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Description

[0001] The invention relates to an anchorage point comprising an under part having a screw bolt which comprises a screw head and is intended for connecting the anchorage point to an object that is to be secured or handled thereby, and an upper part which is rotatable relative to the under part about the longitudinal axis of the screw bolt, is connected to the under part, and comprises a connection means for connecting an anchorage or lashing means.

[0002] Anchorage points of this kind are typically used for lifting objects. The under parts of the anchorage points are connected to the object to be lifted by means of a connection screw designed as a screw bolt, typically a plurality of anchorage points for suspending corresponding lifting gear being used for lifting an object. In order for the eye part to be oriented according to the traction direction in the event of contact of a lifting tool suspended in the eye part, the eye part is rotatable relative to the connection screw. The same properties of an anchorage eye are also desired if this is used for lashing down an object.

[0003] Anchorage points typically remain on the object to be lifted or lashed only for the duration of the lifting or securing. Therefore, an anchorage eye of this kind is screwed, by means of a connection screw provided with a threaded portion, into a threaded hole of the object to be handled, which hole is provided for this purpose and equipped with a complementary internal thread. If the anchorage point is no longer required, it is unscrewed from the object again. Thus, frequent screwing in and unscrewing of an anchorage point of this kind is part of the typical handling required during the use thereof. In order to simplify this procedure, DE 44 03 785 A1 has proposed connecting a screwing tool, which can be coupled to the head of the screw bolt, to the eye part, via which screwing tool the a screwing movement can be introduced into the connection screw via the eye part. In this case, the connection screw is designed for example as an internal hexagonal screw, and the screwing tool comprises a complementary tool. In order to connect it to the eye part and to introduce a torque, the screwing tool itself comprises a strap that is guided around the arch of the eye part. If the hex tool of the screwing tool is inserted into the internal hexagonal recess of the connection screw, the connection screw is connected to the eye part in a torque-locked manner, after the necessarily existing clearance between the arch of the eye part and the strap has been overcome. Therefore, the connection screw can be actuated without an additional

tool, by means of a rotational movement of the eye part. In order to attach the screwing tool to the eye part, the strap of the screwing tool which encompasses the eye part comprises a widenable opening through which the strap of the eye part is guided for connecting the screwing tool to the eye part. In order that a torque transfer can be carried out from the eye part to the connection screw not only for loosely screwing in or unscrewing the connection screw into or from a corresponding threaded hole of an object, but rather also correct fixing of the connection screw and thus of the anchorage point on the object, the screwing tool must have a sufficient degree of stability. This is counteracted, to a certain extent, by the necessary provision of the enlargeable insertion opening in the region of the strap. Therefore, particular requirements are made of the screwing tool.

[0004] DE 20 2012 103 079 U1 describes an anchorage point in which the screw bolt comprises a first rotary driving surface. The upper part, described in this prior art as an eye part, is associated with a complementary rotary driving surface. The two rotary driving surfaces are mutually spaced. The two rotary driving surfaces are mutually spaced to such an extent that the upper part is freely rotatable relative to the under part. If, in order to screw the anchorage point to an object to be handled, the under part is intended to be connected to said object, a coupling piece is inserted into the gap located between the two rotary driving surface, which coupling piece fills said gap. The upper part is then connected to the under part in a torque-locked manner, such that the anchorage point can be screwed onto the object to be handled, by means of rotating the upper part. In this concept, in order to establish the torque-locked connection between the upper part and the under part an additional coupling piece is required. This is typically attached to the upper part in a captive manner by a cable. However, the shank or the tip of a screwdriver can also serve as the coupling piece. It is advantageous for the screw head of the screw bolt to be freely accessible in order that, should the under part be excessively braced on the object, also accessible using a tool, for unloosing the screw bolts.

[0005] A further anchorage point is known from DE 43 36 779 C2, which is designed such that a torque for connecting the screw bolt to an object to be handled can be introduced into the under part or the screw bolt thereof by means of the upper part. The upper part of said connection point comprises a cap-shaped connection piece by means of which said upper part is connected to the under part. The cap-shaped connection piece extends over the entire upper face of the under part, as a result of which the screw head is also completely covered.

Contamination of impurities at the screw head and into the under part is prevented thereby. An internal hexagon contour is introduced into the inner face of the cap-shaped connection piece, into which contour the screw head of the screw bolt, designed as a hexagonal head, plunges when a torque is intended to be transferred from the upper part to the screw bolt. The upper part is adjustable relative to the under part, in the axial direction. The torque-locked engagement of the screw head of the screw bolt of the under part into the rotary driving contour of the upper part is overcome as soon as a force having a component directed axially to the longitudinal axis acts on the upper part. The upper part is then removed from the screw head, by the rotary driving contour thereof. When the screw head is completely removed from the rotary driving contour of the upper part, the upper part is freely rotatable relative to the under part.

[0006] A further anchorage point is known from US 2,812,971, the eye part of which, designed as a hook, is adjustable in the axial direction relative to the under part, in order to be able to be connected in a torque-locked manner to a screw bolt. In the upper part, the connection means designed as a hook is equipped with a hemispherical main body which is mounted on a complementary surface of the under part, in the traction direction. Said main body centrally carries a hexagonal head which can be inserted into an internal hexagonal recess in the screw head of the screw bolt, when a torque is intended to be transferred to the screw bolt. In the position in which it is rotatable relative to the screw bolt, the upper part is retained by a traction means connected to the hook.

[0007] However, in the prior art according to DE 43 36 779 C2 and US 2,812,971 it is not possible to apply a torque to the screw head of the screw bolt by means of a tool. In the case of said known anchorage point, the handling thereof is also not entirely without problem, since particular care is required when introducing a force into the anchorage point, in particular if the force action direction acting on the upper part is not flush with the axis of rotation of the anchorage point. In the case of forces which act on the upper part with a transverse force component, the upper part usually tries to rotate in the direction of the applied force. In order that unintended release of the anchorage point from the object to be handled, in the event of an introduction of force of this kind into the upper part when this is still in torque-locked engagement with the screw head, the risk of unintended unloosing of the screw bolt and thus of the anchorage point from the object to be handled does not have to be taken into account, the upper parts would have to be manually adjusted, relative to the

under parts, into the anchorage point position of use thereof, in which position these are then freely rotatable with respect to the under part. This is complex, however.

[0008] Proceeding from the discussed prior art, the object of the invention is therefore that of developing an anchorage point of the type mentioned at the outset, such that it can be connected to an object to be handled by the screw bolt thereof, without the aid of a tool or a coupling piece, by applying a torque to the upper part, but in which the problem described relating to DE 43 36 779 C2 when forces having a transverse component are applied to the upper part is avoided.

[0009] This object is achieved according to the invention by an anchorage point of the type in question, mentioned at the outset, in which the upper part is adjustable in an axial direction in relation to the under part against the restoring force of a return spring or a return spring assembly, in a first position the upper part being able to be freely rotated in relation to the under part, and in a second position the upper part acting in a torque-locked manner on the screw bolt, the screw head comprising at least one outside rotary driving contour, and the upper part carrying at least one complementary rotary driving contour, which, as a consequence of an axial displacement of the upper part out of its first position into its second position, can be moved into engagement with the rotary driving contour of the under part, the under part comprising a bearing body comprising two bearing surfaces which are spaced apart from one another in the axial direction and face outwards in the radial direction, on which bearing surfaces the upper part is mounted in the radial direction when in its position of use.

[0010] In the case of this anchorage point, the required torque for connecting said anchorage point to an object to be handled is introduced by the upper part into the screw head of the screw bolt, typically directly. For this purpose, the screw head comprises at least one rotary driving contour. The upper part comprises a rotary driving contour which is designed so as to be complementary to the rotary driving contour of the screw head. The upper part is axially displaceable, counter to the force of a return spring or a return spring assembly, out of the first position thereof in which it is freely rotatable with respect to the under part and thus also with respect to the screw head of the screw bolt, in order to bring the mutually complementary rotary driving contours into engagement. Thus, the rotary driving contour of the upper part is in engagement with the rotary driving contour of the screw head of the screw

bolt of the under part only when this has been actively displaced counter to the restoring force of the return spring or the return spring assembly in order to establish the engagement. The result of this is that, without such an axial action of force which is directed towards the under part, the upper part is always located in the position thereof in which it is freely rotatable relative to the under part. In order to connect said anchorage point to an object to be handled, the upper part is moved towards the under part, counter to the restoring force of the return spring or the return spring assembly, in order to bring about the rotationally locked engagement between said two parts, and to then screw the threaded shank of the screw bolt into the internally threaded hole, provided for this purpose, of the object to be handled. If the anchorage point is connected to an object to be handled, the upper part is released, such that this is pushed away from the under part, in the axial direction, by the force stored in the return spring or return spring assembly, and as a result the rotary driving engagement with the screw head is released. An anchorage point of this kind is not only particularly user-friendly, since it can be attached to an object to be handled, and released therefrom again, without an additional tool or other equipment, but is also secure if a force, whether a lashing force or a lifting force having a transverse component, acts thereon after connection thereof. In particular if an object is intended to be secured using anchorage points located thereon, the acting force should generally have transverse force components with respect to the axis of rotation of the upper part, relative to the under part.

[0011] Even if, in principle, the restoring force acting on the upper part can be provided by a return spring or a return spring assembly having a different geometry, according to a preferred embodiment a return spring or return spring assembly should be used which has just a small installation height, such as a disk spring, a disk spring assembly, or a wave spring or a wave spring assembly. Cylindrical wave springs which are produced from one or more windings make it possible to provide the required restoring force with respect to a helical compression spring having a length that is reduced by approximately 50%. The required installation space is correspondingly smaller. Wave springs are flat wire compression springs, which are corrugated in the spiral direction. On account of the only small required installation height (extension in the deflection direction) of a wave spring of this kind, a force introduction from the upper part into the under part, in the event of application of transverse forces acting on the upper part, can be achieved in the under part with just a small spacing from the surface of the object to be handled. The leverage acting due to transverse forces is correspondingly smaller.

[0012] According to an embodiment of a connection point of this kind, the upper part comprises an annular bearing body. The upper part is mounted on the under part, in a manner acting in the radial direction, by means of the annular bearing body. An eye part is formed on said bearing body, which eye part, in this embodiment, constitutes the connection means for an anchorage or lashing means. The eye part spans the bearing body in the manner of an arch. On account of the annular design of the bearing body and the arcuate formation of the eye part, the screw head of the screw bolt is not covered. The screw head can for example comprise a rotary driving contour that is introduced therein, for example designed as an internal hexagon, such that, if the manual forces applied for the upper part are not sufficient for loosening the screw bolt, a corresponding tool can be inserted into said rotary driving contour. In principle the same is also possible if the screw head of the screw bolt is designed as an external hexagon head.

[0013] In the case of an embodiment of this kind, rotary driving cams are formed, in a protruding manner, on at least one inner face of the eye part, the side of which rotary driving cams facing the axis of rotation of the upper part constitutes the rotary driving contour of the upper part. Typically, a rotary driving cam of this kind is provided on the inner faces of the two eye part attachments, if the screw head comprises at least two rotary driving surfaces which are diametrically opposite one another, this being the case for a hexagonal head. Inwardly protruding rotary driving cams of this kind do not impair the useful opening for connecting an anchorage or lashing means of the eye part. Instead, the rotary driving cams prevent an anchorage or lashing means, connected to the eye part, from slipping into the gap present between the relevant eye attachment and the screw head. An undesired torque-locked connection due to the anchorage or lashing means slipping into said gap between the upper part and the screw head of the screw bolt is effectively prevented thereby.

[0014] The rotary driving contour of the screw head is typically configured as a flat surface, the plane of which extends in parallel with the longitudinal extension of the longitudinal axis of the screw bolt. It is in principle sufficient for the screw head to comprise a single surface of this kind. However, the screw head preferably comprises at least two rotary driving surfaces which are diametrically opposite one another, and is designed for example as a hexagonal head. In the case of an embodiment of this kind, rotary driving between the upper part and the under part can be established every 60°, which simplifies the handling.

[0015] The under part comprises a bearing body that is provided by two bearing parts. The bearing body comprises two bearing surfaces which face outwards in the radial direction and are mutually spaced in the axial direction. On said bearing surfaces, the upper part is mounted in the position of use thereof in which it is freely rotatable relative to the under part. In this way, the upper part is securely mounted on the under part, in particular also in the case of transverse forces acting thereon. The design of a bearing body comprising two bearing surfaces which face outwards in the radial direction and are mutually spaced in the axial direction allows for a circumferential space to remain between said two bearing surfaces. According to one embodiment, this is made use of in two ways. Firstly, in order to connect the upper part to the under part, the upper part engages in said space by means of the bearing flange thereof that extends inwards in the radial direction. As a result, the upper part is connected to the bearing body of the under part in an interlocking manner in the axial direction. The space is furthermore used for accommodating the return spring or the return spring assembly therein. This is thus supported both on the boundary of the space facing away from the upper part, and on the bearing flange of the upper part. Within the space, the return spring, for example the wave spring, is already placed under a preload for example. This ensures that the upper part is held in a clearance-free manner on the under part, in the axial direction.

[0016] According to one embodiment, the bearing body of the under part is provided by two bearing parts which are interconnected, for example connected by means of a press-fit.

[0017] The bearing body of the under part is connected to the screw bolt by means of a securing ring which engages by means of a portion of the cross-sectional area thereof into a peripheral groove made in the shank of the screw bolt, and by means of another portion of the cross-sectional area thereof into a peripheral groove made in the bearing part.

[0018] The invention is described in the following, with reference to an embodiment and with reference to the accompanying drawings, in which:

Fig. 1: is a perspective view of a connection point,

Fig. 2: is a partial sectional view of the connection point of Fig. 1 having the upper part thereof in the position of use, and

Fig. 3: shows the anchorage point of Fig. 2, the upper part of which is in a position, relative

to the under part, such that the under part can be secured, by means of the upper part, onto an object to be handled.

[0019] An anchorage point 1 is used for connection to an object in order that said object can be handled, i.e., depending on the application, lifted, lashed down, or the like. The anchorage point 1 comprises an under part 2 and an upper part 3. The upper part 3 is mounted so as to be rotatable relative to the under part 2. In the embodiment shown, the bearing is designed as a plain bearing. The under part 2 comprises a bearing body 4 which is connected to a screw bolt 5. The screw bolt 5 comprises a threaded shank 6 and a screw head 7 that is formed thereon and which in the embodiment shown, is designed as an external hexagon. In the embodiment shown, an inner rotary driving contour 8, also designed as a hexagonal contour, is additionally introduced centrally into the screw head 7. The anchorage point 1 is connected, by the threaded shank 6 thereof, to an object to be handled (not shown in the figures).

[0020] The upper part 2 of the embodiment shown comprises an annular bearing body 9 which is mounted on a bearing surface of the bearing body 4 of the under part 3, which surface faces outwards in the radial direction. An eye part 10 which interconnects two mutually diametrically opposing points of the bearing body 9 in an arcuate manner is formed on the bearing body 9. An anchorage or lashing means, for example a hook, a belt, a cable, or the like, can be connected to the eye part 10.

[0021] The annular bearing body 9 ends, on the upper side and thus in the direction of the eye part 10 thereof, flush with the upper side of the bearing body 4 of the under part 2, and specifically in the regions in which the attachments of the eye part 10 are located. This allows for lateral accessibility of the screw head 7 for engagement of a tool, should this be required for actuating the screw bolt 7. This is not required in principle, however.

[0022] The screw head 7, designed as a hexagonal head, comprises six side surfaces which each represent a rotary driving contour. These flat surfaces extend in parallel with the longitudinal axis of the screw bolt 5. In this case, two rotary driving contour surfaces are always diametrically opposite one another with respect to the longitudinal axis of the screw bolt 5.

[0023] Fig. 1 shows the anchorage point 1 having the upper part 3 thereof in the position of use thereof, in which the under part 3 is freely rotatable relative to the under part 2. As is described in the following with reference to Fig. 2, the upper part 3 is adjustable relative to the under part 2, in the longitudinal axial direction of the screw bolt 5, and specifically counter to the force of a return spring. The upper part 3 is held in the position shown in Fig. 1 by the return spring. An adjustment of the upper part 3 relative to the under part 2 in the axial direction thus takes place counter to the restoring force of the return spring.

[0024] On the inner faces, the eye part 10 bears a rotary driving cam 11, 11.1 in the region of each eye part attachment. The sides of the rotary driving cams 11, 11.1 facing the axis of rotation of the upper part 3 are designed so as to be straight, and constitute complementary rotary driving contours for two rotary driving contours of the screw head 7 that are diametrically opposite one another. In the position of the upper part 3 shown in Fig. 1, the rotary driving cams 11, 11.1 are located in a plane above the upper termination of the screw head 7. This is more clearly visible in the partial sectional view of Fig. 2. In this figure, the lower half of the upper part 3 and the bearing body 4 of the under part 2 are shown in cross section. It is also clear from the view in Fig. 2 that an anchorage or lashing means suspended in the eye part 10 is inhibited, by the rotary driving cams 11, 11.1, from being able to penetrate into the intermediate space between the radially outer side of the screw head 7 of the screw bolt 5 and the inner face of the eye part 10, in the region of the attachment thereof.

[0025] The bearing body 4 of the under part 2 is made up of two bearing parts 12, 13. Each bearing part 12, 13 is designed as a bearing surface on the radial lateral surface thereof, on which bearing surface the inner lateral surface of the annular bearing body 9 of the upper part 3 is supported or which is mounted thereon. In Fig. 2, these two bearing surfaces which are mutually spaced in the axial direction are identified by the reference signs 14, 15. The bearing part 12 is an annular member which is designed so as to be L-shaped in cross section, in which the outside of the transverse limb forms the bearing surface 14. A space 16 which is open towards the outside, peripherally in the radial direction, is located between the two portions of the bearing body 4 which form the bearing surfaces 14, 15. A bearing flange 17 extending inwards in the radial direction engages therein, as part of the bearing body 9 of the upper part 3. This acts counter to the side of the bearing body 13 facing the bearing flange 17, in the axial direction. The axial extension of the space 16 is dimensioned such that the bearing flange 17 can be adjusted therein in the axial direction, in the direction towards the

under part 2, and specifically to such an extent that the sides of the rotary driving cam 11, 11.1 acting as rotary driving contours arrive at torque-locked connection of the upper part 3 to the screw head 7. Furthermore, a wave spring 18 is located inside the space 16, which wave spring is supported both on a side of the bearing part 14 facing the bearing part 13, and on the bearing flange 17. The wave spring 18 is formed as a helically wound wave spring. In this way, the upper part 3 is held relative to the under part 2, in the position thereof shown in Fig. 1 and 2.

[0026] The two bearing parts 13, 14 of the under part 2 are permanently interconnected by means of a press-fit connection. The bearing body 4 of the under part 2 is connected to the shank of the screw bolt 5 by means of a securing ring 19 which engages by means of a portion of the cross-sectional area thereof into a peripheral groove 20 made in the shank thereof, and by means of another portion into a peripheral groove made in the bearing body 4. In the embodiment shown, the groove of the bearing body 4 is located at the end of the bearing part 12, and is provided by a shoulder that increases the inside diameter thereof. The securing ring 19 is inserted therein, before closing the shoulder by the bearing part 13, which shoulder is open at the end for forming a groove.

[0027] In order to connect and release the anchorage point 1 to and from an object to be handled, the upper part 3 is moved towards the under part 2 by exerting a pressing movement (indicated by a block arrow in Fig. 3), in order that the rotary driving contours provided by the rotary driving contours 11, 11.1 can be brought into engagement with two mutually diametrically opposing rotary driving contours of the screw head. This position of the upper part relative to the under part 2 of the anchorage point 1 is shown in Fig. 3. The rotary driving position of the upper part 3 relative to the under part 2 is shown in Fig. 3 on the basis of an upper part 3, the geometry of which is designed slightly differently, but this is irrelevant for the description of the invention. This view furthermore shows the two bearing parts 12, 13 in a side view and not in cross section, as in Fig. 2. An adjustment movement of the upper part 3 relative to the under part 2 takes place counter to the restoring force of the wave spring 18. On account of the torque-locked connection between the upper part 3 and the screw head 7, established by the upper part 3 being depressed relative to the under part 2, the screw bolt 5 can then be screwed, using the eye part 10 as a tool, into a drilled hole that is made in the object to be handled and is equipped with an internal thread that is complementary to the threaded shank 6, until the side of the bearing part 14 facing the object to be handled is

braced on the surface of the object to be handled. The eye part 10 is subsequently released. As a result of the energy stored in the wave spring 18, the upper part 3 then automatically springs back into the position thereof shown in Fig. 1 and 2. In this position, it is ensured that transverse forces acting on the eye part 10 do not result in unintended loosening of the screw bolt in the case of application of force to an anchorage or lashing means suspended therein.

[0028] In the position of use of the anchorage point 1 shown in Fig. 1 and 2, the mounting of the bearing body 9 of the upper part 3 on the bearing surfaces 14, 15 of the bearing body 4 that are arranged at an axial spacing from one another ensures a tilt-free introduction of force, in particular also when transverse forces are applied. This ensures that, even when the transverse forces are applied, the eye part is oriented as intended in the direction of the applied force, and does not tilt. This two-point mounting, viewed in the axial direction, also exists between the upper part 3 and the under part 2 of the anchorage point when the upper part 3 is engaged in the screw head 7 in a torque-locked manner.

[0029] The invention has been explained with reference to an embodiment. Without departing from the scope of the valid claims, numerous further possibilities of implementing the invention are clear to a person skilled in the art, without these having to be explained in greater detail within the scope of these explanations.

List of reference signs

[0030]

1: anchorage point
2: under part
3: upper part
4: bearing body
5: screw bolt
6: threaded shank
7: screw head
8: rotary driving contour
9: bearing body
10: eye part
11, 11.1: rotary driving cam

12: bearing part

13: bearing part

14: bearing surface

15: bearing surface

16: space

17: bearing flange

18: wave spring

19: securing ring

20: groove

Patentkrav

1. Forankringspunkt (1) omfattende en underdel (2) med en skruebolt (5) forsynet med et skruehoved (7) for tilslutning af forankringspunktet (1) til en genstand, som skal fikseres eller håndteres ved hjælp af denne, og en overdel (3) tilsluttet til underdelen (2) og drejelig i relation til underdelen (2) omkring skrueboltens (5) langsgående akse, med et tilslutningsmiddel for tilslutning af et anslags- eller surringsmiddel, hvilken overdel (3) er justerbar i aksial retning i forhold til underdelen (2) imod tilbageføringskraften fra en returfjeder (18) eller en returfjederanordning, hvorved i en første stilling overdelen (3) er frit drejelig i forhold til underdelen (2), og hvorved i en anden stilling overdelen (3) indvirker drejemomentlukkende på skruebolten (5), hvorved skruehovedet (7) udviser mindst en udvendig drejemedbringekontur, og overdelen (3) bærer mindst en komplementær drejemedbringekontur, der som følge af en aksial forskydning af overdelen (3) ud af sin første stilling ind i sin anden stilling kan flyttes ind i indgreb med underdelens (2) drejemedbringekontur, hvor underdelen (2) omfatter et lejelegeme (4), som igen omfatter to lejeflader (14, 15) med en indbyrdes afstand i aksial retning og vendende udad i radial retning, på hvilke lejeflader (14, 15) overdelen (3) i sin anvendelsesstilling er lejret i radial retning.

2. Forankringspunkt ifølge krav 1, **kendetegnet ved, at** overdelen (3) er forsynet med et ringformet lejelegeme (4) og en dertil tilpasset øjedel (10) som tilslutningsmiddel, hvor underdelens (2) skruehoved (7) rager ind i det indre rum omsluttet af øjedelen (10), og at den mindst ene drejemedbringekontur på overdelen (3) er gjort tilgængelig af den side, som vender mod rotationsaksen på en rotationsknast (11, 11.1), der rager frem fra øjedelens (10) indvendige side.

3. Forankringspunkt ifølge krav 1 eller 2, **kendetegnet ved, at** drejemedbringekonturen på skruehovedet (7) er udført som en flad overflade, hvis plan forløber parallelt med skrueboltens (5) længdeudstrækning.

4. Forankringspunkt ifølge krav 3, **kendetegnet ved, at** skruehovedet (7) er udført som sekskanthoved.

5. Forankringspunkt ifølge et af kravene 1 til 4, **kendetegnet ved, at** overdelen (3) bærer to drejemedbringekonturer, som er diametralt placeret over for hinanden i forhold til dens rotationsakse.

6. Forankringspunkt ifølge et af de foregående krav, **kendetegnet ved, at** de to lejeflader (14, 15) på underdelens (2) lejelegeme (4) hver især er forsynet med en lejedel (12, 13), hvilke to lejedele (12, 13) er forbundet med hinanden og mellem hvilke lejeflader (14, 15) der forefindes et periferisk frirum (16), der er åbent udadtil i radial retning, hvori overdelen (3) går i indgreb med en lejeflange (17).

7. Forankringspunkt ifølge krav 6, **kendetegnet ved, at** returfjederen (18) eller returfjederanordningen er placeret i aksial retning i frirummet (16) og indvirker på overdelens (3) lejeflange (17) i aksial retning.

8. Forankringspunkt ifølge krav 7, **kendetegnet ved, at** der forefindes en bølgefjeder (18) som returfjeder.

9. Forankringspunkt ifølge et af kravene 1 til 8, **kendetegnet ved, at** underdelens (2) lejedel (4) er tilsluttet til skrueboltens (5) skaft med en sikringsring (19).

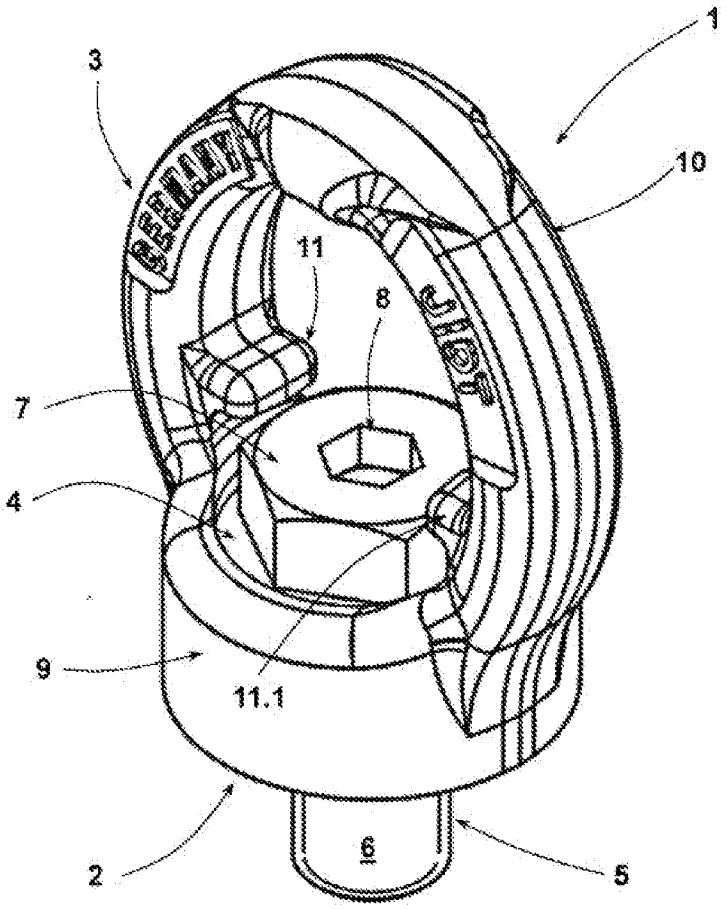

Fig. 1

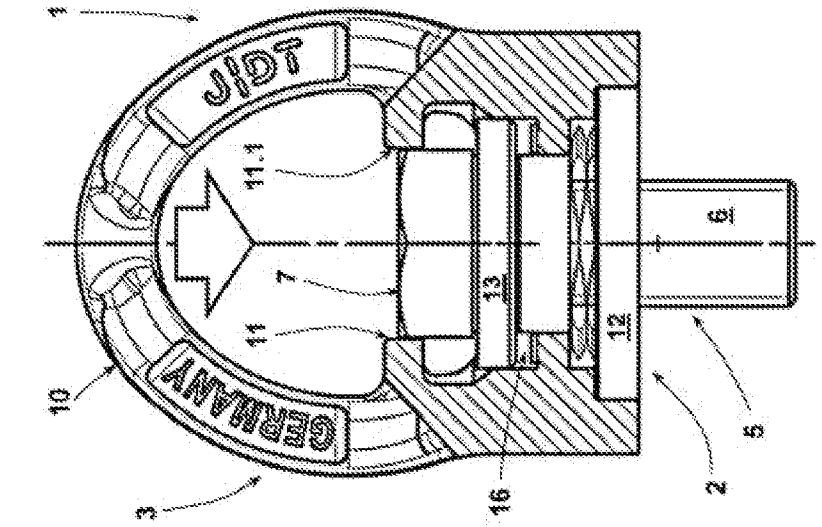
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Fig. 3

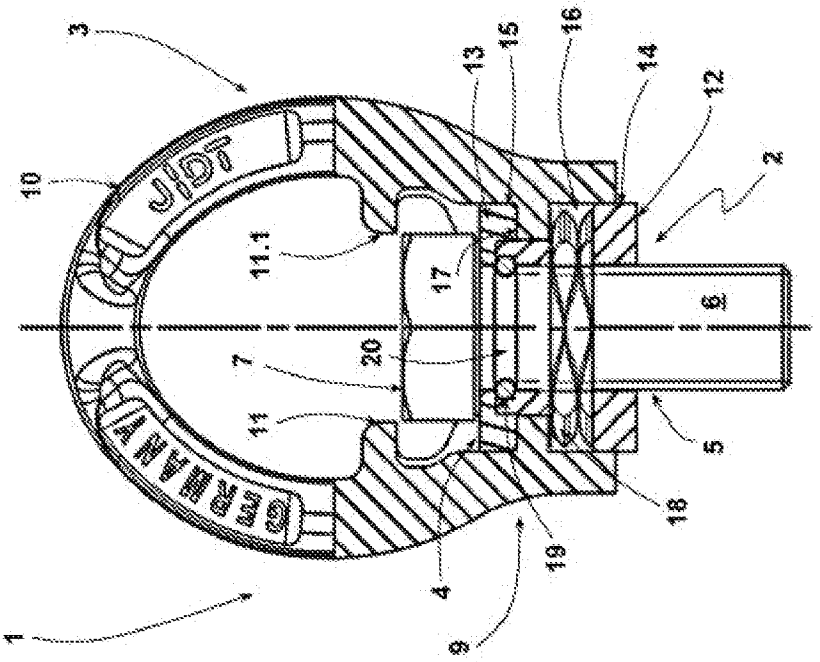
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Fig. 2