

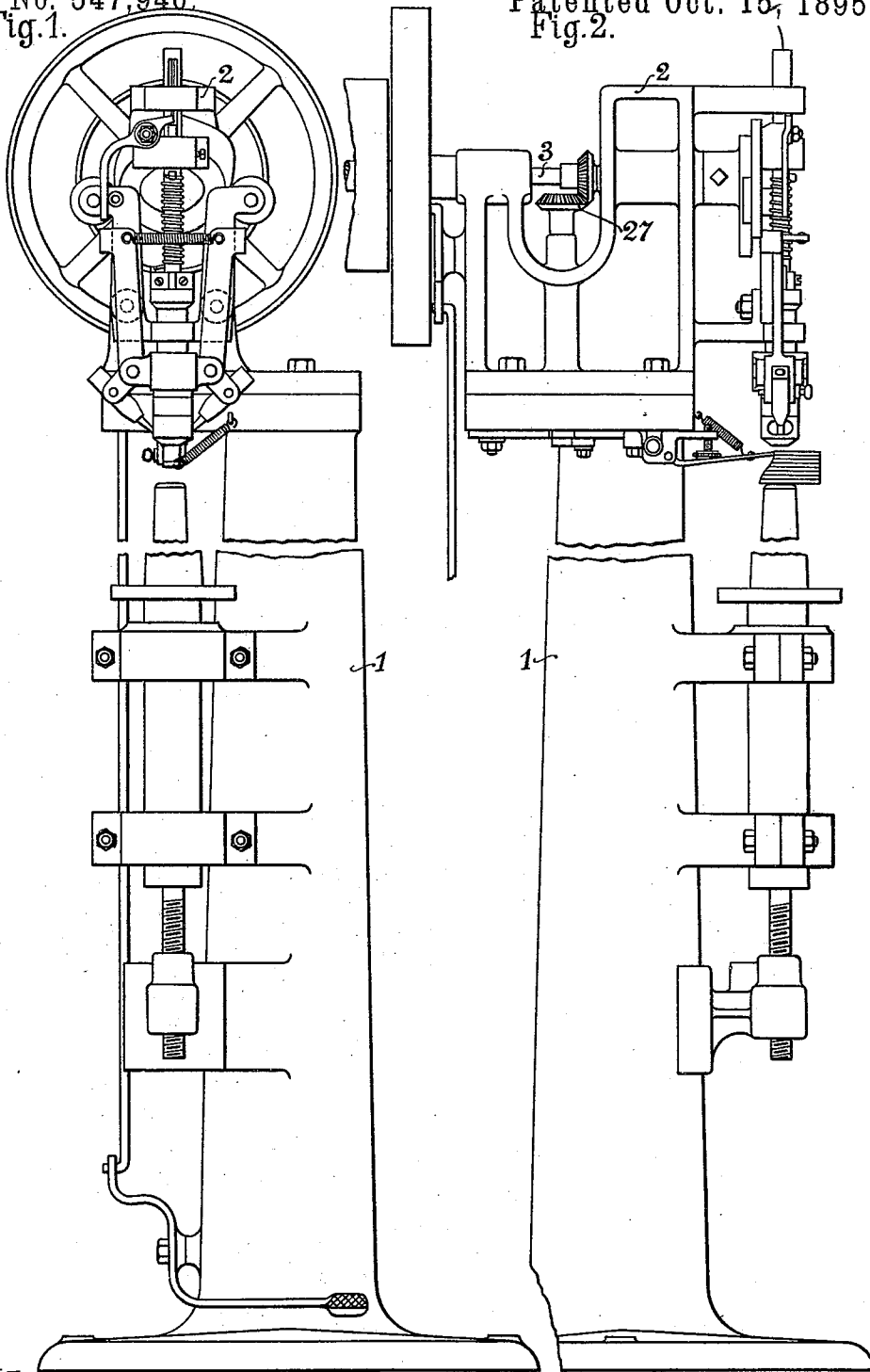
(No Model.)

3 Sheets—Sheet 1.

J. ALBRECHT.
MACHINE FOR NAILING ON BOOT SOLES.

No. 547,946.
Fig. 1.

Patented Oct. 15, 1895.
Fig. 2.



Witnesses:-
Fred Hayer
George Barry

Inventor:-
Johannes Albrecht
by attorneys
Horn & Howard

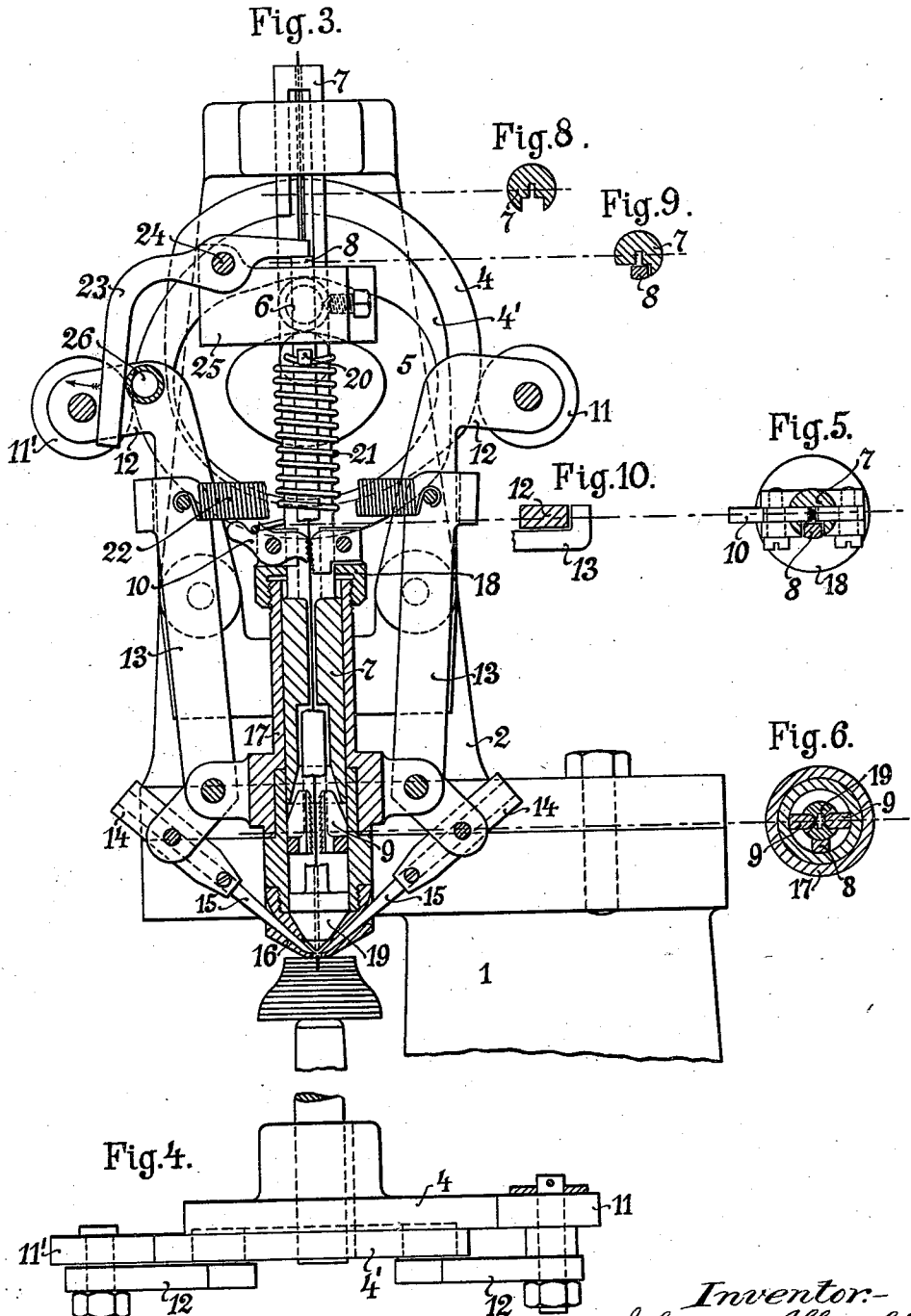
(No Model.)

3 Sheets—Sheet 2.

J. ALBRECHT.
MACHINE FOR NAILING ON BOOT SOLES.

No. 547,946.

Patented Oct. 15, 1895.



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(No Model.)

3 Sheets—Sheet 3.

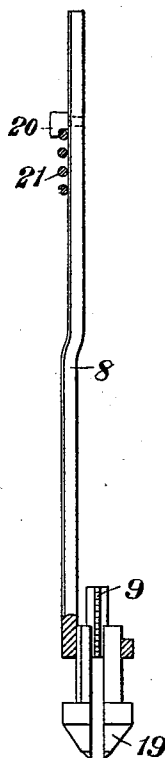
J. ALBRECHT.

MACHINE FOR NAILING ON BOOT SOLES.

No. 547,946.

Patented Oct. 15, 1895.

Fig. 7.



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UNITED STATES PATENT OFFICE.

JOHANNES ALBRECHT, OF CANNSTADT, ASSIGNOR TO THE KEATS MASCHINEN-GESELLSCHAFT, OF FRANKFORT-ON-THE-MAIN, GERMANY.

MACHINE FOR NAILING ON BOOT-SOLES.

SPECIFICATION forming part of Letters Patent No. 547,946, dated October 15, 1895.

Application filed September 29, 1894. Serial No. 524,425. (No model.)

To all whom it may concern:

Be it known that I, JOHANNES ALBRECHT, of Cannstadt, Kingdom of Württemberg, Germany, have invented certain new and useful
5 Improvements in Machines for Nailing on Soles and Heel-Lifts for Boots or Shoes by Means of Wire, of which the following is a specification.

The object of the present invention is to
10 provide an efficient machine for nailing soles or heel-lifts to boots or shoes and by means of wire ends drawn from a length of wire wound upon a reel.

This improved machine is shown in the annexed drawings, in which—

Figures 1 and 2 show the machine complete in front and side elevation. Fig. 3 shows the head of the machine drawn to an enlarged scale and partly in longitudinal section. Fig.
20 4 shows in partial plan view the arrangement of cams for operating the knife. Figs. 5, 6, 7, 8, 9, and 10 show in detached sectional views various parts of the above mechanism, as will be hereinafter explained.

25 The machine is one of that class which presents the wire end vertically to the parts to be nailed and for that purpose is provided with a vertically-moving gripper arrangement for the wire. The wire is forced into the sole
30 or heel and cut off close to the surface, thus forming a nail.

The construction is as follows: On the pillar 1 of the machine is mounted the head 2, Figs. 1, 2, and 3, which carries in suitable
35 bearings the main shaft 3. This latter carries upon one end a fly-wheel and fast and loose pulley, if the machine is to be driven by power. In other cases a crank and treadle may be substituted for the belt-pulleys. On
40 the front end of the main shaft are keyed the cams 4 and 4', set opposite each other at an angle of one hundred and eighty degrees. The front cam 4' has a cam-groove 5, in which a bowl 6 runs. This bowl is carried by a
45 block adjustably secured to the wire-feeding rod 7 by a set-screw, and the wire-feeding rod 7 (shown in cross-section at Figs. 8 and 9) receives a vertical reciprocating motion from the cam-groove 5. As will be seen from these
50 figures, the rod 7 is grooved out to its center for its whole length, so as to form a channel

down which the wire is fed. At the front of the channel for the wire this groove is cut away or widened to contain a "pusher" 8. This
pusher, which is shown detached in Fig. 7, terminates at its lower end in a ring, in which
55 is mounted the gripper-jaws 9, sloped off at the top, as seen in Fig. 3. This slope at the top corresponds with an internal cone bored out in the end of the rod 7, so that when the
60 pusher 8 is drawn up into the cone of the rod 7 the gripper-jaws 9 will close upon and grip the wire. Besides this gripper apparatus 9 the machine is provided with another pair of
65 gripping-jaws 10, which slip over the wire as the rod 7 rises and grip it tightly when the rod descends, acting on the wire when the gripper-jaws 9 are open. The cams 4 and 4' operate upon bowls 11 and 11', mounted in the
70 levers 12. These levers, as will be seen from Fig. 10, are so embraced by the bell-crank levers 13 that motion will be imparted to the levers 12 to hold their bowls 11 11' against the cams 4 4' under the influence of the spring
75 connecting them. The bell-cranks 13, Fig. 3, carry on their short limb the knife-holders 14 with the knives 15. These latter are inserted by their points in the holes 16, which are formed in the knife-carrier 17. The knife-carrier 17 is closed at top by an internally-
80 threaded cap 18, which carries the above-mentioned second gripping-jaws 10. Inclosed in the lower part of the knife-carrier 17 are the guide-jaws 19 for the wire as it is drawn down, the ends of which pass through the
85 ring of the pusher 8, as seen in Fig. 7, and between the gripper-jaws 9, as seen in Fig. 6. The pusher 8 has a stud 20, which serves, as the pusher-rod rises and falls, to vary the pressure of the spring 21, acting on the movable gripper-jaw 10.

The operation of this machine is as follows: The wire from a reel is passed through the channel in the feeding-rod 7 and is held in the same by the pusher 8. It then passes be-
95 tween the gripper-jaws 10 and downward between the gripper-jaws 9, and thence through the guide-jaws 19, which, while the machine is at work, stand close over or rest on the material to be nailed. Fig. 3 shows a position
100 of the parts in which the rotation of the cams 4 4', having brought the bowl 6 and conse-

quently the rod 7 to its lowest position, a fresh length of wire has just been driven into a heel. In the position of the cams at this time the bowls 11 are held at their maximum distance from each other. The upper ends of the bell-cranks 13 have been pressed outward against the tension of the spring 22 and the knives 15 have approached each other and cut the wire lying between them short off, flush with the last heel-lift. By the motion of the left-hand lever 12 outward a stud or bowl 26, which it carries acts on the tail of the bell-crank lever 23, fulcrumed on the block 25, rocking it on its fulcrum 24 and pressing with its shorter arm on the upper end of the pusher 8. By this action of the lever the gripper-jaws 9 are forced out of the cone in the end of rod 7, and accordingly open themselves and release the wire from their grip. The pusher-rod 8, by means of the stud 20, in its downward motion compresses the spring 21 and thus jams the gripper-jaws 10 upon the wire lying in the groove of the rod 7. By the further rotation of the driving-shaft the bowl 6 and the rod 7, which was previously in its lowest position, will be drawn up by the cam-groove 5. The rise of the rod 7 will carry up with it the knife-carrier 17 and the gripper-jaw 10, which will slip over the wire to take a fresh bite on the wire and effect the feed. The spring 22 draws the bell-cranks 13, and with them the lever 12 together, so that the bell-crank 23 is rocked, as before, on its fulcrum 24, but in the reverse direction, raising its short arm from the pusher-rod, and the spring 21 can consequently impart to the pusher-rod 8 an upward movement and lift the gripper-jaws 9 again into the conical recess bored in the end of the said rod, and thus cause them to close again after the knife-carrier 17 and its dependent parts have been lifted a certain distance. By the descent of the rod 7, followed by the knife-carrier 17 and gripper-jaws 10, which fall by their own weight, the wire is again gripped by the gripper device 9 and driven into the material by the continued downward movement of the

rod 7. During the first portion of the movement the knives 15 remain open till the rod 7 attains its lowest position, when the knives will be brought together and the wire cut off simultaneously with the release of the wire from the gripper-jaws 9. So long as the knives 15 are not closed and the cams 4 and 4' have not forced the bowls 11 outward the spring 21 is inactive, and thus the gripper-jaws 10 do not put pressure on the wire, thereby allowing them to slip on the wire, so as to effect the feed.

What I claim as my invention is—

1. The combination with the knife carrier 17 and the knives 15 working therein, of the reciprocating hollow wire feeding rod 7 having its lower end internally conical, the pusher 8 movable lengthwise within and independently of said feeding rod, the gripping jaws 9 carried by said pusher and entering said internally conical lower end, and cams and levers substantially as herein described for operating said knives and feeding rod and for operating said pusher to depress the said jaws within said conical lower end and liberate said jaws after the operation of the knives, as herein set forth.

2. The combination with the knife carrier 17, and the hollow wire feeding rod 7 the latter working within the former and each capable of moving lengthwise independently of the other, the pusher 8 movable lengthwise within and independently of said feeding rod, the lever 23 for operating said pusher, the gripping jaws 10 and the knives 15 in said carrier, the gripper jaws 9 in said pusher, the cam 5 for operating the feeding rod, and the cams 4, 4', and levers 12, 13 for operating the knives 15 and actuating the pusher lever 23, all substantially as herein described.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

JOHANNES ALBRECHT.

Witnesses:

ALBERT GOETZ RIGAUD,
BAUM FISCHER.