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Stahlecker et al.

[11] **3,874,154**

[45] **Apr. 1, 1975**

[54] **FIXEDLY DISPOSED FEEDING AND OPENING DEVICE FOR A SPINNING UNIT OF AN OPEN-END SPINNING MACHINE**

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Dec. 11, 1971 Germany 2161619.3

[52] **U.S. Cl.** **57/58.95**

[51] **Int. Cl.** **D01h 1/12**

[58] **Field of Search** 57/58.89-58.95

[56] **References Cited**

UNITED STATES PATENTS

3,511,045	5/1970	Bures et al.	57/58.91
3,668,854	6/1972	LaChatelier	57/58.89
3,685,270	8/1972	Bartling	57/58.95
3,695,021	10/1972	Ormerod et al.	57/58.91
3,724,194	4/1973	Greenwood et al.	57/58.95
3,756,007	9/1973	Bartling	57/58.91
3,760,577	9/1973	Kibara et al.	57/58.89 X

Primary Examiner—John W. Huckert
Assistant Examiner—Charles Gorenstein
Attorney, Agent, or Firm—Craig & Antonelli

[57] **ABSTRACT**

A spinning machine arrangement having a pivotable cover for covering the spinning turbine as well as a relatively fixed support member which houses the feed and openins rolls. Transmission means are provided between the cover and the drive and braking mechanisms of the spinning turbine, the feed roll, and the opening roll for controlling the drive and braking mechanisms in response to opening movement of the cover. The cover is movable to a first open position for access to the spinning turbine with the cover substantially covering the feed and opening rolls and to a second open position providing access also to the feed and opening rolls. An insert member which forms part of a fiber duct leading to the turbine and part of a thread take-off duct is attached to the cover for movement therewith. The cover may be pivotally mounted at a longitudinally extending cleaning duct which extends over a plurality of spinning units.

57 Claims, 10 Drawing Figures

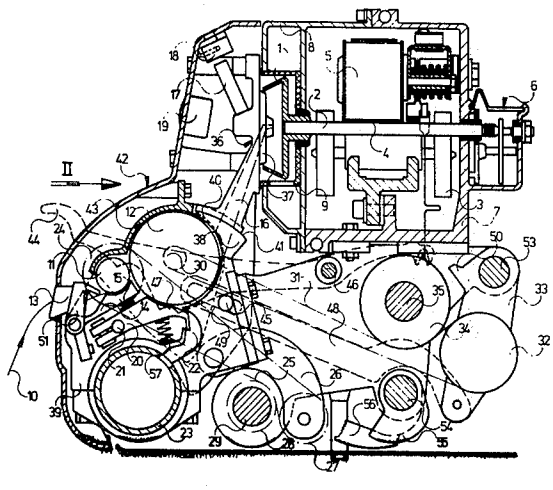

Fig. 1

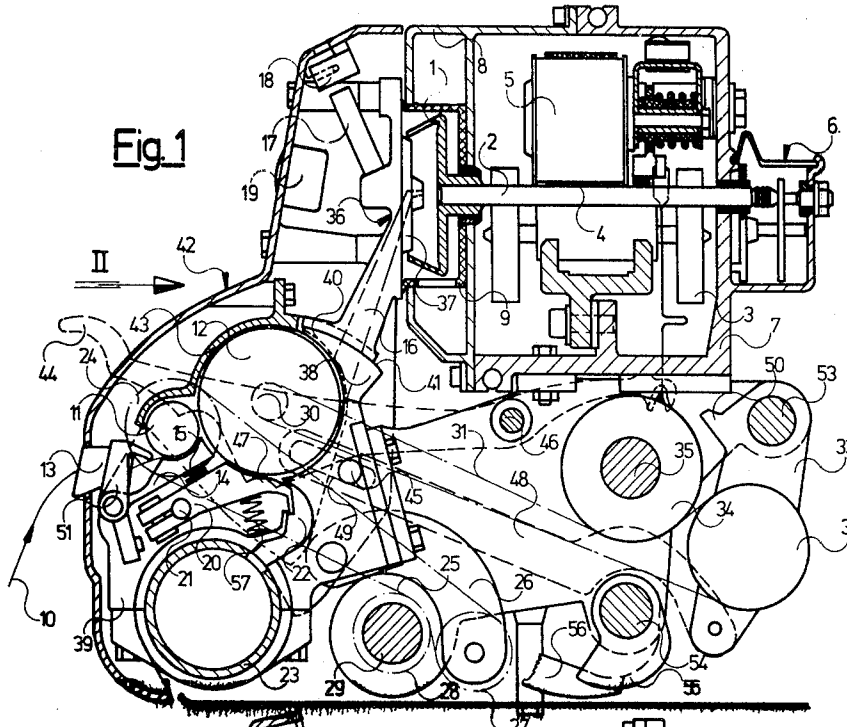
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Fig. 6

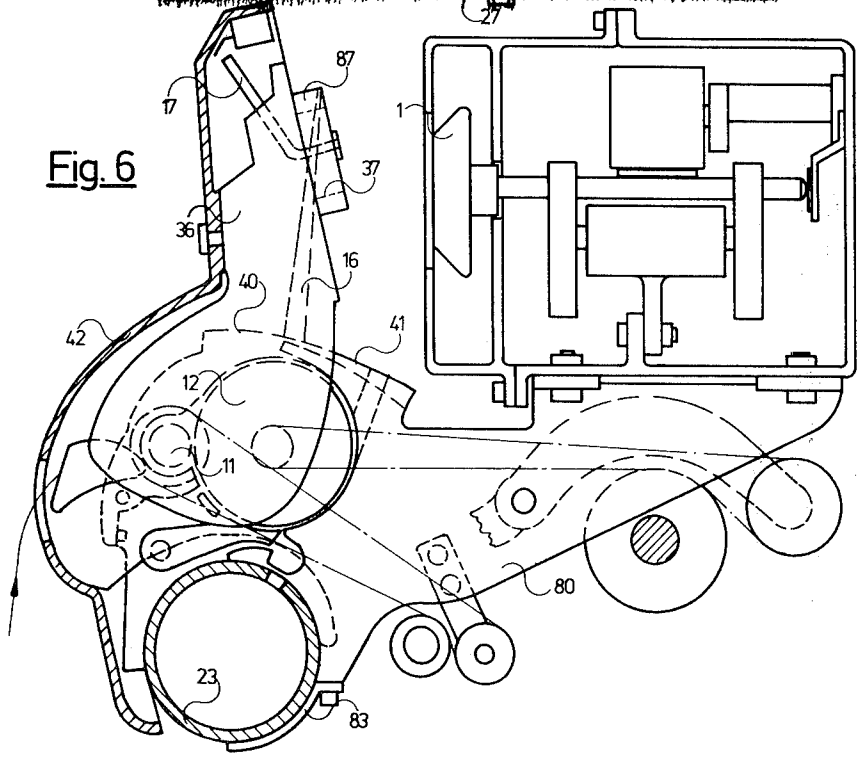
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Fig. 2

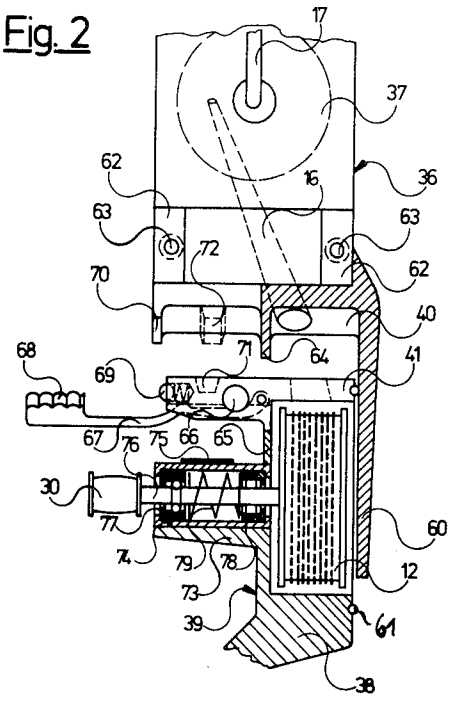
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Fig. 3

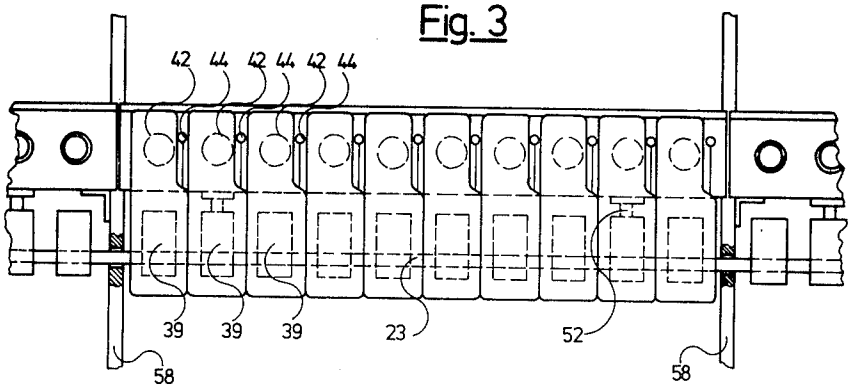
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Fig. 4

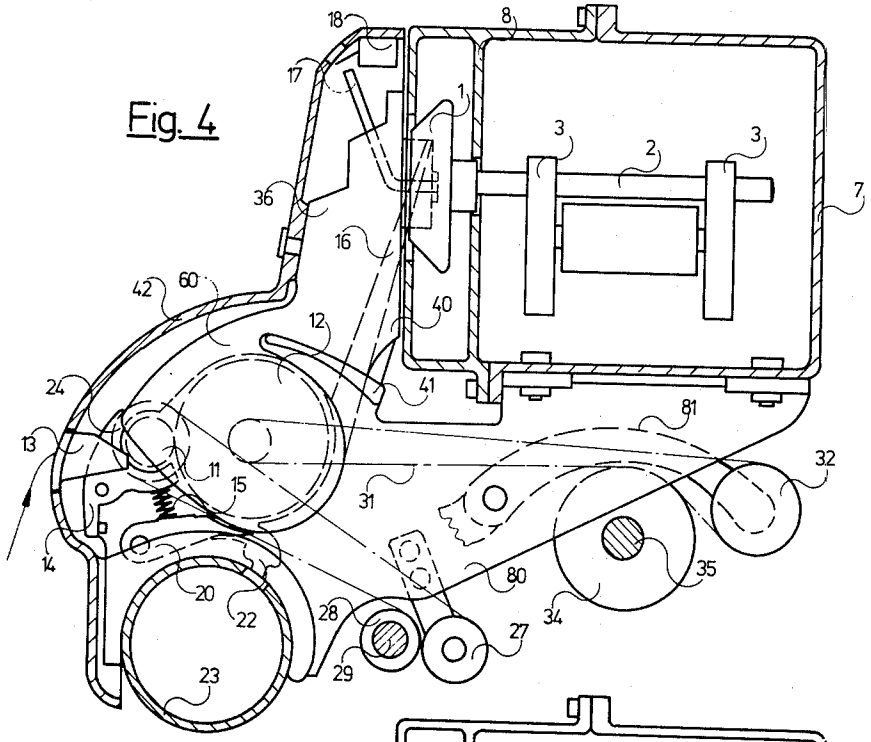
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Fig. 5

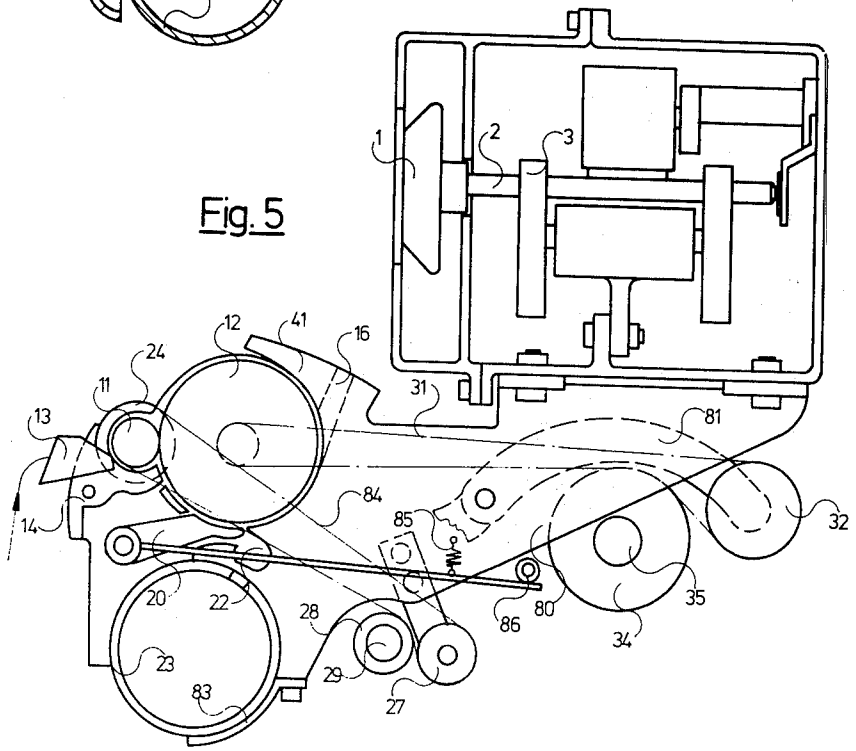
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Fig.7

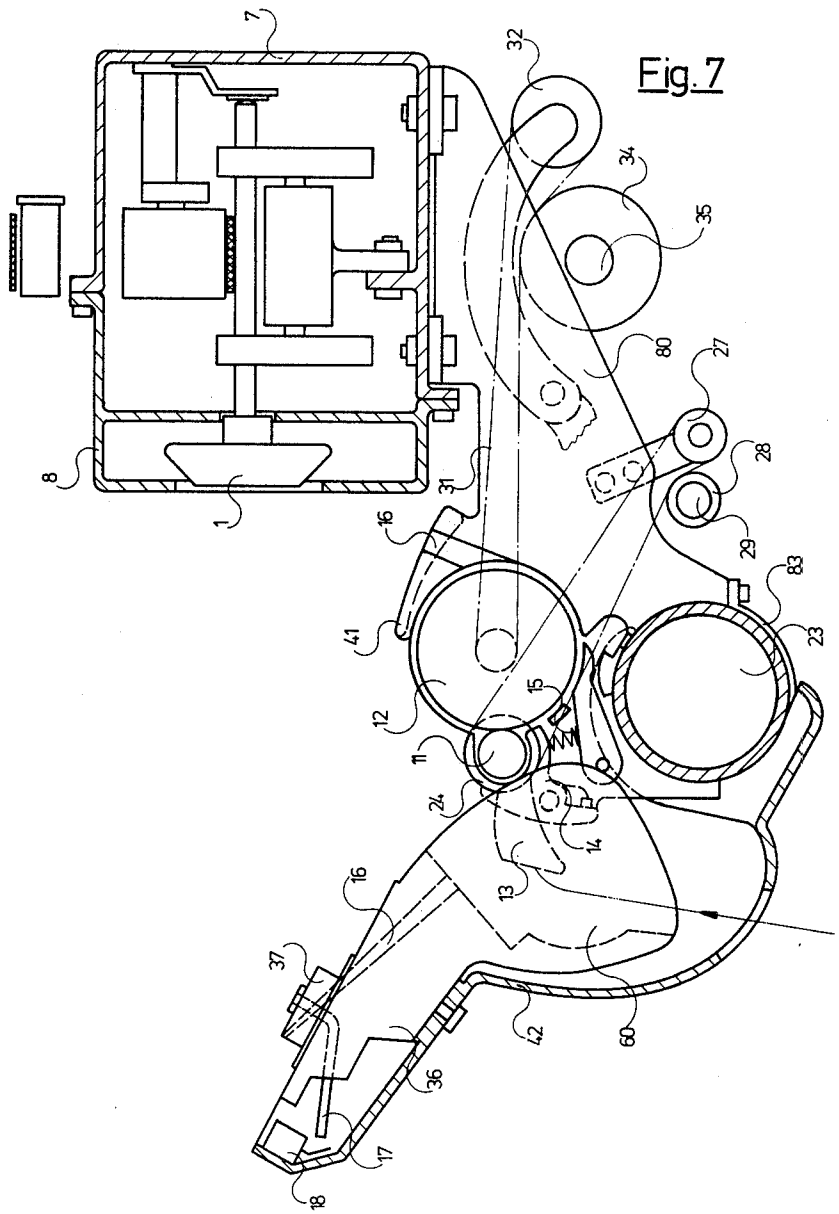
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Fig. 8

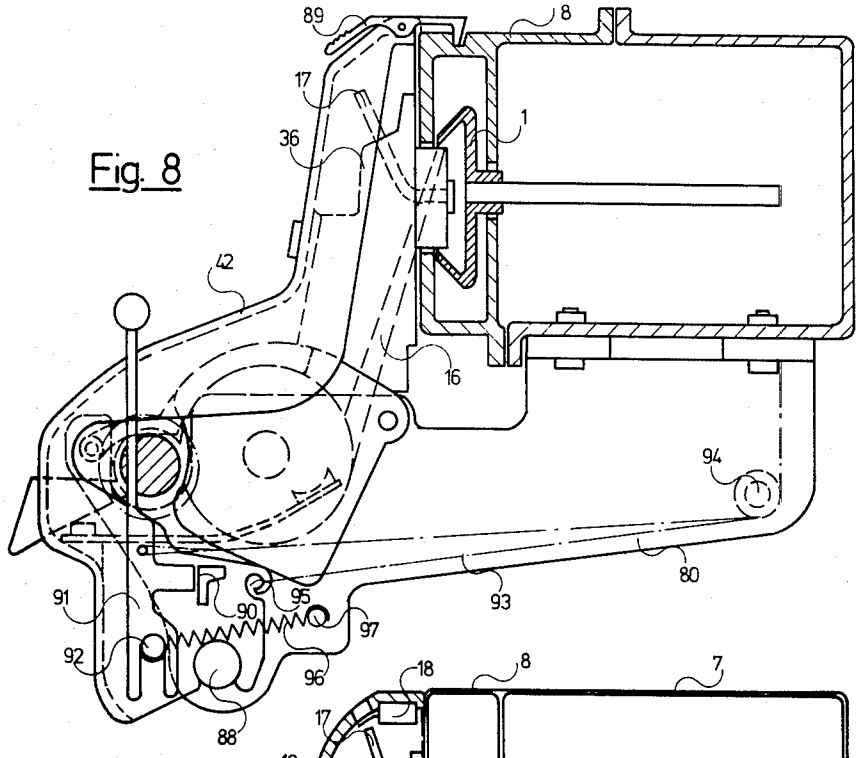
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Fig. 9

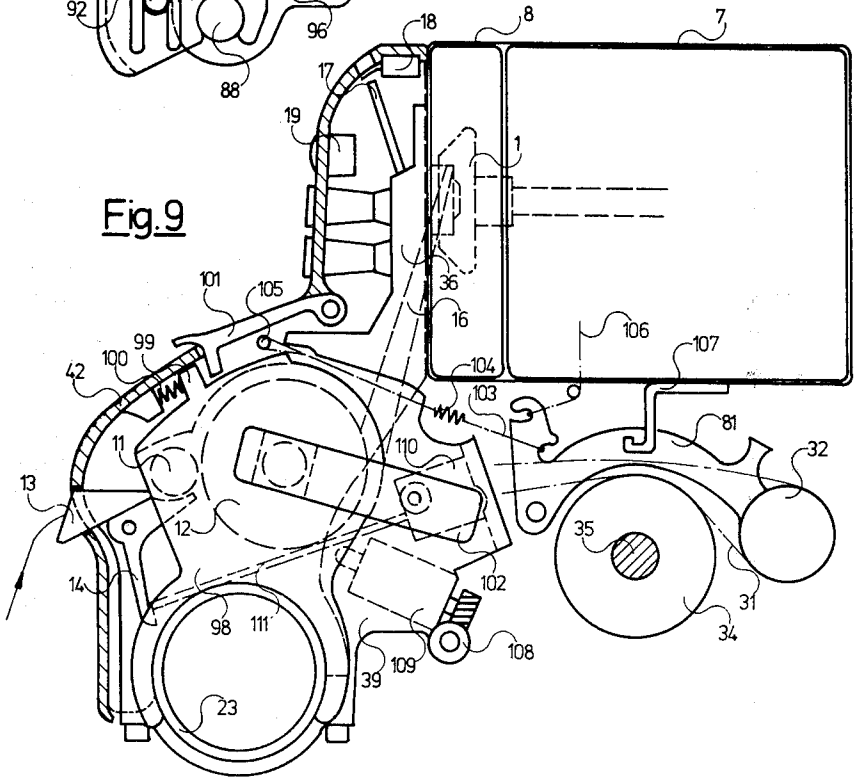
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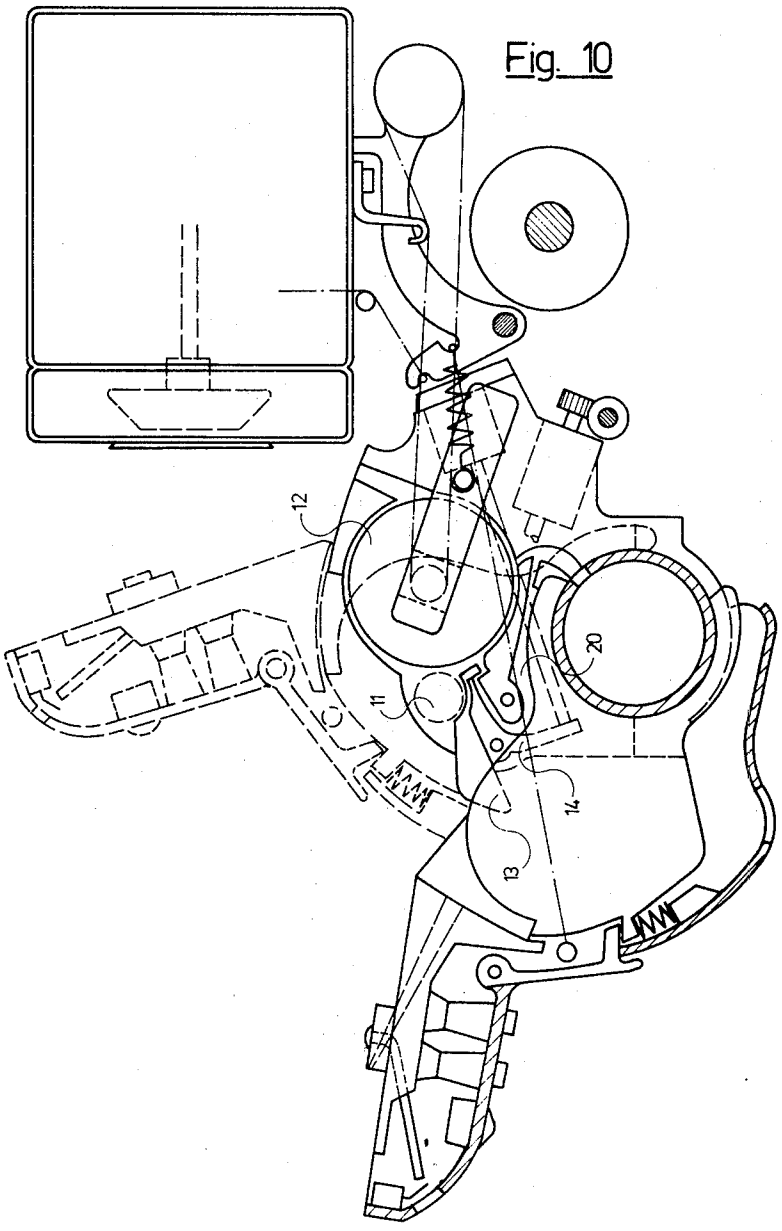
Fig. 10



FIXEDLY DISPOSED FEEDING AND OPENING DEVICE FOR A SPINNING UNIT OF AN OPEN-END SPINNING MACHINE

BACKGROUND AND SUMMARY OF THE INVENTION

The invention relates to a cover arrangement for a feeding and opening device for a spinning unit of an open-end spinning machine. A fiber duct leads to a spinning turbine from a feed roll and an opening roll which duct is partially disposed in an element which can be moved away with a cover and which also contains a thread take-off duct.

It has been contemplated to arrange the feed and opening rolls of the individual spinning units in pivotable housings which can be swung away as a whole from the spinning turbine, so that thereafter the spinning turbine becomes accessible, for example for a cleaning operation or the like. This type of structure per se has the advantage that it is possible to utilize this pivoting motion for braking the spinning turbine and for interrupting the drive of the opening roll. However, there is the disadvantageous feature that relatively large masses must be moved during the opening and closing of the spinning unit. There is the danger that the relatively heavy housings can hit with corresponding force the fixed part of the spinning machine during closing, resulting especially for electrical inner components in the danger of damage or displacements or the like.

With respect to the masses to be moved, another type of structure has been contemplated which is more advantageous, wherein the feeding and opening device, as well as the spinning turbine and its bearing, are fixedly arranged. In this construction, a foldable lid may be provided in front of the spinning turbine, containing part of the fiber duct and the fiber take-off duct. In this arrangement, however, it is difficult to put the feature into practice of utilizing the movement necessary for opening the spinning turbine also for the braking of the spinning turbine.

In both of the above-discussed types of construction, the opening movement only makes the spinning turbine accessible. However, one cause for the failure of such a spinning machine is frequently a disturbance in the zone of the fiber opening mechanism, particularly a clogging of the opening roll. In order to render this opening roll accessible, the above-discussed types of structure require additional, relatively complicated mechanism measures, by means of which the opening roll can only be uncovered. In this connection, it has been contemplated to provide an additional lid for the opening roll, which likewise requires additional manipulations for lifting same. Furthermore, this construction makes it impossible to impart to the feeding and opening device, as well as the entire machine, a pleasant external appearance.

The invention is based on the problem of providing a feeding and opening device of the aforementioned type which, without substantially increasing the movable masses, makes it possible to render the spinning turbine as well as further parts of the spinning unit accessible to a control or the like by means of one manipulation. The invention resides in part in that the cover member also covers the spinning turbine and carries an insert containing the zone of the fiber duct arranged in front of the spinning turbine and the fiber take-off duct.

By means of this arrangement of the feeding and opening device according to the present invention, the advantages of the above-discussed types of construction are simultaneously realized, without, however, having to include the disadvantages inherent in the individual types of structure. The masses to be moved are relatively small, so that the danger of damages during closing or opening is avoided. Besides, the advantages of a fixed disposition of the drives are exploited. Furthermore, it is possible, without using additional connecting conduits or the like, to fixedly arrange a common suction removal duct for impurities obtained during the opening of the fibers. In addition to the advantage of great freedom in the aesthetic design of the cover, there is the special advantage that, by means of a single manipulation and only one opening motion, practically all parts of the opening and feeding device, including the drive elements thereof, as well as the spinning turbine, become accessible. This makes it possible to shorten the servicing operations to a minimum amount of time.

In one embodiment of this invention, the insert, in the closed position, covers part of the periphery of the opening roll and/or of the feed roll. Thus, opening the cover reveals at once part of the periphery of the opening roll, so that any presence of clogging or damage to the clothing or cot of the opening roll can be determined directly. In order to even further improve the possibility of monitoring the opening roll and/or the feed roll, the provision is made in another development of this invention to equip the insert with an extension covering, in the closed position, an end face of the opening roll and/or feed roll. This makes it possible to readily effect servicing operations on the opening roll or the feed roll immediately after removal of the cover, without any further assembly or disassembly.

In a further embodiment of this invention, the supporting member is provided with a guide track on which the insert can be moved with a sliding surface. This makes it possible to realize an exact alignment of the portions of the fiber duct. In order to provide lateral guidance as well, it is advantageous to arrange guide ribs and grooves on the guide track and on the sliding surface. In order to be sure, moreover, that the final position has been reached, it is advantageous to provide, between the supporting member and the insert, a mechanism for securing or locking in the operating position.

In order to be able to uncover the opening roll completely, the provision is made in a further development of the present invention to mount the opening roll in the supporting member to be axially displaceable. This makes it possible entirely reveal the opening roll after opening of its housing.

The stationary arrangement of the feeding and opening device enables one to mount a central cleaning duct in a simple manner. In an advantageous embodiment, a pipe extending over several spinning units is attached to the supporting member, this pipe constituting a cleaning duct. Thereby, the supporting member is utilized for a further function, namely for connecting an additional auxiliary device with the remainder of the spinning machine.

In a structurally very advantageous embodiment of the invention, respectively individual supporting members are attached to the machine frame via mounting means, while the remaining supporting members are

disposed on a pipe forming a cleaning channel. This makes it possible to realize a sectional mode of construction with respect to the feeding and opening devices, according to which these devices can be fashioned for a plurality of spinning units as a structural whole which can be preassembled. It is, moreover, structurally advantageous to have the pipe serve as a pivot axle for the pivotable cover and/or for a panel laterally covering the feed roll and/or the opening roll.

In a further development of the invention, the provision is made that the pivotable cover is equipped with transmission means which transmit the pivoting motion as a control movement for interrupting the drives and-/or switching on the brakes of the spinning turbine and-/or of the opening roll and/or of the feed roll. This construction makes the device highly convenient in operation, since this feature is connected with an automatic switching cycle which also essentially increases the safety in operation.

In another development of the invention, the cover is pivotably removable in two stages, wherein the pivotal motions of the two stages can be transmitted separately to the drive and braking mechanism of the spinning turbine and to the drive and braking mechanism of the opening roll. This makes it possible, for example, to effect that the first stage, which only serves for opening the spinning turbine, also interrupts only the drive of the spinning turbine and brakes the spinning turbine only. A further pivoting in the second stage arrests the opening roll, while the further provision can additionally be made that in this stage the drive of the spinning turbine is again set into operation. It is readily possible in these embodiments of the invention, to employ already present braking devices, or braking devices to be provided for other reasons, which are then operable selectively by a manual switch or automatically by pivoting the cover away.

Reference is hereby made to copending commonly assigned U.S. application Ser. No. 252,211, filed May 11, 1972, for further details of braking devices and the like which may be helpful in understanding the present invention.

Additional features and advantages of the invention can be seen from the following description of several embodiments illustrated in the drawings, in conjunction with the claims

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** shows a cross section through a spinning unit of a spinning machine equipped with a feeding and opening device according to this invention;

FIG. **2** shows a view of a spinning unit similar to FIG. **1**, but partially broken away, in the direction of arrow II;

FIG. **3** shows a schematic view in the direction of arrow II of FIG. **1** of several spinning units of a spinning machine extensively corresponding to this embodiment;

FIG. **4** is a cross section through another embodiment of a spinning unit constructed according to the present invention;

FIG. **5** is a cross section corresponding to FIG. **4** wherein various parts have been omitted;

FIG. **6** is a cross section through the spinning unit according to FIG. **4** in a first opening stage;

FIG. **7** is a cross section through the spinning unit of FIGS. **4–6** in a second opening stage;

FIG. **8** is a cross section through another embodiment of the present invention; and

FIGS. **9** and **10** are further cross sections through a feeding and opening device of this invention in the closed condition (FIG. **9**) and in the opened condition (FIG. **10**).

DETAILED DESCRIPTION OF THE DRAWINGS

FIG. **1** shows a spinning unit with all essential details. A spinning machine consists of a plurality of such spinning units, disposed side-by-side at regular intervals. Each spinning unit has a spinning turbine **1** with a horizontally disposed turbine shaft **2.** The turbine shaft **2** is supported in a V-slot formed by pairs of supporting disks **3.** This shaft is driven by a driving belt **4** directly contacting the shaft; this driving belt is under the effect of a pressure roll **5.** A force oriented away from the spinning turbine **1** is exerted on the turbine shaft **2** by the drive or the bearing or with the aid of an additional device, so that the axial position of the shaft can be secured with the aid of a thrust bearing **6.** The turbine shaft **2,** including the associated drive and supporting mechanism, is disposed within a closed duct extending over several series-arranged spinning units. The duct consists of a base member **7** formed by an extruded profile. The base member **7** forms the bottom, the rear wall, and part of the ceiling of the duct. The front wall and the residual portion of the ceiling consist of a further extruded profile **8,** constituting a common housing for the series-disposed spinning turbines **1** pertaining to one section. Within this common housing, individual chambers are provided for the single spinning turbines **1** by means of cup-shaped inserts **9,** the latter being preferably manufactured of a synthetic resin.

A strand of silver **10** opened up into individual fibers is fed to the spinning turbine **1.** For this purpose, a feeding and opening device is provided consisting essentially of a feed roll **11** and an opening roll **12.** An inlet funnel **13** is arranged in front of the feed roll **11.** A trough lever **14** is associated with the feed roll **11,** this lever being pressed against the feed roll **11** by means of a spring **15.** The opening roll **12** follows the feed roll **11;** this opening roll rotates in the opposite direction and substantially faster than the feed roll and is provided with a sawtooth-like clothing on its periphery. This opening roll **12** breaks up the fibers of the silver strand **10** and entrains same approximately over half of its circumference. At that point, a fiber duct **16** starts which is oriented approximately tangentially with respect to the opening roll and terminates obliquely in the spinning turbine **1.** The broken-up fibers are conveyed essentially by sub-atmospheric pressure provided in the zone of the spinning turbine **1.**

A thread spun from the fibers is withdrawn from the spinning turbine; for this purpose, a thread take-off duct **17** is provided which terminates axially in the spinning turbine **1** and subsequently extends upwardly in an inclined direction. A thread regulator (broken-end detector) **18** adjoins the thread take-off duct **17,** which regulator monitors the presence of a thread. A signal lamp **19** is connected with the thread regulator **18.**

The lower periphery of the opening roll **12** is partially covered by a cleaning lever **20** arranged to be pivotable about an axle **21,** thus closing an opening **22** to a greater or lesser extent. The opening **22** is connected to a pipe **23** disposed therebelow; this pipe extends in the longitudinal direction of the spinning machine, and

the length of the pipe corresponds to the length of the duct with the drive and bearing means for the turbine shaft 2. The cleaning lever 20 can be pivoted about its axle 21, in order to eliminate impurities in the opened fibers, for example husk residues, which can be removed by vacuum periodically applied to the pipe 23.

The feed roll 11 is connected to a gear wheel 24 for rotation therewith and is driven via a bilaterally serrated toothed belt 25. The toothed belt 25 is tensioned by a cogwheel 27 disposed on a pivotable lever 26 and pressed against a gear wheel 28 arranged on a shaft 29.

The opening roll 12 is connected to a whorl 30 for rotation therewith; the whorl is driven by a drive belt 21. The latter is looped around a tension roll 32 disposed on a spring-loaded pivot arm 33. The belt is pressed from the outside against a driving pulley 34 mounted on a shaft 35.

In practice, it is necessary to uncover the spinning turbine 1 for eliminating broken threads or for the possible automatic introduction of cleaning devices. In order to attain this objective and yet be able to dispose the opening and feeding device extensively in a fixed manner, the feed roll 11 and the opening roll 12 are arranged below the spinning turbine and at such a distance therefrom that directly in front of the spinning turbine 1 there are, in each case, only the fiber duct 16 and the fiber take-off duct 17. These two ducts 16 and 17 are formed, in the zone disposed in front of the spinning turbine 1, by an insert 36 extending with a cylindrical head 37 into the spinning turbine 1; the insert 9 surrounding the spinning turbine 1 is in sealing engagement with this head 37. The head 37 can optionally be attached to the insert 36 so that the former is exchangeable; in this way, the insert, by interchanging the head 37, can be adapted to spinning turbines 1 of varyingly large diameters.

The insert 36, in the illustrated embodiment, completely forms the thread take-off duct 17 and forms only part of the fiber duct 16. The remainder of the fiber duct 16 is arranged in a housing 38 surrounding the periphery of the opening roll 12. The housing 38 is a component of a supporting member 39 projecting toward the front beyond a vertical plane defining the turbine housing. The supporting member 39 is provided with mountings for the bearings of the feed roll 11 and of the opening roll 12 and simultaneously constitutes part of the housing 38 surrounding these rolls. The insert 36 is centered, with a sliding surface 40, on a guide track 41 of the supporting member in such a manner that the two parts of the fiber duct 16 are in exact alignment with each other in the operating position.

The supporting member 39 is protected toward the front by a cover 42 extended in the upward direction and likewise covering the profile 8 forming the turbine housing. This cover 42 which, in the horizontal direction, has an approximately U-shaped cross section, is pivotably mounted on the pipe 23. For this purpose, the two lateral legs of the cover are provided with bifurcate recesses encompassing the pipe 23 from above. The insert 36 is preferably adjustably threaded to the cover 42; thus, when the cover 42 is pivoted, this insert can be flipped away from the zone of the spinning turbine 1. For this reason, the sliding surface 40 and the guide track 41 are fashioned as cylindrical surfaces, the axis of these surfaces extending concentrically with respect to the pipe 23. With the pivoting of the cover and the thus-effected opening of the spinning turbine 1, all details of the opening and feeding device, including their drive mechanisms, become simultaneously visible and accessible. In order to be able to determine also immediately any possible clogging of the opening roll 12 or any damage of its cot (clothing), or any clogging in the area of the feed roll 11, a part 43 is connected with the cover 42, which part covers part of the periphery of the feed roll 11 and especially of the opening roll 12 in the closed position and reveals same when the cover 42 is pivoted away. It is thus possible to uncover the spinning turbine 1 as well as, at least, the opening roll 12, by the pivoting of one component, namely the cover 42; consequently, any required servicing operations or the like can be effected without any difficulties. In this connection, the opening roll 12, for example, can be freed of cloggings or the like on its circumference in a simple manner by manually rotating, for example, the opening roll 12 at its whorl 30 so that its cot passes, piece by piece, along the uncovered location.

In most cases, it will be sufficient to uncover only the spinning turbine 1. For this purpose, the provision can be made that the cover is pivoted only to such an extent that the spinning turbine becomes accessible to a cleaning device operated manually or automatically. In contrast thereto, if it is desired to execute servicing operations, for example, on the opening roll 12 or another component, or to exchange the spinning turbine 1, or to open the duct, then the cover can be pivoted into the second stage wherein it is approximately horizontal. In certain cases it is also possible to completely remove the cover 42, held resiliently on the pipe 23 in a manner not shown in detail, after releasing the resilient lock or mounting. The opening roll 12 and its housing portion 38 are disposed at such a low level that it is readily possible also to detach the extruded profile 8 from the base member and remove this profile.

Each spinning unit is provided with a braking device containing a brake lever 44 which can be activated from the outside when the assembly is closed; this brake lever lifts the pressure roll 5 off and lowers a brake lining onto the spinning turbine shaft 2. It is advantageous to operate this braking device automatically also when the cover 42 of a spinning unit has been pivoted and the spinning turbine 1 has thus been opened up. This is accomplished, in the illustrated embodiment, by arranging a stop pin 45 at the cover 42 which pin, when the cover 42 is pivoted, contacts an abutment edge of the brake lever 44 and pivots the latter into its braking position. The brake lever 44 is mounted to be pivotable about an axle 46 disposed underneath the bottom of the duct; the illustrated operating position of this lever is secured by means of a spring, not shown. The abutment edge of the brake lever is provided with a recess 47 engaged by the stop pin 45 as soon as the opening angle of the first stage has been reached. The abutment edge of the brake lever 44 is fashioned so that the brake lever 44 is returned into its illustrated operating position under the effect of its spring when the cover 42 is further pivoted, so that the stop pin 45 moves past the recess 47. This is advantageous to prevent during a longer period of inactivation of one of the spinning units, the drive belt 4 from sliding on the braked turbine shaft 2 during a longer inoperative period and, under certain circumstances, being subjected to increased wear and tear. The end of the abutment edge of the brake lever 44 can be provided

with a further recess defining the end of the upward swinging motion of the cover 42.

In practice, it is advantageous to interrupt the drive of the opening roll 12 when the cover 42 is pivoted, thus revealing the opening roll 12, so that the opening roll is arrested or can optionally be braked by hand or by means of an additional brake. This is advantageously likewise done automatically together with the pivoting of the cover 42. For this reason, a lever 48 is hingedly connected to the rocking lever 33 carrying the tension roll 32 of the drive for the opening roll 12; this lever 48 can be pivoted with the upward swing of the cover 42 in such a manner that the drive belt 31 is loosened, so that the transmission of the driving movement from the driving pulley 34 to the whorl 30 of the opening roll 12 is interrupted. However, the arresting of the opening roll 12 is only necessary if the cover 42 is pivoted to such an extent that also the opening roll 12 becomes accessible. A bolt engages the lever 48; in the lateral view of FIG. 1, this bolt is disposed congruent with the abutment pin 45, or can be constituted by the stop pin 45. This bolt engages a slotted hole 49 of the lever 48, so that the first stage of the pivoting motion of the cover 42 is not transmitted thereto. Thereafter, the lever 48 and, via this lever, the rocker arm 33 are entrained, which latter moves the tension roller 32 toward the driving pulley 34 and thus loosens the drive belt 31. The movement of the rocking lever 33 is limited by a stop 50. This stop 50 thus also limits the pivoting motion of the cover 42, so that the further recess in the brake lever 44 can then be omitted.

It is suitable also to interrupt the drive of the feed roll 11 together with the pivoting of the cover 42, but at least upon the pivoting for revealing the opening roll 12. This interruption of the drive can be controlled in a simple manner by the thread regulator 18 which effects a switching operation when no thread is moving past any more, which must surely be the case after a pivoting of this cover 42. In the illustrated embodiment, the fiber feed is interrupted by the actuation of a magnetic element by the thread regulator 18; this magnetic element presses locking clamp 51 on the trough lever 14 closely in front of the feeding roll 11 and clamps the silver into position. In the illustrated construction, this trough lever is integral with the inlet funnel 13. In certain cases, it will also be sufficient to pivot only the trough lever 14, against the effect of the spring 15, by means of a magnetic element controlled by the thread regulator 18, so that the conveying operation is thus interrupted. By providing, in place of a toothed belt drive, a drive with a standing shaft for the feed roll 11, then it is possible to arrange a clutch within this fixed shaft which is shifted by the thread regulator.

The supporting member 39 is flanged to a holder 52 (FIG. 3) which, in turn, is flanged from below to the base member 7 of the duct. This holder 52 furthermore serves as the bearing block for the drive shafts 29 and 35 extending respectively over several spinning units. Moreover, the holder 52 carries continuous axles 46 and 53 on which the brake levers 44 and the rocker arms 33 are mounted. Furthermore, the holder 52 carries a continuous shaft 54 intended as the central control for the cleaning flap 20. This continuous shaft 54 is connected, via an eccentric 55, with a lever 56 which is directly coupled either with the axle 21 or with the cleaning lever 20. In this way, it is possible to pivot the cleaning flap, by rotating the longitudinal shaft 54, so that the opening 22 is opened to a greater or lesser extent. During this operation, the cleaning flap 20, in its closed position, is under the bias of a spring 57 which is substantially stronger than the spring 15.

The schematic lateral view of a spinning machine similar to FIG. 1 as shown in FIG. 3 demonstrates that it is sufficient to provide two holders 52 for a section of a spinning machine consisting, for example, of ten spinning units; these holders are each attached to the base member 7 corresponding to the length of the section. The duct formed from the base member 7 and the profile 8 serves as the supporting part of the machine frame, so that, at the junction points, only intermediate frames 58 need to be provided which receive the ends of the ducts. The supporting members 39 are clamped onto the pipe 23, which latter corresponds in length preferably to the length of one duct section. The pipe 23 is held by the two supporting members 39 attached to the duct by means of the holders 52, while the pipe, in turn, serves for supporting the remaining supporting members 39. In this manner, excess components are avoided. It is possible basically to form all supporting members 39 to be identical, although in such a case, the flanges for connection to a holder 52 are not utilized in most members. However, the advantage of mass production is thus achieved. Moreover, it is, of course; also possible to provide only the supporting members 39 which are to be connected to the holder 52 with a corresponding flange, or also to produce two supporting members 39 integrally with holders 52. Furthermore, the provision can also be made to dispose several supporting members 39, for example all supporting members of one section, on a pipe or a rod which is detachably mounted to the machine frame via independent holders. In this way, it is possible to provide preassembled sections for a spinning machine, which can be transported as an enclosed and particularly mutually aligned and adjusted unit. The necessary control and monitoring operations can then be extensively effected in the manufacturing plant.

As can further be seen from FIG. 3, the pipes 23 of the adjacent sections are joined together via sealing rings so that a duct extending over the entire length of the machine is produced which is utilized as a suction duct for impurities.

As can furthermore be derived from FIG. 3, the pivotable covers 42 extensively cover the supporting members 39, including the front wall of the duct formed by the profile 7 and 8. Respectively one brake lever 44 is provided on the front side, which is slightly modified with respect to the brake lever illustrated in FIG. 1.

The shafts 29, 35, and 54, shown in FIG. 1 but not visible in FIG. 3, as well as the axles 46 and 53, fashioned as rods, corespond with respect to their lengths preferably likewise to the length of one duct section, so that they also pertain to the prefabricated structural unit.

FIG. 2 shows a partial view, partially in section, of an embodiment corresponding to that of FIG. 1, except for a minor modification. In FIG. 2, the lateral covering of the opening roll 12 is constituted by a cover panel 60 integrally constructed with the insert 36. In contrast thereto, in the embodiment of FIG. 1, the cover panel illustrated in small dashed lines is formed integrally with part 43 threadedly connected to the cover 42. In

FIG. 2, the insert 36 is illustrated to be somewhat offset in the upward direction with respect to the supporting member 39, in order to enhance the clarity of the drawing. The panel 60 completely covers the lateral opening of the housing 38; a continuous sealing strip 61, for example a rubber band or gasket, is provided for this purpose. The insert 36 has abutment surfaces 62 contacting corresponding extensions of the cover 42 and provided with threaded bores 63 for the reception of screws. These abutment surfaces 62 and threaded bores 63 are disposed above and below the center of the turbine.

The insert furthermore comprises a shortened lateral shield 64 forming a sealing joint with a fixed lateral shield 65 of the housing 38. The guide tracks 41 and the slide surfaces 40 are curved cylindrically as in the arrangement of FIGS. 1 and 2. It is, of course, also possible to provide planar surfaces for these components. The sliding surface 40 and the guide track 41 extend past the width of the opening roll 12 toward one side. In this zone, a bore 66 is disposed in the supporting member 39; a locking pin of the insert 36, not visible in the drawing, is inserted in this bore during closing. This locking pin has a groove engaged by a locking lever 67 pivotable against the bias of a spring, not shown. The locking lever 67 is provided with an operating handle 68 penetrating the cover 42, not shown in FIG. 2, toward the outside. Moreover, ball locks 69 can effect locking in the operating position as well as in the pivoted position; these ball locks engage a rib 70 projecting from the insert 36.

In order to achieve a particularly reliable guidance of the insert 36 with respect to the housing 38, a groove 71 can be arranged in the guide track 41 and a profiled rib 72, likewise shown in dashed lines, can be provided in the corresponding sliding surface 40, which groove and rib interlock.

As can be seen from FIG. 1, part of the periphery of the opening roll 12 becomes accessible by pivoting the cover 42, so that the opening roll 12 can at least be examined to the effect whether its sawtooth-like cot is still functional. Moreover, it is possible to eliminate in this manner any clogging or the like on the periphery.

In order to be able to remove cloggage between the inner wall of the housing 38 and the opening roll 12, the additional provision is made that the opening roll 12 can be shifted axially after removal of the cover panel 60, i.e., after pivoting away the cover 42, so that the roll 12 is completely revealed along its circumference, and the interior of its housing 38 becomes likewise accessible. For this purpose, the bearing illustrated in FIG. 2 can be employed, for example. The supporting member 39 has a semicylindrical or prismatic mounting 73 for the bearing housing 74 of the bearing of the opening roll 12. The bearing box 74 is held in the mounting 73 by means of a clamping element 75 which also effects an axial mounting by means of a projection engaging an annular groove. The bearing housing contains a ball bearing 77 and a roller bearing 78 for the shaft 76 of the opening roll 12, wherein the shaft 76 is fashioned directly as the race for the roll elements. For the ball bearing, a groove is worked into the shaft 76 to serve as a race, while the roller elements of the roller bearing 78 travel along the smooth outer surface of the shaft 76. A spring 79 is provided between the two outer rings of the bearings 77 and 78. The outer ring of the ball bearing 77 is dimensioned so that it can be relatively easily displaced axially within the bearing housing 74. The balls of this outer ring entrain the shaft 76 so that the opening roll 12 is pushed out of its housing 38.

FIGS. 4-7 show an embodiment wherein a supporting member 80 for the feeding and opening device is fashioned integrally with a holder attached to the bottom of the duct. The supporting member 80 receives the feed roll 11 and the opening roll 12 in a manner corresponding to FIGS. 1–3. A toothed belt drive is provided for the feed roll 11, corresponding essentially to the toothed belt drive described in connection with FIG. 1. The opening roll 12 is driven via a belt drive which likewise corresponds essentially to the embodiment of FIGS. 1-3, wherein the clamping roll 32 is carried by a pivot arm 81 supported in the supporting member 80; the pivot arm, in a manner not shown in detail, is biased by means of a spring in the direction toward the driving pulley 34. In this embodiment, the insert 36 is fashioned integrally with a cover panel 60 laterally covering the feed roll 11 and especially the opening roll 12 in a way essentially corresponding to FIG. 2.

The insert 36, just as the thread regulator 18, is attached to the cover 42 mounted to be pivotable about a pipe 23 which latter is utilized as the cleaning duct and is attached to the supporting member 80. The pipe 23 is mounted by a leaf spring 83 threadedly connected to the supporting member 80; this spring is visible, for example, in FIG. 5, showing the spinning assembly without the cover 42 and insert 36. FIG. 5 illustrates furthermore that the cleaning flap 20 is connected fixedly with a rocker arm 84 for rotation therewith, this rocker arm being under the force of a spring 85. The rocker arm 84 contacts an eccentric 86 arranged on a continuous shaft, so that a central operation of the cleaning devices of several or all spinning units is possible.

FIG. 6 shows the embodiment of FIGS. 4 and 5 in a first opening stage wherein the spinning turbine 1 is accessible for the introduction of a cleaning device or the like, not shown. As can be seen from FIG. 6, in the first stage which can be locked into position in a manner not shown in detail (such as described in conjunction with FIG. 2), the opening roll 12 is still covered for the most part. It is furthermore indicated in FIG. 6 that the head 37 of the insert 36 can be adapted to spinning turbines 1 of different diameters with the aid of exchangeable rings 87, shown in dashed lines. In this connection, care must be taken that the fiber duct 16 does not cut through the adapter ring 87. In this half-open position, it is not yet necessary for the drive of the opening roll 12 to be arrested, since no work or the like is yet executed on this roll.

FIG. 7 shows an entirely opening spinning unit wherein the cover 42 has been pivoted into its final position. The zone of the spinning turbine 1 has been uncovered to such an extent that it can readily be pulled out toward the front. In this completely open position, the profile 8 forming the turbine housing can also be disassembled very simply, so that the duct can be opened. The feed roll 11, just as the opening roll 12, is extensively revealed, so that the path of the silver strand 10 within the feeding and opening device from the inlet funnel 13 to the fiber duct 16 becomes visible and accessible. Thus, any disturbance which may have occurred can readily be eliminated.

In this position, shown in FIG. 7, it is advantageous if the opening roll 12 is arrested. This can be done simply by pivoting the rocker arm 81 (see FIG. 9 for corresponding structure) away from the drive pulley 34 via a lever system connected to the cover 42 or via a drawstring, so that the tension of the drive belt 31 is lessened and thus the drive is interrupted. The fiber feed can be terminated by employing a magnetic switching element or the like, controlled by the thread regulator 18, for lifting the trough lever 15 off the feed roll 11. In all of these arrangements, the advantage is obtained that the continuous drive shafts 29 and 35 need not be set still, so that it is readily possible to arrest a single spinning unit.

In the embodiment of FIGS. 4–7, the continuous longitudinal shafts 29 and 35, as well as any control shafts included in this arrangement, are supported in independent bearing blocks, so that also a single opening device can be disassembled by itself by loosening the supporting member 80 from the duct, without interfering with the adjacent spinning units.

In all embodiments, the feeding funnel 13 extends, in the operating position, through an opening of the cover 42. The cover 42 is furthermore set back underneath this opening for the inlet funnel 13 so that the entering sliver strand 10 cannot be torn off or pinched during the pivoting step.

FIG. 8 shows another embodiment of the invention, wherein a supporting member 80 is simultaneously fashioned as a holder and is attached to a duct receiving a spinning turbine 1 including the drive and bearing mechanisms thereof. The holder 80 is provided, in the zone of its forward bottom edge, with a pivot axle 88 on which a cover 42 is swingably attached from above. In this embodiment, the cover has an insert 36 threadedly connected thereto and being adjustable with respect to height; this insert contains part of the fiber duct 16 and the thread take-off duct 17. At the top, the cover 42 has a latch 89 engaging a longitudinal groove of the profile 8 of the duct. After releasing this latch 89, the cover can be pivoted downwardly about the axle 88, entraining during this step a brake lever 91 via a stop 90, this lever being pivotable about an axle 92. The brake lever 91 is hingedly connected to a drawstring 93 introduced into the duct via a guide roll 94 and engaging, in a manner not illustrated in detail, a spring-loaded brake device. Therefore, this brake lever 91, optionally braking when the cover 42 is closed, automatically exerts a braking action when the cover 42 is opened.

In order to be able to open the cover 42 entirely, the brake lever 91 is lifted in its pivot axle 92 so that it disengages from the stop 90. If there is to be no possibility for braking when the cover is closed, then the brake lever 91 can be omitted. The drawstring 93 is then hung directly into a hook 95 of the cover 42, which then effects braking upon opening. In this case, the drawstring 93 would have to be removed from the hook 95 for purposes of opening the cover completely.

A tension spring 96 is provided in the zone of the pivot axle 88, this spring being hung into a pin 97 of the suppoting member 80 and into the pin 92 forming the pivot axis for the brake lever 91. This tension spring 96 tends to urge the cover 42 toward the duct, so that especially in case of small spinning units, a locking lever 89 can be omitted. Moreover, the tension spring 96, due to its location, has the effect of a dead-center spring in the completely pivoted position of the cover 42, which also secures the flipped-open condition.

In the embodiment of FIG. 8, the cover 42 is recessed in the zone of its sidewalls in such a manner that the feed rolls of the spinning units of one section of the spinning machine can be fashioned as a continuous shaft or cylinder. In this case, the bearings of these rolls are suitably arranged at the supporting member 39 to be detachable.

In FIGS. 9 and 10, another embodiment of the invention is shown wherein an insert receiving part of the fiber duct 16 and the thread take-off duct 17 is mounted to a pivotable cover 42. In this way, the insert is pivotable together with the cover 42. In this type of construction, a lateral cover panel 98 is provided which furthermore covers part of the periphery of the feed roll 11 and of the opening roll 12. This cover panel 98 is disposed to be pivotable concentrically with respect to the cover 42. The cover panel has an extension 99 pressed into the operating position by a spring 100 resting against the cover 42. The cover 42 has a driving stop 101 on the side opposite the spring 100; this driving stop, in the operating position according to FIG. 9, is disposed at a spacing from the extension 99. When the cover 42 is pivoted, only the insert 36 is first pivoted away from the spinning turbine 1. Only when the stop 101 rests against the extension 99 is the cover panel 98 entrained. This range can be dimensioned so that, in the first stage, the cover panel 98 is not opened, and only the spring 100 expands. Once the cover 42 is further pivoted, the cover panel 98 is entrained. Thereby, the opening roll 12 and the feed roll 11, as well as the associated inlet funnel 13, the trough lever 14, and the cleaning lever 20, are made accessible.

The cover panel 98, just as the cover 42, can be swung about a pipe 23 serving as the cleaning duct and attached to the supporting member 39. The cover panel 98 has a bifurcate opening which opens up in the downward direction and by means of which it is attached to the pipe 23.

In this embodiment, it is possible to remove the cover panel 98 entirely. For this purpose, the driving stop 101 is fashioned as a pivot lever which can be pivoted away from the extension 99 of the cover panel 98. Thereby, it is possible to open the cover 42 completely, without entraining the cover panel 98. The latter can then be simply pulled off at the top.

The cover panel is under the force of a leaf spring 102 in the operating position; this leaf spring is affixed to the supporting member 39 and presses against the panel in the axial direction toward the opening roll 12.

Also in this arrangement, the spinning turbine 1 is braked and the drive of the opening roll 12 is arrested together with the opening of the cover. The opening roll 12 is driven, in a manner corresponding to the embodiment of FIG. 1, by a driving belt 31 looped around a whorl 30 of the opening roll 12. The drive belt 31 is tensioned by a tension roll 32 and pressed against the drive pulley 34 arranged on a continuous shaft 35. The lever 81 carrying the tension roll 32 has a hook-like extension in which a drawstring 103 is suspended, containing a tension spring 104. The drawstring 103 is hung on a pin 105 of the cover 42. This pin 105 is preferably disposed in the zone of a sidewall of the cover 42. Furthermore, a band 106 is hung into the hook-like extension of the arm 81, which band leads to a brake device of the spinning turbine 1, which brake device is

not shown. In this way, with one pivoting of the cover **42**, the spinning turbine **1** is arrested and also the drive of the opening roll **12** is interrupted.

In order to brake the opening roll **12**, a brake pad **107** is arranged on the underside of the duct, against which pad the drive belt **31** is pressed when the cover **42** is pivoted. Additionally, the leaf spring **102** can be provided with a brake lining on the end contacting the cover panel **98**, which lining presses against the opening roll **12** when the cover **42** is pivoted away together with the cover panel **98**. In this connection, even in case of larger opening rolls **12**, one of the two types of braking means will, of course, be sufficient whereas, in case of most of the smaller opening rolls, braking means can be omitted entirely, since it is readiy possible to arrest the opening roll **12** by hand after the drive has been interrupted.

In this embodiment, the feed roll **11** is driven via a standing shaft and worm gears, not shown, by a continuous longitudinal shaft **108**. The standing shaft has a clutch **109** shifted by the thread regulator **18**. Ths ensures that, when the cover **42** is pivoted, the drive of the feeding roll **11** is interrupted, since the thread automatically fails to appear. An interruption of the drive can also be effected by pivoting the trough lever **14**, having a downwardly angled extension, away from the feed roll **11** by means of a push rod **111**, via a magnetic switch **110** controlled by the thread regulator **18**. Under certain circumstances, both measures can be provided simultaneously.

While we have shown and described only several embodiments of the present invention, it is obvious that the same is susceptible of numerous changes and modifications as known to those skilled in the art, and we therefore do not wish to be limited to the details shown and described herein but intend to cover all such changes and modifications as are within the scope of those skilled in the art.

We claim:

1. Spinning machine arrangement comprising:
- stationary supporting means,
- feed roll means and opening roll means disposed in said supporting means,
- spinning turbine means for spinning material supplied from the feed and opening roll means,
- a single removable cover member for covering the turbine means and the feed and opening roll means when in a closed position,
- cover mounting means for accommodating movement of said cover member from said closed position to an open position away from said turbine means and said feed and opening roll means, and
- fiber duct means for guiding the material to be spun from said opening roll means to said turbine means, at least a portion of said fiber duct means being disposed on said support means in a housing surrounding at least a portion of said opening roll means.

2. An arrangement according to claim **1**, wherein said cover member is constructed as a relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means, and wherein said cover mounting means includes pivot means which support said cover means for pivotal movement about a relatively fixed pivot axis.

3. An arrangement according to claim **2**, wherein said turbine means is positioned above said feed and opening roll means, and wherein said pivot axis is located below said feed and opening roll means.

4. An arrangement according to claim **1**, further comprising an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, wherein said insert member is attached to said cover member for movement along with said cover member.

5. An arrangement according to claim **4**, wherein said insert member also forms a thread take-off duct for guiding thread away from said turbine means.

6. An arrangement according to claim **4**, wherein said insert member includes means for covering part of the periphery of at least one of said feed and opening roll means when said cover member is in the closed position.

7. An arrangement according to claim **6**, wherein said insert member includes means for covering part of the periphery of said opening roll means when said cover member is in the closed position.

8. Spinning machine arrangement comprising:
- stationary support member means,
- feed roll means and opening roll means disposed in said supporting member means,
- spinning turbine means for spinning material supplied from the feed and opening roll means,
- removable cover means which covers the turbine means and the supporting member means in the area of the feed and opening roll means when in a closed position,
- cover mounting means for accommodating movement of said cover means from said closed position to an open position away from said turbine means and said feed and opening roll means,
- fiber duct means for guiding the material to be spun from said opening roll means to said turbine means,
- and an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, said insert member being attached to said cover means for movement along with said cover means, said insert member having an extension which covers an end face on at least one of said feed and opening roll means when said cover means is in the closed position.

9. An arrangement according to claim **4**, wherein means are provided for removably and adjustably attaching said insert member to said cover member.

10. An arrangement according to claim **9**, wherein said cover member is constructed as a relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means, and wherein said cover mounting means includes pivot means which support said cover member for pivotal movement about a relatively fixed pivot axis.

11. An arrangement according to claim **10**, wherein said insert member also forms a thread take-off duct for guiding thread away from said turbine means.

12. An arrangement according to claim **10**, wherein said insert member has an extension which covers an end face on at least one of said feed and opening roll means when said cover member is in the closed position.

13. An arrangement according to claim 4, wherein said insert member is constructed integrally with said cover member.

14. An arrangement according to claim 13, wherein said cover member is constructed as a relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means, and wherein said cover mounting means includes pivot means which support said cover member for pivotal movement about a relatively fixed pivot axis.

15. An arrangement according to claim 14, wherein said insert member also forms a thread take-off duct for guiding thread away from said turbine means.

16. Spinning machine arrangement comprising:
stationary supporting means,
feed roll means and opening roll means disposed in said supporting means,
spinning turbine means for spinning material supplied from the feed and opening roll means,
removable cover means which cover the turbine means and the supporting means in the area of the feed and opening roll means when in a closed position, said cover means being constructed as a single relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means,
cover mounting means for accommodating movement of said cover means from said closed position to an open position away from said turbine means and said feed and opening roll means, said cover mounting means including pivot means which support said cover means for pivotal movement about a relatively fixed pivot axis,
fiber duct means for guiding the material to be spun from said opening roll means to said turbine means, a portion of said fiber duct means being disposed on said support means in a housing means surrounding at least a portion of said opening roll means,
and an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, said insert means being constructed integrally with said cover means for movement along with said cover means, said insert member having an extension which covers an end face on at least one of said feed and opening roll means when said cover means is in the closed position.

17. An arrangement according to claim 4, wherein said insert member has a cylindrical head portion which extends into the turbine means when said cover member is closed, and wherein exchangeable means are provided at the outer diameter of said cylindrical head portion for accommodating turbine means of varying diameters.

18. An arrangement according to claim 1, wherein said cover member is constructed as a relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means, and wherein said cover mounting means includes pivot means which support said cover for pivotal movement about a relatively fixed pivot axis.

19. Spinning machine arrangement comprising:
supporting means,
feed roll means and opening roll means disposed in said supporting means,
spinning turbine means for spinning material supplied from the feed and opening roll means,
a single removable cover member for covering the turbine means and the feed and opening roll means when in a closed position,
cover mounting means for accommodating movement of said cover member from said closed position to an open position away from said turbine means and said feed and opening roll means,
fiber duct means for guiding the material to be spun from said opening roll means to said turbine means, and
an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, said insert member being attached to said cover member for movement along with said cover member,
said supporting means being provided with a guide track, said insert member being provided with a corresponding sliding surface, said guide track guiding said sliding surface during opening and closing movements of said cover member.

20. An arrangement according to claim 19, wherein said cover member is constructed as a relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means, and wherein said cover mounting means includes pivot means which support said cover member for pivotal movement about a relatively fixed pivot axis.

21. An arrangement according to claim 20, wherein said guide track and said sliding surface extend concentrically with respect to said pivot axis.

22. An arrangement according to claim 19, wherein said guide track and sliding surface are, respectively, a guide groove and a guide rib.

23. An arrangement according to claim 21, wherein said guide track and sliding surface are, respectively, a guide groove and a guide rib.

24. An arrangement according to claim 4, further comprising locking means disposed between the supporting means and the insert member for releasably locking said cover member in the closed position.

25. Spinning machine arrangement comprising:
stationary supporting means,
feed roll means and opening roll means disposed in said supporting means,
spinning turbine means for spinning material supplied from the feed and opening roll means,
removable cover means which cover the turbine means and the supporting means in the area of the feed and opening roll means when in a closed position,
cover mounting means for accommodating movement of said cover means from said closed position to an open position away from said turbine means and said feed and opening roll means,
fiber duct means for guiding the material to be spun from said opening roll means to said turbine means, a portion of said fiber duct means being disposed on said support means in a housing means surrounding at least a portion of said opening roll means,
an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, said insert member being attached to said cover means for movement along with said cover

means, said insert member having an extension which covers an end face on at least one of said feed and opening roll means when said cover means is in the closed position,

and locking means disposed between the supporting means and the insert member for releasably locking said cover means in the closed position.

26. An arrangement according to claim **1,** wherein means are provided for mounting said opening roll means in the supporting member means so as to be displaceable in the direction of the opening roll means axis.

27. An arrangement according to claim **8,** wherein means are provided for mounting said opening roll means in the supporting member means so as to be displaceable in the direction of the opening roll means axis.

28. An arrangement according to claim **1,** wherein a single supporting means is provided for each turbine means, each of said supporting means also accommodating feed and opening roll means for the respective turbine means, and wherein a plurality of said supporting means are mounted on a common longitudinally extending support member attached to a machine frame.

29. An arrangement according to claim **2,** wherein a single supporting means is provided for each turbine means, each of said supporting means also accommodating feed and opening roll means for the respective turbine means, and wherein a plurality of said supporting means are mounted on a common longitudinally extending support member attached to a machine frame.

30. An arrangement according to claim **28,** further comprising fiber duct means for guiding the material to be spun from said opening roll means to said turbine means, and an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, wherein said insert member is attached to said cover member for movement along with said cover member.

31. Spinning machine arrangement comprising:

supporting means,

a feed roll means and opening roll means disposed in said supporting means,

spinning turbine means for spinning material supplied from the feed and opening roll means,

a single removable cover member for covering the turbine means and the feed and opening roll means when in a closed position,

cover mounting means for accommodating movement of said cover member from said closed position to an open position away from said turbine means and said feed and opening roll means,

a single supporting means is provided for each turbine means, each of said supporting means also accommodating feed and opening roll means for the respective turbine means, a plurality of said supporting means being mounted on a common longitudinally extending support member attached to a machine frame, said longitudinally extending support member being a pipe which forms a cleaning duct for the opening roll means.

32. Spinning machine arrangement comprising:

a plurality of single supporting means,

feed roll means and opening roll means disposed in each of said supporting means,

a plurality of spinning turbine means for spinning material supplied from the feed and opening roll means, each of said supporting means accommodating feed and opening roll means for a respective turbine means,

removable cover means which covers the turbine means and the supporting member means in the area of the feed and opening roll means when in a closed position, said cover means being constructed as a single relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means,

cover mounting means for accommodating movement of said cover means from said closed position to an open position away from said turbine means and said feed and opening roll means, said cover mounting means including pivot means which support said cover means for pivotal movement about a relatively fixed pivot axis,

a common longitudinally extending support member attached to a machine frame for mounting said plurality of supporting means, said longitudinally extending support member being a pipe which forms a cleaning duct for the opening roll means.

33. Spinning machine arrangement comprising:

supporting means,

feed roll means and opening roll means disposed in said supporting means,

spinning turbine means for spinning material supplied from the feed and opening roll means,

a single removable cover member for covering the turbine means and the feed and opening roll means when in a closed position,

cover mounting means for accommodating movement of said cover member from said closed position to an open position away from said turbine means and said feed and opening roll means,

a single supporting means is provided for each turbine means, each of said supporting means also accommodating feed and opening roll means for the respective turbine means, a plurality of supporting means being mounted on a common longitudinally extending support member attached to a machine frame,

a common housing is provided for the turbine means associated with said plurality of supporting means,

and holder means are interposed between some of said supporting means and said common housing for attaching said common housing to said supporting member, at least those supporting means not having holder means are arranged on a pipe which forms a cleaning duct for the opening roll means.

34. Spinning machine arrangement comprising:

supporting means,

feed roll means and opening roll means disposed in said supporting means,

spinning turbine means for spinning material supplied from the feed and opening roll means,

a single removable cover member for covering the turbine means and the feed and opening roll means when in a closed position,

cover mounting means for accommodating movement of said cover member from said closed position to an open position away from said turbine means and said feed and opening roll means,

a single supporting means is provided for each turbine means, each of said supporting means also accommodating feed and opening roll means for the

respective turbine means, a plurality of said supporting means being mounted on a common longitudinally extending support member attached to a machine frame,

fiber duct means for guiding the material to be spun from said opening roll means to said turbine means,

an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, said insert member being attached to said cover member for movement along with said cover member,

a common housing is provided for the turbine means associated with said plurality of supporting means, and

holder means are interposed between some of said supporting means and said common housing for attaching said common housing to said supporting means, at least those supporting means not having holder means are arranged on a pipe which forms a cleaning duct for the opening roll means.

35. Spinning machine arrangement comprising:

supporting member means,

feed roll means and opening roll means disposed in said supporting member means,

spinning turbine means for spinning material supplied from the feed and opening roll means,

removable cover means which covers the turbine means and the supporting member means in the area of the feed and opening roll means when in a closed position, said cover means being constructed as a single relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means,

and cover mounting means for accommodating movement of said cover means from said closed position to an open position away from said turbine means and said feed and opening roll means, said cover mounting means including pivot means which support said cover means for pivotal movement about a relatively fixed pivot axis, said pivot means being a longitudinally extending pipe which forms a cleaning duct for the opening roll means.

36. An arrangement according to claim **34,** wherein a single cover member is provided for each turbine means, said pipe also serving as a pivot means for each of said cover members.

37. An arrangement according to claim **35,** wherein means are provided for detachably attaching said cover member to the pipe.

38. An arrangement according to claim **36,** wherein means are provided for detachably attaching each of said cover members to the pipe.

39. An arrangement according to claim **1,** further comprising transmission means for controlling at least one of driving means and braking means of at least one of said turbine means, said opening roll means and said feed roll means in response to opening of said cover member.

40. An arrangement according to claim **2,** further comprising transmission means for controlling at least one of driving means and braking means of at least one of said turbine means, said opening roll means and said feed roll means in response to opening of said cover member.

41. An arrangement according to claim **4,** further comprising transmission means for controlling at least one of driving means and braking means of at least one of said turbine means, said opening roll means and said feed roll means in response to opening of said cover member.

42. Spinning machine arrangement comprising:

supporting member means,

feed roll means and opening roll means disposed in said supporting member means,

spinning turbine means for spinning material supplied from the feed and opening roll means,

removable cover means which covers the turbine means and the supporting member means in the area of the feed and opening roll means when in a closed position, said cover means being constructed as a single relatively rigid member which in the closed position extends from above said turbine means to below said feed and opening roll means,

cover mounting means for accommodating movement of said cover means from said closed position to an open position away from said turbine means and said feed and opening roll means, said cover mounting means including pivot means which support said cover means for pivotal movement about a relatively fixed pivot axis,

transmission means for controlling at least one of the driving means and braking means of at least one of said turbine means, said opening roll means and said feed roll means in response to the opening of said cover means, a rocker arm is provided which receives a tension roller of a belt for driving the opening roll means,

and transmission means including means interconnected with said cover means and said rocker arm for causing said rocker arm to lift said tension roller off a drive pulley in response to opening of said cover means.

43. An arrangement according to claim **42,** further comprising fiber duct means for guiding the material to be spun from said opening roll means to said turbine means, and an insert member forming a portion of the fiber duct means which is disposed in front of the turbine means, wherein said insert member is attached to said cover means for movement along with said cover means.

44. An arrangement according to claim **40,** wherein means are provided for mounting said cover member on the spinning machine to be openable in two stages and displaced to first and second open positions, said transmission means including means for separately transmitting the displacement of said cover member to said two stages for controlling said at least one of driving means and braking means of the turbine means and the opening roll means.

45. An arrangement according to claim **41,** wherein means are provided for mounting said cover member on the spinning machine to be openable in two stages and displaced to first and second open positions, said transmission means including means for separately transmitting the displacement of said cover member to said two stages for controlling said at least one of driving means and braking means of the turbine means and the opening roll means.

46. An arrangement according to claim **44,** wherein said means for separately transmitting the displacement of said cover member includes means for selectively stopping the driving means and engaging the brake

means of the turbine means whereby the opening movement of said cover member to said first open position is transmitted by said transmission means to stop the driving means and engage the braking means of the turbine means.

47. An arrangement according to claim **46,** wherein said means for separately transmitting the displacement of said cover member includes means for selectively stopping the driving means of said opening roll means whereby the opening movement of said cover member to said second open position is transmitted by said transmission means to stop the driving means of said opening roll means.

48. An arrangement according to claim **44,** wherein said turbine means is accessible for cleaning and repair purposes from the outside and means are provided for permitting only partial access to said opening roll means for observation purposes from the outside when said cover member is in said first position.

49. An arrangement according to claim **48,** wherein means are provided for permitting complete access to both said turbine means and said opening roll means for cleaning and repair purposes from the outside when said cover member is in said second position.

50. An arrangement according to claim **48,** wherein said means for separately transmitting the displacement of said cover member includes means for stopping the driving means and engaging the brake means of said turbine means whereby the opening movement of said cover member to said first open position is transmitted by said transmission means to stop the driving means and engage the braking means of the turbine means.

51. An arrangement according to claim **49,** wherein said means for separately transmitting the displacement of said cover member includes means for stopping the driving means of said opening roll means whereby the opening movement of said cover member to said second open position is transmitted by said transmission means to stop the driving means of said open roll means.

52. An arrangement according to claim **39,** wherein said supporting member means has a trough lever for controlling said feed roll means, said lever being controlled by a thread regulator arranged at a thread duct means leading from the turbine means.

53. An arrangement according to claim **40,** wherein said supporting member means has a trough lever for controlling said feed roll means, said lever being controlled by a thread regulator arranged at a thread duct means leading from the turbine means.

54. An arrangement according to claim **3,** wherein an inlet funnel and an opening for receiving said inlet funnel are provided, said pivot axis is arranged underneath said opening, said inlet funnel guides material to be spun to said feed roll means.

55. An arrangement according to claim **3,** wherein means are provided for removably mounting said turbine means in the spinning machine, said cover member in a fully open position permitting said turbine means to be removed from said mounting means by displacement in the direction of the turbine means axis.

56. An arrangement according to claim **2,** further comprising a lateral cover panel for laterally covering at least one end face of the feed roll means and opening roll means, said lateral cover panel being pivotable about the same axis as said pivot axis of the cover member, and cover connecting means for connecting said lateral cover panel to said cover member such that said cover panel remains stationary during initial opening movement of said cover member and moves with said cover member during final opening movement of said cover member.

57. An arrangement according to claim **4,** wherein said supporting means is provided with a guide track, and wherein said insert member is provided with a corresponding guide surface, said guide track guiding said guide surface during opening and closing movement of said cover member.

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