

M. HORRIE.
Sheet-Metal Roofing.

No. 205,188.

Patented June 25, 1878.

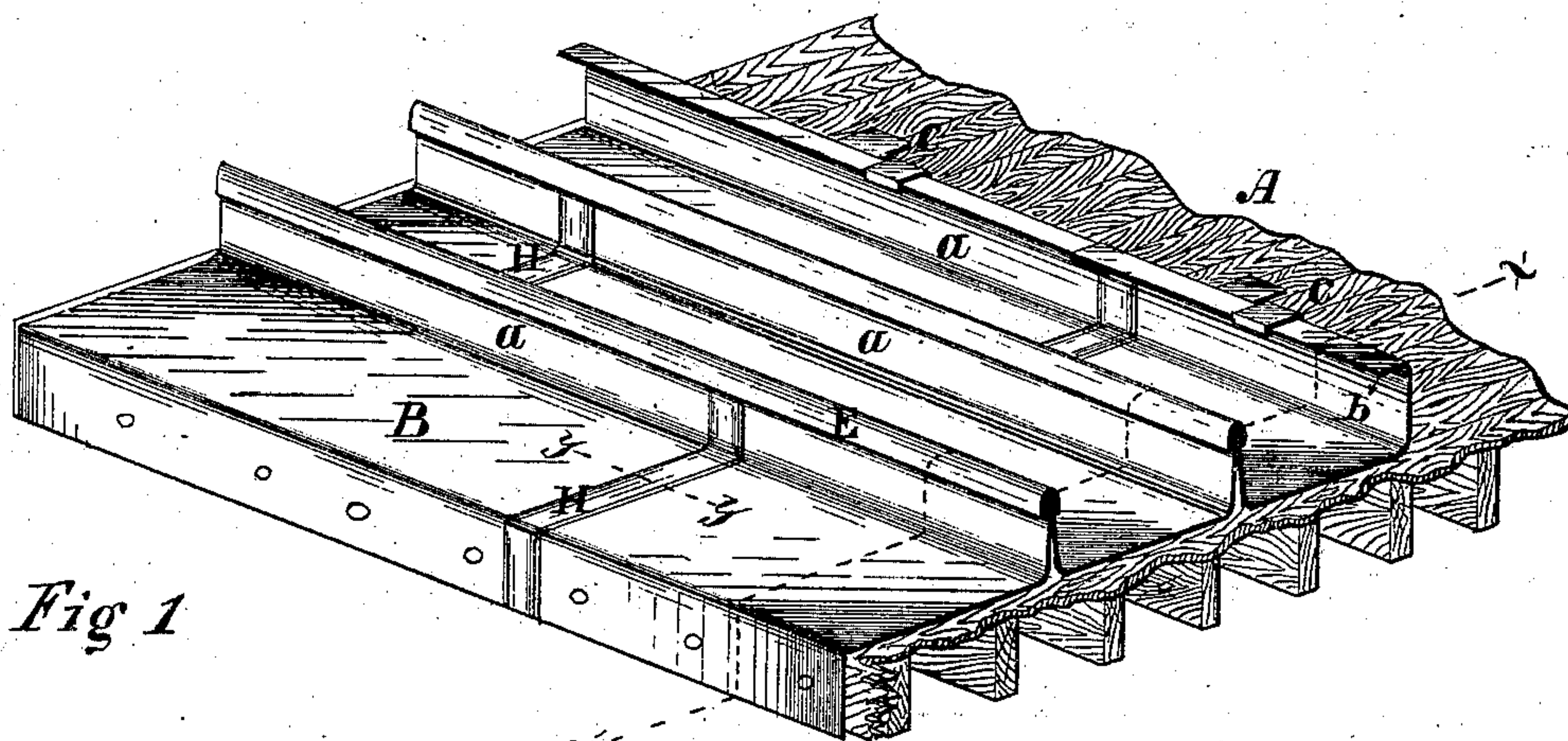


Fig 1

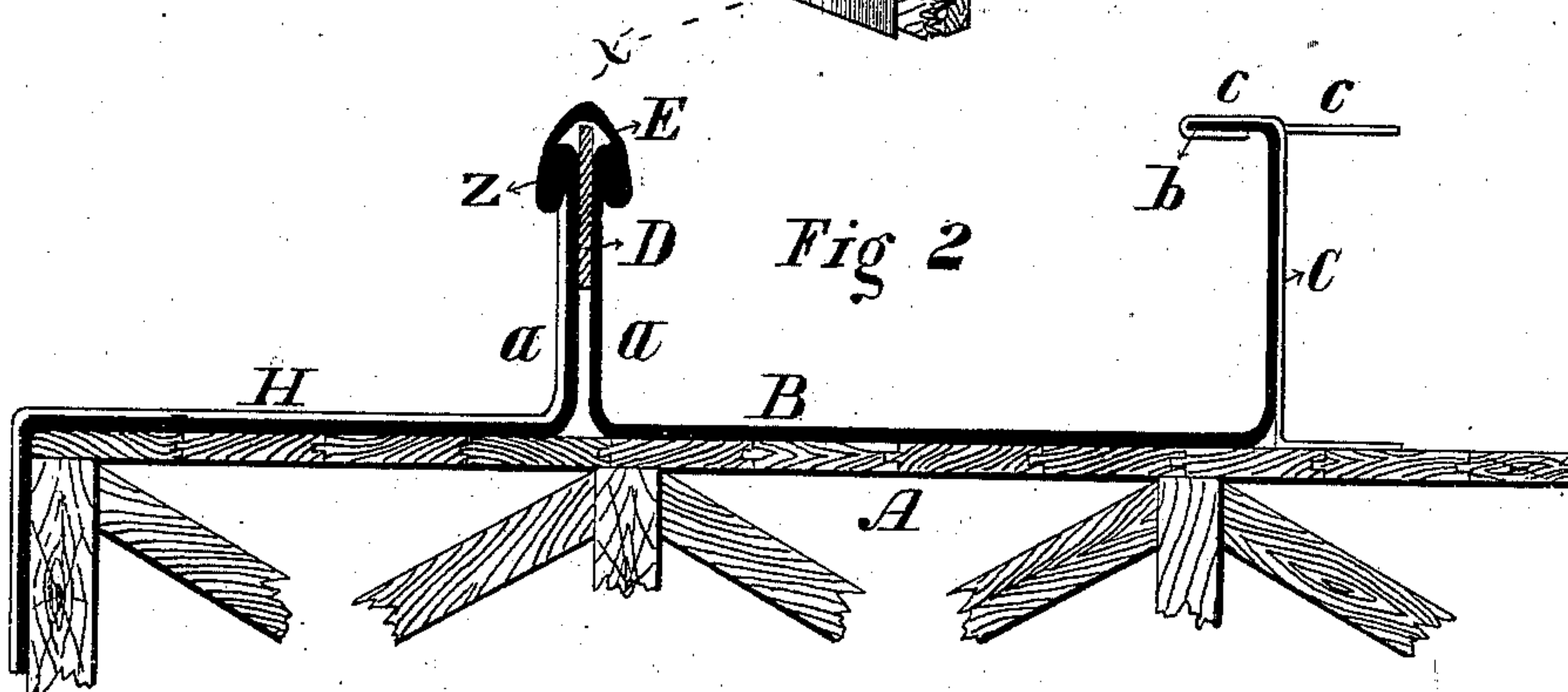


Fig 2

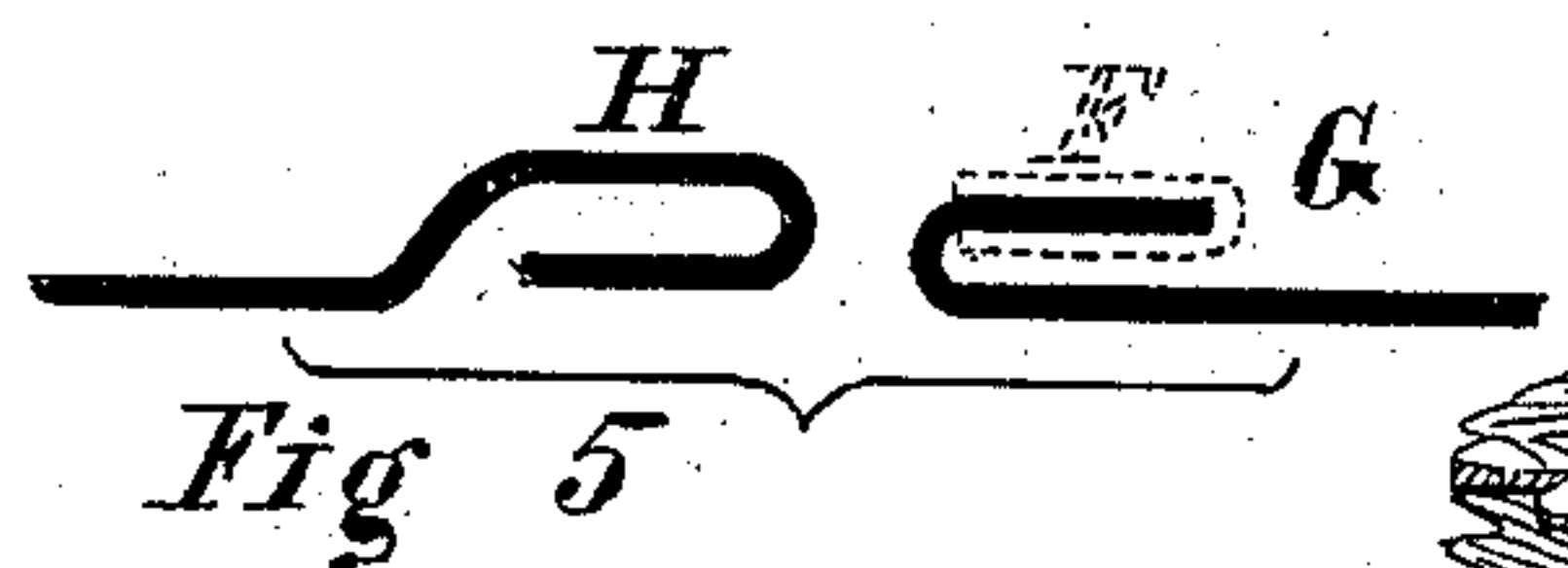


Fig 5



Fig 6

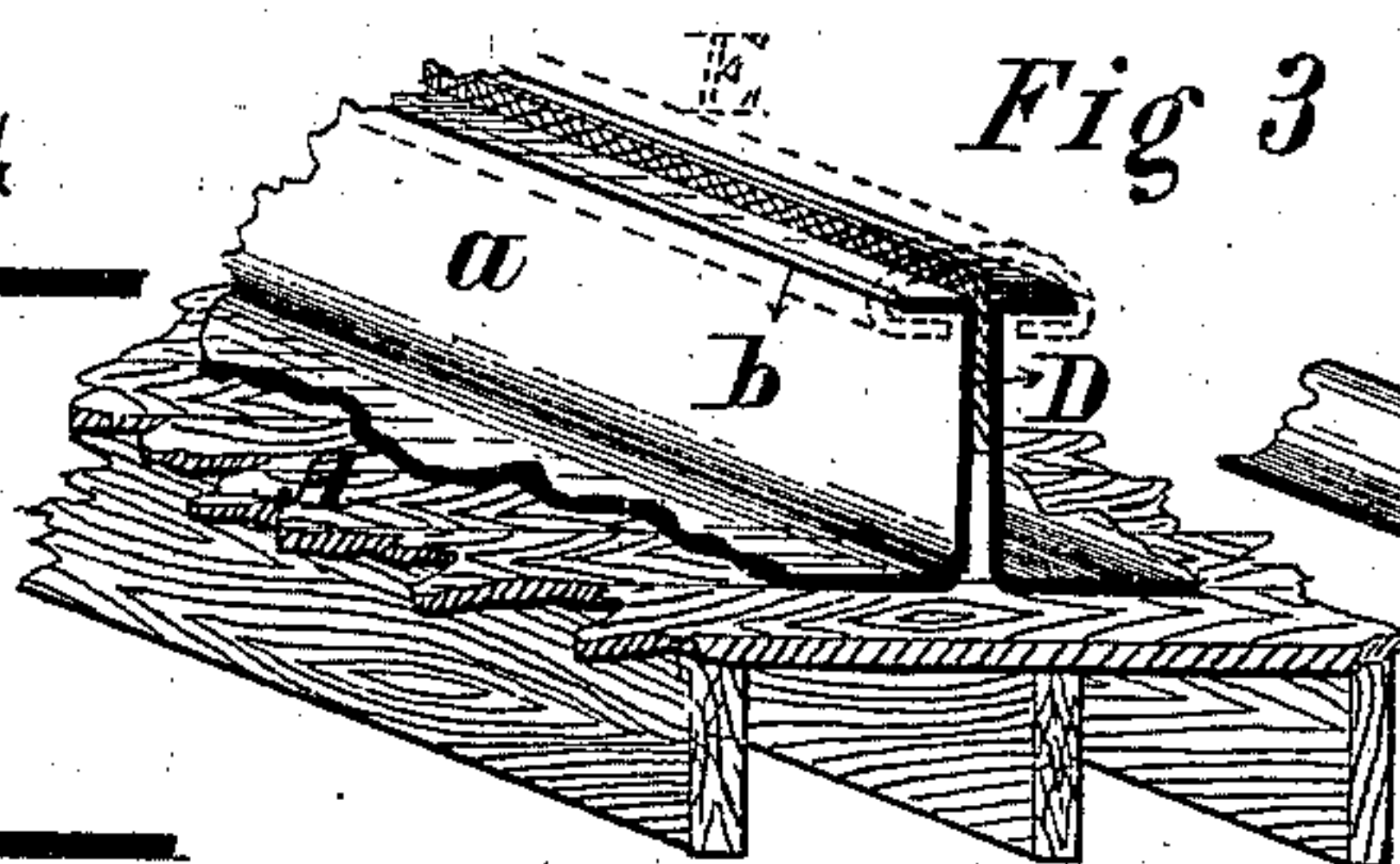


Fig 3



Fig 4

INVENTOR

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UNITED STATES PATENT OFFICE.

MALCOLM HORRIE, OF MORRIS, ILLINOIS, ASSIGNOR OF ONE-HALF HIS
RIGHT TO FRANK B. HANDWERK, OF SAME PLACE.

IMPROVEMENT IN SHEET-METAL ROOFING.

Specification forming part of Letters Patent No. **205,188**, dated June 25, 1878; application filed
September 27, 1877.

To all whom it may concern:

Be it known that I, MALCOLM HORRIE, of Morris, in the county of Grundy and State of Illinois, have invented a new and useful Improvement in Sheet-Metal Roofing, which is fully described in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a perspective view of a section of the roof covered with sheet metal, with my improved joint; Fig. 2, a section of the same on an enlarged scale, taken on the line *x x*, Fig. 1; Fig. 3, a detail, in perspective, showing the arrangement of the parts forming the rib-joint before clamping; Fig. 4, a perspective view of the section of the cap which covers the joint; Fig. 5, a detailed sectional view, showing the two edges before being joined to form the flat seams of the roof; and Fig. 6, a sectional view of one of said seams, taken on the line *y y*, Fig. 1, on an enlarged scale.

My invention relates to the method of forming the rib-joints and seams in sheet-metal roofs; and its object is to form a perfectly water-tight joint.

The invention consists in various details of construction, all of which will be hereinafter more fully set forth.

In the drawings, A represents the roof of the building, and B the strips of sheet metal which are used for covering it. The edges *a* of these strips are bent up in a perpendicular position, the two bends of two adjacent strips being arranged side by side, as shown in the drawings, for the purpose of joining them together in the form of a rib-joint. The extreme upper portion of these upright flanges *a* are first bent outward at right angles, thereby forming a counter-flange or bend, *b*, as shown in the drawings.

A fastening strip or plate of sheet metal, C, is secured at its foot to the boarding of the roof, and extends up between the flanges *a*. The upper end of this strip is slitted, and the two parts *c* are bent in opposite directions, as shown in Fig. 1 of the drawings, and are turned down around and under the narrow flange *b*, as shown in Fig. 2 of the drawings.

A strip, D, of suitable packing material is placed between the vertical sides *a*, either extending the whole width of the latter, or from the top only part way down, as shown in Fig. 3 of the drawings. This strip may be made of canvas, or any other material which is suitable for packing, so as to form a close tight joint, and the upper edge may project a little above the level of the flanges *b*.

If desired, the packing-strip may be saturated with paint or any other water-proof composition before it is placed in position; and whether this is done or not, after being placed in position the upper surfaces of the flanges *b* and the packing-strip should be thoroughly covered with paint, laid on thick.

A cap or cover, E, is bent into such form and made of such size as to easily slip over the upper portion of the joint above described, as shown in dotted lines in Fig. 3 of the drawings, the cap being made of sheet metal, with its edges disconnected, but bent round so as to come underneath the horizontal flanges *b*.

When the cap is slipped on over the joint, as shown in Fig. 3 of the drawings, the several parts are bent down on each side, and thoroughly swaged together by an instrument suitable for this purpose. Under this operation the parts assume the position shown at *z*, Fig. 2 of the drawings, and a close water-joint is formed by means of the packing and paint, which fill all the spaces between the cap and plates.

The joint thus formed will effectually prevent any leakage occasioned by snow and ice upon the roof, which causes the water to back up under the joint, and constitutes a serious objection to sheet-metal roofs, as ordinarily constructed.

The ends of the strips are united by an ordinary overlapping lock-joint, with packing inserted, however, to make it perfectly water-tight. The joint is formed in the ordinary way, by bending the edges of the adjoining ends of the strips over upon each other, as shown in Figs. 5 and 6 of the drawings. A strip of packing, F, is placed around one of the bends, G, of the joint, as shown in Fig. 5 of the drawings, and the other bend, H, is then

hooked over it, and the two are pressed tightly down together in the ordinary way, so as to bring them into the position shown in Fig. 6.

The packing-strip F is of the same material as that described above for the rib-joint, and may be prepared in the same manner. If properly constructed, this joint will effectually turn all water, and the entire roofing, put together as described, will be perfectly water-tight.

Any kind of paint may be used with the packing to close the joints; but a cement paint suitable for use with metallic substances is desirable on some accounts.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The sheets B, having the double bend *a b* at their edges, in combination with the fastening plate or strip C, slitted at its upper end,

with divisions bent in opposite directions around the bent edges of the sheets B, and both turned down together, substantially as and for the purpose set forth.

2. The metal-sheets B, bent, as described, at the edges, in combination with the cap or cover E, the latter bent down upon the sides of the rib, with the flanges *b*, substantially as and for the purpose set forth.

3. The metal sheets B, bent at their edges, as described, in combination with the packing strip D and the cap E, the edges of the strips and cap being bent and folded down together on each side of the packing, substantially as and for the purpose set forth.

MALCOLM HORRIE.

Witnesses:

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