

(No Model.)

2 Sheets—Sheet 1.

G. H. COGSWELL.
HEEL NAILING MACHINE.

No. 460,560.

Patented Oct. 6, 1891.

Fig. 2.

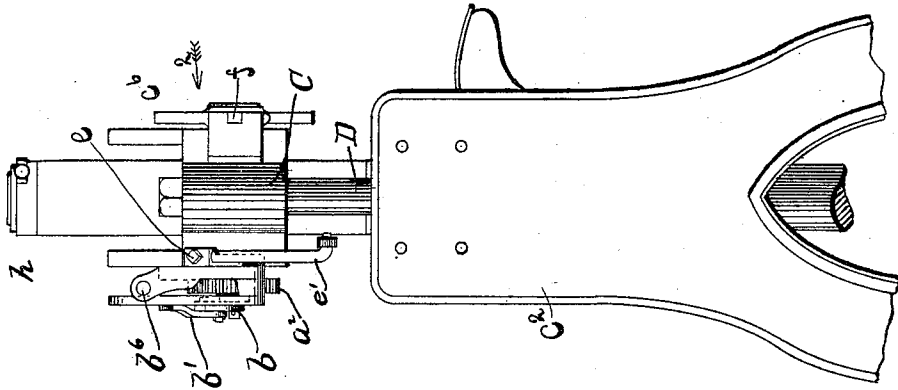
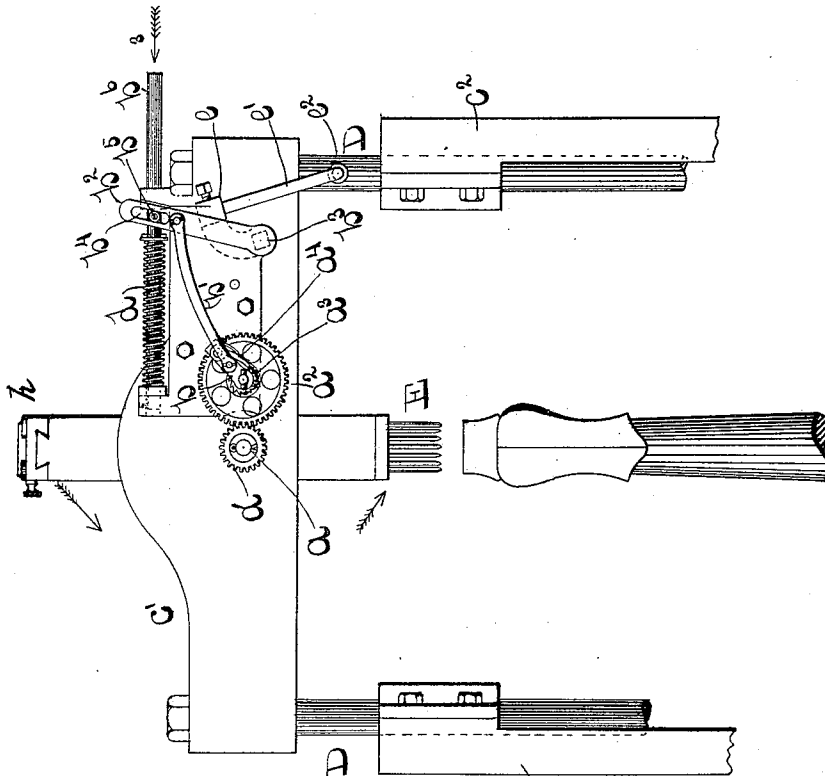


Fig. 1.



Witnesses:

Edward F. Allen.

Fred S. Greenleaf.

Inventor.

George H. Cogswell.
by Crosby & Gregory
Attys.

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Fig: 3.

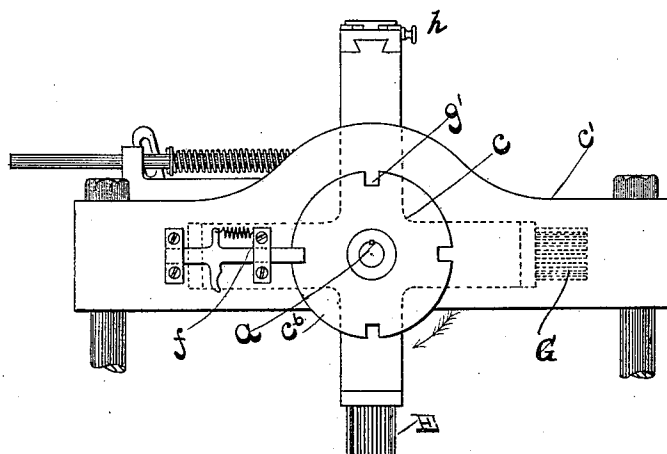
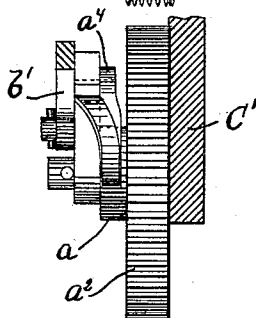


Fig: 4.



Witnesses:
Edward T. Allen
Fred S. Greenleaf.

Inventor.
George H. Cogswell.
By Crosby & Gregory Attys

UNITED STATES PATENT OFFICE

GEORGE H. COGSWELL, OF BRADFORD, MASSACHUSETTS.

HEEL-NAILING MACHINE.

SPECIFICATION forming part of Letters Patent No. 460,560, dated October 6, 1891.

Application filed May 18, 1891. Serial No. 393,136. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. COGSWELL, of Bradford, county of Essex, State of Massachusetts, 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.

This invention has for its object to improve and simplify that class of heel-nailing machines wherein the awls, the drivers, and top-lift blocks or spankers are carried upon a rotating head, substantially as in United States Patent No. 252,215, issued to H. A. Henderson January 10, 1882. In machines of this class as now made and in use the heads carrying the awls, drivers, &c., are rotated by hand at the proper time. My object is to effect the rotation of the head automatically, and to do this I have in this present embodiment of my invention added to the shaft of the head a pinion, which is engaged by gearing, to be described, actuated automatically and intermittingly, as will be described.

My invention consists, essentially, in the combination, with the movable head of a heel-nailing machine provided with awls, drivers, &c., and a lock therefor, of a pinion applied to said head, and gearing in operative connection therewith, the said gearing including a ratchet and spring-controlled means for actuating the said ratchet intermittingly, a spring, means to compress it, and connections between said spring and lock, whereby the spring is held inoperative while the head is locked, as will be described.

Figure 1 is a partial rear elevation of a heel-nailing machine embodying my invention; Fig. 2, a right-hand end view of the machine shown in Fig. 1. Fig. 3 is a front view of the cross-beam carrying the movable head, said view being taken from the front side of the machine, or looking at Fig. 2 in the direction of the arrow 2 thereon; and Fig. 4 is a detail of the ratchet mechanism enlarged.

The stationary frame-work C^2 , composed of side pieces, the slide-rods D therein, the cross-bar C' , attached to the upper ends of the said slide-rods, the movable head C , having a series of arms provided, respectively, with awls E , drivers G , and a top-lift holder h for the top

lift, and the shoe-holding piece b are and may be all substantially as in United States Patent No. 252,215, or in machines built under the said patent and designated as the "National."

The shaft of the head (herein designated by the letter a) is provided at the rear side of the cross-bar C' with a pinion a' , which, as represented in this present form of my invention, is engaged by a gear a^2 , mounted on a suitable stud of the bar C' , the hub of the gear having, as represented, a ratchet-wheel a^3 , the said ratchet-wheel, as herein represented, having teeth to be engaged by a spring-held pawl a^4 , mounted upon a pawl-carrier b , mounted loosely upon the said stud. The pawl-carrier b derives its movement from a link b' , attached to the lever b^2 , having its fulcrum on a shaft b^3 , the said lever being slotted at b^4 to receive a pin or other stud or block b^5 of a slide-rod b^6 , the said slide-rod being surrounded by a spring d , (see Fig. 1.) which normally acts to press it to the right in Fig. 1, such movement of the ratchet moving the lever b^2 in the direction to cause the pawl to turn the ratchet and rotate or move the head one stop.

The shaft b^3 has fast upon it a lever e , provided with a leg e' , represented as having a roller e^2 , the said roller being normally held in such position that when the cross-bar C' is depressed in manner provided for in the patent and in the machine referred to, to cause the awls to prick the heel or the drivers to drive nails from the holder into the heel or to spank a top lift upon the protruding ends of the partially-driven nails, the said roller or lower end of the leg e' will strike a fixed projection or surface, preferably the upper end of one of the side pieces C^2 , which will cause the shaft b^3 to be rocked in a direction to cause the lever b^2 to move the slide-bar b^6 in the direction of the arrow 3, Fig. 1, such movement causing the pawl to click back over the ratchet and take a new hold, so that when the cross-bar C' is elevated in the usual manner the spring d will assume control of the lever b^2 to actuate it and the ratchet and rotate the head; but this rotation of the head cannot be effected until after the operator shall have engaged the locking device f and withdrawn it from the

locking-pawl c^6 . This locking device is best shown in Fig. 3.

The head herein shown, as represented, is provided with four arms, the arm g being employed in spring-heel nailing and for other purposes. In regular heeling only three arms are needed. The length of the spring d and the stroke imparted by it to the slide-bar b^6 are sufficient to rotate the head upward of one hundred and ninety degrees or until a notch in the stop-awl is brought opposite the locking device.

In regular heeling, where the arm g is not to be used, I stop up the notch in the locking-pawl opposite that arm carrying the top-lift spanker-pawl, so that in the rotation of the locking-pawl the latter will not be stopped by the locking device when the stop-notch passes under it.

I have shown the notch in the locking-pawl, which is effective when the arm g would be in operative position, as stopped by a key g' , the key being represented in heavy black.

I claim—

1. In a heel-nailing machine, the combination, with a movable head provided with awls, drivers, &c., and a lock therefor, of a pinion a' , gearing in operative connection therewith, including a ratchet device and spring-controlled means to move the said ratchet device intermittently, a spring, means to compress it, and connections between said spring and lock, whereby the spring is held inoperative while the head is locked, substantially as and for the purposes set forth.

2. In a heel-nailing machine, a support for

the shoe to which the heel is to be nailed, the reciprocating cross-head C' , a rotating head mounted therein and provided with awls and drivers, and a pinion attached to the shaft of the said rotating head, combined with a gear a^2 , its attached ratchet-wheel, a spring-actuated pawl and pawl-carrier, and means comprising a rock-shaft b^3 and a lever thereon provided with a depending leg adapted to strike a fixed part of the machine and turn the rock-shaft to move the pawl-carrier in opposition to its spring to actuate said pawl-carrier, whereby an intermittent rotary movement may be imparted to the said rotating head, substantially as described.

3. In a heel-nailing machine, a support for the shoe to which the heel is to be nailed, a reciprocating cross-head, a rotary head mounted thereon and provided with a series of awls and drivers, a gear a , attached to the shaft of the said rotating head, a gear a^2 , a ratchet-wheel, pawl, pawl-carrier, link b' , rod b^6 , spring b , and rock-shaft, combined with the link b' , the said rock-shaft having an arm connected to said link and another arm adapted to be arrested and actuated during the descent of the said cross-head to at such times compress the said spring, and a locking device, to operate substantially as described.

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

GEO. H. COGSWELL.

Witnesses:

FREDERICK L. EMERY,
GEO. W. GREGORY.