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DRAFTING MECHANISM IN SPINNING OR LIKE MACHINES

Filed March 26, 1948

2 Sheets-Sheet 1

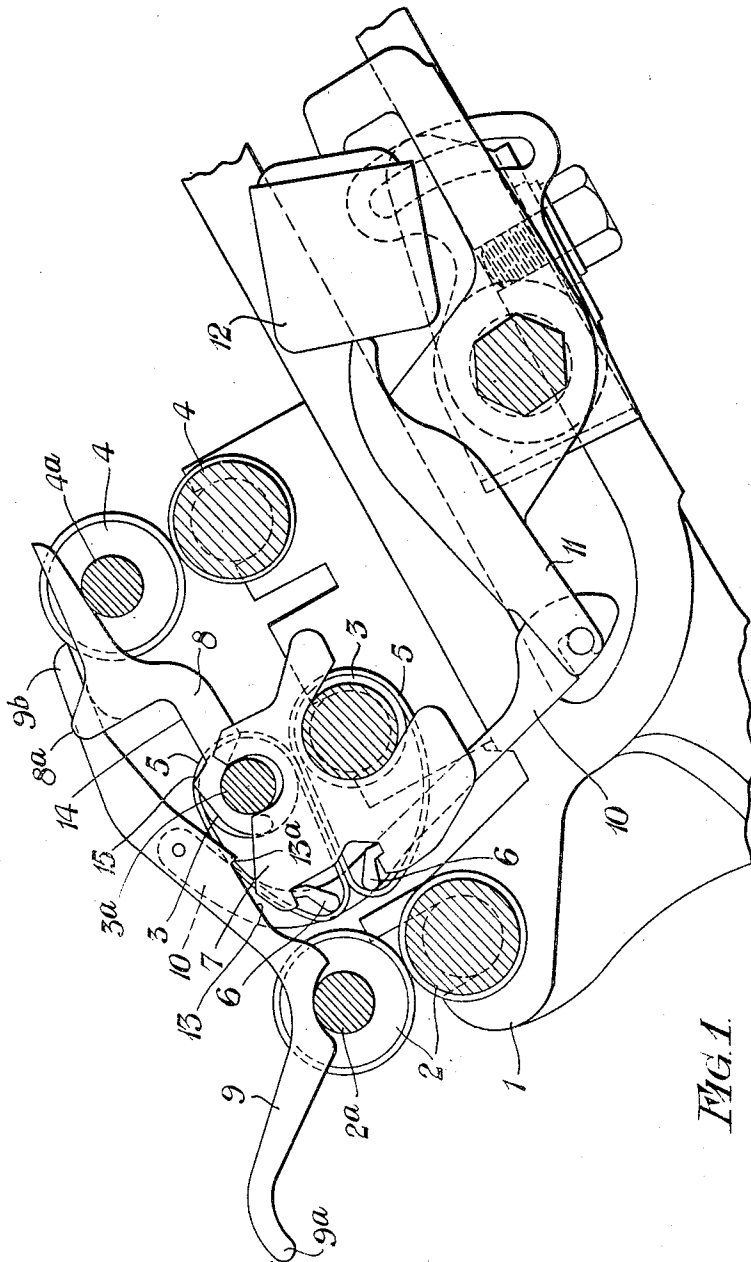


Fig. 1

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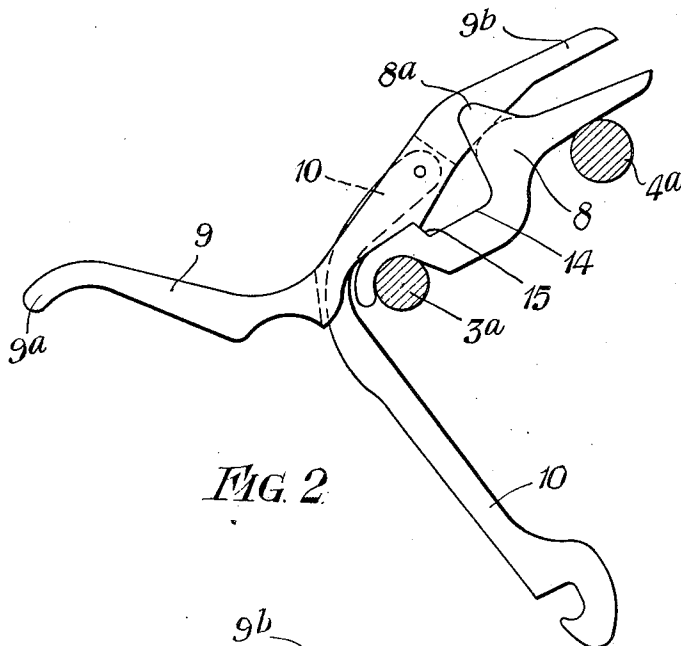


FIG. 2

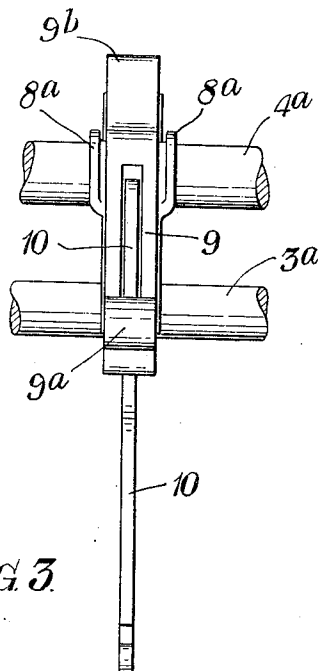


FIG. 3

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DRAFTING MECHANISM IN SPINNING OR
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5 Claims. (Cl. 19—137)

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This invention relates to drafting mechanism in spinning and like machines having a plurality of consecutive pairs of drafting rollers and is concerned with the provision of an improved device for weighting the top drafting rollers in such mechanism.

The invention is particularly applicable to machines employing three or more consecutive pairs of drafting rollers, in which machines it becomes occasionally necessary during operation thereof to remove the top front roller. Such removal is, for example, necessitated in a spinning machine when an "end" or yarn is broken and the untwisted textile material wraps around the top front roller to form what is usually called a roller lap. In existing spinning machinery it is often the practice to weight all the top drafting rollers in common with the aid of a single weighting hook, there being saddles which bear upon the rollers and distribute the loading weight among them. With such an arrangement, when the top front roller is to be removed, the weighting on all the top rollers has to be relieved, and this in practice presents a disadvantage for the reason that the unweighted rollers may lag or stop with the result that a large accumulation of textile material is formed between the rollers. This accumulation causes loss of time after the top front roller has been replaced, and it is an object of the present invention to provide a device which will permit removal of the top front roller without freeing the remaining top rollers from their weighting, so that these rollers continue to function normally during the entire period in which the front roller is removed, thus ensuring a consequent flow of textile material without accumulation at any point within the drafting field.

In accordance with the present invention, a roller weighting device comprises a first saddle which is adapted to bear on the top drafting rollers other than the front top drafting roller, a second saddle which is adapted to bear on the front top drafting roller and upon the said first saddle and means for transmitting a weighting pressure to said second saddle, the device being so arranged that the said second saddle can be rearwardly displaced from its operative position, to free the top front drafting roller to a position in which it can be retained by said first saddle and in which it can continue to apply weighting pressure to said first saddle.

In order that the invention may be clearly understood and readily carried into effect one embodiment thereof will now be described in de-

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tail with reference to the accompanying drawings wherein:

Figure 1 is a side elevation, partially in section, illustrating the saddle arrangement in the position in which weight is applied to three consecutive top drafting rollers, the roller stand being partially broken away.

Figure 2 is a side elevation illustrating the position of the saddle arrangement when weight is applied only to the middle and rear top drafting rollers, the end pivots only of these rollers being shown in section, and

Figure 3 is an end elevation according to Figure 2.

In the constructional form illustrated, the invention is applied to a drafting roller stand 1 having three pairs of drafting rollers 2, 3 and 4. The middle drafting rollers 3 are fitted with a pair of endless belts 5 in accordance with the well known Casablancas system, the loop of the belts 5 being formed into a nip adjacent the front drafting rollers 2 by tensor members 6 carried by a cradle 7 supported on the rollers 3.

A first saddle 8 engages the end pivot 3a of the top roller of the intermediate pair 3 and also the end pivot 4a of the top roller of the rear pair 4 and a second saddle 9 engages the end pivot 2a of the top roller of the front roller pair 2 and also the first mentioned saddle 8.

At its front end the saddle 9 is provided with a handle 9a by which it can be grasped and moved out of engagement with the end pivot 2a of the front top roller 2, and at the rear end the saddle 9 is formed with a nose 9b which engages the saddle 8 between the upstanding guide portions 8a. The saddle 9, at about one third of its length from the nose 9b, has pivotally secured to it a weighting hook 10. The hook 10 is substantially L-shape, the longer arm being arranged to depend downwardly and engage a lever 11 which is operatively connected to a weighting mechanism 12 mounted on the roller stand 1.

The under surface of the saddle 9 is cut away to provide a transverse recess 13 having a rear shoulder 13a which is located in a plane approximately at right angles to the under surface of the saddle 9. A transverse recess 14 having a front shoulder 15 is formed in the upper surface of the saddle 8 in that part which is normally located between the intermediate drafting rollers 3 and the point at which the nose 9b of the saddle 9 bears upon the saddle 8.

When the front roller 2 is in position and the drafting mechanism is functioning normally, as illustrated in Figure 1, the hook 10 applies

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weighting pressure to the saddle 9 which in turn applies weighting pressure to the front top roller 2 and also to the saddle 8, which latter therefore applies a weighting pressure to the intermediate and back top rollers 3 and 4. In this working position the shoulder 13a on the saddle 9 is slightly in front of the top intermediate drafting roller 3 and out of contact with the saddle 8. When now it is desired to remove the top front roller 2, the end 9a of the saddle 9 is grasped and the saddle is pushed backwards over the top of the saddle 8 out of engagement with the end pivot 2a of the top front roller 2 and into the position illustrated in Figure 2 in which the shoulder 13a of the saddle 9 engages behind the shoulder 15 of the saddle 8. In this way the roller 2 can be removed whilst the weighting pressure is continuously maintained on the saddle 8. It will be appreciated that the saddle 9 will have to be lowered slightly after it has been moved to the rear to enable the shoulders 13a and 15 to engage so that the distribution of the weighting pressure between the intermediate and back rollers 3 and 4 will be different from normal when the saddle 9 has been moved to the rear. This however is of no consequence because during the time the top front roller 2 is removed no yarn is in fact being made.

It will of course be understood that the invention is applicable to multiple drafting roller stands in which more than three pairs of drafting rollers are employed.

I claim:

1. A roller weighting device for drafting mechanism in spinning and like machines having at least three consecutive pairs of drafting rollers, said device comprising a first saddle adapted to bear on the top drafting rollers other than the front top drafting roller, a second saddle adapted to bear on the front top drafting roller and upon the said first saddle and being capable of rearward displacement to free said front top drafting roller, means for transmitting a weighting pressure to said second saddle and means on each said saddle which can be inter-engaged, when said second saddle has been displaced rearwardly to free the top front roller, whereby said second saddle continues to apply weighting pressure to said first saddle when in said rearward position.

2. A roller weighting device for drafting mechanism in spinning and like machines having at least three consecutive pairs of drafting rollers, said device comprising a first saddle adapted to bear on the top drafting rollers other than the front top drafting rollers, a second saddle adapted to bear on the front top drafting roller and upon said first saddle and being capable of

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rearward displacement to free said front top drafting roller, a weighting member pivotally connected to said second saddle, the point of pivotal connection being so located that it lies behind the second top drafting roller when said second saddle has been rearwardly displaced, and abutting surfaces provided respectively on the top and bottom faces of the first and second saddles which surfaces can be inter-engaged, when the said second saddle is rearwardly displaced, so that the said second saddle is retained in said rearward position by the first saddle and continues to apply weighting pressure to said first saddle.

3. A roller weighting device as in claim 2 in which said abutting surfaces are in the form respectively of a rearwardly directed transverse shoulder on said first saddle and a forwardly directed transverse shoulder on said second saddle.

4. A drafting mechanism in a spinning and like machine comprising three consecutive pairs of drafting rollers, a first saddle adapted to bear on the middle and rear top drafting rollers, a second saddle adapted to bear on the front top drafting roller and upon said first saddle and being capable of displacement to a rearward position in which it bears only on said first saddle, a member pivotally connected to said second saddle for transmitting a weighting pressure thereto, the point of pivotal connection of said member being located so that it lies behind the middle top drafting roller when said second saddle is in said rearward position and means for retaining said second saddle in said rearward position.

5. A drafting mechanism as in claim 4 in which the weight transmitting member is substantially L-shaped, said member being pivotally connected adjacent the end of the shorter arm to said second saddle and being in operative engagement, adjacent the end of the longer arm, with a weighting device.

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