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PRESSURE APPARATUS FOR SPINNING MACHINES

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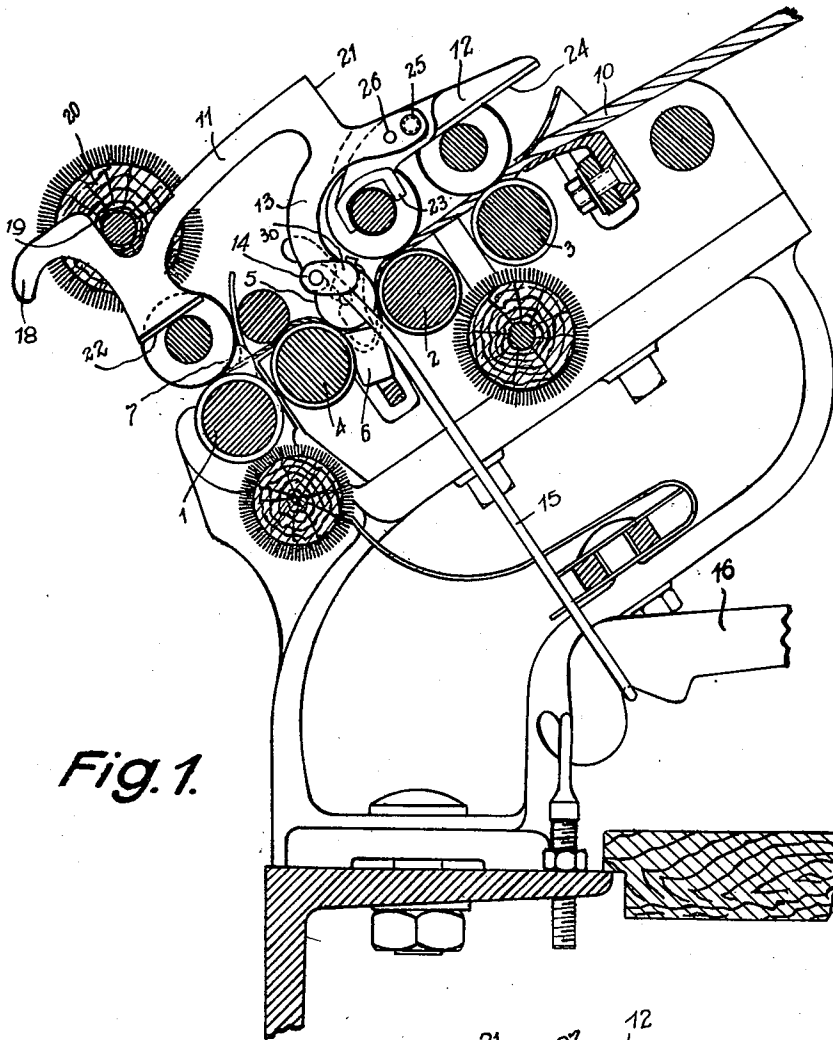


Fig. 1.

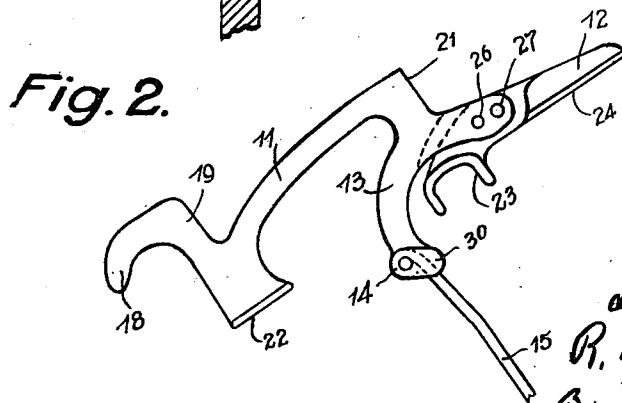


Fig. 2.

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PRESSURE APPARATUS FOR SPINNING MACHINES

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2 Claims. (Cl. 19—137)

In spinning machines with several pairs of rollers, it is necessary to load some of these rollers in such a way that they shall exercise on the sliver a pressure that shall hold the fibres properly and this is generally done by means of the so called pressure apparatus, which include a saddle or pressure piece that rests on the centre collars of the top rollers of the drawing mechanism and by means of a stay rod is connected to a lever arranged below the rollers and loaded by a weight. When a single saddle has to exercise pressure on the different pairs of rollers of a drawing mechanism, it is necessary that it should be arranged in such a way that the pressure exercised by the lower weight is transmitted in a convenient proportion to the different rollers and at the same time that it should allow the different separations of the rollers and a proper working of the drawing mechanism.

This invention provides a pressure apparatus for drawing mechanisms of textile slivers that allows of the loading by a single weight of different pairs of rollers of the drawing mechanism and that is especially suitable for the drawing mechanisms described in Patent No. 2,205,701 and other mechanisms that include means to accompany the sliver whilst the drawing is effected.

The invention consists in essence in making the pressure saddle formed by two members articulated to one another by means of a pin or articulation shaft, that is of a variable position in order to vary the relation of pressures. The front or principal member of the saddle rests on the first pair of rollers or exit rollers of the thread and has a downward extending branch to which there is articulated the stay rod connected to the lever loaded with the weight. On the back part this principal member is articulated to a secondary or rear member that rests on the two last pairs of rollers of the drawing mechanism, forming for the first of these two pairs a bearing that fits on the collar of the roller, whilst for the second pair it has simply a flat surface that rests on the collar of the roller.

The articulation between the front principal member and the rear member is effected by means of a pin, the position of which may be varied. To this end, both the front member as well as the rear member have various orifices and on graduating the apparatus according to the separation of the rollers, the articulation pin is placed in one or other of the orifices to vary the relation of transmission or distribution

of the pressure, with the object that notwithstanding varying the separation of the rollers, it shall exercise on each one of them the proper pressure.

When the pressure apparatus is applied to a drawing mechanism provided with a roller to conduct or accompany the fibres and with condensers of the sliver as per Patent No. 2,205,701, the top part of the front or principal saddle member is arranged sufficiently high to allow of the easy withdrawal of said conducting roller of the sliver and the condensers and at the same time to allow that when the clearer brush is run on this part of the saddle, it shall not touch the condenser nor the conducting roller. In addition, the articulation point of this principal saddle member with the stay rod remains situated approximately between the conducting rollers of two contiguous slivers and preferably this part of the saddle is made of such a width that it forms a stop for the ends of these conducting rollers, preventing their longitudinal displacement.

In the attached drawing there is shown as an example a drawing mechanism of a spinning machine of the type described in the previous mentioned patent, to which there has been applied a pressure apparatus according to this invention.

Figure 1 is a cross section of the whole of the drawing mechanism, and

Figure 2 is an elevation of the pressure saddle.

In the drawing, 1 represents the first pair of rollers or delivery rollers of the thread and 2, 3 represent the two last pairs of rollers, of which the latter 3 corresponds to the entrance of the sliver. These three pairs of rollers have to be duly loaded by means of the pressure apparatus, in such a way that they exercise on the fibres of the sliver an energetic pressure that duly holds the fibres in order to determine the drawing. The drawing mechanism includes also a pair of slip rollers 4 placed very close to the delivery rollers 1 and a conducting roller 5 of the sliver 10 that rests on the lower rollers of the pairs 2 and 4. Finally, the mechanism includes according to the former patent referred to, a reducer or condenser of the sliver 6 arranged below the conducting roller 5 and another condenser 7 arranged between the pairs 1 and 4.

The pressure apparatus according to this invention includes a double pressure saddle formed by two members articulated between themselves; a front one 11 and a back one 12. The front member 11 presents a branch 13 extending be-

tween the pairs of rollers 2 and 4 of the drawing mechanism and articulated in 14 with a stay rod 15 which in its turn is caught by its lower end in the lever 16 loaded with a weight in the usual way.

The front member 11 of the pressure saddle forms on its front end a hook 18 in order to be able to lift it easily by hand and immediately afterwards, a straight part 19 which serves as a rest for the journals of the clearer brush 20. Subsequently, this saddle member forms another plane or straight part 21 which serves as a rest for the journals of the clearer brush 20 when this is placed for clearing the top rollers of the back pairs 2, 3. Between both planes 19 and 21 the member 11 forms a relatively high bridge with the object that on sliding on these journals of the clearer brush in order to pass same from the plane 19 to 21 or vice versa, the bristles of this brush cannot touch the handle or top prolongation of the front condenser 7 or the framework of the conducting roller 5.

In order to exercise pressure on the front pair of rollers 1 this front saddle member presents a flat part 22 which rests on the collar of the top roller of pair 1.

The back member 12, articulated to the member 11 makes up simply a lever that has its articulation point in the middle part and in the front part forms a fork or bearing 23 to fit in the collar of the top roller of the pair 2 whilst subsequently it forms a flat surface 24 by means of which it rests on the collar of the top roller of pair 3. In consequence of this, the position of the whole of the pressure saddle 11, 12 is determined by the fitting of the fork or bearing 23 in the collar of the roller of the pair 2, whilst in view of the flat surfaces 22, 24, there may be varied at will the separation between the pairs of rollers 2 and 1 and 2 and 3 to duly regulate the mechanism according to the fibres being treated and in all cases, the saddle is duly adapted by the plane surfaces 22 and 24 on the rollers 1 and 3.

The articulation of the two parts 11 and 12 of the saddle is effected by means of a pin 25 the position of which may be varied in order to change the relation of the transmission of forces. To this end both member 11 as well as member 12 have two or more orifices 26, 27 and according as to whether the pin 25 is placed in the orifice 26 or 27 the distance or length of lever arm from the point of application 14 of the stay 15 to the point of articulation between the two halves 11, 12 is varied and consequently the ratio

of transmission of force is varied. This allows of the distribution of the pressure on the rollers, in such a way that notwithstanding the variations of separation between the rollers 2 and 3 the different pairs of rollers are always properly loaded.

When the pressure apparatus of this invention is used in a drawing mechanism according to the cited patent, such as is shown in the drawing, there is arranged on the end of the central arm 13 of the pressure saddle an expansion 30 which is of such dimensions that it occupies practically all the space that remains between the frameworks of two adjacent conducting rollers 5. In this way there is obtained, without complicating the apparatus, the convenient situation of these rollers 5 in such a way that they cannot be displaced axially as each one of them is limited on the one side by the support of the rollers and on the other by the expansion 30 of the arm 13.

I claim:

1. Pressure apparatus for textile sliver drawing machines having a plurality of pairs of drawing rollers including a front pair and two rear pairs arranged at a variable distance from said front pair, said apparatus comprising a double pressure saddle composed of a front saddle member and a rear saddle member, means for attaching a weight to said front member intermediate the ends thereof, said front member loading said front pair of rollers and said rear member loading said rear pairs of rollers, and pin means extending transversely of said members for pivotally interconnecting the same, said members being provided with means to vary the relation of the transmission of forces from said weight to said members in accordance with variations in distance between the front pair and the rear pairs of rollers, said last-named means being constituted by a plurality of alignable openings in each saddle member for the reception of said pin means in order to vary, in predetermined manner, the point of pivotal connection therebetween.

2. The apparatus as defined in claim 1, the means for attaching said weight consisting of a branch extending downwardly between the front and rear pairs of rollers, the end of said branch being laterally enlarged to provide a stop, whereby lateral displacement of a roller laterally adjacent said enlargement may be prevented.

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