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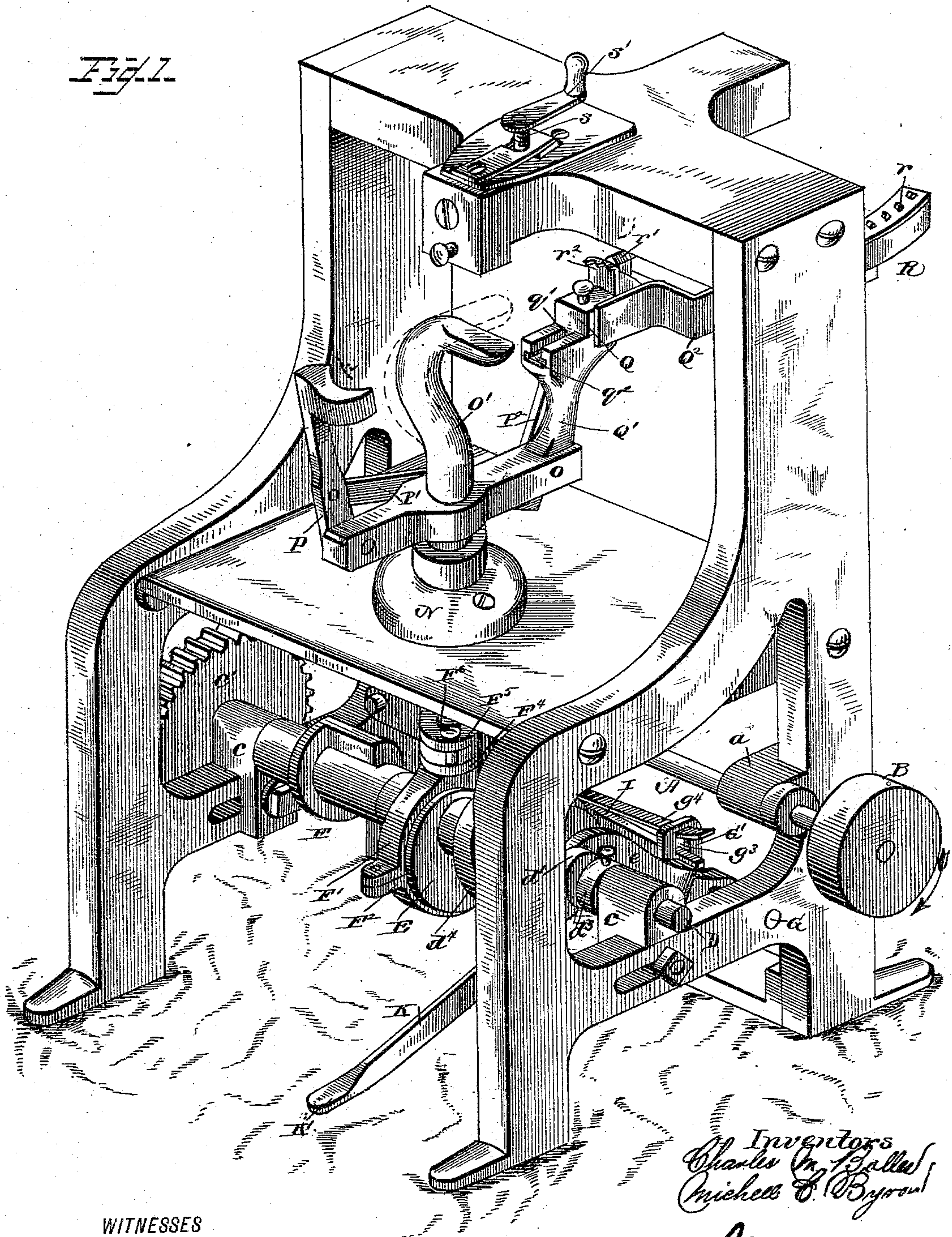
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C. M. BOLLES & M. E. BYRON.

MACHINE FOR STAMPING BOOTS AND SHOES.

No. 296,513.

Patented Apr. 8, 1884.



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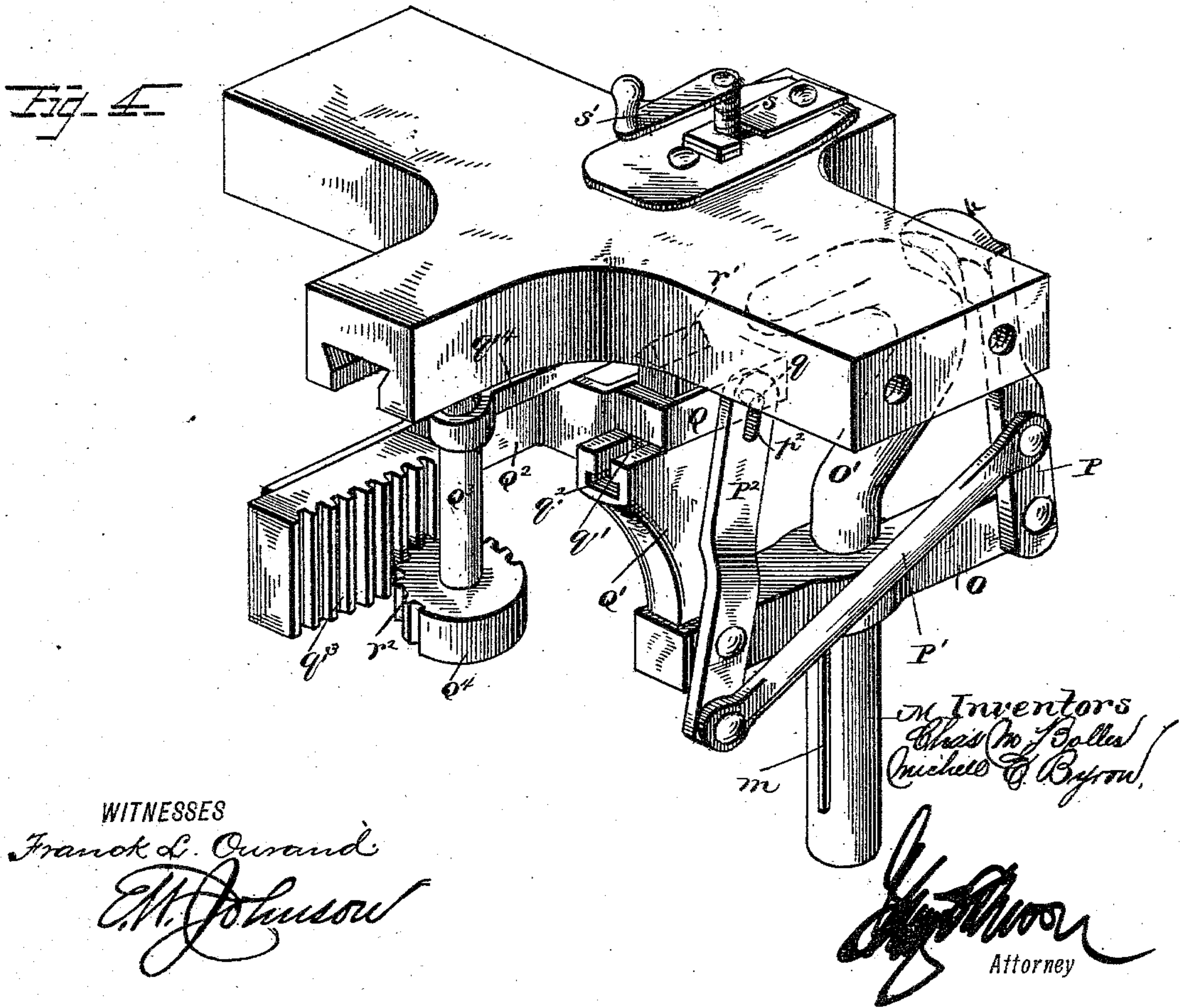
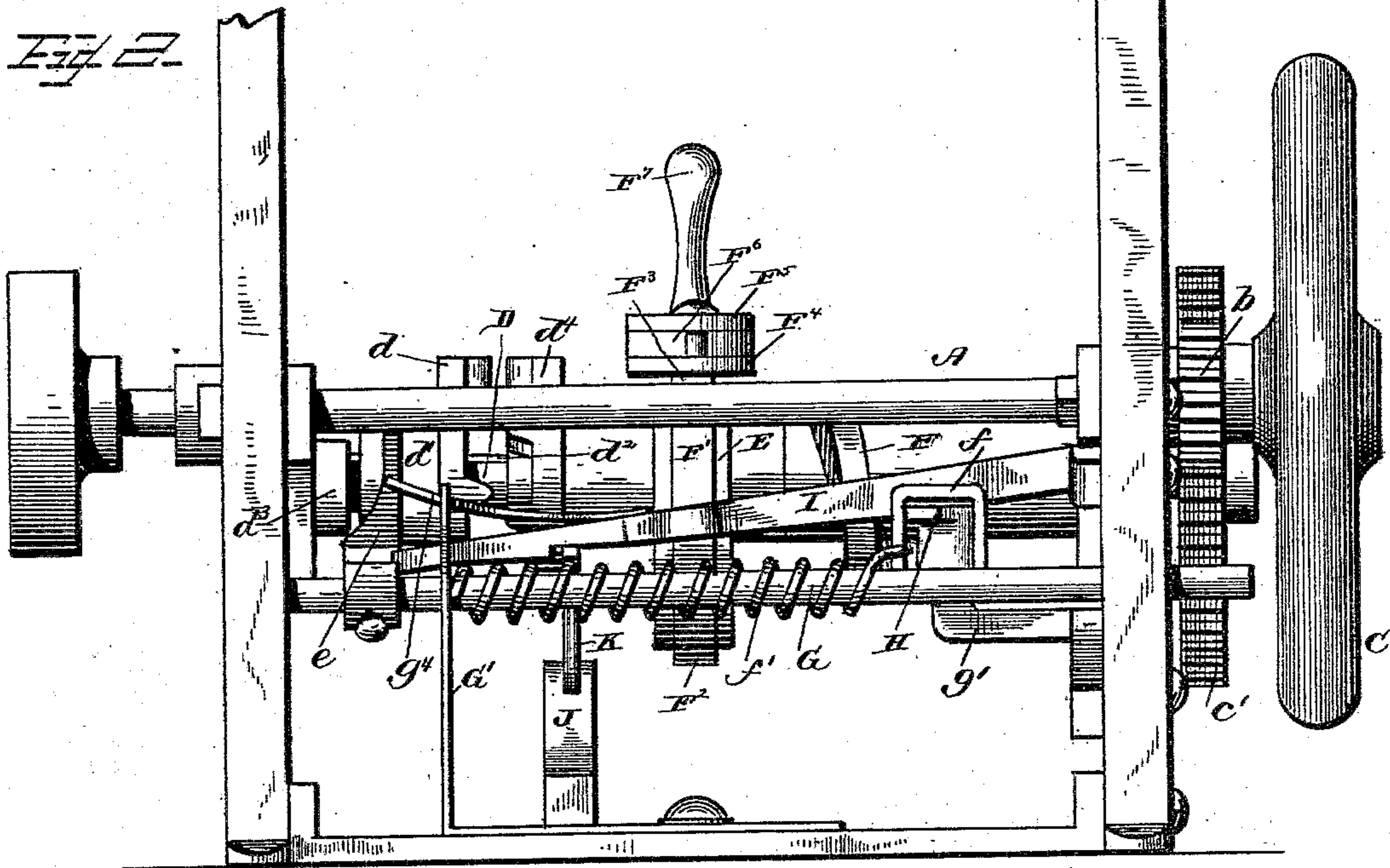
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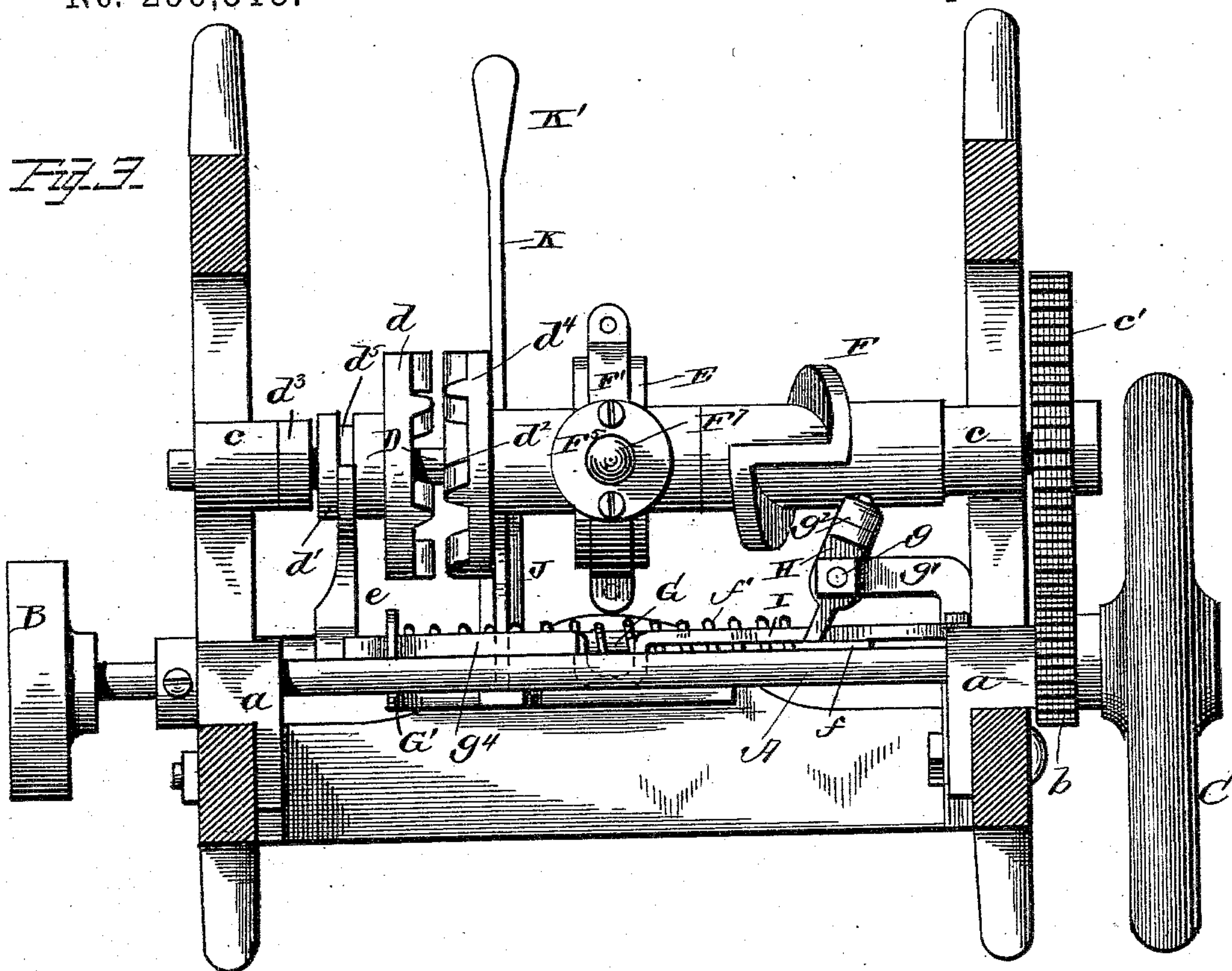
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# UNITED STATES PATENT OFFICE.

CHARLES M. BOLLES AND MICHELL E. BYRON, OF EAST PEPPERELL, MASS.

## MACHINE FOR STAMPING BOOTS AND SHOES.

SPECIFICATION forming part of Letters Patent No. 296,513, dated April 8, 1884.

Application filed January 31, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES M. BOLLES and MICHELL E. BYRON, citizens of the United States of America, residing at East Pepperell, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Machines for Stamping Boots and Shoes; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Our invention relates to machines for stamping the soles of boots and shoes; and it consists in the improvements and combinations of parts hereinafter described, whereby the boots or shoes may be readily mounted in position to receive the stamp, the stamping devices readily brought into operation, and means provided whereby the elevation of the boots or shoes to the stamp are guided so as to receive the stamp at the proper point.

The invention further consists in certain other novel features and parts to be set forth and explained hereinafter.

In the accompanying drawings, forming part of this specification, Figure 1 is a perspective view of a stamping-machine embodying our improvements. Fig. 2 is a rear elevation, showing the parts of the machine below the central table. Fig. 3 is a plan view of Fig. 2. Fig. 4 is a perspective view of the devices arranged in the upper part of the machine, looking from the rear right-hand side; and Fig. 5 is a detail view of the arrangement of the adjustable block in the upper part of the machine for effecting the projection of the stamps.

In the present application the arrangement and operation of parts are somewhat similar to the construction described and illustrated in our application for Letters Patent filed July 27, 1883, Serial No. 102,081. The arrangement of supporting-frame, central table, and top is like that described and illustrated in said application. A drive-shaft, A, is mounted in bearing-boxes *a*, bolted each at the rear of the side sections of the frame, the projecting

ends of said drive-shaft carrying, respectively, a band-pulley, B, and a balance-wheel, C, and pinion *b*, as shown in Figs. 2 and 3. Bearing-boxes *c*, bolted to the center of the side sections of the frame, support a shaft, D, one end of which projects beyond the side of the frame, and has keyed thereon a gear-wheel, *c'*, which meshes with the pinion *b*. Upon said shaft D, near one side of the frame, rides a toothed disk, *d*, provided with a hub, *d'*, grooved to receive a spline or feather, *d''*, on the shaft D, so as to revolve therewith, but otherwise loose, to slide longitudinally thereon. A collar, *d'''*, adjustably bolted to the shaft D between the side of the frame and the disk *d*, affords a means of regulating the sliding movement of said disk toward the side of the machine. A second toothed disk, *d''*, is loosely mounted on the center of the shaft D, so as to turn thereon, and is provided with a sleeve, upon which is formed an eccentric disk, E.

Upon the shaft D, between the side of the frame at which the gear-wheel *c* is located and the eccentric disk E, is rigidly mounted a cam, F. A rod, G, playing longitudinally in perforations in the sides of the machine, and through a perforation in a vertical standard, G', bolted to the base of the frame, has bolted to it at one side an arm, *e*, bifurcated at its front end to embrace the hub of the disk *d* by resting in an annular groove, *d'''*, formed in the hub *d'* of the same. A yoke, *f*, bolted to the rod G at one side, has secured to it one end of a contracting spring, *f'*, which embraces a portion of the rod G, and bears at its other end against the standard G', tends to normally maintain said rod in the position shown in Fig. 2. A lever, H, pivotally secured on the pintle *g* of a bracket, *g'*, has a roller, *g''*, at its front end, to bear against the cam F and be oscillated thereby, while its rear end plays in the yoke *f* on the rod G. A bar, I, pivotally secured at one end to the side of the frame, is reduced at its other end to pass through a vertical slot, *g'''*, formed in the standard G'. A leaf-spring, *g''*, secured on the upper side of the end of the bar and bearing against the portion of the standard forming the top of the slot, maintains the end of the bar down in the slot. A bar, J, is bent up at its front



end to form a fulcrum on which to pivot the center of a bar, K, the rear end of which rests between the bar I and the rod G, and is provided at its front end with a treadle, K', the depression of which will raise the bar up in the slot in the standard G'. The eccentric F is grooved peripherally, so as to permit curved sections F' F<sup>2</sup> to be bolted thereon, so as to embrace the same. The upper section, F', is provided with a neck, F<sup>3</sup>, which terminates at its upper extremity in a horizontal disk, F<sup>4</sup>, which has bolted thereto a second disk, F<sup>5</sup>, a rubber gasket or cushion, F<sup>6</sup>, being interposed between said disks F<sup>4</sup> and F<sup>5</sup>. The upper disk, F<sup>5</sup>, has centrally a vertical extension, F<sup>7</sup>, the upper end of which bears in a recess therefor formed in the lower end of a vertical cylinder, M, which plays in an opening formed in the table, and in a collar, N, bolted to said table, a spline or feather, m, on said cylinder engaging a groove formed in the table and in the collar N, so as to prevent the rotation of said cylinder in the table and collar. A bar, O, is secured to the upper end of the cylinder M, and extends parallel with the side sections of the frame. A jack, O', provided with a suitable threaded shank, is adapted to engage and be supported in an opening formed in the bar O. A heel-rest, P, is pivotally secured to the front end of the bar O, as seen in Fig. 4, and is provided at its upper end with a curved block, p. A rod, P', connects the heel-rest P with the lower end of a lever, P<sup>2</sup>, centrally pivoted at the rear end of the bar O, the upper end of the lever P<sup>2</sup> being provided with a vertical slot, p<sup>2</sup>, into which plays a pin, q, of a block, Q, the base q' of which is dovetailed to slide in and be engaged by a dovetailed recess, q<sup>2</sup>, formed in the upper end of a standard, Q', mounted on the rear end of the bar O. A bent plate, Q<sup>2</sup>, bolted at its front end to one side of the block Q, extends back rearwardly and terminates in a rack, q<sup>3</sup>. A shaft, Q<sup>3</sup>, depends from the under side of the top of the frame, so as to be capable of revolving in its suspended bearing, and has rigidly bolted thereto an arm, q<sup>4</sup>, which carries at its outer extremity a curved bar, R, which is provided with a series of vertical perforations, in which are located stamp-dies r, which carry at their lower ends each a number. These stamp-dies r are spring-seated in the perforations, so that the lower end of said dies are normally flush with the under side of the bar R. A curved rack-plate, R', is bolted to the under side of the arm q<sup>4</sup>, immediately above a wedge-shaped lug, r', secured on the upper side of the block Q, and in advance of this wedge-shape lug r' is secured a curved plate, r<sup>2</sup>, designed to act as a toe-rest.

Rigidly bolted on the lower end of the depending shaft Q<sup>3</sup> is a disk, Q<sup>4</sup>, a portion of the periphery of which is provided with gear-teeth r<sup>2</sup>, which engage with the teeth of the rack q<sup>3</sup>, as shown in Fig. 4. The upper end of the shaft Q<sup>3</sup> turns in a dovetailed box, Q<sup>5</sup>, which slides longitudinally in a dovetailed slot formed in

the under side of the top of the frame, and said box is adapted to be rigidly secured at any point along said slot by means of a set-screw, q<sup>6</sup>. A block, S, is secured on the lower end of a threaded rod, s, which turns in a threaded opening therefor formed in the forward part of the top of the frame. The upper end of the threaded shaft s is provided with a crank-handle, s', for revolving said shaft.

The operation of the machine is as follows: The band-pulley B is driven in the direction of the arrow, Fig. 1. Motion is thereby imparted in the same direction to the drive-shaft A and pinion b thereon, which in turn rotate the gear-wheel c and its shaft D, thereby rotating the toothed pinion d, which is out of engagement with disk d<sup>4</sup>, which does not rotate. The revolution of the shaft D also rotates the cam F, which vibrates the lever H on its pivot, and thereby intermittently forcing the rod G toward the side of the frame in which the drive-pulley is located, and against the spring-traction. When said rod G is moved as above described, the spring is prevented from effecting the return of said rod to its first position by reason of the end of the bar I being forced down in the slot g<sup>3</sup> of the standard G' by the spring g<sup>4</sup>, so as to bear against the side of the arm e, which holds the disk d in the disengaged position referred to. When the bar is thrown up by the depression of the front end of the bar K, the spring on the rod G causes the movement of said rod toward the other side of the frame, carrying with it the arm e, which in turn slides the disk d in engagement with the disk d<sup>4</sup>, thereby turning said disk, its sleeve, the eccentric F, and effecting the elevation of the neck F<sup>7</sup>, and consequently cylinder M and devices connected thereto above the central table. When the stamping above the table (which operation will be freely set forth hereinafter) has been accomplished, the movements of the various parts are so arranged that the cam on the shaft D will again cause the lever H to move the rod toward the side of the machine on which the drive-pulley is located, thereby moving the arm e, which in turn moves the disk d out of contact with the disk d<sup>4</sup>. As the disk d is moving out of contact with the disk d<sup>4</sup> the eccentric has further rotated sufficiently to permit the descent of the cylinder M and parts connected thereto by gravity to its first position, when the operation is again repeated. The curved block on the upper end of the block is moved outward from the front of the machine, so as, by the arrangement of heel-rest and connecting-rod, to move the block rearwardly in the dovetailed slot, and consequently the rack-plate Q<sup>2</sup>, and thereby effects a quarter rotation of the shaft Q<sup>3</sup>, its arm q<sup>4</sup>, and the curved block R, located at the extremity of the same, the movement resulting in the block R, carrying a portion of the stamping devices, being thrown out of position. The jack O' is then turned in its bearing toward one side, so as to permit the shoe to be



passed over the same when it is turned in the position illustrated in dotted lines, Fig. 1, with its toe in the direction of the block Q. The heel-rest P is then moved so that it will cause its curved block p to bear against the heel of the shoe, which movement of the heel-rest P, by reason of the intermediate connections described, thereby moves the block Q forward, so that the toe of the shoe rests upon the forward end of the said block against the plate Q<sup>2</sup>. The forward movement of the block Q revolves the shaft Q<sup>3</sup> and shaft Q<sup>4</sup>, thereby swinging the stamp-bar R around in position above the shoe, each stamp-die, as it comes in contact with the upper-block S, being depressed, so as to project while in contact with said block from the under side of the bar R. The movement of the bar R ceases when the proper stamp-die has been depressed, this being easily effected by adjusting the devices so that certain stamps come successively into position as the distance of the block Q from the heel of the shoe increases, thereby regulating the stamps according to the size of shoe and length of sole. Another adjustment can be effected by moving the dovetailed bearing of the shaft Q<sup>3</sup> along its dovetailed slot. By providing only a portion of the disk Q<sup>4</sup> with gear-teeth, said disk and shaft Q<sup>3</sup> can only be revolved sufficiently to bring the bar R into correct position. The actuating devices beneath the central table now cause the cylinder M and the shoe-supporting devices to be elevated and bear against the stamp-bar R, and the shoe thus receives its proper stamps, the rigid stamp secured in the front of the top of the frame being impressed on the heel of the shoe, while the stamp of the bar R is impressed on the sole, and the shoe-supporting parts drop back by gravity. By revolving the rod s the degree at which the stamp-dies project from the under side of the bar R may be readily regulated. The cushion F<sup>6</sup> receives the concussion of the stamping impact, and prevents communication of the shock to the parts below the table.

We claim—

1. The combination, in a boot and shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies, and devices connecting the supporting devices with said stamping mechanism, adapted, upon the movement of the supporting devices, to throw said mechanism, with said dies, completely into or out of position, and actuating means, substantially as set forth.

2. The combination, in a boot or shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies, which dies are normally out of position for stamping, means for automatically throwing the stamp-carrying mechanism into position above the shoe-supporting devices, and thereby cause the stamping-dies to come into proper position

for stamping, and actuating means, substantially as set forth.

3. The combination, in a boot and shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies and adapted to be thrown into and out of position for stamping, shoe-supporting devices, a pivoted lever adapted to be moved so that its upper end bears against the heel of the shoe, and connected with the stamping mechanism, so as to actuate the same when moved, and actuating means, substantially as described.

4. The combination, in a boot and shoe stamping machine, of shoe-supporting devices, mechanism carrying the stamping-dies, which dies are normally out of position for stamping, a vertically-adjustable block located in the top of the machine above the supporting and stamping devices, and adapted to have the stamp-dies successively come in contact therewith and depress said dies for stamping, and actuating devices, substantially as described.

5. The combination, in a boot and shoe stamping machine, of stamping devices provided with a depending rack, shoe-supporting devices carrying a wedge-shaped block adapted to engage said rack when the support is elevated, and means for elevating said support, substantially as described.

6. The combination, in a boot and shoe stamping machine, of stamping devices adapted to be thrown into or out of position, and having a depending rack, a pivoted heel-rest adapted to be moved so that its upper end will bear against the shoe-heel, a block sliding on guides adapted to support the front end of the shoe, a wedge-shaped block mounted on said sliding block, and connections whereby the movement of the pivoted heel-rest throws the stamping mechanism into position, and at the same time moves said sliding block into position for elevation to the stamping devices and causes said wedge-shape block to engage said rack, and devices for effecting such elevation, substantially as set forth.

7. The combination, in a boot and shoe stamping machine, of stamping devices located in the upper part of the machine, shoe-supporting devices located beneath the same, mechanism connected to said supporting devices for intermittently elevating said support to the stamp, and actuated by a sliding toothed disk revolving and sliding longitudinally on its shaft, and a collar bolted adjustably to said shaft, to limit the longitudinal motion of said toothed disk, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

Witnesses: CHARLES M. BOLLES.  
MICHELL E. BYRON.  
FRANK G. HOBBS,  
AMOS J. SAUNDERS.