J. Mc. Comber,

Finishing Shoe Lasts,

No. 41,121, Patented Jan. 5, 1864.

Fig. 2

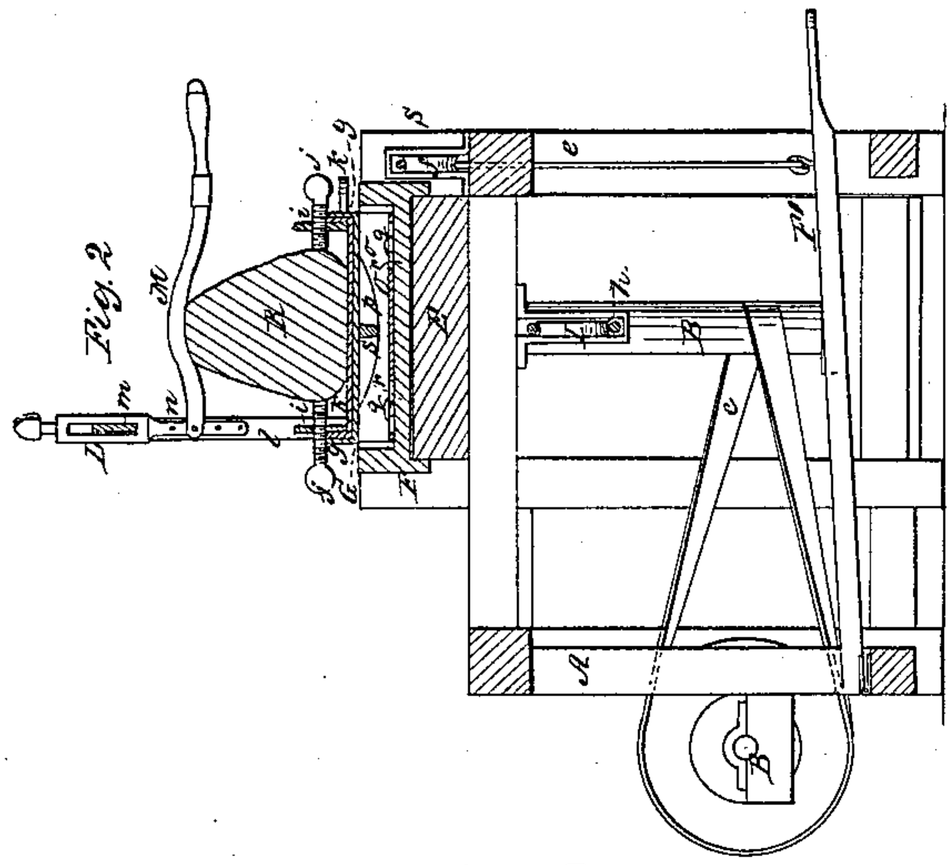


Fig. 4

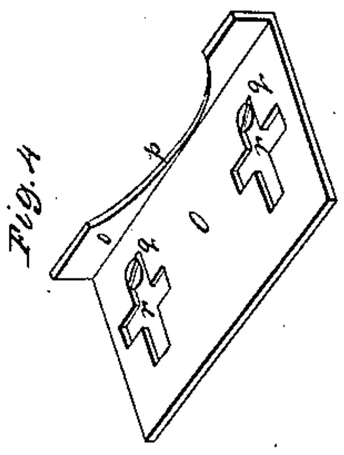


Fig. 1

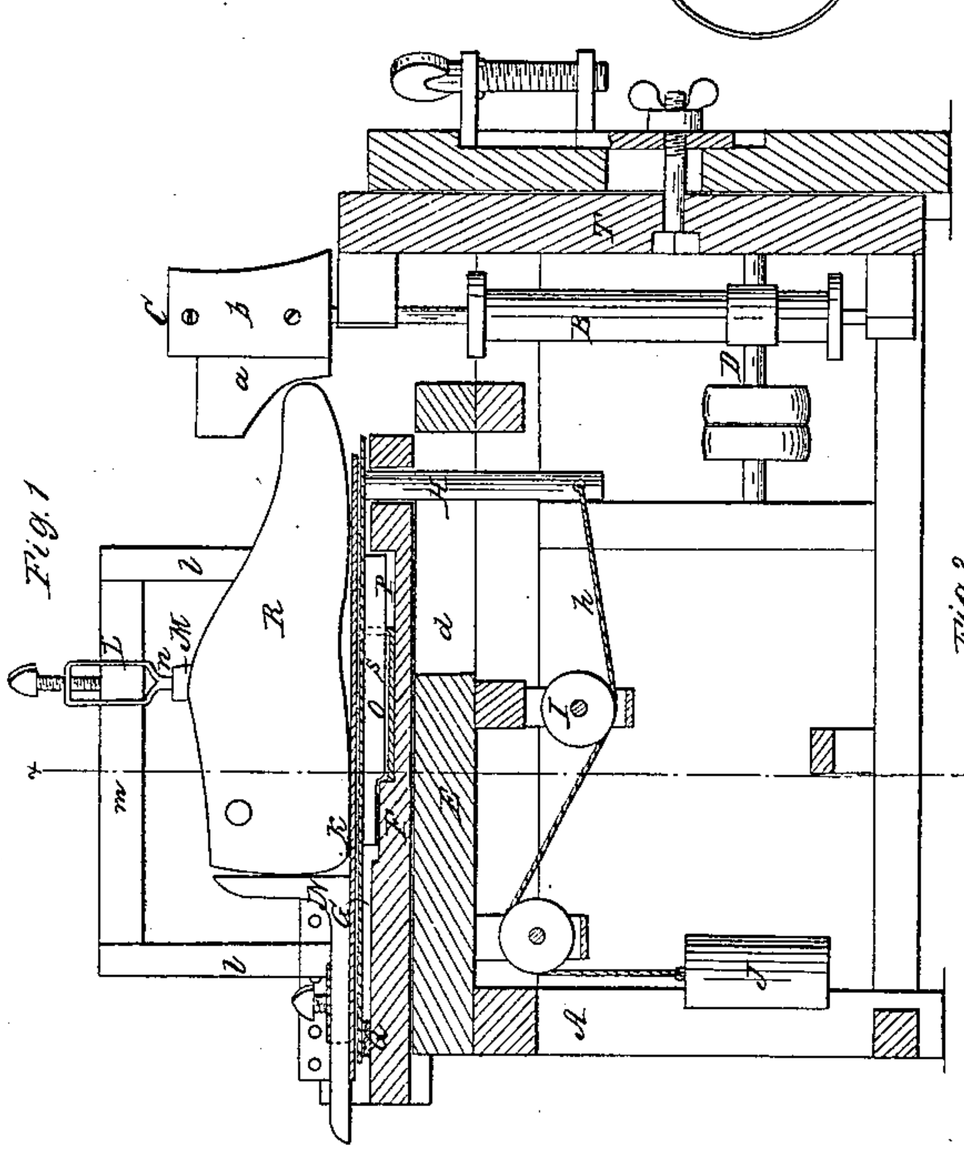
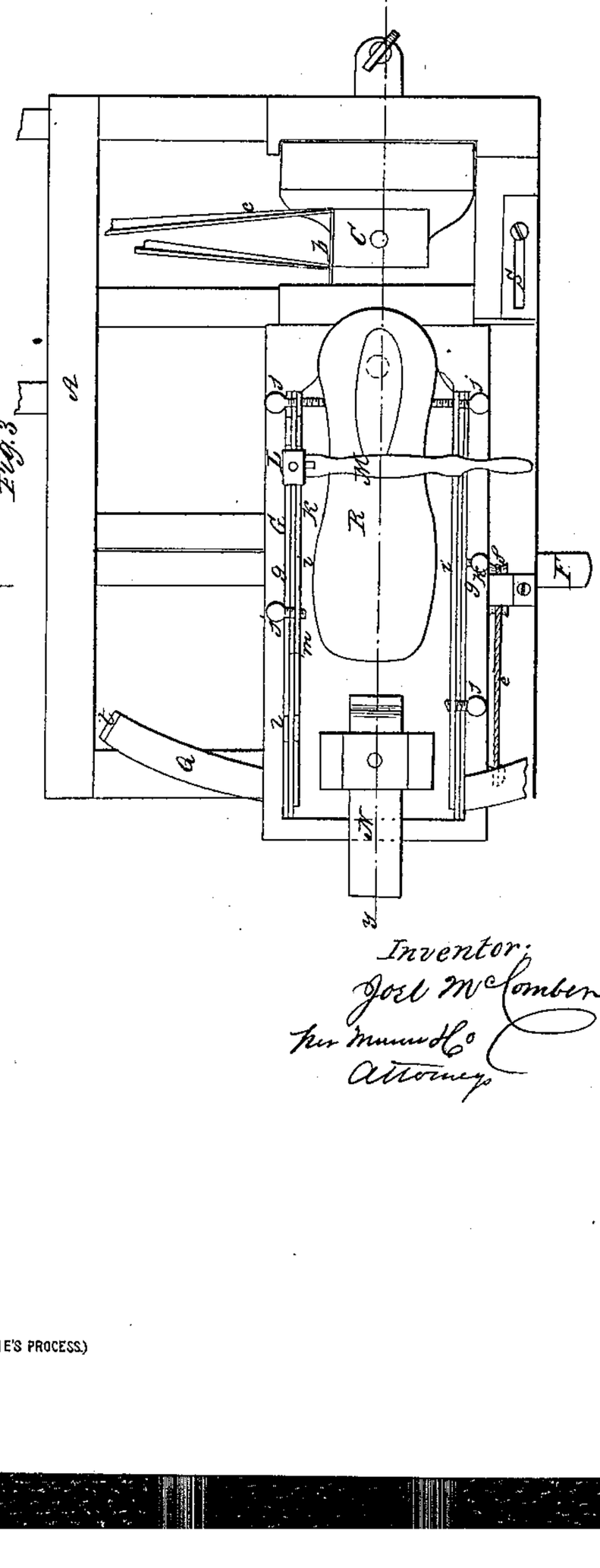


Fig. 3



Witnesses:
J. W. Coombs
G. W. Reed

Inventor:
Jos. Mc Comber
per Munn & Co
Attorneys

UNITED STATES PATENT OFFICE.

JOEL McCOMBER, OF HERKIMER, NEW YORK, ASSIGNOR TO JAMES McCOMBER, OF SAME PLACE.

IMPROVED LAST-FINISHING MACHINE.

Specification forming part of Letters Patent No. **41,121**, dated January 5, 1864; antedated December 26, 1863.

To all whom it may concern:

Be it known that I, JOEL MCCOMBER, of Herkimer, in the county of Herkimer and State of New York, have invented a new and useful Machine for Finishing Lasts; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side sectional view of my invention, taken in the line *x x*, Fig. 3; Fig. 2, a transverse vertical section of the same, taken in the line *y y*, Fig. 1; Fig. 3, a plan or top view of the same; Fig. 4, a detached perspective view of a part pertaining to the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to a machine for forming the toe and heel of lasts which are turned by machinery, said parts not being finished by last-turning machines.

The object of the invention is to obtain a machine for the purpose specified which will perform the work in a perfect manner, be capable of being adjusted to operate upon lasts of different sizes, and also form the curve at the ends of the last, as may be desired.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a frame which may be constructed in any proper manner to support the working parts of the machine, and B is a vertical shaft placed in said frame and having a cutter-head, C, on its upper end, said head having two cutters, *a b*, attached to it, one cutter, *a*, being designed for forming the toe of the last, and the other, *b*, for forming the heel of the same. The shape of these cutters is shown clearly in Fig. 1. The shaft B is rotated by a belt, *c*, from a driving-shaft, D.

On the top of the frame A there is permanently secured a bed-piece, E, which has a slot, *d*, made longitudinally through it near its front end, and F is a carriage or sliding plate which works on the bed-piece E, and has a cord, *e*, attached to its outer or back end, said cord passing over a pulley, *f*, on the frame A and down through the top of said frame and connected to a treadle, F′. (See Figs. 2 and 3.)

On the carriage or sliding plate F there is placed a plate, G, which may be of metal, and provided at each side with an upright ledge or flange, *g*. This plate G has a pendent rod, H, attached to it near its front or inner end, said rod H passing down through a hole in the carriage F, and through the slot *d* in the bed-piece E. To the lower end of the rod H there is attached a cord, *h*, which passes over a pulley, I, at the under side of the frame A, said cord having a weight, J, at its end. This weight has a tendency to keep the carriage F and the parts connected with it drawn back to their fullest extent from the cutter-head C—that is to say, as far back as the slot *d* in the bed-piece E will admit of the rod H moving. This will be fully understood by referring to Fig. 1.

K represents a plate which is fitted on the plate G between its ledges or flanges *g*. The plate K is also provided with an upright ledge or flange, *i*, at each side, and these ledges or flanges are perforated with holes to receive set-screw *j*, the use of which will be presently shown. The plate K may be secured at any desired point on the plate G by means of a set-screw, *k*, which passes through one of the ledges or flanges *g* of the plate G, and bears against one of the ledges or flanges *i* of plate K. (See Figs. 2 and 3.)

To one of the ledges or flanges *i* of the plate K there are attached two uprights, *l l*, which are connected at their upper ends by a horizontal cross-piece, *m*. This cross-piece *m* has a slide, L, fitted upon it, which has a pendant, *n*, to which a lever, M, is attached.

N is an adjustable bar or rest on the upper part of the plate K at its back part, and O is an adjustable plate which is secured in a recess, P, in the upper surface of the carriage F. This plate O has an upright ledge or flange, *o*, at its inner or front end, said ledge or flange having a segment-shaped concave or recess, *p*, made in it, as shown clearly in Fig. 4. The plate O is secured to the carriage F by means of screws *g*, which pass through slots *r* in the form of a cross, as shown in Fig. 4.

To the under side of the plate G there is attached a longitudinal rib or bar, *s*, which rests in the recess *p* in the ledge or flange *o*.

The back part of the plate G works on a curved or segment bar, Q, attached to the bed-piece E, and having its ends turned or bent upward to form stops *t*.

The operation is as follows: The last R to be operated upon is placed on the plate K and secured in proper position by the set-screws *j*. When the toe of the last is to be formed, the heel of the latter is placed against the rest N. After the last is adjusted by the set-screws *j* the operator holds it firmly down on the plate K by means of the lever M. The treadle F is then pressed down by the foot of the operator, and the carriage E, with its plate G K, is moved toward the cutter-head C, the cutter *b* of which was previously detached. A stop, S, on the frame A limits this forward movement of the carrier E, and this stop may be adjusted farther forward or backward on the frame as circumstances may require. When the carriage E reaches the termination of its forward movement, the plate G is turned so that the cutter *a* may cut the toe of the last, said plate turning from the rod H as a center. This turning of the plate G gives the proper curved or rounded form to the toe of the last, and the toe may be cut from a greater or less radius by moving the carriage E farther forward or backward, which is done by adjusting the stop S.

The last R may be moved farther forward or backward by adjusting the plate K. This adjustment of the last and plate K is done in order to bring the toe of the last in proper proximity to the cutter *a*, and by means of these two adjustments the toe of the last may be cut or turned with a proper curve. The plate G as it is turned is raised, so as to give the rounded prominence to the toe of the last by means of the longitudinal rib or bar *s* and the segment-shaped recess *p* in the ledge or flange *o*, which cause the flange to rise at each side of the center of the movement. This rounded prominence may be made greater or less, as desired, by adjusting the plate O farther forward or back in the recess P of the plate G, and the prominence may be made centrally or more or less at either side of the toe by adjusting the plate O laterally, this lateral adjustment admitting of the plate having a proper relative position with the last at all times. The cross-shaped slots *r* in said plate, through which the screws *g* pass, admit of these adjustments.

In forming the heel of the last the toe is placed against the rest N, the proper radius obtained by adjusting the stop S, and the cutter *a* removed and the cutter *b* attached to the cutter-head C. The operation of cutting or rounding the heel is the same as that just described for cutting or rounding the toe.

I would remark that the bearings of the shaft B may be attached to a slide or an adjustable plate, T, in order to admit of the cutter-head being adjusted higher or lower when desired.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The employment or use of the adjustable carriage F, in connection with the plates G K, applied to the carriage F, substantially as shown and arranged, so as to admit of a separate longitudinal adjustment of the plate K, while both plates G K are allowed to turn on the carriage from a pendent rod, H, as a center, for the purpose herein set forth.

2. The adjustable plate O, provided with an upright ledge or flange, *o*, having a concave recess, *p*, made in its upper surface, in combination with the longitudinal rib *s*, attached to the under side of the plate G, substantially as and for the purpose herein set forth.

3. The combination of the carriage F, plates G K, and cutter-head C, provided with the toe and heel cutters *a b*, all arranged and combined for joint operation, as and for the purpose herein set forth.

JOEL McCOMBER.

Witnesses:
EZRA GRARY,
CHAS. GRAY.