(No Model.)

W. H. DAYTON.

MACHINE FOR SWAGING ROUND ARTICLES.

No. 558,783. Patented Apr. 21, 1896.

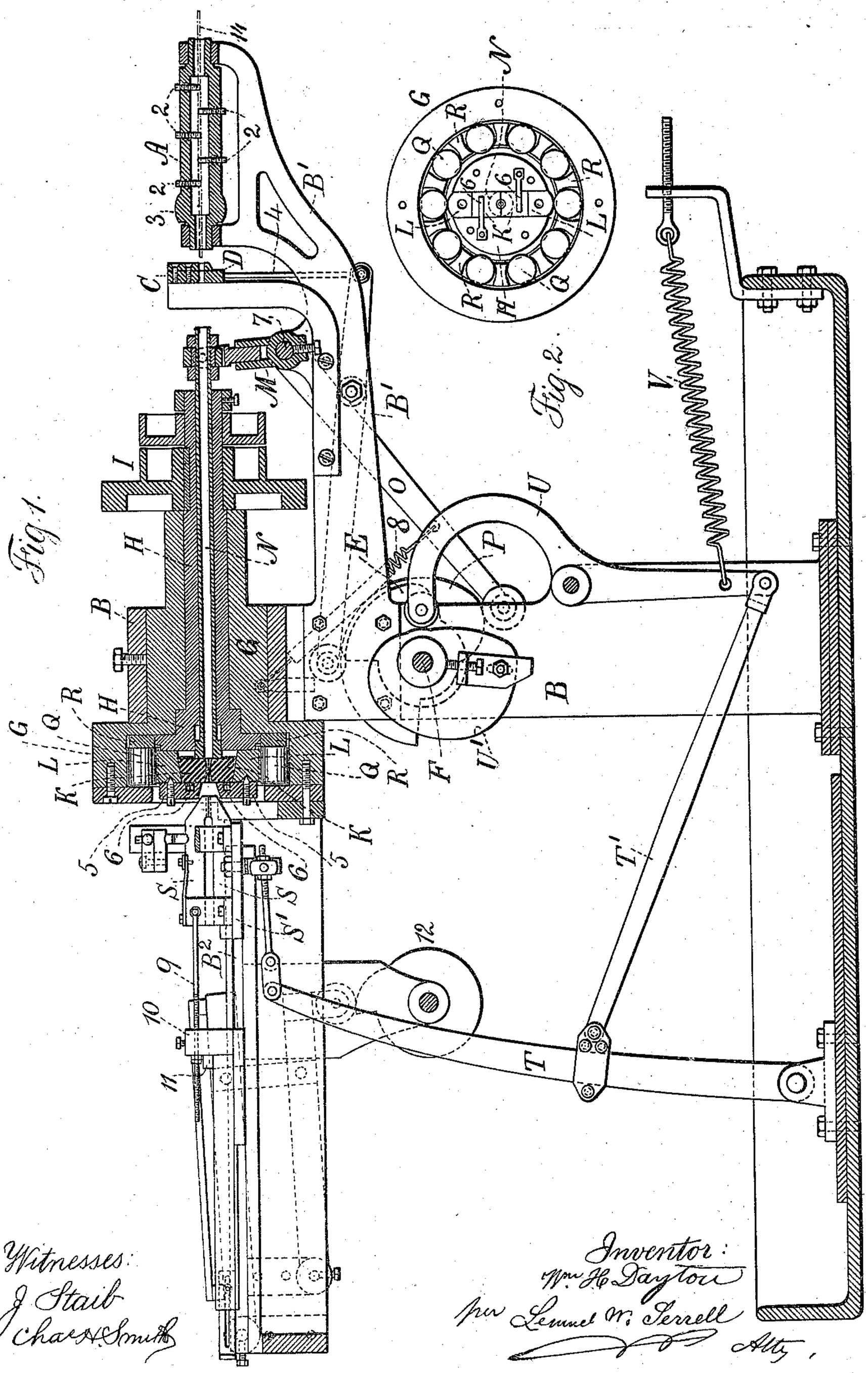

Fig. 1.

Fig. 2.

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UNITED STATES PATENT OFFICE.

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MACHINE FOR SWAGING ROUND ARTICLES.

SPECIFICATION forming part of Letters Patent No. 558,783, dated April 21, 1896.

Application filed July 2, 1894. Serial No. 516,249. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. DAYTON, a citizen of the United States, residing at Torrington, in the county of Litchfield and State of Connecticut, have invented an Improvement in Machines for Swaging Round Articles, of which the following is a specification.

In Letters Patent No. 492,576, granted to me February 28, 1893, a machine is represented for swaging wire, &c., the same being especially adapted to the swaging of spokes for bicycle and other wheels. I make use of a revolving shaft having a cross-mortise at the end with dies and followers, the contact-surfaces being inclined, and a tube gives motion to the dies in one direction and springs in the other to regulate the swaging operation, and I combine with the swaging devices a straightening device that acts upon the wire as it passes into the swaging-machine, and the revolving straightener acts to rub down and remove any inequalities upon the surface of the wire, so that the swaging operations are not interfered with by any imperfections in the wire or foreign substances adhering to the same.

In the drawings, Figure 1 is an elevation of the machine with the revolving shaft and dies and the holding-clamp and straightener in section. Fig. 2 is an elevation of the swaging-dies with the cap-plate removed.

The frame B of the machine supports a shell or stationary head G, within which is a shaft H, carrying pulleys I, by which such shaft H can be rotated, and there is within the shell G a circular range of rolls Q, the same being held by projections from a ring R, which projections come between the rolls to keep them at the proper distances apart, as represented in my Patent No. 515,576, granted February 27, 1894, and the head at the end of the tubular shaft H is slotted transversely for the reception of the followers L and the dies K, similar to those shown in the said Patent No. 515,576, with the exception that the inclined surfaces between the dies and followers stand in the opposite direction, and the springs 6 tend to force the dies backwardly, so that they may open sufficiently for the wire to pass through between them without being swaged.

The disk or cap-plate 5 is secured to the head at the end of the shaft H and serves to retain the dies and followers in their proper position, and the screws that pass through the disk and enter conical holes in the followers allow a limited opening movement to the dies and followers between the closing action of one pair of rolls Q and the next.

Within the tubular shaft H is a tube N, the end of which comes against the back surfaces of the dies K. Hence by an end movement given to this tube N the dies K are moved forward against the action of the springs 6, so as to bring them into the proper proximity for reducing the wire passing through between them as the dies and parts are revolved by the rotation of the shaft H, and in order to give end motion to this tube N a substantially similar device is represented to that in my Patent No. 492,576—that is to say, the rock-shaft 7, having a crank-arm M, is connected with the tube N, and the shaft 7 is turned by a lever O, acted upon by a cam P, there being a spring 8 that keeps the roller at the end of the lever O toward the cam P, and this spring 8 also pulls back the tube N as the cam moves away from the roller at the end of the lever O. The wire is drawn along through between the dies by the pincers S upon a carriage S′, which is acted upon by a link and lever T and a connecting-rod T′ to the lever U, the end of which is kept toward the cam U′ upon the shaft F by a spring V, substantially the same as in said Patent No. 492,576, and the cutting device is composed of the cutter-plate 10 and a cutter 11, acted upon by a cam 12, substantially the same as in said Patent No. 492,576.

The clamping-plate C and the clamping-lever D, acted upon by a lever and cam, are similar to those shown in said Patent No. 492,576; but the wire before it reaches the said clamping-plate is straightened by a rotary straightener A, supported in the bracket-frame B′ and provided with adjustable pins having V-shaped grooved ends to act upon the wire, said straightener A having a pulley portion 3 for a belt, by which it is revolved with the proper rapidity to act upon the wire represented by dotted lines at 14, such wire being supplied from a reel, and hence the wire passes straight and axially through the

clamp C D, through the tube N, and through between the dies K, so that the wire does not rub against the interior of the tube N, and it remains in a straight and axial position during the different operations performed upon said wire in swaging the same and cutting it off into the proper lengths. Hence the operations of the machine are rendered much more perfect and the unswaged portions of the wire forming the ends of the spoke are free from bends or curvatures, and hence the screw-threads cut upon such portions of the spokes are much more accurate than upon wire that is not subjected to the straightening operation before the swaging takes place.

I claim as my invention—

1. The combination with a stationary head or shell and a range of rolls within the same, of a rotary shaft having a head with a cross-slot in the said head, dies and followers in said cross-slot, the adjacent surfaces of the dies and followers being inclined, springs to move the dies and allow them to open for the passage of the wire, a tube passing through the hollow revolving shaft and acting at its end against the dies for moving them to cause them to approach each other and swage the article, and mechanism for giving end motion to the tube, substantially as set forth.

2. The combination in a machine for swaging wire, of a holding-clamp, pincers for drawing the wire through the machine, a straightener acting upon the wire before it passes through the holding-clamp, a revolving shaft and swaging-dies and followers carried by such shaft, the surfaces of the dies in contact with the followers being inclined, a tube for moving the dies in one direction and springs for moving said dies in the other direction, substantially as specified.

Signed by me this 28th day of June, 1894.

W. H. DAYTON.

Witnesses:
GEO. T. PINCKNEY,
A. M. OLIVER.