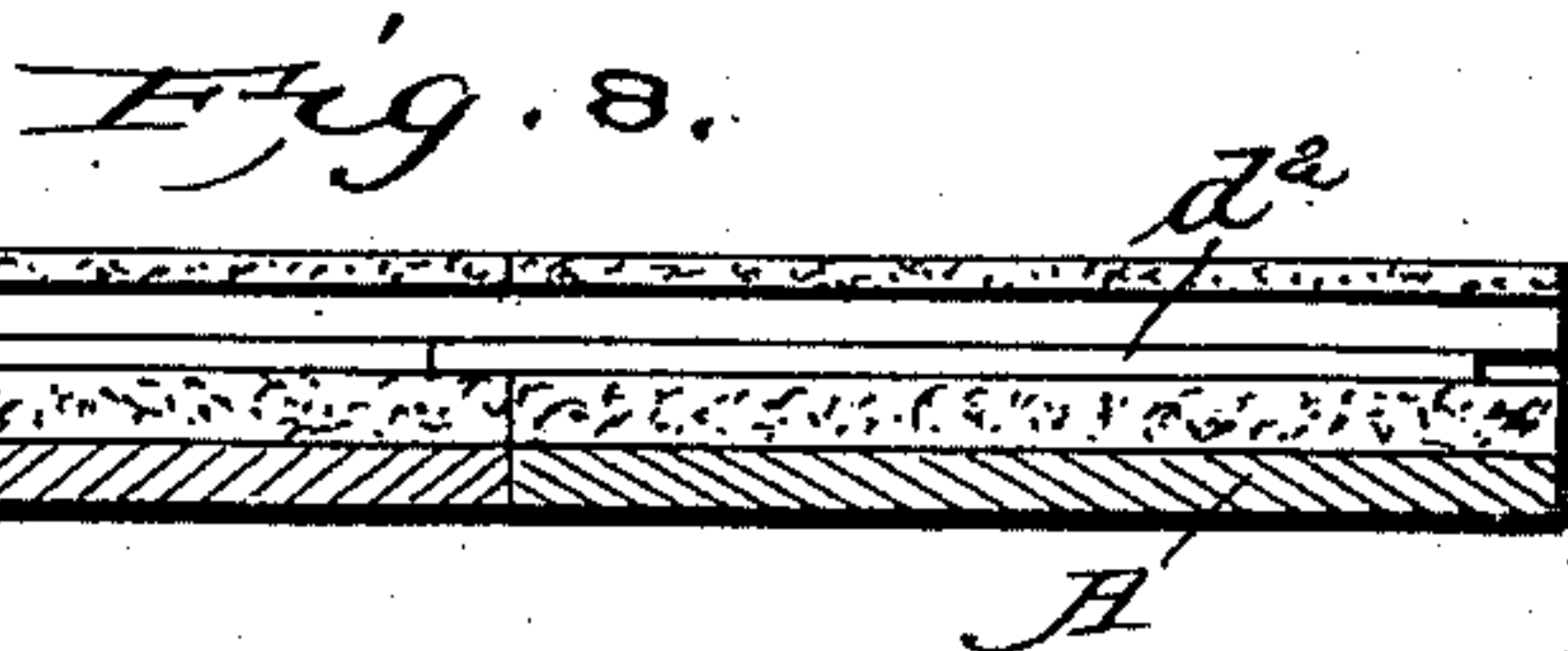
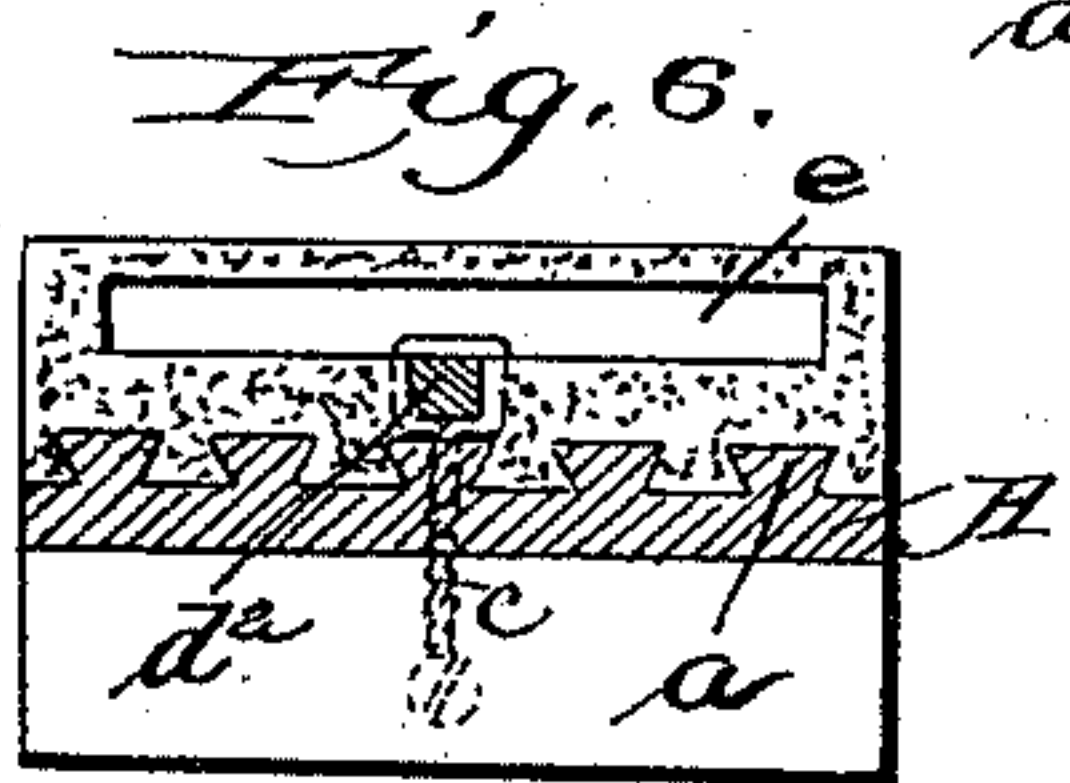
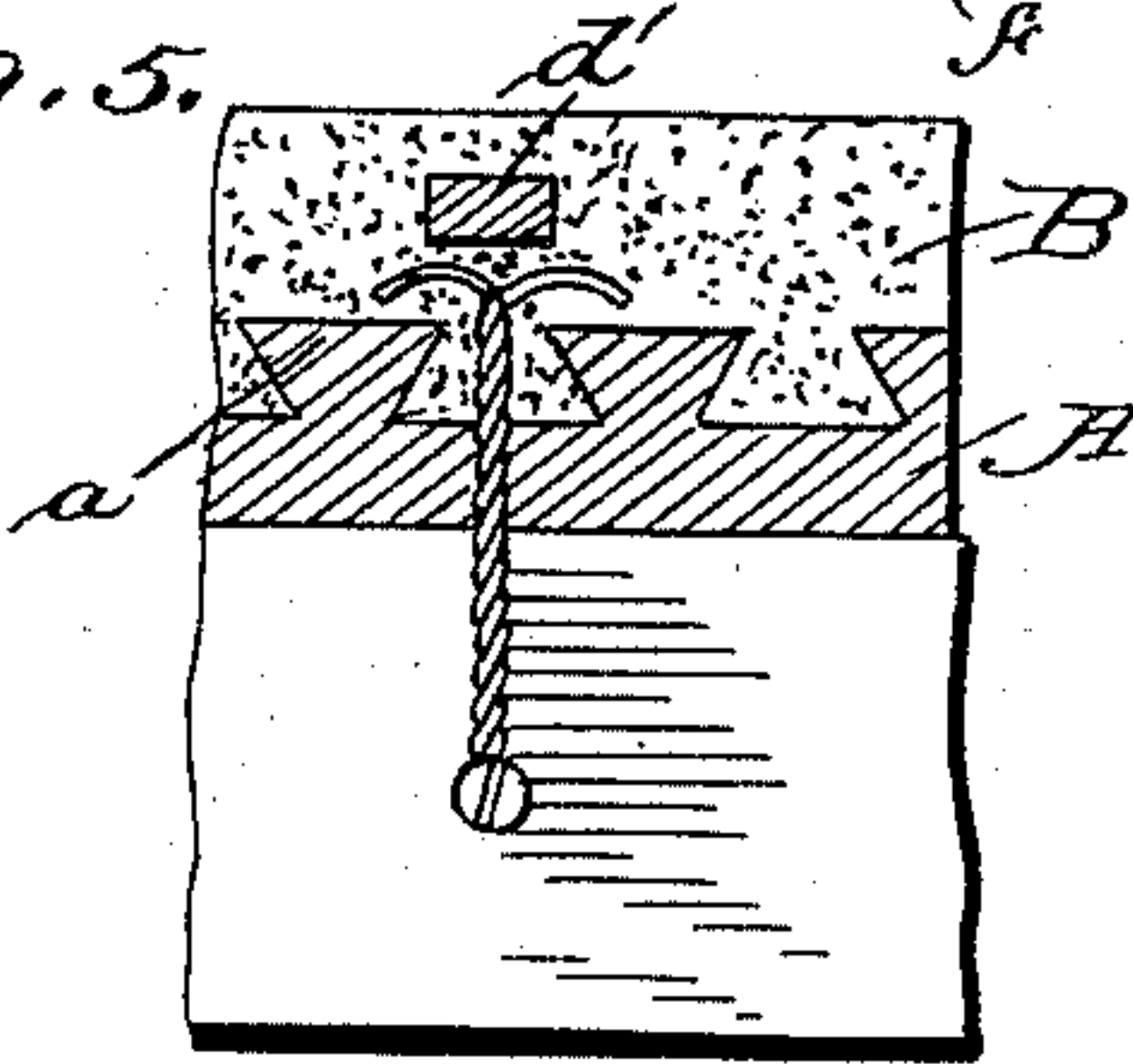
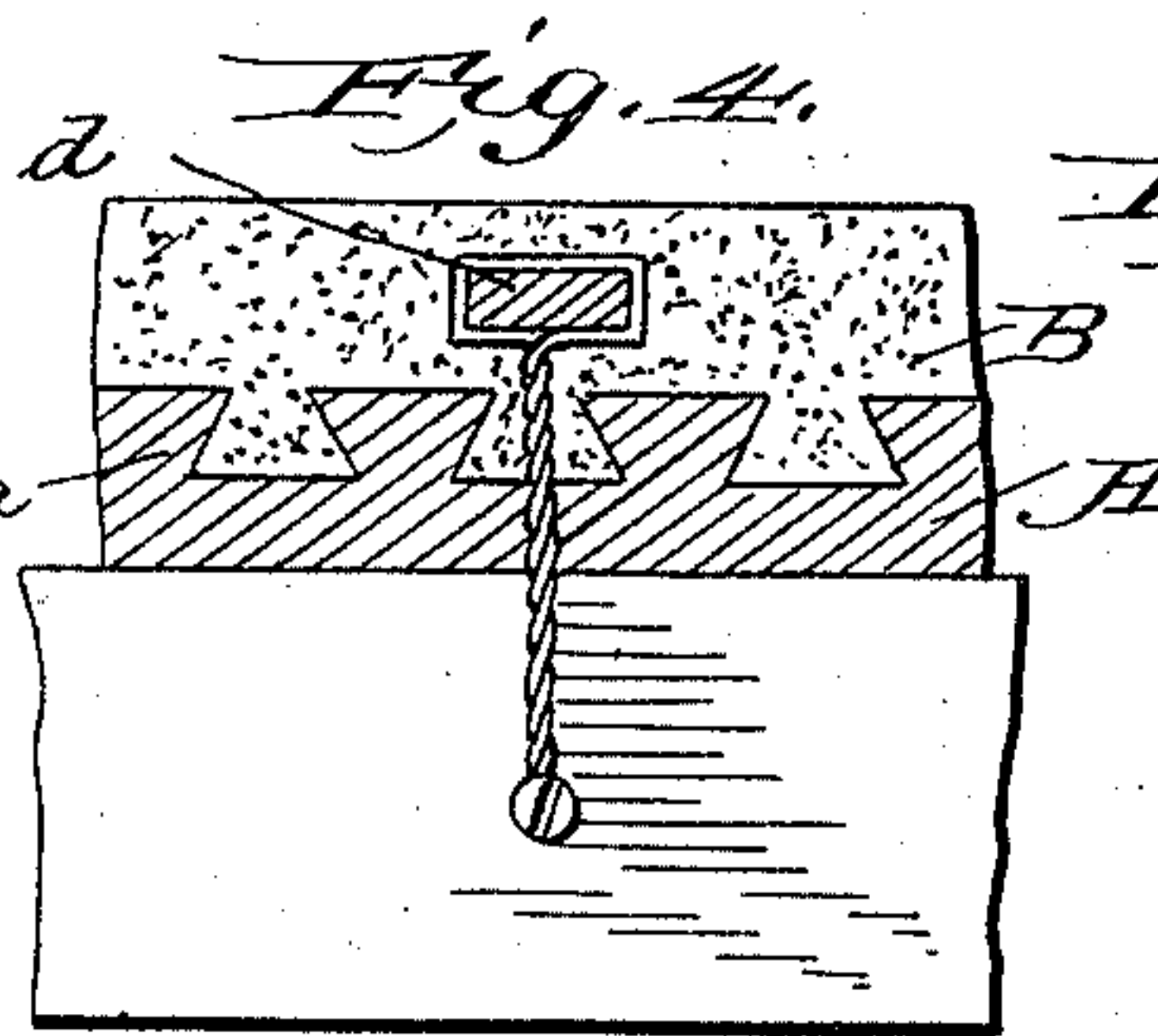
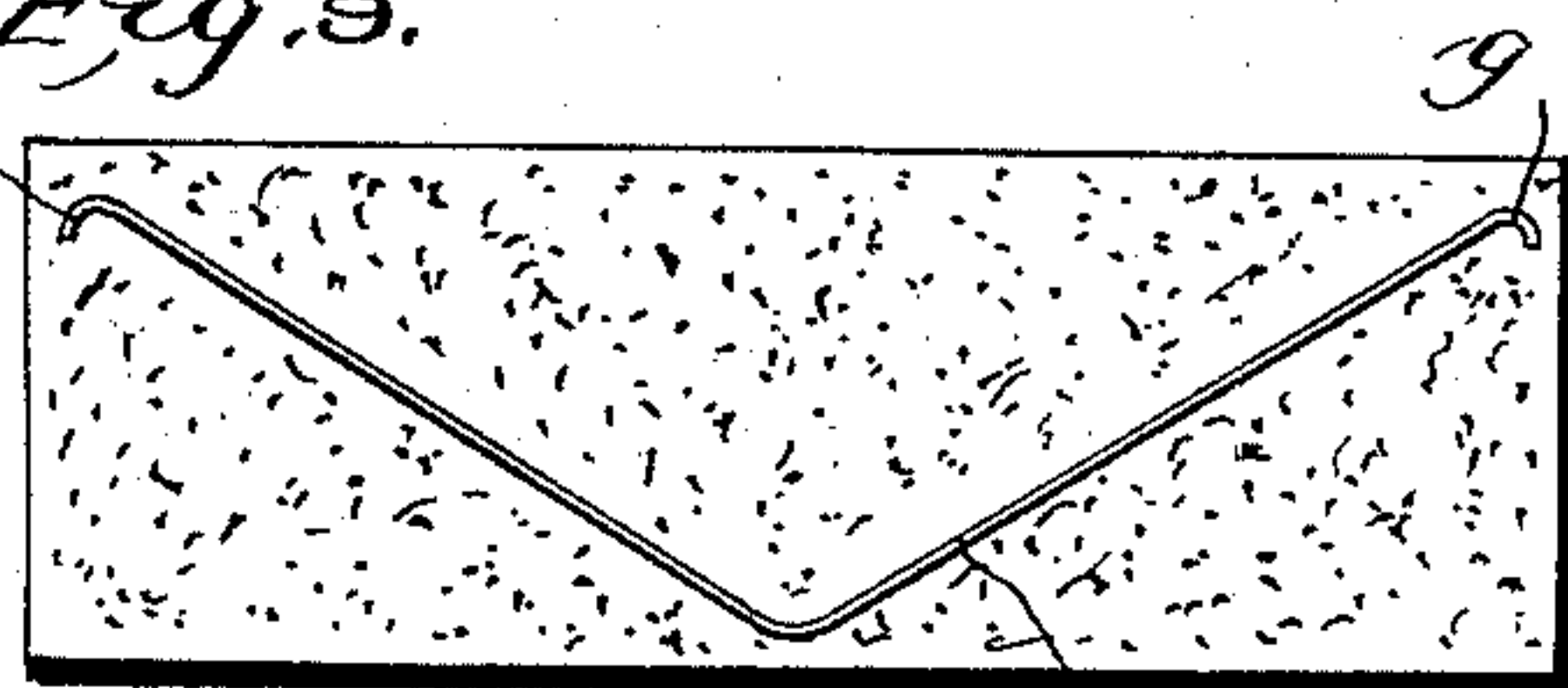
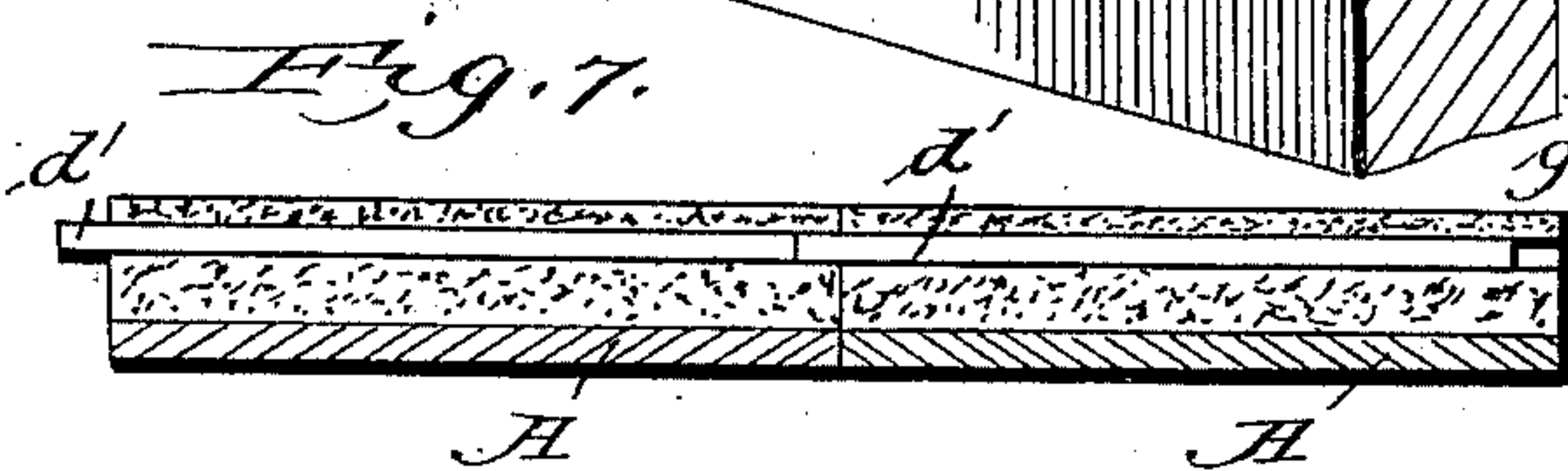
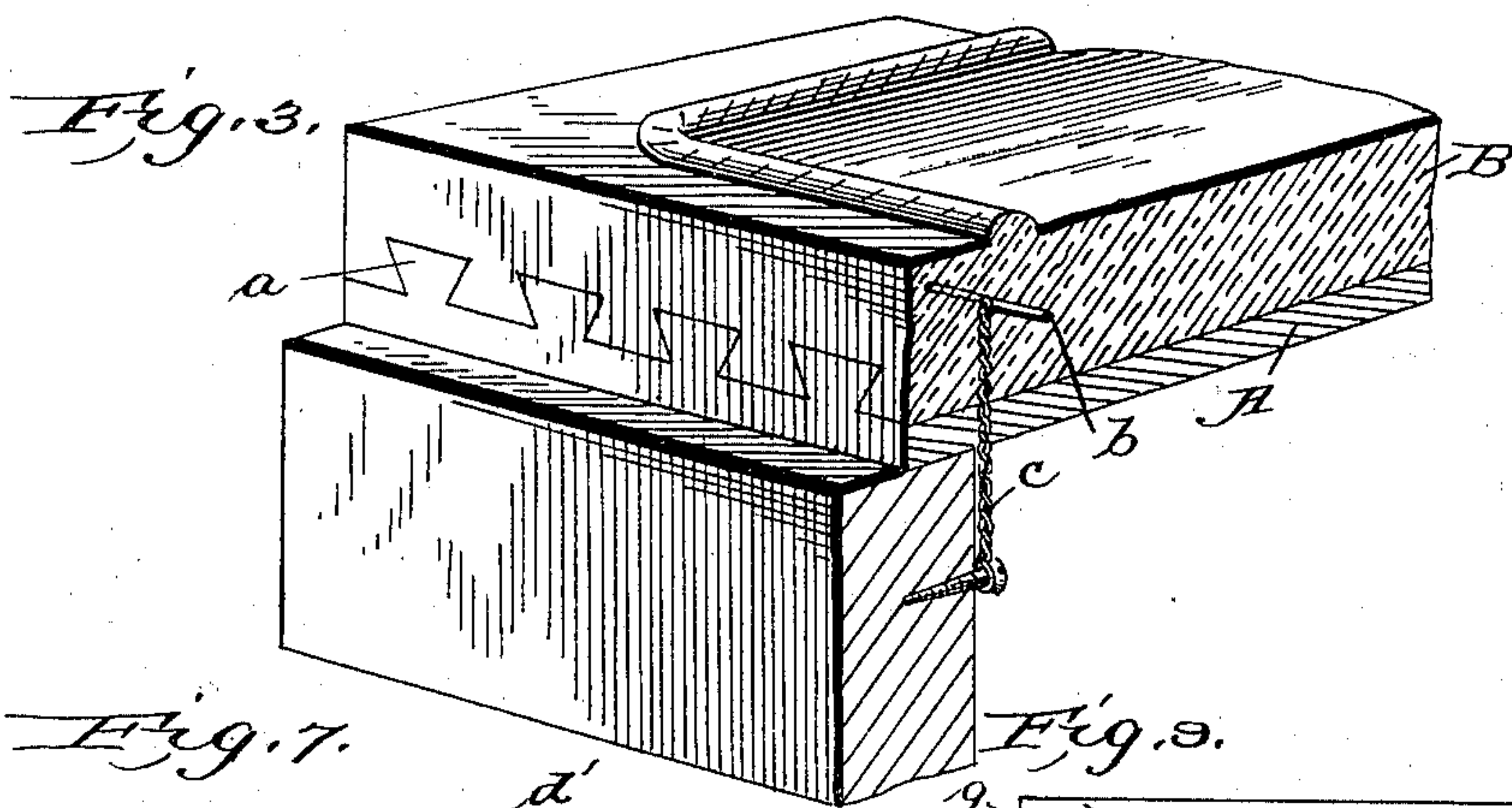
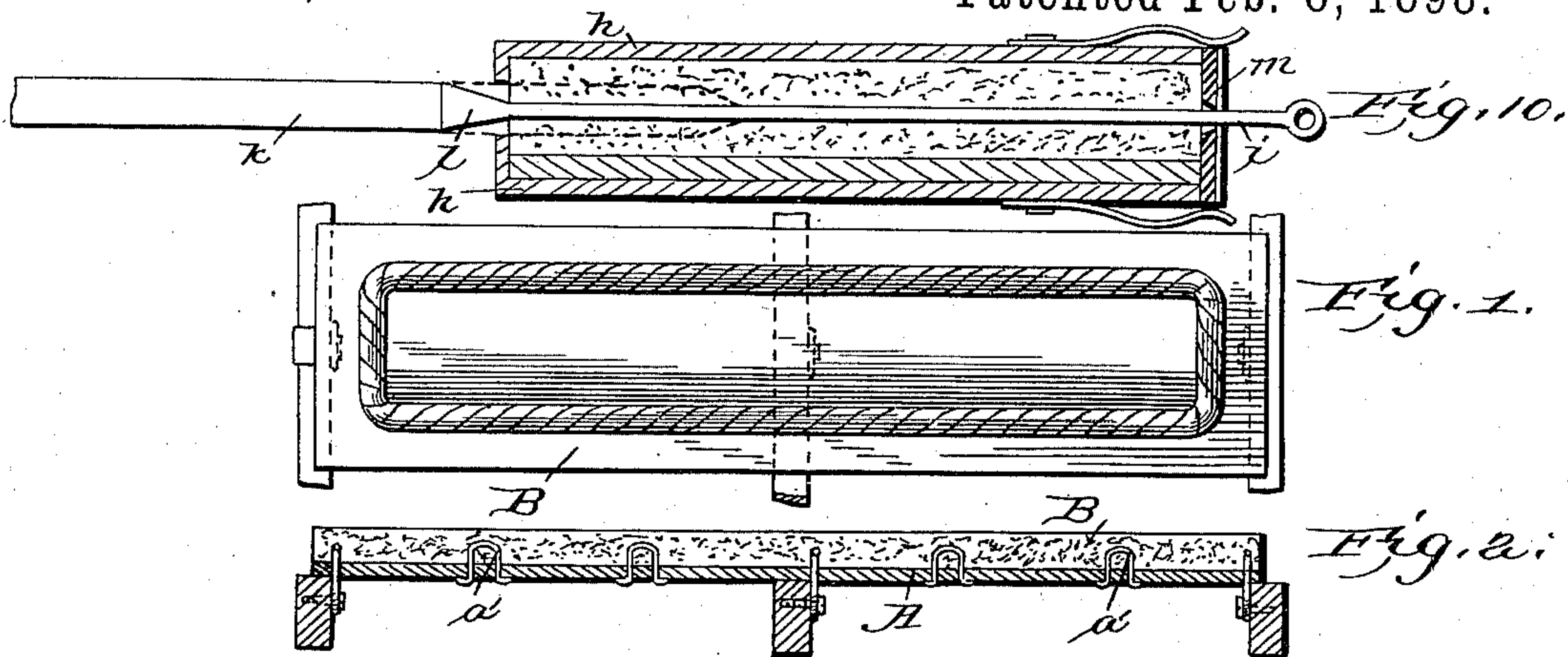


(No Model.)

J. BROWER.
COMPOSITE BUILDING MATERIAL.

No. 598,624.

Patented Feb. 8, 1898.



Attest
M. L. Madison
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UNITED STATES PATENT OFFICE,

JOHN BROWER, OF SAN FRANCISCO, CALIFORNIA.

COMPOSITE BUILDING MATERIAL.

SPECIFICATION forming part of Letters Patent No. 598,624, dated February 8, 1898.

Application filed January 11, 1897. Serial No. 618,860. (No model.)

To all whom it may concern:

Be it known that I, JOHN BROWER, a citizen of the United States, residing at San Francisco, in the State of California, have invented certain new and useful Improvements in Composite Building Material, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention is designed for the covering of buildings and is intended principally to form the outside covering for the walls of frame buildings.

It consists, essentially, of a composite ashler or plate in which a backing of wood is provided with a facing of artificial stone, these ashlers or plates being formed of uniform or regular sizes and being adapted to be applied to the studding or outside of the wall of the building. I have sought to provide a material which may be made and placed upon the market ready to be applied as aforesaid and to form a complete and finished outside covering for such walls, the surface thereof being in imitation of stone and having the qualities of stone in respect of appearance and capacity to resist atmospheric influences. The material for the backing may be of ordinary boards of a uniform quality, and the covering of cement or artificial stone may be caused to adhere by any well-known means and may be of limited thickness, sufficient only to give it the proper stability. In connection with this principal idea I have also shown modifications and subordinate details, all of which are hereinafter fully set forth.

I may give the face of the article any ornamental appearance which may be desired by molding the surface of cement or artificial stone in the process of manufacture. When these plates or pieces are put into place in the building, they represent blocks of stone in appearance, and in the subjoined description I have called them "blocks," although it will be understood that they may be thin and do not constitute the body of the wall, but only its covering.

I have illustrated my invention in the accompanying drawings, in which—

Figure 1 represents a face view of a block with an ornamental border and a convex center within the border, the scantlings to which the block is secured being shown in dotted

lines in rear of the block. Fig. 2 is a sectional view of the block, showing the means for holding the cement to the wood backing. Fig. 3 is a perspective view of a part of one of the blocks, showing another form of connection between the cement and wood backing. Figs. 4, 5, and 6 are sectional views showing modifications of the means for holding the cement face and wood backing together and for securing the block to the scantling of the building. Fig. 7 is a longitudinal section showing the arrangement of the filling-piece, and Fig. 8 is a like section showing a form of block with filling-pieces and a hollow space above the filling-pieces. Fig. 9 shows a brace embedded in the face of the block and adapted to serve as a support for the center thereof and prevent the breaking or cracking of the cement face when the blocks are used over windows or other openings where support is only furnished at each end. Fig. 10 illustrates one way of compressing the cement.

In carrying out my invention I take a foundation-piece A of wood and form it with a series of tongues and grooves, as shown at *a*, or any other form of projections and recesses, or, as shown in Fig. 2, I may provide a series of wire loops *a'*, projecting from the surface of the board A, and upon the face of the board thus formed I compress in any suitable manner a cement surface, (indicated at B,) and this soon becomes stone-like, adhering firmly to the face of the board and prevented from detachment by engaging the pockets and projections or loops, so that it becomes as one piece with the backing A.

In forming the cement surface I may use any suitable material to color the cement and to imitate the various known kinds of stone, and by a suitable mold in which the cement is compressed I may give the surface any desired configuration and may make the surface in imitation of granite or any other well-known appearance of stone, or I may make special designs, such as shown in Figs. 1 and 3, and these designs may of course vary to suit the fancy of the builder or maker of the material. In order to secure the block to the frame of the building, I may use any one or all of the various attaching devices. As shown in Fig. 3, I embed in the cement a wire anchor *b*, having its ends turned at right

angles to the body portion *c*, which passes through the backing-plate A, terminating in a loop through which screws or nails may be passed to secure it to the frame of the building. Instead of this form of securing device I may, as shown in Fig. 4, use an inserted piece *d* of wood or other material and have the retaining device, which may be of wire, looped around this piece *d* and passed out through the backing-plate and secured to the frame, as before stated.

In Fig. 5 I have shown the anchor of Fig. 3, together with an independent inserted piece *d'*, which serves as a filling to cheapen the construction, lessen the amount of cement to be used, and generally strengthen the block. In Fig. 6 I use the inserted piece of Fig. 4, as shown at *d*², together with a like anchor *c*, and provide the upper part of the cement with a passage or channel *e*, thus adding to the lightness of the completed block and providing a non-conducting air-space, and at the same time cheapen the cost.

Where I use the filling-pieces *d'* *d*² I prefer, as shown in Figs. 7 and 8, to have the ends project so as to engage with recesses in the adjacent blocks and thus tend to form stronger connection between adjoining blocks.

In order to prevent the breaking of the cement where blocks are used across openings, I embed a brace *f* in the cement, as shown in Fig. 9, having the ends *g* turned over and the central portion inclined downwardly to the lower part of the block.

I do not limit myself to any particular device for manufacturing this block; but I have shown in Fig. 10 a desirable form of device for compressing the cement and forming a central opening for an inserted filling-piece, or when an opening is desired for a filling-piece. In this figure the upper and lower plates of the mold are shown at *h*, and within the mold,

centrally thereof, is placed a rod *i*, about which the cement is filled. This rod is connected to a larger rod *k* with a tapering end *l*, and by exerting pressure upon the rod *i* to draw it through the mold the larger rod *k* compresses the mold to the desired extent and at the same time forms a passage through the same, which may be left open or which may be filled with an inserted piece. The end of the mold is provided with spring-pressed gates *m*, which allow the egress of the rod *k*. The mold-plates may be given any configuration, as has been before stated, and the backing-plate is also put in place, so that when the pressure is applied the cement is filled into the recesses around the loops of the backing-plate.

I claim—

1. A composite building-block comprising a backing-plate, a cement face and an inserted filling-piece having one end projecting beyond the line of the cement, forming a recess at the other end, substantially as described.

2. A composite building-block comprising a backing-plate, and a cement surface having a hollow space within the same and a filling-piece, substantially as described.

3. A composite building-block comprising a backing-plate, a cement face and a stay embedded therein, having curved ends and a depressed center, substantially as described.

4. A press for molding the cement block, comprising the mold-box, spring-pressed end gates and a central rod having an enlarged end for compressing the cement, substantially as described.

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

JOHN BROWER.

Witnesses:

HENRY E. COOPER,
F. L. MIDDLETON.