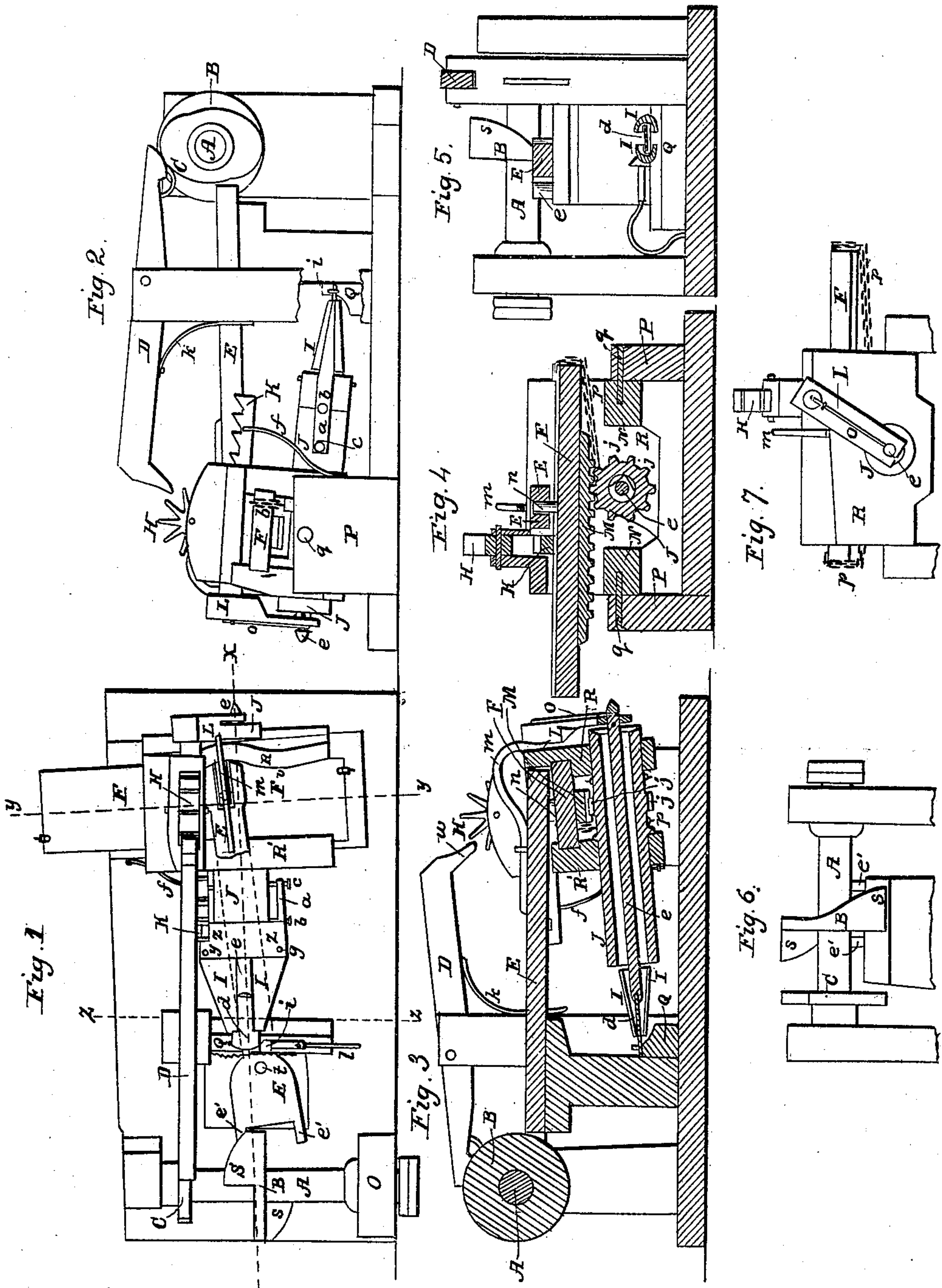


J. P. SHERWOOD.

Making Cut Nails.

No. 12,103.

Patented Dec. 29, 1854.



UNITED STATES PATENT OFFICE.

JOHN P. SHERWOOD, OF FORT EDWARD, NEW YORK.

CUT-NAIL MACHINE.

Specification of Letters Patent No. 12,103, dated December 19, 1854.

To all whom it may concern:

Be it known that I, JOHN P. SHERWOOD, of Fort Edward, in the county of Washington and State of New York, have invented
5 sundry new and useful Improvements in Nail-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this
10 specification, Figure 1, being a top view; Fig. 2, a side elevation; Fig. 3, a longitudinal section, in the line $x x$ of Fig. 1; Fig. 4, a transverse section, in the line $y y$ of Fig. 1; Fig. 5 a transverse section in the line $z z$
15 of Fig. 1; Fig. 6, an elevation of the rear end of my improved nail-machine; and Fig. 7, an elevation of the front end of said machine.

Similar letters indicate like parts in all
20 the figures.

My invention consists, first, in attaching the tube J, to a vibrating carriage, which is combined with a vibrating lever E, in such a manner that the plate-holding jaws I, I
25 (connected to the forward end of said tube) will be elevated just before the said tube is turned, to reverse the position of the nail plate, and will be pressed downward at the termination of each semi-rotary movement
30 of the said plate, and while it is acted upon by the cutters.

The second feature of my invention, consists in the shape of the jaws I, I, and their combination with the tube J, in such a manner as to enable the nail plate to pass freely
35 from the tube into said jaws, while the machine is in motion, and also allow the forward end of the nail plate holder e , to pass into said jaws, so as to almost entirely cut
40 the said plate into nails.

The third feature of my invention, consists in the arrangement and combination of parts by which the nail plate is drawn rearward from the knives, and retained
45 during the reversing movement of said plate, and thereby prevented from riding upon and dulling the knives by said movement.

The vibrating carriage R, R' N, N, with
50 which the tube J, is combined, is suspended by the pivots g, g , between the bearings P, P, as shown in Figs. 3 and 4. The said carriage is vibrated by means of the lever E, and the lateral cam projections s, s , of the
55 wheel B, on the shaft A, in the following manner, viz: the lever E, works on the fulcrum pivot t , and has two legs e', e' , at its inner end that embrace the cams s, s , on the

shaft A. The rear portion R, of the said carriage, rises above the level of the car- 60
riage and is curved into the shape represented in Fig. 1. The outer end of the lever E, is curved and bears against the inner curve of the elevated portion of R, and a hook m , attached to and projecting from the
65 rear end of E, embraces the outer curve of the raised portion of R. When the lever E, is in the position shown in Fig. 1, the hook m , will draw upon the upper portion of R, and thereby depress the forward end of the
70 tube J, and the jaws I, I, and cause the nail plate d , to be held firmly upon the anvil Q, while a nail is cut off; and when, by the rotation of the shaft A, the outer end of the lever E, is carried outward, to turn the tube
75 J, the action of the extremity of the lever upon the inner curve of the projecting portion of R, will impart an outward vibration to the carriage and elevate the front end of the tube J, and of the jaws I, I, until the
80 end of said lever reaches the point v , which is midway between the extremities of the curved portion of R, at which point, the outward curve of said curved portion, causes the hook m , to bear against the outer
85 side thereof, and as the lever moves outward, to draw upon the same, which imparts an inward vibration to the carriage and causes the forward end of the tube J, and of the jaws I, I, to be depressed during
90 the last half of their semi-rotary movement; and at the termination of said movement, presses the nail plate d , firmly upon the anvil Q, while a nail is cut off; at which moment the rotation of the shaft A, will
95 produce a reverse movement of the lever E, which will again cause an elevation and depression of the forward end of the tube J, at the same time that it imparts a semi-rotary movement to said tube, to bring the
100 nail plate again into the proper position to be acted upon.

The outward and inward movements of the outer end of the lever E, turns the tube J, half around, by means of the sliding
105 plate F, which works in grooves in the sides R, R', of the vibrating carriage, and is connected to said lever by the pin n , that rises from said plate into a slot in the lever, and also with the tube J, by means of the rack
110 M, on the under side of F, whose teeth work into the teeth j, j , which radiate from said tube; or by means of the chains p, p , which are connected to the ends of F, and have a
115 half turn around said tube.

The moment that a nail is cut off from

the nail plate *d*, the plate is withdrawn from the gage plate and cutters, and retained during its semi-rotary movement, by means of the combined action of the cam wheel C, the lever D, the pinion H, the rack K, and the arm L in the following manner. The rack K, and the pinion H, are combined with the vibrating carriage R, R', N, N, substantially as represented in the drawings.

The arm L, that descends from the rear end of the rack K, is connected to the outer end of the nail plate holder *e*, by means of the spring *o*, in such a manner as to be readily detachable, and in such a manner as to retain said holder in the center of the tube J, or thereabout. The cam-wheel C, is so arranged on the shaft A, in relation to the cam wheel B, on the said shaft, that at the moment one of the projections *s*, (of the cam-wheel B,) commences to operate upon the lever E, one of the projections of the cam-wheel C, will operate upon the lever D, and vibrate it to such a degree as to cause the arm *w*, at its rear end, to descend upon one of the teeth of the pinion H, and turn said pinion, and thereby cause it to act upon the rack K, and withdraw the nail plate holder *e*, and the nail plate *d*. The nail plate holder *e*, will be retained in its withdrawn position by the cam-wheel C, during the turning movement of the tube J, and will be thrown forward again, by means of the spring *f*, (Fig. 2,) or its equivalent, the moment that the said cam wheel C, ceases to act upon the lever D. The outer end of the lever D, will be thrown upward clear of the pinion H, by means of the spring *k*, the moment that the cam-wheel C, ceases to act upon its inner end; which allows the spring *f*, to throw forward the rack K, and the nail plate holder *e*, as above mentioned. The spring *f*, (or its equivalent,) which acts upon the rack K, may be attached to something outside and above the machine; and must be of such a length as will enable it to act upon nail plates of any desired length.

The nail-plate holding jaws I, I, are of such a shape, and are so combined with the forward end of the tube J, that they can be so adjusted as to receive nail plates of all widths and unerringly conduct them to the proper position upon the anvil Q. The said jaws I, I, embrace the entire mouth of the tube J, and from that point the grooves in each portion of the jaws incline inward and diminish in width to their extremities. The jaws I, I, are hinged to ears Z, Z, at the forward end of the tube J, in such a manner that the space between their extremities can be increased or diminished to suit different widths of nail plates; viz; arms *a*, *a*, from the jaws, pass through recesses in the ears Z, Z, and they are con-

nected to said ears by the fulcrum pins *g*, *g*. Two screws *b*, *c*, pass through each arm *a*,—the former passing into a screw top in the tube J, and the latter striking against the surface of said tube. It will therefore be perceived that by turning the screw *b*, forward, the outer ends of the jaws will be drawn away from each other, and by reversing the screws *b*, *b*, and turning forward the screws *c*, *c* the ends of the jaws will be made to approach each other.

It will be perceived that the flaring shape of the jaws I, I, will allow the end of the nail-plate-holder *e*, to pass forward within a short distance of the extremities of the jaws, and thereby enable nearly the whole of each nail plate to be cut into nails.

The gage spring and cutters, are not represented in the drawings, in connection with the anvil Q, for the reason that they are arranged in my improved nail machine in the usual and well known manner.

What I claim as my invention and desire to secure by Letters Patent, is—

1. Connecting the tube J, to a vibrating carriage, and combining said tube and carriage with the sliding plate F, the lever E, the hook *m*, the cam wheel B, and shaft A, in such a manner that the forward end of said tube will be elevated during the first half of its semi-rotary movement, and be depressed during the latter half of said movement, and then be firmly held in a depressed position a sufficient length of time for a nail to be cut from the nail plate, substantially as herein set forth.

2. I also claim the combination of the flaring jaws I, I, with the end of the tube J, in such a manner that they can be so adjusted as to enable them to unerringly guide a nail plate, of any width, to the cutters, when the machine is in motion, and allow the end of the nail plate holder to pass in between said jaws, substantially as herein set forth.

3. I also claim combining the nail plate holder *e*, with the arm L, the rack bar K, the spring *f*, the pinion H, the lever D, the cam wheel C, and the shaft A, (or their equivalents,) in such a manner that the nail plate holder will be withdrawn at the moment that its semi-rotary movement commences, and will be pressed forward at the moment that its semi-rotary movement ceases, substantially, as herein set forth.

The above specification of my improvement in the feeding of nail plates into nail making machines, signed and witnessed this 2nd day of Novr., 1834.

JOHN P. SHERWOOD.

Witnesses:

Z. C. ROBBINS,
G. W. ADAMS.