

(No Model.)

3 Sheets—Sheet 1.

J. C. CUTCHEON.
BEATING OUT MACHINE.

No. 384,893.

Patented June 19, 1888.

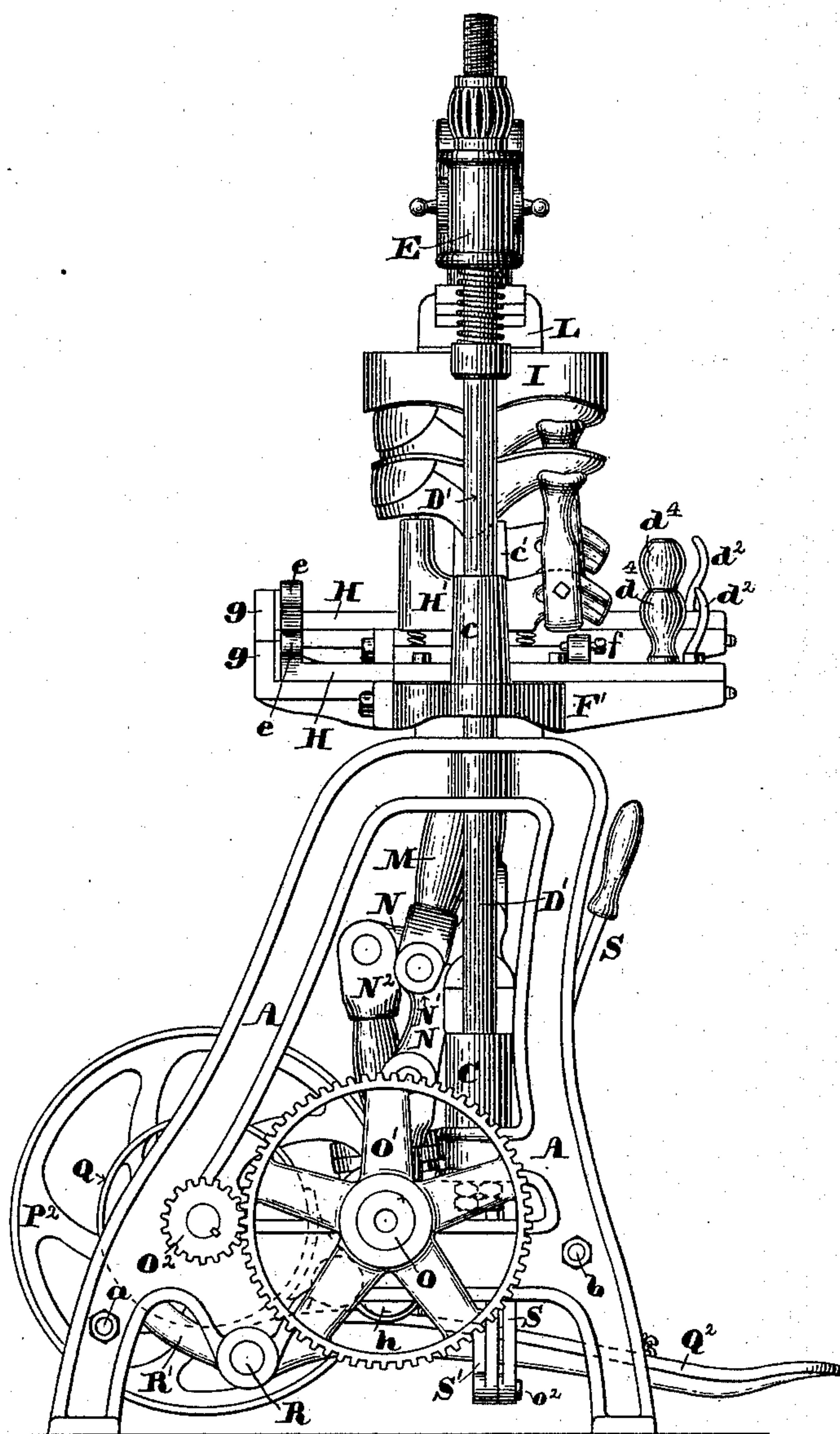


Fig. 1.

Witnesses:
Walter E. Lombard.
Elihu E. Chandler.

Inventor:
James C. Cutcheon,
by N. C. Lombard,
Attorney.

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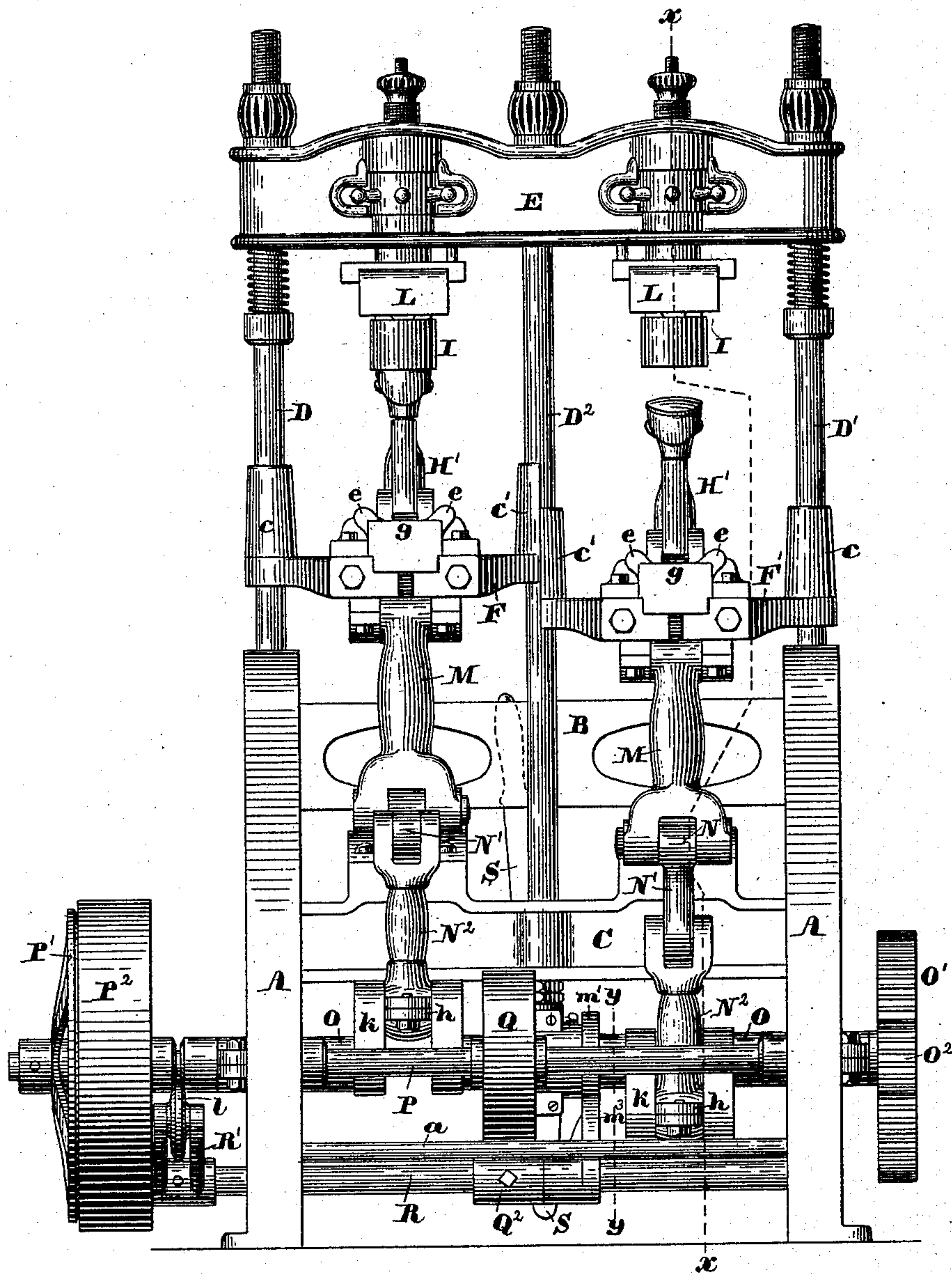


Fig. 2.

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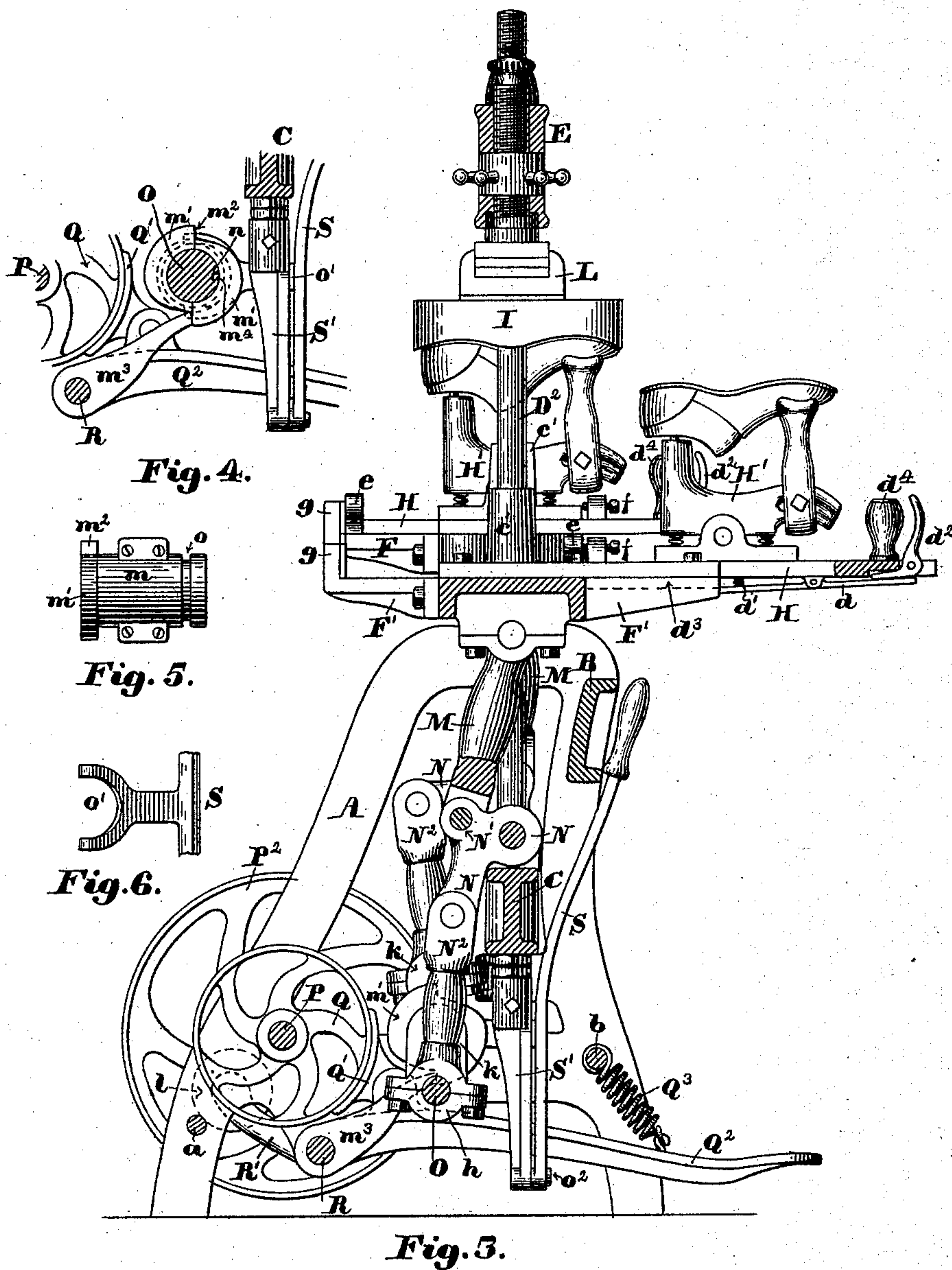
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Witnesses:
Walter G. Lombard,
Elliott E. Chandler.

Inventor:
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UNITED STATES PATENT OFFICE.

JAMES C. CUTCHEON, OF LYNN, MASSACHUSETTS, ASSIGNOR TO CUTCHEON & JOHNSON, OF SAME PLACE.

BEATING-OUT MACHINE.

SPECIFICATION forming part of Letters Patent No. 384,893, dated June 19, 1888

Application filed October 28, 1887. Serial No. 253,622. (No model.)

To all whom it may concern:

Be it known that I, JAMES C. CUTCHEON, of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Beating-Out Machines, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to machines for beating out the soles of boots and shoes, and is adapted especially for beating out the soles of turned sewed slippers, which heretofore has been done by hand; and it consists in certain novel features of construction, arrangement and combination of parts, which will be readily understood by reference to the description of the drawings, and to the claims to be hereinafter given.

Of the drawings, Figure 1 represents a side elevation of a machine embodying my invention. Fig. 2 represents a rear elevation of the same. Fig. 3 represents a vertical sectional elevation of the same, the cutting-plane being on line *xx* on Fig. 2. Fig. 4 represents a partial vertical sectional elevation of the lower portion of the same, the cutting-plane being on line *yy* on Fig. 2. Fig. 5 represents an elevation of the sliding cam-sleeve, and Fig. 6 represents an elevation of the forked arm of the shipper-lever.

In the drawings, *A A* are the side frames of the machine, connected together by the girt *B* and the tie-rods *a* and *b*, and having set therein the two upright rods *D* and *D'*, upon the upper ends of which is secured the cross-head *E*. A second cross-head, *C*, is secured to the lower ends of said rods *D* and *D'*, and to the cross-heads *C* and *E* is secured a third upright rod, *D²*, midway between the rods *D* and *D'*.

Upon the rods *D*, *D'*, and *D²* are mounted the jack-supporting tables *F* and *F'*, each of which is provided at one end with a cylindrical box, *c*, which incases the rod *D* or *D'*, as the case may be, and at its other end with a semi-cylindrical half-box, *c'*, which partially surrounds and bears upon the middle rod, *D²*, said rods *D* and *D²* and *D'* and *D²*, respectively, serving as guides upon which said jack-supporting tables *F* and *F'* may be reciprocated.

Each table *F* and *F'* is provided with a slide,

H, upon which the shoe-supporting jack *H'* is mounted. This jack *H'* may be of the form shown in the drawings; or it may be of any other well-known construction without altering the principle of my invention.

To the under side of the slide *H* is pivoted the lever *d*, the inner end of which is pressed downward by means of the spring *d'*, in order that when said slide has been moved to the front for the purpose of placing a new shoe upon the jack it may engage with the front edge of the table *F* or *F'*, to prevent said slide from being moved inward until it is so desired to do, when the spring *d'* may be compressed by pressing upon the outer arm of the elbow-lever *d²*, pivoted to the front end of the slide *H*, all as shown in Fig. 3, thereby raising the inner end of the lever *d* and allowing it to enter the groove *d³* of the table. (Shown in dotted lines in said Fig. 3.) Each of the slides *H* is provided with a suitable handle, *d⁴*, by means of which the jack may be moved to a position beneath the mold *I*, or removed from that position when the ears *ee* on the rear end of each slide, by coming into contact with the adjustable stops *ff*, will serve to prevent too great a movement in an outward direction, while the flanges *gg* of the tables *F* *F'* limit the movement of said slide in the opposite direction.

To the cross-head *E* are secured the molds or dies *I* in such position as to be directly above the jacks when they are in their innermost position, said molds being fitted to a dovetailed slide in the under surface of the block *L*, and may be adjusted endwise therein in any well-known manner.

The shoe-supporting jack *H* is preferably mounted upon a pivot at about the center of its length and provided with upwardly-pressing springs upon each side of said pivot, substantially as shown and described in Letters Patent No. 367,927, granted to John Pray, August 9, 1887.

To the under side of each of the tables *F* and *F'* is pivoted a toggle-link, *M*, the opposite end of which is pivoted to a second toggle-link, *N*, mounted in suitable bearings in the cross-head *C* and provided with the arm *N'*, to the outer end of which is pivoted the

link N^2 , the lower end of which is provided with the box h , which embraces the crank k of the shaft O , upon the outer end of which is mounted the gear O' , which meshes with the pinion O^2 upon the driving-shaft P , upon the opposite end of which is firmly secured the friction-wheel P' , (see Fig. 2,) and loosely mounted the driving-pulley P^2 . A brake-wheel, Q , is mounted upon said shaft P , against which the shoe Q' , pivoted to the treadle-lever Q^2 , is firmly pressed by the spring Q^3 , connecting the treadle Q^2 and the tie-rod b , said treadle being firmly secured to the rocker-shaft R , mounted in bearings in the side frames, $A A$, and having secured to the outer end thereof a forked lever, R' , carrying a beveled roll, l , which may be moved into contact with the hub of the loose pulley P^2 by depressing the treadle Q^2 , thereby forcing said pulley into contact with the friction-wheel P' , and thus set the machine in motion, the brake-shoe Q' being released or withdrawn from contact with the wheel Q by the same movement of the treadle.

The crank-shaft O is made with two opposing cranks, $k k$, so that when motion is imparted to said shaft one pair of toggles will be straightened and the table F or F' , connected thereto, will be forced into its highest position with the shoe upon its jack pressed firmly into contact with the die or mold I , located above said jack, while at the same time the second pair of toggles will be bent so that the other table will be in its lowest position, in which position the slide H with its jack may be readily withdrawn from beneath its die or mold I , so that the shoe thereon may be removed and another placed upon the jack and then slid back beneath its mold, when, if the treadle be again depressed, the new shoe will come into contact with its mold and be acted upon, while the pressure upon the other will be withdrawn and the table lowered, so that it in turn may be removed.

Between the cranks $k k$ upon the shaft O is mounted the sleeve-like collar m , provided with the cam-surface m' , which has two abrupt shoulders, m^2 , opposite to each other, and this cam m' acts upon the stop-lever m^3 , securely mounted upon the rocker-shaft R , to prevent the brake-shoe Q' from engaging with the wheel Q , and to prevent the roll l from being withdrawn from contact with the hub of the loose pulley P^2 when once the treadle Q^2 has been depressed, until the shoe upon the jack has been firmly pressed against the mold or die I , when the stop-arm m^3 will engage with one of the abutments m^2 and prevent a further movement of the crank-shaft O , the loose pulley being released from the friction-wheel and the brake-shoe Q' coming into contact with the wheel Q , and thus preventing any further motion being imparted to the machine until the treadle is again depressed, thus keeping the sole of the shoe under pressure while the other shoe is being taken from the last or jack and replaced by another.

It is obvious that as the mechanism has thus been described it would be impossible to stop the machine except when one or the other of the shoes upon the jacks was in contact with the mold or die I ; but it is also obvious that at certain times it may be desirable to stop the machine at some other time in the revolution; and in order to accomplish this the shaft O , between the cranks $k k$, is provided with a groove, n , with which a key, m^4 , projecting inward from the sleeve m , engages, so that said sleeve m will revolve with the shaft O , while at the same time it may be moved lengthwise in order to disengage the cam m' from the stop-lever m^3 , and thus allow the machine to be stopped at any point in the revolution of the crank-shaft O , the brake-shoe Q' coming into contact with the wheel Q as soon as the foot is removed from the treadle, as is obvious. The sleeve m is provided with an annular groove, o , with which the forked end of the arm o' of the shifter-lever S , pivoted at o^2 to the support S' , engages, and by means of which said cam m' may be moved into or out of engagement with the stop-arm m^3 .

The operation of the machine is obvious from the foregoing description, and therefore will not here be repeated.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. A machine for beating out the soles of boots and shoes, provided with two jacks, two molds, and means, substantially as described, having provision for automatically moving one jack in one direction while the other is being moved in the opposite direction, whereby the sole of the shoe upon one jack will be under pressure while the other jack will be in a convenient position for the removal of the shoe therefrom.

2. In a machine for beating out the soles of boots and shoes, the combination of a mold or die, a vertically-movable table, a shoe-supporting jack mounted upon said table, a pair of toggle-links for moving said table and jack toward and from said mold, an arm projecting laterally from one of said links and integral therewith, a crank, and a connecting-rod connecting said crank with said lateral arm.

3. In a machine for beating out the soles of boots and shoes, the combination of a mold or die, a shoe-supporting jack arranged to be moved vertically, a pair of toggle-links for moving said jack toward and from the mold, an arm projecting laterally from one of said links and integral therewith, a crank, and a rod connecting said crank with said lateral arm.

4. In a machine for beating out the soles of boots and shoes, the combination of a mold or die, a vertically-movable jack, a crank, a toggle mechanism connecting said crank and jack and having provision for the movement of the latter, a crank-shaft, a cam secured to said crank-shaft and provided with an abrupt shoulder, a driving-shaft, gearing for connect-

ing said crank-shaft and said driving-shaft, a rocker-shaft, a stop-arm secured to said rocker-shaft and engaging with the shoulder upon said cam to stop the machine, a treadle secured to said rocker-shaft, a spring connecting said treadle with a stationary part of the machine, a brake-shoe operated by said treadle and acting upon said brake-wheel, and a suitable clutch mechanism for applying power to the driving-shaft when the shoe has been released from contact with the brake-wheel and the stop-arm has been disengaged from the shoulder of said cam.

5. In a machine for beating out the soles of boots and shoes, the combination of a mold or die, a vertically-movable jack, a crank, a toggle mechanism connecting said crank and jack and having provision for the movement of the latter, a crank-shaft, a driving-shaft, gearing for connecting said crank-shaft and driving-shaft, a rocker-shaft, a stop-arm secured to said rocker-shaft, a cam mounted upon said crank-shaft so as to be moved lengthwise of said shaft and provided with an abrupt shoulder to engage with said stop-arm to stop the machine, a shifter-lever for moving said cam out of or into the plane of motion of said stop-arm, a treadle secured to said rocker-shaft, a spring connecting said treadle with a stationary part of the machine, a brake-shoe operated by said treadle and acting upon said brake-wheel, and a suitable clutch mechanism for applying power to the driving-shaft when the

shoe has been released from contact with the brake-wheel and the stop-arm has been disengaged from the shoulder of said cam. 35

6. In a machine for beating out the soles of boots and shoes, the combination of a mold or die, a vertically-movable jack, a crank, a toggle mechanism connecting said crank and jack and having provision for the movement of the latter, a crank-shaft, a driving-shaft, gearing for connecting said crank-shaft and driving-shaft, a rocker-shaft, a stop-arm secured to said rocker-shaft, a cam secured to said crank-shaft and provided with an abrupt shoulder to engage with said stop-arm to stop the machine, a treadle secured to said rocker-shaft, a spring connecting said treadle with a stationary part of the machine, a forked lever secured to the outer end of said rocker-shaft, a beveled roll mounted in the end of said lever, a friction-wheel secured to the driving-shaft, and a loose driving-pulley mounted upon said driving-shaft and arranged to be pressed into contact with said friction-wheel by the action of said beveled roll upon its hub when it is desired to apply power to said driving-shaft. 40 45 50 55

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 19th day of October, A. D. 1887. 60

JAMES C. CUTCHEON.

Witnesses:

N. C. LOMBARD,
J. R. BRODIE.