2 Sheets—Sheet 1.

W. COMEY.

Machine for Treeing Boots and Shoes.

No. 200,979. **Patented March 5, 1878.**

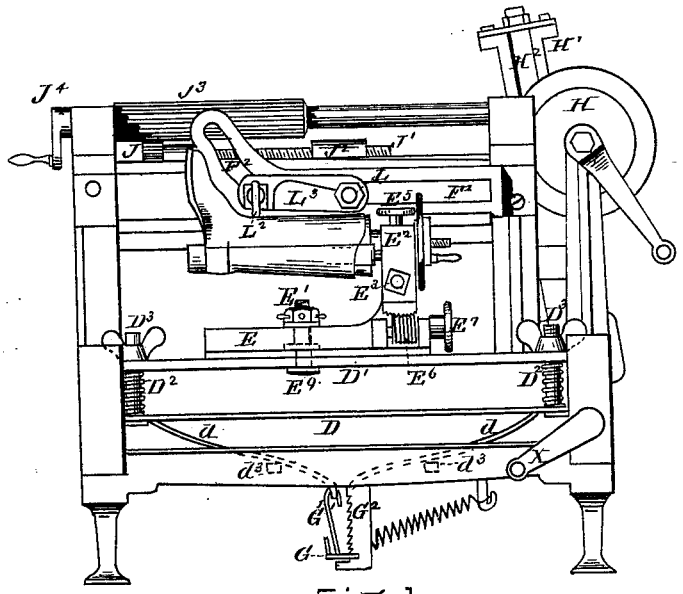

Fig. 1.

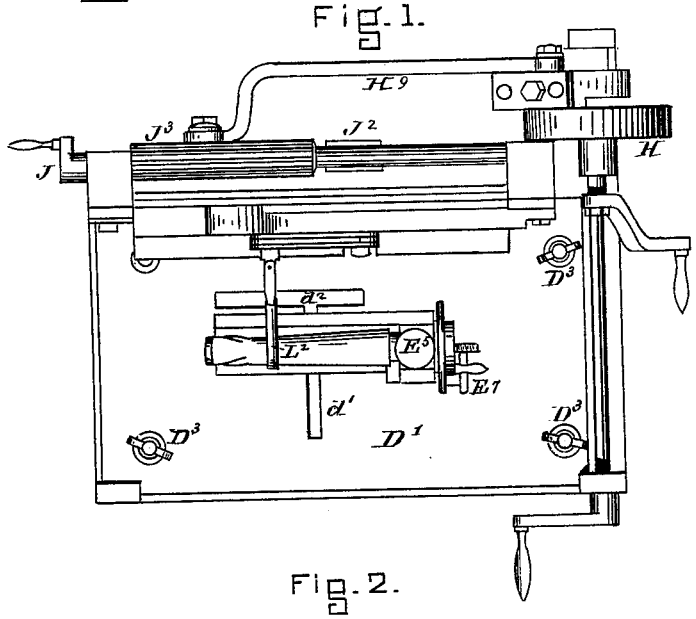

Fig. 2.

WITNESSES

Frank L. Parker

Nath Evans

INVENTOR -

Willard Comey

Per William Edson Atty

2 Sheets—Sheet 2.

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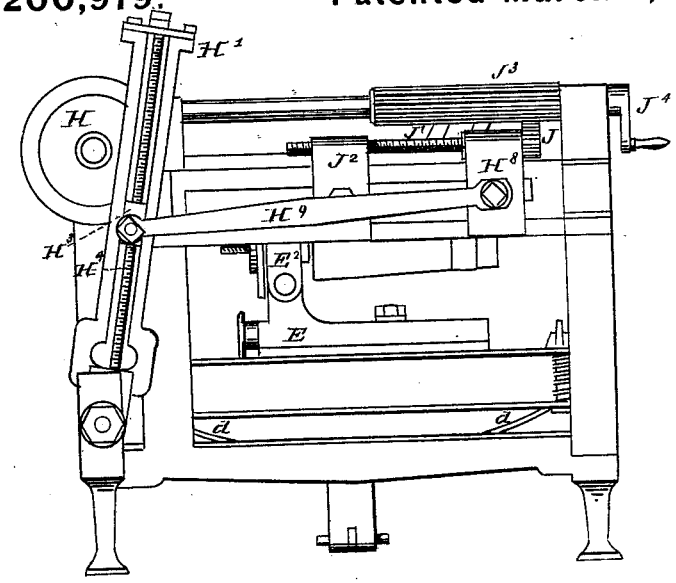

Fig. 3

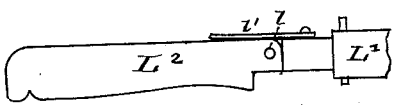

Fig. 5.

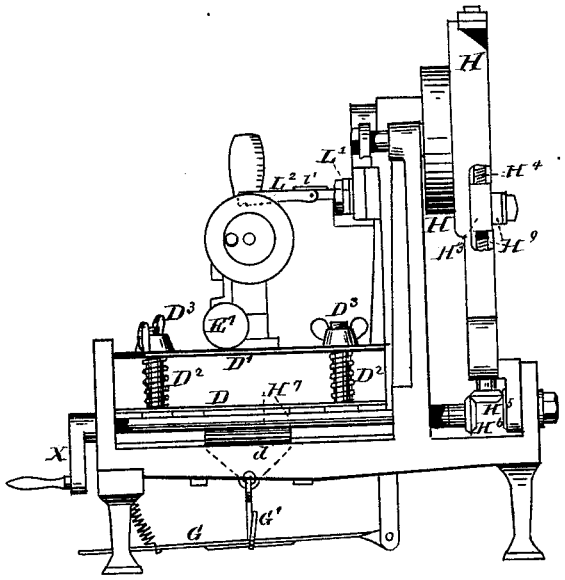

Fig. 4.

WITNESSES

Frank G. Parker

Stall Evans

INVENTOR

Willard Comey

Per William Edson Atty

UNITED STATES PATENT OFFICE.

WILLARD COMEY, OF WESTBOROUGH, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR TREEING BOOTS AND SHOES.

Specification forming part of Letters Patent No. **200,979**, dated March 5, 1878; application filed February 2, 1878.

To all whom it may concern:

Be it known that I, WILLARD COMEY, of Westborough, in the county of Worcester, in the State of Massachusetts, have invented a new and useful Machine for Treeing Boots and Shoes, of which the following is a specification:

The nature of my invention consists in organizing, in a single machine, a device of a jack for holding the boot or shoe and a mechanism for operating the rub-stick, the jack being adjustable to any desired position, allowing the boot or shoe to be turned so as to present any part to the action of the rub-stick, the rub-stick and its mechanism being so made that it can reach all parts of the boot or shoe, and that its motion and field of motion can be regulated at will by the operator while the machine is in motion.

The exact nature of my invention may be best understood by reference to the specification and drawings.

Figure 1 is a front elevation of my machine. Fig. 2 is a plan of the same. Fig. 3 is a rear elevation of the same. Fig. 4 is an end elevation of the same. Fig. 5 is an enlarged view of the rub-stick.

In my machine I mount the boot on a tree, in the usual manner; then I connect the tree to the jack-head E^2, Fig. 1, by means of a rod or shaft that extends from the tree to which it is attached through the jack-head E^2, in which position it is free to revolve, unless fastened in position by the hand-screw E^5. The jack-head E^2 swings on a pivot, E^3, which attaches it to a standard extending upward from the base-plate E, Fig. 1. The lower end of the swinging jack-head E^2 has cut upon it some screw-threads, which engage with the screw E^6, so that by turning the screw E^6 by the hand-wheel E^7 the jack-head may be swung back and forth, so as to raise or lower the front end of the tree.

The jack is fastened to the yielding table D^1 by means of a flat-headed bolt and nut, E^1 E^9, said bolt passing through the base E of the jack and through slots d^1 d^2. (See Fig. 2.) The table D^1 is attached by screws D^3 D^3 D^3 D^3 and springs D^2 D^2 D^2 D^2, surrounding these screws, so that the table D^1 yields to any considerable downward pressure, it, in fact, resting on the springs D^2.

The lower table D rest on flat levers *d d*, and these levers again resting on the fulcrums d^3 d^3, said fulcrums being cross-bars attached to the frame of the machine.

The inner ends of the levers *d d* are attached by the straps G^1 to a foot-lever, G, by means of which the entire table D D^1 may be raised or lowered, and, through ratchet-plate G^2, held at any desired elevation.

Owing to the fact that as a boot or shoe is revolved on the tree it presents a constantly-changing and highly-diversified series of positions, and as no two lots of boots offer the same contour to the rub-stick, it is necessary that the tree should not only be adjustable in every direction, but also that it should yield so far that while the rub-stick shall always be kept in full contact with the work, yet no damage may result to the boot or shoe which is being operated upon. These effects, it will be seen, are fully attained by the combinations of adjustments and springs, as set forth above.

The rub-stick L^2 (shown in Fig. 5) may be made in any desirable shape, and may be pivoted at *l* and held in position by the spring *l'*. This rub-stick L^2 is attached, by the shank L^1, to the moving housing L^3, said housing being attached by the bolt L, which passes through the guide-slot F^1 F^2, Fig. 1, into the sliding nut J^2, (see Figs. 1, 2, and 3,) so that when J^2 is made to slide it communicates its motion to the rub-stick housing L^3.

The rub-stick end of the housing L^3 is guided by a stud which slides freely in the slot F^2, so that as the housing moves back and forth this end will rise and fall—that is, conform in its motion to the guide-slot F^1 F^2.

Motion is imparted to the sliding nut J^2, which operates the rub-stick, by the crank-disk H, Fig. 3, on the rear face of which is a stud fitted in a sliding block, which stud and block have a rotary motion about the center of the disk, and at the same time a reciprocating motion in the channel H^2 in the swinging arm H^1, to which it imparts a reciprocating motion. In the rear of the swinging arm H^1 is formed a second channel, in which rotates the screw H^4, on which a pivot-block traverses.

To this block one end of the link H^9 is pivoted, while the other end is attached to the sliding block H^8, Fig. 3. This block H^8 carries a screw-shaft, J^1. Said screw-shaft J^1 passes through the sliding block J^2, in which it acts as a screw. The end of this shaft is provided with a spur-gear, J, which engages the cylinder-gear J^3.

From the above it may be seen that the block J^2, which controls the position and motion of the rub-stick L^2, may be adjusted to any relative position with the block H^8 by means of the screw-shaft J^1, which is actuated by the gears J and J^3 and the crank J^4. Thus the field of motion of the rub-stick is adjusted in any position within the limits of the guide-slot F^1 F^2, Fig. 1.

To adjust the length of the stroke of the rub-stick, the block H^3, Fig. 3, is moved vertically by turning the screw H^4, (see Fig. 4,) which effect is produced through the bevel-gears H^5 H^6, the shaft H^7, and the crank X.

Having now described the construction and operation of my invention, I claim and desire to secure by Letters Patent—

1. In a boot or shoe treeing machine, the combination of the jack E E^2 and yielding support or table D^1, all substantially as and for the purpose set forth.

2. The combination of the yielding table D^1, the springs D^2, screw-posts D^3, and the plate D with the levers *d*, straps G^1, and foot-lever, all operating together substantially as described, and for the purpose set forth.

3. The combination of the rub-stick L^2 and its holder L^3 with the guide-slot F^1 F^2, operating substantially as described, and for the purpose set forth.

4. In a boot-treeing machine, the combination of the block J^2, the screw J^1, the block H^8, and gear-wheel J, all operating substantially as described, and for the purpose set forth.

5. In a boot and shoe treeing machine, the combination of the block H^8, the link H^9, the pivot-block H^3, and the screw H^4 with the swinging arm H^1, gears H^5 H^6, and shaft H^7, all operating substantially as described, and for the purpose set forth.

6. In a jack, the combination of the swinging part E^2 with the adjusting-screw E^6, substantially as described, and for the purpose set forth.

7. In a boot and shoe treeing machine, the rub-stick L^2, having a pivoted or hinged joint, *l*, and spring *l'*, substantially as described, and for the purpose set forth.

WILLARD COMEY.

Witnesses:
TIMOTHY F. TAFT,
CHAS. E. BLACK.