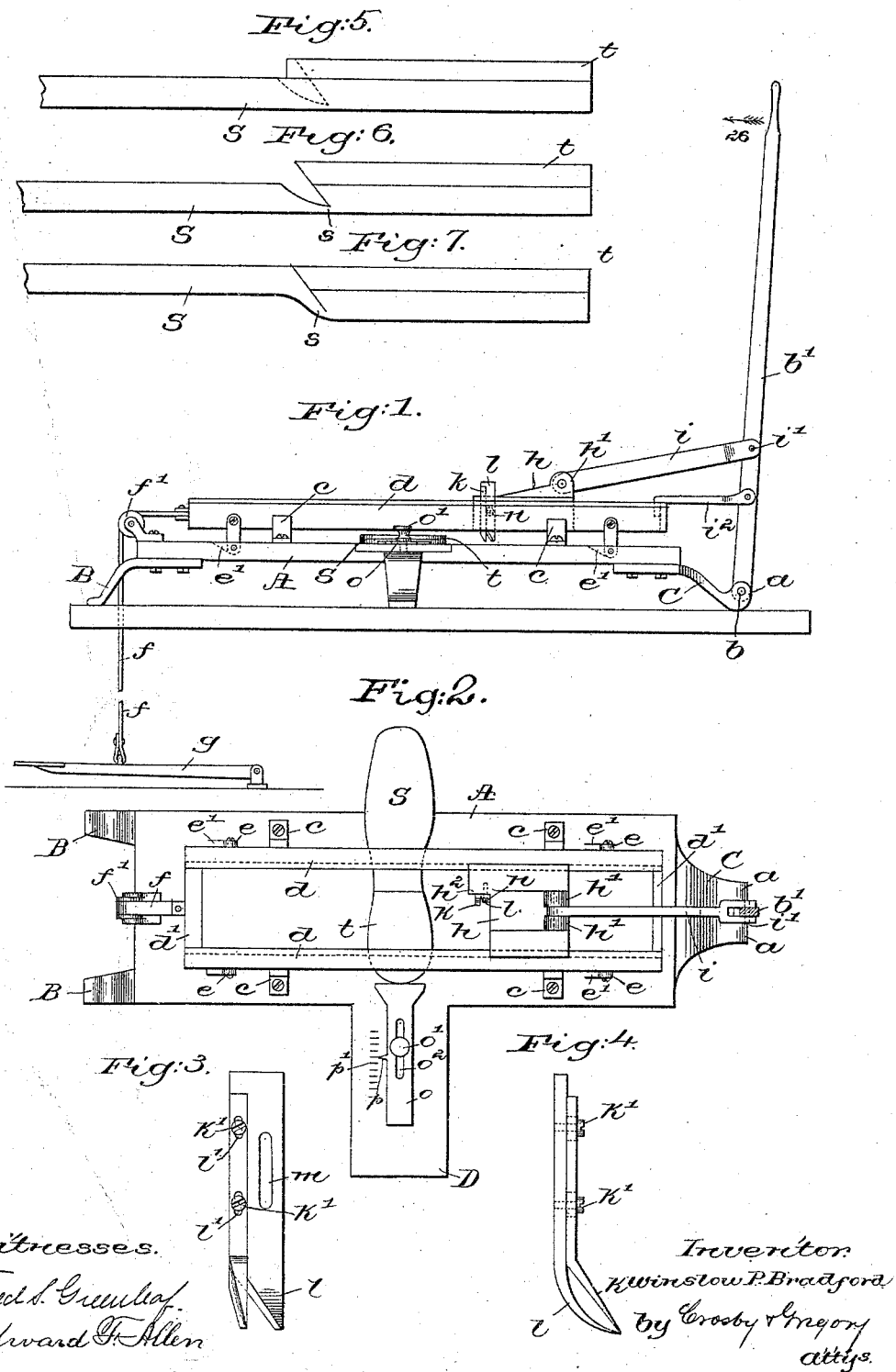


W. P. BRADFORD.
SOLE SLOTTING MACHINE.

Patented Feb. 21, 1893.



UNITED STATES PATENT OFFICE.

WINSLOW PARKER BRADFORD, OF HAVERHILL, MASSACHUSETTS.

SOLE-SLOTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 492,185, dated February 21, 1893.

Application filed August 13, 1892. Serial No. 442,960. (No model.)

To all whom it may concern:

Be it known that I, WINSLOW PARKER BRADFORD, residing in Haverhill, county of Essex, and State of Massachusetts, have invented an Improvement in Sole-Slotting 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 construction of boots and shoes having spring heels the flesh side of the outer sole has been slotted or thinned transversely at the point where the breast of the heel crosses the sole, in order that the sole may be thereafter bent up at such point against the breast of the heel, the sides of the slot being brought together. This slot or thinned portion has usually been made by a hand tool, the lift or lifts forming the heel being beveled at the breast end at the same time, if so desired.

This invention has for its object the construction of a machine for slotting soles, either with or without the heel attached, whereby the slotting can be done more rapidly than by a hand tool, more accurately, and more cheaply.

Figure 1 shows in side elevation a machine embodying my invention. Fig. 2, is a plan view of the same, taken below the line $x-x$, Fig. 1. Figs. 3 and 4, are side and front views respectively of one form of cutting knife; and Figs. 5, 6 and 7 are details to be referred to.

The bed A is provided with suitable legs B, C, the leg C having an upturned end forming ears a , between which is pivoted at b the lower end of an operating lever b' .

Secured to the upper side of the bed by screws, as herein shown, are guides c , between which the clamping frame moves. Herein this frame is composed of two side bars d , d' , and end pieces d'' , d''' , rigidly connecting them, the side bars being pivotally connected to the links e , the said links in turn being pivoted to the bed, as shown best in Fig. 1. A strap or other connection f is attached to one end of the clamping frame, and passes over a pulley f' attached to one end of the bed, and thence to a treadle g secured to the floor.

When the treadle is depressed the frame is drawn to the left, in Fig. 1, between the guides c , and downward toward the bed A by the

pivoted links e . The lower ends of the links rest in depressions e' in the bed, shown in dotted lines Fig. 1, one side of each depression being inclined to form limiting stops for the links when the frame is moved to the left, the other side being substantially vertical and serving as stops for the links when moved in the opposite direction. The tops of the side bars d are flattened to form guideways for and upon which slides the cutter carrier h , provided with ears h' , to which is pivoted one end of a link i , the other end of said link being pivotally connected to the operating lever b' at i' .

As best shown in Fig. 2, the front of the cutter carrier h is cut away to leave a shoulder h^2 , to which the cutter is secured. The cutter is herein shown as composed of a straight blade k , and a curved blade l , the shanks of the two blades being adjustably connected by set screws k' , and slots k^2 , as shown in Figs. 3 and 4. The shape of the blades used can be altered to cut slots of any desired shape. The shank of the blade l is longitudinally slotted at m , and a set screw n' extending therethrough into the shoulder h^2 of the cutter carrier adjustably secures the cutter thereto, the slot and set screw permitting vertical adjustment of the cutter as a whole, the blades thereof being adjusted one with relation to the other by the slots k^2 and screws k' described. A hooked link i^2 pivoted to the lever b' engages one end of the clamping frame, as shown in Fig. 1, for a purpose to be described. At or near the center of one side of the bed A, a shelf D is secured or forms an integral part thereof, and a sliding gage o is adjustably held thereon by a set screw o' , having its shank extended through a slot o^2 of the gage into the shelf, the gage fixing the location of the slot, each size of shoe having its individual length of heel. An index p on the gage moves along the scale p' at right angles to the path of the cutter and its carrier.

In operation, the parts being in the position shown in Fig. 1, a sole S is laid upon the bed with its heel end resting against the face of the gage o , the latter having been previously set for the length of sole to be slotted, and the treadle g is depressed, drawing the clamping frame to the left and also down upon the

sole, thereby clamping it firmly to the bed, the longitudinal movement of the frame, through link i^2 , moving the lever b' on its pivot over in the direction of the arrow 25.

5 The operator, grasping the handle of the lever, draws it still farther in the same direction,—thereby sliding the cutter carrier along the top of the clamping frame, by the link i , and across the upper side of the sole, the cutter
10 cutting the slot therein quickly and accurately. When the operating lever is thrown back to the position shown in Fig. 1, the cutter carrier is retracted, and the treadle being released, the hooked link i^2 will restore
15 the clamping frame to its normal position, unclamping the sole. If a sole only is slotted both side bars d will bear upon and clamp it, but if, as is preferable, the sole has one or more heel lifts t secured thereto, as shown in
20 the drawings, only the side bar resting on said lifts will act to clamp the sole in place, it sufficing to properly hold the sole.

In Fig. 5 the heel end of the sole with its attached lift is shown previous to slotting,
25 the dotted lines indicating the shape of the slot.

Fig. 6 shows the slot completed, the bevel made in the lift forming a continuation of one side of the slot, and Fig. 7 shows the sole bent
30 up at the thin portions and the two sides of the slot brought together, forming the spring heel. The straight blade k bevels the lift and cuts the straight side of the slot, the blade l cutting the curved side thereof.

35 Having described my invention, what I claim, and desire to secure by Letters Patent, is—

40 1. A bed, a clamping frame and parallel supporting links pivotally connected thereto, and to the bed and guides for said frame com-

bined with a cutter carrier adapted to slide on said frame, its cutter, an operating lever, connections between it and said frame and cutter carrier, and means to move the clamping frame toward the bed, and parallel thereto 45 substantially as described.

2. A bed, a clamping frame pivotally connected thereto, and guides for said frame, combined with a cutter carrier supported by and longitudinally movable on said frame, a 50 cutter vertically adjustable on said carrier, a gage movable at right angles to the path of movement of the cutter, a support therefor, and actuating mechanism for said cutter carrier and clamping frame, substantially as de- 55 scribed.

3. A bed, a clamping frame, and a cutter carrier, combined with a cutter having a straight and a curved blade, means to adjust one blade with relation to the other, and to 60 adjustably attach said cutter to the cutter carrier, and mechanism to actuate the clamping frame and cutter carrier, substantially as described.

4. A bed, a clamping frame, guides there- 65 for, and a treadle to move the frame in one direction, combined with a cutter carrier movable on said frame, its cutter, an operating lever, a connecting link between it and the cutter carrier, and a hooked link pivoted 70 to said lever and engaging the frame, to move the latter in the opposite direction, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of 75 two subscribing witnesses.

WINSLOW PARKER BRADFORD,

Witnesses:

ROBERT D. TRASK,
HORACE M. SLEEPER.