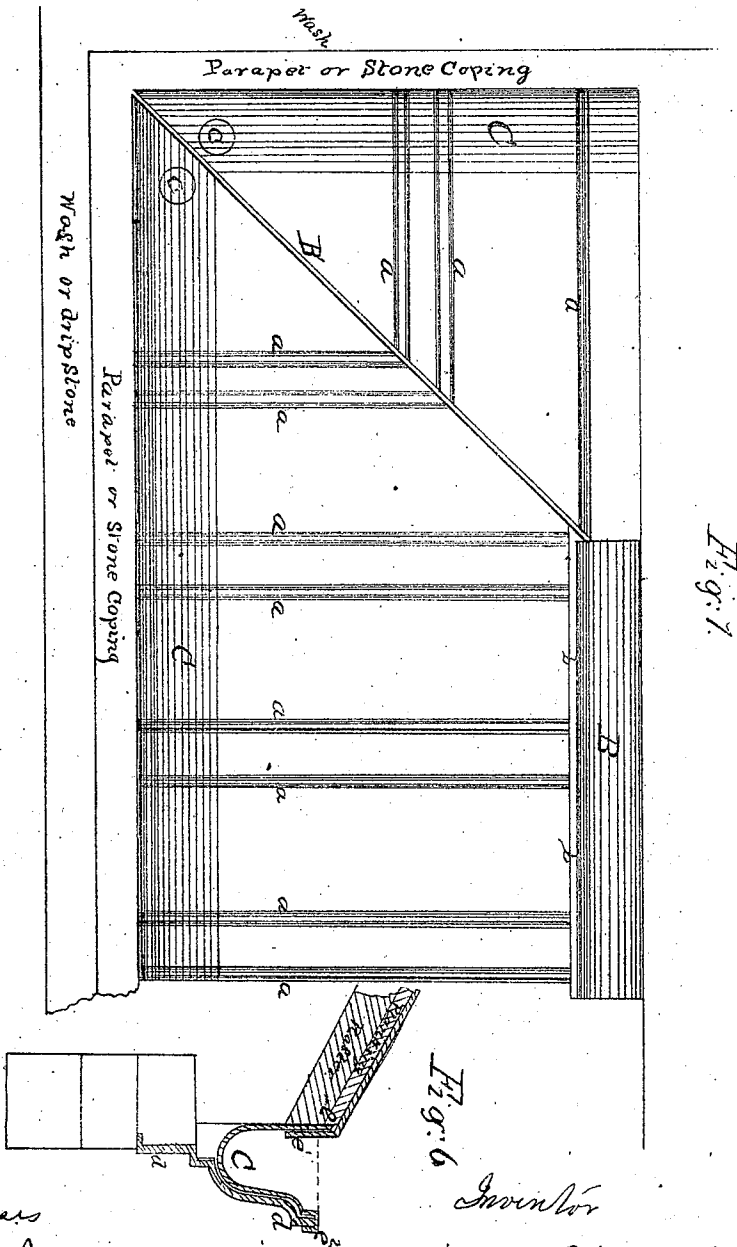


E. P. Vaux.

Metallic-Roofing.

N^o 79522

Patented Jun. 30, 1868.



Witnesses

Edwin James

John S. Hollingshead.

Inventor

Edwin P. Vaux

per Holmead & Hollingshead

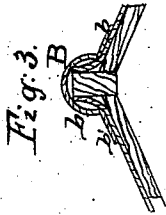
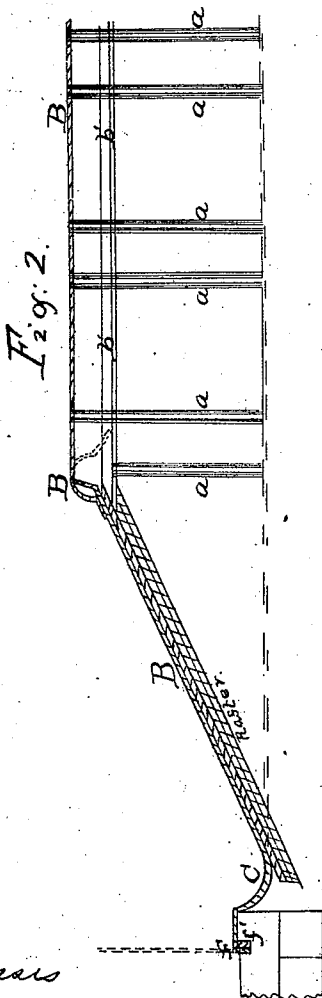
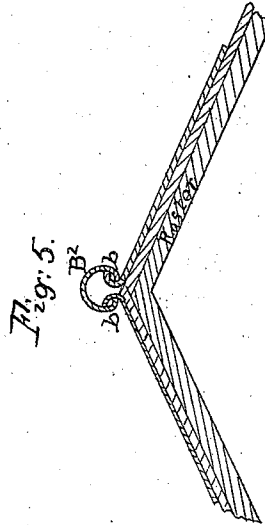
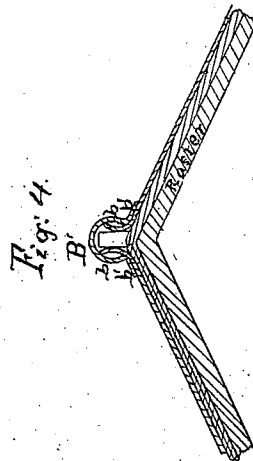
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Wm. S. Hollingshead.

Inventor
Ethan P. Vaux

per Holmead & Hollingshead
Atty.

United States Patent Office.

ETHAN P. VAUX, OF WASHINGTON CITY, DISTRICT OF COLUMBIA.

Letters Patent No. 79,522, dated June 30, 1868.

IMPROVED METALLIC 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, ETHAN P. VAUX, of Washington city, and District of Columbia, have made certain new and useful Improvements in Metallic Roofing; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, and the letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a plan view of the roof.

Figure 2 is a section of the same.

Figure 3 is a section of the ridge-pole.

Figure 4 is a section of the ridge of the hip.

Figure 5 is an equivalent for the same.

Figure 6 is a section of the outside separate gutter.

The nature of my invention consists in covering roofs, either of timber or iron frames, with thin metal plates, which are corrugated, for the purpose of counteracting the effects of expansion and contraction, which, when not provided for, invariably destroy the continuity of the covering-material, and causes the roof to leak; and where the sheets are soldered together, they are torn asunder at the joints. I am aware that many plans have been devised to obviate this difficulty, but hitherto they have all been unsuccessful, and hence the economical use of metal has given way to the more expensive materials, and which are more weighty, and therefore require a heavier frame, and which add greatly to the cost of all classes of buildings.

In my invention I provide for the movement of the metal in all directions, and thus render the covering water-tight; and as, from the lightness of the material, a light frame, either of iron or timber, is only required to span the opening between the walls, and it will support the metal covering.

Having thus described the nature of my invention, to enable others skilled in the art to make and use the same, I will now proceed to describe its nature and operation.

A represents the roof as covered with metal sheets, which may be of copper, zinc, tin, galvanized iron, or sheet iron, and which may be soldered together, or turned over with a single or double lap, and flushed down to suit the circumstances of each case; but in every sheet, before being thus joined to another, there should be near each edge two or more longitudinal or lengthwise corrugations, marked *a a a*, and these corrugations can be extended from the ridge-pole to the eaves; and where the eaves-trough is a continuation of the sheets, these corrugations should continue also across the gutter; and the outer edge of the gutter thus formed is to be let into a groove in the parapet wall, and well calked on the inside, as seen at fig. 2, letters *f* and *f'*. To accomplish this it will be requisite to place the gutter-sheets first in the groove, hard against the outer edge thereof, as seen in dotted lines, and then insert the solder in strips of proper thickness, and then it is to be calked perfectly tight, after which the sheet must be turned over, and the depression for the gutter properly formed, as at *C*, fig. 2, thus making a water-tight joint on the parapet, so that in the event of the down-pipes being stopped, the water will readily flow over the parapet wall, and so to the drip-stone, over which it will fall to the ground. Where separate gutters or eaves-troughs are used inside of cornices, the corrugations should be as frequent across the gutter as circumstances may require; and the outer edge of the gutter, at *e'*, should be turned over the forming-material, which may be a wooden, metallic, or masonry cornice, fig. 6, letter *d*, and the inside edge should rise against the inside trough-piece, grounds, or any other support some distance above the level of the outside edge, as shown in fig. 6, at *e*. The sheets which cover the roof should then project several inches over the eaves, and be turned vertically down, to serve as an apron over the inner edge of the independent gutter, as seen in fig. 6, at *e'*. The expansion or contraction of the gutter laterally will be provided for in the corrugations across the same, and transversely by the free end on the inside at *e'*, and the outer edge at *C*, while it will rest undisturbed in its cradle by its own weight, and the closing of the roof-sheets upon it at *e*.

Where the sheets terminate against the ridge or pole-plate of the frame, they should be turned up with a curve several inches high, as seen at *b b b* in the several figures. Over these curvatures is placed a bead-plate,

B and B', curved to a semicircular shape, and then flared out with a flap, $\delta' \delta'$, several inches in width, and drawn in less than the pitch by the gauge, so that when the cap is placed upon the ridge, the flaps $\delta' \delta'$ of each side, when drawn down by the fastenings through the ridge, will press closely upon the sheets on each side, and where the corrugations occur, the hammer should be used to flatten them somewhat, and the flaps should be hollowed at those places to permit the flaps $\delta' \delta'$ to come down closely to the sheet.

At P², fig. 5, is an equivalent mode of covering the ridge, which can be used, and in which no fastening is required through the cap, as from the complete clasping of the ends of the horse-shoe beading, catching a firm hold of the curvatures of the plates on each side; when stiff sheets are used, as they should always be for the ridge, no force would ever be applied at that point to tear off the ridge.

C is the eaves-trough, having down-pipes or conductors, *c c*. *d*, fig. 6, is a cornice, made of iron, wood, or any other material, inside of which is placed the sheet-metal gutter C. *e* is the upper inside edge of the eaves-trough *e'*, the lower edge of roof-sheets turned down as an apron, *e''*, the outer edge of the gutter turned over the cornice-moulding. *f*, fig. 2, is the groove in the cornice, where sheets are calked with solder. *f'* is the strip of solder.

In hip-roofs, the joinings at the angle or hip can be made in the same curved form, or in the ordinary way, and covered either with the beaded cap B¹, in fig. 4, or curved up and covered as at B², in fig. 5.

I do not claim the use of corrugated metal on roofs, as I know the same has been heretofore used; but What I do claim, is—

A corrugated-metal roof that will allow of expansion and contraction in all directions, when the same is constructed and arranged substantially as herein described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ETHAN P. VAUX.

Witnesses:

JOHN D. BLOOR,

EDWIN JAMES.