2 Sheets--Sheet 1.

B. J. TAYMAN.

Machine for Edge-Setting Soles of Boots and Shoes.

No. 162,206. Patented April 20, 1875.

Fig. 1.

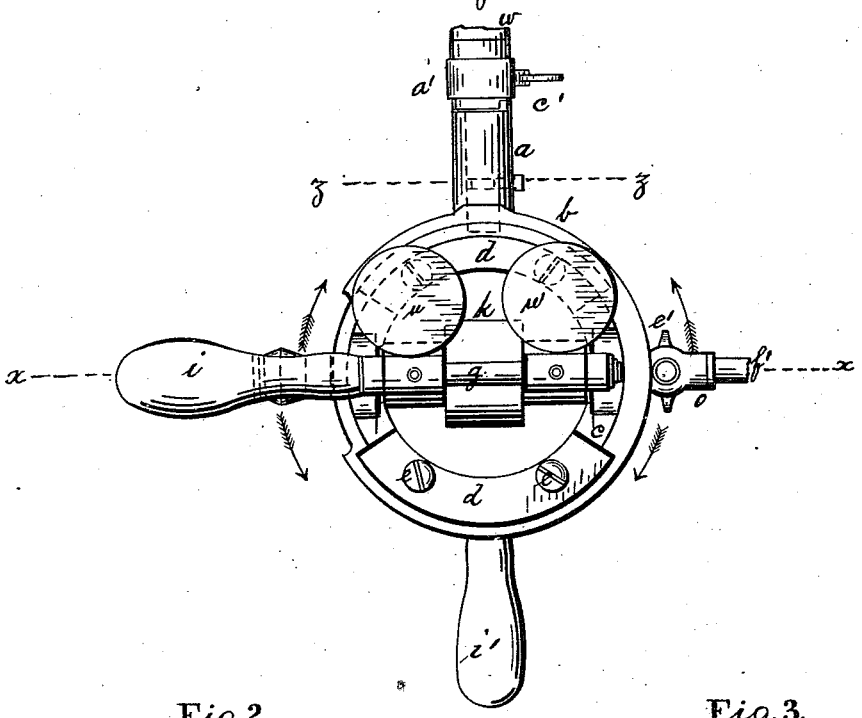


Fig. 2.

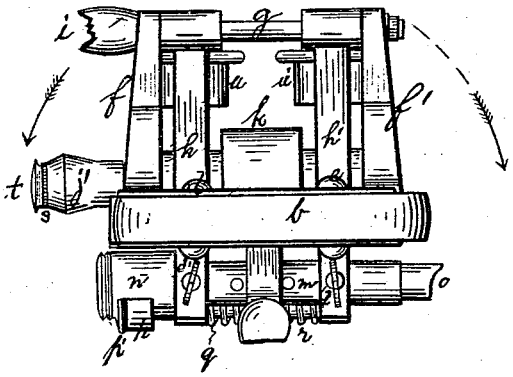


Fig. 3.

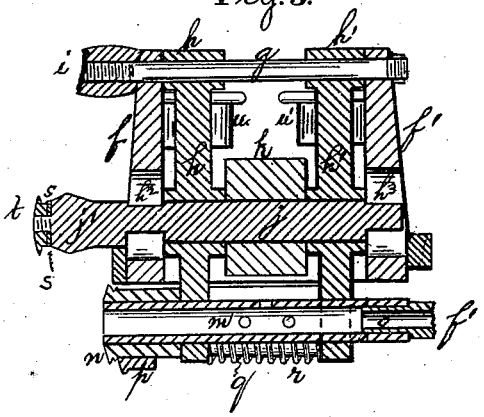
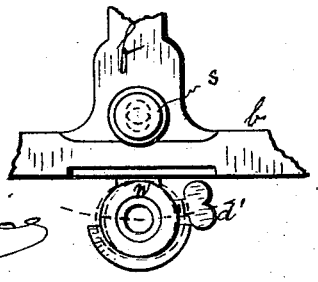


Fig. 4.



Witnesses:

Thos. A. Burtt.

Samuel Richards

Inventor:

Benjamin J. Tayman

2 Sheets--Sheet 2.

B. J. TAYMAN.

Machine for Edge-Setting Soles of Boots and Shoes.

No. 162,206. Patented April 20, 1875.

Fig. 5.

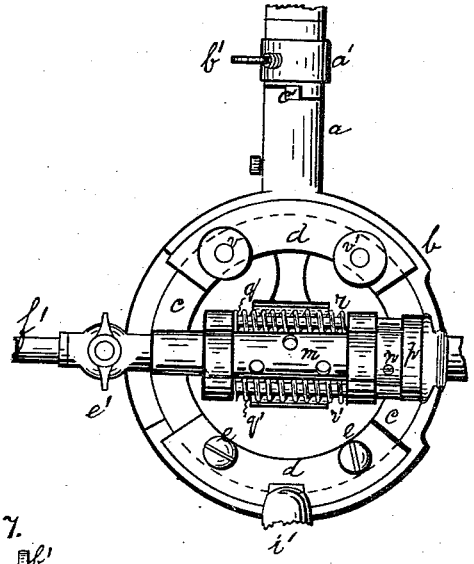


Fig. 7.

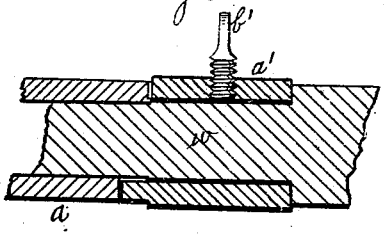


Fig. 8.

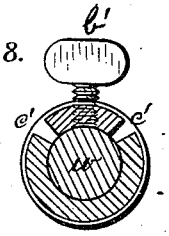


Fig. 6.

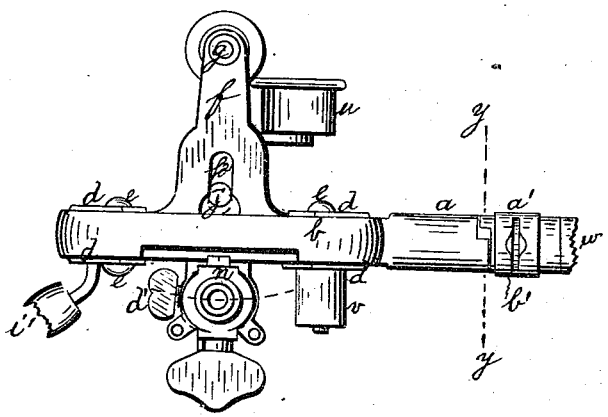


Fig. 9.

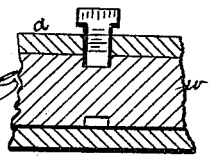
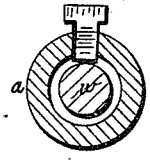


Fig. 10.



Witnesses:

Thos. A. Burdett

Samuel Richards

Inventor:

Benjamin J. Tayman

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

BENJAMIN J. TAYMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF HIS RIGHT TO JAMES B. RONEY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR EDGE-SETTING SOLES OF BOOTS AND SHOES.

Specification forming part of Letters Patent No. **162,206**, dated April 20, 1875; application filed January 27, 1875.

To all whom it may concern:

Be it known that I, BENJAMIN J. TAYMAN, of Philadelphia, Pennsylvania, have invented Improvements in Machines for Edge-Setting the Soles of Boots and Shoes, of which the following is a specification:

The invention herein described consists of a tool for edge-setting or burnishing the edges and for milling the heel-seats of boots and shoes; said tool being designed for use in connection with jack-carriages which have alternate semi-rotary and sliding movements as described in Letters Patent Nos. 140,601 and 151,806, granted to me, respectively, July 8, 1873, and June 9, 1874.

The said tool can be used also with a jack having a plane rotary motion.

In the drawings, Figure 1 is a top view of the tool; Fig. 2, a front view, the handle and a part of the gas-pipe being broken off; Fig. 3, a vertical section on the line *x x* of Fig. 1; Fig. 4, a front view of the burnishing-iron *n*, the crescent-shaped guide *p*, the milling-wheel *s*, and part of the ring-frame *b*, and standard *f*; Fig. 5, a bottom view of the lip of the burnishing-iron, and the milling-wheel and handles being broken off; Fig. 6, a side view. Fig. 7 is a longitudinal section of the sleeve-clutch *a'*, tool-socket *a*, and arm of the jointed tool-holder *w*, and Fig. 8 a transverse section of the same on the line *y y* of Fig. 6. Figs. 9 and 10 are respectively longitudinal and transverse sections of the socket *a* and arm *w* on the line *z z* of Fig. 1.

a, Figs. 1, 5 and 6, represents the tool-socket, which is expanded into the ring-frame *b*. *c* is a ring arranged within the ring *b*, supported by plates *d*, and bolts or screws *e*, as shown in Figs. 1, 2, 5, and 6. *f* and *f'* are standards projecting up from the ring *c*. *g* is a shaft, from which are suspended the swinging boxes *h h*^{1}, and to which the handle *i'* for the left hand of an operator is attached. The standards *f* and *f'* are slotted, as at *h*^{2} and *h*^{3}, Figs. 3 and 6. *j*, Fig. 3, is a shaft passing through the boxes *h h*^{1}, the ends of shaft *j* being eccentric and turning in the slots *h*^{2} and *h*^{3}, thereby imparting a swinging or reciprocating motion to said boxes. *k*, Fig. 3, is a pulley, arranged on the shaft *j* eccentrically, as shown in Fig. 3, so that its axis corresponds with the axes of the eccentric ends of shaft *j*. The object of this construction is to secure a uniform tension on the driving-belt, which passes around said pulley *k*. The lower ends of the swinging boxes *h h*^{1} form bearings for the hollow perforated shaft *m*, Fig. 3, to one end of which the burnishing-iron *n* is attached, and into the other end of which shaft the gas-burner *o*, or end of the gas-pipe *f'*, Fig. 3, is inserted. The burnishing-iron *n*, being adjusted by means of a set-screw, *d'*, can be turned around on its bearing as it becomes worn by friction, and can be thus caused to present an unworn portion of its surface to the sole edge. *p* is a crescent-shaped guard sliding on the under side of the burnishing-iron *n*, to which it is closely fitted. The said guard is attached to the rods *q q'*, Fig. 5, which rods slide through lugs on the lower ends of the swinging boxes *h h*^{1}, and through springs *r r'*. This arrangement renders said burnishing-iron self-adjustable to sole-edges differing in thickness. A projection, *p'*, Fig. 2, is formed on the front face of the guard *p*, to produce what is termed a "bead" on the outer edge of the sole. Such beads are usually put on with burnishing-irons, a different iron being employed for each thickness of sole. Instead of thus forming the projection *p'*, it may be formed on a separate ring, made adjustable by means of a set-screw, the ring in such case taking the place of the crescent-shaped guard *p*. One end of the shaft *j*, Fig. 3, forms a tool, *j'*, for burnishing the upper portions of heels, and it carries a milling-wheel, *s*, which turns loosely, and is kept in position by a nut, *t*, which forms a lip to traverse the seam for the purpose of guiding the milling-wheel in making its impressions on the heel-seats. The milling-wheel *s*, and the heel-burnisher *j'*, above described as part of the shaft *j*, may be separated and removed from shaft *j*, and placed on a shaft having a plain rotary motion. *u* and *u'*, *v* and *v'*, are guiding-rollers. *w*, Fig. 6, represents the arm of the jointed tool-holder, to which the tool herein described is intended to be applied, said arm and tool-holder being such as are described in the above-mentioned Letters Patent. *a'*, Fig. 6, is a

sleeve-clutch on the arm *w*, said clutch being adjusted by means of a set-screw, *b'*, so as to leave a clear space, *c'*, between the corresponding recesses in the sleeve *a'* and socket *a*. Said space *c'* limits the rocking motion of the tool as it (the tool) is applied to the varying bevels of the sole-edge.

In operation, the belt which passes around the pulley *k*, and is put in motion by the driving mechanism, (not shown,) turns the shaft *j*, which, through the operation of its eccentric ends turning in the slots h^2 h^3, imparts a rotary and reciprocating motion to the milling-wheel *s*, and a swinging motion to the boxes *h* h^1, which motion of the boxes produces a reciprocating motion in the burnishing-iron *n*. Ordinary combustible gas, the amount being regulated by the stop-cock *e'*, Fig. 1, is admitted through pipe *f'*, Fig. 3, into the hollow shaft *m*, Fig. 3, upon which the burnishing-iron is placed. When the burnishing iron is to be used the gas is lighted for the purpose of heating the iron. The right and left hands of the operator are applied to the handles *i* and *i'*, respectively, and the lip of the burnishing-iron *n* is placed in the rand-seam of the shoe, the operator guiding the tool as the shoe travels under it, causing the burnishing-iron to come in contact with the varying bevels of the edge of the fore part and shank of the sole. When the breast of the heel is reached the tool is swung around so as to bring the lip of the milling-wheel *s* into the heel-seam, the milling-wheel making its impression on the heel-seat.

I claim—

1. The combination of the swinging boxes *h* h^1, slotted standards *f f'*, eccentric shaft *j*, and eccentric pulley *k*, on said shaft, for imparting a reciprocating motion to the burnishing-iron, and for keeping the tension of the driving-belt uniform, substantially as set forth.

2. The combination of the ring *b*, and standards *f f'*, with their annular base *c*, forming a frame for supporting the other operating parts of the tool, substantially as set forth.

3. The crescent-shaped guard *p*, rods *q q'*, and springs *r r'*, in combination with the hollow shaft *m*, and burnishing-iron *n*, in the manner and for the purpose substantially as set forth.

4. In combination, the removable burnishing-iron *n*, crescent-shaped guard *p*, hollow perforated shaft *m*, and gas-pipes, arranged to heat both the iron and guard, all substantially as shown and described.

5. The sleeve-clutch *a'*, in combination with the socket *a*, and arm *w*, provided with space *c'*, in the manner and for the purpose substantially as set forth.

6. The combination of the milling-wheel *s*, nut and lip *t*, and the rotary heel-seat-burnish-iron *j'*, arranged on a common shaft, in the manner and for the purpose substantially as set forth.

7. The projection *p'* on the crescent-shaped guard in combination with the burnishing-iron *n*, to form a bead on the outer edge of the sole, substantially as set forth.

BENJAMIN J. TAYMAN.

Witnesses:
THOS. A. BURTT,
S. RICHARDS.