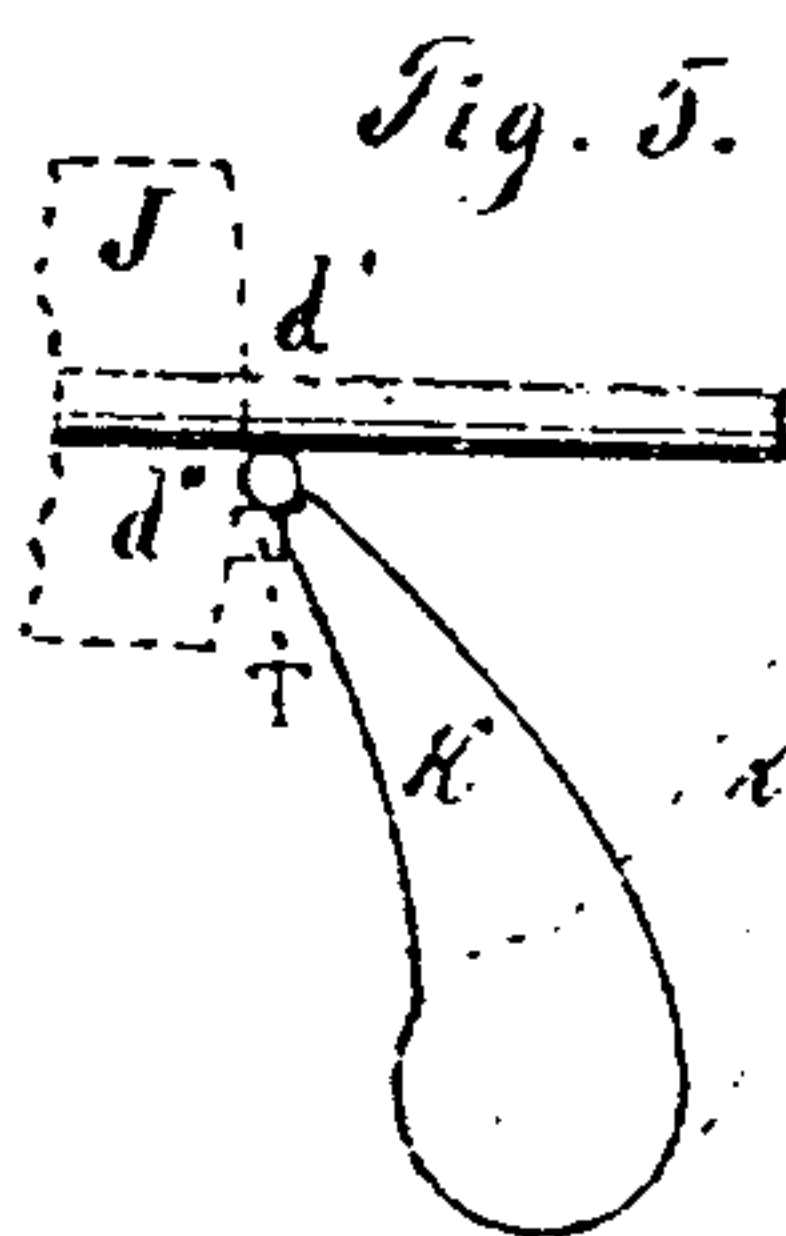
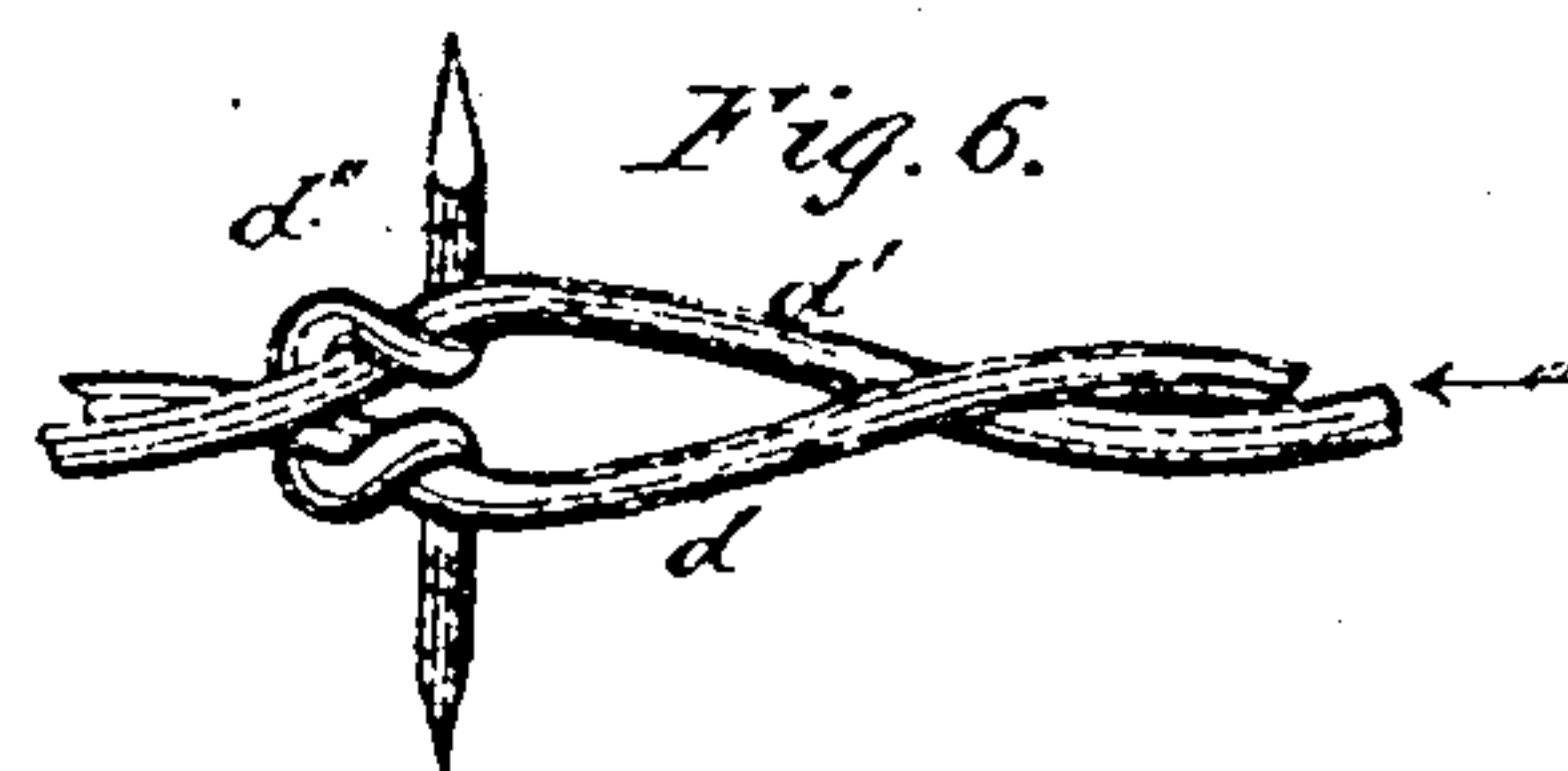
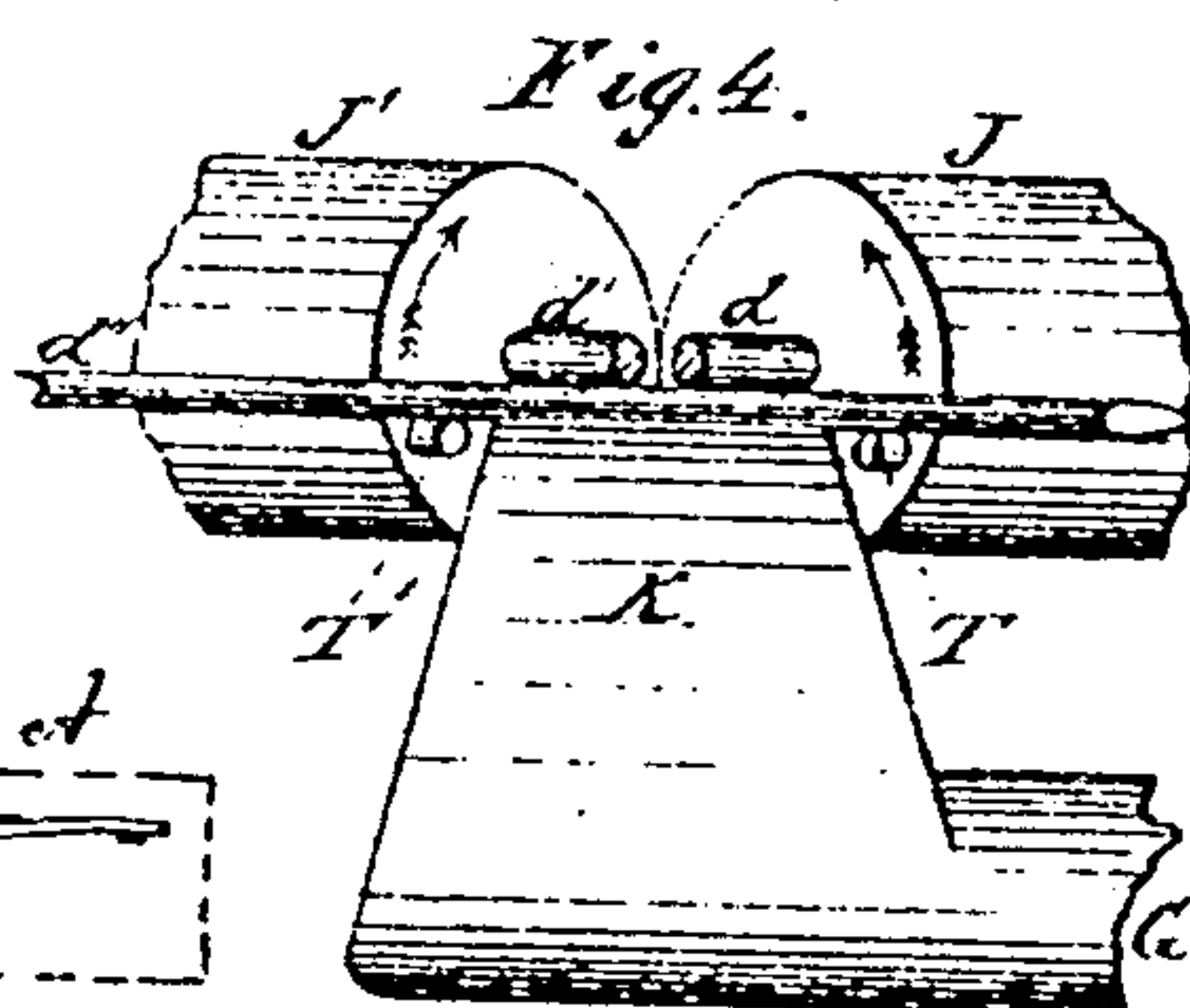
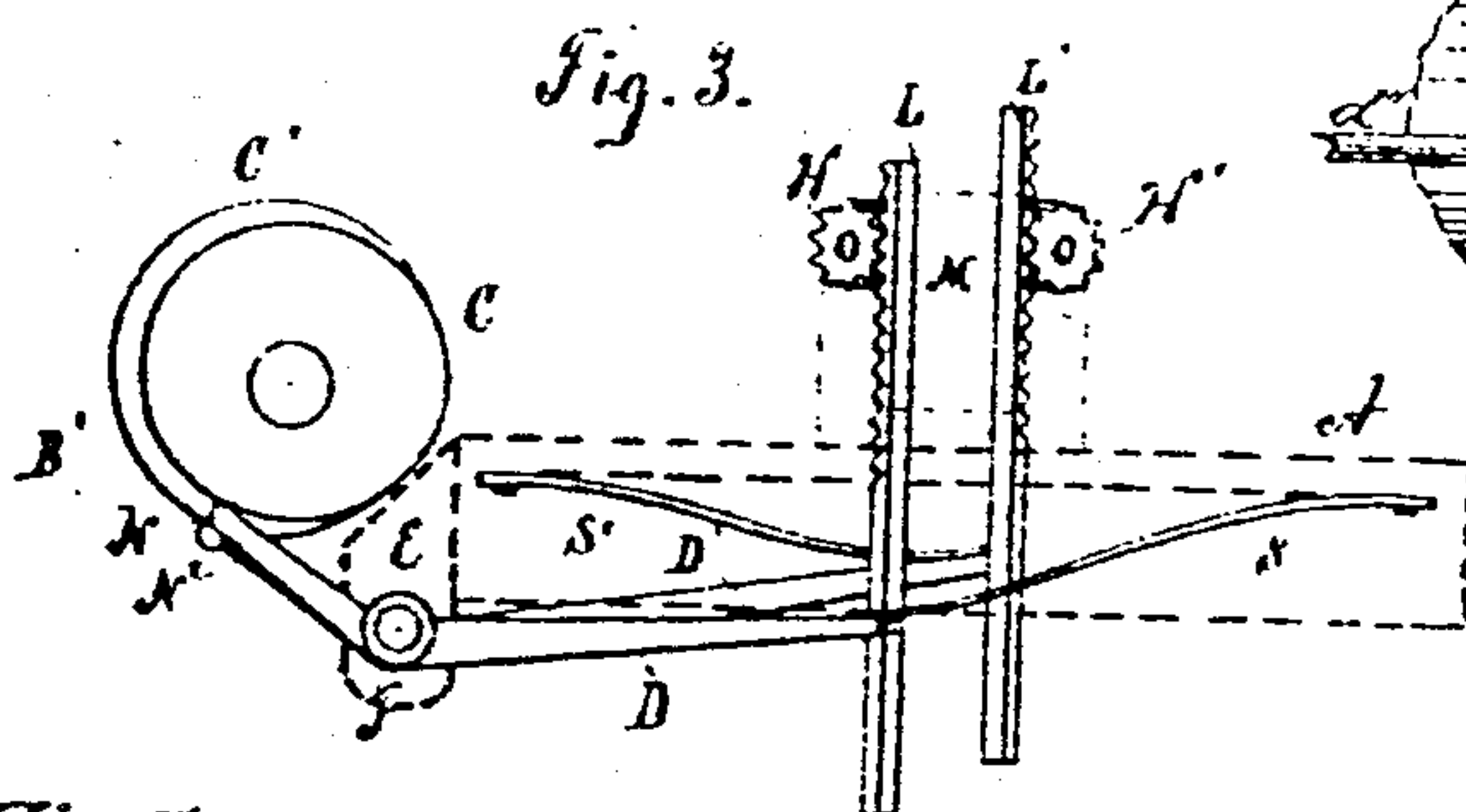
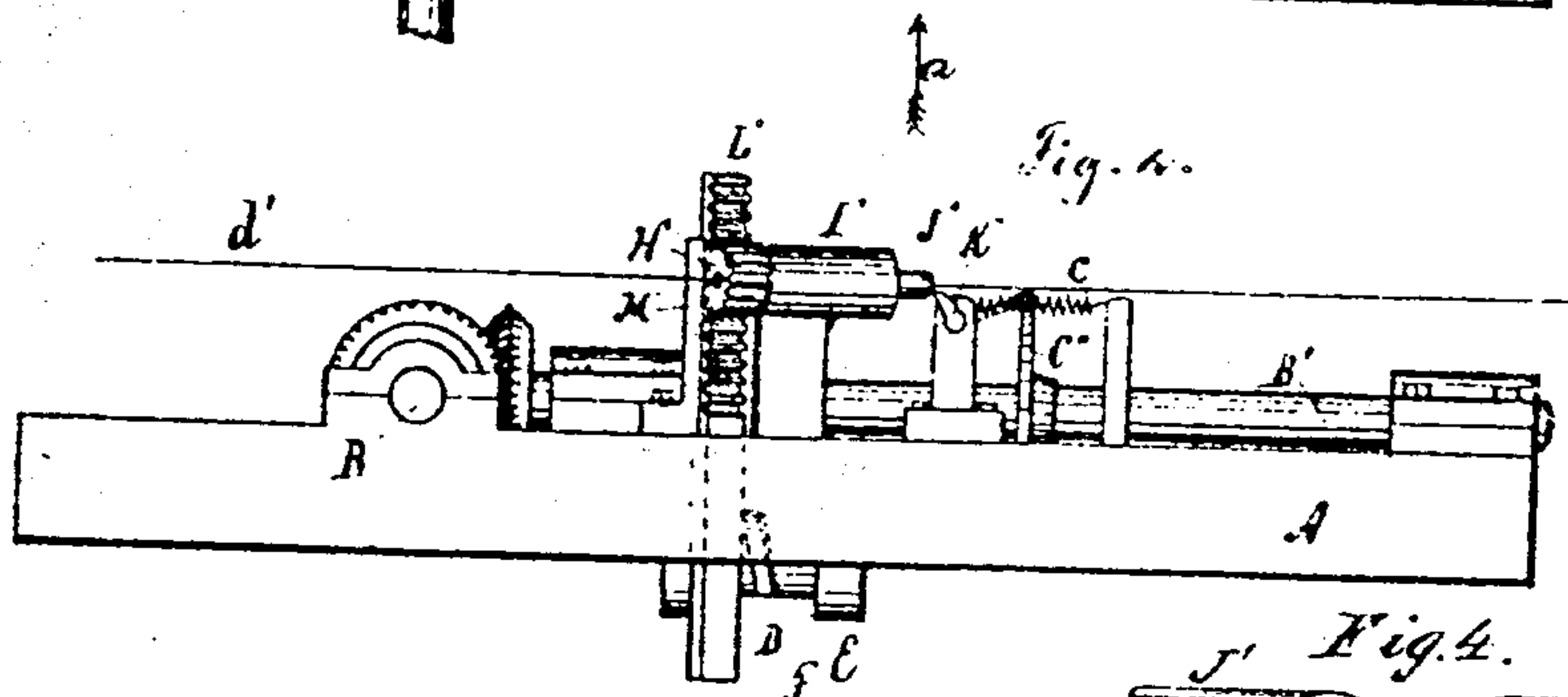
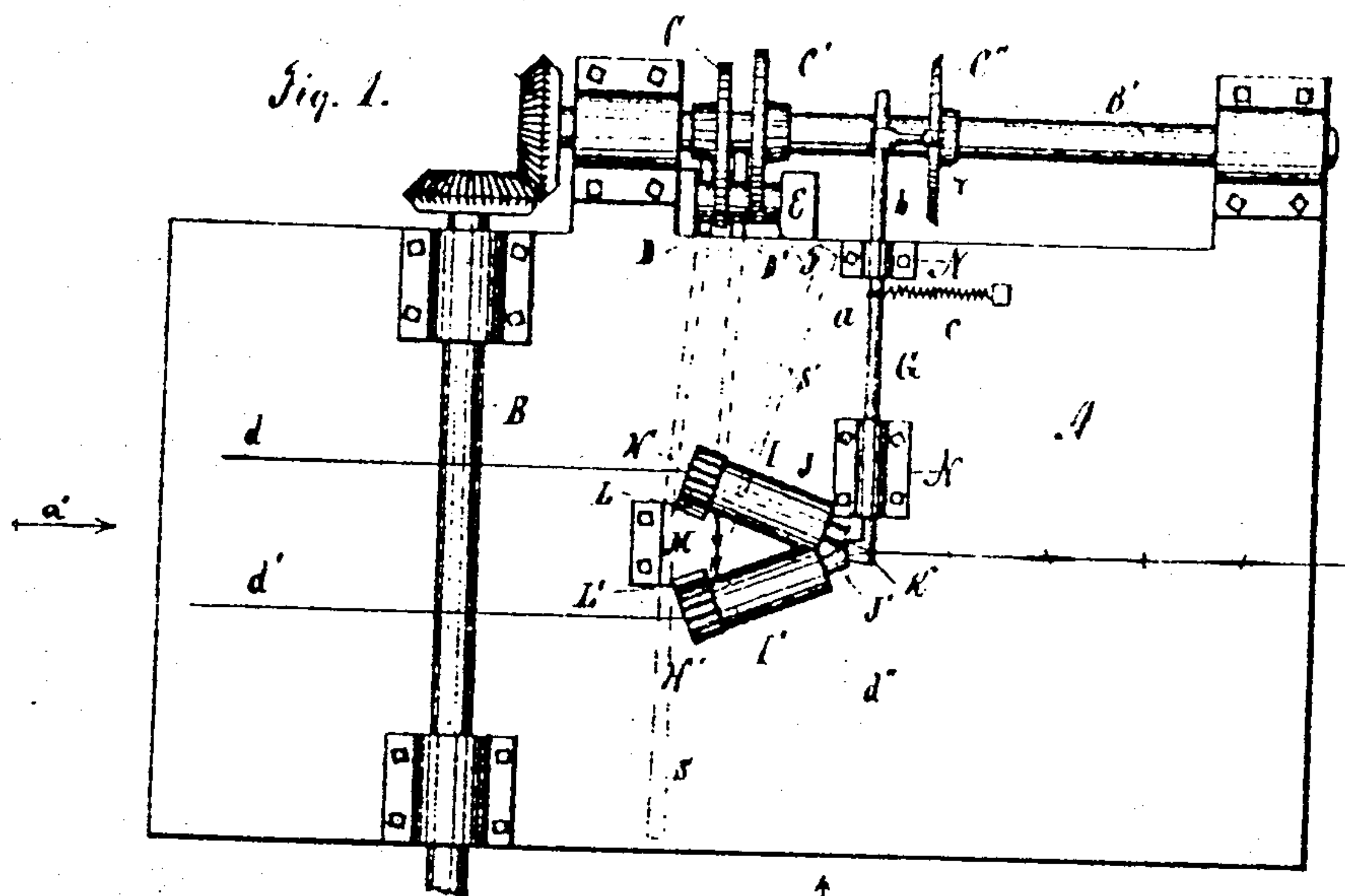


(No Model.)

D. C. STOVER.
WIRE BARBING MACHINE.

No. 287,783.

Patented Oct. 30, 1883.



Witnesses
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287,783

October 30, 1883
page 1

287,783. WIRE-BARBING MACHINE. Danl. C. Stover,
Freeport, Ill. Filed Sept. 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, DANIEL C. STOVER, a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Wire-Barbing Machines; 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 pertains to make and use the same.

My invention is an improvement in wire-

barbing machines of the class adapted to form certain barbs in which the middle portion lies on the same side of and in contact with the two strands of a fence-cable, while the ends are wrapped in opposite directions about the respective strands.

The invention is fully shown in the accompanying drawings, and described, explained, and claimed in the following specification.

In the drawings referred to, Figure 1 is a plan of the entire machine of which this invention forms a part; Fig. 2, a side elevation thereof, looking in the direction indicated by the arrow *a*, Fig. 1; Fig. 3, an end view of the driving mechanism of the wrapping-spindles, looking in the direction of the arrow *a'*, Fig. 1; Fig. 4, a front elevation (working size) of the front faces of the wrapping-spindles and the barb-supporting cam and shaft K G; Fig. 5, a side elevation of same; and Figs. 6 and 7, plan and end views, respectively, of the barb formed by the machine shown.

In these figures, A is the bed of the machine, B the driving-shaft thereof, and B' a side shaft connected with the driving-shaft by a pair of miter-gears. On the shaft B' are rigidly mounted three cams, C C' C'', the first two of which, C C', press downward at each rotation the outer ends, respectively, of two levers, D D', pivoted on a shaft, F, which is journaled in bearings E, attached to the bed of the machine. The inner ends of the levers D D' are pressed downward by springs S S', attached to the under side of the bed, and the force of the cams, together with that of the springs, produces reciprocal vertical motion of the levers D D'.

Near the center of the bed are two stationary bearings, I I', standing at an angle to each other, and in these bearings rotate freely two spindles, J J', longitudinally perforated for the passage and support of the two strands of the fence-cable to be barbed, and provided with wrapping-lugs T T' in their front faces. The ends of the spindles project in rear of the bearings I I', and are provided with rigidly-mounted pinions H H', and two vertical racks, L L', passing downward through openings in the bed of the machine, engage, respectively, with the pinions H H'. Near the lower ends of the racks are pins which enter the divided ends of the respective levers D D' and form a connection, by means of which the reciprocal motion of the levers produces reciprocal vertical motion of the racks L L' and reciprocal rotary motion of the spindles J J'.

In front of the front faces of the spindles, and slightly below them, is a rod, G, lying in a line at right angles to the shaft B', and provided at its outer end with a crank-arm, *b*, whose free end is furnished with an anti-friction roller, *r*, which rests upon the cam C'', and is raised thereby at each revolution of the shaft B'. A spring, *c*, attached to the rod tends to draw downward the free end of the crank *b*, and thus holds it in contact with the face of

the cam, and the cam and spring co-operate in producing reciprocal rotation of the rod in its bearings N N.

The rod G is provided at its inner end with a lug, K, projecting upward from the rod and lying directly in front of the wrapping-spindles and slightly below their center line. The upper edge of the lug is grooved in a line parallel with the rod G, for the reception of the barb-wire, as hereinafter described, and the position of the rod and lug and the form of the cam C'' are such that when the crank *b* is raised to its highest point by the revolution of the cam, the lug K occupies the position shown in Fig. 4 and by the full lines in Fig. 5; but when the crank drops to its lowest point the lug rocks forward to the position shown by the dotted lines in Fig. 5. The office of the lug K is to support the middle portion of the barb, to prevent it from bending while the ends are wrapped about the main wires. The ends of the barb being wrapped about the wires in opposite directions, it is the natural tendency of the middle of the barb to curve outward from the main wires; but the lug comes so near the lower surface of the wires as to leave only sufficient space for the barb-wire, which is thus held straight at its middle. The relative positions of the main wires, the barb-wire, and the lug K are well shown in Figs. 4 and 5, in which J J' are the spindles; *d d'*, the main wires; *d''*, the barb-wire; K, the lug supporting the barb-wire, and T T' the wrapping-pins attached to the spindles. As is evident in these views, the lug K holds the barb-wire firmly against the main wire, and prevents the middle of the barb from bending downward. As the lug swings forward, however, it drops below the line of the wires, and permits the finished barb to pass over it as the main wire is fed forward.

The operation of the machine is as follows: The barb-wire, being fed by suitable means across and under the main wires, is held in place by the lug K, as shown in Figs. 4 and 5, the wrapping-lugs T T' being under the barb-wire, as shown in Figs. 4 and 5. The spindles J J' are rotated in the directions indicated by the arrows in Fig. 5, and wrap the ends of the barb about the main wires, respectively, the barb-wire being severed in the meantime by suitable mechanism between the main wires and the barb-feeding mechanism. As they pass around the main wires the ends of the barb are carried through the space between the main wires and the faces of the wrapping-spindles, and are turned outward in opposite directions on the lower side of the main wires. Immediately after the completion of the wrap the lug K rocks forward, the main wires are fed forward by suitable mechanism, and at the same time another barb is fed into position by the barb-feeding mechanism. The finished barb is in the form shown in Figs. 6 and 7, the feed of the main wires being in the direction indicated by the arrow in Fig. 6.

The drawings show the barb-wire under the main wires and the lug K in position to support the barb-wire from below; but it is evident that it may equally well be placed above the main wires, if desired. It is also evident that the form and motion of the lug K may be varied indefinitely, so long as it has such a motion as will at one time bring it into position to support the barb while being wrapped, and upon the completion of the wrap will so far remove it as to permit the release of the finished barb. Since these details may be varied without changing its principle, I do not limit my invention to the exact form shown here; neither do I wish to confine it to its combination with the particular wrapping-spindles or other devices included in this machine, for the supporting-lug may be equally well used with any machine making substantially the barb shown.

I am aware that the use of two wrapping-spindles rotating in fixed bearings, standing at an angle to each other, is not new, since that device forms the subject of Letters Patent No. 243,683, issued July 5, 1881, to Bestor and Cunningham; and I do not, therefore, claim that as part of my invention.

In the drawings heretofore referred to no means for feeding the main wires or for feeding and cutting the barb-wire are shown, the ordinary and well-known feeding and cutting devices being used in this machine, and no novelty being claimed for them or any of them.

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

1. In a wire-barbing machine, the combination of two longitudinally-perforated spindles for supporting the main wires to be barbed, means for feeding a barb-wire across the main wires and on the same side of both, means for wrapping the ends of said barb-wire about said main wires, respectively, and means for supporting said barb-wire at a point between the main wires during the operation of wrapping, substantially as and for the purpose set forth.

2. In a wire-barbing machine, the combination of two supporting-spindles longitudinally perforated for the passage of the main wires to be barbed, means for feeding a barb-wire across the main wires on the same side of and in contact with them, means for wrapping the ends of said barb about said main wires, respectively, a reciprocally-moving support adapted to sustain said barb-wire at a point between the main wires during the operation of wrapping, and to recede from the barb-wire after the completion of such operation, and means for imparting such reciprocal motion to such moving support.

3. In a wire-barbing machine, the combination of two longitudinally-perforated wire-supporting spindles rotating in stationary horizontal bearings standing at an angle to each

other, means for feeding a barb-wire across the main wires supported by said spindles, two wrapping-lugs mounted in the faces of said spindles, respectively, and adapted to wrap the ends of said barb about said main wires, respectively, a rocking-lever provided with a lug adapted to support said barb-wire at a point between the main wires during the operation of wrapping, and to recede from said barb-wire after the completion of such operation, and means for imparting rocking motion to said levers, substantially as shown and described, and for the purpose set forth.

4. The combination of the spindles J J', wrapping-lugs T T', mounted in the faces thereof, rocking lever G, and lug K, thereto attached, arm b, attached to the lever G, and cam C', actuating said arm b and lever G, substantially as shown and described, and for the purpose set forth.

5. The combination of the bearings I I', spindles J J', pinions H H', racks L L', levers D D', cams C C', and springs S S', all combined and operating substantially as and for the purpose set forth.

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

DANIEL C. STOVER.

Witnesses:

R. H. WILES,
OSCAR TAYLOR.