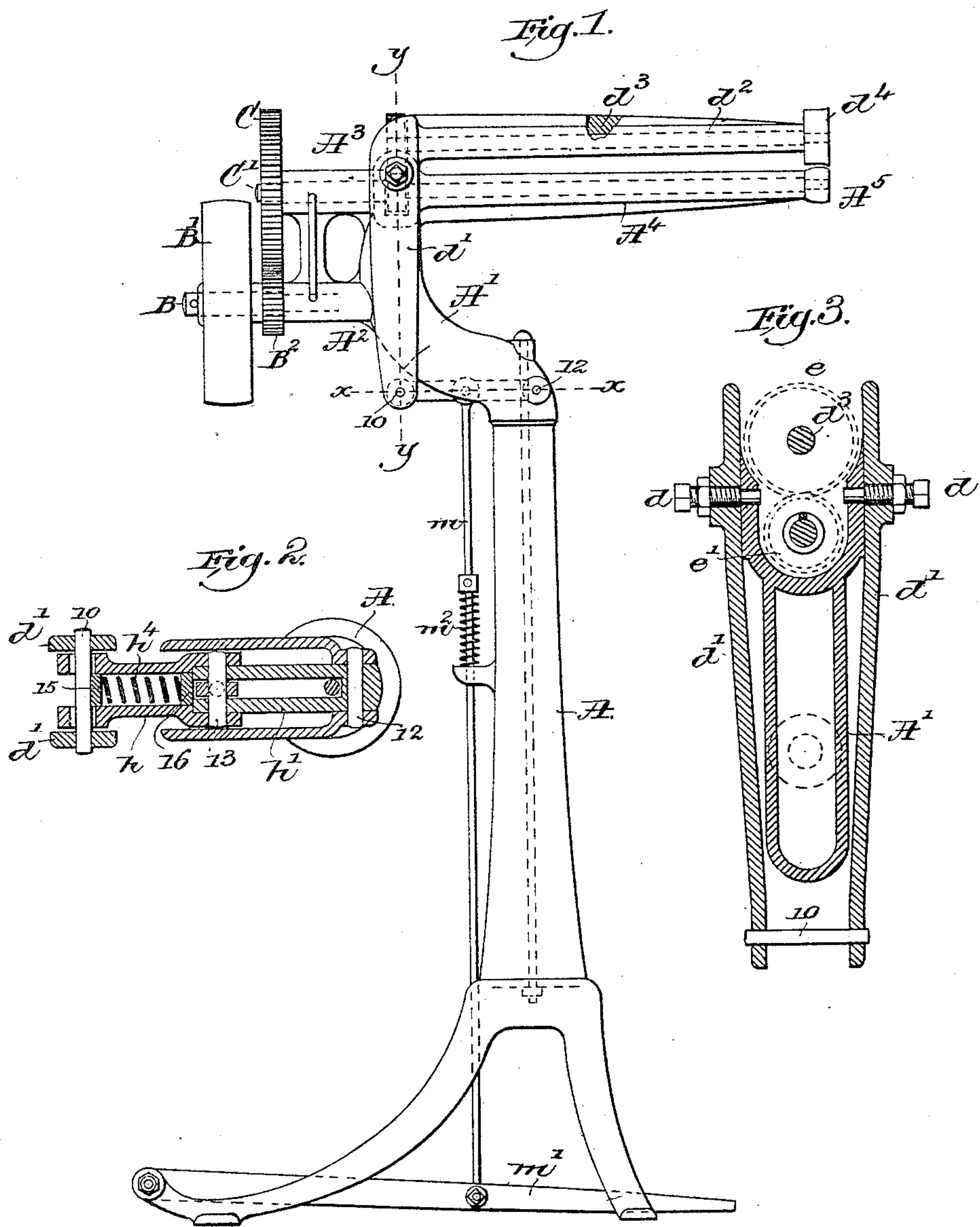


(No Model.)

C. W. GLIDDEN.  
QUARTER BEATING MACHINE.

No. 454,429.

Patented June 16, 1891.



Witnesses.  
Edward F. Allen  
Maurice L. Emery -

Inventor.  
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# UNITED STATES PATENT OFFICE.

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## QUARTER-BEATING MACHINE.

SPECIFICATION forming part of Letters Patent No. 454,429, dated June 16, 1891.

Application filed November 7, 1890. Serial No. 370,662. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. GLIDDEN, of Lynn, county of Essex, State of Massachusetts, have invented an Improvement in Quarter-Beating Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In the manufacture of boots and shoes the heels are trimmed by machines, and during such operation the heel-trimming cutter or a part co-operating with it runs on the quarter of the boot or shoe next the heel-seat, the quarter being backed up by the counter-stiffener and the heel end of the inner sole. The counter-stiffener is frequently out of shape, and consequently the heel and rand cutter are not properly guided, and the heel is not trimmed symmetrically. To insure the production of a symmetrical heel, the quarter next the heel-seat must be as smooth and uniform as possible and conform to the shape of the last or heel end of the sole, and to insure this I have provided the machine to be here-  
in described, it containing a roller to enter the shoe and sustain the inside of the stiffener and quarter close to the heel-seat, a second roll acting on the outside of the quarter near the heel-seat, the latter roll acting with  
a yielding pressure.

Figure 1 in side elevation represents a beating-out machine embodying my invention; Fig. 2, a section in the line  $x x$ ; and Fig. 3, a section in the line  $y y$ , looking to the left.

The column A has a neck  $A'$ , provided with hollow sleeve-bearings  $A^2 A^3$ . The bearing  $A^2$  receives a stud B, on which is mounted loosely a pulley  $B'$ , having an attached pinion  $B^2$ , which engages a toothed gear C fast on a shaft  $C'$ , extended through the bearing  $A^3$  and through a tubular arm  $A^4$ , the shaft having at its outer end a roller  $A^5$ , having for the best results a convexed periphery to thus fit the inside of the quarter. Pivoted on the neck by screws  $d$  is a yoke-like lever  $d'$ , from which is extended a tubular arm  $d^2$ , in which is mounted a shaft  $d^3$ , having at its outer or right-hand end a beating-roll  $d^4$ , the opposite end of the said shaft having a gear  $e$ , which  
engages loosely a gear  $e'$ , fast on the shaft  $C'$ ,

the pivots  $d$  of the lever  $d'$  being substantially in the line of contact of the gears  $e$  and  $e'$ , so that the lever may be moved, as will be described, to separate the rolls  $d^4$  and  $A^5$  sufficiently for the reception of the quarter between them without disengaging the said gears. The lower end of the lever  $d'$  has jointed to it at 10 one part  $h$  of a toggle-lever  $h h'$ , the other part  $h'$  being pivoted at 12 on a stud or pin on the frame-work, the two parts  $h h'$  of the joint being pivoted together at 13. The hole in the part  $h$ , which receives the pin 10, is elongated, and the said part is open-centered to receive a spring  $h^4$ , having at its opposite ends bearing-blocks 15 16, which act respectively against the pin and the end of the part  $h'$  of the toggle-joint, the spring, arranged as shown, exerting, when the toggle is straightened, as in Fig. 1, a pressure on the lever to keep the beating-roll  $d^4$  pressed with a yielding pressure on the material between the said rolls.

To straighten the toggle after the quarter to be beaten out has been placed between the rolls, I have jointed to the toggle a rod  $m$ , in turn jointed to a treadle or equivalent device  $m'$ , the said rod being normally held up by a spring  $m^2$ , the latter, as shown in Fig. 1, being supposed to be compressed.

I have not shown the quarter in position between the rolls; but with the rolls in the position shown the quarter would lie between them.

In operation the rolls will act upon the quarter and both feed the same about the tubular arm  $A^4$ , and at the same time by pressure will smooth those parts of the quarter over which the rolls travel. By removing the foot from the treadle the spring  $m^2$  will break the toggle and cause the lever  $d'$  to be moved to lift the roll  $d^4$ , when if one operation of the rolls has not fully smoothed and beaten out the quarter, it may be turned back and be run through the machine again.

I am aware prior to my invention that machines for turning or bending the edges of soles have had co-operating rolls, as in United States Patents Nos. 347,305 and 387,059; but by means of the rolls mounted as described in the said patents it would be impossible to



beat out the quarter of a boot or shoe of usual character.

I claim—

1. In a machine for beating out quarters of boots and shoes at the heel-seat, the roll  $A^5$  to enter and support the quarter, the shaft  $C'$ , on which the said roll is mounted, and the beating-out roll  $d^4$ , its shaft  $d^3$ , gears to connect them, and a movable pivoted bearing for the shaft  $d^3$ , combined with a long tubular bearing  $A^4$  for the shaft  $C'$ , to permit the leg of the boot or shoe to be operated upon to be passed over the said bearing and enable the roll  $A^5$  to come in contact with the inside of the quarter of the boot or shoe next the inner sole, substantially as described.

2. In a machine for beating out quarters of boots and shoes at the heel-seat, the roll  $A^5$  to enter and support the quarter, the shaft on which the said roll is mounted, the long tubular bearing  $A^4$ , the beating-out roll  $d^4$ , its shaft  $d^3$ , and gears to connect the said shafts, combined with a movable lever having bearings for the shaft  $d^3$ , and having pivots substantially in the line of contact of the said gears, to operate substantially as described.

3. In a machine for beating out quarters of boots and shoes near the heel-seat, the roll  $A^5$  to enter and support the quarter, its actuating-shaft, the roll  $d^4$ , its actuating-shaft, gears to connect the said shafts, and a movable lever having bearings for the shaft carrying one of the said rolls, pivots  $d$  for the said lever, located substantially in the line of contact of the said gears, and a spring to normally keep the said rolls pressed one toward the other, so that one of the said rolls may act with a yielding pressure on the quarter, substantially as described.

4. In a machine for beating out quarters of boots and shoes near the heel-seat, the roll  $A^5$

to enter and support the quarter, its actuating-shaft, the roll  $d^4$ , its actuating-shaft, gears to connect the said shafts, a movable lever having the bearings for the shaft carrying one of the said rolls, and a toggle-joint containing a spring, whereby one of the said rolls may act with a yielding pressure on the quarter, substantially as described.

5. In a machine for beating out quarters of boots and shoes near the heel-seat, the roll  $A^5$  to enter and support the quarter, its actuating-shaft, its long tubular bearing, the roll  $d^4$ , its actuating-shaft  $d^3$ , gears to connect the said shafts, a movable lever having the bearings for the shaft carrying one of the said rolls, pivots  $d$  for said levers, located substantially in the line of contact of said gears, and a spring to normally keep the said rolls pressed one toward the other, so that one of the said rolls may act with a yielding pressure on the quarter, and with the rod, its lifting-spring, and treadle, substantially as described.

6. In a machine for beating out quarters of boots and shoes at the heel-seat, the roll  $A^5$  to enter and support the quarter, its actuating-shaft  $C'$ , the roll  $d^4$ , its actuating-shaft  $d^3$ , gears to connect the said shafts, a movable lever having bearings for the shaft  $d^3$ , and a toggle-joint connected to the said lever and containing a spring, whereby one of the said rolls may act with a yielding pressure on the quarter, combined with a rod and a treadle, to operate substantially as described.

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

CHARLES W. GLIDDEN.

Witnesses:

GEO. W. HAMMATT,  
H. P. FAIRFIELD.