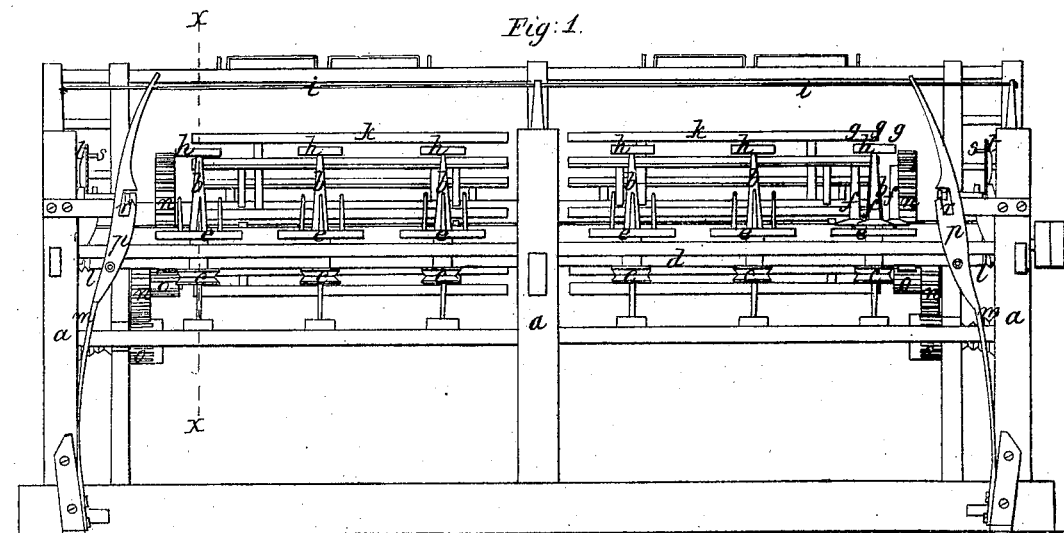
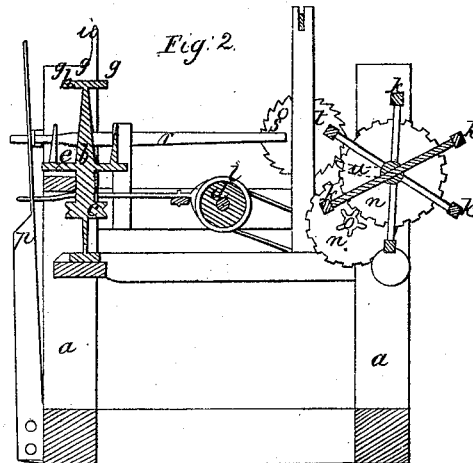


*G. Lavan.*

*Machine for Doubling, Twisting and Reeling Yarn.*

*N<sup>o</sup> 4649.*

*Patented Jul. 20, 1846.*



# UNITED STATES PATENT OFFICE.

GEORGE LEVAN, OF GAP, PENNSYLVANIA.

## DOUBLING AND TWISTING AND REELING.

Specification of Letters Patent No. 4,649, dated July 20, 1846.

*To all whom it may concern:*

Be it known that I, GEORGE LEVAN, of Gap, in the county of Lancaster and State of Pennsylvania, have invented new and useful Improvements in Machines for Doubling, Twisting, and Reeling Yarn, and that the following is a full, clear, and exact description of the principle or character thereof, which distinguishes them from all other things before known, and of the manner of making, constructing, and using the same, reference being had to the accompanying drawings, making part of this specification, in which—

15 Figure 1 is a front elevation, and Fig. 2, a vertical cross section, taken at the line (X X) of Fig. 1.

The same letters indicate like parts in all the figures.

20 In the machines heretofore employed for this purpose the single yarns are taken either from bobbins or reels and two, three, or more threads passed through a flier which twists and winds them onto a bobbin, and then by a second operation reeled to form skeins.

25 The object of my improvements is to perform the three operations of doubling, twisting, and reeling all at once, which I effect by taking as many bobbins as there are to be single threads in the compound thread, and placing them on pins in a disk attached to a spindle, and at equal distances around the center thereof, and passing all these threads through an eye at the upper end of the spindle, the rotation of which twists them all into one thread which passes over guides to a reel to be wound into skeins.

30 In the accompanying drawings (*a*) represents the frame properly adapted to the moving parts, and (*b*) are the spindles provided with pulleys (*c*) driven by bands from a horizontal drum (*d*) in the usual manner of driving spindles. On each of these spindles there is a disk (*e*) near the spindle rail provided with two, three, or more vertical pins on which turn freely the bobbins (*f*), and from these bobbins the threads pass through guides (*g*) attached to the periphery of a small disk (*h*), near the top of the spindle and corresponding with the bobbins and from these all the threads pass through a center guide rod (*i*) and are united and twisted together by the rotation of the spindle, the threads then pass over proper guides to a reel (*k*) back of the spindles on which the hanks or

skeins are formed, the threads receiving the required twist in passing from the spindles to the reel. 60

The whole machine is driven by a belt from some first mover running onto a pulley on the end of the drum (*d*) which drives the spindles, and by a belt from a pulley (*l*) on the end thereof motion is communicated to the reel by a band wheel (*m*) there being a series of spur wheels (*n, n*) and pinions (*o, o*) interposed to reduce the motion of the reel, the pulleys (*l*) and (*m*) are conical or otherwise arranged to change at pleasure the relative velocities of the spindles and reel. 70

The drum (*d*) and pulley (*l*) turn freely on their shaft which is provided with a clutch to throw them in and out of gear, and this clutch is connected by means of a lever (*p*) with the shipper, and for the purpose of making the skeins of equal size the shipper is held by a lever (*r*), one end of which clutches in a notch in the shipper while the other is acted upon by a pin (*s*) in the face of a ratchet wheel (*l*) which is turned on teeth at each revolution of the reel by a tappet (*u*) shown by dotted lines in Fig. 2 on the shaft thereof, so that when the reel has made as many revolutions as there are teeth in the ratchet wheel the lever (*r*) is lifted up by the pin (*s*) which liberates the shipper and unclutches the drum and pulley. 80

It will be obvious that instead of throwing the spindles and reels by a clutch the same effect may be produced by means of a fast and loose pulley, and that any desired number of bobbins can be used in each spindle, but generally three will be sufficient. I generally employ two reels in the same frame, each reel being operated and connected with the same number of spindles and arrangement of parts. The journals of the reel are so held in their boxes by means of pins in any ordinary way so that they can be removed and replaced with facility. 85

What I claim as my invention and desire to secure by Letters Patent is—

The shipping apparatus in combination with the reel for the purpose of throwing the machinery out of gear when the skeins are of the proper size, as described. 110

GEORGE LEVAN.

Witnesses:

W. KENNEDY,  
JER. BAUMAN.