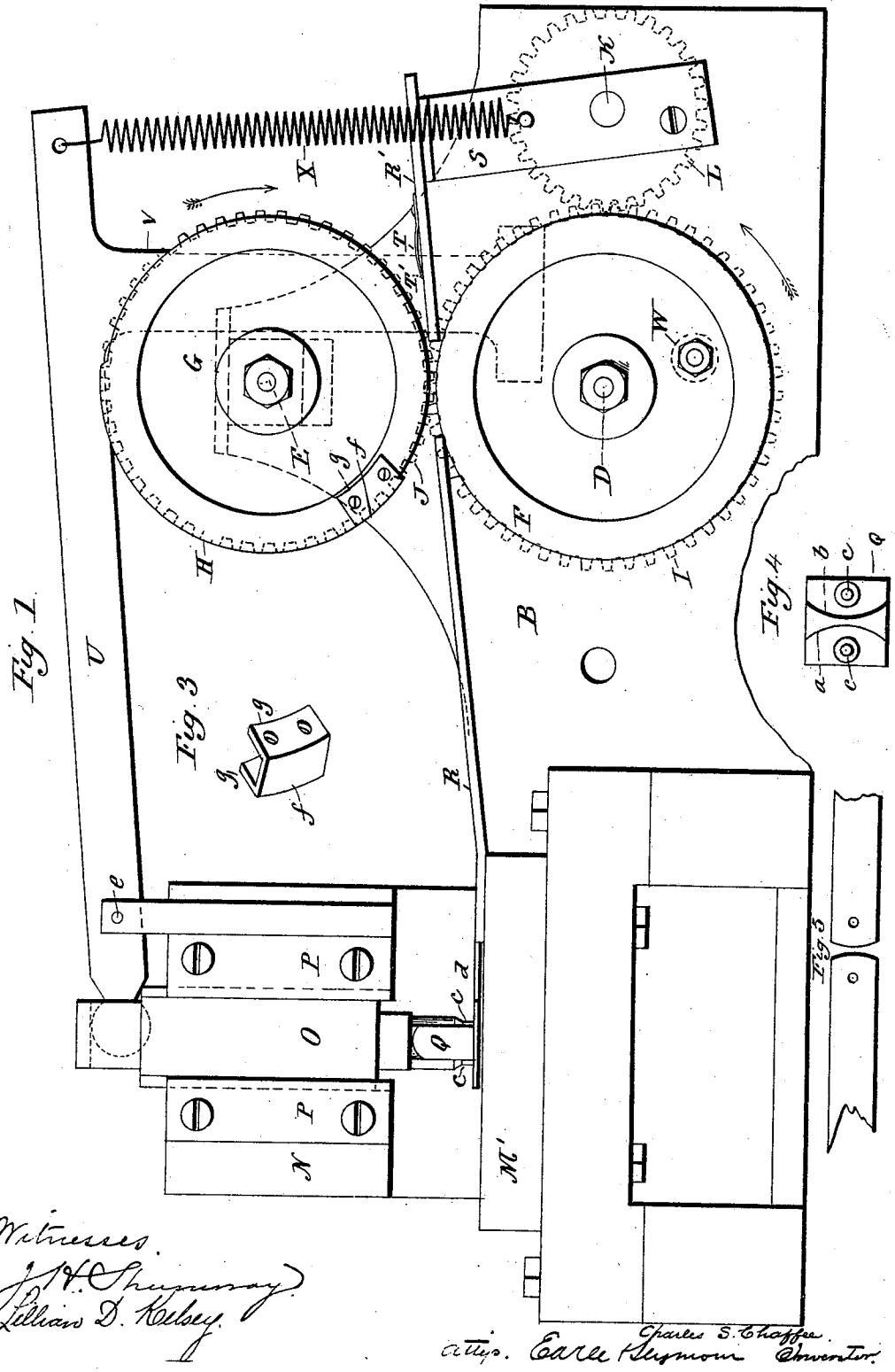
(No Model.) 2 Sheets—Sheet 1.

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MACHINE FOR CUTTING WIRE.

No. 594,676. Patented Nov. 30, 1897.



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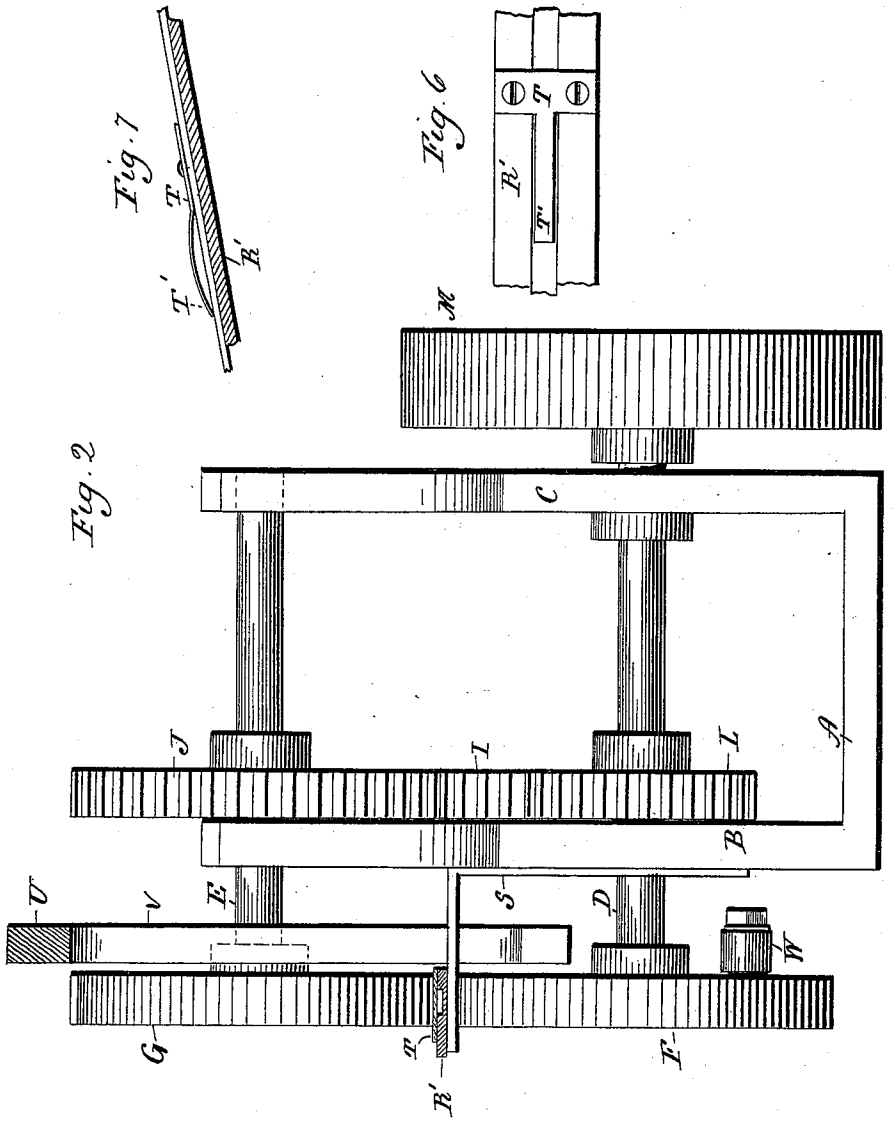
THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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UNITED STATES PATENT OFFICE.

CHARLES S. CHAFFEE, OF DERBY, CONNECTICUT.

MACHINE FOR CUTTING WIRE.

SPECIFICATION forming part of Letters Patent No. 594,676, dated November 30, 1897.

Application filed January 14, 1897. Serial No. 619,137. (No model.)

To all whom it may concern:

Be it known that I, CHARLES S. CHAFFEE, of Derby, in the county of New Haven and State of Connecticut, have invented a new Improvement in Machines for Cutting and Punching Wire; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a front view of a machine constructed in accordance with my invention; Fig. 2, an end view of the same; Fig. 3, a perspective view of the feed-plate detached; Fig. 4, an under side view of the cutter and punches; Fig. 5, a top view of two ends of the wire after the cutting and punching operation; Fig. 6, a top view of the rear guideway; Fig. 7, a sectional view of the same.

This invention relates to an improvement in machines for cutting and punching wires, and particularly wires which have been inclosed in paper or cloth wrappers and such as are used for dress-stays, the object of the invention being to regulate the length of wire fed, so that the machine will automatically cut the wires to predetermined lengths, and to so construct one of the feeding-rolls that by changing a plate secured to its face the feeding operation will be increased or diminished, so as to produce stays of different lengths and without changing the material parts of the machine.

Another object of my invention is to combine with such feeding mechanism cutters and a punch which will round the opposite ends of the said wires and perforate the ends at the same operation; and it consists in the construction as hereinafter described, and particularly recited in the claims.

The main portion of the frame of the machine consists of a base A and uprights B C, extending from the sides of the base upward parallel with each other. Mounted in these uprights, one above the other, in vertical lines and parallel with each other, are two shafts, the lower one D carrying a feed-roll F at its outer end and the upper shaft E carrying a feed-roll G at its outer end, the peripheries of the two rolls being slightly separated from each other. A segment H of the edge of one of the rolls, and preferably the upper one, is of longer radius than the main portion of the roll and so as to come in contact with the face of the other roll, the length of this enlargement corresponding to the shortest length of the wires to be cut. On the shaft D, inside the upright B, is a gear-wheel I, meshing with a corresponding wheel J, mounted on the shaft E. Also mounted in the uprights is a driving-shaft K, carrying a gear L, meshing with the gear I, and adapted to be driven by a pulley M, and so that the rotation of the driving-shaft K will be imparted to the shafts D and E to turn them in opposite directions.

At one end of the frame is a bed M′, above which is arranged a head N, in which is mounted a slide O, vertically movable between guides P P. At the lower end of the slide is a cutter Q, having reversely-curved cutting edges *a b*, and at each side of the cutter is a punch *c*. Above the bed M is a stripper-plate *d*, through which the cutter and punches pass into suitable recesses in the bed. Extending from the bed into line with the adjacent surfaces of the feed-rolls is a guideway R, corresponding to the shape of the wire to be cut, and extending beyond the wheels on the opposite side and in line with said guideway is a guide R′, supported by a downwardly-extending arm S, which is secured to the outer face of the upright B. Upon the face of the guide R′ is secured a spring T, having a finger T′, adapted to bear downward upon the wire extending through the guide and tending to prevent the accidental withdrawal of the wire. Mounted in the head N upon a pivot *e* is a lever U, one end of which is connected to the slide O and the other extending beyond the feed-rolls F G and carrying a downwardly-depending arm V, which extends into the path of a stud W, secured to the feed-roll F, and so that as the feed-roll revolves the stud W will lift the arm V, and hence the lever U, and so as to depress the slide O. The end of the lever U is connected to the frame by a spring X, the tendency of which is to draw the free end of the lever downward. As before stated, the segmental portion H corresponds in length to the length of the shortest

wires to be cut, and if a longer wire is desired I apply to the wheel G at the end of the segmental portion H a block *f*, formed with side flanges *g*, by which it may be secured to the sides of the wheel, and so as to vertically extend the length of the segmental portion H. These blocks vary in length according to the increased length of the stays required and may be readily removed or one substituted for another without disarranging the machine.

The operation of the machine is as follows: The wire is fed through the guide R′, between the rolls F G, through the guide R, and below the cutter-slide O, and during the time that the wheels F G are revolving out of engagement with each other the arm V of the lever U will be lifted, which depresses the slide O, and hence the cutter Q and punches *c*, which rounds and punches a hole in the rear end of the wire cut off and in the forward end of the wire about to be fed. After this punching and cutting operation the continued movement of the machine brings the segmental portion H into contact with the wire and clamps it between said segmental portion and the feed-roll F and draws it through the guide R′ and forces it through the guide R below the punch and to a distance corresponding to the length of the segmental portion. After the segmental portion has passed the feeding is stopped and the cutting and punching operation before described again takes place, and this continues automatically as long as wire is fed to the machine, the spring T preventing accidental withdrawal of the wire and holding it in readiness to be engaged by the segmental portion at the next revolution. If longer wires are desired, a longer block *f* may be applied to the feed-roll, and so as to increase the length of the segmental portion, and hence increase the length of the wire fed. The uprights B and C are of sufficient width to permit the shaft K and its gear-wheel L to be arranged on the opposite side of the feed-rolls, if desired, when the power is derived from the opposite side of the shaft, and so that by simply shifting the driving-shaft the rotation in the proper direction may be secured without twisting the driving-belts.

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

1. In a machine for cutting and punching wire, the combination with two rolls having their peripheries adjacent to but separated from each other, and means for driving them in opposite directions, one of said feed-rolls formed with an integral segmental feeding-face projecting beyond the main portion of the roll, of a combined cutter comprising two reversely-curved cutters and a punch adjacent to each cutter whereby both ends of the wire are rounded and perforated, a guideway extending from said rolls to the cutting and punching mechanism, and a lever connected with the said cutter and punch and adapted to be lifted by a stud on the side of one of said feed-rolls, substantially as described.

2. In a machine for cutting and punching wire, the combination with two rolls having their peripheries adjacent to but separated from each other, and means for driving them in opposite directions, one of said feed-rolls formed with an integral segmental feeding-face projecting beyond the main portion of the roll, of a combined cutter comprising two reversely-curved cutters and a punch adjacent to each cutter whereby both ends of the wire are rounded and perforated, a guideway extending from said rolls to the cutting and punching mechanism, and from the feed-rolls toward the source of supply, a holdback on said guideway, and a lever connected with the said cutter and punch, and adapted to be lifted by a stud on the side of one of said feed-rolls, substantially as described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

CHARLES S. CHAFFEE.

Witnesses:
WM. S. BROWNE,
S. H. LESSEY.