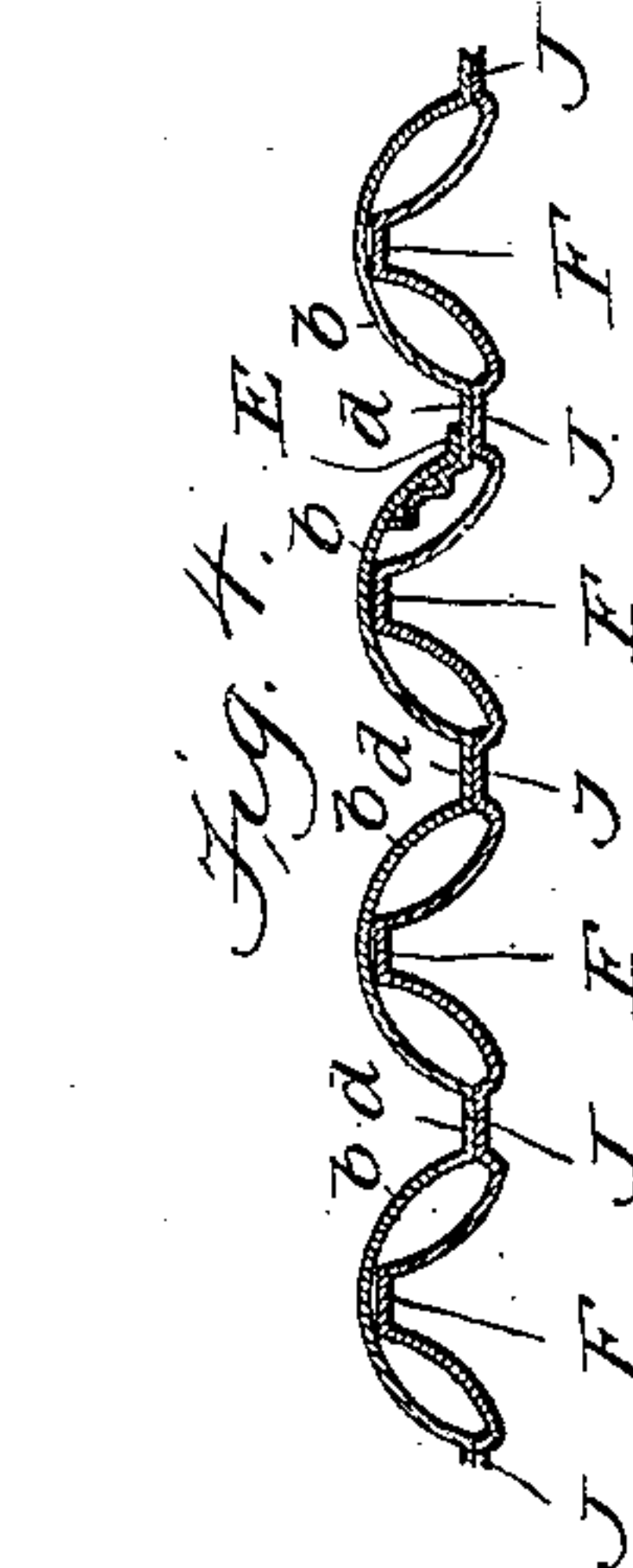
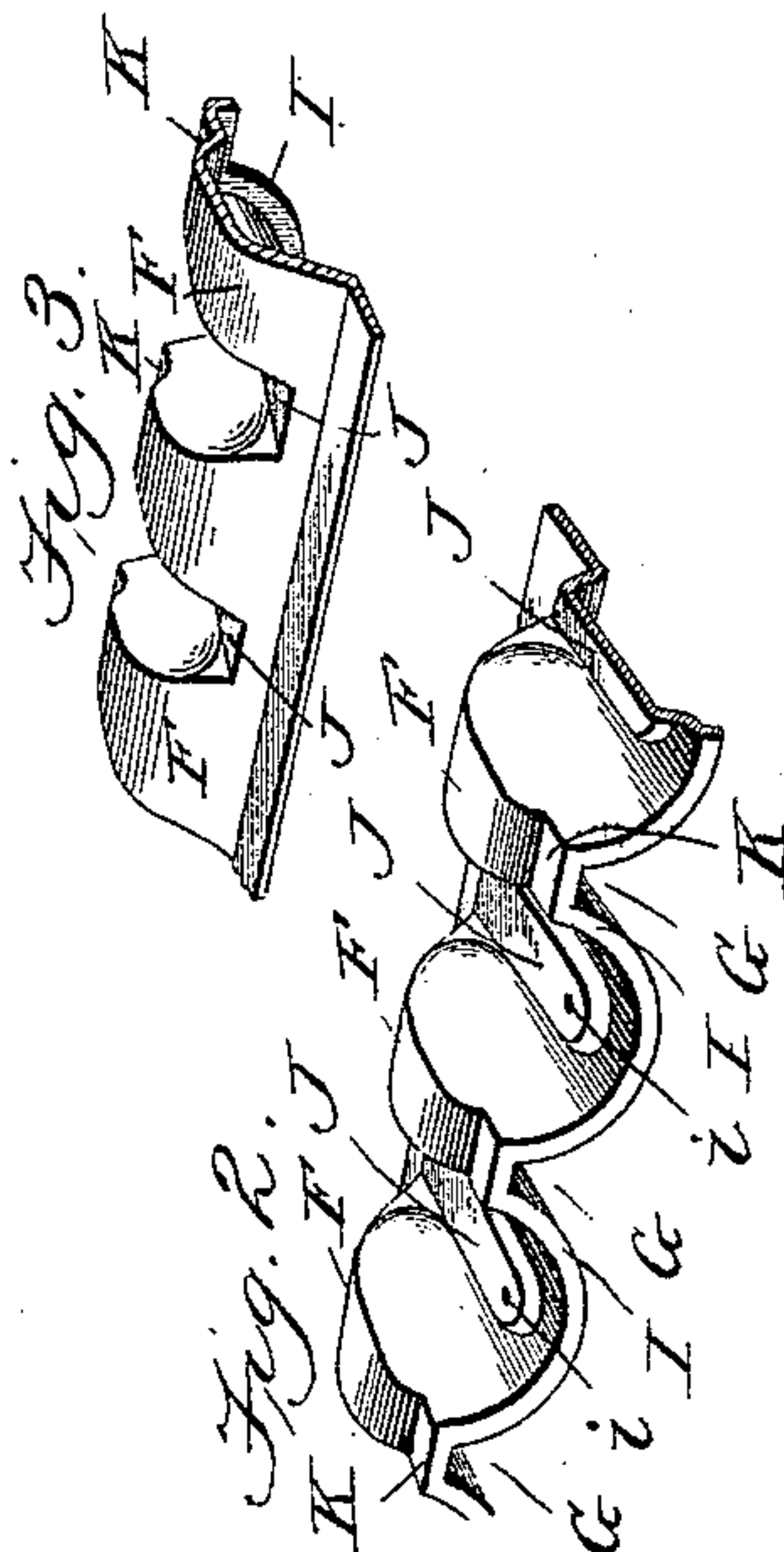
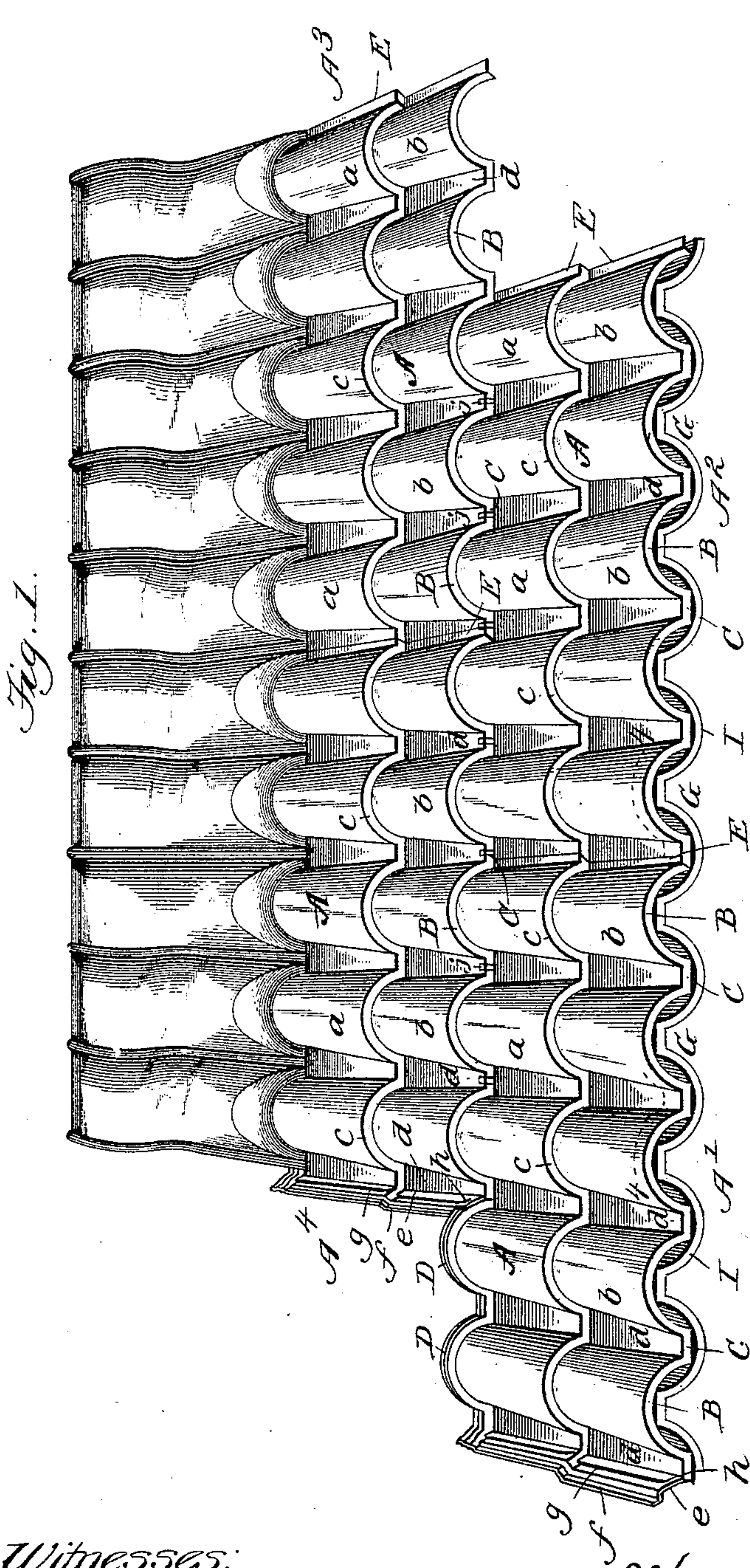


(No Model.)

W. H. MULLINS.
METALLIC ROOFING.

No. 538,532.

Patented Apr. 30, 1895.



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM H. MULLINS, OF SALEM, OHIO.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 538,532, dated April 30, 1895.

Application filed February 28, 1895. Serial No. 540,024. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MULLINS, a citizen of the United States, residing at Salem, in the county of Columbiana and State of Ohio, have invented 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 invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in roofing or covering for buildings, and consists in certain features of construction, arrangement, and adaptation which will be hereinafter fully set forth and described.

This invention has for its object the production of a metallic roof stamped or otherwise formed of sheet metal such as copper, iron, or zinc in exact imitation of the semi-cylindrical terra cotta tile technically known as "monk and nun" tile, and laid as headers in overlapping alternately inverted courses. It is distinguishable from the latter however, in its highly important quality of lightness, the closeness and absolute water-proof character of its joints, the ease and rapidity with which it may be laid, its comparative cheapness, and durability.

The invention will be hereinafter described and particularly pointed out in the claims following.

In the accompanying drawings, forming part of this specification, whereon like letters of reference indicate like parts wherever employed, Figure 1 represents a perspective view of a section of my improved roofing; Fig. 2, a perspective view showing a portion of an eaves-strip constituting part of the invention; Fig. 3, a similar view taken from the opposite direction; and Fig. 4, a longitudinal vertical section on line 4 4, Fig. 1.

Reference being had to the drawings and letters thereon A' A² A³ A⁴ indicate connected and overlapping metallic sheets of standard size, and of material suitable for roofing purposes, copper being preferred owing to its lightness, durability, and ease of manipulation. Upon each sheet A is formed, as by stamping or embossing, an upper and lower series of tiles *a b* the former being off-set from the latter at *c* to give the appearance of

an end lap, while between the tiles thus formed are a series of water-ways *d* for conducting water from the roof, said ways also being crossed by a continuation of off-set *c* as shown. The lower ends of tiles *b* are similarly constructed, each bearing a depending lip *B* serving to impart a thickened appearance to the tile and communicating with intermediate flanges *C* crossing the lower ends of ways *d*, thus constituting a continuous flange from end to end of the sheet A. The upper end of tiles *a* are finished in a double corrugation *D* crossing the entire sheet longitudinally and serving as a strengthening rib, and also as a means of off-setting the next course of tiles above.

As illustrated by Fig. 1, there are five tiles in length and two in the width of each sheet A, though the number per sheet is regulated and limited only by the size of the individual tiles or the sheets from which they are formed. Sheets A at one end are provided with a transverse web *E* to facilitate the overlapping thereof, and at the opposite end are each provided with a weather flange *e* and a contiguous drip-strip *f*, between which flange and strip is formed a parallel quirk or gutter *g* having a spout *h* emptying directly into the water-way *d*, said flange, strip, and gutter being designed, arranged, and adapted to arrest and conduct off any water that may find its way between the plates A in cases of severe storms.

As thus far described, with the exception of quirk or gutter *g*, the invention is substantially the same as that forming the subject-matter of United States Letters Patent No. 520,371, issued to me on the 22d day of May, 1894; the present invention residing more particularly in the eaves-strip illustrated by Figs. 2 and 3 of the drawings, or its equivalent, and combined therewith the characteristic features of said former patent. This eaves-strip, as will be seen upon inspection of said Figs. 2 and 3, consists of a connected series of domes *F*, struck up from a continuous strip of metal, each being closed at its back and presenting in rear elevation the appearance of a truncated cone. The front sides of domes *F* are open as at *G* and are bounded by a continuous downwardly extending flange *I* traversing the eaves-strip from end to end, a series of said domes presenting in front eleva-

tion an escalated appearance. Between these domes F are formed raised seats J, which cross the strip transversely and receive the under side of water-ways *d* located between tiles *b* of the eaves course, the end of said seats being inclosed by depending flange C as shown by Fig. 1; while in like manner lips B of said course at points of contact with the domes, rest in depressions K formed in the upper front edge thereof.

An eaves-strip thus constructed may be the subject of special fastening to the eaves-board of a roof, for instance by nails passing there-through as at *i*; though all other sections of my improved roofing are by preference secured in place by suitable cleats as *j* which are nailed to the sheathing, and at their free ends are bent up over the lower edge of sheets A at points between the tiles *b*.

This being substantially the construction of my invention its application to a roof is as follows: Beginning at the eaves of a building the eaves-strip illustrated by Figs. 2 and 3 is first laid, and then inclosed by the lower ends of an overlapping eaves-course of plates A, working from right to left, whereupon it will be observed that lips B of tiles *b* rest upon depressions K, and the lower end of water-ways *d* upon the surface of seats J of said strip. These parts are then firmly secured by small nails driven through said water-ways and their seats into an eaves-board below. By this construction a correct imitation of the ancient "monk and nun" tiling is produced in a most secure and rigid manner without a material increase in weight over a roof-covering of single thickness, and while the eaves-tiles *b* are apparently open at their ends rain, snow, and wind are positively prevented from entering thereunder by the closed rear ends of domes F. In like manner all subsequent plates A are laid overlapping at their sides the corrugated upper ends of tiles *a*, and at their ends the adjacent plates, the weather flange *e* in each instance being snugly housed by its overlapping tiles *a* and *b*, plates A themselves being secured by cleats *j* and laid so as to break joints, as indicated by Fig. 1.

This being the nature, construction, and application of my invention it will be understood that many minor changes of form and arrangement may be made without in the least departing from the spirit of the invention, as

for instance the tiles may be struck up individually and provided with the characteristics of the plates; or the eaves strip may consist of a disconnected series of blocks or domes for closing the ends of the lowermost course of tiles.

What I claim, therefore, and desire to secure by Letters Patent, is—

1. A metallic tile for roofing purposes, consisting of a semi-cylindrical body portion, a corrugated off-set crossing the upper end thereof, a lower over-hanging lip, an upwardly turned flange forming a weather strip provided with an angular backward bend at its edge, and a gutter located between said flange and edge, substantially as described.

2. A metallic tile for roofing purposes in combination with an eaves-block or dome inclosed thereby, said block or dome being closed at its rear and flanked by suitable seats for the tile, substantially as described.

3. An eaves-strip for roofing purposes consisting of a series of domes closed at the rear, and intervening raised seats for an eaves course of roofing plates, substantially as described.

4. An eaves-strip for roofing purposes consisting of a series of domes closed at the rear, intervening raised seats for an eaves course of roofing plates, and a downwardly extending flange bounding the edge of the eaves-strip, substantially as described.

5. An eaves-strip for roofing purposes consisting of a connected series of domes closed at the rear, alternately raised and depressed seats for an eaves course of roofing tiles, and a downwardly extending flange bounding the edge of the eaves-strip, substantially as described.

6. An eaves-strip for roofing purposes consisting of a connected series of domes, alternately raised and depressed seats for an eaves course of roofing tiles, a downwardly extending flange bounding the edge of said eaves-strip, in combination with a series of tiles inclosing said domes, substantially as described.

In testimony whereof I subscribe my signature in presence of two witnesses.

WILLIAM H. MULLINS.

Witnesses:

F. J. MULLINS,
C. L. FISHER.