

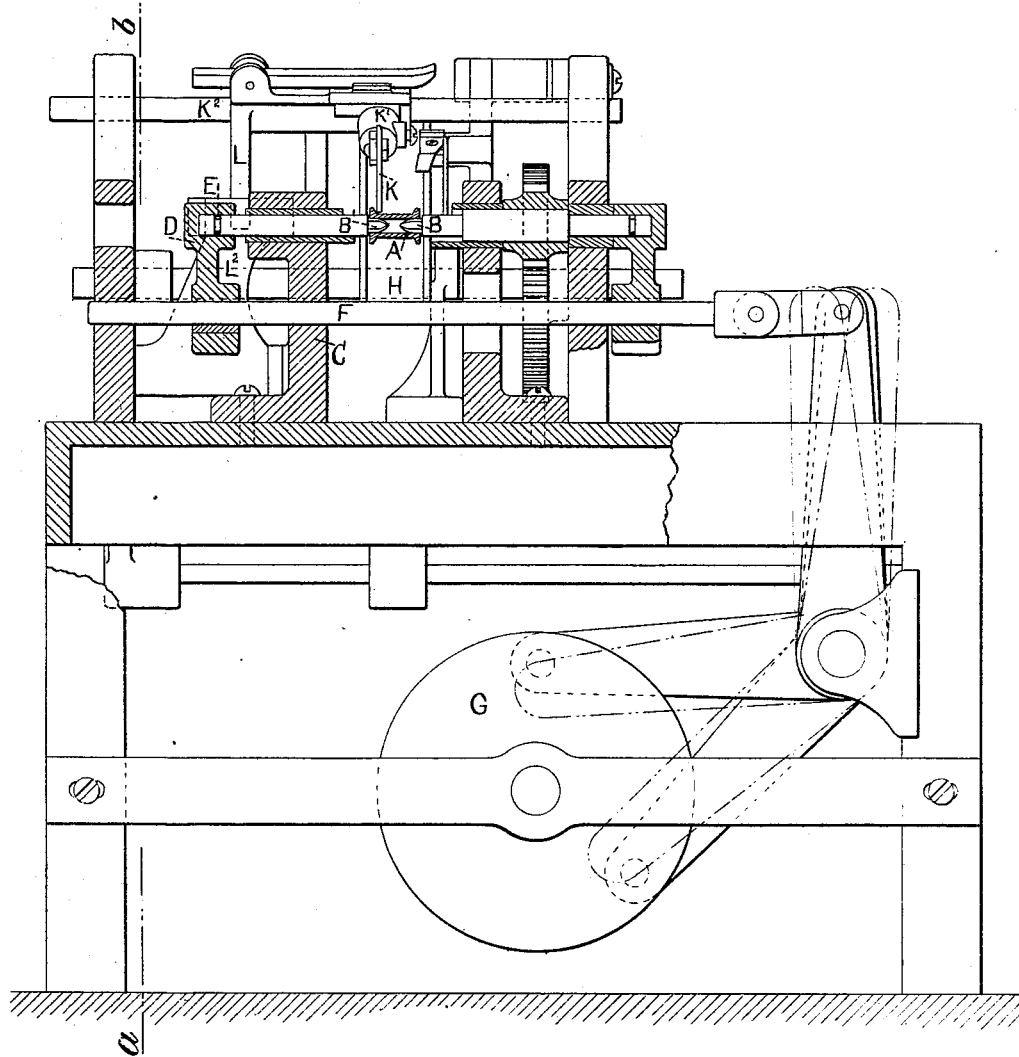
W. CLARK.

MACHINE FOR WINDING THREAD ON SPOOLS.

No. 189,697.

Patented April 17, 1877.

FIG. 1.



WITNESSES:

*Chaas Leonard.*  
*Frank McLaughlin.*

*William Clark*  
INVENTOR.

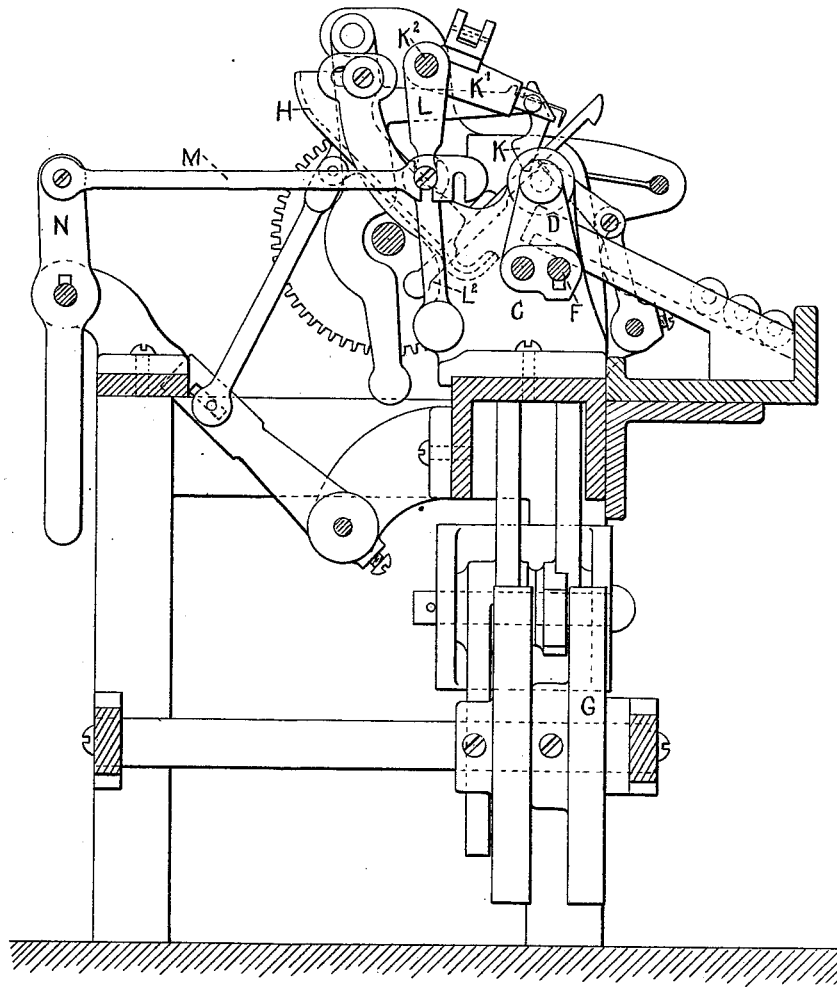
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MACHINE FOR WINDING THREAD ON SPOOLS.

No. 189,697.

Patented April 17, 1877.

FIG. 2.



WITNESSES :

*Charles Edwards.*  
*Frank McLaughlin.*

*William Clark*  
INVENTOR.

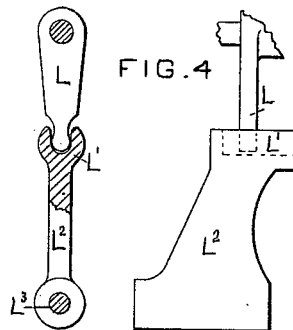
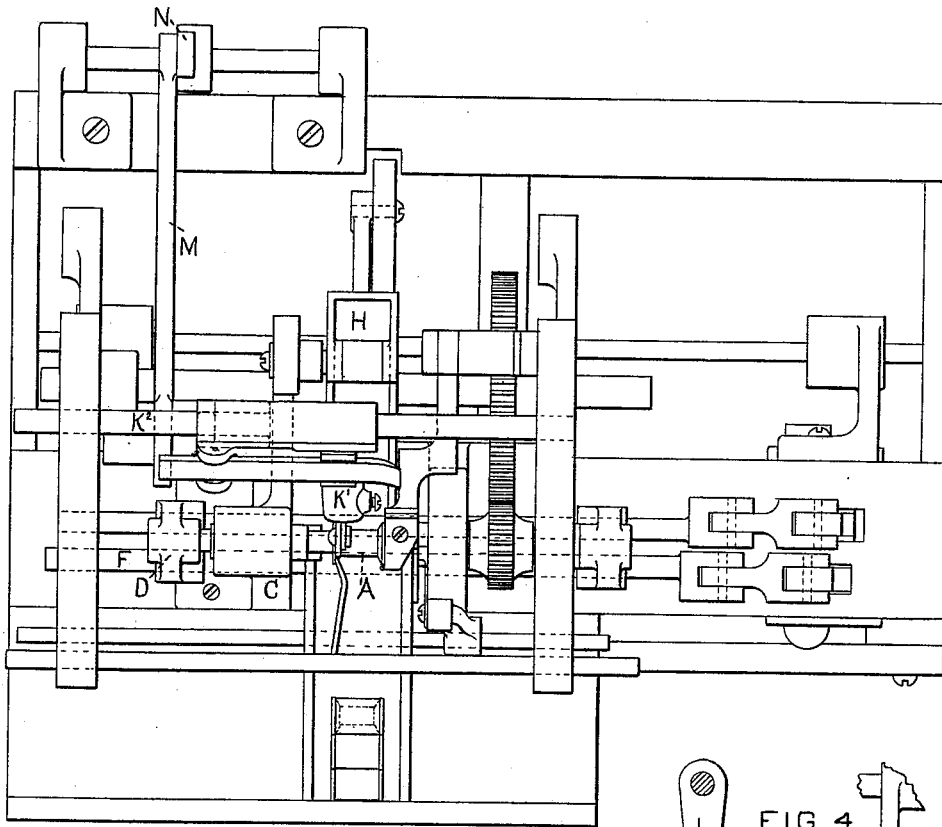
W. CLARK.

MACHINE FOR WINDING THREAD ON SPOOLS.

No. 189,697.

Patented April 17, 1877.

FIG. 3.



WITNESSES:

*Charles Leonard.*  
*Frank McLaughlin*

*William Clark*  
INVENTOR.

# UNITED STATES PATENT OFFICE.

WILLIAM CLARK, OF NEWARK, NEW JERSEY.

## IMPROVEMENT IN MACHINES FOR WINDING THREAD ON SPOOLS.

Specification forming part of Letters Patent No. 189,697, dated April 17, 1877; application filed January 11, 1877.

### *To all whom it may concern:*

Be it known that I, WILLIAM CLARK, of Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Machines for Winding Thread on Spools, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings.

This invention pertains to certain improvements in the well-known thread-winding machines of William Weild; and it consists in providing a guiding-channel for the thread-guide, which will at all times cause it to travel parallel to the axis of the spool, and thereby lay the thread on the spool in a true cylindrical form, instead of bulging, as is often the case.

Figure 1 is a partial section and elevation of a portion of a thread-winding machine, as seen from the front side. Fig. 2 is a transverse section through the line *a b*. Fig. 3 is a plan of the parts as seen from above the machine; and Fig. 4 represents, in detail, the yielding device for controlling the thread-guide.

As such machines are very complex in their complete organization, it is not necessary to refer to the several parts in detail further than to show the nature of the improvements and their relation to the other working parts.

At A is represented the spool upon which the thread is to be wound for the market, and as the machines are usually built, eight spools are in operation at the same time, and each one under the control of the same kind of mechanism, and is therefore merely a duplicate of that shown in the drawings. Said spool, instead of being mounted on a mandrel or rotating axis extending through it, as heretofore, is caught between two centers, which are tapering, as shown at B B' in Fig. 1, and which extends from each end of the spool only part of the distance of its length inward, as shown in said figure. Said centers, in addition to being made conical or tapering, are provided with angles or projecting ribs, extending lengthwise, to press into the wood of the spool, whereby the driving-mandrel may rotate the spool, and the spool, in turn, may rotate the mandrel at the other end.

The driving-mandrel is shown at B, and

the other is shown at B', and both are mounted in suitable bearings, similar to the mandrels of a lathe. The mandrel B' is, however, mounted in a journal-box in its upright, (shown at C,) and its rear end enters a bracket, as at D, and is held in a bearing in said bracket by a pin extending into a groove, (shown at E, Fig. 1,) and said bracket is mounted upon and attached to a guide-rod, as at F, which receives a to-and-fro motion from the cam-wheel G, which also gives a corresponding motion to the driving-mandrel B by a similar connection, and at the same time, and thereby draws the mandrels B and B' apart, and also shoves them toward each other when taking a spool from the hopper, which is shown at H, which is best seen in Fig. 2, and into which the spools are placed by the operative, keeping it so supplied that when the filled spool is dropped from the winding-mandrels, another is ready at the bottom of the hopper to be lifted up to a point between the mandrels, so that they can enter its centers and repeat the operation of the preceding one.

The hopper is lifted to a proper position by a cam-wheel, (not here shown;) but it is raised immediately upon the dropping of the filled spool, and automatically, as in the Weild machine.

The thread-guide is shown at K, and it is attached to a bracket, as at K<sup>1</sup>, which extends out from a guide-rod, as at K<sup>2</sup>, and which has a to-and-fro motion, controlled by mechanism, (not here shown,) to make the proper traverses on the spool; but for the purpose of giving the requisite amount of pressure upon the guide as it lays the thread upon the spool, a crank-arm, as at L, is attached upon one end of the guide-rod, and it extends down into a grooved segment, a section of which is shown at L<sup>1</sup>, Fig. 4, and this segment is mounted upon an arm, as at L<sup>2</sup>, which is pivoted at L<sup>3</sup>, and to its upper end there is attached a draw bar or rod, as at M, and connected with it, and another crank-arm at N, which is upon a shaft that has a weight and chain attached, to give the pressure upon the thread-guide.

Now, in the Weild machine, this draw bar or rod M is pivoted to its rear end, and is directly attached to the crank-arm on the guide-

rod; consequently, in the operation of traversing, there is a slight travel of the guide in the arc of a circle, caused by the radial motion of the draw bar or rod M; but it is evident that as the arm L travels in a straight groove in the segment at L<sup>1</sup>, this radial action is obviated, and the pressure upon the spool is continually the same from one end to the other, so that the thread is laid smoothly in a perfect cylinder.

The other parts, all having been described in the patent to William Weild, need not be further mentioned here.

I therefore claim—

The combination, with the two mandrels B B', and mechanism for moving the same toward or from each other, of the thread-guide K, guide-rod K<sup>2</sup>, arm L, and grooved segment L<sup>1</sup>, substantially as and for the purpose described.

WILLIAM CLARK.

Witnesses:

CHAS. H. LEONARD,

FRANK McLAUGHLIN.