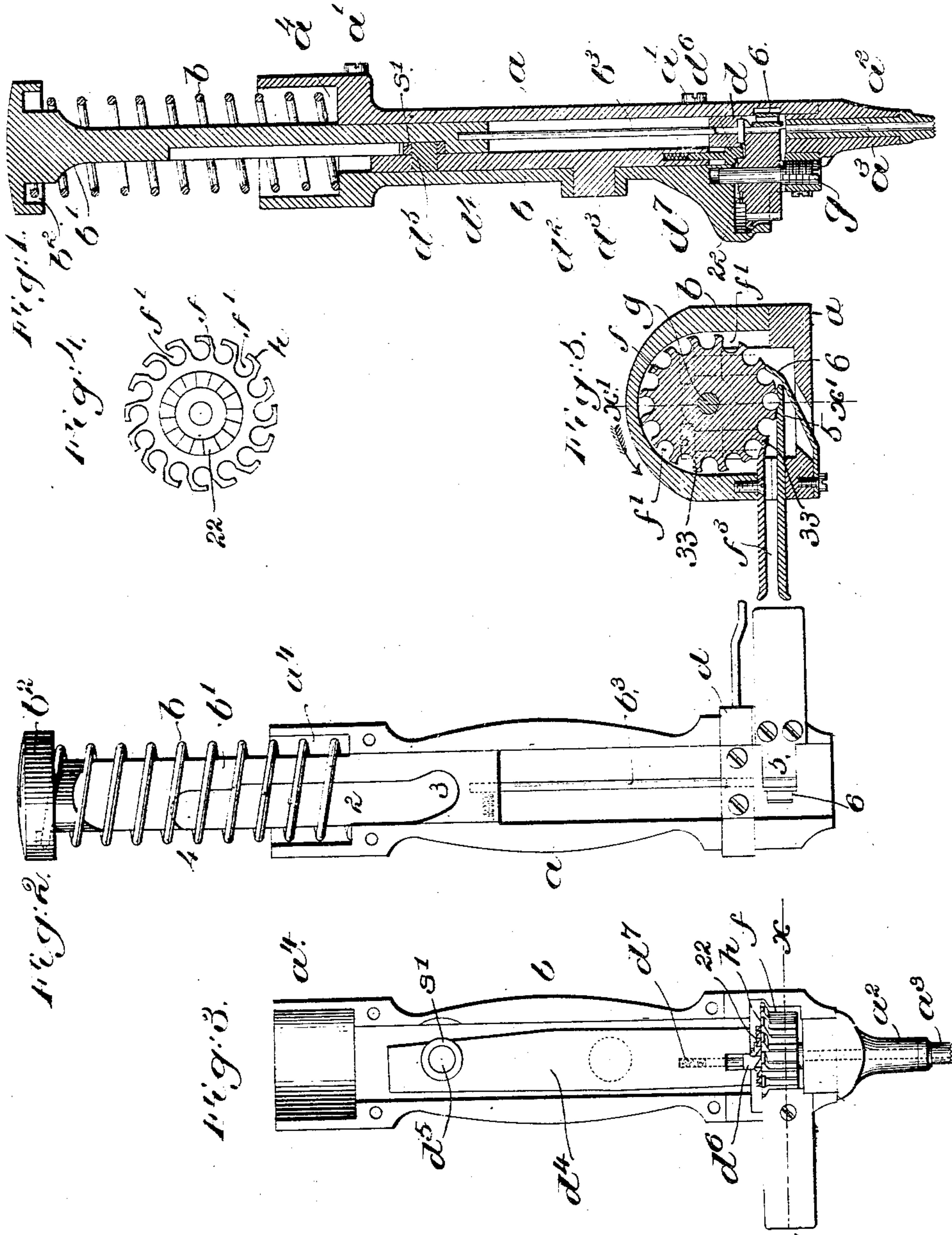


(No Model.)

C. B. GODFREY.
TACK OR NAIL DRIVER.

No. 473,873.

Patented Apr. 26, 1892.



Witnesses.

Fred. S. Gumbel
Louis N. Howell

Inventor:

Charles B. Godfrey
by Crosby & Gregory
attys.

UNITED STATES PATENT OFFICE.

CHARLES B. GODFREY, OF MILFORD, MASSACHUSETTS, ASSIGNOR TO THE
MCKAY & COPELAND LASTING MACHINE COMPANY, OF PORTLAND,
MAINE.

TACK OR NAIL DRIVER.

SPECIFICATION forming part of Letters Patent No. 473,873, dated April 26, 1892.

Application filed July 28, 1891. Serial No. 400,984. (No model.)

To all whom it may concern:

Be it known that I, CHARLES B. GODFREY, of Milford, county of Worcester, State of Massachusetts, have invented an Improvement in Nail or Tack Driving Apparatus, of which the following description, in connection with the accompanying drawings, is a specification, like letters and numerals on the drawings representing like parts.

10 This invention has for its object to improve and simplify the construction of apparatus employed for driving tacks in the manufacture of boots and shoes and for other purposes.

15 The machine herein to be described may be used with great advantage in connection with tack-strips, preferably paper-strips set with headed tacks, the bodies of the tacks at the delivery end of the strip being engaged

20 and fed forward in succession between the raised driver and the hole in the nail tube or nose by a rotating feeding device. The tack-strip comes to the feeding devices through a suitable guideway or chute, and, as shown, the

25 form of the feeding-wheel is such as to support the tack-strip while the driver descends on the head of a tack to drive it out of the strip, the tack in its descent and the driver in driving the tack descending through the

30 pocket of the wheel in which the tack is held. The feed-wheel is shown as provided with a ratchet, which is engaged by a pawl carried or moved by a pawl-carrier. The extent of movement is so controlled by a suitable cam

35 that the feeding-wheel has a full feeding stroke given to it only after the driver has had imparted to it full or tack-driving movements. In other words, unless the descent of the driver is sufficient to drive a tack the

40 feeding-driver will not be actuated to feed the tack-strip. This provision of suspending the feed until after a tack has been driven prevents the liability or possibility of the driver driving more than one tack into the

45 nail-tube, but not out of the nail-tube, and consequently the nail-tube will not be jammed or filled with loose tacks.

Figure 1 is a vertical central cross-section of a tack-driving implement embodying my

50 invention. Figs. 2 and 3 show the imple-

ment separated in the division-line of the two halves of the shell or hand-piece, the feed-wheel being shown in elevation in Fig. 3. Fig. 4 shows the feeding-wheel detached and in top view; Fig. 5, a section in the line 55 x , Fig. 3, the dotted line x' , Fig. 5, showing the line of section for Fig. 1.

The shell or hand-piece is composed of two pieces a b , united by suitable screws a' and provided at its lower end with a suitable nose 60 or nail-tube a^2 , provided, preferably, with a hollow steel nipple a^3 . The upper end of the hand-piece is chambered, as at a^4 , to receive the lower end of a spring b , surrounding the driver-bar b' , the upper end of which spring acts 65 against the under side of the head b^2 of the said bar. The driver b^3 may be united to the driver-bar in any well-known or suitable manner. The driver-bar has a cam-slot of several gradients, preferably a rather straight central 70 portion 2 and cam or inclined ends 3 4. The driver always stands in and is guided by a steady guide or stripper d . The part b of the hand-piece, as shown, has a hub d^2 , which receives a stud d^3 , extended from the back of 75 the pawl controller or lever d^1 , and a roller or other stud d^5 , which enters the cam-slots 2 3 4. The pawl-controller has at its lower end a pawl d^6 , normally acted upon by a spring d^7 , the said pawl engaging a crown-toothed 80 ratchet-wheel 22 at the upper side of or attached to or moving with the feed-wheel f , having a series of pockets or nail-passages f' , the walls between the said passages, as best shown by the wall 33, Fig. 5, being so shaped 85 as to readily enter the spaces between the bodies of two adjacent tacks of a tack-strip, as the said tacks come to the said feed-wheel through the guide or race way f'' of any usual or suitable shape or length. The feed-wheel 90 runs close to the inner end 5 of one of the pieces forming the guideway, as in Fig. 5, and forms an inclosed pocket or passage for the tack to be driven by the driver. A pawl 6 acts as a detent to prevent retrograde movement 95 of the feed-wheel. The stud g acts as a center for the feed-wheel.

In operation the strip containing the tack to be driven rests on the upper side of the feed-wheel between its periphery and the 100

ratchet-wheel 22, the feed-wheel thus supporting the strip quite about the head of the tack in one of the pockets and about to be driven from the same by the driver into the nose and from the nose into the stock, leather, or other material.

In operation, if the driver-bar is not forced down sufficiently to drive a tack from the nose or if the part 4 of the slot 2 3 4 does not act on the roll *s'* the pawl-controller will not have a full throw, but will have only a partial throw, not enough to put the point of the pawl *d'* behind a tooth of the ratchet or crown wheel. If the bar *b'* has less than a nail-driving movement, the pawl-controller will be vibrated only far enough to let the pawl slide up and down on one and the same tooth 22.

This invention is not to be limited to the exact form of wheel shown, nor to the exact form of wheel 22, nor to the particular shape of the driver-bar, the cam-slot, and the pawl-controller, all or either.

It will be understood that the wheel may be used in tack or nail driving machines in connection with a chute or raceway of usual character and feed any usual nails.

The teeth left at the periphery of the feed-wheel between the open pockets co-operate with the inner ends of the guideway, and the ends of the latter tangent to the wheel permit one open pocket after another to be brought in succession opposite the end of the guideway. The slots opening from the periphery of the wheel into the open spaces *f'* are so made as to leave hooks *h* to engage the body of a tack or nail.

I am aware that a wheel notched at its periphery has received buttons from a button-raceway, and has by an intermitting movement of the wheel placed the said buttons in position with relation to a driver for a button-fastener, so that a button-fastener has been driven through the material and through the eye of the button.

I do not claim anything shown in United States Patent No. 381,031.

Having described my invention, what I deem as novel, and desire to secure by Letters Patent of the United States, is—

1. A nail or tack driving apparatus containing the following instrumentalities, viz: a shell or case, a nail tube or delivery connected to one end of said shell or case, a longitudinally-movable driver-bar, provided with a cam, a driver connected with said driver-bar, a feed-wheel located between the said tube and the lower end of the said driver-bar when in its elevated position, said feed-wheel having peripheral pockets open at one side, the upper part of the feed-wheel serving as an anvil or support for a tack-strip, a tack-strip guideway tangential to the said feed-wheel and having an extended portion to co-operate with projections at opposite sides of the pocket from which the nail is to be driven, a lever interposed between the said driver-bar and feed-wheel, said lever having a pawl to engage a ratchet of the feed-wheel and a projection to be actuated by the cam-surface of the driver-bar, and a detent to restrain retrograde motion of the feed-wheel, substantially as shown and described.

2. The shell or hand-piece, the feed-wheel having at its periphery open pockets and intermediate teeth formed by the side walls of the pockets, and a tangential guideway having a portion extended to close the open side of the adjacent pocket and having near its center of rotation a series of ratchet-teeth, and having a tack-strip-supporting surface between the ratchet-teeth and its periphery, combined with a driver, a driver-bar, a pawl, a pawl-controller, and a cam having a straight central portion and oppositely-inclined end portions to actuate the pawl-controller in such manner, substantially as described, that the pawl will pass behind a ratchet-tooth only after a full driving-stroke of the driver, as set forth.

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

CHARLES B. GODFREY.

Witnesses:

GEO. W. GREGORY,
FRANCES M. NOBLE.