

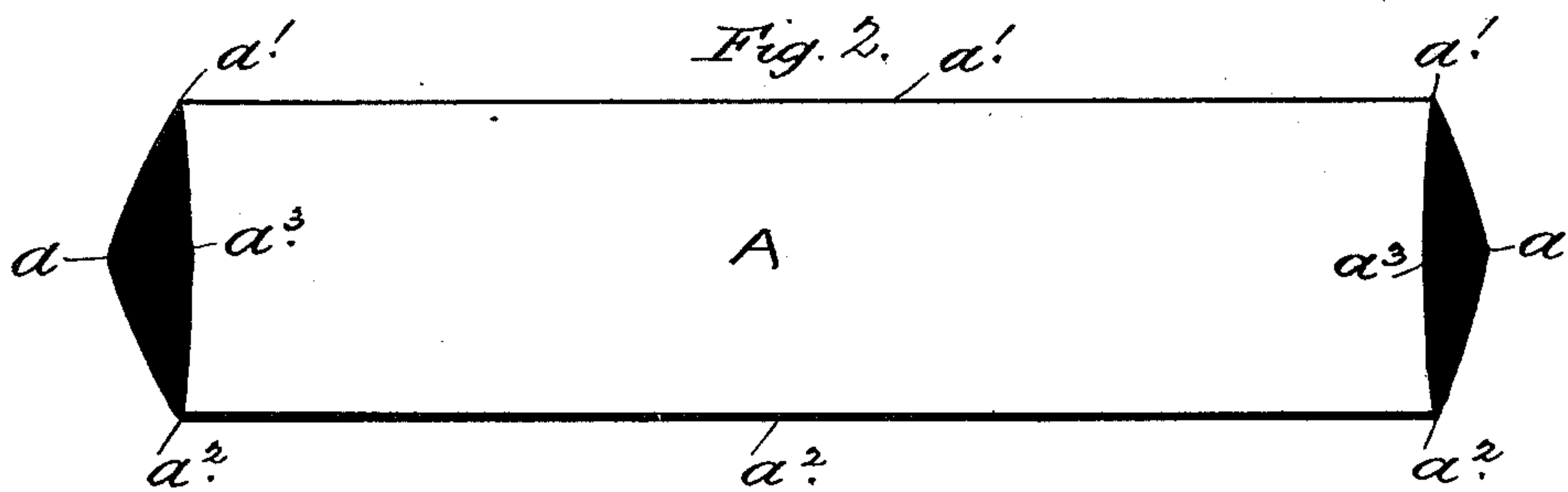
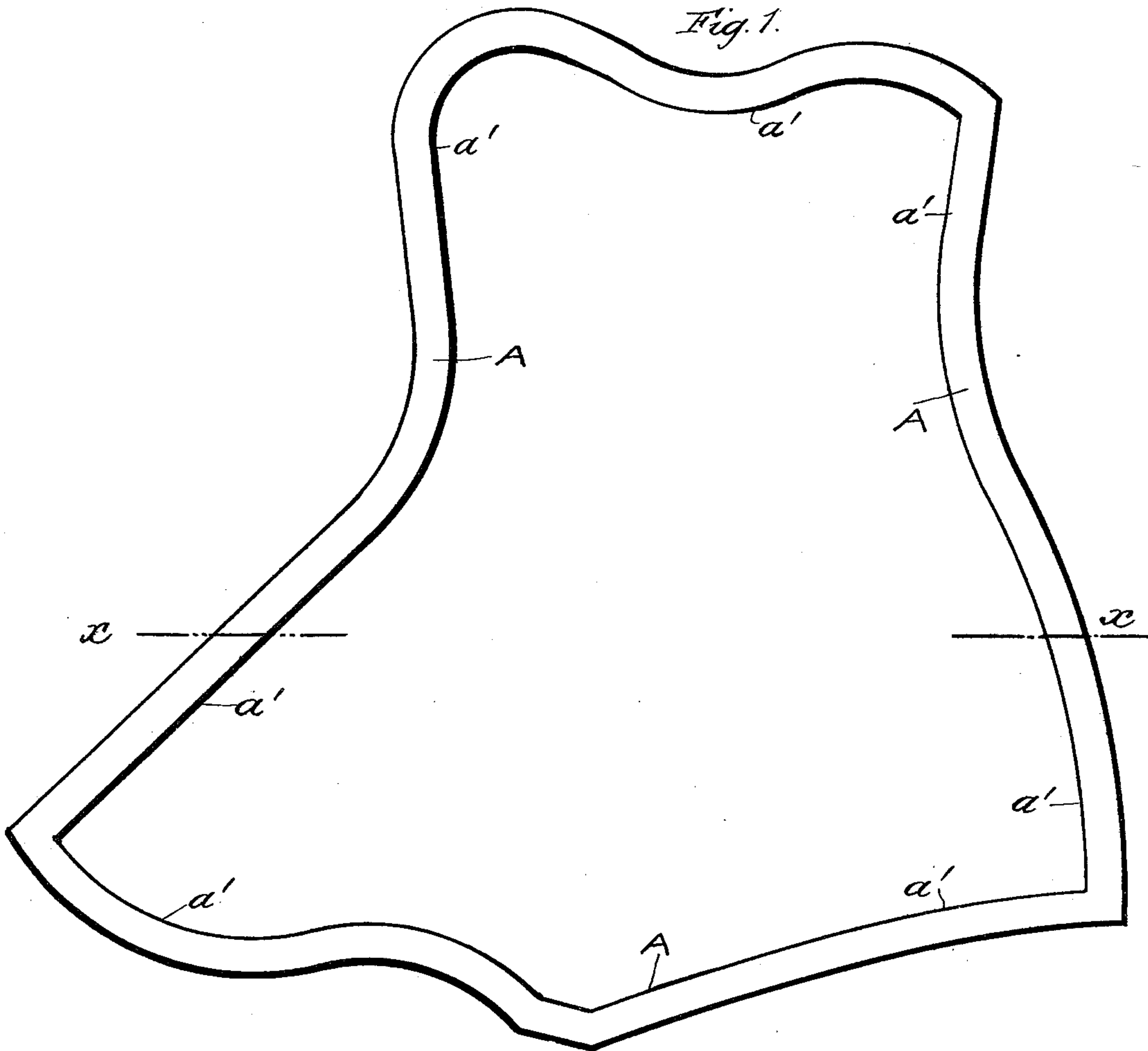
(No Model.)

2 Sheets—Sheet 1.

T. BRINING.  
MACHINE FOR CUTTING SHOE UPPERS.

No. 407,159.

Patented July 16, 1889.



Witnesses  
Baltus D. Long.  
C. M. Brooke.

Inventor.  
Thomas Brining  
By his attys  
Baldwin, Warden & Wright.

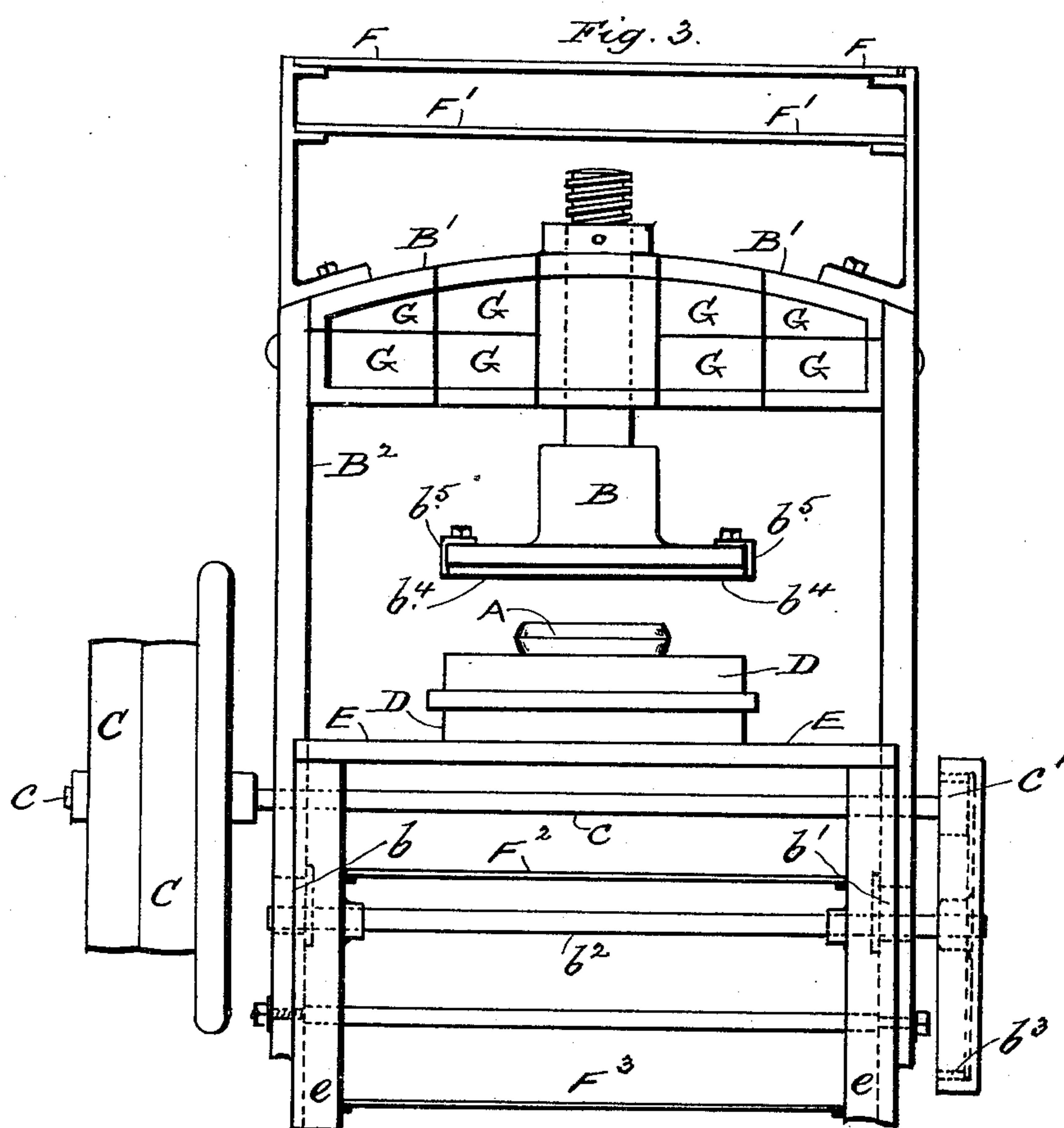
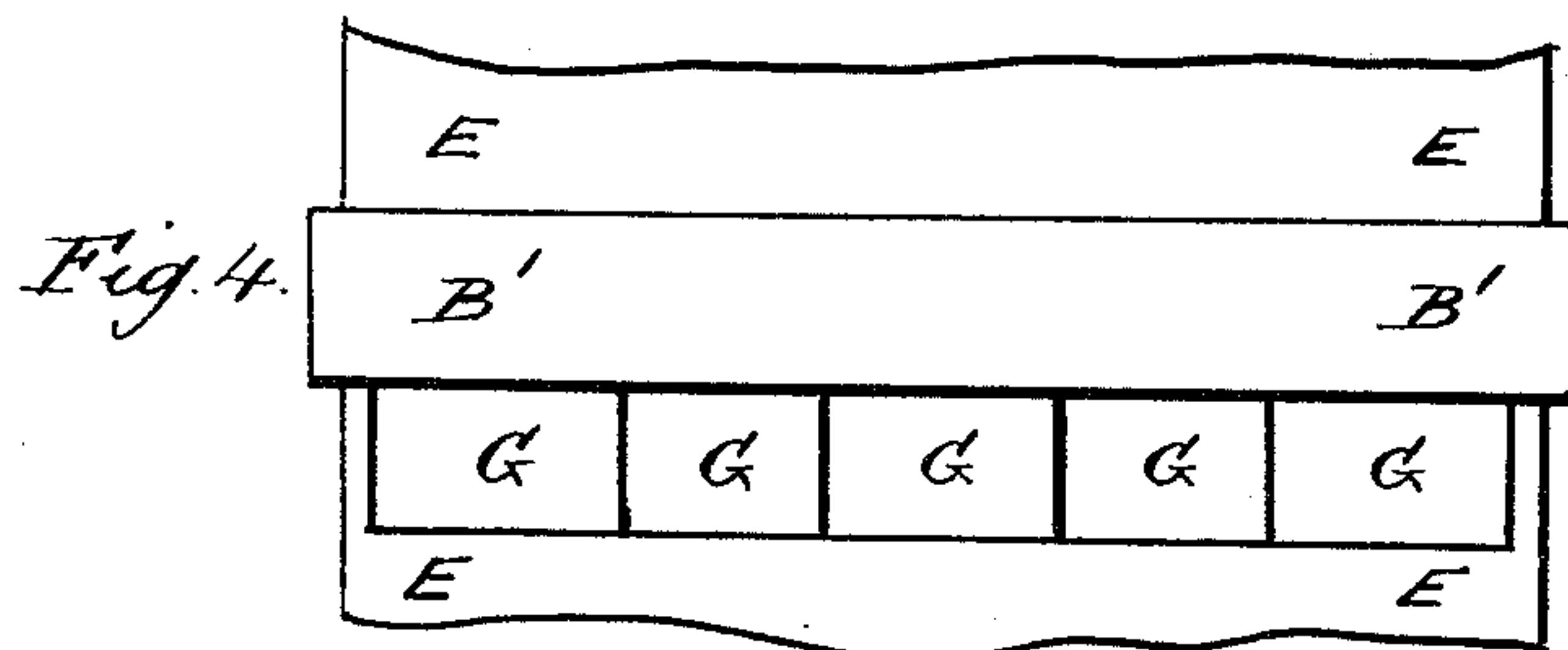
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Thomas Brining.  
By his Attys.  
Baldwin Davidson & Wright



# UNITED STATES PATENT OFFICE.

THOMAS BRINING, OF LEEDS, COUNTY OF YORK, ENGLAND, ASSIGNOR OF  
ONE-HALF TO GEORGE LISTER, OF SAME PLACE.

## MACHINE FOR CUTTING SHOE-UPPERS.

SPECIFICATION forming part of Letters Patent No. 407,159, dated July 16, 1889.

Application filed February 13, 1889. Serial No. 299,794. (No model.) Patented in England December 5, 1887, No. 16,680.

### *To all whom it may concern:*

Be it known that I, THOMAS BRINING, a subject of the Queen of Great Britain and Ireland, residing at Leeds, in the county of York, England, have invented a new and useful Improvement in Cutting the Upper-Leathers of Boots or Shoes, (for which I have obtained a patent in Great Britain and Ireland, No. 16,680, bearing date the 5th day of December, 1887,) of which the following is a specification.

Hitherto in clicking or cutting the various portions constituting the "uppers" of boots or shoes it has been usual to employ a knife provided with a single cutting-edge shaped to the contour of the part to be cut. The leather is placed on a wooden block and the knife allowed to rest upon the upper surface of the leather. Pressure is then applied, usually by means of an eccentric press, for forcing the knife through the leather. The system described necessitates the leather being cut with the grain side uppermost to form, say, a left-hand-leg quarter or other portion of a boot or shoe upper, and with the flesh side uppermost to form the right-hand portions, thus necessitating frequent handling and turning of the leather with the consequent loss of time. Knives with two cutting-edges, to cut the right and left hand portions of the upper of a boot or shoe, have been used in connection with a frame having a detachable handle.

The objects of my improvements are, first, to provide a knife of an improved form with two cutting-edges arranged opposite to each other; second, to adapt an ordinary eccentric or other cutting-press to force said knife through the leather without damaging the cutting-edges; third, to afford facilities carrying the knives not in use on the machine. I attain these objects by the arrangement illustrated in the accompanying drawings, in which—

Figure 1 is a plan of a knife constructed according to this invention; Fig. 2, a sectional elevation on line  $x x$ , Fig. 1; Fig. 3, a part elevation of an eccentric cutting-press adapted for operating the improved knife; Fig. 4, a part plan of eccentric press.

Like parts in all the views are marked with the same letters of reference.

A is the knife constructed according to this invention, which may be formed out of one or more pieces of bar-steel or other suitable metal (preferably, though not necessarily so, of about one and a half inch wide by one-fourth of an inch in thickness) welded together and bent to the required shape. The knife is beveled from the center  $a$  of its outer portion in opposite directions to form two cutting-edges  $a' a^2$ , which are arranged opposite to each other, as shown at Fig. 2, while its inner portion may be made slightly curved or straight and vertical.

In the drawings, the knife is shown in a form suitable for cutting the leg-quarters of a boot; but it may also be made in any other form or shape suitable for cutting out the other portions of a boot or shoe.

On reference to the drawings it will be readily seen that the edge  $a'$  of the knife will cut a right-hand and the opposite edge  $a^2$  a left-hand portion of the upper by simply reversing the knife and without in any way turning over the leather, thus enabling the operator in all cases to work with the grain or right side of the leather uppermost, as well as discover any flaw therein.

B is the adjustable ram or buffer of a cutting-press mounted in the head  $B'$ , to which a reciprocating motion is imparted by means of the eccentrics  $b b'$  (mounted respectively on the ends of shaft  $b^2$ ) through the side arms  $B^2$ . Motion is conveyed to the eccentrics from any suitable source through pulleys C, shaft  $c$ , pinion  $c'$ , to internal wheel  $b^3$ , mounted on shaft  $b^2$ . D is a wood block, on which the cutting operation takes place; and E, the table of the machine, which is mounted upon the standards or legs  $e$ .

With the exception of the knife A all the above-described parts may be of ordinary construction.

I also provide, in a convenient position and attached to the operating-press, the shelves  $F F' F^2 F^3$ , arranged so as to be accessible to the operator. On the shelves  $F F'$  may be placed the different knives employed in cut-



ting out the various portions of the boot or shoe, the object of this being to enable the operator on coming to a damaged or otherwise unsuitable portion of leather to readily change the knife and produce some smaller or other form whereby the leather or material can be better utilized. Shelves  $F^2$  and  $F^3$  may be employed for receiving the leather or other material to be operated upon. A series of pockets  $G$  may also, when required, be attached to the reciprocating head  $B'$  of the cutting-press on the side facing the operator, for receiving the smaller knives or upper facings. By attaching the above-mentioned shelves and pockets to the cutting-press I am enabled to dispense with the ordinary clicker's table, and thus save its room and cost.

In operating a knife of the above description it will be seen that when one cutting-edge  $a^2$  of the knife is in contact with the leather (placed on the upper face of the wood block  $D$ ) its opposite edge  $a'$  would be liable to injury from the buffer  $B$  of the press. To obviate the buffer damaging the cutting-edge, the buffer is shod or armed with a suitable soft-metal covering  $b^4$ —such as sheet brass, zinc, or other alloy (say about a sixteenth of an inch in thickness and secured to the face of the buffer by three or more clips and screws  $b^5$ , or other suitable means)—that will provide sufficient driving-power without injury to the knife. By having the face of the buffer covered with sheet brass, zinc, or other alloy, as described, which, being softer than the knife  $A$ , does not injure the upper cutting-edge  $a'$ , but being at the same time harder than the material below the cutter and the wood block  $D$ , which is in turn below that, the pressure given to the top edge causes the cut to be made by the bottom one, which has the less resistance to encounter. The covering  $b^4$  of the plunger thus escapes penetration and the

material comes out cleanly. In order to enable the knife to make a cleaner cut, the wood block  $D$  may be charged or soaked with oil to make it denser.

Although I have described the knives as being suitable for cutting the uppers of boots or shoes, yet I would have it understood that the improvement may, if required, be adapted to other similar knives used in the boot, shoe, and saddlery trades.

I am aware that prior to my invention upper-cutting knives with one cutting-edge have been made and used in conjunction with an eccentric press. I therefore do not claim such combination, broadly; but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, substantially as hereinbefore set forth, of the knife formed with upper and lower cutting-edges, the frame of the cutting-press, the block  $D$ , of soft material, on which the leather is placed and which supports the cutting-knife, the buffer  $B$ , having a facing  $b^4$  of soft material, and means for reciprocating the buffer, substantially as set forth.

2. In cutting the upper-leathers of boots or shoes, the combination of the knife  $A$ , having two edges  $a'$   $a^2$  opposite to each other, the buffer  $B$ , covering  $b^4$ , head  $B'$ , side bars  $B^2$ , eccentrics  $b$   $b'$ , shaft  $b^2$ , pulleys  $C$ , shaft  $c$ , pinion  $c'$ , internal spur-wheel  $b^3$ , wood block  $D$ , table  $E$ , legs  $e$ , shelves  $F$   $F'$   $F^2$   $F^3$ , and pockets  $G$ , all arranged as and adapted for the purposes set forth.

In testimony whereof I have hereunto set my hand in the presence of two witnesses.

THOMAS BRINING.

Witnesses:

GEORGE LISTER,

WM. FAIRBURN HART.