Nov. 24, 1936. J. L. MARSHALL 2,061,913

TWISTING ATTACHMENT

Filed July 2, 1935 2 Sheets-Sheet 1

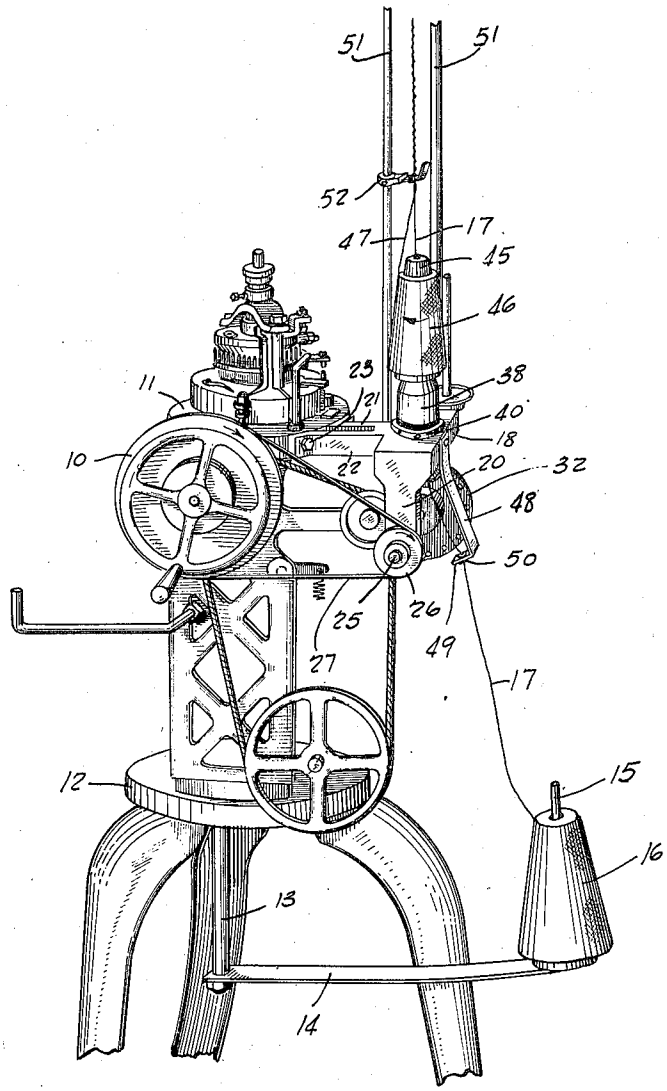


Fig 1

WITNESSES:
Jackson F. Mossmann
Anna M. Ward

INVENTOR:
JOHN LOYN MARSHALL
BY Joshua R. H. Hopps
ATTORNEY

Nov. 24, 1936. J. L. MARSHALL 2,061,913

TWISTING ATTACHMENT

Filed July 2, 1935 2 Sheets-Sheet 2

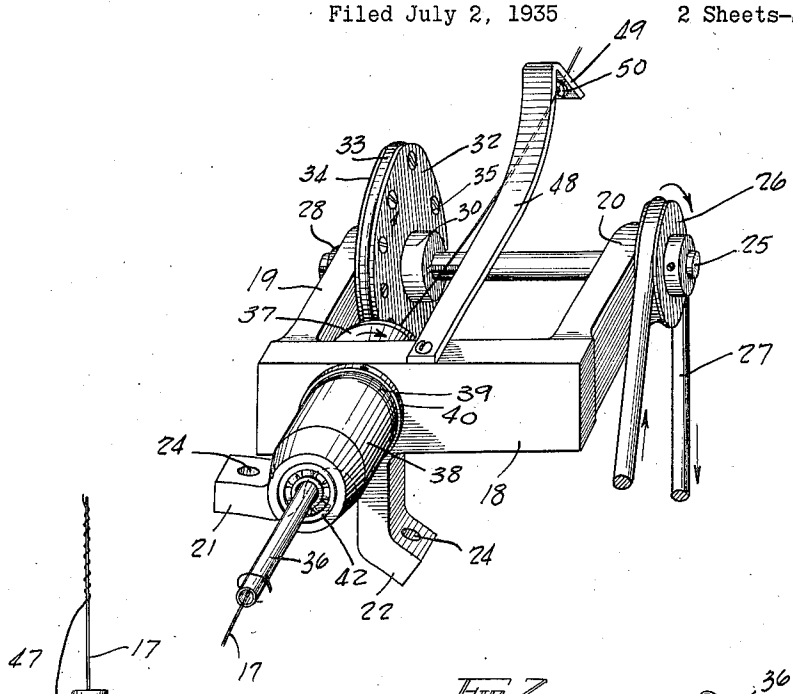


Fig 2

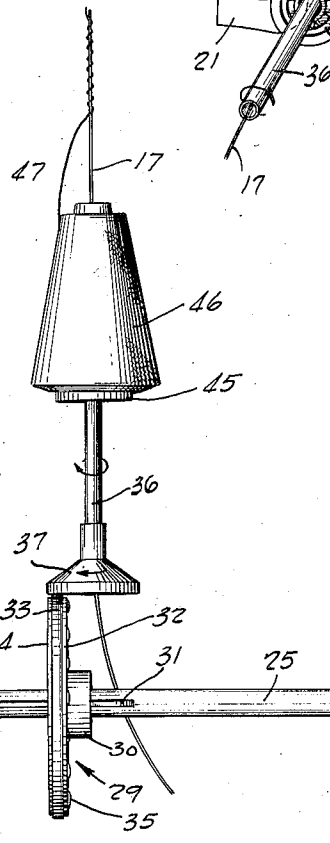


Fig 3

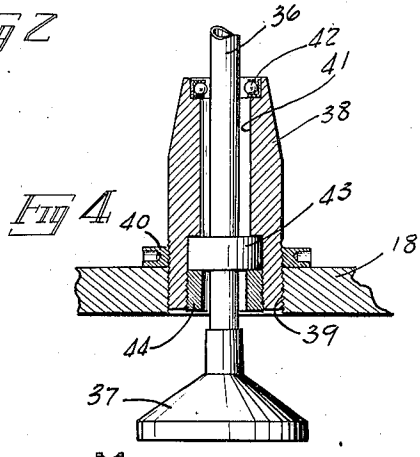


Fig 4

WITNESSES:
Jacob F. Mossmann
Anna M. Ward

INVENTOR:
JOHN LOYN MARSHALL
BY
Joshua R. H. Hopkins
ATTORNEY

Patented Nov. 24, 1936 2,061,913

UNITED STATES PATENT OFFICE

2,061,913

TWISTING ATTACHMENT

John Loyn Marshall, Chattanooga, Tenn., assignor to United Hosiery Mills Corporation, Chattanooga, Tenn., a corporation of Tennessee

Application July 2, 1935, Serial No. 29,490

6 Claims. (Cl. 66—125)

The present invention relates to the art of yarn twisting and is concerned primarily with the twisting of threads or plies of yarn together as they are being supplied to a knitting machine.

At the present time, a knitting machine of conventional design includes a source of yarn supply in the form of a cone from which a thread is led to the knitting instrumentalities. This invention recognizes that conditions may arise under which it becomes desirable to supply two or more plies of yarn to the knitting instrumentalities, that is, a thread made up of two or more single strands twisted together.

Accordingly, this invention has in view, as an important object, the provision of an attachment for knitting machines which includes a supplemental source of yarn supply together with mechanisms for twisting the supplemental yarn about a thread being supplied to the knitting instrumentalities.

Another object of the present invention is to provide an attachment of the character described which includes a mounting for a cone of yarn and through which mounting passes a thread being supplied the knitting instrumentalities, and driving mechanism for causing rotation of the cone.

A somewhat more detailed object of the invention is to provide in a knitting machine of the character noted, driving mechanism for causing twisting of the supplemental yarn, which mechanism is driven from the main driving shaft of a knitting machine.

Another important end in view is the provision of a twisting attachment which is readily adaptable for operative association with the various types of knitting machines now commonly availed of in commercial fields. In carrying out this idea in a practical embodiment, the invention contemplates an attachment which does not interfere with the regular operations of a knitting machine, and the use of which attachment may be dispensed with whenever circumstances dictate without impairing the efficiency of operation of the machine.

More particularly, an objective of the invention is to provide a twisting attachment in which a supplemental yarn is twisted about the thread being supplied the knitting instrumentalities with the twisting movement being evidenced by movement of the supplemental yarn rather than by rotation of the thread from the regular source of supply.

Various other more detailed objects and advantages will in part become apparent and in part be hereinafter stated as the description of the invention proceeds.

The invention therefore comprises a twisting attachment which includes a mounting for a supplemental yarn in the form of a cone, the mounting providing for the passage of the thread extending to the instrumentalities therethrough, together with mechanism for causing rotation of said cone, there being driving connections from the main driving shaft of a knitting machine. The attachment also includes means for assembling it with a knitting machine.

For a full and more complete understanding of the invention, reference may be had to the following description and accompanying drawings, wherein:

Figure 1 is a perspective view of a knitting machine which includes an attachment made in accordance with the precepts of this invention,

Figure 2 is a detailed perspective view of the attachment per se,

Figure 3 is a view in side elevation of a driving mechanism for a supplemental cone of yarn, and

Figure 4 is an enlarged detailed illustration in section showing the mounting of a shaft in the attachment.

Referring now to the drawings, wherein like reference characters denote corresponding parts, a well-known type of knitting machine is shown in Figure 1 and an attachment made in accordance with the present invention is shown as applied thereto. It is to be clearly understood that the instant invention is not to be limited to the particular form of knitting machine disclosed as it is obviously adaptable to other types of knitting machines.

Such a knitting machine ordinarily includes a main driving shaft on which is mounted a pulley designated 10. The knitting machine also includes a circular head 11 which carries the knitting instrumentalities. The frame of the knitting machine also includes a lower pedestal indicated at 12. The latter may carry a mounting for the main source of supply of yarn for the knitting instrumentalities and this mounting in the illustrated embodiment takes the form of a depending leg 13 from which extends an arm 14. Upstanding from the extremity of the latter is a stem 15 which carries a cone of yarn indicated at 16. A thread 17 extends from the cone 16 upwardly, where it is affected by the attachment of the present invention, ultimately reaching the knitting instrumentalities carried on the head 11.

Referring now more particularly to Figures 2 and 3, the illustrated attachment takes the form of a bracket 18 provided with a pair of depending legs 19 and 20 and also having connecting arms 21 and 22 which are availed of as a means for operatively affixing the attachment in position with respect to the knitting machine of Figure 1. Screw members are shown at 23 which extend through openings 24 in the arms 21 and 22 and into the head 11 to securely fasten the bracket in position. A shaft 25 is rotatably

mounted in the legs 19 and 20 and at one end this shaft carries a pulley 26 which is drivably mounted thereon. A driving belt 27 is shown as extending about the pulleys 10 and 26 to provide a driving connection between the main shaft of the knitting machine and the shaft 25. This shaft 25 is shown as provided with collars 28 for maintaining it in proper position in the legs 19 and 20. Adjacent to the leg 19 the shaft 25 is provided with a friction disc which is referred to in its entirety by the reference character 29. This disc 29 comprises a hub member 30 which is keyed to the shaft 25 as indicated at 31, and which carries a ring-like member 32. A friction member such as a leather disc is shown at 33 as being clamped between the ring 32 and a clamping member 34 by the fastening members at 35.

A tubular shaft 36 extends through the opening in the bracket 18 and at its lower extremity carries a disc-like driving member 37 that is in frictional engagement with the periphery of the disc 29. This driving member 37 is drivably carried by the shaft 36. The latter is rotatably mounted in the bracket 18 by a bearing housing 38. The latter includes a cylindrical part which is threaded at its extremity as shown at 39 and this threaded portion is screwed into a complemental threaded opening in the bracket 18.

A collar 40 is screwed onto the cylindrical portion 39 above the bracket 18 and serves to maintain the housing 38 in position. This housing 38 is provided with a bore 41 which is enlarged at its upper extremity to receive a bearing assembly at 42, this bearing assembly 42 being preferably of a "single" type. At the lower extremity of the housing 38, the bore 41 is also enlarged to receive another bearing assembly 43 which may include a double row of bearings. This lower bearing assembly 43 is maintained in position in the housing 38 and about the tubular shaft 39 by a retaining means in the form of a collar shown at 44.

Above the bearing housing 38, the shaft 36 carries a cone holder 45 and mounted on the latter is a supplemental source of supply of yarn as indicated at 46. A thread 47 extends from the latter and is twisted about the thread 17 incident to rotation of the cone 46. Depending from the bracket 18 is a yarn guide 48 having a flanged extremity 49 provided with an eye 50 through which the thread 17 passes.

The knitting machine shown in Figure 1 includes rods 51, one of which carries a guide at 52 through which the twisted yarn, made up of the threads 17 and 47, passes. This twisted thread is led to the knitting instrumentalities carried by the head 11 in a well-known manner which is not herein illustrated and described as it is not a part of this invention.

The mode of operation of the above described mechanism is believed to be obvious. However, it may be briefly outlined by noting that the thread 17 extends from the eye 50 in the guide 48 and up through the tubular shaft 36. The thread 47 from the cone 46 is twisted about the thread 17 incident to rotation of this cone 46 in the direction of the arrow on Figure 1. This rotation is caused by rotation of the shaft 36 that is effected by the driving connections including the members 37 and 29, shaft 25, pulleys 26 and 10 and belt 27, that drivably connect with the main driving shaft of the knitting machine.

While the invention has been illustrated and described as functioning to supply a so-called "double" thread to the knitting instrumentalities, obviously it is not to be so limited. The cone of yarn at 16 might well include a strand made up of two or more threads and the attachment of this invention would be effective to twist an additional thread about this strand as it passes through the mounting for the supplemental source of supply.

While the preferred specific embodiment of the invention is hereinbefore set forth, it is to be understood that I am not to be limited to the exact constructions illustrated and described because various modifications of these details may be provided in putting the invention into practice within the purview of the appended claims.

I claim:

1. A twisting attachment of the character described comprising a bracket, means for attaching the bracket to a knitting machine, a tubular shaft rotatably mounted in the bracket, a cone of yarn carried by said tubular shaft, legs depending from the bracket, a shaft carried by said legs, and driving connections between said last mentioned shaft and the said tubular shaft.

2. A twisting attachment of the character described comprising a bracket including depending legs and means for affixing the bracket to a knitting machine, a shaft carried by the said legs, a second shaft rotatably mounted in the bracket and drivably connected with the first mentioned shaft, said second mentioned shaft including a passage through which a thread may extend, and means for mounting a cone of yarn on said second mentioned shaft.

3. A twisting attachment of the character described comprising a bracket including depending legs and means for affixing the bracket to a knitting machine, a shaft carried by the said legs, a second shaft rotatably mounted in the bracket and drivably connected with the first mentioned shaft, said second mentioned shaft including a passage through which a thread may extend, a pulley on said first mentioned shaft, and a mounting for a cone of yarn on said second mentioned shaft.

4. A twisting attachment of the character described comprising a bracket, a shaft carried by the bracket, a tubular shaft also carried by the bracket and disposed at right angle to said first mentioned shaft, friction discs on each of said shafts, a bearing housing interposed between said second mentioned shaft and the bracket, and a mounting for the source of yarn of said second mentioned shaft.

5. A twisting attachment comprising a bracket including arms for attaching it to a circular head of a knitting machine, legs depending from the bracket, a shaft carried by the legs, a bearing housing carried by the bracket, a tubular shaft in the said housing, driving connections between the tubular shaft and the first mentioned shaft, means for mounting a cone on said tubular shaft above the bearing housing, and means for rotating said first mentioned shaft.

6. A twisting attachment of the character described comprising a bracket including depending legs and means for affixing the bracket to a knitting machine, a shaft carried by the said legs, a second shaft rotatably mounted in the bracket and drivably connected with the first mentioned shaft, said second mentioned shaft including a passage through which a thread may extend, means for mounting a cone of yarn on said second mentioned shaft, a driving pulley on said first mentioned shaft, and a thread guide carried by an arm depending from the said bracket.

JOHN LOYN MARSHALL.