(No Model.)

W. H. CARRUTHERS.

METALLIC ROOFING.

No. 341,833. Patented May 11, 1886.

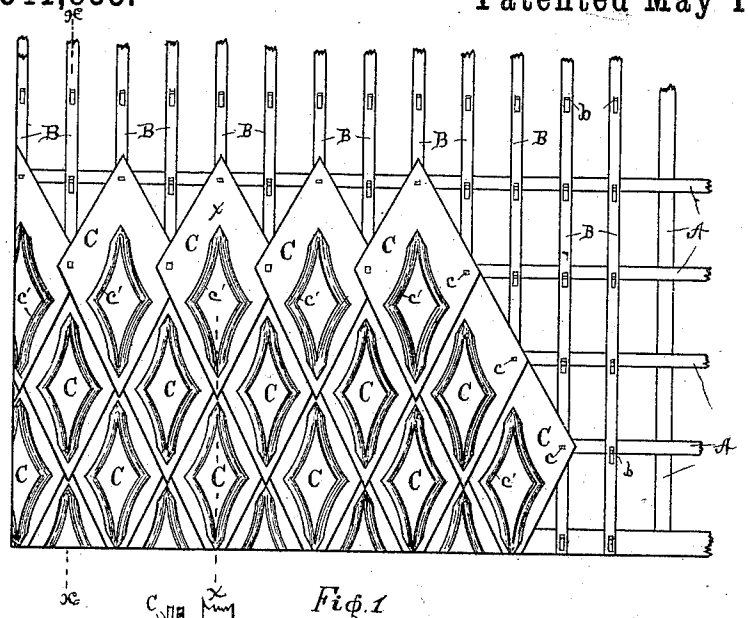

Fig. 1

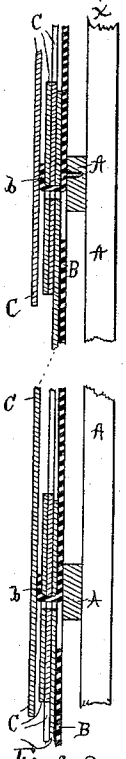

Fig. 2.

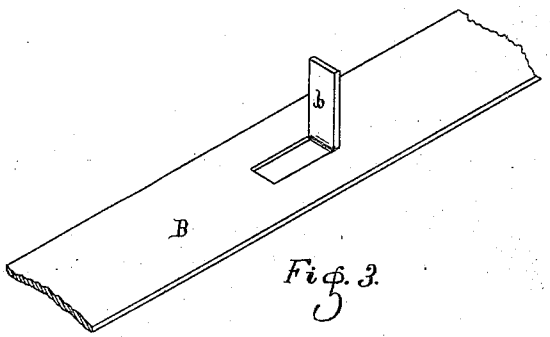

Fig. 3.

Attest.

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UNITED STATES PATENT OFFICE.

WILLIAM H. CARRUTHERS, OF CINCINNATI, OHIO, ASSIGNOR OF TWO-THIRDS TO RALPH H. SELLEW AND CHARLES H. TOWNLEY, BOTH OF SAME PLACE.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 341,833, dated May 11, 1886.

Application filed December 14, 1885. Serial No. 185,657. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CARRUTHERS, a citizen of the United States, and a resident of Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Metallic Roofing, of which the following is a specification.

My invention relates to metallic roofing and covering for buildings. Its object is an improved means for attaching sheet-metal shingles and sidings in place.

The invention consists in providing fastening strips or bands, attached either to the frame-work or sheeting of the building, which strips have lugs or clips projecting from them, to pass through the metal shingles and be clinched down to retain them in place.

It also consists in a shingle or covering adapted to be so secured.

The invention will be first fully described in connection with the accompanying drawings, and then particularly referred to and pointed out in the claims.

In the accompanying drawings, forming part of this specification, in which like parts are indicated by similar reference-letters wherever they occur, Figure 1 is a plan view of a portion of the roof of a building, illustrating my improved means for attaching metallic shingles thereto and the shingles so attached. Fig. 2 is an enlarged sectional view taken through line *x x* of Fig. 1. Fig. 3 is a perspective view of a portion of the metallic fastening-strip, drawn to about full size, showing one of the lugs struck up and projecting at a right angle to the strip.

A represents the frame-work of the building. B are sheet-metal strips, secured to the frame A at regular intervals apart. These strips B have lugs *b*, struck up from them at regular distances from each other, as seen in Figs. 1 and 3.

The shingles C, which are of sheet metal, preferably diamond-shaped, though not necessarily so, are perforated at *c*, near the upper and two side angles, the perforations being of suitable shape to admit the lugs *b* of the strips B, and wide enough to allow for the expansion and contraction of the metal.

The shingles may have various ornamental devices or patterns, as *c'*, struck up from their surfaces, to strengthen them and provide air-spaces between them and the sheeting, when such is used.

After the fastening-strips are placed in position the proper distance apart the lower row of shingles is first placed over the fastening-clips. The clips passing through the side angles are turned over and clinched down, the end of the clip pointing upward. The clips on the strips intermediate between these two are not clinched down, but left projecting at right angles to the roof. When the next row of shingles is placed on, the clips that passed through the upper points of the lower row of shingles serve as fastening-clips to pass through the side angles of the second row. These are now clinched down the same as the first row of clips, and so on alternately until the roof is completed. It will thus be seen that the lower point of the shingles will overlap and cover the fastening-clips holding the row below it.

The fastening-bands B are preferably made of steel or charcoal-iron, so that the clips may be turned without danger of breaking, and in case any of them should become worn, or required replacing, it would not be a difficult matter to remove the defective shingle and replace it by a perfect one. It should also be understood that the perforations through the strip B to receive the tack or fastening-nail which secures the strip to the frame-work or sheathing should be a longitudinal slot, so as to permit the expansion and contraction of the band without buckling. By this means the strip may be made to extend the full length of the roof or side of the building when in that position; but I prefer to make the strips in lengths of six to ten feet, and overlap the connecting ends in a large roof, so that each piece may expand and contract independent of the others.

What I claim is—

1. An attaching-strip for metallic roofing or shingles, consisting of the band or strip B, having the lugs *b* projecting from it and adapted to enter perforations in metallic shingles

and be clinched over the same to hold it in place, substantially as described.

2. The combination, substantially as described, in a metallic roofing, of the shingle A, perforated as shown, with the fastening-strips B, having lugs *b* struck up from them to pass through the perforations of the shingles and be clinched down upon the top side thereof, the said strips being secured to the frame-work or sheeting of the building for the purpose of retaining the shingles in place.

3. In a metallic roof or covering for buildings, the combination, substantially as specified, with the frame-work or sheeting of said building, of metallic fastening band or strip B, the lugs or fastening-clips *b*, integral with the strips, the sheet-metal shingles or covering-pieces A, which are perforated to receive the clips *b*, said perforations being large enough to admit of the expansion and contraction of the metal when applied in place, and the said clips bent down to retain the pieces A in position and be covered by the lower point thereof to conceal and protect the fastening-clips.

WILLIAM H. CARRUTHERS.

Witnesses:
GEO. J. MURRAY,
C. W. MILES.