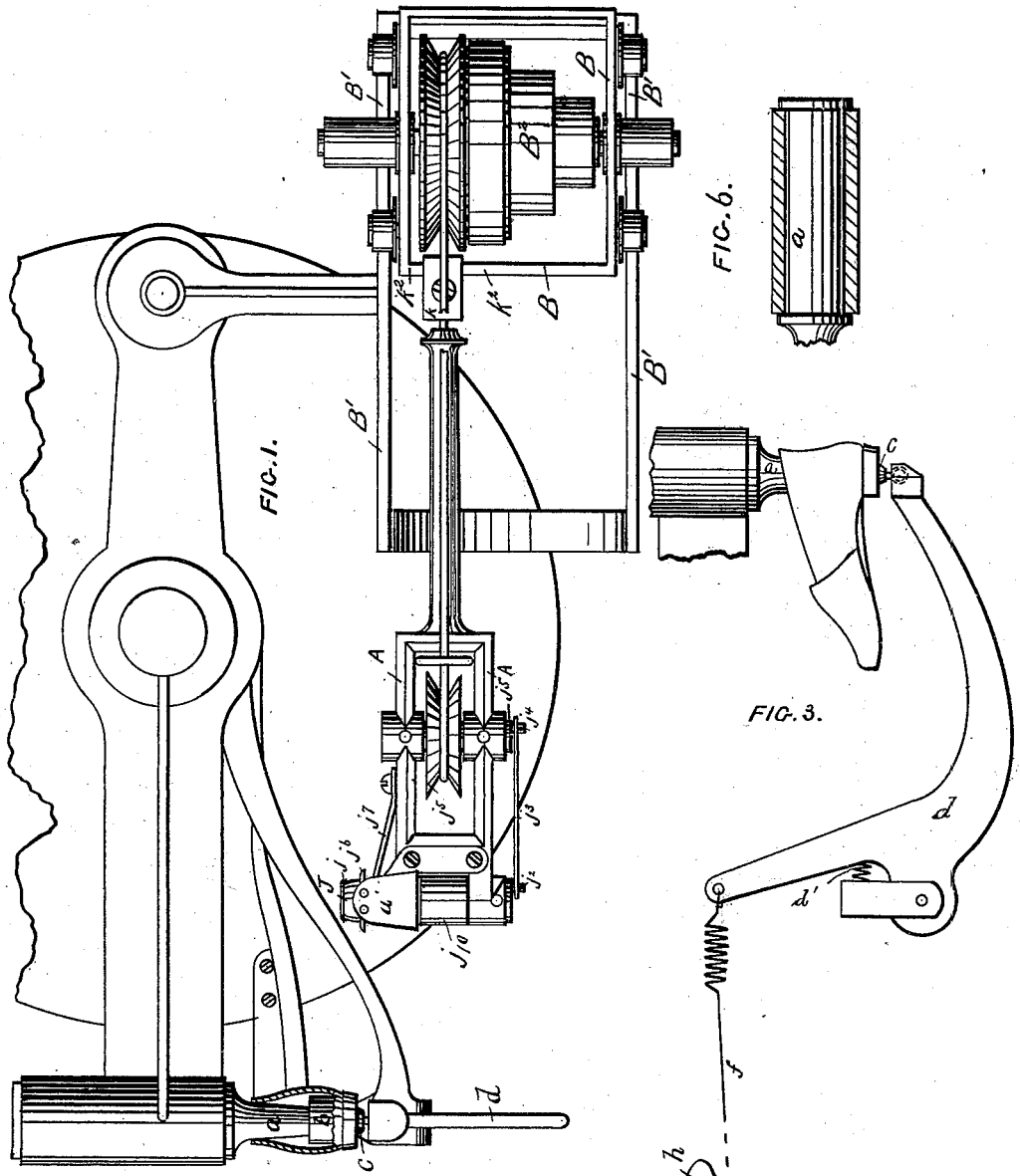
2 Sheets—Sheet 1.

J. W. DODGE.

Heel-Burnishing Machine.

No. 199,523. Patented Jan. 22, 1878.



WITNESSES.

Geo. H. Earle.

George O. G. Coale

INVENTOR.

J. Wesley Dodge

2 Sheets—Sheet 2.

J. W. DODGE.

Heel-Burnishing Machine.

No. 199,523. Patented Jan. 22, 1878.

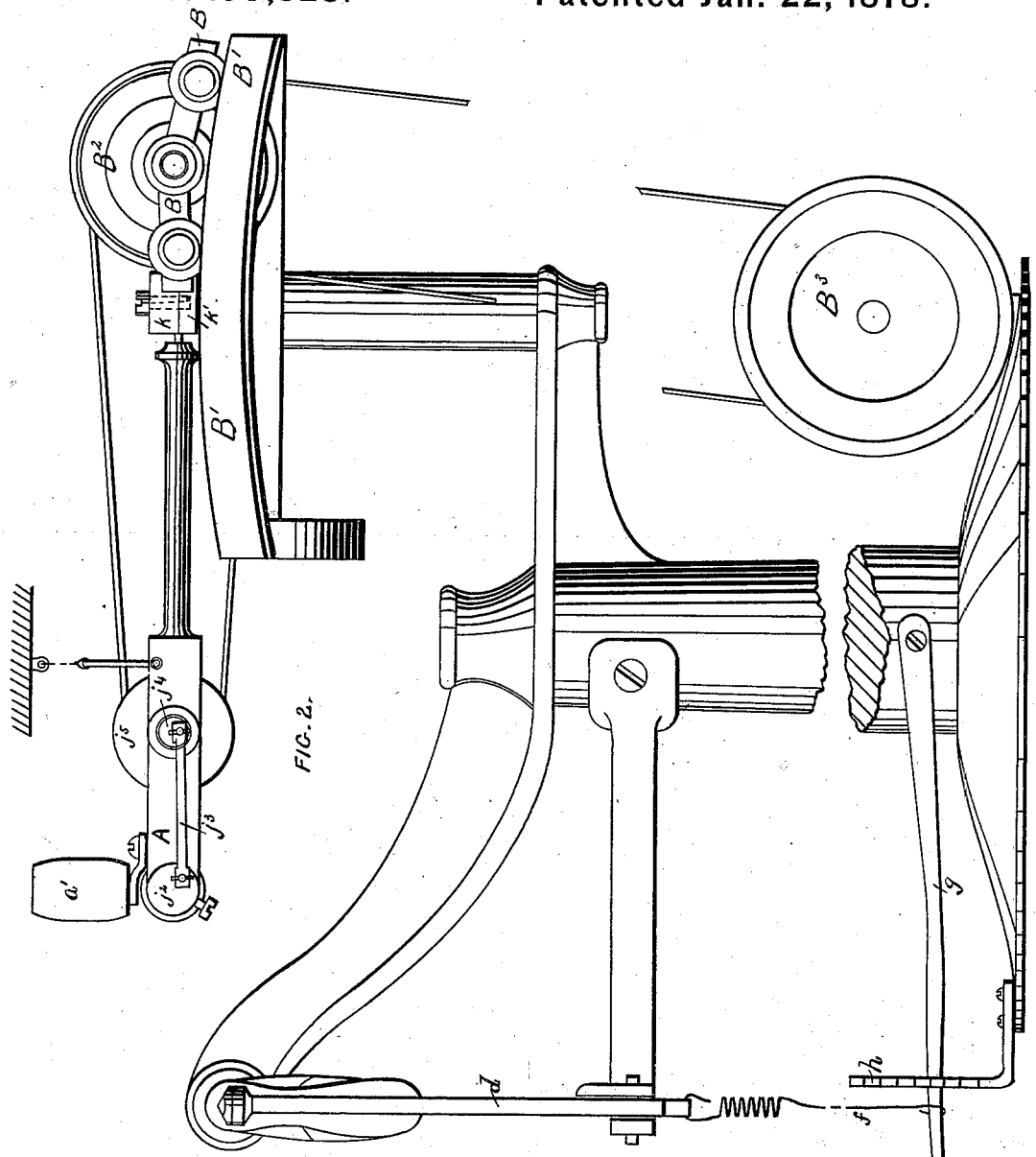


FIG. 2.

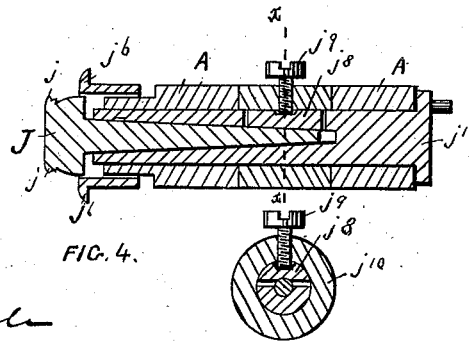


FIG. 4.

WITNESSES.

Geo. H. Earl

Geo. O. G. Goodwin

INVENTOR.

J. Wesley Dodge

UNITED STATES PATENT OFFICE.

J. WESLEY DODGE, OF MALDEN, MASSACHUSETTS.

IMPROVEMENT IN HEEL-BURNISHING MACHINES.

Specification forming part of Letters Patent No. **199,523**, dated January 22, 1878; application filed December 13, 1877.

To all whom it may concern:

Be it known that I, J. WESLEY DODGE, of Malden, in the county of Middlesex and State of Massachusetts, have invented an Improved Heel-Burnishing Machine, of which the following is a full, clear, concise, and exact description thereof, reference being had to the accompanying drawings, making a part hereof.

In the drawing, Figure 1 is a plan; Fig. 2, an elevation, and the other figures details, all showing the best form of my machine.

The shoe is supported by a jack, one part of which is the spindle *a*, which bears upon one end a heel-last, *b*, the spindle being mounted, as shown, in order that it may have a motion on its axis. The other part of the jack is the disk *c*, the flat part of which bears against the tread of the heel, this disk being mounted by a ball-and-socket or universal joint, in order that it may move on its axis, and being pressed firmly against the heel by the lever *d*, and treadle-strap *f*, and treadle *g*. The treadle is held in place by the ratchet *h*.

I prefer to use a spring, *d'*, as shown, to throw the lever *d* back, and also to use a spring between the lever *d* and treadle *g*, in order to make it certain that the ratchet shall properly hold the treadle.

This jack constitutes the first part of my invention.

The tool J is mounted upon the shaft j^1, which is journaled at the end of the tool-carrier A, and this shaft is oscillated by the crank j^2, connecting-rod j^3, and crank j^4 on the shaft j^5, which is also journaled across the tool-carrier A. The pulley on the shaft j^5 is connected with the driving-pulley B^2 by a belt, and the frame B, in which this pulley is journaled, is connected to the tool-carrier A by a universal joint, in order that the tool-carrier may be moved up and down, from side to side, and on its axis. It is desirable, also, that the tool-carrier may be moved back and forth a short distance, and in order to permit of this motion the frame B is mounted upon wheels, which rest upon the tracks B^1. The pulley B^2 derives its motion from the shaft and pulley B^3.

For greater nicety of adjustment, the socket of the universal joint is made in two parts, *k* k^1, which clamp the cross-bar k^2, in order that this socket may be set at any point along the cross-bar, as required, for different heights of heels.

The tool-carrier A, in combination with its two shafts, one oscillating and the other revolving, constitutes one part of my invention; and the combination of this tool-carrier and its shafts with the pulley-frame by means of a universal joint constitutes a third part of my invention. Making the universal joint adjustable across the pulley-frame constitutes a fourth part of my invention.

The tool J has a lip, *j*, to enter between the upper and the heel, and a self-adjusting guard, j^6, to bear upon the tread of this heel. This guard is pressed in one direction by the spring j^7, so that its distance from the lip *j* varies with the height of the heel to be burnished.

The combination of the burnisher J with the lip *j* and guard j^6 constitutes the fifth part of my invention.

The burnisher is provided with a shank, which enters the shaft j^1, and the shank is clamped in place by means of the block j^8 and set-screw j^9, the set-screw having its nut formed in the sleeve j^{10}. This manner of securing the tool to its shaft is also one part of my invention.

The operation is as follows: The shoe is placed upon the heel-last *b*, and the operator clamps it securely by pressing down the treadle *g* and catching it in the ratchet *h*. The operator then reaches forward and grasps with one hand the handle *a'* of the tool-carrier A, and brings the tool J in proper position on the heel. With the other hand the shoe is moved gradually about the axis of spindle *a* and disk *c*, so as to bring all of the edge to be burnished in contact with the burnisher. At the same time the tool-carrier is moved gently forward and back, both hands moving together, and thus lessening the labor of each, the operation very closely resembling that with the ordinary hand-tool, with the exception of the vigorous rubbing motion necessary with the hand-tool, the same effect being produced in my machine by reason of the tool being moved by power.

The machine is so speeded commonly as to give about fifteen hundred revolutions per minute to the shaft j^5.

What I claim as my invention is—

1. In combination, the spindle *a*, heel-last

b, disk c, lever d, treadle-step f, and treadle g, substantially as described.

2. In combination, the tool-carrier A, tool J, shafts j^1 and j^5, and connections j^2 j^3 j^4, the shaft j^5 revolving and the shaft j^1 oscillating, all as set forth.

3. The combination of the tool-carrier A, with its two shafts, j^1 and j^5, one oscillating, the other revolving, with the pulley-frame B by means of the ball-and-socket joint, as set forth, in order that the tool-carrier may have the motions above mentioned without effecting the driving of the tool.

4. In combination with the tool-carrier A and frame B, the adjustable clamps k k^1 and cross-bar k^2, as set forth.

5. In combination, the burnisher and its shank, the hollow shaft j^1, sleeve j^{10}, set-screw j^9, and lock j^8, as set forth.

6. In combination, the jack, the tool-carrier, the pulley B, frame B^2, tracks B^1, and pulley B^3, substantially as described.

J. WESLEY DODGE.

Witnesses:

J. E. MAYNADIER,

GEORGE O. G. COALE.