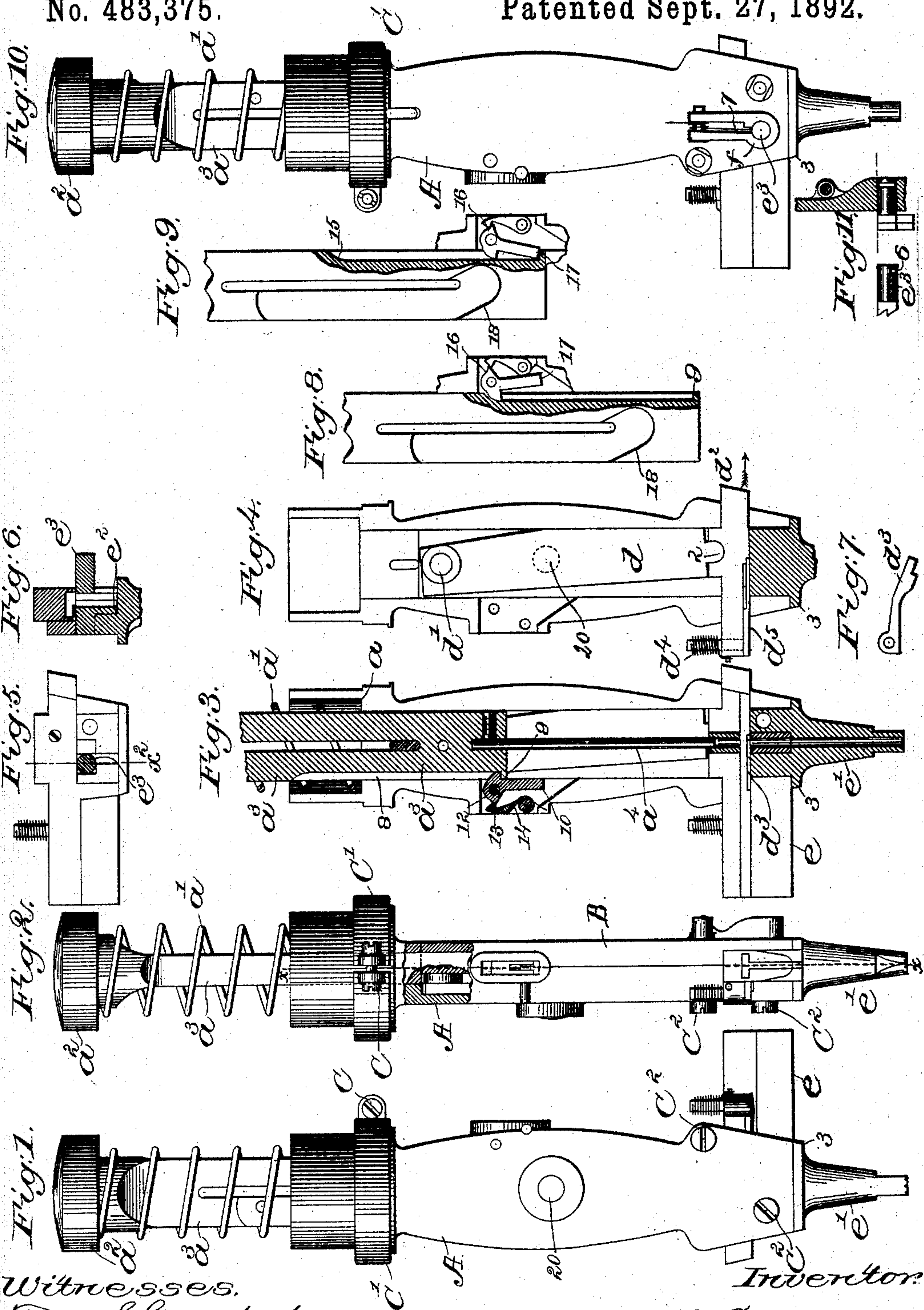


(No Model.)

F. CHASE.
TACK DRIVING MECHANISM.

No. 483,375.

Patented Sept. 27, 1892.



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FRANK CHASE, OF MALDEN, MASSACHUSETTS.

TACK-DRIVING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 483,375, dated September 27, 1892.

Application filed June 29, 1891. Serial No. 397,805. (No model.)

To all whom it may concern:

Be it known that I, FRANK CHASE, of Malden, county of Middlesex, State of Massachusetts, have invented an Improvement in Tack-Driving Mechanism, of which the following description, in connection with the accompanying drawings, is a specification, like letters and figures on the drawings representing like parts.

10 This invention has for its object to improve that class of apparatus known as "tackers," for tacking soles in the manufacture of boots and shoes, my invention being illustrated as embodied in a hand-tacker.

15 In hand-tackers now in use the movement of the feeding device to feed the tack or nail into driving position is effected as the driver completes its ascent. It frequently happens that a driver-bar is not fully driven down, so as to fully drive a nail out from the nose, and consequently the nails become clogged in the driver-tube and the driver tube or nose of the machine has to be cleaned out.

20 The object of this invention is to prevent the clogging of the nose or driver-tube with nails, and this I do by preventing the operation of the feed except after the rise of the driver following a complete descent thereof, so that in case the driver-bar should not be fully driven down, so as to drive from the nose the nail therein, a second nail or tack will not be fed into the nose or tube.

25 Figure 1 in side elevation represents a tacker embodying my invention; Fig. 2, a right-hand edge view thereof; Fig. 3, a partial section in the line x , Fig. 2, looking to the left. Fig. 4 shows half of the tacker-shell removed from the right of Fig. 2, the feeder being in place, the nose being broken off. Fig. 30 5 is a detail showing the raceway and the upper end of the nose or nail-tube with the shell B removed, the raceway-closing block e^3 being in section. Fig. 6 is a section in the line x^2 , Fig. 5; Fig. 7, a top or plan view of the feed-pawl detached. Figs. 8 and 9 are details chiefly to show the locking device co-operating with the driver-bar. Fig. 10 is a side elevation of the tacker opposite that shown in Fig. 1, and Fig. 11 shows details of 45 the raceway-closing block.

50 The handpiece of the tacker is composed, essentially, of chambered plates A B, held to-

gether, as represented in this present invention, by a clamp C' , having ears, through which is extended a screw C, the two halves 55 of the handpiece being yet further united by screws C^2 . These shells are hollow and at their upper ends have a seat a for the spiral spring a' , the under side of which acts against the under side of the head a^2 of the driver-bar a^3 , to the lower end of which is secured the driver a^4 , the said spring acting to normally keep the driver elevated, as represented in Figs. 1, 2, and 10. 60

The two parts of the handpiece are chambered not only for the reception of the driver-bar, but also for the reception of the lever d , provided at its upper end with a roller or other stud d' , and having, as represented, at its lower end a tip 2 to enter a notch made in the feed-carrier d^2 , upon which is pivoted the feed-pawl d^3 , a spring d^4 normally acting to keep the said feed-pawl pressed toward and into the raceway containing the tack or nail to be fed forward into position in the driver 65 to be driven. This raceway e , a portion only of which is shown in the drawings, may be of any usual or suitable shape to receive any usual or suitable tacks or nails; but preferably I shall employ what are called "comb-nails." The nose or nail-tube e' has its upper end so shaped as to fit into a notch in the raceway, the raceway being held between the lower ends of the shells A B, a shoulder 3 on the nose abutting against the under side of 70 the raceway. The upper end of the nose receives a die e^2 , open at one side in the line of the raceway-passage, so that the tack or nail to be driven may be fed by the pawl d^3 into the said die, and thereafter the open space referred to of the die is closed by the raceway-closing block e^3 , (shown best in Figs. 6 and 11,) it having a pawl-like inner end to engage the tack next back of the one to be driven, the outer round end of the closing device being extended through the shell B and through a shield f , the said closing device being provided with a notch 6 to receive one end of a suitable spiral or other spring 7, which normally acts to keep the said closing 75 device pressed inwardly, the beveled faces of the teeth at the inner end of the closing device being acted upon by the nail or tack being moved into position under the driver to 80 85 90 95 100

push the same downwardly and let the tack pass the closing device and enter the guide or tack-passage referred to. In case a comb-nail strip is used and the cam-nails are cut off one at a time by the driver in its descent, then the edge 7 of the closing device e^3 forms the lower cutter member.

The parts so far described do not differ materially from other well-known tack-drivers; but with the devices so far described it would be easy to clog the nose or nail-driver passage. To prevent this, I have provided the driver-bar at one edge with a groove 8, leaving a shoulder or collar 9, with which co-operates a locking device 10, shown as a hook adapted to turn about a pivot 12, a pawl 13, attached to a spring 14, normally acting to keep the said locking device operative or in operative position—as, for instance, when the driver-bar is thrown completely down the shoulder 15 at the upper end of the groove 8 will strike the inner arm of the locking device, as in Fig. 8, and will throw its lower end out, so that the upper beveled edge of the pawl 13 will come under the point 16 of the locking device and retain the locking device, as in Fig. 8, so that the shoulder 9 of the driver may pass the lower end 17 of the locking device and enable the roller or other stud d' to enter the inclined notch 18 at the inner side of the driver-bar as the driver-bar completes its ascent, thus moving the said lever d to cause it to push the feed-carrier in the direction of the arrow 19, Fig. 4, to feed a tack into driving position, the said lever then turning on its fulcrum 20. The backward movement of the feed-carrier is effected during the first part of the descent of the driver-bar. As the driver-bar completes its ascent from the position Fig. 8, the shoulder 9 strikes the inner arm or projection of the locking device and turns the same about its pivot until the lower end 17 of the locking device comes against the outer edge of the shoulder 9 of the driver-bar, thus bringing the point of the spring-held pawl upon the upper side of the projection 16. During the first portion of the descent of the driver-bar the feed-carrier is retracted; but if the driver fails to be driven down far enough to bring

the shoulder 15 in contact with the locking device the said driver-bar when the pressure is removed from its upper end will quickly rise under the action of the spring a' , and at such time the lower end 17 of the locking device standing in the groove 8 will be struck by the shoulder 9 and will prevent the driver-bar rising for enough to enable its lower cam-shaped pocket 18 to act on the roller or other stud d' to feed the carrier forward. In this way it will be readily seen that a tack or nail cannot be driven out from the nose e' of the device unless the driver-bar be thrown fully down and that the feed will never be effected unless the driver-bar goes fully down. Hence there is no opportunity for a nail to be forced part way into the nose, as in ordinary tack-drivers, this feature of the locking device or equivalent to control the feed through the driver-bar being the essential feature of my invention.

It is not intended or desired to limit this invention to the exact shape shown for the locking device, as prior to my invention I am not aware that a driver-bar has ever had a locking device of any kind to control its movements to effect the intermission of the feed under certain circumstances and let the feed operate under other circumstances.

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

A tack or nail driver containing the following instrumentalities, viz: a shell or case, a nose, a driver, a driver-bar, a feeding mechanism, a stop for arresting the full upward movement of the driver-bar, and a locking or controlling device contacting with and positively arresting said driver intermediate the full length of movement thereof and controlling thereby the operation of the feed mechanism.

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

FRANK CHASE.

Witnesses:

GEO. W. GREGORY,
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