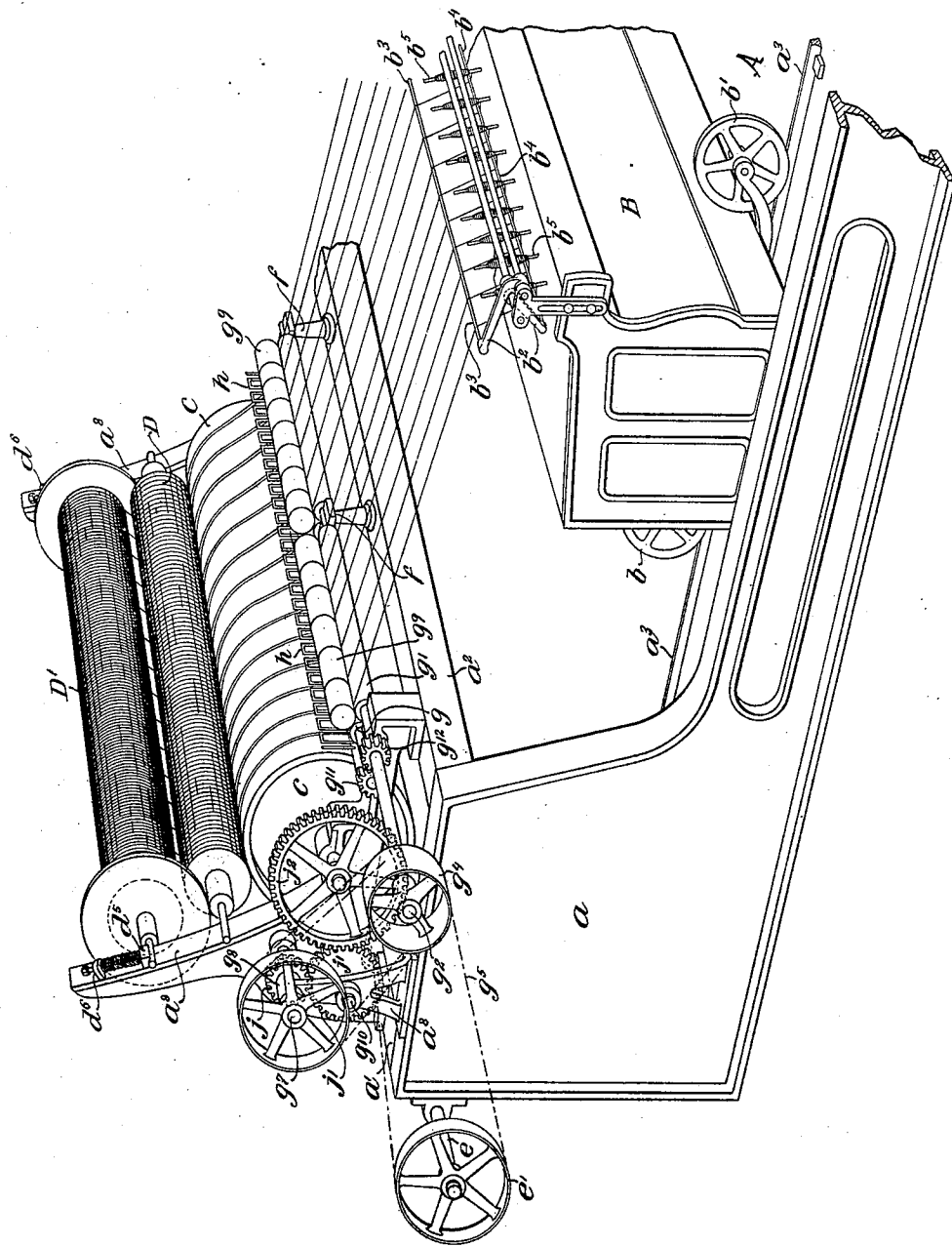


(No Model.)

J. LUNN.
APPARATUS FOR SPINNING DIFFERENT COLORED ROVINGS INTO THREAD
OR YARN.

No. 520,793.

Patented June 5, 1894.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN LUNN, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR SPINNING DIFFERENT-COLORED ROVINGS INTO THREAD OR YARN.

SPECIFICATION forming part of Letters Patent No. 520,793, dated June 5, 1894.

Application filed October 4, 1893. Serial No. 487,146. (No model.)

To all whom it may concern:

Be it known that I, JOHN LUNN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Spinning Different-Colored Rovings into Thread or Yarn, of which the following is a specification.

My invention has relation to the spinning of different colored fibrous material into thread or yarn.

The principal objects of my invention are first, to provide an apparatus for spinning in contradistinction to twisting different colored roving, as reeled from the finisher carding engine, into variegated thread or yarn for fabricating knit or woven fabrics; and second, to provide an apparatus for spinning different colored rovings into variegated thread or yarn, by the drawing under the influence of rolling friction and a spinning operation the same to a position of union one with the other and so as to prevent retwist and laying up under a controlled tension the spun together rovings uniformly onto bobbins or cops for subsequent use.

My invention consists of the improvements hereinafter described and claimed.

The nature of my invention will be more fully understood from the following description taken in connection with the accompanying drawing forming part hereof, which illustrates in perspective a woolen mule spinning machine adapted for spinning different colored rovings into thread or yarn embodying features of my invention.

Referring to the drawing *a*, is one of the end standards of the machine and *a'* and *a''*, are the cross-beams thereof and respectively constituting the frame-work for supporting devices and mechanism of my invention to be hereinafter fully described.

a'', is a track secured to the floor or a platform *A*.

B, is a carriage provided with traveler-wheels *b* and *b'*, and with shaper fallers *b''*, comprising rods or wires *b'''* and *b''''*, extending the length of the carriage and engaging the yarn or thread in such manner as to guide the same onto the series of spindles *b''''''*, to form cops thereof. The spindles *b''''''*, as well as the

carriage *B*, are operated by suitable mechanism, which has not been shown.

c, is a drum journaled to the end standards of the machine.

D and *D'*, are roving reels adjustably engaging one another. The reel *D*, is recessed at each end for the reception of the complementary flanged ends of the reel *D'*, adjustably engaging therewith by means of spring controlled bearing blocks *d''*, having shanks or stems around which are coiled springs and which shanks or stems of the blocks *d''*, extend through lugs *d'''*, connected with the curved arm or bracket *a''*, of the machine. This arrangement of the respective reels *D* and *D'*, as above described, insures uniformity of tension of the one with respect to the other in operation and also regularity in the spinning of the different colored rovings together and without retwist, thereby obtaining a superior resultant product for the manufacture of knitted and woven fabrics.

e, is the main driving shaft provided with a pulley *e'*.

j, is a gear mounted on a shaft *g''*. This gear meshes with a gear *j'*, which is mounted on a shaft *g''''*. The gear *j'*, meshes with a gear *j''*, which is mounted on one of the end journals of the drum *c*, for permitting of motion being imparted thereto.

g'', is a belt which passes around the pulleys *e'* and *g''''*, and which latter is mounted on the end journal *g''''''*, of the calender roll *g''''''*, to be presently fully described. The main driving shaft *e*, is held in suitable bearings applied to the end standards *a*.

f, represents a series of recessed T or similar shaped supports held to position on the cross-beam *a''*, and forming bearings for the journals of calender rollers *g* and *g'*, which frictionally contact with one another. The respective journals of the calender rollers *g* and *g'*, are geared at *g''''* and *g''''''* to each other. The shaft *g''*, is held in a bearing *g''''*, of the curved arm or bracket *a''*.

g'', is a series of small rolls supported in frictional contact with the rollers *g* and *g'*.

h, are guides or loops for directing the different colored roving from the reels *D* and *D'*, and drum *c*, to and between the rollers *g*, *g'* and *g''*, to be spun together and laid up onto the series of spindles *b''''''*, of the carriage *B*.

The operation of the machine hereinbefore described, is as follows:—The different colored rovings pass from the respective reels in a forward direction through the guides or loops *h*, and between the rollers *g*³, *g* and *g'*, to the shaper fallers *b*², and then to the series of spindles *b*⁵, of the carriage B, and the different colored fibrous materials are uniformly spun together and without retwist are laid up in the form of variegated thread or yarn as cops for subsequent use, upon removal from the machine.

I am aware that it is not new to double the product of a condenser carding machine in the form of sliver by spinning of two or more slivers together and laying onto bobbins as such is described in English Letters Patent No. 13,780 of October 21, 1851; and hence I do not wish to be understood as broadly claiming any of the methods of said patent for the production of such a product; but

Having thus described the nature and objects of my invention, what I do claim as new, and desire to secure by Letters Patent, is—

1. A woolen mule spinning machine, comprising a drum, gear for actuating the same, two reels whereof one is provided with enlarged ends held under spring tension in contact with the journals of the other reel engaging said drum, the arrangement being such

that rovings are drawn from said reels over said drum, rolls actuated by gear and pulley mechanism and the latter imparting motion to the gear of said drum, detachable rolls held in frictional contact with said positively actuated rolls, guides located between said drum and in rear of said positively actuated and detachable rolls, a traveling carriage provided with spindles and shaper fallers, and means, as described, for actuating said spindles and shaper fallers, all arranged substantially as described and for the purposes set forth.

2. A woolen mule spinning machine, comprising a traveling carriage provided with shaper-fallers, frame-work, a drum journaled thereto, gear-mechanism connected with said drum, reels in frictional contact with each other and one of said reels maintained in contact with said drum, an arm or bracket and spring controlled bearing blocks connected with said arm or bracket and with the other of said reels, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

JOHN LUNN.

Witnesses:

GEO. W. REED,
THOMAS M. SMITH.