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Stahlecker

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[54] **SPINNING MACHINE OPERATING ACCORDING TO THE OPEN-END METHOD**

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[73] Assignee: **Stahlecker GmbH**

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Nov. 17, 1971 Germany 2157021

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

[58] **Field of Search**. 57/34 R, 1 R, 56, 58.89–58.95

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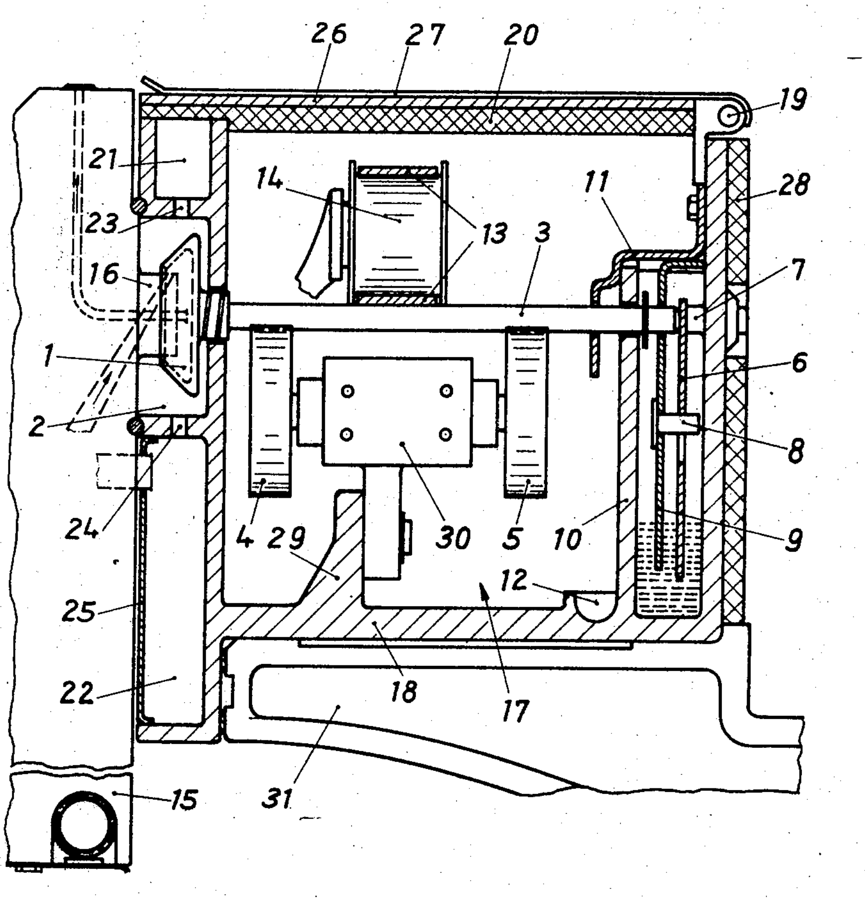
Primary Examiner—Donald E. Watkins
Attorney, Agent, or Firm—Craig & Antonelli

[57] **ABSTRACT**

A spinning machine operating according to the open end method and including a plurality of spinning units each having a spinning turbine rotating in a turbine housing under subatmospheric pressure. A closed duct or tunnell extends over a plurality of spinning units to sound proofingly enclose the turbine shafts, shaft driving, and shaft bearing or supporting means associated with the respective spinning units. Cooling air conveying systems operatively connected to the mechanism for driving the spinning shafts are provided for conducting cooling air through and out of the closed duct. The closed duct is constructed in sections to accommodate the assembly, disassembly and repair large machines having many individual spinning turbines. A profiled rail including structure for accepting spinning units may be incorporated with the closed duct structure to facilitate modular construction of the entire spinning machine. The closed duct also includes structure for accommodating the vacuum lines leading to individual housings, and the supporting or bearing oiling, and driving mechanisms associated with each spinning unit. In some embodiments, the closed duct also forms the turbine housings. Synthetic resinous inserts may be provided to separate individual turbine housings. The closed duct strut also includes hinged structure to ready access to the interior thereof.

52 Claims, 16 Drawing Figures



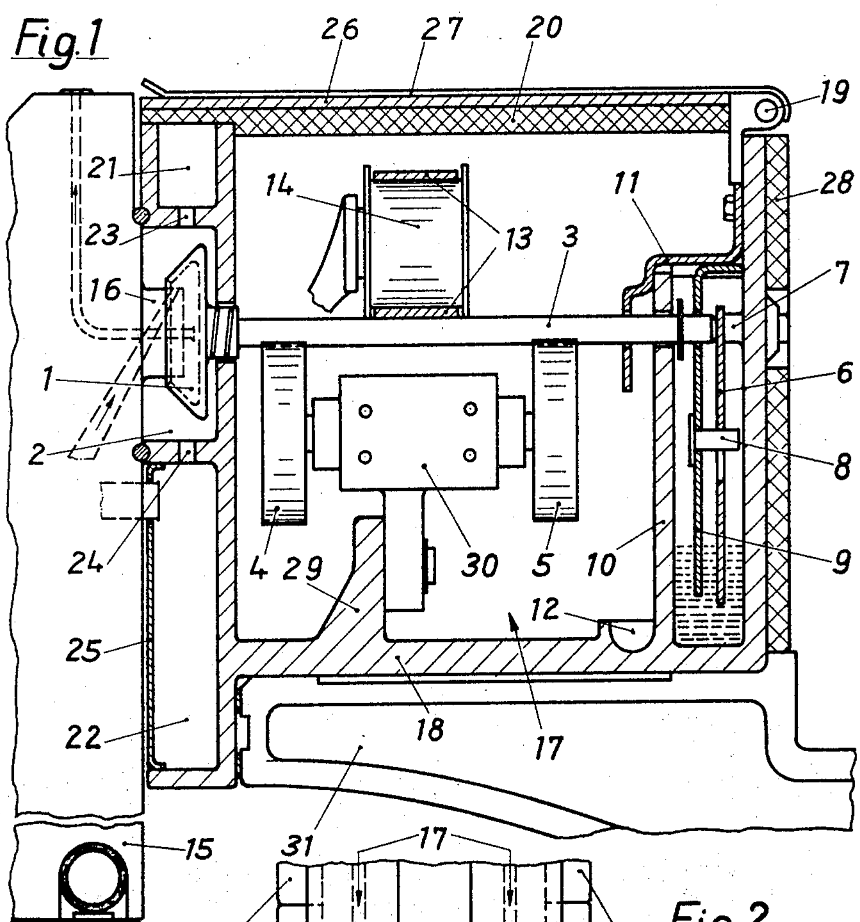

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Fig.1

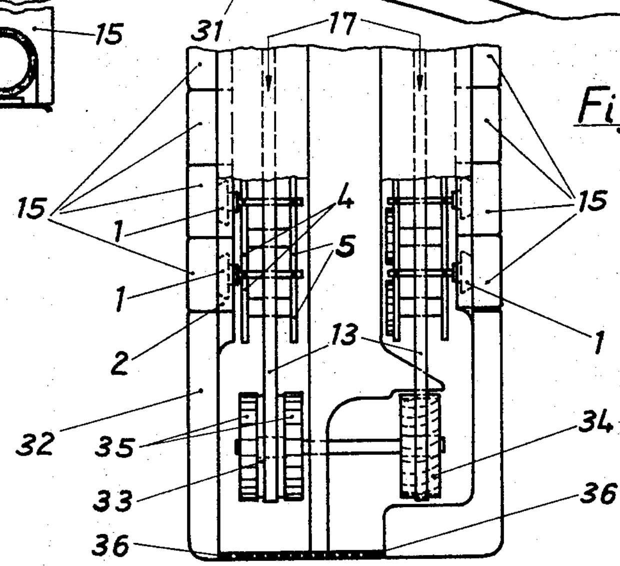
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Fig.2

Fig 3

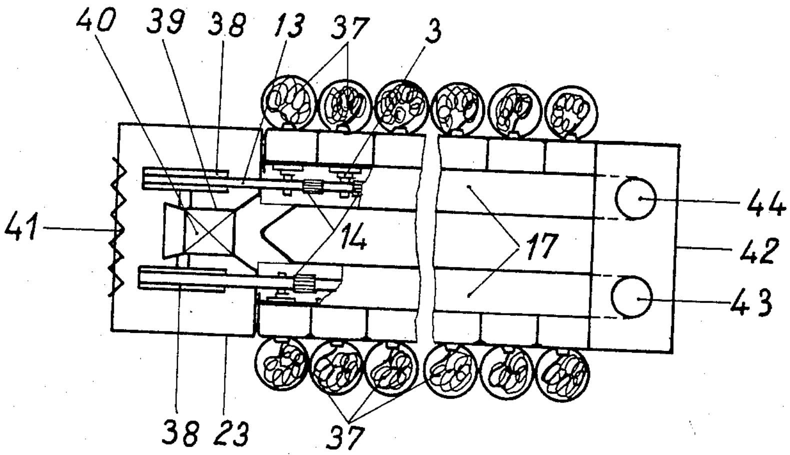
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Fig. 4

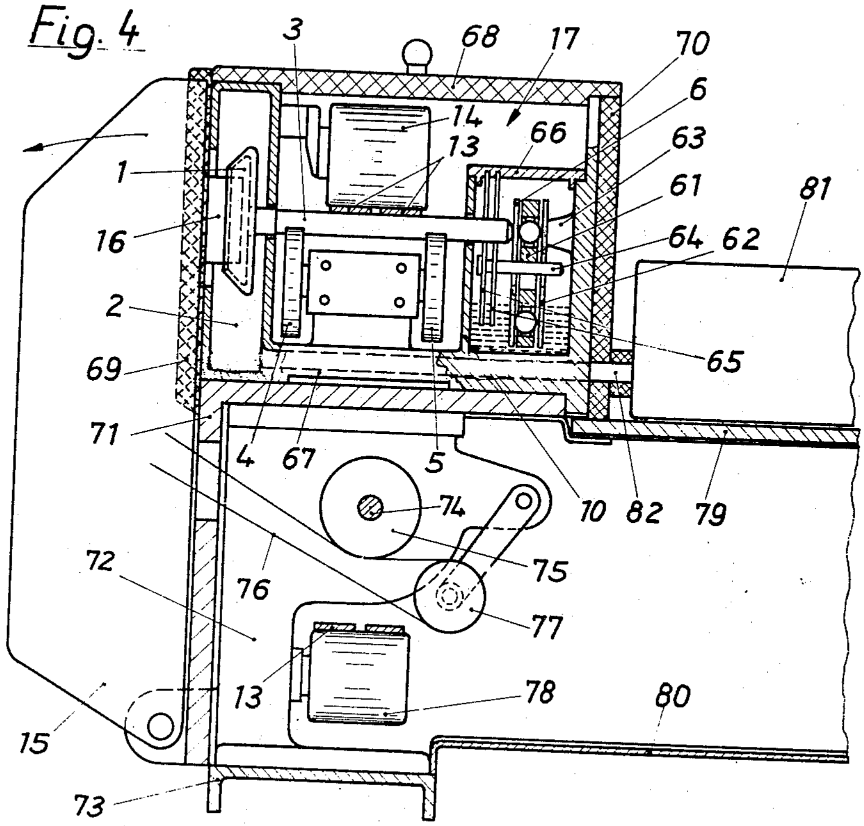
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Fig.5

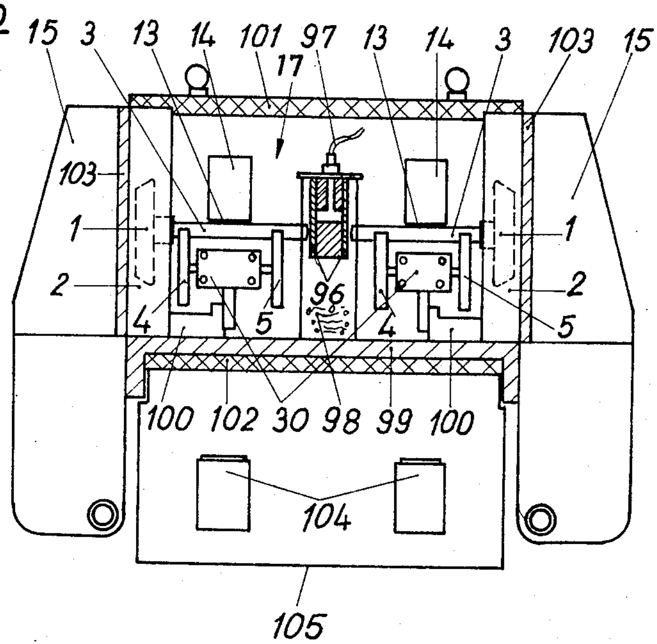
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Fig.6

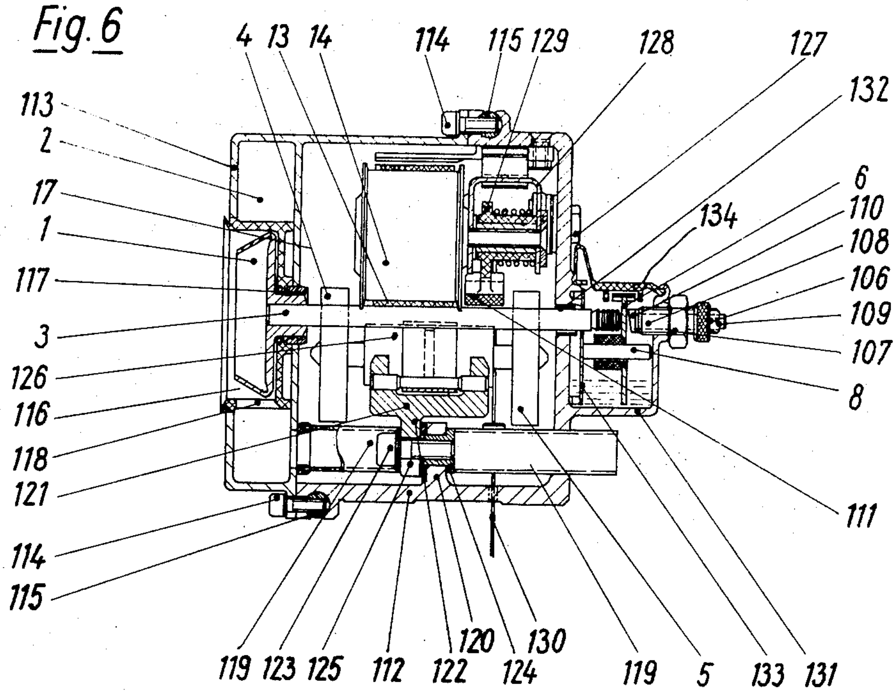
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Fig. 7

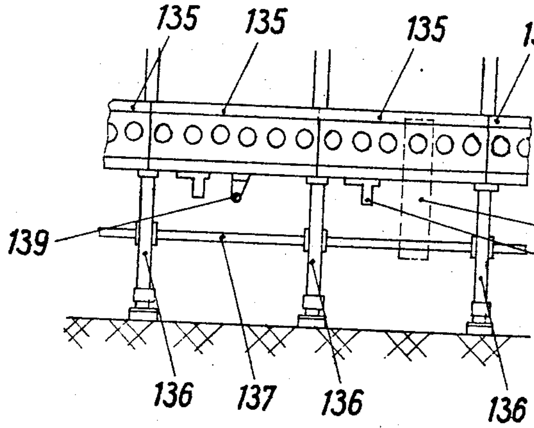


Fig. 8

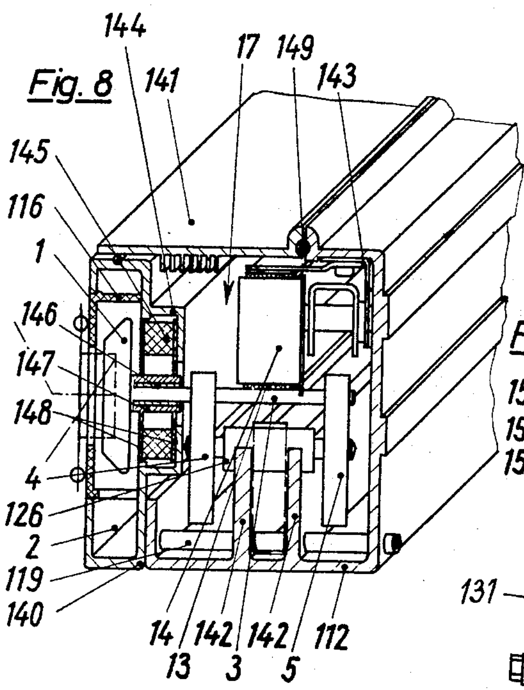


Fig. 9

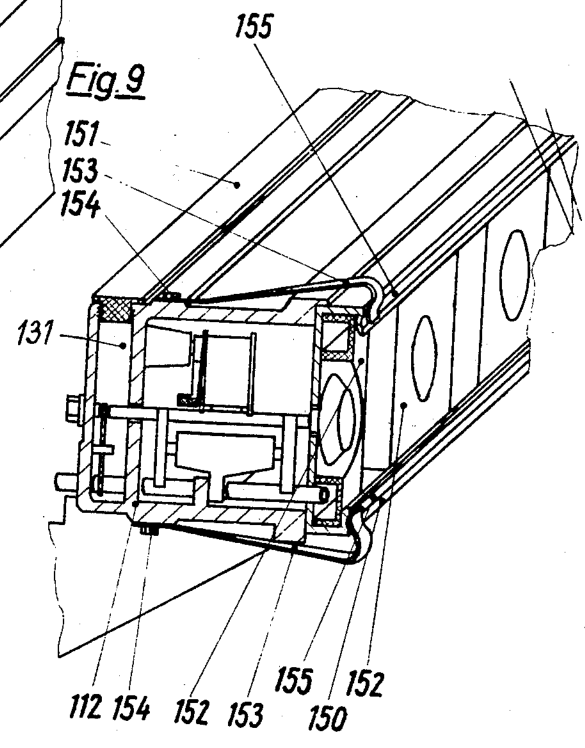


Fig. 10

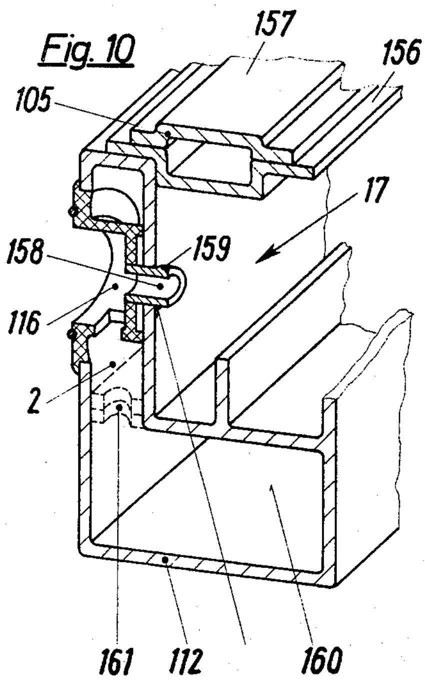


Fig. 11

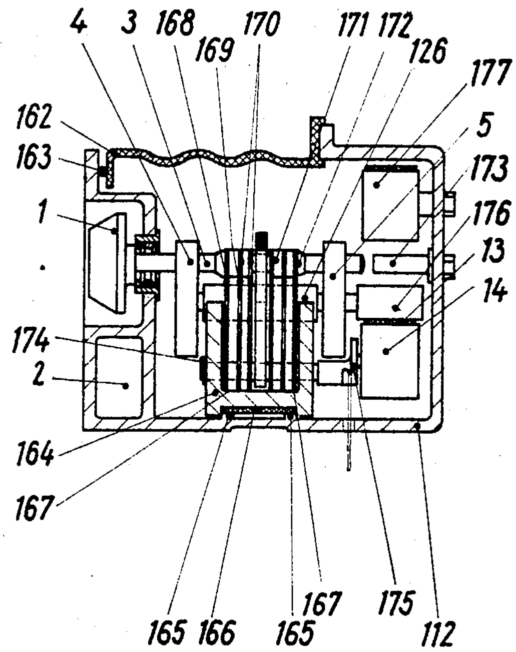
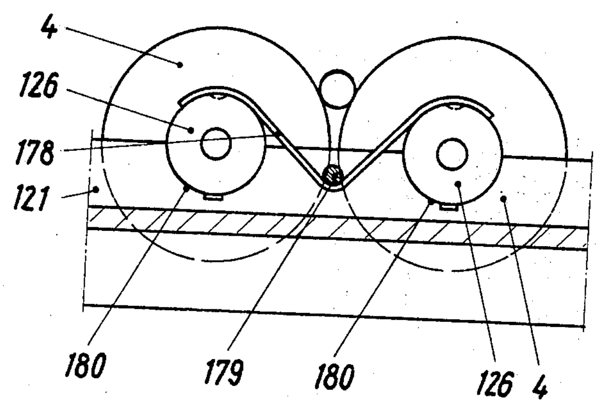


Fig. 12



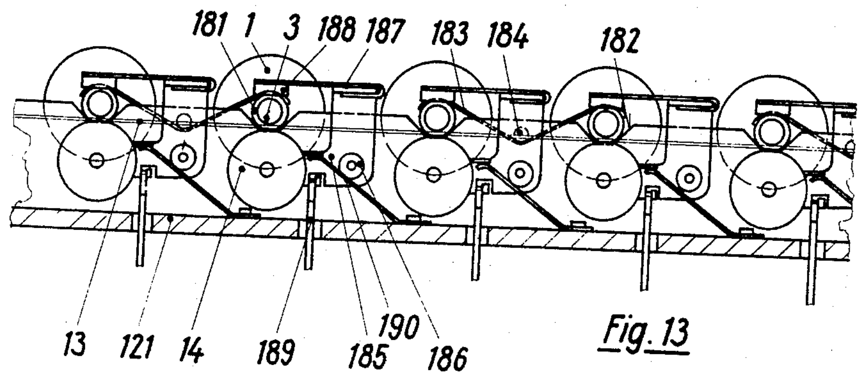


Fig. 13

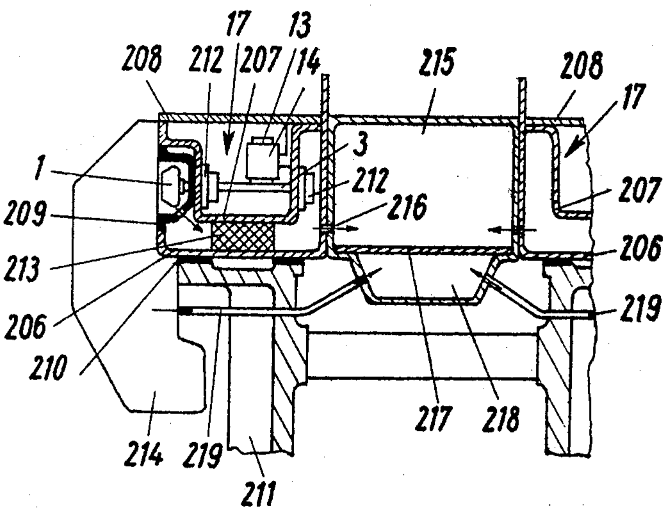


Fig. 16

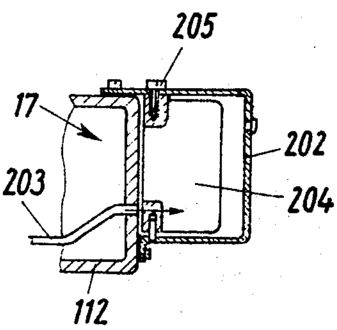


Fig. 15

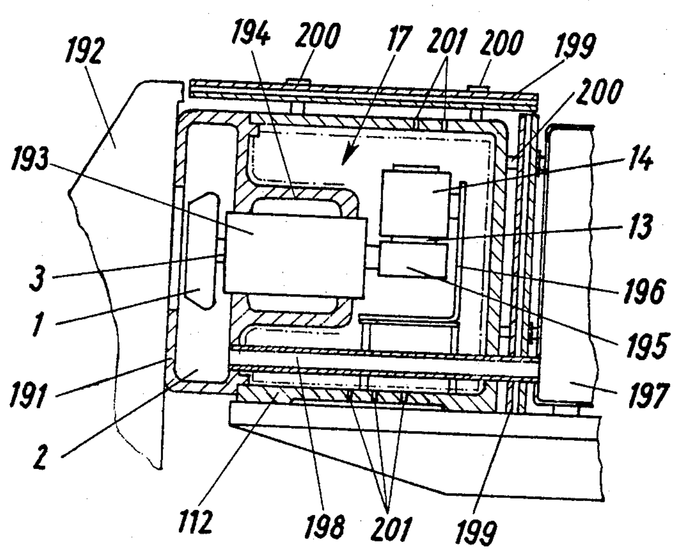


Fig. 14

SPINNING MACHINE OPERATING ACCORDING TO THE OPEN-END METHOD

BACKGROUND AND SUMMARY OF THE INVENTION

This invention relates to a spinning machine operating in accordance with the open-end method, with several spinning units each containing a spinning turbine. Each of the spinning turbines rotates within a turbine housing which is under subatmospheric pressure. A turbine shaft for each turbine penetrates the rear wall of the turbine and is mounted or supported and driven in the rear wall or behind the rear wall.

In open-end spinning or turbine spinning, very high speeds of rotation are provided for the spinning turbine, since this process is more economical than the classical spinning method only in case of such high speeds. In order to be able to realize these high speeds of rotation, which can amount to 60,000 r.p.m., and thereabove, various types of bearings have been contemplated, wherein antifriction bearings are employed in most instances. A disadvantage of such an arrangement is that antifriction bearings cause running noises which often exceed the limit tolerable for the operating personnel.

For reasons of economy, the spinning turbines are normally driven by way of tangential belts or bands, so as to make it unnecessary to provide each spinning turbine with a separate electric motor or other driving mechanism. Tangential belts or bands also cause strong running or operating noises, since they must be operated at high speeds.

This invention is directed in part to solving the problems of constructing a spinning machine of the type mentioned above, with the use of the conventional bearing and drive elements, in such a manner that no excess running noises occur during operation. The present invention contemplates accommodating the turbine shafts, including their bearings and drive means, in a closed duct extending in the longitudinal direction of the spinning machine, perpendicular to the turbine shaft axes. With this closed duct construction, the parts which cause running noises are well encapsulated so that the running noises are noticeable on the outside of the duct only to a minor extent. Also, by the arrangement of the bearing and drive elements of the spinning turbines in a duct or tunnel, an optically pleasing impression of the entire spinning machine is obtained, since in this way a smooth exterior and compact mode of construction is made possible.

The present invention further contemplates a further development of the duct construction and the advantages thereof to fashion a spinning machine so that the manufacturing costs are reduced. This further development includes the provision of a duct which is composed of several series-disposed elements which are preferably constructed as supporting base members; each of these base members being fashioned as receiving and mounting means for components of several adjacent spinning units.

By this series-disposed construction of the spinning machine, the objective is attained that the casing of the drive and mounting means, fashioned as a duct, fulfills additional functions in conjunction with the noise attenuation. The duct walls surrounding the turbine drive mechanism not only serve for noise attenuation, but

also accomplish the further purpose of making the drive mechanism and the turbine bearings proper even more safe in operation and even more economical in their manufacture than heretofore possible. With the series-disposed elements as base members, the present invention contemplates producing the spinning machine in a sectional mode of construction, i.e., to subdivide the spinning machine into sections of prefabricated components and then to assemble these sections into the complete spinning machine. This sectional manufacturing or construction mode permits a more advantageous production and, very importantly, a more advantageous machining of the individual components with consequent increased accuracy. Also, the packaging and the final assembly are essentially simplified by this sectional construction mode. Further advantages are attained in the operation of the spinning machine of this invention with respect to servicing and repair, since either individual sections or specific components of the bearings or the like of the spinning units can be exchanged in their entirety. The present invention further contemplates utilizing the duct for forming a part of the supporting structure of the spinning machine such that a substantial simplification of the basic spinning machine frame becomes possible.

The present invention further contemplates an embodiment including the provision that the duct has a rectangular cross-section, wherein the base or main member, which is of a U-shape or of an angular configuration, forms at least the bottom and the rear wall, whereas the front wall and/or the ceiling are fashioned as a one-piece or multipartite cover or lid. The construction ensures a very stable arrangement, while simultaneously assuring ready accessibility to all assemblies contained in the closed duct.

In one aspect of the present invention, it is contemplated that the base or main member is fashioned integrally with the turbine housings of several spinning units. This mode of construction has the advantage that these base or main members are provided with a high dimensional stability by the special structure of one wall. In another advantageous embodiment contemplated by this invention, a wall attached as a detachable lid on the base member, preferably on the front side, constitutes a turbine housing common to several spinning units. This last mentioned embodiment affords the advantage that servicing is simplified, since the accessibility of a section is improved by removing the lid-like turbine housing.

In order to prevent adjacent spinning turbines disposed in the common turbine housing from interfering with one another due to air eddies or the like produced during spinning operation, which interference is especially important in case of small machine constructions, the present invention contemplates dividing the common turbine housing by preferably detachable inserts. By using detachable inserts, it is possible in a simple manner to subdivide the common turbine housing into several individual chambers. In this connection, it is advantageous if inserts with varying inner diameters can be inserted in the turbine housing. Thereby, the further advantage is attained that the spinning machine can be adapted to different spinning turbines with a minimum of assembly work.

The present invention further contemplates an advantageous embodiment utilizing an extruded profile part of aluminum or the like for making at least the base or main member of the duct. Such a profiled part can be manufactured rather inexpensively in the desired sizes and with the required degrees of accuracy. In this embodiment, the advantage is attained that no difficulties are involved in producing even a profiled part of a complicated shape.

The present invention further contemplates an advantageous embodiment utilizing a sheet metal profile for making at least the base member of the duct. Such a sheet metal profile can be of advantage particularly in case of lightweight spinning machines.

Since, according to the present invention, the base members can readily be dimensioned so that the duct represents the essential supporting structure for the spinning machine, another development of this invention provides that the duct composed of the base members serves as a supporting structure for feeding and opening devices associated with each spinning unit. In order to be able to arrange fixed feeding and opening devices in this construction, without impeding the accessibility of the interior of the duct or the spinning turbine, the present invention contemplates that removable intermediate or connecting pieces are disposed between the turbine housings and the feeding and opening devices fixedly arranged therebelow.

The present invention further contemplates utilizing the duct in still another manner, by providing the topside of the base members with mounting means for take-off rolls, pirns, or the like.

Since the drive and bearing assemblies of the individual spinning units on a spinning machine according to the present invention are subject to an increased development of heat at the high operating speeds, the present invention contemplates the provision of one or more air conveying devices to produce an air flow or stream through the duct. This air flow or stream prevents the localized development of heat at any place along the duct, which localized heat is detrimental especially for grease-lubricated bearings and for the drive means, especially sets of supporting rollers or friction wheels or the like. Since the measures of this invention make it possible to remove the thus-produced heat within the duct, a special advantage is attained additionally for the engine rooms within which the machines are operating, since the air conditioner of these rooms is not burdened by this additional evolution of heat.

The present invention further contemplates another embodiment of the invention which provides that the bottom of the base member is equipped with mountings for a detachable profiled rail receiving the bearings and/or guide elements and/or drive and braking devices of several spinning units. This profiled rail arrangement makes it possible to install and disassemble these parts (bearings and/or guide elements and/or drive and braking devices) as complete modules into and out of the respective section of the spinning machine. Such a profiled rail can be machined relatively simply with great accuracy so that the components mounted thereto are aligned exactly in the desired manner; consequently, exact running conditions are provided for the turbine shafts of the spinning turbines. In particular, servicing and repair can be simplified, since it is possible to remove in each case a profiled rail with all of its components and send same, for repair or servicing, to a workshop especially equipped for this purpose, or also to the manufacturing plant. Upon reinstallation, the alignment of the individual parts with respect to one another is not impaired.

In a further development, the present invention contemplates the provision to equip one wall of the base member, particularly the rear wall, with axial securing means for the individual turbine shafts. Thereby, a further wall of the duct executes an additional function, while simultaneously advantages are attained from the viewpoints of manufacturing technique and functional operation resulting from a sectional mode of construction. In a particularly advantageous functional embodiment of this invention, the rear wall of the duct is provided, preferably on its outside, with an oil channel closed off by a detachable lid and wherein an adjustable guide plate is arranged for each spinning unit, respectively one tubine shaft contacting this plate. In this connection, it is advantageous that a relatively large amount of oil can be housed therein, so that the lubrication is ensured even over a very long operating period.

In case the base member, including the oil channel, consists of an extruded profiled element, the present invention contemplates providing elastic filling pieces between the oil channels of the adjacent base members. These filler elements can separate the individual oil channels from one another, or they can also merely seal these channels with respect to the outside, so that an oil channel extending along the entire spinning machine is created.

The present invention further contemplates a further embodiment of the invention having, on one wall of the base member, particularly on the rear wall, bearing bolts for the reception of swivel arms on which drive and/or braking devices associated with individual spinning units are supported. Thus, a further wall of the closed ducts is provided with an additional function.

Further features and advantages of the invention can be seen from the description of several embodiments illustrated in the drawings, and from the claims.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a partial cross sectional view through a spinning unit of a spinning machine constructed in accordance with this invention,

FIG. **2** is a top view of part of a spinning machine with spinning units according to FIG. **1**

FIG. **3** is a top view of another embodiment of a spinning machine according to the present invention, similar to FIG. **2**, but with directly supported spinning turbines,

FIG. **4** is a cross sectional view through another embodiment of a spinning unit according to the present invention, similar to FIG. **1** with an air exhaust duct,

FIG. **5** is a cross sectional view through an embodiment of the present invention with two spinning units disposed in opposition on both sides of the machine, which units are accommodated in a common duct,

FIG. **6** is a cross sectional view through another embodiment of a spinning unit according to the present invention, similar to FIG. **4**, but with an axial bearing for the turbine disposed on the outside of the duct,

FIG. **7** is a lateral partial schematic view of another embodiment of a spinning machine according to the present invention which is composed of a plurality of sections,

FIG. **8** is a cross sectional view through another embodiment of a spinning unit according to the present invention which is similar to FIG. 4, but without an axial bearing on the rear duct wall, with the duct being shown in a perspective view,

FIG. 9 is a cross sectional view through another embodiment according to the present invention with a perspective view of the duct exhibiting a laterally open base member,

FIG. 10 is a cross sectional perspective view of a further embodiment according to the present invention of the duct with an air chamber disposed at the bottom,

FIG. 11 is a cross sectional view through another embodiment of a spinning unit according to the present invention with a turbine shaft secured axially by means of magnets,

FIG. 12 shows a detail of the spinning machine according to FIG. 6,

FIG. 13 is a partial lateral view of the arrangement of the drive and braking devices in an embodiment of a spinning machine according to the present invention which utilizes direct bearing means,

FIG. 14 is a cross sectional view through another embodiment of a spinning unit according to the present invention with a spinning turbine supported in a direct bearing, wherein the duct walls are surrounded by sound-absorbing panels,

FIG. 15 is a cross sectional view of an air exhaust channel according to the present invention with auxiliary devices, adjoining the duct, and

FIG. 16 is a cross sectional view through a spinning unit of a spinning machine according to the present invention, the duct of which is composed of sheet metal profiles.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring to the drawings, wherein like parts have like reference numerals throughout the various views, and particularly to FIG. 1, a high-speed spinning turbine 1 is shown disposed in a turbine housing 2. The spinning turbine 1 is provided with a turbine shaft 3 penetrating the rear wall of the turbine housing 2 and supported in a V-groove formed by two pairs of supporting disks 4 and 5. The turbine shaft 3 is supported in the axial direction on a guide plate 6 resting against a securing means 7. The guide or bearing plate 6 is rotatably arranged on a pin 8 attached to a partition 9 of an oil tank 10. The oil tank 10 is filled with oil to such an extent that the guide plate 6 is immersed in an oil bath. The oil casing 10 is closed at the top by means of a profiled rail 11 exhibiting a bore for passing the turbine shaft 3 therethrough. The profiled rail 11 serving as the cover is fashioned so that any oil which may pass through the bore of the oil tank 10 is caught and can drip into an oil groove 12.

The turbine shaft 3 is driven by means of a tangential belt 13 directly abutting the shaft; which belt 13 is pressed against the turbine shaft 3 by a pressure roller 14 arranged offset with respect to the turbine shaft 3. The tangential belt 13 returns by way of the top of the pressure roller 14.

In front of the turbine chamber 2, a swivel housing 15 is disposed which contains, in a manner not illustrated in detail, an opening and feeding device for the spinning fibers to be spun. A cylindrical extension 16, provided with a feed channel and a discharge channel, extends into the spinning turbine 1. The opened fibrous material is fed to the spinning turbine 1 via the extension 16 in an oblique direction from the bottom, whereas the spun fibrous material is withdrawn via the same extension 16 first in a horizontal direction and then vertically upwardly. (The feeding and discharge channels are shown in dashed lines in FIG. 1 with arrows indicating the path of the material.)

The turbine shaft 3, and the bearing or supporting and driving means associated therewith, is surrounded by a duct 17 extending in the longitudinal direction over the entire spinning machine, i.e. through all spinning units of one side of the machine. This duct 17 is formed by a U-shaped base member 18, the topside of which is closed by a cover 20 pivotable about an axle or pivot pin 19. The turbine housing 2 is formed integrally with the base member 18. Vacuum channels 21 and 22 are arranged above and below the turbine housing 2 for communicating with the turbine housing 2 via bores 23 and 24, respectively. The upper U-shaped vacuum channel 21 is also closed off by the cover 20, whereas the lower vacuum channel 22 is sealed by its own detachable lid 25. This latter lid 25 is provided, in a manner not shown in detail, with connections to a cleaning device for the opened fibrous material. The thick bottom wall of the duct 17 and the relatively thick wall containing the vacuum channels 21 and 22 and the turbine chamber 2 provide a good noise attenuation due to their thickness. The cover 20 is also provided with two cover plates 26 and 27 of a noise-damping material to further limit the noise propogation at the outside of the duct 17. Also, the rear wall of the duct 17 is covered by a panel 28 of a soundproofing material.

A holder 29 projects from the duct bottom of the base member 18. This holder 29 carries the bearings 30 of the supporting roller pairs 4 and 5. The oil groove 12 and the oil tank 10 are likewise formed integrally with the base member 18 in this embodiment. The main member 18 is supported on girders 31 of the machine frame.

In order to be able to remove the heat of the bearing and drive elements developing during operation without localized hot spots, the duct 17, in a manner illustrated in connection with FIG. 2, and described is connected to an air conveying device which generates an air flow in the duct. This air current can be relatively weak and yet can provide a sufficient cooling effect, so that the driving power required therefor remains at a minimum. In a preferred arrangement, the duct 17 together with the oil housing 10 and the turbine casings 2 is composed of individual sectional parts corresponding to the length of one spinning unit or of several spinning units. Between these partial sections or sectional parts, mutually sealing gaskets are advantageously provided. In this embodiment of the invention, it is readily possible to exchange individual partial sections which, for example, correspond to the length of one spinning unit, and to replace same by other partial sections.

The top view of the spinning machine of FIG. 1, illustrated in FIG. 2, shows two possibilities for producing an air flow within the ducts 17 of a spinning machine equipped with spinning units on both sides. Respectively one drive pulley 33 and 34 is provided in the enginge head 32 for the tangential belts 13 of both sides of the machine. In the left-hand half of FIG. 2, the duct 17 is fashioned to be linearly continuous, so that it extends in the same direction through the engine head 32. The drive pulley 33 is studded on both sides with fan blades 35 forming a king of tangential-flow fan which generates an air flow within the duct 17. The thus-formed tangential-flow fan takes in the air via a screen 36 disposed at the end of the engine head 32 and blows the air through the duct 17. In the right-hand half of the embodiment according to FIG. 2, the duct 17 likewise extends through the engine head 32. The drive pulley 34 is fashioned as an axial-flow fan, while the duct 17, due to a corresponding deflection in the zone of the pulley, extends in an axial orientation with respect to the drive pulley 34. Also in this embodiment, the drive pulley 34 takes in air via a screen 36 and blows this air through the duct 17. In most cases, it will be advantageous to arrange muffling devices, not illustrated in detail, behind the screens 36. Of course, the fans can also be fashioned so that the air movement takes place in the opposite direction.

The spinning machine illustrated in a top view in FIG. 3 is provided with spinning units on both sides. A closed duct 17 is provided for each side of the machine, wherein the drive and bearing elements of the spinning units are disposed. In this embodiment, the turbine shafts 3 of the spinning turbines are supported in the rear wall of the turbine housing 2 directly in antifriction bearings. The turbine shafts extending beyond these bearings into the ducts 17 are again driven by tangential belts 13 pressed against the turbine shaft 3 by means of contact rollers 14. The individual spinning units are provided with swivel housings 15 containing the required feeding and opening devices which remove the silver from cams 37 set up beside the spinning machine, open it up, and feed it to the respective spinning turbines.

The two ducts 17 shown in FIG. 3 are joined in front of the machine head 32, which machine head exhibits two drive pulleys 38 for the tangential belts 13. The ducts 17 terminate in a housing 39 containing a fan 40. This fan 40 sucks air in via a screen 41 mounted at the engine head 32, and blows this air through the ducts 17 to the end 42 of the machine, provided with discharge openings 43 and 44. The air heated within the ducts 17 can be exhausted to the outside via conduits which are not shown in detail, if the temperature in the engine space or engine room is not to be influenced. In case of longer spinning machines, it can be advantageous to subdivide the ducts 17 into several sections in order to discharge the heated air already at the connection points between sections and to feed fresh air for the further sections with the aid of additional air conveying devices.

The embodiment shown in FIG. 4 corresponds to that of FIG. 1 with respect to its basic structure. The spinning turbine 1, running in a turbine housing 2, has a turbine shaft 3 penetrating the rear wall of the turbine housing 2. This shaft is radially supported in a V slot formed by two supporting roller pairs 4 and 5. The driving means are two parallel-running drive belts 13 which are under the effect of a pressure roller 14 in the direction toward the V slot. The rear end of turbine shaft 3 is supported in the axial direction against a guide disk 6. Disk 6 is combined with a step ball bearing 61 which rests against a rear guide disk 62. The disk 62 rests against an abutment 63. The supporting disks 6 and 62 rotate in an oil housing 10 in an oil bath and are mounted on a pin 64 attached to two partitions 65. The partitions 65 are mounted to a lid 66 sealing the oil tank 10.

The driving and bearing elements of all spinning units are accommodated in a closed duct 17 also in this FIG. 4 embodiment. The duct 17 is formed by a U-shaped base member 67, one sidewall of which is fashioned as a turbine housing 2, respectively. The oil tank 10 is also manufactured integrally with the base member 67. The topside of the base member 67 is covered by a detachable lid 68. The duct 17 is composed of individual partial sections of the base member 67 and of the lid 68, wherein these sections respectively correspond to the length of one or more spinning units. In this embodiment, the sidewalls of the duct 17 are covered by panels 69 and 70 of a soundproofing material. The panel 69 is attached to the rear wall of the swivel housing 15. Housing 15 contains, in a manner not illustrated in detail in this FIG. 4, the opening and feeding devices and projects, with a cylindrical extension 16, into the spinning turbine 1. The panel 70 is attached to the rear sidewall of the U-shaped base member 67. The cover 68 is also produced of a noise-attenuating material. In this manner, a satisfactory shielding of the running noises of the entire spinning machine is attained. In order to remove the heat produced during spinning operations and to cool the bearing and drive elements, an air flow is generated within the duct 17 in a manner such as shown and described with respect to FIGS. 2 and 3.

The base member 67 is mounted to a longitudinal stand 71 fashioned as an angular profile, which stand likewise extends along the entire spinning machine. The longitudinal stand 71 is carried by punched sections 72 mounted to a lower longitudinal stand 73 of the machine frame. In the stamped sections 72, a continuous shaft 74 is disposed which drives, in a manner not illustrated in detail, the opening device of the swivel housing 15 via a driving pulley 75 and a drive belt 76 tensioned by means of a tension roller 77. Furthermore, the punched sections 72 carry guide rollers 78 for the returning drive belts 13.

Panels 79 and 80 of a soundproofing material adjoin the two longitudinal stands 71 and 73. These panels 79 and 80 extend to the other side of the machine and form a closed hollow space with the symmetrically arranged longitudinal stands of this other side of the machine and the stands 71 and 73. A vacuum channel 81 is arranged on the top panel 79; which channel 81 is in communication with the turbine housings 2 of the individual spinning units via ducts 82 passing through the base member 67.

In the embodiment of the invention shown in FIG. 5, the bearing and drive elements of the spinning units of both sides of the machine are disposed in a common duct 17. The spinning turbines 1 are supported and driven via the turbine shafts 3 thereof in a manner corresponding to the embodiment of FIG. 1. A common footstep bearing for axial mounting is provided for the mutually opposed turbine shafts 3. This bearing is provided with step disks 96 on both sides. These step disks 96 exhibit one or more bores to which oil is fed via an oil channel 97 in a uniform or periodic manner. The oil drips off from the step or guide disks 96 and is collected by an oil pan 98.

In this FIG. 5 embodiment, the turbine housings 2 of the two sides of the machine form, together with a longitudinal stand 99 extending over the entire machine, the sides and the bottom of duct 17. Holders 100 are mounted at the turbine housings 2, the bearings 30 of the supporting roller pairs 4 and 5 being attached to these holders. The topside of the duct 17 is closed off by a cover 101 subdivided into sections along the longitudinal extent of the machine, which longitudinal extent is perpendicular to the axes of rotation of the turbine shafts 3. This cover 101 is manufactured from a noise-attenuating material. For further soundproofing, the longitudinal stand or bench 99 is covered on its underside with a panel 102 of a noise-damping material. The rear walls of the swivel housing 15, directly adjoining the turbine housing 2, which rear walls can optionally also be fashioned to be pivotable by themselves, are additionally covered with panels 103 of a soundproofing material, which panels furthermore effect a sealing of the turbine housing, so that the penetration of by-pass air is prevented. Underneath the longitudinal stand 99 are guide rollers 104 for returning the tangential belts 13 of both sides of the machine. Also, the drive means for feeding and opening devices accommodated within the swivel housings 15, illustrated, for example, in FIG. 4, are provided in this zone underneath stand 99. This bottom portion is closed off by a U-shaped cover 105 which likewise forms a duct extending over the entire machine together with the longitudinal stand 99.

This cover 105 can either be manufactured of noise-damping material, or it can be lined therewith.

The turbine shaft 3 of the embodiment according to FIG. 6 is adjusted so that an axial force, directed away from the turbine housing 2, is exerted on the turbine shaft 3 by the supporting roller pairs 4 and 5 or by the contacting tangential belt 13. The axial disposition of the turbine shaft 3 is secured by a guide plate 6 mounted on axle 8 to be rotatable and axially displaceable. The guide or step plate 6 is supported, on its side opposite the turbine shaft 3, with the aid of an adjustable abutment 106. The abutment 106 consists of a bushing 108 which can be fixedly arrested with the aid of a counter nut 107. An adjustable threaded pin 109 is inserted in this bushing. The threaded pin 109 is beveled at its end 110 opposite the guide plate 6, so that the contact radius with which the guide disk 6 is supported at the threaded pin 109 can be varied.

All parts pertaining to the drive 13, 14, the brake 111, and to the radial bearing means are accommodated within a closed duct 17 in this FIG. 6 embodiment. This duct serves, on the one hand, for insulating against the noise produced by the parts running at high speed and for the removal of heat. Heat is removed by the production of a flow of cooling air within the duct in a manner such as shown and described in connection with FIGS. 2 and 3. Also, the duct 17 fulfills further functions, in that all assemblies of the individual spinning units are supported or mounted at the components forming this duct. The duct is formed by a base member 112 and a cover 113, each of which has an essentially angular configuration. The base member 112 and the cover 113 extend over a certain length, so that the total duct is composed of individual elements or sections. Each of these sections contains several spinning units, as can be seen from FIG. 7.

In the illustrated FIG. 6 embodiment, the base member 112 and the cover 113 are connected via screws 114 engaging the axles or threaded bores 115 of the base member 112. These screws, after being slightly loosened, can be pivoted out of slots of the cover 113, so that the latter can then be removed.

The cover 113 is produced as an extruded profile, for example of aluminum. This cover 113 forms the front side and part of the ceiling of the duct 17. In the region constituting the front side, the cover is formed as a hollow chamber, whereby it is utilized as the turbine housing 2 for all spinning turbines 1 of one section.

When the scale of the machine is relatively small and/or in case the spinning turbines 1 rotate at a very high speed, it is advantageous, in order to exlude mutual interference, to subdivide the turbine housing 2 into individual chambers by means of inserts 116. The inserts 116 consist preferably of a synthetic resin and are of an approximately cup-like shape. They exhibit a cylindrical centering extension 117, consisting preferably of a metal. By means of this centering projection 117, the inserts are fitted into a bore of the inner wall of the cover 113. The open side of the cup-like inserts 116 projects, with a lip profile, beyond the outside of the cover 113; this lip serves as a gasket with respect to a feeding and opening device adjoining thereto, which device is not shown. On the underside, the cup-shaped inserts 116 are provided with cutouts 118, by means of which they are in communication with the hollow space formed by the two walls of the cover 113, namely the common turbine housing 2. In this hollow chamber, a vacuum is produced by connecting a vacuum line 119 to the inner wall, at least one of such vacuum lines being provided per section.

Also the base member 112 is preferably produced as an extruded profile, for example likewise of aluminum. On the bottom portion of this base member 112, a longitudinally extending rib 120 is provided, to which is attached a profiled rail 121 extending over the length of one section. The profiled rail 121 has a Y-shaped cross-section. The leg 122 of the rail 121 extends in parallel to the longitudinal rib 120 and is fastened to the longitudinal rib 120 by means of three setscrews 123 per each section. The setscrews 123 are threadedly inserted in threaded bushings 124, the latter being housed in corresponding bores of the longitudinal rib 120. The profile rail 121 is mounted with slots 125 from above to the setscrews 123, so that these setscrews 123 need not be completely removed for disassembly purposes. The two upper legs of the profiled rail 121 are provided with semicylindrical or prismatic recesses, in which bearing housings 126 of the supporting roller pairs 4 and 5 are inserted and are held by corrugated leaf spring elements. The leaf spring elements are slung about fastening bolts extending in parallel to the semicylindrical or prismatic recesses and disposed between the two legs of the profiled rail 121.

On the rear wall of the base member 112, bearing pins 127 are provided as mounting means, each pine 127 receiving a swivel arm 128 for the contact roller 14 and a braking arm with brake lining 111. The actuation of the brake is effected via a drawstring 130 penetrating the bottom of the duct 17.

The rear wall of the base member 112 fashioned as an extruded profile is fashioned integrally with an externally disposed oil channel 131, which latter receives the axial mounting of the turbine shaft 3. The rear wall of the base member is perforated toward the oil channel 131 in order to pass the turbine shaft 3 therethrough. A sealing bush 132 is pressed into this bore, which bush surrounds the turbine shaft 3. A mounting plate 133 is suspended in the oil channel 131, this plate being extended through the sealing bushes 132 and being resiliently supported against the rear wall of the base member above and below the sealing bushes. This mounting plate **133** serves for receiving the axles or pivot pins **8** of the guide disks **6** of all spinning units pertaining to one section. From the outside, the part of the abutment **106** fashioned as a threaded bushing **108** is inserted in the outer wall of the oil channel **131** and is secured by means of the counter nut **107.** The oil channel **131** is closed off by a lid **134,** preferably made of a synthetic resin, which lid is resiliently clamped into corresponding profiled portions of the upper rim of the oil channel **131.** The lid **134** is likewise fashioned as a longitudinal profiled element extending over one section.

The turbine housings **2** of the cover **113** are each closed off at the end of one section by appropriate filling pieces which receive a continuous sealing profile on the outside. At the junction points where the individual sections abut one another, which sections form a continuous longitudinal duct, it is also possible to arrange an elastic sealing profile, the configuration of which corresponds to the total cross section of the base member **112** and of the cover **113.** The seams visible in FIG. **7** can also be covered by sealing strips permitting axial play.

The special shape of the base member **112** and of the lid **113** results in structural components which are inherently rigid and stable to such an extent that no additional longitudinal stands or the like need to be provided for a spinning machine. As shown in FIG. **7,** it is readily possible to employ the longitudinal duct, formed from individual sections, which duct, in turn, consists of a base member **112** and a cover **113,** as the supporting components of a spinning machine. In the illustrated embodiment, the individual sections **135** are each held in intermediate shields **136** of a spinning machine, whereby the individual intermediate shields **136** are joined together. In the intermediate shields **136,** additional drive shafts **137** can be mounted for the feeding and/or opening device. The opening device **138** associated with each spinning turbine and pivotable about the shaft **137** is shown in dashed lines. Furthermore, it is readily possible to mount bearing supports **139** or the like directly at the sections, especially on the bottom of the base member **112.** This is advantageous for the shaft **137,** for example, if the spacings between the intermediate shields **136** are too large.

An important feature of the above-described FIG. **6** embodiment is that the advantage is obtained that the bores to be provided in the base member **112** and in the cover **113** for passing the turbine shaft **3** therethrough or for receiving the insert **118** and for mounting the vacuum line **119,** respectively, can be provided in exact alignnment in a simple manner by executing the machining step when the base member **112** and the cover **113** are assembled. In this manufacturing process, any offset disposition of the bores with respect to one another is prevented. In case of a mass production on a transfer line, it is furthermore possible to conduct several machining processes simultaneously on one duct section, whereby an exact maintenace of all spacings of the bores and other interrelated surfaces is ensured to a maximally safe extent. In particular, it is ensured with certainty that the mutual spacings of the spinning turbines **1** are exactly identical, especially since the profiled rail **121** can be machined exactly in a corresponding manner.

The well encapsulated bearings and drive elements are conveniently accessible after removal of the cover **113,** and the cover can be removed in a simple manner by a minor loosening of a few screws **114.** The profiled rail **121** can be withdrawn as a closed structural unit together with the bearing boxes **126** and supporting roller pairs **4** and **5** attached thereto. Thereby, the transportation to workshops provided for servicing is facilitated, and at the same time, it is avoided with a greater degree of safety that individual bearing boxes **126** are damaged by collision with one another or the like.

FIG. **8** shows an embodiment of the present invention wherein as in the FIG. **6** embodiment a closed longitudinal duct **17** is produced from a base member **112** manufactured as an extruded profile and two covers **140** and **141.** This closed duct **17** receives all turbine shafts **3** including the drive and bearing units thereof. The base member **112** furthermore serves, in this embodiment, directly as a holder for the bearing housings **126** of the supporting roller pairs **4** and **5,** in the V slot of which the turbine shaft **3** is disposed. For this purpose, two longitudinal ribs **142** project from the bottom of the base member **112,** which ribs, in correspondence with the profiled rail **121** of the FIG. **6** embodiment, are provided with half-shell-type or prismatic recesses for the reception of the bearing housings **126.** The schematic suspension and mounting of the pressure roller **14,** including the braking device which is not shown in this Figure, corresponds essentially to the embodiment of FIG. **6,** except that the bearing pin **127** is attached to the upper portion of the base member **112** via an angular rail **143,** rather than to the rear wall of the base member **112.** This angular rail **143** also receives the guide rails for the returning topside of the tangential belt **13.**

The cover **140** is likewise formed as an extruded profile extending over the length of one section and serving as a common turbine housing for the spinning turbines **1** of several spinning units. The spinning turbines **1** are shielded with respect to one another by inserts **116.** Also, the cover **140** is provided with an interiorly positioned chamber **144** wherein annular magnets **145** are arranged which take over the axial mounting of the spinning turbine **1.** The spinning turbine **1** is in each case provided with a collar **146** on which a bushing **147** equipped with two radial rings is disposed. Pole disks **148** of the annular magnet **145** oppose the radial rings of the bushing **147.** In this FIG. **8** embodiment of the invention, the radial securing of the turbine shaft **3** is effected with the aid of the driving means and/or the brake, and the axial mounting is effected by way of the annular magnet **145** received by the cover **140.** The cover **141** is fashioned as a hinged cover which is mounted to be pivotable about a pivot joint **149** at the base member **112.** In order to obtain in a simple manner a tight seal with respect to the cover **140,** the latter is provided with a rubber band on its topside. By the provision of the hinged cover **141,** it is possible to conduct a brief visual inspection of individual sections of a spinning machine at any time without having to arrest the spinning machine for this purpose.

In the embodiment according to FIG. **9,** a longitudinally closed extending duct **17** is likewise provided, which duct **17** is composed of a base member **112** and a cover **150** and containing all drive and bearing devices of the individual spinning units of a spinning machine. The base member **112** is, like base members **112** and 112′, manufactured as an extruded profiled element. In this connection, as distinguished from the embodiment of FIG. 6, the oil channel 131 is fashioned in such a manner that its rear wall is extended to the level of the ceiling of the duct. This affords the advantage that the cover 151 of this oil channel 131 can be more readily mounted, since it is likewise disposed at the height of the ceiling of the duct.

The ceiling or top wall of the duct, in this embodiment, is fashioned integrally with the base member 112. The ceiling and the bottom form a kind of mounting flange at the front side of the longitudinal duct 17, the cover 150 being attached to this flange. The cover 150 is formed as a C-shaped longitudinal profile which points toward the front side of the spinning machine with its open side. In this manner, the cover 150 forms a rail-like guidance for turbine housings 152 which are laterally inserted in the cover 150. The cover 150 is held by two spring clips 153 attached on the topside and underside of the base member by means of scres 154. These spring clips 153 engage into groove-like recesses 155 of the outer legs of the cover.

FIG. 10 illustrates an embodiment of the invention wherein a base member 112 is fashioned integrally with a turbine housing 2. The base member 112 by itself forms a duct closed off on three sides, only the topside being open. The topside is closed by a lid 156, the central region of which is indented in the downward direction. The central zone is closed by an attachment 157 which is indented in the upward direction, so that a double-walled cover is produced permitting a particularly favorable noise attenuation. The front side and the bottom of the base member 112 are likewise fashioned of double walls. By forming also the rear wall of two walls, for example as an oil channel, then a longitudinal duct is obtained which excels by a particularly highly noiseproof effect, due to the double walls on all sides.

The front wall of the base member 112 of FIG. 10 serves as a common turbine housing 2 for all spinning units of one section. The spinning turbines, not shown, are shielded with respect to one another by inserts 116 mounted in the front wall from the outside. These inserts 116 are elastically biased and thus inserted in the front wall of the turbine housing 2. They have a centering extension 158 which is placed into a bore of the inner wall of the turbine housing, the extension 158 extending behind the inner wall by means of beads 159. The insert 116 produced from a synthetic resin is clippd into the turbine housing 2 in this manner. The bottom of the insert is fashioned to be curved, so that a certain bracing effect is achieved. Additionally, annular flanges are provided at the upper rim thereof which likewise exhibit a curvature and thus result in additional bracing.

The channel-like bottom of the base member 112 of FIG. 10 forms a vacuum channel 160 which is in communication with the turbine housing 2 via one or more bores 161.

It is easily possible to subdivide the vacuum channel 160 by means of a partition, so that it can be utilized not only for producing a vacuum in the turbine housings 2, but also for the discharge of waste present in the feeding and opening device. The channel-like bottom can also exhibit a round cross section, so that it can be employed for mounting purposes especially when tubular components are used in place of profiled supports.

Also in the embodiment of FIG. 11, the turbine housing 2 is fashioned integrally with the base member 112. The base member 112 forms a duct section closed off at the topside by an elastic longitudinal lid 162. The longitudinal lid 162 has a corrugated cross section, so that it is elastically resilient in the transverse direction. A flange projects upwardly from the turbine housing 2, receiving a gasket 163 extending along a length of the duct, the elastic longitudinal lid 162 resting against this gasket, so that a satisfactory seal is attained.

In this FIG. 11 embodiment, the turbine shafts 3 are each supported in a V slot formed by supporting disk pairs 4 and 5. The bearing housings 126 of the supporting disk pairs 4 and 5 are held, in this embodiment, in half-shell-shaped or prismatic recesses of a profiled rail 164 having an H-shaped cross section. The profiled rail 164 encompasses, with two downwardly directed legs, longitudinal ribs 165 of the bottom of the base member 112, arranged at an appropriate spacing. The height position of the profiled rail 164 and thus of the turbine shaft 3 can be aligned exactly with the aid of a spacer plate 166. It is possible, for example, to exchange the spacer plate 166 against a thicker plate once the linings of the supporting roller pairs 4 and 5 have been worn down after a certain operating period. Besides, it is advantageous to manufacture the spacer plate 116 of a vibration-damping material, so that a damping of the bearing unit vibration is provided.

In the embodiment of FIG. 11 the profiled rail 164 serves also for receiving the axial and radial securing means of the turbine shaft 3. Permanent magnets 167 are arranged on the profiled rail 164, the pole shoes 168 and 169 of these magnets being in exact opposition to metal rings 170 disposed on the turbine shaft 3. Filler pieces 171 are provided between the metal rings 170, these filler pieces corresponding to the diameter of the metal rings 170. The two outer filler elements 172 taper conically toward the diameter of the turbine shaft 3. The filler elements 171 and 172 can be formed by molding them around the turbine shaft 3 provided with the metal rings 170. These filler pieces serve the task of preventing that the linings of the supporting disk pairs 4 and 5 are damaged when the turbine shaft is pulled out.

On the rear wall of the base member 112, a stay bolt 173 is arranged in alignment with the turbine shaft 3. This stay bolt 173 serves only as an emergency abutment preventing, during the placing of a thread or the like, that the spinning turbine is unduly displaced by the operating personnel. In the illustrated operating position, a small spacing is present between the stay bolt 173 and the turbine shaft 3.

The profiled rail 164 of FIG. 11 also receives an axle 173 on which a swivel arm 175 is disposed carrying a contact roller 14. The contact roller 14 presses a tangential belt 13 from below against a whorl 176 pertaining to an axle of the supporting disk pairs 4 and 5. The tangential belt 13 can be returned directly on the whorls 176 of the individual spinning units. However, it is also possible to provide additional guide rollers 177 on the rear wall of the base member 112 for the return of the tangential belt. Also, the braking device is attached to the swivel arm 175, as described, for example, on connection with FIG. 6.

FIG. 12 shows the securing of the bearing boxes 126 of supporting disk pairs with the aid of a spring element 178 slung around a pin 179, the latter being inserted in the bores 180 of the profiled rail 121 of the FIG. 6 embodiment. In this embodiment, it is readily possible to employ a corrugated spring element extending over the entire length of a section and thus serving for securing a plurality of bearing housings 126 of the supporting disk pairs.

In FIG. 13, a profiled rail 121 is shown wherein the bearings 181 of directly supported spinning turbines 1 are received. The profiled rail 121 is provided with prismatic cutouts 182 at spacings corresponding to the machine scale. In these cutouts 182, the bearings 181 are held by means of undulating spring elements 183 which are pushed under a pin 184, the latter being attached to the profiled rail 121.

The turbine shafts 3 are driven by way of a tangential belt 13, moving from below directly against the turbine shafts 3. This belt 13 is pressed against the turbine shafts 3 by means of contact rollers 14.

The contact rollers 14 are mounted on swivel arms 185 attached to the profiled rail 121 to be pivotable about axles 186. The swivel arms 185 are extended in the upward direction and carry at that point leaf springs 187, the free ends of which receive a brake linings 188 disposed from above over the turbine shafts 3. When the swivel arms 185 are pivoted, with the aid of drawstrings 189, in the downward direction, the brake linings 188 are placed from above on top of the turbine shafts 3. The operating position of the contact rollers 14 is secured by leaf springs 190 contacting the pivoting levers 185 from below and attached to the profiled rail 121.

In the embodiment of FIG. 14, a U-shaped base member 112 is provided consisting of an extruded profile element, which base member is open toward the front. The front side of this member is closed off by a cover 191, also fashioned as an extruded profile element, this cover constituting a continuous turbine housing 2. The turbine housing 2 is provided in the zone of the spinning turbines in each case with openings for fiber feeding and discharging means, not shown, which are accommodated in a housing 192 adjoining the cover 191 at the front. The turbine shafts 3 are mounted in the cover 191 by means of direct bearings 193. The cover 191 is provided at its rear with hollow extensions 194 of an approximately square cross section, wherein the required bearing bores are disposed for mounting the turbine shafts 3. The turbine shaft 3 penetrates the rear wall of the extension 194 and is provided with a whorl 195 on this side which whorl is driven by a tangential belt 13 under the effect of a contact roller 14. The perssure roller 14 is disposed, including the braking device which is not shown in this Figure, on a bearing support 196 resting on the bottom of the duct 17. An air exhaust channel 197 is arranged adjoining the rear wall of the base member 112. This channel 197 is fashioned as a sheet metal profile, for example, and is in communication with the turbine housing 2 by way of a hose or pipe 198.

In order to obtain noise protection in this FIG. 14 embodiment, the duct 17 is covered on two sides by noise proofing panels 199 connected to the duct walls with pins 200, leaving an air gap. These noise-attenuation panels 199 can be fashioned as solid plates, or, as in the illustrated embodiment, they can consist of several thin panels which leave air gaps therebetween, for example. In certain cases, it is practicable in this embodiment to dispose small bores 201 in the duct bottom and in the duct ceiling, making an additional circulation of air possible. In this type of structure, the advantage is attained that the cover 191, together with the turbines 1 and the bearings 193 of several spinning units can be disassembled or assembled as a structural unit.

In order to obtain a noiseproof construction, it is also possible to line the inner walls of the duct with an antinoise compound or the like, or to apply a layer of such a compound, as indicated in dot-dash lines in FIG. 14. By means of such a lining, it is possible to create wall surfaces which are provided with elevations and indentations or which have a honeycomb shape or the like.

In the partial sectional view of FIG. 15, an air exhaust channel 202 is shown which is directly attached to the back of base member 112 by means of screws. The air discharge duct is provided with connection lines 203 in the zone of each spinning unit, which lines lead to the associated turbine housing or to a cleaning chamber of a feeding and opening device pertaining to the respective spinning unit. In order to obtain a uniform air conductance and air distribution in the air exhaust channel 202, air flaps 204 are provided, distributed over the length of the duct, which adjust the desired air distribution or air flow. The air flaps 204 are pivotably disposed at the top and at the bottom in the air exhaust channel 202, wherein at least one bearing point is constituted by a setscrew 205 making it possible to clamp the air flap 204 into a fixed desired position. Moreover, it is possible to provide an adjusting device which permits an adjustment from the outside. In certain cases, it is advantageous to provide a central adjusting device for all air flaps 204 of the air exhaust channel 202, making it possible, for example, to effect a centrally controlled changeover to different spinning conditions.

In FIG. 16, an embodiment of the invention is illustrated wherein, for a spinning machine equipped with spinning units on both sides, two parallel-extending ducts 17 are provided which are formed by sheet metal profiles 206, 207, 208, and 209. The approximately angularly shaped sheet metal profile 206 forms the base member of the duct 17. This base member 206 is supported and mounted on an intermediate frame 211 of the spinning machine via elastic supports 210. Base member 206 projects in the upward direction beyond the remaining sheet metal profiles with its vertical leg, so that it can form, in this zone, mountings for additional assemblies, such as bobbins or take-off rolls, or the like. The sheet metal profile 207, which is approximately U-shaped and is open at the top, serves as a bearing support for the direct bearings 212 of the turbine shafts 3 of the spinning turbines 1. Also, this sheet metal profile 207 receives, at its rear leg, mountings for contact rollers 14 each of which presses a tangential belt directly against the turbine shaft 3. The sheet metal profile 207 rests with its bottom on the horizontal leg of the angular sheet metal profile 206 with individual rubber blocks 213. The sheet metal profile 207, open at the top, is covered by the flat sheet metal profile 208 serving as the cover. The sheet metal profile 209 completes the sheet metal profile 206 to a U-shaped cross section, and has such a profiled shape that, together with the adjoining housings 214 of the opening and feeding devices, the turbine housing 2 for the spinning turbines 1 is formed.

Between the ducts 17 of both sides of the machine, an air exhaust channel **215**, likewise produced from sheet metal profile, is arranged. This air exhaust channel **215** is in communication with the turbine housings via bores **216** of the sheet metal profiles **206** and via boxes of the sheet metal profiles **209**. The air exhaust duct **215** is subdivided by an inserted metal plate **217**, so that a cleaning duct **218** is separated therefrom. This cleaning duct **218** is in communication, via preferably elastic lines **219**, with the housings **214** of the feeding and opening devices of all spinning units, so that the separated impurities can be removed by suction from the cleaning chambers thereof, which are not visible, and can be discharged centrally via the air exhaust channel **218**. Both air exhaust channels are connected to a common air exhaust device, or to separate air exhausting devices, producing a sufficient vacuum.

A very important advantage of the present invention is to be seen in that the machine can be combined into extensively preassembled structural units already in the manufacturing plant. In this connection, the required control processes and monitoring operations can be effected in the manufacturing plant, since there are hardly any sources of errors existing during the final assembly. Additionally, the machining can be executed in a time-saving manner by means of modern tools. Another essential advantage resides in that the duct components which form the sections and contain practically all important parts of the machine need not be packaged in an expensive manner for transportation to the site where the machine will be operated, since the duct housing already extensively replaces a packaging container.

While I have shown and described several embodiments in accordance with the present invention, it is understood that the same is not limited thereto but is susceptible to numerous changes and modifications as known to a person skilled in the art, and I 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 persons skilled in the art.

I claim

1. Spinning machine arrangement for spinning machines of the type operating according to the open-end method; said arrangement comprising a plurality of spinning units each including: a spinning turbine, turbine housing means having a rear wall, a turbine shaft having the front end thereof supportingly attached to the spinning turbine and the rear end thereof extending through said rear wall, turbine shaft driving means for rotatably driving said turbine shaft, and turbine shaft supporting means for supporting said shaft in position with respect to said housing means; and closed duct means extending over at least two of said spinning units for enclosing portions of said spinning units positioned rearwardly of the rear walls of said housing means.

2. An arrangement according to claim **1**, further comprising vacuum maintaining means for maintaining a subatmospheric pressure within each of said turbine housing means.

3. An arrangement according to claim **2**, wherein each of said driving means and supporting means are disposed within said closed duct means, and wherein said closed duct means extends longitudinally over several spinning units in a direction perpendicular to the respective axes of rotation of said turbine shafts.

4. An arrangement according to claim **3**, wherein the closed duct means includes a plurality of series-disposed elements fashioned as supporting base members, and wherein each supporting base member includes receiving and mounting means for several adjacent spinning units.

5. An arrangement according to claim **4**, wherein the closed duct means has a rectangular shaped cross section formed by respective top, bottom, front, and reat duct walls; wherein the supporting base members form at least the bottom and rear duct walls, and wherein the remaining duct walls are formed as detachable covers.

6. An arrangement according to claim **1**, wherein the closed duct means has a rectangular shaped cross section formed by respective top, bottom, front and rear duct walls, wherein supporting base members form at least the bottom and rear duct walls, and wherein the remaining duct walls are formed as detachable covers.

7. An arrangement according to claim **5**, wherein said detachable covers are each formed in one piece.

8. An arrangement according to claim **5**, wherein said detachable covers are of multipartite construction.

9. An arrangement according to claim **4**, wherein the turbine housing means of the several adjacent spinning units are formed integrally with the base member associated with said several adjacent spinning units.

10. An arrangement according to claim **5**, wherein the turbine housing means of the several adjacent spinning units are formed integrally with the base member associated with said several adjacent spinning units, and wherein said turbine housing means comprise part of the front duct wall associated with the respective base member.

11. An arrangement according to claim **5**, wherein said detachable covers form turbine housing means common to several spinning units, said detachable covers being attached to the respective front sides of said base members.

12. An arrangement according to claim **4**, wherein said detachable covers form turbine housing means common to several spinning units, said detachable covers being attached to the respective front sides of said base members.

13. An arrangement according to claim **9**, wherein detachable inserts are provided for subdividing the turbine housing means into separate housing means for each spinning turbine.

14. An arrangement according to claim **12**, wherein detachable inserts are provided for subdividing the turbine housing means into separate housing means for each spinning turbine.

15. An arrangement according to claim **6**, wherein detachable inserts are provided for subdividing the turbine housing means into separate housing means for each spinning turbine.

16. An arrangement according to claim **1**, further comprising an air exhaust channel on at least one longitudinal wall of the closed duct means, said air exhaust channel extending longitudinally of the spinning machine over a plurality of spinning units, and means for communicating said air exhaust channel with the interior of said turbine housing means.

17. An arrangement according to claim 16, further comprising feeding and opening devices operatively connected with each turbine, cleaning ducts operatively connected to said feeding and opening devices, and means for communicating said air exhaust channel with the interior of said turbine housing means.

18. An arrangement according to claim 4, further comprising an air exhaust channel on at least one longitudinal wall of the closed duct means, said air exhaust channel extending longitudinally of the spinning machine over a plurality of spinning units, and means for communicating said air exhaust channel with the interior of said turbine housing means.

19. An arrangement according to claim 18, further comprising feeding and opening devices operatively connected with each turbine, cleaning ducts operatively connected to said feeding and opening devices, and means for communicating said air exhaust channel with the interior of said turbine housing means.

20. An arrangement according to claim 4, wherein at least the supporting base members of the closed duct means consist of extruded profiles of aluminum and the like.

21. An arrangement according to claim 6, wherein at least the supporting base members of the closed duct means consist of extruded profiles of aluminum and the like.

22. An arrangement according to claim 9, wherein at least the supporting base members of the closed duct means consist of extruded profiles of aluminum and the like.

23. An arrangement according to claim 4, wherein at least the supporting base members of the closed duct means consist of sheet metal profile constructions,

24. An arrangement according to claim 6, herein at least the supporting base members of the closed duct means consist of sheet metal profile constructions.

25. An arrangement according to claim 9, wherein at least the supporting base members of the closed duct means consist of sheet metal profile constructions.

26. An arrangement according to claim 4, wherein the base members include supporting structure for supporting feeding and opening devices operatively associated with each of the respective spinning units.

27. An arrangement according to claim 6, wherein the base members include supporting structure for supporting feeding and opening devices operatively associated with each of the respective spinning units.

28. An arrangement according to claim 9, wherein the base members include supporting structure for supporting feeding and opening devices operatively associated with each of the respective spinning units.

29. An arrangement according to claim 4, wherein upwardly facing surfaces of said base members are provided with mounting means for take-off rolls, pirns, and the like.

30. An arrangement according to claim 6, wherein upwardly facing surfaces of said base members are provided with mounting means for take-off rolls, pirns, and the like.

31. An arrangement according to claim 1, wherein the walls of the duct means include sound-attenuating means.

32. An arrangement according to claim 31, wherein said sound-attenuating means includes sound attenuating material forming walls of said duct means.

33. An arrangement according to claim 31, wherein said sound-attenuating means includes a cover of sound attenuating material for walls of said duct means.

34. An arrangement according to claim 4, wherein the walls of the duct means include sound-attenuating means.

35. An arrangement according to claim 34, wherein said sound-attenuating means includes sound attenuating material forming walls of said duct means.

36. An arrangement according to claim 34, wherein said sound-attenuating means includes a cover of sound attenuating material for walls of said duct means.

37. An arrangement according to claim 1, wherein at least one air conveying device is disposed in said closed duct means for conveying cooling air therethrough.

38. An arrangement according to claim 4, wherein at least one air conveying device is disposed in said closed duct means for conveying cooling air therethrough.

39. An arrangement according to claim 11, wherein at least one air conveying device is disposed in said closed duct means for conveying cooling air therethrough.

40. An arrangement according to claim 37, wherein at least one air conveying device is disposed in said closed duct means for conveying cooling air therethrough.

41. An arrangement according to claim 6, further comprising a detachable profiled rail having receiving means for the driving and supporting means of a plurality of spinning units, and wherein the bottoms of said base members are provided with mounting means for detachably mounting said rail.

42. An arrangement according to claim 41, further comprising braking devices for said spinning units, and wherein said profiled rail includes receiving means for said braking devices.

43. An arrangement according to claim 4, further comprising a detachable profiled rail having receiving means for the driving and supporting means of a plurality of spinning units, and wherein the bottoms of said base members are provided with mounting means for detachably mounting said rail.

44. An arrangement according to claim 41, further comprising spacer plates interposed between the mounting means and the profiled rail for accommodating wear on said driving and supporting means, said spacer plates being composed of a vibration damping material.

45. An arrangement according to claim 43, further comprising spacer plates interposed between the mounting means and the profiled rail for accommodating wear on said driving and supporting means, said spacer plates being composed of a vibration damping material.

46. An arrangement according to claim 4, wherein said supporting means includes axial securing means disposed on a wall of the respective base means for axially securing the turbine shafts, said axial securing means including guide disks provided for each spinning unit and arranged in a sealable oil channel having a detachable lid.

47. An arrangement according to claim 6, wherein said supporting means includes axial securing means disposed on a wall of the respective base means for axi-

ally securing the turbine shafts, said axial securing means including guide disks provided for each spinning unit and arranged in a sealable oil channel having a detachable lid.

48. An arrangement according to claim **11,** wherein said supporting means includes axial securing means disposed on a wall of the respective base means for axially securing the turbine shafts, said axial securing means including guide disks provided for each spinning unit and arranged in a sealable oil channel having a detachable lid.

49. An arrangement according to claim **4,** further comprising swivel arms arranged in holding means on walls of said base members, and wherein the driving means for the individual spinning units are mounted on said swivel arms.

50. An arrangement according to claim **49,** further comprising braking devices for the individual spinning units mounted on said swivel arms.

51. An arrangement according to claim **49,** wherein said swivel arms are mounted on respective rear walls of said base members.

52. An arrangement according to claim **6,** wherein said swivel arms are mounted on respective rear walls of said base members.

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