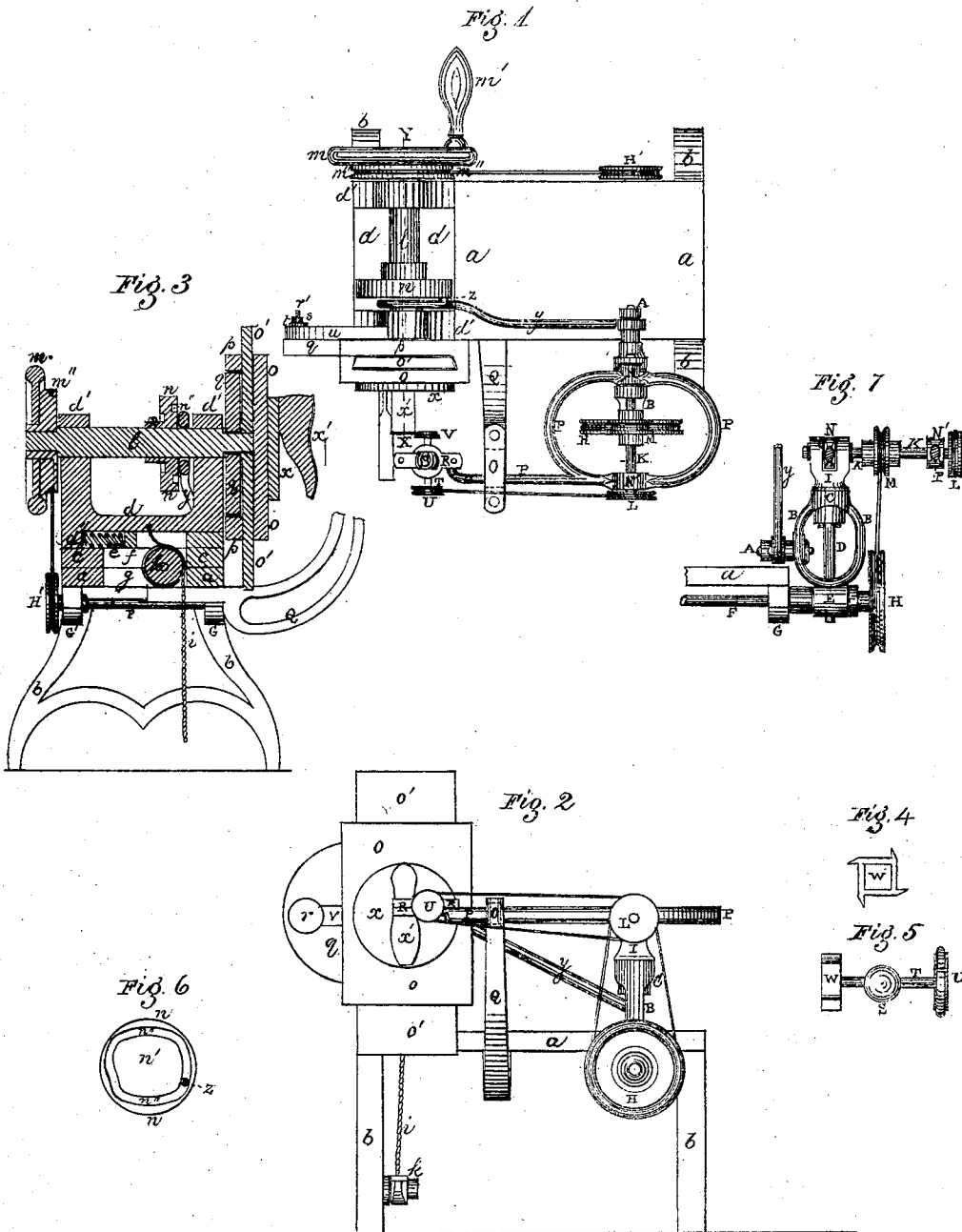


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Machines for Burnishing and Trimming the Edges of  
Boots and Shoe Soles.

No. 135,229.

Patented Jan. 28, 1873.



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# UNITED STATES PATENT OFFICE.

JAMES W. MALOY, OF BOSTON, ASSIGNOR TO BENJAMIN F. LARRABEE AND SAMUEL H. HODGES, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR BURNISHING AND TRIMMING THE EDGES OF BOOT AND SHOE SOLES.

Specification forming part of Letters Patent No. 135,229, dated January 28, 1873.

*To all whom it may concern:*

Be it known that I, JAMES W. MALOY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Machine for Burnishing and Trimming the Edges of Boots and Shoes, of which the following is a specification:

Figure 1 of the accompanying drawing is a top view, Fig. 2 is a front view, and Fig. 3 is a vertical transverse section taken in line X Y, Fig. 1, of my improved machine. Figs. 4, 5, 6, and 7 are parts of my improved machine in detail.

The object of the present invention is to trim and burnish the edges of boots or shoes, or to channel the same, in an efficient and expeditious manner, by means of machinery operating automatically. My improvements consist mainly in a series of mechanical devices so arranged and operated, as will be more fully described hereinafter, that an adjustable chuck, to which is attached a jack, is revolved so as to bring the desired portion of a boot or shoe connected with the jack in contact with a revolving or stationary trimmer, burnisher, or cutter, &c., connected with an adjustable slide actuated so that the trimmer or burnisher, &c., is at all times adjusted to the desired curve of the boot or shoe, by means of a peculiarly-formed revolving cam engaging with a stem and roller attached to a lever-arm connected with the frame of the adjustable slide; or, instead of the automatic apparatus herein described for operating the tool, the latter may be held by the operator, since the chuck *o* and eccentric *g* give such a movement to the jack as to allow the holding of the tool by hand.

In the drawing, *a* is the top and *b b* are the supporting ends of the frame of my improved machine. To one end of the top *a* is attached a transverse bed, *c*, provided with suitable ways, on which travels back or forth a head-stock, *d*, provided at one end with a stop-piece or buffer, *d'*, projecting downward to receive the end of a spiral spring, *e*, the other end of which abuts against a stationary stop-block, *f*, affixed in the top *a*, which is formed with a slot, *g*, in which revolves a pulley, *h*, provided with a cord or rod, &c., *i*, which connects the head-stock *d* with a treadle, *k*, pivoted to one

of the ends *b*. The ends *d' d'* of the head-stock *d* form bearings for a shaft, *l*, revolved by a wheel, *m*, having a handle, *m'*, and belt-pulley *m''*, and operating a wheel, *n*, that has an irregular-curved cam, *n'*, formed on its inner face by a channel or groove, *n''*. To the front end of the shaft *l* is attached an oblong plate, *o'*, with beveled sides, on which slides, as the plate *o'* is revolved, a chuck, *o*, formed on each side with beveled ways, and at the top and bottom with projecting cross-bars *p p*, which hold it and allow of its free play on the beveled sides of the plate *o'*. Between the cross-bars *p p* is an adjustable eccentric cam, *g*, formed with a slot to admit of its adjustment either to the right or left of the shaft *l* on which it travels, and provided with a cap or stud, *r*, and screw-stem *r'*, having a screw-nut, *s*, and washer *t*, or other suitable arrangement of devices to hold and allow the eccentric cam *g* to travel horizontally in a slotted guide, *u*, attached to and projecting from one end, *d'*, of the head-stock *d*. On the face of the chuck *o* is a jack, *x*, which holds the boot or shoe *x'*. Traveling in the groove *n''*, as the wheel *n* is revolved, is a stem and roller, *z*, attached to an annular end, connected with the shaft *l* of a lever rod or arm, *y*, the other end of which engages with a stem, *A*, connected with one side of a standard, *B*, formed with a slot to allow of its proper adjustment. The standard *B* is of an oval or other suitable shape, as shown in Fig. 7, and its upper portion forms a socket, *C*, for the reception of a vertical rod or shaft, *D*, which turns in a bearing, *E*, formed on the bottom of the standard *B*, and which also serves to support a transverse horizontal shaft, *F*, connected at each end with belt-wheels *H H'*, and further supported by standards *G G'* attached to the under side of the top *a*. The rod or shaft *D* connects with an adjustable head or standard, *I*, the bottom of which finds a seat on the top of the socket *C*, and whose top is bifurcated to form arms for the support of a hollow stem, in which revolves an arbor, *K*, provided with an outer belt-wheel, *L*, and an inner belt-wheel, *M*, the latter of which connects, by a belt or cord, &c., with the belt-wheel *H*. One of the arms of the standard *I* has on the top a recess or slot to receive a lateral projection or lug of a nave, *N*, formed on one

side of an oval or other suitable shaped end of a horizontal frame or slide, P, the other end of which extends in a straight longitudinal direction and passes through a slotted transverse bar, O, which is supported by a curved arm, Q, attached to the top *a*, and at its extremity is connected with a longitudinal bearing, R, provided with a slotted ball-socket, which receives a ball, S, attached to an arbor, T, which revolves in and is supported by the sides of the bearing R, and is provided on the outer end with a belt-wheel, U, connecting with the belt-wheel L, and on its inner end with a burnisher, V, or trimmer or cutter W, arranged as shown in Figs. 4 and 5, of which the former figure represents the face and the latter the side of the cutter W, ball S, arbor T, and wheel U. The opposite side of the oval end of the slide P is formed with a bearing or nave, N', which receives one end of the arbor K, the other end of which turns in the hollow socket on which the nave N revolves, thus allowing an up-and-down movement to the slide P, which is regulated by the lateral projection or lug of the nave N engaging with the slot of the arm of the standard I, and by the top and bottom of the slotted bar O.

The operation of my invention is as follows: By applying power to the wheel *m* the shaft *l*, together with the wheel *n*, cam *n'*, and plate *o'*, is revolved, thus carrying the chuck *o*, which in its revolution slides on the plate *o'*, its cross-bars *p* impinging on the periphery of the cam *q* so as to cause the jack *x* and boot or shoe connected with it to describe any curve desired, according to the position in which the cam *q* is arranged in the slot *v* of the guide *u*, the said cam *q* being regulated and held in the desired position by means of the cap *r*, screw-nut *s*, and washer *t* operating on the stem *r'* against the side guide *u*. The revolution of the wheel *n* and irregular cam *n'* formed on it causes the stud and roller *z*, engaging with the irregular groove *n''*, Fig. 6, to actuate, by means of the lever rod or arm *y*, the adjustable slide P in such a manner that the trimmer or cutter W or burnisher V is made to follow the desired curve of the boot or shoe. The slide P is susceptible of a lateral movement by the partial revolution of the head or standard I on the socket C and the vertical rod D in the socket C and bearing E, as well as the vertical movement given to it by the turning of its oval end on the arbor K and the longitudinal motion produced by the operation of the cam *n'* in connection with the stem and roller *z* and lever rod or arm *y*, thus allowing of its adjustment against the boot or shoe so as to fit any desired curve. By the operation of the wheel *m*, attached to one end of the shaft

*l*, and provided with a handle or crank, *m'*, and a belt-wheel, *m''*, that connects by a belt or cord, &c., with the belt-wheel H', power is communicated to the several shafts or arbors F K T by means of the belts or cords, &c., engaging with the wheels H H' L L' U, thus revolving the trimmer W, burnisher V, or cutter simultaneously with the boot or shoe. A downward pressure on the treadle *k* causes the rod or cord *i*, operating over the pulley *h*, to propel the head-stock *d*, and consequently the boot or shoe, toward the trimmer W or burnisher V, &c., and on releasing the pressure from the treadle *k* the action of the spring *e* causes the boot or shoe to be withdrawn from the trimmer W, &c.; thus, by regulating the pressure on the treadle, the boot or shoe may be directed to the proper position required for the operation of the trimmer, &c.

The head-stock *d* may be arranged to turn on a center, so as to partly revolve horizontally either way to accommodate itself to the different classes of work required.

The burnisher W or trimmer V, &c., may be either stationary or revolving; or it may be detached entirely from the machine, and a burnishing-iron or trimmer, &c., may be held in the hands of an operator against the boot or shoe, which is revolved in the manner hereinabove described.

Having thus described my improvements, what I claim as my invention, and desire to have secured to me by Letters Patent, is—

1. The combination of the shaft *l*, slotted arm *u*, eccentric *q*, chuck *o*, provided with cross-bars *p*, plates *o'*, and jack *x'*, all arranged and operating as and for the purpose specified.

2. The slide P having the nave N with a projection thereon and combined with the head I, having a recess to receive said projection, and combined also with the vibratory frame B, rotatory stem D, slotted bar O, and a rotary tool for cutting, trimming, burnishing, &c., all arranged as described.

3. The shaft *l*, in combination with the cam *n'*, connecting-rod *y*, stem A, and vibratory frame B, all arranged as set forth.

4. The chuck *o* provided with the cross-bars *p* and combined with the plate *o'* and eccentric *q*, as explained.

5. The head-stock *d* provided with the ends *d'* *d''* and combined with the shaft *l*, spring *e*, and guide-way *c*, all arranged as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES W. MALOY.

Witnesses:

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SAML. M. BARTON.