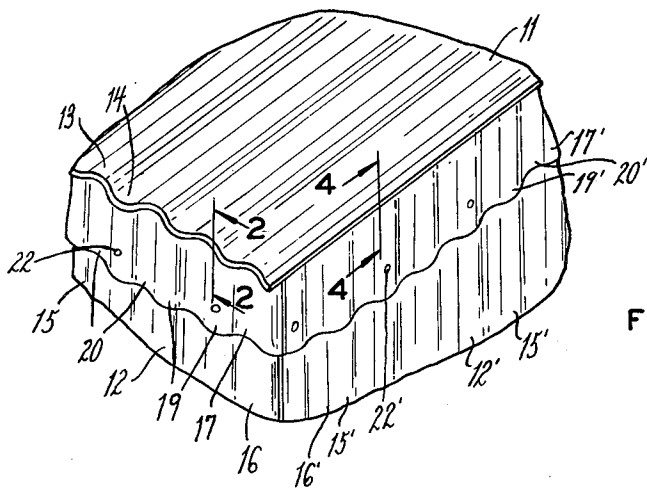


FIG. 1.

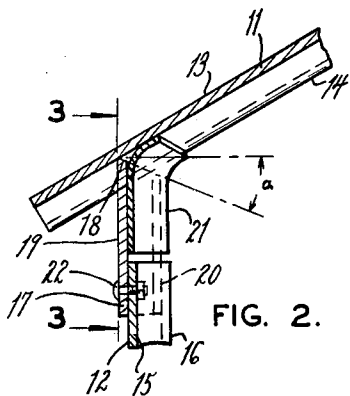


FIG. 2.

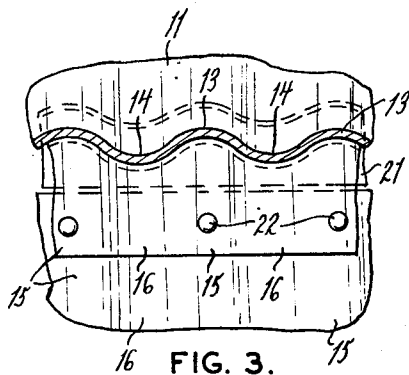


FIG. 3.

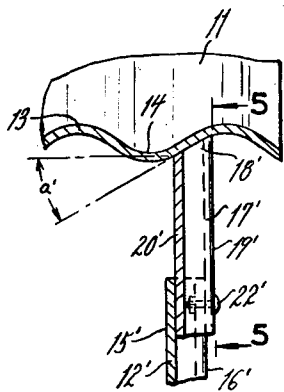


FIG. 4.

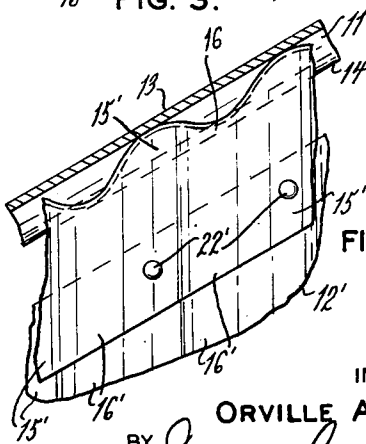


FIG. 5.

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FLASHING FOR CORRUGATED BUILDINGS

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3 Claims. (Cl. 189—1)

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This invention relates to improvements in flashing corrugated buildings, and more specifically, relates to the flashing of joints between roof and side walls of structures made of corrugated sheets, such as cement-asbestos board.

Corrugated materials of the class mentioned are well adapted for use in industrial structures, primarily because of their easy erection. However, the problem of flashing the joints between roof and side walls of buildings so constructed has been a serious one. The customary method of flashing is to bend a strip of soft lead, attach it under the eaves and to the walls, and then beat it into the troughs of the corrugations with a hammer. Needless to say, this method is expensive from the standpoint of both material and labor required.

An object of this invention is to devise an inexpensive, easily installed flashing between the roof and side walls of corrugated structures, whose appearance will conform to that of the structure.

Another object of this invention is to utilize strips of the corrugated sheet material as a flashing, together with a simple sealing strip.

Another object of this invention is to eliminate hand-forming of flashings, and to achieve a substantial degree of prefabrication.

With these and other objects, which will be evident from this specification, in view, this invention consists of the construction and novel combination and arrangement of the parts hereinafter described, illustrated in the accompanying drawings, and set forth in the claims hereto appended. It should be understood that various changes in the form, proportion and detail of construction, within the scope of the claims, may be resorted to without departing from the essence of the invention or sacrificing any of the advantages thereof.

In the drawings:

Fig. 1 is a perspective view of a corner of a corrugated building, illustrating the application of my invention.

Fig. 2 is a sectional view taken along line 2—2 of Fig. 1.

Fig. 3 is a sectional view taken along line 3—3 of Fig. 2.

Fig. 4 is a sectional view taken along line 4—4 of Fig. 1.

Fig. 5 is a sectional view taken along line 5—5 of Fig. 4.

I refer to the eave shown at the left in Fig. 1 as the horizontal eave, and that shown to the right as the sloping eave.

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In the drawings, the horizontal eave is that marking the juncture of corrugated sloping roof sheet 11 and the vertically corrugated wall sheet 12.

These have similarly spaced corrugations and are so arranged that the crests 13 and troughs 14 of roof sheet 11 correspond respectively in lateral position with the outward-extending crests 15 and inward-extending troughs 16 of wall sheet 12.

In order to flash the gaps between the upper edge of wall sheet 12 and the lower surface of roof sheet 11, I apply a corrugated strip 17 of the same material and overlapping wall sheet 12. Said strip's upper edge 18 is sawed from its outward-extending crests 19 to its inward-extending troughs 20 (or vice versa) at an angle α , hereafter described.

As shown in Fig. 3, the effect of sawing strip 17 at such an angle is to give its upper edge 18 a somewhat scalloped outline, the size of such scallops varying with the angle at which sawed. This angular sawing of the corrugated material is the very essence of my invention.

Flexible sealing strip 21, which may be of building felt or other suitable material, is cut to a corresponding outline and cemented or otherwise adherently attached to and on the inner side of upper edge 18 so that it extends beyond such edge any distance convenient for its function. I usually permit such sealing strip to extend beyond edge 18 about $\frac{3}{4}$ " but the exact amount depends upon the size of corrugations and, to some extent, upon the preference of the builder.

In use, the flashing strip 17, with sealing strip 21 mounted thereon, is applied to the joint so that it fits in the corrugations of wall sheet 12. With sealing strip 21 bent inward against the overlapping roof corrugations, flashing strip 17 is pushed upward so that its crests 19 and troughs 20 along upper edge 18 make a snug joint with the respective crests 13 and troughs 14 of roof sheet 11. It is then attached to side wall sheet 12 in any convenient manner as with bolts 22.

Using dimensionally similar sheets for roof and side walls, and solving for angle α in Fig. 2, I have determined the following simple formula:

$$\alpha = 45^\circ - \frac{\text{slope angle}}{2}$$

where the slope angle is that angle which the roof makes with the horizontal, and the side walls are vertical.

For the application of my invention to the sloping eave, reference is made to Figs. 1, 4 and 5.

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Wall sheet 12', has outwardly-extending crests 15' and inward-extending troughs 16', being of the same proportions as roof sheet 11 with its corresponding crests 13 and troughs 14.

The average slope between the crests 13 and troughs 14 is not great; in standard corrugated cement-asbestos board the pitch of the corrugations is 4.2" while the depth from crest to trough is only 1½", exclusive of material thickness. I have found that the variation in curvature may be disregarded or sufficiently compensated for if roof sheet 11 is so located with reference to side wall sheet 12' that the latter lies approximately one material thickness inward of midway beneath a crest 13 and a trough 14 (I assume the alignment of side wall sheet 12' with the direction of corrugation, as will follow in all cases where the side walls are normal to the front walls). Flashing strip 17', cut obliquely to correspond with the slope of the roof 11, is made of the same corrugated material, having crests 19' and troughs 20' adapted to nest upon the corresponding outward crests 15' and inward troughs 16'. As with strip 17, the upper edge 18' of strip 17' is sawed at an angle α , said angle being determined by inspection in each case, as one which will permit a relatively snug fit against the slope of the overlying corrugations of roof sheet 11 while nested over the vertical corrugations of side wall sheet 12'. Having been so fitted, it is attached in place as by bolts 22' or in any other convenient manner.

In the case of both horizontal and sloping eaves, I call the joints between flashing strips 17 and 17' and roof sheet 11, following ordinary calking practice.

From the foregoing description, it is apparent that the flashing strips employed, for both the horizontal eaves and the sloping eaves, are essentially extensions of the side walls, their patterns of corrugations being coincident with those of the side walls. Therefore, if the upper edges of the side wall sheets are precisely sawed to the same angular specifications as are here given for the flashing strips 17 and 17', no separate flashing strips would be required.

Further generalizing, it is apparent that one essential element of my invention as applied to horizontal eaves is to so angularly saw a corrugated side wall that its edge will slope in a direction opposite the slope of the roof. Thus, in case of a roof which did not overhang, but instead sloped backward from a horizontal eave, the roof crests would be aligned laterally with the inward-extending troughs and the angle of cut would be downward from inside to outside.

Other changes may also be made in the construction, arrangement and disposition of the

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various parts of the invention, within the scope of the appended claims, without in any degree departing from the field of the invention, and it is meant to include all such within this application.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. In a building, a vertically corrugated wall element, and a corrugated sloping roof overhanging the wall element and corrugated to the same pitch and depth as the wall element, the crests of the roof corrugations being aligned with the outward-extending crests of the wall element corrugations, the wall element terminating in a wavy upper margin nesting against the corrugated under-surface of the roof and lying entirely in a plane inclined from the horizontal oppositely to the slope of the roof at an angle equal to 45° minus half the slope of the roof.

2. In a building, a wall, a corrugated sloping roof overhanging the wall, and a flashing strip vertically corrugated to the same pitch and depth as the roof corrugations and secured to the upper edge of the wall with its outward-extending crests aligned with the crests of the roof corrugations, the said flashing strip having a wavy upper margin nesting against the corrugated under-surface of the roof, the said margin lying entirely within a plane inclined from the horizontal oppositely to the slope of the roof at an angle equal to 45° minus half the slope of the roof.

3. In a building, a vertically corrugated wall, a corrugated sloping roof whose corrugations have the same pitch and depth as the wall corrugations, the crests of the roof corrugations being aligned with the outward-extending crests of the wall corrugations, and a flashing strip secured to the upper edge of the wall and vertically corrugated to the same pitch and depth as the roof corrugations, the flashing strip portion above the upper edge of the wall having a wavy upper margin nesting against the corrugated under-surface of the roof, the said flashing upper margin lying entirely within a plane inclined from the horizontal oppositely to the slope of the roof at an angle equal to 45° minus half the slope of the roof.

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