

(No Model.)

C. W. JONES.

SPINDLE DRIVING MECHANISM FOR SPINNING MACHINES.

No. 418,797.

Patented Jan. 7, 1890.

Fig. 1.

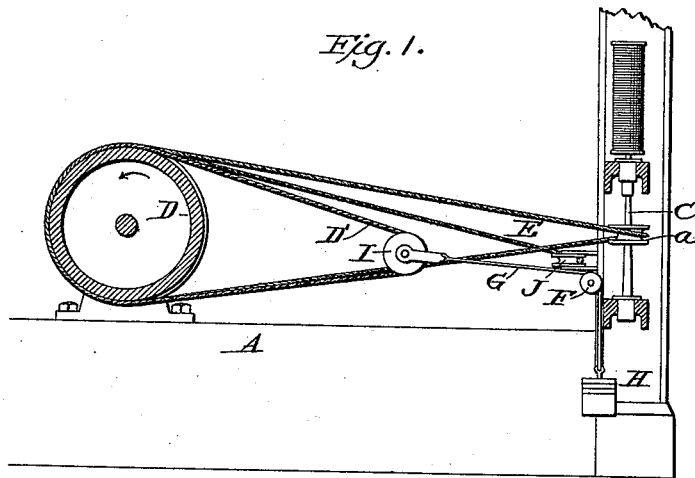
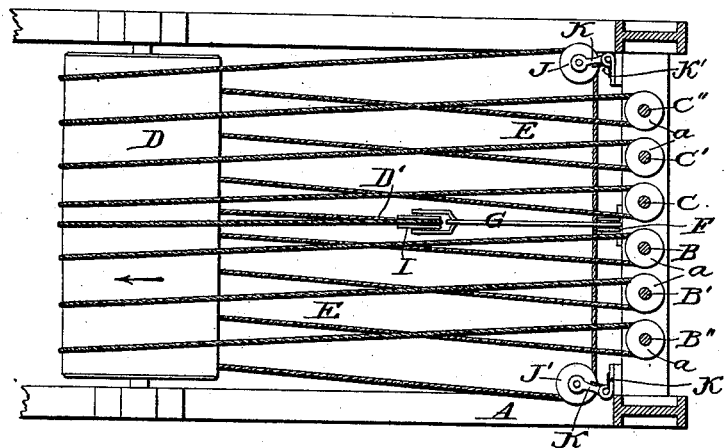


Fig. 2.



Witnesses:

James F. O'Hanlon
Horace A. Dodge

Inventor:

Charles W. Jones,
by Dodges Sons,
Attys.

UNITED STATES PATENT OFFICE.

CHARLES WILLIAM JONES, OF LONDON, ONTARIO, CANADA.

SPINDLE-DRIVING MECHANISM FOR SPINNING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 418,797, dated January 7, 1890.

Application filed December 4, 1888. Serial No. 292,654. (No model.) Patented in England March 3, 1888, No. 3,248, and in Canada December 12, 1888, No. 30,381.

To all whom it may concern:

Be it known that I, CHARLES WILLIAM JONES, a citizen of the United States of America, residing at London, in the Province of Ontario and Dominion of Canada, have
5 invented certain new and useful Improvements in Spindle - Driving Mechanism for Spinning-Machines, (for which I have received Letters Patent in Great Britain, No. 3,248,
10 dated March 3, 1888, and in Canada, No. 30,381, dated December 12, 1888,) of which the following is a specification.

My invention relates to spinning machinery, and has reference more particularly
15 to a novel construction and arrangement of the band-tightener and in a novel arrangement of the operating-band, all as hereinafter set forth and claimed, whereby a uniform tension is maintained on the band and the
20 operation of the spindles rendered uniform.

The object of this invention is to operate any suitable number of spindles by means of a single continuous or endless band, which
25 latter must be so arranged as to produce an even tension on each and every spindle.

When the tension device is so arranged as to take up the slack from the return line, it is found that the tension is unequal and the
30 bobbins filled unevenly, some hard and some loose; but where, as in the present invention, the slack is taken up from or through a loop in the band from the cylinder it is found in practice that the tension on the spindles is
35 uniform and the bobbins filled alike.

The desired results are secured by the construction shown in the accompanying drawings, in which—

Figure 1 represents a vertical sectional view of a portion of so much of a spinning-machine as is necessary to show the application
40 of my invention, and Fig. 2 a top plan view of the same.

A indicates a portion of the frame of the machine, in which are mounted two series of
45 upright spindles B B' B'' and C C' C'', each spindle being provided with a grooved wheel or pulley *a*, as is usual in this class of machines. Arranged at right angles to the spindles is the main drum or cylinder D, to which
50 motion is imparted from any convenient

source, and which receives the endless spindle-driving band or belt E.

About the middle of the frame A is secured a wheel or pulley F, over which passes a cord, belt, or band G, carrying at one end a
55 weight H and at its other end a wheel I, which latter is adapted to receive the spindle-driving belt E, as shown.

At each end of the frame A is a horizontal wheel or pulley J J', about which the belt E
60 also passes, said pulleys or wheels J J' being preferably carried by arms K, provided with springs K', so as to aid in keeping the band E taut. This is not essential, however, as
65 the springs may be omitted and the wheels or pulleys carried by fixed or rigid arms.

The spindle-driving belt passes from one of the pulleys or wheels J over the top of drum D, thence to and around spindle C'',
70 back over top of drum, thence to and around spindle C', back over the top of drum again, thence to and around spindle C, thence over top of drum, thence formed into a loop D', passing around tightener wheel or pulley I,
75 thence back to top of drum, to and around spindle B, back to top of drum D, to and around spindle B', back to top of drum, thence to and around spindle B'', back to top of drum, thence to wheel or pulley J' at end
80 of machine, and back to wheel or pulley J at other end. From this arrangement it will be seen that by means of a single endless band a uniform motion will be imparted to each and all of the spindles, and it will also be
85 noticed that by forming the loop D' in the middle of the band, as shown, and applying the tension thereto at that point the pull or strain on the band will be equal and uniform.

The weight should be so graduated as to maintain the requisite tension upon the band,
90 and as this will vary and depend in each case upon the number of spindles employed and other facts no definite weight can be given that will answer for all cases.

The number of spindles may of course be
95 varied as desired; but the method herein shown and described of winding the band alternately about the spindles and drum and the application of the tension to a loop at the center should be adhered to.

The weight H may be omitted and a spring secured to the end of the cord or connection G to maintain the requisite tension; but as these are the recognized equivalents of each other no illustration of the spring is deemed necessary.

The "middle" of the band, in the sense in which I herein use that term, means that part of the band to which the tension device is applied in Fig. 2. In this arrangement the length of band passing about the spindles and drums is equal on each side of the tension device, so that the tension on both branches of the band will be uniform and the tension on the spindles B B' B'' the same as that on the spindles C C' C''. Of course it is not necessary that the loop in the band be midway between the ends of the drum, as shown in Fig. 2, as it is apparent that it may be arranged nearer one end than the other; but the arrangement shown is preferred because of the uniformity of the tension on the spindles. In this latter arrangement that portion of the band to which the tension device is applied could hardly be called the "middle" of the band, but more properly the "loop."

Having thus described my invention, what I claim is—

1. In combination with a frame provided with spindles and with a wheel at each end of said frame, a drum, an endless band passing about said drum and spindles alternately, and from the ends of the drum to the wheels on the frame, a loop formed in the band and extending from the drum, and a tension device applied to the loop.

2. In combination with a frame provided with spindles and with a spring-sustained wheel at each end of said frame, a drum, and an endless band passing alternately about the drum and spindles and from the ends of the drum to the wheels on the frame.

3. In combination with a frame provided with spindles, and with a wheel at each end of said frame, a drum, an endless band passing alternately about the drum and spindles and from the drum to the wheels, a loop formed in said band and extending from the drum, and a tension device applied to the loop.

In witness whereof I hereunto set my hand in the presence of two witnesses.

CHARLES WILLIAM JONES.

Witnesses:

C. X. RYLAND,
JOHN MOULE.