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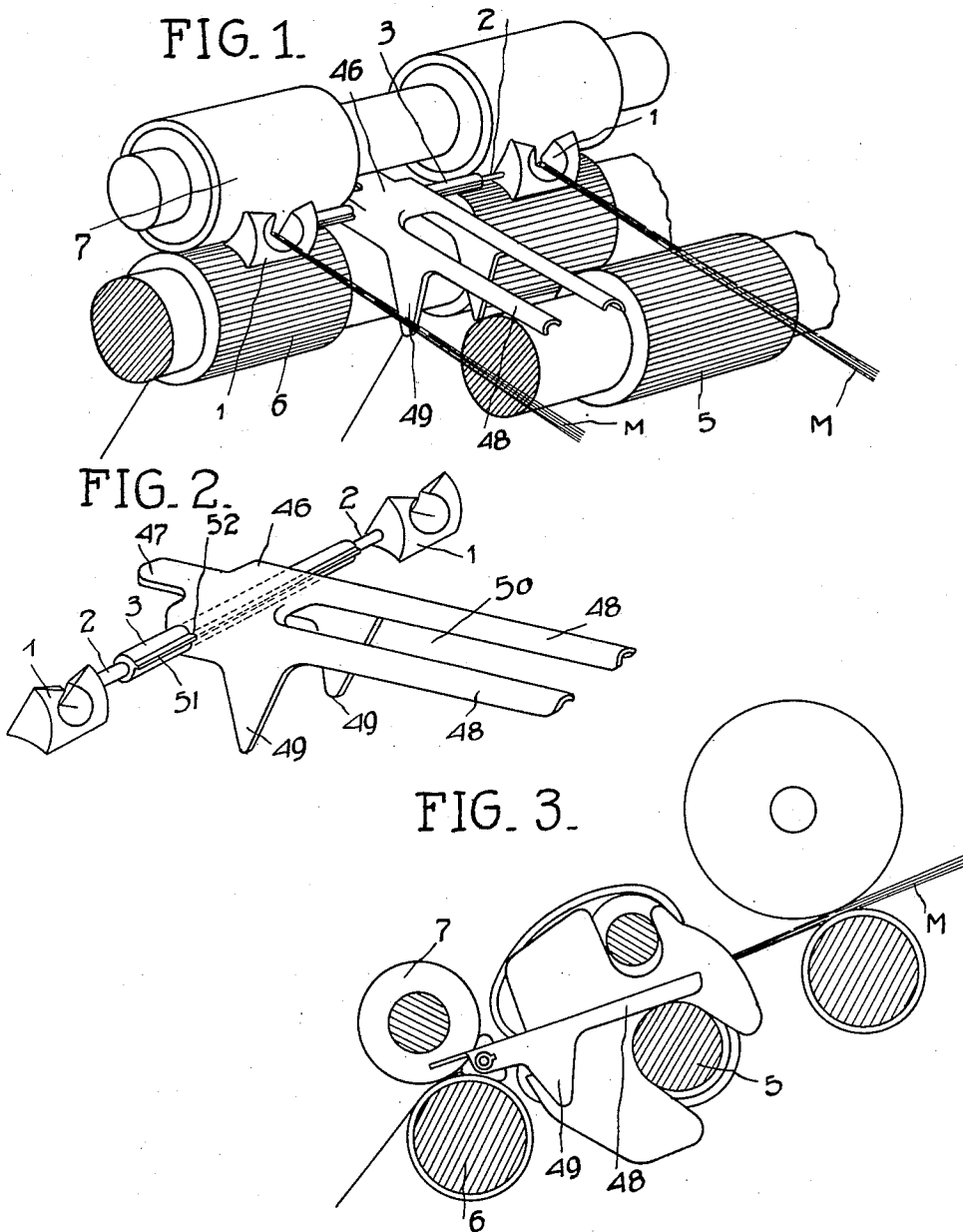
F. CASABLANCAS

1,992,121

CONDENSING OR REDUCING DEVICE FOR TEXTILE ROVINGS

Filed Aug. 20, 1932

2 Sheets-Sheet 1



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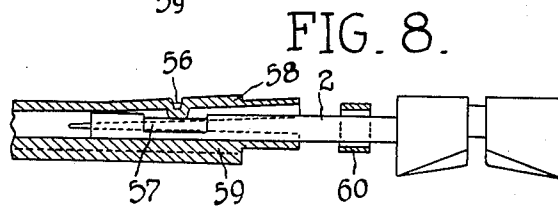
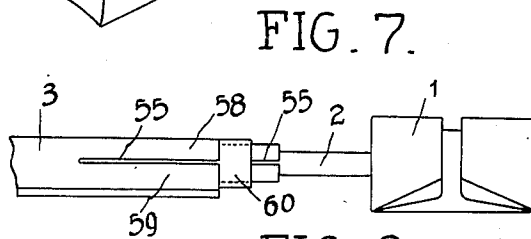
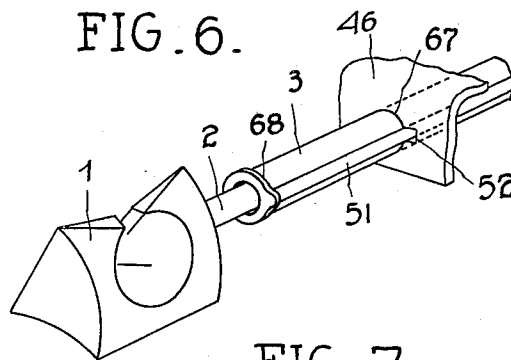
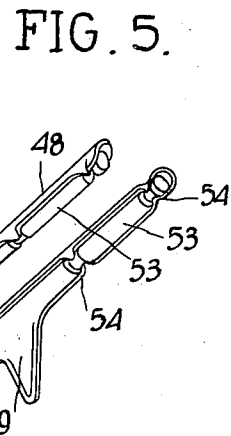
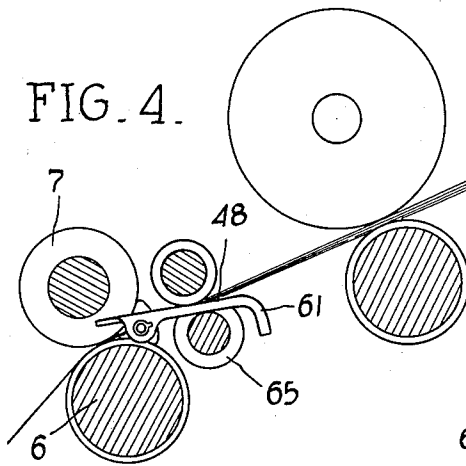
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CONDENSING OR REDUCING DEVICE FOR TEXTILE ROVINGS

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UNITED STATES PATENT OFFICE

1,992,121

CONDENSING OR REDUCING DEVICE FOR
TEXTILE ROVINGS

Fernando Casablancas, Sabadell, Spain

Application August 20, 1932, Serial No. 629,712
In Spain March 5, 1932

4 Claims. (Cl. 19—130)

This invention refers to the condensing or reducing devices for the textile rovings or slivers applicable to the drawing mechanisms in spinning machinery and constitutes an improvement in or modification of the subject matter of my co-pending applications Serial No. 440,517 and Serial No. 521,791.

Said co-pending applications refer to a roving reducer which is applicable to the drawing cylinders of textile rovings and is characterized by the feature that the piece in the form of a funnel which acts as reducer of the roving, is quite free without being coupled to any supporting member and rests solely on the bottom drawing cylinder. These reducers are connected together in twos corresponding to two adjacent drawing mechanisms and this union or coupling is effected in such a manner that each of the two reducers has freedom of movement in relation to the other so that each one of them may be able to adapt itself independently to the position of its respective roving.

The present invention relates to certain improvements which give the roving-reducer an arrangement that is much more practical and convenient to handle and which at the same time ensure the convenient positioning of the reducer in all cases, without the latter being able to fall when the top cylinder is withdrawn.

With these improvements, the handling of the reducer is facilitated, so that the operative can position it in the machine with ease and without the slightest danger that it will be incorrectly positioned. Moreover, the adaptation of the reducer to the angle formed between the drawing cylinders will always be ensured and, finally, it is provided that, when the operative withdraws the top drawing cylinder in order to clean it, the reducer will be absolutely prevented from falling to the front part of the machine by being dragged by the movement of the bottom drawing cylinder.

This invention essentially consists in permanently connecting the uniting tube of the reducers with a frame or retaining piece, preferably made of a stamping of light metal, which forms on the front part an extension or handle by which the operative can take hold of the reducer and place it in its position and also forms towards the rear part two branches or extensions which rest on the bottom intermediate cylinder and has downward projections which are normally at a very small distance from the bottom drawing cylinder and prevent the reducers from falling when the top drawing cylinder is withdrawn. This frame

or retaining piece has holes through which the tube for uniting the reducers passes, and both these holes and the uniting tube have a shape such that the reducers can move parallel to the cylinders but cannot rotate in relation to the retaining piece through more than the small angle which allows of the play existing between these pieces.

In the accompanying drawings there is represented a pair of reducers embodying the invention.

Fig. 1 is a perspective view of a pair of reducers placed in the working position in relation to the drawing cylinders and to the lower intermediate cylinder.

Fig. 2 represents on a large scale, also in perspective, a pair of reducers with their retaining piece.

Fig. 3 represents in cross-section the application of this reducer to an high draft mechanism with endless belts.

Fig. 4 is a similar section of an high draft mechanism with small slipping cylinders.

Fig. 5 represents a modification of the retaining piece as seen in perspective from the bottom.

Fig. 6 represents a detail and,

Figs. 7 and 8 represent respectively in a top plan and longitudinal section a method of mounting the reducers on a coupling tube which allows the reducers to be changed.

As described in said co-pending applications, each pair of reducers consists of two reducers 1 each of which carries a coupling rod 2 permanently fixed thereto and these two rods are coupled together by means of an exterior tube or sleeve 3.

The coupling between the rods and the tube is effected in such a manner that each of the rods has a certain amount of longitudinal play and can also rotate on its axis through a small angle so that each of the reducers can adapt itself with complete freedom to its corresponding pair of cylinders and take up exactly the position that corresponds to the position of the roving.

According to the present invention, the tube 3 which couples the pair of reducers 1 together is combined with a frame or retaining piece which, as a whole, is designated by the numeral 46. This retaining piece is preferably constructed of a stamping of light metal and in such a manner that it has sufficient rigidity without its weight being excessive, and presents two rearwardly directed branches 48 of a length that is sufficient to enable them to rest on the neck of the bottom

intermediate cylinder 5 and at the front part forms an extension 47 which constitutes a handle by which the operative can easily take hold of the whole of the two reducers and the retaining piece and position them in the spinning machine.

The two rear branches 48 of the retaining piece have between them a space 50 which is sufficient to enable the pressure-transmitting rod of the spinning machine, which transmits the pressure to the top cylinders of the drawing mechanism, to pass between them. In addition, the retaining piece 46 forms, on each side and at the inner part, extensions 49 which are adapted to limit the forward movement of the whole.

The coupling tube or sleeve 3 of the two reducers has a non-circular section and is connected with the retaining piece 46 by passing through holes made in the sides of the retaining piece so that the tube 3 can slip longitudinally with perfect freedom in relation to the retaining piece 46 but cannot rotate in relation to the latter.

In the drawings it is shown that the tube 3 has a rib 51 and that the holes 67 of the side faces of the frame 46 have, corresponding to this rib 51, a notch 52, but, for the same purpose, the tube 3 could be of a square, hexagonal or any other non-circular section and the holes 67 have a corresponding shape.

This non-circular section of the tube 3 and the corresponding shape of the hole 67 produces the result that the reducers remain approximately in the correct position in relation to the piece 46 and, therefore, on simply taking hold of this piece by the handle 47 and placing it in the spinning machine the reducers remain well positioned and adapt themselves to the drawing cylinders 6 and 7.

Once the tube 3 has been inserted in the holes 67 of the piece 46, the ends of this tube can be slightly flanged to form ridges or stops 68 (Fig. 6) which limit the movement of the frame 46 in relation to the tube 3, thus preventing this piece 46 from jumping from the tube 3 on to the rod 2 during working, since the slipping of the piece 46 off the end of the tube 3 is rendered impossible.

As may be seen in the drawings, in the working position the reducers 1 remain enclosed in the angle which is formed between the drawing cylinders 6 and 7 and the piece 46 rests with its rear branches 48 on the neck of the rear intermediate cylinder 5. The bottom projections 49 remain at a small distance from the bottom drawing cylinder 6 without touching it. In this position the reducers are quite free whilst being enclosed in the angle between the cylinders 6 and 7 and they can at the same time freely follow the movement of the rovings M.

When these reducers are applied to an high draft mechanism with belts or to a drawing mechanism with cylinders, the projections 49 remain near the bottom drawing cylinder 6 and, when the top cylinder 7 is withdrawn without interrupting the working of the machine, the cylinder 6 drags the reducers forward but the projections 49 meet this cylinder 6 and prevent the reducers from advancing and falling over the front part.

When the reducers are applied to an high draft mechanism with slipping cylinders, as shown in Fig. 4, the projections 49 may be omitted and the ends 61 of the branches 48 curved downwards. In this case, when the reducers run forward, the curved parts 61 meet the slipping cylinder 65.

The adaptation of the reducers 1 to the angle formed between the cylinders 6 and 7 is obtained in the first place by the friction of the bottom

cylinder 6 against the bottom faces of the reducers and is, to a certain extent, assisted by the friction between the rear branches 48 of the retaining piece and the neck of the bottom intermediate cylinder 5. When, owing to using a drawing mechanism in which the roving is horizontal or only slightly inclined or for any other reason, it is convenient to increase the force with which the reducers 1 are applied in the angle of the cylinders 6 and 7, small supplementary weights or masses 53 may, as shown in Fig. 5, be arranged in the ends of the branches 48. In Fig. 5, these weights are supposed to consist of pieces of wire or rod 53 of suitable material which have grooves 54 in their ends and the plate of the branches 48 engages in or is stamped into these grooves, so that it suitably confines the rods 53. Nevertheless, as may be understood, these weights could be arranged in any other suitable manner.

These weights increase the pressure which the branches 48 exert upon the intermediate cylinder 5 and, therefore, the propelling action that this cylinder develops on the piece 46 in order to apply the reducers 1 in the angle between the cylinders 6 and 7. By suitably regulating the weights 53, there can be obtained for each type of apparatus the suitable force for exactly applying the reducers to the drawing cylinders.

Figs. 7 and 8 represent a method of detachably coupling the rods 2 of the reducers with the coupling tube 3. For this purpose, the ends of the tube 3 have diametral cuts or slits 55 which divide them into two branches 58 and 59 that can be operated in order to allow the rod 2 to be removed. In one of these branches there is made a recess or depression 56 which forms a projection for the inner part of the tube, which projection engages in a notch 57 made in the coupling rod 2.

The two branches 58 and 59 of the coupling tube are kept closed by means of a ring 60 as shown in Fig. 7 and, when it is desired to remove the reducer 1, this ring 60 is disconnected and placed as shown in Fig. 8, and, by rotating the reducer 1 and the rod 2, the full part of the rod corresponding to the notch 57 raises the protuberance 56 and separates the branch 58 of the tube, so that the rod 2 with the reducer 1 can be removed. This ring 60 may form the ridge or stop for the purpose of preventing the piece 46 from escaping from the tube 3.

I claim:

1. In the reducers of textile slivers for machines provided with drawing cylinders and intermediate cylinders, a pair of reducers to rest upon the lower drawing cylinder, a sleeve for connecting the reducers to permit movement of the reducers with relation one to another, a frame, means carried by the frame for supporting the sleeve, rearwardly projecting arms formed in the frame to rest upon the intermediate cylinder, downwardly extending side members integral with said arms to limit the forward movement of the frame, and an outwardly projecting handle formed in the front of the frame to permit inserting or withdrawing the frame from the machine.

2. In the reducers of textile slivers for machines provided with drawing cylinders and intermediate cylinders, a pair of reducers to rest upon the lower drawing cylinder, a sleeve for connecting the reducers to permit movement of the reducers with relation one to another, a frame, means carried by the frame for supporting the sleeve, a pair of straight arms formed in the frame, weights fixed

to the arms to contact with the lower intermediate cylinder for causing friction between said weights and the lower intermediate cylinder, whereby the weights contribute to hold the reducers in the angle formed between the drawing cylinders, and means for limiting the forward movement of the frame formed integral therewith.

3. In the reducers of textile rovings for drawing mechanisms of the kind described provided with drawing cylinders and intermediate cylinders, a pair of reducers to rest upon the lower drawing cylinder, a retaining piece having a forwardly projecting handle to permit movement of the same by the operator, the said retaining piece having two straight branches projecting rearwardly therefrom which rest upon the lower intermediate cylinder, stops carried by said retaining piece to limit the forward movement of the retaining piece and the pair of reducers, and a coupling tube of non-circular cross section connected to said pair of reducers, the said retaining piece having side walls cut to provide openings corresponding in shape to the cross section of said

coupling tube to insert the same, whereby the coupling tube can move longitudinally with entire freedom but cannot rotate in relation to the retaining piece.

4. In the reducers of textile rovings for drawing mechanisms of the kind described provided with drawing cylinders and intermediate cylinders, a pair of reducers to rest upon the lower drawing cylinder, a retaining piece having a forwardly projecting handle to permit movement of the same by the operator, the said retaining piece having two straight branches projecting rearwardly therefrom which rest upon the lower intermediate cylinder, stops carried by said retaining piece to limit the forward movement of the retaining piece and the pair of reducers, and a coupling tube connected to said pair of reducers and mounted in said retaining piece, the said coupling tube having ridges at its ends to limit the movement of the retaining piece, and to prevent the same from disengaging itself from the coupling tube.

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