

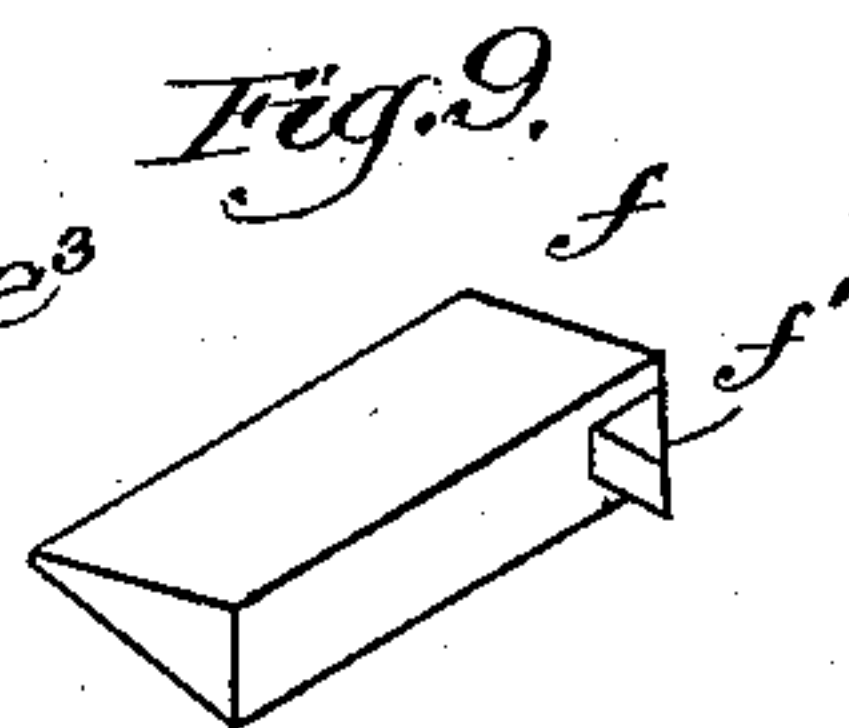
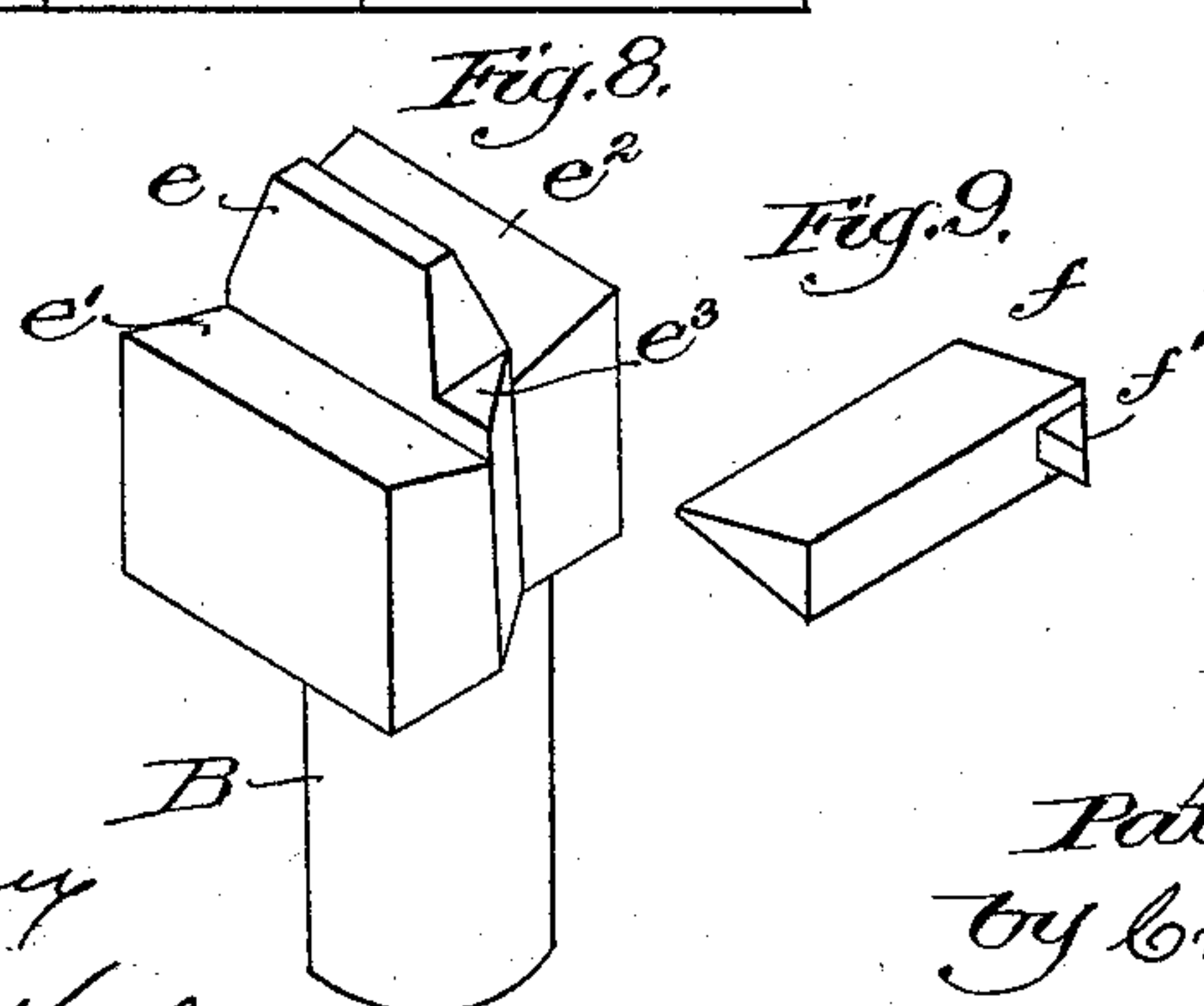
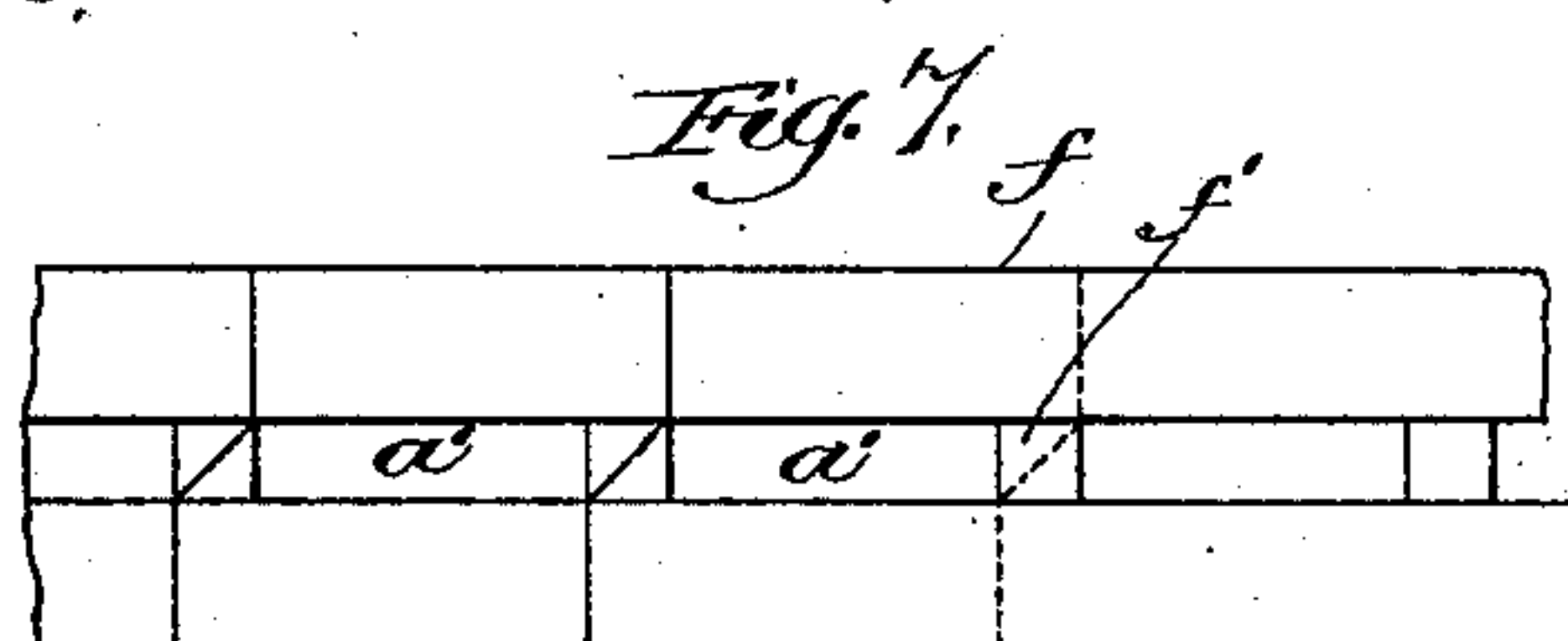
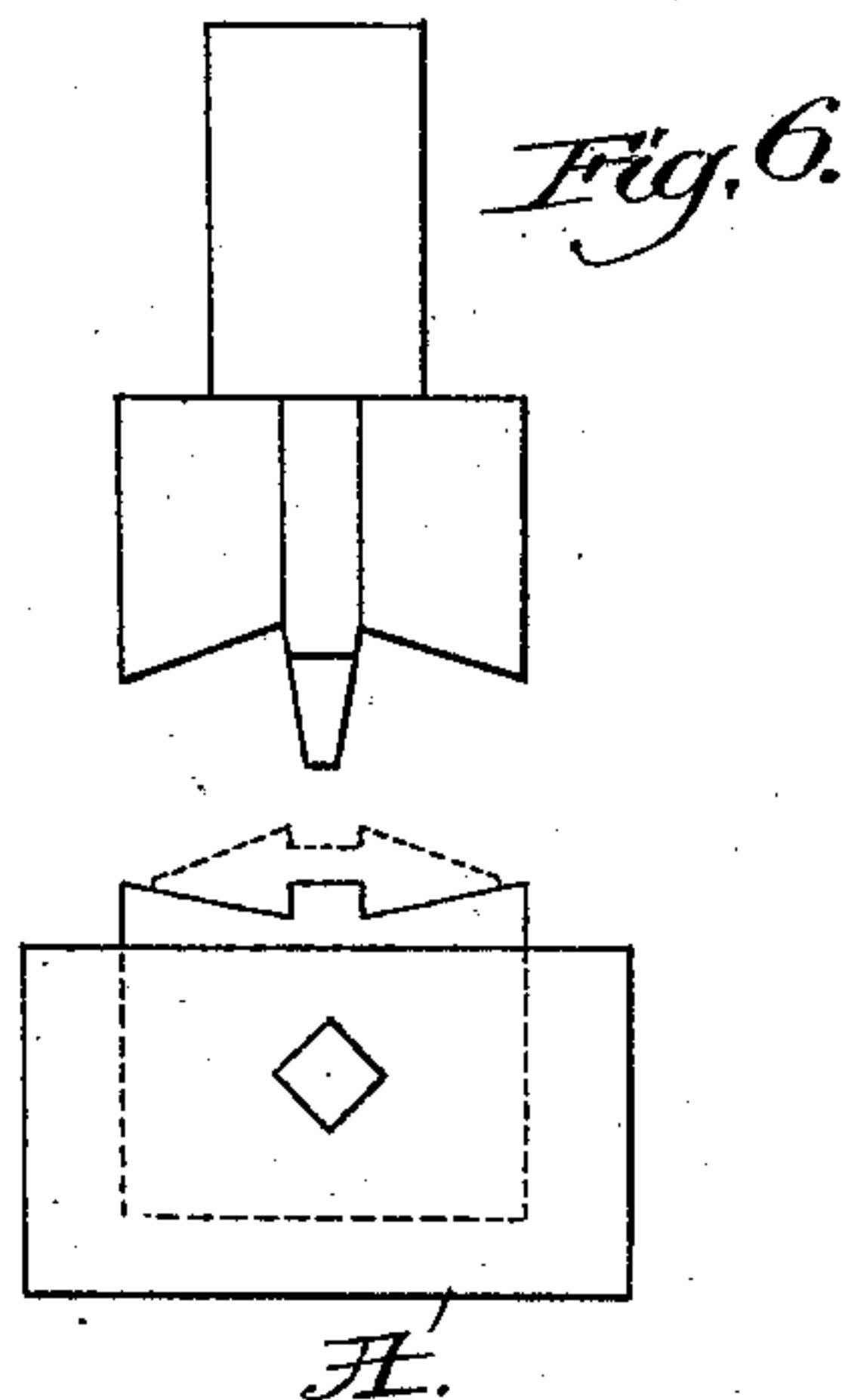
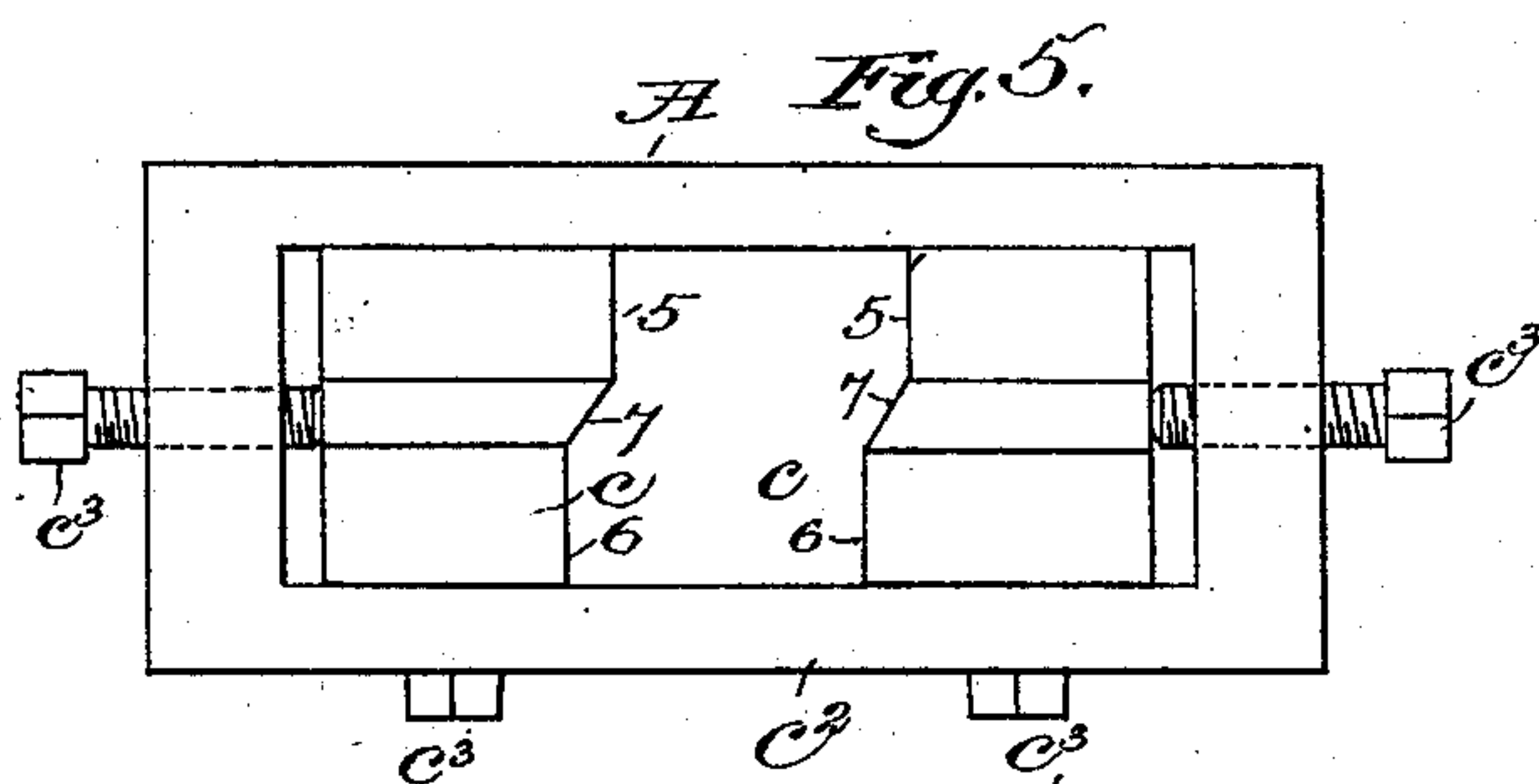
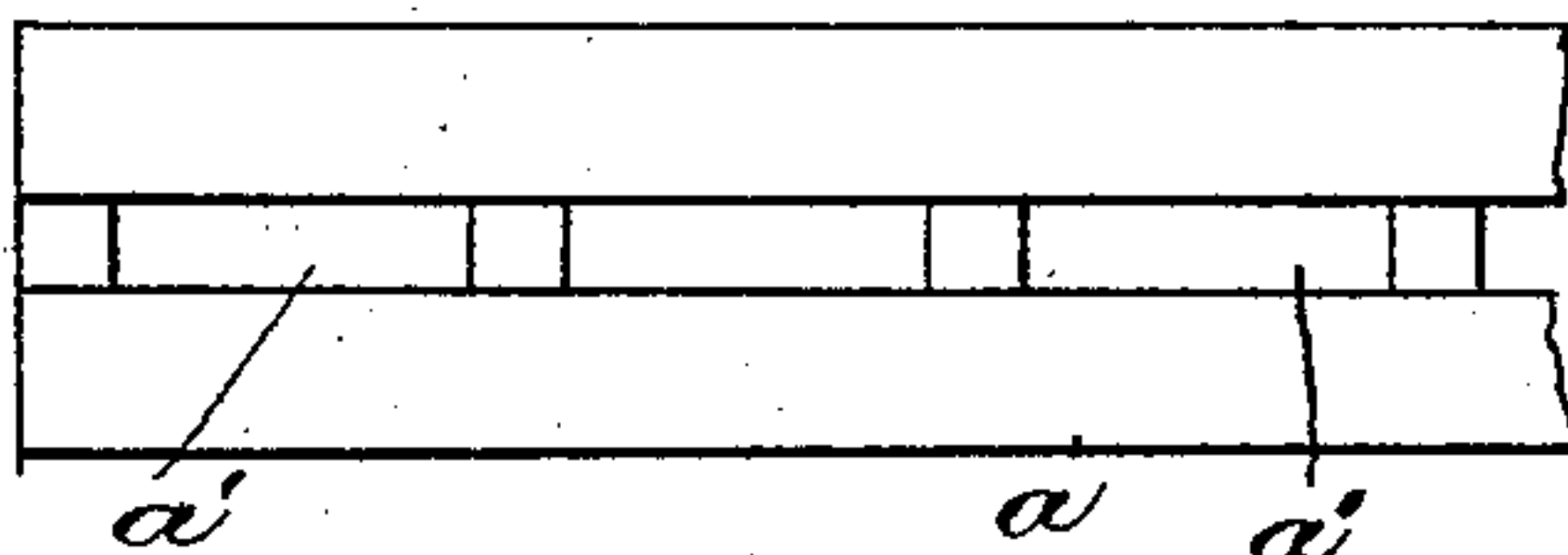
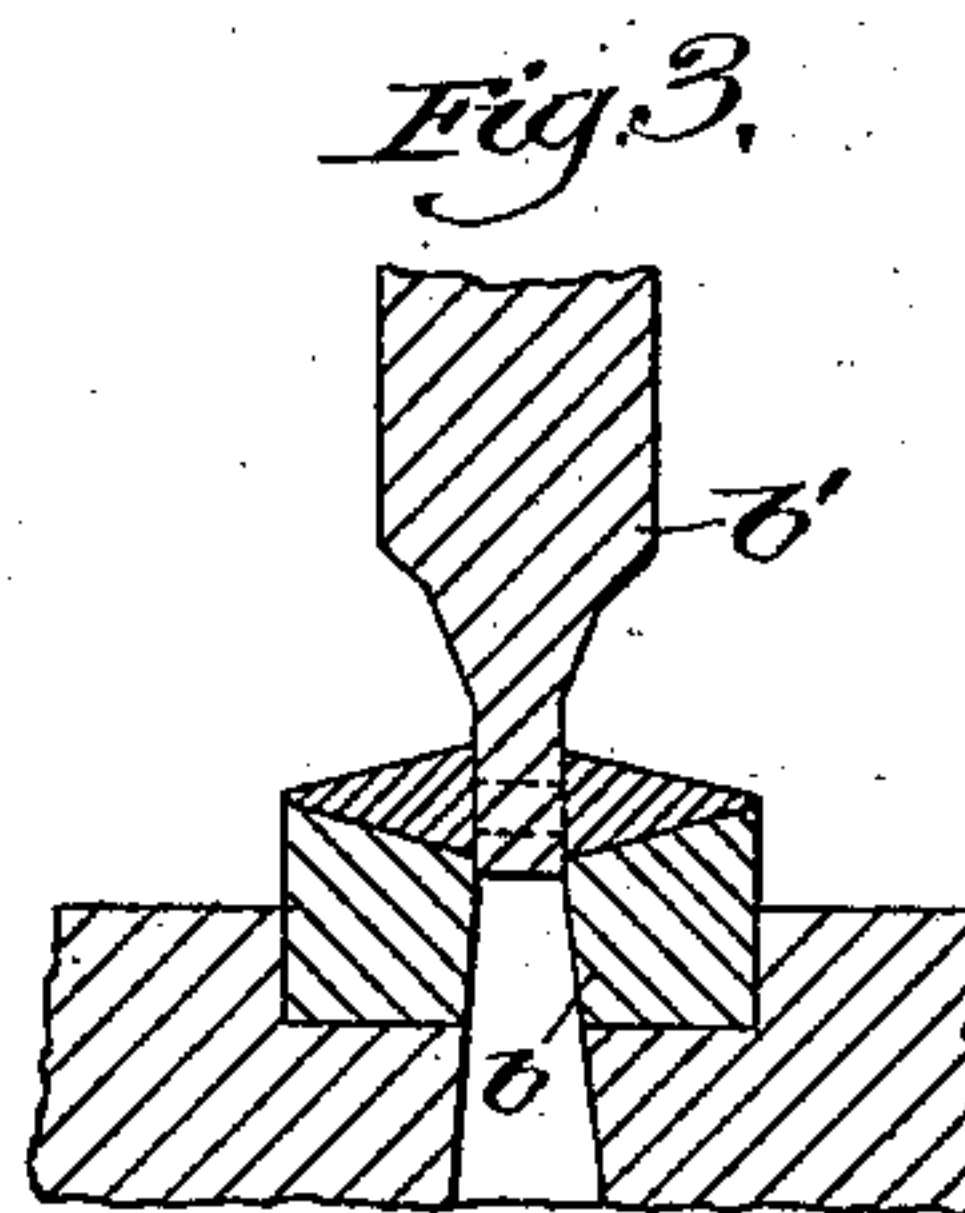
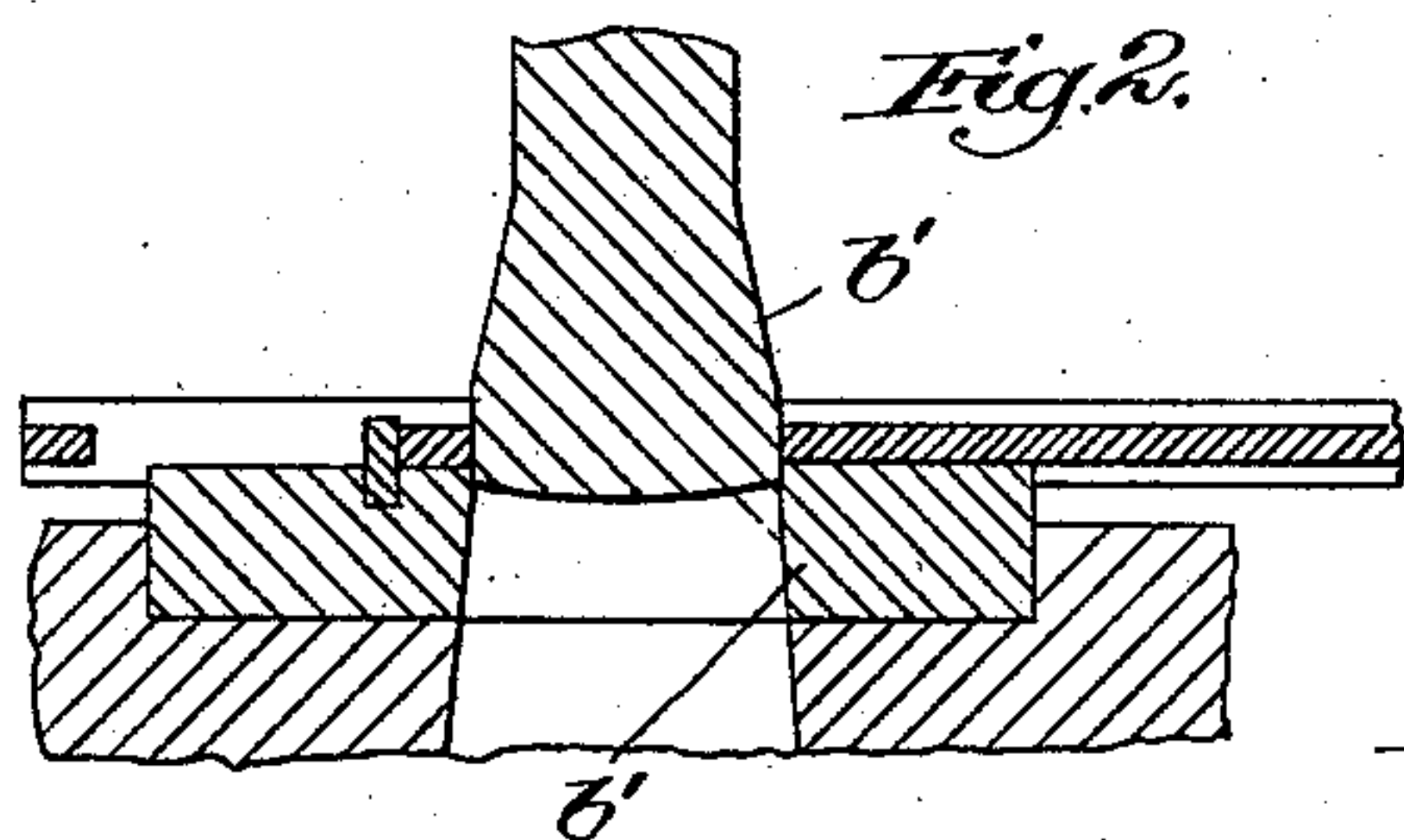
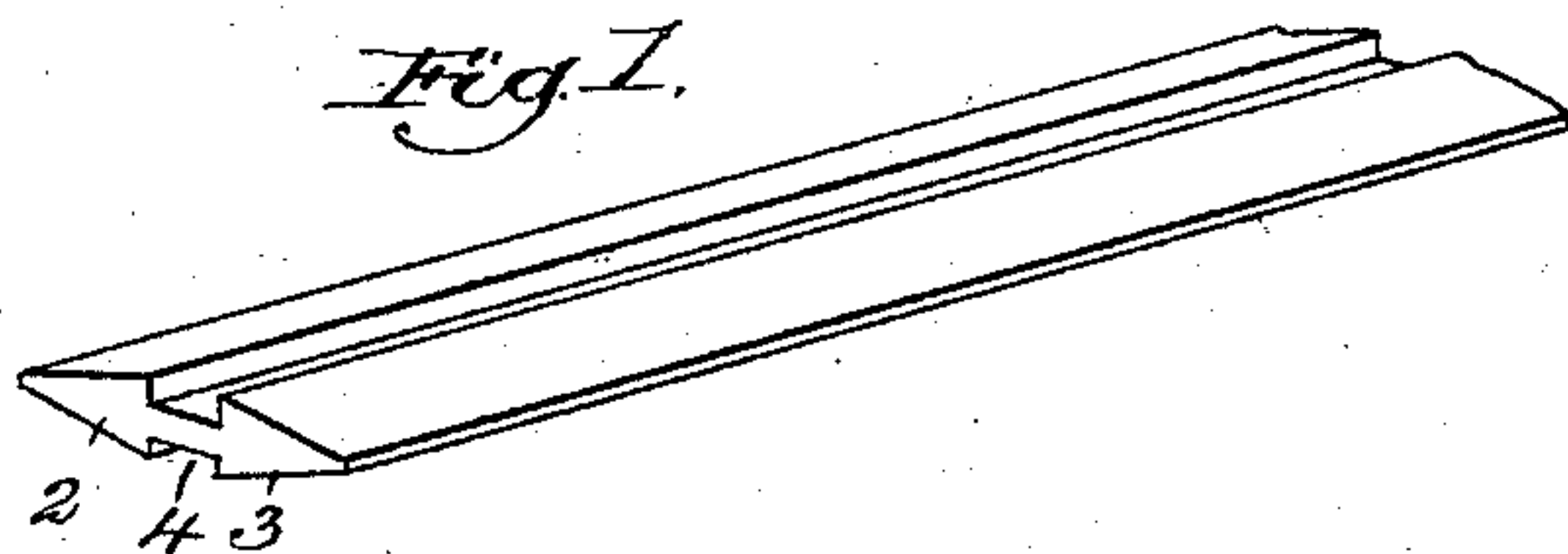
(No Model.)

P. F. BURKE.

DIE FOR MAKING HORSESHOE CALKS.

No. 370,763.

Patented Oct. 4, 1887.



Witnesses.
Fred L. Emery
John F. C. Pinkert

Inventor
Patrick F. Burke.
by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

PATRICK F. BURKE, OF BOSTON, MASSACHUSETTS.

DIE FOR MAKING HORSESHOE-CALKS.

SPECIFICATION forming part of Letters Patent No. 370,763, dated October 4, 1887.

Application filed March 1, 1887. Serial No. 229,294. (No model.)

To all whom it may concern:

Be it known that I, PATRICK F. BURKE, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Dies for Making Horseshoe Toe-Calks, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object to construct a die for punching horseshoe toe-calks from a prepared bar or plate, whereby the said toe-calks may be punched very rapidly, and the dies, as they become worn, may be very easily and cheaply sharpened. The bar or plate from which the calks are cut is similar to that described in United States Letters Patent No. 86,503, granted to me February 2, 1869, to which reference may be had, the essential difference being that the edges are made more conical or V-shaped in cross-section. The bar or plate is fed between a suitable open die and plunger, and the material for connecting the web is removed at intervals to thereby leave a series of short connecting portions connecting the two edges. The blank thus prepared by punching is fed between another open die and plunger, so constructed and arranged as to cut the prepared blank to form toe-calks. This die is composed of two blocks placed in line with each other and having their adjacent ends or faces cut to present two sides of the open die. The two blocks are held adjustable in a frame, preferably rectangular, the sides of the frame constituting two sides of the open die. As the edges or faces of the two blocks which form two of the sides of the open die become worn by use, the said blocks may be removed and sharpened in a planing-machine of ordinary construction. The rectangular frame supporting the blocks is held by any suitable frame or bed. The plunger, of peculiar shape to be described, is carried by a cross head or support having a movement toward and from the open die.

Figure 1 shows in perspective a bar or plate rolled into suitable shape to be used for cutting horseshoe toe-calks; Figs. 2 and 3, vertical sections at right angles of a portion of the plunger and die for removing the connecting-web at intervals; Fig. 4, a plan view of the bar or plate after it has been acted upon by

the plunger and die shown in Figs. 2 and 3; Fig. 5, a plan view of the open die employed for cutting the toe-calks from the prepared bar or plate; Fig. 6, an end view of the open die, Fig. 5, and its co-operating plunger in position to descend to cut the toe-calks from the prepared bar, Fig. 4; Fig. 7, a diagram showing the relative position of the toe-calks as they are cut from the bar or plate, Fig. 4; Fig. 8, a perspective view of the plunger shown in Fig. 6, and Fig. 9 a perspective view of one of the toe-calks.

The bar or plate *a* is rolled to present two opposite sides or edges, 2 3, conical in cross-section and diverging in opposite directions, as shown, the conical portions being connected by a web, 4. The plate *a*, thus rolled, is fed between the open die *b* and the plunger *b'*, of rectangular shape in cross-section, and the plunger is operated to punch or cut out at intervals portions of the connecting-web 4, leaving openings preferably equidistant from each other, thus leaving a bar or plate provided with rectangular openings *a'*, as shown in Fig. 4. The bar or plate thus prepared is then fed between another open die and plunger shaped and constructed as shown in Figs. 5, 6, and 8.

The open die *A* is composed of two blocks, *c c'*, held in a rectangular frame, *c''*, by adjusting-screws *c'''*. The adjacent faces of the blocks *c c'* are each cut to present two faces, 5 6, extending at substantially right angles with relation to the sides of the supporting-frame, and, as herein shown, parallel with the ends thereof, but at a different distance from the ends, the faces 5 and 6 being joined by an inclined or diagonal face, 7. The two blocks *c c'*, having their ends or faces cut, as described, to form two sides of the open die, are placed and held in the supporting-frame in such manner that the side walls of the said supporting-frame are made to constitute the two remaining sides of the die-opening.

The plunger *B*, co-operating with the die, Fig. 5, has a head provided at its striking-faces with an elongated projection, *e*, to enter the opening *a'* in the bar, and two oppositely-inclined faces, *e' e''*, to strike against the beveled portions of the bar as the plunger descends, and two triangular shoulders, as *e'''*, one at each side of the head, which strike against the connecting portions of the web be-

tween the edges 2 3 of the bar or plate and between the openings. The general contour of the head of the plunger in horizontal section corresponds with the open die formed by the blocks *c c'* and the side walls of the supporting-frame. Each plunger *b'* and *B* will in practice be secured to any usual reciprocating cross-head or the moving part of a press.

The prepared bar, Fig. 4, is placed over the open die, so that as the plunger *B* descends the projection *e* will enter an opening, *a'*, in the said bar, and at the same time the striking-face of the head of the plunger will strike the bar and force downward through the die-space a sufficient portion of the bar for two horseshoe toe-calks, the triangular shoulders *e³* during such operation co-operating with the diagonal faces 7 7 to cut diagonally a portion of the web 4 left after forming the openings *a'*. The prepared bar will be moved forward intermittently between the punch and die, and this operation will be repeated, cutting the bar each time, as in dotted lines, Fig. 7, leaving (see Fig. 9) toe-calks each having a main body portion, *f*, and a single triangular projection, *f'*, both cut from the prepared bar 4 without waste.

As the blocks *c c'* become worn by use, they may be easily and quickly removed from the supporting-frame to be sharpened.

Instead of employing the prepared bar or plate herein shown, a similarly-prepared bar or plate having its edges of even thickness, instead of conical in cross-section, may be employed, such a bar being shown, yet differently prepared, in another application for Letters Patent filed by me concurrently with this.

I claim—

1. The die to receive the prepared bar, combined with the plunger having the projection *e* and the two triangular faces *e³*, to operate as set forth.

2. The open die composed of the supporting-frame *A* and two adjustable blocks, *c c'*, cut to present correspondingly adjacent faces 5 6 7, the frame forming two sides of the open die, combined with the plunger of a shape corresponding to the opening of the open die, the plunger having the projection *e* and triangular-faced shoulders *e³*, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PATRICK F. BURKE.

Witnesses:

BERNICE J. NOYES,
F. L. EMERY.