(No Model.) 3 Sheets—Sheet 1.

J. W. DODGE.

SOLE EDGE BURNISHING MACHINE.

No. 339,049. Patented Mar. 30, 1886.

Fig. 1.

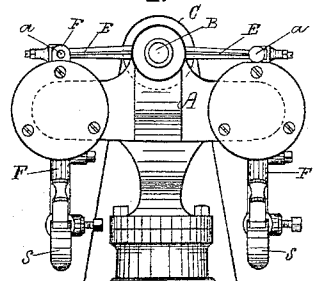


Fig. 2.

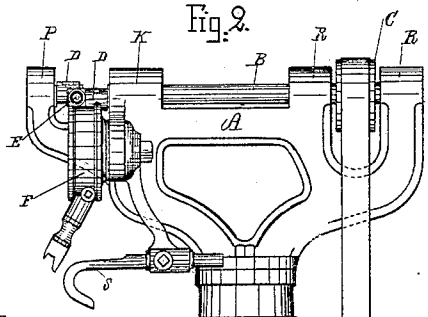
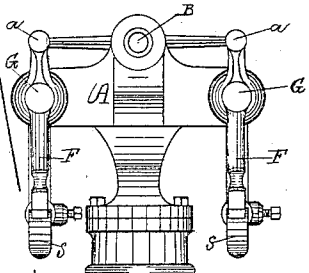
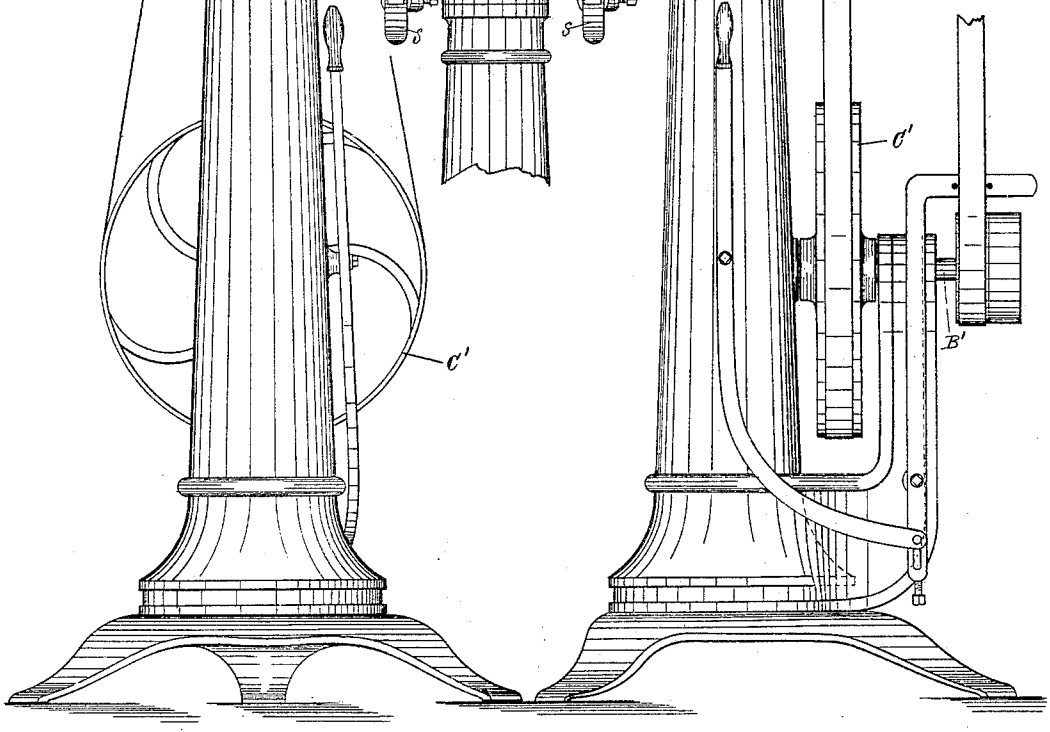


Fig. 3.





Witnesses.

Robert Wallace,

Laurits N. Möller.

Inventor.

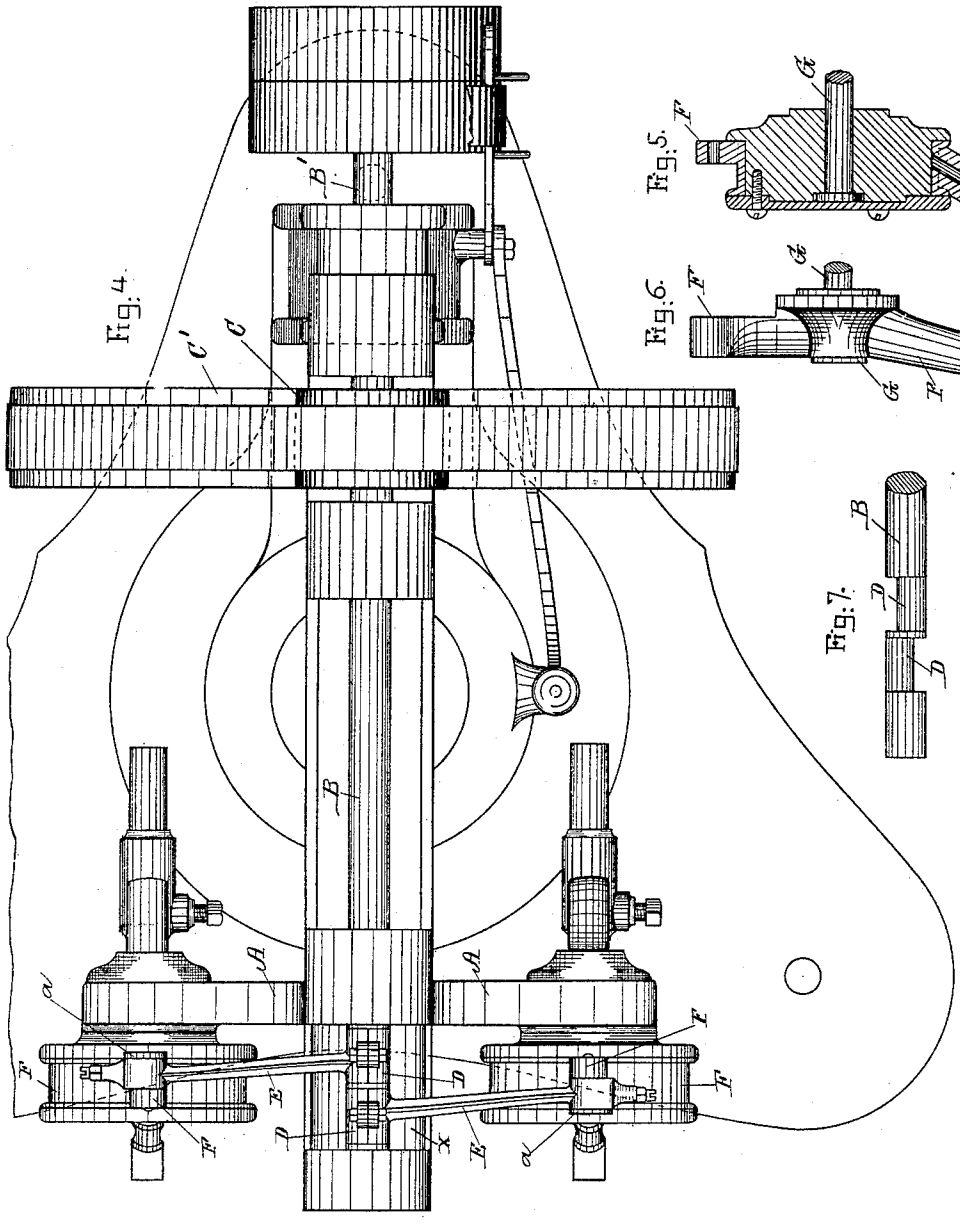
J. Wesley Dodge

(No Model.) 3 Sheets—Sheet 2.

J. W. DODGE.

SOLE EDGE BURNISHING MACHINE.

No. 339,049. Patented Mar. 30, 1886.



Witnesses.
Robert Wallace.
Laurits N. Möller.

Inventor.
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(No Model.) 3 Sheets—Sheet 3.

J. W. DODGE.

SOLE EDGE BURNISHING MACHINE.

No. 339,049. Patented Mar. 30, 1886.

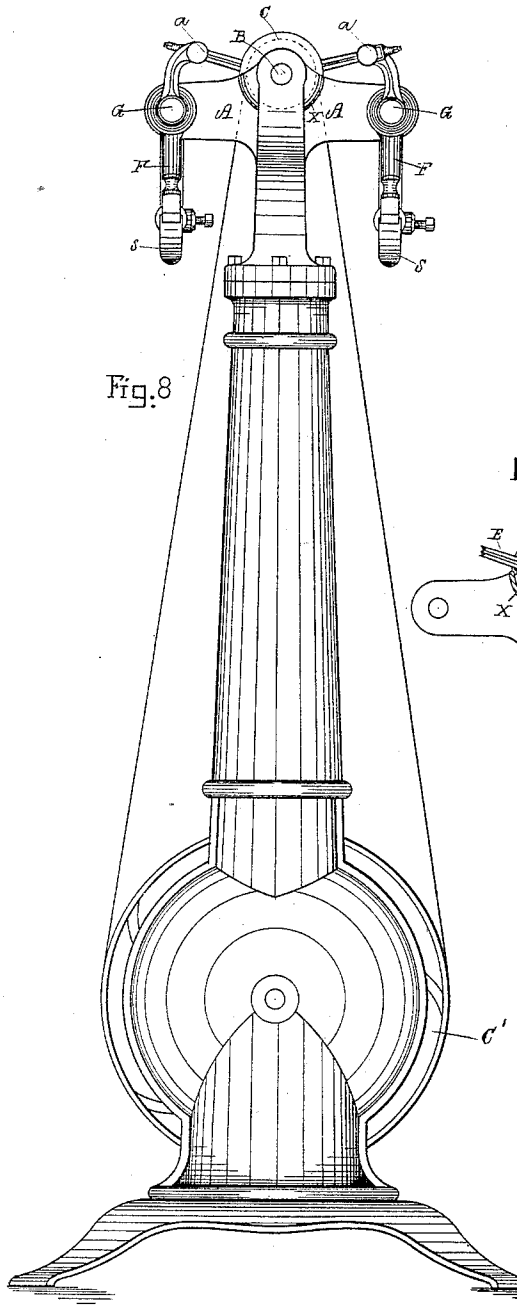

Fig. 8

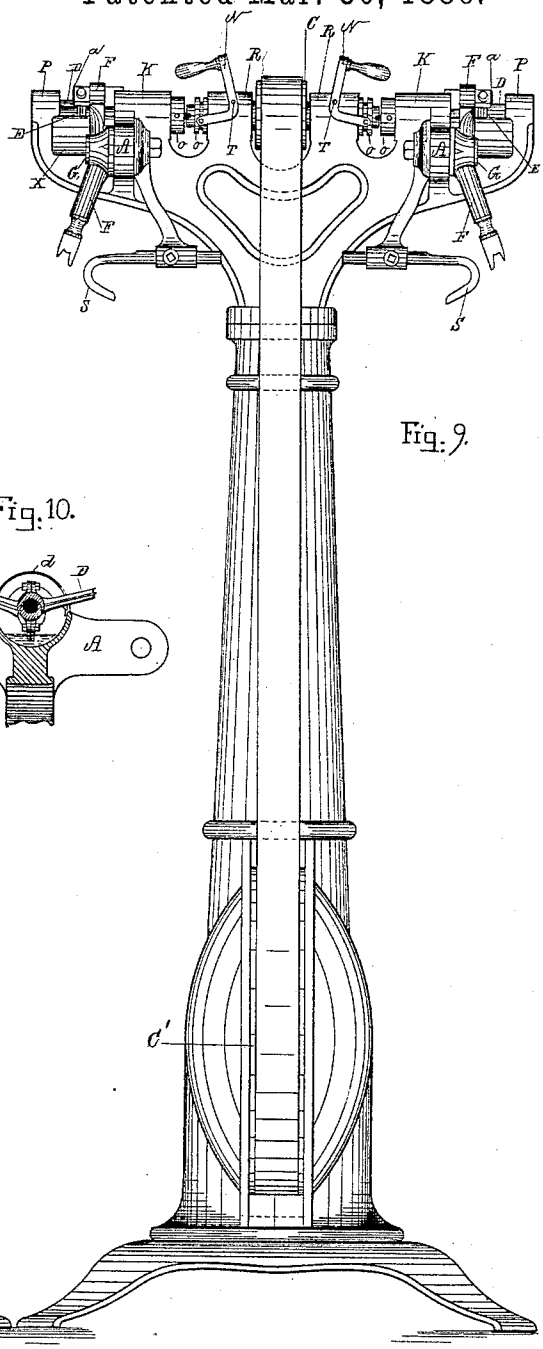

Fig. 9

Fig. 10.

Witnesses.

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Laurits N. Möller.

Inventor.

J. Worley Dodge

UNITED STATES PATENT OFFICE.

J. WESLEY DODGE, OF MALDEN, MASSACHUSETTS.

SOLE-EDGE-BURNISHING MACHINE.

SPECIFICATION forming part of Letters Patent No. 339,049, dated March 30, 1886.

Application filed November 21, 1885. Serial No. 183,467. (No model.)

To all whom it may concern:

Be it known that I, J. WESLEY DODGE, of Malden, county of Middlesex, State of Massachusetts, have invented a new and useful Improvement in Sole-Edge-Burnishing Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My present invention is an improvement on the machine shown and described in Letters Patent No. 318,456, dated May 26, 1885, granted to me, which relates to machinery for burnishing or setting the edges of soles of boots or shoes of that class in which the burnishing is effected by holding the sole-edge against a rapidly-reciprocating edge-iron or burnishing-tool; and it consists in the combinations of parts constructed, arranged, and operated in the peculiar manner hereinafter described, and specified in the claims hereof.

In many burnishing-machines made there is but a single reciprocating mechanism; consequently the jar and wear of the machine is considerable, while the machine embodying my invention, hereinafter described, belongs to that class in which the reciprocating mechanism is arranged on either side of the shaft in the head of the machine, and by the peculiar construction hereinafter set forth the jar of either side is largely counteracted by the other, and great speed may consequently be obtained with little noise.

I will describe my invention as embodied in the machines shown in the accompanying drawings, in which like letters are used to designate like parts.

In the drawings, Figure 1 is a front elevation of my improved machine. Fig. 2 is a side elevation. Fig. 3 is an elevation of a modified form of head. Fig. 4 is a plan view. Fig. 5 is a cross-section of the tool-carrier. Fig. 6 is a side view of a modification of Fig. 5. Fig. 7 is a detail showing the eccentrics on the main shaft. Figs. 8 and 9 are respectively a front and side elevation of my invention as embodied in a double machine. Fig. 10 is a vertical sectional view of the oil-box.

A represents the head, which may be made single, as shown, Figs. 1, 2, and 4, or double, as in Fig. 9—that is, the driving-shaft may have two eccentrics or crank-pins, and two pitmen and two tool-carrying levers, or it may have four of these parts—two sets at each end.

In the head A is journaled, in suitable bearings, a shaft, B, on which is secured a pulley, C, belted to the large pulley C′ on the main shaft B′, to which power is applied. (See Figs. 2 and 4.) Near the end of shaft B two eccentrics or crank-pins, D D, are formed, on opposite sides thereof, to which two connecting-rods or pitmen, E E, are attached at one end, while the other end of each pitman is jointed to one of the short arms of the tool-carrying levers F F, which oscillate on studs G G, which are firmly secured one to each of the projecting portions of head A.

The studs G G and pitmen E E and tool-carrying levers F F are placed in the same relative position on opposite sides of shaft B. I prefer to place the center of the joints *a* of pitmen E E with the short arms of the tool-carrying levers F F at a distance of from four to six inches from the center of the shaft B, and about an inch above the level of the shaft, (see Fig. 8,) for the reason that if the pitmen E E slope downward toward the shaft I am enabled to run the shaft and the ends of the pitmen, which are connected with the shaft, in an oil-box, X, and any oil that may be thrown, by the rapid revolution of the shaft and the movements of the pitmen-connections on the shaft, out of the oil-box onto the arms of the pitmen will naturally run back into the box. This oil-box is covered, as shown at *d*, Fig. 10, and openings are provided on either side for the movement of the pitmen.

I find, in practice, that only sufficient oil is required in the oil-box to secure the dipping of the pitmen-connections in the oil as the shaft revolves, for they spatter the oil and thereby secure perfect lubrication.

The long arms of the tool-carrying levers F F hold the burnishing-tools, which have long tangs adapted to enter holes formed to receive them in the ends of said levers, and are held in place by suitable spring-catches. I place these tool-holders substantially in line with each other, both vertically and horizontally, and from eight to twelve inches apart, as the specific use for which the machine is designed may require. For burnishing the edges of the soles of large shoes, twelve inches may be

requisite. For small ones eight inches are sufficient, although small shoes may be finished on the larger machine.

In use the operator stands nearly in front of the burnishing-iron, pressing the edge of the sole up against the iron, and steadying the shoe with the aid of a finger-rest, S, when necessary. By a slight movement the operator presents the shank-edge of the sole to the iron on the other side of the shaft, which is fitted to burnish the shank-edge, and thus the entire edge may be speedily finished while it is in temper—that is, in the best condition for the purpose.

In a double or twin machine both ends of head A are formed alike, and the mechanism the same on each, and so constructed that two operators—one at each end—may work at the same time, where a single integral shaft is employed or where the sectional shaft is connected by clutches *o o*.

In constructing a double or twin machine I prefer to make the shaft in three sections, the sections on each end having the two eccentrics on opposite sides thereof and journaled in bearings P K. (See Fig. 9.) At the inner ends of the double eccentric sections and between bearings K and R, I secure a part of a suitable clutch, the other part of which is secured to the projecting section of shaft on which is secured pulley C. That part of the clutch on the pulley or central section of the shaft is prevented from rotating by splines, which allow of a longitudinal movement of that part of the clutch on the shaft to engage with the other part of the clutch, which is secured to the eccentric or outer section. When these clutches are engaged, a single shaft is formed, operating both ends of the double machine, and actuated by the pulley C. By movement of clutch-levers N N, pivoted at T T on the frame, the parts of the clutches on the central section of the shaft B are moved on splines outwardly to engage and inwardly to disengage with the eccentric sections of the shaft. The clutch may be operated reversely—that is, the levers N may be operated on the side of bearing K, instead of on the side of bearing R. (See Fig. 9.)

Any well-known form of clutch may be employed. The one shown consists of the movable collar *b* on splines on the central section of the shaft, and provided with pins on its face to engage, as it is moved outward, in corresponding holes in the opposite collar, C, which is fast on the outer sections of the shaft.

The desirability of making the double machine with a sectional shaft capable of being disconnected, and therefore of running one or both ends of the machine, as desired, is obvious and need not be explained.

In the double machines the large pulley C' on the main-shaft B is placed near the center of the post. (See Figs. 8 and 9.) In the single machine it may be placed outside of the post. (See Fig. 2.)

I do not confine myself to the necessity of making two opposite eccentrics at or near each end of the revolving shaft, and two pitmen, and two tool-carrying levers and two tools, for in certain cases only one burnishing-iron would be requisite at each end, and then a single eccentric at or near each end only would be needed on the revolving shaft, and one pitman, and one tool-carrying lever, and one stud, on which the lever would oscillate, and one operating-tool.

I do not desire to limit myself to a machine having the eccentrics on the shaft close together, as shown in Fig. 7. They may be at each end of the shaft of a double machine, although on opposite sides of it, in which case a plan view would show the burnishing-tool at either end of the machine, and diagonally opposite to each other.

What I claim is—

1. In an edge-burnishing machine, the combination, with a shaft having two eccentrics or crank-pins on opposite sides thereof, of connecting-rods pivoted at one end to each eccentric and at the other to a tool-carrying lever, said tool-carrying levers each pivoted to a fixed stud, said studs being set on the frame on opposite sides of said shaft, for the purposes and substantially as set forth.

2. The combination, in a burnishing-machine, of two or more burnishing-irons and their operating-levers mounted on fixed studs G, shaft B provided with double eccentric-rods E, and the finger-rest S, for the purposes and substantially as described.

3. In a burnishing-machine, the combination of a shaft having two eccentrics, one on either side thereof and jointed each with a pitman and a tool-carrying lever, said pitmen being oppositely inclined toward the shaft and their inner ends resting within an oil-box, substantially as herein described, and for the purpose specified.

4. The combination, in a double or twin machine for burnishing the edges of the soles of boots and shoes, of a sectional shaft provided with one or more eccentrics, at or near the outer ends thereof, connecting-rods pivoted to tool-carrying levers, and said tool-carrying levers and a clutch or clutches, whereby the sections of the shaft may be connected or disconnected, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 17th day of November, A. D. 1885.

J. WESLEY DODGE.

Witnesses:
ROBERT WALLACE,
M. A. THOMPSON.