Sept. 10, 1929. G. A. LAY 1,728,066

TENSION DEVICE FOR SPINNING MACHINES

Filed Jan. 7, 1928

Fig. 1.

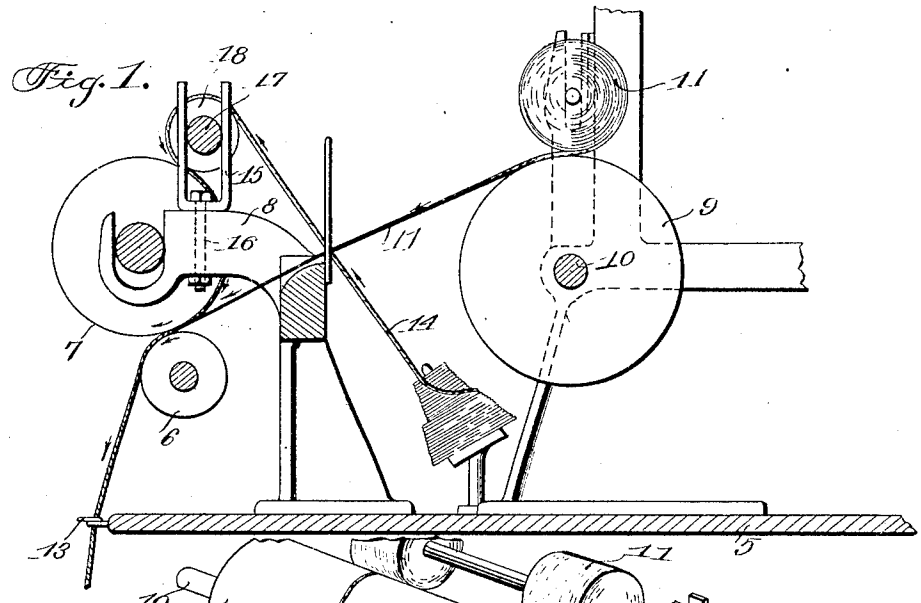


Fig. 2.

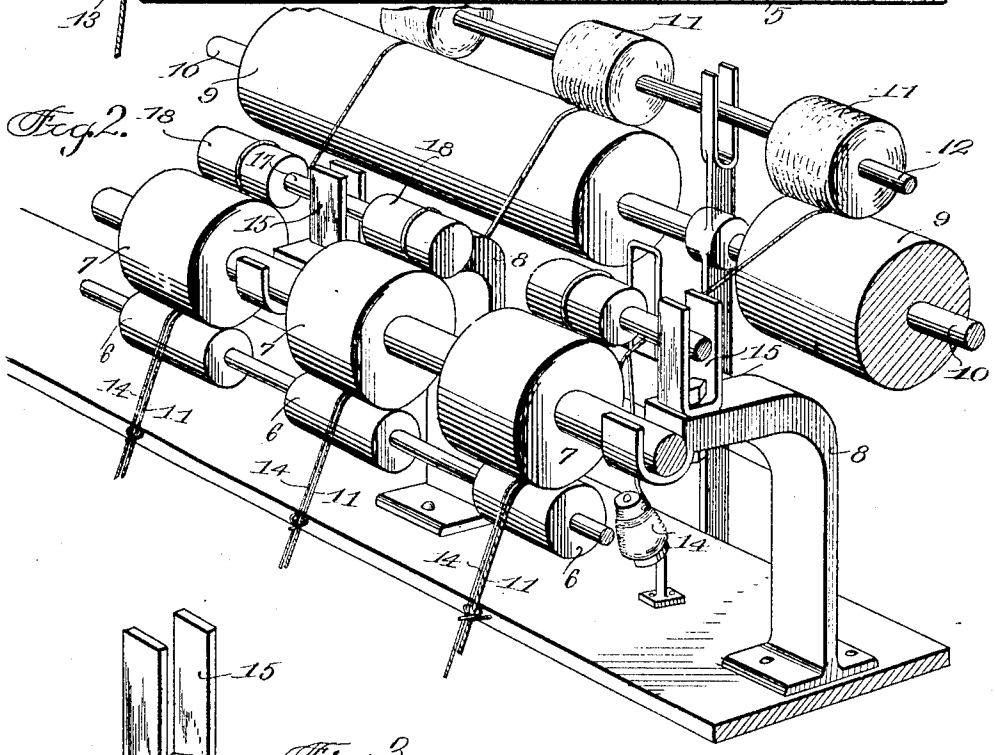


Fig. 3.

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TENSION DEVICE FOR SPINNING MACHINES.

Application filed January 7, 1928. Serial No. 245,153.

My invention is a core yarn tension device for spinning machines.

In the art of spinning, to produce a yarn of desirable quality, it is necessary to advance both the core yarn and roving strand in the same proportions to the ring traveller. Should either the core yarn or the roving strand be advanced or fed slightly ahead of the other, either the core yarn and roving strand will split apart, or pull knots in the finished article which will cause the latter to break out in the weaving. These objections are primarily caused by the delivery rollers being unable to obtain a sufficient grip on the core yarn to keep the ring traveller from pulling the core yarn faster than the roving strand is delivered. This condition is due to the difference in diameter of the core yarn and roving strand passing between the delivery rollers.

With these objections in mind it is an object of the present invention to provide a tension device whereby the core yarn is maintained under positive tension as it is advanced between the usual rollers of a spinning machine with the roving strand.

Further the invention provides a tension device for spinning machine which is constructed as an attachment to be readily arranged in operative position on the machine to coact with its upper delivery rollers in maintaining the core strand under tension.

With the preceding and other objects and advantages in mind, the invention consists in the novel combination of elements, constructions and arrangement of parts to be hereinafter specifically referred to, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a fragmentary vertical sectional view of a spinning machine equipped with my invention;

Figure 2 is a fragmentary perspective of the machine and illustrating the invention in operative position thereon;

Figure 3 is a perspective of the tension roller shaft guide or mounting embodied in the invention.

Referring to the invention in detail a conventional jack frame 5, embodying the usual main delivery rolls 6 and coacting top rolls 7, the latter being supported in the forwardly extending bearing arms 8, is provided. The usual roving drums 9, arranged on a main shaft 10, are located rearwardly of the top rolls 7 in transverse alinement with the latter. Skeins of roving strand 11 supported from a shaft 12 are arranged above each of the roving drums 9, and the roving strands are extended forwardly between each pair of coacting delivery and top rolls 6 and 7, respectively, from whence they pass through guides 13 at the forward end of the spinning frame.

In practice the core yarn 14 is fed between the rolls 6 and 7 with the roving strand and it is the purpose of the present invention to maintain this core yarn under tension so that it will be fed between the rolls 6 and 7 in the same proportion as the roving strand. For this purpose a U-shaped guide or bearing 15 is secured to the upper face of the arm 8 adjacent its forward end by means of a bolt 16 which passes transversely through the crest of the U-shaped bracket and the arm 8. As illustrated in Figure 1, the U-shaped bracket or bearing is arranged with its parallel legs facing the front and rear of the spinning jack.

A short horizontally disposed floating shaft 17 formed with tension rollers 18 at its ends is received in the bracket or bearing 15 with the rollers resting upon the top rolls 7. The combined length of the shaft 17 and rollers 18 is such as to dispose the outer ends of these rollers coincident to the outer ends of the top rolls 7. It will be obvious that in practice one of the floating shafts 17, with its tension rollers, and one of the brackets 15 is provided for each adjacent pair of top rolls 7.

In the operation of the invention each of the core yarns are extended over one of the tension rollers 18, thence rearwardly around the coinciding top roll 7 and finally passed between the coacting rolls 6 and 7, parallel to the roving strands which also pass between each pair of coacting rolls 6 and 7. Due to the tension rollers 18 resting on the top rolls 7 the pressure of the tension rollers

against the top rolls will maintain tension on the core yarns. The core yarn, being thus tensioned and thereby retarded in its movement between the coacting rolls 6 and 7, is fed in the same proportion as the roving strands.

What is claimed is:—

1. In a device of the character described a support, a vertically arranged U-shaped guide attached thereto, a floating shaft received in the guide and thereby guided in a vertical direction, and a plurality of tension rollers carried by the floating shaft to rest against the upper feed rolls of a spinning jack frame and over each of which a core yarn is trained before the latter is engaged by the feed roll.

2. A tension device for spinning machines consisting of a substantially U-shaped member, a fastening for securing the member to part of a spinning machine, a shaft loosely mounted in the member and held against lateral movement by the parallel parts thereof, and a tension roller carried by the shaft and adapted to rest on one of the top rolls of the spinning machine and over which a core yarn is adapted to be trained, and cooperating with the top roll in maintaining tension on the core yarn.

Signed at Draper in the county of Rockingham and State of North Carolina, this 31 day of December A. D. 1927.

GILES A. LAY.