

June 11, 1935.

J. W. FALL

2,004,198

ROOF CONSTRUCTION

Filed March 29, 1933

2 Sheets-Sheet 1

FIG 1

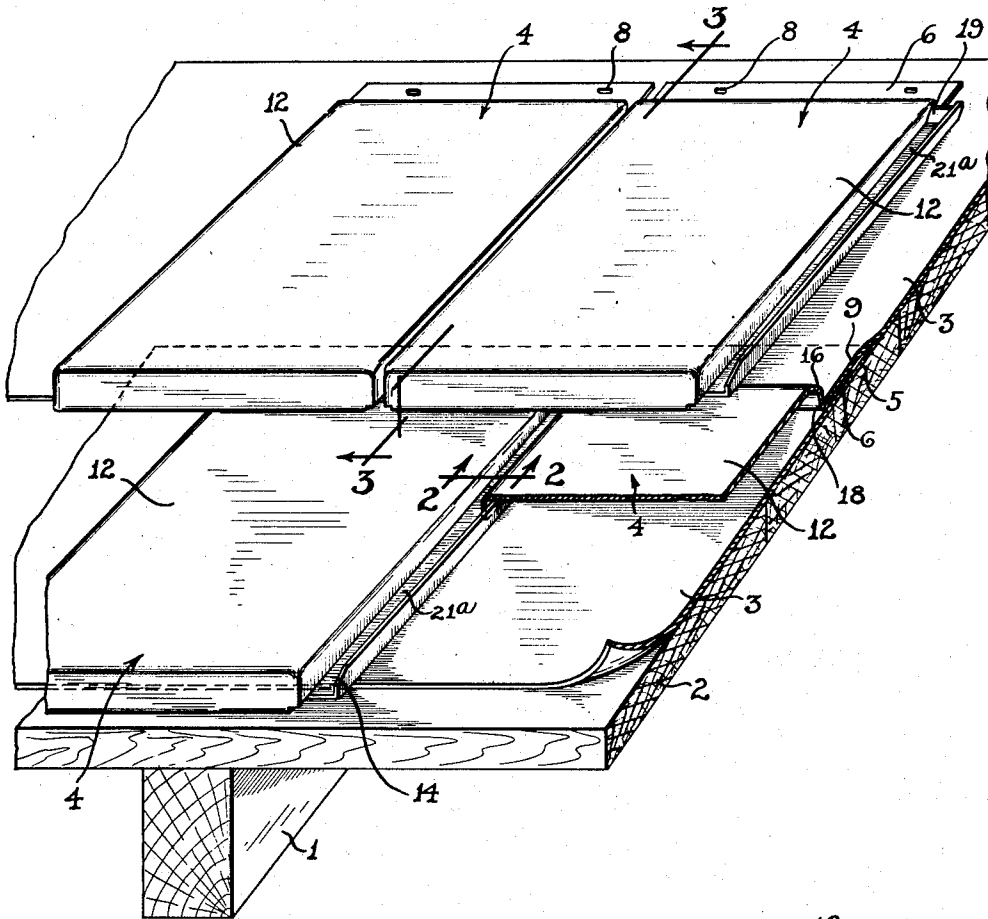
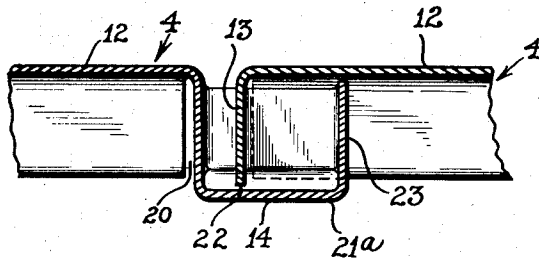


FIG 2



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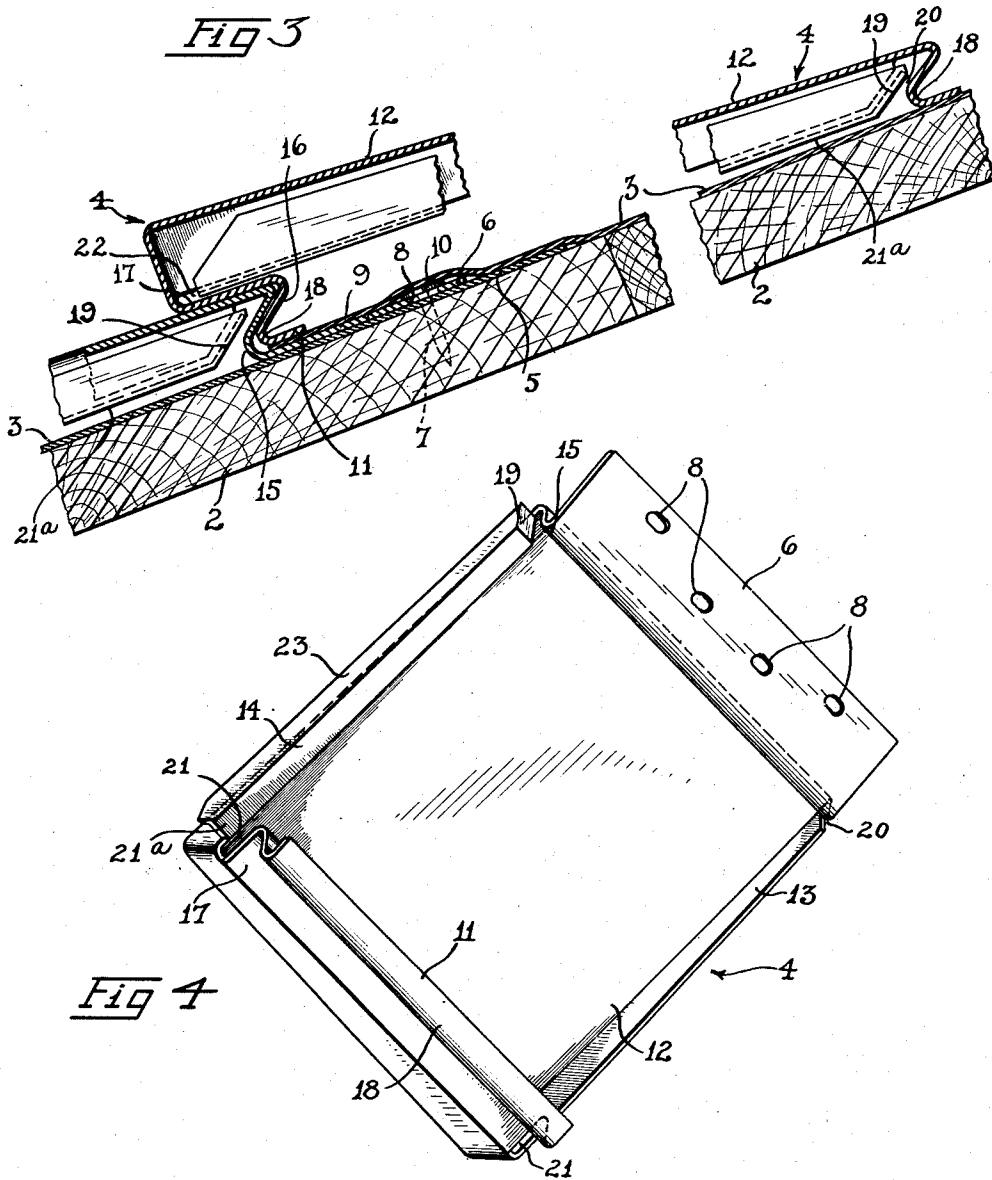
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2 Sheets-Sheet 2



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2,004,198

ROOF CONSTRUCTION

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10 Claims. (Cl. 108—17)

My invention relates to building construction elements, and more particularly to sheet metal shingles, siding, paneling, etc. These metal parts are preferably made of steel porcelain enameled, but other non-corroding metals can be used, or other finish supplied. In the past where metal shingles have been used the upper portion of the shingle only was attached to the roof, and no means provided to support the lower end of the shingles. Consequently, such shingles would tend to loosen or leave openings due to warpage, etc.

One of the objects of my invention is to provide a sheet metal shingle construction in which the lower overlapping edges of an upper row of shingles will be held down in position by engagement with the secured upper edge of a lower row of shingles, thus preventing the shingles from warping and sticking up away from the other shingles and allowing rain and snow to get under them.

A further object of my invention is to provide a sheet metal shingle construction which will permit of lateral adjustment between adjacent shingles, still maintaining a weatherproof connection.

Another object of my invention is to provide a sheet metal shingle construction in which the heads of the nails will be covered by a layer of roofing fabric and in which the lower edge of the roofing fabric will be clamped in position in applying the shingles, thus cushioning the connection between the shingles to take care of expansion and contraction due to changes in temperature.

Further objects and advantages of the invention will be apparent from the description and claims.

In the drawings, in which an embodiment of my invention is shown:

Figure 1 is a perspective view showing a number of sheet metal shingles in place;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 1; and

Fig. 4 is a perspective view of the lower side of the sheet metal shingle.

Referring to the drawings in detail, the construction shown therein comprises the rafters 1, the wooden sheathing 2, secured to the rafters, strips of roofing fabric, such as tar paper 3 secured to the sheathing, and a plurality of shaped sheet metal shingles 4 secured on top of the tar paper 3. The fabric 3 and the shingles are so

arranged that the upper edge 5 of a strip of fabric is held underneath the outwardly extending upper flanges 6 of a row of shingles, the shingle nails 7 being inserted through the holes 8 in the upper flanges 6 and driven through the tar paper 3 into the sheathing. The lower edge 9 of a strip of tar paper overlies the heads 10 of the shingle nails and is clamped down by the inwardly extending flanges 11 on the lower edges of the overlapping layer of shingles, so that all the nail heads are covered by tar paper.

The sheet metal shingles, excepting the ones at each end of a roll, are identical in construction except as to width. The end shingles have a turned-down portion overlapping the edge of the roof, and in the case of a valley between two roof portions the shingles are mitered, and that edge is turned downward to meet the roof. Each shingle comprises a flat, weather portion 12, a downwardly-extending flange portion 13 on one side which fits into a U-shaped flange or gutter portion 14 on the edge of an adjacent shingle, a receiving dovetail flange 15 on the upper edge of the shingle and a Z-shaped flange 16 on the lower edge of the shingle in said Z-shaped flange comprising an inwardly returned overlapping bearing portion 17 for engagement with the upper edge of the weather surface of the underneath shingle and having a projecting dovetail portion 18 for engagement with the receiving dovetail portion 15 of the underneath shingle. The entire outer surface of the portion 12 may be termed a weather surface for the purposes of this specification.

The flange 15 forms a pocket to receive the projecting portion 18 of the Z-shaped flange 16 of an adjacent shingle, and flange 16 forms a pocket to receive the upper edge of the weather surface portion 12 of an adjacent shingle. These pockets are located under the weather surface of the shingles. In other words, the Z-shaped flange 16, including the portion 17, forms an inwardly extending hook portion which is arranged to hook under the weather surface edge of an adjacent shingle and thereby retain the shingles snugly in overlapping relation.

The engagement of the downwardly-extending flange 13 with the U-shaped flange 14 permits lateral adjustment of the shingles with respect to each other so that a row of shingles may be laid down on top of the tar paper and lateral adjustment of this row of shingles made to make them extend the entire length of roof necessary to be covered before nailing them down. The shingles of one row are staggered with respect

to the shingles of the adjacent rows and half width shingles are provided with turned-down edges at one side to secure flush edge construction.

5 The upper end of the channeled flange is blocked, as indicated at 19, to provide a further weatherproof feature of construction to prevent rain or snow which might beat up on the lower edge of the shingle from getting underneath the layer of shingles.

10 A clearance space 20 is provided at the corner between the downwardly-extending side flange 13 and the dovetail portion 15 of the upper flange to provide clearance for this weather-stop at the upper edge of the channel portion 14. Clearance 21 is also provided at the corner where the downwardly-extending flange 13 approaches the lower Z-shaped flange 16 to provide for the reception of the bottom portion 21a of the U-shaped channel 14. Clearance is also provided between the end edge 22 of the Z-shaped channel and the downwardly-extending side flange to permit the entry of the upwardly-extending side 23 of the U-shaped channel flange.

25 Some of the holes 8 in the upper flange or nailing strip 6 for the passage of the shingle nails 7 are out of alignment with other nail holes to take care of the situation where there might be a joint between the sheathing at the nailing line.

30 It will be seen that the construction described provides a sheet metal roof in which the shingles are held against any tendency to warp, thus making them weatherproof.

Further modifications will be apparent to those skilled in the art and it is desired, therefore, that the invention be limited only by the prior art and the scope of the appended claims.

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

40 1. A sheet metal shingle construction comprising upper and lower shingles, the lower end of the upper shingle having an inwardly returned portion overlying the upper edge of the lower shingle, said shingles having interengaging means adjacent said edges and underneath both said shingles when interengaged for holding the lower edge of the upper shingle down, and a nailing portion extending outwardly of said upper edge and located below said interengaging means.

50 2. A sheet metal shingle construction comprising upper and lower shingles, the lower edge of said upper shingle having an inwardly returned portion overlying the upper edge of the lower shingle, said shingles having interengaging means adjacent said edges and underneath both shingles when interengaged for holding the lower edge of the upper shingle down, and said interengaging means comprising interengaging dovetail portions on said shingles, and flanges on said dovetail portions, said flanges arranged to clamp roofing fabric therebetween by said interengagement.

60 3. A sheet metal shingle construction comprising upper and lower shingles, the upper shingle having an overlapping portion on its lower edge overlying the upper edge of the lower shingle, said shingles having interengaging means adjacent and below the edge of said lower shingle for holding the lower edge of the upper shingle down and said interengaging means having cooperating clamping flanges, for clamping a roofing fabric therebetween during assembly, the clamping flange on the upper edge of the lower shingle being extended to provide a nailing strip lying underneath said roofing fabric whereby the roofing fabric covers the nail heads.

4. A sheet metal shingle construction of the character described comprising substantially flat rectangular sheet metal members having downwardly extending flanges on all edges, the side flanges forming interlocking members between adjacent shingles arranged to allow overlapping lateral adjustment and to prevent moisture passing therebetween and the end flanges interlocking entirely underneath the weather surface portion of each shingle to retain the shingles snugly in end overlapping relation.

5. A shingle of the character described comprising a shallow sheet metal box having its under side open, both end walls forming pockets extending under the weather surface portion of said shingle to receive outwardly extending portions of adjacent shingles of the same character, one of the side walls forming a gutter arranged to receive the opposite side wall of an adjacent shingle in laterally adjustable overlapping relation therein.

6. A shingle of the character described comprising a shallow sheet metal box having the edge of its weather surface portion extending beyond the upper end wall, a nailing strip on said end wall and extending beyond said weather surface edge, and an inwardly extending hook portion adjacent the lower end wall and arranged to hook under the said weather surface edge of an adjacent shingle and thereby retain the shingles snugly in overlapping relation, said hook having a portion for cooperation with said nailing strip to clamp roofing fabric therebetween.

7. A metallic shingle of the character described comprising a substantially rectangular metal sheet with its edges formed to provide a shallow box-like structure, an outwardly extending nailing flange on one end of said shingle and substantially in alignment with the open side of said box, an inwardly extending flange on the opposite end and substantially in alignment with said open side, said last flange being formed downwardly at a distance inwardly from said opposite end, whereby in the normal act of building construction said last flange will rest on the surface of an adjacent shingle and said downwardly extending portion will engage the forward end of said adjacent shingle below the surface thereof.

8. A sheet metal shingle construction comprising upper and lower shingles, the under face of the lower portion of the upper shingle sloping upwardly from the lower edge of the shingle and overlapping and lying snugly against the sloping upper face of the upper portion of the lower shingle, the upper portion of the lower shingle being bent to provide an overhanging ledge portion, and a nailing strip portion, the upper shingle having a portion bent to hook underneath said overhanging ledge portion.

9. A sheet metal shingle construction comprising upper and lower shingles, the under face of the lower portion of the upper shingle sloping upwardly from the lower edge of the shingle and overlapping and lying snugly against the sloping upper face of the upper portion of the lower shingle, the upper portion of the lower shingle being bent to provide an overhanging ledge portion, and a nailing strip portion, the upper shingle having a portion bent to hook underneath said overhanging ledge portion, and a portion overlying said nailing strip portion.

10. A sheet metal shingle construction comprising upper and lower shingles, the under face of the lower portion of the upper shingle sloping

upwardly from the lower edge of the shingle and overlapping and lying snugly against the sloping upper face of the upper portion of the lower shingle, the upper portion of the lower shingle being bent to provide an overhanging ledge portion, and a nailing strip portion, the upper shingle having a portion bent to hook underneath said over-

hanging ledge portion, and a portion overlying said nailing strip portion and spaced therefrom to enable a sheet of roofing material to be held between said nailing strips of said overlying portion.

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