

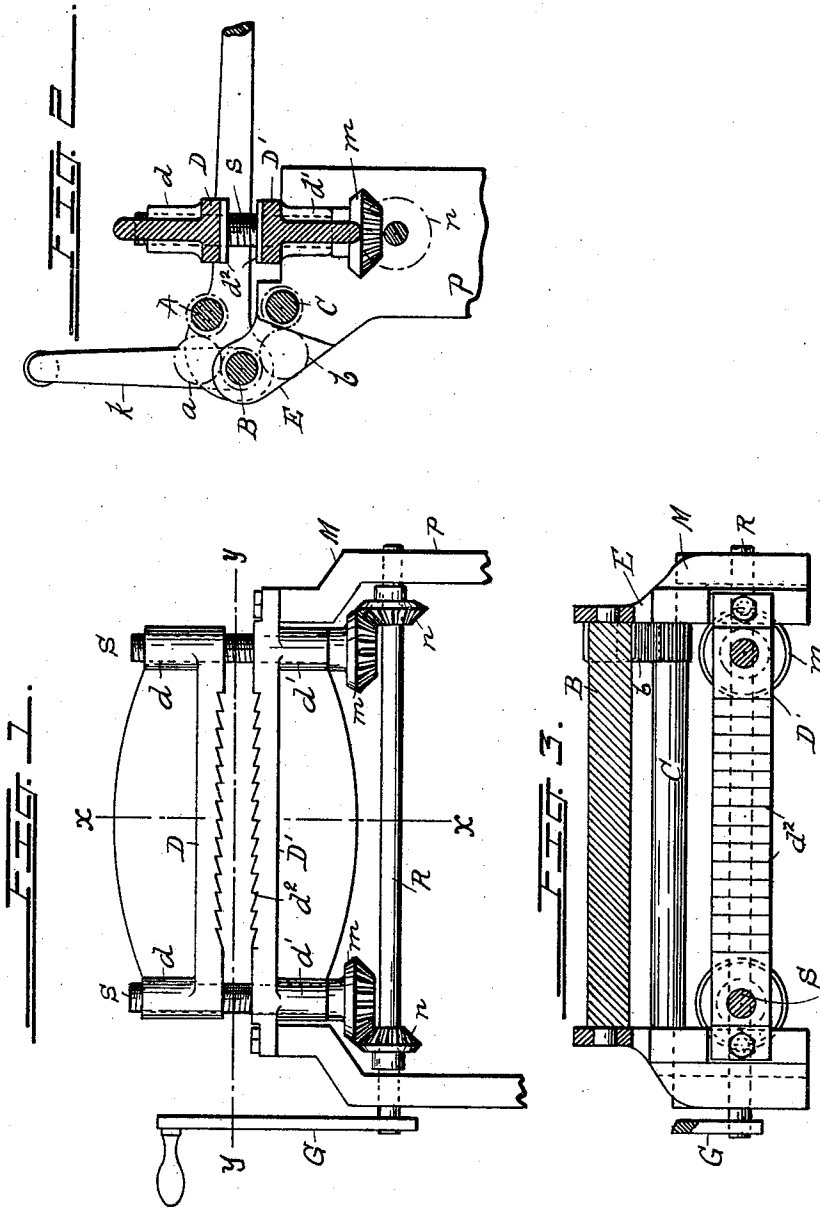
(No Model.)

2 Sheets—Sheet 1.

H. M. JACKSON.
WIRE COIL AND MACHINE FOR SAME.

No. 581,027.

Patented Apr. 20, 1897.



Witnesses
Florence Kelly
Carrie Kelly.

Henry M. Jackson, Inventor

By Attorney E. M. Kelly.

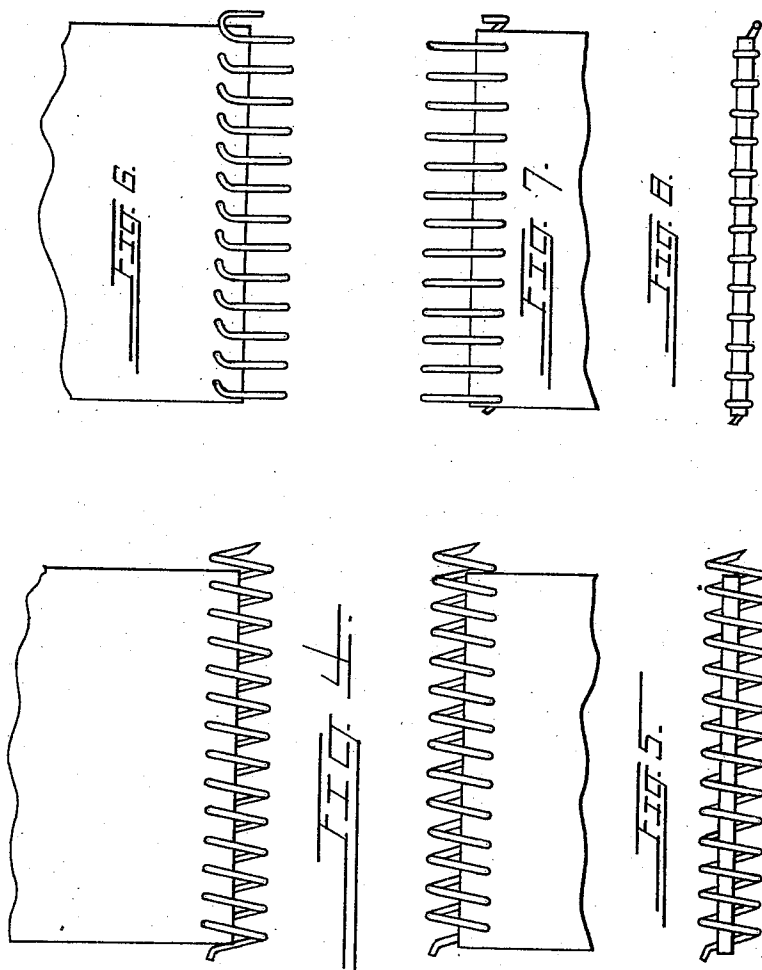
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UNITED STATES PATENT OFFICE.

HENRY M. JACKSON, OF READING, PENNSYLVANIA, ASSIGNOR TO KELLY BROS. & SPIELMAN, OF PHILADELPHIA, PENNSYLVANIA.

WIRE COIL AND MACHINE FOR SAME.

SPECIFICATION forming part of Letters Patent No. 581,027, dated April 20, 1897.

Application filed July 16, 1896. Serial No. 599,397. (No model.)

To all whom it may concern:

Be it known that I, HENRY M. JACKSON, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Wire Coils and Machines for Same; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to wire coils and improvements in machines in which such coils are inserted into leather belts or other fabrics the two ends of which are to be joined by means of said coils.

Heretofore machines of different constructions have been devised for inserting the coils in the belt, and means were also provided for flattening them against the belt, so as to make the surface on both sides practically flush. However, it has been necessary heretofore to have a right-hand coil in one end and a left-hand coil in the other end of the belt in order that they would mesh properly when brought together to be joined.

By means of my improved machine I can use either two right-hand coils or two left-hand coils, or one of each, for after the coils are flattened out on my machine flush with the surface of the belt the convolutions of the coils will be perfectly straight and at right angles to the axis of the coil, the pitch of the wire between two convolutions being forced to the point where they pass through the belt. This will allow the two coils to mesh properly no matter whether they have been wound right or left, as the pitch of each convolution is entirely removed from that portion thereof of which projects beyond the edge of the belt.

By reason of the fact that either a right or left hand coil can be used on both ends of the belt it is evident that both ends can be placed in the machine and the coils inserted into them at one operation instead of two operations in different directions, as required when a right and left hand coil is used, which requires a reversible machine or two machines.

The invention consists mainly of the jaws for flattening the coils, which are constructed in such a manner that when they are

brought together with the coil between them they will not permit the convolutions to bend out of line or to lay over, but will keep them equidistant and set them into a true plane and at right angles to the axis of the coil.

The invention is fully described in the following specification and clearly shown in the accompanying drawings.

Figure 1 is a front elevation of my improved machine, the rollers not being shown. Fig. 2 is a vertical section on line *x x* of Fig. 1, showing the rolls. Fig. 3 is a horizontal section on line *y y* of Fig. 1. Fig. 4 shows the ends of a belt with right-hand coils inserted in both ends. Fig. 5 is an edge view of the same. Fig. 6 shows the one side and Fig. 7 the other side of one end of the belt after being flattened. Fig. 8 is an edge view of Fig. 7.

A, B, and C are a series of rollers, preferably grooved circumferentially and having bearings at both ends in the frame E of the machine and adapted to gear with each other through idlers *a* and *b*, so that they will bear against and feed onward a coil of wire placed between them. In front of this series of rollers is arranged a pair of jaws D D', formed with serrations *d*² in their meeting faces, the latter jaw securely fastened to the bed of the machine M and having screws S passing through a lug *d*' on either end thereof. On the lower ends of these screws are arranged bevel-gears *m*, which mesh with the bevel-gears *n* on a horizontal shaft R, running the full length of the machine and bearing in the legs P thereof. To the end of this shaft is arranged a crank G for turning the same. The upper jaw D is also provided with lugs *d* on either end, through which pass the ends of the screws S.

The operation of the machine is as follows: A coil of wire is inserted at one end of the machine between the rollers and the rollers revolved by means of the hand-crank *k*, attached to one of them. The end of a belt is placed between the jaws and close enough to the coil to allow it to engage the end thereof while being revolved and fed onward. When the coil has been inserted into the belt, the rollers are opened sufficiently to release their hold on the coil and the belt pulled forward until the coil rests on the lower jaw D', each

convolution thereof finding its way to the bottom of one of the serrations d^2 on said jaw, and the pitch of each convolution will bring its upper surface about midway of the serration directly opposite it in the upper jaw D. The crank G is then turned, and by reason of the gears $m n$ the upper jaw will descend on the screws S and bring pressure on the coil beneath it, and as the pressure is increased the upper portion of each convolution will be forced to the bottom of the serration in which it stands, and they will be flattened against the belt and at the same time brought into a true plane and at right angles to the axis of the coil. The coils can, however, be entered in the machine and pressed in the same manner without having first been inserted into the belt, and they can be inserted therein afterward; but it is preferable to insert the coils first and then flatten them, as above described.

It is evident that as the pitch or angle of the convolutions is entirely removed from that portion which projects beyond the edge of the belt and which meshes with another coil it is not necessary, as has been heretofore the case, to use a right-hand coil at one end and a left-hand coil at the other end of the belt to be joined, but two coils wound in the same direction can be used, and, if desired, both ends of the belt can be placed in the ma-

chine side by side and the coils inserted into them at one operation.

It is evident that the serrations can be made V-shaped, if desired, or one can be made as shown in the drawings and the other V-shaped, as the form is not essential and can be varied.

Having thus fully described my invention and its manner of operation, what I claim, and desire to secure by Letters Patent, is—

1. A spiral coil having a portion of each convolution thereof set in a true plane at right angles to the axis of the coil, substantially as set forth.

2. The combination with a piece of leather or other fabric of a spiral coil engaging perforations near the edge thereof and having each convolution bent so as to set the projecting portion in a true plane substantially at right angles to the axis of the coil.

3. A wire-coil machine having clamping-jaws provided with serrations adapted to engage the convolutions of the coil and simultaneously flatten the same and set them into parallel planes, substantially as set forth.

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

HENRY M. JACKSON.

Witnesses:

ED. A. KELLY,
W. Z. DECK.