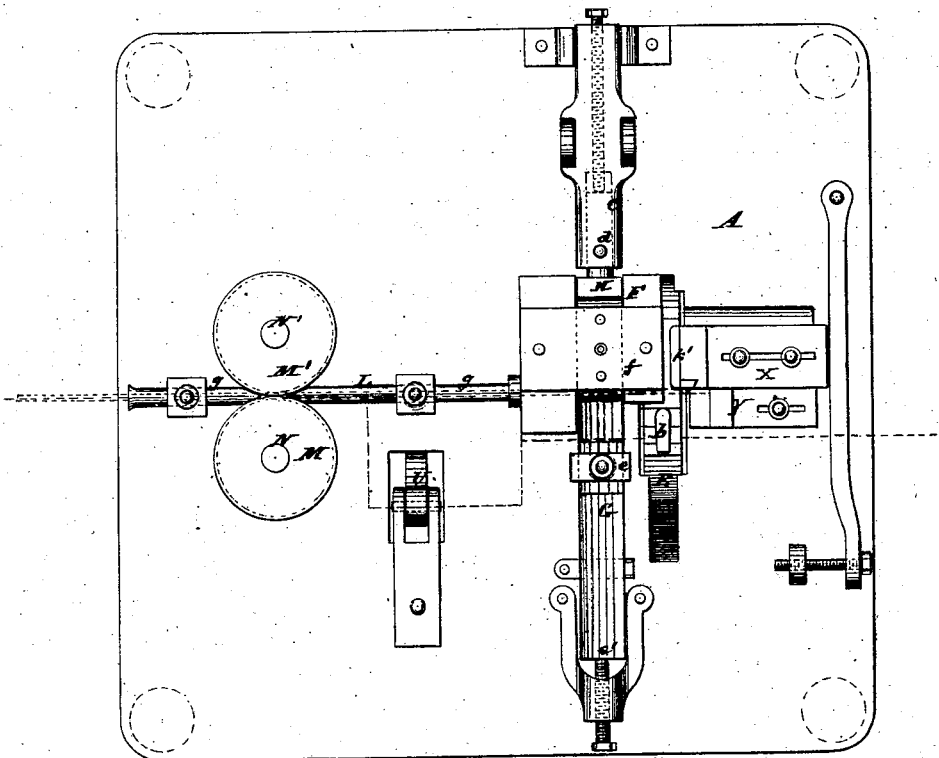


*J.C. Stead. Machine for Making Staples.*

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PATENTED OCT 25 1870

*Fig. 1.*



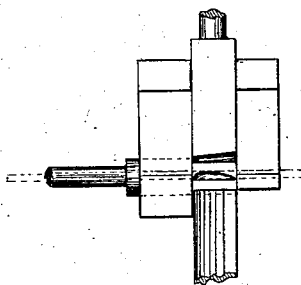
*Fig. 5.*



*Fig. 6.*



*Fig. 4.*



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J.C. Stead. Machine for Making Staples.

Fig. 2.

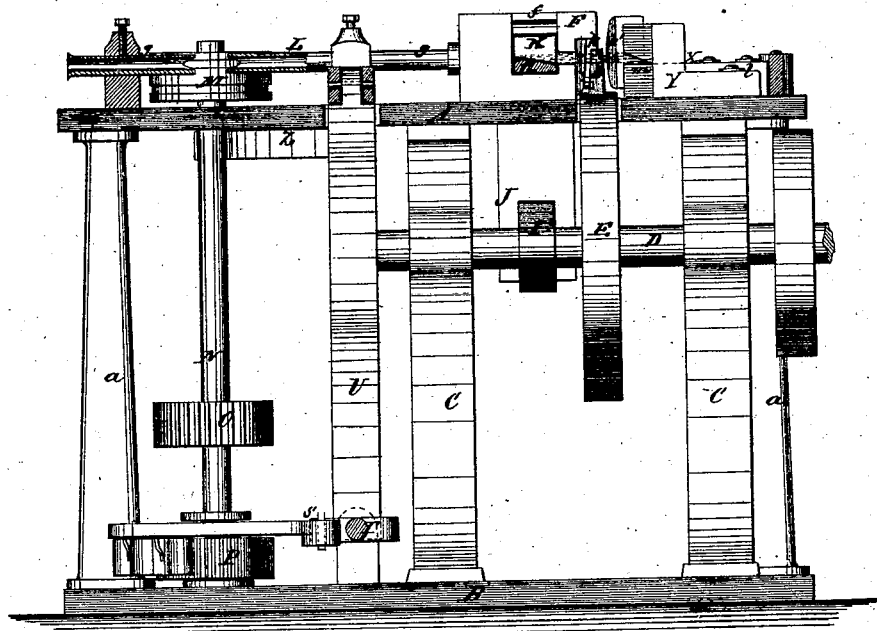
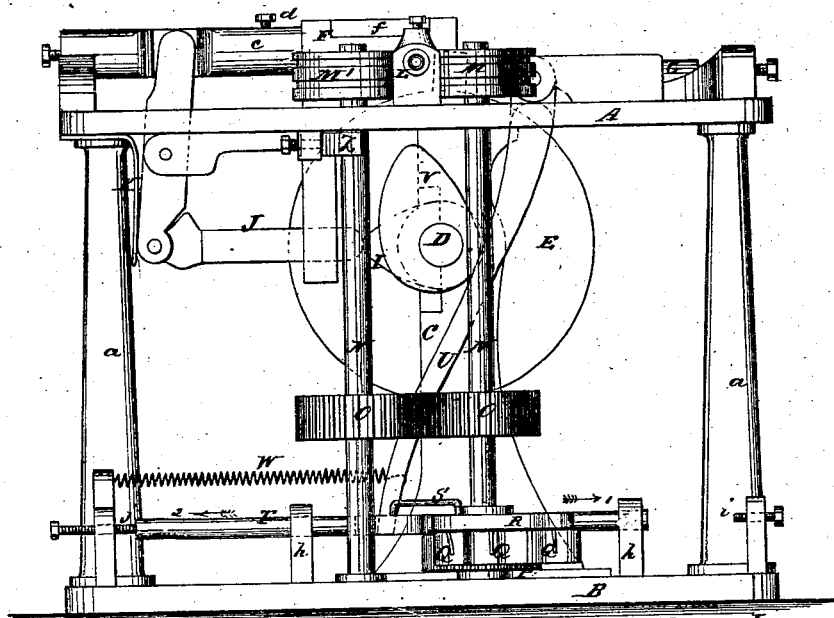


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN MACHINES FOR MAKING STAPLES.

Specification forming part of Letters Patent No. 108,733, dated October 25, 1870.

*To all whom it may concern:*

Be it known that I, JAMES CURTIS STEAD, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Machine for Making Staples; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

This invention relates to a new and improved construction and combination of certain parts, hereinafter shown and described, whereby an efficient machine is obtained for the purpose of making staples.

The most essential feature of the invention consists of a rotary bender for bending the blanks as they are cut from the rod, and using in connection therewith cutters so constructed and arranged as to cut the rod obliquely and form sharp ends to admit of the staples being readily driven into the wood.

The invention also consists in the combination of a feed mechanism with the parts above named; and, further, in an improved construction of detail parts, as hereinafter set forth, whereby the efficiency of the machine is greatly enhanced.

In the accompanying sheets of drawings, Figure 1, Sheet No. 1, is a plan or top view of my improved machine. Fig. 2, Sheet No. 2, a transverse vertical section of the same, taken in the line *xx*, Fig. 1. Fig. 3, Sheet No. 2, an end elevation of the same. Fig. 4, Sheet No. 1, a portion of the plan or top view, Fig. 1, with the cover of the cutters removed in order to show the latter clearly. Fig. 5, Sheet No. 1, a detached view of a blank cut from the rod. Fig. 6, Sheet No. 1, a detached view of a staple.

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

The framing of the machine consists of a top and bottom plate, *A B*, connected by upright posts *a* and two upright standards, *C C*, in which are the bearings of a horizontal shaft, *D*, from which motion is communicated to the several parts of the machine.

On the shaft *D* there is keyed a wheel, *E*, which has an arm or projection, *b*, extending from its periphery, said arm and the upper part of the wheel working through a slot or

opening in the top plate, *A*, of the framing, as shown clearly in Fig. 2.

*F* represents a cast-iron head, which is firmly secured to the top plate, *A*, and is provided with a recess extending its whole length to receive the cutters *G H*—the former, *G*, being stationary or fixed, and the latter, *H*, a sliding one, both cutters having an oblique cutting-edge, and one working directly over the other, as shown in Fig. 2. The sliding cutter *H* is fitted into a stock, *c*, and secured therein by a set-screw, *d*, as shown in Fig. 1. This arrangement admits of said cutter being adjusted to compensate for wear. The fixed cutter *G* may also be adjusted for the same purpose by means of set-screws *e e'*, as shown in Fig. 1. Both cutters *G H* are kept down in proper place in the recess in the head *F* by a cap-plate, *f*. (Shown in Figs. 1 and 2.) The sliding cutter *H* is operated by a cam, *I*, on the shaft *D*, said cam acting against a jointed arm or lever, *J*, to give the cutting motion, the return motion being given by a spring, *K*. (See Fig. 3.)

The staples are made from a rod or wire of a suitable thickness, said rod or wire being fed through a tube, *L*, formed of two parts, *g g'*, which are in line with each other, a space being allowed between the adjoining ends of the two parts to leave a portion of the rod or wire exposed, so that it may be acted upon by two feed-rollers, *M M'*, which press against it at opposite sides. The feed-rollers are keyed on the upper ends of upright shafts *N N'*, which are connected by gears *O O* near their lower ends. The shaft *N* has a ratchet-wheel, *P*, on its lower part into which pawls *Q* work; said pawls being fitted in a lever, *R*, which is connected by a link, *S*, with a sliding rod, *T*, fitted in bearings *h h* on the bottom plate, *B*, of the framing of the machine. A pendent lever, *U*, engages at its lower end with the sliding rod *T*, and against this lever a cam, *V*, on the shaft *D* acts, said cam giving the feed motion to the feed-rollers, the return motion being given by a spring, *W*. A screw-stop, *i*, limits the movement of the sliding rod *T* in the direction, (indicated by the arrow 1,) while the movement of the sliding rod in the opposite direction (indicated by arrow 2,) is limited by a screw-stop, *j*, the latter, by its adjustment, controlling the feed movement of

the rod or wire, and admitting of staples of greater or lesser length being made. The rod or wire, (indicated by the dotted lines in Figs. 1 and 4,) passes through the tube L, and the head F also passing through a socket in the latter, which leaves its upper part, or rather an oblique half, exposed to the action of the upper cutter, H, which is the sliding one. This will be understood by referring to Fig. 2.

In one end of the head F there is inserted a steel plate, *k*, and a similar steel plate, *k'*, is inserted in a cast-iron head, X, on the top plate, A, of the framing. These steel plates *k k'* may be fitted in dovetails in the heads F and X, to admit of their ready removal and replacement by new ones, when required.

Y is a cast-iron stop secured on the top plate, A, by a set-screw, *l*, and having a slot, *m*, made in its face side to receive the obliquely-cut end of the rod or wire. This stop Y limits the feed movement of the rod or wire, while the slot *m* prevents it from turning while being acted upon by the rotary bender E.

The operation is as follows: The cam V first acts against the lever U, and the feed-rollers

MM' move the rod or wire along until its obliquely-cut end enters the slot *m* of the stop Y. The feed movement then ceases, and the sliding cutter H is moved forward under the action of the cam I, and a blank is cut from the rod or wire. The projection *b* of the rotary bender then comes in contact with the blank and bends the latter in staple form between the fixed plates *k k'*.

I would remark that the upright shaft N' has a spring, Z, bearing against its upper end to cause the feed-rollers M M' to press sufficiently against the rod or wire.

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

The combination of the feed-rollers M M', cutters G H, rotary bender E, fixed bearings *k k'*, and the slotted stop Y, all constructed and arranged in the manner substantially as and for the purpose set forth.

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