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54 Apparatus for driving the spindles in a ring spinning machine.

57 The apparatus, which is of the tangential friction type, comprises a belt driven for sliding along the major axis of the apparatus and rotatively driving, with a set rotary speed, the spindles of the ring spinning machine, the belt being entrained between tension rollers and transmission rollers of which at least one is provided with a braking device.

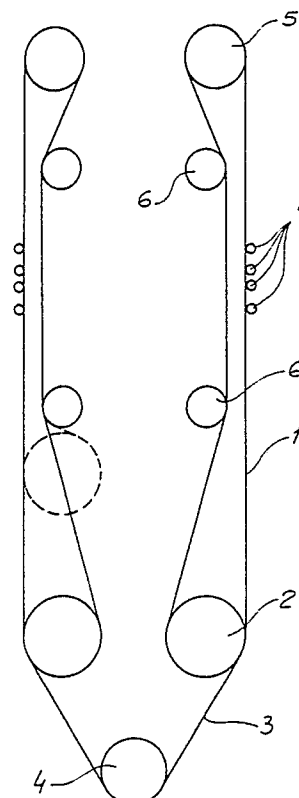


Fig. 1

BACKGROUND OF THE INVENTION

The present invention relates to an apparatus for driving, by a tangential friction, the spindles of a ring spinning machine.

As is known, ring spinning machines usually comprise a spindle driving system which turns the spindles by tangential friction through a belt extending along the major axis of the spinning machine.

By this driving system it is possible to facilitate the maintenance of the machine operating parts and improve the fitting characteristics of the ring spinning machines to the devices for automatically removing or doffing the thread-full tubes.

Also known is the fact that automatic doffing of the full tubes is presently carried out by articulated members which, with the ring spinning machine in a rest condition, transfer the full tubes from the related spindles to pin arranged on a belt which supports corresponding empty tubes.

In this connection it should be pointed out that the machine automatically provides, between tube and thread, a binding force for recovering winding of the thread on an empty tube.

It should be apparent that as an empty tube is arranged on a spindle, the thread being reeled is broken by a simple tension.

Even if this operation can be easily carried out in the case of cotton or other naturally occurring fibres, it is rather complex to be performed in the case of polyester fibres and the like: in fact, in this case, the ultimate tensile strength of the thread is much greater and, accordingly, entrains undesired tension and rotary forces on the spindles.

Moreover the spindle tangential driving belt can slip which could damage the driving belt and the mentioned tension and transmission rollers.

SUMMARY OF THE INVENTION

Accordingly, the present invention sets out to overcome the above mentioned drawbacks by providing an apparatus for driving spindles in ring spinning machines which can be locked during the full spindle doffing operation.

Within the scope of the above mentioned aim, a main object of the present invention is to provide a spindle driving apparatus which is very simple construction-wise and accordingly of small cost. Another object of the present invention is to provide such a spindle driving apparatus which is very reliable in operation.

According to one aspect of the present invention, the above mentioned aim and objects, as well

as yet other objects, which will become more apparent hereinafter, are achieved by a driving apparatus for driving spindles in ring spinning machines comprising a belt driven for sliding along a major axis of said ring spinning machine and adapted for driving with a given rotary speed said spindles by a tangential friction, characterized in that said belt is entrained between tension rollers and transmission rollers, at least one of which is provided with a braking device

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the driving apparatus for driving spindles in a ring spinning machine will become more apparent from the following detailed description of a preferred embodiment thereof, which is illustrated, by way of an indicative but not limitative example in the figures of the accompanying drawings, in which:

figure 1 shows a schematic diagram of the arrangement of two spindle driving belts.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference to the figures of the accompanying drawings, the driving apparatus for driving spindles in a ring spinning machine according to the present invention essentially comprises a belt 1 which can slide along the major axis of the machine.

More specifically, the belt 1 is driven by a driven roller 2 which is driven with rotary movement, through a flexible transmission member 3, by an electric motor 4, said belt being entrained between said driven roller and a transmission roller 5.

The belt is suitably tensioned or stretched by tension members 6 and is adapted for rotatively driving, by tangential friction, a plurality of spindles bearing corresponding tubes to be reeled.

On the transmission roller 5, in particular, is mounted a braking device, of conventional type, for locking the pulley thereon said belt 1 is entrained, and, accordingly, the belt itself during the overall doffing operation.

Thus, owing to the disclosed arrangement, the breakage of the thread, which occurs as the pantograph is displaced downward for replacing the tubes does not cause the spindles to undesirably rotate.

From the above disclosure it should be apparent that the disclosed apparatus fully achieves the intended aim and objects.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to several modifications and variations all of which will come within the spirit and scope of the appended claims.

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Claims

1- A driving apparatus for driving spindles in a ring spinning machine comprising a belt driven for sliding along a major axis of said ring spinning machine and adapted for driving with a given rotary speed said spindles by a tangential friction, characterized in that said belt is entrained between tension rollers and transmission rollers, at least one of which is provided with a braking device.

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2- An apparatus according to claim 1, characterized in that said belt is driven by a driven roller in turn driven, through a flexible member, by an electric motor, said belt being entrained between said driven roller and a transmission roller and being stretched by tension members.

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3- An apparatus according to claim 1, characterized in that said braking device is mounted on said transmission roller and is adapted for locking a pulley thereon said belt is entrained during a doffing operation of said spindles.

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