



(51) International Patent Classification:

D04B 15/00 (2006.01) D04B 9/00 (2006.01)

(21) International Application Number:

PCT/IB2024/055502

(22) International Filing Date:

05 June 2024 (05.06.2024)

(25) Filing Language:

Italian

(26) Publication Language:

English

(30) Priority Data:

102023000011577 07 June 2023 (07.06.2023) IT

(71) Applicant: **SANTONI S.P.A.** [IT/IT]; Via Carlo Fenzi, 14, 25135 Brescia (IT).

(72) Inventors: **RIZZI, Stefano**; Via Panigada 20, 25126 Brescia (IT). **ANDREOLI, Marco**; Via Scuole 25, 25045

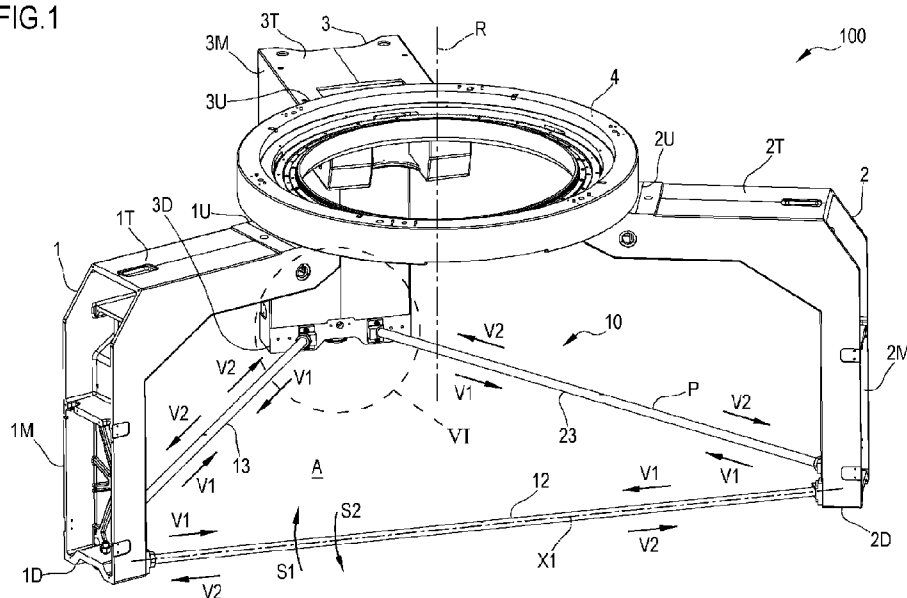
Castegnato (BS) (IT). **LONATI, Andrea**; Via Del Goletto, 48, 25123 Brescia (IT).

(74) Agent: **ROSA, Daniele**; c/o PGA S.P.A., piazza della Vittoria 7, 25121 Brescia (IT).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(54) Title: BASE FOR A CIRCULAR WEFT KNITTING MACHINE PROVIDED WITH A REGULATION SYSTEM AND RELATED REGULATION METHOD

FIG.1



(57) Abstract: Base (100) for a circular weft knitting machine (M), said circular knitting machine (M) comprising a textile head (200) provided with at least one rotating needle-bearing organ (201), with a plurality of needles movably mounted to said at least one needle-bearing organ (201), and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a textile fabric; wherein said base (100) constitutes a contact point of said circular knitting machine (M) on a bearing plane (F) and supports said textile head (200); said base (100) comprises: - an upper supporting element (4), on which it is mounted said textile head (200) in such a way that said needle-bearing organ (201) can rotate around a central axis (R); - at least two supporting legs (1, 2, 3) interposed between said upper element (4) and said bearing plane (F); - a regulation system (10) of the relative position between said at least two legs (1, 2, 3), said regulation system (10) comprising at least one spacer assembly (12, 23, 13) interposed

(84) **Designated States** (*unless otherwise indicated, for every kind of regional protection available*): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report (Art. 21(3))*

between a pair of supporting legs (1-2, 2-3, 1-3) of said at least two supporting legs; said at least one spacer assembly (12, 23, 13) is operatively active on said pair of supporting legs (1-2, 2-3, 1-3) and is actionable for determining a distance (D1, D2, D3) between said pair of supporting legs.

DESCRIPTION

“Base for a circular weft knitting machine provided with a regulation system and related regulation method”Field of the invention

- 5 The present invention has as its object a base for a circular weft knitting machine. In particular, the present invention has as its object a base for a circular weft knitting machine provided with a regulation system, more specifically, a regulation system of the distance between the support legs of said base.
- The present invention has as its object also a circular weft knitting machine comprising said base provided with said regulation system.
- 10 In addition, the present invention concerns a regulation method of the configuration of a base for a circular weft knitting machine.

Background of the invention

- 15 It is known the use of circular weft knitting machines for the manufacturing of textile items of various type, for example destined to the manufacturing of garments. Such textile items may constitute garments and products substantially already completed once realized by the knitting machine or they may undergo subsequent operations and workings, such as cutting, stitching, shapings and/or applying of additional portions.
- Circular weft knitting machines for the realization of textile items comprise a textile head, provided with at least one needle-bearing organ (needle-bearing cylinder and/or plate), on which one or more series of needles is/are
- 20 arranged along a circular path (circular needle beds), and devices adapted to control the movement of the needles for the formation of the fabric. The textile head is commonly provided with a plurality of knockover sinkers, movably arranged in radial seats obtained in an annular body (sinkers crown) arranged around the needle-holder cylinder and configured to cooperate with the needles in the process of formation of the knitted fabric, which has an overall conformation at least partially tubular.
- 25 The circular knitting machine comprises, furthermore, a base which constitutes the bearing structure of the knitting machine. Specifically, the base constitutes the organ through which the knitting machine contacts the bearing plane (or ground) of the relative installation site. The base is then configured to support the textile head, which is movably mounted on said base and is vertically spaced from the bearing plane on which the circular knitting machine lies.
- 30 Generally, the bases of the circular knitting machines comprise an upper supporting ring, or an equivalent supporting element, on which is mounted the textile head in such a way that said needle-bearing organ can rotate around a vertical central axis. The bases of known type comprise also a plurality of supporting legs, which extend between the upper ring and the bearing plane. In particular, the supporting legs are connected to said

upper ring and are spatially arranged around the central axis so as to ensure a stable support to the textile head.

The main function of the base is therefore to ensure the highest possible stability for the circular knitting machine, which has several moving components during its operation. These components can be particularly heavy and their relative movement can generate considerable vibratory events which, if propagated to the textile head, can generate imperfections and/or defects on the manufactured textile fabric.

By way of example, known knitting machine bases can comprise three supporting legs arranged in a radial pattern around the central axis of the knitting machine in an equi-spaced manner, i.e. angularly spaced by 120° around the central axis, so as to ensure optimum stability of the textile head and minimize the risk of the knitting machine tipping over.

Typically, the supporting legs have an "L" conformation with a lower, substantially vertical portion in contact with the bearing plane and an upper, substantially horizontal portion connected to the upper ring. Therefore, the supporting legs are connected at one end to the upper ring, while the other end contacts the bearing plane.

In addition, the bases of the circular knitting machines of known type can comprise a lower base, in jargon referred to as a "crossbeam" and which typically has a substantially planar structure. The crossbeam is positioned in contact with the bearing plane and is interposed between the supporting legs of the knitting machine. The function of the crossbeam is to further strengthen the base of the knitting machine, interconnecting the supporting legs in substantial correspondence with their lower ends. Specifically, the purpose of the crossbeam is to prevent the risk that the supporting legs of the base collapse and/or that the knitting machine can tip over.

The crosses traditionally installed in bases of the circular knitting machines are connected to the lower ends of the supporting legs and extend at least the entire area within them. Typically, known crosses extend for the entire projection of the circular knitting machine on the bearing plane, connecting the supporting legs thereof and increasing the contact surface between the circular knitting machine and the bearing plane.

The upper ring, the supporting legs and the crossbeams of bases of known type define, underneath the textile head, a volume in which a take-down and/or collection group can be housed and installed. Said take-down and/or collection group is configured to automatize the process of wrapping the textile fabric manufactured by the textile head into rolls. Some examples of bases used in circular knitting machines provided with take-down and/or collection groups are shown in documents WO2006/072969A1, WO2014/191868A1 and WO2017/081564A1 on behalf of the Applicant.

Circular knitting machines provided with the above-described bases provide an optimal support when installed on perfectly flat and smooth surfaces. However, quite often it occurs that the bearing plane of the installation sites have slight unevenness, which has an impact on the stability of the structure of the circular knitting machine, in particular due to the vibratory events that occur during its operation. As above-described, the

occurrence of such vibratory events causes oscillations within the components of the knitting machine that have an impact on the quality of the manufactured textile fabric, which may have imperfections and/or defects that may exclude it from subsequent processing leading to the final textile product..

In order to overcome these drawbacks, during the installation of circular knitting machines, methods are used to regulate the opening of the supporting legs in order to guarantee an optimal contact on the bearing plane and an overall stability that does not compromise the quality of the fabric manufactured by the textile head. These regulation methods provide, for example, for the use of one or more shims in the connection between the crossbeam and the supporting legs in order to modify the distance between the supporting legs and allow for a stable support of the base. It is evident that the above-mentioned regulation methods are particularly complex and time consuming: long installation times and qualified personnel are in fact required in order to obtain an overall balance configuration that complies with production requirements..

Furthermore, the Applicant has noticed that, due to the considerable weight of the knitting machine (in particular, of the movable components such as the textile head and the possible take-down and/or collection group) and the vibratory events occurring during the relative operation, the initial configuration of the base can be altered in such a way as to compromise the balance achieved during the installation step. Therefore, in order to restore the initial condition, a new regulation operation is necessary, which requires a long period of downtime of the knitting machine with a consequent loss of efficiency of the entire production process.

In addition, the Applicant has noted that the bases of the circular knitting machines of known type are heavy. This characteristic makes the transport of the knitting machines complex, requiring special transport means for their movement to the installation and production site.

The Applicant has also noticed that the bases of the circular knitting machines of known type have considerable dimensions and are particularly bulky. In particular, in order to define a sufficient housing space for housing a take-down and/or collection group, the bases of the circular knitting machines of known type have a considerable height development. Consequently, the center of gravity of the circular knitting machine is located at a height from the bearing plane that exposes the above-mentioned circular knitting machine to a greater risk of tipping over.

Summary

In the context of the contact on a bearing plane of circular knitting machines, the Applicant has therefore noticed the presence of certain limitations and drawbacks. In particular, the Applicant has observed that circular knitting machines of known type comprise bases that provide a precarious and non-durable stability, which also impacts on the quality of the manufactured textile fabric and on the efficiency of the entire production process. As shown above, the known solutions in this context have their limitations and are not able to offer a stable and durable support. On the one hand, traditional fixed-type bases cannot easily adapt to the bearing planes of

installation sites, which typically have slight differences in height and therefore do not allow to achieve a sufficient stability. On the other hand, known bases provided with regulation systems require complex configuration operations and do not guarantee the maintenance of the balance achieved in the long term.

The Applicant has also noted that bases of known type are too bulky and heavy.

5 In this situation, a purpose at the basis of the present invention, in its various aspects and/or embodiments, is to propose a base for a circular weft knitting machine, a circular weft knitting machine and a configuration regulation method of a base for a circular weft knitting machine, which are capable of solving the above indicated issues and of overcoming the limits of the known technique.

10 In particular, the purpose of the present invention is to propose a base for a circular knitting machine capable of regulating its configuration in order to keep the textile head in optimal conditions for the manufacturing of a textile fabric with structural and/or aesthetic characteristics that are capable of meeting high quality requirements.

Another purpose of the present invention is to describe a base for a circular knitting machine which guarantees an optimal support for the components of the above-mentioned circular knitting machine.

15 Another purpose of the present invention is to provide a base for a circular knitting machine which guarantees a lasting support for the above-mentioned circular knitting machine.

Another purpose of the present invention is to propose a base for a circular knitting machine the regulation thereof is simple, fast and intuitive.

20 Another purpose of the present invention is to provide a base for a circular knitting machine that allows to carry out configuration regulations even after the installation step without the need for long machine downtimes.

Another purpose of the present invention is to provide a base for a circular knitting machine characterized by a simple and rational structure.

Another purpose of the present invention is to propose a base for a circular knitting machine having a small footprint and a particularly reduced weight.

25 Another purpose of the present invention is to propose a circular knitting machine provided with the above-mentioned base.

Still another purpose of the present invention is to propose a circular knitting machine with a particularly stable structure.

30 Another purpose of the present invention is to provide a circular knitting machine capable of manufacturing a textile fabric that is free of defects and/or imperfections due to precarious contact with the bearing ground.

Another purpose of the present invention is to propose a circular knitting machine with easy installation thanks to a base with a simple and intuitive regulation system. Another purpose of the present invention is to provide a circular knitting machine which allows a quick and easy regulation of the base configuration even after the

first installation, and thus a prompt restoration of the optimal balance configuration for the manufacturing of a high-quality fabric.

It is still a purpose of the present invention to propose a circular knitting machine particularly reliable and efficient, wherein the maintenance and/or regulation interventions are minimized. In particular, purpose of the present invention is to reduce downtimes of the circular knitting machine due to maintenance interventions and/or regulations due to a sub-optimal contact with the bearing plane.

Another purpose of the present invention is to propose a configuration regulation method of said base for a circular knitting machine that is particularly simple and straightforward to actuate.

Another purpose of the present invention is to provide a configuration regulation method of said base for a circular knitting machine that is precise, stable and long-lasting.

Another purpose of the present invention is to provide a configuration regulation method of said base for a circular knitting machine the actuation thereof is quick and not invasive.

Yet another purpose of the present invention is to show a configuration regulation method of said base for a circular knitting machine that it is repeatable even after the first installation of the circular knitting machine.

These purposes and any others, which will become clearer in the following description, are substantially reached by a base for a circular weft knitting machine, a circular weft knitting machine and a configuration regulation method of said base for a circular knitting machine, according to one or more of the attached claims, as well as according to the following aspects and/or embodiments, variously combined, possibly also with the above-mentioned claims.

In a first aspect, the invention has as its object a base for a circular weft knitting machine.

In an aspect, said circular knitting machine comprises a textile head provided with at least one rotating needle-bearing organ, having shape of needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably mounted to said at least one needle-bearing organ, and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a fabric.

In an aspect, said base constitutes a contact point of said circular knitting machine on a bearing plane and supports said textile head.

In an aspect, said base comprises:

- an upper supporting element, preferably an upper supporting ring, on which said textile head is mounted in such a way that said needle-bearing organ can rotate around a central axis substantially vertical and preferably perpendicular to said bearing plane;
- at least two supporting legs interposed between said upper element and said bearing plane, said at least two legs being connected to said upper element in distinct and laterally spaced positions in such a way that said upper element results vertically at a distance from said bearing plane along said central axis;

- a regulation system of the relative position between said at least two legs, said regulation system comprising at least one spacer assembly interposed between a pair of supporting legs of said at least two supporting legs.

In an aspect, said at least one spacer assembly is operatively active on said pair of supporting legs and is actionable for determining a distance between said pair of supporting legs.

According to an aspect, said at least one spacer assembly is actionable for moving said pair of supporting legs both in a reciprocal approaching verse and in a reciprocal distancing verse.

With the expression "for moving said pair of legs both in a reciprocal approaching verse and in a reciprocal distancing verse", it is intended that said at least one spacer assembly is configured to both approach and distance said pair of supporting legs, or analogously to decrease or increase a distance between said pair of supporting legs.

In an aspect, said at least one spacer assembly is actionable both for decreasing a distance between said pair of supporting legs and for increasing said distance between said pair of supporting legs.

In an aspect, said at least one spacer assembly is actionable both for approaching said pair of supporting legs and for distancing said pair of supporting legs.

In an aspect, said at least one spacer assembly is configured to maintain, increase or decrease, in a selective manner, said distance between said pair of supporting legs.

In an aspect, said spacer assembly is actionable, in use, for moving said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse, i.e. both for decreasing and increasing said distance between said pair of supporting legs. According to said aspect, said spacer assembly can be actuated with the base mounted, i.e. also after an installation of said circular knitting machine.

In an aspect, said spacer assembly is configured to selectively exert a pulling action on said pair of supporting legs or a pushing action on said pair of supporting legs. According to this aspect, said spacer assembly is selectively actionable to both actuate said pulling action and to actuate said pushing action.

In an aspect, said pulling action is configured to move said pair of supporting legs in said reciprocal approaching verse, i.e. to decrease the distance between said pair of supporting legs.

In an aspect, said pushing action is configured to move said pair of supporting legs in said reciprocal distancing verse, i.e. to increase the distance between said pair of supporting legs.

In an aspect, said at least one spacer assembly is operatively active along a connection direction between said pair of supporting legs both for decreasing said distance between said pair of supporting legs and for increasing said distance between said pair of supporting legs. In an aspect, said connection direction is a straight line passing through said pair of supporting legs, i.e. a straight direction that connects said pair of supporting legs and along which said distance is measured. In a preferential aspect, said connection direction is parallel to said bearing plane.

In an aspect, said spacer assembly provides a first regulation direction, configured to move said pair of supporting legs in said reciprocal approaching verse, and a second regulation direction, configured to move said pair of supporting legs in said reciprocal distancing verse. In other words, said spacer assembly provides a first regulation direction, configured to decrease the distance between said pair of supporting legs, and a second regulation direction, configured to increase the distance between said pair of supporting legs.

In an aspect, said at least one spacer assembly is, in use, in contact with each supporting leg of said pair of supporting legs. According to this aspect, said spacer assembly is directly active on said pair of supporting legs for selectively moving it in said reciprocal approaching verse and in said reciprocal distancing verse.

In an aspect, each supporting leg of said at least two supporting legs extends vertically between a lower end, in contact with said bearing plane, and an upper end, connected, preferably fixed, to said upper element.

In an aspect, each supporting leg of said at least two supporting legs comprises an upright, having a substantially vertical development and having one end coinciding with said lower end, and a cross-beam, having a substantially horizontal development and having one end coinciding with said upper end.

In an aspect, said upright and said crossbeam are integrally joined, preferably at one end of said upright opposite to said lower end and at one end of said crossbeam opposite to said upper end. According to this aspect, each supporting leg has a substantially "L"-shaped conformation.

In an aspect, said at least one spacer assembly is, in use, in contact with each supporting leg of said pair of supporting legs at substantially the respective lower end.

In an aspect, said base comprises a plurality of supporting legs. According to said aspect, said plurality of supporting legs comprises N supporting legs, said number N of supporting legs being greater than or equal to three ($N \geq 3$).

In an aspect, said plurality of supporting legs extends from said upper element at least partially distancing from said central axis. In particular, the crossbeam of each supporting leg extends horizontally from said upper element distancing from said central axis.

In an aspect, said upper ends of said at least two supporting legs are connected to said upper element at distinct portions of the upper element itself.

In an aspect, said plurality of supporting legs extends from said upper element distancing from said central axis with a radial pattern, i.e. said plurality of supporting legs extends radially with respect to said central axis. In particular, the crossbeam of each supporting leg extends in a radial direction with respect to said central axis.

In an aspect, said plurality of supporting legs defines constant angles between consecutive supporting legs in said radial pattern around said central axis. According to this aspect, said plurality of legs defines a uniform radial around said central axis.

In an alternative aspect, said plurality of supporting legs defines different angles between consecutive supporting legs in said radial pattern around said central axis.

In an aspect, said plurality of supporting legs is connected to, and extends from, said upper element in distinct and laterally spaced positions according to a circular sequence around said central axis.

In an aspect, said regulation system comprises a plurality of spacer assemblies. In an aspect, said regulation system comprises at least N-1 spacer assemblies, where N is the number of supporting legs of said base.

5 Preferably, said regulation system comprises N spacer assemblies.

In an aspect, each spacer assembly of said plurality of spacer assemblies is interposed between a pair of consecutive supporting legs according to said circular sequence. According to this aspect, said plurality of spacer assemblies and said plurality of supporting legs are configured to define a perimeter of said base, said perimeter interconnecting pairs of consecutive supporting legs according to said circular sequence.

10 In an aspect, said base does not comprise components in an area externally defined by said perimeter. According to this aspect, the area defined by said perimeter is free of components of the base.

In an aspect, said at least one spacer assembly comprises two lateral elements, configured to connect said spacer assembly to a respective supporting leg of said pair of supporting legs. In particular, said at least one spacer assembly comprises a first lateral element and a second lateral element said first lateral element being
15 configured to be connected to a supporting leg of said pair of supporting legs and said second lateral element being configured to be connected to the other supporting leg of said pair of supporting legs.

In an aspect, said at least one spacer assembly comprises a central element, interposed between said two lateral elements.

20 In an aspect, said central element extends between a first end and a second end. Specifically, said central element is connected to said first lateral element at said first end and is connected to said second lateral element at said second end.

In an aspect, said central element is movable relative to said first lateral element and/or to said second lateral element. According to this aspect, a movement of said central element relative to said first lateral element and/or to said second lateral element determines a movement of the pair of supporting legs connected by the relative
25 spacer assembly in said reciprocal approaching verse or in said reciprocal distancing verse. According to this aspect, a movement of said central element relative to said first lateral element and/or to said second lateral element determines an increase or a decrease of the distance between the pair of supporting legs interconnected by the relative spacer assembly.

30 In an aspect, said first regulation direction provides a movement of said central element relative to said first lateral element and/or to said second lateral element different, preferably opposite, with respect to a movement of said central element relative to said first lateral element and/or to said second lateral element provided by said second regulation direction. In an aspect, said first lateral element is configured to be fixed to a supporting leg of said pair of supporting legs and/or said second lateral element is configured to be fixed to the other supporting leg of said pair of supporting legs.

In an aspect, said central element is connected to said first lateral element and/or to said second lateral element by means of a helicoidal constraint, preferably by means of a threading.

In an aspect, said central element comprises a first central threading at said first end and said first lateral element comprises a first lateral threading, said first central threading and said first lateral threading being pairable between them for connecting said central element and said second lateral element.

In an aspect, said central element comprises a second central threading at said second end and said second lateral element comprises a second lateral threading, said second central threading and said second lateral threading being pairable between them for connecting said central element and said second lateral element.

In an aspect, said first lateral element comprises a first seat having said first lateral threading. Said first seat is configured to house said first end of the central element by means of reciprocal screwing between said first central threading and said first lateral threading so as to constrain said central element and said first lateral element.

In an alternative aspect, said central element comprises said first seat in which it is obtained said first central threading. According to this aspect, said first seat is configured to house, by means of screwing, a part of said first lateral element in which it is obtained said first lateral threading so as to constrain said central element and said first lateral element.

In an aspect, said second lateral element comprises a second seat having said second lateral threading. Said second seat is configured to house said second end of the central element by means of reciprocal screwing between said second central threading and said second lateral threading so as to constrain said central element and said second lateral element.

In an alternative aspect, said central element comprises said second seat in which it is obtained said second central threading. According to this aspect, said second seat is configured to house, by means of screwing, a part of said second lateral element in which it is obtained said second lateral threading so as to constrain said central element and said second lateral element.

In an aspect, said first central threading and said first lateral threading have an opposite verse with respect to said second central threading and said second lateral threading. In an embodiment, said first central threading and said first lateral threading have a right-handed thread while said second central threading and said second lateral threading have a left-handed thread. In an alternative embodiment, said first central threading and said first lateral threading have a left-handed thread while said second central threading and said second lateral threading have a right-handed thread.

In an alternative aspect, said first central threading, said second central threading, said first lateral threading and said second lateral threading have all the same verse.

In an aspect, said spacer assembly is configured to be manually actuated in order to move said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse. In other words,

said spacer assembly is configured to be manually actuated both to increase and to decrease the distance between said pair of supporting legs.

In an aspect, said regulation system comprises a manual actuating device selectively connectable to said central element and/or to said first lateral element and/or to said second lateral element for moving said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse, i.e. both to increase and to decrease the distance between said pair of supporting legs. Preferably, said manual actuating device is selectively connectable to said central portion and is configured to be actuated in order to move said central element relative to said first element and/or said second lateral element.

In an aspect, said spacer assembly comprises an electronic actuating device operationally active on said central element and/or on said first lateral element and/or on said second lateral element to move said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse, i.e. and both to decrease and to increase the distance between said pair of supporting legs. Preferably, said electronic actuating device comprises an electric motor.

In an aspect, said spacer assembly comprises a pneumatic or hydraulic actuation device operationally active on said central element and/or on said first lateral element and/or on said second lateral element to move said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse, i.e. both to decrease and to increase the distance between said pair of supporting legs.

In an aspect, said spacer assembly comprises at least one fastener configured to allow or to inhibit, in a selective manner, the relative movement between said central element and said first lateral element and/or the relative movement between said central element and/or said second lateral element. In an aspect, said fastener is configured to be selectively associated to said spacer assembly to inhibit the relative movement between said central element and said first lateral element and/or the relative movement between said central element and said second lateral element.

In an aspect, said central element comprises at least one rod-shaped element. Said rod-shaped element extends between said first end and said second end. Specifically, said rod-shaped element extends between said first end and said second end along said connection direction between said pair of supporting legs.

In an aspect, said rod-shaped element has a substantially tubular conformation. Specifically, a section of said rod-shaped element along a plane perpendicular to said connection direction has a substantially circular shape.

In an aspect, said first central threading and said second central threading are obtained on the outer surface of said rod-shaped element, respectively, at said first end and at said second end.

In an aspect, said first lateral element comprises a first connection block. In particular, said first connection block is configured to be mounted on, preferably fixed to, a supporting leg of said pair of supporting legs. In an aspect, said first connection block comprises said first seat, said first seat comprising said first lateral threading. Said first seat is configured to receive said first end of the rod-shaped element by means of helical coupling

between said first central threading and said first lateral threading. In another aspect, said first connection block is a threaded bracket configured to be fixed (or, mounted in a fixed position) to a supporting leg of said pair of supporting legs by means of fasteners, for example by means of a plurality of screws.

In an aspect, said second lateral element comprises a second connection block. In particular, said second connection block is configured to be mounted on, preferably fixed to, a supporting leg of said pair of supporting legs, preferably the supporting leg opposite with respect to the one on which the first connection block is mounted. In an aspect, said second connection block comprises said second seat, said second seat comprising said second lateral threading. Said second seat is configured to receive said second end of the rod-shaped element by means of helical coupling between said second central threading and said second lateral threading.

In another aspect, said second connection block is a threaded bracket configured to be fixed (or, mounted in a fixed position) to a supporting leg of said pair of supporting legs by means of fasteners, e.g. by means of a plurality of screws.

In an aspect, said rod-shaped element is movable relative to said first connection block in a rotation verse around said connection direction. A rotation of said rod-shaped element around said connection direction determines a translation of said rod-shaped element along said connection direction. Specifically, the rotation of said rod-shaped element around said connection direction determines, depending on the rotation verse, a greater or a smaller penetration of the first end in said first seat of said first connection block.

In an aspect, said rod-shaped element is movable relative to said second connection block in rotation verse around said connection direction. A rotation of said rod-shaped element around said connection direction determines a translation of said rod-shaped element along said connection direction. Specifically, the rotation of said rod-shaped element around said connection direction determines, depending on the rotation verse, a greater or a smaller penetration of the second end in said second seat of said second connection element.

In an aspect, said rod-shaped element, said first connection block and said second connection block do not modify their size during the movement of said pair of legs in said reciprocal approaching verse or in said reciprocal distancing verse. Specifically, the movement of said pair of legs in said reciprocal approaching verse or in said reciprocal distancing verse determines a modification of the connection between said rod-shaped element, said first connection block and said second connection block.

In an aspect, a decrease of the distance between said pair of legs is determined by a greater penetration of said rod-shaped element in said first seat of the first connection block and/or a greater penetration of said rod-shaped element in said second seat of the second connection block.

In an aspect, an increase of the distance between said pair of legs is determined by a lower penetration of said rod-shaped element in said first seat of said first connection block and/or a lower penetration of said rod-shaped element in said second seat of the second connection block. In an aspect, said rod-shaped element constitutes a central threaded stud interposed between said first connection block and said second connection block.

According to this aspect, said first central threading and said first lateral threading have an opposite verse with respect to said second central threading and said second lateral threading. Depending on the embodiment, said first central threading and said first lateral threading have a right-handed thread while said second central threading and said second lateral threading have a left-handed thread or vice versa.

5 In an aspect, a rotation of said rod-shaped element in a first rotation verse determines a movement of said pair of supporting legs in said reciprocal approaching verse, i.e. a decrease of the distance between said pair of supporting legs. In particular, the rotation of said rod-shaped element in said first rotation verse determines simultaneously a greater penetration of the first end in said first seat and a greater penetration of the second end in said second seat. Consequently, the distance between said first connection block and said second
10 connection block is reduced. Being the first connection block and the second connection block integral with a respective supporting leg of said pair of supporting legs, said pair of supporting legs is moved in said reciprocal approaching verse. Specifically, in such a circumstance, the spacer assembly exerts a pulling action adapted to decrease the distance between said pair of supporting legs. In an aspect, said first rotation verse coincides with said first regulation verse.

15 In an aspect, a rotation of said rod-shaped element in a second rotation verse, preferably opposite to said first rotation verse, determines a movement of said pair of supporting legs in said distancing verse, i.e. an increase of the distance between said pair of supporting legs. In particular, the rotation of said rod-shaped element in said second rotation verse determines simultaneously a lower penetration of the first end in said first seat and a lower penetration of the second end in said second seat. Accordingly, the distance between said first
20 connection block and said second connection block is increased. Being the first connection block and the second connection block integral with a respective supporting leg of said pair of supporting legs, said pair of supporting legs is moved in said distancing verse. Specifically, in such a circumstance, the spacer assembly exerts a pushing action adapted to increase the distance between said pair of supporting legs. In an aspect, said second rotation verse coincides with said second regulation verse.

25 In an aspect, said rod-shaped element comprises a seat configured to allow a coupling, of removable type, between said manual actuating device and said spacer assembly. Said seat is configured to receive, in a removable manner, said manual actuating device so as to allow a movement between said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse, and then a decrease or an increase of the distance between said pair of supporting legs. In an embodiment, said seat is a hole obtained
30 on the outer surface of said rod-shaped element in a position between said first end and said second end, preferably in a midpoint between said first end and said second end.

In an aspect, said manual actuating device comprises a regulation lever adapted to be selectively inserted in said seat and configured to be manually actuated by a user to move said pair of supporting legs both in said reciprocal approaching verse and in said reciprocal distancing verse, and then to decrease or increase the

distance between said pair of supporting legs. In an aspect, said regulation lever is configured to determine a mechanical advantage in the rotation of said rod-shaped element around said connection direction.

In an aspect, said at least one fastener comprises at least one nut configured to be tightened on said first central threading or on said second central threading at a contact point between said rod-shaped element and said first connection block or at a contact point between said rod-shaped element and said second connection block. Said at least one nut is configured to selectively inhibit the rotation of said rod-shaped element relative to said first connection block and/or said second connection block.

According to another aspect, the present description has as its object a circular weft knitting machine.

In an aspect, said circular knitting machine comprises a base according to one or more of the aspects described above.

In an aspect, said circular knitting machine comprises a textile head provided with at least one rotating needle-bearing organ, having shape of needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably mounted to said at least one needle-bearing organ, and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a fabric.

In an aspect, said base is configured to support said textile head. According to this aspect, the textile head is vertically spaced with respect to the bearing plane of the knitting machine. In particular, said at least two supporting legs of the base determine the existence of a certain distance along the central axis between said textile head and said bearing plane.

In an aspect, said needle-bearing organ can be movable in rotation verse around a substantially vertical central axis. During the rotations of said needle-bearing organ, the one plurality of needles movably mounted on said at least one needle-bearing organ cooperates at least with said command means to allow the manufacturing of a fabric.

According to an aspect, said textile head comprises at least one rotating sinker holder organ housing a plurality of knockover sinkers, of a known type and therefore not described in the present document. The textile head comprises also relative command means of the sinkers adapted to selectively actuate said plurality of knockover sinkers. Said plurality of knockover sinkers is configured to cooperate with said plurality of needles in the manufacturing process of the textile fabric.

In an aspect, said base defines, below said textile head, a housing volume free of elements of said base. According to said aspect, said housing volume is configured to house a collection device for the textile fabric manufactured by the textile head. Preferably, said collection device is a take-down and/or collection group, configured to automatize a winding in rolls of the textile fabric manufactured by the knitting machine. In an aspect, said collection device is movable with respect to said base, preferably is rotating around said central axis in an integral manner with said needle-bearing organ.

In an aspect, said collection device is entirely hanging from the base and entirely supported by the base, or said collection device is entirely hanging from the needle-bearing organ and entirely supported by the needle-bearing organ. In particular, said collection device does not provide for the presence of supporting means at the bearing plane of the knitting machine. According to this aspect, said collection device is defined as "hanging" from the circular knitting machine.

In an alternative aspect, said collection device comprises contact means on the bearing plane of the knitting machine. By way of example, said contact means of the collection device comprise a plurality of wheels or bearings, configured to at least partially support the load of said collection device and to allow a movement thereof during the operation of the knitting machine.

According to a further aspect, the present invention also has as its object a configuration regulation method of a base for a circular knitting machine.

In an aspect, said regulation method is a regulation method applicable to a base for a circular knitting machine according to one or more of the preceding aspects.

In an aspect, said regulation method comprises a step of installing a base comprising at least the following elements:

- an upper supporting element, preferably an upper supporting ring;
- at least two supporting legs interposed between said upper element and a bearing plane, said at least two legs being connected to said upper element in distinct positions and laterally spaced so that said upper element is vertically distant from said bearing plane along a central axis, said central axis being preferably perpendicular to said bearing plane.

In an aspect, said regulation method comprises a step of arranging a regulation system of the relative position between said at least two legs, said regulation system comprising at least one spacer assembly interposed between a pair of supporting legs of said at least two supporting legs.

In an aspect, said regulation method comprises a step of mounting a textile head on said upper supporting element. In particular, said textile head is movably mounted to said upper supporting element.

In an aspect, said textile head comprises at least one rotating needle-bearing organ, having shape of needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably mounted to said at least one needle-bearing organ, and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a textile fabric.

According to an aspect, said textile head comprises at least one rotating sinker holder organ housing a plurality of knockover sinkers, of a known type and therefore not described in the present document. The textile head comprises also relative command means of the sinkers adapted to selectively actuate said plurality of knockover sinkers. Said plurality of knockover sinkers is configured to cooperate with said plurality of needles in the manufacturing process of the textile fabric.

In an aspect, said regulation method comprises a step of adjusting the configuration of said base by means of an actuation of said at least one spacer element for moving, in a selective manner, the relative pair of supporting legs both in a reciprocal approaching verse and in a reciprocal distancing verse. Said step of regulating the configuration of said base provides that said at least one spacer element is actuated selectively for moving the relative pair of supporting legs in a reciprocal approaching verse or in a reciprocal distancing verse.

In an aspect, said step of regulation the configuration of said base provides that said at least one spacer element is actuated both for decreasing the distance between the relative pair of supporting legs and for increasing said distance between said pair of supporting legs.

In an aspect, said step of regulating the configuration of said base provides that said at least one spacer element is actuated both for exerting a pulling force adapted to decrease the distance between the relative pair of supporting legs and to exert a pushing force adapted to increase the distance between said pair of supporting legs.

In an aspect, said step of arranging a regulation system provides that said at least one spacer system is put in contact with both the supporting legs of the relative pair of supporting legs.

In an aspect, said step of installing said base provides that said base comprises a plurality of supporting legs, preferably N supporting legs with N greater than or equal to 3 ($N \geq 3$). In an aspect, said N supporting legs are connected to said upper element in different and laterally spaced positions according to a circular sequence around said central axis.

In an aspect, said step of arranging said regulation system provides that said regulation system comprises a plurality of spacer assemblies. Preferably, said regulation system comprises at least N-1 spacer assemblies, where N is the number of supporting legs of said base. Even more preferably, said regulation system comprises N spacer assemblies.

In an aspect, said step of arranging said regulation system provides that each spacer assembly of said plurality of spacer assemblies is interposed between a pair of consecutive supporting legs according to said circular sequence. According to this aspect, said plurality of spacer assemblies and said plurality of supporting legs are configured to define a perimeter of said base, said perimeter interconnecting pairs of consecutive supporting legs according to said circular sequence.

In an aspect, said step of regulation provides to actuate said at least one spacer assembly in a first regulation verse, configured to move said pair of supporting legs in said reciprocal approaching verse, or in a second regulation verse, configured to move said pair of supporting legs in said reciprocal distancing verse. In other words, said step of regulation provides that said spacer assembly is actuated in said first regulation verse, configured to decrease the distance between said pair of supporting legs, or in said second regulation verse, configured to increase the distance between said pair of supporting legs. In an aspect, said step of arranging a regulation system provides that each spacer assembly comprises a central element, a first lateral element and

a second lateral element. In particular, said central element is interposed between said first lateral element and said second lateral element.

In an aspect, said step of arranging a regulation system provides that said central element is connected in a mobile manner to said first lateral element and/or to said second lateral element.

5 In an aspect, said step of regulation provides a relative movement between said central element and said first lateral element and/or a relative movement between said central element and said second lateral element.

In an aspect, said step of arranging a regulation system provides that said first lateral element is connected, preferably fixed, to a supporting leg of said pair of supporting legs and/or said second lateral element is connected, preferably fixed, to the other supporting leg of said pair of supporting legs.

10 In an aspect, said step of regulation provides that said first regulation verse determines a movement of said central element relative to said first lateral element and/or to said second lateral element different, preferably opposite, with respect to a movement of said central element relative to said first lateral element and/or to said second lateral element determined by said second regulation verse.

15 In an aspect, said step of arranging a regulation system provides that said central element is connected to said first lateral element and/or to said second lateral element by means of a helicoidal constraint, preferably by means of a threading.

In an aspect, said step of regulation provides a rotation of said central element around a relative longitudinal axis, said longitudinal axis being parallel, preferably coinciding, with a connection direction between said pair of supporting legs interconnected by said spacer assembly. In an aspect, said step of regulation provides that said
20 first regulation verse determines a rotation of said central element around said longitudinal axis different, preferably opposite, with respect to a rotation of said central element around said longitudinal axis determined by said second regulation verse.

In an aspect, said step of regulation provides a screwing of said central element relative to said first lateral element and/or to said second lateral element. In particular, said first regulation verse provides a screwing of
25 said central element in a different, preferably opposite verse, with respect to a screwing of said central element provided by said second regulation verse.

In an aspect, said step of regulation provides that said at least one spacer assembly is manually actuated. Preferably, said step of regulation provides that said at least one spacer assembly is manually actuated by means of a manual actuating device, said actuation device being selectively connectable to said central element
30 and/or to said first lateral element and/or to said second lateral element. In an aspect, said step of regulation provides that said manual actuating device is connected to said central element and/or to said first lateral element and/or to said second lateral element and which is subsequently moved according to said first regulation verse or said second regulation verse. According to an aspect, said regulation method comprises a

step of fixing the configuration of said base by means of the installation of a fastener on said at least one spacer assembly.

Further characteristics and advantages will result more clearly from the detailed description of a preferred, but non-exclusive, embodiment, of a base for a circular weft knitting machine, a circular weft knitting machine and a configuration regulation method of said base for a circular knitting machine, according to the present invention.

Description of figures

This description will be expressed hereinafter with reference to the attached figures, provided for illustrative purposes only and therefore non limitative, in which:

- figure 1 shows a perspective view of an embodiment of the base for a circular knitting machine provided with a regulation system according to the present invention;
- figure 2 shows according to a different perspective view the base of figure 1;
- figure 3 shows a front view of the base of figure 1;
- figure 4 shows a plant view from above of the base of figure 1;
- figure 5 shows a plant view from below of the base of figure 1;
- figure 6 shows a detail of the base according to the view of figure 1;
- figure 7 shows a detail of the base according to the view of figure 5;
- figure 8 shows, according to a perspective view, the regulation system according to the present invention insulated from the remainder of the base in which it is used;
- figure 9 shows a detail of a component of the regulation system of figure 8;
- figure 10 shows an exploded view of a component of the regulation system of figure 8;
- figure 11 shows a perspective view of the circular knitting machine in which it is used the base of figures 1-10;
- figure 12 shows a different perspective view of the circular knitting machine of figure 11;
- figure 13 shows a perspective view of the circular knitting machine of figure 11 with some optional additional components.

Detailed description

With reference to the above-mentioned figures, with the reference 100 has been overall indicated a base for a circular weft knitting machine M according to the present invention, hereinafter referred to for simplicity as base 100. Generally, the same reference number is used for the same or similar elements, eventually in their variant embodiments.

As shown in figures 11 and 12, said base 100 is configured to be used in the context of a circular weft knitting machine M, hereinafter referred to for simplicity as machine M. According to the above shown, the machine M comprises a textile head 200 provided with at least one rotating needle-bearing organ 201, having shape of

needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably mounted to said at least one needle-bearing organ, and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of the textile fabric. In particular, said base 100 constitutes un contact point of said machine M on a bearing plane F and supports said textile head 200. Said needle-bearing organ 201 is rotating around a central axis R and is configured to manufacture a textile fabric having a conformation at least partially tubular around said central axis R. Preferably, said central axis R is an axis substantially vertical and perpendicular to said bearing plane F.

It is to be noted that in the present document, the terms "under", "lower", "below", "beneath" and similar, as well as their opposites "on", "upper", "over", "above" and similar, are to be considered as referring to the machine M in use with respect to a vertical direction, i.e. perpendicular to the bearing plane F.

Analogously, the terms "vertical", "vertically", "horizontal", "horizontally" and similar are to be intended as referring to the machine M in use, wherein a vertical direction and a horizontal direction are orthogonal to each other. Preferably, the vertical direction is perpendicular to the bearing plane F and the horizontal direction is parallel to said bearing plane.

As shown in the attached figures, said base 100 comprises:

- an upper supporting element 4, preferably an upper supporting ring, on which said textile head 200 is mounted in such a way that said needle-bearing organ 201 can rotate around said central axis R;
- at least two supporting legs 1, 2, 3 interposed between said upper element 4 and said bearing plane F, connected to said upper element 4 in distinct and laterally spaced positions in such a way that said upper element 4 results vertically at a distance from said bearing plane F along said central axis R;
- a regulation system 10 of the relative position between said at least two legs 1, 2, 3, comprising at least one spacer assembly 12, 13, 23 interposed between a pair of supporting legs of said at least two supporting legs 1, 2, 3.

Specifically, said at least one spacer assembly 12, 13, 23 is operationally active on said pair of supporting legs and is actionable for determining a distance D1, D3, D3 between said pair of supporting legs.

In particular, said at least one spacer assembly 12, 13, 23 is actionable for moving, in a selective manner, said pair of supporting legs both in a reciprocal approaching verse V1 and in a reciprocal distancing verse V2. In particular, each spacer assembly 12, 13, 23 is operationally active on a relative pair of supporting legs and is actionable for moving, in a selective manner, said pair of supporting legs both in a reciprocal approaching verse V1 and in a reciprocal distancing verse V2.

With the expression "moving said pair of legs both in a reciprocal approaching verse V1 and in a reciprocal distancing verse V2" it is intended that said spacer assembly 12, 13, 23 is configured to both approach and distance the relative pair of supporting legs, or analogously to decrease or increase a distance between said pair of supporting legs.

For reasons of exposition simplicity, in the present description reference will be made mainly to the embodiment of the base 100 shown in the attached figures. The base 100 shown comprises three supporting legs, namely a first supporting leg 1, a second supporting leg 2 and a third supporting leg 3. The regulation system 10 of said base 100 comprises the following three regulatory assemblies:

- 5 - regulatory assembly 12 between a first pair of supporting legs 1-2, i.e. the pair composed by the first supporting leg 1 and by the second supporting leg 2;
- regulatory assembly 23 between a second pair of supporting legs 2-3, i.e. the pair composed by the second supporting leg 2 and by the supporting leg 3;
- 10 - regulatory assembly 13 between a third pair of supporting legs 3-1, i.e. the pair composed by the third supporting leg 3 and by the first supporting leg 1.

This description is to be intended in an absolutely exemplary and non-limiting manner, since bases 100 with a different number of legs provided with a regulation system 10 comprising a different number of regulatory assemblies are nevertheless to be considered included in the object of the present description.

15 In the following, reference will mainly be made to the regulatory assembly 12 between the first pair of supporting legs 1-2, i.e. between the first supporting leg 1 and the second supporting leg 2. What has been said in relation to the regulatory assembly 12 is to be considered valid, *mutatis mutandis*, also for the other regulating assemblies 13, 23 with which the regulation system 10 is provided.

20 In the light of the above, said regulatory assembly 12 is actionable for moving the relative pair of supporting legs 1-2 both in a reciprocal approaching verse V1 and in a reciprocal distancing verse V2. In other words, said spacer assembly 12 is actionable both for decreasing a distance D1 between said pair of supporting legs 1-2 and for increasing said distance D1 between said pair of supporting legs 1-2. Alternatively said, said spacer assembly 12 is actionable both for approaching the relative pair of supporting legs 1-2 and for distancing said pair of supporting legs. Thus, said spacer assembly 12 is selectively configured to keep (when not actuated), increase or decrease (when actuated) said distance D1 between said pair of supporting legs 1-2.

25 In particular, said spacer assembly 12 is actionable, in use, for moving said pair of supporting legs 1-2 both in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2, i.e. both for decreasing and for increasing said distance D1. Therefore, said spacer assembly 12 can be actuated with base 100 mounted, i.e. even after an installation of said machine M.

30 In accordance with the above described, said spacer assembly 12 is configured to selectively exert a pulling action on said pair of supporting legs 1-2 or a pushing action on said pair of supporting legs 1-2. It is to be noted that said spacer assembly 12 is actionable selectively both for actuating said pulling action and for actuating said pushing action. In particular, said pulling action is configured to move said pair of supporting legs 1-2 in a reciprocal approaching verse V1, i.e. to decrease the distance D1 between said pair of supporting legs 1-2. On

the contrary, said pushing action is configured to move said pair of supporting legs 1-2 in said reciprocal distancing verse V2, i.e. to increase the distance D1 between said pair of supporting legs 1-2.

Said spacer assembly 12 is operationally active along a connection direction X1 between said pair of supporting legs 1-2 both for decreasing said distance D1 and for increasing said distance D1. As shown in figure 4, said connection direction X1 is a straight line passing through said pair of supporting legs 1-2, i.e. a straight direction that connects said pair of supporting legs 1-2 and along which said distance D1 is measured. Preferably, said connection direction X1 is parallel to said bearing plane F.

As shown in figure 1, said spacer assembly 12 provides a first regulation direction S1, configured to move said pair of supporting legs 1-2 in said reciprocal approaching verse V1, and a second regulation direction S2, configured to move said pair of supporting legs 1-2 in said reciprocal distancing verse V2. In other words, said spacer assembly 12 provides a first regulation direction S1, configured to decrease the distance D1, and a second regulation direction S2, configured to increase the distance D1.

According to what is shown in the attached figures, said spacer assembly 12 is, in use, in contact with each supporting leg 1,2 of said pair of supporting legs 1-2. In particular, said spacer assembly 12 is directly active on said pair of supporting legs 1-2 for moving it in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2.

Each supporting leg 1, 2, 3 extends vertically between a lower end 1D, 2D, 3D, in contact with said bearing plane F, and an upper end 1U, 2U, 3U, connected, preferably fixed, to said upper element 4. In the shown embodiment, each supporting leg 1, 2, 3 comprises an upright 1M, 2M, 3M, having a substantially vertical development and having one end coinciding with said lower end 1D, 2D, 3D, and a crossbeam 1T, 2T, 3T, having a substantially horizontal development and having one end coinciding with said upper end. Said upright 1M, 2M, 3M and said crossbeam 1T, 2T, 3T are integrally joined, preferably at one end of said upright opposite to said lower end and at one end of said crossbeam opposite to said upper end. Therefore, as clearly shown in the attached figures, each supporting leg 1, 2, 3 has a substantially "L"-shaped conformation.

Preferably, said at least one spacer assembly 12 is, in use, in contact with each supporting leg of said pair of supporting legs 1-2 at substantially the respective lower end 1D, 2D.

As previously mentioned, said base 100 comprises a plurality of supporting legs 1, 2, 3. In particular, said plurality of supporting legs comprises N supporting legs, with N greater than or equal to three ($N \geq 3$).

As clearly shown in figures 4 and 5, said plurality of supporting legs 1, 2, 3 extends from said upper element 4 at least partially distancing from said central axis R. In particular, the crossbeam 1T, 2T, 3T of each supporting leg extends horizontally from said upper element 4 distancing from said central axis R.

Preferably, said upper ends 1U, 2U, 3U of said supporting legs are connected to said upper element 4 at distinct portions of the upper element itself. In particular, said plurality of supporting legs 1, 2, 3 is connected to, and

extends from, said upper element 4 in distinct and laterally spaced positions according to a circular sequence 1-2-3 around said central axis R.

In the shown embodiment, said plurality of supporting legs 1, 2, 3 extends from said upper element 4 distancing from said central axis R with a radial pattern, i.e. said plurality of supporting legs extends radially with respect to said central axis R. In particular, as evident from figure 4, the crossbeam 1T, 2T, 3T of each supporting leg extends in a radial direction with respect to said central axis R.

In the shown embodiment, said plurality of supporting legs 1, 2, 3 defines different angles A1, A2, A3 between consecutive supporting legs in said radial pattern around said central axis R. In an alternative embodiment, said plurality of supporting legs 1, 2, 3 defines constant angles A1, A2, A3 between consecutive supporting legs in said radial pattern around said central axis R so as to define a uniform radial.

According to what is shown, said regulation system 10 comprises a plurality of spacer assemblies 12, 23, 13. Preferably, said regulation system comprises at least N-1 spacer assemblies, where N is the number of supporting legs of said base 100. More preferably, said regulation system 10 comprises N spacer assemblies. In the embodiment of the attached figures, the base 100 comprises three supporting legs and the regulation system 10 comprises three spacer assemblies.

According to a preferred aspect, each spacer assembly 12, 23, 13 is interposed between a pair of consecutive supporting legs according to said circular sequence 1-2-3. In this configuration, the plurality of supporting legs 1, 2, 3 and the plurality of spacer assemblies 12, 23, 13 are configured to define a perimeter P of said base 100. Said perimeter P interconnects pairs of consecutive supporting legs according to said circular sequence 1-2-3. According to what is shown in the attached figures, said base 100 does not comprise components in an area A externally defined by said perimeter P.

As better shown in figures 8-10, said spacer assembly 12 comprises two lateral elements 121, 122, configured to connect said spacer assembly 12 to a respective supporting leg of said pair of supporting legs 1-2. In particular, said spacer assembly 12 comprises un first lateral element 121, configured to be connected to said first supporting leg 1, and un second lateral element 122, configured to be connected to said second supporting leg 2. Preferably, said first lateral element 121 is configured to be fixed said first supporting leg 1 and/or said second lateral element 122 is configured to be fixed to the second supporting leg 2.

In addition, said spacer assembly 12 comprises a central element 120, interposed between said two lateral elements 121, 122. As shown in figure 10, said central element 120 extends between a first end 120' and a second end 120''. Specifically, said central element 120 is connected to said first lateral element 121 at said first end 120' and is connected to said second lateral element 122 at said second end 120''.

Said central element 120 is movable relative to said first lateral element 121 and/or to said second lateral element 122. Specifically, a movement of said central element 120 relative to said first lateral element 121 and/or to said second lateral element 122 determines a movement of the pair of supporting legs 1-2 connected

by the relative spacer assembly 12 in said reciprocal approaching verse V1 or in said reciprocal distancing verse V2. In other words, a movement of said central element 120 relative to said first lateral element 121 and/or to said second lateral element 122 determines an increase or a decrease in distance D1 between the pair of supporting legs 1-2.

5 As shown in figure 1, said first regulation direction S1 provides a movement of said central element 120 relative to said first lateral element 121 and/or to said second lateral element 122 different, preferably opposite, with respect to a movement of said central element 120 relative to said first lateral element 121 and/or to said second lateral element 122 provided by said second regulation direction S2.

10 In the shown embodiment, said central element 120 is connected to said first lateral element 121 and/or to said second lateral element 122 by means of a helicoidal constraint, preferably by means of a threading. Specifically, said central element 120 is connected to said first lateral element 121 and to said second lateral element 122 by means of the above mentioned helicoidal constraint.

As apparent from figures 9 and 10, said central element 120 comprises a first central threading F1 at said first end 120' and said first lateral element 121 comprises a first lateral threading F3, in which said first central
15 threading F1 and said first lateral threading F3 are couplable between them to connect said central element 120 and said second lateral element 121. Analogously, said central element 120 comprises a second central threading F2 at said second end 120'' and said second lateral element 122 comprises a second lateral threading F4, in which said second central threading F2 and said second lateral threading F4 are couplable between them to connect said central element 120 and said second lateral element 122.

20 Specifically, said first lateral element 121 comprises a first seat S1 having said first lateral threading F3. As shown in figure 9, said first seat S1 is configured to house said first end 120' of the central element 120 by means of reciprocal screwing between said first central threading F1 and said first lateral threading F3 so as to constrain said central element 120 and said first lateral element 121. Analogously, said second lateral element 122 comprises a second seat S2 having said second lateral threading F2. Said second seat S2 is configured to
25 house said second end 120'' of the central element 120 by means of reciprocal screwing between said second central threading F2 and said second lateral threading F4 so as to constrain said central element 120 and said second lateral element 122.

In a non-shown embodiment, said central element comprises said first seat in which it is obtained said first central threading and/or said second seat in which it is obtained said second central threading. According to
30 this embodiment, said first seat and/or said second seat is/are configured to house, by means of screwing, a part of said first lateral element and/or said second lateral element in which it is obtained said first lateral threading and/or said second lateral threading so as to constrain said central element and said first lateral element and/or said first central element and said second lateral element. As shown in figures 9 and 10, said first central threading F1 and said first lateral threading F3 have an opposite verse with respect to said second

central threading F2 and said second lateral threading F4. By way of example, said first central threading F1 and said first lateral threading F3 have a right-handed thread while second central threading F2 and said second lateral threading F4 have a have a left-handed thread or vice versa.

In an alternative and non-shown embodiment, said first central threading F1, said second central threading F2, said first lateral threading F3 and said second lateral threading F4 have all the same verse.

Preferably, said spacer assembly 12, 23, 13 is configured to be manually actuated in order to move the relative pair of supporting legs both in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2.

In other words, said spacer assembly is configured to be manually actuated both for increasing and for decreasing the distance between said pair of supporting legs. As shown in figure 2 with reference to the pair of

supporting legs 2-3, said regulation system 10 comprises a manual actuating device L selectively connectable to said central element 230 and/or to said first lateral element 231 and/or to said second lateral element 232 for moving said pair of supporting legs 2-3 both in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2, i.e. both for decreasing and for increasing the distance D2. Preferably, said manual actuating device L is selectively connectable to said central portion 230 and is configured to be actuated in order to move said central element 230 relative to said first element 231 and/or said second lateral element 232.

In alternative non shown embodiments, said spacer assembly can comprise an electronic, pneumatic or oleodynamic device operationally active on said central element and/or on said first lateral element and/or on said second lateral element for moving said pair of supporting legs both in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2, i.e. both for decreasing and for increasing the distance D1, D2, D3. By way of example, said electronic actuating device can comprise an electric motor.

Preferably, said spacer assembly 12 comprises at least one fastener 123 configured to allow or to inhibit, in a selective manner, the relative movement between said central element 120 and said first lateral element 121 and/or the relative movement between said central element 120 and said second lateral element 122. In particular, said fastener 123 is configured to be selectively associated to said spacer assembly 12 to inhibit selectively the relative movement between said central element 120 and said first lateral element 121 and/or the relative movement between said central element 120 and said second lateral element 122.

In the shown embodiment, said central element 120 comprises un rod-shaped element 120A. Said rod-shaped element 120A extends between said first end 120' and said second end 120'', preferably along said connection direction X1 between said pair of supporting legs 1-2. Specifically, said rod-shaped element 120A has a substantially tubular conformation, i.e. a section of said rod-shaped element 120A along a plane perpendicular to said connection direction X1 has a substantially circular shape.

Said first central threading F1 and said second central threading F2 are obtained on the outer surface of said rod-shaped element 120A, respectively, at said first end 120' and of said second end 120''. According to what is shown in figures 8-10, said first lateral element 121 comprises a first connection block 121A. In particular,

said first connection block 121A is configured to be mounted on, preferably fixed to, a supporting leg of said pair of supporting legs 1-2, namely a said first supporting leg 1. Furthermore, said first connection block 121A comprises said first seat S1, within which said first lateral threading F3 is obtained. In accordance with the above description, said first seat S1 is configured to receive said first end 120' of the rod-shaped element 120A by means of helical coupling between said first central threading F1 and said first lateral threading F3. In the shown embodiment, said first connection block 121A is a threaded bracket configured to be fixed (or, mounted in a fixed position) to said first supporting leg 1 by means of fasteners 121M, for example by means of a plurality of screws.

In a manner substantially similar to the first lateral element 121, said second lateral element 122 comprises a second connection block 122A. In particular, said second connection block 122A is configured to be mounted on, preferably fixed to, a supporting leg of said pair of supporting legs 1-2, namely the second supporting leg 2. Furthermore, said second connection block 122A comprises said second seat S2, within which said second lateral threading F4 is obtained. Similarly to the first seat S1, said second seat S2 is configured to receive said second end 120'' of the rod-shaped element 120A by means of helical coupling between said second central threading F2 and said second lateral threading F4. In the shown embodiment, said second connection block 122A is a threaded bracket configured to be fixed (or, mounted in a fixed position) to said second supporting leg 2 by means of fasteners 122M, for example by means of a plurality of screws.

As shown in figure 8, said rod-shaped element 120A is movable relative to said first connection block 121A in rotation verse around said connection direction X1. A rotation of said rod-shaped element 120A around said connection direction X1 determines a translation of said rod-shaped element 120A and/or of said first connection block 121A along said connection direction X1. With reference to the section shown in the left portion of figure 9, the rotation of said rod-shaped element 120A around said connection direction X1 determines, depending on the rotation verse, a greater or a lower penetration of the first end 120' in said first seat S1.

Analogously, said rod-shaped element 120A is movable relative to said second connection block 122A in rotation verse around said connection direction X1. A rotation of said rod-shaped element 120A around said connection direction X1 determines a translation of said rod-shaped element 120A and/or of said second connection block 122A along said connection direction X1. Specifically, the rotation of said rod-shaped element 120A around said connection direction X1 determines, depending on the rotation verse, a greater or a lower penetration of the second end 120'' in said second seat S2.

It is to be noted that said rod-shaped element 120A, said first connection block 121A and said second connection block 122A do not modify their size during the movement of said pair of legs 1-2 in said reciprocal approaching verse V1 or in said reciprocal distancing verse V2. Specifically, the movement of said pair of legs 1-2 in said reciprocal approaching verse V1 or in said reciprocal distancing verse V2 determines only a modification of the connection between said rod-shaped element 120A, said first connection block 121A and

said second connection block 122A. In particular, a decrease of the distance D1 is determined by a greater penetration of said rod-shaped element 120A in said first seat S1 and/or a greater penetration of rod-shaped element 120A in said second seat S2. Analogously, an increase of the distance D1 is determined by a lower penetration of said rod-shaped element 120A in said first seat S1 and/or a lower penetration of said rod-shaped element 120A in said second seat S2.

As shown in figure 9, said rod-shaped element 120A constitutes a central threaded stud interposed between said first connection block 121A and said second connection block 122A. In particular, said first central threading F1 and said first lateral threading F3 have an opposite verse with respect to said second central threading F2 and said second lateral threading F4. Depending on the embodiment, said first central threading F1 and said first lateral threading F3 have a right-handed thread while said second central threading F2 and said second lateral threading F4 have a left-handed thread or vice versa.

Consequently, a rotation of said rod-shaped element in a first rotation verse, coinciding with the first regulation direction S1, determines a movement of said pair of supporting legs 1-2 in said reciprocal approaching verse V1, i.e. a decrease of the distance D1. In particular, the rotation of said rod-shaped element 120A in said first rotation direction S1 determines simultaneously a greater penetration of the first end 120' in said first seat S1 and a greater penetration of the second end 120'' in said second seat S2. Contextually, the distance between said first connection block 121A and said second connection block 122A is reduced. Being the first connection block 121A and the second connection block 122A integral with a respective supporting leg, said pair of supporting legs 1-2 is moved in said reciprocal approaching verse V1. In such a circumstance, the spacer assembly 12 exerts a pulling action adapted to decrease the distance D1 between said pair of supporting legs 1-2.

In a substantially equal and opposite manner, a rotation of said rod-shaped element in a second rotation verse, coinciding with said second regulation direction S2 and preferably opposite to said first rotation verse, determines a movement of said pair of supporting legs 1-2 in said reciprocal distancing verse V2, i.e. an increase of the distance D1. In particular, the rotation of said rod-shaped element 120A in said second rotation verse determines simultaneously a lower penetration of the first end 120' in said first seat S1 and a lower penetration of the second end 120'' in said second seat S2. Contextually, the distance between said first connection block 121A and said second connection block 122A is increased. Being the first connection block 121A and the second connection block 122A integral with a respective supporting leg, said pair of supporting legs 1-2 is moved in said reciprocal distancing verse V2. In such a circumstance, the spacer assembly 12 exerts a pushing action adapted to increase the distance D1 between said pair of supporting legs 1-2.

Preferably, said rod-shaped element 120A comprises a seat configured to allow a coupling, of removable type, between said manual actuating device L and said spacer assembly 12. Said seat is configured to receive, in a removable manner, said manual actuating device L so as to allow a movement between said pair of supporting

legs 1-2 both in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2, and thus a decrease or an increase of the distance D1. In the shown embodiment, said seat is a hole 120H obtained on the outer surface of said rod-shaped element 120A in a position between said first end 120' and said second end 120'', preferably in a midpoint between said first end and said second end.

5 According to what is shown in figure 2, said manual actuating device L comprises a regulation lever, shown with reference to the spacer assembly 23. Said regulation lever is adapted to be selectively inserted in said seat and configured to be manually actuated by a user to move said pair of supporting legs both in said reciprocal approaching verse V1 and in said reciprocal distancing verse V2, and then to decrease or increase the distance D2. When associated to the rod-shaped element 120A, said regulation lever is configured to determine a
10 mechanical advantage in the rotation of said rod-shaped element 120A around said connection direction X1.

As shown in detail in figure 9, said at least one fastener 123 comprises at least one nut configured to be tightened on said first central threading F1 and/or on said second central threading F2 at a contact point between said rod-shaped element 120A and said first connection block 121A or at a contact point between said rod-shaped element 120A and said second connection block 122A. Said at least one nut is configured to inhibit
15 selectively the rotation of said rod-shaped element 120A relative to said first connection block 121A and/or said second connection block 122A.

With reference to figures 10-13, it will now be better described the circular knitting machine M in which the above-described base 100 is used.

As anticipated, la machine M comprises a textile head 200 provided with at least one rotating needle-bearing organ 201, having shape of needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably
20 mounted to said at least one needle-bearing organ, and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a textile fabric. In particular, said base 100 constitutes a contact point of said machine M on a bearing plane F and supports said textile head 200. Said needle-bearing organ 201 is rotating around a central axis R and is configured to manufacture a textile fabric having an at least
25 partially tubular conformation around said central axis R. During the rotations of said needle-bearing organ 201, the one plurality needles movably mounted on said at least one needle-bearing organ cooperates at least with said command means to allow the manufacturing of said fabric.

Specifically, said base 100 is configured to support said textile head 200 so that it is vertically spaced with respect to the bearing plane F of the machine M. In particular, as shown for example in figure 3, the supporting
30 legs 1, 2, 3 determine the existence of a certain distance along the central axis R between said textile head 200 and said bearing plane F.

Preferably, said textile head 200 comprises at least one rotating sinker holder organ housing a plurality of knockover sinkers, of a known type and therefore not described in the present document. The textile head 200 comprises also relative command means of the sinkers adapted to selectively actuate said plurality of knockover

sinkers. Said plurality of knockover sinkers is configured to cooperate with said plurality of needles in the manufacturing process of the textile fabric.

As shown in figure 3, said base 100 defines, below said textile head 200, a housing volume V free of elements of said base. Said housing volume V is configured to house a collection device 300 of the textile fabric manufactures by the textile head. Preferably, said collection device 300 is a take-down and/or collection group, configured to automatize a winding in rolls of the textile fabric manufactured by the knitting machine. In an aspect, said collection device is movable with respect to said base, preferably is rotating around said central axis R in an integral manner with said needle-bearing organ 201.

In some embodiments such as those shown in figures 11 and 12, said collection device 300 is entirely hanging from the base 100 and entirely supported by the base, or said collection device 300 is entirely hanging from the needle-bearing organ 201 and entirely supported by the needle-bearing organ. In particular, said collection device 300 does not provide for the presence of supporting means at the bearing plane F of the machine M. According to this aspect, said collection device 300 is defined as "hanging" from the machine M.

In other no shown embodiments, said collection device 300 comprises contact means with the bearing plane F. By way of example, said contact means of the collection device comprise a plurality of wheels or bearings, configured to at least partially support the load of said collection device 300 and to allow a movement thereof during the operation of the knitting machine.

The machine M, as exemplarily shown in figure 13, can comprise other components, such as:

- components of the textile head 200, such as coverings, cams, wire guides, etc.;
- a U cone-holder structure placed above the textile head 200;
- a plurality of closing cages G that close the housing volume V wherein it is housed the collection device 300 (that results then closed inside such cages).

The closing cages G are movably mounted (e.g. hinged) to the base 100 at least between a closing configuration, in which they prevent the access to the housing volume V, and an opening configuration, in which they allow the access to the housing volume V.

It is finally described, a configuration regulation method of the base 100 according to what has been described above.

Said regulation method comprises a step of installing a base 100 comprising said upper supporting element 4 and at least two supporting legs 1, 2, 3. Said base 100 is a base according to the above.

The regulation method comprises a step of arranging said regulation system 10 provided with at least one spacer assembly 12, 13, 23 interposed between a pair of supporting legs 1, 2, 3. Said regulation system 10 is a regulation system according to the above.

The regulation method comprises also a step of mounting said textile head 200 on said upper element 4. In particular, said textile head 200 is mounted in a movable manner to said upper element 4.

Subsequently, said regulation method comprises a step of regulation of the configuration of said base 100 by means of an actuation of said at least one spacer element 12, 13, 23 for moving, in a selective manner, the relative pair of supporting legs both in said reciprocal approaching verse V1 and in a reciprocal distancing verse V2. In particular, said step of regulating the configuration of said base 100 provides that said at least one spacer element 12, 13, 23 is actuated selectively for moving the relative pair of supporting legs in a reciprocal approaching verse V1 or in a reciprocal distancing verse V2. In other words, said step of regulating the configuration of said base 100 provides that said at least one spacer element 12, 13, 23 is actuated both for decreasing and for increasing the distance D1, i.e. both for exerting a pulling force adapted to decrease the distance between the relative pair of supporting legs and for exerting a pushing force adapted to increase the distance between said pair of supporting legs.

Preferably, said step of regulation provides to actuate said at least one spacer assembly 12, 13, 23 in a first regulation direction S1, configured to move said pair of supporting legs in said reciprocal approaching verse V1, or in a second regulation direction S2, configured to move said pair of supporting legs in said reciprocal distancing verse V2.

Preferably, said step of regulation provides a relative movement between said central element 120 and said first lateral element 121 and/or a relative movement between said central element 120 and said second lateral element 122.

Preferably, said step of regulation provides that said first regulation direction S1 determines a movement of said central element 120 relative to said first lateral element 121 and/or to said second lateral element 122 different, preferably opposite, with respect to a movement of said central element relative to said first lateral element and/or to said second lateral element determined by said second regulation direction S2.

In an embodiment, said step of arranging a regulation system 10 provides that said central element 120 is connected to said first lateral element 121 and/or to said second lateral element 122 by means of a helicoidal constraint, preferably by means of a threading.

Sempre preferably, said step of regulation provides a rotation of said central element 120 around a relative longitudinal axis, in which said longitudinal axis is parallel, preferably coinciding, to said connection direction X1. More preferably, said step of regulation provides that said first regulation direction S1 determines a rotation of said central element 120 around said longitudinal axis different, preferably opposite, with respect to a rotation of said central element around said longitudinal axis determined by said second regulation direction S2.

In an embodiment, said step of regulation provides a screwing of said central element 120 relative to said first lateral element 121 and/or to said second lateral element 122. In particular, said first regulation direction S1 provides a screwing of said central element 120 in a different, preferably opposite verse, with respect to a screwing of said central element provided by said second regulation direction S2.

In a preferred embodiment, said step of regulation provides that said at least one spacer assembly 12, 13, 23 is manually actuated. Preferably, said step of regulation provides that said at least one spacer assembly is manually actuated by means of a manual actuating device L, selectively connectable to said central element 120 and/or to said first lateral element and/or to said second lateral element. In particular, said step of regulation provides that said manual actuating device L is connected to said central element and/or to said first lateral element and/or to said second lateral element and which is subsequently moved according to said first regulation direction S1 or said second regulation direction S2.

Preferably, said regulation method comprises a step of fixing the configuration of said base 100 by means of the installation of a fastener 123, 133, 233 on said at least one spacer assembly.

Advantages of the invention

The present invention obtains important advantages.

As it can be seen from what has been extensively described above, the regulation system 10 according to the present description allows to use a base 100 for a circular knitting machine capable of regulating its configuration in order to keep the textile head 200 in optimal conditions for the manufacturing of a textile fabric with structural and/or aesthetic characteristics that are capable of meeting high quality requirements.

In particular, the regulation system 10 allows a simple, fast and intuitive regulation of the configuration of the base 100.

Particularly advantageous is also the possibility of making regulations to the configuration of the base 100 even after the step of installation of the circular knitting machine, without the need for long machine downtimes.

Furthermore, the base 100 guarantees an optimal support to the components of the relative circular knitting machine.

In addition, the base 100 guarantees a lasting support to the components of the relative circular knitting machine.

The base 100 has also a simple and rational structure.

The compactness of the regulation system also allows to use a base 100 which has a small footprint and a particularly low weight.

The above-mentioned characteristics of the base 100 provide a circular knitting machine with a particularly stable structure. Consequently, the circular knitting machine is capable of manufacturing a textile fabric that has no defects and/or imperfections due to a precarious contact with the bearing plane.

The presence of the previously described regulation system 10 allows to use a circular knitting machine with easy installation. In particular, the regulation of the position of the textile head is quick and easy even after the first installation. This also guarantees a prompt re-establishment of the optimal balance configuration for the manufacturing of a high-quality textile fabric.

By virtue of the above-mentioned qualities, the circular knitting machine is particularly reliable and efficient. Specifically, maintenance and/or regulation interventions adapted to restore the optimal balance condition of the circular knitting machine are minimized and, if necessary, require particularly short downtimes.

In addition, the configuration regulation method of said base 100 is particularly simple and immediate to actuate.

5 In particular, the aforementioned configuration regulation method of said base is advantageously precise, stable and long-lasting.

In addition, the actuation of said regulation method is quick, non-invasive and above all repeatable even after the first installation of the circular knitting machine.

CLAIMS

1. Base (100) for a circular weft knitting machine (M), said circular knitting machine (M) comprising a textile head (200) provided with at least one rotating needle-bearing organ (201), having shape of needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably mounted to said at least one needle-bearing organ (201), and with command means suitable for selectively actuating said plurality of needles and for allowing the manufacturing of a textile fabric;

said base (100) constituting a contact point of said circular knitting machine (M) on a bearing plane (F) and supporting said textile head (200);

said base (100) comprising:

- an upper supporting element (4), preferably an upper supporting ring, on which said textile head (200) is mounted in such a way that said needle-bearing organ (201) can rotate around a central axis (R) substantially vertical and preferably perpendicular to said bearing plane (F);
- at least two supporting legs (1, 2, 3) interposed between said upper element (4) and said bearing plane (F), said at least two legs (1, 2, 3) being connected to said upper element (4) in distinct and laterally spaced positions in such a way that said upper element (4) results vertically at a distance from said bearing plane (F) along said central axis (R);
- a regulation system (10) of the relative position between said at least two legs (1, 2, 3), said regulation system (10) comprising at least one spacer assembly (12, 23, 13) interposed between a pair of supporting legs (1-2, 2-3, 1-3) of said at least two supporting legs;

wherein said at least one spacer assembly (12, 23, 13) is operatively active on said pair of supporting legs (1-2, 2-3, 1-3) and is actionable for determining a distance (D1, D2, D3) between said pair of supporting legs.

2. Base (100) according to the preceding claim, wherein said at least one spacer assembly (12, 23, 13) is actionable for moving said pair of supporting legs (1-2, 2-3, 1-3) both in a reciprocal approaching verse (V1) and in a reciprocal distancing verse (V2); and/or wherein said at least one spacer assembly (12, 23, 13) is actionable both for decreasing said distance (D1, D2, D3) between said pair of supporting legs (1-2, 2-3, 1-3) and for increasing said distance (D1, D2, D3) between said pair of supporting legs (1-2, 2-3, 1-3); and/or wherein said at least one spacer assembly (12, 23, 13) is actionable both for approaching said pair of supporting legs (1-2, 2-3, 1-3) and for distancing said pair of supporting legs (1-2, 2-3, 1-3); and/or wherein said spacer assembly (12, 23, 13) is configured to selectively exert a pulling action on said pair of supporting legs (1-2, 2-3, 1-3) or a pushing action on said pair of supporting legs (1-2, 2-3, 1-3), said pulling action being configured to move said pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal approaching verse (V1) and said pushing action being configured to move said pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal distancing verse (V2); and/or wherein said at least one spacer assembly (12, 23, 13) is operatively active along a connection direction (X1, X2, X3) between said pair of supporting legs (1-2, 2-3, 1-3) both for decreasing said distance (D1,

D2, D3) and for increasing said distance (D1, D2, D3); and/or wherein said connection direction (X1, X2, X3) is a straight line passing through said pair of supporting legs (1-2, 2-3, 1-3).

3. Base (100) according to claim 2, wherein said at least one spacer assembly (12, 23, 13) provides a first regulation direction (S1), configured to move said pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal approaching verse (V1), and a second regulation direction (S2), configured to move said pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal distancing verse (V2); and/or wherein said at least one spacer assembly (12, 23, 13) is, in use, in contact with each supporting leg of said pair of supporting legs (1-2, 2-3, 1-3); and/or wherein said spacer assembly (12, 23, 13) is directly active on said pair of supporting legs (1-2, 2-3, 1-3) for selectively moving it in said reciprocal approaching verse (V1) and in said reciprocal distancing verse (V2).

4. Base (100) according to any one of the preceding claims comprising a plurality of supporting legs (1, 2, 3), said plurality of supporting legs comprising N supporting legs, wherein N is an integer number greater than or equal to 3, i.e. $N \geq 3$; and/or wherein said plurality of supporting legs (1, 2, 3) is connected to, and extends from, said upper element (4) in distinct and laterally spaced positions according to a circular sequence (1-2-3) around said central axis (R); and/or wherein said regulation system (10) comprises a plurality of spacer assemblies (12, 23, 13), said plurality of spacer assemblies comprising N spacer assemblies; and/or wherein each spacer assembly of said plurality of spacer assemblies (12, 23, 13) is interposed between a pair of consecutive supporting legs (1-2, 2-3, 1-3) according to said circular sequence (1-2-3); and/or wherein said plurality of spacer assemblies (12, 23, 13) and said plurality of supporting legs (1, 2, 3) define a perimeter (P) of said base (100).

5. Base (100) according to any one of the preceding claims, wherein said at least one spacer assembly (12, 23, 13) comprises a first lateral element (121, 231, 131) and a second lateral element (122, 232, 132), said first lateral element and said second lateral element being configured to connect the relative spacer assembly (12, 23, 13) to a respective supporting leg of said pair of supporting legs (1-2, 2-3, 1-3), said at least one spacer assembly (12, 23, 13) comprises a central element (120, 230, 130), interposed between said first lateral element (121, 231, 131) and said second lateral element (122, 232, 132); and/or wherein said central element (120, 230, 130) is movable relative to said first lateral element (121, 231, 131) and/or to said second lateral element (122, 232, 132); and/or wherein a movement of said central element (120, 230, 130) relative to said first lateral element (121, 231, 131) and/or to said second lateral element (122, 232, 132) determines a movement of the pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal approaching verse (V1) or in said reciprocal distancing verse (V2); and/or wherein said first regulation direction (S1) determines a movement of said central element (120, 230, 130) relative to said first lateral element (121, 231, 131) and/or to said second lateral element (122, 232, 132) different, preferably opposite, with respect to a movement of said central element (120, 230, 130) relative to said first lateral element (121, 231, 131) and/or to said second lateral element (122, 232, 132) determined by said second regulation direction (S2).

6. Base (100) according to the preceding claim, wherein said central element (120) is connected to said first lateral element (121) and/or to said second lateral element (122) by means of a helicoidal constraint; and/or wherein said central element (120) comprises a first central threading (F1) at a first end (120') and said first lateral element (121) comprises a first lateral threading (F3), said first central threading (F1) and said first lateral threading (F3) being mutually pairable for connecting said central element (120) and said first lateral element (121); and/or wherein said central element (120) comprises a second central threading (F2) at a second end (120'') and said second lateral element (122) comprises a second lateral threading (F4), said second central threading (F2) and said second lateral threading (F4) being mutually pairable for connecting said central element (120) and said second lateral element (122).

7. Base (100) according to the preceding claim, wherein said first lateral element (121) comprises a first seat (S1) having said first lateral threading (F3), said first seat (S1) being configured to house said first end (120') of the central element (120) by means of reciprocal screwing between said first central threading (F1) and said first lateral threading (F3); and/or wherein said second lateral element (122) comprises a second seat (S2) having said second lateral threading (F4), said second seat (S2) being configured to house said second end (120'') of the central element (120) by means of reciprocal screwing between said second central threading (F2) and said second lateral threading (F4); and/or wherein said first central threading (F1) and said first lateral threading (F3) have an opposite verse with respect to said second central threading (F2) and said second lateral threading (F4).

8. Base (100) according to any one of the claims from 5 to 7, wherein said regulation system (10) comprises a manual actuating device (L) selectively connectable to said central element (120, 230, 130) and/or to said first lateral element (121, 231, 131) and/or to said second lateral element (122, 232, 132) for moving said pair of supporting legs according to said first regulation direction (S1) or said second regulation direction (S2); and/or wherein said at least one spacer assembly (12, 23, 13) comprises at least one fastener (123, 233, 133) configured to allow or to inhibit, in a selective manner, the relative movement between said central element (120, 230, 130) and said first lateral element (121, 231, 131) and/or the relative movement between said central element (120, 230, 130) and/or said second lateral element (122, 232, 132).

9. Base (100) according to any one of the claims from 5 to 8, wherein said central element (120, 230, 130) comprises at least one rod-shaped element (120A, 230A, 130A), said rod-shaped element (120A, 230A, 130A) extending between said first end (120') and said second end (120'') along said connection direction (X1, X2, X3); and wherein said first lateral element (121, 231, 131) comprises a first connection block (121A, 231A, 131A) configured to be mounted on, preferably fixed to, a supporting leg of said pair of supporting legs (1-2, 2-3, 3-1); and wherein said second lateral element (122, 232, 132) comprises a second connection block (122A, 232A, 132A) configured to be mounted on, preferably fixed to a supporting leg opposite with respect to the one

on which it is mounted the first connection block (121A, 231A, 131A), said first connection block (121A, 231A, 131A) and said second connection block (122A, 232A, 132A) being preferably threaded brackets.

10. Base (100) according to the preceding claim, wherein said rod-shaped element (120A, 230A, 130A) is movable relative to said first connection block (121A, 231A, 131A) and/or to said second connection block (122A, 232A, 132A) in a rotation direction around said connection direction (X1, X2, X3); and/or wherein a rotation of said rod-shaped element (120A, 230A, 130A) in a first rotation direction (S1) determines a movement of said pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal approaching verse (V1) and a rotation of said rod-shaped element in a second rotation direction (S2), preferably opposite to said first rotation direction (S1), determines a movement of said pair of supporting legs in said reciprocal distancing verse (V2).

11. Circular weft knitting machine (M) comprising:

- a base (100) according to any one of the preceding claims;
- a textile head (200) provided with at least one rotating needle-bearing organ (201), having shape of needle-bearing cylinder or needle-bearing plate, with a plurality of needles movably mounted to said at least one needle-bearing organ, and with command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a textile fabric;

said base (100) is configured to support said textile head (200).

12. Circular knitting machine (M) according to the preceding claim, wherein said base (100) defines, below said textile head (200), a housing volume (V) free of elements of said base;

said circular knitting machine (M) comprising a collection device (300) of the textile fabric manufactured by the textile head (200), said collection device (300) being at least partially housed in said housing volume (V); said collection device (300) being preferably a take-down and/or collection group, configured to automatize a winding in rolls of said textile fabric.

13. Configuration regulation method of a base (100) for a circular knitting machine (M), said regulation method comprising at least the following steps:

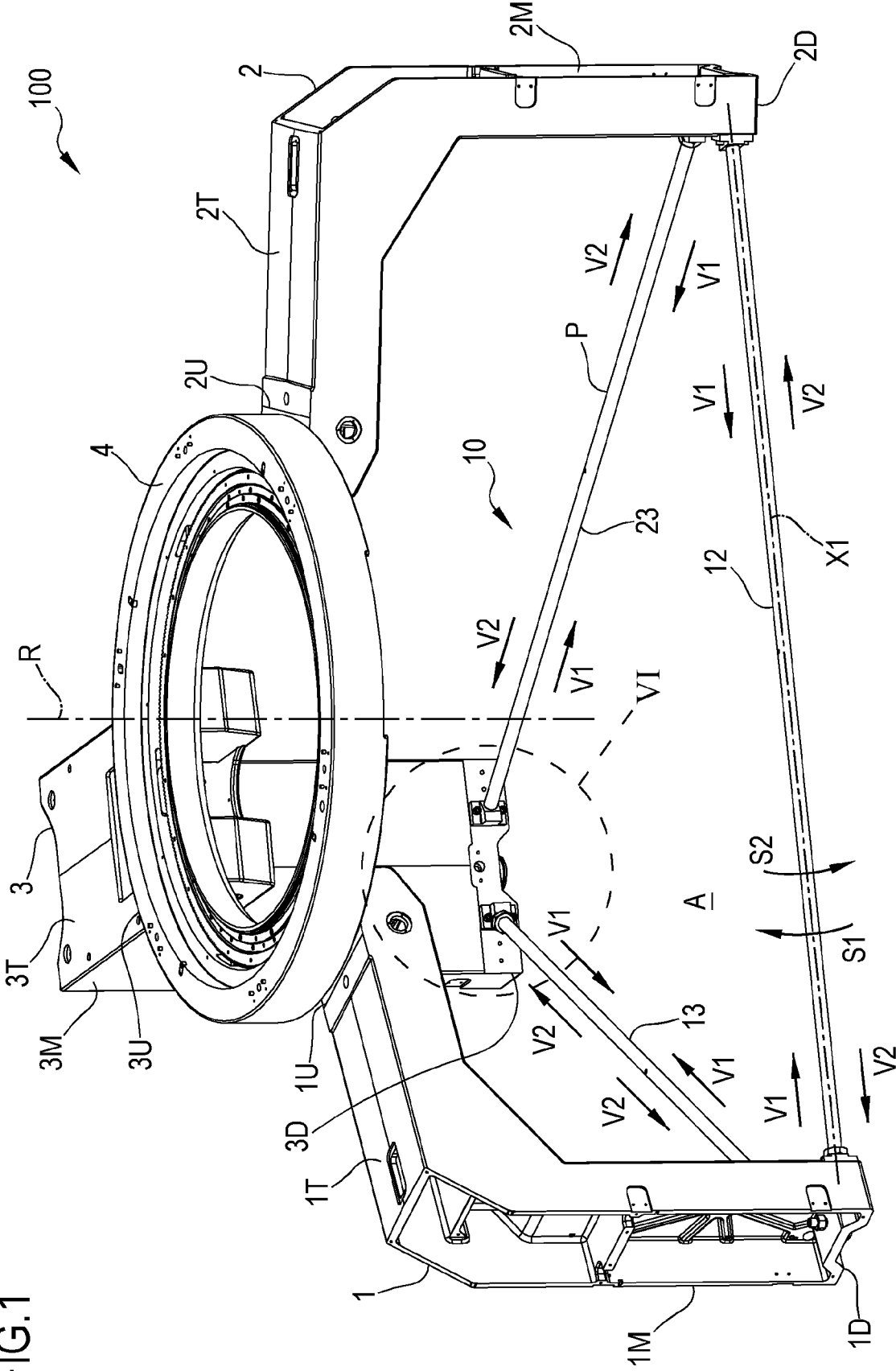
- installing a base (100) comprising at least one upper supporting element (4) and at least two supporting legs (1, 2, 3), interposed between said upper element (4) and a bearing plane (F);
- arranging a regulation system (10) of the relative position between said at least two legs (1, 2, 3), said regulation system (10) comprising at least one spacer assembly (12, 23, 13) interposed between a pair of supporting legs (1-2, 2-3, 1-3) of said at least two supporting legs;
- mounting a textile head (200) on said upper supporting element (4), said textile head (200) comprises at least one rotating needle-bearing organ (201), having shape of needle-bearing cylinder or needle-bearing plate, a plurality of needles movably mounted to said at least one needle-bearing organ, and command means adapted to selectively actuate said plurality of needles and to allow the manufacturing of a textile fabric;

- regulating the configuration of said base (100) by means of an actuation of said at least one spacer element (12, 23, 13) for moving, in a selective manner, the relative pair of supporting legs (1-2, 2-3, 1-3) both in a reciprocal approaching verse (V1) and in a reciprocal distancing verse (V2).

14. Regulation method according to the preceding claim, wherein said step of regulating the configuration of said base (100) provides that said at least one spacer element (12, 23, 13) is actuated both for decreasing and for increasing the distance (D1, D2, D3) between the relative pair of supporting legs (1-2, 2-3, 1-3); and/or wherein said step of regulation provides to actuate said at least one spacer assembly (12, 23, 13) in a first regulation direction (S1), configured to move said pair of supporting legs (1-2, 2-3, 1-3) in said reciprocal approaching verse (V1), or in a second regulation direction (S2), configured to move said pair of supporting legs in said reciprocal distancing verse (V2).

15. Regulation method according to claim 13 or claim 14, wherein said step of arranging a regulation system (10) provides that each spacer assembly (12, 23, 13) comprises a central element (120, 230, 130), a first lateral element (121, 231, 131) and a second lateral element (122, 232, 132); and/or wherein said step of regulation provides a relative movement between said central element (120, 230, 130) and said first lateral element (121, 231, 131) and/or a relative movement between said central element (120, 230, 130) and said second lateral element (122, 232, 132); and/or wherein said step of regulation provides a rotation of said central element (120, 230, 130) around a relative longitudinal axis; and/or wherein said step of regulation provides a screwing of said central element (120, 230, 130) relative to said first lateral element (121, 231, 131) and/or to said second lateral element (122, 232, 132).

FIG.1



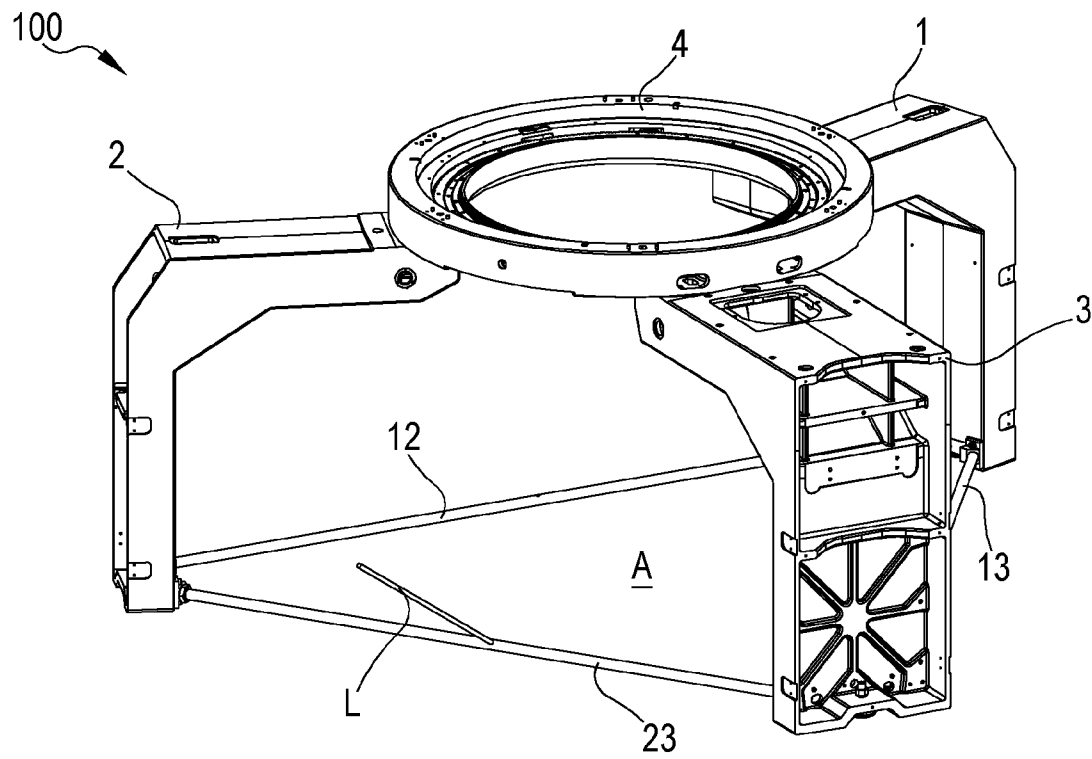


FIG. 2

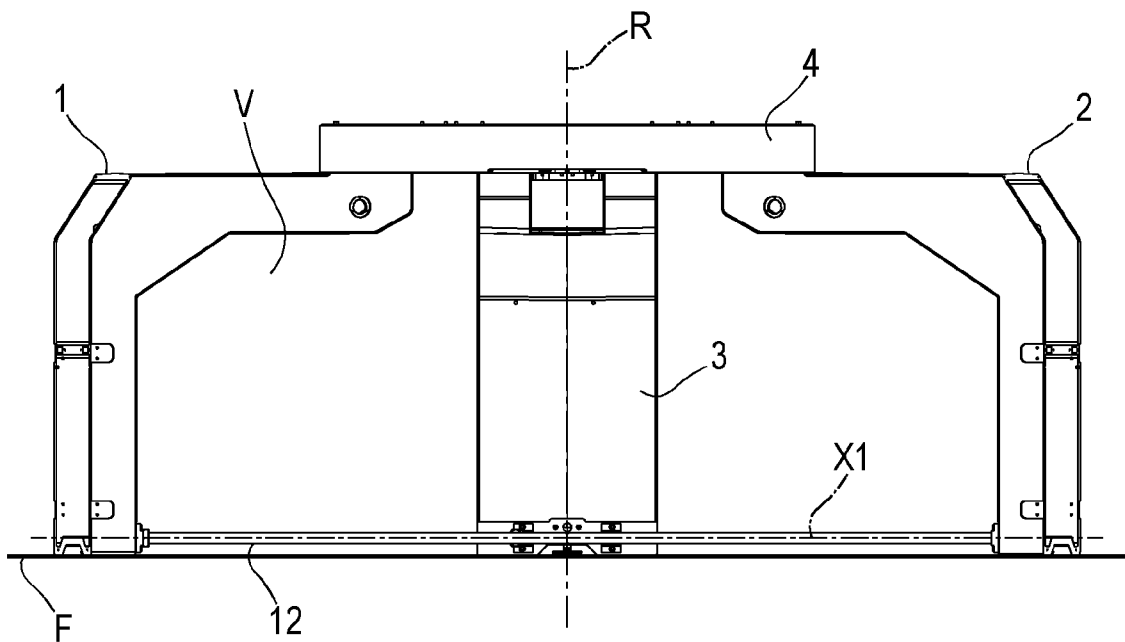


FIG. 3

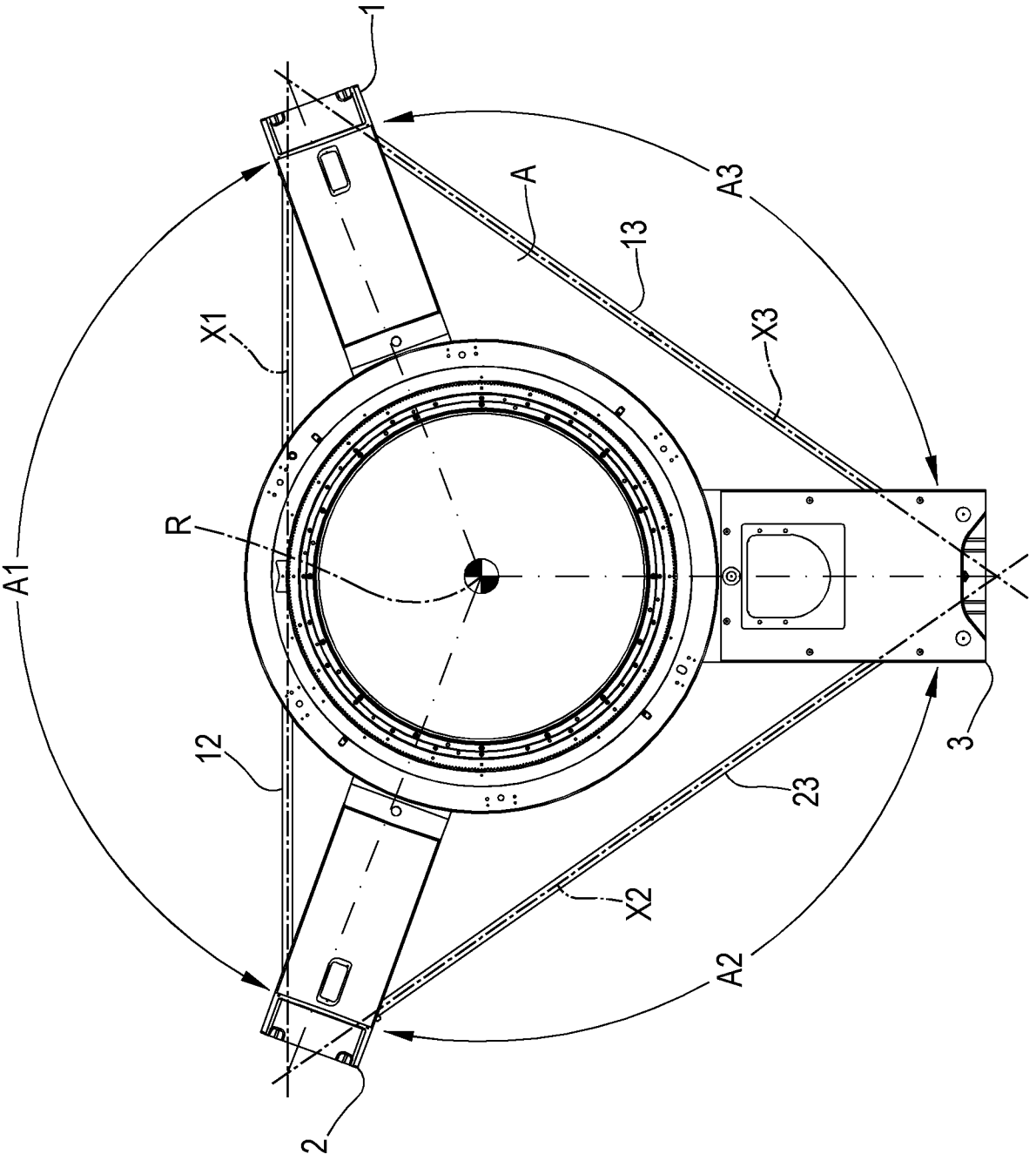


FIG.4

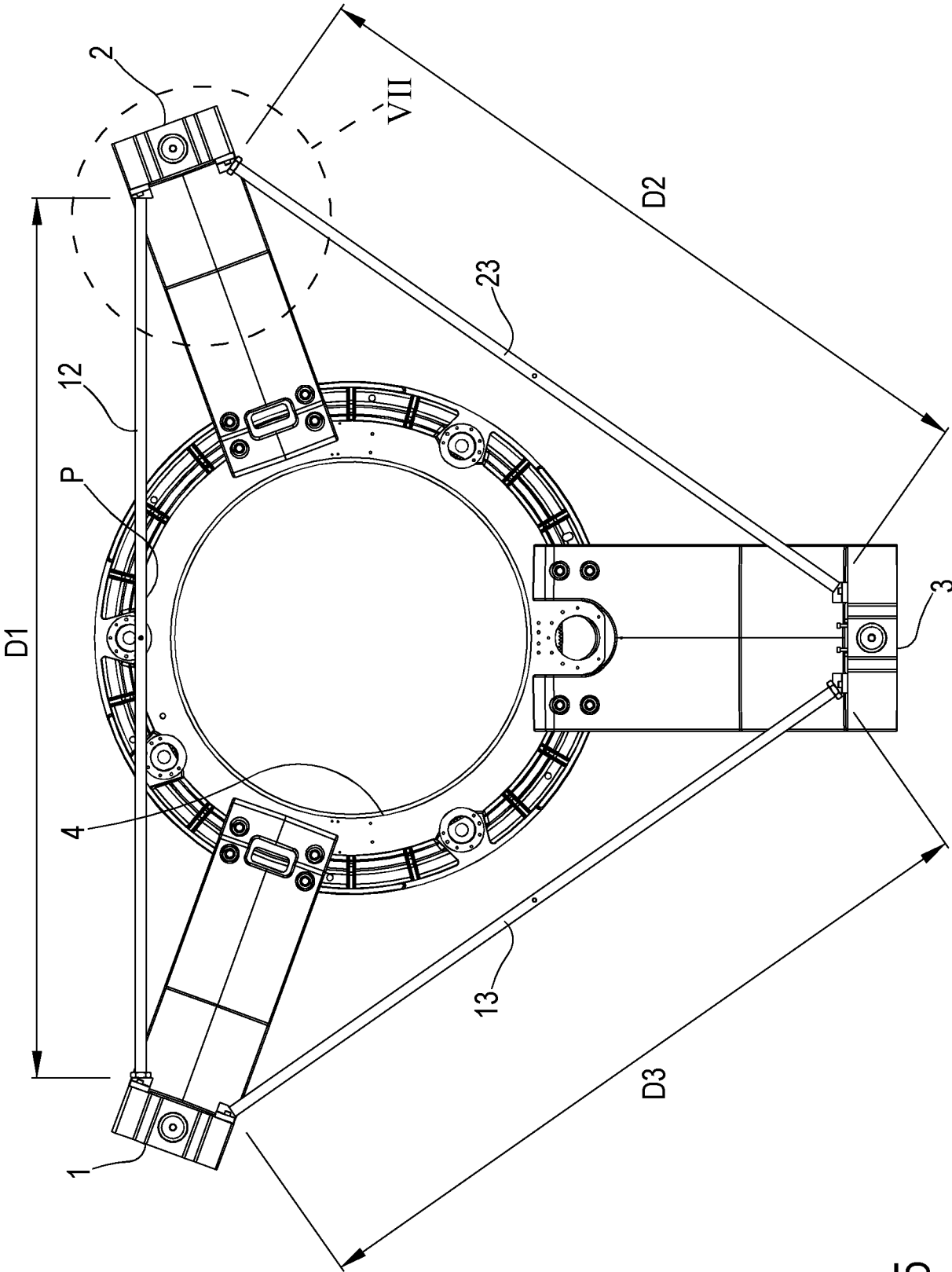


FIG.5

FIG.6

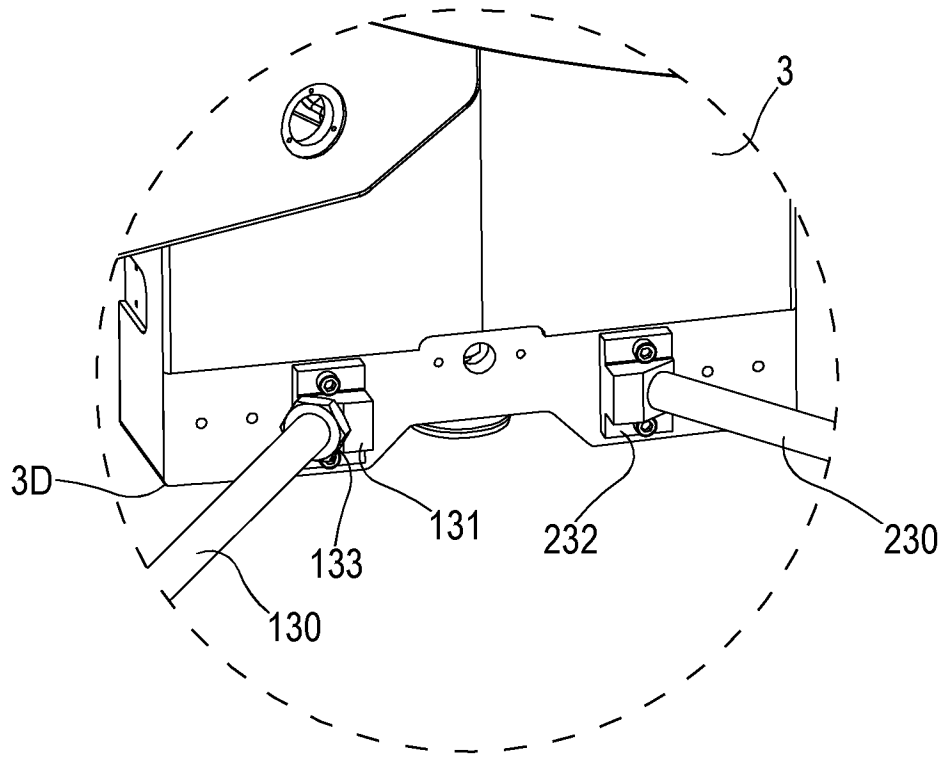
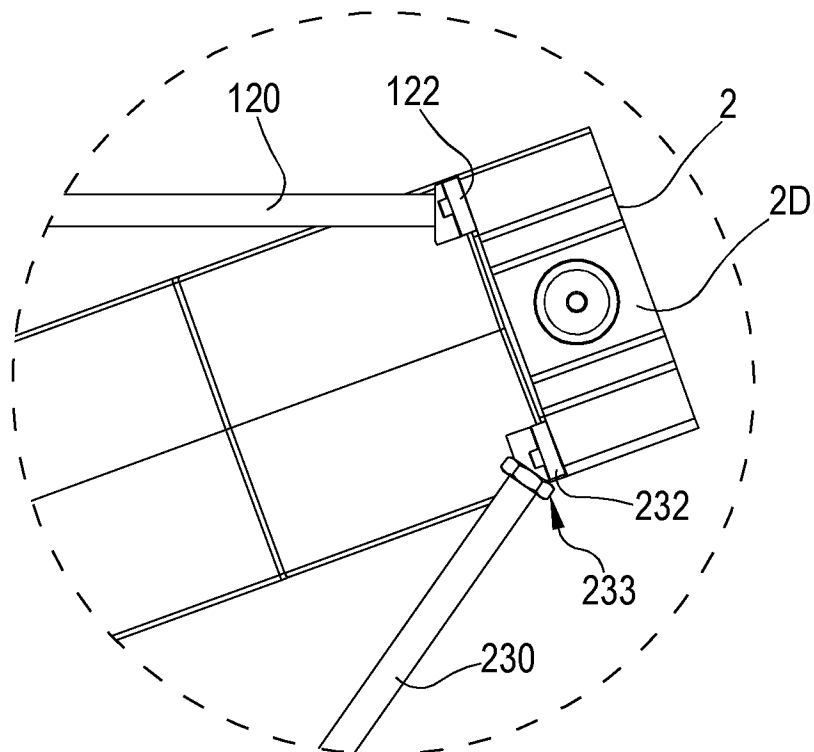


FIG.7



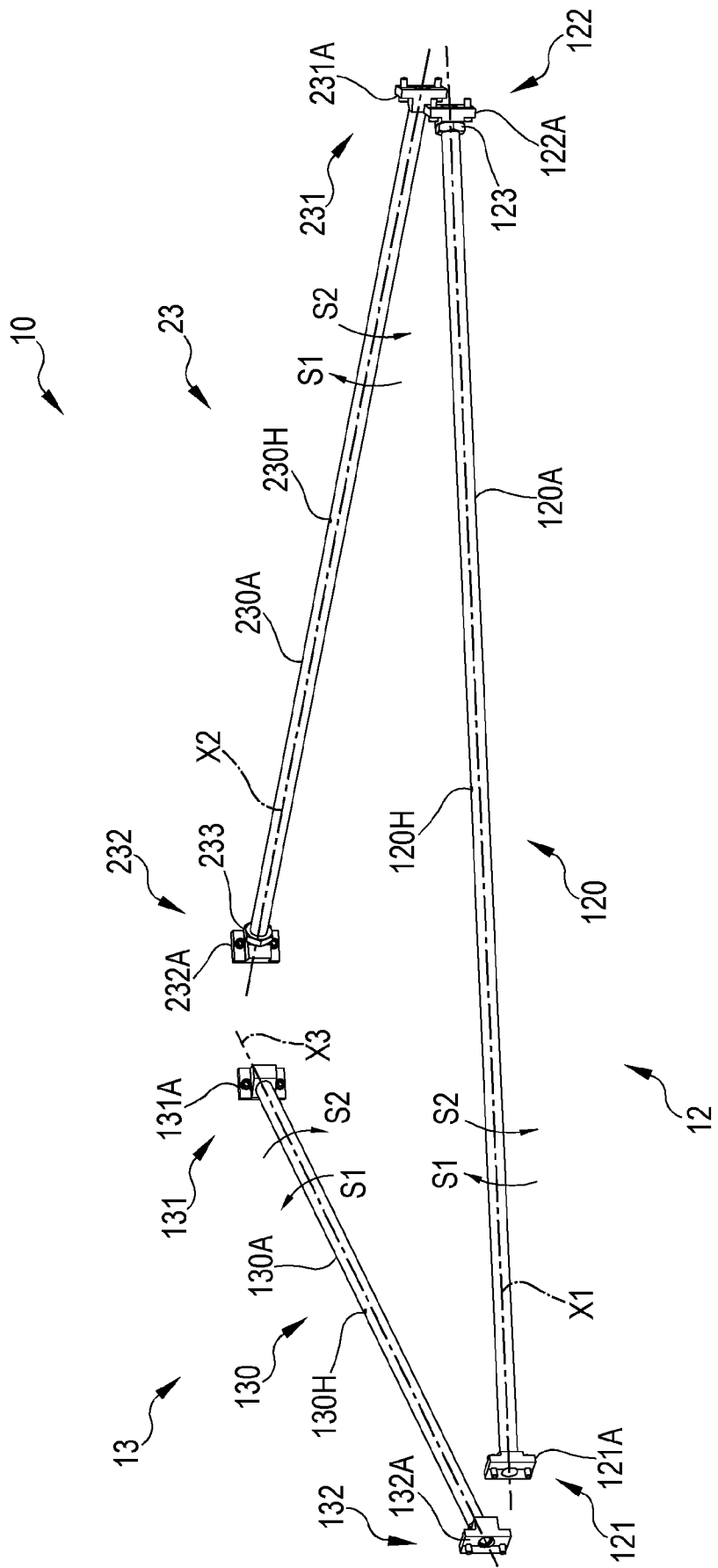


FIG.8

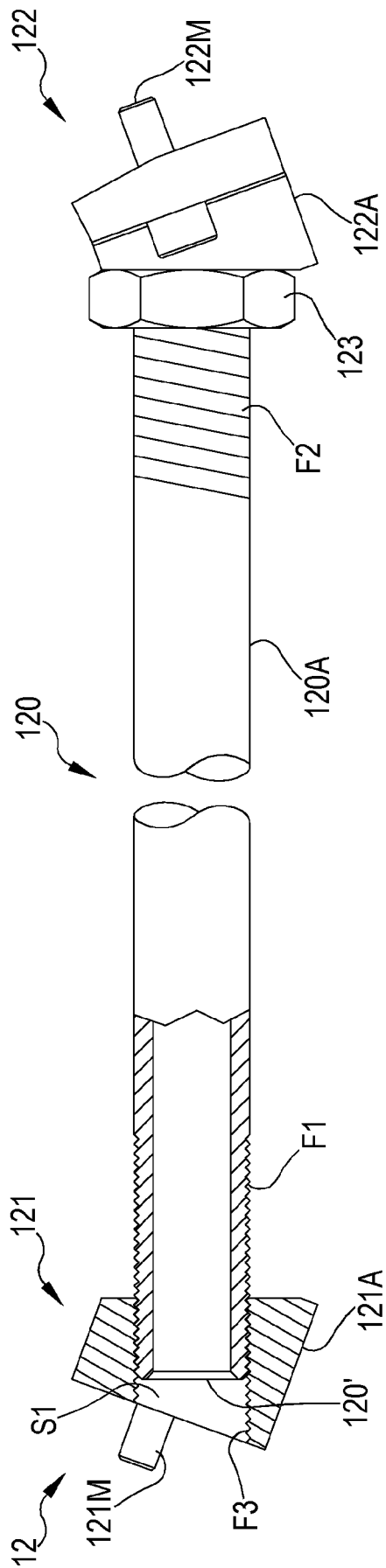


FIG. 9

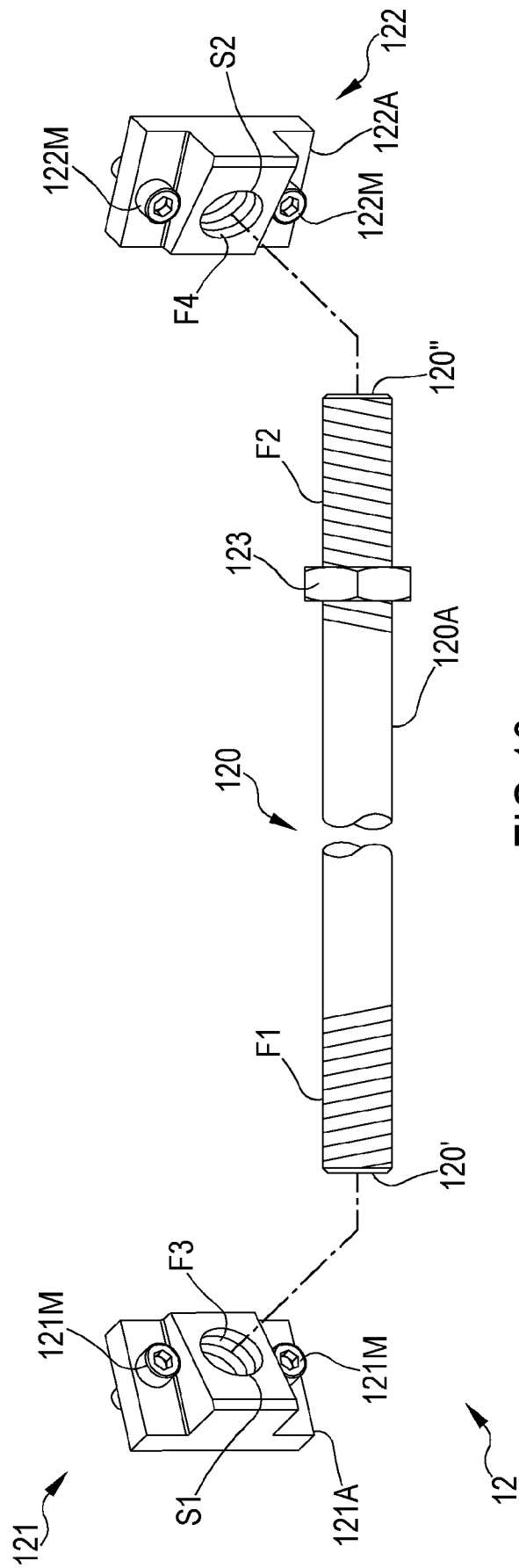
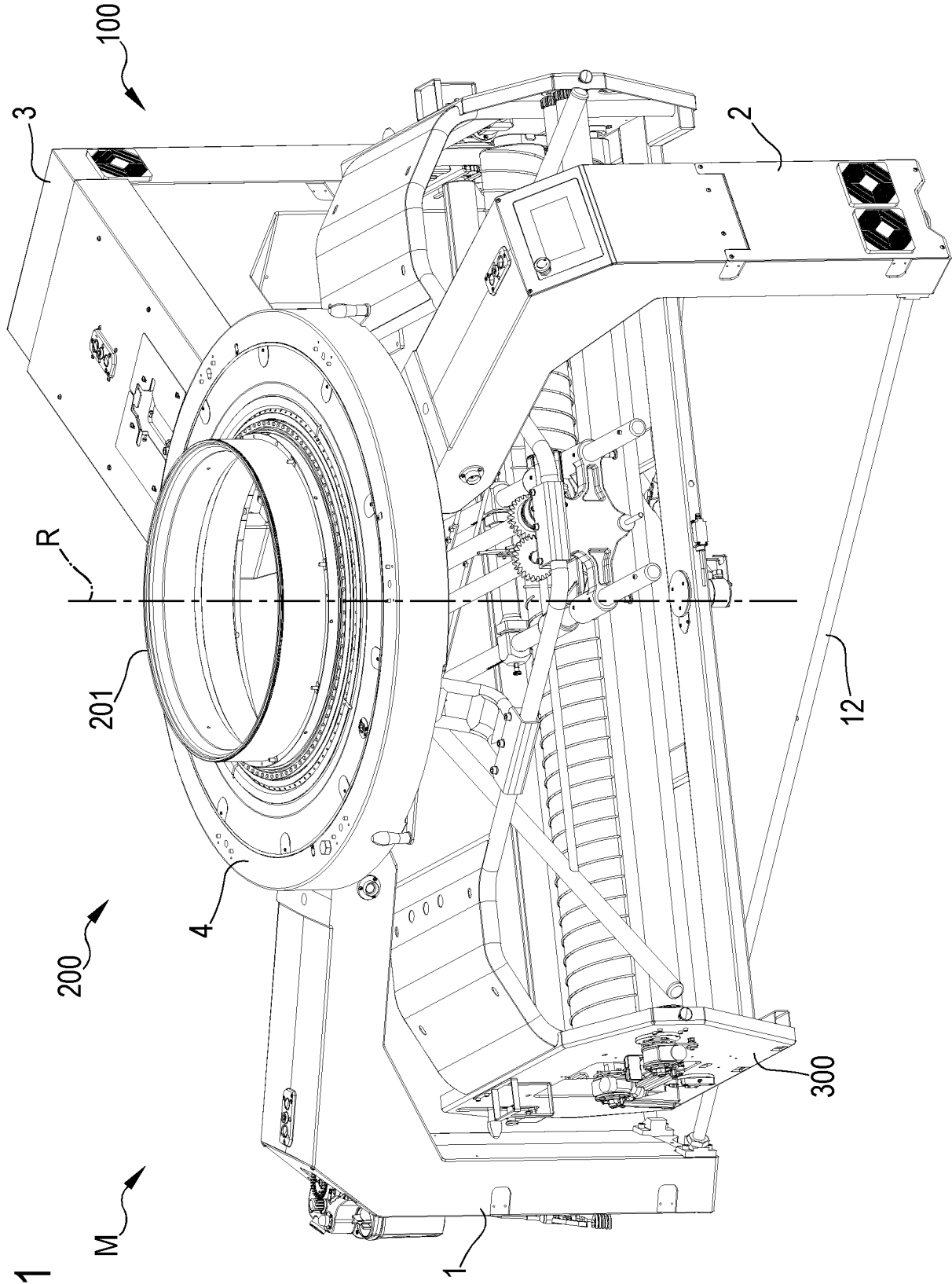


FIG. 10



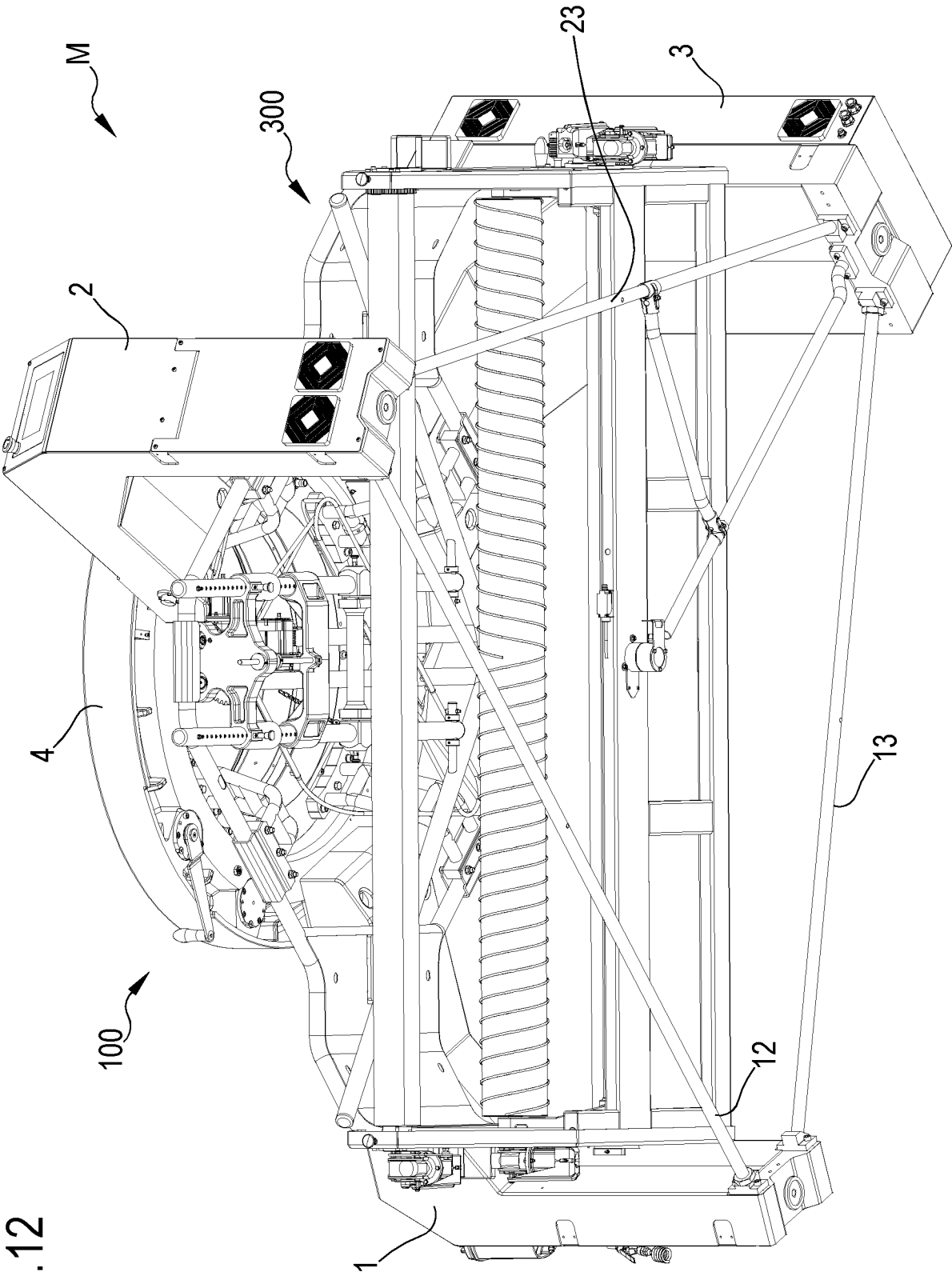


FIG.12

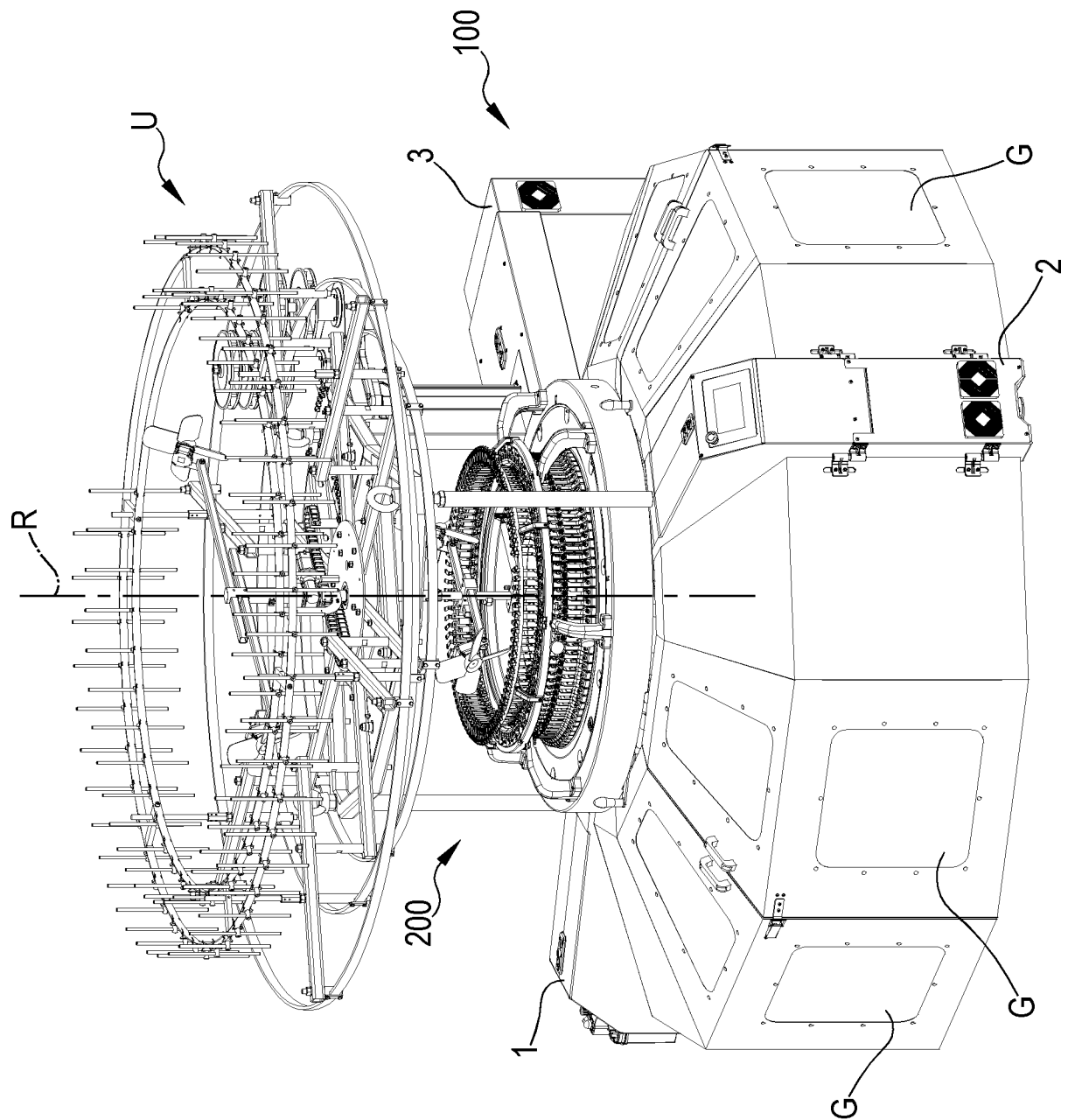


FIG. 13

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2024/055502

A. CLASSIFICATION OF SUBJECT MATTER

INV. D04B15/00 D04B9/00

ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

D04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 568 221 B2 (SIPRA PATENT BETEILIGUNG [DE]) 27 May 2003 (2003-05-27)	1,4,5,8, 11,12
A	column 2, lines 1-8,39-60; figures 1-3 column 3, line 54 - column 5, line 8 -----	2,3,6,7, 9,10, 13-15
X	CN 113 062 039 B (YUANDA XIAMEN TEXTILE TECH CO LTD) 11 November 2022 (2022-11-11)	1,4,5,8, 11,12
A	paragraphs [0005] - [0021], [0043], [0044], [0063] - [0066]; figures 1-6 -----	2,3,6,7, 9,10, 13-15
A	CN 217 839 309 U (JINJIANG HONGJI MACHINERY CO LTD) 18 November 2022 (2022-11-18) paragraphs [0030] - [0033]; figures 1-3 ----- -/-	1-15



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance;; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance;; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

27 June 2024

Date of mailing of the international search report

12/07/2024

Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2

NL - 2280 HV Rijswijk

Tel. (+31-70) 340-2040,

Fax: (+31-70) 340-3016

Authorized officer

Kirner, Katharina

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2024/055502

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	CN 205 934 288 U (SHAOXING HONGJUN MACHINERY CO LTD) 8 February 2017 (2017-02-08) paragraphs [0026] - [0034]; figures 1-5 -----	1 - 15
A	EP 3 004 440 B1 (SANTONI & C SPA [IT]) 29 August 2018 (2018-08-29) paragraph [0107]; figure 1 -----	1 - 15

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2024/055502

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 6568221	B2	27-05-2003	AT E273409 T1 15-08-2004
		DE 10120736 C1 13-02-2003	
		EP 1253230 A1 30-10-2002	
		ES 2227350 T3 01-04-2005	
		JP 2002363842 A 18-12-2002	
		KR 20020083141 A 01-11-2002	
		SG 102045 A1 27-02-2004	
		TW 564270 B 01-12-2003	
		US 2002157427 A1 31-10-2002	

CN 113062039	B	11-11-2022	NONE

CN 217839309	U	18-11-2022	NONE

CN 205934288	U	08-02-2017	NONE

EP 3004440	B1	29-08-2018	BR 112015029841 A2 25-07-2017
		CN 104178905 A 03-12-2014	
		EP 3004440 A1 13-04-2016	
		TW 201506216 A 16-02-2015	
		WO 2014191868 A1 04-12-2014	
