

No. 654,998.

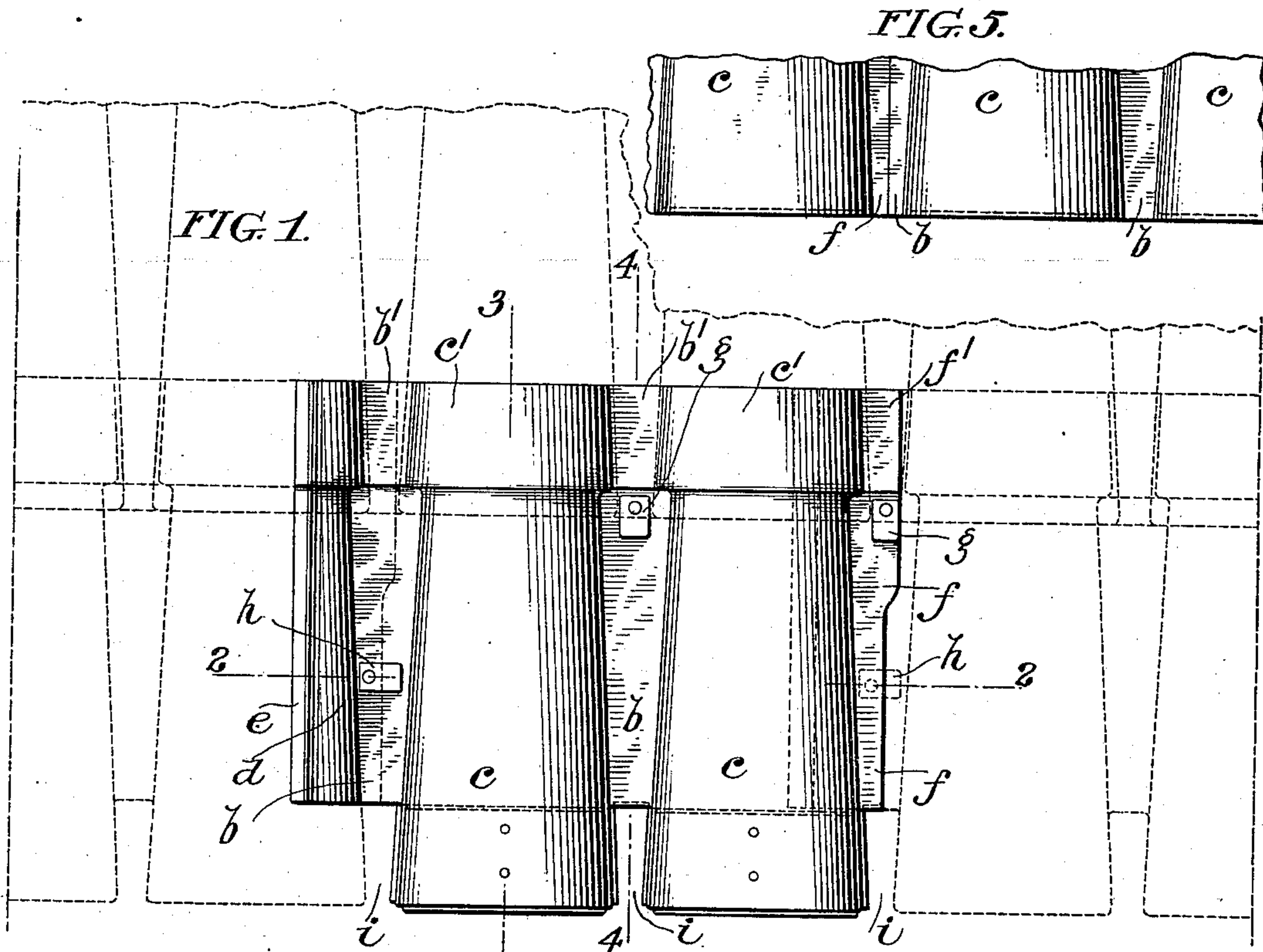
Patented July 31, 1900.

L. H. MONTROSS.  
METALLIC ROOFING TILE.

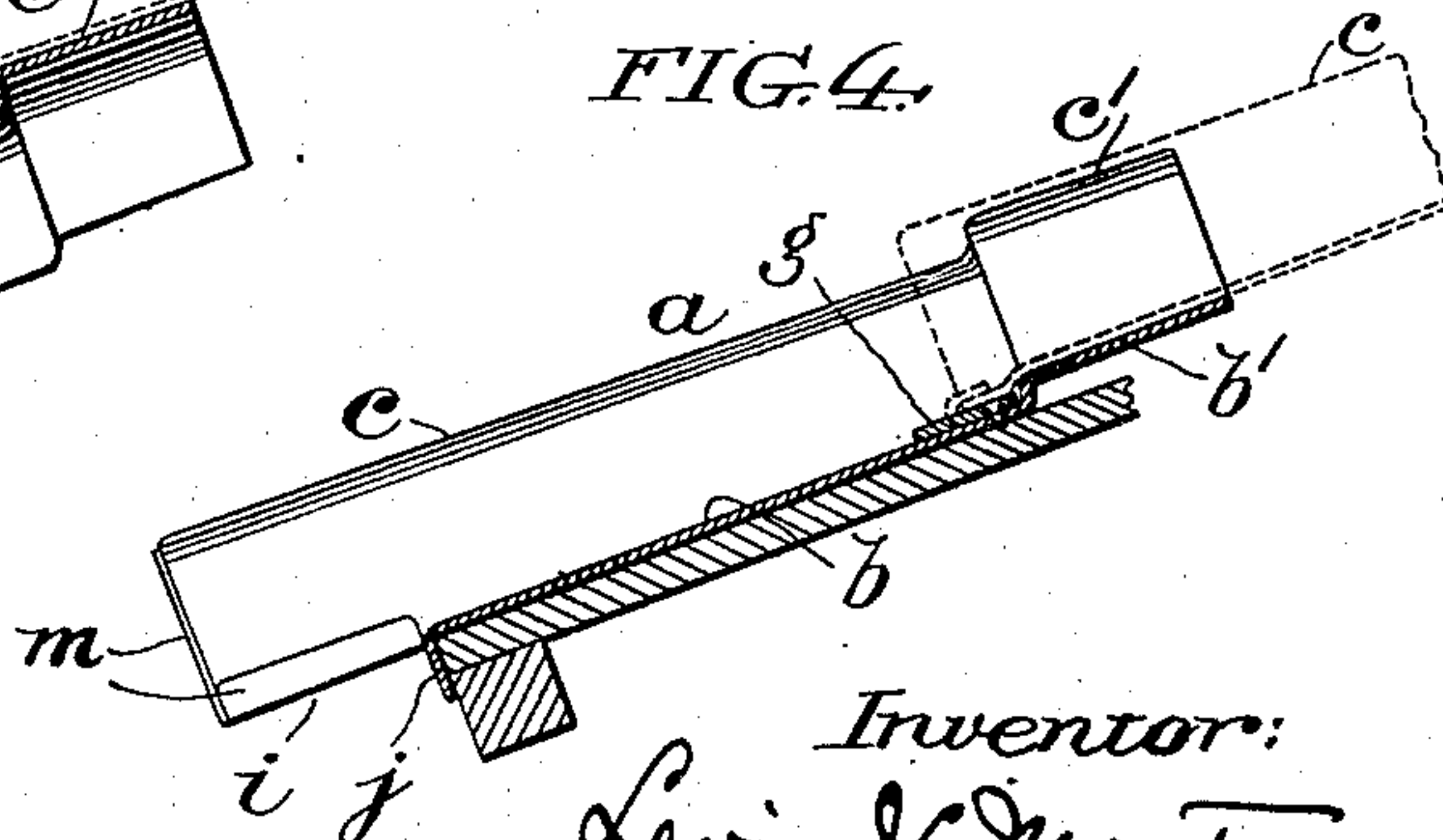
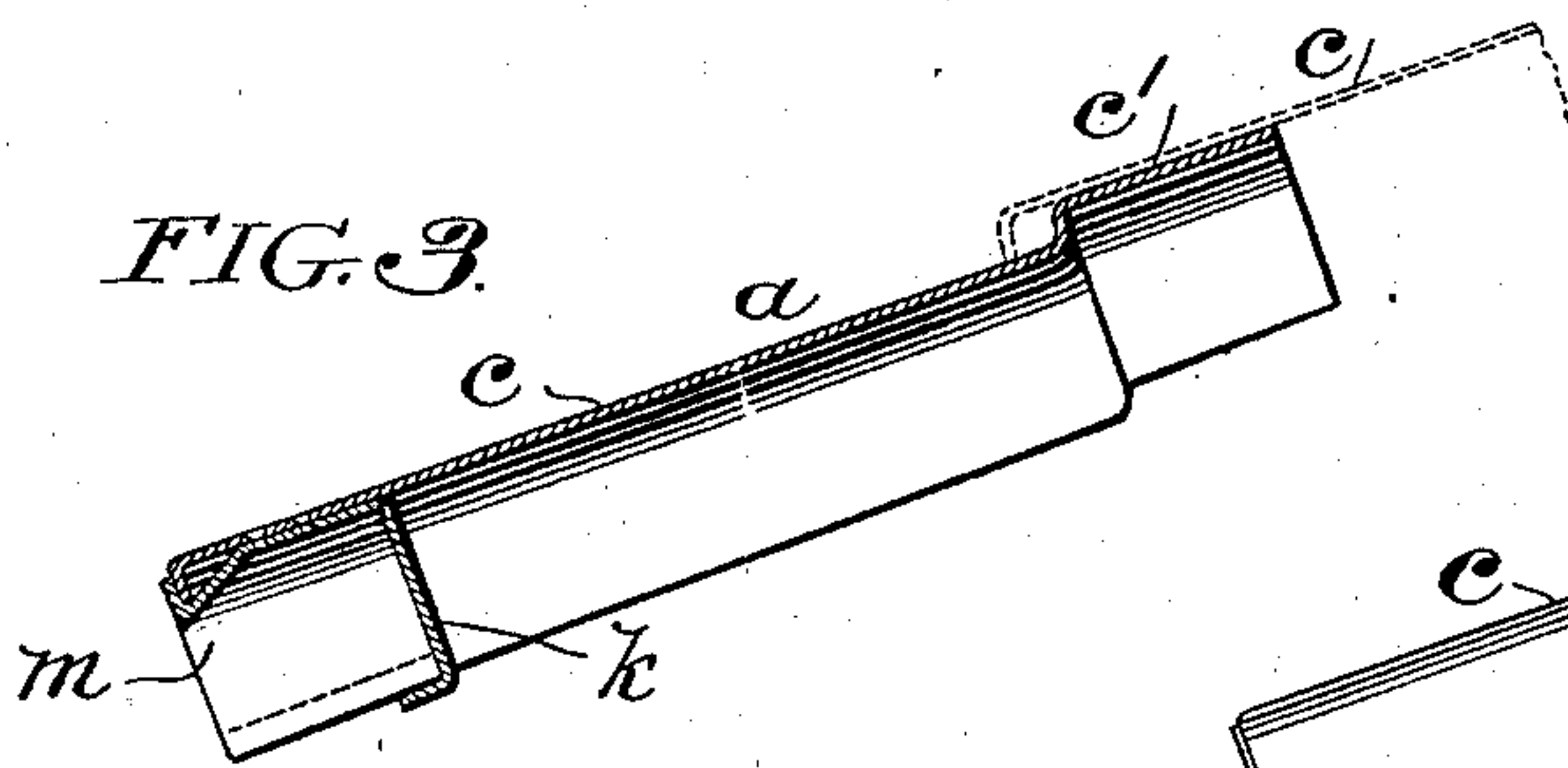
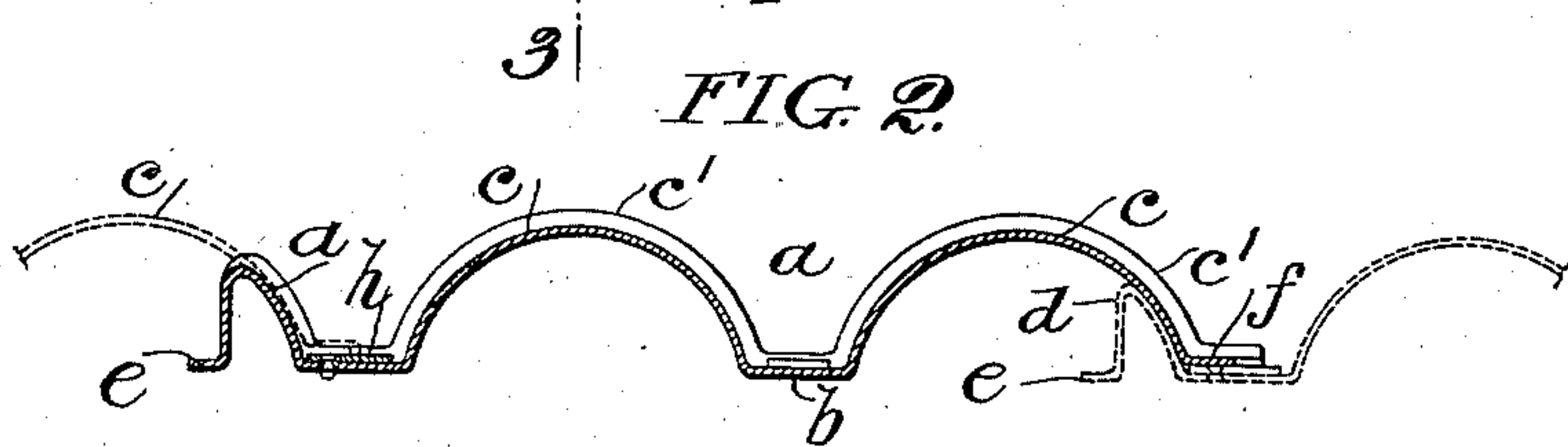
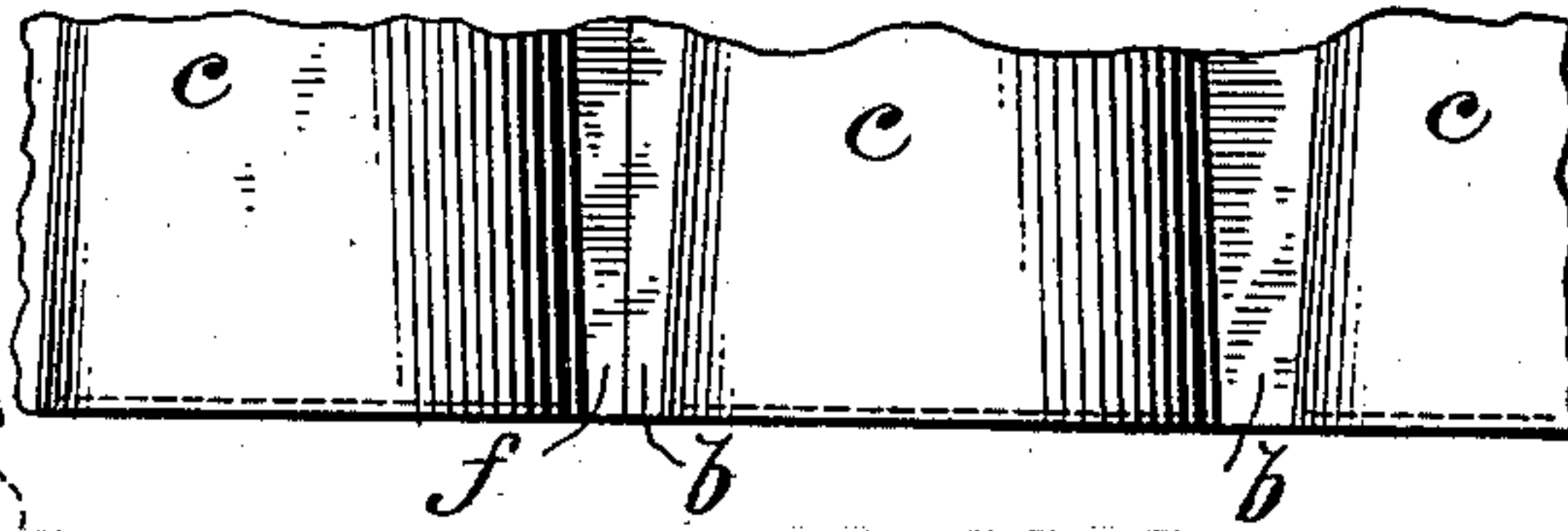
(Application filed Apr. 4, 1900.)

(No Model.)

2 Sheets—Sheet 1.



**FIG. 5.**



Witnesses:  
Henry D. King  
R. M. Kelly.

Inventor:  
Levi J. Montross  
By *[Signature]*

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2 Sheets—Sheet 2.

FIG. 6.

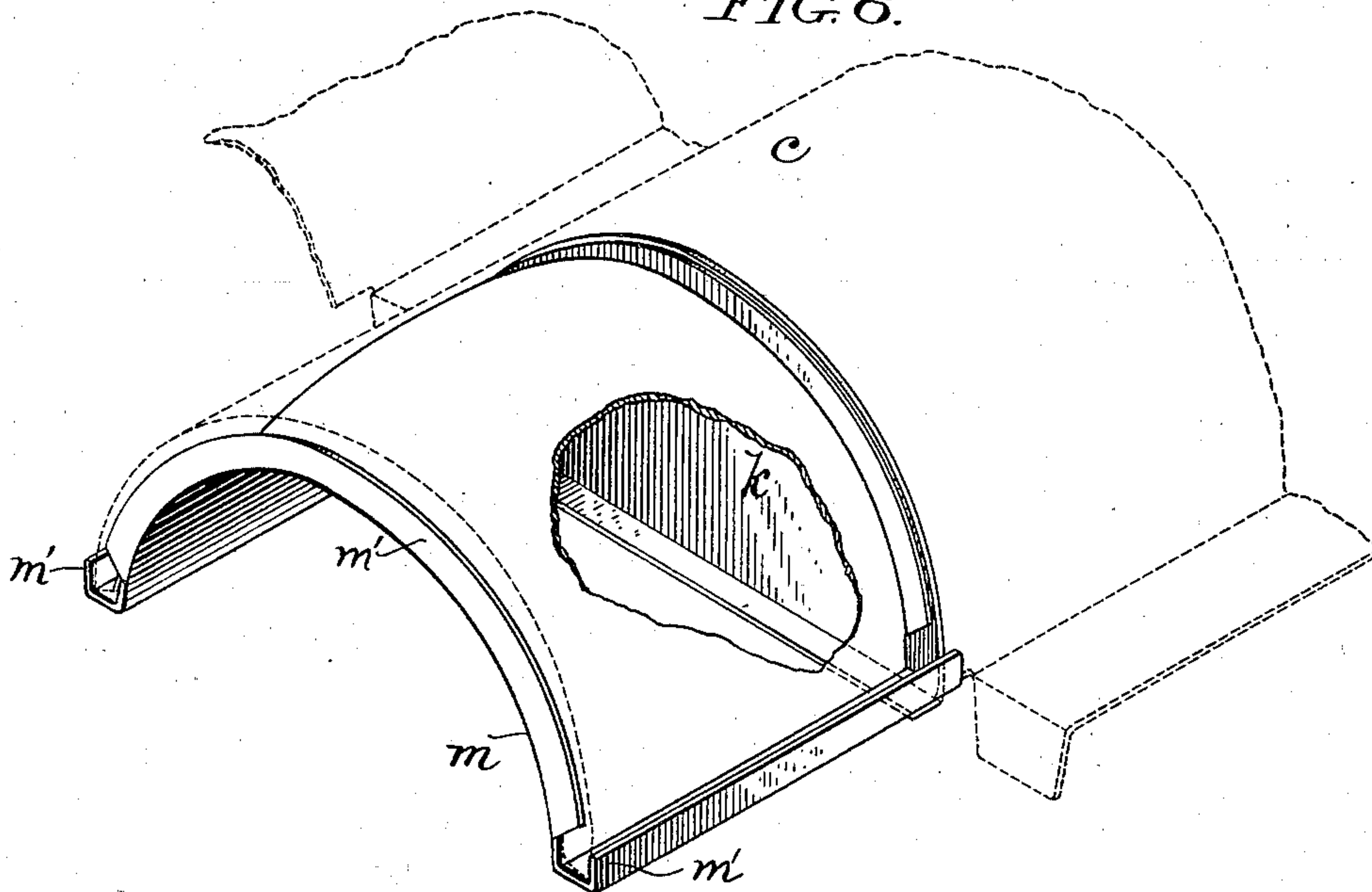


FIG. 7.

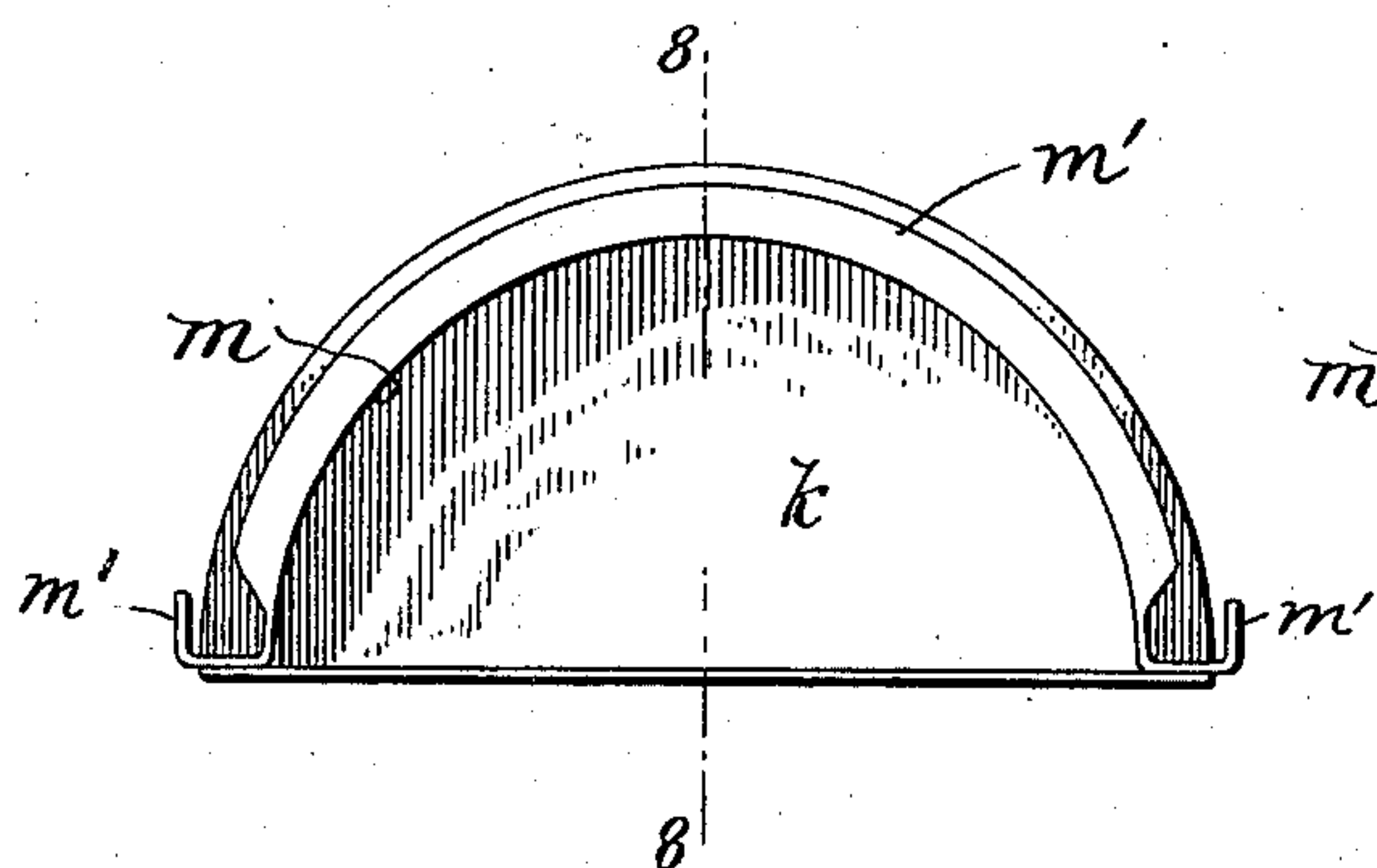
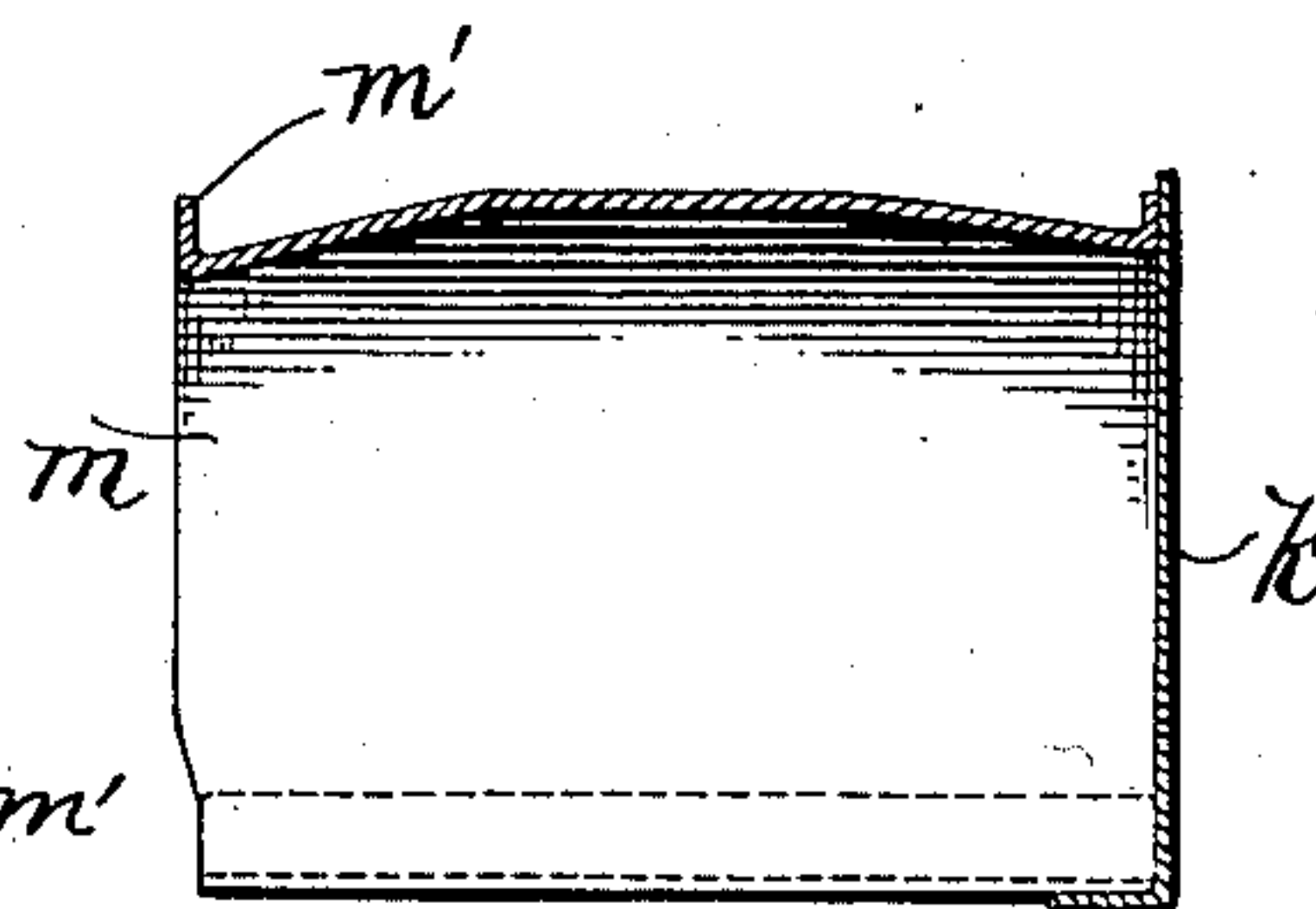


FIG. 8.



WITNESSES:

Henry D. Dwyer  
R. M. Kelly.

INVENTOR:

Levi H. Montross.  
By *Wm. D. Kelly*



# UNITED STATES PATENT OFFICE.

LEVI H. MONTROSS, OF CAMDEN, NEW JERSEY, ASSIGNOR TO CLARKE  
MERCHANT, OF PHILADELPHIA, PENNSYLVANIA.

## METALLIC ROOFING-TILE.

SPECIFICATION forming part of Letters Patent No. 654,998, dated July 31, 1900.

Application filed April 4, 1900. Serial No. 11,423. (No model.)

*To all whom it may concern:*

Be it known that I, LEVI H. MONTROSS, of Camden, county of Camden, and State of New Jersey, have invented an Improvement in  
5 Metallic Roofing-Tiles, of which the following is a specification.

My invention relates to metallic roofing-tiles, and is fully set forth in the following specification and shown in the accompanying  
10 drawings.

My invention relates particularly to that class of tiles which consists of a metallic sheet provided with alternate low and raised portions extending longitudinally and presenting  
15 when the tiles are assembled a longitudinally-ribbed-roof surface.

In the drawings I have shown the invention embodied in roofing-tiles of the form known as the "Spanish" or "Moorish" tile; but this  
20 particular form may be changed without departing from the invention.

It is one of the objects of my invention to simplify the manner of fastening the adjacent tiles together, to avoid the use of exposed  
25 nails, and to allow for both transverse and longitudinal expansion and contraction.

It is another object of my invention to provide a metallic tile of this class in which the raised portions of the tile may project or extend beyond the eaves, and this part of my invention embraces a special form of tile adapted for eaves-courses.

It is also an object of my invention to prevent the passage of air-currents and the creation of drafts through the longitudinal ribs formed by the raised portions of the tiles.

In the drawings, Figure 1 is a plan view of an end or eaves tile embodying my invention and illustrating the combination thereof with  
40 other tiles. Fig. 2 is a transverse sectional view on the line 2 2 of Fig. 1. Figs. 3 and 4 are longitudinal sectional views on the lines 3 3 and 4 4, respectively. Fig. 5 is a plan view of the end portion of the upper tiles.  
45 Fig. 6 is a perspective view of the end reinforcing-piece for the eaves-course tiles. Fig. 7 is an end elevation of the same, and Fig. 8 is a longitudinal vertical sectional view on the line 8 8 of Fig. 7.

50 The tile *a*, as shown, is of the general form known as the "Spanish" or "Moorish" tile,

having a flat or low portion *b* and longitudinal raised or arched portions *c*, the upper ends of the base and arched portions being elevated or offset, as at *b' c'*. One side edge  
55 is provided with a longitudinal raised rib *d*, terminating in a nailing-flange *e*, and the other side edge with a fastening-flange *f*.

In the construction shown in the drawings the tile is of a duplex form or one having  
60 two arched portions *c c'*; but the invention may also be embodied in a tile having a single arched portion or in one having more than two of such portions.

In laying the tiles the first tile is placed  
65 upon the roof and nailed thereto through the upper edge of the low portion *b'* and through the side nailing-flange *e*. The next tile above is similarly laid upon the roof and secured thereto, with the lower ends of the flat portion  
70 *b* and the arched portion *c* extending over and covering the raised or offset portions *b' c'* at the top of the lower tile, and in this manner a longitudinal row of tiles may be laid. The tiles in the next row are similarly laid,  
75 with the outer side of the curved or raised portion *c c'* fitting over the longitudinal side ribs *d d* and the flange *f* resting upon the adjacent low face *b*.

*g g* are cleats upon the low portion *b* and  
80 flange *f*, immediately adjacent to the portion *b' f'*, which are bent back over the lower edges of the portions *b f* of the superimposed tile, (see dotted lines in Fig. 4,) and thus serve to secure the lower edge of that tile in  
85 place without any exposed nails or positive fastenings, which would not permit of the necessary movement under expansion and contraction. *h* is a similar cleat on the low face *b*, adjacent to the rib *d*, which is adapted  
90 to be bent back over the side flange *f* of the adjacent side tile (see dotted lines in Fig. 2) to secure the outer side of that tile without exposed nails or positive fastenings.

To obtain the effect of what is known as  
95 the "monk-and-nun" pattern, in which on the eaves course the lower edges of the raised portions of the tiles extend or project beyond the lower edges of the intermediate low or flat portions, I cut away the metal of the low  
100 portions *b b* and flange *f* at the ends of the eaves-course tiles, thus forming openings *i i*



between the ends of the curved or raised parts. The ends of the portions *b b f* are provided with downturned flanges *j*, which fit over and may be nailed to the edge of the roof, thus causing the lower edges of the portions *c* to project beyond the eaves.

*k* is a transverse partition on the inside adjacent to the end of the raised or curved portion *c* of the eaves-course tile, which closes the end of said raised portion and prevents the air-currents passing under them over the roof.

To strengthen the projecting ends *c* of the eaves-course tiles and to leave no raw exposed edges, they may be lined or reinforced with a layer of metal *m*, which may be integral, if desired, with the partition *k*, the partition and reinforcing-lining being made in one piece, as shown in Fig. 3. By extending the edges of this internal reinforcing-piece over the sides and ends of the projecting portions *c* the raw sharp edges of the metal are concealed, and the projecting-ends have the appearance of thick heavy tiles similar to the simulated clay tiles. In Figs. 6, 7, and 8 I have shown my preferred construction of these reinforcing-pieces. The body *m* is an arched piece integral with or secured to the partition *k* at its rear and having its outer end and side edges formed with upturned flanges *m'*, adapted to fit over the edges of the end of the arched portion *c* of the tile. The outer end of the piece *m*, adjacent to the end flange *m'*, is depressed to receive the downturned flange on the end of the tile, and this gives to the reinforced end of the projecting eaves-course tile the thickened appearance of the clay tile.

The minor details shown may be varied without departing from the invention.

What I claim as new, and desire to secure by Letters Patent, is as follows:

1. A metallic tile provided on one of its side edges with a raised rib *d* terminating in a nailing-flange *e* and on its other side edge with a fastening-flange *f*, and a cleat *h* carried by the body of the tile adjacent to the raised rib *d* and adapted to engage the fastening-flange *f* of the laterally-adjacent tile.

2. A metallic tile consisting of a metal sheet having low portions *b* and raised portions *c*, a raised rib *d* and nailing-flange *e* on one side edge and a flange *f* on the other side edge, and provided with fastening-cleats *g* on the low portions *b* at a distance from the upper end thereof and with a cleat *h* adjacent to the raised rib *d*, substantially as and for the purposes described.

3. A metallic tile consisting of a metal sheet having low and raised portions extending lon-

gitudinally and said raised portions projecting at the lower end for a substantial distance beyond the lower ends of the low portions, so as to leave open spaces *i* of substantial depth between the ends of adjacent raised portions whereby said raised portions only may project beyond the eaves.

4. A metallic tile consisting of a metal sheet having low and raised portions extending longitudinally and said raised portions projecting at the lower end beyond the lower ends of the low portions, so as to leave open spaces between the ends of adjacent raised portions, and the ends of the low portions being provided with downturned flanges.

5. A metallic tile consisting of a metal sheet having a low portion and a raised portion, the lower end of the raised portion extending for a substantial distance beyond the lower end of the low portion, so as to leave intermediate spaces *i* of substantial depth between the ends of the raised portions, and provided with a partition extending transversely across the interior of the raised portion adjacent to the end thereof.

6. A metallic tile consisting of a metal sheet having a low portion and a raised portion, the lower end of the raised portion extending beyond the lower end of the low portion for a substantial extent so as to enable the raised portion only to extend beyond the eaves and said projecting end of the raised portion being provided with an internal reinforcing-layer *m* extending over and covering its inner surface.

7. A metallic tile consisting of a metal sheet having a low portion and a raised portion, the lower end of the raised portion extending beyond the lower end of the low portion for a substantial extent so as to enable the raised portion only to extend beyond the eaves and said projecting end of the raised portion being provided with an internal reinforcing-layer *m* extending over and covering its inner surface and terminating in an internal transverse partition *k*.

8. A metallic tile adapted for eaves courses, consisting of a metal sheet having a longitudinal raised portion projecting at the lower end beyond the body of the tile, and provided with an internal reinforcing-layer at said projecting end having its edge extended over and covering the extreme lower edge of said projecting end.

In testimony of which invention I have hereunto set my hand.

LEVI H. MONTROSS.

Witnesses:

W. C. PERRIN,  
M. G. THOMAS.