S. M. WILLIAMS & H. M. WILLIAMS.

Improvement in Spinning-Machines.

No. 114,074. Patented April 25, 1871.

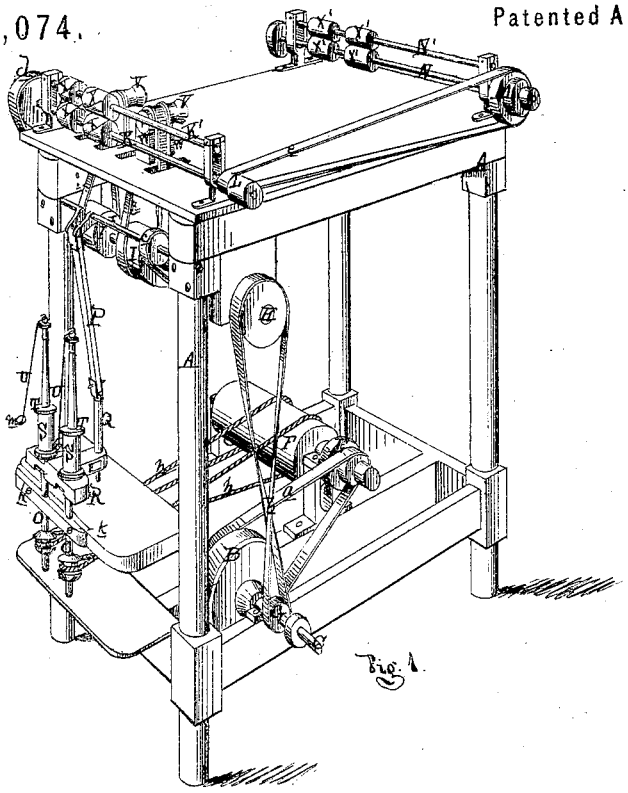

Fig. 1.

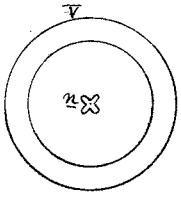

Fig. 2.

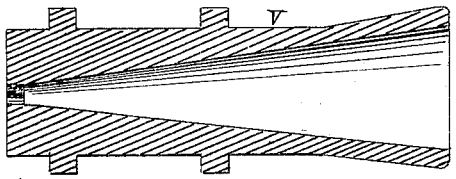

Fig. 3.

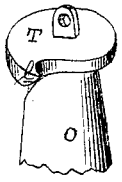

Fig. 4.

ATTEST

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SAMUEL M. WILLIAMS AND HENRY M. WILLIAMS, OF COLDWATER, MICH.

IMPROVEMENT IN SPINNING-MACHINES.

Specification forming part of Letters Patent No. **114,074**, dated April 25, 1871.

To whom it may concern:

Be it known that we, SAMUEL M. WILLIAMS and HENRY M. WILLIAMS, of Coldwater, in the county of Branch and State of Michigan, have invented a new and useful Improvement in Continuous Spinner for Woolen Yarns; and we do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of our device. Fig. 2 is an end view of one of the twisting-tubes. Fig. 3 is a longitudinal section of the same. Fig. 4 is an enlarged view of the top of the spindle.

Like letters indicate like parts in each figure.

The nature of this invention relates to a spinning-machine more especially designed for woolen yarns, by means of which, after the wool has been properly prepared, as for spinning on jacks, it may readily be spun and wound on suitable bobbins.

The invention consists in the peculiar construction and arrangement of its operative parts, as more fully hereinafter described.

In the accompanying drawing, A represents a suitable frame which sustains the operating parts of the machine. B is a cone of pulleys running with the main driving-shaft C, to which motion is given by a crank or any other suitable power. A belt, *a*, from this cone of pulleys carries motion to another cone of pulleys, E, running upon a counter-shaft, to which is secured the drum F. A cross-belt, *b*, running over the small pulley G, carries motion to the shaft H, upon which are secured the drums or wide pulleys I. A belt, *c*, carries motion over proper pulleys from the shaft H to the crank-shaft J. A belt, *d*, carries motion from a small pulley (not shown in the drawing) to the feed-roller shaft K, the opposite end of which is provided with a cone of pulleys, L, from which motion is carried by the belt *e* to a similar cone of pulleys, M, on the feed-roller shaft N. Belts *h* carry motion from the drum F to the spindles O.

A suitable pitman, P, connects the crank-shaft J with the cylinder Q, which has a vertical motion upon a rigid stem fitting the inside of said cylinder. A suitable cross-head and slides may be substituted for the device just described. To the lower end of this cylinder Q is secured the platform R, upon which rest the bobbins or spools S. This platform is made in two parts, the front one of which is secured to the other part by means of set-screws *k*. As the spindles O pass up through this standard the set-screws are loosened or tightened, as occasion may require, to allow the spindles to revolve more or less easily, depending upon how closely it is desired to spin or twist the yarn.

The tops of the spindles O are provided with disks or flanges T, in the periphery of which are cut hooks or projections *l*, for the purpose hereinafter set forth.

U are fliers or guides, one end of which is hooked to the top of the spindles, while the opposite end is provided with rings *m*. V are spinning or twisting tubes, cast in metal preferably, and conically shaped in the interior, as shown in the detached figures. The front ends of these tubes are solid, excepting a small stelliform opening, *n*.

The tubes are journaled into suitable bearings W, and receive motion from the drums or wide pulleys I on the shaft H.

Suitable rubber rollers X X′, running in pairs, are secured respectively to the feed-roller shafts K K′ N N′, directly in line with the twisting-tubes V. The "rolls" being properly prepared, as hereinbefore described, are presented to the rear side of the feed-rollers X′; thence into the conical interior of the twisting-tubes V, where, the machines being in motion, a partial twist is obtained. The thread passing through the stelliform opening *n* is then carried between the drawing-rollers X; then it is engaged with the hooks *l* in the periphery of the disks or flanges on the spindles; then it is carried through the rings *m* of the guides U, and thence to the bobbins. The motion of the rollers X, being faster than the rollers X′, stretches the roll in its passage between them and through the twisting-tubes.

The twist is completed by the rotation of the spindles O, carrying the flanges on their tops, with which the thread is engaged.

The reciprocating motion of the platform allows the guides to wind the thread evenly on the bobbins.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The spindles O, provided with disks or flanges T, the peripheries of which are provided with hooks or projections *l*, in combination with the fliers or guides U, when constructed, arranged, and operating substantially as and for the purposes set forth.

2. The combination of the spindles O, provided with the disks T and fliers U, constructed and arranged as described, with the feed-rollers X X′, the shafts N N′ K K′, the pulleys M L, the belt *e*, and the tubes V, all constructed, arranged, and operated substantially as described and shown, for the purposes set forth.

SAMUEL M. WILLIAMS.
HENRY M. WILLIAMS.

Witnesses:
THOS. S. SPRAGUE,
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