(No Model.)

W. I. WINNE.

MACHINE FOR STRAIGHTENING AND CUTTING WIRES.

No. 597,211. Patented Jan. 11, 1898.

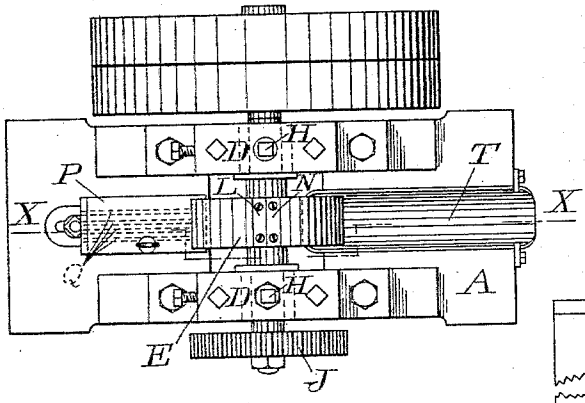


Fig. 1

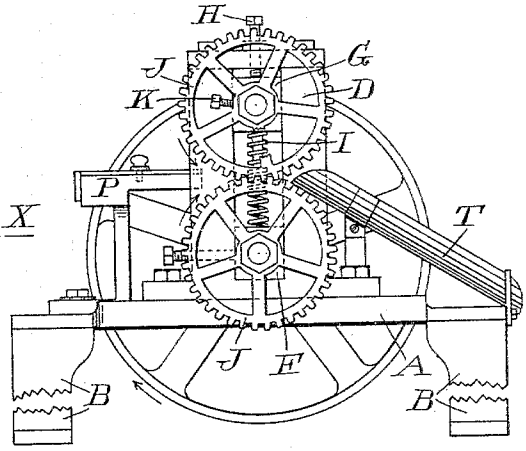


Fig. 2.

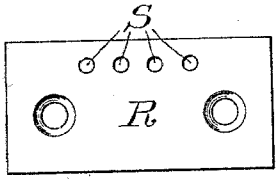


Fig. 6.

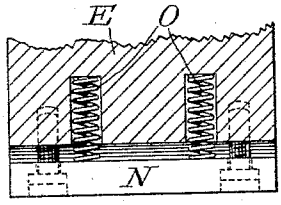


Fig. 5.

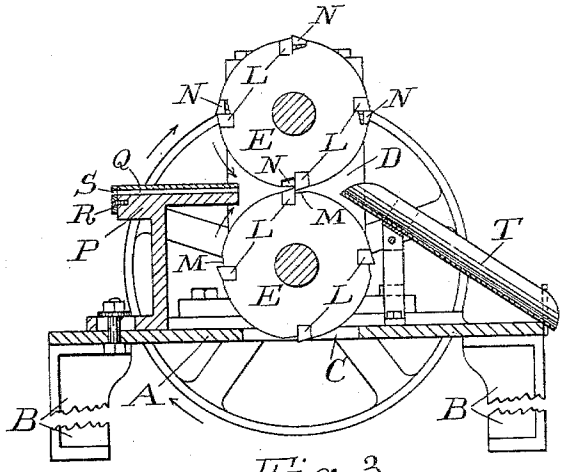


Fig. 3.

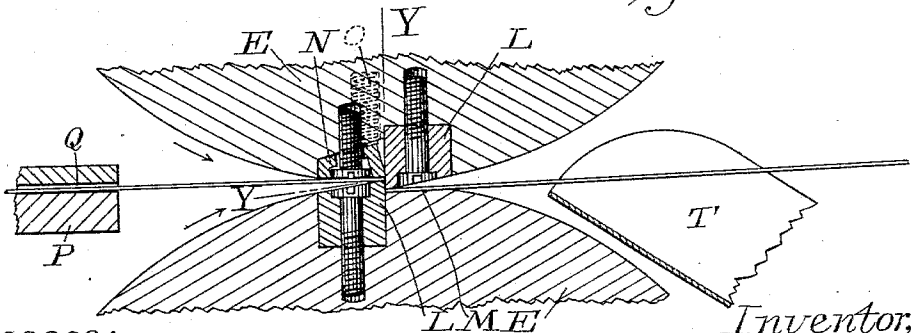


Fig. 4.

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

UNITED STATES PATENT OFFICE.

WILLIAM I. WINNE, OF ALBANY, NEW YORK, ASSIGNOR OF ONE-HALF TO WILLIAM I. WINNE, JR., OF SAME PLACE.

MACHINE FOR STRAIGHTENING AND CUTTING WIRES.

SPECIFICATION forming part of Letters Patent No. 597,211, dated January 11, 1898.

Application filed April 1, 1897. Serial No. 630,217. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM I. WINNE, of the city and county of Albany, in the State of New York, have invented new and useful Improvements in Machines for Straightening and Cutting Wires to Prescribed Lengths, of which the following is a specification.

My invention relates to improvements in machines for straightening wires and cutting them to prescribed lengths; and it consists in the novel construction and combination of parts shown in the accompanying drawings, described herein, and particularly pointed out in the claims which form part of this specification.

In the accompanying drawings, which are herein referred to and form part of this specification, Figure 1 is a plan view of my invention; Fig. 2, a side elevation of the same with parts of the legs on which the machine is supported shown broken out; Fig. 3, a longitudinal section of Fig. 1 at the irregular line X X of Fig. 1; Fig. 4, an enlarged transverse section of adjacent parts of the rollers for feeding and cutting the wires; Fig. 5, a longitudinal section of part of one of said rollers, showing the arrangement of a depressible bar or gripper for the wires; and Fig. 6, a front elevation of the wire-straightener.

As represented in the drawings, A designates the bed-piece of my machine, which, as shown in the drawings, is supported on legs B, that are shown as broken apart. Said bed-piece is preferably provided with a central opening C, that will permit the cutters, as they are carried around, to pass clear of said bed-piece.

D are side frames or housings for the journal-bearings in which the spindles of the rollers E are fitted to revolve. The lower journal-bearings F are held in a fixed position, but the upper journal-bearings G have set-screws H arranged to bear upon their upper side for the purpose of adjusting the upper roller as occasion may require. A spring I is interposed between the journal-bearings F and G to maintain the journal-bearings G in position against the set-screws H.

J are spur gear-wheels which are secured to the spindles of the rollers E. Said gear-wheels are provided with an equal number of teeth to produce a uniform rate of speed for both rollers E. The lower gear-wheel J is preferably secured permanently on the spindle of the corresponding roller E, but the upper gear-wheel J is preferably provided with a set-screw K to allow the said gear-wheel to be adjusted rotatively on the spindle of the corresponding roller E; but in order to allow a nice adjustment of said wheel the point of the set-screw K is arranged to bear against a gib, (not shown in the drawings,) which will allow the wheel to be set frequently to very slight variations without marring the surface of the spindle of the roller. This nicety of adjustment is essential to bring the cutting edges of the cutters, hereinafter referred to, into exact positions to produce a clean cut of the wires.

L are cutters which are secured longitudinally in both rollers E. As shown in the drawings, each roller is provided with four of said cutters, but the number may be increased or diminished, as occasion may require. The cutting edges of the corresponding cutters must agree perfectly to produce cuts of the wire without leaving ragged fins projecting from the ends of the wire. In advance of the cutting edge of each cutter in the lower roller E there is a longitudinal depression M, which, as the rollers E revolve, will allow the cutting edges of the cutters of the upper roller to pass into them, and it should be understood that this depression is essential if a clean cut of the wire is to be made. Following each cutter of the upper roller E there is a depressible bar or bearer N, which is fitted loosely into a longitudinal groove that is formed in the upper roller directly against the after face of the cutter. Each depressible bar is arranged to bear upon springs O, which will normally press said bars, so that their outer edge will project beyond the cutting edge of each cutter L, so that the severed end of a wire will be clamped between the cutting edge that has just severed the wire and the edge of the depressible bar that bears against said cutting edge, as shown in Fig. 4, and in this manner the wire will be fed along continuously without being released from the feeding movement of said rollers, and it will be understood that the length of the pieces

of wire will be dependent upon the diameter of the rollers E and the number of cutters L in said rollers.

P is a wire-straightener which is arranged to lead the wires to be cut between the rollers E. Said straightener consists of a head provided with a series of grooves Q, which are indicated by dotted lines in Fig. 1, said grooves being arranged to lead the wires directly between the rollers E. On the outer end of said head a plate R is secured, and it is provided with a series of holes S, whose number will equal the number of wires to be cut each time the cutters of the upper and lower rollers are brought into position to effect such cutting and whose caliber corresponds to the diameter of the wire to be severed. The preliminary straightening of the wire is effected by the holes S, and the operation of straightening the wire is completed by their passing through the grooves Q.

Preliminary to the cutting of the wires the latter in coils is placed on suitable reels, (not shown in the drawings,) and the end of the wire of each coil is led through the holes S and grooves Q and entered between the cutting edge of an adjacent cutter L and the upper edge of the corresponding depressible bar N. Then by rotating the rollers E in the direction indicated by the arrows on Fig. 4 the wires will be fed to the action of the cutters L as they are successively brought into positions to effect a severing of the lengths of wires from the coils. As the lengths of wires are separated from the coils they fall into the chute T and by the latter carried into a receptacle for containing them.

What I claim as my invention is—

1. In a machine for straightening and cutting wires, a pair of rollers E provided with longitudinal grooves, one or more cutters L secured in said grooves and provided with a sharp cutting edge that projects beyond the periphery of the roller in such manner that the cutting edges of coacting cutters will lap past each to effect a positive shearing cut of the wires; said rollers being cylindrical in form and each having its surface immediately in advance of the cutting edge of each cutter depressed to allow the projecting cutting edge of a coacting cutter to enter said depression to effect such shearing cut, as herein specified.

2. In a machine for straightening and cutting wires, a pair of cylindrical rollers E, which are each provided with coacting longitudinal cutters L that are made independently of said rollers and are provided with cutting edges that project beyond the periphery of the roller to which they are secured and which lap past each other to effect a shearing cut of the wires, in combination with longitudinal bars N loosely fitted in grooves formed in one of said rollers directly following the cutting edge of each of its cutters; said bars being arranged to bear upon springs O that will yield to the pressure applied by the cutter but will resume its normal position when such pressure is removed, as herein specified.

3. A wire-straightener consisting of a grooved head which guides the wires to feeding-rollers, and a face-plate R provided with a series of holes S whose caliber accords to the diameter of the wire and whose number corresponds to the number of grooves in said head, as specified.

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