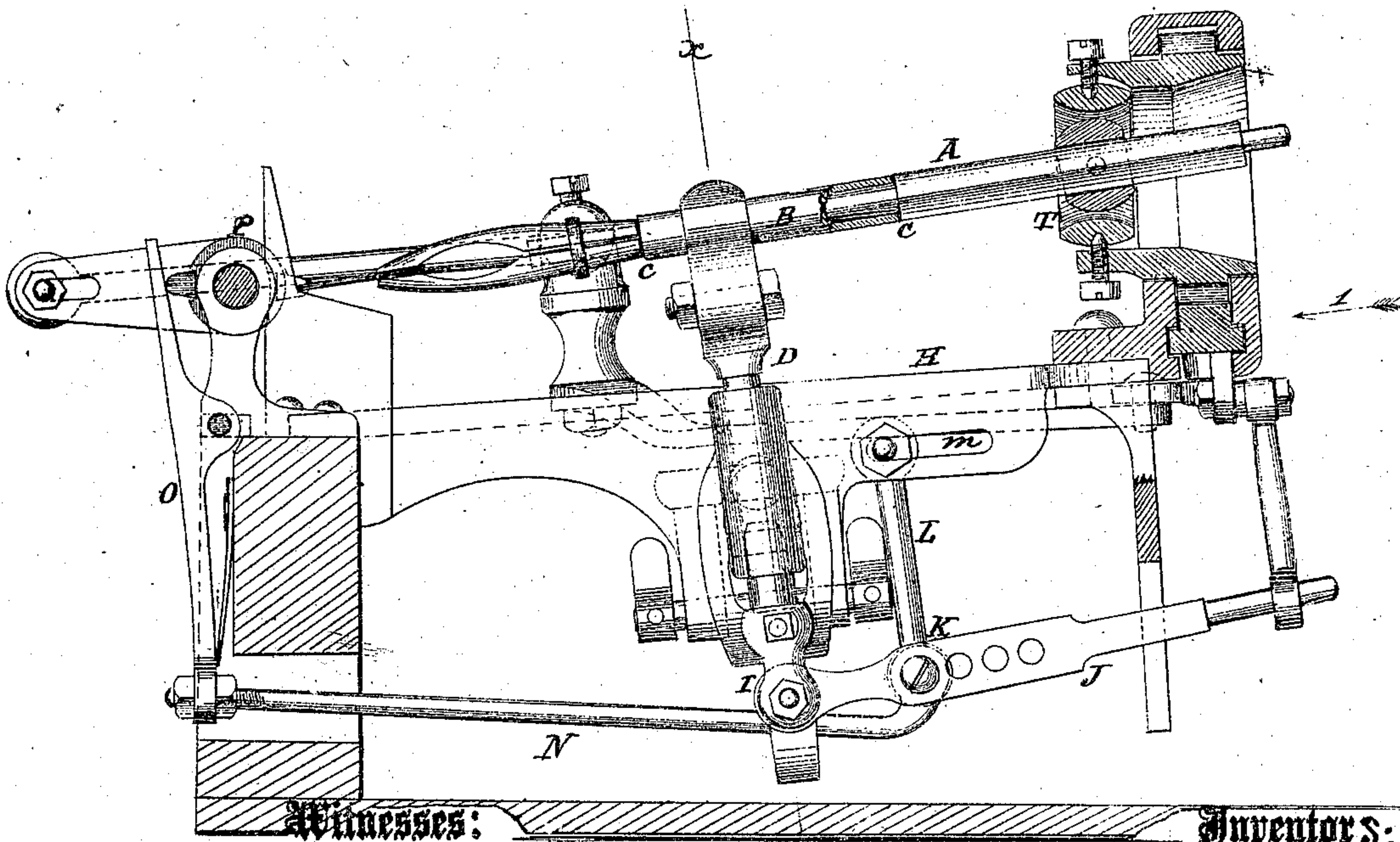
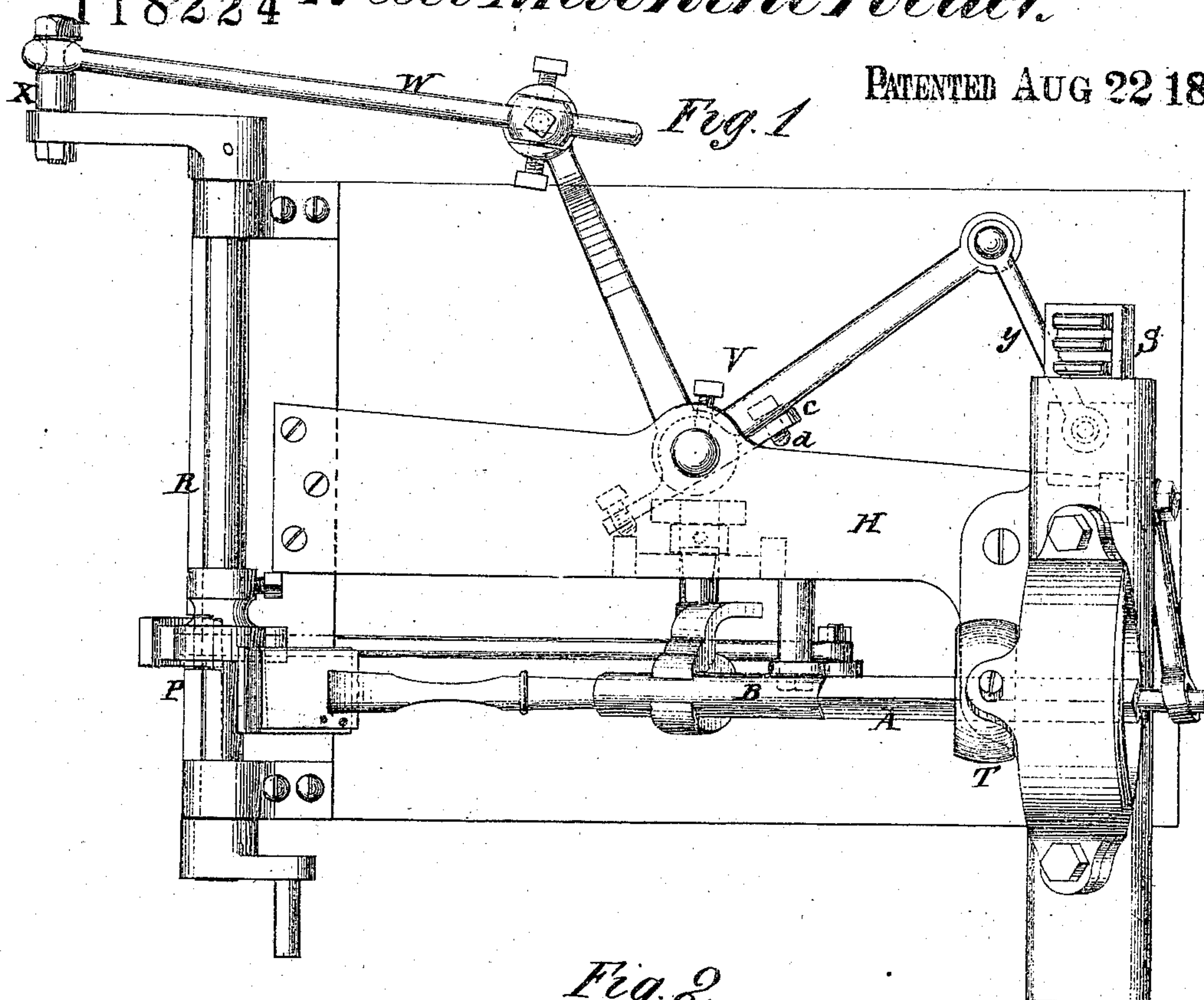


*J. Ferguson and J. Turner:  
Nail Machine Feeder.*

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*Nail Machine Feeder.*

PATENTED AUG 22 1871



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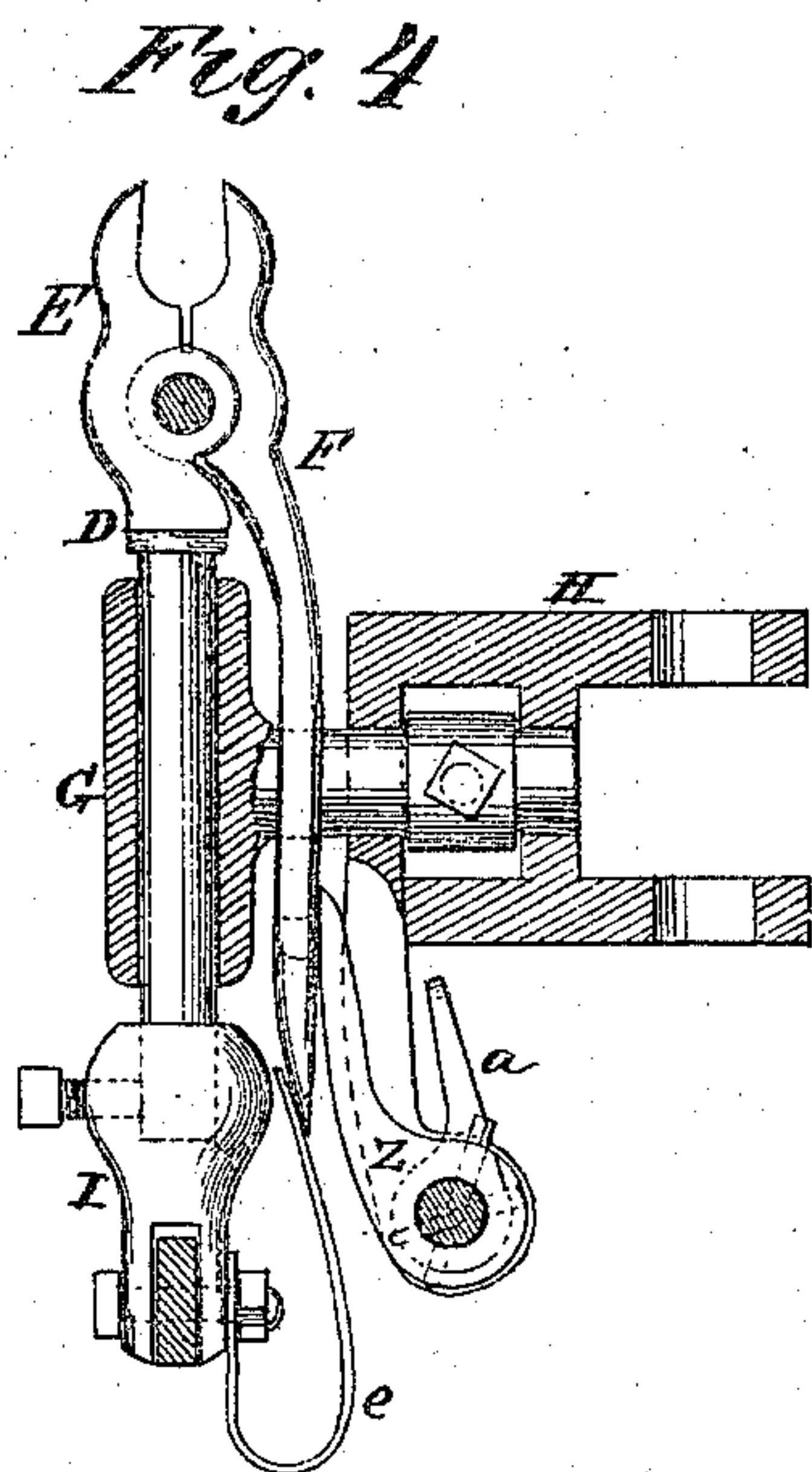
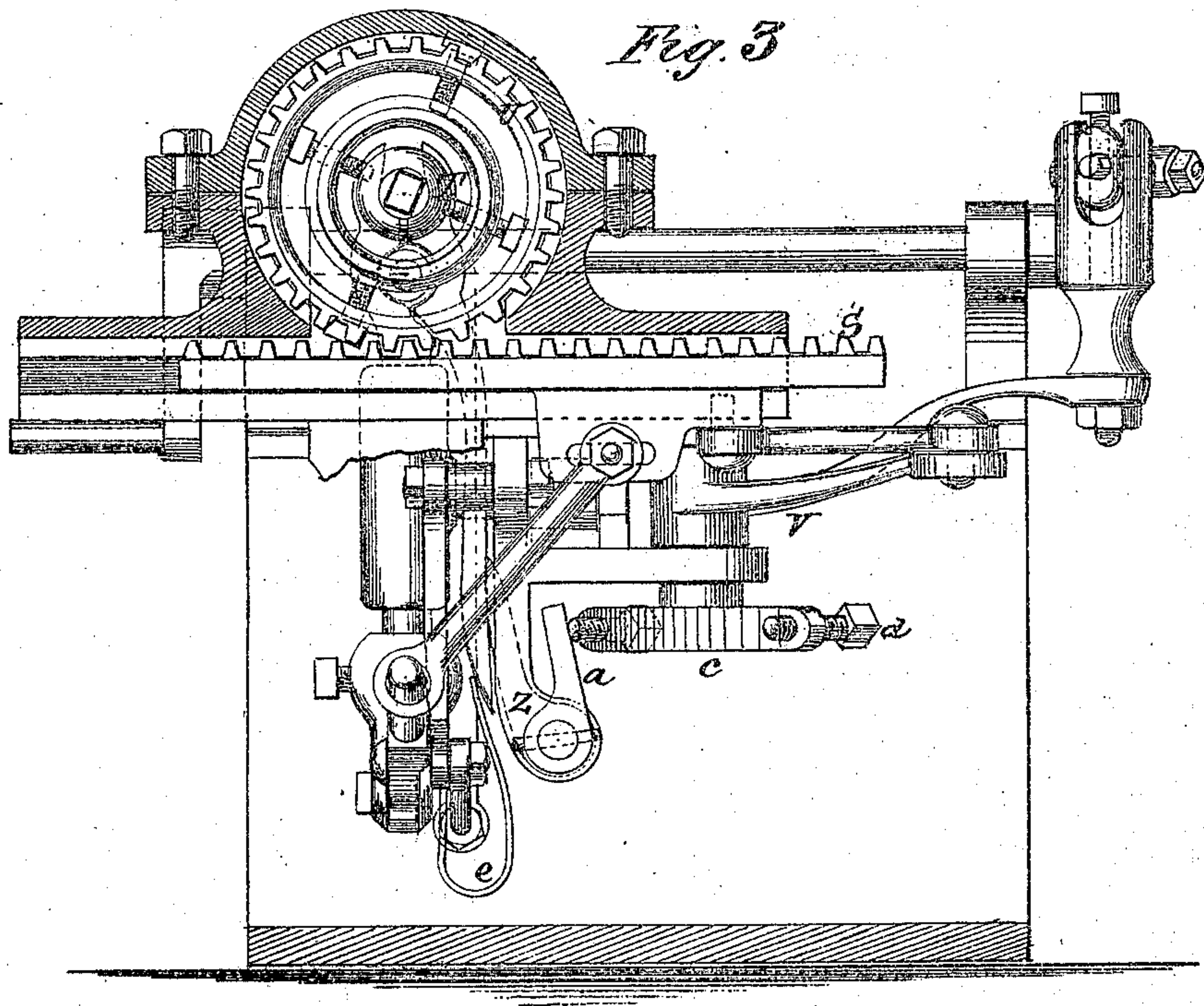
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# UNITED STATES PATENT OFFICE.

JAMES FERGUSON AND JOHN TURNER, OF BRIDGEWATER, MASSACHUSETTS.

## IMPROVEMENT IN NAIL-PLATE FEEDERS.

Specification forming part of Letters Patent No. 118,224, dated August 22, 1871.

*To all whom it may concern:*

Be it known that we, JAMES FERGUSON and JOHN TURNER, of Bridgewater, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Nail-Machine Feeder; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Our invention consists in improving nail-plate feeders, as hereinafter fully described and subsequently pointed out in the claims.

In the accompanying drawing, Figure 1, sheet 1, represents a top or plan view of the feeder, showing the construction and general arrangement of parts. Fig. 2 is a side view, partly in section. Fig. 3, sheet 2, is an end view, with parts broken away to show the reversing-wheel and rack. Fig. 4 is a vertical section of Fig. 2 taken on the line *x x*, showing the nipper-rod holder and the manner in which it is made to operate.

Similar letters of reference indicate corresponding parts.

A is the nipper-rod. B is the sleeve on the rod, confined between the shoulders C C. D is the holder, consisting of a shank-jaw, E, and a pivot-jaw, F, seen plainly in Fig. 4. The shank passes through the tube G, the tube itself being allowed to oscillate on a pivot supported by the bed-plate H. I is a forked connection on the lower end of the shank. J is an adjustable lever, which works on the fulcrum-pin *k*, the said pin being on the end of the hanger L, which is adjustable by means of the slot *m* in the side flange of the bed-plate H. N is a rod which connects the fulcrum-pin *k* with the vertical lever O. (See Fig. 2.) P is a double cam on the horizontal shaft R, which at each half revolution engages with the lever O, which motion serves to oscillate the tube G and carry the nippers or nail-plate to and from the moving knife of the nail-machine, thus feeding up the plate. The nipper-rod holder is raised and lowered so that the nail-plate in the nippers may be reversed clear of the bed-knife by means of the adjustable lever J, mentioned above. This lever is connected with the sliding rack S. The lever is adjusted or the fulcrum changed according to the width of the nail-plate. T is a universal joint, through the center of which the square shank of the nipper-rod

passes, as seen in Fig. 2. This universal joint is connected with or forms a part of the revolving or reversing-wheel U. (See Fig. 3.) The universal joint allows the nipper-rod to be moved upward or laterally and removed entirely from the feeder with the utmost facility. The action of the jaws of the nipper-rod holder is made intermittent so as to gripe the rod when moving or feeding up and loosen its hold for moving back, thus taking a new hold of the rod, or rather the sleeve at each oscillation of the cam-lever O. The upper end of the lever O is kept in contact with the cam by means of a spring, as seen in Fig. 2. The shaft R, which carries the double cam P, is the driving-shaft of the feeder, and is connected with one arm of the bell-crank V by the rod W. X is a crank on the end of the driving-shaft, with which the rod W is adjustably connected, by means of which motion is given to the bell-crank V. The other arm of the bell-crank is connected with the sliding rack S by the rod Y. The mechanism by means of which the pivot-jaw F of the holder is made to operate intermittently is seen in Figs. 1, 3, and 4. In Fig. 4, Z is a cam on a short horizontal rock-shaft, supported from the bed-plate H. *a* is an upright arm on each end of this shaft. On the lower end of the pivot of the bell-crank V is the bar C, having in it the adjusting-screws *d*. (See Fig. 1.) *e* is a spring attached to the connection I, which bears against the lower end of the pivot-jaw F, and serves to close the jaw and gripe the nipper-rod. The bell-crank V works in unison with the feeding-up motion of the nipper-rod, and at each of its oscillations one of the screws *d* strikes one of the upright arms *a*, which rocks the shaft of the cam Z, and passes the cam against the shank of the pivot-jaw F, which loosens the gripe of the holder upon the nipper-rod at the precise moment to allow of the back movement of the rod.

We are aware that automatic feeders for nail-machines have been made before, and that some portions of the mechanisms above described are not new; but we are not aware that any nail-feeder heretofore known embraces the improvement which we have designated as constituting our present invention.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. The nipper-rod A and sleeve B combined with a holder, D E F, and mechanism for operating said holder, as and for the purpose specified.

2. The combination of holder D E F, tube G pivoted in plate H, and mechanism to cause the holder to vibrate and reciprocate vertically, as set forth.

3. The combination of reciprocating rack S and lever J with holder D E F, sleeve B, and nipper-rod A, universal joint T, and wheel U, substantially as set forth.

4. The combination of bar *c*, arranged at the angle of bell-crank V and having a screen in each end, with mechanism to vibrate said bar, the arms

*a a*, and cams Z to open and close the jaw F, as described.

5. The reversing-wheel U and feeding and lifting holder D E F, combined with the nipper-rod A, sleeve B, and universal joint T, substantially as described.

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Witnesses:

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