

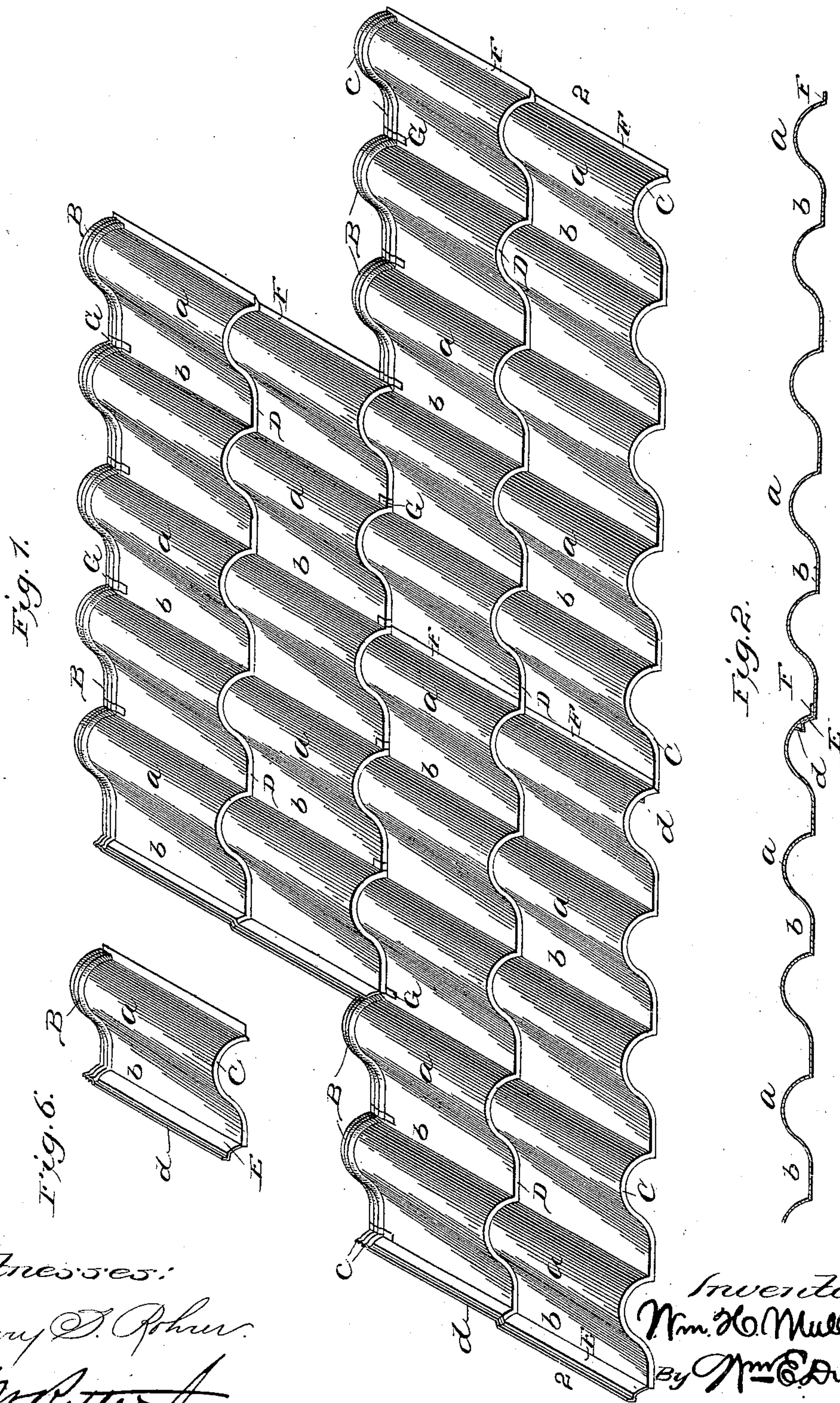
(No Model.)

2 Sheets—Sheet 1.

W. H. MULLINS.  
METALLIC ROOFING.

No. 520,371.

Patented May 22, 1894.



witnesses:

Harry D. Fisher.

J. M. Patten.

Inventor:  
Wm. H. Mullins,  
By *Wm. C. Dyke*  
His Attorney.



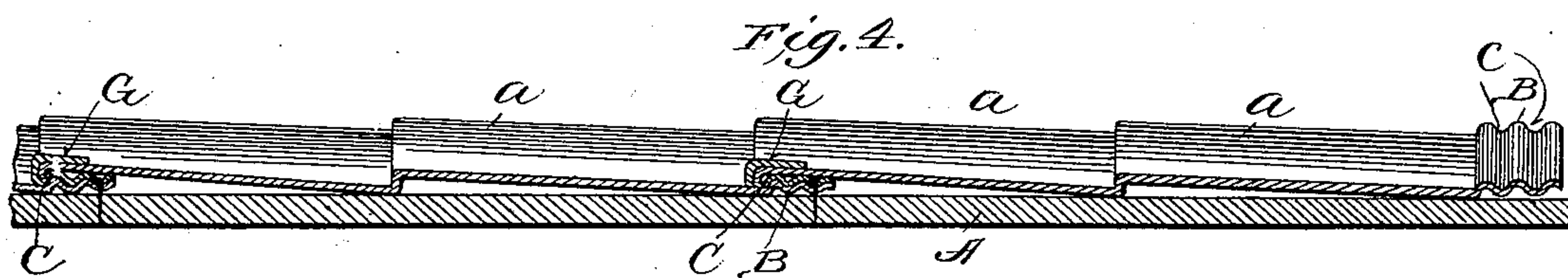
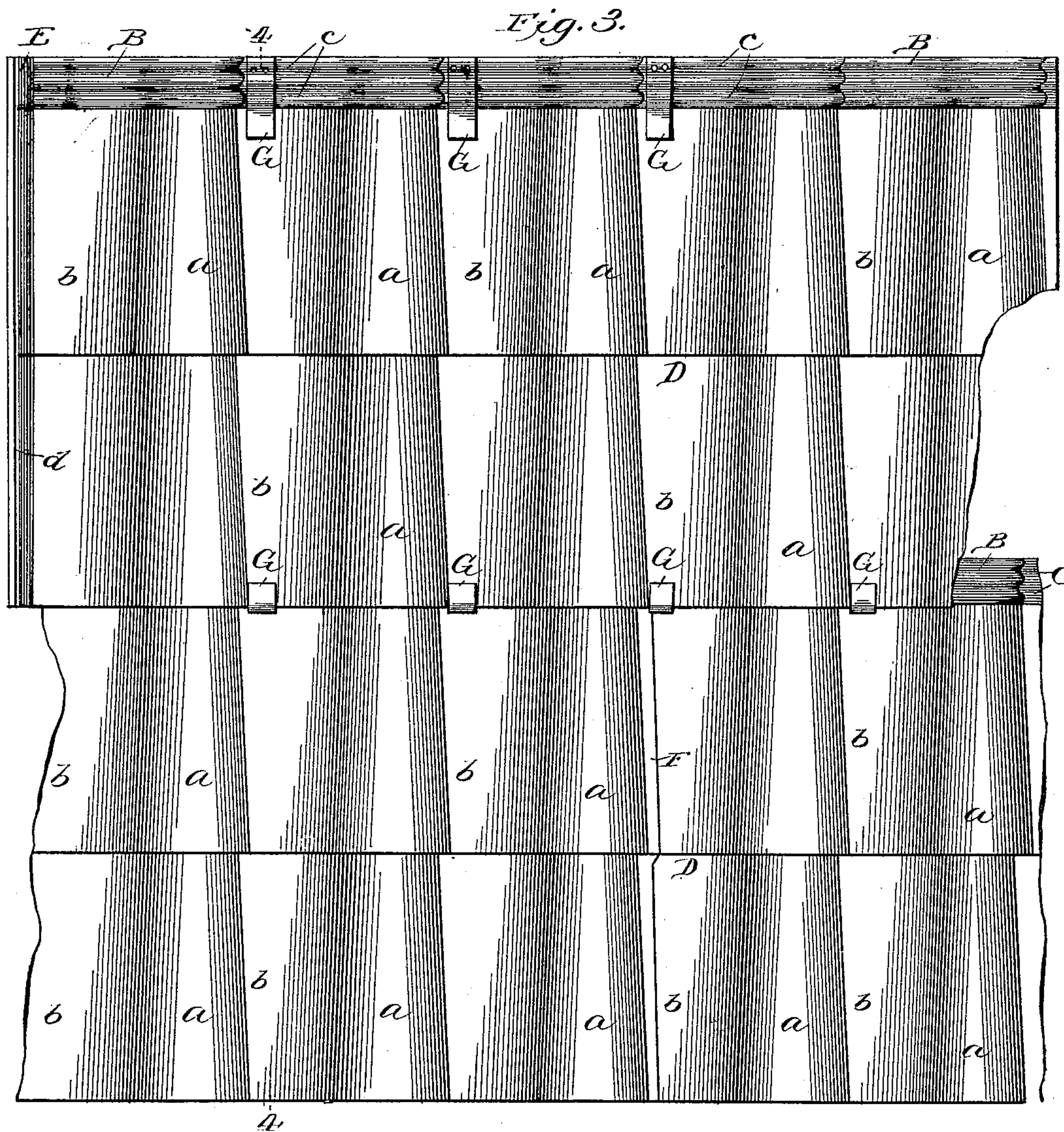
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2 Sheets—Sheet 2.

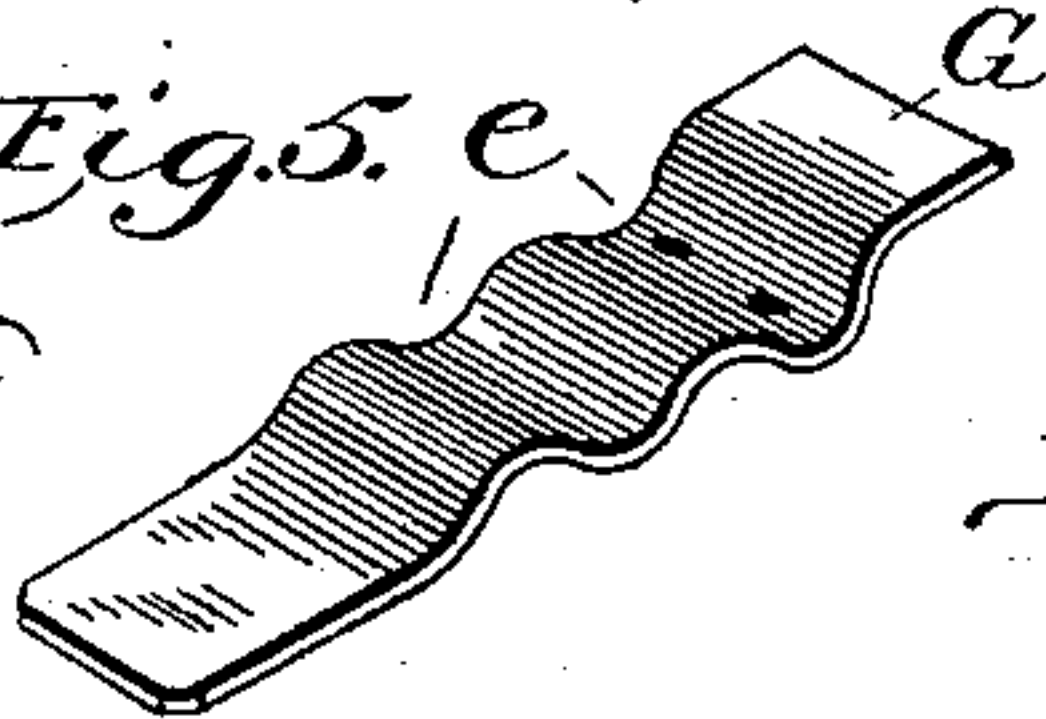
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witnesses: *Fig. 5.*  
Harry D. Rohrer.  
*J. M. Miller*



Inventor:  
Wm. H. Mullins,  
By *Wm. C. Dyre*  
His Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM H. MULLINS, OF SALEM, OHIO.

## METALLIC ROOFING.

SPECIFICATION forming part of Letters Patent No. 520,371, dated May 22, 1894.

Application filed October 30, 1893. Serial No. 489,480. (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 metallic roofing and consists of certain improvements therein, which will be fully set forth in the following specification, and illustrated by the accompanying drawings, constituting part thereof.

The object of this invention is to produce in sheet metal, a cheap, light, durable and correct representation of, and substitute for, the thick, heavy, and clumsy earthen tiles, frequently used as a decorative covering for pitched roofs, and known to the trade as "Spanish tile." In design such tiles follow a cyma-reversa form, in cross section, which precludes the possibility of laying same in a manner to break joints by overlapping the tile, as is done with the ordinary corrugated metallic roofing, and with slates, shingles, &c. Therefore, my invention has for its further objects the production of an imitation tile-roofing which is at once water, fire, wind, and lightning proof; one which is readily made and laid, insuring exactness of fit and effectual weather joints throughout; and one which promptly adapts itself to climatic changes of temperature be they much or little.

More particularly stated, my invention consists in stamping, rolling, or otherwise producing in suitable sheets of metal the desired configuration; of providing the tiles or series of tiles thus formed with corrugated stiffening ribs, and drip flanges; and means for securing the metallic plates or tiles to the wooden roof, or if desired, directly to the purlins.

In constructing tiling in accordance with my invention, it will be understood that same may be made up in separate detachable blocks representing one tile each; or, preferably, from a continuous sheet of copper, steel, galvanized iron, tin, or other sheet metal, the first mentioned, however, being preferred owing to its superior wearing qualities, free-

dom from corrosion, and ease of manipulation. And, although copper is subject to greater degrees of expansion and contraction, this quality is fully compensated for by peculiarities of the plates themselves, as will hereinafter appear.

In the accompanying drawings in which like letters indicate like parts wherever employed—Figure 1, is a perspective view of my invention showing several connected sheets of tiles. Fig. 2, is a longitudinal section on the line 2, 2, of Fig. 1; Fig. 3, a top plan view of the improved roofing; Fig. 4, a vertical section on the line 4—4 Fig. 3; Fig. 5, a perspective of cleat for securing the plates to the roofing boards, and Fig. 6, is a perspective view of one complete tile detached.

Reference being had to the drawings, A, represents the sheathing of a roof, upon which are secured metallic tiles, of my improved construction, each tile consisting of a convex portion *a*, and a contiguous concave portion *b*. These tiles are preferably formed in standard size sheets of metal, the number of tiles to the sheet being regulated by the dimensions of the individual tiles themselves, there being, ordinarily, two in width and five in length to the sheet, as shown in the upper portion of Fig. 1. Crossing longitudinally the upper end of the sheet above described, is an offset B, for the purpose of elevating the lower ends of the next series of tiles above; said offset being corrugated throughout its entire length, as at *c c*, for the purpose of stiffening the sheet, providing for expansion and contraction, producing a superior weather joint between the several sheets, and conducting off any possible leakage or accumulation of moisture between the overlapped ends of such sheets. Crossing in like manner at the bottom of each sheet of metal is a downwardly projecting and overhanging lip C, which performs the double function of strengthening the sheet at this point, and inclosing the upper end of the next series of tiles below. While at a point on each sheet, about midway between offset B and lip C, is a longitudinal depression D which stiffens the sheet at this point also, and imparts thereto a correct imitation of the bottom of an earthen tile. At the left hand end of a sheet thus formed and constructed, is a trans-



verse upwardly turned weather strip E, terminating in an angular drip-flange *d*, said strip and flange being housed, when in position, by the convex portion *a* of the first tile in the adjacent series. And, at the opposite or left hand end of each sheet, is a transverse web F, which, when the sheets are assembled, rests upon the surface of the concave portion *b* of the first tile in its adjacent series, as most clearly shown by Fig. 2.

G represents a cleat for securing above described plates to the roof, same being corrugated as at *e e* for engagement with corrugations *c c* of the plates in which they are located and secured by nails passing through upper corrugate *e*, the corresponding corrugate *c*, and into the sheathing A beneath.

This being the construction of my invention, its mode of application to a building will be readily understood; commencing at the eaves and end of building the configured sheets are laid horizontally side by side, the weather strip E of each being snugly housed by the convex member *a* of its adjacent tile. To the upper edge, or offset B, of the sheet or sheets thus laid, and at points near the juncture of the convex member *a* of one tile, with the concave member *b* of the next, is located as described cleats G. In laying the second course of sheets, it is desirable that the joints between sheets of the first row be broken by overlapping the sheets above; in other words, by beginning the second course with a half sheet in place of a full one. Resting now upon the offset B of the first course, the second course is secured at its lower edge, by a bend imparted to the projecting end of cleats G, which are thus bent up and over the lip C of the upper plate, the latter being thereby held firmly in position. This operation is then repeated until the roof is entirely covered, when the extreme top edges of the

uppermost sheets or tiles may be inclosed by a suitable ridge-cap.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A metallic tile for roofing purposes, consisting of a cyma-reversa body portion, a corrugated offset crossing the upper end thereof, a lower over-hanging lip, and an upwardly turned flange forming a weather strip provided with an angular backward bend at its edge forming a drip flange, substantially as described.

2. In a metallic roofing-plate a contiguous series of cyma-reversa tiles, a continuous corrugated offset crossing the plate longitudinally, an overhanging lip extending from end to end of the plate, and a weather strip at one end thereof, substantially as described.

3. In a metallic roofing-plate a contiguous series of cyma-reversa tiles, a continuous corrugated offset crossing the plate longitudinally, an over-hanging lip extending from end to end of the plate, a weather strip at one end thereof provided with an angular drip flange, and a transverse web at the opposite end of the plate, substantially as described.

4. In a metallic roofing-plate a connected double series of cyma-reversa tiles, a continuous corrugated offset crossing the plate longitudinally, an over-hanging lip extending from end to end of the plate, a drip flange at one end and a transverse web at the opposite end of the plate, and suitable cleats for retaining said plate in position upon a roof, 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.