No. 781,755. PATENTED FEB. 7, 1905.

J. WILKINSON.

AUTOMATIC THREAD BOARD LIFTER.

APPLICATION FILED JULY 11, 1904.

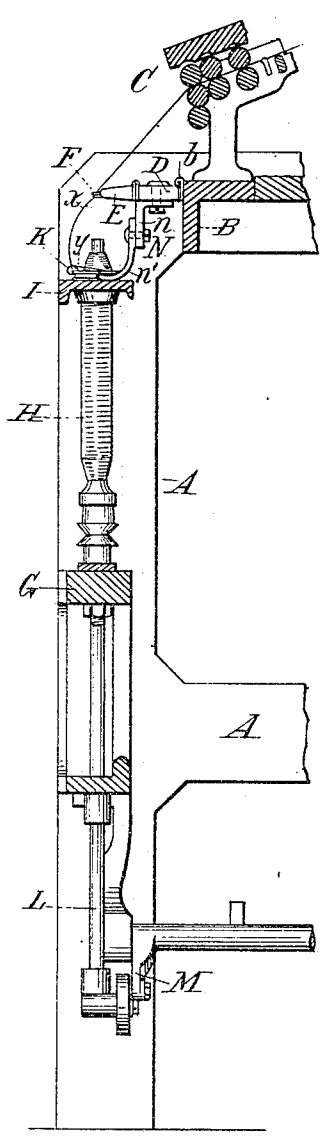


Fig. 1.

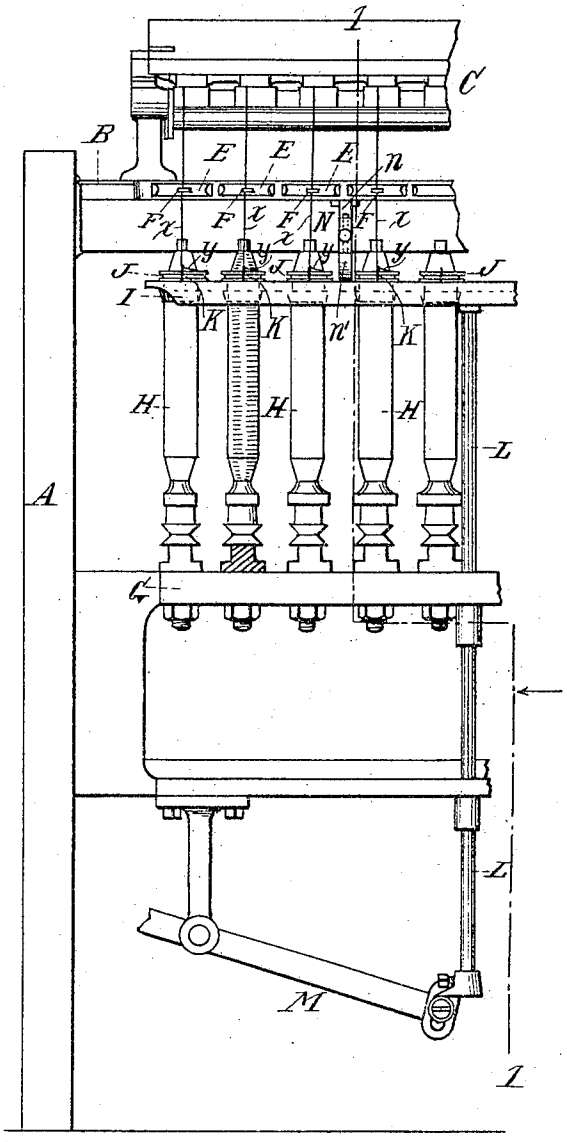


Fig. 2.

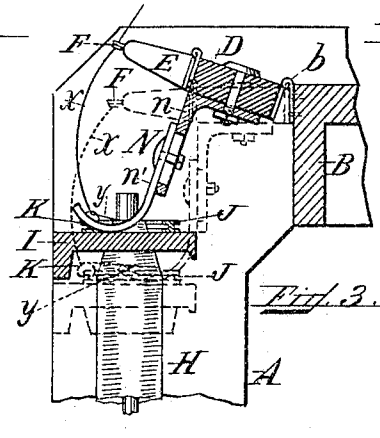


Fig. 3.

Witnesses:
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UNITED STATES PATENT OFFICE.

JABEZ WILKINSON, OF FALL RIVER, MASSACHUSETTS.

AUTOMATIC THREAD-BOARD LIFTER.

SPECIFICATION forming part of Letters Patent No. 781,755, dated February 7, 1905.

Application filed July 11, 1904. Serial No. 215,996.

To all whom it may concern:

Be it known that I, JABEZ WILKINSON, a citizen of the United States, residing in the city of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Automatic Thread-Board Lifters, of which the following is a specification.

My invention relates to automatic thread-board lifters for ring-spinning frames; and the object of said invention is to provide a ring-spinning frame with means whereby, if desired, it may spin thread upon bobbins that in length are longer than any of the bobbins which the frame was originally designed to spin.

My invention resides in means whereby the thread-guide of a ring-spinning frame may be moved toward and away from the end of its bobbin by the ring-rail, said movements thereby permitting the ring and traveler that are mounted on said ring-rail to move over an additional portion of the bobbin without decreasing the size of the angle between the balloon portion of the thread and that portion being wound upon the bobbin to one that will cause the thread to break by the increased tension on said thread due to a smaller angle.

Figure 1 is a side view of my invention, shown in section, on line 1 1 of Fig. 2. Fig. 2 is a front elevation, while Fig. 3 is an enlarged detail showing the coöperating features of my invention in their extreme positions, partly in section.

In the drawings illustrating the principle of my invention and the best method now known to me of embodying said principle and also showing so much of an ordinary ring-spinning frame as will exhibit the relation of my invention to said frame, A is a frame provided with the usual roller-beam B, having mounted thereon delivery-rolls C. To the front of the roller-beam B is pivotally secured by a hinge *b* a thread-board D, to which are hinged thread-doors E E, each of which is provided with a thread-guide F.

G is a spindle-rail having a series of spindles and bobbins H H, which are operated in the usual manner.

A ring-rail I, provided with travelers J J and rings K K, is reciprocated vertically by lifting-rods L L and levers M M, operated by mechanism too well understood to require further illustration and description.

All the above features of a ring-spinning frame are old and well known.

The novel feature of my invention resides in a bar N, depending from the thread-board D and having its lower end portion curved and lying in the path of said reciprocating ring-rail. Said bar, while it may be made in one solid piece, is preferably made in two parts *n n'*, the former being bolted to the under side of the thread-board D and having a slot therein, while the latter, *n'*, is adjustably secured to the former by means of a bolt engaging said slot.

Figs. 1 and 2 and the dotted lines of Fig. 3 show the extreme limit to which the bobbin may be wound without breakage of the thread, provided the thread-guide F remains in the position shown. When, however, the ring-beam I rises higher, (see Fig. 3,) said beam comes into contact with the lower portion *n'* of the bar N, moves the same, together with the thread-board D, the thread-guide holder E, and the thread-guide F, about the hinge *b* as a center, and thus causes the thread-guide F to assume the position shown in solid lines; but it will be noted that the angle formed by the balloon portion *x* of the thread and the portion *y* being wound upon the bobbin is substantially the same in both the extreme positions of the thread-guide F, traveler J, and ring K. (Shown in Fig. 3.)

It will now be plain that by means of my invention a ring-spinning frame may, when it is desired, wind a bobbin which is longer than any of those which the frame was originally designed to wind. Further, mechanism embodying the principle of my invention is simple, strong, and cheap in construction, and in operation efficient.

Having described both the construction and the operation of my invention, I desire to claim it in the broadest manner legally possible.

What I claim is—

1. In a ring-spinning frame, the combination of a pivoted thread-board; a thread-guide operatively secured to said thread-

board; a ring-rail; means for vertically reciprocating the same; a bar, depending from said pivoted thread-board, and designed to be engaged and moved by the ring-rail only while the top portion of the bobbin is being spun.

2. In a ring-spinning frame, the combination of a pivoted thread-board; a thread-guide operatively secured to said thread-board; a ring-rail; means for vertically reciprocating the same; a bar, depending from said thread-board, and consisting of two parts adjustably secured together, said bar being designed to be engaged and moved by said ring-rail only while the top portion of the bobbin is being spun.

In testimony whereof I affix my signature in presence of two witnesses.

JABEZ WILKINSON.

Witnesses:

ROBERT C. DAVIS,

JAMES H. KENYON, Jr.