July 15, 1958 J. KAISER 2,842,805

ARRANGEMENT FOR DEPOSITING SLIVER IN SLIVER CANS

Filed March 4, 1955

FIG. 1

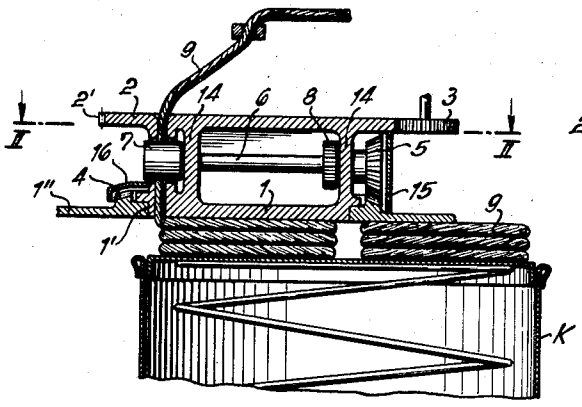


FIG. 3

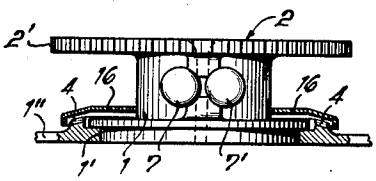
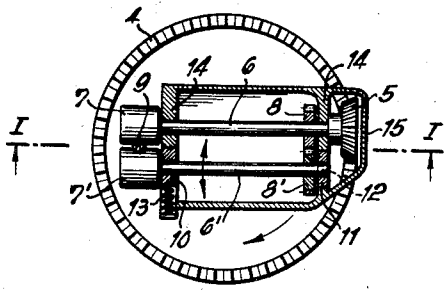


FIG. 2



INVENTOR

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2,842,805

ARRANGEMENT FOR DEPOSITING SLIVER IN SLIVER CANS

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Application March 4, 1955, Serial No. 492,200

Claims priority, application Germany May 9, 1954

1 Claim. (Cl. 19—159)

The present invention relates to a rotatable plate for depositing sliver in sliver cans. Such rotatable plates are arranged at the delivery end of spinning machines, for instance, of drawing frames, combers, or the like, and serve the purpose of properly depositing in receiving containers, sliver cans, or the like, the sliver which is delivered by drawing frames or rubbers. The sliver is passed between two rollers rotating in opposite direction with regard to each other and due to the rotation of the rotatable plate drops in uniform windings into the receiving containers, which in their turn may rotate.

It is an object of this invention to provide an arrangement for depositing sliver in sliver cans, which will be considerably improved and simplified over similar plates heretofore known.

It is another object of this invention to provide a rotatable plate for sliver cans, which will cooperate with delivery rollers in such a manner that the driving parts for said delivery rollers are properly protected against lint.

It is also an object of this invention to provide a simple and highly sufficient driving connection between the delivery rollers for delivering the sliver into a sliver can and the rotatable plate associated with the sliver can.

These and other objects and advantages of the invention will appear more clearly from the following specification in connection with the accompanying drawing, in which:

Fig. 1 is a vertical section through a rotatable plate according to the invention, said section being taken along the line I—I of Fig. 2.

Fig. 2 is a horizontal section through the rotatable plate of Fig. 1, said section being taken along the line II—II of Fig. 1.

Fig. 3 is a side view of the rotatable plate shown in Figs. 1 and 2.

General arrangement

According to the invention, the pair of rollers driven by the rotative movement of the rotatable plate and the driving means for said pair of rollers are located within the rotatable plate and rotate together with the latter.

The invention is furthermore characterized in that the rotatable plate is surrounded by a stationarily arranged gear ring which meshes with a gear or toothed wheel connected to a driving shaft for the pair of rollers. The arrangement is such that said gear or wheel rolls on said gear ring in response to a rotative movement of the rotatable plate.

The rotative movement of the roller shaft which is driven due to the rotative movement of the rotatable plate is conveyed to the other roller shaft by means of two gear or friction wheels connected to the driving shafts of the delivery rollers, said two gears or friction wheels being arranged in driving connection with each other.

It is advantageous to arrange the delivery rollers in such a manner that they are resiliently pressed against each other. To this end one of the roller drive wheelshafts may be journalled in two movable bearing bodies, one of which is rotatable while the other is displaceable in horizontal direction.

The rotatable plate is driven by means of a gear ring arranged at the outer marginal portion of the rotatable plate. This gear ring meshes in appropriate manner with a pinion.

According to a preferred embodiment of the invention, the rotatable plate is designed as a hollow casing which carries or houses the drive for the delivery rollers and rotates in an opening which is surrounded by a stationary gear ring for the drive of the delivery rollers.

Structural arrangement

Referring now to the drawing in detail, the rotatable plate **1**, preferably designed as hollow body, has its upper marginal portion **2** provided with a gear ring **2'**, which latter is engaged by a driving wheel **3**. The driving wheel **3** is driven in a manner known per se by appropriate devices and in its turn rotates the rotatable plate **1** about the axis of the latter. The rotatable plate **1** is journalled in an opening **1'** of the support or frame **1''** carrying the rotatable plate **1** so that the rotatable plate **1** is adapted to rotate within said opening **1'**. The marginal area of the opening **1'** is provided with a stationary gear ring **4** engaged by a bevel gear **5** which, in reponse to a rotative movement of the plate **1**, rolls on the stationary gear ring **4**. The bevel gear **5** is fixedly connected to a shaft **6** journalled in the rotatable plate **1**. This shaft **6** at the other end thereof carries a delivery roller **7**. The rotative movement conveyed to the shaft **6** by means of the bevel gear **5** is conveyed to a gear or friction wheel **8'** by means of a gear or friction wheel **8** likewise connected to shaft **6**. The gear or friction wheel **8'** is fixedly connected to a drive shaft **6'** for the second delivery roller **7'**, said shaft **6'** likewise being journaled in the rotatable plate **1**. The rollers **7**, **7'** thus rotate in opposite direction with regard to each other in response to a rotation of the rotatable plate **1** and in this way convey the sliver **9** downwardly into a receiving container, sliver can K or the like, where the sliver due to the rotative movement of the plate **1** is deposited as circular windings one above the other.

The can K may, if desired, itself perform a rotative movement as is described, for instance, in my co-pending application, Serial No. 489,656, filed February 21, 1955, now Patent No. 2,820,255. The movement of the can K and the rotative plate **1** make it possible to deposit the sliver in a cycloidal form without undesired twisting of the sliver.

The driving shafts **6**, **6'** for the delivery rollers **7**, **7'** are preferably journalled in the side walls **14** of the hollow rotatable plate so that the gears or wheels **8**, **8'** are completely enclosed on all sides, whereby they are protected against danger and accumulation of dust, and especially against lint and fiber fly. Also the bevel gear **5** is well covered and protected by the walls of the rotatable plate **1**. In addition thereto, the rotatable plate may also be so designed that the gear ring **4**, bevel gear **5** and rollers **7**, **7'** are completely covered toward the outside, for instance, by means of a shrouding wall which extends from the upper outer marginal portion **2** of the rotatable plate up to approximately the surface of the frame **1''**. The drawings show such protective covering by way of example. The bevel gear **5** is surrounded by a wall **15**, whereas a cover **16** is arranged above the gear ring **4**, said cover **16** not being shown in Fig. 2. The sliver **9** passing between the rollers **7**, **7'** is frequently of varying thickness throughout its length. This feature has been taken into consideration by journalling the shaft **6'** of the roller **7'** in movable bearing bodies **10** and **11**. As will be evident from the drawing, the bearing body **11** is rotatable about the shaft **12**, whereas the bearing body **10** is displaceable in horizontal direction. The bearing body **10** is under the

influence of an adjustable pressure spring 13 which has the tendency to urge the roller 7' firmly against the roller 7. The rollers 7, 7' thus exert a resilient pressure upon the sliver 9 sliding through between the rollers 7, 7' and are adapted to vary the distance with regard to each other in conformity with the varying thickness of the sliver.

The invention is not limited to the embodiment shown and described in the specification. Any other desired and expedient transmission means may be provided for conveying the rotative movement of the rotatable plate 1 to the delivery rollers 7, 7' without affecting the principle of the present invention, Also, the manner in which the rollers 7, 7' are resiliently pressed against each other may be varied. Thus, the invention is not limited to the specific showing in the drawing but also comprises any modifications within the scope of the appended claim.

What I claim is:

An arrangement for depositing sliver in a sliver can, which comprises in combination: a hollow rotatable member, power transmitting means drivingly connected to said hollow member for rotating the same, two delivery rollers arranged for cooperation with each other for feeding sliver into said can, said delivery rollers being supported by said rotatable member for rotation about the axis of rotation of said rotatable member, two shafts respectively arranged within said rotatable member and rotatable about the longitudinal axis thereof, said shafts being drivingly connected to said delivery rollers for rotating the same about the extension of the longitudinal axes of said shafts, movable bearing means supporting one of said shafts, one of said bearing means being rotatable and the other of said bearing means being displaceable in horizontal direction, and means drivingly connected with at least one of said shafts and arranged to rotate the same about the longitudinal axis thereof in response to the rotation of said rotatable member about the axis of rotation thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

2,152,295	Weinberger	Mar. 28, 1939
2,695,429	Howes et al.	Nov. 30, 1954

FOREIGN PATENTS

131,411	Great Britain	Aug. 14, 1919
1,075,831	France	Apr. 14, 1954