

G. H. BENNETT.

FLOOR TILE.

(Application filed May 15, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1,

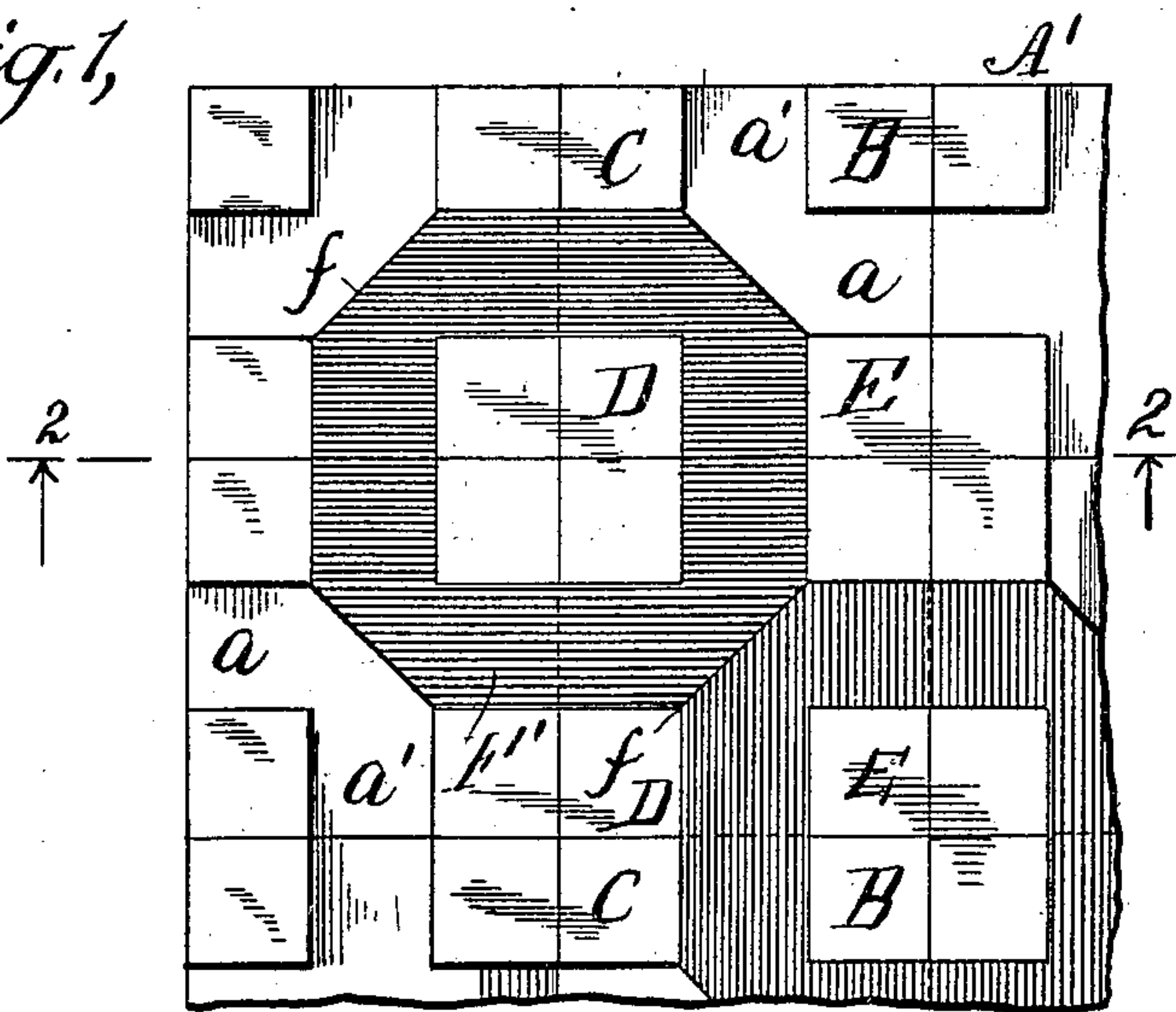


Fig. 1<sup>a</sup>

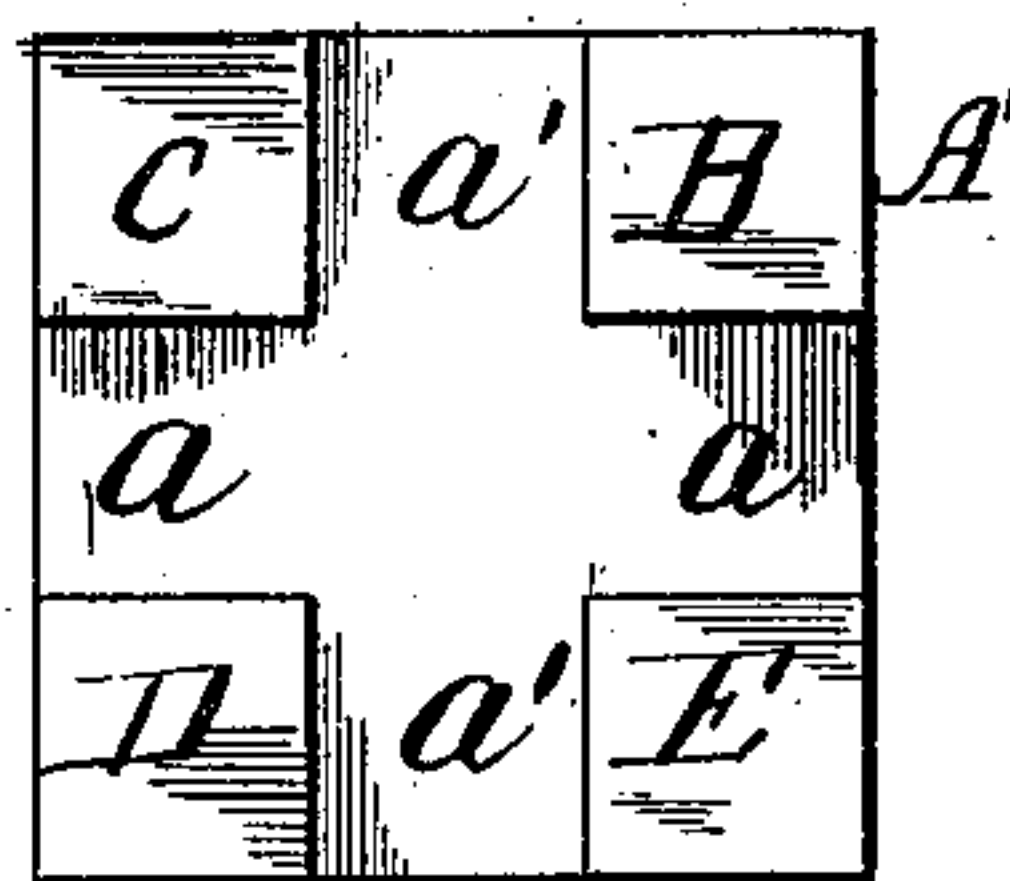


Fig. 2,

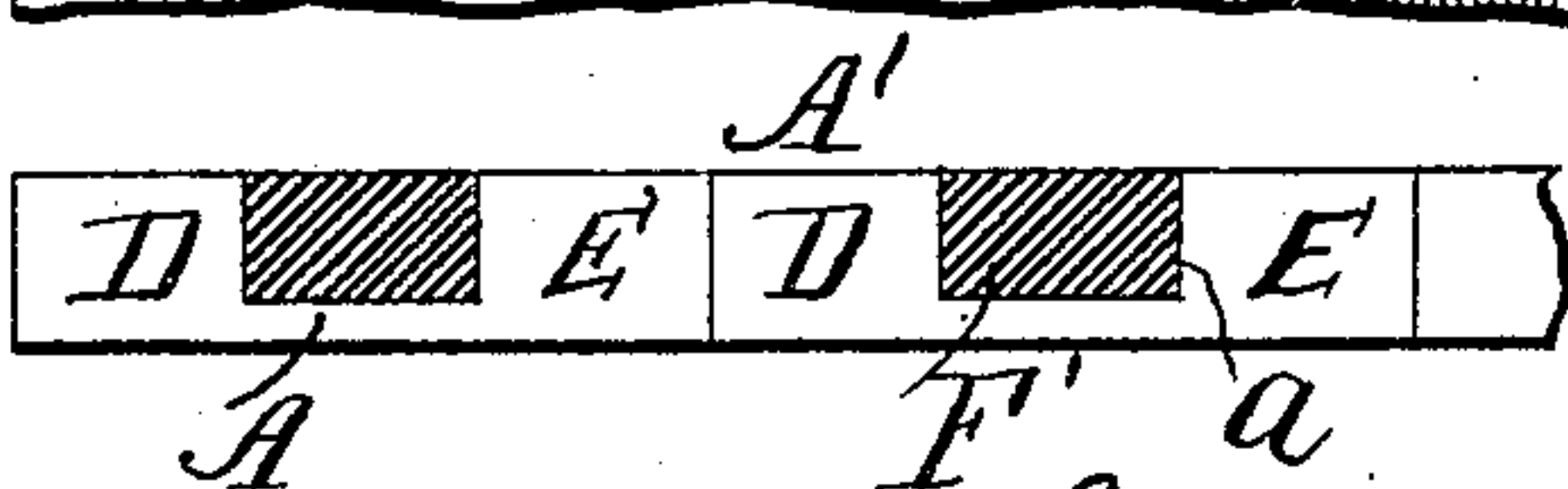


Fig. 3,

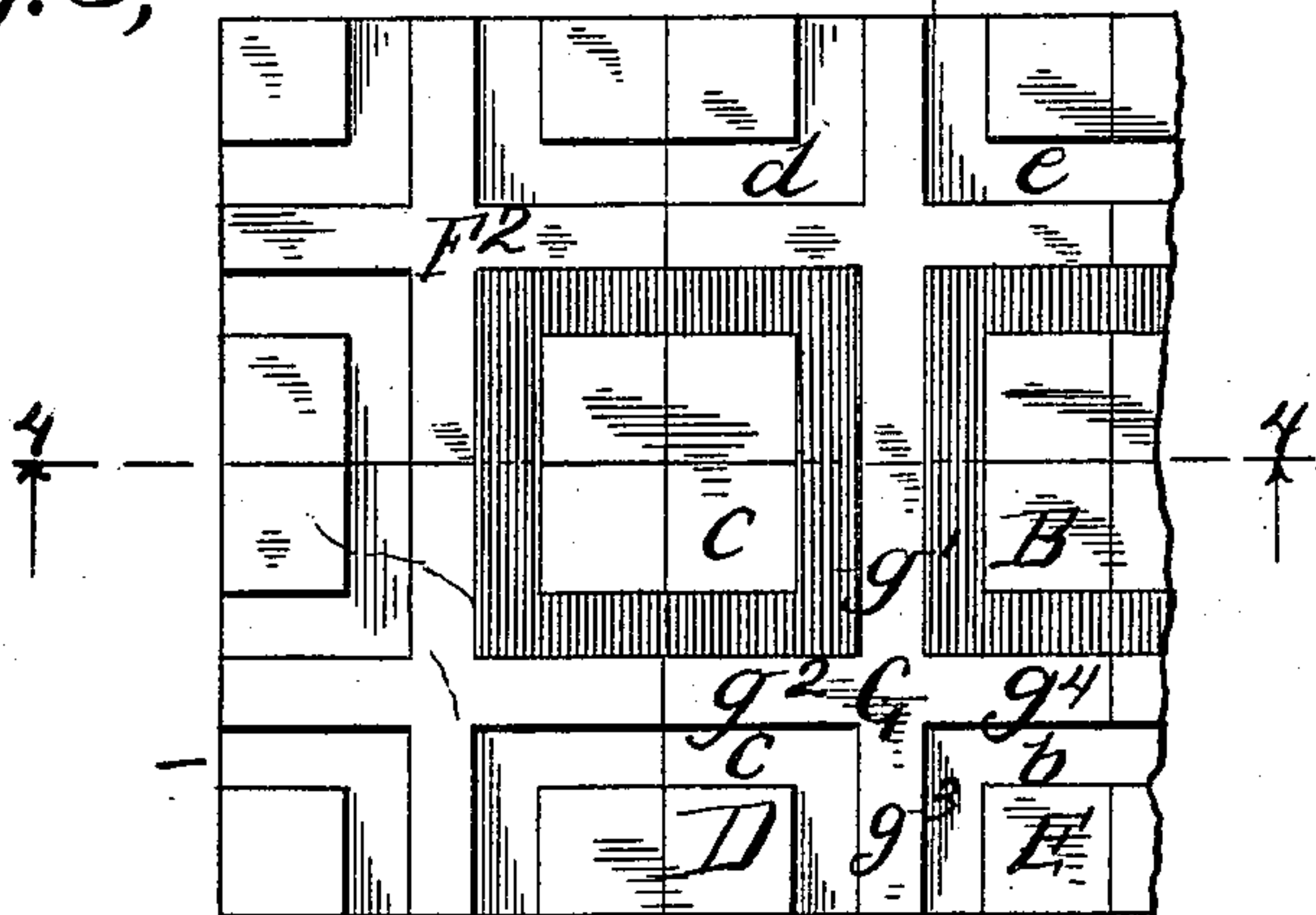


Fig. 3<sup>a</sup>

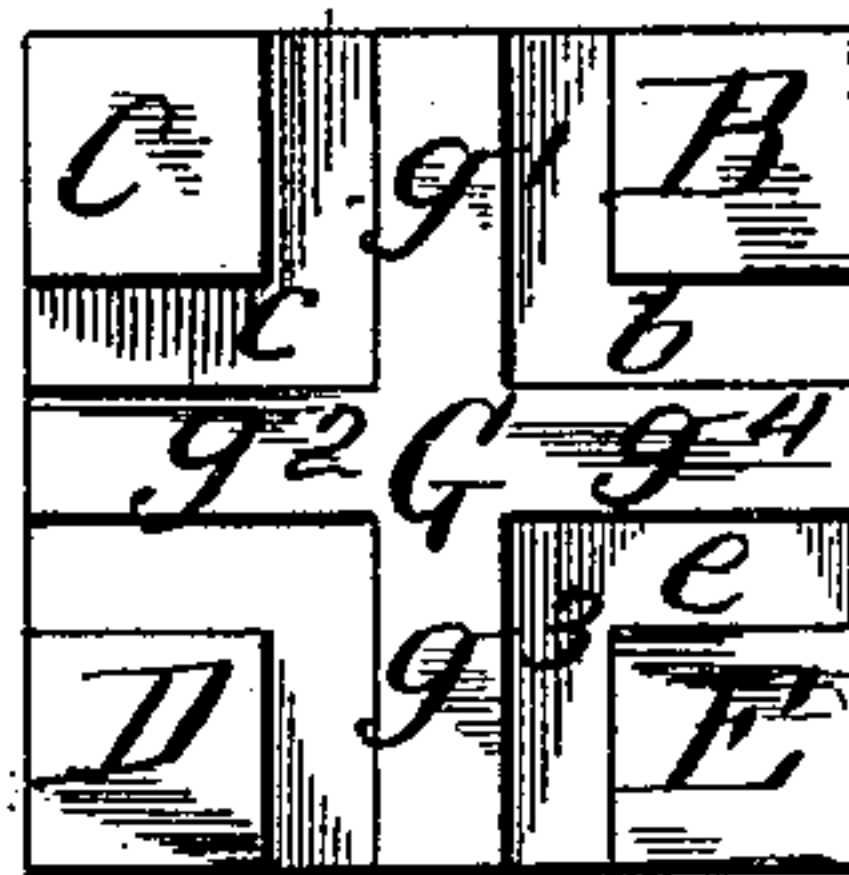
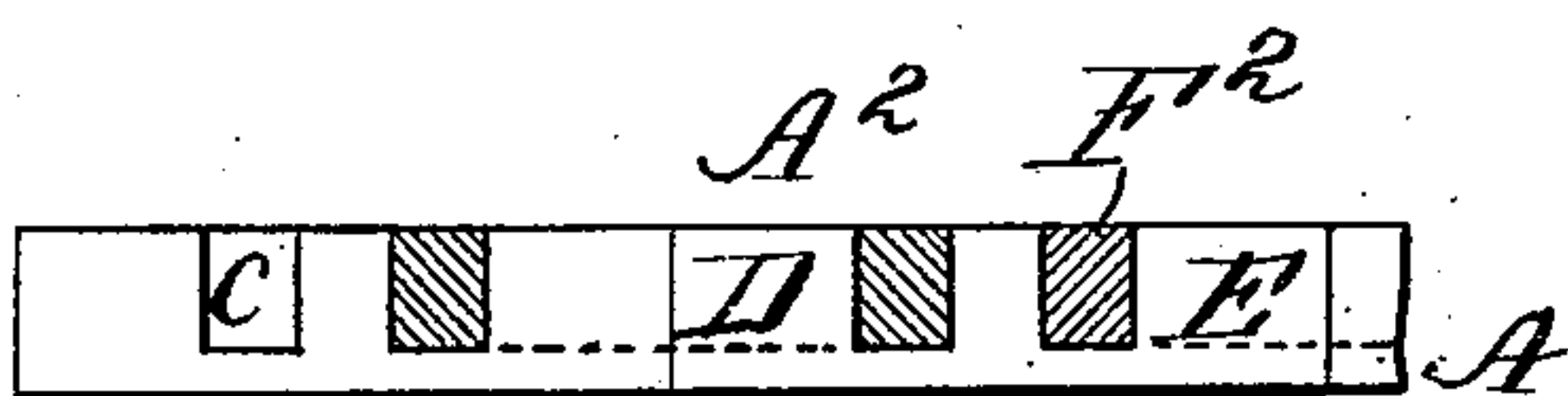


Fig. 4,



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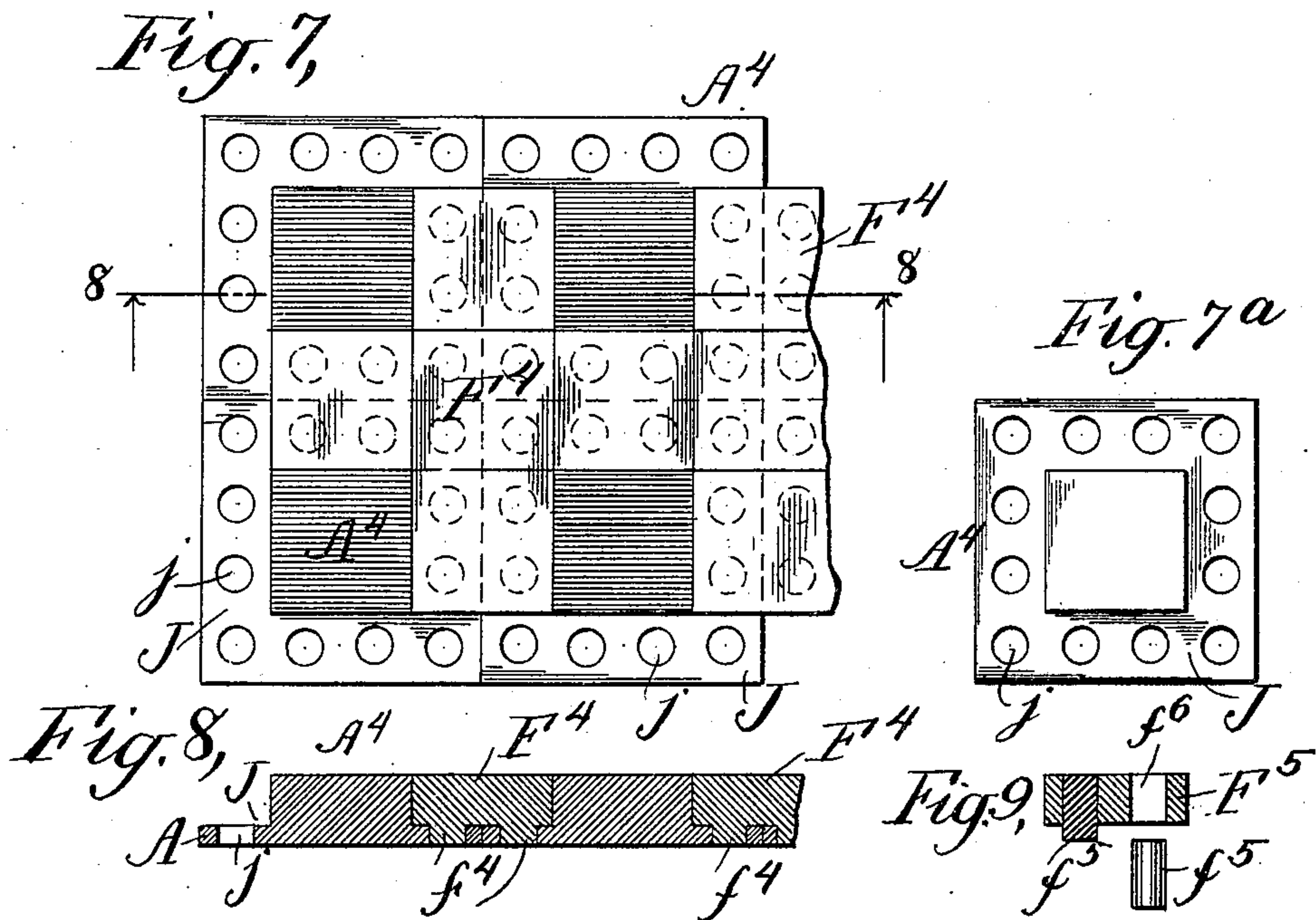
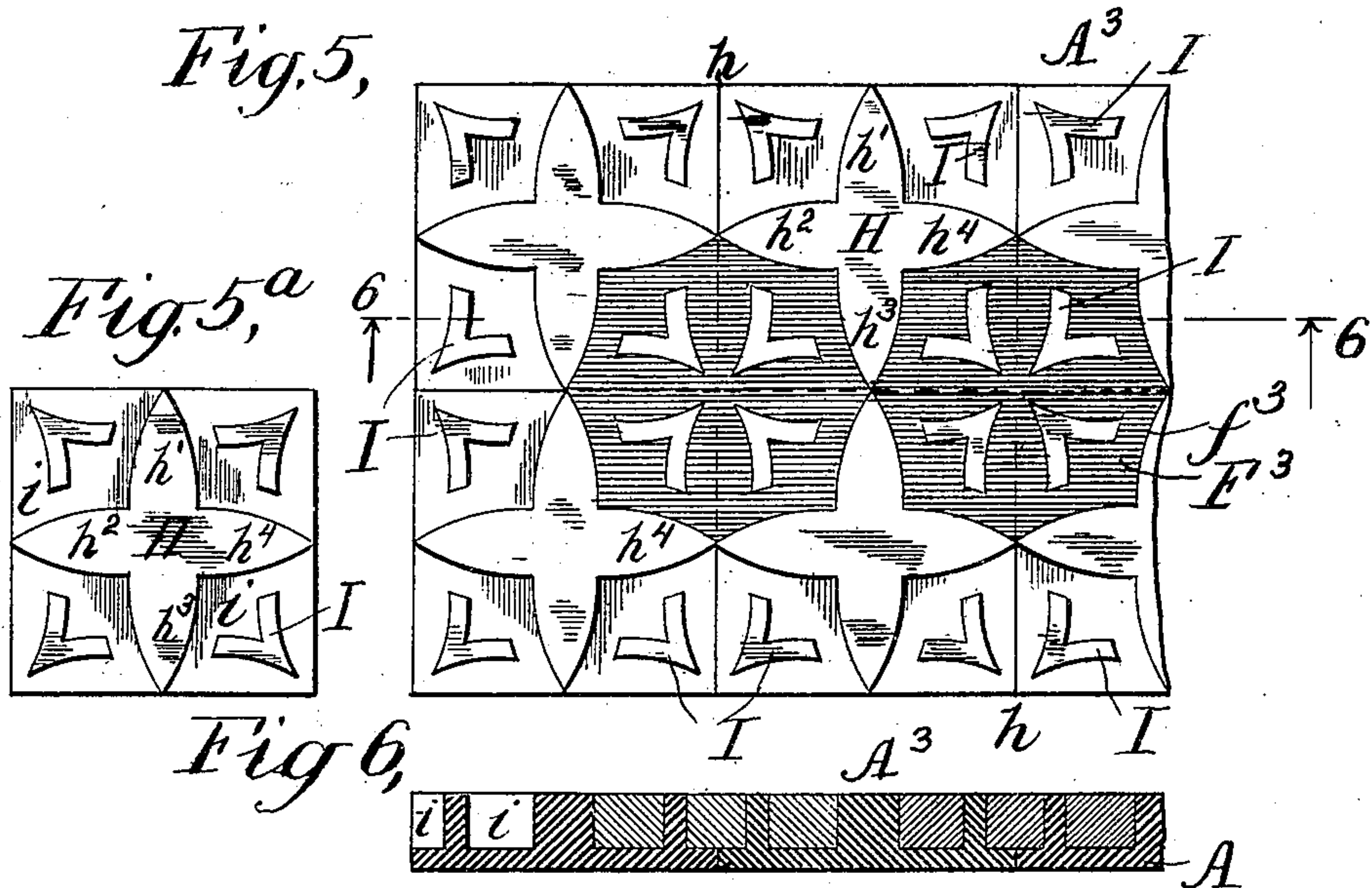
G. H. BENNETT.

FLOOR TILE.

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2 Sheets—Sheet 2.



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# UNITED STATES PATENT OFFICE.

GEORGE H. BENNETT, OF NEW YORK, N. Y.

## FLOOR-TILE.

SPECIFICATION forming part of Letters Patent No. 681,946, dated September 3, 1901.

Application filed May 15, 1901. Serial No. 60,296. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. BENNETT, a citizen of the United States of America, and a resident of the city of New York, county of New York, State of New York, (post-office address box No. 485, New York city,) have invented certain new and useful Improvements in Floor-Tiles, of which the following is a specification.

My invention relates to an improved covering for floors, walls, or the like in the form of tiles, which when assembled upon the foundation to be covered are all securely locked together, so as to form a smooth even surface of various colors and designs, the joints of which will not separate unless the tiles are taken apart and which will yield under expansion or contraction to which the surface covered thereby may be liable or subjected.

My improved tile is constructed in two parts: one, which will be referred to as the "base-tile," which covers all of the foundation upon which the tiles are laid, but forms only portions of the tile-surface, and a second part, referred to as a "locking-tile," which engages portions of a plurality of the base-tiles, locking them securely together, filling the space between them, and completing the surface exposed for use.

My improved tiles may be made of a variety of materials—such, for instance, as compositions of rubber, vulcanized fiber, wood, linoleum, compounds of leather, paper, and many other materials.

By means of my invention I am enabled to produce small mosaic tiles from tiles several times their size and without the weakness incidental to the assembling of small independent pieces, and in some forms the locking-tiles cover the intersection of four base-tiles and when assembled and secured in place with cement they serve not only to securely connect the adjoining tiles, but also cover and seal the joints of the converging tiles, and so produce a waterproof surface.

The details of construction will be hereinafter set forth in connection with the accompanying drawings, in which—

Figure 1 is a plan view of a group of base-tiles with a portion of their complement of locking-tiles in place. Fig. 1<sup>a</sup> is a detail view of one of the base-tiles of Fig. 1. Fig. 2 is a

transverse sectional view on the line 2 2 of Fig.

1. Fig. 3 is also a plan view of a group of tiles embodying the invention with a portion of the locking-tiles in position. Fig. 3<sup>a</sup> is a detail view of one of the base-tiles of Fig. 3. Fig. 4 is a transverse sectional view on the line 4 4 of Fig. 3. Fig. 5 is a plan view of a group of tiles embodying the invention with locking-tiles in place, said locking-tiles covering intersections of the base-tiles. Fig. 5<sup>a</sup> is a detail view of one of the base-tiles of Fig. 5. Fig. 6 is a transverse sectional view on the line 6 6 of Fig. 5. Fig. 7 is a plan view of a group of tiles embodying the invention in which the locking devices extend downwardly. Fig. 7<sup>a</sup> is a detail view of one of the base-tiles of Fig. 7. Fig. 8 is a transverse sectional view on the line 8 8 of Fig. 7. Fig. 9 is a detail view of a modification of the locking-tile shown in Figs. 7 and 8.

In the drawings, A' A<sup>2</sup> A<sup>3</sup> A<sup>4</sup> indicate the base-tiles in Figs. 1, 1<sup>a</sup>, 3, 3<sup>a</sup>, 5, 5<sup>a</sup>, 7, and 7<sup>a</sup>, and although they differ in minor respects they are all alike in that their bottom surfaces or sides have a uniform rectangular dimension and that their bottom sides and edges A meet to form a complete covering for the foundation on which they are laid. The top or surface portions of these base-tiles are of smaller area than their lower portions and comprise differing characteristics of form, as will appear.

As shown in Fig. 1, the base-tile A' is square in form and has two recesses crossing each other at right angles through the central portion of the tile and extending through about three-fourths of its thickness. The four corners B C D E are untouched and remain in the form of four squares of the full thickness of the tile. When four such tiles are arranged together, the recesses *a a'* intersect, and the four corner-pieces of the four adjacent base-tiles come together in a square group, and are then united by fitting into the channels so formed. The locking-tile F', which, as indicated in Fig. 1, has a square central opening adapted to fit around the square group of projections from the base-tiles, is of octagonal exterior form, the walls of which are of the same width as the channels *a a'* in the base-tiles, the straight portions of which channels it fills. At the corners of the chan-



nels the space is greater and is filled by the adjoining corners of two of the locking-tiles, as indicated at  $f$ . The locking-tile  $F'$  is of a thickness about equal to the depth of the channels in the base-tile, so that when fitted therein its upper side is of the same height as and forms a uniform surface with the projections of the base-tiles, suitable allowance being made for a coating of cement, which is applied in the said channels  $a a'$  to hold the parts securely together. With this arrangement a composite mosaic pattern is produced in which the small surface-squares are not only secured within and supported by the locking-tiles, but are further strengthened by their connection with the base-tiles.

As shown in Fig. 3, the base-tile  $A^2$  is formed with square corner projections  $B C D E$ . The tile, however, differs from that in Fig. 1 in that it is formed with four separate rectangular channels  $b c d e$ , which are comparatively narrow and extend through about three-fourths of the thickness of the base-tiles, leaving the central portion  $G$  of the full thickness of the base-tile, having four similar arms  $g' g^2 g^3 g^4$  of the full thickness of the base-tile and in the form of a cross. In this manner the sides of four narrow rectangular channels are produced, into which are fitted and cemented square locking-tiles  $F^2$ , which, however, do not come into contact with each other, being separated by the arms of the cross  $G$ .

In Fig. 5 the outlines of the surface portion  $H I$  of the base-tiles are given different forms, the precise form, however, being merely by way of illustration, although the arrangement of the surface portions of the base-tiles now referred to is important and constitutes a distinctive feature of my invention. In said Fig. 5 the base-tile  $A^3$  has a central surface portion  $H$ , which may be in the form of four arms  $h' h^2 h^3 h^4$ , arranged at right angles with each other and extending from the center of the tile to the middle of each side thereof, the said arms tapering to points at the edges of the tile. The remainder (the corners  $i$ ) of the tile is cut away to about three-fourths of its depth, leaving one-fourth as the thickness of its bottom portion, with the exception of projections  $I$  or unremoved portions of said tiles, which may be given any desired shape, in the present instance being in the form of the letter  $V$ , the bottom of said letter pointing toward the corner of the tile, but not extending to the edges. In this form the locking-tile  $F^3$  is also octagonal, having eight indented or scalloped sides  $f^3$ , which conform to the shape of and fit in between the arms of the central figure  $H$  of four adjoining base-tiles. The said locking-tile  $F^3$  is also formed with four  $V$ -shaped openings, which fit over the projections  $I$  in the corner spaces of the base-tiles  $A^3$ . Thus the locking-tile  $F^3$  fills the space between the arms  $H$ , embraces the  $V$ -shaped projections  $I$ , and covers and thereby seals the central point between the pro-

jections  $I$ , where the corners of the bases of four adjacent tiles come together, thereby greatly adding to the strength of the floor and also preventing the entrance of dirt and moisture and making it waterproof and also serving to hold down the corners of the base-tiles, and not only is the locking-tile  $F^3$  held in place by cement on its under side and edges, but it is further and very much more strongly secured by the projections  $I$ , formed in the corner spaces of the base-tiles and away from their edges.

In Fig. 7 a slightly-modified form is shown, in which the base-tile  $A^4$  has a central surface projection and is formed with the recesses or cut-away portions  $J$  around the four sides thereof. These cut-away portions  $J$  are preferably of equal width, so that the central or surface portion is square. A series of equidistant perforations  $j$  are formed in the extended bottom portions  $J$  of the tiles  $A^4$ , and when a group of the base-tiles are assembled the channels formed between them by the locking together of the reduced portions  $J$  will extend on all sides of and be of the same width as the square surface portion of the base-tiles. These tiles are connected by locking-tiles  $F^4$ , each of which is provided with four projections placed to register with and engage the apertures  $j$ , the corner-tiles  $F^4$  thus serving to engage and interlock with the adjacent corners of four base-tiles. The locking-tiles  $F^4$  are of the thickness of the depth of the channels between the surface portions of the base-tiles  $A^4$ , and their projections  $f^4$  are the length of the thickness of the bottoms of said channels. The said locking-tiles are preferably of the same size and shape as the surface portions of the base-tiles, so that when assembled a perfectly uniform, strong, and durable mosaic surface is produced. If desired, the locking-tiles may be secured to the base-tiles by pins passing through both, instead of by integral projections, although the latter are preferred. A construction is shown in Fig. 9 in which the locking-tile  $F^5$  is formed with perforations  $f^6$ , in which are inserted pins  $f^5$ , which pass through said tiles and into the perforations  $j$  of the base-tiles  $A^4$ . The pins  $f^5$  are preferably of the same color as the locking-tiles  $F^5$  and are secured in place in the apertures of both tiles by suitable cement.

In view of the foregoing it will be understood that various minor modifications and changes may be made in the construction of the tiles without departing from the invention and that the top or bottom sides of the tiles may be used as the exposed or wearing surface.

Having described my invention, what I claim is—

1. A tile floor-covering comprising tiles having vertical extensions formed with vertical walls, and locking-tiles arranged between and filling the spaces between the extensions.
2. A floor-covering composed of a series of



base-tiles entirely covering the foundation,  
each base-tile having a vertically-walled chan-  
nel or recess therein and a surface portion  
and a locking-tile fitting the channels of and  
5 laterally uniting a plurality of the base-tiles.

3. A floor-covering consisting of a series of  
tiles covering the desired foundation, each  
tile having portions cut away to form recesses  
having vertical walls and extending between  
10 the surfaces of the tiles, and locking pieces  
or tiles fitting into the recesses and filling the  
spaces between their surface portions and  
engaging said tiles to secure them together  
laterally; whereby said locking-tiles may be  
15 removed or replaced from the surface.

4. A floor-covering presenting a surface  
consisting of small mosaic tiles part of said  
mosaics extending from supporting-bases of  
greater area than the surface portions, in  
combination with locking-tiles engaging the 20  
said bases and closing the openings in the  
surface between the base-supported mosaics  
and uniting the said base-tiles laterally.

Signed by me at New York, N. Y., this 14th  
day of May, 1901.

GEORGE H. BENNETT.

Witnesses:

FRANKLAND JANNUS,  
ALBERT W. PHILLIPS.