

(No Model.)

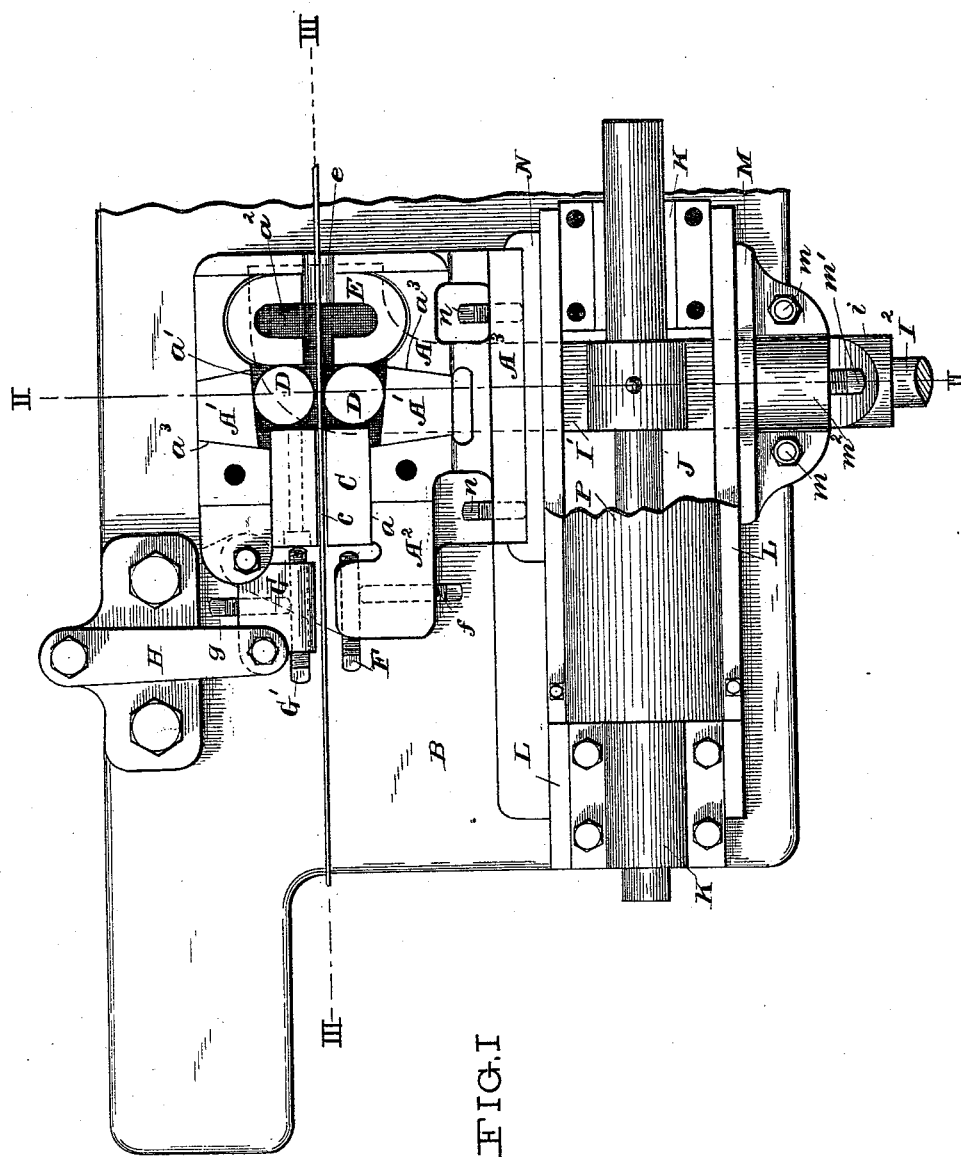
2 Sheets—Sheet 1.

C. W. RICHARDS.

# WIRE FEEDING DEVICE FOR NAIL MACHINES.

No. 526,117.

Patented Sept. 18, 1894.



**WITNESSES:**

J. C. Turner  
Jm Lecher

*INVENTOR.*

INVENTOR.  
C. W. Richards  
BY  
Hall & Gay  
ATTORNEYS.

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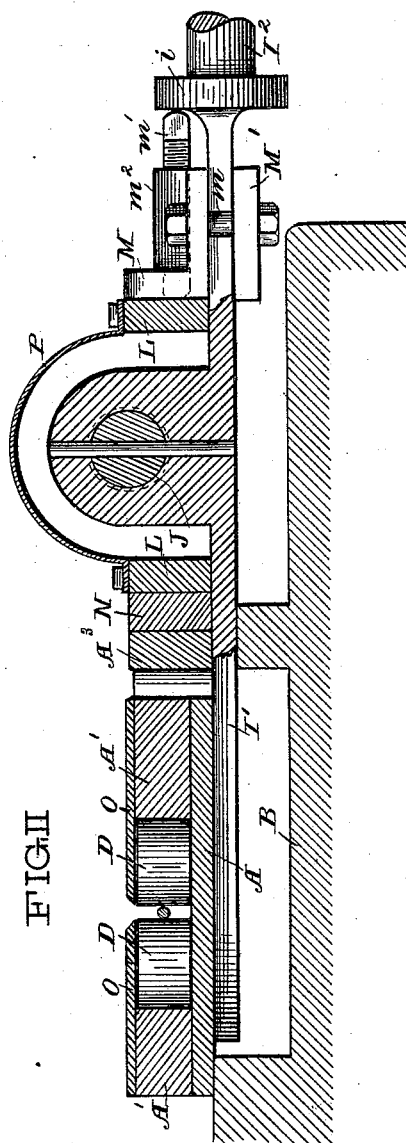
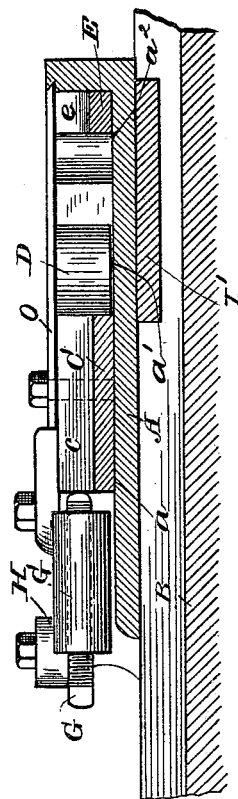


FIG. II

FIG. III



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES W. RICHARDS, OF CLEVELAND, OHIO.

## WIRE-FEEDING DEVICE FOR NAIL-MACHINES.

SPECIFICATION forming part of Letters Patent No. 526,117, dated September 18, 1894.

Application filed October 28, 1892. Renewed July 27, 1894. Serial No. 518,712. (No model.)

### *To all whom it may concern:*

Be it known that I, CHARLES W. RICHARDS, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Wire-Feeding Devices for Nail-Machines, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail, one mechanical form embodying the invention; such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings—Figure I represents a top plan view of my improved wire feeder for nail machines, and Figs. II and III, sections on an enlarged scale, respectively taken on the line II—II and the line III—III, in Fig. I.

The casing, A, of the feeder slides upon suitable supports upon the bed frame, B, of the nail machine, and said casing is formed with a longitudinal guide-way, *a*, which opens at its rear end into a forwardly tapering way, *a'*, the rear end of which opens into a recess, *a<sup>2</sup>*, having rounded sides. The rearwardly-diverging sides of the forwardly tapering or truncate wedge-shaped way *a'* have outwardly narrowing recesses, *a<sup>3</sup>*, in which correspondingly-shaped wear pieces, *A'*, are secured. A block, C, having a longitudinal groove, *c*, in its upper side, slides in the straight guide-way *a*, and two steel rollers, D, which form the wire gripping jaws, have play in the forwardly tapering way *a'*, traveling with their peripheries against the wear pieces. A spring, E, fits in the rounded recess *a<sup>2</sup>*, and has its arms bearing against the rollers, forcing the latter forward. This spring is preferably formed from a stout piece of rubber, square in cross section, and bent to fit the recess, the middle of the spring having a notch, *e*; but any form of spring or springs which will force the rollers forward, may be used instead of this form. The casing A is formed at its forward end with a projection, *A<sup>2</sup>*, through which passes a longitudinal adjusting screw, F, the

inner end of which serves as a stop for the reciprocating block C, at the forward stroke of the latter; and said screw stop F is secured in its adjusted position by means of a set screw, *f*, passed through the sides of the projection. An arm, G, is pivoted to the forward end of the casing, opposite to the projection *A<sup>2</sup>*, and has an adjusting screw stop, *G'*, inserted through it; said screw stop bearing against the forward end of the reciprocating block C, and having a set screw, *g*, for securing it in its adjusted position. A link, H, pivoted at one end upon the bed frame of the machine, has its other end pivoted to the free forward end of the stop arm G. The casing A is secured upon a feeder bar, I', having a guide rod, J, secured through it. Said rod slides in two longitudinal bearings, K K, formed in the machine frame. Two longitudinal guide bars, L L, are secured at their ends to the sides of the bearings to form guides for the feeder bar. A gib, M, is secured upon the upper side of the feeder bar to bear against and slide upon the outer guide bar, being secured upon the feeder bar by means of a shackle, M', which bears against the underside of the feeder bar and of the gib, and is secured to the latter by means of nutted bolts, *m*. An adjusting screw, *m'*, fits and turns in a screw-threaded box, *m<sup>2</sup>*, in the outer edge of the gib, and has its outer end bearing against a shoulder, *z*, formed upon the feeder bar at the point where said bar merges into the cylindrical gudgeon, I<sup>2</sup>, to which the connecting rod or pitman is pivoted. By means of this screw and shoulder the gib may be adjusted to fit snugly against the guide-bar. A gib, N, is secured against the outer edge of the casing A, and may be adjusted to fit snugly against the inner guide bar by means of screws, *n*, passing through a flange, *A<sup>3</sup>*, which forms the edge of the casing. A curved hood, P, is secured over the space between the guide bars, being secured to the upper edges of the same. The open top of the casing is covered by removable top plates, O, when the feeder is in operation. In practice, the wire is placed from above into the groove in the reciprocating block and between the two rollers, and, when the feeder is reciprocated, the spring and the friction between the wire and the rollers will draw the rollers

forward, during the back stroke of the feeder, into the narrow portion of the tapering way, clamping the wire between the rollers and feeding it to the nail forming mechanism.

- 5 When the extreme of the back stroke is reached, the stop arm G is so tilted by the link that its screw stop will strike the forward end of the reciprocating block and will force the latter rearward, thereby pushing the  
10 rollers into the wider rear end of their way and causing them to spread. As the rollers spread, they release the wire and the feeder may move forward, while the wire remains stationary. When the feeder again moves  
15 rearward, the wire is again gripped, and so forth. The portion of the stroke during which the wire is held gripped, and, consequently, the length of feed, is adjusted by means of the screw stop in the stop arm, and  
20 the limit of the forward movement of the reciprocating block is adjusted by the screw stop F; according to the thickness of the wire to be fed. The spring and the screw stop will make the gripping of the wire positive  
25 and exact, and the swinging stop arm, its link, and the reciprocating block, will make the release of the wire positive and exact, so that the feeding of the wire to the nail making mechanism, in exact and equal length  
30 will be insured.

The longitudinal guide bars and the gibs upon the feeder serve to insure reciprocation in a perfectly straight line, without lateral strain upon the guide rod on account of the  
35 pull of the pitman upon the end of the feeder bar. All wear and consequent lost motion may be taken up by adjusting the gibs. The hood over the guide bars and guide rod protects the latter from dust and chips from the  
40 nails, which dust and chips might otherwise fall upon the rod and be carried by the same into the bearings, cutting and injuring them.

Other modes of applying the principle of my invention may be employed for the mode  
45 herein explained. Change may therefore be made as regards the mechanism herein set forth provided the principles of construction respectively recited in the following claims are employed.

50 I therefore particularly point out and distinctly claim as my invention—

1. In a feeding device for nail making machines, the combination with a feeder bar, a longitudinal guide rod for the same, and longitudinal bearings for said rod, of a longitudinal  
55 guide bar at the side of and parallel with the guide rod, and a gib upon the feeder bar bearing against and sliding upon said guide bar, substantially as set forth.

2. In a feeding device for nail making machines, the combination with a feeder bar, a longitudinal guide rod for the same, and longitudinal bearings for said rod, of two guide bars secured at their ends to the sides of the bearings, and gibs upon the feeder bar bearing against and sliding upon the guide bars, substantially as set forth.

3. In a feeding device for nail making machines, the combination with a feeder bar, a longitudinal guide rod for the same, and longitudinal bearings for said rod, of two longitudinal guide bars secured at their ends to the sides of the bearings, gibs upon the feeder bar bearing against and sliding upon the guide bars, and screws for adjusting said gibs in their bearing against the guide bars, substantially as set forth.

4. In a feeding device for nail making machines, the combination with a tapering way, of wire gripping rollers having play in said way and traveling against the diverging sides of the same, substantially as set forth.

5. In a feeding device for nail making machines, the combination with a reciprocating casing formed with a tapering way, of two wire gripping rollers having play in said way and traveling against the diverging sides of the same, substantially as set forth.

6. In a feeding device for nail making machines, the combination of a tapering way, wire gripping jaws having play in said way and bearing against the sides of the same, a spring bearing against said jaws to force them into the narrow portion of said way, a block sliding to project into the narrow end of the tapering way, and means for forcing said block into the narrow end of the way, substantially as set forth.

7. In a feeding device for nail making machines, the combination of a reciprocating casing formed with a tapering way, wire gripping jaws having play in said way and bearing against the sides of the same, a spring bearing against said jaws to force them into the narrow portion of said way, a block sliding in the casing to project into the narrow end of the tapering way, an arm pivoted to engage said block and force it into the narrow end of the way, and a link pivoted to said arm at one end and rigidly pivoted at the other end, substantially as set forth.

In testimony that I claim the foregoing to be my invention I have hereunto set my hand this 3d day of October, A. D. 1892.

CHARLES W. RICHARDS.

Witnesses:

WM. SECTUR,  
J. C. TURNER.