

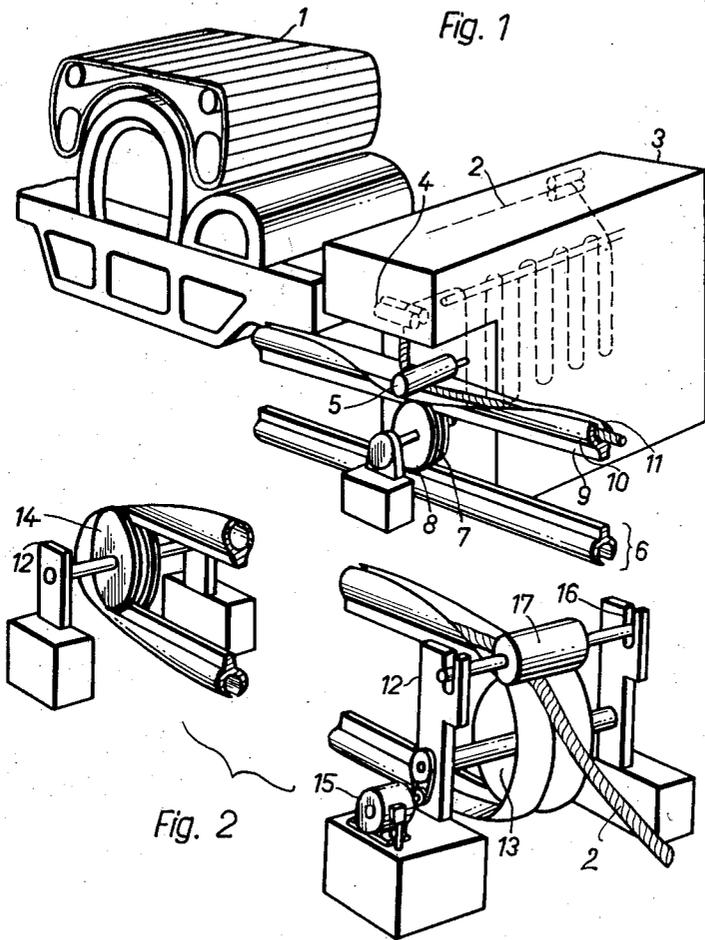
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APPARATUS FOR TRANSPORTING SLIVERS

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APPARATUS FOR TRANSPORTING SLIVERS

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The present invention relates to an apparatus for transporting slivers in spinning mills.

It is an object of the invention to provide an apparatus which avoids depositing slivers discharged by a processing machine in cans for transporting the slivers to another machine for subsequent treatment. The apparatus according to the invention has a sliver receiving station where the sliver is placed coaxially into a longitudinally slit endless hose forming a conveyor belt, and a sliver discharging station where the sliver is removed from the hose. The conveyor belt has a finlike base portion extending longitudinally of the belt and two flaps extending from said base portion to form a hose which is longitudinally split along a line which is diametrically opposed to said base portion. The base portion is on the inside of the endless conveyor belt loop and the hose opens, i.e. the flaps spread apart, if the belt travels around a reversing roller of the conveyor so that the sliver may be received in or discharged from the hose. Opening the hose can be assisted by a roller resting on the opened hose opposite and parallel to the reversing roller. Opening of the hose can also be effected at parts of the conveyor other than the parts where the direction of movement of the conveyor belt is reversed, by providing a roller supporting the base portion of the belt and a roller placed parallel and opposite to said roller on the opened hose portion of the belt.

The novel features which are considered characteristic of the invention are set forth with particularity in the appended claims. The invention itself, however, and additional objects and advantages thereof will best be understood from the following description of an embodiment thereof when read in connection with the accompanying drawing wherein:

FIG. 1 is a perspective diagrammatic illustration of a machine discharging a sliver and of means for placing the sliver on a conveyor according to the invention.

FIG. 2 is a perspective illustration of the reversing parts of the conveyor one of which is used for discharging a sliver from the conveyor.

Referring more particularly to the drawing, numeral 1 designates a carding machine including a sliver accumulator 3 as shown, for example, in copending application Serial No. 840,395, filed September 16, 1959, now Patent 3,029,477, for accumulating the sliver 2 produced by the machine 1 before discharging the sliver through delivery rollers 4 in vertical direction onto an endless conveyor belt 6. The latter is made of elastic material and has a longitudinal, narrow base portion 9 wherefrom extend two substantially semicircular, longitudinal wall portions 10 and 11 facing each other and forming a tube which is longitudinally split diametrically opposite said base portion. FIG. 1 shows a short portion of the upper run and of the lower run of the belt 6. A guide roller 8 is provided between the runs and has an annular groove 7 corresponding to and receiving the base portion 9 of the belt 6. A hose opening and sliver feeding roller 5 is placed on top of the spread apart and flattened wall portions 10 and 11 and opposite and parallel to the roller 8 for temporarily opening the hose and for deviating and placing the sliver 2 substantially coaxially into

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the hose formed by the wall portions 10 and 11. For this purpose the sliver arriving in vertical direction from the delivery rollers 4 is placed between the roller 5 and the belt.

The direction of movement of the endless belt 6 is reversed by reversing rollers or pulleys 13 and 14 rotatably mounted on supports 12. These pulleys are provided with circumferential grooves for receiving the base portion 9 of the belt. The conveyor belt is driven by a motor 15 through a transmission belt. A spreading and sliver discharging roller 17 mounted on a shaft guided in vertical slots of a support 12 rests on the spread apart wall portions 10 and 11 of the belt 6 above and parallel to the roller 13. The roller 17 not only reliably opens the hose forming part of the conveyor belt but also guides the sliver 2 which runs between the conveyor belt and the roller 17 prior to being discharged from the conveyor belt.

The apparatus operates as follows: The sliver delivered at substantially constant speed by the rollers 4 is deflected from the vertical to the horizontal by the roller 5 and is placed onto the temporarily opened conveyor belt 6 whereupon the longitudinally split hose-like belt is closed around the sliver due to the elasticity of the belt material. Upon reaching the reversal roller 13 the hose-like belt is once more temporarily opened by the weight of the opening or spreading roller 17, permitting discharge of the sliver from the belt.

While a specific embodiment of the invention has been shown and described, it will be apparent to those skilled in the art that various changes, modifications, substitutions, additions and omissions may be made therein without departing from the spirit and scope of the invention as set forth in the appended claims. It is not necessary to discharge the sliver at a reversing roller. A guide roller may be arranged opposite a discharging roller in the same manner as is the guide roller 8 placed opposite the feed roller 5, for discharging the sliver from the conveyor belt at any desired location along the conveyor belt.

I claim:

1. In an apparatus for transporting slivers in spinning mills, having reversing rollers, and an endless, hose-like, longitudinally slit conveyor belt forming a loop around said reversing roller: a guide roller placed on one side of said belt, a sliver feeding roller placed opposite said guide roller and forming a nip therewith for receiving and temporarily holding said belt in flattened condition, said feed roller deviating a sliver arriving at an angle to said belt into the travel direction of the belt and pressing the sliver onto said belt.

2. In an apparatus as defined in claim 1 and wherein said guide roller is placed at the inside of said loop and said feeding roller is placed at the outside of said loop, the rotation axes of said guide roller and of said feeding roller being parallel.

3. In an apparatus as defined in claim 1, a second guide roller placed on one side of said belt, and a sliver discharging roller placed opposite said second guide roller and forming a nip therewith for receiving said belt in flattened condition and the sliver resting thereon and temporarily holding said belt in flattened condition for permitting the sliver to leave said belt after passage through said nip formed by said second guide roller and said sliver discharging roller.

4. In an apparatus according to claim 3 and wherein said second guide roller is one of the belt reversing rollers.

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