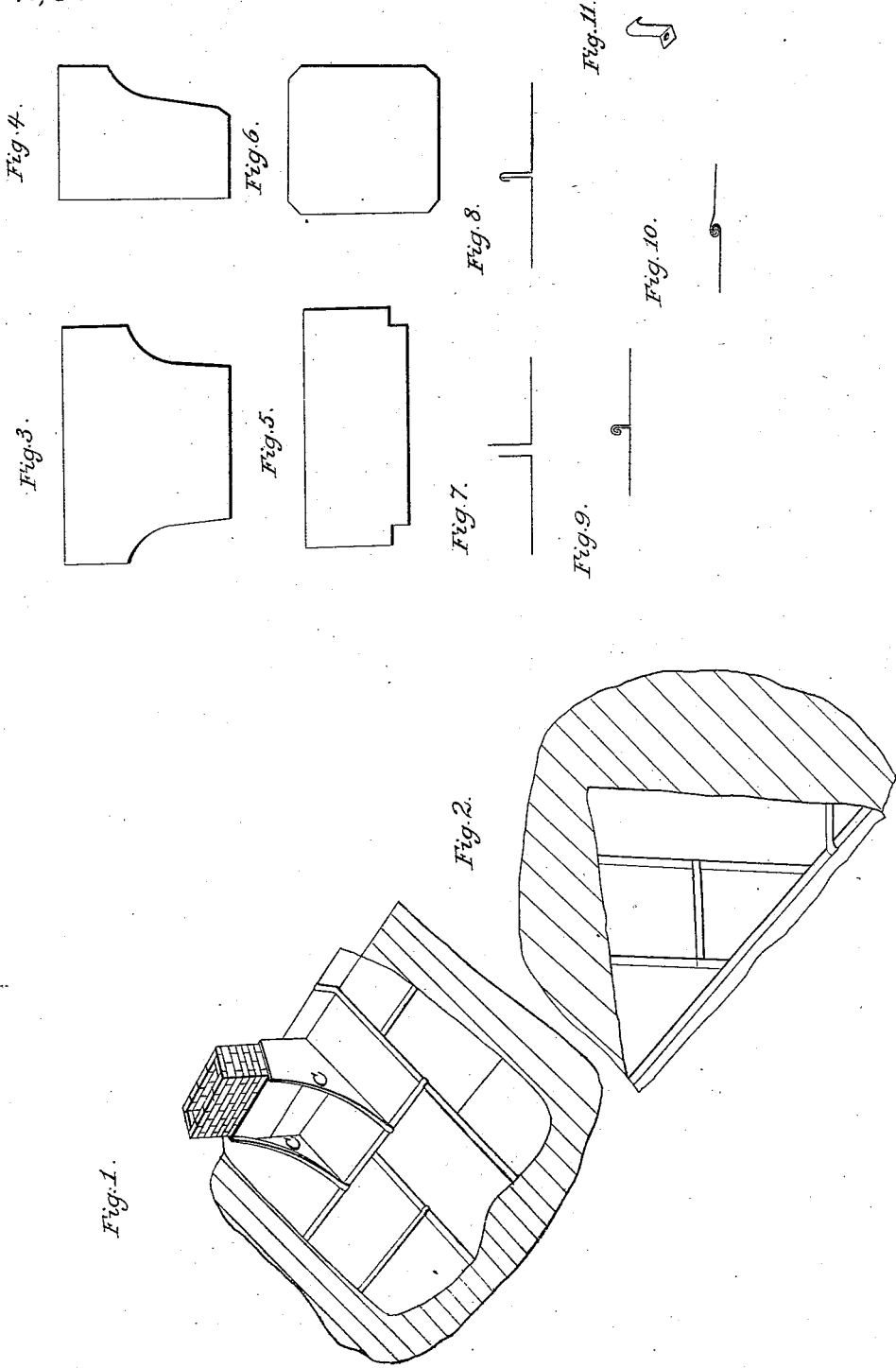


J. W. Boesch,

Metallic Roofing,

Patented Nov. 12, 1842.

N^o 2,850.



UNITED STATES PATENT OFFICE.

JOHN W. BOESCH, OF CHARLESTON, SOUTH CAROLINA.

IMPROVEMENT IN THE METHOD OF RENDERING METALLIC ROOFS WATER-TIGHT AROUND THE CHIMNEYS AND DORMER-WINDOWS.

Specification forming part of Letters Patent No. 2,850, dated November 12, 1842.

To all whom it may concern:

Be it known that I, JOHN W. BOESCH, of the city of Charleston and State of South Carolina, have invented a new and useful Improvement in Rendering the Joints of Metallic Roofs Water-Tight without the use of solder, cement, &c., by a new method of shaping and lapping the edges of the sheets of metal of which the roof is constructed, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a perspective view, showing the manner of constructing the joints around the chimney. Fig. 2 is a view showing the joints of a valley or gutter; Figs. 3, 4, 5, form of the sheets that are used for fitting around chimneys or dormer-windows; Fig. 6, one of the sheets for covering the flat part of the roof before being folded; Fig. 7, the two sheets turned up at right angles; Fig. 8, the same and showing the first lap; Fig. 9, the same and showing the second lap; Fig. 10, the same with the turned-up edges double lapped and folded and hammered flat down upon the roof; Fig. 11, one of the hooks or fastenings folded between the sheets and nailed to the sheathing.

To render the joint at the junction of the roof with the chimney, dormer-window, or other projections secure against leaking, take a sheet of copper, or of whatever metal the roof is to be composed, longer than the width of the chimney, and turn up the edge next the chimney about eight or ten inches, more or less, so that the surface shall be parallel with the outer surface of the chimney. Then turn up the ends of the sheets at right angles to the roof. Then lap the part of the sheet that folds at the corners against the first-described turned-up edge, or against the side of the chimney, as preferred, and secure the same. Then with a pair of shears or other suitable implement scallop the turned-up ends of the sheet, taking out a curved segment of the sheet at each turned-up end, leaving sufficient of the metal standing at right angles to the roof to form a lap for water-tight joints with the sheets to be added at the sides for closing the side joints, in the manner to be described. The sheet formed as above described would, if again flattened on a horizontal plane, present a figure such as that represented at Fig. 3.

To close the side joints of the chimney or dormer-window, or other similar side joints, take two sheets to be jointed on the ends of the sheets just described, and take from them segments corresponding in shape with those taken from the ends of the first-mentioned sheet, but of lesser size, being previously turned up at right angles to the roof, which will leave the scalloped edges of the last-mentioned sheets higher than the scalloped edges of the last-described sheet. Then lap the edges of the last-described sheet over the edges of the first-described sheet about one-quarter of an inch. Then turn the edges thus lapped again over, forming a double lap, and secure the sheets to the sides of the chimney or dormer. This sheet projects at right angles beyond the first-mentioned sheet sufficiently to extend to the sides of the chimney. The last-mentioned sheets, when flattened out on a plane, would present a figure resembling that at Fig. 4, and when put together as seen at Fig. 1 would present a curved and lapped joint at *c*, Fig. 1, which will be perfectly water-tight, the vertical parts of said side sheets lying flat against the sides of the chimney or dormer in a position to receive another sheet to be jointed thereto to extend beyond the chimney. The upper or turned-up edge of the sheet, coming against the chimney or dormer-window, will come under the usual ledge or projection on the chimney; but if this be omitted in the construction of the building another sheet may be prepared—such as that represented at Fig. 5—by cutting out the corners. The ends are then to be turned at right angles, so as to allow the sheet to be fitted in between the turned edges of the first-mentioned sheet. The lower edge of this sheet is turned up in a contrary direction, and the upper edge of the first-mentioned sheet lapped over the turned-up edge, forming a tight joint. This sheet is then secured against the side of the chimney or dormer-window under the cornice or eaves or other projection in a vertical position, which will prevent water from entering behind the sheets or between them and the chimney, &c. The side sheets are secured in a similar manner. The vertical portions of the sheets or turned sides may be made to rise to any height required, or be lengthened by adding another sheet in the manner above described, so as to

extend beyond the chimney in a straight line with the face of the same. All the four joints of a chimney, when it passes through the middle of a roof or through one side of it, may be rendered secure against the entrance of water, even should it be backed up on the roof, behind parapets, by the stoppage of the spouts, or from any other cause above the joints, in the manner before described, or other mode substantially the same.

The peculiar form of the exterior of the chimney or dormer-window or other projection above the roof may render it necessary to shape the several sheets of copper required to cover and close the joints so as to correspond therewith; but they all will be double lapped in the manner described. The joints of valleys of roofs are secured in a similar manner by double-lapped joints without solder. The joints formed by the uniting of the edges of the sheets required for covering the main body of the roof when there are no projections are rendered water-tight without solder in the following manner: The four corners of each sheet of metal are cut off at an angle of about forty-five degrees, so as to prevent a too great thickness of metal when folded or lapped, as seen at Fig. 6. The edge of a sheet is then turned up one and a fourth inch, as seen in Fig. 7. The edge of the next sheet above this is turned up in a similar manner one and a half inch, as seen in Fig. 7. This last-mentioned turned-up edge is lapped over the first-mentioned turned up edge one-quarter of an inch, as seen as in Fig. 8. The two edges thus united are folded over again a little more than a quarter of an inch, as seen at Fig. 9. The

edges thus lapped over are then turned down upon the roof and hammered out flat, as seen in Fig. 10. When a row of sheets are united or jointed together in this manner, reaching from the eaves to the ridge, another row is prepared in a similar manner. The edges of these two rows are then united in a similar manner with the said double-lapped joints, as above described. The joints are then all well hammered down flat and close, and will thus be rendered proof against the entrance of water without the use of solder, though the roof might be flat and covered with water.

In order to secure the sheets to the sheathing, metallic hooks bent at right angles and perforated for nails and screws are put over the turned-up edge of the first-mentioned sheet before it is lapped, and then nailed to the sheathing, so as to be covered by the succeeding sheet, the hook being folded in between the folds of the sheets entirely out of sight when the roof is completed, which renders the covering secure against being stripped by high winds. Fig. 11 represents one of the hooks detached from the roof.

What I claim as my invention, and which I desire to secure by Letters Patent, is—

The before-described method of rendering the joints at the junction of the sheets of metal secure against leaking around the chimneys and dormer-windows by bending and scalloping the sheets, in combination with the double lapping of the joints, as described.

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Witnesses:

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