

(No Model.)

E. L. CHAMPLIN & F. E. ANDREWS.
METALLIC ROOFING.

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No. 453,577.

Patented June 2, 1891.



Witnesses

Chas. F. Robertson

Thos E Robertson

Fig. 3

Edward I. Champlin Inventors
Francis E. Andrews

By their Attorney

John G. Manahan

UNITED STATES PATENT OFFICE.

EDWARD L. CHAMPLIN AND FRANCIS E. ANDREWS, OF STERLING, ILLINOIS,
ASSIGNORS OF ONE-THIRD TO SAMUEL ALBERTSON, OF SAME PLACE.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 453,577, dated June 2, 1891.

Application filed August 29, 1889. Renewed December 12, 1890. Serial No. 374,426. (No model.)

To all whom it may concern:

Be it known that we, EDWARD L. CHAMPLIN and FRANCIS E. ANDREWS, citizens of the United States, residing at Sterling, in the county of Whiteside and State of Illinois, have invented certain new and useful Improvements in Metallic Roofing; and we do hereby 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 letters of reference marked thereon, which form a part of this specification.

Our invention has reference to improvements in metallic roofing; and it consists, essentially, of sheets of steel or other metal having diagonally-cut ends and grooves, flanges, and portions in relief upon its upper surface, as hereinafter described. The ends of the sheets are cut diagonally, so that the water may flow from the lap or junction of the ends instead of toward or under it. The grooves and flanges have a twofold function: First, said flanges form barriers under the end laps against the admission of water or air thereunder, and said grooves form outlets for such water as may get under the outer portion of the lap, and, second, both grooves and flanges afford the necessary elasticity to permit the contraction and expansion of the material consequent upon changes of temperature.

The object of the raised portions, in addition to permitting at their flanged edges of the expansion and contraction above referred to, is to form air-chambers between the material and the underlying roof, and to thus increase the warmth of said covering and to permit the evaporation of such moisture as may gather thereunder. Such raised portions are also susceptible of different configurations and can be made to present the appearance of shingles of various forms.

In the drawings, Figure 1 is a plan of a portion of a roof provided with our invention. Fig. 2 is a vertical section in the line X X of Fig. 1. Fig. 3 is a longitudinal section in the line y y of Fig. 1.

A is the underlying sheet, and B the over-

lying one, the lap being made at their diagonal contiguous edges.

The edge of the sheet B is indicated by the line C, and the projection under B of the contiguous edge of the sheet A is indicated by the dotted line D.

E E are the raised portions, which at their upper ends are in the general plane of the material and in contact with the sheeting F thereunder, as shown in Fig. 2. The raised portions E are bounded laterally by the grooves G and at their lower extremities by the angular flanges H, although said lower extremities may, if desired, be formed in a straight or other line. The sheets may be formed of any desired size, as also may the raised portions E; but as used by us the sheets are eight feet long, running laterally upon the roof, and two feet wide, and the raised portions E are five inches wide and of the proportions shown in the drawings.

The lap at the upper edge of the sheets is indicated by the line J, representing the lower edge of the upper sheet, and the dotted line K, representing the upper edge of the lower sheet. Like indicating-lines L and letters M represent the lap at the lower edges of the sheets A and B.

Referring to the lateral union of the sheets A and B, it will be observed that the grooves G and flanges H of the sheet B at the lap of said sheets are placed directly upon the corresponding grooves and flanges of the underlying sheet A, and that therefore any water which may casually work under the edge of said lap is met and prevented from further progress by the flanges H of the underlying sheet A and conducted by the grooves G of the latter from beneath said lap outwardly, and thereby prevented from reaching the extreme edge of the lap, so as to get beneath the said sheet. The water will largely follow the flanges H to where the latter meet the upper ends of the grooves G and then pass down said grooves. This action will be facilitated if the flanges H converge at the upper ends of the grooves.

As those portions of the troughs or grooves G and the flanges H of the sheet A which project under the aforesaid lap are covered by

the corresponding parts of the sheet B, they cannot be shown in the drawings; but it is to be understood that the indications upon the drawings of the troughs or grooves G and flanges H of the sheet B at said lap indicate the location of the underlying corresponding parts of the sheet A.

In our invention as heretofore used by us the sheets A and B are formed of rolled steel, and the desired conformation is given said sheets by passing the same between rollers having the desired configuration upon their peripheries.

The sheets A and B are preferably fastened to the sheeting F by means of nails or screws located at the aforesaid lap outside of the troughs G and flanges H and at such other selected portions where the material lies in contact with the sheeting, as may be desired.

The said sheets, being well painted upon both sides previous to being laid, are of great durability, and can be occasionally painted outside thereafter, if desired. Said sheets may be colored to represent either tile or shingles,

and may be of one uniform color or diversified, as may suit the taste of the user. Said sheets may also be used for siding.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

1. The sheets A and B, provided, respectively, with the diagonal edges C and D and with the grooves G and flanges H and the raised intervals E, substantially as shown, and for the purpose described.

2. In a covering material, a combination of the sheets A and B, provided, respectively, with the diagonally-cut edges C D and grooves G and flanges H thereon, adapted to overlap each other at their point of junction, substantially as shown, and for the purpose described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDWARD L. CHAMPLIN.

FRANCIS E. ANDREWS.

Witnesses:

JOHN G. MANAHAN,

ZADOK T. GALT.