

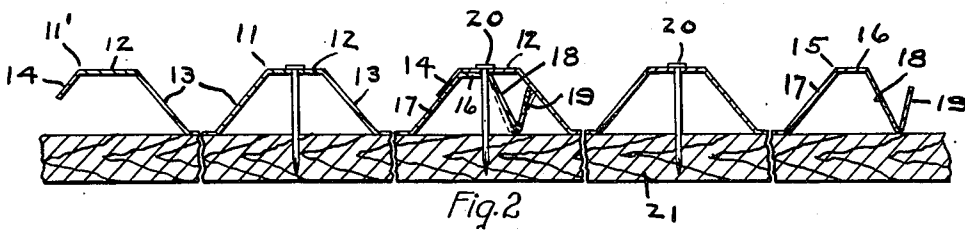
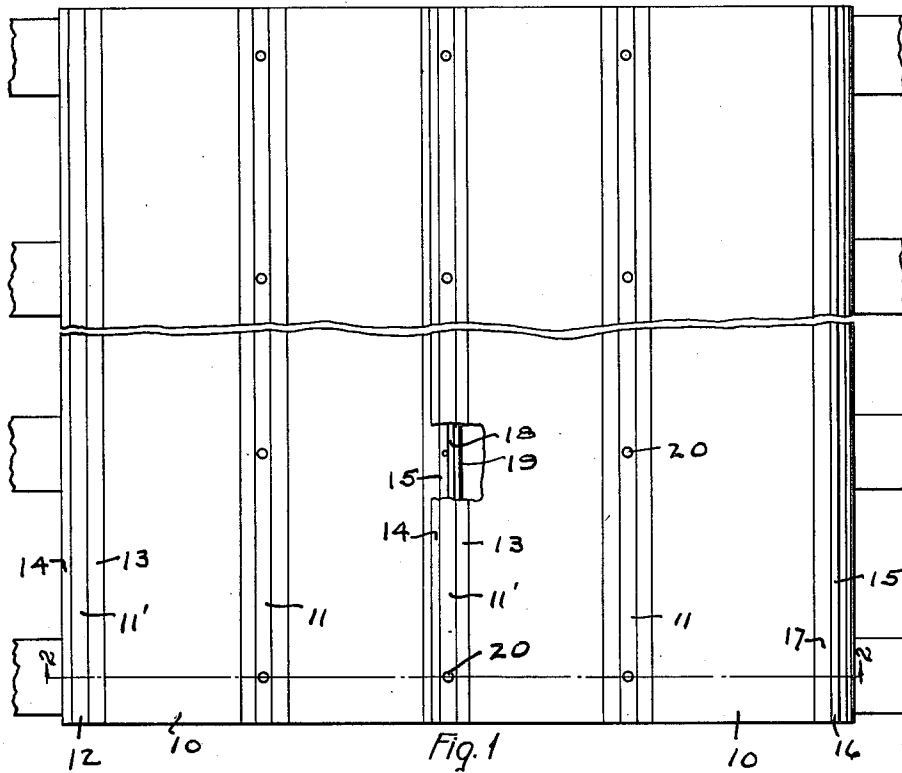
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METAL ROOF

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METAL ROOF

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3 Claims. (Cl. 108—18)

This invention relates to the art of roofs and particularly to a metal roof. It is a primary object of my invention to provide sheets of metal so formed that they may be readily overlapped one on the other and secured to the sheathing of a roof so as to form a water tight structure free of any possibility of leaks at the laps and also permitting ready attachment and securing to the sheathing.

A further primary object of my invention is to provide a lap joint which will prohibit the start of capillary action along the laps whereby water will not tend to enter under the laps at least under all ordinary circumstances, but in the event of an unusual rain, will then provide for an auxiliary water seal which is automatically secured by nailing the sheets to the roof sheathing.

Other objects and advantages of my invention are to be found in the fact that I secure a material saving in material for the same roof covering and also provide an extremely neat and durable structure.

Further advantages will be apparent to those versed in the art in the following description of my invention shown in the preferred form in the accompanying drawing, in which

Fig. 1 is a top plan view of a portion of the roof embodying my invention, and

Fig. 2, a vertical section on the line 2—2 in Fig. 1.

Like characters of reference indicate like parts in the two views.

The roof is made up from a plurality of sheets generally designated by the numeral 10, each interchangeable with the other both as to appearances and as to dimensions. Each sheet 10 is formed to have longitudinal ridges 11 extending thereacross in parallel spaced alignment. Each ridge is preferably formed to have an upper area parallel to the major portion of the sheet. From that upper area indicated by the numeral 12, Fig. 2, the metal is sloped symmetrically from each side downwardly to the major part of the sheet.

The ridges 11 are so arranged on the sheet that one of the ridges is formed along a longitudinal edge of the sheet, reference being now had specifically to that ridge 11', Fig. 2, which would be along the left hand edge in the present example. It is to be noted in this edge ridge 11', the upper area 12 is made to have the same width as the area 12 in the other ridges and that from the area 12 the slope 13 extends downwardly into the major portion of the sheet. The distinction,

however, over the other ridges is that on the outer edge, the sloping area 14 extending downwardly and outwardly from the upper area 12 is cut off much above the plane of the sheet proper so as to leave only a relatively short downwardly turned leg.

Now along the other longitudinal edge of the same sheet, I provide a ridge of a slightly different formation. Referring again to Fig. 2, this ridge 15 has an upper area 16 in the same plane as that of the areas 12 in the other ridges, but the width of this area 16 is reduced from that of the areas 12. From the inner side of the area 16, the metal slopes downwardly by the leg 17 at the same angle as does the leg 13, for example, corresponding to the same sloped portions in the other ridges. However, from the outer edge of the area 16, I slope the metal downwardly by a leg portion 18 at a sharper slope to have the lower end of that leg 18 terminate in the plane of the major portion of the sheet. From the lower end of the leg 18 I bend the metal sharply upwardly to have the upturned and outwardly sloped leg 19, the upper end of which terminates below the level of the tops of the various ridges 11 and, of course, the area 16.

The proportions of the area 16, slope of the leg 18, slope of the leg 19, and length of the leg 19, are made such that when the next adjacent sheet is laid on the roof to have the ridge 11' overlap the ridge 15, the leg 14 will lap down over the sloped leg 17 and be in actual contact therewith over the upper portion thereof. Also the under side of the flat portion 12 will be in contact with and rest on the flat portion 16. The upper end of the leg 19 will bear against the under side of the slope 13 in a yielding manner. Now to secure the two sheets in position along this joint formed by lapping as just described, nails 20 are driven down through the flat portion 12, through the portion 16 and on down into the sheathing 21 thereunder. In driving the nails 20 in, the heads thereof will compressively draw the upper ridged portion 12 against the under ridge portion 16 tending to cause the legs 18 and 19 to move from the dash line position, Fig. 2, to a position somewhat as indicated by the solid lines, thereby increasing the pressure of the upper end of the leg 19 against the under side of the leg 13. The sheet is further secured to the roof sheathing 21 by driving nails 20 through the flat portions of the other ridges.

Now in reference to the joint between adjacent sheets of metal as I have above described, it is to be noted that the lower end of the leg 14 is

spaced a considerable distance upwardly along the sloped leg 17 from the major plane of the sheet 10 so that before there would be any tendency for water to enter under the leg 14 up over the leg 17, the water would have to be of sufficient depth on the roof to have its level at the under edge of the leg 14. Of course, where the roof is properly sloped, any rain short of a cloudburst would not cause water to pile up that high. In the structures heretofore employed, where the leg 14 was continued on down to the bottom of the under leg 17, any slight rain would permit water to cover over the lower end of the leg 14 and thus a capillary action would be set up between the two legs tending to cause the water to travel upwardly therebetween. By reason of the shorter leg 14, I prevent that capillary action under ordinary conditions.

Now for any reason should the capillary action be induced under the leg 14 and water travel thereunder, the V-gutter formed between the legs 18 and 19 will catch that water as it enters and flows down the leg 18 and cause it to drain out at the lower end of the sheet. Any water tending to travel on over under the flat portion 12 and then down the leg 13 is intercepted by the upper end of the leg 19 bearing against the leg 13 so as to again direct water into the gutter. A further advantage is pointed out in that by reason of the spring-like pressure of the leg 19 of the one sheet against the sloped leg 13 of the other sheet, the joint is maintained in a tight solid manner even though sun may expand the nails and the roof itself, since the resiliency of the legs 18 and 19 is such to take up such expansion.

While I have herein shown and described my invention in the form as preferred by me, it is obvious that structural changes may be made without departing from the spirit of the invention, and I, therefore, do not desire to be limited to that precise form beyond the limitations as may be imposed by the following claims.

I claim:

1. A roof comprising a plurality of side-lapped metal sheets having raised ridges formed along the lapping edges, the ridge on the underlapping sheet edge being formed by an inner leg sloping upwardly and outwardly from the plane of the sheet to an upper flat portion parallel with the sheet, an outer leg sloping downwardly and outwardly from the outer edge of said flat portion to the plane of the sheet continuing around upwardly and outwardly therefrom to terminate in a short upturned leg, the end of which is below the elevation of said flat portion; the ridge on the overlapping sheet edge being formed to have a leg sloping upwardly and outwardly from that sheet back over the outer edge of said short leg to join an outer edge of a single flat portion extending across to, on and over the flat portion of the first ridge, from the other edge of which single portion extends a short downturned leg along over the said inner leg of the first ridge, the said outer edge of the single flat portion being spaced beyond the corresponding edge of the flat portion thereunder approximately above the lower end of said outer leg of the first ridge, and a nail passed through the two flat portions into an underlying

roof carrying member, pulling the overlapping ridge downwardly into compressive contact with the underlapping ridge which tends to spread laterally thereunder.

2. A roof comprising a plurality of side-lapped metal sheets having raised ridges formed along the lapping edges, the ridge on the underlapping sheet edge being formed by an inner leg sloping upwardly and outwardly from the plane of the sheet to an upper flat portion parallel with the sheet, an outer leg sloping downwardly and outwardly from the outer edge of said flat portion to the plane of the sheet continuing around upwardly and outwardly therefrom to terminate in a short upturned leg, the end of which is below the elevation of said flat portion; the ridge on the overlapping sheet edge being formed to have a leg sloping upwardly and outwardly from that sheet back over the outer edge of said short leg to join an outer edge of a single flat portion extending across to, on and over the flat portion of the first ridge, from the other edge of which single portion, extends a short downturned leg along over the said inner leg of the first ridge, the said outer edge of the single flat portion being spaced beyond the corresponding edge of the flat portion thereunder approximately above the lower end of said outer leg of the first ridge, and a nail passed through the two flat portions into an underlying roof carrying member, pulling the overlapping ridge downwardly into compressive contact with the underlapping ridge which tends to spread laterally thereunder; said short leg bending sharply from said outer leg in said first ridge, said bend shifting outwardly as said nail is seated.

3. A roof comprising a plurality of side-lapped metal sheets having raised ridges formed along the lapping edges, the ridge on the underlapping sheet edge being formed by an inner leg sloping upwardly and outwardly from the plane of the sheet to an upper flat portion parallel with the sheet, an outer leg sloping downwardly and outwardly from the outer edge of said flat portion to the plane of the sheet continuing around upwardly and outwardly therefrom to terminate in a short upturned leg, the end of which is below the elevation of said flat portion; the ridge on the overlapping sheet edge being formed to have a leg sloping upwardly and outwardly from that sheet back over the outer edge of said short leg to join an outer edge of a single flat portion extending across to, on and over the flat portion of the first ridge, from the other edge of which single portion, extends a short downturned leg along over the said inner leg of the first ridge, the said outer edge of the single flat portion being spaced beyond the corresponding edge of the flat portion thereunder approximately above the lower end of said outer leg of the first ridge, and a nail passed through the two flat portions into an underlying roof carrying member, pulling the overlapping ridge downwardly into compressive contact with the underlapping ridge which tends to spread laterally thereunder, the nail on being centered in the upper portion passing through the lower portion adjacent its outer edge.

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