No. 618,516. Patented Jan. 31, 1899.

J. S. MOYER.

METALLIC ROOFING.

(Application filed Aug. 17, 1898.)

(No Model.)

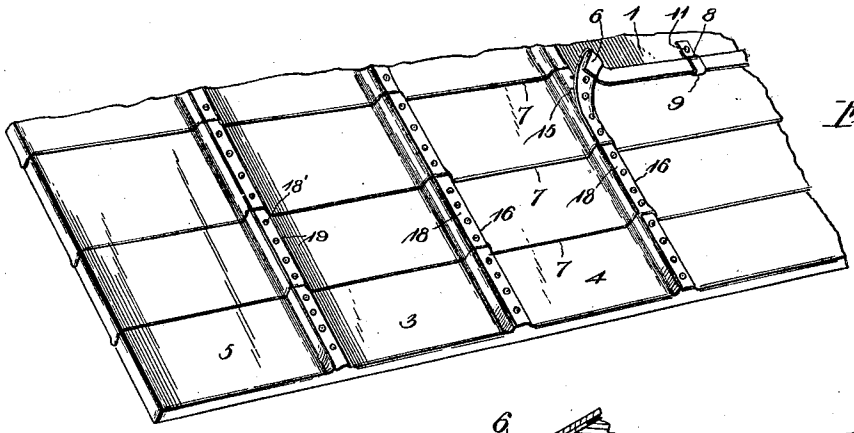


Fig. 1.

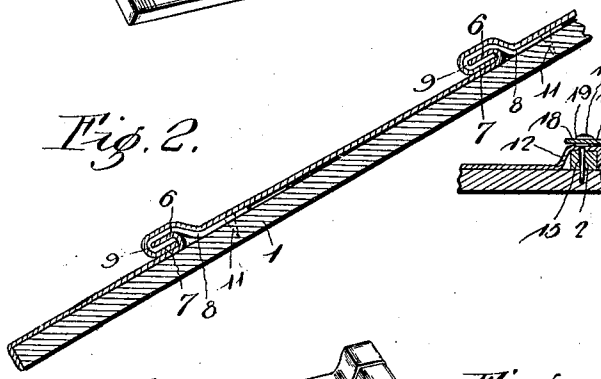


Fig. 2.

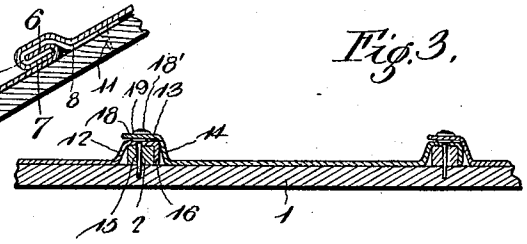


Fig. 3.

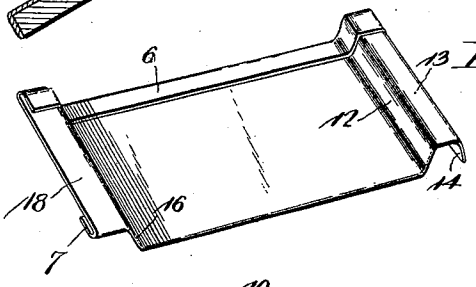


Fig. 5.

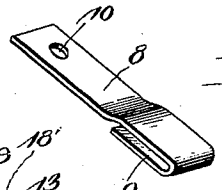


Fig. 6.

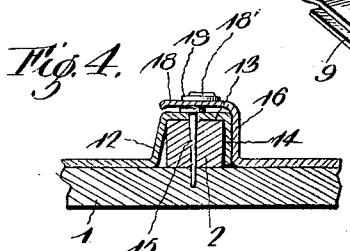


Fig. 4.

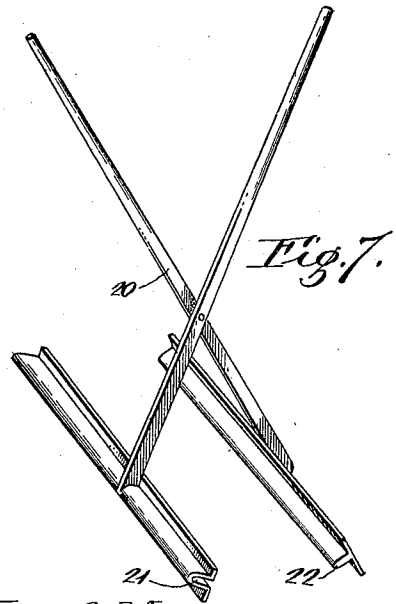


Fig. 7.

Witnesses

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METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 618,516, dated January 31, 1899.

Application filed August 17, 1898. Serial No. 688,789. (No model.)

To all whom it may concern:

Be it known that I, JONAS S. MOYER, a citizen of the United States, residing at Hatfield, in the county of Montgomery and State of Pennsylvania, have invented a new and useful Metallic Roofing, of which the following is a specification.

My invention relates to improvements in metallic roofing; and the object that I have in view is to provide a simple and cheap structure which may be applied easily to a roof without the use of special tools and in which metallic sheets are interlocked and fastened securely to the sheathing to overcome any rattling by the wind or exposure of the fastening means, said metallic sheets being also joined in a peculiar manner to battens for the purpose of producing a vertical standing joint that thoroughly excludes the weather from the roofing.

With these ends in view the invention consists in the novel construction and arrangement of parts, which will be hereinafter fully described and claimed.

To enable others to understand the invention, I have illustrated it in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a metallic roof embodying my improvements. Fig. 2 is a vertical sectional elevation thereof taken transversely through the metallic sheets. Fig. 3 is a vertical transverse section, taken longitudinally through the metallic sheets. Fig. 4 is an enlarged detail sectional view through the vertical joint formed by a batten and the overlapping ends of two adjacent sheets. Fig. 5 is a detail perspective view of one of the metallic sheets. Fig. 6 is a detail view of the fastening-strap. Fig. 7 is a perspective view of a crimping-tongs adapted to be used in fastening the hasp or hook seam of the sheet.

Like numerals of reference denote like and corresponding parts in each of the several figures of the drawings.

The sheathing of an ordinary roof is indicated by the numeral 1, and to it is fastened a series of vertical battens 2, which extend from the eaves to the ridge of the roof. These series of battens are spaced at the proper distance apart, corresponding to the length of the metallic sheets, and each batten is of square form in cross-section to enable each of the series of sheets to have one end interlocked with the battens by hook-shaped joints, as will presently appear.

To the sheathing is applied a number of series of metallic sheets, each series of which is laid on the sheathing between two adjacent battens 2, and the sheets forming each series are interlocked at their upper and lower edges and are fastened close down to the sheathing to prevent the wind from entering between the sheets by provision of tight joints between the same.

In the manufacture of metallic roofing in accordance with my invention the sheets are prepared at a factory from galvanized sheet-metal and each sheet is stamped or struck up in a single piece according to predetermined dimensions. The metallic sheet shown by Fig. 5 is provided at its upper edge with an upturned flange 6, while the lower edge of the sheet has a downturned flange 7. In applying the sheet to the roof the downturned flange 7 is interlocked with the upturned flange on the sheet which has previously been applied to the roof, while the next sheet is engaged with the upturned flange 6 at the upper edge of the sheet just applied. After applying one sheet to the roof and before the application of the subsequent sheet a fastening-strap of thin sheet metal is engaged with the upturned flange 6 of the sheet just fastened in place, and said strap is nailed to the sheathing. As shown by Fig. 6, the strap 8 is a single piece of metal having a hook 9 at one end and a transverse aperture 10 near the other end. The hook of the strap is engaged with the flange 6 of the sheet, and said strap is fastened in place by driving a nail 11 through the aperture 10 and into the sheathing. The hook lies within the limits of the upturned flange of one sheet, and it is covered by the downturned flange of the next sheet, so that the strap is effectually concealed by the sheets and the fastenings for the sheets are hid from view, thus making the sheets present a neat appearance, because the interlocked edges thereof only are exposed.

In applying the roofing the sheets of the series indicated at 3 are bent over at their

ends to embrace the battens 2, one end of each sheet being overlapped by an adjacent sheet of the next series and the other end of the same sheet overlapping the end of the next series, thereby joining each sheet to the two adjacent sheets and with adjacent battens to produce vertical joints that thoroughly exclude the elements from passing through the roof. In applying each sheet to the roof one end thereof is bent upward, as at 12, against one face of the batten 2, then carried or bent horizontally across the face of the batten, as at 13, and then bent downward at 14 to embrace the other face of the batten, and this peculiar bending of one end of the sheet 3 forms a hook adapted to embrace three sides of the batten, thus firmly joining the metallic sheet at one end to the batten. This end of the sheet is fastened in place by a nail 15, which is driven through the hook-shaped end and the batten into the sheathing of the roof. The other end of each plate 3 is bent upward at 16 to fit against one face of an adjacent batten, and said end is extended across the top face of the batten, as at 18. It will be understood that each sheet of the series of sheets 3, 4, and 5 has its ends bent as described. The bent end 16 18 of the sheet 4 overlaps the hook-shaped end 12 13 14 of the sheet 3, while the bent end 16 18 of the sheet 3 overlaps the hook-shaped end 12 13 14 of the sheet 5. The overlapping ends of the sheets are fastened in place by the nails 18′, having the soft metallic washers 19, and these nails 18′ are driven through the overlapping ends of two plates and into and through the battens, thus forming an extremely tight joint between the ends of the sheets, the batten, and the sheathing. The adjacent ends of the sheets are fastened together and to the battens to produce thoroughly waterproof joints, which prevent the leakage of rain or snow through the roof and excludes the wind, and the plates or sheets are fastened by the straps in the intervals between the battens to prevent the sheets from rattling under the force of a high wind. It will be observed that the sheets are interlocked together along their longitudinal edges by flanges which produce tight joints to exclude the weather, and the joints between the several sheets allow for the expansion and contraction of the metal incident to changes in temperature without opening the joints and exposing the roof to leakage. The metallic sheets may be rapidly and economically manufactured, and they may be applied to a roof rapidly and easily by an unskilled person. The roof presents a neat appearance, and all the fastening devices except the rows of nails 18′ are effectually concealed by the overlapping side and end portions of the plates or sheets.

While my metallic roofing may be fastened to a roof without the use of special tools, I have shown by Fig. 7 of the drawings a crimping-tongs which may be used advantageously to press the hasp or hook shaped seam of the plates. The tongs 20 has one of its jaws or members provided with a groove 21 to receive a rib 22, provided on the other jaw of the implement; but it will be understood that I do not include this tool within the scope of the present invention.

Changes may be made in the form of some of the parts, while their essential features are retained and the spirit of the invention embodied. Hence I do not desire to be limited to the precise form of all the parts as shown, reserving the right to vary therefrom.

Having thus described the invention, what I claim is—

A metallic roofing comprising a sheathing, the vertical battens rectangular in cross-section and applied at intervals to the sheathing, the plurality of metallic sheets or plates arranged in horizontal series across the sheathing and the battens thereon, each sheet or plate having its top and bottom edges folded in reverse directions and with one end and both folded edges thereof bent into the angular hook which embraces three sides of one batten and with its other end and both folded edges bent into the right-angular clasp which overlaps the hook of an adjacent sheet, the top and bottom edges of each sheet having interlocking engagement with sheets above and below the same, a series of nails driven through the angular hook at one edge of each sheet and through the bottom into the sheathing and concealed by the overlapping angular end edge of an adjacent sheet, and another series of nails driven through the overlapped ends of each pair of sheets and into the battens, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JONAS S. MOYER.

Witnesses:

DAVID ALLEBACH,

HORACE L. SHELLENBERGER.