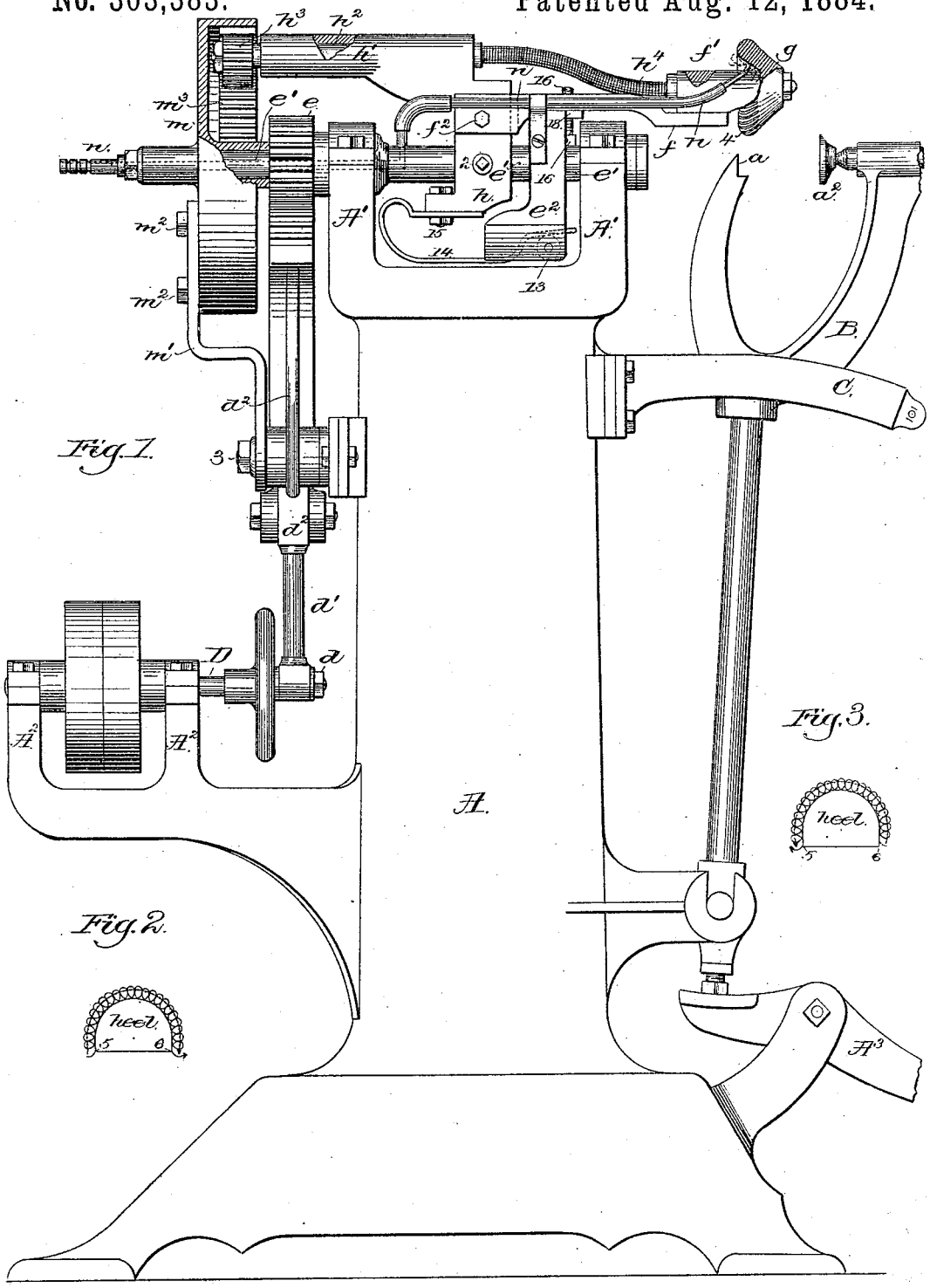
(No Model.)

C. J. ADDY.

BURNISHING MACHINE.

No. 303,383. Patented Aug. 12, 1884.



Witnesses.
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UNITED STATES PATENT OFFICE.

CHARLES J. ADDY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO THE TAPLEY MACHINE COMPANY.

BURNISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 303,383, dated August 12, 1884.

Application filed June 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. ADDY, of Boston, in the county of Suffolk and State of Massachusetts, have invented an Improvement in Burnishing-Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object the production of a machine wherein the heel may be burnished from breast to breast in one and then in the other direction by a rotating burnishing-tool, the said tool rotating in first one and then in the other direction as the shaft carrying it is moved bodily about the heel.

My invention consists, essentially, in a rotating burnishing-tool connected with an actuating-shaft therefor, mounted in a yielding carrier which is adapted to be moved about the heel, combined with mechanism to rotate the said tool in one and then in the opposite direction as the said tool is moved about the heel, and then back again by the yielding carrier. The tool has a motion of rotation on its own axis, and its axis or bearing is revolved about the heel in a path corresponding with the curvature of the latter, and when moving from one breast toward the other in one direction the tool is rotated toward the left, and when the said yielding carrier is being moved back in the opposite direction the tool is rotated toward the right.

Figure 1 represents in side elevation a burnishing-machine embodying my invention, the stationary gear and tool being partially broken out to show their construction; and Figs. 2 and 3 are diagrams, to be referred to, showing the heel and the direction of rotation of the tool about and in contact with it.

The standard A, provided with uprights A′ A′ A^2 A^2, the foot-lever A^3, the jack B, provided with the shoulder *a* for the breast of the heel, the rest *a′* for the top-lift, and the adjustable presser a^2 to act within the shoe and hold it on the jack while the heel of the boot or shoe is being burnished, the guide C for the jack, the driven shaft D, its attached crank *d*, link *d′*, vibrating sector or bell-crank lever d^2, having its fulcrum on bolt 3, gear *e* fast on the shaft *e′*, supported in bearings in the uprights A′ A′, and counter-balance e^2, are all substantially as in the well-known Tapley burnishing-machine in market, so said parts need not be herein further described.

The stud 3, which serves as the fulcrum for the lever d^2, is herein made to hold the upright *m′*, to which is bolted by bolts m^2 the toothed rack or internal gear, *m*, having a series of teeth, m^3, at the inner side of its flange. (See Fig. 1.)

The shaft *e′*, which has a rotary reciprocating movement, has attached to it by screw 2 the frame *h*, having as part of it the bearing or sleeve *h′*, which latter receives the part h^2 of the tool-actuating shaft h^2, having at one end a gear, h^3, which is made to engage the teeth m^3.

The part h^4 of the tool-actuating shaft is what is known as "flexible" or "stow-shafting," and the said shaft, being extended to the bearing *f′*, has operatively connected with it the rotating burnishing-tool *g*, provided at its periphery with a series of corrugations, as shown at 4. The bearing *f′* for the burnishing-tool or its shaft is attached to the bearing-carrier *f*, pivoted by bolt f^2 to the block *h*, so that the said carrier is free to yield or turn on the said bolt as the bearing-carrier and tool-actuating shaft are moved about the heel from breast to breast and back again by the shaft *e′*.

The tool *g* may be heated in any usual manner. Herein I have shown a gas-pipe, *n*, of usual construction.

As the shaft *e* is rotated, first in one and then back in the opposite direction, the frame *h*, its attached bearing *h′*, the bearing-carrier *f*, bearing *f′*, tool-actuating shaft, and the gearing h^3 are carried or moved with it, and the gear h^3 in engagement with the internal teeth, m^3, of the stationary gear or rack *m*, effects the rotation of shaft h^2 h^3 and with it the tool *g*.

In Fig. 2 I have shown the outline of a heel to be burnished. In operation, the tool *g* will be brought against the heel at one corner of the breast, as at 5, and as the said tool is moved about and in contact with the heel to the other corner, 6, of the breast, the said tool, by the tool-carrying shaft, the gear h^3, and teeth m^3, will be rotated about its own axis in the direction of the coiled arrow, Fig. 2, where it will be noticed that the action of the wheel is such as to rub the heel back or away from

the corner 5. The burnishing-tool having arrived at the breast 6, while the sector or lever d^2 was moved in one direction, the said sector or lever is vibrated in the opposite direction, to effect the movement of the gear e, shaft e', and its attached parts in the opposite direction, thus moving the tool g about and in contact with the heel from the corner 6 of the breast to the corner 5; but during the backward movement of the said tool the gear h^3, in engagement with the teeth m^3, effects the rotation in the reverse direction of the tool-carrying shaft and tool, their direction of rotation at such time being shown by the curved arrow in Fig. 3, which it will be noticed is just opposite that of the curved arrow in Fig. 2, the said tool, when acting on the heel from the corner 6 to the corner 5, rubbing the heel from the corner 6 backward. This reverse rotation of the tool is due to change in the direction of the movement of the shaft e and its attached parts, which rolls the toothed wheel h^3 over the stationary teeth m^3 in first one and then in the opposite direction.

The counter-balance has a roll or pin, 13, (shown in dotted lines,) on which acts the spring 14, connected by bolt 15 with the block h, the said spring thus acting to keep the bearing-carrier f down so as to press the tool against the edge of the heel with the desired pressure.

The descent of the bearing-carrier f is determined or regulated by means of a bolt, 16, screwed into the said carrier, the head of the bolt meeting the shaft e', a check-nut, 18, holding the bolt in place.

The outside shape of the tool g will be adapted in curvature or shape to conform to the heel to be burnished.

I claim—

1. In a heel-burnishing machine, a rotating burnishing-tool connected with an actuating-shaft therefor, mounted in a yielding carrier adapted to be moved about the heel, combined with mechanism, substantially as described, to rotate the said tool in one and then in the opposite direction, as the said tool is moved about the heel from one to the other corner of the breast of the heel and then back, substantially as set forth.

2. In a burnishing-machine, a rotary reciprocating shaft, an attached bearing-frame, a rotary shaft, an attached rotary burnishing-tool, a yielding carrier for the tool-actuating shaft, and a gear connected with the said shaft, combined with a series of teeth to be engaged by the said toothed gear, whereby the tool-actuating shaft is rotated first in one and then in the opposite direction, substantially as described.

3. The bearing f', made movable in a curved path about the heel, and the burnishing-tool, and a shaft to rotate it, combined with a gear, and a series of teeth, m^3, along and in engagement with which the said gear is made to travel as the tool is carried about the heel, whereby the said tool is rotated in opposite directions, as set forth.

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

CHARLES J. ADDY.

Witnesses:
G. W. GREGORY,
W. H. SIGSTON.