

(No Model.)

J. L. DICKELMAN.
SHEET METAL ROOFING.

No. 446,217.

Patented Feb. 10, 1891.

Fig. 1.

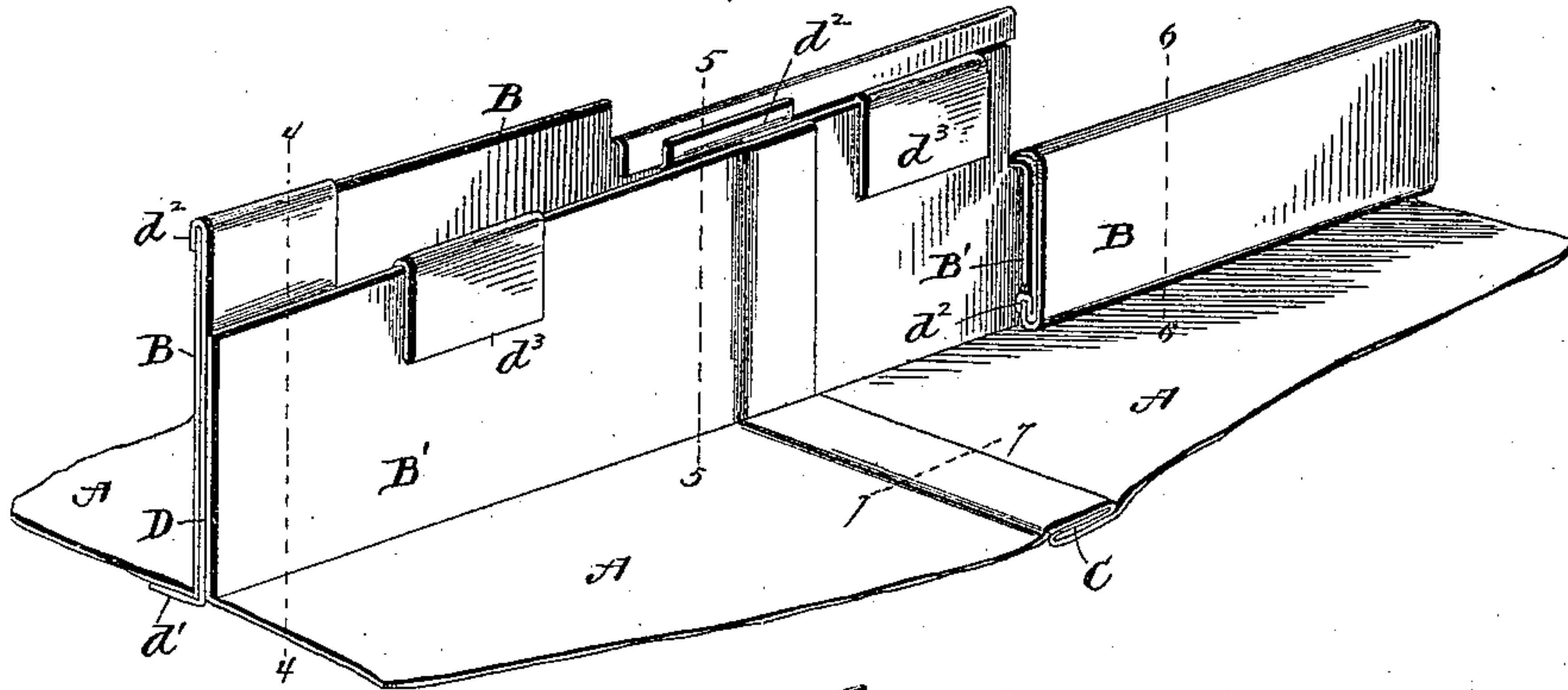


Fig. 2.

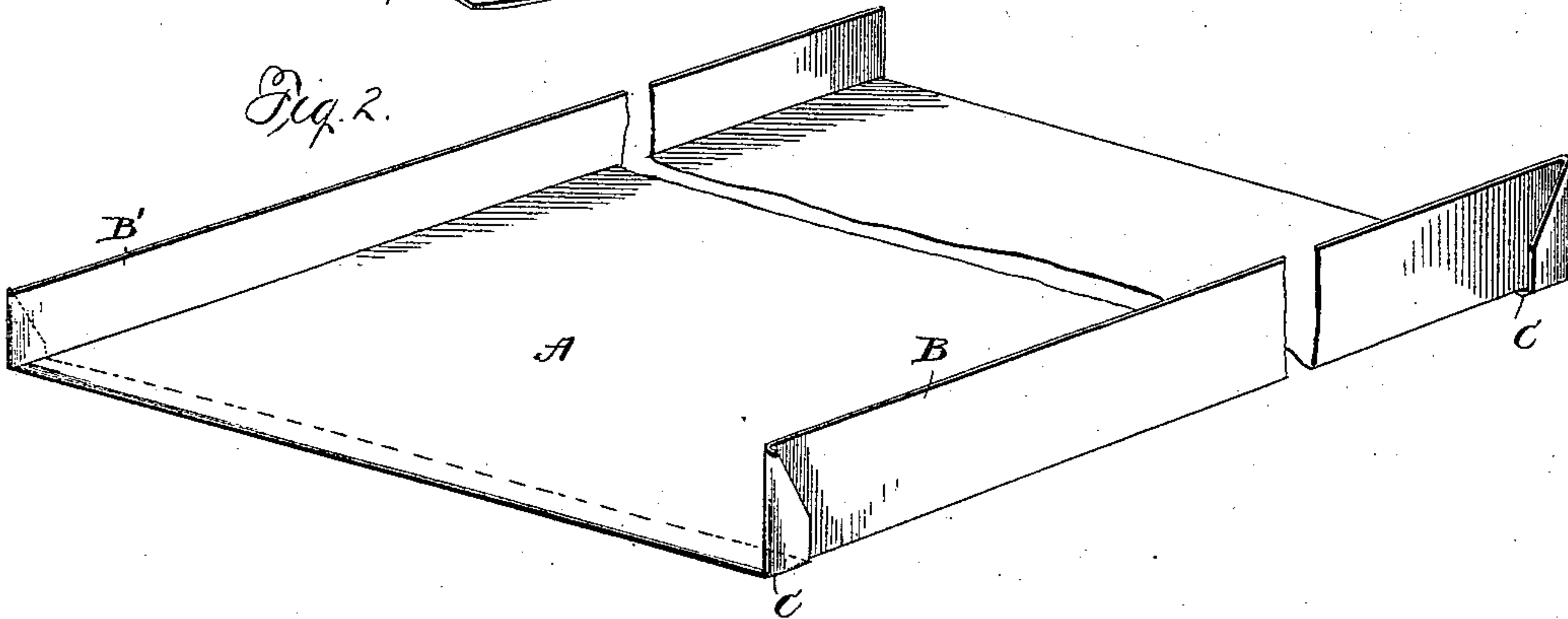


Fig. 3.

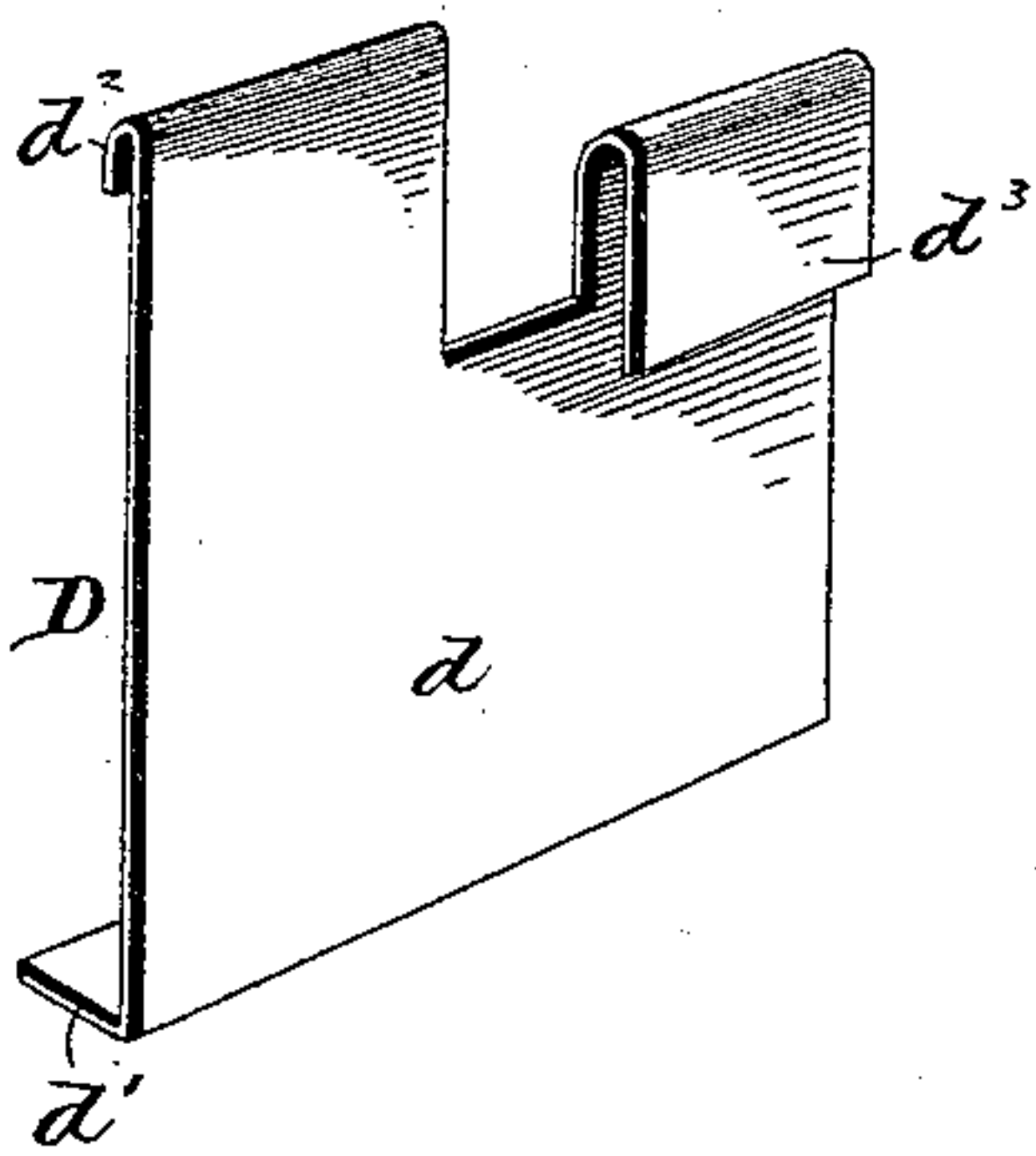


Fig. 4.

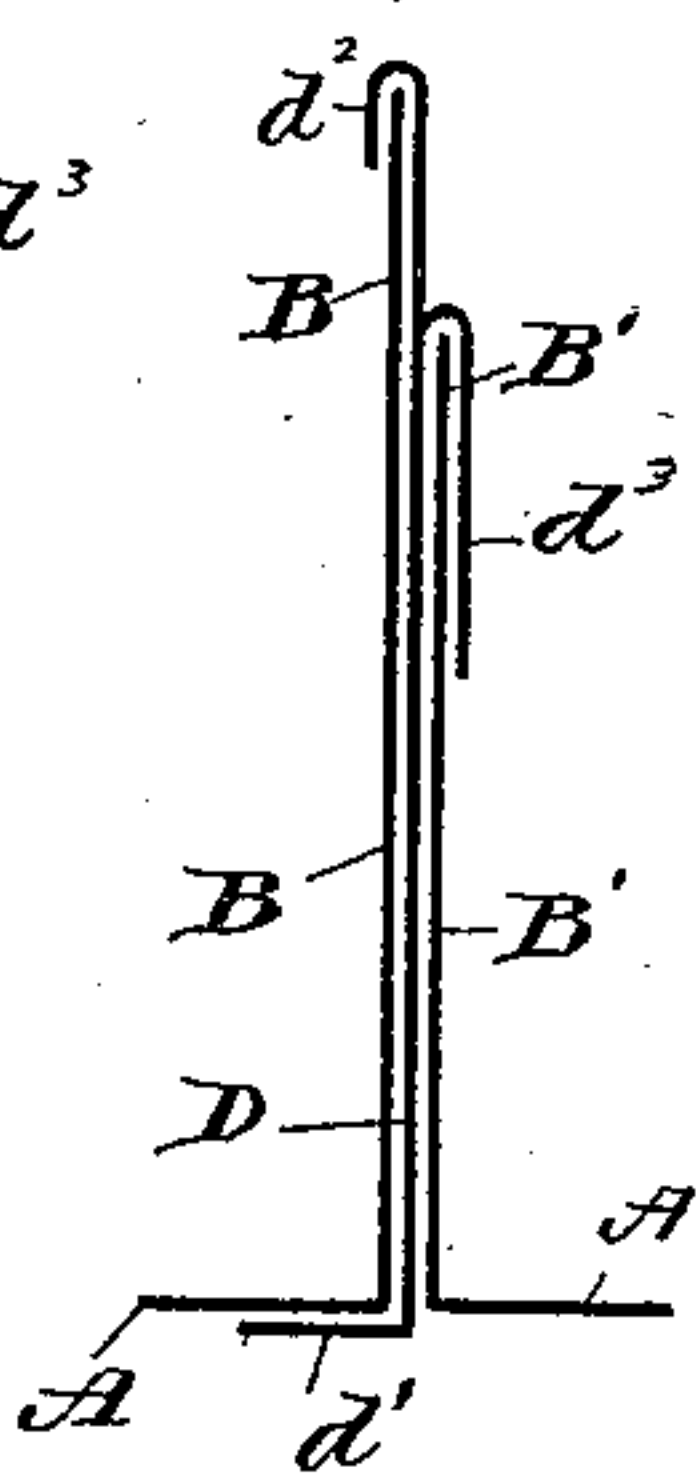


Fig. 5.

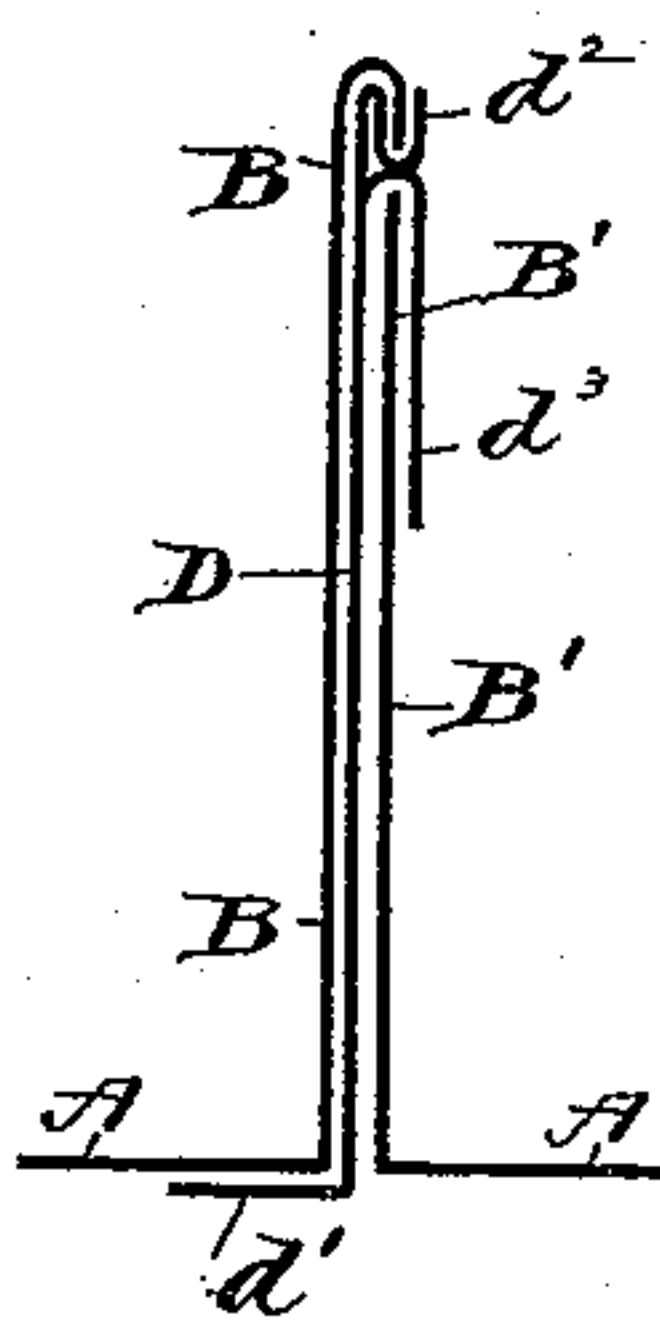


Fig. 6.

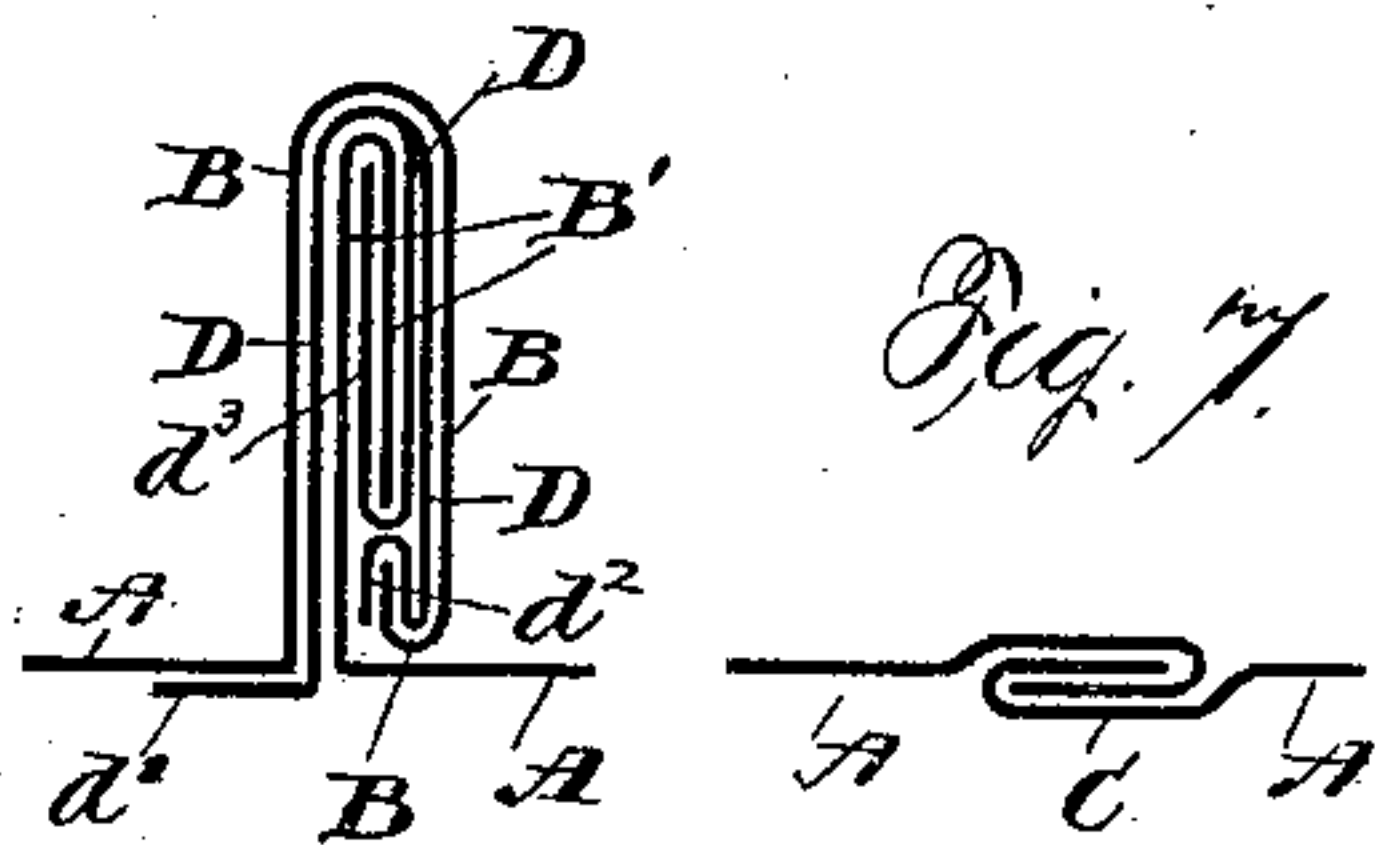


Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

JOSEPH L. DICKELMAN, OF FOREST, OHIO.

SHEET-METAL ROOFING.

SPECIFICATION forming part of Letters Patent No. 446,217, dated February 10, 1891.

Application filed September 20, 1890. Serial No. 365,584. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH L. DICKELMAN, a citizen of the United States, residing at Forest, in the county of Hardin and State of Ohio, have invented certain new and useful Improvements in Sheet-Metal Roofing; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in that class of metallic roofs in which a number of separate metallic sheets are joined together at their ends, forming strips which are then laid parallel to each other on the roof to be covered and secured together at their sides by means of seams composed of flanges at the sides of the strips.

A serious objection to the employment of standing seams in this class of sheet-metal roofing has been due to the fact that in the said style of seam the rain is likely to be driven under the outer flange of the seam and by capillary attraction carried up between the flanges and over the inner flange; and an essential object of the present invention is to construct the standing seam in such manner as to obviate this objection and at the same time to save a large amount of metal which is wasted in many seams designed to effect the same purpose, and, further, to so construct the seam that the thickness of the same will be the same at the bottom as at the top, thus making it more symmetrical and at the same time leaving less space for water to gather in. My seam is therefore constructed in such manner as to effectually exclude water during heavy rain-storms accompanied by severe winds, and to also allow of its being compressed in much narrower compass than has been possible with former constructions.

To these ends and such others as the invention may pertain it consists in the peculiar combination, construction, and arrangements of parts, which will be hereinafter more fully described, and shown in the appended drawings, and then specifically defined in the claims.

In the drawings, Figure 1 is a perspective view of a section of roofing put together in accordance with my invention, and shows the seam in each of the three stages of construction. Fig. 2 is a perspective view of a sheet of roofing prepared in accordance with the requirements of my invention and ready for use. Fig. 3 is a perspective view of the cleat which I use to secure the sheets to the sheathing. Figs. 4, 5, 6, and 7 are respectively sectional views on lines 4 4, 5 5, 6 6, and 7 7 of Fig. 1.

Reference being had to the details of the drawings by letter, the sheets A are secured or joined together at C by the ordinary hook-joint, and are provided on their opposite sides with flanges B and B', bent upward and at right angles to the body of the sheets, one of the flanges B being slightly higher than the other B'. In laying the roof the high flange B of one sheet is placed contiguous to the low flange B' of the next adjacent sheet. Between these flanges are the cleats D, which are made substantially as shown in Letters Patent No. 430,927, granted to me June 24, 1890, and to which I make no claim in the present application. These cleats D are formed of sheet-metal strips having one end bent at right angles to the body of the cleat *d* and forming a flange *d'*, which is attached to the sheathing by nails or any other suitable fastening device and provided at their opposite ends with two projecting tongues *d*² and *d*³ of unequal length. These tongues are bent over the flanges and serve to anchor the flanges to the sheathing, Fig. 4. To make the seam, the high flange B is bent down till its edge is brought into contact with the upper edge of the flange B', Fig. 5. It will be observed that the flange B is not turned down far enough to overlap the flange B', but simply touches its edge, thus effecting a saving in material and at the same time lessening the thickness of the seam at this point. The seam thus produced is next folded upon a horizontal line drawn through its vertical center, the upper edge being thus brought in contact with the surface of the sheet, Fig. 6. The tongues of the cleat must of necessity be bent at the same time and in the same manner as the flanges to which they are respectively secured.

In order to facilitate the bending of the sheets at the joints, the metal of the sheets is mitered from the intersection of the side of the sheet with the fold to any convenient point 5 on the end, Fig. 2. The joint remains intact, however, for a short distance above the roof, so that no ordinary amount of water will reach high enough to run through the opening made by the mitering of the corners.

10 In practice, to make a one-inch standing seam I turn the high flange up two and one-fourth inches and the low flange one and three-fourths inch, which arrangement enables me to turn the high flange down one-fourth inch, leaving the seam at this stage 15 two inches high. This seam, when folded as above described, will leave a standing seam of one inch, as stated.

It will be readily seen that my seam can be 20 used with any other form of cleat than the one described.

What I claim as new, and desire to secure Letters Patent for, is—

1. The herein-described standing seam for 25 sheet-metal roofs, the same consisting of two vertical flanges of unequal height provided

upon the adjacent edges of two connecting-sheets, the upper edge of the higher flange being folded to contact with the upper edge of the lower flange, and the uncompleted seam 30 thus produced folded upon itself through its vertical center, substantially as shown and described.

2. The herein-described standing seam for sheet-metal roofs, the same consisting of two 35 vertical flanges of unequal height provided upon the adjacent edges of two connecting-sheets, a cleat having tongues d^2 d^3 interposed between the flanges and having said tongues folded over the edges of the flanges, as de- 40 scribed, the upper edge of the higher flange being folded to contact with the upper edge of the lower flange, and the uncompleted seam thus produced folded upon itself through its vertical center, substantially as described. 45

In testimony whereof I affix my signature in presence of two witnesses.

JOSEPH L. DICKELMAN.

Witnesses:

E. H. COOK,

H. D. DETWILER.