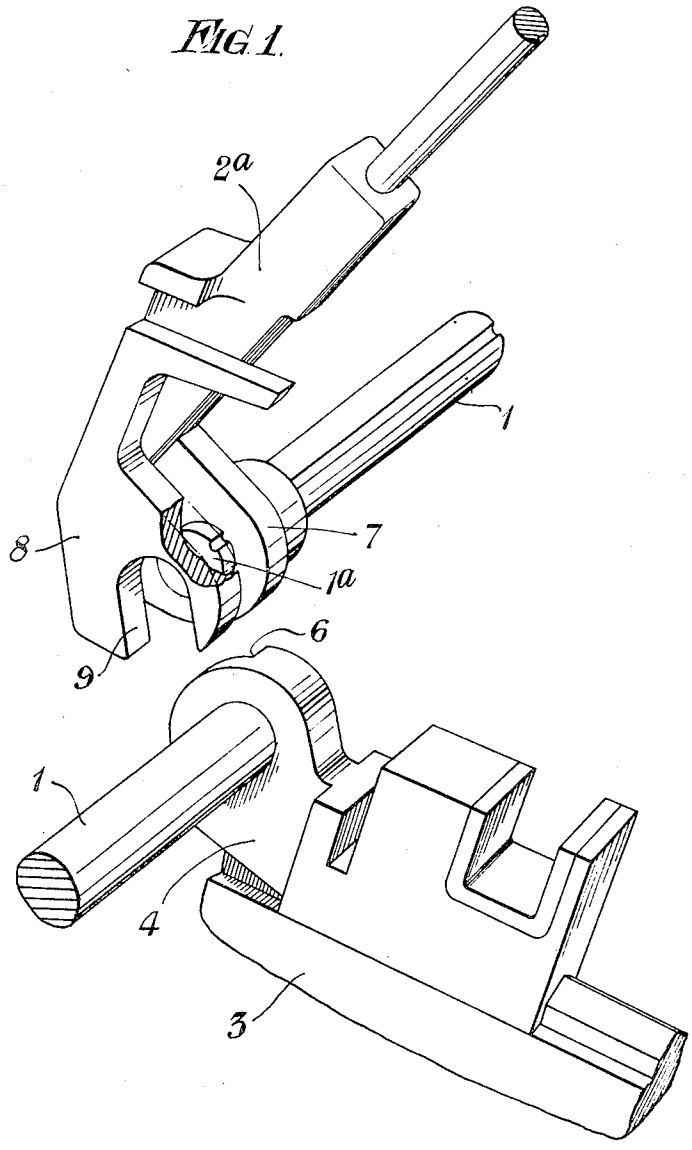
Feb. 27, 1951 J. NOGUERA 2,543,374

SPINNING AND PREPARATORY MACHINE

Filed March 26, 1948 2 Sheets-Sheet 1

FIG. 1.



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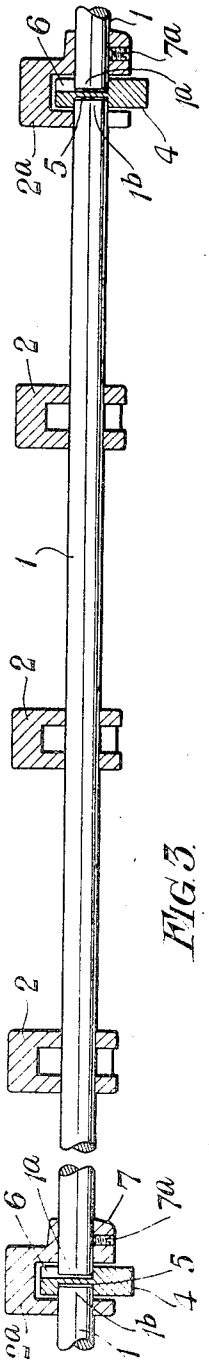


FIG. 3.

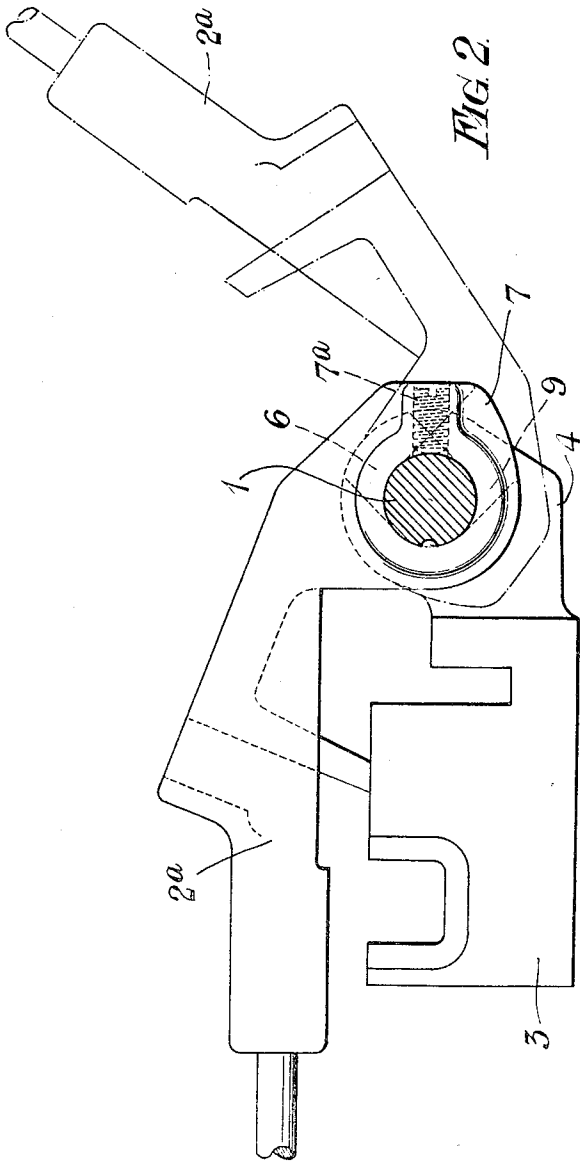


FIG. 2.

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SPINNING AND PREPARATORY MACHINE

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8 Claims. (Cl. 19—134)

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This invention relates to spinning and preparatory machines and is concerned with the provision of improved means for mounting the cap bars used in such machinery.

The purpose of the cap bars is to hold the top drafting rollers in their correct position in relation to the bottom rollers and to this end the bars are in the form of supports which are mounted over the bottom drafting rollers and provided with open ended slots into which the end pivots of the top rollers are fitted. The cap bars are usually assembled in units arranged side by side in series along the machine, each unit comprising three or four cap bars, or cap bar fingers as they are commonly termed. Thus each unit normally corresponds to six or eight spindles and covers the portion of the spinning machine between two roller stands. The three or four cap bars or fingers of each unit are normally screwed or pinned on a common steel rod, each end of which is inserted in an aperture in a back roller slide which thereby determines the position of the rod in relation to the rollers. The slides are usually provided with upstanding apertured portions for reception of the ends of the rods, each rod end being inserted into an aperture to a depth which is slightly less than half the thickness of the apertured portion of the slide so that adjacent ends of the rods of adjacent units can be inserted into the aperture in a common slide from opposite sides.

This design, which has been universal for many years, has the disadvantage that it is extremely awkward for any one cap bar unit to be removed from the machine. Theoretically the way to remove a cap bar unit would be to start at the end of the machine and remove the first slide and then the first cap bar unit, then the second slide and the second cap bar unit and so on. In practice however advantage is taken of the fact that there is some play between the ends of the rods and the apertures in the slides and by loosening the screws which hold one slide on its roller stand at one end of a given cap bar unit, the slide can be pushed backwards sufficiently to allow the cap bar rod of the unit to be removed. As will be understood, this is, however, a troublesome operation with many disadvantages such as disturbance of the bottom rollers which may become bent.

An object of the present invention is to provide an improved means of attaching cap bar units to back roller slides so that such units can be easily removed from the machine without the disadvantages above mentioned.

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According to the present invention, in means for detachably mounting cap bar rods, carrying cap bars or cap bar fingers, between roller slides in spinning and preparing machines, each supporting slide is adapted on one side to receive and hold a rod end and is formed on the other side with an open ended slot or groove, and a cap bar is adapted on one side also to receive and hold another rod end whilst being formed on the other side with an open ended slot or groove, the design of the cap bar and slide being such that they may be mutually engaged by entering the rod of each into the slot or groove of the other, whilst the said slots or grooves lie parallel to one another, until the rods are aligned, whereupon the cap bar and slide can be relatively angularly displaced about the aligned axes of the rods so that the said cap bar is held locked upon the slide.

In order that the invention may be clearly understood and readily carried into effect one embodiment thereof will now be described in detail with reference to the accompanying drawings wherein:

Figure 1 is a perspective view, partially broken away, illustrating the means for attaching adjacent ends of two cap bar rods to a back roller slide,

Figure 2 is a side elevation, partially in section and partially broken away showing a cap bar rod mounted on a back roller slide, a cap bar finger being shown in the operative position in full lines and in an open position in chain-dotted lines, and

Figure 3 is a sectional side elevation, partially broken away and to a reduced scale, illustrating a complete cap bar unit mounted between back roller slides.

In the embodiment illustrated, a series of cap bar rods 1, each carrying three cap bars 2 and an end cap bar 2*a*, are supported in axial alignment between back roller slides 3 of a spinning machine (not shown), each rod 1 with the cap bars 2, 2*a* supported thereon constituting a cap bar unit which co-operates with eight roller spindles. The slides 3, supporting the cap bar rods 1 at each end, are each provided with a rearwardly extending portion 4 having a cavity 5 in one side and an open ended groove 6 in the opposite side, the groove 6 being U-shaped in outline.

The cavity 5 is of a suitable size to receive one end 1*b* of a cap bar rod 1, and one end 1*a* of the next adjacent cap bar rod is engaged in the groove 6, the opposite end 1*b* of this second rod

being supported in a cavity 5 in the next slide 3 and so on as illustrated in Figure 3.

The end 1a of each rod 1 which is intended to engage in a groove 6 in a slide 3 is attached, by means of a set screw 7a, in an aperture in one arm 7 of a double-armed downwardly depending portion of the end cap bar 2a in such manner that the end 1a of the rod protrudes through the arm. The other arm 8 of the cap bar is provided with an open ended slot 9 which corresponds in outline to the groove 6 in the slide extension 4, the two arms 7 and 8 being so proportioned and arranged that they can embrace the aforesaid extension 4. In this position the protruding end 1a of the rod 1 engages in the groove 6 of the slide extension 4 and the slot 9 in the arm 8 engages over the next adjacent rod 1, the end 1b of which is supported in the cavity 5 in the slide extension 4.

As will be understood the cap bar 2a can only be attached to the slide extension 4 when the slot 9 in the arm 8 of the cap bar and the groove 6 in the extension 4 are in a predetermined position with respect to each other and similarly the cap bar can only be disengaged when in this position. The engaging position of the cap bar 2a is illustrated in Figure 1. When the cap bar 2a has been engaged over the slide extension 4 the cap bar can be rotated with the attached rod 1 into an operative position as shown in full lines in Figure 2, or into an open position as shown in chain-dotted lines, the adjacent end of the cap bar rod 1 being retained in position in the groove 6 of the slide in all positions of angular adjustment of the cap bar 2a other than the engaging and disengaging position.

With the construction according to the invention it is possible to remove any particular cap bar unit by rotating the end cap bar 2a into the disengaging position with respect to the adjacent slide and the complete unit can then be taken out, the opposite end of the rod being withdrawn from the cavity in the next slide in which it is supported.

The disengaging and engaging position is arranged intermediate the normal working position and the fully open position of the cap bar which latter is required for cleaning and scouring the machine. Thus in both these two positions the cap bar will remain firmly attached between the slides.

I claim:

1. Means for detachably mounting cap bar rods, carrying cap bars between roller slides in spinning and preparing machines wherein each supporting slide is adapted on one side to receive and support a rod end and is formed on the other side with an open ended groove, and a cap bar is adapted on one side also to receive and hold another rod end whilst being formed on the other side with an open ended slot, the design of the cap bar and slide being such that they may be mutually engaged by entering the rod end supported by the slide into the slot of the cap bar and the rod end held by the cap bar into the groove in the slide, whilst the said slot and groove lie parallel to one another, until the rods are aligned, whereupon the cap bar and slide can be relatively angularly displaced about the aligned axes of the rods so that the said cap bar is held locked upon the slide.

2. Means as claimed in claim 1 wherein the slides for supporting the cap bar rods are each formed with a rearward extension having an aperture in one side to receive and position a rod end and an open ended groove in the opposite side to receive the end of the next adjacent rod.

3. Means as claimed in claim 2 wherein the rod end which is to be entered into the said groove is secured in and extends through an aperture in one arm of a double-armed depending portion of a cap bar, the other arm of said bar being formed with an open ended slot having a shape similar to the shape of said groove, the arrangement being such that the double-armed portion can embrace the slide extension so that the slot in one arm can engage over a rod end positioned in the aperture in said extension and the rod end held in the other arm of said cap bar can engage in the groove in said extension.

4. In a spinning and preparing machine, means for detachably mounting, between roller slides, cap bar rods carrying cap bars, said means comprising rearward extensions on said slides each said extension being adapted on one side to receive and support a rod end so that the said rod end is free to rotate and move axially relatively to the extension and on the other side being provided with an open ended groove, and end cap bars each adapted on one side to receive and hold another rod end whilst being formed on the other side with an open ended slot, the design of said end cap bars and slide extensions being such that an end cap bar and slide extension can be mutually engaged by entering the rod end supported in said extension into the slot in the cap bar and at the same time entering the rod end held by the cap bar into the groove in the extension, whilst said slot and groove lie parallel to one another, until the said rods are aligned, whereupon the cap bar and slide can be relatively angularly displaced about the aligned axes of the rods so that the said cap bar is held locked upon the slide extension.

5. In a spinning and preparing machine, means for detachably mounting, between roller slides, cap bar rods carrying cap bars, said means comprising rearward extensions on said slides, each said extension having an aperture in one side to receive a rod end and having an open ended U-shaped groove in the other side, and end cap bars each having a rear double-armed dependent portion, one of said arms being formed with an aperture in which another rod end is secured so as to project between the arms and the other said arm being formed with an open ended slot having a shape similar to that of the said groove, the arrangement being such that the double-armed dependent portion of an end cap bar can be caused to embrace a slide extension by entering the rod end positioned in the said extension into the slot in the one dependent arm of the cap bar and at the same time entering the rod end which extends through the other said dependent arm of the cap bar into the groove in the slide extension whilst said slot and groove lie parallel to one another, until the said rods are aligned, whereupon the cap bar and slide can be relatively angularly displaced about the aligned axes of the rods so that the said cap bar is held locked upon the slide extension.

6. Means as in claim 4 in which the said slot and groove are so arranged that they will lie parallel to one another for the engagement and dis-engagement of an end cap bar and a slide extension when the said cap bar is in a position of angular adjustment in relation to the said slide which is intermediate the normal

working position and the fully open position of said cap bar.

7. In a spinning and preparing machine having a plurality of pairs of top and bottom co-operating drafting rollers, slides for supporting said bottom rollers, cap bar rods carrying cap bars for supporting said top rollers, rearward extensions on said slides, each said extension having an aperture on one side to receive and position a cap bar rod end and having an open ended groove on the other side, and end cap bars each adapted on one side to receive and hold another cap bar rod end whilst being formed on the other side with an open ended slot of substantially the same shape in outline as the groove, the arrangement being such that end cap bars and adjacent slides can be mutually engaged by entering the rod end supported in a slide extension into the slot in an end cap bar and at the same time entering the rod end held by the said cap bar into the groove in the extension whilst said slot and groove lie parallel to one another and then, when said cap bar rods are aligned, relatively angularly displacing them about their aligned axes so that the end cap bar is held locked upon the slide extension.

8. For use in a spinning and preparing machine having a plurality of pairs of drafting rollers, the rollers of each pair being superposed one above the other and the lower rollers being supported in a slide, means for detachably mounting cap bar rods carrying cap bars for supporting the upper rollers, said means comprising rearward extensions on said slides each said extension being adapted on one side to support a rod end so that the said rod end is free to rotate and move axially relatively to the extension and on the other side being provided with an open ended groove and end cap bars each adapted on one side to receive and hold another rod end whilst being formed on the other side with an open ended slot, the design of said end cap bars and slides being such that an end cap bar and slide extension can be mutually engaged by entering the rod end supported in said extension into the slot in the cap bar and at the same time entering the rod end held by the cap bar into the groove in the extension, whilst said slot and groove lie parallel to one another, until the said rods are aligned, whereupon the cap bar and slide can be relatively angularly displaced about the aligned axes of the rods so that the said cap bar is held locked upon the slide extension.

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