

(No Model.)

2 Sheets—Sheet 1.

W. H. MULLINS.
METALLIC ROOFING.

No. 520,370.

Patented May 22, 1894.

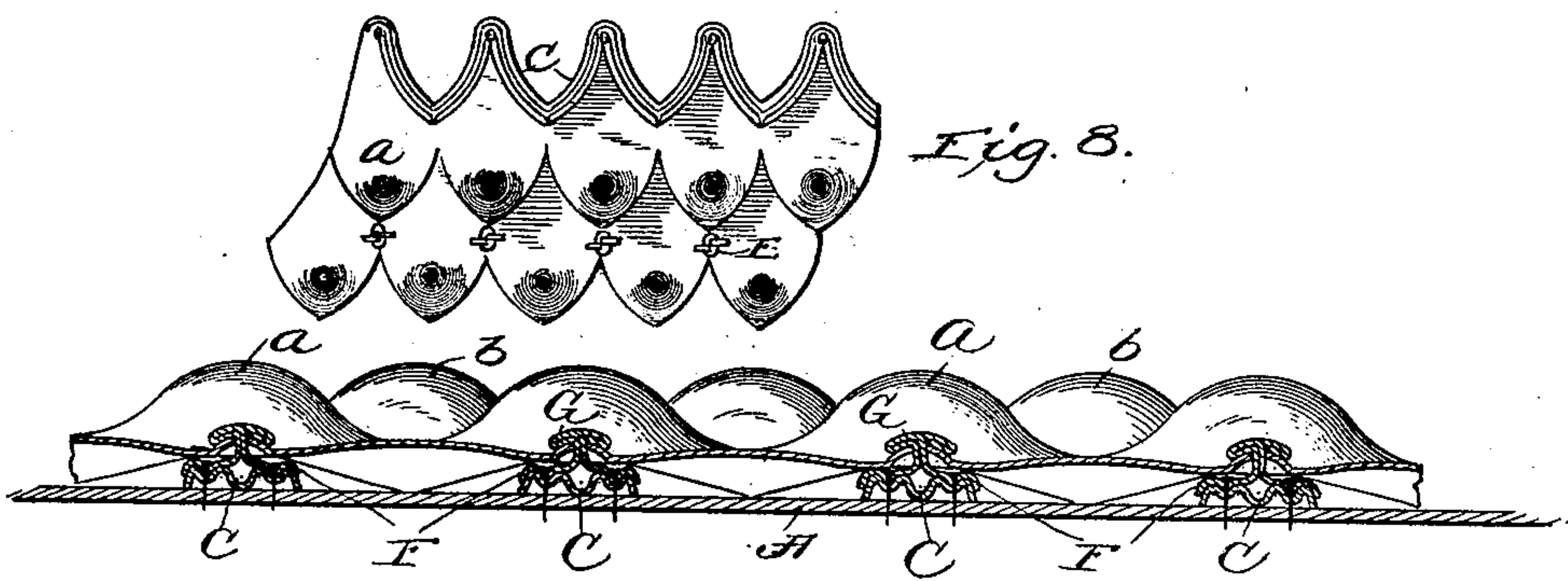
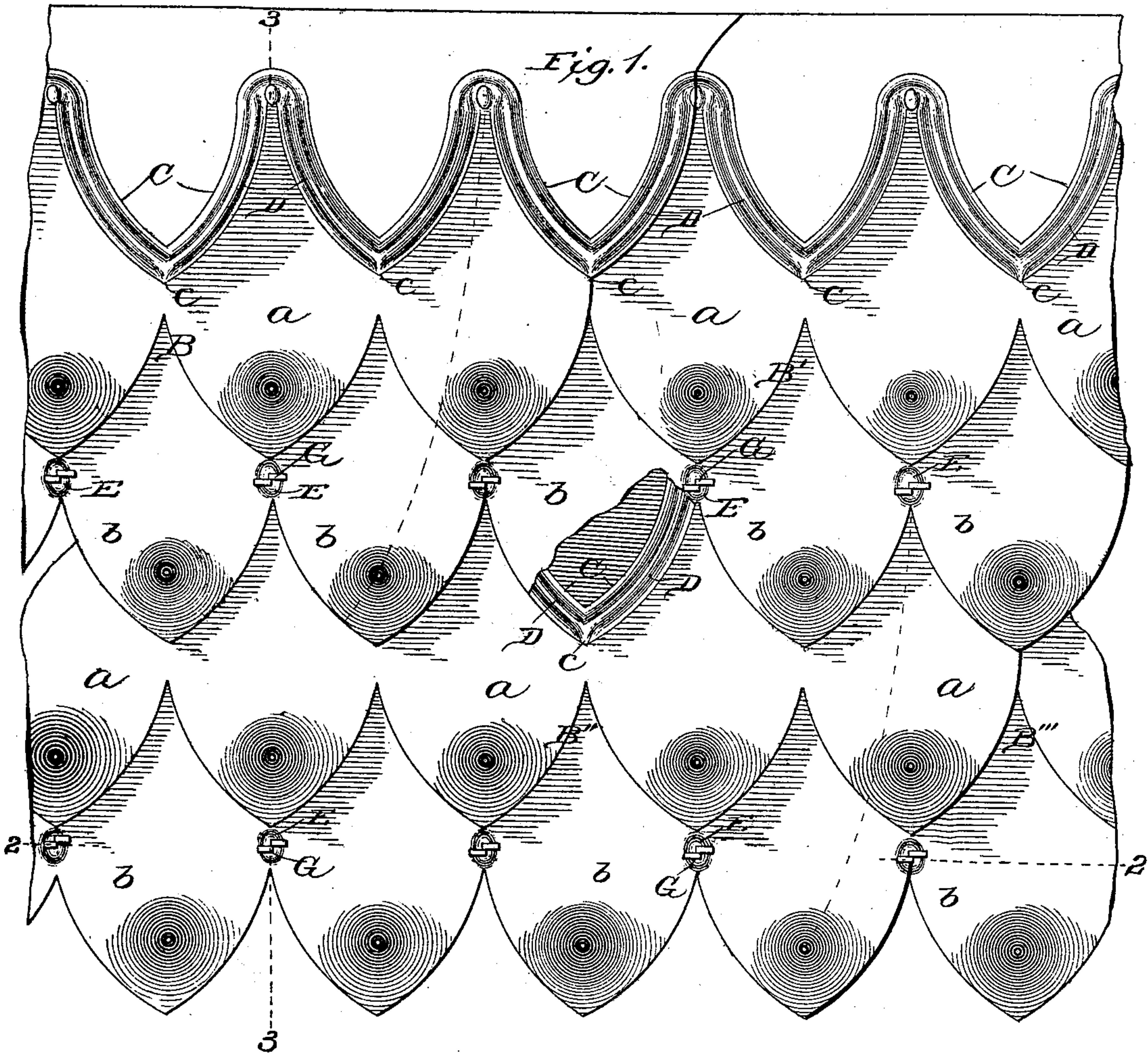


Fig. 8.

Fig. 2.

Witnesses:
Harry D. Pomeroy
J. W. Patten

Inventor:
Wm. H. Mullins,
By Mr. E. D. Dyer
His Attorney

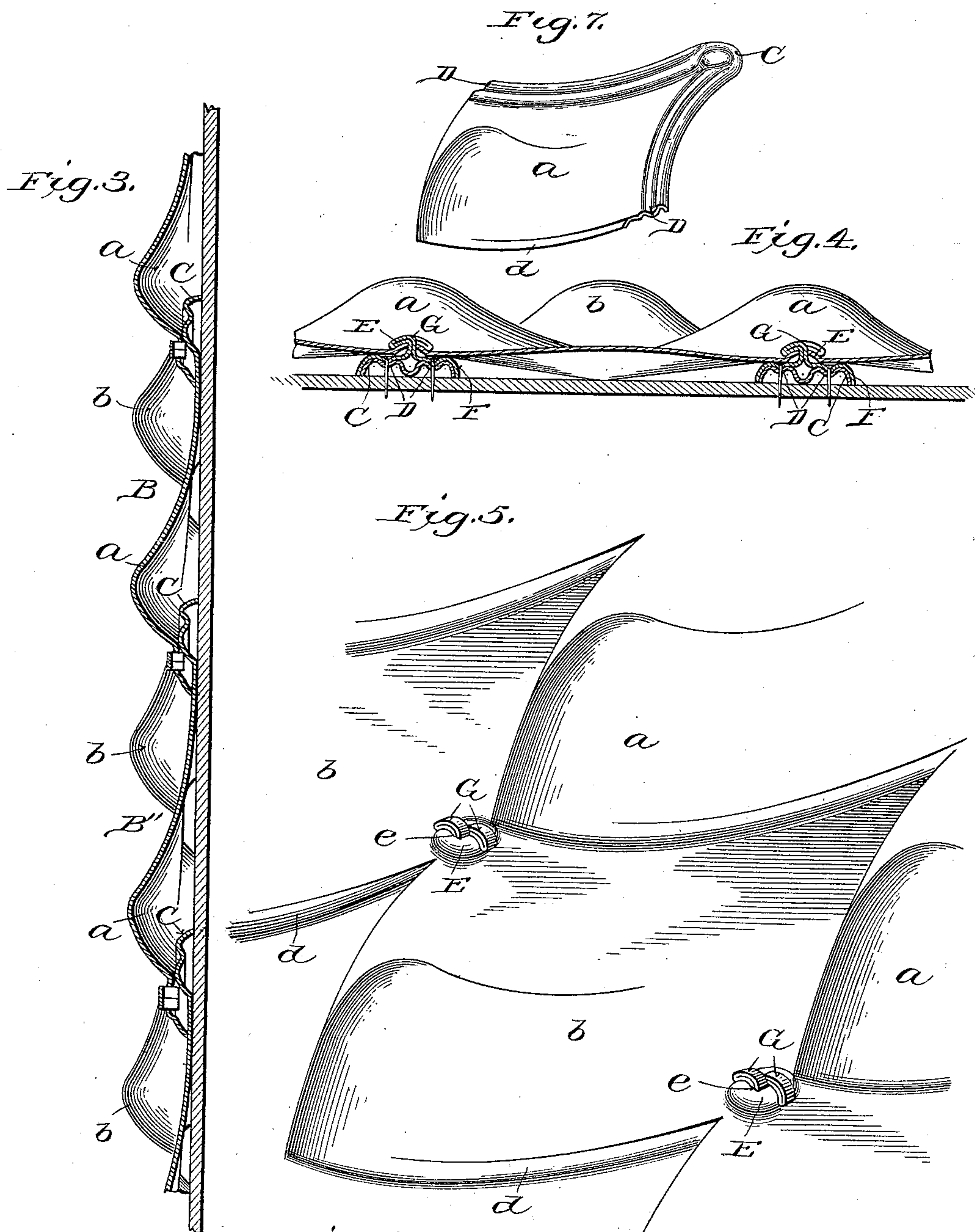
(No Model.)

W. H. MULLINS.
METALLIC ROOFING.

2 Sheets—Sheet 2.

No. 520,370.

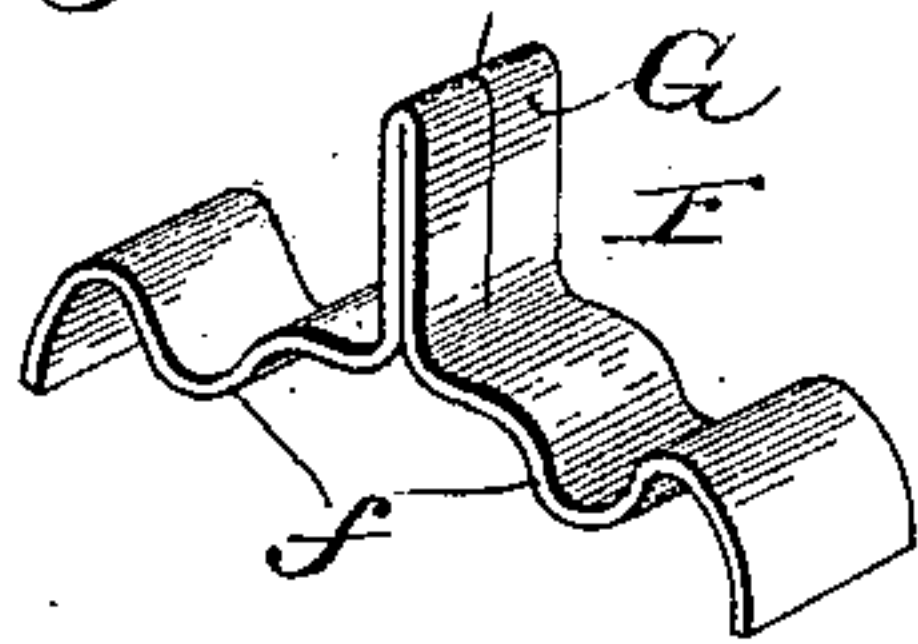
Patented May 22, 1894.



witnesses:

Harry D. Rohrer.

F. H. Rutter.



Inventor.
Wm. H. Mullins.
By *Wm. H. Dyer*.
His Atty.

UNITED STATES PATENT OFFICE.

WILLIAM H. MULLINS, OF SALEM, OHIO.

METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 520,370, dated May 22, 1894.

Application filed October 30, 1893. Serial No. 489,479. (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 present invention relates to metallic roofing, and resides in certain improvements in this art which will be hereinafter described and particularly pointed out in the claims following.

The object of this invention is to produce in sheet metal a highly ornamental covering for roofs, in imitation of terra-cotta tiling, which shall be proof against leakage, or damaging effects of the elements; and which, in short, shall be artistic in appearance, durable in its nature, easily applied, and remarkably rigid and close in its joints.

It is a well known fact that the durability of a roof does not depend upon its thickness, but rather upon quality of the material used, and its construction, and for this reason I prefer to use sheet copper of a comparatively light gage, although it will be apparent that other metals such as aluminum, tin, or iron are well adapted for use in connection with my invention.

Particularly stated the improvements consist in a sheet or sheets of metal stamped or otherwise embossed in an artistic pattern, said sheets being adapted to overlap with the least possible waste of material and provided each with a system of ridges to guard against leakage at the joints, and grooves or gutters to conduct off any leakage or moisture that may accumulate or find its way between the plates. Further than this, the individual plates are stamped in a manner to insure the greatest rigidity, and are sheared diagonally at their ends to encourage water upon the roof in flowing or blowing away from the lap joints rather than to them. These tiles are preferably formed in bold relief for the following reasons, namely: first, in order to obtain the richest effect of lights and shades thereon; secondly, to provide for expansion and contraction, in both directions, by full-

ness of the material itself; thirdly, to furnish an air space between the sheathing and the metallic roof, thus adding warmth thereto; and fourthly, to constitute a series of snow guards for the prevention of an avalanche of snow in the winter.

My invention also contemplates and includes cleats of peculiar construction for securing said plates to the roof, and it will be observed that plates constructed as shown and described may be closely nested one within another thus facilitating the packing of them for storage or transportation, and rendering them easily applied to a building.

In the accompanying drawings which form part of this specification, and in which like letters of reference indicate like parts wherever employed: Figure 1, represents a plan view of parts of four metallic plates made in accordance with my invention showing in dotted lines the manner in which they overlap and break joints. Fig. 2, is a longitudinal section taken on the line 2—2 Fig. 1. Fig. 3, is a corresponding vertical section on the line 3—3 Fig. 1; Fig. 4, an enlarged longitudinal section through two securing cleats, and adjacent parts. Fig. 5, is an enlarged perspective view of a portion of roofing. Fig. 6, is a perspective view of a cleat for securing the plates in position; Fig. 7, a similar view of a single tile detached, and Fig. 8 is a plan view on a small scale of one plate embodying a series of tiles.

Reference being had to the drawings and letters thereon, A is the sheathing or underlying boards to which my improved roofing is applied; and B, B', B'', B''' indicate the adjacent edges of corresponding metallic sheets preferably made of copper stamped or otherwise formed to represent in bold relief overlapping upper and lower tiles *a* and *b* respectively, as shown.

Extending longitudinally across the entire top of sheets B, is a continuous offset C, which bounds the upper edges of each tile *a*, and is provided with a substantially continuous groove, gutter or water-drain D, the inner wall of the latter being slightly mutilated at its lowermost points by a spout *c* serving as a drain therefrom. Both the upper and lower tiles *a* and *b* of each sheet terminate in a bottom flange, or downwardly extending

lip *d*, which adds to the appearance and serves as a stiffening rib for the individual tiles and the plates from which they are formed, the lower lip *d* performing also, the
 5 important function of engaging and inclosing one portion of offset *C* of the next plate below, whereby the two plates are locked with relation to each other.

Immediately below the point of each tile *a*
 10 plates *B* are raised or embossed as shown at *E* and provided with an elongated slot *e* through which protrudes a fastening cleat *F*; said embossment serving to turn water from the slot *e* therein, and also to stiffen the plate
 15 *B* at this flat and consequently weaker point. Cleats *F* are formed from a single strip of pliable material corrugated as at *f f* to form an anchor portion, and extending upward at the center in a double fold *G*, the latter be-
 20 ing vertically slit as shown at *g* Fig. 6.

This being substantially the nature and construction of my invention, its mode of application is as follows: Beginning at the eaves of a building and at one end, plates *B* are laid
 25 horizontally their diagonally cut ends overlapping as indicated by dotted and heavy lines in Fig. 1; the metal above offset *C* of said plates being preferably cut away for the purpose of reducing weight and economizing
 30 cost. The first course of plates thus laid may be the subject of a special fastening to the eaves-board of a building, but all subsequent plates are firmly and sufficiently secured by the cleats *F* which straddle the offset *C* near
 35 its upper end as shown in Figs. 2 and 4. A second course of plates is then laid as before, the lower series of tiles *b* neatly inclosing offset *C* of the first laid plates, care being taken to break joints between the ends of said
 40 plates of the first course, as far as possible, in order that the diagonal ends of the plates shall not register one with another. In this position it will be seen that the vertical fold *G* of cleats *F* will project through slot *e* of the
 45 embossment *E*; where, owing to the slit *g*, it may be bent or folded in opposite directions as clearly shown in Fig. 5, thus serving the purpose of both an end and side cleat, and proving of special advantage in drawing the
 50 plates *B* snugly down and holding them against the possibility of rattling. In like manner all subsequent plates are applied until the last or ridge plate is reached in which latter it is desirable not to cut away that por-

tion above the offset *C*, same being left to receive an overlapping ridge-cap, or other suitable covering.

The construction and application of my improved roofing being substantially as set forth, it will be understood that many minor changes
 60 in form and construction may be made and substituted for those herein shown and described without departing, in the least, from the spirit of my invention; as for instance tiles may be made up separately, as illus-
 65 trated by Fig. 7 and individually applied to a roof in manner and form the same as if said tiles each constituted one of a series in a continuous plate.

Having thus described my invention, what
 70 I claim is—

1. A metallic roofing tile bounded on its upper edges by an offset provided with a groove or gutter therein, and on its lower edges by a suitable lip for inclosing a portion
 75 of the next tile below, substantially as described.

2. A metallic roofing plate consisting of a series of tiles, a longitudinal offset bounding the upper edges thereof and converging water-
 80 drains formed in said offset between the tiles, substantially as described.

3. A metallic roofing-plate consisting of a connected series of tiles, a longitudinal offset bounding the upper edges thereof, converg-
 85 ing water-drains between the tiles, and a spout leading from the drains, substantially as described.

4. A metallic roofing-plate consisting of a duplicate series of tiles, a longitudinal offset
 90 bounding the upper edge of the plate, water-drains formed in said offset, and a cleat or cleats secured to the roof and penetrating the plate for retaining it in position, substantially
 95 as described.

5. A metallic roofing-plate consisting of a series of tiles, a longitudinal offset bounding the upper edge of the plate, water-drains in
 100 said offset, slotted embossments formed in the plates, and suitable roof cleats passing through said slots and folding upon the embossments, substantially as described.

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

WILLIAM H. MULLINS.

Witnesses:

F. J. MULLINS,
 R. J. THOMSON.