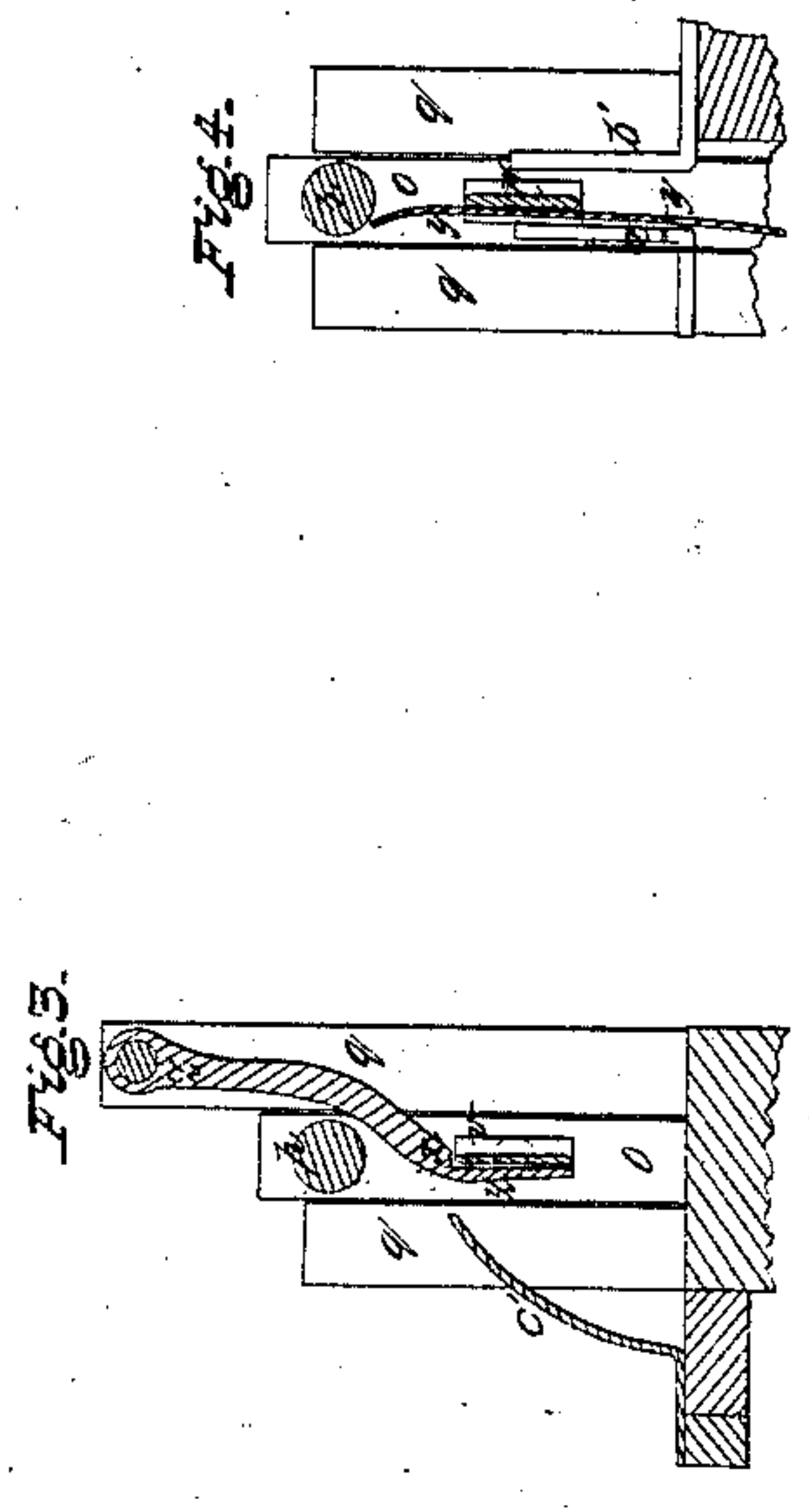
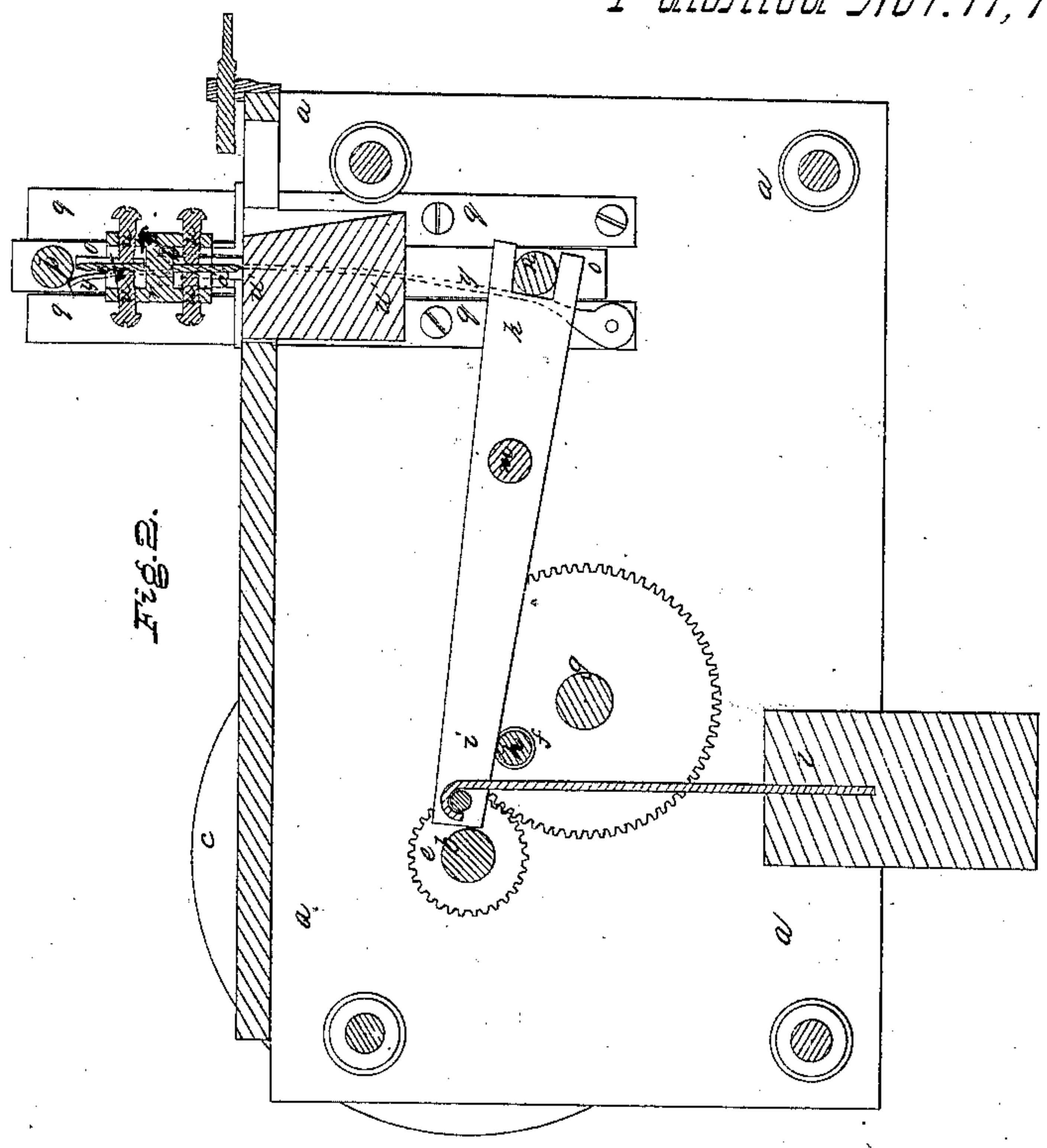
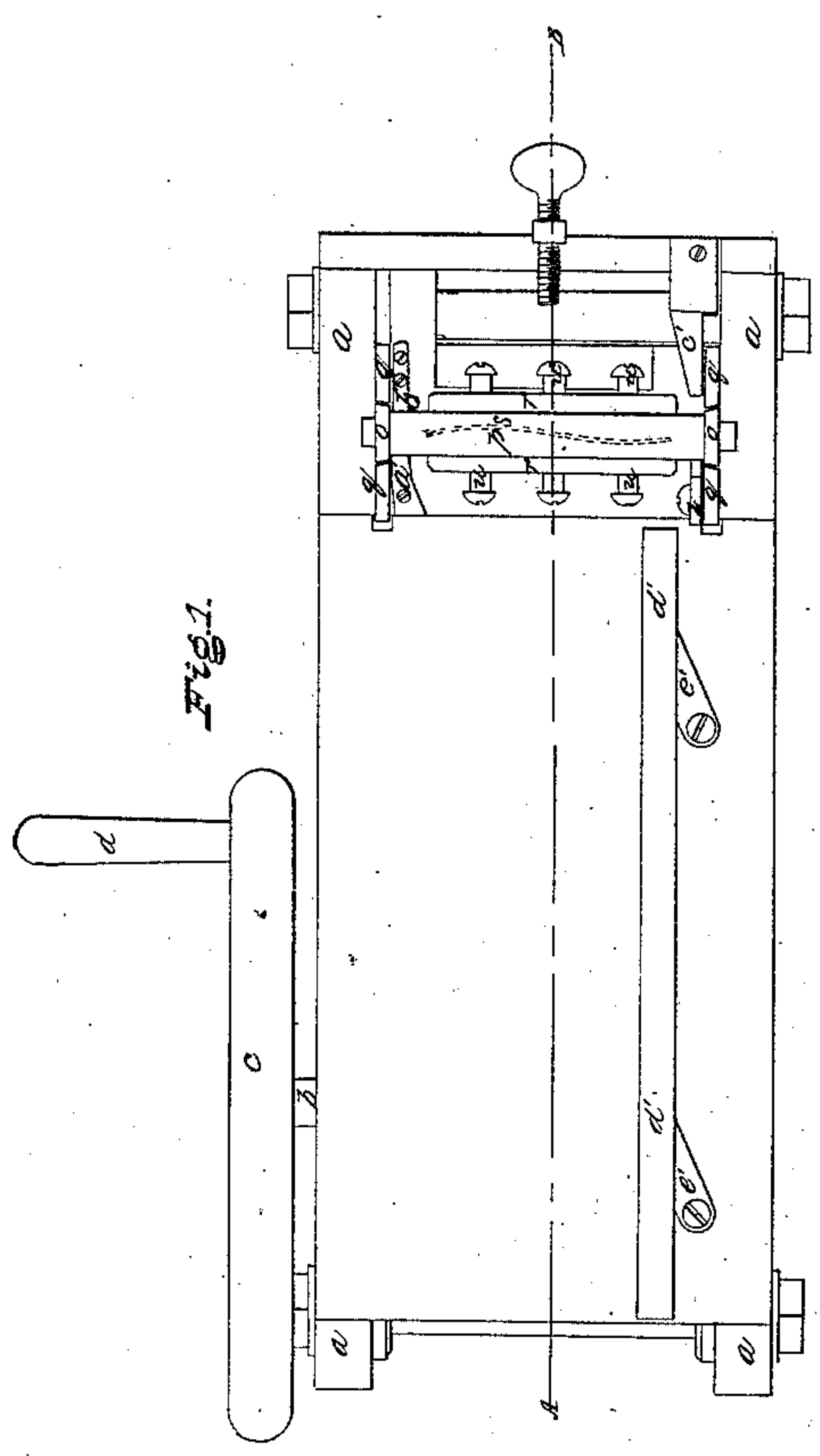


*J. Steger,*  
*Shoe-Sole Machine,*

*Nº 8,507,*

*Patented Nov. 11, 1851.*





# UNITED STATES PATENT OFFICE.

JOS. STEGER, OF ROXBURY, MASSACHUSETTS, ASSIGNOR TO WM. MITCHELL.

## MACHINE FOR CUTTING THE SOLES OF BOOTS AND SHOES.

Specification of Letters Patent No. 8,507, dated November 11, 1851.

*To all whom it may concern:*

Be it known that I, JOSEPH STEGER, of Roxbury, in the county of Norfolk and State of Massachusetts, have invented certain  
5 new and useful Improvements in Machines for Cutting Out Soles of Boots and Shoes, and that the following description, taken in connection with the accompanying drawings, hereinafter referred to, forms a full  
10 and exact specification of the same, wherein I have set forth the nature and principles of my said improvements, by which my invention may be distinguished from others of a similar class, together with such parts as I  
15 claim and desire to have secured to me by Letters Patent.

The figures of the accompanying plate of drawings, represent my improvement.

Figure 1 is a plan of my improved machine. Fig. 2 is a longitudinal vertical section of the same, taken in the plane of the line A B, Fig. 1; and Figs. 3 and 4 are  
20 detail sectional views, which will be hereinafter referred to and explained.

25 In machines which have heretofore been contrived for the purpose of cutting out soles, the knives have been arranged in the form of dies, and cut the sole out at one operation, but this kind of machine did not  
30 operate economically, as there was a strip of leather left between every two adjacent soles cut out.

Another kind of machine, more recently introduced, consists of a knife, with two  
35 cutting edges, curved in the form of two sides of the sole, which operates by cutting one side of the sole with one edge of the knife, and then turning the knife over, and cutting the other side; the leather being fed  
40 along in the meantime, to get the proper width of the sole.

The difficulty in working the latter class of machines has been in getting the knife to turn over unerringly for the two operations on each sole, and this difficulty my  
45 improvements are designed to remedy. The turning of the knife in such machines is effected by a band passing over a loose pulley on the knife shaft and having a weight  
50 at one end its other end being connected to the driving shaft so as to draw the weight up at every revolution of said driving shaft. The running down of the weight and band turns the pulley which carries a pawl that  
55 engages with a ratchet wheel on the end of the knife shaft and turns it over. This ar-

rangement as before stated does not work accurately or unerringly.

*a a a* in the several drawings, is the stationary framework of the machine; *b b* is  
60 the driving shaft, from which the moving parts derive their motion; said shaft having a fly wheel on one end, and a winch *d* attached to the same. This shaft has a gear  
65 pinion *e*, which engages with a gear wheel *f*, on the cross shaft *g*, Fig. 2. On the side of the gear wheel *f*, is an eccentric roller *h*, which as said wheel revolves, raises one end  
70 *i*, of the lever *ik*, the weight *l* suspended on the end of said lever, or a spring, or other mechanical equivalent, properly attached to  
75 the same, depressing said end, when the roller *h* begins to descend. The lever *ik* has a fulcrum on the cross shaft *m*, and has its end *k* forked, so as to embrace the lower  
80 cylindrical bar *n*, of the rectangular frame *noop*, composed of said bar *n*, the flat side rails *oo*, and the top cylindrical bar *p*. This frame has a reciprocating rectilinear motion  
85 imparted to it, by the lever *ik*, connected to it, and operated as above described, the side rails *oo* moving up and down between the guiding cleats *qq*, *qq*, attached to each  
90 side of the framework, as shown on one side, in the sectional view Fig. 2.

The knife frame *rr*, Figs. 1 and 2 is hollowed or mortised out as shown in Fig. 2, on the upper and under side, for the reception of the two knives *s* and *t*, which are held in  
95 position, and made to assume a different shape or curve, by means of the several set screws *u*, *u*, *u*, &c which pass through the sides of said frame, and have their ends bear against the two sides of the knives, at  
100 various points along their lengths. The journals of this knife frame have proper bearings in the sliding rails *oo*, before referred to, and therefore the said knife frame moves up and down with said rails, and the  
105 frame, of which they are a part. After one knife has cut one side of the sole on the block *u' u'*, secured between the two sides of the frame, as shown in Fig. 2, the sliding frame *noop*, and the knife frame rise; and  
110 said frame has its journals within the rails *oo*, and adjacent to the frame flattened out into the rectangular plates *v w*, as shown in Figs. 3, and 4 and the sharp edge of the journal plate *v*, comes into connection with the notch *x*, in the loose curved pawl lever  
115 *zz*, which is attached to the top of the extension of one of the guiding cleats *qq*, as



shown in Fig. 3, and the further rising of the knife frame, will, by means of said curved pawl lever, tend to turn said frame in its bearings, until it passes a little below a horizontal plane passing through the axis of said knife frame, when the spring *yy* bearing against the opposite journal plate *w*, as shown in Figs. 2 and 4 unerringly completes the revolution of the knife frame, and it begins to descend between the two right angular spring guides *a' b'*, shown by dotted lines in Fig. 1, and in Fig. 4, which keep the knife frame vertical, until the second knife has cut the opposite side of the sole.

The bent spring *c'*, Figs. 1 and 3 keeps the lever pawl *zz* from turning too far, when the journal plate *v* bears against its notch *x*; and during the turning of the knife frame as aforesaid, the leather is fed along on the side of the gage and guide bar *d' d'*, which may be moved out and in toward the center line

of the machine, and on the top platform of the framework, by means of the loose parallel arms *e' e'*, operating on the principle of the old fashioned parallel ruler, the front of the strip of leather abutting against the end of the adjustable stop screw, by which the width of the sole may be regulated.

Having thus described my improvements, I shall state my claims as follows:

What I claim as my invention, and desire to have secured to me by Letters Patent, is—

The mode or means, herein above described, for insuring the unerring turning of the knife frame, for cutting both sides of the sole, said means consisting of the notched pawl lever, and spring *yy*, operating on the journal plates of said frame, substantially as herein above described.

JOSEPH STEGER.

Witnesses:

GEORGE H. WILLIAMS,  
EZRA LINCOLN.