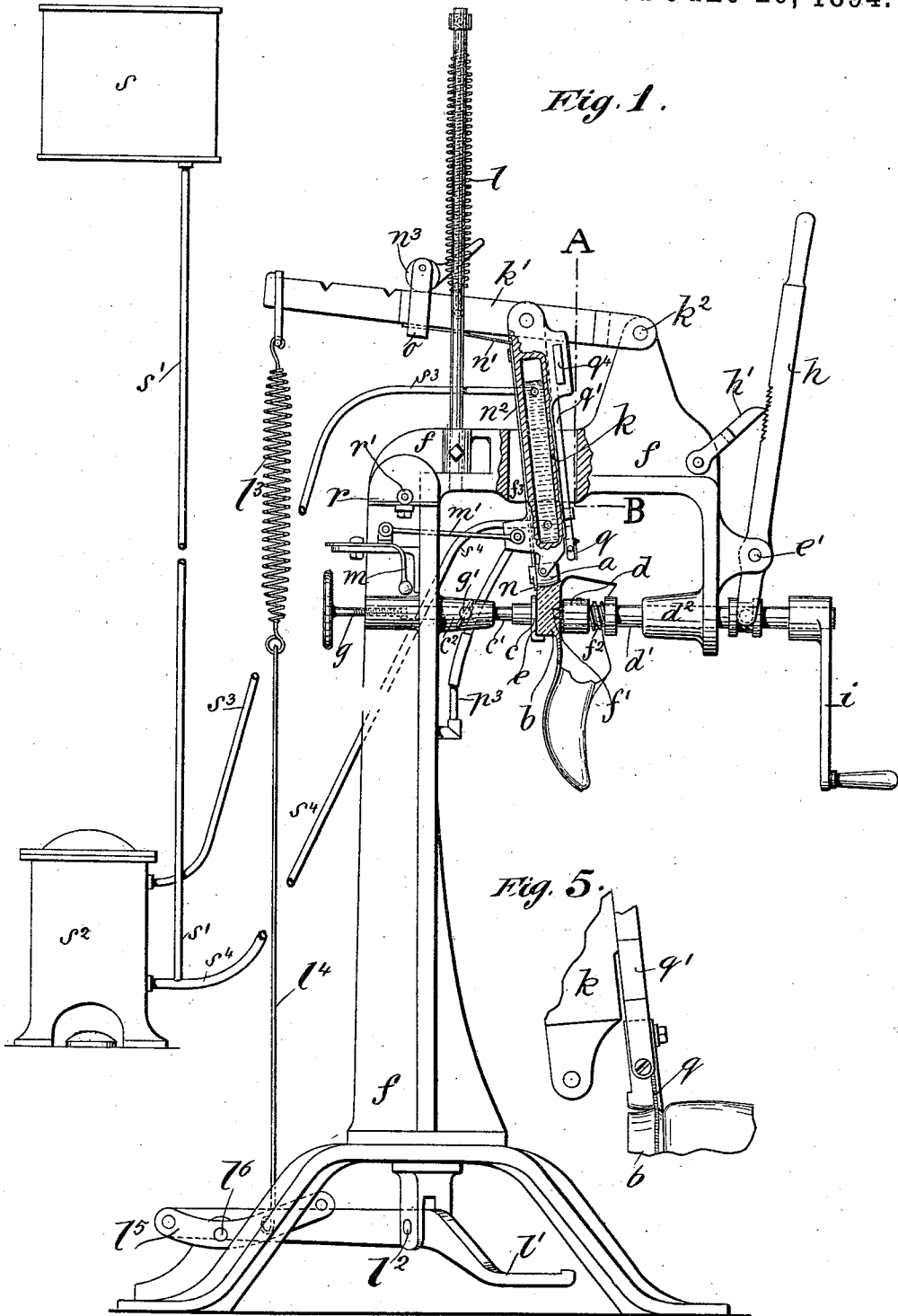


T. GARE.
BURNISHING MACHINE.

No. 521,977.

Patented June 26, 1894.



Witnesses.
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Stanley Pramall.

Inventor.
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Fig. 3.

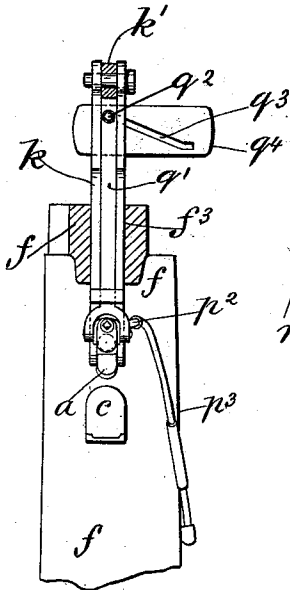


Fig. 2.

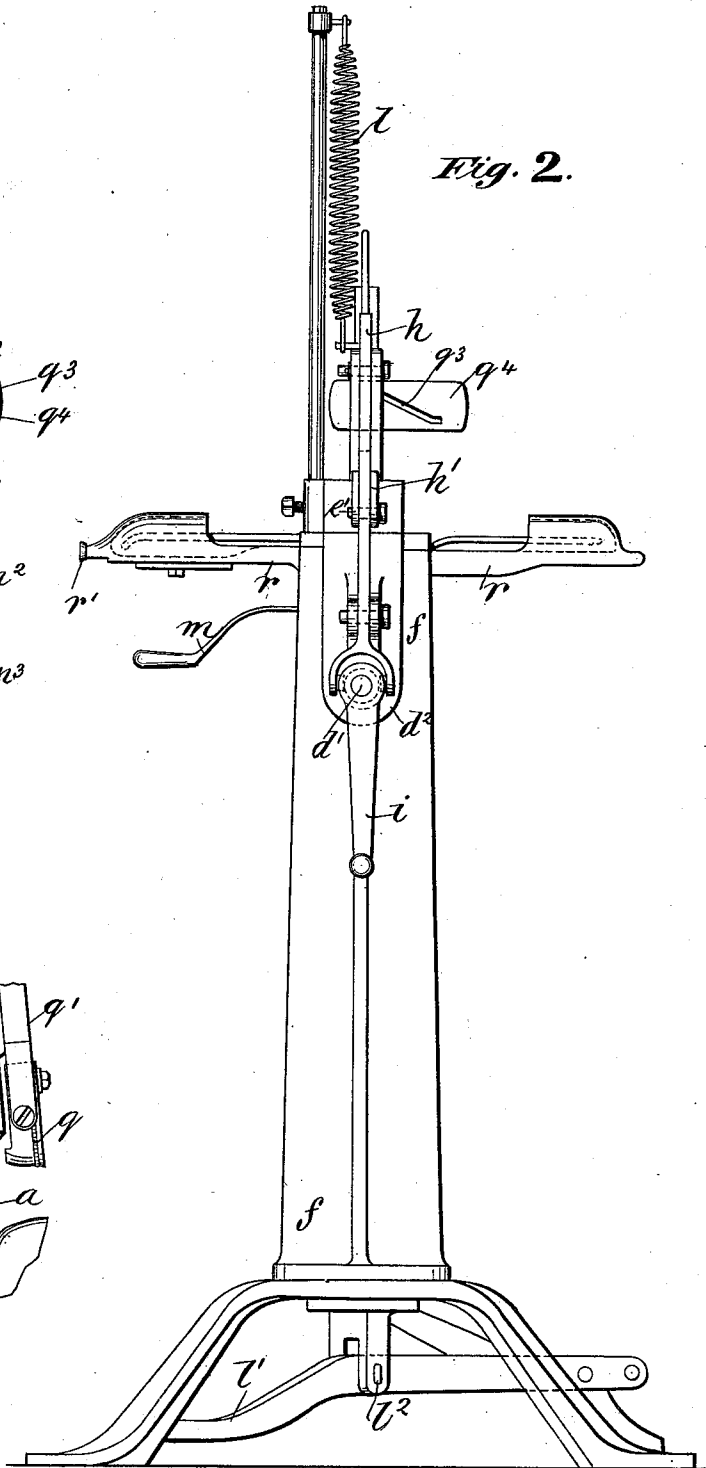
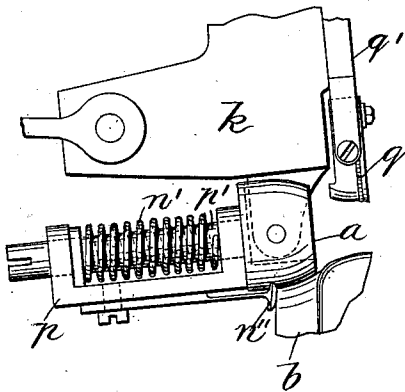


Fig. 4.



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UNITED STATES PATENT OFFICE.

THOMAS GARE, OF STOCKPORT, ENGLAND.

BURNISHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 521,977, dated June 26, 1894.

Application filed August 8, 1893. Serial No. 482,682. (No model.) Patented in England November 21, 1890, No. 18,947; in France October 12, 1891, No. 217,375, and in Germany November 8, 1891, No. 63,264.

To all whom it may concern:

Be it known that I, THOMAS GARE, a subject of the Queen of Great Britain, residing at Stockport, in the county of Chester, in the Kingdom of Great Britain, have invented new and useful improvements in burnishing-machines and tools used in the finishing of boots or other coverings for the feet and in the method of heating burnishing-tools, (for which I have obtained a patent in Great Britain, No. 18,947, dated November 21, 1890; in France, No. 217,375, dated October 12, 1891, and in Germany, No. 63,264, dated November 8, 1891,) of which the following is a specification.

My invention relates to improvements in burnishing machines and tools used in the finishing of boots or other coverings for the feet and has for its object to provide means whereby the burnishing round the heel and edge setting of the top piece, can be performed in one operation and in a better and quicker manner than heretofore and the seat wheeling round the heel and burnishing of the top thereof and the sole, if desired, performed in one machine.

Heretofore the working surface of the tools for burnishing round the heel have been made comparatively very narrow and moved round and gradually across the same, while the heel itself remained stationary, which method of burnishing is very defective owing to the narrowness of the burnishing tool, causing indents where the leather is comparatively soft and in moving round the heel the flame heating the burnishing tool very often getting extinguished. I attain these objects by the means illustrated in the accompanying two sheets of drawings, in which—

Figure 1, Sheet I, is a side view; Fig. 2, Sheet II, a front view of a complete burnishing or finishing machine constructed according to my invention. Fig. 3, Sheet II, is a sectional front view through line A—B of Fig. 1, Sheet I. Figs. 4 and 5, Sheets II and I, respectively, are side views of the burnishing, edge setting and seat wheeling tools enlarged.

Similar letters refer to similar parts throughout the views.

In carrying out my invention and referring to the figures generally, I form the working

surface of the burnishing tool *a* comparatively wider and stationary, relatively to the heel *b*, to be operated upon, while I partially rotate the latter against the same, by fixing it between two centers, *i. e.* two suitably shaped blocks *c* and *d*, both, or one of which, may be covered with serrated rubber *e* to cause adhesion and prevent the boot or other covering for the feet from getting damaged. The blocks *c*, *d*, are carried respectively by the shafts *c'*, *d'*, mounted in bearings *c²*, *d²*, formed on the frame *f* of the machine and arranged to be partially rotated therein, the block *c* bearing against the top of the heel *b* and the other block *d* against the inside of the boot or other covering for the feet to be operated upon. By preference I arrange the block *d* to slide on the shaft *d'* and the end of the latter I form with pins *f'* which grip the heel more securely. The sliding block *d* is under the action of a spring *f²* which causes it to grip the heel *b* and on the latter being removed, covers the pins *f'* so as to prevent damage to the boot or other covering for the feet which otherwise may occur when placing it between the blocks *c* and *d*, or removing it therefrom. If desirable, a last may be used in the boot or shoe and the pins *f'* adapted to enter holes formed therein. The block *c* render longitudinally adjustable, by means of a screwed spindle *g* bearing against the end thereof and a set screw *g'*, so as to accommodate the various heights of heels and bring the same in proper position underneath the burnishing tool *a*. The block *d* and the shaft *d'* are made longitudinally adjustable, for the purpose of permitting the heel *b* to be fixed between and removed from the blocks *c* and *d* by means of a lever *h*, connected to the shaft *d'* and hinged at *e'* to the frame *f*, which lever *h* can be locked in position by means of the pawl *h'*. A lever or handle *i* is attached to the free end of the shaft *d'*, by means of which the heel *b* to be burnished or otherwise finished, is partially rotated.

The burnishing tool *a*, which may be a stationary or rotary one, (concentric or eccentric to its axis) I pivot to a holder *k*, guided in a slot *f³* formed in the frame *f* and suspended from a lever *k'*, having its fulcrum *k²* on the frame *f*, which lever *k'* is under the influence

of a weight, or preferably, a spring l , adapted to raise the holder k and tool a . The lever k' is operated by means of a foot lever l' having its fulcrum l^2 at the foot of the frame f and by a spring l^3 , rod l^4 , and lever l^5 which latter has its fulcrum l^6 also at the foot of the frame f . The springs l and l^3 conjointly form a cushion in a vertical sense, for the tools a and q and cause the same to follow, under pressure, the varying curvature of the heel b . If desirable the lever k' may be dispensed with and the burnisher holder k brought directly under the influence of a weight or spring (not shown), as will be readily understood.

The relative position of the burnishing tool a , to the heel b can be altered crosswise, periodically, by either a lever m , pivoted to the frame f , and a connecting rod m' , or by a screwed spindle (not shown) connected therewith, so as to insure the burnishing tool a coming into contact with the whole of the curvature of the heel b .

To set the edge on the top of the heel b and to burnish round the same simultaneously, I form the block e in size less than the top of the heel b , so as to expose its edge and permit of bringing a top iron under the influence of a weight or preferably a spring in contact therewith. The said top iron may consist of a flange n , formed on the end of the burnishing tool a , placed under the influence of a spring n' attached to the lever k' and a plate or rod n^2 guided in the holder k , which spring n' can be brought in and out of action by means of an eccentric lever n^3 bearing against the lever k' and pivoted to a link o connected thereto. The spring n' , when in action together with the pull exerted by hand on the lever m , presses the flange n firmly against the edge of the heel b and thus effects a thorough setting and top ironing of the same.

In lieu of forming the flange n as part of the burnishing tool a , the same may be made self-adjusting thereon, see Fig. 4, by attaching it, as at n'' to a bracket p carried by a shank p' formed on the burnishing tool a and brought under the influence of a spring n' .

The burnishing and edge setting tool a may be heated by a gas jet p^2 brought against the holder k thereof and suitable pipes p^3 , as shown in Figs. 1 and 3, or by the application of steam or hot water, or steam and water, in lieu of contact with a flame. The steam or hot water may be circulated through the burnishing or finishing tool, or otherwise provided, to give off the required amount of heat. In every case the burnishing or finishing tool, or the part to which it is attached, is formed hollow for the reception or circulation of steam or hot water.

A continuous circulation of hot water may be maintained through the burnishing or finishing tools or their adjacent parts or apparatus described, by means of a heating apparatus, for instance, such as shown in Fig. 1, Sheet I, consisting of a water supply tank and pipe s , s' , heating vessel s^2 , supply and

return pipes s^3 and s^4 , in principle similar to that of a hot water bath.

To effect the seat wheeling and burnishing round the heel in the same machine simultaneously, or independently of each other, I employ a seat wheel q at the end or front of the said burnishing tool a , carried by a rod or bar q' guided in the tool holder k . The rod or bar q' at its upper end is furnished with a pin q^2 engaging an inclined slot q^3 formed in a plate q^4 , arranged to be slid crosswise on the tool holder k , by means of which the seat wheel q can be brought in and out of action.

The machine described may be worked by motive or hand power. When worked by motive power the machine may be duplicated and through suitable connections between the respective moving parts operated alternately, so as to permit of fixing a boot or other covering for the feet in position in the one, while the other is operated upon in the other part of the machine. When operating the described machine in its single form by hand, I form the frame f thereof with projecting surface or surfaces r , which may be provided with a stitch or other wheel r' , see Figs. 1 and 2, suitably shaped and heated by any suitable means for the purpose of effecting the burnishing of the top of the heel and the sole or otherwise finishing the same by rubbing it by hand against the said projecting surfaces r .

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, the tool a pivotally supported to the holder k and the flange projecting below the lower edge of the burnishing tool a to bear on the lower face of the heel and the spring for pressing the flange against the heel face, substantially as described.

2. In combination, the tool holder k , the tool a pivotally supported at the lower end thereof, the flange arranged at one side of the tool and under spring tension to top iron or set the edge of the lower face of the heel and the seat wheel q supported on the opposite side of the tool holder from the flange and the means for raising or lowering the said seat wheel, substantially as described.

3. In combination, the tool holder k the tool carried thereby, the seat wheel q , the rod or bar q' carrying the same and guided in the holder k and the slotted plate q^4 arranged to move transversely of the tool holder and engaging a pin projection from the bar q' of the seat wheel, substantially as described.

4. In combination, the tool holder pivoted at its upper end and having the tool pivoted thereto and depending therefrom at its lower end, the shoe holder and the rod m' and lever m in connection with the tool holder for swinging the same on its pivot, substantially as described.

5. In combination, the tool holder, the tool carried thereby, the lever k' pivoted to the frame and connected to the tool holder, the

spring l connected to the lever and tending to lift the same, the means for operating the lever and the connection therefrom to the lever including the spring l^s , substantially as described.

5 6. In combination, the lever l' pivoted to the frame, the tool holder pivoted to the lever and depending therefrom the tool at the lower

end of the lever and means for swinging the tool holder on its pivot and the means for raising and lowering the lever l' , substantially as described.

THOMAS GARE.

Witnesses:

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STANLEY E. BRAMALL.