

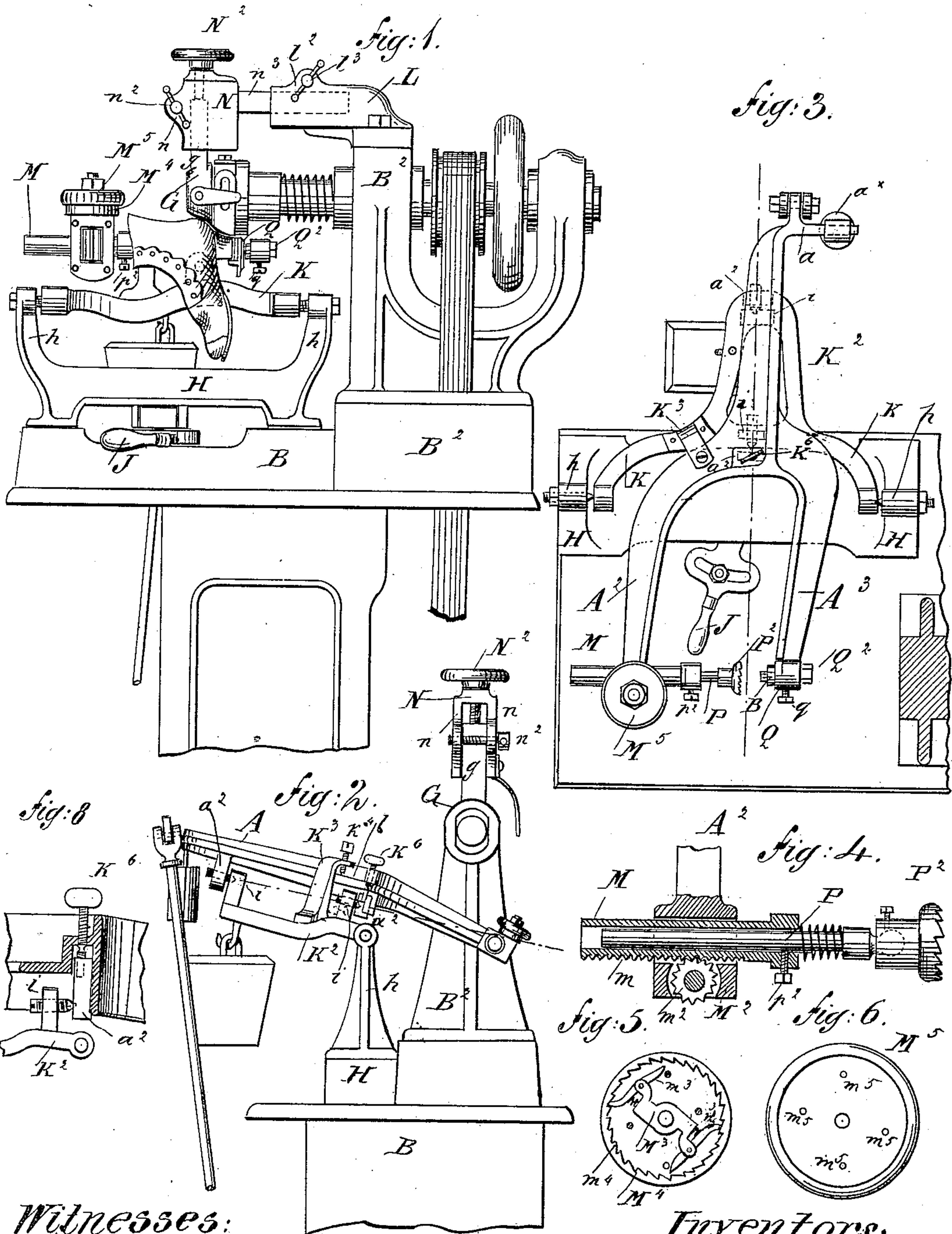
(No Model.)

T. P. KING & F. S. STRONG.

HEEL TRIMMING MACHINE.

No. 267,544.

Patented Nov. 14, 1882.



Witnesses:
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HEEL-TRIMMING MACHINE.

SPECIFICATION forming part of Letters Patent No. 267,544, dated November 14, 1882.

Application filed December 28, 1881. (No model.)

To all whom it may concern:

Be it known that we, THOMAS P. KING, of Brooklyn, in the county of Kings and State of New York, and FREDERIC S. STRONG, of East
5 Bridgewater, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Heel-Trimming Machines; and we do hereby declare that the following is a full, clear, and exact description thereof.

Our invention relates to certain improvements on those for which Letters Patent were granted to Isaac Van Nuhuys and Thomas P. King, under date of October 5, 1875, No.
15 168,540, and October 1, 1878, No. 208,653. In the last-mentioned invention referred to the work-carriage or jack is constructed in three pieces, pivoted together so as to enable them to partake of a universal movement. The center-pin on one of the beams of the work-carriage or jack is automatically adjustable by means of a spring, and the center-pin on the other beam of the jack is provided with a hand-screw for adjusting it.

25 The present invention consists, first, in a novel construction and mode of suspension of the jack; also, in a novel construction and operation of the center-pins; and, further, in certain novel details of construction, arrangement, and combination of parts, whereby several advantages are obtained, as hereinafter more particularly described.

In the accompanying drawings, Figure 1 is a front view of the upper portion of the machine embodying our improvements. Fig. 2 is a side view, and Fig. 3 a top view, of the same. Figs. 4, 5, 6, 7, and 8 are detail views, hereinafter more particularly referred to.

The work-carriage or jack is constructed
40 with three arms, A A^2 A^3 , cast in one piece. The arms A^2 A^3 form two branches of a fork, and the arm A extends rearward therefrom at a point toward one side of the center or point of junction of said branches and terminates in
45 an arm, a , bent at about a right angle with its main length, for the purpose hereinafter described.

On the under side of the arm A are two perforated lugs, a^2 a^2 , for the purpose hereinafter
50 described.

On the table or platform B , which supports the working parts of the machine, is a frame, H , arranged to slide horizontally in ways or guides by means of an eccentric, provided with a handle, J , in a similar manner to the corresponding parts described in patent of October 5, 1875, before referred to. Extending upward from this frame H are two arms, h h , in which are journaled the ends of a rock-shaft, K , from which an arm or extension, K^2 , projects rearward. This arm or extension K^2 is provided on its upper side with perforated lugs, l , corresponding in position with the lugs a^2 on the arm A of the jack.

The jack is pivoted or hinged to the extension of the rock-shaft by means of pivots or bolts i i passed through the lugs a^2 and l , as shown in Fig. 2. By this mode of hanging the jack it is enabled to partake of a universal motion, as the pivots i allow it to be oscillated in the direction of its width and the rock-shaft K allows it to be raised and lowered in the direction of its length, and thus the work is fed to the cutter-head in a similar manner to that described in the patents before referred to. By casting the jack in one piece greater strength, solidity, and steadiness are obtained than when made in three pieces, as heretofore. As the jack is hung at one side of its center, the arm A^2 has a tendency to overbalance the arm A^3 . To counteract this tendency a weight, a^x , is hung on the arm a of the jack, and may be adjusted thereon so as to balance the jack.

In the front end of the arm A^3 of the jack works a center, Q , for engagement with a hole in the pattern-plate attached to the heel to be trimmed. This center Q (see Fig. 7) is provided with a peripheral groove on the portion inside of the arm, in which groove works the point of a set-screw, q , which limits the longitudinal play of said center. At the rear end of said center is an adjusting-screw, Q^2 , working in the arm and having its point bearing against said center, by which means said center may be made to protrude more or less, as may be desired.

Near the front end of the arm A^2 of the jack works a horizontal sleeve, M , provided with a rack, m . Forward of this sleeve works a vertical shaft, M^2 , provided with a pinion, m^2 . In

the sleeve M works a spindle, P, having on its front end a shoulder, between which and the front end of the sleeve is a spring having a tendency to force it outward from the sleeve.

5 The spindle may be adjusted longitudinally in the sleeve, and held securely in place therein by a set-screw, p^2 .

To the inner end of the spindle P a clutch, P^2 , is attached by a universal swivel-joint. 10 This clutch engages equally well with the top of a last, or with the bottom of a shoe not lasted.

To the upper end of the vertical shaft M^2 is attached a circular box or casing, M^4 , on the 15 inner periphery of which is a ratchet, m^4 . In the bottom of this box or casing, with the shaft M^2 as its center, works a double-armed lever, M^3 , carrying a pawl, m^3 , at each end.

Fitting over the box or casing M^4 is a milled 20 cap or wheel, M^5 , from the inner surface of which four pins or abutments, m^5 , project downward. By turning the wheel M^5 in one direction a rotary motion is imparted to the shaft M^2 in a corresponding direction, and the pawls 25 slip over the ratchet-teeth. On turning the wheel M^5 in the opposite direction the abutments m^5 disengage the pawls m^3 from the ratchet m^4 , and a rotary motion in a corresponding direction with the wheel is imparted 30 to the shaft M^2 . Thus a reciprocating longitudinal motion is imparted by the pinion m^2 and rack m to the sleeve M and spindle P carried thereby.

The centering device above described is ad- 35 justed to fit the shoe to be operated upon by placing the spindle P in the desired position in the sleeve M, and securing it by the set-screw p^2 . The wheel M^5 is turned toward the left, the clutch P^2 inserted in the shoe, and the 40 wheel M^5 then turned to the right, so as to bring the pattern-plate into engagement with the center Q, in which position the work is securely held by the engagement of the pawls m^3 with the ratchet m^4 .

45 The lugs a^2 and l are so arranged that the pivots $i i$ are in line with the finished edge of the top lift of the heel when the trimming is complete. In order to provide for securing this position with relation to heels of different 50 sizes, the lug a^2 nearest the rock-shaft K is arranged to work in a mortise in the arm A of the jack, and is provided with a set-screw, K^6 , by which the position of the jack may be nicely adjusted.

55 On referring to Fig. 3 it will be seen that the center Q at the front end of the arm A^3 is in line with the pivots $i i$. This prevents any lateral vibration of the work while the heel is being trimmed.

60 The extension K^2 of the rock-shaft K is provided with an arm, K^3 , extending upward and hanging over the arm A^2 of the jack, and provided with a set-screw, k^4 , the point of which 65 bears upon the arm A^2 and prevents it from rising too high when the jack is oscillated laterally. The height to which said arm A^2 is allowed to rise is regulated by the set-screw.

Attached to the base or platform B is a standard, B^2 , which carries the main driving-shaft to which the cutter-head is attached. At 70 the upper end of this standard is a horizontal arm, L, in the top of which is a groove having its sides formed by flanges l^2 , through which works a tightening-screw, l^3 .

The gage-plate G is provided with a shank 75 or stem, g , which works between flanges n in a yoke or holder, N, through which flanges works a tightening-screw, n^2 . Through the top of the yoke N works a hand-screw, N^2 , the threads of which engage with threads in the shank g 80 of the gage-plate G. The yoke N is provided with a horizontal shank or stem, n^3 , which works between the flanges l^2 in the arm L. The shank of the gage-plate is inserted in the groove of the yoke N and engaged by the hand- 85 screw N^2 . The shank n^3 of the yoke N is then inserted between the flanges l^2 and adjusted laterally to the proper position, where it is held by tightening the screw l^3 , which thus clamps said shank n^3 between said flanges l^2 . The 90 gage-plate is then adjusted to the exact required position by means of the hand-screw N^2 , and is firmly held in place by tightening the screw n^2 , which thus clamps the shank or stem 95 g between said flanges n .

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a work-carriage for heel-trimming machines, the laterally-adjustable frame carrying 100 the rock-shaft K, having the eccentrically-pivoted work-supporting fork thereon, substantially as shown and described.

2. In a work-carriage for heel-trimming machines, the rock-shaft K, having the arm or 105 extension K^2 , provided with the lugs $i i$, supporting the eccentrically-pivoted work-supporting fork, provided with lugs $a^2 a^2$, as shown and described.

3. In a work-carriage for heel-trimming machines, the rock-shaft K, provided with the 110 arm K^3 and adjusting-screw, for regulating the oscillation of the work-supporting fork, as shown and described.

4. In a jack for heel-trimming machines, the 115 work-supporting fork, having the arm A^2 , provided with the universally-adjustable center P^2 and adjusting devices, the arm A^3 , provided with the longitudinally-adjustable center-pin Q, set-screws q , and adjusting-screw Q^2 , and 120 jam-nut, and the arm A, provided with weight-arm a and lugs $a^2 a^2$, as shown and described.

5. In a work-carriage for heel-trimming machines, the universally-adjustable center P^2 , 125 sleeve M, provided with the rack m and set-screw p^2 , and the shaft P, in combination with the pinion m^2 , shaft M^2 , lever M^3 , pawl m^3 , casing M^4 , ratchet m^4 , cap-wheel M^5 , provided with stops m^5 , and the work-supporting fork, for operation as shown and described. 130

6. In a jack for heel-trimming machines, the tightening device consisting of the sleeve M, provided with rack m , the shaft M^2 , provided with a pinion, m^2 , the lever M^3 , provided with

the pawls m^3 , the box or casing M^4 , provided with the interior ratchet, m^4 , and the cap or wheel M^5 , provided with the abutments m^5 , substantially as and for the purpose herein described.

5 7. In a heel-trimming machine, the horizontal grooved arm L, provided with the flange l^2 and tightening-screw l^3 , in combination with

the yoke or holder N, provided with a shank or stem, n^3 , substantially as herein described. 10

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