

(No Model.)

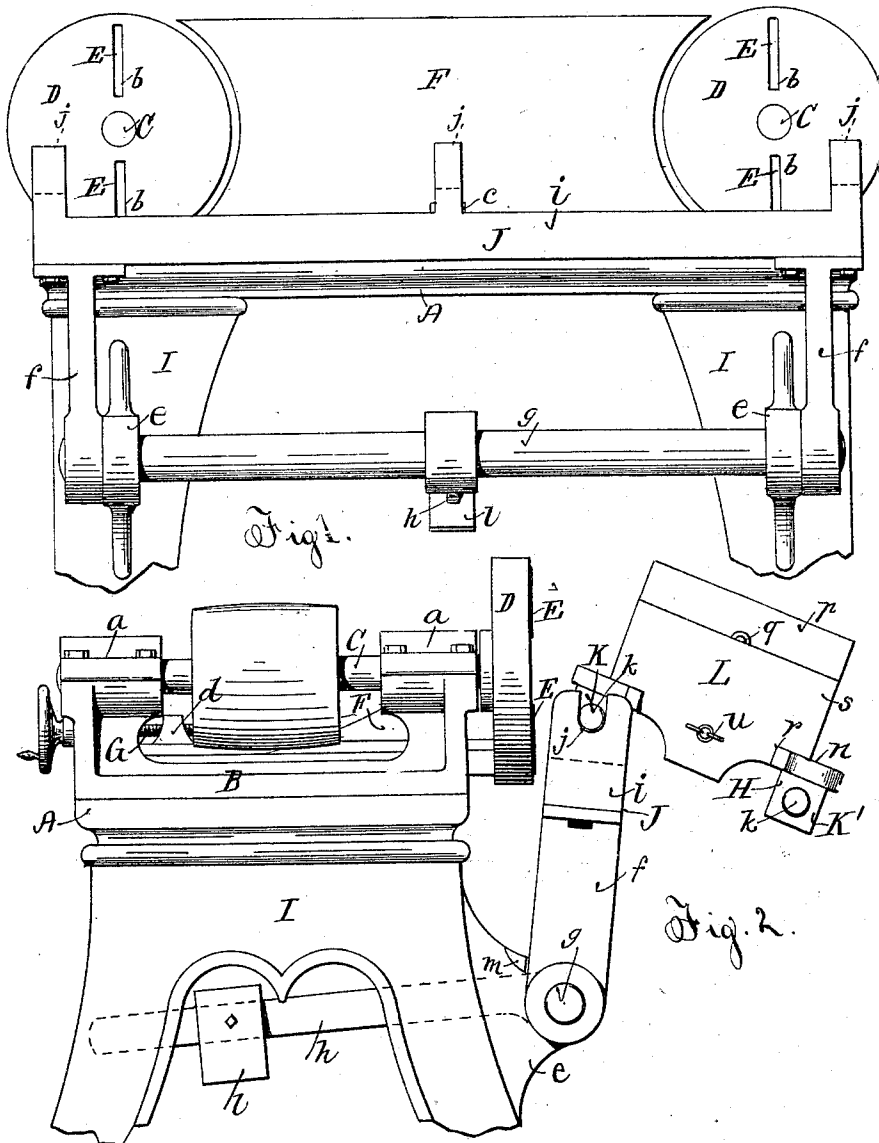
3 Sheets—Sheet 1.

H. K. GARDINER.

MACHINE FOR TRIMMING ENDS OF SHOE LASTS.

No. 555,912.

Patented Mar. 3, 1896.



Witnesses:

Harry J. Garceau  
James W. Burnett

James W. Burnett

Inventor:

Harry K. Gardiner

Wm. Schofield

Atty

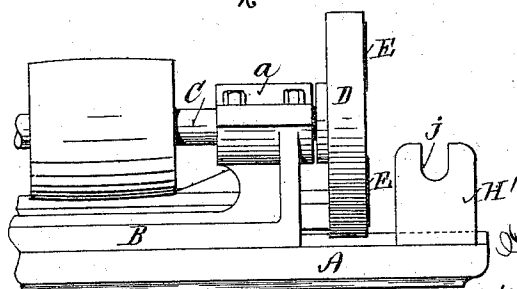
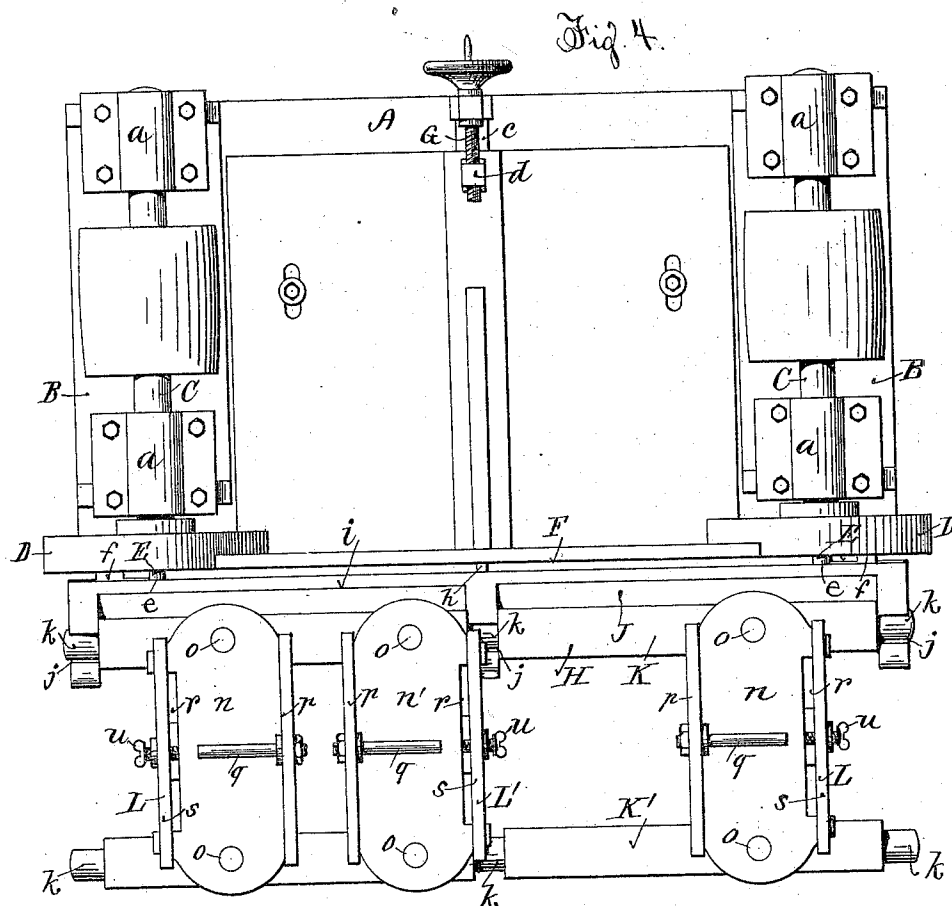
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3 Sheets—Sheet 2.

H. K. GARDINER.  
MACHINE FOR TRIMMING ENDS OF SHOE LASTS.

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Witnesses:

Harry J. Garceau.  
James W. Beaman.

Fig. 8.

Inventor:  
Harry K. Gardiner  
By S. Scholfield  
Att'y.

(No Model.)

3 Sheets—Sheet 3.

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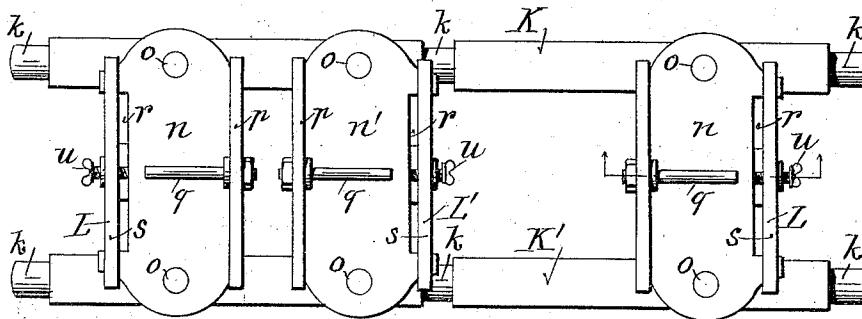
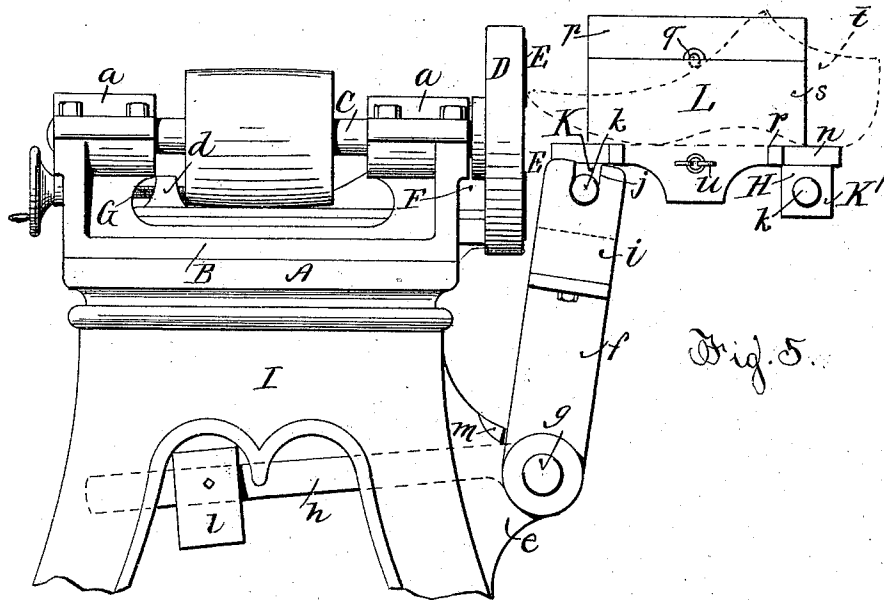


Fig. 6.

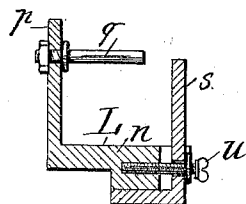


Fig. 7.

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James W. Beaman

Given For:  
Henry R. Gardner  
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# UNITED STATES PATENT OFFICE.

HARRY K. GARDINER, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO  
HIMSELF AND GEORGE N. MORSE, OF SAME PLACE.

## MACHINE FOR TRIMMING ENDS OF SHOE-LASTS.

SPECIFICATION forming part of Letters Patent No. 555,912, dated March 3, 1896.

Application filed March 7, 1894. Serial No. 502,761. (No model.)

*To all whom it may concern:*

Be it known that I, HARRY K. GARDINER, a citizen of the United States, residing at Worcester, in the State of Massachusetts, have invented a new and useful Improvement in Machines for Trimming the ends of Shoe-Lasts, of which the following is a specification.

When the shoe-last is taken from the lathe in which it is turned, the stub ends, by means of which the last-blank has been held for rotation, must be removed to completely finish the last for market. This finishing operation has heretofore been effected singly by hand, and it is the object of my invention to provide suitable means whereby the ends of several lasts may be trimmed simultaneously; and it consists in the improved construction of the machine and of the device for holding the lasts to be trimmed, as hereinafter set forth.

In the accompanying drawings, Figure 1 represents a front view of the machine with the clamping-frame removed. Fig. 2 represents an end view with the clamping-frame in an inclined position. Fig. 3 represents a detail end view of the machine with one of the cutter-heads removed to show the adjustable gage-plate for the last-pattern. Fig. 4 represents a top view of the machine with the clamping-frame in position. Fig. 5 represents an end view of the machine as in Fig. 2, with the clamping-frame in a horizontal position. Fig. 6 represents a top view of the clamping-frame separate from the machine. Fig. 7 represents a section taken in the line 77 of Fig. 6. Fig. 8 represents a modification.

In the drawings, A represents the bed-frame of the machine, upon which may be secured any desired number of spindle-heads B B, having bearings *a a* for the spindles C C of the revolving cutter-heads D D, provided with slots *b b* for the cutters E E, and upon the transverse guide-track *c* of the bed-plate A is placed the gage-plate F, which is grooved at its under side to fit the guide-track and provided with the lug *d*, which is screw-threaded to receive the hand-screw G, by means of which the gage-plate F is to be properly adjusted for governing contact with the pattern-last held in one of the clamps of the clamping-frame H.

To the projecting bearing-arms *e e* at one

side of the legs I I of the bed-frame A is pivoted the rocking frame J, comprising the arms *f f*, secured to the pivot-rod *g*, the weighted arm *h*, and the bar *i*, provided with the open bearings *j j j*, which are adapted to receive the journals *k k k* of the clamping-frame H, the adjustable weight *l* upon the arm *h* serving to rock the frame J toward the cutter-heads D D to contact with a suitable stop *m*, which may be located at the outer side of the bearing-arm *e*, and thus serve to limit the inward movement of the frame.

The clamping-frame H is formed of the two square parallel bars K K', each provided with the journals *k k k*, adapted to loosely fit the bearings *j j j* of the frame J, the said bars being linked to each other by means of the linking-plates *n n n'* of the holding-clamps L L L', which are loosely jointed to the said bars by means of the pivot-bolts *o o*, so as to form a parallel movement. The linking-plate *n* is provided at one side with an upright clamping-jaw *p*, in which is secured an inwardly-projecting stud *q*, adapted to form a bearing rest or gage for the instep of the last *t*, (shown in dotted lines,) and at the opposite side with the recess *r*, adapted to receive the movable clamp-jaw *s*, which is operated to clamp the last *t* by means of the thumb-screw *u*.

The clamping-frame H (shown in the drawings) is adapted for operating upon two lasts at the same time, the pattern-last being held in the intermediate clamp L' to bear against the governing gage-plate F.

In operating with the machine the two lasts to be trimmed are to be securely held in the clamps L L, with their insteps resting against the inwardly-projecting stud or gage *q* and the journals *k k k* of the bar K of the holder H placed in the open bearings *j j j* of the rocking frame J. Then upon turning the clamping-frame H in a vertical plane and moving the free bar K' endwise from side to side the projecting ends of the lasts will be trimmed by the action of the revolving cutters E E until the corresponding end of the pattern-last held in the clamp L' bears properly against the governing gage-plate F. Then upon removing the bar K from the bearings *j j* and reversing the clamping-frame H, so that the bar K' is placed in the said bearings, the opposite ends of the lasts may be

in like manner operated upon by the cutters until the pattern-last again bears properly against the gage-plate F, the clamping-frame H being drawn forward as the cutting proceeds by means of the weight *l* upon the arm *h* of the rocking frame J until the proper amount of cutting has been completed to finish the projecting ends of the lasts.

The clamping-frame H may be adapted for carrying either one or any desired number of lasts, and the rocking frame J, which forms a bearing-support for the clamping-frame, may be employed without the weighted arm, the said rocking frame being readily pressed forward by the operator upon the proper insertion of the journals of the clamping-frame, and instead of the rocking frame J, which forms a bearing-support for the clamping-frame, the said bearing-support may be formed by a properly-guided sliding piece H', arranged to slide upon the top of the bed-frame A of the machine, as shown in Fig. 8.

I claim as my invention—

1. In a machine for trimming the ends of shoe-lasts, the combination with the revolving cutter-heads and the gage-plate of the

movable bearing-support, and a clamping-frame provided with a journal-bar having clamps jointed thereto for parallel movement, substantially as described.

2. In a machine for trimming the ends of shoe-lasts, a reversible clamping-frame provided with opposite journal-bars connected by means of links which form a jointed parallel movement, substantially as described.

3. In a machine for trimming the ends of shoe-lasts, a reversible clamping-frame provided with opposite journal-bars connected by links which form a jointed parallel movement, and the holding-clamps, substantially as described.

4. In a machine for trimming the ends of shoe-lasts, a reversible clamping-frame provided with opposite journal-bars connected by links which form a jointed parallel movement, and the holding-clamps provided with a gage for the instep of the last, substantially as described.

HARRY K. GARDINER.

Witnesses:

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CHAS. S. FORBES.