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(54) **Tensioner for condensing bags**

(57) The invention comprises an individual tensioner for each of the condensing bag (1) components of a spinning machine, which is connected detachably to the tu-

bular suction component (3) associated with the perforated bag (1) and which has a skid (7) that acts directly on said bag, transmitting thereto the tensioning force of an opposing means associated to the tensioner.

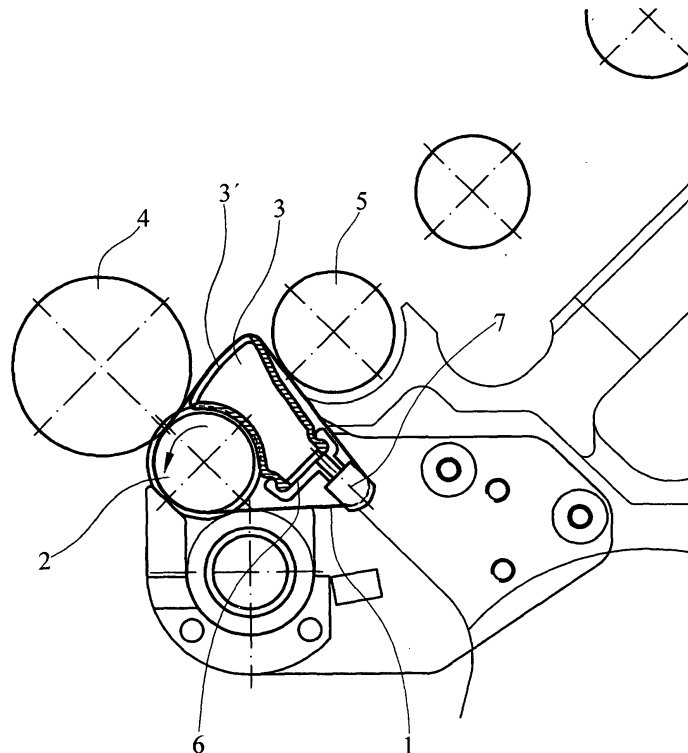


FIG.1

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Description

[0001] The present invention relates to a tensioner for condensing bags of the type used in spinning machines to achieve a greater parallel order of the fibres and thus reduce the hairiness of the yarn.

[0002] The condensing bags known at present are tensioned by bars provided with recesses that act on a plurality of successive bags, acting by gravity or by means of springs, giving slight tension to said bags. These tensioning rods generally act on six or eight perforated bags so that the spinning machines, which may have up to 1400 or more perforated bags, are divided into spans or sections of six or eight positions (spindles).

[0003] Because of the effect of manufacturing tolerances, the perforated bags do not all have exactly the same internal diameter. This tolerance effect is also affected by the work to which the bags and the components on which they rest are subjected, with an additional increase in the individual dimensions because of factors such as temperature, humidity, friction, etc.

[0004] At present, therefore, in the tensioning system using a common bar for a plurality of bags, it is only possible to tension two bags, which will be those with the smallest diameter since the others will not be tensioned. This also has the effect that the tension calculated for each perforated bag will be concentrated only on two of them, instead of on those forming the aforementioned group of six or eight bags on which each span of the device acts. In addition, depending on the position of the smallest bags in relation to the others, the tensioning rod may adopt an anomalous position even compromising the guide for the perforated bags produced by the recessed areas of said rod.

[0005] In addition, if due to use, dirt, etc., the bag is damaged, this may affect the position of the tensioning rod, impairing the correct operation of the remaining bags.

[0006] To overcome the aforementioned drawbacks the inventor has carried out tests and experiments that have led to the production of a tensioning device for condensing bags that overcomes the aforementioned drawbacks.

[0007] Basically, the tensioner according to the present invention is designed to connect directly the tubular guide component of the parallelising bag and the bag itself, also taking into account that simple and practical assembly should be achieved. Accordingly, the tensioner according to the present invention has an area for connection by a mere gripping action on the bag support and an area of direct tensioning at one end thereof. It therefore has a basically two-part structure and an intermediate spring. The parts may be manufactured by injection moulding of synthetic materials and are characterised in that one of them is designed to be connected by easy methods to the bag support and the other is inserted in the first, receiving the action of a spring and acting at the other end on the bag by its having lateral

guide tabs.

[0008] For better understanding of the invention the accompanying drawings illustrate, as an explanatory non-limiting example, a tensioner for condensing bags according to the present invention.

Fig. 1 shows diagrammatically a view in elevation illustrating a tensioner according to the present invention in the position for tensioning a condensing bag for fibres.

Fig. 2 shows a view in front elevation of the tensioner.

Fig. 3 shows a view in side elevation of the tensioner.

Fig. 4 shows a view in perspective of the tensioner.

[0009] As illustrated in the figures, according to the present invention the perforated fibre condensing bag indicated by reference numeral -1- rests on a rotating driving roller -2- which drags the bag by the tangency produced by the freely rotating roller covered with rubber -4- which acts on the belt as it passes over the driving roller - 2-. The belt -1- therefore has the same speed as the driving roller -2-.

[0010] A tubular component or static section -3- also receives the perforated bag, particularly on its upper grooved portion -3'-, the inside of said tubular component being connected to a vacuum source.

[0011] By means of this arrangement the fibres coming from the draw-frame -5- are deposited on the perforated bag -1-, an aerodynamic parallel order being achieved by the effect of rotation and suction, resulting in a yarn with minimal hairiness.

[0012] The tensioner according to the present invention is designed to tension the bag -1- individually, in other words, each of the condensing bags is allocated an individual tensioner. This is very important since the constant rotation of the perforated bag without sliding over the driving roller -2- with neither loss nor variation of speed is very important to achieve high yarn production speeds and high yarn quality. Thus, the tensioner according to the present invention improves the quality of the yarns very substantially compared with the state of the art.

[0013] The tensioner according to the present invention, in the embodiment shown in the example, has a body -6- fixed to a portion of the tubular component -3- and a tensioner skid -7- that acts on the bag -1-. An opposing means, for example, a spiral spring -11- between said parts -6- and -7- or another similar means produces suitable tensioning of the bag.

[0014] In the specific embodiment shown, the tensioner has a very simple structure using a body -6- moulded from a synthetic material that has end wings -8- and -9- designed to connect by nipping at one end of the tubular component -3-. The skid -7- slides along a central shaft -10- of the body -6- and receives the opposing action of the internal spiral spring -11- or other similar means. In the upper contact portion of the skid with the bag -1- said skid has lateral centering and retaining flanges -12- and

-12' which laterally centre the bag.

[0015] In a preferred embodiment, the upper portion of the skid -7- has small apertures -13- and -14-.

[0016] It will be understood that, although the invention has been described in relation to a practical embodiment, that embodiment is not limiting and variations may be introduced that do not depart from the essential nature of the invention, as defined in the accompanying claims.

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Claims

1. Tensioner for condensing bags, **characterised by** an individual tensioner for each of the condensing bag components of a spinning machine which is connected detachably to the tubular suction component associated with the perforated bag and which has a skid that acts directly on said bag, transmitting to the bag the tensioning force of an opposing means associated with the tensioner. 15
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2. Tensioner for condensing bags, according to claim 1, **characterised in that** it is formed by a part for connecting to the tubular support component of the bag and a skid that is guided in the tubular support component and receives the action of a bag tensioning intermediate spring. 25
3. Tensioner for condensing bags, according to claim 2, **characterised in that** the support for fixing to the tubular bag suction component comprises feet for producing an interference fit with said tubular component. 30
4. Tensioner for condensing bags according to claim 2, **characterised in that** the bag tensioning skid has a curved area of contact with the bag and lateral lugs for centring the edges of the bag. 35
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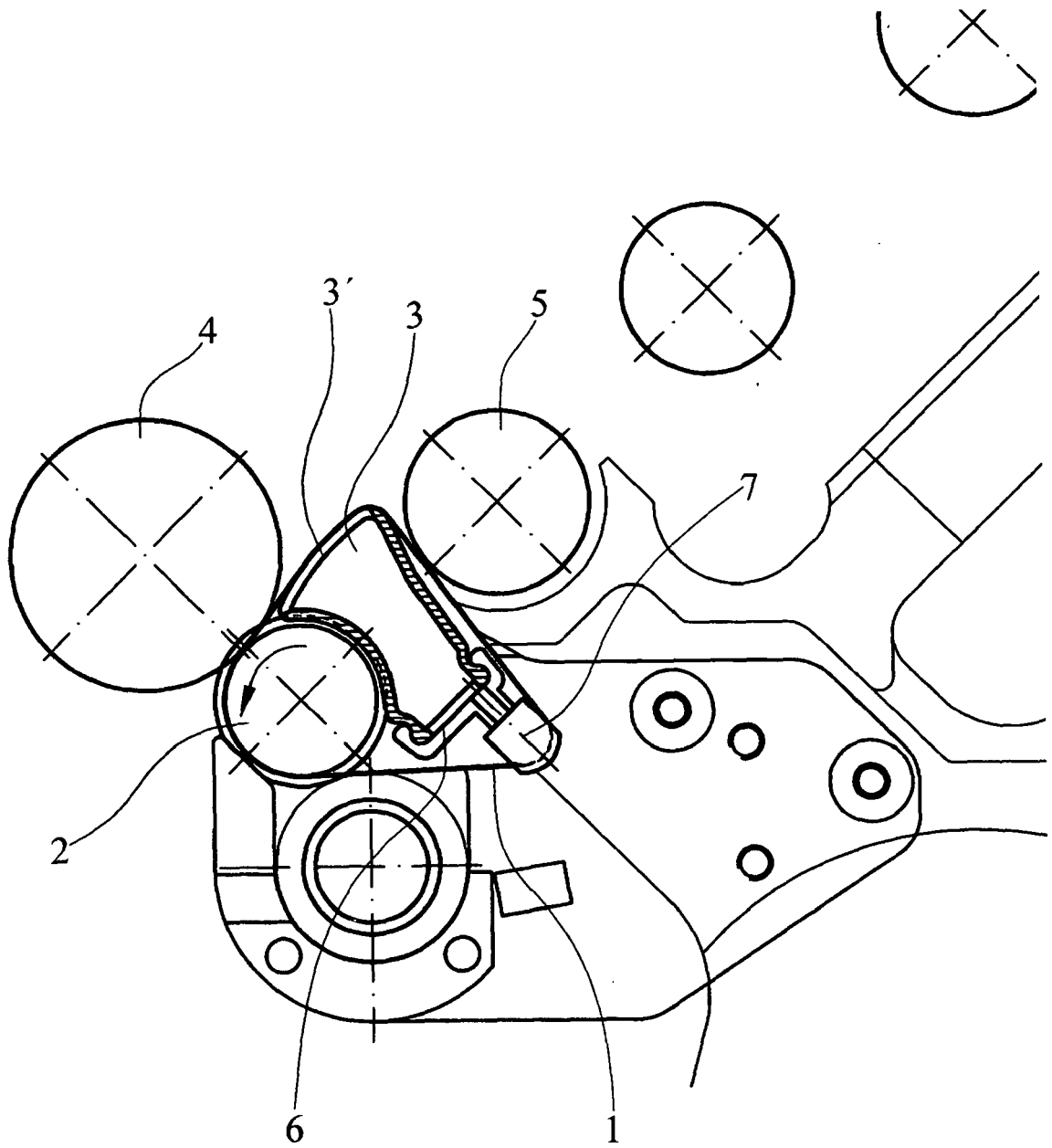


FIG. 1

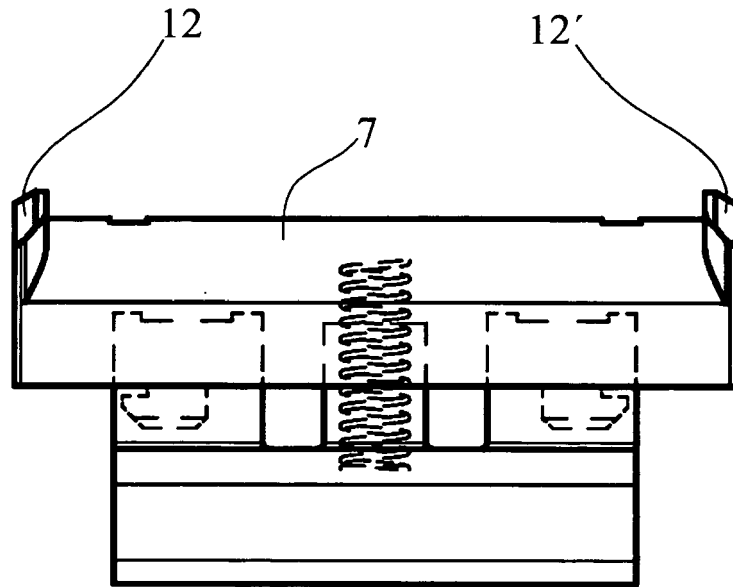


FIG.2

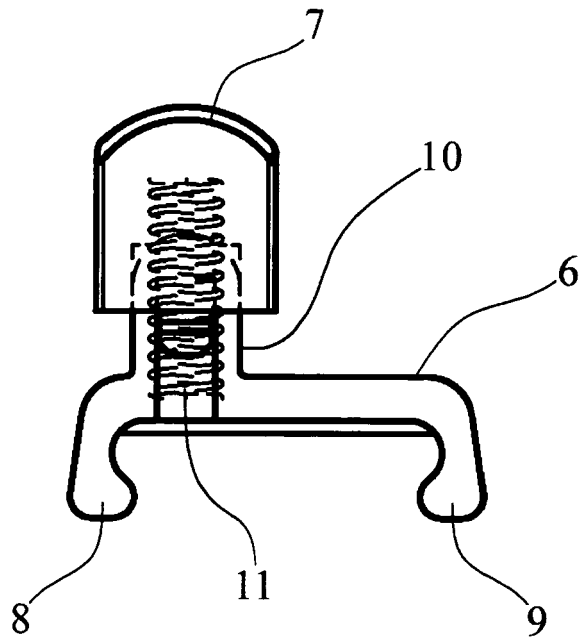


FIG.3

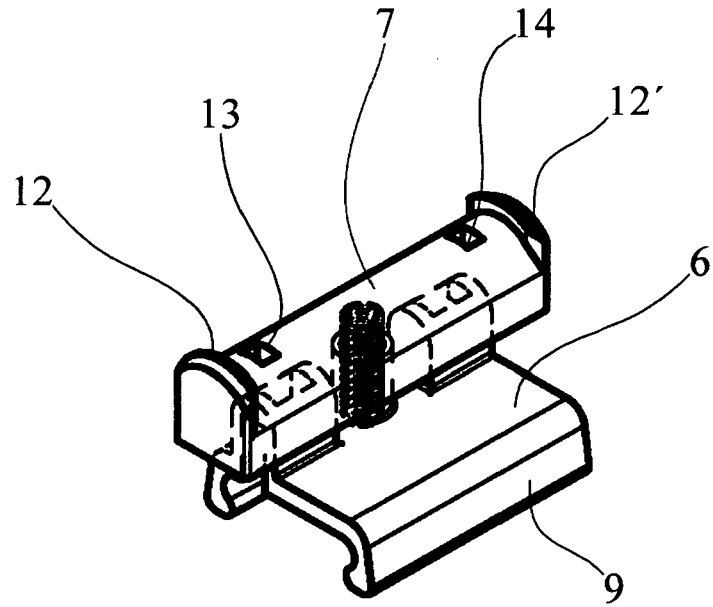


FIG.4