W. M. COLLINS.
Staple-Machine.

No. 212,441. Patented Feb. 18, 1879.

Fig. 1.

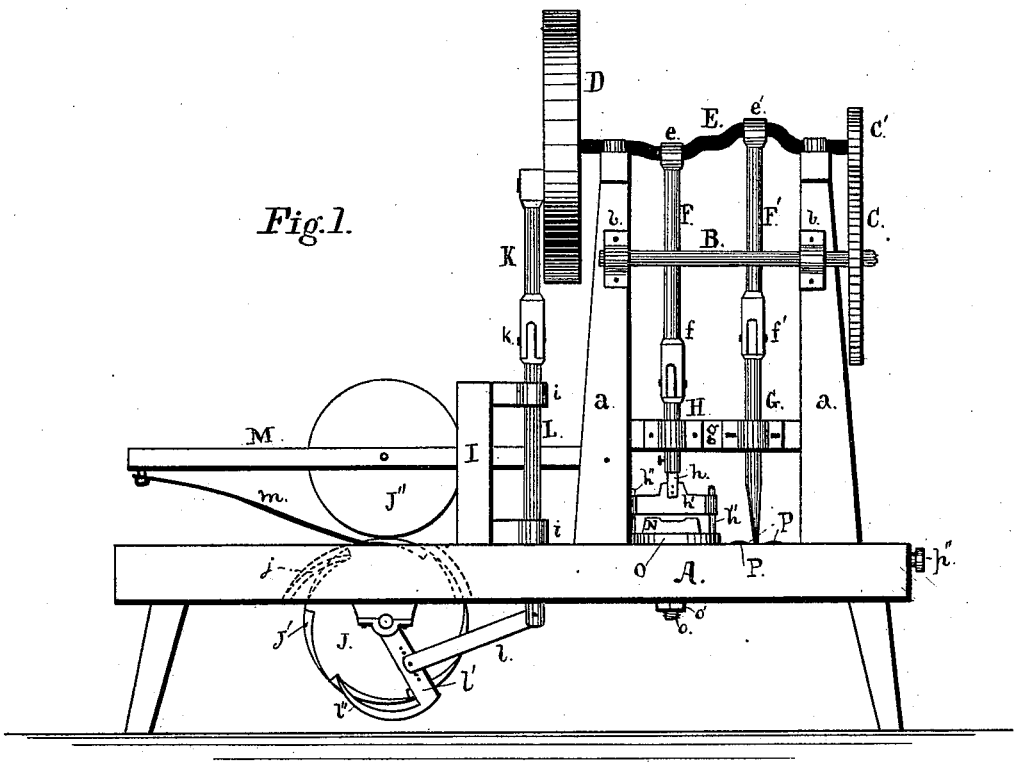
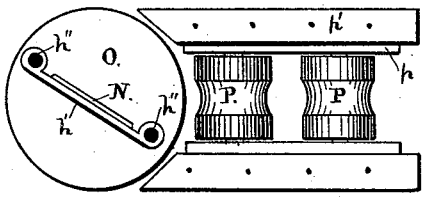


Fig. 2.



Witnesses,
Dr. L. H. Barclay
W. A. Bertram.

Inventor
Wm. M. Collins.
by
R. D. Williams
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM M. COLLINS, OF WEST BRANCH, IOWA.

IMPROVEMENT IN STAPLE-MACHINES.

Specification forming part of Letters Patent No. **212,441**, dated February 18, 1879; application filed July 5, 1878.

To all whom it may concern:

Be it known that I, WILLIAM M. COLLINS, of West Branch, Cedar county, State of Iowa, have invented certain new and useful Improvements in Machines for Making Staples; and I hereby declare the same to be fully, clearly, and exactly described as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the device; Fig. 2, a plan view of the shear-plate and die-rollers.

This invention relates to that class of machines in use for converting a continuous length of wire into staples of any desired length; and it consists in a device for accomplishing that end, constructed as hereinafter described, and possessing points of novelty indicated in the claim.

In the accompanying drawings, A represents the bed of the machine, upon which are secured uprights *a a*, carrying journals *b b*, for the main driving-shaft B. Upon the latter is keyed a gear-wheel, C, which meshes with a similar wheel, C′, upon the shaft E, that is mounted upon bars connecting the tops of the uprights *a a* upon either side of the machine.

The shaft E is cranked at *e* and *e′*, for driving, respectively, the mechanism for cutting and for bending the wire. At *e* is attached a bar, F, having a jaw, *f*, to which is pivoted another bar, H, which passes through a box upon a cross-piece, *g*, between the uprights, as shown. A socket is formed in the lower end of the bar H, into which enters, and is secured by a set-screw or equivalent clutch, the shank *h* of the blade *h′*. Upon the ends of the latter are formed sleeves, which slide upon guide-rods *h″*, that are rigidly secured upon the plate O. This plate rests upon the bed of the machine, and fits snugly in a circular recess in the latter, being secured therein by means of a threaded rod, *o*, extending through the bed, and nut *o′* upon the under side of the latter. The plate carries a blade, N, between which and the reciprocating blade *h′* the wire is cut.

At *e′* is attached a bar, F′, having jaw *f′*, similar to that upon the bar F, a rod, G, being pivoted thereto, and passing also through a box upon the cross-piece *g*. The rod G is bifurcated and beveled at its lower end, in order, respectively, to embrace the wire as it comes from the shears, and to pass freely between the die-rollers P P. The latter are mounted in pieces *p*, which are adapted to slide in guides *p′* upon the bed of the machine, the distance of the rollers from the shears being regulated by a screw, *p″*.

Upon the end of the shaft E is keyed a fly-wheel, D, having a crank-pin, to which the rod K is attached.

A rod, L, passing through guides *i i*, secured to an upright, I, is pivoted at *k* to the rod K, and carries at its lower end an arm, *l*, which, in turn, is pivoted to a spring-pawl, *l′*, that engages with a ratchet-plate, J, secured upon the wheel J′.

A slotted bar, M, is pivoted between the uprights *a*, and in its slot is mounted a wheel, J″, that is pressed by means of a spring, *m*, against the face of the wheel J′. A stop-pawl, *j*, (shown in dotted lines,) serves to prevent reverse motion of the latter.

The operation of the device is as follows: The shaft B being set in motion by the application of any suitable power, the shaft E is caused to revolve, and at each complete revolution the wheel J′ moves through one or more ratchet-spaces. The wire, being fed between the wheels, is delivered to the shears, and the lengths thereby cut off are forced, upon the descent of the rod G, between the die-rollers P P, thereby completing the staples.

It is obvious that the length of the staple depends upon the amount of rotation of the wheel J′, and that as the same is changed the rollers P P must be made to correspondingly approach or recede from the plate O, which adjustment is readily effected by the screw *p″*.

The box through which the rod G passes is made laterally adjustable upon the piece *g*, in order to suit the adjustment of the rollers P P. Any desired bevel may be given to the ends of the staples by means of the shears, hereinbefore described.

Upon loosening the screw which retains the shank *h* in the end of the bar H and unscrewing the nut *o′*, the plate O may be rotated so that its blade N shall cut the wire at any desired angle. Upon removing the pin in the jaw *f′* the rod G may be removed, when the

wire will be delivered in the form of straight lengths, beveled at each end, and admirably adapted for the manufacture of barbed-wire fencing.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a staple-machine, the combination, with intermittent feed-rollers and actuating mechanism, as described, of the cutters N h', adjustable upon an axis at right angles to the line of feed, and the bending-rod G and rollers P, adjustable in relation to said cutters, substantially as and for the purpose set forth.

WILLIAM M. COLLINS.

Witnesses:
D. B. REEVES,
D. H. YETTER.