(No Model.)

S. R. HAWTHORNE.

ROOFING.

No. 386,316. Patented July 17, 1888.

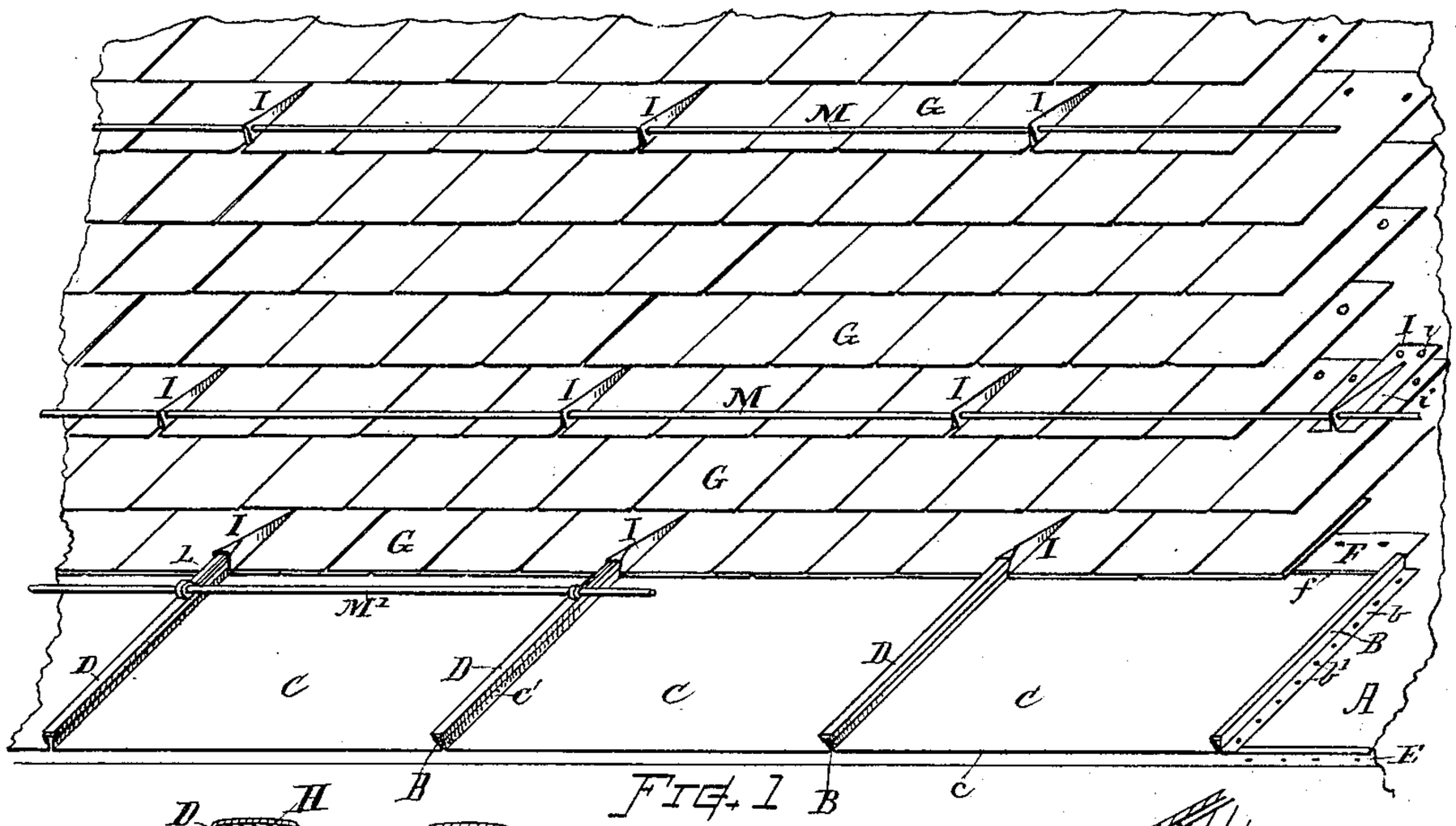


FIG. 1

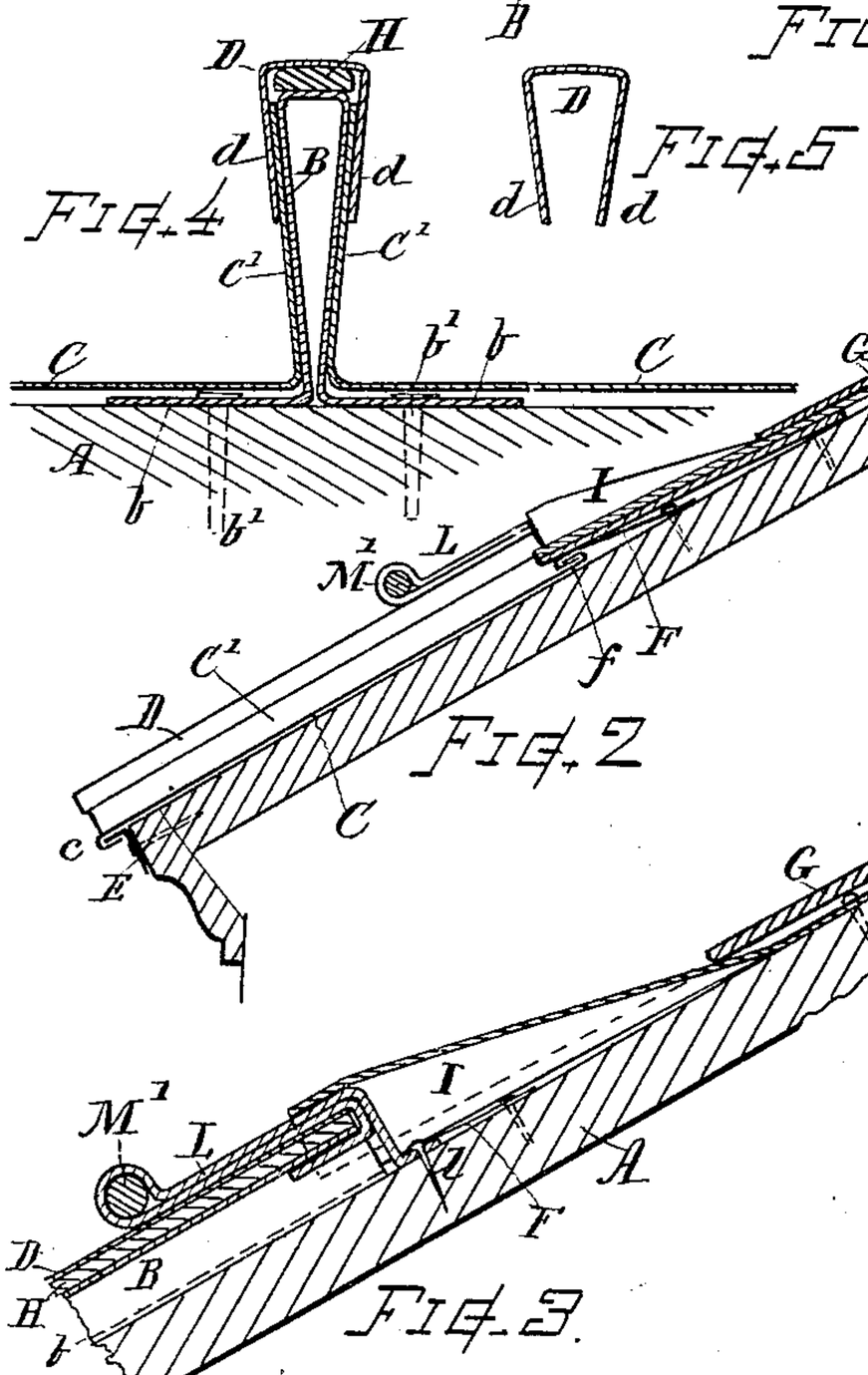


FIG. 4

FIG. 5

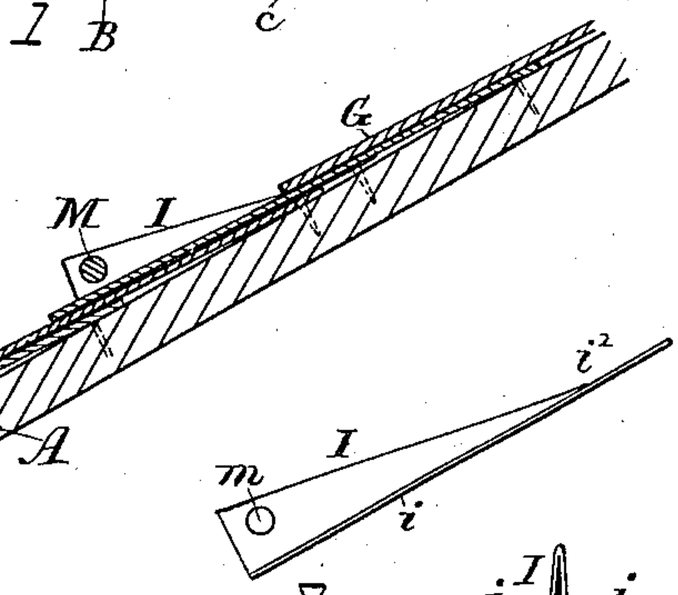
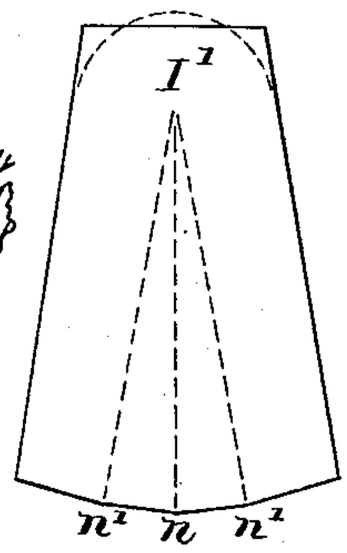


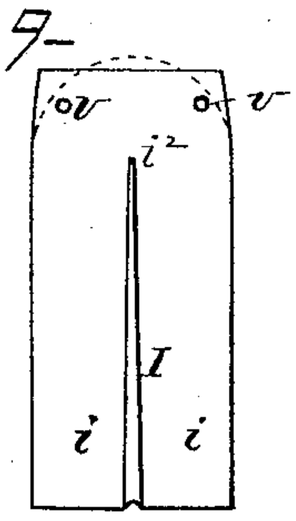
FIG. 2

FIG. 6

FIG. 7-8-9

FIG. 3.





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UNITED STATES PATENT OFFICE.

SAMUEL R. HAWTHORNE, OF MIDDLEBURY, VERMONT.

ROOFING.

SPECIFICATION forming part of Letters Patent No. 386,316, dated July 17, 1888.

Application filed January 3, 1888. Serial No. 259,653. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. HAWTHORNE, a citizen of the United States, residing at Middlebury, in the county of Addison and State of Vermont, have invented certain new and useful Improvements in Roofing, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

In roofs covered with slates or tiles laid as in ordinary shingle construction, and on buildings which are heated in the interior, there frequently occur in cold weather conditions of temperature which will cause the snow and ice to melt upon the roof surface which is over the warmed interior, and to freeze along the eaves or outer edge of the projecting cornice, thereby forming a gradually-increasing ice dam along the eaves, behind which the water accumulates until it flows back over the heads of the lower rows of slates and leaks through the roof and ceilings of the buildings, causing much damage and annoyance. Furthermore, the sliding of bodies of snow upon a roof having this ice dam frozen to the slates or along the eaves frequently breaks or tears away such slates and causes much damage.

The object of my present invention is to obviate the above-named difficulties and to afford a roof which will not be liable to leak by reason of the formation of ice along the eaves and the consequent backing up of the water, and to also afford a practical and efficient means for preventing the slide of snow and ice on the roof. These objects I attain by means such as herein shown and described, the particular subject-matter claimed being hereinafter definitely specified.

In the drawings, Figure 1 is a view of my improved roofing. Fig. 2 is a section of the same. Fig. 3 is a longitudinal section through one of the plate-connecting joints. Fig. 4 is a transverse section through the plate-connecting joints. Fig. 5 is a transverse section of the cap before it has been placed on the joint. Fig. 6 shows a view of the flashing-point blank. Figs. 7, 8, and 9 show side, end, and plan views of the sheet-metal flashing-point.

Referring to parts, A denotes the roof-boarding, laid in the ordinary manner.

B indicates a supporting-rib, which is about one-half inch wide (more or less) across the top, and about two inches (more or less) in height. This rib is made of sheet metal folded in the manner shown, so as to give a dovetailed shape to the upright portion, and with side flanges, *b b*, by aid of which the rib is securely fastened to the roof-boarding A by screws or nails *b'*, driven through holes punched in said flanges. A number of the ribs B are secured to the roof along the eaves some three to four feet (more or less) apart and extending up and down on the roof, as illustrated in Fig. 1.

C indicates sheet-metal plates having their lower edges bent under to form a lock at the eaves, their upper edges bent over to form a head-lock, and their ends C' turned up in a manner to fit against the sides of the ribs B, the upward-turned end C' being substantially of the same height as the rib.

D indicates a cap-piece made of dovetailed form to fit over the top of the rib B and to confine the upturned edges C' of the plates C.

The length of the ribs B and cap D corresponds with the width of the roof-plates C. This may be the full dimension of merchantable sheet-copper or galvanized iron found in the market, or less if such being the material of which these parts are made, or, if preferred, of a smaller dimension.

E indicates the drip-piece or angular-shaped strip fastened to and extending along the eaves, and to which the lower edges of the plates C are secured by the under-locked joint at *c* in the usual manner of attaching sheet-metal roofing.

F indicates a fastening or attaching strip extending along the upper edges of the plates C, connected thereto by the interlocking folded edges at *f*, and securely nailed or screwed to the roof-boarding.

G indicates the slates, tiles, or shingles, laid and fastened in the usual manner, the lower courses lapping over and covering the attaching-strips F and upper edges of the sheets C.

H indicates a tightening-strip or binding-shim introduced between the top of the rib B

and cap D, for raising the cap and thereby causing its dovetailed sides to hug closely against and clamp the upturned edges of the plates C firmly to the sides of the dovetailed supporting-rib B.

When putting on the roofing, the ribs B are first nailed to the boarding. The plates C are then laid with their edges C′ fitting against the sides of said ribs, and the cap D is fitted over the rib B and edges C′ by slipping it thereon endwise, the dovetail sides *d d* of the cap locking with the dovetail of the rib and plate edges C′. The binding-shim or tightening-strip H is then driven into the space between the cap and rib from one end. This lifts the cap and causes it to fit tight against the side surfaces.

If desired, the top of the rib B and cap D can be slightly tapered throughout their length to facilitate sliding on the cap-piece D. The edges *d d* of the cap are preferably made with a sharper incline to their dovetail than are the ribs B, so that said edges have to spring apart somewhat when the cap is forced over the other parts. This insures a more snug fit. In some instances the strip H may be omitted, if desired; but I prefer to introduce it, as described. It can be fastened by a nail at its upper end, or, if made of metal, by bending down its upper end so that it will engage the end of the rib B.

I indicates flashing-points or triangular fin-shaped guards, for the purposes shown. Said points are made, substantially as indicated in Figs. 6 to 9, with side flanges, *i*, that lie under or between the slates, and with an upwardly-inclined central rib or fin that projects upward between two adjacent slates. One of these flashing-points is arranged to cover the upper end of each of the supporting-ribs, including the plate edges C′ and cap strips D, so as to make all tight and secure at the junction thereof with the slating. The particular construction of these flashing-points and their employment for supporting snow-guards are features of my invention which I reserve for the subject-matter of a separate application for Letters Patent.

L indicates an eye for supporting a snow guard or rod, M′.

The required spread for covering the width of the cap and guard-loop L can be imparted to the flashing-points I by flattening the apex of their upwardly-projecting fin.

In some instances the attaching-strips F can be omitted and the nails driven through the upper edge of the plate C; but I prefer to employ said strips F, as I consider it the better construction.

I am aware that roofs have heretofore been laid with sheet metal along the eaves; also, that standing joints have been used in metal roofing, and also that snow-guards have been made to lie in with the slates. I do not therefore herein make claim, broadly, to such features irrespective of their construction.

What I claim as of my invention, and desire to secure by Letters Patent, is—

1. In a roof-covering, the combination of the dovetailed ribs B, the roofing-plates C, having upward-turned edges C′ fitted against said ribs, the cap-strips D, having edges *d d* overhanging and locking the edges of said plates to the ribs, and the flashing-point I, covering the upper end thereof, substantially as set forth.

2. In a roof-covering, the combination of the rib B, having attaching-flanges *b* and the dovetailed upright portion, the roofing-plates C, having the upward-turned edges C′ fitted against the sides of said ribs, the cap D, having sides *d d* overhanging and locking the edges of said plates to the ribs, the flashing-point I, and the straining-strip H, inserted between the cap and top of the rib, for the purpose set forth.

3. In a roof-covering, the combination of the folded metal flanged and dovetailed ribs B, the roofing-plates C, having the upward-turned edges that fit against the sides of said ribs, the cap-strips D, having overhanging edges that lock the edges of said plates to the sides of the ribs, and flashing-points I, substantially as and for the purpose set forth.

4. In a roof-covering, the combination of the ribs B, having attaching-flanges *b* and dovetailed upright portion, the plates C, having upward-turned side edges, C′, and locking-folds at their upper and lower edges, the overhanging cap D, the fastening-strips F, the point-flashings I, and the slates, tiles, or shingles G, as shown and described.

Witness my hand this 29th day of November, A. D. 1887.

SAMUEL R. HAWTHORNE.

Witnesses:

ELLA P. BLENUS,

CHAS. H. BURLEIGH.