Thompson & Tripp,

Shoe-Heel Machine.

No. 46,761. Patented Mar. 7, 1865.

Fig: 1.

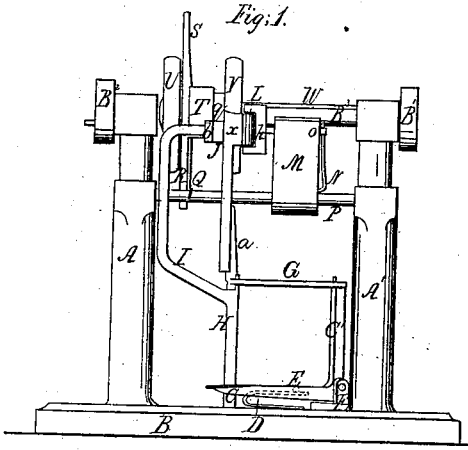


Fig: 3.

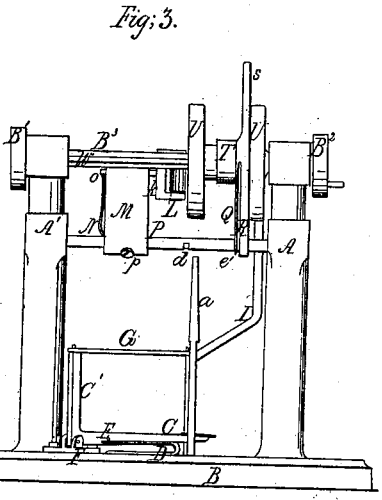
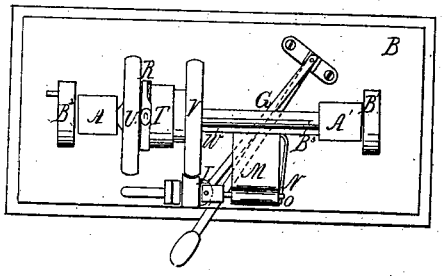


Fig: 2.



Witnesses.

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UNITED STATES PATENT OFFICE.

JAMES M. THOMPSON, OF STONEHAM, AND SETH D. TRIPP, OF LYNN, MASSACHUSETTS, ASSIGNORS TO SAID SETH D. TRIPP.

IMPROVED HEEL-POLISHING MACHINE.

Specification forming part of Letters Patent No. **46,761**, dated March 7, 1865.

To all whom it may concern:

Be it known that we, JAMES M. THOMPSON, of Stoneham, in the county of Middlesex and State of Massachusetts, and SETH D. TRIPP, of Lynn, in the county of Essex and State of Massachusetts, have invented a new and useful Improvement in Machines for Polishing and Finishing Heels of Boots and Shoes; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of a machine containing my improvements as seen from the front. Fig. 2 is a plan view. Fig. 3 is an elevation from the rear.

Similar letters of reference indicate corresponding parts.

This invention consists in various improvements in the devices for holding the work up to the polishing-wheels, in providing two or more polishing-wheels, which slide upon their shaft, and so are brought opposite to the holding devices, and in a method of cooling the polishing-wheels during the operation.

A A′ are standards, which furnish bearings for the shaft B^3 of the polishing-wheels. They are securely fastened to a floor or platform, B, to which also is secured a fulcrum-plate, F, which carries a right-angled lever, whose horizontal arm C serves as a treadle, and whose upright arm C′ is connected to a strap, G, extending in a nearly parallel direction with the treadle-arm C to a vertical post, A, to the top of which it is connected. The post H is stepped in the platform B, and it has a branch, I, which extends from its top first in a nearly horizontal direction, then upward in a vertical direction, nearly to the level of the shaft B^3, and then horizontally to a point vertically above the axis of the vertical post H, carrying on its end an inner fixed disk, *b*, and an outer rotating disk, J, and beyond the latter a centering-pin, (not seen,) which penetrates the heel *x*, and upon which the said heel rotates.

P is a cross-bar, which connects the two standards. It furnishes means for supporting an arm, M, which embraces it and is adjustable thereon, being held in any desired position by a set-screw, *s*. This arm M is set so as to incline upward and forward, its top being brought about to the level of the shaft B^3, its inner face being curved concentrically with the periphery of the polishing-wheel V, so as to allow the latter to be moved on its shaft and revolve freely in front of the said arm. Its top is perforated lengthwise to receive a rod, O, which passes entirely through it, its right-hand end pressing against a spring, N, fastened to the side of the arm M. The end of the spring rests in a slot cut across the end of the rod O, thus preventing rotary motion in the rod. The left-hand end of the rod carries a frame, K, of the form shown in the drawings, to which frame the rod is rigidly connected. The back side of the frame is a plane surface, and its front side has two parallel projections, which furnish bearings for the journals of a rocking plate, L, whose general form is that of a semi-cylinder, its flat face being turned toward the disk J. The bottom of the heel to be operated on is placed against this plate, being held up to it by the centering-pin, which projects in front of the revolving disk J, the said pin penetrating the inside of the heel and allowing the disk to come in contact herewith.

B^3 is a shaft revolving in bearings formed on the upper parts of the standards A A′. It has a spline or key, W, on its whole length between the inner faces of the standards. Pulleys B' B^2 are secured to the ends of the shaft on the outer faces of the standards, one of which may be fitted with a crank to drive a bellows or blower to supply air to a vertical pipe, *a*, set on the platform below the polishing-wheels U V.

The polishing-wheels U V are of a suitable size and material, with rounded peripheries in cross-section and permanently connected by a collar, T, which has a groove, *q*, at each end, next to the wheels, to receive a shipper, S, which embraces one or the other of said grooves. The shipper has a straight arm, R, which extends downward past the connecting-bar P and fits in one or the other of two slots, *d e*, cut transversely thereon.

When it is desired to move the polishing-wheels on the shaft B^3, the shipper S is drawn forward toward the operator, so as to unlock its arm R from whatever slot it rests in, and

pushed sidewise, thereby moving the polishing-wheels along the shaft to a new position, in which they are secured by means of the arm R, articulating with another slot.

It will be observed that the said disk J is free to rotate on its axis, and also that it vibrates with the post H about the axis of the latter, and that the action of the spring D is to maintain the said post in a vertical position, thereby bringing the disk J toward the rocking plate L. The frame which holds the rocking plate is made to slide longitudinally, so as to make the parts capable of holding heels of different heights, and the said plate is made to rock, so as to bring the whole surface of the height of the heel against the periphery of the wheels by causing the heel to rock or move in a circular path about the said periphery, the curve of the heels in cross-section being drawn with a greater radius than the curve given to the periphery of the wheels in cross-section. The operator holds the work up to the wheel, revolving it upon the centering-pin, while with his left hand he revolves the branch arm I and post H, and thus brings the different sections of the height of the heel up to the periphery of the wheel.

Heels which are not shaved smooth must be made so in some way before they can be polished. The usual way of doing this is to grind them on a sharp gritty wheel or stone. We therefore have applied two stones or wheels on the same shaft, one, U, to grind the heel to a proper finish and shape, and the other, V, to polish it. We find that marble makes a very good wheel for polishing.

In finishing heels that have deep cracks and cavities and uneven places it is better to fill them with wax or blackball than to grind them too deep. This is accomplished by giving the polishing-wheel V a good coating of wax or blackball. The projecting edges and protuberances of the heel will rub off the wax or blackball from the wheel as it revolves against them, and the cracks and lowest portions will become filled therewith. To do this most effectually it is necessary that the wax or blackball be cold, the temperature of an ordinary shop or factory being too warm, and, therefore, to bring them to the right temperature and make them cold enough to be brittle and friable we apply a blast from an ordinary bellows or blower or an air-pump, through a blast-pipe, *a*, for the purpose of carrying off the heat produced in the wheels by the friction against the work.

It will be observed that the rotating disk J rocks or vibrates in a plane at right angles to the axis of the rocking plate L.

We claim as new in machines for polishing heels of boots and shoes—

1. The rocking plate L, in combination with the supports of the rotating disk J, substantially as above described.

2. The adjustable arm M and spring N, in combination with the frame K, which holds the rocking plate, substantially as above described.

3. Operating the disk J and its supports I H by means of the treadle C and spring D, substantially as described.

4. Cooling the polishing-wheels of machines for polishing heels of boots and shoes by the application of a blast of air to the same, substantially as and for the purpose above described.

5. The combination, in machines for polishing the heels of boots, of a grinding and a polishing wheel upon the same shaft, substantially as above described.

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Witnesses:
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