

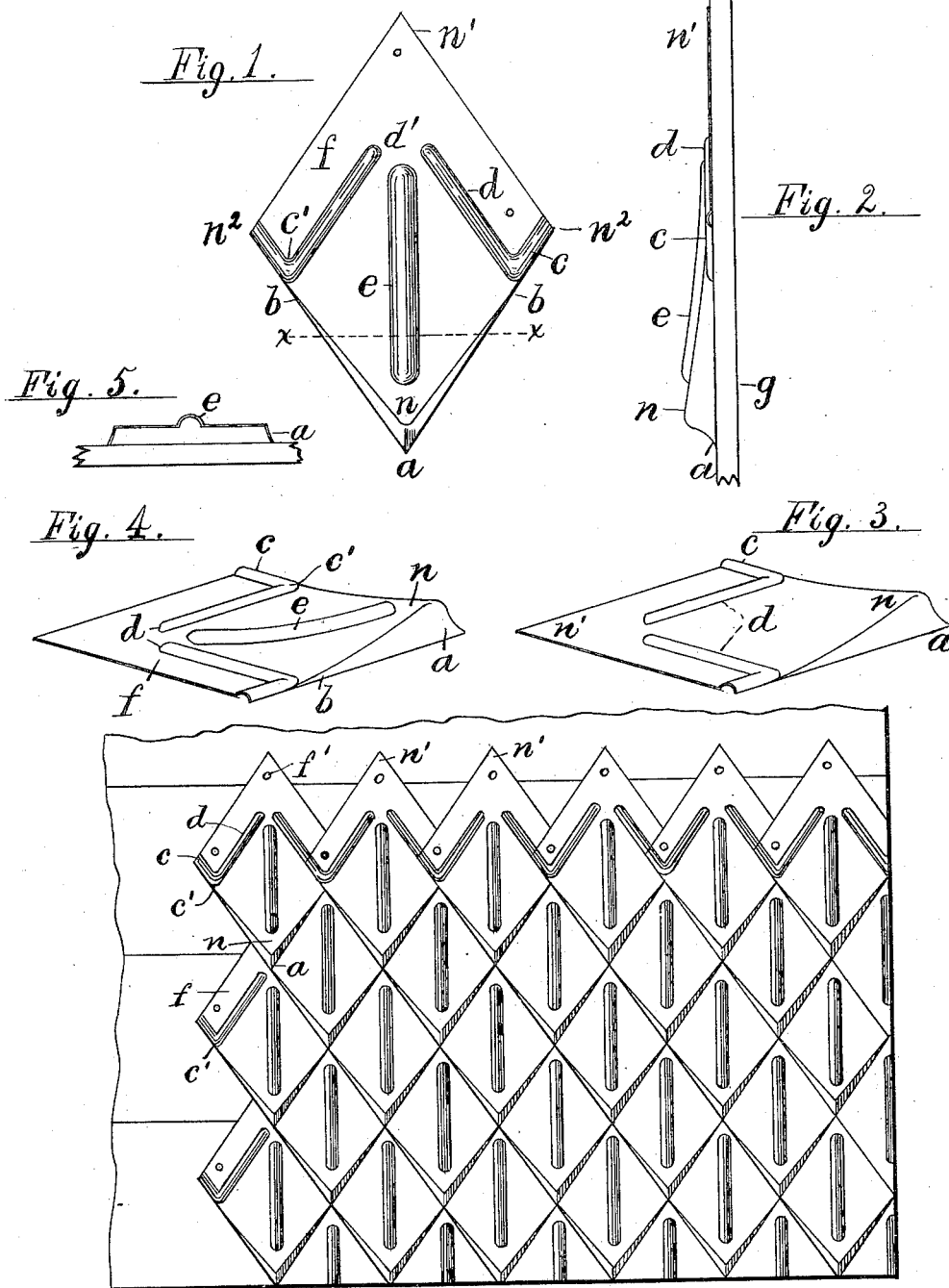
(No Model.)

J. S. THORN & C. LEFFLER.

METALLIC ROOFING TILE.

No. 341,966.

Patented May 18, 1886.



Attest:

L. Lee.

Henry J. Theberath

Fig. 6.

J. S. Thorn & C. Leffler

per Crane & Miller Atty

Inventors.

UNITED STATES PATENT OFFICE.

JACOB S. THORN, OF PHILADELPHIA, PA., AND CHARLES LEFFLER, OF
BROOKLYN, N. Y.; SAID LEFFLER ASSIGNOR TO SAID THORN.

METALLIC ROOFING-TILE.

SPECIFICATION forming part of Letters Patent No. 341,966, dated May 18, 1886.

Application filed February 18, 1886. Serial No. 192,396. (No model.)

To all whom it may concern:

Be it known that we, JACOB S. THORN and CHARLES LEFFLER, citizens of the United States, residing, respectively, at Philadelphia and Brooklyn, counties of Philadelphia and Kings, and States of Pennsylvania and New York, have invented certain new and useful Improvements in Metallic Roofing-Tiles, fully described and represented in the following specification, and the accompanying drawings, forming a part of the same.

The invention relates to an improved combination and arrangement, in a single diamond-shaped metallic plate, of certain features adapted to secure improved results when the tiles are properly joined together and secured upon a roof, and the improvements consist, partly, in the combination, in a tile having diamond-shaped point and having tapering flanges projected inward from the edges of such point, of a rib extended downward from the side of the tile toward the point a short distance, and a rib connected therewith and extended upward from the edges of the tile toward the middle, parallel with the opposed edges of the point, and partly in the combination, with a tile having such flanged point and such ribs, of a curved longitudinal rib extended upward from the point and operating to stiffen the latter and to hold it down upon the roof.

The invention is shown herein as applied to a diamond-shaped plate having a point at each of its upper and lower ends and opposite sides, but it will be seen that the improvements are applicable to a perfectly square plate or others of similar form, if applied to the roof with one point downward, substantially as described herein.

We are aware that certain features of our invention have been heretofore used in other combinations, but the particular arrangements of the elements which we employ modifies their effect and secures a new result.

Our invention will be understood by reference to the annexed drawings, in which Figure 1 is a plan of one tile. Fig. 2 is an edge view of the same lying upon a roof-board. Fig. 3 is a perspective view of the same without the longitudinal central rib. Fig. 4 is a

perspective view of the same with the longitudinal rib. Fig. 5 is a section across the point of the tile on line xx in Fig. 1, and Fig. 6 represents the lower corner of a roof having five tiers of tiles laid thereon.

n is the point or lower end of the tile; n' , the upper corner upon the head of the tile, and n'' the side corners of the tile. A flange is formed along the edges of the point, being bent inward to rest upon the roof-board g , and tapered gradually from its middle a to the point b below the side n'' , where a rib, c , is formed upon the edge of the tile and extended upward to the side corners, n'' . A rib, d , is shown formed in the tile-plate continuous with the lower end of the rib c , and extended upwardly and inwardly nearly to the middle line of the tile, parallel with the opposed lower edge of the flanges $a b$, the upper ends of the ribs d being separated by a space, d' , to admit the point of the overlapping tile.

The flanges $a b$ are applied over the ribs $c d$ when the tiles are laid, as shown in Fig. 6, with the point n applied in the blank space d' , and all that part f of the tile above the ribs is therefore covered, and may be used as a nailing-flange, and be provided with holes f' , if desired. Such nailing-flange is made flat to fit the roof-boards, but the point of the tile-plate is raised above the boards by the flanges $a b$, and is united to such flat portion by curving the plate from the point n upward to the ribs d , as is shown in Fig. 2.

As the flanges along the sides of the point terminate at the junction of the ribs $c d$, it is obvious that the tile-plate would have no stiffness longitudinally without an additional brace, which is provided by forming a longitudinal rib, e , upon the outer side upon the middle line. Such rib is curved to correspond with the concave form of the plate, as shown in Figs. 2 and 4, and operates as well to impart an ornamental appearance to the tile as to hold the point of the flanges at a firmly downward over the ribs $c d$, to form a weather-tight joint.

The flanges $a b$, formed upon the point of the tile, also serve to render the points prominent when the tiles are laid upon the roof, and thus present the effect of considerable thick-

ness in the tile, and produce a contrast of light and shade resulting in a highly-ornamental appearance.

It will be noticed by inspecting the upper tier of tiles laid upon the roof in Fig. 6 that the angles c' of the ribs $c d$ form a V-shaped rib, c' , and are laid over one another upon the points n' of the preceding tier before the flanged points of the succeeding tier are applied thereto. The tiles are thus guided accurately to the desired position, and a double security against the weather is effected by the junction of two sets of ribs, $c d$, and the projection afforded by the flanges $a b$, which wholly inclose them both.

The curved rib e is not absolutely essential to the operation of our invention, and one form of the tile is therefore shown without it in Fig. 3.

We are aware that a flange bent inward upon the lower edge of a diamond-shaped tile is not entirely new, and that ribs formed along the upper edges of such a tile have been also used to engage with such flanges, and we do not therefore claim the same, broadly; but, having fully set forth the particular functions of each part of our construction and shown the manner in which they co-operate, we have claimed only our particular improvements.

The small number of elements embodied in our tile to make a good weather-proof joint when they are secured together, renders the same much more easy of application than if provided with any kind of lock-joints or requiring any special means for securing the same to the roof. Our tile may therefore be properly laid upon the roof by an unskilled person, and when thus laid those constructive features which constitute the weather-joint are entirely concealed, with the exception of the flange $a b$, thus avoiding any external appearance of the mechanical construction.

The flanges $a b$ being tapered from the point of one tile gradually upward to the point of the tile above it, suggests an architectural feature rather than a constructive element, and imparts a purely architectural effect in the aggregate.

The only constructive feature not involved in the formation of the weather-joint is the stiffening-rib e , which, so far from defacing the surface of the tile or impairing its architectural effect renders the latter still more novel and pleasing.

The use of the short ribs c is not absolutely essential to our invention, and we have therefore claimed the same with and without such ribs; but, when used, the V shape furnishes a form of joint for the succeeding members of each tier, which greatly assists an unskilled operator in properly placing the tiles (as is evident from inspection of Fig. 6) and also completely intercepts any passage of wind or water at such V-shaped joint.

As the point of the V-rib extends downward, its sloping sides, $c d$, direct the wind and water that may penetrate the flange a

sidewise toward the middle of the tiles, and thus prevent its penetrating between the edges of the same.

We have not claimed herein the combination in a tile of a flat head and a curved body, as we have claimed the same generically in an application copending herewith.

What we claim herein is—

1. The combination, with a tile having diamond-shaped point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point a of the tile and tapered to nothing at the upper edge, b , of the exposed surface, and the ribs d , formed upon the head of the tile parallel with its opposed lower edges and extending to the same, and the space d' between the upper ends of the ribs, the parts being constructed and arranged substantially as and for the purpose set forth.

2. The combination, with a tile having diamond-shaped point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point a of the tile and tapered toward its sides, the rib c extended downward from each side of the tile along the same inclined edges as the flanges $a b$ and rib d , continuous with the rib c at its lower end and inclined upward toward the center of the tile parallel with the opposite exposed edge of the same, the flange at the inclined sides of the point a being adapted to embrace and cover the ribs c and d , as and for the purpose set forth.

3. The combination, with a tile having diamond-shaped head and point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point a of the tile and tapered toward its sides, the outer surface of the tile being flat where it is secured to the roof and of concave form where it is exposed, the ribs c and d continuous with one another and forming a V upon the flat part of the tile, as described, and having the nailing-surface f between the ribs d and the inclined edges at the head of the tile, the said parts being constructed and arranged substantially as and for the purpose set forth.

4. The combination, with a tile having diamond-shaped point, of the flange projected inward from the edges of such point, the flange being of greatest depth at the point a of the tile and tapered toward its sides, and the outer surface of the tile being of concave form and provided with the ribs c and d , connected together and arranged as described, and with the central curved rib, e , as and for the purpose set forth.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JACOB S. THORN.
CHARLES LEFFLER.

Witnesses:

CHAS. L. HART,
THOS. S. CRANE.