(No Model.) 2 Sheets—Sheet 1.

C. W. MILLER.

BURNISHING MACHINE.

No. 446,923. Patented Feb. 24, 1891.

Fig. 1

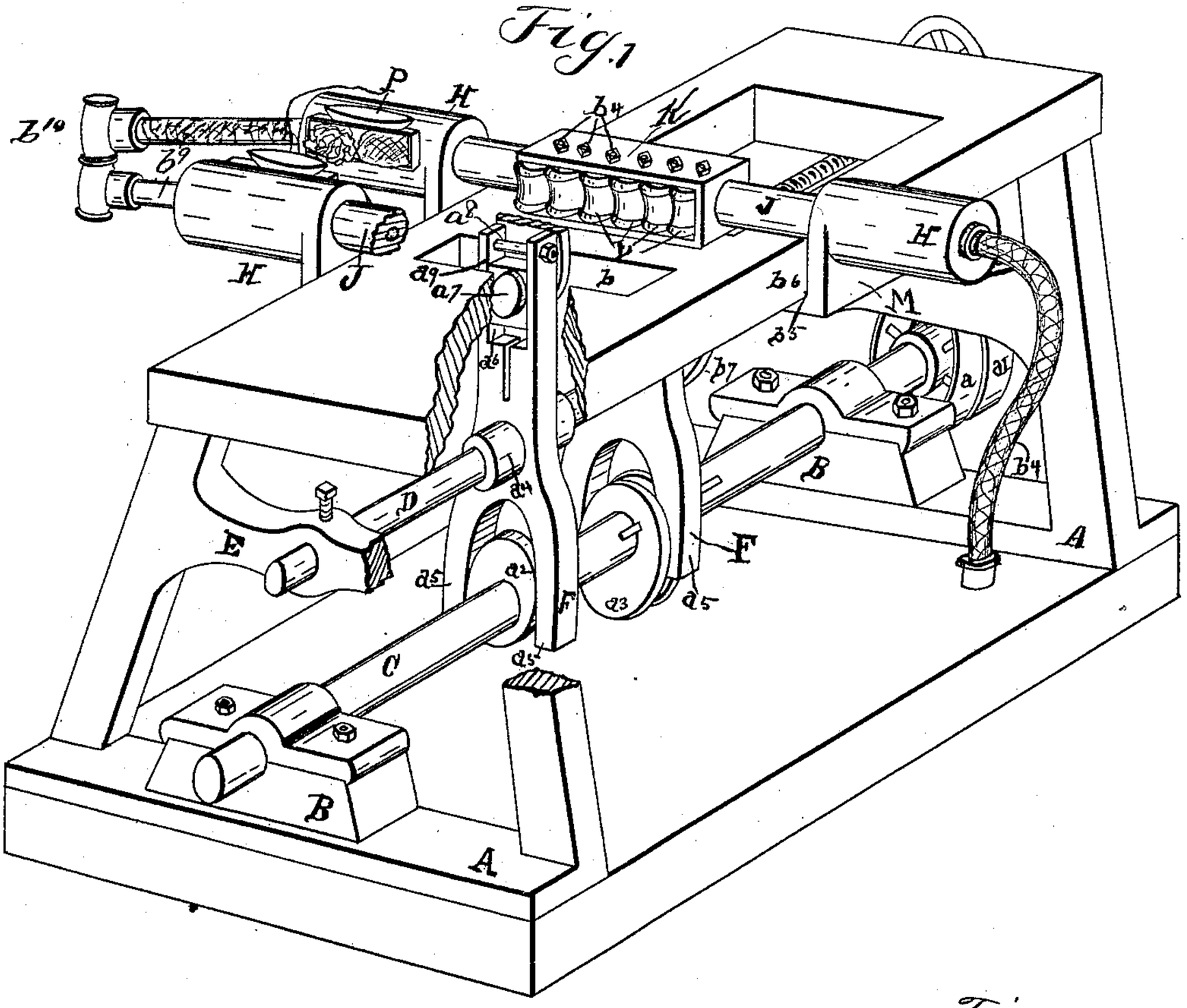


Fig. 4

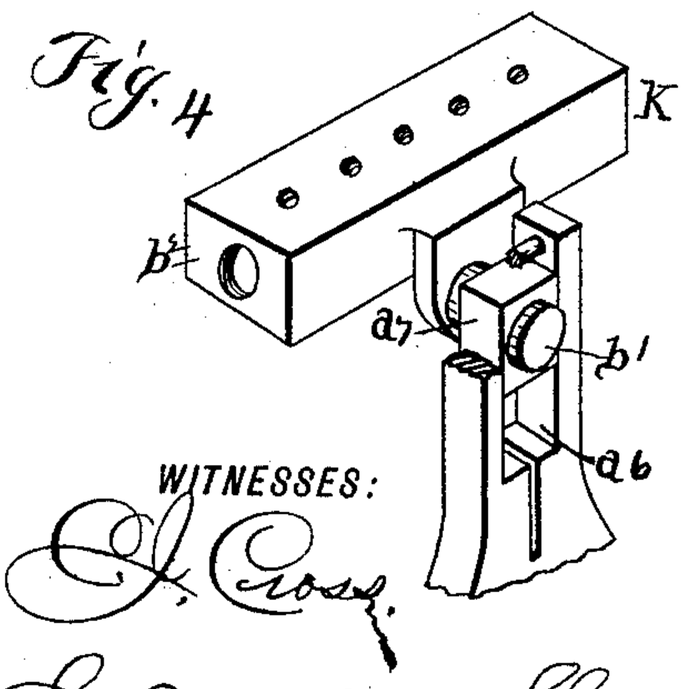


Fig. 3

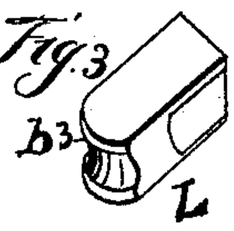
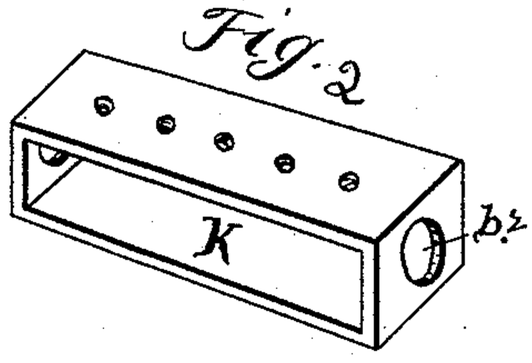


Fig. 2



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(No Model.)

2 Sheets—Sheet 2.

C. W. MILLER.

BURNISHING MACHINE.

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Fig. 5.

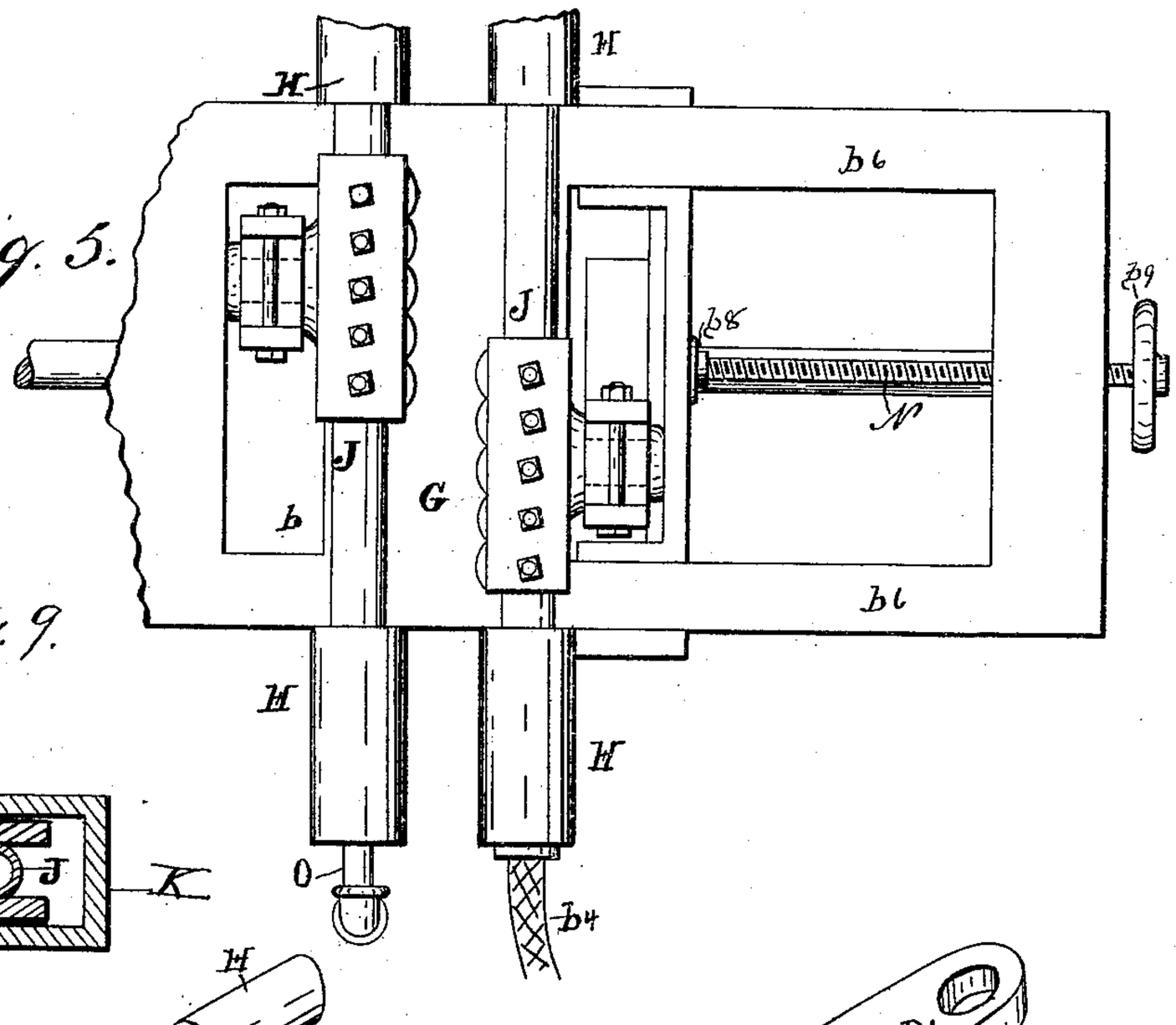
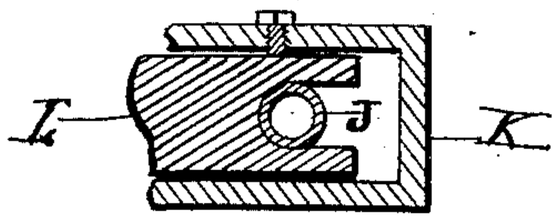


Fig. 9.



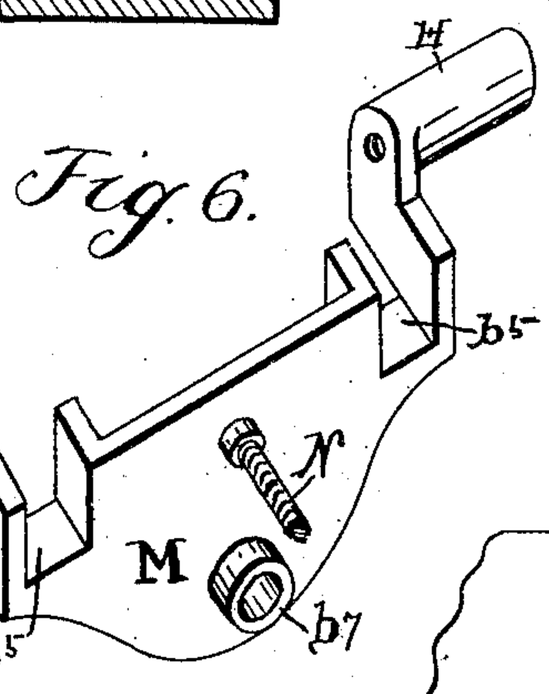


Fig. 6.

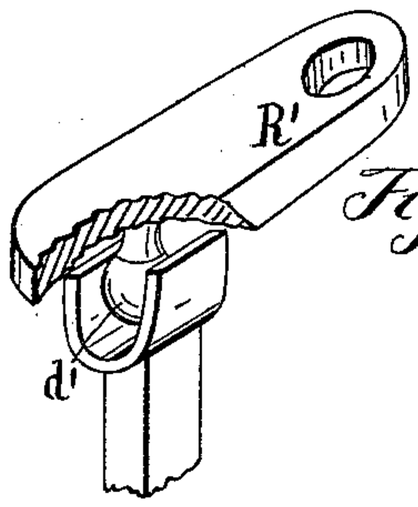
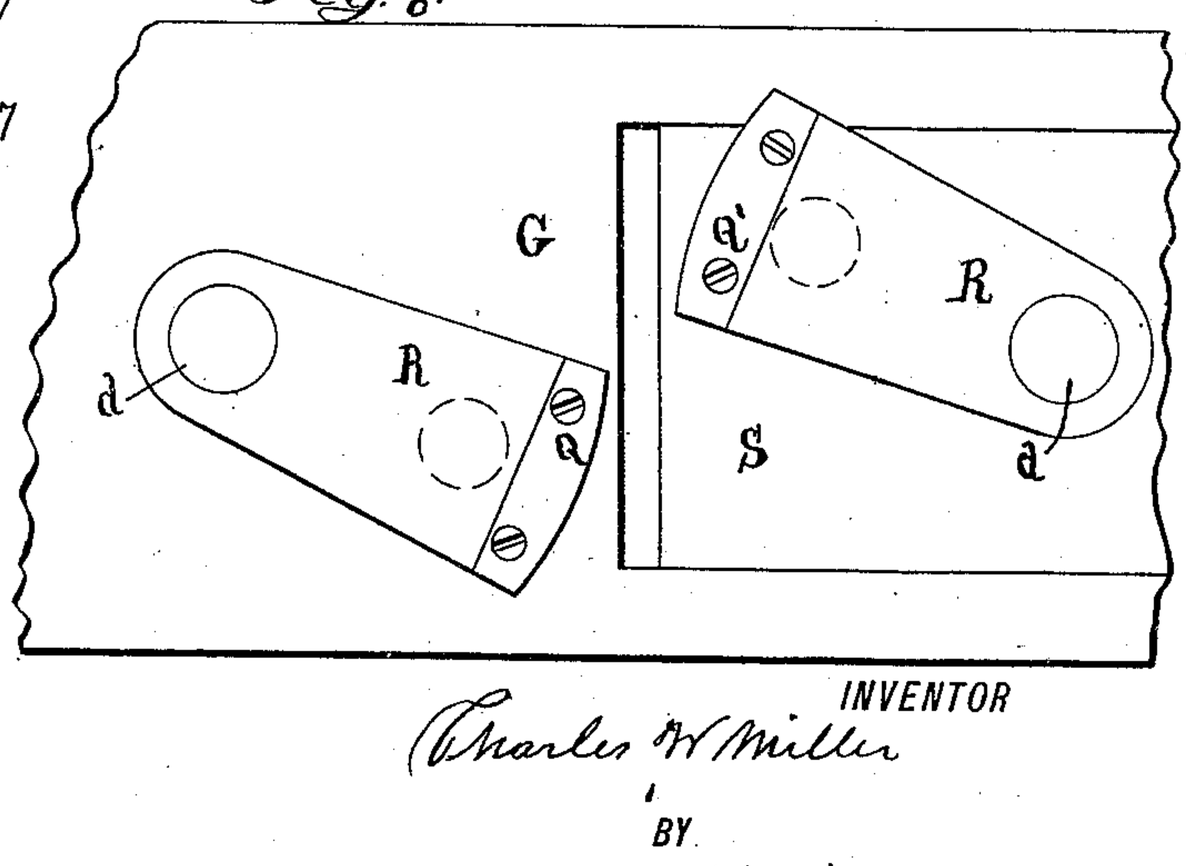


Fig. 7

Fig. 8



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UNITED STATES PATENT OFFICE.

CHARLES W. MILLER, OF CANTON, OHIO.

BURNISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 446,923, dated February 24, 1891.

Application filed August 11, 1890. Serial No. 361,634. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. MILLER, a citizen of the United States, and a resident of Canton, county of Stark, State of Ohio, have invented a new and useful Improvement in Burnishing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making part of this specification.

My invention relates to an improved method of finishing or polishing at the same time the two edges of harness tugs and straps; and it consists in providing a machine having one or more rubbing or burnishing points adapted to engage the tug or strap at opposite sides, said point or points to move in opposite directions.

With these ends in view my invention consists in certain features of construction and combination of parts, as will be hereinafter described, and pointed out in the claims.

Figure 1 of the accompanying drawings is a view in perspective of a machine illustrating my invention with one of the burnishing-heads removed; Fig. 2, a similar view of case or carrier for the burnishers; Fig. 3, a similar view of a single burnisher; Fig. 4, a similar view of the burnisher-carrier, showing the manner of connecting the carrier to the sway-bar. Fig. 5 is a plan view of the top of the machine, showing burnishers in position; Fig. 6, a perspective of a portion of the frame. Fig. 7 is a plan view of a modification, showing the burnishers and support adapted for a rotary reciprocating movement; Fig. 8, a perspective showing the manner of connecting the vibrating arm with the sway-bar; and Fig. 9 is a vertical section through the burnisher-box.

A represents the frame of the machine, which may be constructed in any desirable form, the object of which is to support the several parts of the machine. Journal-boxes, as B, are secured to the frame, in which is placed the actuating-shaft C, on which are mounted driving and loose pulleys a and a' and eccentrics a^2 and a^3, the apex or extreme points of the throw of said eccentrics placed diametrically opposite. A rod D is secured in a cross-bar or girder E of said frame to pass therethrough, as shown in Fig. 1. On said rod are loosely mounted sway-bars F, having at their central portions journal-boxes a^4, adapted to rock on the bar D. The lower end portion of said bar is bifurcated, the prongs a^5 to embrace the eccentrics a^2 and a^3. At the upper end of said bar is provided an elongated slot a^6, in which is placed a sliding journal-box a^7. A bolt a^8 is passed through the jaws a^9, by which the jaws may be adjusted to the box.

The table G or top portion of the frame A is provided with an elongated aperture b transverse the table, through which the upper end portion of the sway-bar is passed, as shown in Fig. 1. Hollow arms H are secured to the table, through which is passed a pipe J, which forms a support for the carriers K and a heater for the burnishers L. The carrier is provided with a wrist-pin b', as shown in Figs. 1 and 6, which enters the box a^7 in the end of the sway-bar. The pipe J is passed through the arm H and the perforations b^2 in the ends of the carrier K.

The burnishers are formed substantially as shown in Fig. 3, having the outer end portion b^3 grooved or adapted to the form of the edge of the tug or strap to be finished. The inner end portion of the burnisher is bifurcated, the prongs to pass into the carrier one above and the other below the pipe, in which position it is secured by a screw b^4. The burnishers may be used singly or in series.

To provide for a longitudinal movement of one set of burnishers, a frame M has guideways, as b^5, to embrace the side portions b^6 of the table, and a pipe portion b^7 to receive and slide upon the bar D, the bar supporting the frame in position. Said frame is also provided with an outwardly-projected hollow arm H, through which a pipe J′ is passed to form a slide and support for the carriers and burnishers.

To move the frame M laterally on the table, a screw N is turned in a nut (not shown) under the table and the inner end of the screw swiveled to the frame, as shown at b^8, and the outer end provided with a hand-wheel b^9. By turning said wheel and screw the frame M, with its carrier and burnishers, will be moved to increase or diminish the space between the burnishers to adapt the machine to finish the edges of harness tugs or straps of different widths. The screw is also used

to adjust the pressure of the burnishers on the edge of the strap.

To facilitate the polishing or burnishing process, the burnishers may be warmed or heated, and to accomplish this purpose a steam-pipe O is secured at the end of the pipe J, said pipe having a flexible connection b^{10} at its opposite end with the pipe J′, at the opposite end of which is provided a flexible hose or pipe b^4 by which the exhaust-steam and water are conducted away from the machine. A cup and sponge holder P is provided, which in this case is secured to the arms H, in which may be placed blacking, wax, paste, or other material to be used in the operation of coloring and polishing the edges of such parts or strap as may be passed through the machine.

In practice the edge of the tug or other strap to be burnished is first passed through an edge-trimming machine of some form by which the edge is formed. Dies or burnishers to conform to the edge are placed in the carriers, the machine put in motion, and the burnishers moved in opposite directions. The strap to be burnished is passed between the blacking-sponges to and through the machine between the two sets of burnishing or rubber heads, by which the edges are reduced to a solid surface and highly burnished.

The object sought in dividing the burnishing-head into a series or plurality of burnishing-points is to increase the efficiency of the machine, and by the reciprocating movement of the burnisher or burnishing points, the fibers of leather can be reduced to a solid surface that cannot be readily raised or roughed, the result being similar to that produced by the shoulder-stick or hand-burnisher, the output being largely increased, thereby reducing the initial cost of such work.

If preferred, a single burnisher may be used in each of the carriers of desired length and form.

Figs. 7 and 8 show a modification of my invention, differing only in the manner of supporting and moving the burnisher Q Q′. In the modification the burnishers are supported on arms R and R′, one of which R is pivotally secured to the table G, as at *d*, and the other R′ to a sliding portion S, about which pivots the arms are vibrated by the sway-bars F, a ball portion *d*′ on the under side of the arm R, to engage the upper end portion of the said bar, imparting to the burnishers a rotary reciprocating movement in opposite directions to burnish or finish the two edges of a tug or other strap at the same time. A screw similar to screw N, hereinbefore described, is attached to the sliding portion S of the table and turned in a nut under the frame, by which the sliding portion of the table, with the arm R′ and burnisher Q′, may be moved to or from the burnisher Q to increase or diminish the space between the burnishers to adapt the machine to burnish straps of different widths, as hereinbefore stated in describing the devices shown in Figs. 1 and 5.

The prime object of my invention in either of the forms hereinbefore described is to facilitate the process of burnishing harness-straps by burnishing both edges at the same time, and that will leave the strap uniform in width and produce a better result in every respect at a greatly-reduced cost.

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

1. In a burnishing-machine, the combination of the oppositely-sliding sets of burnishing-tools, steam-pipes upon which each set of said tools slides to heat the same, means for moving one set toward and away from the other set, and a flexible connection for the ends of said pipes, whereby one set of tools may be moved toward or away from the other set without interfering with the circulation of steam within said pipes.

2. The combination, in a burnishing-machine, of a carrier adapted to hold a burnishing-tool, said carriers and tools to vibrate face to face in opposite directions, a slide to support said carrier, and means to vibrate said carrier and burnishers to simultaneously burnish both edges of harness-straps, substantially as set forth.

3. In a burnishing-machine, the combination of a main frame, a supporting-shaft D, journal-frames, one of which is supported to slide upon said shaft and each provided with guide portions to embrace the sides of the supporting-frame and with sleeves H, steam-pipes secured in said sleeves, burnisher-boxes mounted to slide upon said pipes, burnishers secured within said boxes, sway-bars mounted upon said supporting-rod and connected to said boxes to reciprocate them in opposite directions, means for sliding one of the journal-frames, and means for rocking the sway-bars in opposite directions, substantially as set forth.

4. The combination, in a burnishing-machine, of a burnisher-carrier adapted to be supported and vibrated on a heating-pipe, and a burnishing-iron having one of its ends formed to burnish the edge of a harness-strap, the other end bifurcated to embrace the heating-pipe, substantially as described, and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 8th day of August, A. D. 1890.

CHARLES W. MILLER.

Witnesses:
W. K. MILLER,
ATLEE POMERENE.