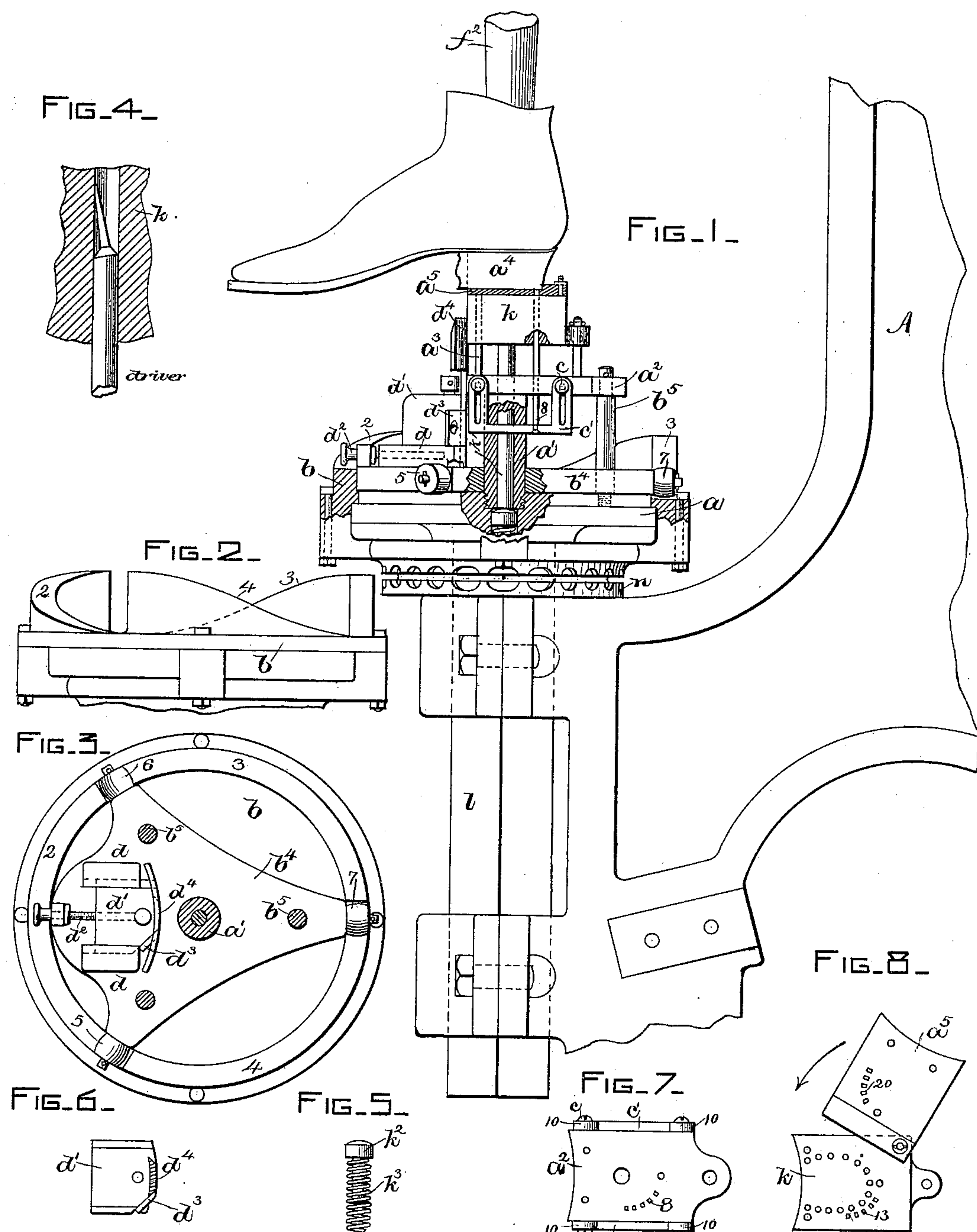


(No Model.)

J. F. McMULLETT.
HEEL NAILING MACHINE.

No. 373,409.

Patented Nov. 15, 1887.



WITNESSES

WITNESSES
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UNITED STATES PATENT OFFICE.

JAMES F. McMULLETT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 373,409, dated November 15, 1887.

Application filed April 12, 1887. Serial No. 234,493. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McMULLETT, of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Heel-Nailing Machines, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

10 This invention, relating to heel-nailing machines, has for its object to drive not only the nails which secure the heel to the sole, but to also immediately thereafter drive into the heel several slugs to prevent the heel being worn
15 away too rapidly.

In accordance with this invention the nails by which to attach the heel to the sole are forced therein from a nail-box by a series of main drivers operated in usual manner, and
20 thereafter, while the heel is yet under pressure, an independent set of drivers, which I shall denominate "auxiliary drivers," is brought into operation to drive a series of slugs or nails, preferably outside the nails first driven.

25 My invention is shown as embodied upon that class of heel-nailing machines known as the "McKay and Bigelow," or a machine substantially such as represented in United States Patent No. 203,440, and as herein shown
30 the upper end of the usual die-bed spindle is provided with a rotating cam-plate, which, as it is rotated, acts to raise a carriage, which in turn lifts the auxiliary driver-plate, to which are attached the auxiliary drivers, the carriage
35 having also preferably attached to it a heel-breasting knife.

My invention consists, essentially, in the combination, with a nail-box and a series of main drivers to drive the nails by which to at-
40 tach heels to soles, of a series of auxiliary drivers to drive slugs or other nails into the heel to reduce its tendency to wear.

Figure 1 is a side elevation and partial section of a sufficient portion of a heel-nailing
45 machine to enable my invention to be understood. Fig. 2 is a detail showing the cam-plate detached; Fig. 3, a top view of the cam-plate and carriage; Fig. 4, a detail showing the upper end of one of the drivers as beveled, to thus enable it to drive a nail or slug

into the heel on a slant; Fig. 5, a detail showing the spring-plug to sustain the shank of the nail-box; Fig. 6, a detail showing the holder for the breast-cutting blade, the shank of the blade being shown in section. Fig. 7 shows
55 the auxiliary driver-plate detached from the machine, and Fig. 8 is a detail showing the nail-box and its attached top-lift plate for blinding the top lift.

The frame-work A, the die-bed spindle l ,
60 the last-holding standard f^2 , and the chain-wheel n are and may be all as in United States Patent No. 203,440, while the nail-box k , its shank k' , and its yielding support composed of a pin, k^2 , and spring k^3 , and the top-lift
65 plate a^5 , except as to the slug-holes in the nail-box and plate, are and may be all as in United States Patent No. 166,795.

The head a , a circular plate attached to the upper end of the die-bed spindle, has screwed
70 into it a sleeve, a' , upon the top of which is mounted the main driver-plate a^2 , to which are secured a series of drivers, as a^3 , to drive the nails employed to attach the heel a^4 to the sole in usual manner, but one of the drivers being
75 herein shown, the heel resting on the top of the nail-box or on the top-lift plate a^5 at the top of the nail-box, according to the work to be done, the drivers a^3 driving the nails, while the main driver-plate is lifted from its position
80 (shown in Fig. 1) into a position to meet the bottom of the nail-box.

Immediately below the head a the spindle is surrounded loosely by a cam-plate, b , having a hub provided with teeth to co-operate
85 with the chain, the latter turning the cam-plate for about one-third of a rotation in one and then in the opposite direction. This cam-plate embraces the head a loosely, (see Fig. 1,) so as to rise and fall with it, and at its up-
90 per side the cam-plate is provided with (as herein shown) three cam projections, 2 3 4, each occupying substantially one hundred and twenty degrees of a circle. These cams receive upon them three rolls, 5 6 7, loose on a
95 carriage, b^4 , surrounding the sleeve a' , and having holes to surround the guide-posts b^5 , supporting the main nail-driver plate a^2 , erected on the head a .

The main nail-driver plate a^2 has suspended 100

below it from screw-studs *c* the auxiliary nail or slug driver plate *c'*, carrying the auxiliary drivers 8, one only of which is shown in Fig. 1, the number of such drivers being more or less, according to the number of slugs to be driven.

In Fig. 7 I have shown five auxiliary drivers, 8. The plate *c'* has upwardly-extended ears 10, slotted as shown in Fig. 1, to slide on the studs *c*. The carriage has a guide, *d*, to receive a knife-carrier, *d'*, made adjustable by a screw, *d''*. The knife-carrier has a dove-tailed slot or opening, in which is held by a gib, *d'''*, the shank of a knife or blade, *d''''*, by which to breast the heel.

After the regular nails have been driven, as described, by the drivers *a*³, the head *a* having substantially completed its upstroke and having brought the carriage *b*⁴ up to the plate *a*², the usual chain engages the chain-wheel and starts the cam-plate, causing it by its rotation to lift the auxiliary nail or slug driving plate, so that the drivers 8, carried by it, (they being longer than the drivers *a*³,) act to drive the slugs out through the holes 13 of the nail-box, the blade acting at the same time to breast the heel.

To enable the nails or slugs (see Fig. 4) to be driven into the heel on a slant, I have inclined the upper ends of the drivers.

If a top lift is not to be blind-nailed or impaled on the but partially-driven nails, as usual, then I may dispense with the top-lift plate; but otherwise the top-lift plate will be retained and be provided with slug-holes 20.

In case that the heel is not to have a top lift blinded upon it in usual way, the end of the heel will rest directly upon the upper side of the nail-box, instead of upon the top-lift plate, as in Fig. 1.

If it is desired to blind the top lift upon the protruding ends of the nails employed to attach the heel to the sole, then the top-lift plate *a*⁵ will be turned aside to uncover the top of the nail-box, as in Fig. 8, so that as the die-bed spindle is lifted the drivers *a*³ will act to drive the nails into the heel to attach it to the sole, and thereafter the die-bed spindle will be lowered, the top-lift plate will be swung around in the direction of the arrow upon it in Fig. 8 to cover the nail-box, and a top lift will be laid upon the top-lift plate. Then the die-bed spindle will be again raised to cause the top lift to be impaled upon the undriven heads of the nails, and thereafter the cam-plate will be rotated to actuate the auxiliary driver-plate, as before described, it acting to drive the slugs into and through the top lift and into the heel, only the slugs showing in the top lift.

I am aware that awls with inclined points are old.

I claim—

1. A heel-nailing machine containing the following instrumentalities, viz: a nail-box having two series of holes through it—one for the regular nails to attach the heel to the sole and the other for slug-nails—a set of drivers for each of the said series of holes, a main driver-plate to operate the drivers and drive from the nail-box the nails to be used to attach the heel to the sole, and an auxiliary driver-plate to operate the slug-nail drivers, and means to operate the auxiliary driver-plate in the same direction as and against the under side of the main driver-plate, while the latter remains at the upper part of its throw, both driver-plates having a reciprocating motion only, the parts being combined to operate substantially as described.

2. In a heel-nailing machine, the nail-box and the main driver-plate and its drivers *a*³, to drive nails to attach the heel to the sole, combined with the independently-movable auxiliary driver-plate attached to the main driver-plate, substantially as described, and located below the main driver-plate and its attached drivers, to operate substantially as described.

3. In a heel-nailing machine, the nail-box and the main driver-plate and its drivers *a*³, to drive nails to attach the heel to the sole, combined with the independently-movable auxiliary driver-plate arranged below the main driver-plate, its attached drivers attached to the main driver-plate, substantially as described, and the drivers actuated by the said auxiliary driver-plate, the carriage, means to move it, and the breasting-knife carried by the said carriage, substantially as described.

4. The die-bed spindle, its head, the rotating cam-plate thereon provided with a series of cams or inclines, and the carriage moved by the cam-plate, combined with the main driver-plate, its drivers, and the auxiliary driver-plate having the longer drivers, 8, to operate substantially as described.

5. The combination, with the head of the cam-plate and the carriage mounted thereon, of a vertically-moving heel-breasting knife or blade to operate automatically, substantially as described.

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

JAMES F. McMULLETT.

Witnesses:

JOHN A. WIEDERSHEIM,
JAS. F. KELLY.