(No Model.) 2 Sheets—Sheet 1.

W. M. SHEESLEY.

MACHINE FOR MAKING STAPLES.

No. 306,537. Patented Oct. 14, 1884.

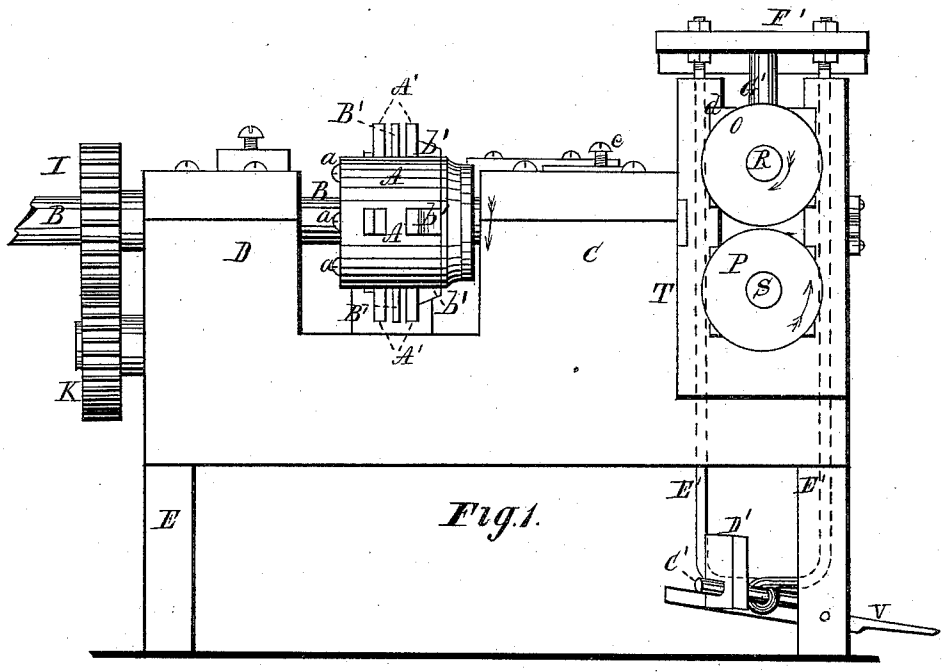

Fig. 1.

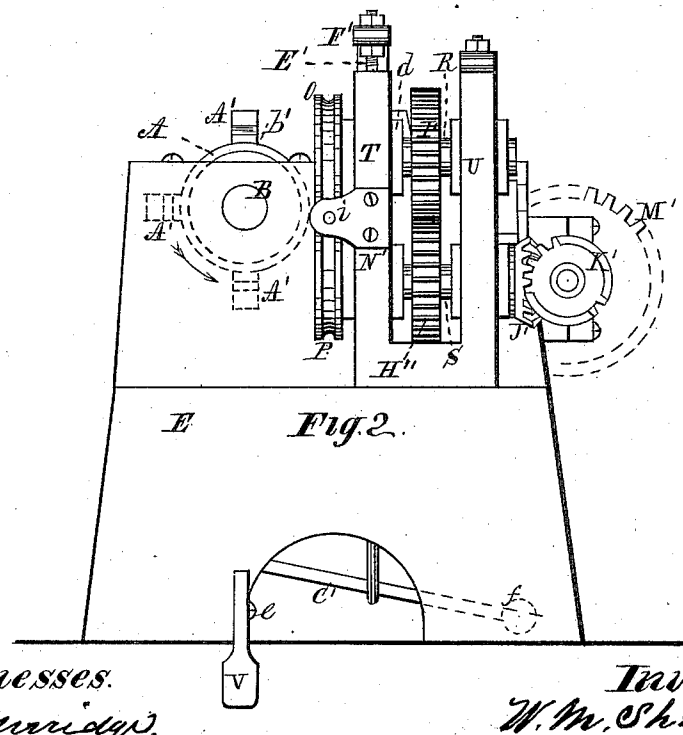

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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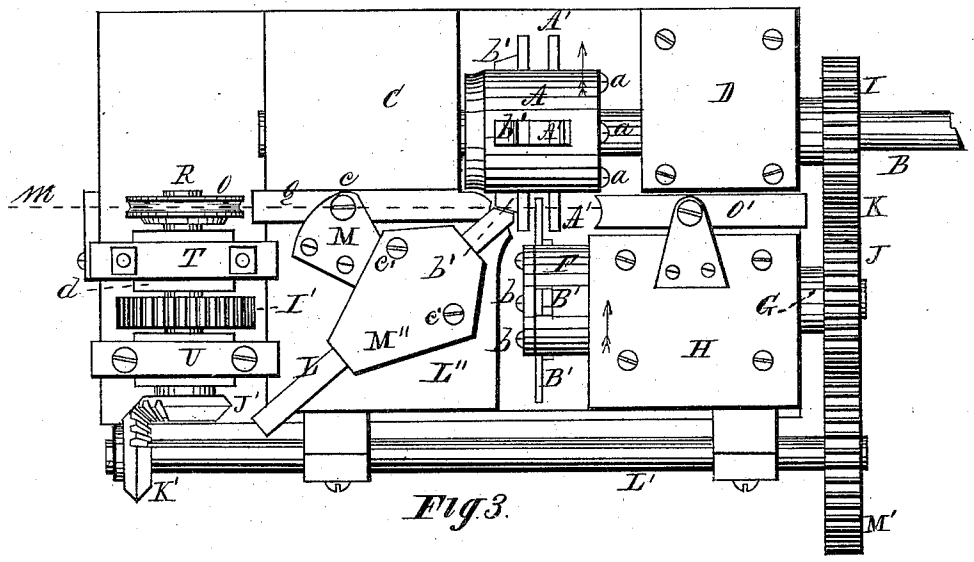


Fig. 3.

Fig. 4.

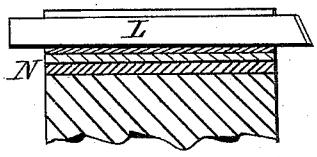
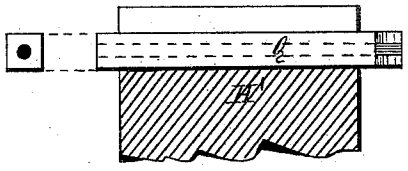


Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM M. SHEESLEY, OF CLEVELAND, OHIO.

MACHINE FOR MAKING STAPLES.

SPECIFICATION forming part of Letters Patent No. 306,537, dated October 14, 1884.

Application filed December 8, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. SHEESLEY, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and Improved Machine for Making Staples; and I do hereby declare that the following is a full, clear, and complete description thereof.

The following is a detached description of the construction and operation of the machine for making staples, above alluded to, reference being had for illustration to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side elevation of the machine. Fig. 2 is an end elevation. Fig. 3 is a plan view, and Figs. 4 and 5 are detached sections.

Like letters of reference refer to like parts in the several views.

As shown in the drawings, A represents a cylindrical head secured to the shaft B, journaled in the blocks C and D, mounted upon the stand E. In said head is secured, respectively, by set-screws *a* four pairs of radial arms, A′, Figs. 2 and 3. The space between each pair of arms is wide enough to admit the passage between them of the four radial bending-arms, B′, secured in the cylindrical head F, Fig. 3, mounted on a shaft, G, having its bearing in the block H. The relative position of the two said cylindrical heads, with their respective radial arms, in respect to each other is shown in Fig. 3, in which it will be seen that the bending-arms B′ are not only free to pass between the arms A′, but also to allow the wire or rod of which the staples are made to pass between the bending-arm and arms A′. The bending-arms are made fast in the head by set-screws *b*, or by other suitable means.

In the head carrying the arms A′, and by the side of four of said arms, is a cutter, *b′*, with a diagonal cutting-edge, the purpose of which will presently be shown.

The two cylindrical heads above described are made to revolve in the same direction by the cog-wheels I and J, respectively secured to the shafts of the said heads. Said cog-wheels I and J do not engage each other; but motion is transferred from one to the other by an intermediate wheel, K, Fig. 1, causing the two heads to revolve in the same direction, as aforesaid.

L, Fig. 3, is a stationary cutter, the cutting-edge of which corresponds to the cutting-edge of the revolving cutter *b′*, and acting conjointly therewith for cutting lengths of rod of which to form staples. A detached view of the stationary cutter is shown in Fig. 4, in which it will be seen that the cutter is sunk into the top L″ of the machine, a groove being made therein for that purpose, thereby bringing the cutting-edge of said cutter near to the axial line of the head A, so that the cutting-edges of the revolving cutters and the cutting-edge of the stationary cutter shall approximate and act conjointly for cutting the rod for staples.

The stationary cutter above alluded to has a diagonal cutting-edge, and is secured in place by a binding-plate, M″, which, by means of the set-screw *c′*, is screwed down upon the cutter. Under the cutter are strips of packing N, Fig. 4, for adjusting the cutter vertically in its relation to the revolving cutters; also, the ends of the packing serve to guide the rod to the cutters after it leaves the tubular guide Q.

O and P are a pair of feed-rollers, through the peripheral grooves of which the wire or rod passes into said tubular guide Q, Fig. 3, thence to the cutters.

A detached view of the tube is shown in Fig. 5, in which it will be seen that it is set down into the top of the machine, as is the stationary cutter, that the wire may be fed to the cutters for being severed thereby.

The feed-rollers above alluded to are mounted upon the shafts R and S, Figs. 2 and 3, having their bearings in boxes fitted, respectively, in the frames T and U. The box *d* of the shaft R is movable in the frame, so that it can be moved, together with the feed-roller O, away from the roller P, for a purpose hereinafter explained. The feed-roller O alluded to is moved upward by the treadle V, pivoted at *e* to the side of the frame. The inner end of the treadle extends under an arm, C′, Figs. 1 and 2, one end of which is pivoted to the frame at *f*. On the opposite end of the arm is a weight, D′, for depressing that end of the arm, in order to bring the adjustable feed-roller O down after being pushed upward by the treadle. That the treadle may operate the feed-roller, as above specified, is the purpose of the rods E′, the lower ends of which are made fast to the weighted arm C′, whereas the

upper ends of the rods are secured to the cross-piece F′, connected to the movable journal-box *d* by a stem, G′. The rods E′ pass loosely up through the frame T; hence on depressing the outer end of the treadle the inner end thereof will push upward the arm C′, and with it the rods E′ and cross-piece F′, which in turn pulls upward the journal-box *d* by the stem G′, and therewith the feed-roller O, which roller is again brought down by the weight D′ when the foot is removed from the treadle. The feed-rollers alluded to are revolved by the cog-wheels H″ and I′, secured, respectively, to the shafts carrying the feed-rollers. Said cog-wheels are operated by the beveled pinions J′ on the shaft of the cog-wheel H″, and the corresponding pinion, K′, on the counter-shaft L′ revolved by the cog-wheel M′ in its engagement with the cog-wheel J, as shown in Fig. 3.

The practical operation of the above-described machine is substantially as follows: The cylindrical heads above described are made to revolve in the direction of the arrows by power applied to the shaft B. At the same time the feed-rollers revolve in the direction indicated by the arrows seen thereon in Fig. 1 by means of the mechanism above described. During the operation of the machine the wire or rod for staples is fed into the machine by inserting the end in the hole *i*, Fig. 2, of the guide-plate N′, the said end being immediately caught by the feed-rollers and the wire carried along through the conducting-tube Q until the end strikes the gage O′, which determines the length to be cut from the rod for a staple. The broken line *m* indicates the rod drawn into the machine and from which a length will be cut by the co-operation of the stationary and a revolving cutter, which now by the timely movement of the machine are in cutting relation to each other. A piece thus cut from the rod lies across two of the arms A′ and below the bending-arm B′, which immediately bends the blank or piece for a staple down between the arms A′, thereby forming a staple, which drops from the arms into a keg or package under the machine. The operation of the machine is such that the rod passes longitudinally between the arms in time to reach the gage before the cutters sever it and the arms bend it into a staple. The material used for the staples consists of metal rods of convenient length to be handled; hence they are fed to the machine by hand. Therefore the workman inserts the end of the rod in the feed-rollers, when the rod is quickly drawn into the machine. To prevent the short latter end of the rod from being drawn into the tube by the feed-rollers, the operator places his foot upon the treadle and lifts the upper roller enough to free its hold on the rod, which short piece of rod is suddenly pulled out from the rollers and prevented from being carried into the guide-tube, in which it would lodge after passing the feed-rollers and obstruct the insertion of another long length of rod.

The bending-arms may be adjusted laterally to adapt them for making different-sized staples, and the cutters may be adjusted radially to adapt them to the stationary one, which is also adjustable.

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

1. In a machine for making staples, the revolving head A, having inserted therein a quadrate arrangement of radial arms, and cutters *b*′, in connection with said radial arms, in combination with the revolving head F, having a quadrate arrangement of radial arms adapted to pass between the radial arms of the revolving head A, substantially as described, and for the purpose set forth.

2. In a staple-machine, the combination of the revolving heads A and B with their respective cutters and radial arms, adjustable stationary cutter, gage O′, tubular guide, feed-rollers, and mechanism for operating the same. rods E″, cross-piece and stem G′, and weighted arm and treadle, constructed and arranged to operate and co-operate in the manner substantially as set forth, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM M. SHEESLEY.

Witnesses:
W. H. BURRIDGE,
J. H. BURRIDGE.