

Oct. 23, 1951

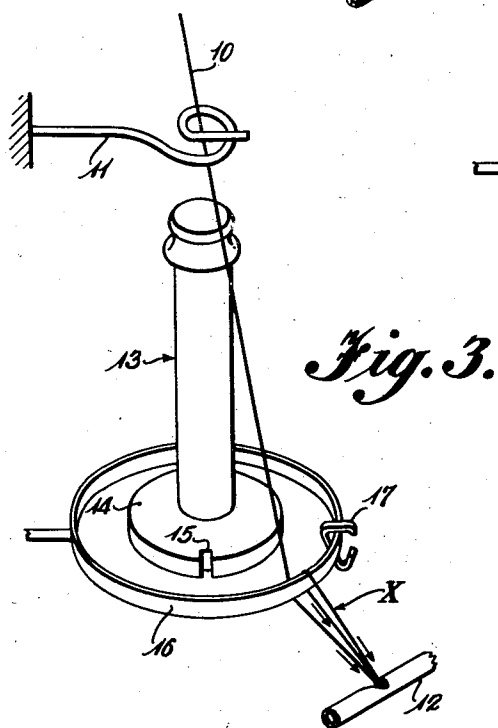
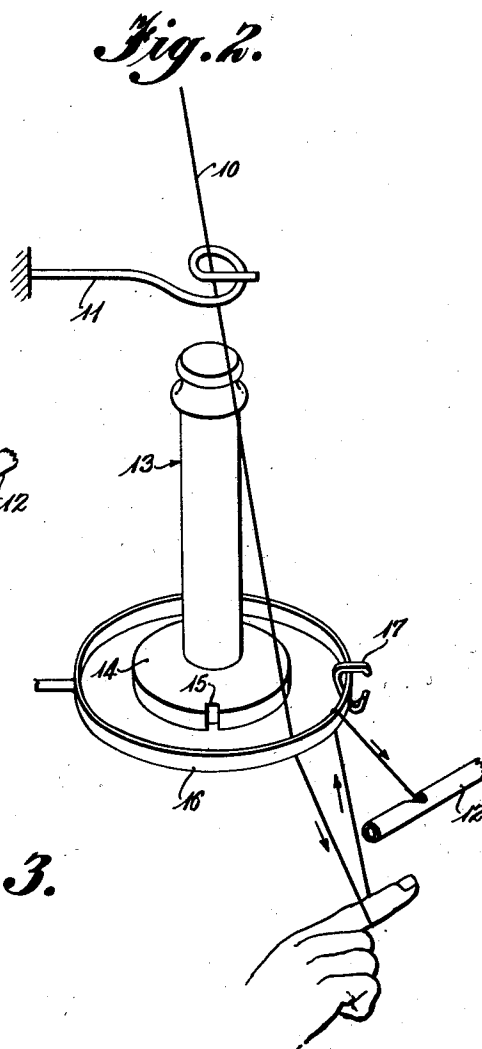
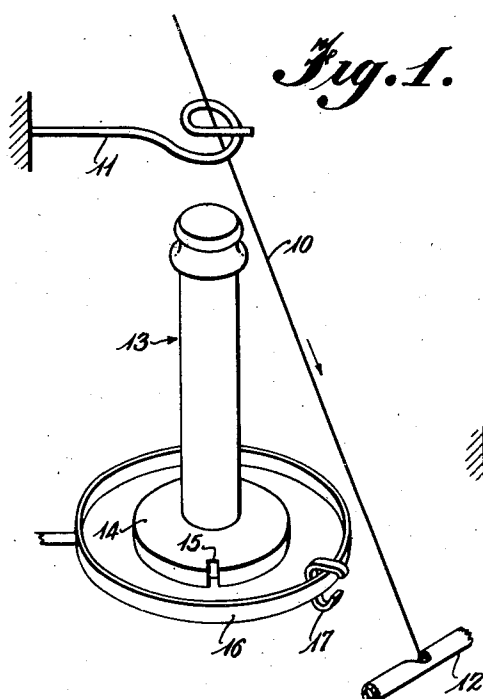
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2,572,138

METHOD OF THREADING RING TWISTING MACHINES

Filed Feb. 7, 1951

2 SHEETS—SHEET 1



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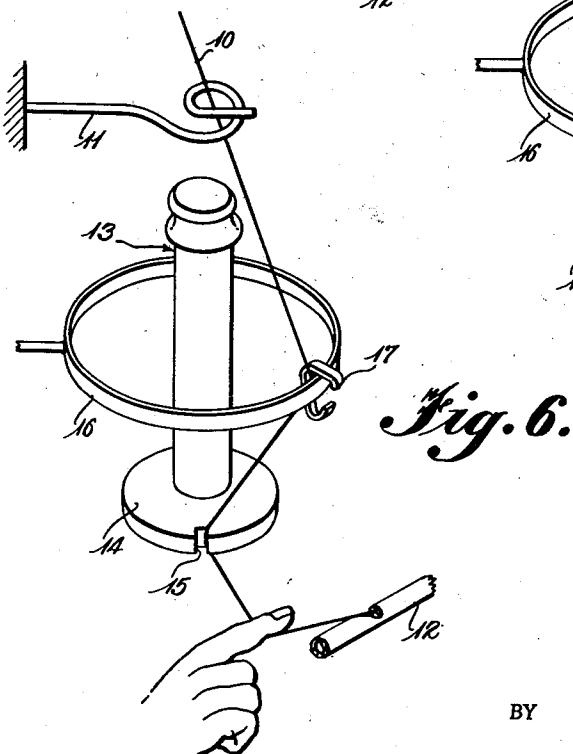
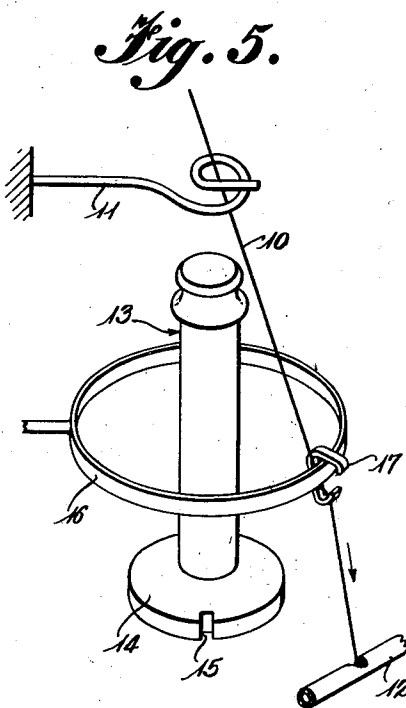
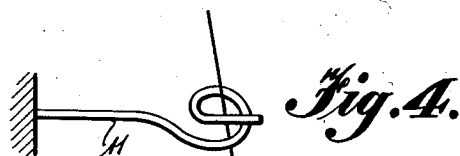
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METHOD OF THREADING RING TWISTING MACHINES

Filed Feb. 7, 1951

2 SHEETS—SHEET 2



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2,572,138

METHOD OF THREADING RING TWISTING MACHINES

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Application February 7, 1951, Serial No. 209,785

2 Claims. (Cl. 57-156)

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This invention relates to the art of twisting, and more particularly to an improved method for the initial threading of a ring twister with a continuously issuing thread.

With the many various systems of continuous spinning of artificial threads, filaments, and yarn that are now known in the industry, the collection problem of the freshly formed thread has assumed major importance. The most convenient mode of collection is a rotating bobbin, or spool. This is an especially practical method when the thread speed is high, but since the thread is taken up in an untwisted condition, a subsequent twisting operation then becomes necessary. For this reason, it is preferable to collect the thread directly on a twister, such as a ring twister. In this latter method, however, there is present the problem of the initial threading of the ring twister.

Various patents have been issued relating to improvements in the manner of threading a ring twister, but there has not yet been disclosed a method that is wholly satisfactory. For some procedures which are ideal at low thread speeds, the use of high thread speeds tends to complicate the manual handling of the continuously issuing thread. For other procedures, intricate mechanisms for controlling the bobbin speed are needed.

It is therefore the object of this invention to provide an improved method for the threading of a ring twister with a continuously running thread that is being fed from a source at high linear speeds, e. g., 60-100 meters per minute.

It is contemplated according to this invention to perform this method with the aid of a thread-suction collection device in such a manner that the introduction of the thread under the ring and the quick initiation of the twisting operation can be accomplished in a simpler manner than heretofore has been possible.

Other ancillary objects and advantages of this invention will be more apparent from the following description when considered in conjunction with the accompanying drawings wherein:

Figure 1 is a schematic perspective view of the equipment presently used in the method of this invention, the thread being illustrated in the position which it assumes immediately prior to the threading operation;

Figure 2 is a view similar to Figure 1 but showing the next step of the threading process;

Figures 3, 4, and 5 show succeeding steps in the process; and,

Figure 6 shows the thread in its final position prior to the initiation of twisting.

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Referring first to Figure 1, thread 10 is passed at a constant speed from a source of supply, not shown, through pigtail guide 11 to a thread-suction collection device 12, with the thread path being roughly parallel to the twisting bobbin generally indicated at 13. Bobbin 13 is mounted on a base 14, provided with a small notch 15 to trap the thread and thereby facilitate the initiation of the twisting operation. A ring 16, about which a traveler 17 is free to ride, surrounds bobbin 13, and, during the twisting operation, ring 16 reciprocates vertically to traverse the thread on bobbin 13 in the manner well known in the art. Thus the apparatus described is entirely conventional and need not be further elucidated herein.

The method of this invention comprises first leading the continuously issuing thread 10 from its source of supply directly to a thread-suction collection device, schematically indicated at 12, and then conducting it through pigtail guide 11, as shown in Figure 1. During this and the subsequent operations, twisting bobbin 13 is maintained stationary by the customary bobbin brake, while the slow reciprocation of ring 16 continues.

The operator then hooks his finger up through the ring and pulls a loop of running thread down through the ring, as shown in Figure 2. If a small diameter ring is used, a small thread hook can be used for this purpose, but usually it is practicable to effect this operation by a finger alone.

Next the loop of running thread thus formed is also conducted to thread-suction collection device 12, which immediately begins withdrawing thread directly from the source via ring 16, while the loop that is formed around the ring remains stationary. This condition is shown in Figure 3, wherein there are the equivalent of three separate threads entering the collection device 12. The two forming the loop are stationary, and the third is being drawn off continuously.

This stationary loop is then cut or broken at point X of Figure 3 for example, with the result that the parted ends are removed through collection device 12. Figure 4 shows the condition after this loop is removed, with the single thread running under ring 16 and into collection device 12.

The next step is to guide the running thread through traveler 17 on ring 16, after which the thread is running as shown in Figure 5. After this, the operator places his finger over the running thread and directs it into notch 15, as shown in Figure 6. At this point, the bobbin brake is released, and as the bobbin begins to

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rotate, notch 15 carries the thread with it, thereby producing rotation of traveler 17 on ring 16. The thread between notch 15 and collection device 12 may be broken as soon as the bobbin commences to rotate, or it may be necessary to cut the thread, depending on the speed and thickness of the thread, the speed and size of the twisting bobbin, the suction on the thread imposed by the collection device, and other similar factors.

In order that this method can be accomplished successfully it is necessary that the collection device be of the thread-suction type, or its equivalent such as a centrifugal pot. At one stage in this method, as described above, there are three separate threads entering the device, of which two are not moving, and the third is issuing continuously and any positive collection would defeat the purpose of the invention.

As stated, a centrifugal spinning pot might be utilized as the collection means, but the thread would have to be moistened to insure satisfactory operation. Such a collection means would function similarly to a thread-suction device, i. e., both stationary and running threads could be drawn into the device simultaneously; also, the initial loop could be easily drawn under the ring.

With the use of a suction device of the character of that shown in British Patent No. 359,627, the method of the present invention enables an operator to rapidly and easily thread a ring twisting machine with a thread issuing at high thread speeds such as 100 meters per minute. For ease in successively threading a plurality of twisting positions, the thread collection device should preferably be light and portable. The method is equally applicable to relatively fine threads, such as viscose rayon threads of 75 denier, or to relatively heavy threads, such as viscose rayon threads of 1650 denier.

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What is claimed is:

1. A method of initially threading a ring twister with a running thread that comprises leading the running end of thread to a point of temporary collection in a path generally parallel to the twister spindle, collecting succeeding portions of the running thread at said point while drawing a loop of the running thread down through the ring, conducting the running loop to the same point of temporary collection, cutting the stationary loop that is thus formed around the ring whereby the running end of thread is continuously drawn under the ring and collected at the point of temporary collection, guiding the thread through the traveler, trapping the thread on the bobbin, initiating rotation of the bobbin and breaking the thread between the point it is trapped and the point of temporary collection.

2. A method of initially threading a ring twister with a running thread that comprises leading the running end of thread to a point of temporary collection in a path generally parallel to the twister spindle, impositively drawing succeeding portions of the running thread to said point while pulling a loop of the running thread down through the ring, conducting the running loop to the same point of temporary collection, cutting the stationary loop that is thus formed around the ring whereby the running end of thread is continuously drawn under the ring and impositively drawn to the point of temporary collection, guiding the thread through the traveler, trapping the thread on the bobbin, initiating rotation of the bobbin and breaking the thread between the point it is trapped and the point of temporary collection.

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No references cited.