C. W. EVANS.

SHEET-METAL ROOFS.

No. 171,368. Patented Dec. 21, 1875.

Fig. 1

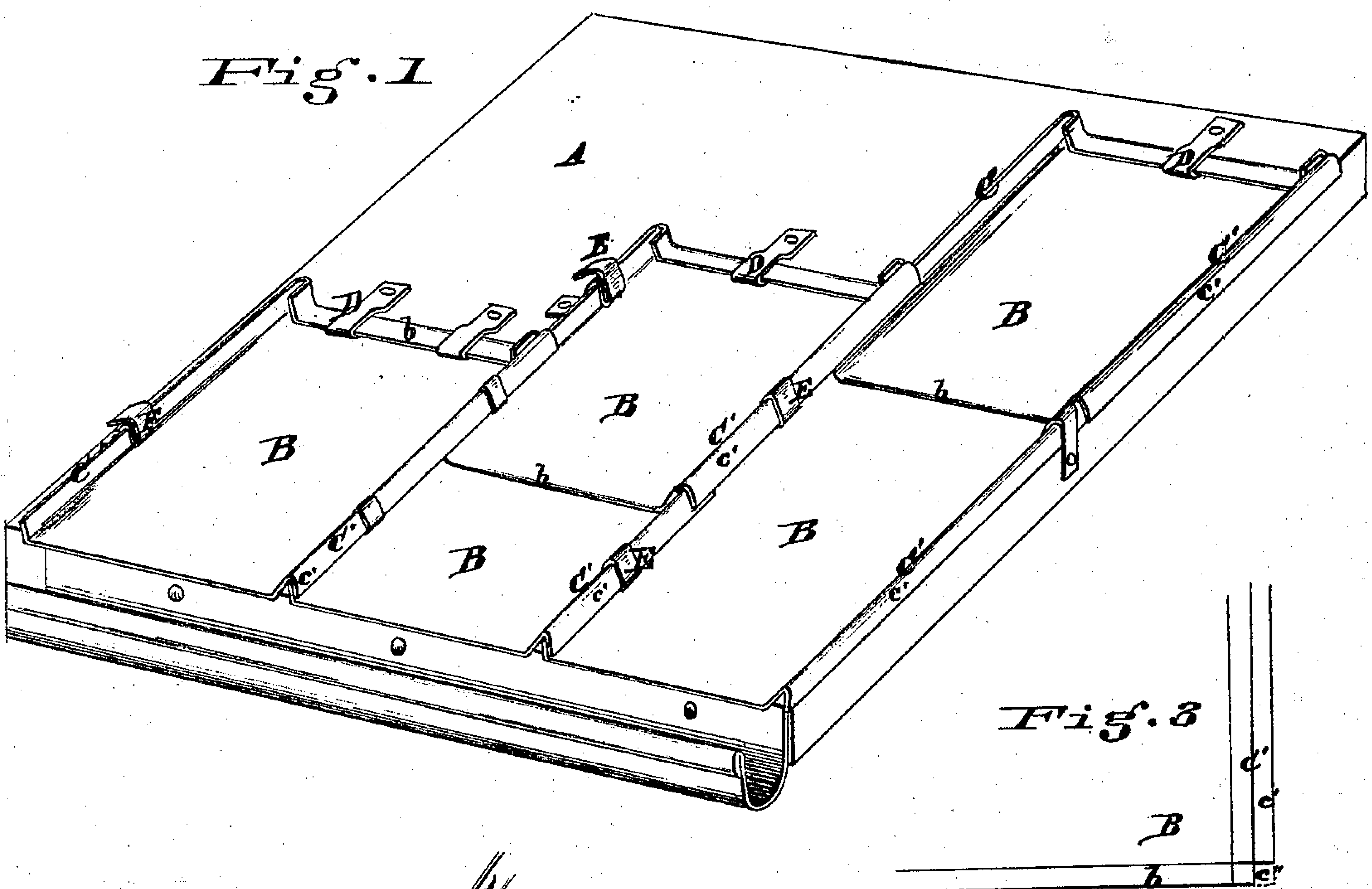

Fig. 3

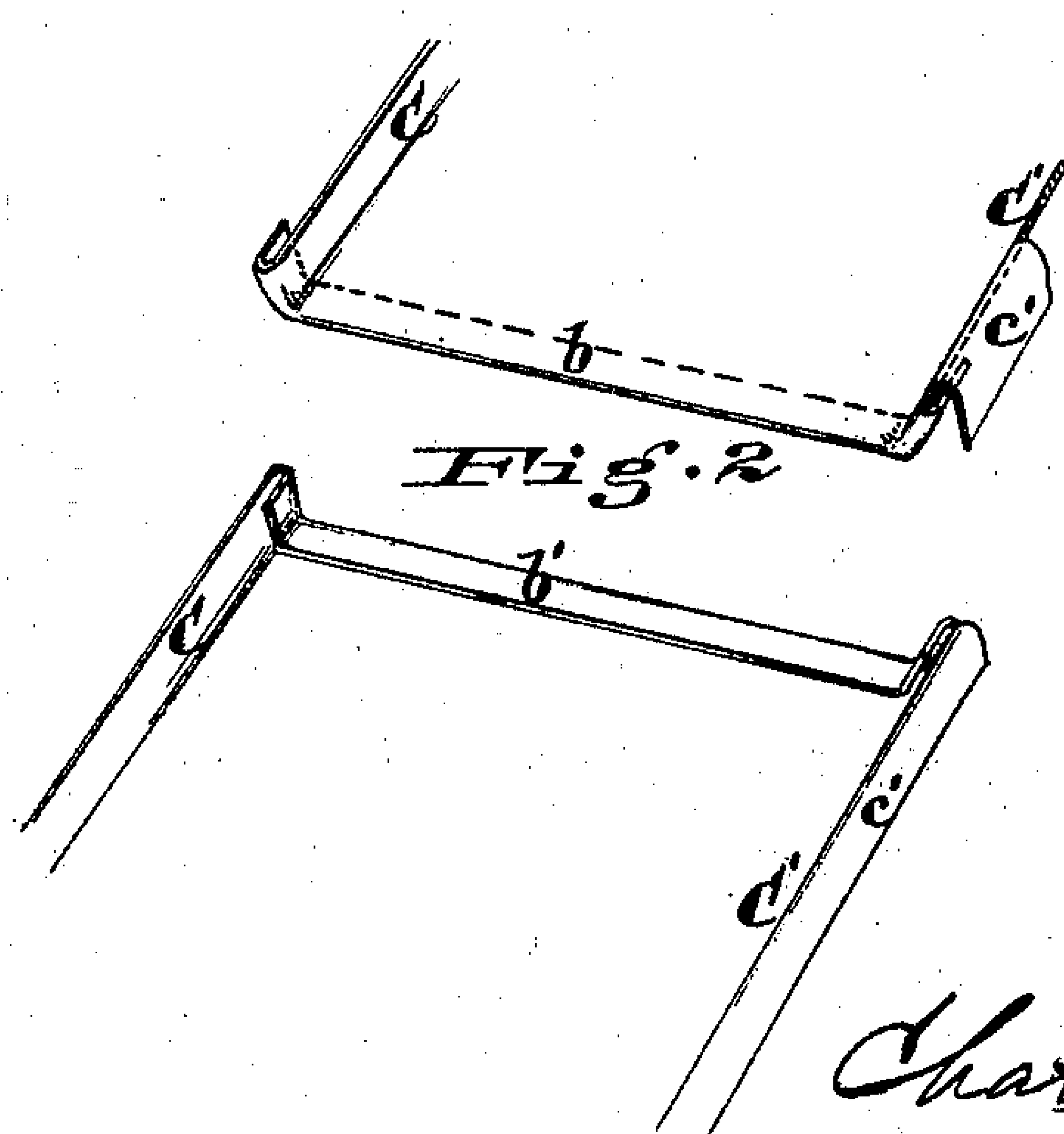

Fig. 2

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IMPROVEMENT IN SHEET-METAL ROOFS.

Specification forming part of Letters Patent No. **171,368**, dated December 21, 1875; application filed November 17, 1875.

To all whom it may concern:

Be it known that I, CHARLES W. EVANS, of Cincinnati, Hamilton county, State of Ohio, have invented an Improvement in Sheet-Metal Roofs, of which the following is a specification:

My invention consists in such a formation of the sheet by cutting and lapping as that a lap-joint is provided at the lower edges of the sheets, and a complete ridge-piece, without the necessity of extending the lap-joint over the ridge.

Figure 1 is a perspective view of a section of roofing embodying my invention. Fig. 2 is a perspective view, showing the method of securing any two contiguous sheets in one row.

Let A represent a portion of primary roofing, upon which the metal roofing composed of plates B is to be secured. The plates B are joined together in rows, and the rows secured together, so that the seams of the individual plate-connections will "break joint." Each plate B has one end, *b*, bent under and back, and one end, *b'*, bent upward and back, so that the sheets may be strung together in such a manner that water running over them will have no chance to seep through. The edges C C' of the sheets B are bent up to form ridges, so that the lapping joint between the sheets will be elevated; but the edge C' is made intentionally longer than the edge C, so that when said edge C' is brought in contact with edge C of another sheet, in the act of forming a ridge-connection between the sheets, the predominating portion of edge C' may be bent down over edge C, to form a covering and protecting lap, *c'*; but it is obvious that if the quadruple thickness caused by the lap-connection *b b'* of the sheets B were carried over this ridge and through the lap *c'*, the roofing would become very impracticable, partly from the difficulty which would arise in attaching the lap *b b'* of two consecutive sheets, (said laps *b b'* having in that case too intricate a contour to cause them to engage readily,) and partly because the thickness of the joint would prevent the formation of a snug ridge-joint, without the application of excessive hammering, which would be likely to break the metal and injure the durability of the roof. To obviate this, I form the sheets B, as shown in Fig. 3, with the metal *c''* bound by the edges 1 and 2 of the sheet, and the fold-lines 3 and 4 cut away at both ends of the sheets, thus leaving the lap *c'*, which is of single thickness, except at the joint between the sheet B B of a row, of not more than double thickness at any point, while the laps *b b'* will be much simpler, in extent running merely across the sheet and up at the ridges C C', without extending over the ridge C'. The plates B are secured to the roof-boards A by clips D engaging with the laps *b'* at the ends. To secure the edges of the sheets to the roof-boards I provide clips E of such extension that, after being secured to the roof A, they are bent up, over, and down the edges C of the sheets B, and, after the lap *c'* of the contiguous row of sheets is capped over said edges C, the clip is bent up and over said lap *c'* to secure it to the roof.

Having thus described my invention, I claim—

In a sheet-metal roof, the sheets B, having folds *b b'*, ridges C C', and ridge-lap *c'*, when formed from a sheet having notches *c''*, substantially as described, and for the purpose specified.

In testimony of which invention I hereunto set my hand.

CHARLES WALTER EVANS.

Witnesses:

JOHN E. JONES,

J. L. WARTMANN.