

No. 640,134.

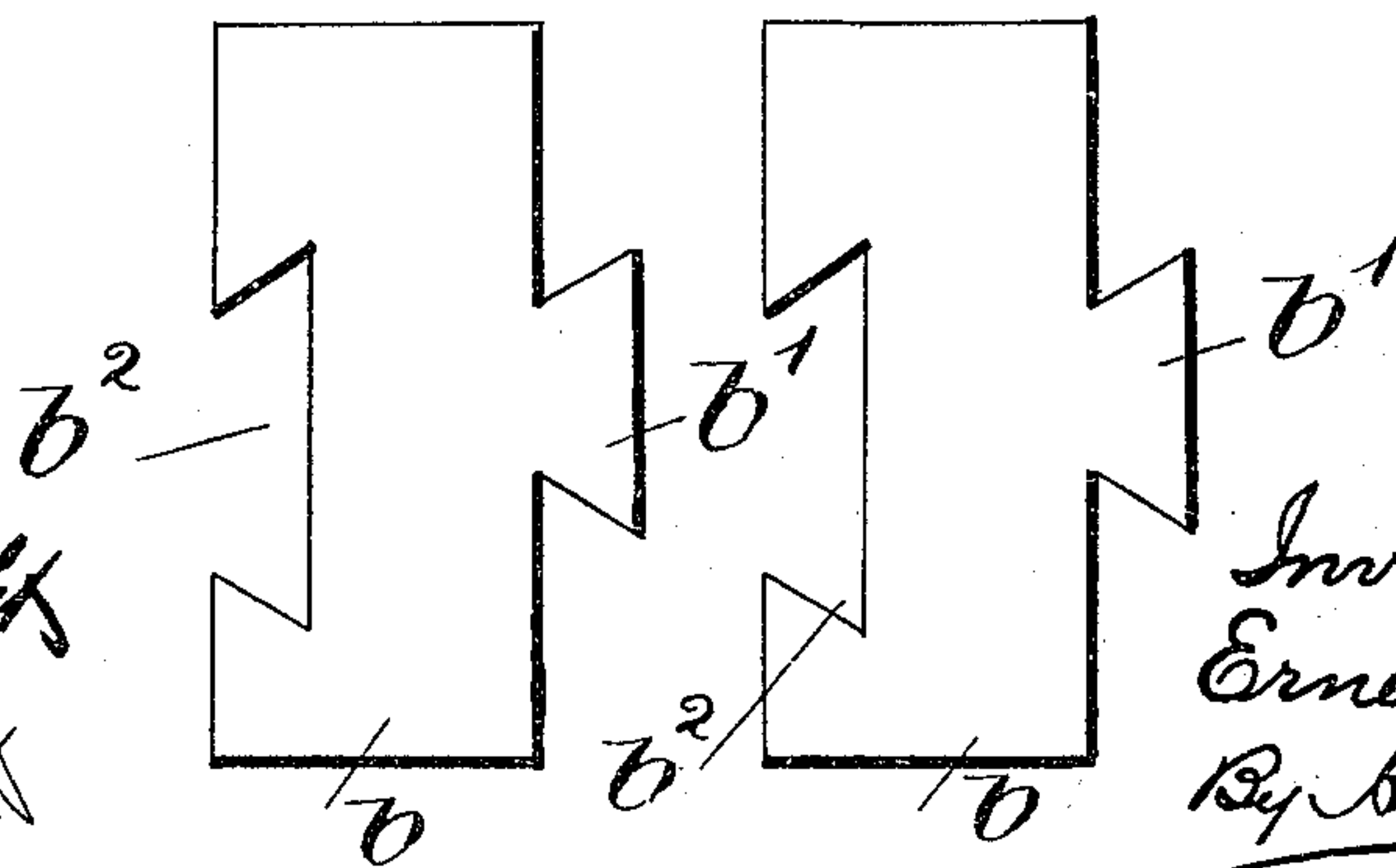
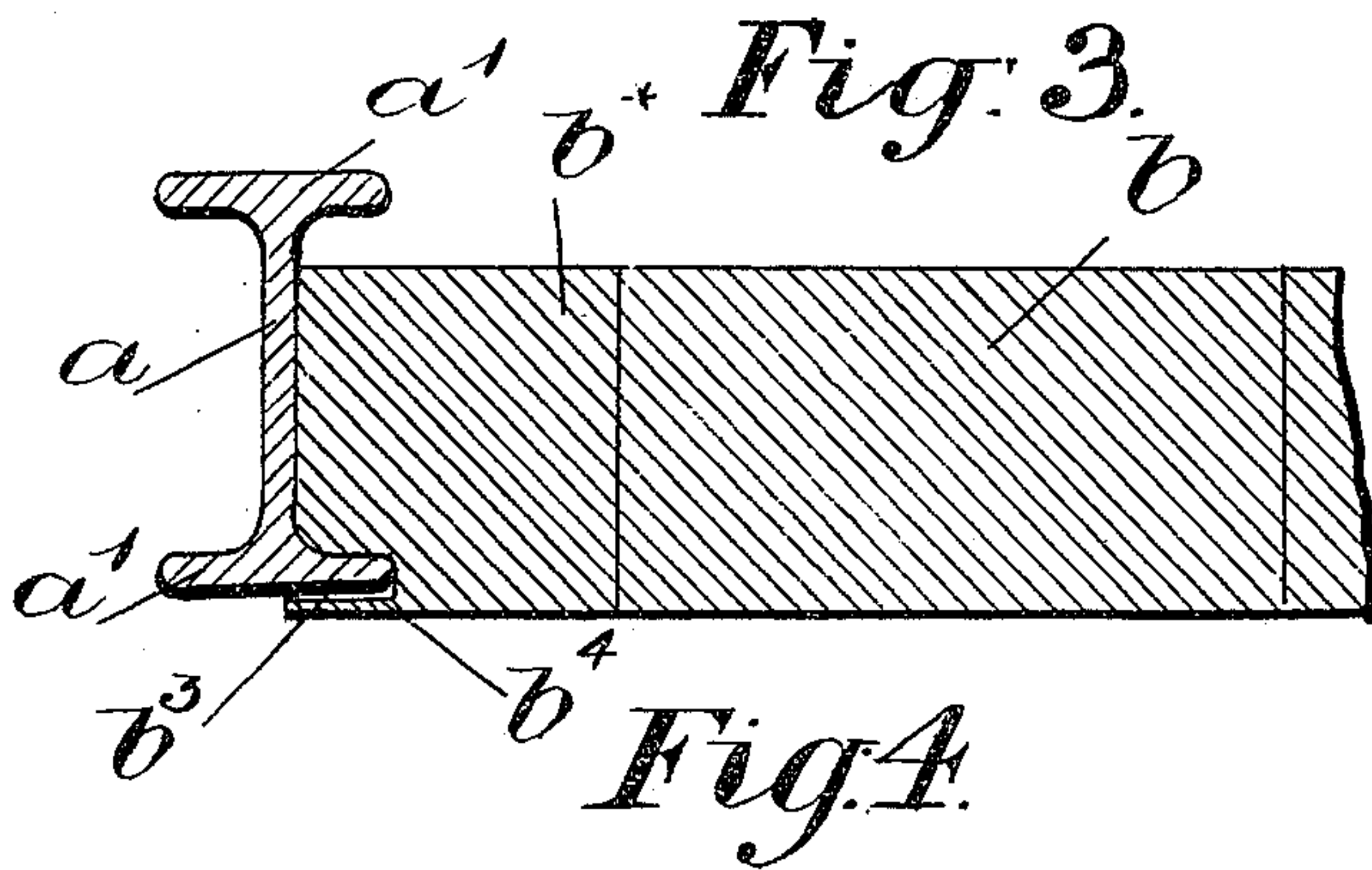
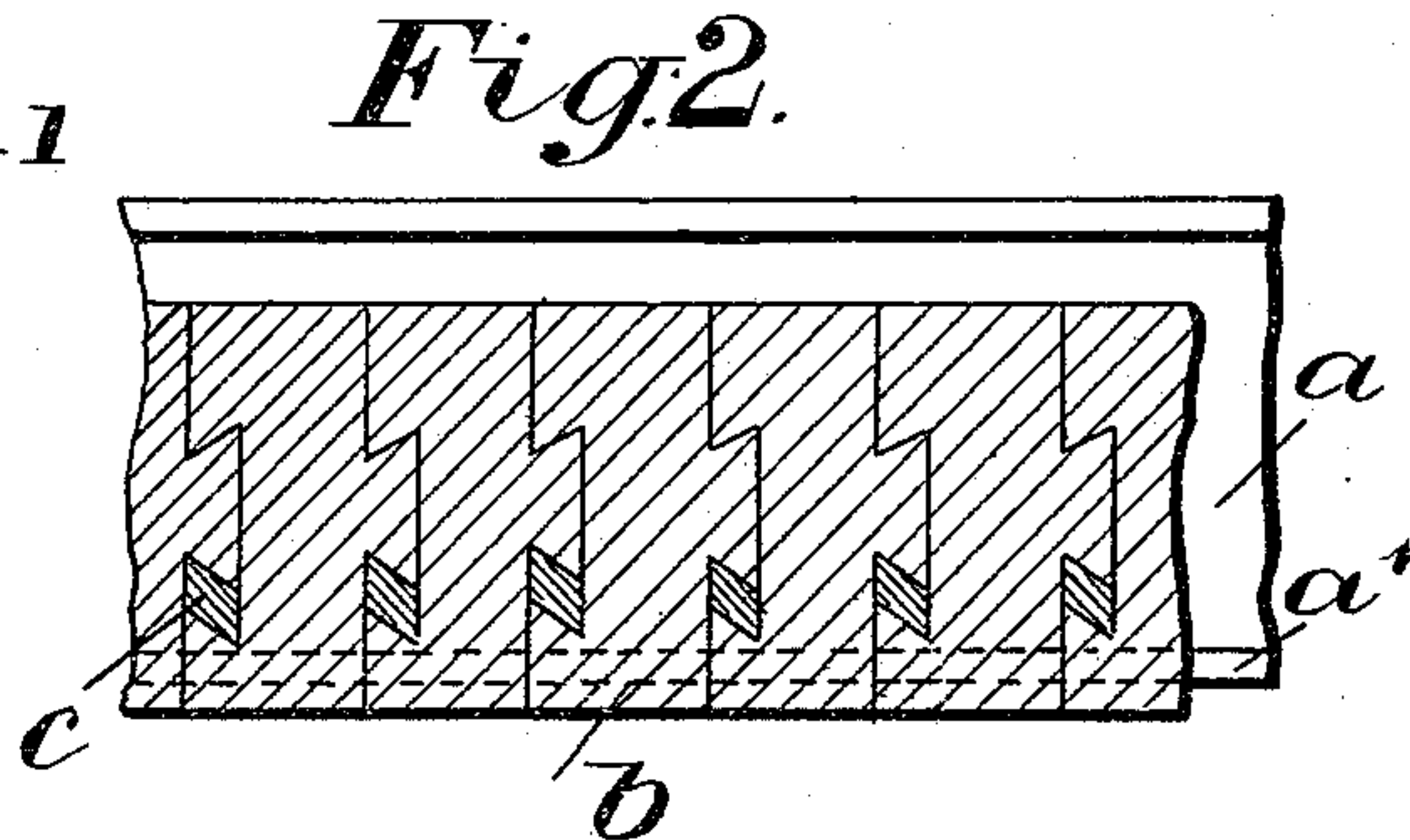
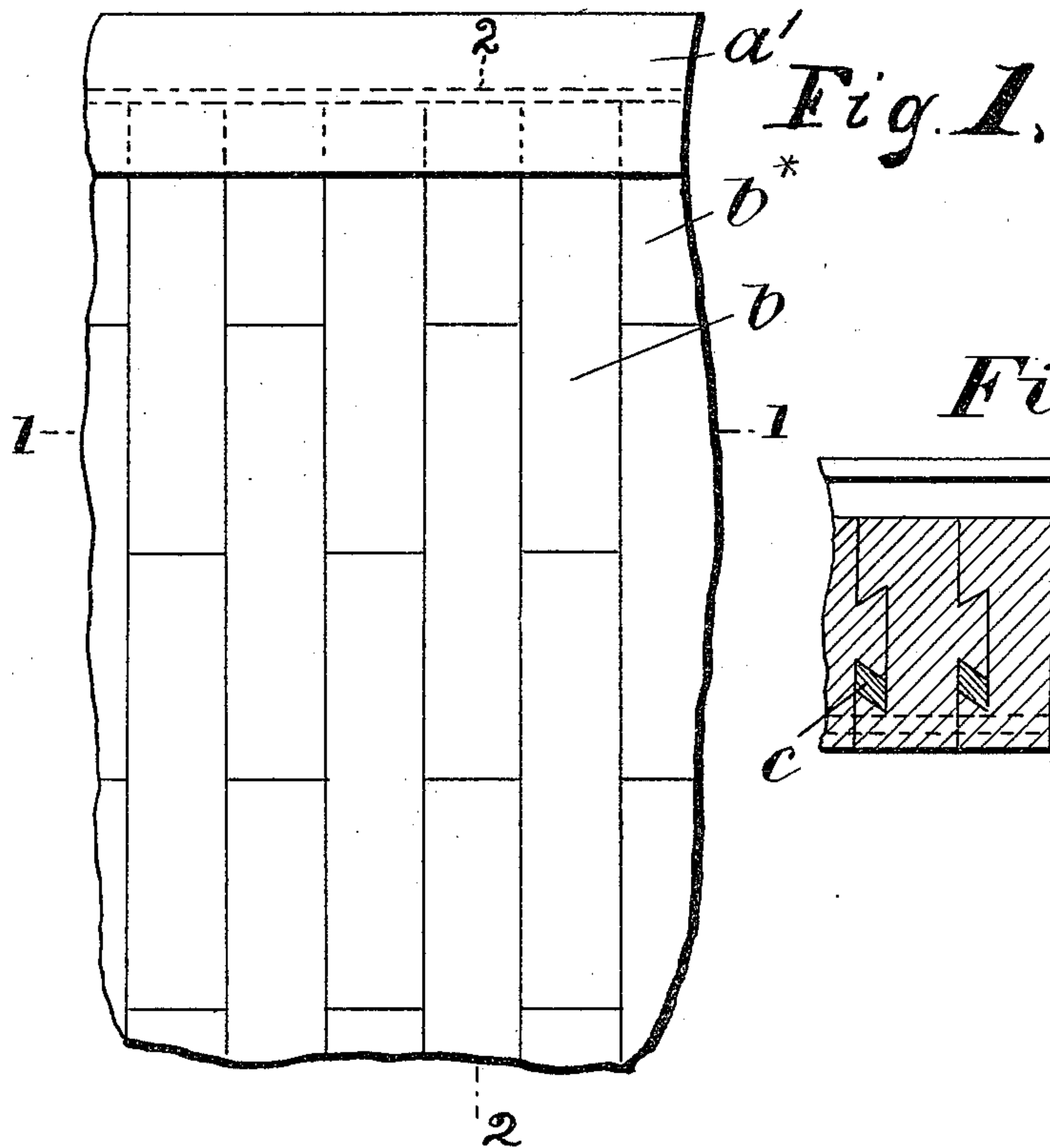
Patented Dec. 26, 1899.

E. HOMAN.
FIREPROOF FLOOR, CEILING, &c.

(Application filed Aug. 11, 1899.)

(No Model.)

2 Sheets—Sheet 1.



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2 Sheets—Sheet 2.

Fig. 5.

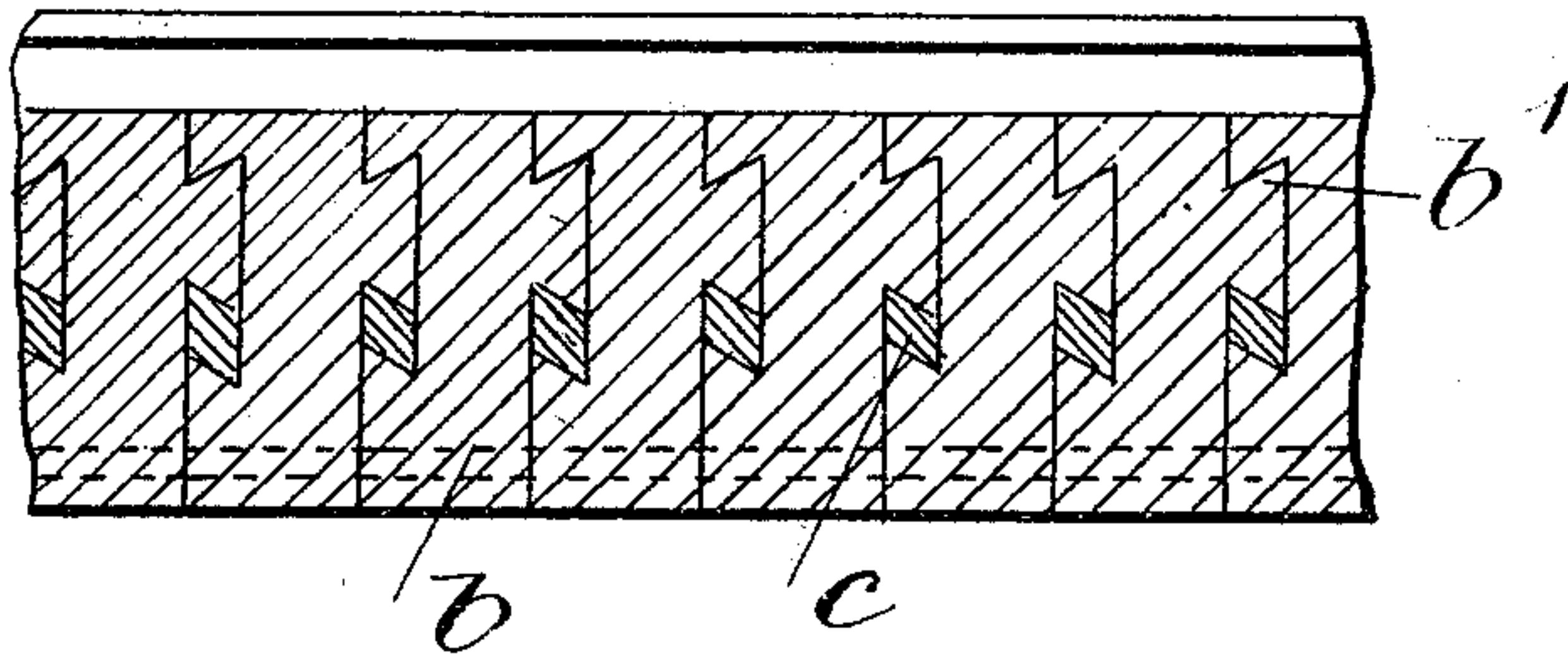


Fig. 6.

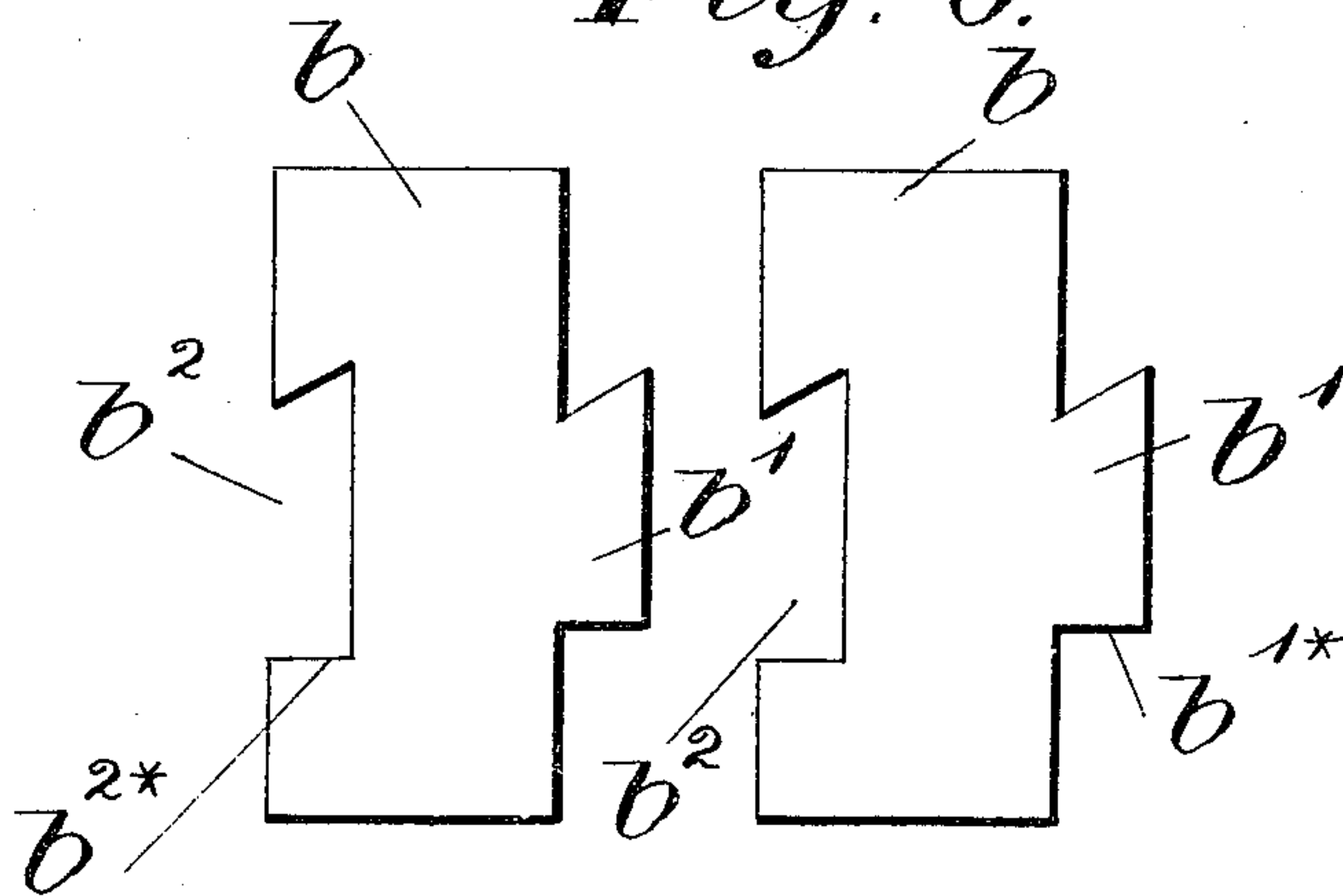


Fig. 7.

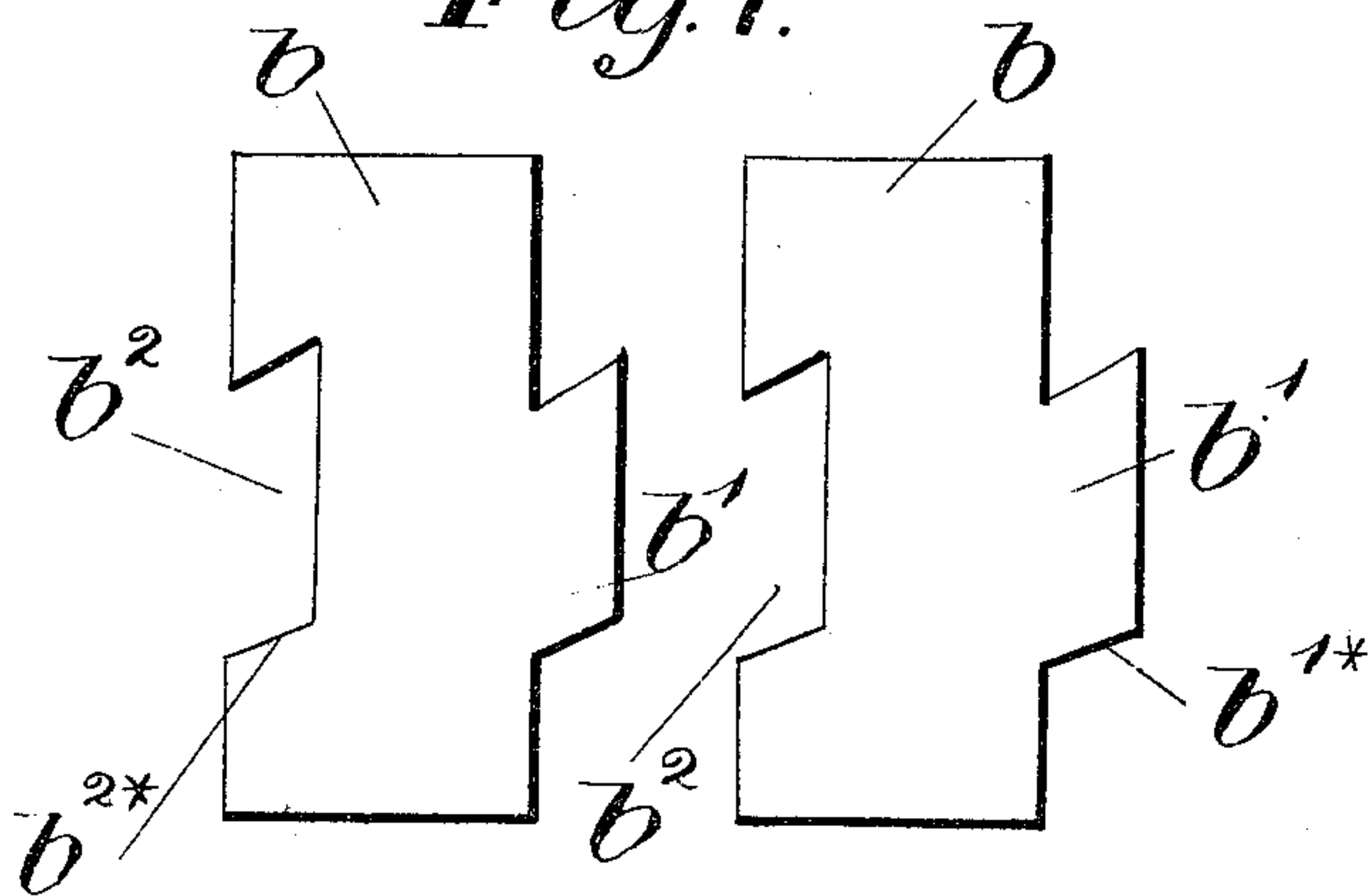
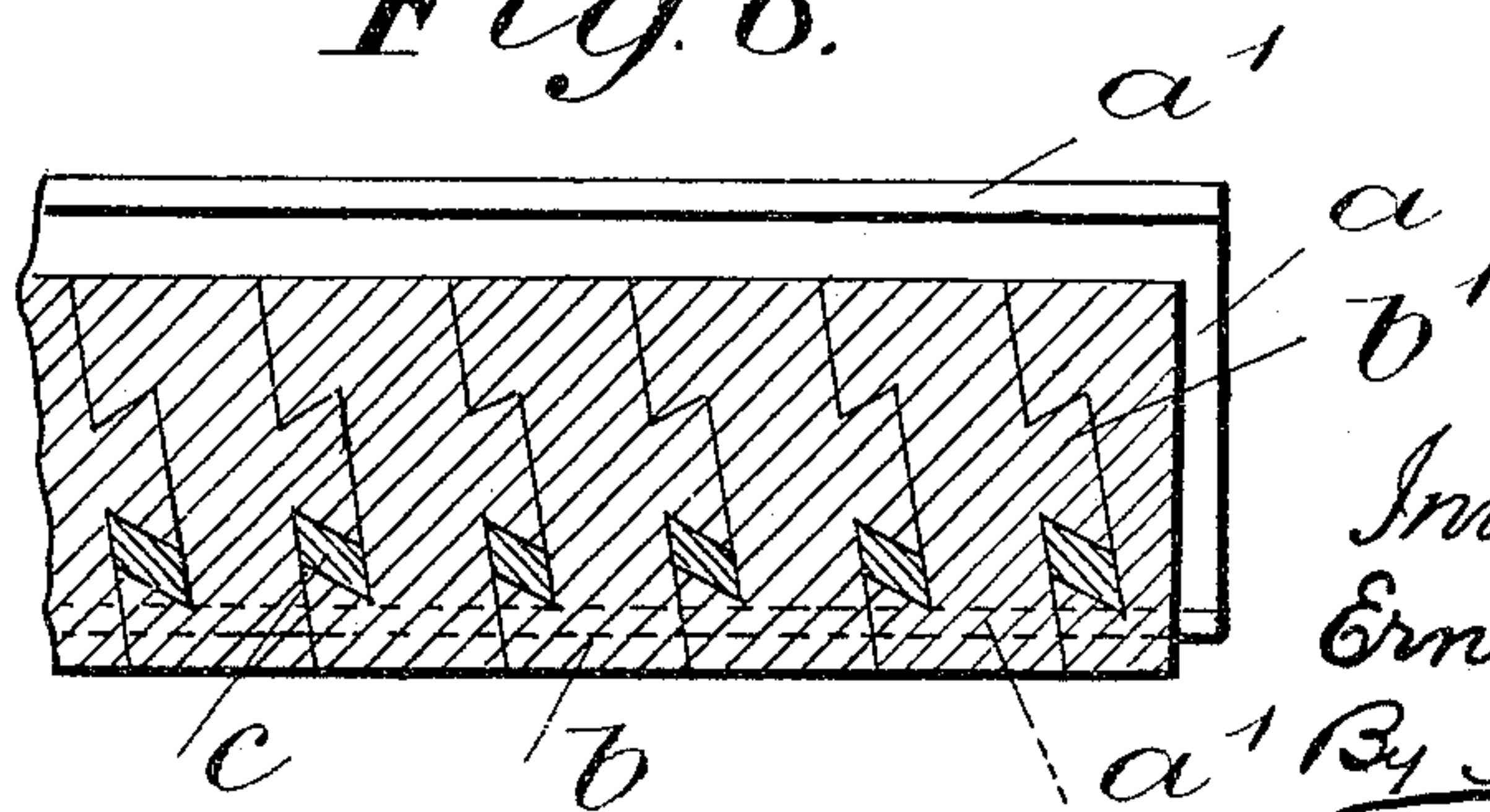


Fig. 8.



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UNITED STATES PATENT OFFICE.

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FIREPROOF FLOOR, CEILING, &c.

SPECIFICATION forming part of Letters Patent No. 640,134, dated December 26, 1899.

Application filed August 11, 1899. Serial No. 726,924. (No model.)

To all whom it may concern:

Be it known that I, ERNEST HOMAN, engineer, a subject of the Queen of Great Britain, residing at 17 Gracechurch street, in the city of London, England, have invented certain new and useful Improvements in or Connected with Fireproof Floors, Ceilings, or the Like, of which the following is a specification, reference being had to the drawings hereunto annexed and to the letters marked thereon.

The invention relates to improvements in or connected with fireproof floors, ceilings, or the like.

It is well known that in order to construct a fireproof floor with bricks or blocks of the kind at present in use it is either necessary that the bricks or blocks should extend in one span from joist to joist or that a frame or centering be first built up between the joists in order that the bricks of which the floor is being constructed may be supported until the joists are reached or the binding-cement has set.

Now the object of the present invention is to so construct and arrange the bricks or blocks that they will when placed in position automatically support one another and key themselves together, so that the troublesome and tedious operation of centering may be dispensed with, the workman's time materially saved, and an absolutely rigid floor obtained.

In the drawings, Figure 1 is a plan representing a portion of a fireproof floor or ceiling constructed according to the present invention. Fig. 2 is a transverse section thereof, taken on the line 1 1 of Fig. 1. Fig. 3 is a longitudinal section thereof, taken on the line 2 2 of Fig. 1. Fig. 4 represents an end view of two of the bricks or blocks separately. Fig. 5 is a similar view to Fig. 2, illustrating a slight modification. Fig. 6 is a similar view to Fig. 4, illustrating a slight modification in the shape of the interlocking parts. Fig. 7 is a similar view representing a further slight modification in said parts. Fig. 8 is a similar view to Fig. 2, illustrating a modification in the shape of the body of the bricks or blocks.

In the several figures, in which like parts are indicated by similar letters of reference, Figs. 4, 6, and 7 are drawn to an increased

scale with respect to the other figures of the drawings.

Referring to Figs. 1 to 4, *a* represents one of the usual joists or beams employed in the construction of fireproof floors, and *b* represents the bricks or blocks which are filled in between said joists. The bricks or blocks *b*, which are rectangular and oblong in shape, are provided on one side or face thereof with a horizontal and longitudinal dovetail projection or rib *b'*, while upon the opposite side each brick is formed with a longitudinal groove *b²* therein shaped to correspond with the dovetail projection *b'*, but formed of larger dimensions to allow of said projection freely entering therein, as hereinafter described. Each end brick of a row is in that end adjacent to the joist *a* formed with a horizontal slot or notch *b³*, which receives the flange *a'* of the joist *a*, and with a lip *b⁴*, which covers about half the under side of said flange *a'*, so that when a row of bricks is laid upon the opposite side of the joist *a* the under side of the flange *a'* will be more or less protected from fire.

In constructing a floor with bricks of the character hereinbefore described a row of bricks with the ribs or projections *b'* outward is first laid in the usual manner so as to rest on the wall or girder supporting the joists *a*, and the bricks *b* of the next row are by means of their dovetail slots or grooves *b²* hung onto the ribs or projections *b'* of the preceding row, said slots being of such area as to admit of the projections *b'* passing thereinto from the face or side of the brick, and the bricks are packed or bedded in mortar or cement, as is usual in brickwork, the peculiar undercut shape of the grooves *b²* causing the bricks to hang securely in position, while the mortar or cement at *c* forms a key to effectually lock the parts together. The bricks *b* are laid so as to break joint after the usual manner of brick-laying, thus insuring the absolute rigidity of the floor, and in order to enable this to be accomplished the rows are alternately commenced with half-bricks *b**. By reason of the angular shape of the projections *b'* and grooves *b²* any weight placed upon the floor will tend to press the bricks more closely together, and thus add to the general strength of the structure.

The brick floor or ceiling may be covered with concrete, asphalt, boarding, or other material in the usual way.

In the example given at Fig. 5 the dovetail rib or projection b' and groove or recess b^2 are formed out of the center—that is, nearer to the top edge of the brick than in the previous example—by which arrangement the hanging principle is accentuated.

In the example given at Fig. 6 the ribs or projections b' and grooves or recesses b^2 instead of being formed with complete dovetails have their lower parts b'^* and b^{2*} formed flat or horizontal—that is to say, at right angles with the body of the brick. The interlocking parts of this device by reason of the removal of the lower angle of the dovetail fit more closely than those hereinbefore described, the difference in the dimensions of the rib and groove being just sufficient to give the necessary clearance, and although the key c is absent the parts are firmly united by the cement in which the bricks are bedded and which fills the joints.

In the example given at Fig. 7 the principle of cutting away the lower angle of the dovetail is carried still farther—that is to say, the direction of said angle is reversed, the parts b'^* and b^{2*} being upwardly inclined, although they are not quite parallel with the upper angles, by which arrangement the hanging of the bricks is facilitated, or both angles might be of other suitable shape, or curves might be substituted therefor, if desired.

In the example given at Fig. 8 the bricks b are constructed with sloping sides—that is to say, their transverse section is that of a parallelogram—so that each row after the first to some extent lies upon the preceding row, and the end rows are or may be formed wedge-shaped or inclined upon one side, so that the opposite side will lie parallel with the wall or girder against which it abuts.

By the means hereinbefore described a

fireproof floor may be rendered self-supporting between the joists during its construction, thereby dispensing with the troublesome and expensive operation of centering, and a greater span can be obtained from joist to joist than can be effectively carried by a single brick or lintel, while the bricks or blocks will be firmly keyed together, and by reason of the peculiar shape of the keys or interlocking parts any pressure upon the floor will tend to force the bricks together rather than separate them, and the floor will consequently be more rigid than heretofore.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a fireproof floor or the like the combination of joists or bearers, blocks built in rows between said joists or bearers, having upon their sides transverse to the joists or bearers undercut or hooked interlocking, ribs and recesses whereby one row of blocks is hung upon the preceding row and supported by the undercut or hooked engaging parts against both vertical and lateral displacement, and fillings or keys of cement or the like introduced in the recesses to prevent disengaging relative movement between the interlocked parts.

2. As a new article of manufacture, bricks or blocks for constructing floors and the like formed upon their respective vertical sides with undercut or hooked ribs and grooves of vertical dimensions which permit said ribs to be introduced into the grooves laterally or in the line of engagement, and then moved vertically to cause engagement of the undercut parts and thus lock the parts together against transverse displacement as described.

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Witnesses:

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