(No Model.) 4 Sheets—Sheet 1.

E. A. LUPIEN.

BREASTING ATTACHMENT FOR HEELING MACHINES.

No. 382,615. Patented May 8, 1888.

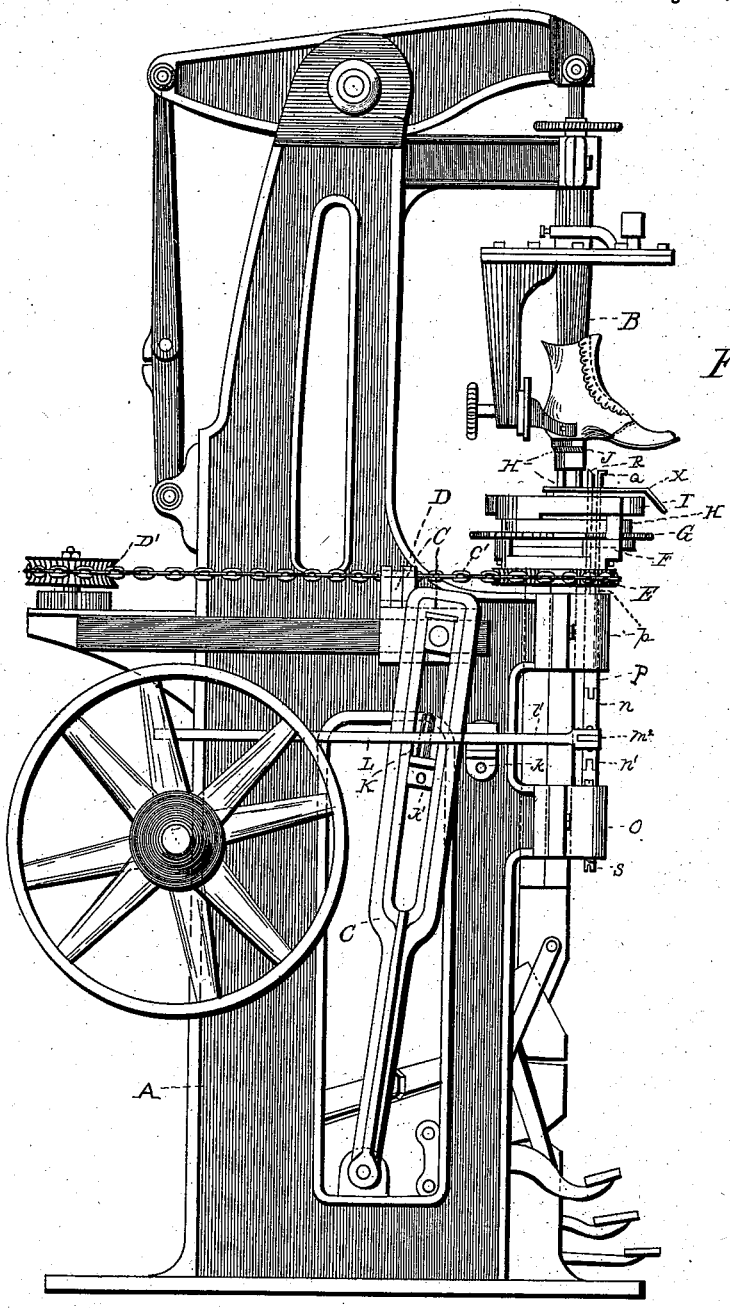

Fig. 1.

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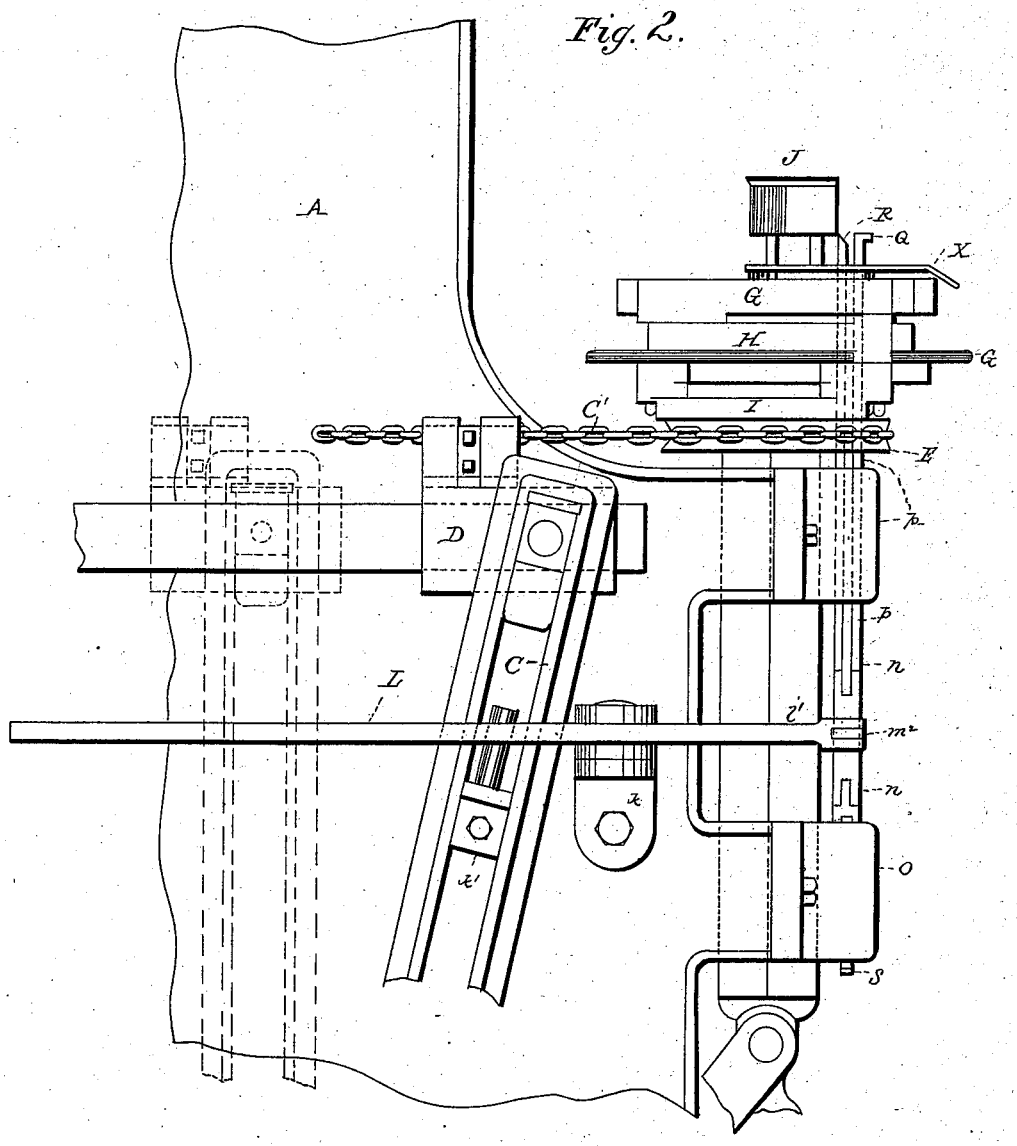
Fig. 2.



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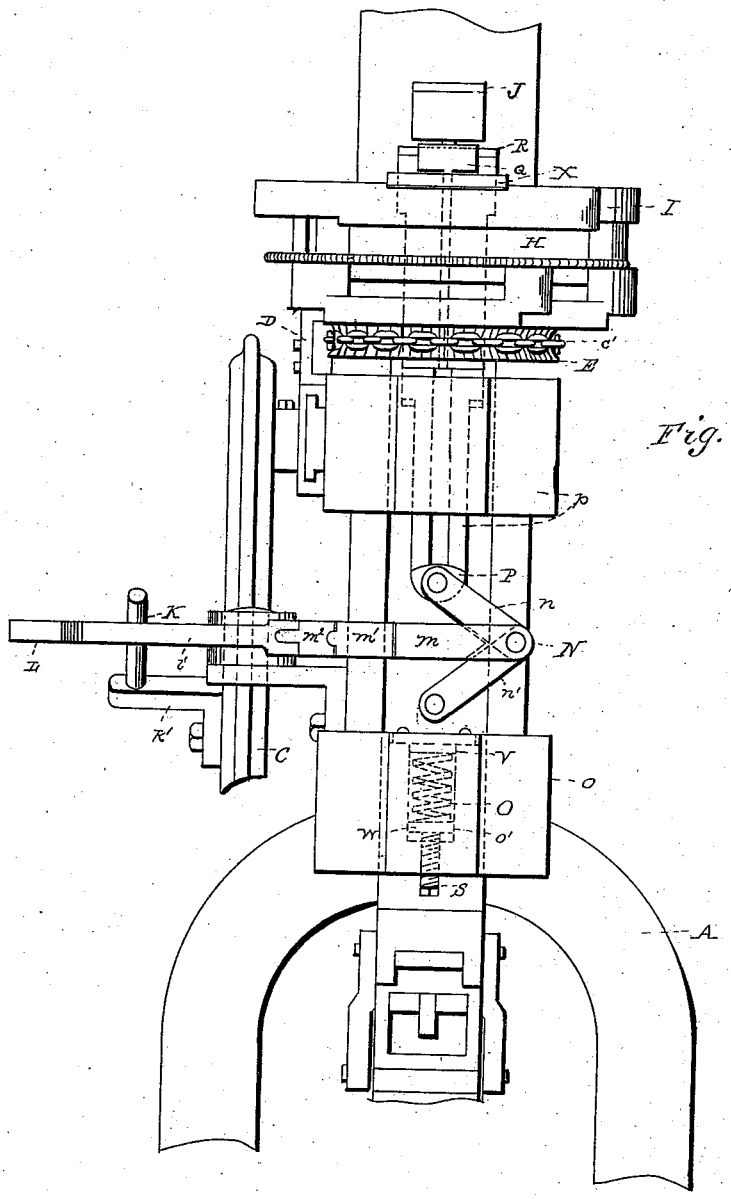

Fig. 3.

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BREASTING ATTACHMENT FOR HEELING MACHINES.

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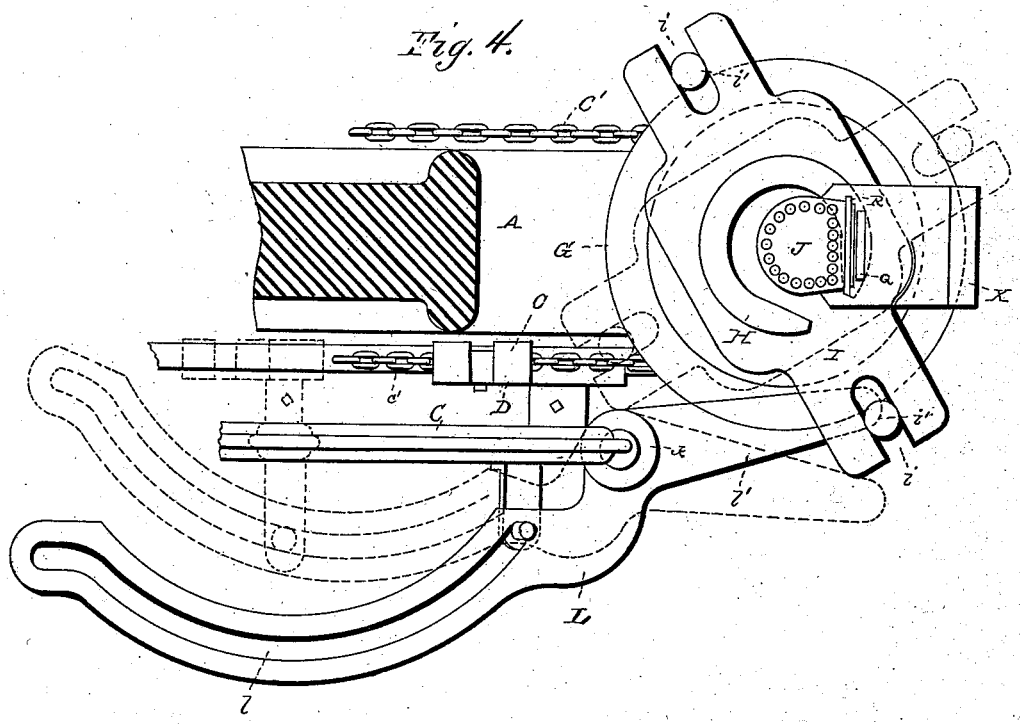
Fig. 4.



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UNITED STATES PATENT OFFICE.

EDMOND ANTOINE LUPIEN, OF WAYLAND, MASSACHUSETTS.

BREASTING ATTACHMENT FOR HEELING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 382,615, dated May 8, 1888.

Application filed November 26, 1887. Serial No. 256,236. (No model.)

To all whom it may concern:

Be it known that I, EDMOND ANTOINE LUPIEN, a citizen of the United States, and a resident of Wayland, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Breasting Attachments for Heeling-Machines; and I do 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.

Figure 1 of the drawings is a side elevation of a heel-trimming machine with my improved breaster attached. Fig. 2 is an enlarged side elevation of my improved breasting attachment. Fig. 3 is a front elevation of same. Fig. 4 is a plan view with upper part of frame A removed.

The invention relates to improvements in breasting attachments for boot and shoe heeling-machines; and it consists in the construction and novel combination of parts, as hereinafter set forth.

The breasting mechanism is preferably attached to machines known in the market as the "McKay and Bigelow Heeling-Machines;" and to fully describe my invention it is necessary to refer by letter to parts heretofore patented to Allen, No. 310,488; Glidden, No. 374,894; McKay *et al.*, No. 166,795; Glidden, No. 203,440, and Allen, No. 332,032; and in the drawings it has not been deemed necessary to illustrate fully the operating mechanism of the machines above referred to.

Referring to the drawings, A designates the frame; B, the spindle; C, the chain carrier lever, and D the chain-carrier.

E and D′ represent the sheaves for the chain; C′ and F, the carrier for the trimming-lever. G is the ring of the trimming-lever carrier; H, the form-plate, and I the trimming-lever provided with the notches *i i*, by means of which and the pins *i′ i′* the trimming-lever is vibrated on its center.

J is the nail-block upon which the heel rests, as shown.

The above-described parts are common in the patents cited, and my attachment is set forth as follows:

k is a bracket or bearing plate secured to the side of the frame A by a suitable bolt or bolts, and having a vertical journal-pin attached to its projecting portion, upon which is fulcrumed the double-armed cam-lever L, provided in its longer curved arm with the cam-slot *l*, and having its shorter arm, *l′*, connected by the links *m* *m′* *m²* to the toggle-joint N, formed by the levers *n n′*. The link *m* is bifurcated and embraces the toggle-joint, being pivoted thereto, and connects to the link *m′* by a horizontally-turning joint. The opposite end of the link *m′* connects to the link *m²* by a vertically-turning joint, the said link *m²* being connected to the shorter arm, *l′*, of the lever L.

K is an anti-friction roller having its lower end pivoted in the outstanding arm of a bracket, *k′*, which is bolted at a suitable point on the lever C. The roller K extends into the cam-slot *l* of the lever L, so that when the lever C is vibrated the roller moving in the slot moves the cam-lever inwardly when in the middle of the slot and outwardly when at either end, so that the cam-lever makes two complete vibrations to one made by the chain-carrier lever. The anti-friction roller rests, respectively, at opposite ends of the slot *l* when the lever C is at the opposite points of its vibration.

P is a vertically-reciprocating bar, which slides in a guideway in the block *p*, forming part of the frame of the machine above the toggle-joint. The lower end of the bar P is pivoted to the end of the lever *n* of the toggle-joint, and the upper end of the rod P is attached to the breasting-knife R and guard Q.

O is a spring, preferably spiral, situated in a vertical recess, *o′*, in the block *o*, which is secured to the main frame below the toggle-joint in a vertical line with the block *p*. V is a plate above said spring provided with a central standard, to which the lower end of the lever *n′* is pivoted. The spring has an upper bearing against the plate V, and a lower bearing against the plate W in the bottom of the recess *o′*, and its tension may be regulated by the adjusting-screw S, which engages a threaded opening through the lower wall of the block *o* and impinges at its upper end against the plate W.

The guard Q has its upper end turned outwardly at a right angle, so that it rests against the shank of the shoe being operated upon,

and prevents the knife from cutting into the sole, as the cutting-edge of the knife and the upper end of the guard are usually on the same level. The coiled spring acts as a cushion and allows the knife and guard to give slightly downward.

The knife and guard have their respective shanks secured to the carrying-bar by screws or bolts, and the said shanks are vertically adjustable on said bar, so that the knife can be elevated to compensate for the wear of its edge, and the guard can be raised slightly above the knife-edge when operating on soft leather, into which the guard has a tendency to sink.

The breasting-knife and guard move through a suitable opening in the plates G, H, and I, and the knife R passes up against the edge of the nail-block, so as to cut the edge of the heel-lifts in a line with said block.

X is a thin metallic protecting-plate secured over the plates of the heeling-machine below the nailing-block, to prevent the cut pieces of leather from falling into the guide-opening for the knife and guard.

When the chain rotates the head of the heeling-machine to trim the convex surfaces of the heel, the breasting-knife and guard, actuated by the cam-lever, links, and toggle-joint, begins to rise and cut the front of the heel, and rises to its full height when the said head has rotated half-way. It then descends, so that the cam-lever makes two vibrations to one of the chain-carrier lever, and thus the breasting-knife and guard can never be in the way of the trimming-knife.

Having described my invention, I claim—

1. In breasting attachments for heeling-machines, the combination, with the vertically-reciprocating knife, and the guard having its upper end bent over at or near the same level as the edge of the knife, and both knife and guard reciprocating simultaneously, of mechanism, substantially as described, whereby said knife and guard are moved to their highest points when the head of the machine has made one-half of its rotation, substantially as specified.

2. In breasting attachments for heeling-machines, the combination, with the knife and guard secured to and reciprocating with a vertical bar, the knife and guard being vertically adjustable on said bar, of the toggle-joint attached to the lower end of said bar and connected with the main frame of the machine, and mechanism, substantially as described, to actuate said toggle-joint, substantially as specified.

3. In breasting attachments for heeling-machines, the combination, with the knife and guard-bearing bar reciprocating vertically in a guide opening in the main frame, of the toggle-joint attached to the lower end of said bar and connected with the main frame, the double-armed cam-lever journaled on a bearing secured to the main frame and connected by links to the toggle-joint, and means, substantially as described, whereby said lever is vibrated to actuate the toggle-joint, substantially as specified.

4. In breasting attachments for heeling-machines, the combination, with the vertically-reciprocating knife and guard-bearing bar, the toggle-joint attached to said bar and connected with the main frame, of the double-armed cam-roller connected to the toggle-joint by suitable links, the actuating-chain for the rotation of the head, the chain-carrier, the chain-carrier lever, and the cam-roller attached to said lever, substantially as specified.

5. In breasting attachments for heeling-machines, the combination of the reciprocating bar P, the guard Q, attached thereto and vertically adjustable thereon, the knife R, attached to and vertically adjustable on the same, the toggle-joint N, the plate V, the coiled spring O, the plate W, and adjusting-screw S, all constructed and arranged substantially as and for the purposes specified.

In testimony whereof I affix my signature in presence of two witnesses.

EDMOND ANTOINE LUPIEN.

Witnesses:
JAMES J. COLEMAN,
DECLAN D. BARRY.