June 17, 1930. E. TALMAGE 1,763,870

METAL ROOF CONSTRUCTION

Filed April 2, 1928

Fig. 1.

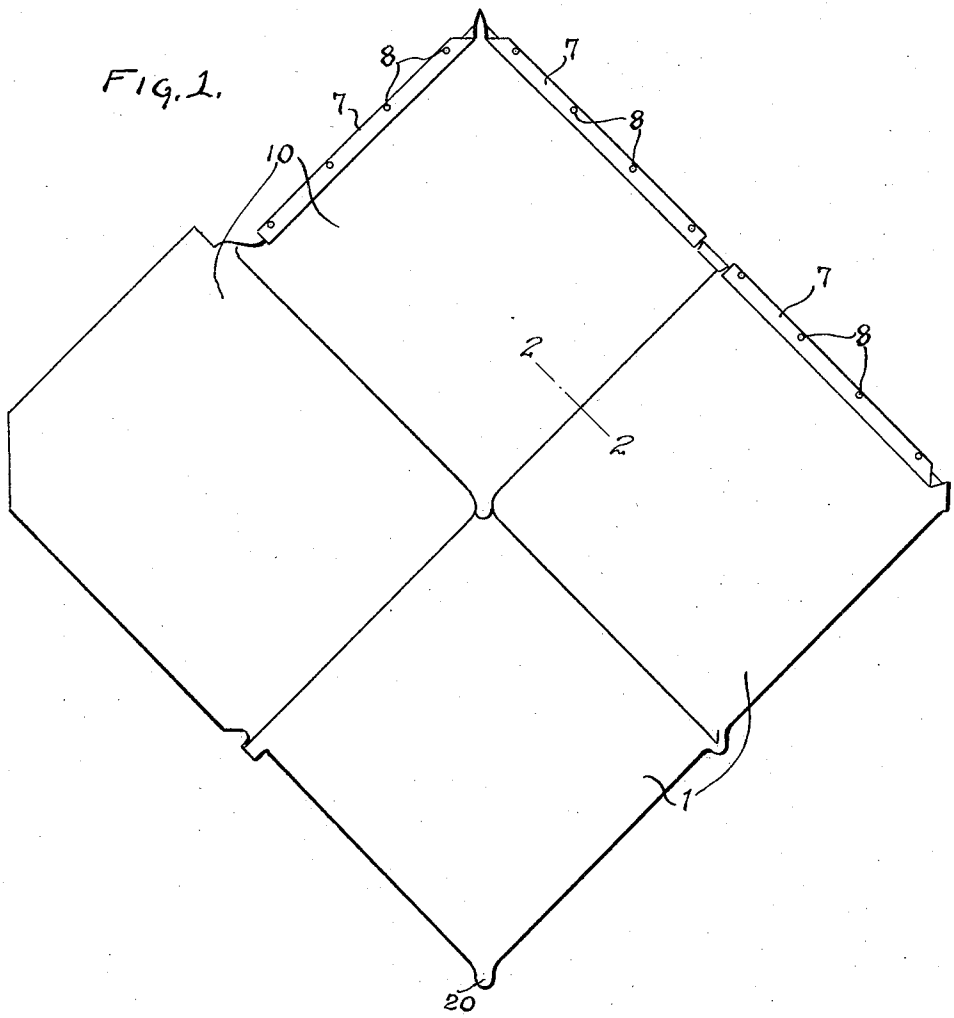
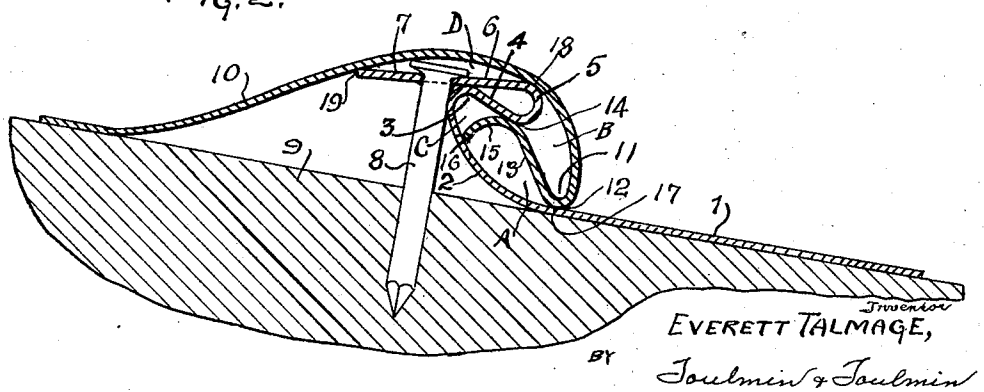


Fig. 2.



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UNITED STATES PATENT OFFICE

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METAL-ROOF CONSTRUCTION

Application filed April 2, 1928. Serial No. 266,801.

My invention relates to roofs and in particular to metal roofs.

It is the object of my invention to provide a roof which may be applied in sections, that will be self-draining both on the surface and at the joints, will be tight enough to prevent the entrance of moisture, snow and dirt and may be quickly and simply applied and easily removed so that it has a high salvage value.

In particular, it is the object of my invention to provide a roof joint that will prevent the leakage of water by capillary attraction, that will interpose a plurality of air spaces in the path of the water and a plurality of sharp edges yieldingly held together for forming a barrier or barriers to the passage of moisture, snow and the like.

I have found that the most effective means of preventing the movement of water by capillary attraction is to interpose alternate air spaces and sharp edges in close engagement one with the other.

It is a further object to provide a joint of such construction that one section of the roof will be yieldingly locked on the other.

Referring to the drawings:

Figure 1 is a plan view of a typical section consisting of four integral plates, a portion of which is partially formed;

Figure 2 is a section on the line 2—2 of Figure 1.

Referring to the drawings in detail, 1 refers to the lower of two sections, the upper edge of which is curved upwardly at 2 and it is then bent over in a direction down the roof at a sharp angle or inner curve as at 3, such portion directed downwardly being located at 4. It is then turned over upon itself in a loop or outer curve 5 so that the plate or free end 6 turned over projects beyond the angular portion 3 forming a nailing strip 7 through which nails 8 are inserted and driven into the roof 9. This gives the upper edge of the lower section the form of a sigmoid flexure.

The next section placed above the plate 1 is designated 10. The lower edge of this is bent upwardly to form an inner curve loop portion 11, the lower edge of which at 12 engages the surface of the plate 1 before it is curved up at 2. It is then bent sharply upwardly as at 13 where it engages the bottom of the strip 4 along a line marked 14 and then turns over and downwardly in an outer curved portion 15 engaging the upper side of the curved portion 2 of the plate 1 along a sharp edge 16. This gives the lower edge of the upper section the form of a sigmoid flexure.

Thus, a sharp line of engagment is formed between the loop 12 and the plate 1 at 17, between the curved portion 12 and the curved portion 15 along the line 16 and between the portion 4 and the portion 13 along the line 14. The strip 10 also engages along the line 18 on its under side with the upper portion of the loop of the plate 1.

A line of engagement is provided between the free end of the strip 7 and the under side of the plate 10 at 19.

Consequently, there are 5 sharp lines of engagement, each of which is separated from the other by air spaces, such air spaces being designated A, B, C and D.

The water film must pass these 5 sharp edges before it can reach the roof. The sharp edges destroy the surface tension and reduce the chances of water seeping in by capillary attraction.

The water must traverse the four air spaces, all of which are so arranged to drain downwardly down the roof.

It will be understood that, as in Figure 1, the plates may be made either in the four sections indicated which are formed into one integral structure to imitate shingles, or each shingle may be independently put on the roof. I prefer to arrange the shingles at an angle of 45 degrees to the ridge of the roof so that their edges are at a 45 degree angle. This facilitates drainage at the joints if any moisture should collect.

By placing four of these sections in one plate, it greatly facilitates the rapidity of laying the roof. In laying the roof I start at the bottom or lower edge of the roof along the eaves and build upwardly. At the bottom of the roof plate at the lower corner, I provide an overlapping finger 20 which seals the joints with the adjacent roof plates.

In Figure 1 the upper edge of one of the roof plates is left unfolded in order to show the form of the blank.

The yielding character of the upper plate 10 as it is bent along its edge provides a tight joint.

It will be observed that there are no portions of these two plates which lie flat against each other so that moisture can not travel between the plates, which has been the difficulty in metal roofs heretofore employed in the art.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions and uses.

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

1. In a roof construction, a lower plate having an upper edge which is bent upwardly looped backwardly towards the eaves of the roof and thence upwardly again towards the ridge pole of the roof so that the free edge thereof extends beyond the looped portions of the lower plate on the upper edge, nails projected through said projecting portion, and an upper roof plate having a lower looped edge arched upwardly to pass over the looped end and the looped edge of the lower plate until it passes downwardly to engage the surface of the lower plate below its looped upper edge and thence passes upwardly until it engages the bottom of the rearwardly projecting looped edge of the lower plate and thence passes downwardly until it engages the upper surface of the upwardly projecting portion of the upper edge of the lower plate whereby the yielding looped edges lock along sharp lines with spaced air spaces between the lines of contact.

2. In a roof construction, a lower roof plate having an upper locking edge consisting of an upwardly extending arcuate portion, a rearwardly extending looped portion and forwardly extending projecting plate through which nails are inserted to attach the plate to the roof and an upper plate having its lower edge arched over the nail heads and engaging the edges of the nailing plate and the rearward loop of the lower plate thence passing downwardly until the upper surface of the lower plate is engaged along a line and thence passing upwardly until the lower edge of the lower plate loop is engaged and thence passing downwardly again until the surface of the lower plate where it is curved upwardly is engaged, all of said engagements between the plates being along sharp lines with air spaces interposed therebetween.

3. In a roof construction, a lower roof plate having an upper locking edge consisting of an upwardly extending arcuate portion, a rearwardly extending looped portion and forwardly extending projecting plate through which nails are inserted to attach the plate to the roof and an upper plate having its lower edge arched over the nail heads and engaging the edges of the nailing plate and the rearward loop of the lower plate thence passing downwardly until the upper surface of the lower plate is engaged along a line and thence passing upwardly until the lower edge of the lower plate loop is engaged and thence passing downwardly again until the surface of the lower plate where it is curved upwardly is engaged, all of said engagements between the plates being along sharp lines with air spaces interposed therebetween, there being five lines of engagement and four air spaces interposed between said lines of engagement.

4. In a roof construction, a lower roof plate having an upper locking edge consisting of an upwardly extending arcuate portion, a rearwardly extending looped portion and forwardly extending projecting plate through which nails are inserted to attach the plate to the roof and an upper plate having its lower edge arched over the nail heads and engaging the edges of the nailing plate and the rearward loop of the lower plate, thence passing downwardly until the upper surface of the lower plate is engaged along a line and thence passing upwardly until the lower edge of the lower plate loop is engaged and thence passing downwardly again until the surface of the lower plate where it is curved upwardly is engaged, all of said engagements between the plates being along sharp lines with air spaces interposed therebetween, there being five lines of engagement and four air spaces interposed between said lines of engagement, said plates being so arranged that water on the roof will drain away from said air spaces and lines of engagement, said air spaces and lines of engagement being arranged at an angle to the ridge pole of the roof, and an overlapping finger located on the lowermost corner of the upper plate to overlap the joint between it and the adjacent lower plates.

5. In a roof construction, a roof plate having an upper edge bent in the form of a sigmoid flexure having an inner and an outer curve with the free end adapted to receive nails for the attachment of the plate to the roof, and an upper plate having its lower edge bent in the form of a sigmoid flexure having an inner and an outer curve, the outer curve of which is adapted to engage the outer curve of the first plate to form a substantially watertight roof connection therebetween.

6. In a roof construction, a roof plate having an upper edge bent in the form of a sigmoid flexure having an inner and an outer curve with the free end adapted to receive nails for the attachment of the plate to the roof, and an upper plate having its lower edge bent in the form of a sigmoid flexure having an inner and an outer curve, the outer curve of which is adapted to engage the outer curve

of the first plate and the inner curve adapted to receive the outer curve of the first flexure whereby there is formed a substantially watertight connection consisting of a plurality of lines of contact.

In testimony whereof, I affix my signature.

EVERETT TALMAGE.