

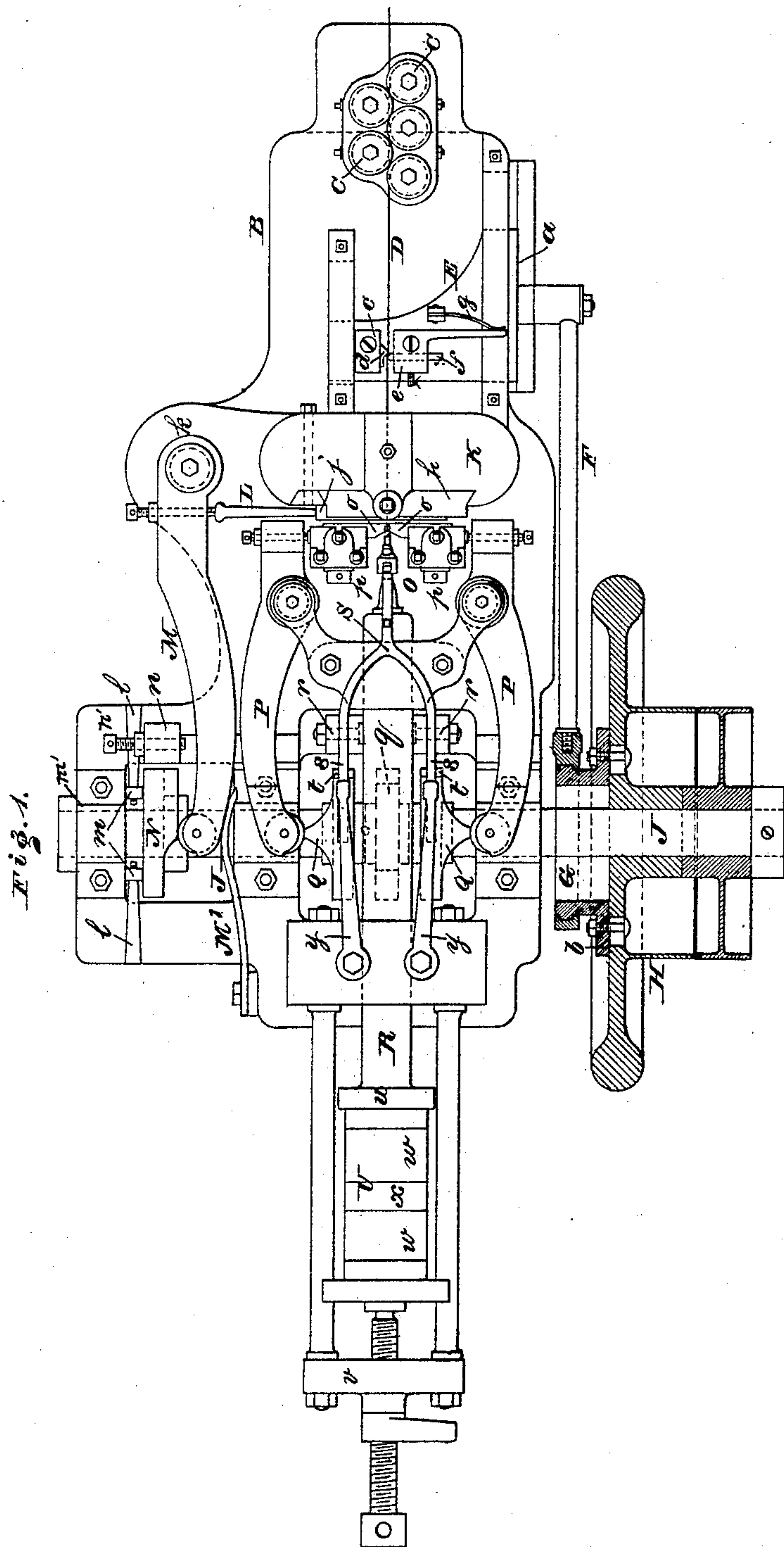
(No Model.)

2 Sheets—Sheet 1.

J. M. SCHILTZ.  
NAIL MAKING MACHINE.

No. 327,828.

Patented Oct. 6, 1885.



WITNESSES:

L. Douville.  
W. F. Fischer.

INVENTOR:  
John M. Schiltz.  
BY John A. Diederich  
ATTORNEY.

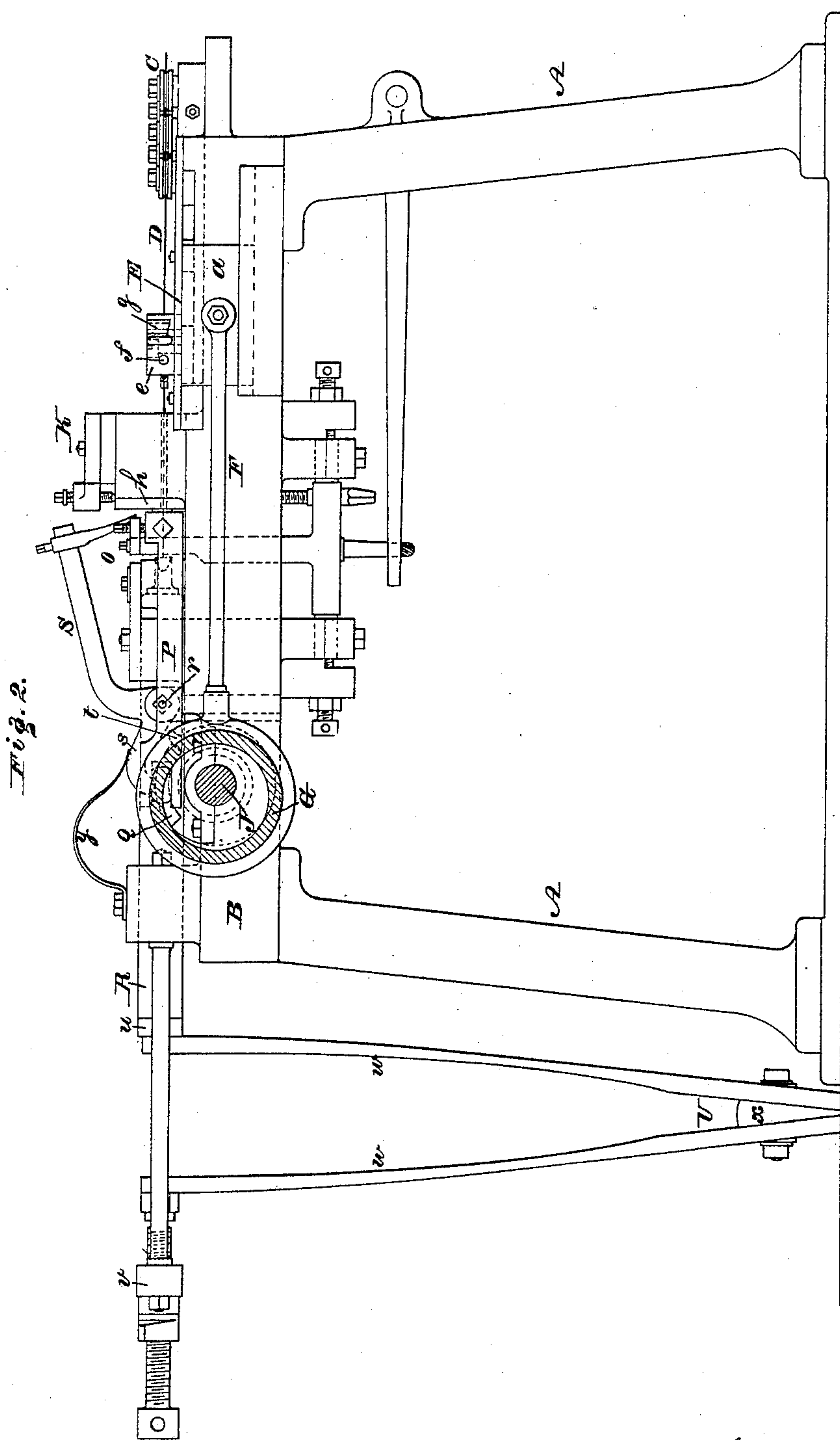
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INVENTOR:  
*John M. Schiltz*  
BY *John A. Diederichsen* ATTORNEY.



# UNITED STATES PATENT OFFICE.

JOHN M. SCHILTZ, OF PHILADELPHIA, PENNSYLVANIA.

## NAIL-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 327,828, dated October 6, 1885.

Application filed December 6, 1884. Serial No. 149,643. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. SCHILTZ, a subject of the King of Prussia, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Nail-Making Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 represents a plan view, partly in section, of a nail-making machine embodying my invention. Fig. 2 represents a side elevation of the same.

Similar letters of reference indicate corresponding parts in the two figures.

My invention relates to improvements in nail-making machines; and it consists, first, in a new form of gripping device by which the wire is fed to the machine, and adjustable means for converting the rotary motion of the driving-shaft into a rectilinear motion of the slide carrying the gripping device; second, in a cutting device and means for actuating the same; third, in a device for cleaning or trimming the nail-plate, cutting away burrs, &c.; and, furthermore, in other details, hereinafter fully set forth.

Referring to the drawings, A represents the stand of a nail-making machine, on which rests the bed B, having thereon the rollers C, between which the wire D is fed to the machine by said rollers C giving tension to said wire.

E represents a sliding plate having suitable guideways attached to the bed B. The side portion, *a*, of the said plate, which has a downward-projecting flange parallel to and sliding against the side of the bed B, is suitably connected by a rod, F, to a yoke working on an eccentric, G. The eccentric G consists of a hollow cylinder having a flanged portion, *b*, by which it is attached eccentrically to the wheel H, revolving on shaft J. On the slide E is a clamping device, consisting of the stationary jaw *c*, having an angular attachment, *d*, on its inner side, and the movable jaw *e*, having a pin or stud, *f*, projecting therefrom toward the said angular attachment *d*, the said pin and attachment being kept in proximity by means of a spring, *g*.

K represents a holding device, consisting of

a stationary jaw, *h*, and a movable one, *j*, both of the said jaws having projections corresponding to the serrations desired on the nail. The movable jaw *j* is actuated or controlled by an attachment or adjustable arm, L, of the lever M. One end of the said lever M is pivoted, as at *k*, while the other end rides upon a cam, N, rigidly secured to the shaft J.

Firmly secured to the frame of the machine are projections *l*, carrying friction-rollers *m*. An internally-threaded boss, *n*, having a screw *n'*, is also secured to the said frame, the object of the adjustable screw *n'* being to limit the throw of the lever M and prevent its bearing against the cam N during a portion of the revolution of the said cam. The pressure upon the cam N by the lever M is also sustained by the block *m'*, securely attached to the frame, thus releasing the other working parts from a lateral strain caused by the said pressure of the lever M upon the cam N.

O represents the cutting device, consisting of two sliding knives or cutters, *o*, which are secured to adjustable arms *p* of the pivoted levers P, and are so shaped as to form a point or sharpened end to the piece cut from the wire, the said arms *p* being adjustable by means of screws *p'* working in openings in the ends of the said levers P'. The said levers P ride upon cams Q secured to shaft J.

R represents a hammer, and *q* a wiper attached to the shaft J for drawing back the said hammer after a blow has been given to the wire.

S represents a lever, having arms pivotally secured on shaft *r*, provided with suitable bearings. The short arms *s* of the lever S ride upon collars or flanges on the shaft J, each of the said collars or flanges having on its periphery a projection, *t*. Attached to the long arm of the said lever S is a cutting or trimming device projecting downward toward the wire. A spring, *y*, secured to a boss on the bed B keeps the short arms *s* of the lever S in contact with the collars or flanges on the shaft J, and the long arm carrying the trimming device above and away from the wire until the projections *t* lift the short arms, forcing down the said trimming device.

Between the end *u* of the hammer R and the tail-block *v*, a wooden spring, U, is placed,



the said spring being formed of two strips of wood, *w*, having between their lower ends a wedge-shaped block, *x*, which strips and block are fastened together by a bolt passing through them, as shown in Fig. 2, or may be otherwise properly secured.

The operation of the device is as follows: The wire of which the nails are to be formed is drawn between the rollers C by the action of the plate E and the eccentric G. The clamping device on the said plate, owing to its peculiar construction, having gripped the same when the plate is slid inward or toward the body of the machine, the wire is guided in suitable ways to the holder K, the jaws of which are apart when the wire is being brought forward by the feeding mechanism. When the wire has been forwarded the desired length, which may be regulated by adjusting the eccentric G on the wheel H, the jaw *j*, actuated by the cam N, closes thereon, and the end thereof is struck by the hammer R, actuated by the wooden spring U, thus forming the head of the nail. A further rotation of the shaft J forces back the hammer R by means of the wiper *q* on the said shaft, and causes the plate E to slide outward, the clamping device thereon being released, owing to its form, from the wire, sliding along the same. When the plate E, having reached its outer limit, returns, the wire, being released by the holder K and gripped by the clamping device on the plate E, is forwarded or advanced another length. The cams Q now actuate the levers P, bringing together the cutters or knives *o*, thereby separating or cutting off the forward length of the said wire, thus making a partially-finished nail. Immediately thereafter the end of the lever S having the cutting or trimming device is forced downward, owing to the projection *t* on the collar of the shaft, upon the end of the wire held fast by the holder K, removing any burrs thereon, when it is immediately raised by the action of the spring *y*. The hammer R is now released from the control of the wiper *q*, and, being forced by the spring U, strikes upon the end of the wire, thus forming a head thereon. The cutters *o* and the trimming device on the lever S are operated by the cam-connections at each revolution of the shaft J. The wire is then forwarded, as before described, and a length, according to the adjustment of eccentric G, is cut therefrom, the end of the remaining part being first trimmed and then headed, the operation described being repeated, as desired.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

1. In a nail-making machine, the sliding plate E, having a fixed jaw provided with a horizontal angular projection, and a movable jaw having an adjustable pin, in combination with the bed B, having guideways attached thereto, the said plate E, having a depending flange and resting on the said bed B, substantially as described.

2. In a nail-making machine, the holder K, provided with a stationary jaw and a movable jaw, in combination with adjustable arm L, pivoted lever M, having a roller at one end, shaft J, having cam N, and boss *n*, having a screw-threaded opening, and an adjusting-screw, substantially as described.

3. In a nail-making machine, a cutting device actuated by a cam mechanism, in combination with a trimming device operated by a projection on the operating-shaft, substantially as described.

4. A feeding mechanism consisting of a sliding plate provided with a clamping device thereon, in combination with rod F, a yoke, eccentric G, having flanged portion *b*, wheel H, shaft J, and means, substantially as described, for rotating said shaft, substantially as and for the purpose set forth.

5. In a nail-making machine, the bed B, having projection *l*, provided with rollers *m*, and boss *n*, carrying a screw, in combination with pivoted lever M, substantially as and for the purpose set forth.

6. In a nail-making machine, the lever S, having arms pivotally secured and provided with a trimming device secured to the front thereof and projecting downward, in combination with spring *y*, and shaft J, having a flange provided with the projection *t*, substantially as and for the purpose set forth.

7. The holder K, in combination with the lever M, cam N, shaft J, plate E, having a clamping device thereon, and connected by a rod to a yoke, and an eccentric on which the said yoke works, the eccentric being mounted on said shaft J, substantially as described.

8. A nail-making machine composed of a bed, holding, cutting, and trimming devices, a rotary shaft-operating mechanism connected with each of said devices, and a rotary shaft whereby motion is communicated from the said rotary shaft to each of said devices in proper succession, substantially as described.

J. M. SCHILTZ.

Witnesses:

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JNO. K. PLITE.