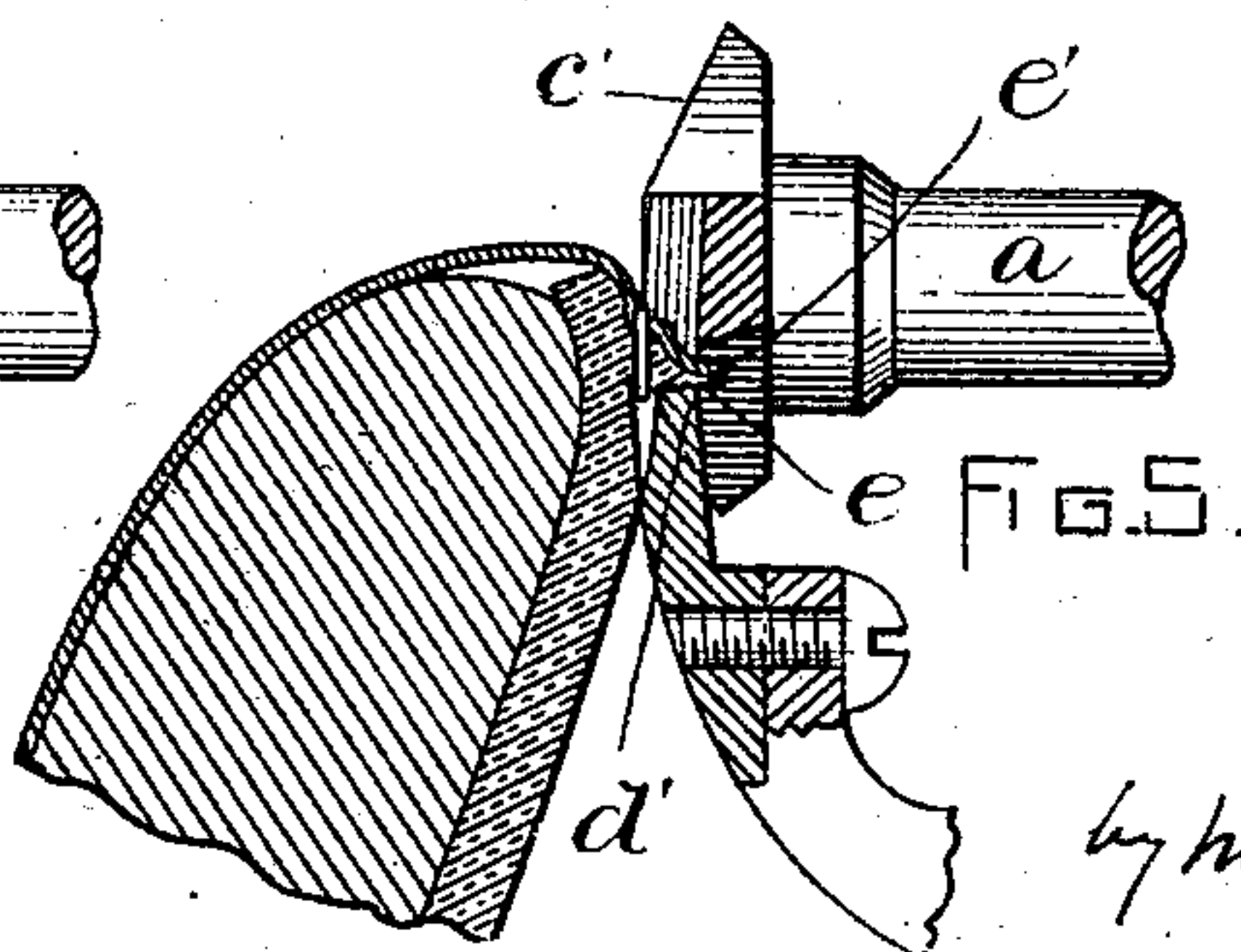
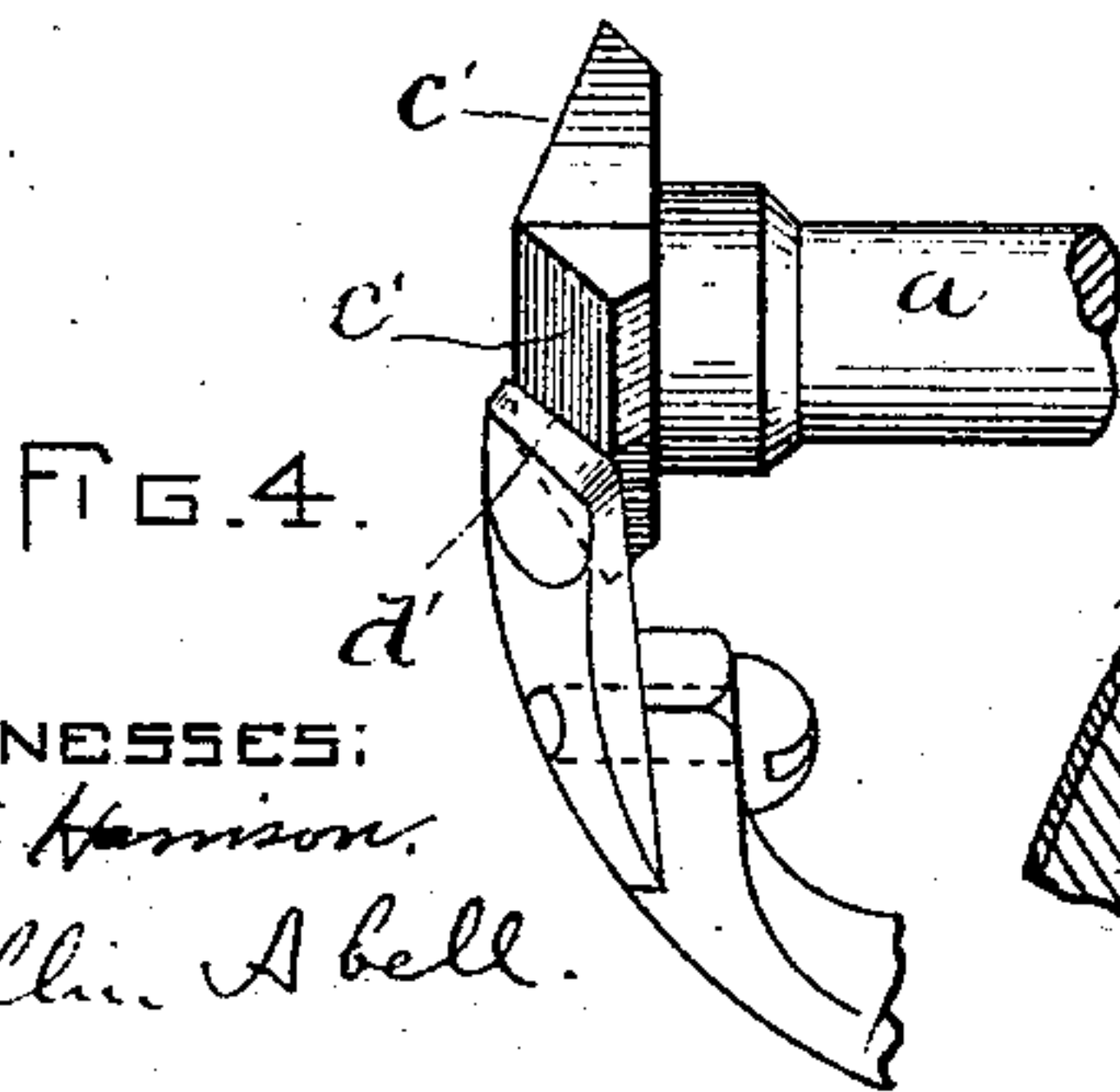
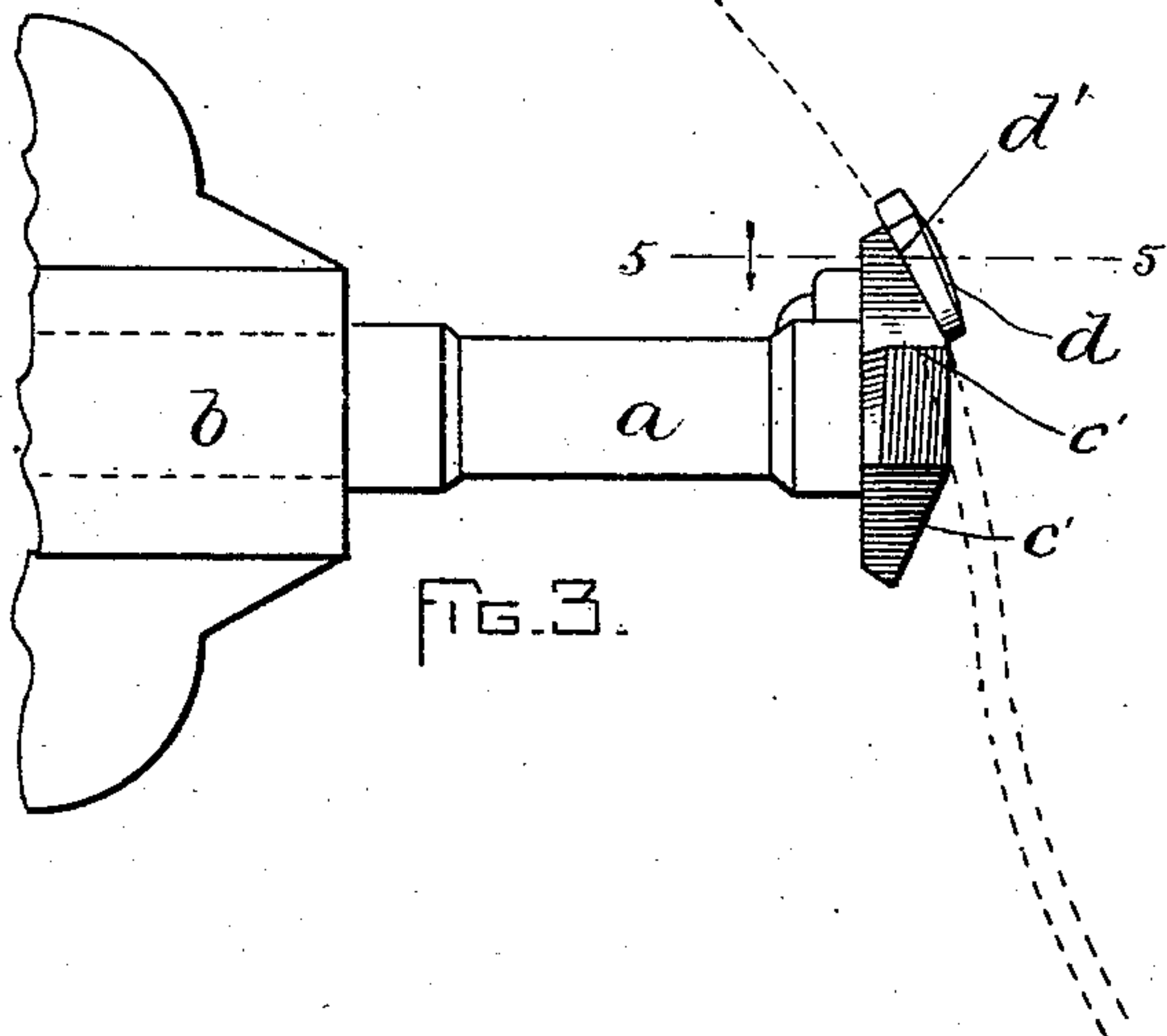
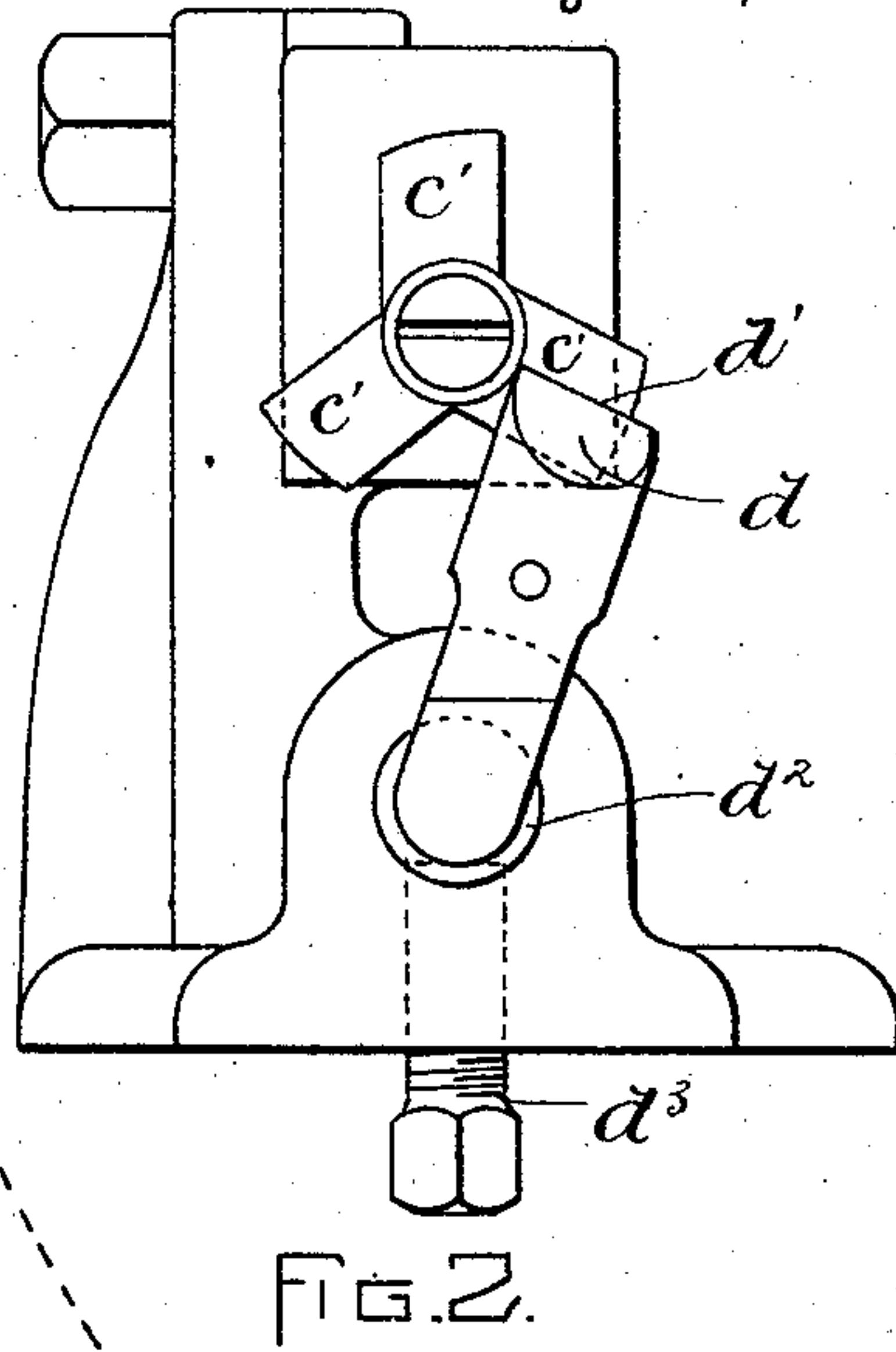
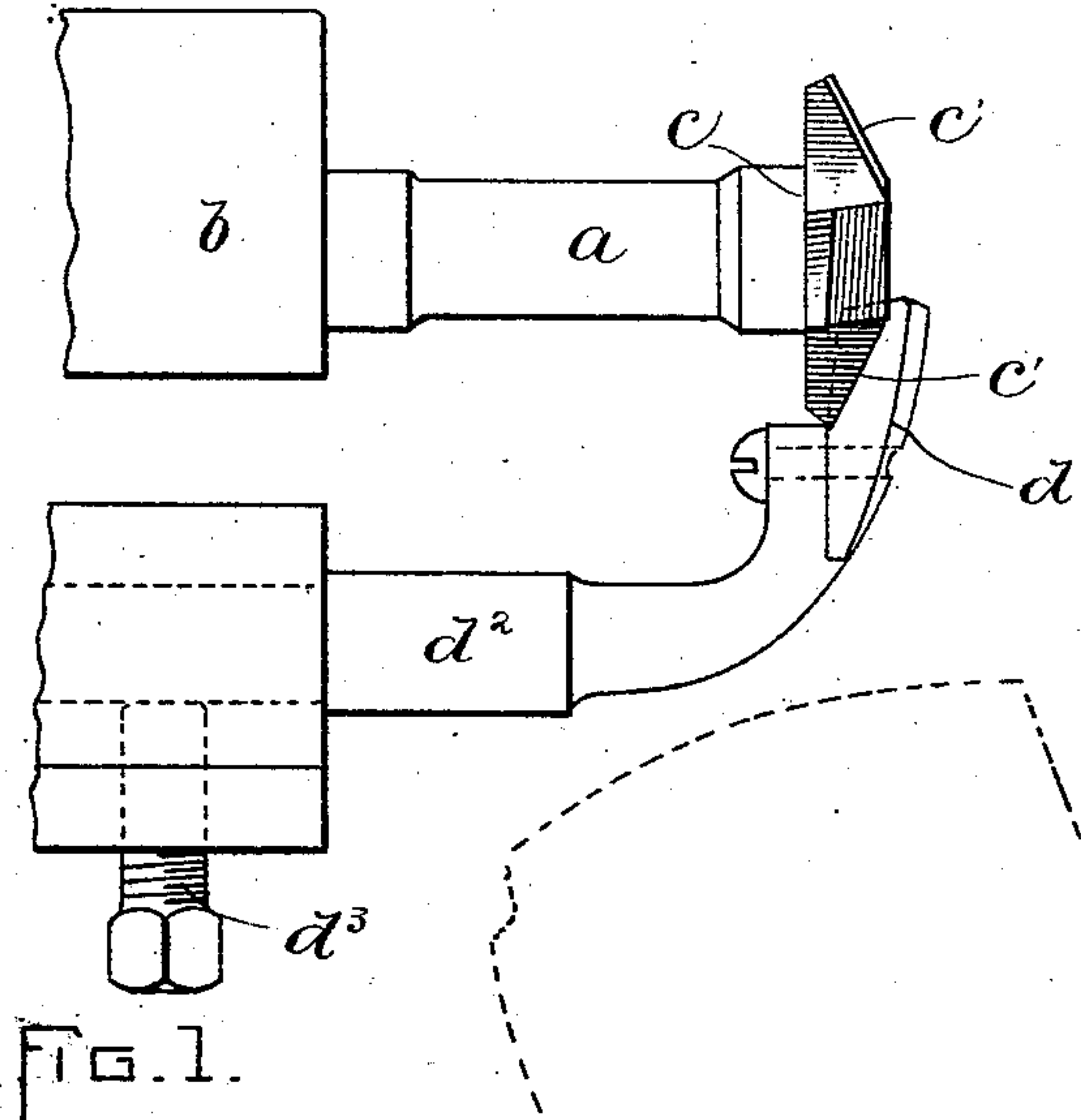


(No Model.)

E. S. HARRIS.
MACHINE FOR TRIMMING BOOT OR SHOE UPPERS.

No. 540,051.

Patented May 28, 1895.



WITNESSES:
A. J. Harrison.
Rollin A. Bell.

INVENTOR:
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by *Wm. K. Mumford*
Att'y.

UNITED STATES PATENT OFFICE.

ELMER S. HARRIS, OF HAVERHILL, MASSACHUSETTS.

MACHINE FOR TRIMMING BOOT OR SHOE UPPERS.

SPECIFICATION forming part of Letters Patent No. 540,051, dated May 28, 1895.

Application filed March 25, 1895. Serial No. 543,030. (No model.)

To all whom it may concern:

Be it known that I, ELMER S. HARRIS, of Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Trimming Boot or Shoe Uppers, of which the following is a specification.

This invention relates to machines for trimming the projecting edges of the channeled lip and upper of certain boots and shoes, particularly turned shoes, in which the lip formed on the channel in cutting the sole for the reception of the stitches and the upper which is secured to the sole by said stitches stand out from the surface of the sole and have surplus material outside of the line of stitches which requires to be cut away. A machine is now in use for trimming off this surplus material, said machine comprising a rotary shaft having a cutter-head with diverging shear-blades and a fixed shear-blade which constitutes a rest for the channel-lip during the trimming operation, the lip and the projecting portion of the upper being supported by the said fixed shear-blade and trimmed by the conjoint operation of said blade and the blades of the rotating cutter-head. Heretofore the acting edges of the blades of the cutter-head and the co-operating cutting edge of the fixed shear-blade have been arranged in a plane at right angles to the axis of the cutter-head, as shown in Letters Patent No. 343,452, granted to me June 8, 1886. This form of cutter-head and fixed shear-blade is objectionable, because in trimming along the shank-portion where the edges to be trimmed form a re-entrant curve, the blades at the opposite side of the cutter-head from the fixed shear-blade necessarily strike portions of the work and are liable to cut the same injuriously.

My present invention has for its object to remedy the difficulty above mentioned; and to this end, it consists in the improved form and relative arrangement of the blades of the cutter-head and the fixed shear-blade whereby the outer or front surface of the cutter-head is made approximately conical, so that it conforms to the curvature of the shank-portion of the boot or shoe sole, and thus prevents the blades at the opposite side of the cutter from the fixed shear-blade from

touching the work, as I will now proceed to more fully describe.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a side elevation of that portion of a trimming-machine embodying my improvements. Fig. 2 represents an end view of the parts shown in Fig. 1. Fig. 3 represents a top view of the same. Fig. 4 represents a view of the opposite side from that shown in Fig. 1. Fig. 5 represents a section on line 5 5 of Fig. 3, showing, also, a section of a portion of the boot or shoe.

The same letters of reference indicate the same parts in all the figures.

In the drawings, *a* represents a rotary shaft journaled in a suitable fixed bearing *b*, and *c* represents a cutter-head affixed to said shaft and provided with diverging blades. The outer sides *c'* of said blades are oblique to the axis of the cutter, as shown in Figs. 1, 3, 4, and 5, each being inclined backwardly from the center of the cutter-head to the outer end of the blade. The cutting edges are formed by the intersection of the inclined face with one of the sides of each blade, so that said cutting edges are also obliquely arranged and inclined, as above described, the result being that the outer face or front of the cutter-head has an approximately conical form, which enables it to act in the re-entrant curve or shank-portion of a boot or shoe, without contact between the blades at the opposite side from the fixed shear-blade and adjacent portions of the work.

d represents the fixed shear-blade, having a cutting edge *d'* which is located at one side of the axis of the cutter-head and has the same oblique arrangement as the blades of the cutter-head, so that it is in position to co-operate with each blade of the cutter-head in succession, at one side of the axis thereof, said blade supporting the channel-lip *e* and the edge *e'* of the upper in position to hold the superfluous material of the said lip and the upper in position to be trimmed by the conjoint action of the fixed and revolving shear-blades.

It will be seen by reference to Fig. 3, where the shoe is shown in dotted lines in the position it occupies while the shank-portions are

being trimmed, that the blades of the cutter-head can act only on the shoe at the point where it is supported by the fixed shear-blade, the blades at the opposite side of the cutter-head from said shear-blade being out of contact with the work, so that they cannot cut or injure it.

The fixed shear-blade d is attached to an arm d^2 which is secured by a set-screw d^3 to the supporting-frame of the machine.

I claim—

In a channel edge or lip trimmer, the combination of a shaft or spindle, a cutter-head affixed thereto and having diverging shear-blades the outer faces and cutting edges of which are oblique to the axis of the cutter

and are inclined backwardly from the center of the cutter to the outer ends of the blades, and a fixed shear-blade arranged at one side of the axial line of the cutter-head and having a cutting edge which is in position to cooperate with the blades of the cutter-head in shearing on a line oblique to the axis of the cutter-head.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of January, A. D. 1894.

ELMER S. HARRIS.

Witnesses:

C. F. BROWN,
A. D. HARRISON.