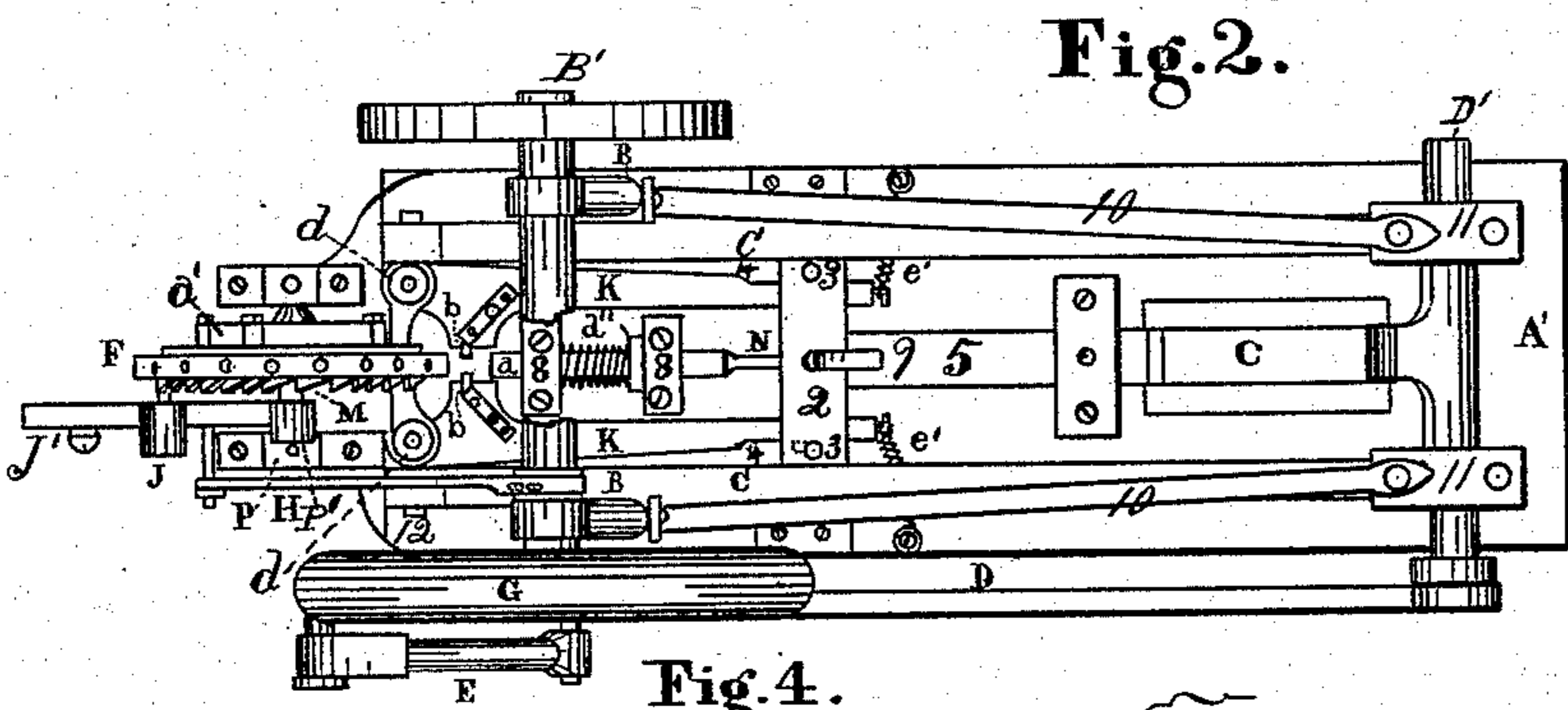
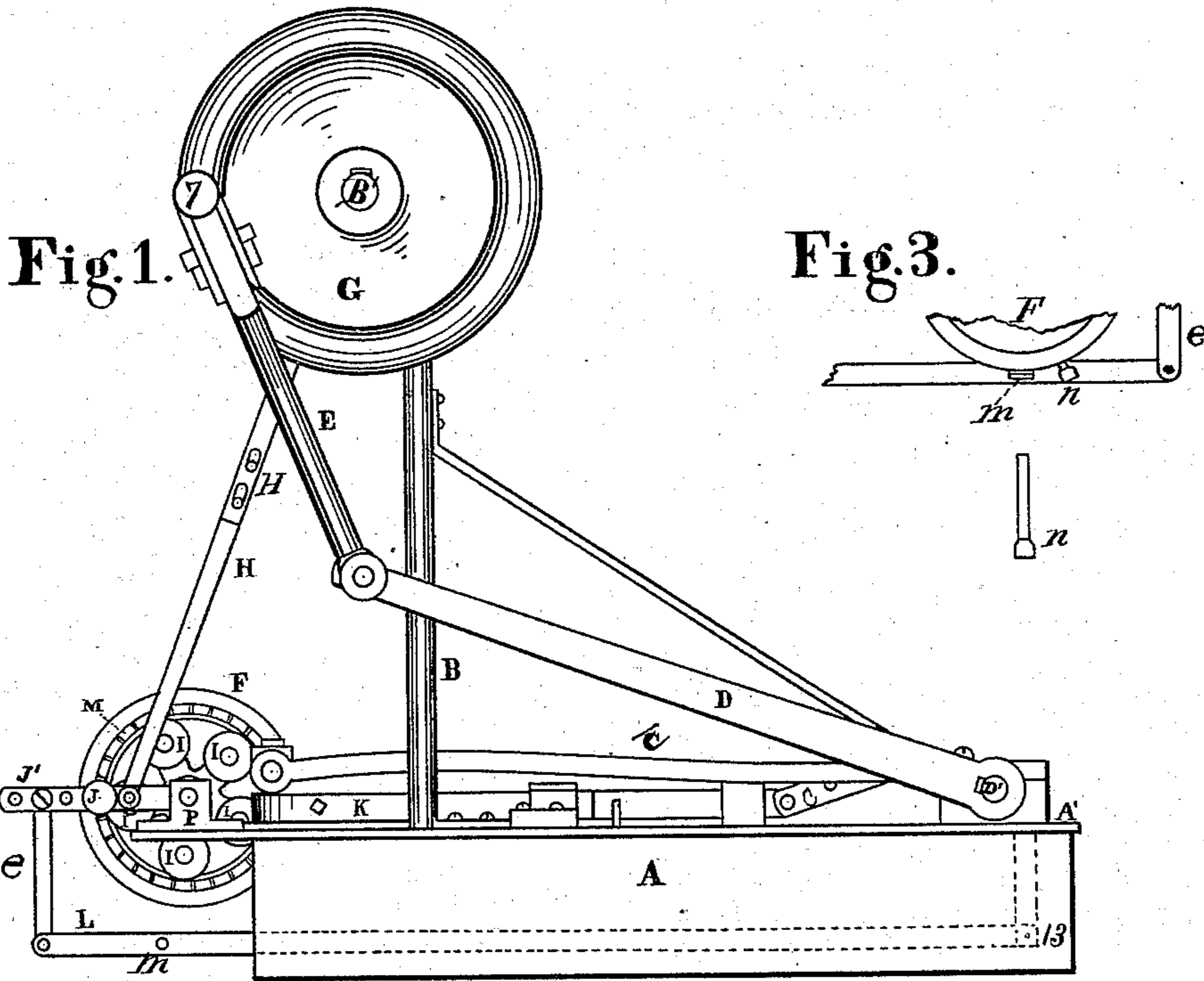


**T. WOOD.**

## Machines for Heading Spikes and Nails.

No. 156,865.


Patented Nov. 17, 1874.



Attest:

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Atty.

# UNITED STATES PATENT OFFICE.

THOMAS WOOD, OF CHICAGO, ILLINOIS.

## IMPROVEMENT IN MACHINES FOR HEADING SPIKES AND NAILS.

Specification forming part of Letters Patent No. **156,865**, dated November 17, 1874; application filed June 11, 1874.

*To all whom it may concern:*

Be it known that I, THOMAS WOOD, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Spike and Nail Machines, of which the following is a specification:

The present invention relates to an improvement in that class of machines which are designed more especially to form the heads of horseshoe-nails after they have been forged by machinery. Its nature consists in a feed-wheel, in the periphery of which the nails are placed by hand, and carried to heading devices.

The nails, one at a time, are brought between dies, when the wheel stops long enough for a die to form the head of the nail, after which the finished nail is carried beneath the wheel, and removed by means of a tool attached to an oscillating lever beneath the machine. The dies are driven by a crank, shafts, pitman, reciprocating cross-tree, and connecting-rods, as hereinafter described and shown.

In the drawing, Figure 1 is a side elevation of my improvement in spike and nail machines; Fig. 2, a top or plan view thereof; Fig. 3, a broken side view of the feed-wheel, showing also the tool for removing the nails from the wheel, and the lever to which it is attached. Fig. 4 is a broken detached top view of the levers which carry the dies, and also of the sliding head which operates it.

A represents the foundation or frame, which supports the mechanism hereinafter described. On the top of this foundation is a bed-plate, A', extending far enough over the foundation A to form two bearings, P, which support the shaft P' of a lever, J'. A feed-wheel, F, is provided with a series of holes, Fig. 2, in which nails to be headed are to be put. On the side of this wheel is formed a continuous ratchet, M, whose teeth correspond in number with the number of holes in the periphery, so that a dog, J, attached to a lever, J', will move the wheel F one notch at a time, and bring nails in rotation between dies b, Fig. 2. The lever J' is pivoted to the shaft of the wheel F, and is operated by an adjustable two-part connecting-rod, H, which is driven by a crank on shaft B'. The adjustment for the movement of the wheel is made by slots in one of the rods H, and set-screws put therein, as shown at H', the object

being to provide such an adjustment as will always attain a proper movement of the dog J. To hold the wheel F in place, and provide a means for its rotation, rollers I are pivoted to a frame, a, Fig. 1, placed close to said wheel, so that the internal part of the rim may readily turn on the rollers. The means for clamping the shanks of nails, and holding them in position to be headed, consist of two dies, b, Fig. 2, affixed to levers K, which are pivoted to the plate A' at d d, and are opened at the time of a forward movement of the feed-wheel F, and closed at the time the wheel is at rest, by means of a sliding head, 2, which is provided with pins 3, Figs. 2 and 4, so that in their reciprocating movement they will bear against cams 4 on the outsides of the levers, and carry the latter toward each other, coil-springs e' carrying the levers back.

The means for operating the head 2 consist of a strong connecting-bar, 5, bolted to the head 2, and pivoted to a pitman, c, which is driven by a crank-shaft, D'. This shaft does not rotate, but is turned about one-fourth round by means of a connecting-rod, D, pivoted to the shaft, and to a connecting-rod, E, the latter being pivoted to a wrist-pin on drive-wheel G, fixed to the crank-shaft B'. The connecting-bar 5 not only drives the head 2, but it drives a header, a, Fig. 2, by means of an intermediate plunger, N, which is secured to the head 2 and bar 5 by a pin, 9. The header a runs in guides 8; and on the shank of the header is placed a coil-spring, d'', which throws the die a back after it has been pushed forward to head a nail.

To make all of the gearing appertaining to the dies very strong, bars C, terminating at the boxes 11 of the shaft 6, are fastened, at their opposite ends, to a cross-tree, 12, fastened to the same pivots, d, to which the levers K are pivoted.

To remove the nails from the wheel F after they are headed, a lever, L, is pivoted to the rear end of the machine, at 13, (dotted lines,) and is connected to the lever J' by a rod, e, so that when the lever is moved the lever L is carried with it. A blade, m, is fastened to the lever L, and at the proper time it is moved automatically under nail-heads, and removes the nails from the wheel F.

The operation of the machine is as follows: The nails are to be put by hand into the holes of the wheel F, and the crank-shaft B' rotated at such speed as the feeding of the wheel F will warrant. This will carry the head of the nails, one at a time, into the space between the dies *b* and *a*, Fig. 2, and when there the wheel F will stop, while the dies grasp the shank of a nail close to the head, while the die *a* comes against the latter, and finishes or heads it. The nails are removed by the blade *m*, as aforesaid.

I claim and desire to secure by Letters Patent—

1. The wheel F, provided with holes to receive the nails, in combination with the rollers I, on which it is mounted, as set forth.

2. The combination of wheel F, rollers I,

dies *a b*, levers K, cross-head 2, bar 5, pin 9, pitman C, springs *e'*, lever J', dog J, and crank-shaft D', as and for the purpose specified.

3. The combination of the wheel F, levers L J', rod *e*, and blade *m*, for removing nails from the wheel, as described and shown.

4. The combination of wheel F, lever J', adjustable connecting-rods H H', crank-shaft B', dog J, rod *e*, lever L, and blade *m*, as and for the purpose set forth.

5. The combination of shaft B', connecting-rods D E, shaft D', pitman *c*, bar 5, pin 9, and dies *a b*, substantially as specified.

THOMAS WOOD.

Witnesses:

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