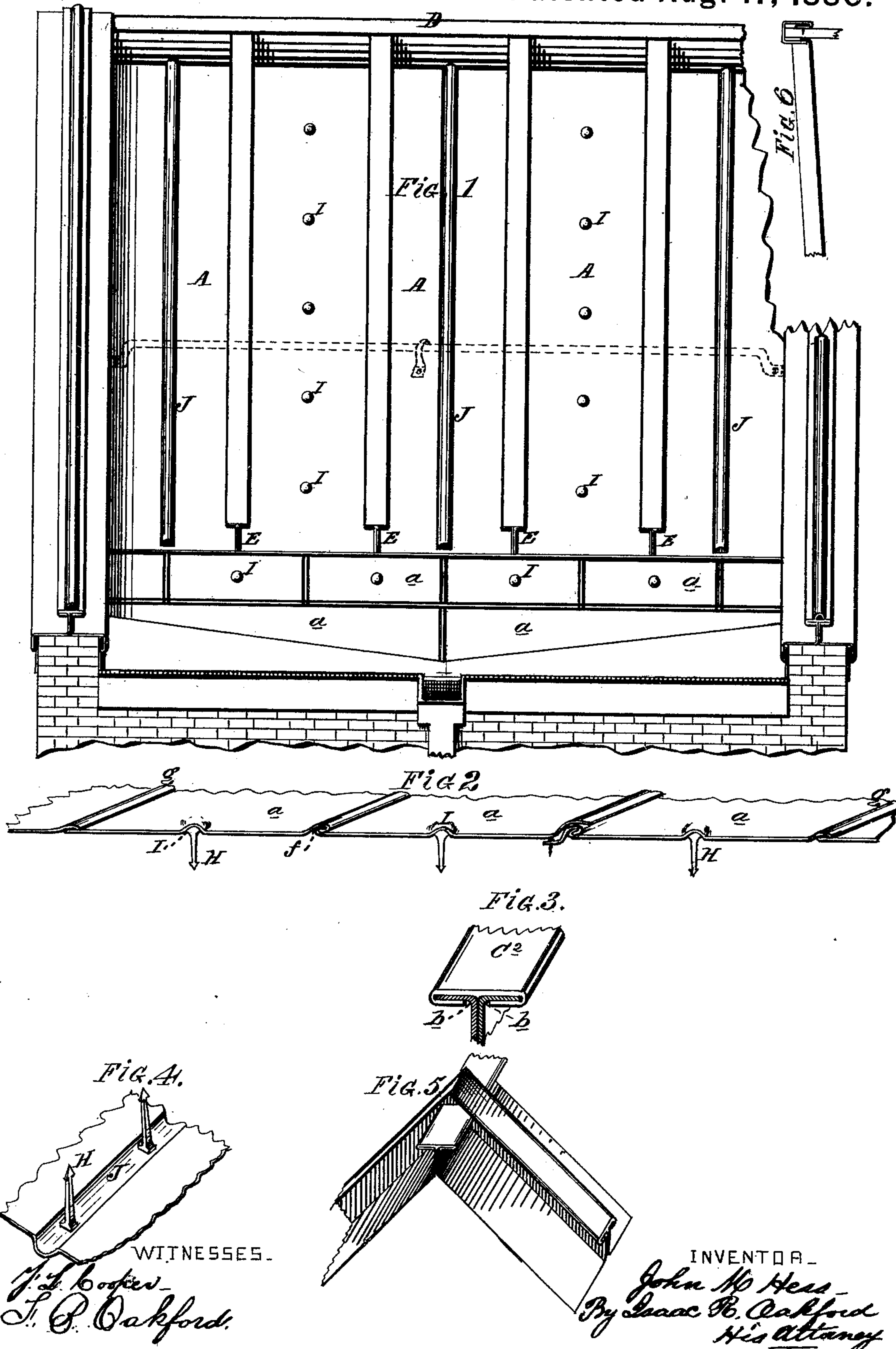


J. M. HESS.
Metallic Roofing.

No. 231,317.

Patented Aug. 17, 1880.



UNITED STATES PATENT OFFICE.

JOHN M. HESS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO CHARLES H. MINTZER, OF SAME PLACE.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 231,317, dated August 17, 1880.

Application filed November 20, 1879.

To all whom it may concern:

Be it known that I, JOHN M. HESS, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Metallic Roofing, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a plan view of my metallic roofing. Fig. 2 is a plan and edge view of a portion of the gutter-strip, showing the seams and the means employed for securing the metal to the wood-work. Fig. 3 is a sectional view across one of the standing seams of the metal plates. Fig. 4 is a perspective view of a groove or channel formed in the metal plates, with projecting nails soldered therein. Fig. 5 is a perspective view, showing the manner of forming the seams when the metal plates are applied to a double-pitch roof. Fig. 6 is an edge view of the metal at the cornice or head of the roof.

The object of my invention is, in connection with the arrangement of the seams or joints of a tin or sheet-metal roof in such a manner that they will remain secure and tight at all times, and also in such a manner as to lend additional stiffness to the plates to prevent rattling, to more thoroughly secure the roof in position to prevent its being torn or blown off by high winds. In the present method of uniting the tin plates double seams are used, which are liable to break and get out of order, owing to the sharp vibrations which the plates are subjected to during storms.

The upturned edges of the adjacent plates, A A A, &c., (shown in Fig. 1 of the drawings,) which form the vertical or standing seams, are turned outward at right angles to form flanges, as shown at *b b'*, Fig. 3. In the old method they are lapped one over the other and pressed together, which has a tendency to break the tin.

C, Fig. 3, is a strip of tin laid on the flanges *b b'*, with the edges curved under the same, forming a complete cap or covering for the seams to effectually prevent their leaking.

D, Fig. 1, is the head of the roof or cornice. A A A, &c., are the tin plates covering the roof, and E E E, &c., are the vertical or standing seams, constructed, as previously stated, with the flanges *b b'* and cap C².

It will be observed that the ends of the

seams at the front of the roof are made to butt against and are secured to the tin covering the wood D, as shown in the sectional view, Fig. 6. By this means the tin at this portion of the roof is braced and stiffened to prevent its being raised up and torn off by high winds.

The tin or metal strip, which is clinched over the flanges formed on the upturned edges of the plates, acts in a twofold capacity—that of a cap or covering for the seam and as a lock for uniting the parts together.

In order to more thoroughly secure the metal plates to the wood-work of the roof, I employ spear-pointed nails H, the heads of which are inserted and soldered within indentations I, formed on the under side of the plates, as shown in Figs. 1 and 2. These nails project downward and are driven into the rafters as the plates are laid down, their spear or barbed points holding with tenacity and preventing the metal from being torn off by high winds.

The heads of the nails shown in Fig. 4 are inserted and secured within a groove or channel, J, formed on the under side of the metal. The advantage in using this groove or channel is that it renders the plates more rigid, and is particularly adapted for the plates which are alongside of the battlement-walls. The nail-heads inserted within the indentations or within the grooves are thoroughly covered, and all danger of leakage avoided.

The manner of forming the seams on pitch or double-hip roofs is shown in Fig. 5, in which case the locking strips or caps may be employed.

The iron rod or stay shown in dotted lines in Fig. 1 is intended to be placed across the standing seams and secured to the roof, if occasions require, to prevent the tin from being blown off.

What I claim as my invention is—

The combination, in a metallic roof, of recessed or indented roof-plates A A, having spear-pointed nails H secured therein, angle-flanges *b* and *b'*, and cap C, whereby the plates are retained securely in position and the joints rendered water-tight, substantially as described.

JOHN M. HESS.

Witnesses:

A. WATKINS,

CHARLES H. MINTZER.