(No Model.)

I. DIMOCK.

SPINNING AND TWISTING MACHINE.

No. 416,326. Patented Dec. 3, 1889.

Fig. 1.

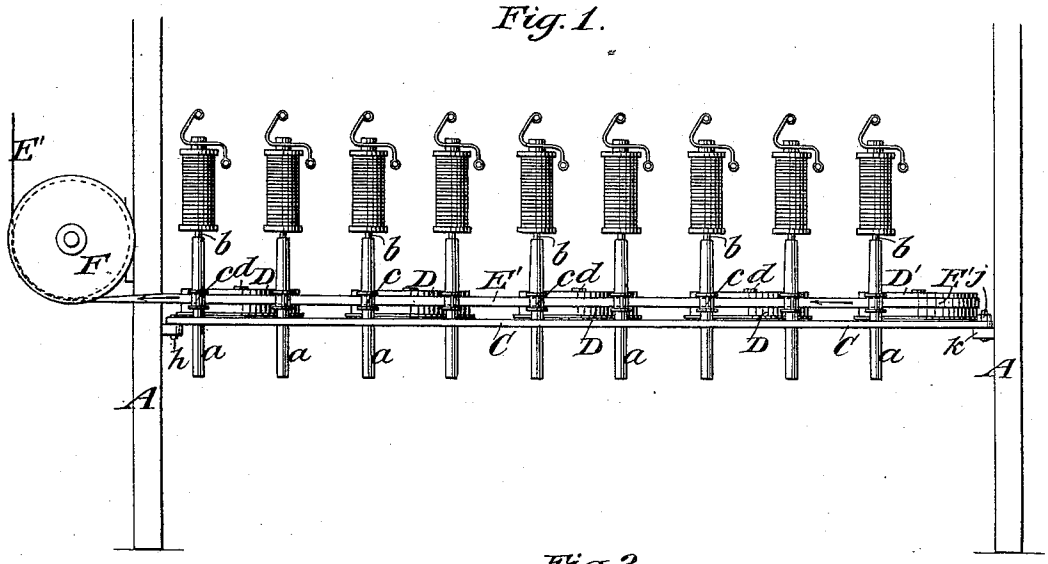


Fig. 2.

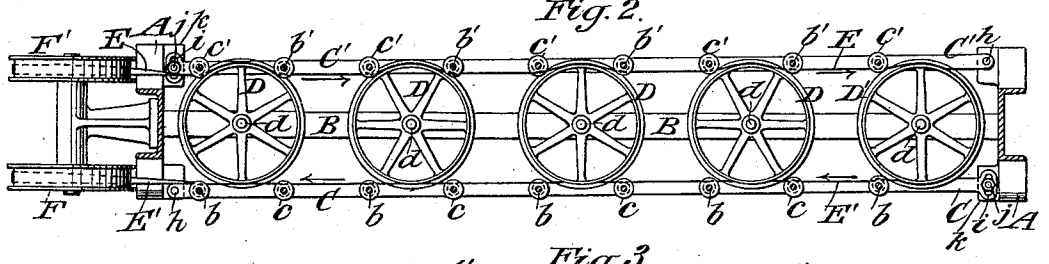
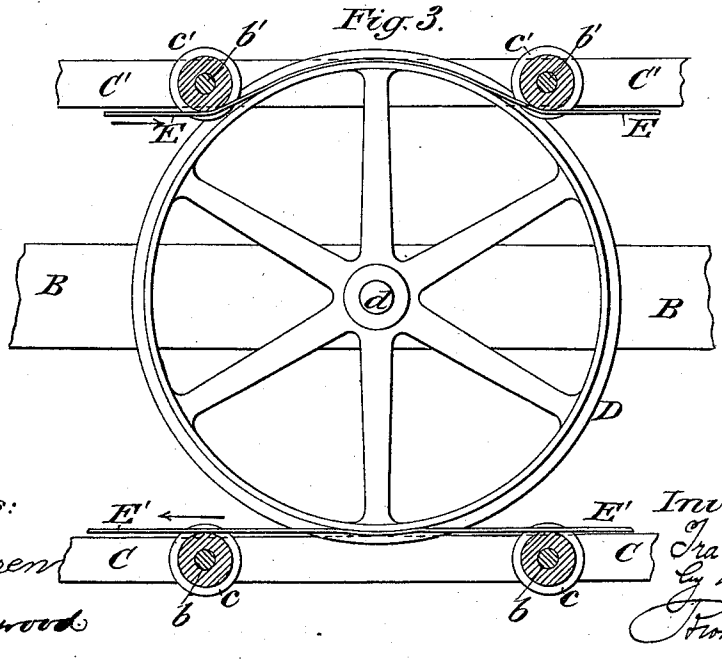


Fig. 3.



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UNITED STATES PATENT OFFICE.

IRA DIMOCK, OF NEW LONDON, CONNECTICUT.

SPINNING AND TWISTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 416,326, dated December 3, 1889.

Application filed September 5, 1889. Serial No. 323,088. (No model.)

To all whom it may concern:

Be it known that I, IRA DIMOCK, of New London, in the county of New London and State of Connecticut, have invented a new and useful Improvement in Spinning and Twisting Machines, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to spinning and twisting machines in which a single driving-belt is used for driving a number of spindles arranged in two rows.

The object of my improvement is to provide for transmitting power from such driving-belt equally to the spindles in both rows and to all the spindles in each row.

I will describe my invention with reference to the drawings, and will afterward point out its novelty in the claims.

Figure 1 represents a side elevation of such parts of a spinning-machine as are necessary to illustrate my invention. Fig. 2 represents a horizontal section of the same, taken below the bobbins. Fig. 3 is a diagram representing a portion of Fig. 2 on a larger scale.

Similar letters of reference designate corresponding parts in all the figures.

A A are the end frames of a spinning-machine.

B is a stationary horizontal rail secured between the frames A and constituting a part of the fixed framing of the machine.

C C′ are the spindle-supporting rails, one on each side of the machine, the rail C containing or supporting the bolsters *a* for the spindles *b* of one row, and the other of said rails containing or supporting corresponding bolsters for the spindles *b′* of the other row. The spindles are severally provided with whirls *c c′*, which may be of any suitable kind, but which I prefer to make with broad faces to receive a broad or flat belt E E′, which is common to all of said whirls, and which is arranged to run against the inner sides of the whirls of the two rows, as shown in Figs. 2 and 3.

Between the two rows of spindles and between the two sides or runs of the belt E E′ are arranged horizontal idler-pulleys D D′, which are supported and turned freely on pivots *d* in or on the rail B. The diameter of these idler-pulleys D D′ and their position relatively to the spindles are such that they will press the two sides or runs of the belt outward against the whirls of the spindles of both rows, as shown in Figs. 2 and 3. The belt E E′ may be driven from a pulley on any suitable driving or counter shaft. I have not thought it necessary to represent such pulley and shaft. At the end of the machine next the said driving-pulley two guide-pulleys F F′ are provided for the two sides or runs of the belt to direct the belt to and from the spindle-whirls and idler-pulleys D. The idler-pulley D′, which is farthest from these guide-pulleys F′, receives the turn of the belt. The belt being set in motion and running against all the whirls drives all the spindles; but if the centers of the idler-pulleys were in a line equidistant between the lines of the two rows of spindles that side or run of the belt which is moving away from the pulleys F F′ and from the driving-pulley would have less tension than the take-up side or run which is moving toward the pulley F′ or F and the driving-pulley, and while the spindles on the take-up side would be properly driven the belt would be apt to slip on the whirls of the spindles on the other side, and the latter would not be driven at the same speed as those on the take-up side. In order to counteract the effect of the above inequality of the tension of the two sides or runs of the driving-belt, I arrange the rails B and C C′ in such manner that the rail C′ on one side and the line of spindles *b′* therein supported are nearer than the rail C and the spindles *b* therein supported are to the said rail B and to the pivots of the idler-pulleys, as shown in Figs. 2 and 3, thus giving one side or run E of the belt more bearing on the whirls *c′* of the spindles *b′* than on those *c* of the spindles *b*, and I transmit power to the driving-belt in such direction, as indicated by arrows in Figs. 2 and 3, that the side or run E′, on which the spindles are farthest from the pivots of the idler-pulleys and the belt has least bearing on the whirls, is the take-up or tight side. Since the other side or run E of the belt, which is looser, has more bearing on the spindle-whirls, its looseness is compensated for, and all the spindles may be uniformly driven.

In order to properly adjust the spindles to their respective sides or runs of the belt, I

make the rails C C′ laterally adjustable toward and from the axes of the idler-pulleys. This adjustment is shown in Figs. 1 and 2 of the drawings by providing each rail at one end with a pivotal support *h* on the framing A A and providing at the other end a slot *i*, through which it is adjustably secured by a bolt and nut *j* to a support *k*, provided on the framing. This method of providing for the adjustment of the rails enables them to be set somewhat oblique to the line of the axes of the idler-pulleys, and thereby to give the belt a greater bearing of the whirls of the spindles in each row in proportion to the distances of the spindles from the take-up end of each run of the belt.

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

1. The combination, with a series of spindles arranged in two rows, whirls on the said spindles, and a driving-belt common to the two rows of spindles in contact with the whirls thereon, of a series of idler-pulleys and supports for the same arranged between the two rows of spindles, each pulley being in contact with the two sides or runs of the belt, and the axes of the spindles of one row being in greater proximity to the axes of said pulleys than the axes of the spindles of the other row, substantially as and for the purpose herein set forth.

2. The combination, with a series of spindles arranged in two rows, whirls on said spindles, and a driving-belt common to both rows of spindles in contact with the whirls thereon, of a series of idler-pulleys and fixed supports for the same arranged between the two rows of spindles, and two spindle-supporting rails having provisions for adjustment, whereby each row of spindles is adjustable laterally toward and from the fixed idler-pulley supports, substantially as and for the purpose herein set forth.

3. The combination, with a series of spindles arranged in two rows, whirls on said spindles, and a driving-belt common to both rows of spindles in contact with the whirls thereon, of a series of idler-pulleys and fixed supports for the same arranged between the two rows of spindles, spindle-supporting rails containing the bearings for said spindles, a pivotal support for each of said rails at one end thereof, and a support for the other end of the rail on which the rail is adjustable laterally, substantially as and for the purpose herein set forth.

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