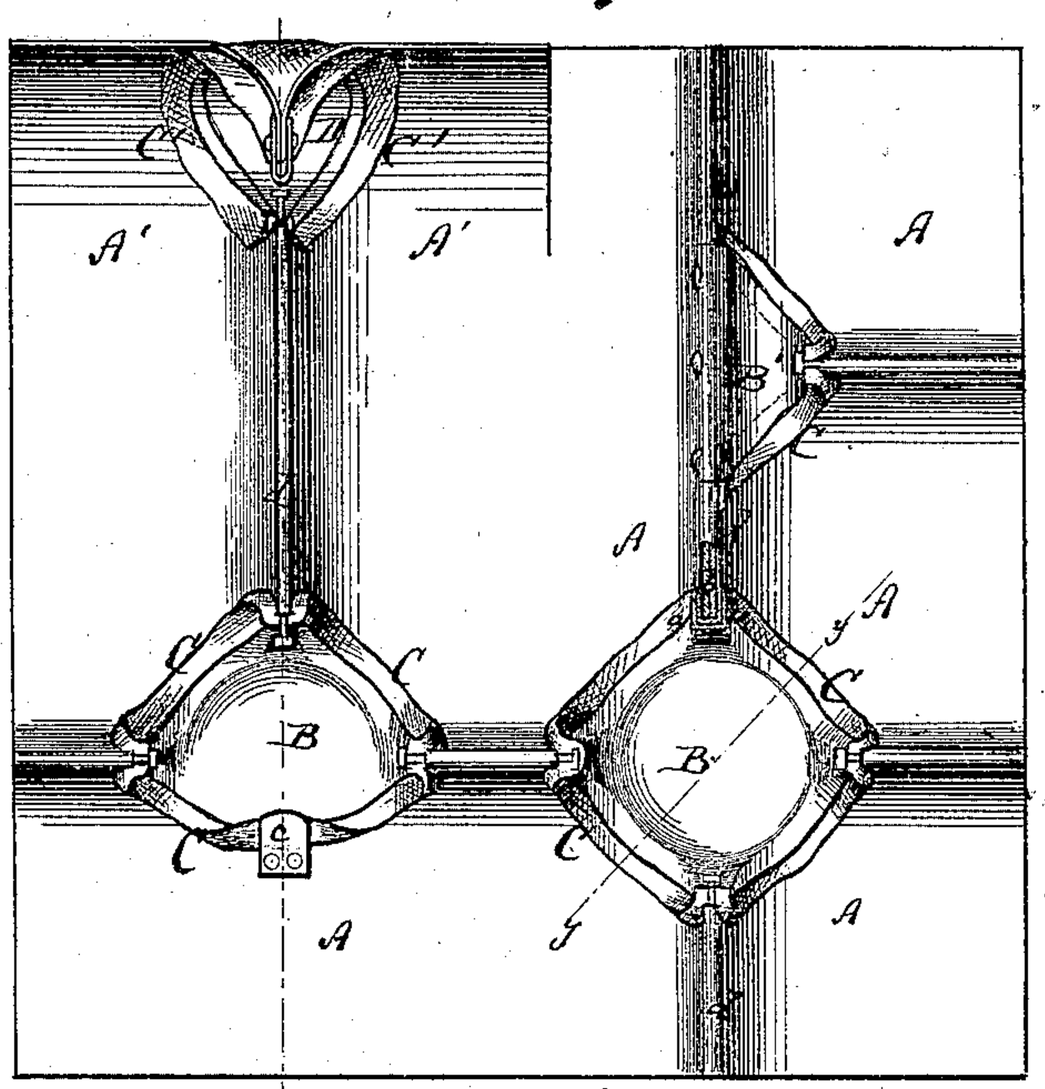
S. HUGHES.

METAL ROOFING.

No. 103,887. Patented June 7, 1870.

Fig. 1



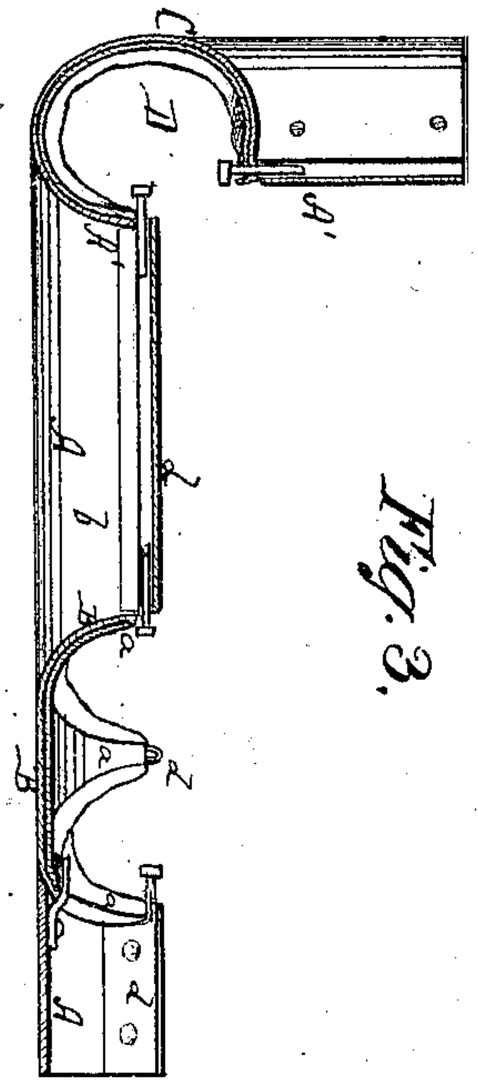


Fig. 3.

Fig. 2

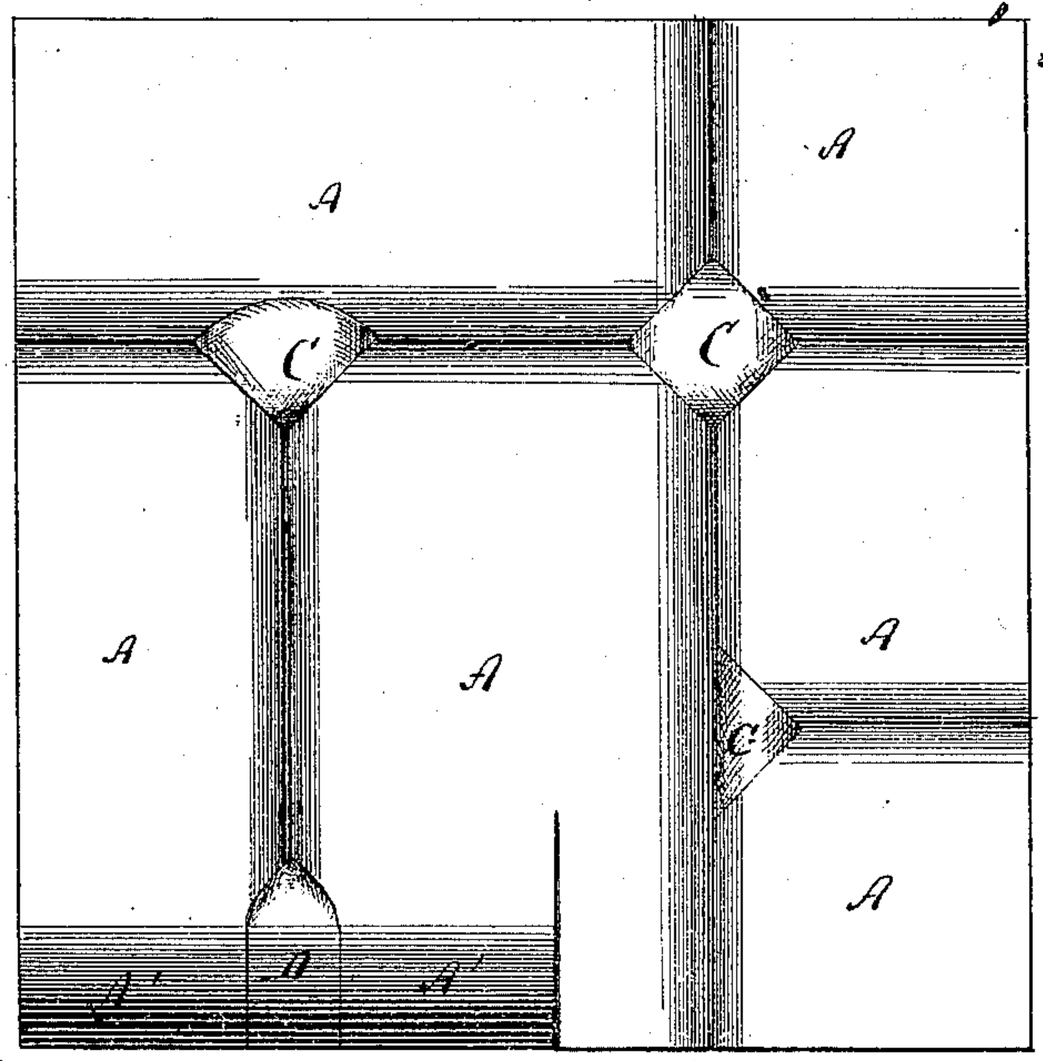


Fig. 4.

Fig. 5. Fig. 6

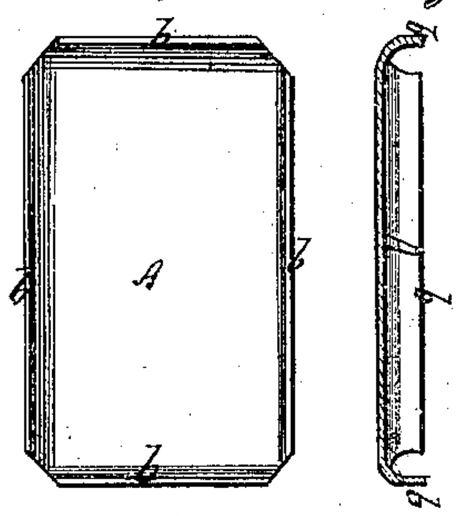


Fig. 7.

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SEYMOUR HUGHES, OF HUDSON CITY, NEW JERSEY.

Letters Patent No. 103,887, *dated June 7*, 1870.

IMPROVEMENT IN METAL ROOFING.

The Schedule referred to in these Letters Patent and making part of the same

To all whom it may concern:

Be it known that I, SEYMOUR HUGHES, of Hudson City, in the county of Hudson and State of New Jersey, have invented a new and improved Metal Roofing; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a plan or top view of a section of a roof, provided with my improved joints.

Figure 2 is an inverted plan view of the same.

Figure 3 is a vertical section of the same, taken on the plane of the line *x x*, fig. 1.

Figure 4 is a detail vertical section of the same, taken on the plane of the line *y y*, fig. 1.

Figure 5 is a plan view of one of the plates used on the roof.

Figure 6 is a longitudinal section of the same.

Figure 7 is a detail vertical section of one of the joints.

Similar letters of reference indicate corresponding parts.

This invention has for its object to so construct the plates of a metallic roofing that the joints formed between them may be entirely water-tight. Heretofore, such joints, especially at the corners where four plates meet, could not be made satisfactorily water-tight.

The invention consists chiefly in the employment of sheets of peculiar form, whereby but three sheets can meet at any one joint.

The invention also consists in the use of a water-proof fabric which is put within the joints to allow expansion and contraction, and still make tight joints.

The invention also consists in the construction of new joints, as hereinafter more fully described.

A, in figs. 5 and 6 of the drawing, represents a sheet, as I employ the same or my improved roof. This plate has its edges turned up, but rounded, and not at sharp angles, and at the corners it is clipped to become octagonal, as shown. When a number of these plates are put together, they will, where the four corners meet, leave room for the insertion of a lozenge-shaped plate, B, which has its corners elevated and bent outwardly, as at *a a*, in fig. 1, to embrace, with each projecting corner piece, the upward projecting flanges *b*, of two adjoining plates A. Between the corners *a* the plate B is so bent as to rest upon and conform to the shape of the plate A, as shown. It merely overlaps the said plates, as shown in fig. 4.

C C are pieces of fabric interposed between the plates B and A. This fabric is soaked with asphaltum or other equivalent matter, whereby it is made impervious to, and a non-conductor of water. It keeps the joints between A and B water-proof without the use of solder, rivets, or other fastening devices, and permits, consequently, full expansion and contraction of said plates, without any danger to the joints.

Similar sheets, C', are interposed between the metal sheets D A', which form the gutter, as shown. For some cases, where but three plates A are joined, it may be necessary to use but half a lozenge plate, as at B, and in some cases the fabric C may be confined to the plate B by an ear, *c*, fastened to the plate A.

The contiguous edges *b b* of the plates A A, are either merely covered by a U-shaped cap, *d*, or they may, as in fig. 7, be turned out and receive a cap, *e*, which has its edges bent up, while a piece, *f*, of water-proof fabric is fitted between the two. This latter form of joint will also do away with all rivets, and will permit free expansion and contraction.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The roofing-sheets A, clipped at the corners to receive the lozenge-shaped joint-pieces B, as set forth.

2. The water-proof fabric C, interposed between the plates A B of a metal roof, to permit expansion and contraction of said plates, as set forth.

SEYMOUR HUGHES.

Witnesses:

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