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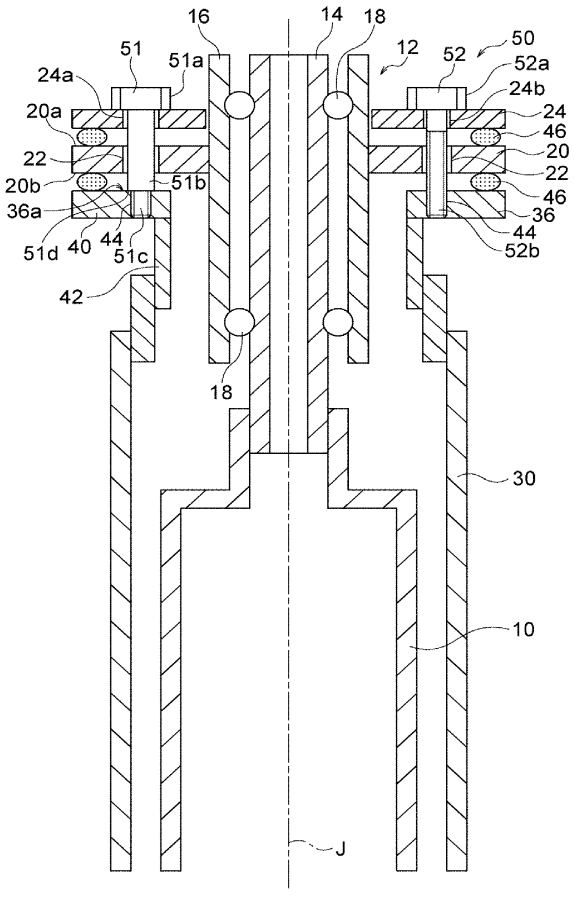
(54) POT SPINNING MACHINE

(57) A pot spinning machine includes a pot (10) having cylindrical shape, and a pot bearing (12) that rotatably supports the pot (10) and includes a fixed ring (16). The pot spinning machine further includes , a support member (36, 60) that is fixedly disposed, a damper member (46, 66) disposed between the support member (36, 60) and the fixed ring (16), and an adjustment mechanism (50) that adjusts a deformation amount of the damper member (46, 66) so that the deformation amount of the damper member (46, 66) varies in a circumferential direction of the pot (10).

FIG. 1



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Description

BACKGROUND ART

[0001] The present disclosure relates to a pot spinning machine.

[0002] In a pot spinning machine, a yarn introduced into a pot by a yarn introduction tube is deposited in layers on an inner wall of the pot by way of the centrifugal force caused by high-speed rotation of the pot to form a cake, and then the yarn is rewound on a bobbin in the pot. At that time, air friction is generated in the outer periphery of the pot by high-speed rotation of the pot, and this air friction becomes a resistance when rotating the pot. Japanese Translation of PCT International Application Publication No. 2005-520940 discloses a pot spinning machine having a configuration in which a fixed cover is disposed outward of the pot in order to reduce the drive output of the motor consumed in rotating the pot. In this configuration, it is possible to reduce the drive output of the motor consumed in the rotation of the pot.

[0003] In the pot spinning machine of the above-cited Publication, the pot is supported by a magnet bearing. In the pot spinning machine having this configuration, it is difficult to suppress the vibration generated with the pot and the magnet bearing attracted to the low-pressure side due to the unbalanced rotation of the pot and the pressure distribution between the pot and the fixed cover. In addition, since it requires highly precise control to suppress the vibration, the cost increases.

[0004] For the cost reduction, a roller bearing, which is cheaper than the magnet bearing, may be used for supporting the pot. In such case, the rolling resistance applied to the roller bearing increases as the diameter of the bearing increases. Therefore, the diameter of the roller bearing is preferably made small to reduce the drive output to be consumed by rotation of the pot. In order to minimize the amplitude during the rotation of the pot, the pot is preferably supported on both sides in the central axis direction of the pot, that is, one side (upper side) and the other side (lower side) of the central axis.

[0005] However, in view of securing a space for spinning inside the pot and doffing for the bobbin replacement, a one side support structure in which the pot is supported by the bearing on only one side in the central axis direction of the pot is applied. Thus, the natural frequency of a rotating system configured to rotate the pot becomes low, resonance occurs within a range of the number of rotations of the pot, and the pot is unbalanced, thereby becoming a source of vibration. Moreover, when the number of rotations of the pot exceeds the resonance range within the range of the number of rotations of the pot, a vibration, other than the vibration caused by the resonance, occurs. As a result, the pot spinning machine is affected such that a serviceable life of the rolling bearing is shortened when the pot is rotated in the actual rotating range during the normal operation of the pot spinning machine.

[0006] In a case where the pot is supported by a rolling bearing (hereinafter referred to as the pot bearing), an outer ring of the pot bearing is supported by a damper member to reduce the vibration during the rotation of the pot. In such case, it is difficult to restrict the inclination of the pot with the precision of parts since, with the above-described one side support configuration, the outer ring of the pot bearing is supported by the damper member. Thus, the inclination of the pot results in non-coaxial relationship between the pot and the fixed cover, which increases the air friction resistance for the pot.

[0007] The present disclosure, which has been made in light of the above-mentioned problems, is directed to providing a pot spinning machine that reduces the air friction resistance during the rotation of the pot by adjusting the inclination of the pot in a configuration in which the pot is supported by a damper member.

SUMMARY

[0008] In accordance with an aspect of the present disclosure, there is provided a pot spinning machine includes a pot having cylindrical shape; and a pot bearing that rotatably supports the pot and includes a fixed ring. The pot spinning machine includes a support member that is fixedly disposed, a damper member disposed between the support member and the fixed ring, and an adjustment mechanism that adjusts a deformation amount the damper member so that the deformation amount of the damper member varies in a circumferential direction of the pot.

[0009] Other aspects and advantages of the present disclosure will become apparent from the following description, taken in conjunction with the accompanying drawings, illustrating by way of example the principles of the present disclosure.

BRIEF DESCRIPTION OF THE DRAWINGS

[0010] The present disclosure together with objects and advantages thereof may best be understood by reference to the following description of the presently preferred embodiments together with the accompanying drawings in which:

FIG. 1 is a schematic side sectional view of a pot spinning machine according to a first embodiment of the present disclosure;

FIG. 2 is a schematic plan view, showing positions of bolts in a circumferential direction of a pot;

FIG. 3 is a schematic side view of a pot spinning machine according to a second embodiment of the present disclosure; and

FIG. 4 is a schematic side view, showing an example of a configuration that can change the deformation amount of a damper member.

DETAILED DESCRIPTION OF THE EMBODIMENTS

[0011] The following will describe embodiments of the present disclosure with reference to the accompanying drawings.

<First Embodiment

[0012] FIG. 1 is a schematic cross-sectional side view, showing a configuration of a pot spinning machine according to a first embodiment of the present disclosure.

[0013] As shown in FIG. 1, the pot spinning machine includes a pot 10 having a cylindrical shape. The pot 10 is rotatably supported by a pot bearing 12. The central axis J of the pot 10 is disposed in parallel to the vertical direction. Thus, one end and the other end of the central axis direction of the pot 10 correspond to the upper and the lower direction.

[0014] The pot bearing 12 is provided by a rolling bearing, including an inner ring 14, an outer ring 16, and rolling elements 18. The inner ring 14 is disposed inward of and coaxially with the outer ring 16. The pot 10 is attached to the lower end of the inner ring 14. The pot 10 rotates integrally with the inner ring 14.

[0015] The outer ring 16 is fixedly disposed, that is, disposed in a state where the movement in the circumferential direction (rotational direction) is restricted so as not to rotate integrally with the pot 10 and the inner ring 14. The outer ring 16 corresponds to the pot bearing fixed ring. The rolling elements 18 are disposed between the inner ring 14 and the outer ring 16. The rolling elements 18 are provided on the upper and lower sides of the pot bearing 12. The rolling elements 18 are provided by, for example, balls and rollers. In the present embodiment, the rolling elements 18 are provided by balls.

[0016] A holder member 20 is fixed to the outer ring 16. The holder member 20 is configured to support the pot bearing 12. The holder member 20 has a disc shape, extending radially from the outer ring 16. A plurality of through holes 22 are formed through the holder member 20. The through holes 22 are provided at different positions in the circumferential direction. Each of the through holes 22 extends through the holder member 20 in the thickness direction thereof.

[0017] A plate 24 is disposed above the holder member 20. The plate 24 has a disc shape, as shown in FIG. 2. The plate 24 is engaged with the outer ring 16 of the pot bearing 12 and is movable in the vertical direction relative to the outer ring 16 of the pot bearing 12. A space is secured in a part where the plate 24 and the outer ring 16 engage with each other to allow the adjustment of inclination of the pot 10. A plurality of bolt holes 24a, 24b are formed in the plate 24 for mounting bolts. The bolt holes 24a, 24b are disposed at positions in the circumferential direction so as to correspond to the above-described through holes 22. Each of the bolt holes 24a, 24b extends through the plate 24 in the thickness direction thereof.

[0018] A fixed cover 30 is disposed below the holder member 20. The fixed cover 30 has a cylindrical shape. The fixed cover 30 is disposed so as to surround the outside of the pot 10. A flange member 36 is provided above the fixed cover 30.

[0019] The flange member 36 is fixed to a fixing member (not shown) so as to move neither in the vertical direction nor in the circumferential direction. Thus, the flange member 36 is fixedly disposed. The flange member 36 corresponds to the support member and includes a plate portion 40 and a tubular portion 42. The plate portion 40 and the tubular portion 42 are integrally formed. The plate portion 40 has a disk shape and is disposed facing the holder member 20 in the vertical direction of the pot spinning machine. A plurality of screw holes 44 are formed in the plate portion 40. The screw holes 44 are disposed at positions in the circumferential direction so as to correspond to the above-described through holes 22. Further, each of the screw holes 44 is provided so as to extend through the plate portion 40 in the thickness direction thereof. The tubular portion 42 is formed, extending downwardly from the inner periphery of the plate portion 40.

[0020] According to this configuration in which the fixed cover 30 is disposed outward of the pot 10, the air friction resistance acting on the outer periphery of the pot 10 is reduced, thereby reducing the consumption of power for rotating the pot 10.

[0021] A plurality of damper members 46 are disposed between the outer ring 16 and the flange member 36. Specifically, the damper members 46 are disposed on the upper and lower sides of the holder member 20 that is fixed to the outer ring 16. The damper member 46 is disposed on the upper side of the holder member 20 between the holder member 20 and the plate 24 (hereinafter also referred to as the upper damper member 46), and the damper member 46 is disposed on the lower side of the holder member 20 between the holder member 20 and the flange member 36 (hereinafter also referred to as the lower damper member 46).

[0022] The damper member 46 is provided by an elastic body that elastically deforms. The damper member 46 is configured to damp the vibrations caused by the rotation of the pot 10. The damper member 46 deforms in a deforming direction that extends in parallel to the central axis J of the pot 10 (the vertical direction in FIG. 1). In the present embodiment, the damper member 46 is provided by an O-ring.

[0023] The upper damper member 46 is pressed and deformed in the vertical direction with the upper damper member 46 held between the holder member 20 and the plate 24. The lower damper member 46 is pressed and deformed in the vertical direction with the lower damper member 46 held between the holder member 20 and the plate portion 40 of the flange member 36. Therefore, the upper damper member 46 is disposed in contact with an upper surface 20a of the holder member 20, and the lower damper member 46 is disposed in contact with a lower

surface 20b of the holder member 20.

[0024] An adjustment mechanism 50 is disposed around the pot bearing 12. The adjustment mechanism 50 is configured to adjust the deformation amount of the damper member 46. The adjustment mechanism 50 adjusts the deformation amount of the damper member 46 so that the deformation amount of the damper member 46 varies in the circumferential direction of the pot 10. The adjustment mechanism 50 includes a first bolt 51 and a second bolt 52 shown in FIGS. 1 and 2, in addition to the holder member 20, the plate 24, and the flange member 36, which have been described above.

[0025] The first bolt 51 is configured to restrict the deformation amount of the damper member 46 so as to set a reference for the deformation amount of the damper member 46 (hereinafter also referred to as the reference deformation amount) when the deformation amount of the damper member 46 is adjusted by the adjustment mechanism 50. In other words, the first bolt 51 corresponds to a setting member that is configured to set the deformation amount of the damper member 46. The first bolt 51 is disposed at one position in the circumferential direction of the pot 10. The second bolt 52 is provided for adjusting the deformation amount of the damper member 46 so as to adjust (correct) the inclination of the pot 10 when the adjustment mechanism 50 adjusts the deformation amount of the damper member 46. The second bolt 52 corresponds to the screw member that is configured to adjust the inclination of the pot 10. The inclination of the pot 10 corresponds to the inclination of the central axis J of the pot 10 relative to the vertical axis. The second bolts 52 are disposed at two positions in the circumferential direction of the pot 10. Any adjacent two of the first bolt 51 and the second bolts 52 are spaced angularly at 120 degrees in the circumferential direction of the pot 10. That is, three bolts including the first bolt 51 and the second bolts 52 are disposed at regular intervals in the circumferential direction of the pot 10.

[0026] The first bolt 51 has a head portion 51a, a shaft portion 51b, and a threaded portion 51c, formed integrally. The diameter of the shaft portion 51b is greater than that of the threaded portion 51c, and a stepped portion 51d is formed at a boundary between the shaft portion 51b and the threaded portion 51c. That is, the first bolt 51 is provided by a stepped bolt. The first bolt 51 is inserted through the bolt hole 24a of the plate 24 and the through hole 22 of the holder member 20, and is screwed into the screw hole 44 of the flange member 36.

[0027] The second bolt 52 has a head portion 52a and a threaded portion 52b, formed integrally. The second bolt 52 is inserted through the bolt hole 24b of the plate 24 and the through hole 22 of the holder member 20, and is screwed into the screw hole 44 of the flange member 36.

[0028] The following will describe a procedure for adjusting the inclination of the pot 10 using the adjustment mechanism 50 provided in the pot spinning machine of the first embodiment of the present disclosure.

[0029] Firstly, in a state where the upper damper member 46 is disposed between the holder member 20 and the plate 24, and the lower damper member 46 is disposed between the holder member 20 and the flange member 36, the first bolt 51 and the second bolts 52 are mounted. The first bolt 51 is inserted through the bolt hole 24a of the plate 24 and the through hole 22 of the holder member 20, and is screwed into the screw hole 44 of the flange member 36, and the second bolts 52 are inserted through their associated bolt holes 24b of the plate 24 and their associated through holes 22 of the holder member 20, and are screwed into the screw holes 44 of the flange member 36.

[0030] While the first bolt 51 is rotated in the tightening direction, the upper and lower damper members 46 are pressed and elastically deformed, and the stepped portion 51d of the first bolt 51 is brought into contact with the upper surface 36a of the flange member 36. With the upper surface 36a of the flange member 36 serving as a reference surface (bearing surface), the reference deformation amount of the damper member 46 and the position of the pot bearing 12 in the vertical direction are determined by the length of the shaft portion 51b of the first bolt 51.

[0031] While the second bolt 52 is rotated in the tightening direction, the upper and lower damper members 46 are pressed and elastically deformed. Since the second bolt 52 is not a stepped screw, the deformation amount of the damper member 46 is arbitrarily adjustable. The second bolts 52 are disposed at two positions in the circumferential direction of the pot 10. Therefore, the deformation amounts of the damper members 46 in the circumferential direction of the pot 10 may be changed by adjusting the rotation amount and the rotation direction of each of the second bolts 52.

[0032] In a state where the upper and lower damper members 46 are deformed by the rotations of the first bolt 51 and the second bolts 52, the holder member 20 is disposed above the flange member 36 via the lower damper member 46, and the plate 24 is disposed above the holder member 20 via the upper damper member 46. The holder member 20 is elastically supported by the upper and lower damper members 46. This configuration enables the adjustment mechanism 50 to adjust the deformation amounts of the damper members 46 so that the deformation amounts of the damper members 46 vary in the circumferential direction of the pot 10 by using the two second bolts 52. The following will describe in detail.

[0033] When the rotation amount and the rotation direction of the second bolt 52 are adjusted so that the deformation amounts (crashed amount) of the damper members 46 by tightening the second bolt 52 becomes greater than the reference deformation amounts of the damper members 46 set by the tightening of the first bolt 51, part of the holder member 20 where it is tightened by the second bolt 52 is displaced in a direction approaching the upper surface 36a of the flange member 36. Consequently, the position of the holder member 20 is inclined

so that the part of the holder member 20 where it is tightened by the second bolt 52 is positioned lower than the part of the holder member 20 where it is tightened by the first bolt 51.

[0034] When the rotation amount and the rotation direction of the second bolts 52 is adjusted so that the deformation amounts (crashed amounts) of the damper members 46 by tightening the second bolt 52 become smaller than the reference deformation amounts of the damper members 46 set by the tightening of the first bolt 51, the part of the holder member 20 where it is tightened by the second bolts 52 is displaced in a direction away from the upper surface 36a of the flange member 36. Consequently, the position of the holder member 20 is inclined so that the part of the holder member 20 where it is tightened by the second bolt 52 is positioned higher than the part of the holder member 20 where it is tightened by the first bolt 51.

[0035] When the rotation amount and the rotation direction of each of the two second bolts 52 are adjusted so that the deformation amounts of the damper members 46 by tightening one of the second bolts 52 become greater than the deformation amounts of the damper members 46 by tightening the other of the second bolts 52, the position of the holder member 20 is inclined so that the part of the holder member 20 where it is tightened by the second bolt 52 that deforms the damper member 46 greater is lower than the part of the holder member 20 where it is tightened by the second bolt 52 that deforms the damper member 46 less. In other words, the adjustment mechanism 50 adjusts the inclination of the pot 10 in accordance with the rotation amount of the second bolts 52.

[0036] Accordingly, the pot spinning machine of the first embodiment of the present disclosure permits adjusting the deformation amounts of the damper members 46 so that the deformation amounts of the damper members 46 vary in the circumferential direction of the pot 10 by using the two second bolts 52 of the adjustment mechanism 50. Further, by adjusting the deformation amounts of the damper members 46 so that the deformation amounts vary in the circumferential direction of the pot 10, the holder member 20 is inclined in accordance with how the deformation amounts are adjusted. Since the holder member 20 is fixed to the outer ring 16 of the pot bearing 12, the pot 10 and the pot bearing 12 are inclined in accordance with the inclination of the holder member 20. Accordingly, the inclination of the pot 10 is adjusted (corrected) by using the two second bolts 52 of the adjustment mechanism 50. This configuration permits arranging the pot 10 and the fixed cover 30 so as not to be disposed in non-coaxial relationship by adjusting the inclination of the pot 10 after the pot spinning machine is assembled, without suppressing the inclination of the pot 10 with the precision of the parts. As a result, the air friction resistance acting on the pot 10 during the rotation of the pot 10 may be reduced. In addition, since the damper member 46 is disposed between the outer ring 16 and the flange member 36, the vibration energy due to the rotation of the pot 10 may be damped by the damper member 46. Accordingly, the vibration during the rotation of the pot 10 is suppressed.

[0037] In general, the damping ratio for the mode of vibration increases when the capacity of damping is applied to a part where the mode of vibration fluctuates greatly. In the present embodiment, the diameter of the O-ring forming the damper member 46 is made large so as to be disposed outward of the first bolt 51 and the second bolt 52 for the vibration in the inclination direction of the pot 10, which corresponds to the main mode of vibration the actual operation range of the rotation speed of the pot 10. In damping the vibration using the O-ring, a large damping ratio may be secured for the mode of vibration by increasing the displacement by the deformation of the O-ring.

<Second Embodiment>

[0038] FIG. 3 is a schematic cross-sectional side view showing a configuration of a pot spinning machine according to a second embodiment of the present disclosure.

[0039] The pot spinning machine of the second embodiment differs from the first embodiment in the positional relationship between the damper member 46 and the adjustment mechanism 50. In the above-described first embodiment, as shown in FIG. 1, the upper and lower damper members 46 are disposed so that the holder member 20 fixed to the outer ring 16 of the pot bearing 12 is held between the upper and lower damper members 46 in the vertical direction. In the second embodiment, on the other hand, as shown in FIG. 3, the plate 24 is disposed below the holder member 20 fixed to the outer ring 16 and the upper and lower damper members 46 are disposed so that the plate 24 is held between the upper and lower damper members 46 in the vertical direction. Then, the first bolt 51 is inserted through the through hole 22 of the holder member 20 and the bolt hole 24a of the plate 24, and is screwed into the screw hole 44 of the flange member 36, and the second bolts 52 are inserted through the through holes 22 of the holder member 20 and the bolt holes 24b of the plate 24, and is screwed into the screw hole 44 of the flange member 36. The plate 24 is fixed to the fixing member (not shown).

[0040] In the pot spinning machine of the second embodiment, similarly to the first embodiment, the adjustment mechanism 50 adjusts the deformation amounts of the damper members 46 so that the deformation amounts of the damper members 46 vary in the circumferential direction of the pot 10 by using the two second bolts 52 of the adjustment mechanism 50, thereby adjusting (correcting) the inclination of the pot 10. Accordingly, the air friction resistance during the rotation of the pot 10 may be reduced by arranging the pot 10 and the fixed cover 30 so as not to be disposed in non-coaxial relationship. Further, the vibration during the rotation of the pot 10

may be suppressed by damping the vibration energy caused by the rotation of the pot 10 with the damper members 46.

[0041] The technical scope of the present disclosure is not limited to the above-described embodiments. The embodiments of the present disclosure may be modified and improved in various manners and intend to include any modified embodiment within the scope that provides specific effects offered by the configurations of the present disclosure and the combination thereof.

[0042] Although the deformation amount of the damper member 46 is adjusted by the second bolt 52 in the first and second embodiments, but the configuration to adjust the deformation amount of the damper member 46 is not limited thereto. For example, the configuration shown in FIG. 4 may be applied. The configuration shown in FIG. 4 includes a washer 62 that has a tapered shape and is placed on the upper surface of the support member 60 that is fixedly disposed, and the plate 64 that is disposed above the washer 62, and the damper member 66 (O-ring) that is disposed between the washer 62 and the plate 64. Further, this configuration includes an externally threaded member 70 that is mounted on the outer periphery of an outer ring 68, and the nut 72 is screwed to the externally threaded member 70. In this configuration, the damper member 66 is deformed between the washer 62 and the plate 64 by tightening the nut 72 screwed into the externally threaded member 70. The washer 62 has an upper surface 62a that is inclined so that the thickness of the washer 62 decreases from the inner peripheral side toward the outer peripheral side. When the washer 62 is displaced in the horizontal direction on the support member 60, the deformation amount of the damper member 66 changes (increases and decreases) in accordance with the direction and the amount of the displacement of the washer 62. Therefore, the deformation amounts of the damper members 66 may be adjusted so that the deformation amounts of the damper members 66 vary in the circumferential direction of the pot 10 by adjusting the direction and amount of the displacement of the washer 62.

[0043] In the above-described first embodiment, three bolts 51, 52 are disposed at three different positions in the circumferential direction of the pot 10 and the inclination of the pot 10 is adjusted by the rotation amounts of two of the bolts, namely, the second bolts 52. The number of the bolts for adjusting the inclination of the pot 10 is not limited to two, but may be three or more.

[0044] Although the holder member 20 is fixed to the outer ring 16 in the first and the second embodiment, the outer ring 16 and the holder member 20 need not necessarily be formed separately, but may be formed integrally.

[0045] Although the upper and lower damper members 46 are disposed below the holder member 20 so as to hold the plate 24 therebetween in the second embodiment, the configuration is not limited to this. For example, the positions of the holder member 20 and the plate 24 are swapped in the vertical direction and the upper and the lower damper members 46 are disposed above the holder member 20 so as to hold the plate 24 therebetween. The damper members 46 need not necessarily be disposed on both sides of the holder member 20, but may be disposed on either the upper side or lower side of the holder member 20.

[0046] In the above-described embodiments, the direction in which the damper members 46, 66 deforms is set in a direction in parallel to the central axis J of the pot 10, but it may be set in a direction that extending perpendicular to the central axis J of the pot 10.

[0047] Additionally, the damper members 46, 66 are provided by an O-ring in the above-described embodiments, the damper members 46, 66 are not limited to an elastic body such as an O-ring. For example, the damper member may be provided by a combination of a metal spring and oil.

[0048] An oil damper function may be added with oil sealed in the damper member, in addition to the vibration damping function by the damper member. Specifically, a function that damps the vibration using the viscosity of oil moving (the oil damper function) in the circumferential direction in accordance with the deformation of the damper member may be added by sealing oil between two damper members (O-rings) with different diameters.

[0049] Although the fixed cover 30 is provided outward of the pot 10 in the above-described first embodiment, the fixed cover 30 may be replaced with a rotatable cover (not shown).

[0050] The adjustment of the inclination of the pot 10 using the adjustment mechanism 50 may be used for reducing the pot 10 to be disposed relative to the fixed cover 30 or the rotatable cover in non-coaxial relationship as well as for the adjustment of the inclination of the pot 10 relative to parts and axes of parts other than the fixed cover 30 or the rotatable cover.

[0051] Although the deformation amount of the damper member 46 is adjusted by the second bolt 52 in the first and second embodiments, but the configuration to adjust the deformation amount of the damper member 46 is not limited thereto. For example, the configuration in which the deformation amount of the damper member 46 is adjusted by the rotation of a nut relative to an externally threaded member shown in FIG. 4 may be used.

[0052] A pot spinning machine includes a pot (10) having cylindrical shape, and a pot bearing (12) that rotatably supports the pot (10) and includes a fixed ring (16). The pot spinning machine further includes , a support member (36, 60) that is fixedly disposed, a damper member (46, 66) disposed between the support member (36, 60) and the fixed ring (16), and an adjustment mechanism (50) that adjusts a deformation amount of the damper member (46, 66) so that the deformation amount of the damper member (46, 66) varies in a circumferential direction of the pot (10).

Claims

1. A pot spinning machine including a pot (10) having cylindrical shape; and a pot bearing (12) that rotatably supports the pot (10) and includes a fixed ring (16), the pot spinning machine **characterized by** comprising:

   a support member (36, 60) that is fixedly disposed;
   a damper member (46, 66) disposed between the support member (36, 60) and the fixed ring (16); and
   an adjustment mechanism (50) that adjusts a deformation amount of the damper member (46, 66) so that the deformation amount of the damper member (46, 66) varies in a circumferential direction of the pot (10).

2. The pot spinning machine according to claim 1, **characterized in that**
   the adjustment mechanism (50) includes at least two screw members (52) that are disposed at different positions in the circumferential direction of the pot (10) and adjust an inclination of the pot (10) with rotation amounts of the at least two screw members (52).

3. The pot spinning machine according to claim 2, **characterized in that**
   the damper member (46, 66) is disposed outward of the screw members (52).

4. The pot spinning machine according to any one of claims 1 through 3, **characterized in that**
   the adjustment mechanism (50) includes a restricting member (51) that restricts the deformation amount of the damper member (46, 66).

5. The pot spinning machine according to any one of claims 1 through 4, **characterized in that**
   the damper member (46, 66) deforms in a deforming direction that extends in parallel to a vertical direction.

6. The pot spinning machine according to any one of claims 1 through 5, **characterized in that**
   the adjustment mechanism (50) includes a holder member (20) that is fixed to a fixed ring (16) of the pot bearing (12) and extends radially from the fixed ring (16),
   the damper member (46) includes a plurality of damper members (46), and
   the damper members (46) are disposed in contact with an upper surface (20a) and a lower surface (20b) of the holder member (20).

7. The pot spinning machine according to any one of claims 1 through 6, **characterized in that**
   the damper member (46, 66) is provided by an O-ring.

FIG. 1

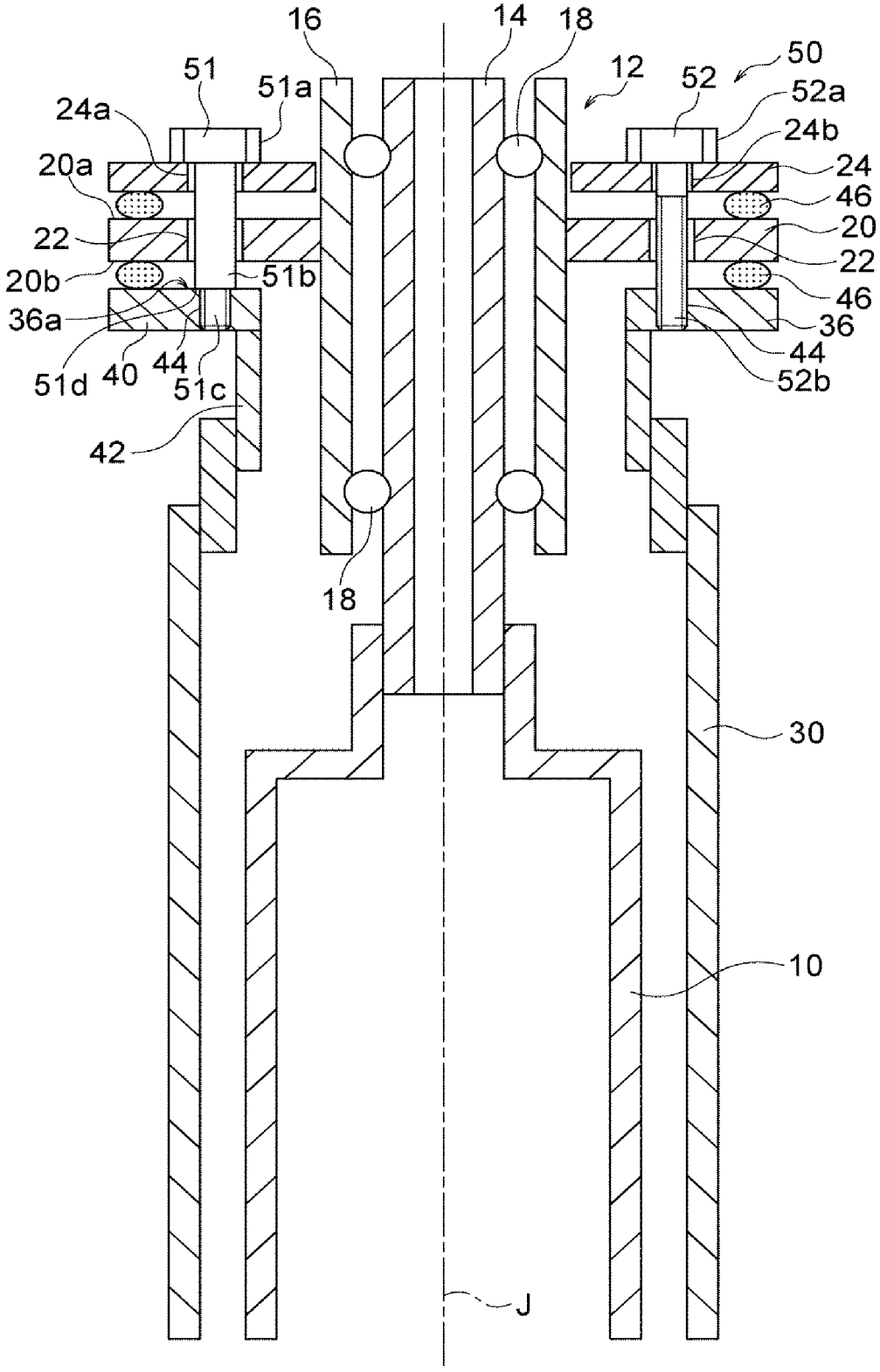
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FIG. 2

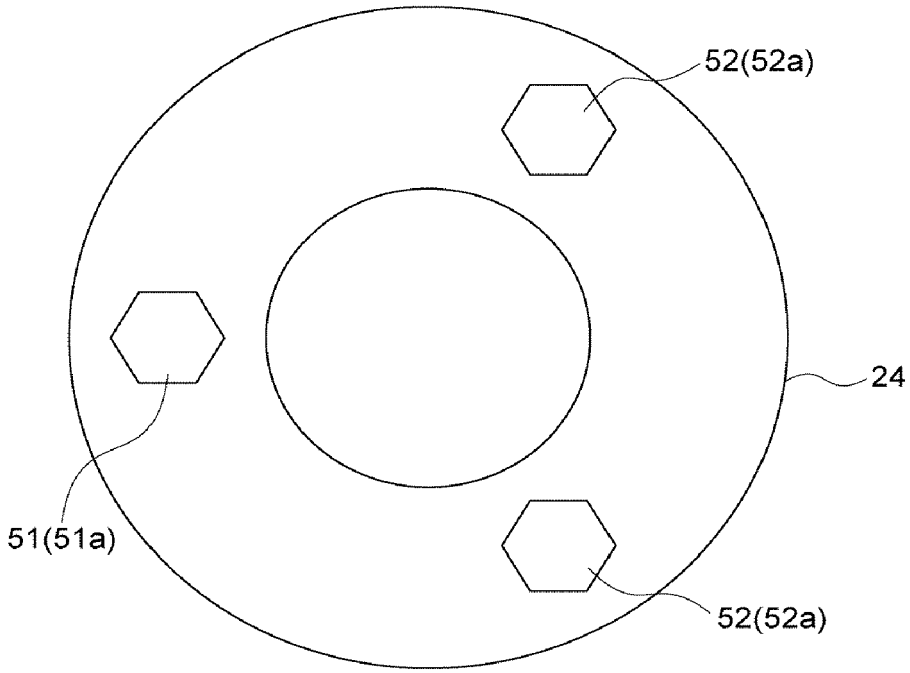

FIG. 3

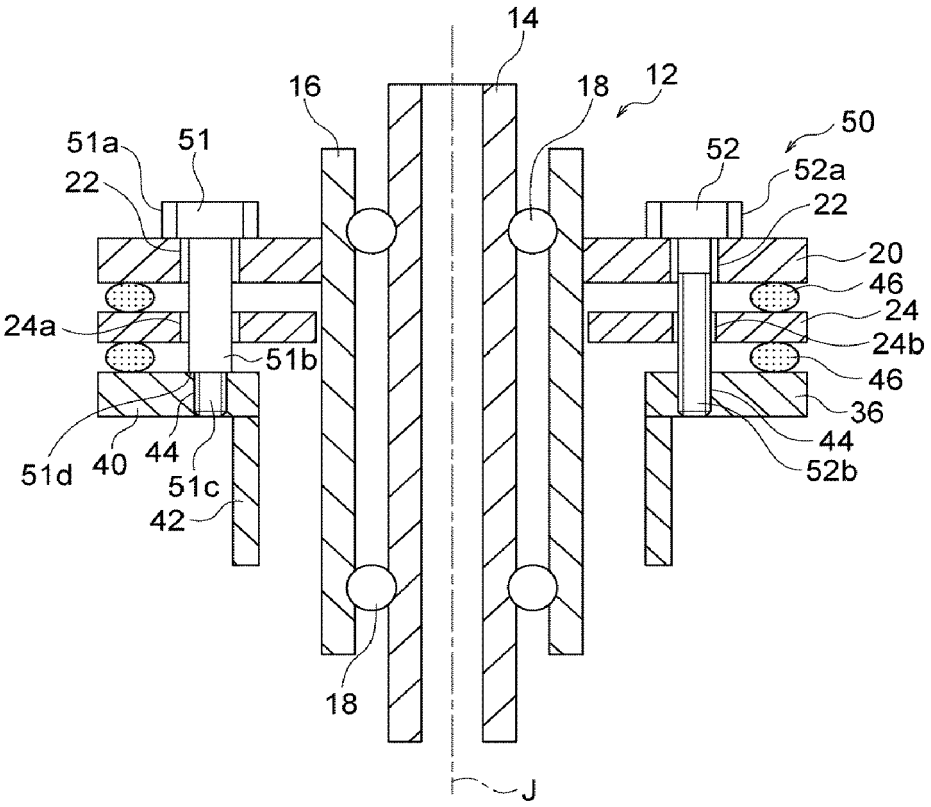
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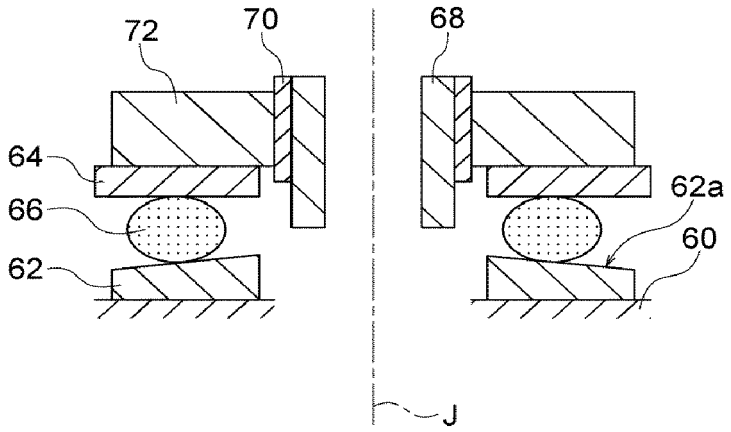
FIG. 4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Europäisches Patentamt
European Patent Office
Office européen des brevets

EUROPEAN SEARCH REPORT

Application Number
EP 20 17 9916

DOCUMENTS CONSIDERED TO BE RELEVANT

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Munich	22 October 2020	Humbert, Thomas

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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