



(11) **EP 2 300 350 B1**

(12) **EUROPEAN PATENT SPECIFICATION**

(45) Date of publication and mention of the grant of the patent:
31.10.2012 Bulletin 2012/44

(51) Int Cl.:
B66D 1/74 (2006.01) B63B 21/16 (2006.01)
B66D 1/04 (2006.01)

(21) Application number: **09750868.3**

(86) International application number:
PCT/SE2009/050386

(22) Date of filing: **15.04.2009**

(87) International publication number:
WO 2009/142573 (26.11.2009 Gazette 2009/48)

(54) **METHOD AND DEVICE AT A LINE WINCH HANDLE**

VERFAHREN UND VORRICHTUNG AN EINEM SEILWINDENGRIF

PROCÉDÉ ET DISPOSITIF ASSOCIES A UNE POIGNÉE DE TREUIL LINÉAIRE

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK TR

(30) Priority: **19.05.2008 SE 0801152**

(43) Date of publication of application:
30.03.2011 Bulletin 2011/13

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Description

Technical Field

[0001] The present invention relates to a method at and a device for a rope winch, according to the preambles of claims 1 and 6, respectively.

Prior Art

[0002] Above all, rope winches are found in sailing boats and are there used to, among other things, adjust the sails by means of sheets, i.e., ropes, which ensure to keep a sail at a fixed angle in relation to the current wind, and by which it is possible to determine, adapt, the speed at which it is desired to sail. However, the fact is that the wind does not always blow in such a direction that it is possible to sail in the most convenient possible manner, but for allowing sailing with the wind in all directions in relation to the boat, from upwind to downwind, something has to be done. In relation thereto, a number of phenomena arise that necessitate an accurate adjustment of the angle of the sail(s) in relation to the wind, because of which, accordingly, there is a need of, in a smooth and above all reliable but also accurate manner, having a possibility of adjusting the length of the ropes. Traditionally, winching out is effected by gripping the rope at the end thereof being loose and unloaded in relation to the winch and, by manipulating the same, getting the rope to run out a desired length, whereupon the same is locked again. However, this is easy to say, but may in many cases be more difficult to do on board of a perhaps heeling boat driven under awkward weather conditions. In order to solve this problem, therefore various solutions have appeared. One is disclosed in SE 0800831-0, yet not published. However, this solution does not present a two- or multi-speed manual variant.

[0003] The combination of features of the preambles of claims 1 and 6 is known by GB 1285300

[0004] Other examples are large hydraulically driven winches on which a hydraulic motor can hold back and/or veer away according to needs and a comparison with such ones is less relevant.

[0005] In crank-operated winches, but also more advanced winches of two-speed type, there is since long a handling problem, namely that, in spite of it being desired that the winch is two-speed, it is wanted to be possible to winch out by one hand in a controlled way at the same time as one perhaps desires to cling oneself by one or, if possible, preferable two hands.

[0006] Therefore, it is an object of the present invention to provide a method and a device by which the remaining problem is solved.

The Invention in Brief

[0007] The purpose of the invention is attained by a method according to claim 1 and by a device according

to claim 6.

[0008] By allowing winching out in this easy way, it will be simpler and entirely safe to handle the sheeting on board of a sailing boat.

[0009] In an additional further developed design of the invention, the drive gear of the transmission is brought out of driving engagement by a not self-locking cone coupling being released.

[0010] The specific use of a not self-locking coupling makes that the coupling always will release in a smoothest possible manner if it is manoeuvred to make this.

[0011] In the following, the invention will be described in more detail, reference being made to a preferred embodiment example shown in the appended drawings, wherein:

Fig. 1 shows a perspective view of a crank of a winch,

Fig. 2 shows a perspective view of a drive shaft having transmission for a winch in a first state,

Fig. 3 shows a perspective view corresponding to Fig. 2 partly as a cross-section and in the same state,

Fig. 4 shows a perspective view that essentially corresponds to Fig. 2 but in a second state,

Fig. 5 shows a perspective view in cross-section corresponding to Fig. 4,

Fig. 6 shows a cross-section through an alternative design of a crank in comparison with the design according to Fig. 1,

Fig. 7 shows a perspective view of a drive shaft and parts of a transmission having a double cone coupling, shown with the parts apart, and

Fig. 8 shows a perspective view of a winch drum for the implementation of the method and the device according to the invention.

Detailed Description

[0012] First, Fig. 1 shows as a perspective view a design of a winch crank 1 for a winch L (refer to Fig. 8), which crank embodies a hub 2, a lever 3 as well as a handle 4. At the part of the crank hub 2 to the left in the figure and seen exteriorly, it is shown a button 5 of circuit breaker type, i.e., a button having two individually stable steady positions, which also may be called a mechanical bistable trigger.

[0013] Fig. 2 shows a view of a drive shaft 6 including transmission 7, 8, 9, 10, 11, 12, 13, 14 of a winch in a first state. By first state, it is meant that a drive gear 7 is in a position in which there is no mutual contact between freewheel teeth 8a on the underside of the drive gear 7

and the corresponding teeth 8b on a driver 9 (more clearly shown in Fig.3), respectively. Here, it is further seen a ratchet wheel 10 and a ratchet rider 10b spring biased against the same. Inside the ratchet wheel 10, there is a double cone coupling, which is described and shown in more detail in connection with Fig. 7 below, the output shaft 11 of which is integral with a pinion 12 for the driving of a second gear by the wheels 13, 14 of the winch A.

[0014] As has been pointed out above, Fig. 3 shows a picture of the drive shaft 6, including the transmission 7-14, represented as a partial cross-sectional view. In addition to what is seen in Fig. 2, here it is seen how there is arranged, inside the drive shaft 6, an axially movable and, by means of means in the crank 1, actuatable plunger 15. The plunger 15 has a driving rod 16 pushed on, which in turn is inserted in a slide 17. Between the plunger 15 and the slide 17, there is a compression spring 21 a arranged. The driving rod 16 telescopes into the slide 17, which has two radial holes 18, in which pins 19 are arranged. The pins project under the impact of the driving rod 16 through the holes 18 and stick into slots 20 in the drive shaft 6. The reason for arranging the pins in this way is that it should be possible to mount and dismount, respectively, the parts. Underneath the slide 17, an additional compression spring 21 b is attached, which presses, on one hand, against the slide 17 while it has the holder- on thereof in a sleeve 22 that is framed in a cylindrical recess 23 in the output shaft 11 of the pinion 12. The shaft 11 of the pinion 12 has, at the end thereof opposite the pinion 12, a trapezoidal thread 24a having a pitch of between 25 and 35°, preferably closer to 30°. The trapezoidal thread 24a co-operates with an opposite trapezoidal thread 24b on an inner cone 25 of a double-cone coupling 26, which, depending on the tightening state of the trapezoidal thread, either is intended to transfer a torque or is intended to take care of temporary avoiding the same. The double-cone coupling 26 embodies an intermediate cone 27 as well as an outer cone 28, on the outside of which there are arranged ratchet teeth 29, which are intended to co-operate with a pair of ratchet riders 10b acting spring-biasedly against teeth 29 of the principally cylindrically shaped outer cone 28. From this figure, it is also seen how the input shaft 6 has a driving driver provided with driving teeth 32 that are in driving engagement with the corresponding teeth of the intermediate cone 27, as well as that between said parts, there is a spiral compression spring 31 arranged.

[0015] Fig. 4 shows a perspective view that essentially corresponds to Fig. 2 but in a second state in which the teeth 8a, b are in engagement with each other. In addition, it is clearly seen how the ratchet wheel 10 co-operates with the spring-biased ratchet rider 10b thereof and permits the wheel 10 to rotate only in clockwise direction.

[0016] Fig. 5 shows a partly sectioned perspective view in an engagement state corresponding to the one according to Fig.4. The plunger 15 is depressed, which results in the driving rod 16 and the slide 17 including the pins 19 projecting through the cylindrical outer periphery

thereof forcing the freewheel teeth 8a, b of the drive gear 7 into engagement with each other.

[0017] Fig. 6 shows a cross-section through an alternative design of a crank in comparison with the design according to Fig. 1. The crank has a handle H, and according to this design, the manoeuvring is effected by an insertable and projectable plunger 36 in the engagement part 33 of the crank, here provided by means of a button 35 spring biased toward an unactuated state. Upon pressing, the button 35 actuates a lever 34 and, in that connection, lifts an actuator 45.

[0018] Fig. 7 shows a perspective view with the parts separated of the drive shaft 6 including appurtenant parts of a transmission 7-14, which includes the double cone coupling 26, having the inner cone 25, the intermediate cone 27 as well as the outer cone 28 on the inside of the ratchet wheel 10.

[0019] In the following, after that the constructive structure has been elucidated, the function of the method and the device according to the invention is described in more detail.

[0020] The initial position is that no winch crank 1 is attached in a recess 33 arranged for this purpose in the drive shaft 6 shown in drawing Figure 1 and provided with drive splines. This means that the plunger 16 (refer to Fig. 3), under the impact of the springs 21 a and b, is kept in the absolutely most projected state thereof. The force from the spring 21 b is greater than the one from the spring 21 a and, accordingly, simultaneously forces the slide 17 to be lifted maximally, which results in the teeth 8a, b of the floatingly mounted gear wheel 7 and drive shaft 6, respectively, being brought out of engagement with each other and, accordingly, no torque being able to be transferred from the gear wheel 7 to the winch drum (refer to Fig. 8). If rope, in this state, is arranged around the winch drum, this is prevented from being released by the fact that the ratchet wheel 10 blocks feeding out of rope as a consequence of the ratchet rider 10b thereof being in engagement and the transmission 12, 13, 14 situated under the ratchet wheel in Fig. 3 being in fixed engagement, including the double-cone coupling 26.

[0021] A possible subsequent state is that the winch crank 1 is attached in the splined engagement part 33 of the drive shaft 6. At the end thereof, the hub 2 of the winch crank 1 has a male spline 37, which mates the engagement part 33 of the drive shaft 6, and which in this "default state" thereof acts on the plunger 15 to be pressed downward until the slide 17, including the pins 19 attached in the radial holes 18, which pins are in engagement with the slots 20 on the inside of the gear wheel 7, presses down the gear wheel 7 in such a way that a mesh is established between the teeth 8a on underside of the gear wheel 7 and the teeth 8b on the upperside (as seen in the figure) of the driver 9. In this state, the winch works as a conventional two-speed winch, where the gear wheel 7 in this case represents the first gear, the gear wheel 12 together with the gear wheel 13 rep-

resents the second gear, where the wheel 13 drives directly on a gear rim on the inside of the winch drum. A clockwise cranking now means that the first gear is driven via the teeth 8b of the driver 30 and transfers the torque to the gear wheel 7 via the teeth 8a. On the contrary, a counter-clockwise cranking accordingly causes the double-cone coupling 26, by the fact that the trapezoidal thread 24a, b integrated thereby is turned in such a way that it disengages the grip thereof and thereby releases the coupling in such a way that force and torque is transmitted down to the drive gears 12, 13 and finally 14 in the winch, to provide a second gearing.

[0022] Another state is the one that arises with the crank 1 mounted but in which simultaneously either the button 5 on the hub 2 of the crank or the corresponding button 35 on the handle H of the crank (refer to the design according to Fig. 6) is pressed in order to get a plunger in the crank hub 2 to be lifted a short distance (approx. 4 mm) in order to, in turn, actuate the plunger 15 to move upward/outward in the figure under the impact of the spring 21 a as well as the spring 21 b. In the last-mentioned case with the button in the handle H, the motion of the button is transferred via a lever mechanism inside the lever 3 of the crank 1. The plunger 15 actuates the rod 16 that in turn stops to actuate the slide 17, which accordingly, by the radially projecting pins 19 thereof, which stick into the slots 20 in the gear wheel 7, actuates the slide to displace the gear wheel a corresponding distance. This distance (approx. 4 mm) is sufficient to bring the freewheel teeth 8a, 8b of the gear wheel 7 out of engagement with each other, because of which, accordingly, the driving engagement with the driver 30 stops and the gear that comprises the gear wheel 7 cannot any longer drive upon a counter-clockwise cranking. In this state, if the crank, in spite of this, is turned counter-clockwise under load from a rope wound around the outer periphery of the winch, the cone coupling is again released as a consequence of the trapezoidal thread tendency to lift the inner cone 25 from the engagement thereof with the intermediate cone 27. This makes it possible to winch out rope (the sheet can be loosened) as long as a certain counter-clockwise turning of the crank is maintained in such a way that the trapezoidal thread is not given a chance to be tightened again, which in such a case causes the cone coupling to grip and the ratchet wheel 10 will prevent further loosening of the sheet.

[0023] With the purpose of further explaining the function of the ratchet and of the double-cone coupling, respectively, the same will be further described, reference being made to Fig. 7. The ratchet has the purpose of preventing the winch from rotating "rearward" under the impact of a torque M2 that is applied to the winch drum 38 (refer to Fig. 8) from a stretched rope 45, for instance a sheet connected to a sail. M2 strives to try to turn the pinion wheel 12 counter-clockwise. The torque M2 is transmitted to the trapezoidal thread 24b on the shaft 11 of the pinion 12, which in turn transfers the torque to the inner cone 25. As a consequence of the thread direction

of the trapezoidal thread, the same tightens the cone coupling between the inner and outer cone 25 and 28, respectively, because of which the outer cone 12 strives to transmit the torque up along the input shaft 6. However, the outer cone 25 tries also to drive the ratchet wheel counter-clockwise, which is prevented by the ratchet rider 10b thereof. Since the double cone coupling is tightened, therefore this also means that the input shaft is prevented from rotating as a consequence of the ratchet wheel arresting. This means in reality that the winch drum is prevented from rotating in a counter-clockwise direction under the impact of a force from a rope 45.

[0024] The instant invention relates generally to a method and a device for a rope winch L of the kind shown in Fig. 8. Such a winch L embodies a rotatably mounted rope drum 38 around which the rope 45 is intended to be wound. From the crank 1 and a drive opening 39 arranged for the same, a drive shaft 6 extends (refer to Fig. 2-5) from an eccentric position at the upper part 40 of the winch L into the rope drum 2, and drives a transmission, which is included in the lower part 41 of the rope drum. Under the impact of the drive shaft 6, the transmission drives a rotation of the drum 38 either in a clockwise hauling-in direction 42 of the rope 43 at a high speed, small force and low torque or in a counter-clockwise one at a low speed, great force and high torque or allows a counter-clockwise sheeting out in the direction 44 of the rope 43 in the case also the sheeting-out button 5, 35 is actuated simultaneously.

[0025] The invention should not be regarded as limited by the embodiment example described above. For instance, it would work just as well to turn the operational functionality upside down, i.e., let the default state of the button 5, 35 be in the outermost position of the plunger 15. Hence, the invention is only limited by the accompanying claims and the embodiments supported by the description in its entirety.

40 Claims

1. Method in which a rope winch (L) allows winching in a sheet at two or more speeds, as well as winching out, the method comprising a rotatably mounted rope drum (38) and a shaft (6) driving the same via a transmission (7-14), around which drum (38) a rope is windable, as well as first forcing means, such as a crank (1), for allowing the rope drum (38) to be driven by means of the driving shaft (6) in a first direction using at least two different gearings, **characterized in that** the loosening of the sheet to an adjusted extent is allowed by the fact that means (5, 35) in/on the crank are actuated at the same time as cranking is carried out, a drive gear (7) of the transmission, which in the normal case drives in the same direction as the crank is cranked, by means of second forcing means (17), in the form of a control slide (17), which upon actuation of the means (5, 35) in/on the crank

- actuates the drive gear (7) of the transmission to via pins (19), which project circumferentially from the envelope surface of the slide (17) through slide-shaped recesses in the input shaft and stick into a slot (20) facing the outer periphery of the input shaft and being arranged in the drive gear (7), compulsory being translated a distance from said certain position and **in that** connection being brought out of driving engagement with the input shaft (6), the ability of the drive gear (7) to transfer torque being suspended by it being disengaged from driver members on the input shaft adjacent to the drive gear (7), in such a way that the drive coupling between the crank (1) and the transmission (7-14) is temporary suspended, wherein rope wound on the drum of the winch can run out under load from the rope.
2. Method according to claim 1, **characterized in that** the drive gear (7) of the transmission (7-14) is brought out of driving engagement by a not self-locking cone coupling being released.
3. Method according to claim 1 or 2, **characterized in that** the drive gear (7) is arranged coaxially with the crankshaft.
4. Method according to claim 3, **characterized in that** the drive gear (7), in an initial position, is positioned by means of the spring-biased control slide (17) situated inside the crankshaft (6) and situated in a certain position therein.
5. Method according to claim 4, **characterized in that** the control slide (17) is actuated by means of a button (35) at the top of the crank handle (H), which acts via a lever mechanism (34) inside the crank in such a way that an actuator (45) in the drive part of the crank is raised or is lowered.
6. Device for a rope winch (L), embodying, on one hand, a rotatably mounted rope drum (38) and a pair of shafts (6, 11) driving the same via a transmission (7-14), around which drum (38) a rope (43) is wound, and on the other hand forcing means, such as a crank (1), for making it possible to drive the rope drum (38) by means of any of the driving shafts in a first direction at two different gearings as well as to winch out a sheet, **characterized in that**, for accomplishing the latter, it furthermore embodies means (5; 35, 34) on/in the crank (1) that are connected to a control slide (17) for compulsory actuating the means (5; 35; 34) in/on the crank to indirectly via pins, which through slide-shaped recesses in the input shaft (6) project circumferentially from the envelope surface thereof and stick into a slot (20) facing the outer periphery of the input shaft and being arranged in the drive gear, translate the drive gear a distance from said certain position and **in that** connection can drive the same, in such a way that it loses the possibility of transferring torque by it being disengaged from driver members, which are arranged on the input shaft (6) adjacent to the drive gear, in order to disengage a coupling that is arranged in the winch, in such a way that, provided that the rope (43) on the drum (38) is loaded, it will be possible to sheet out from the rope drum (38).
7. Device for a rope winch according to claim 6, **characterized in that** the coupling is a cone coupling (26) of a not self-locking type.
8. Device according to claim 6 or 7, **characterized in that** the drive gear (7) is arranged around the crank drive shaft (6).
9. Device according to claim 8, **characterized in that** the control slide (17) is actuatable by means of a button (35) at the top of the crank handle (H), which acts via a lever mechanism (34) inside the crank in such a way that an actuator (45) in the drive part of the crank is raisable or lowerable.

Patentansprüche

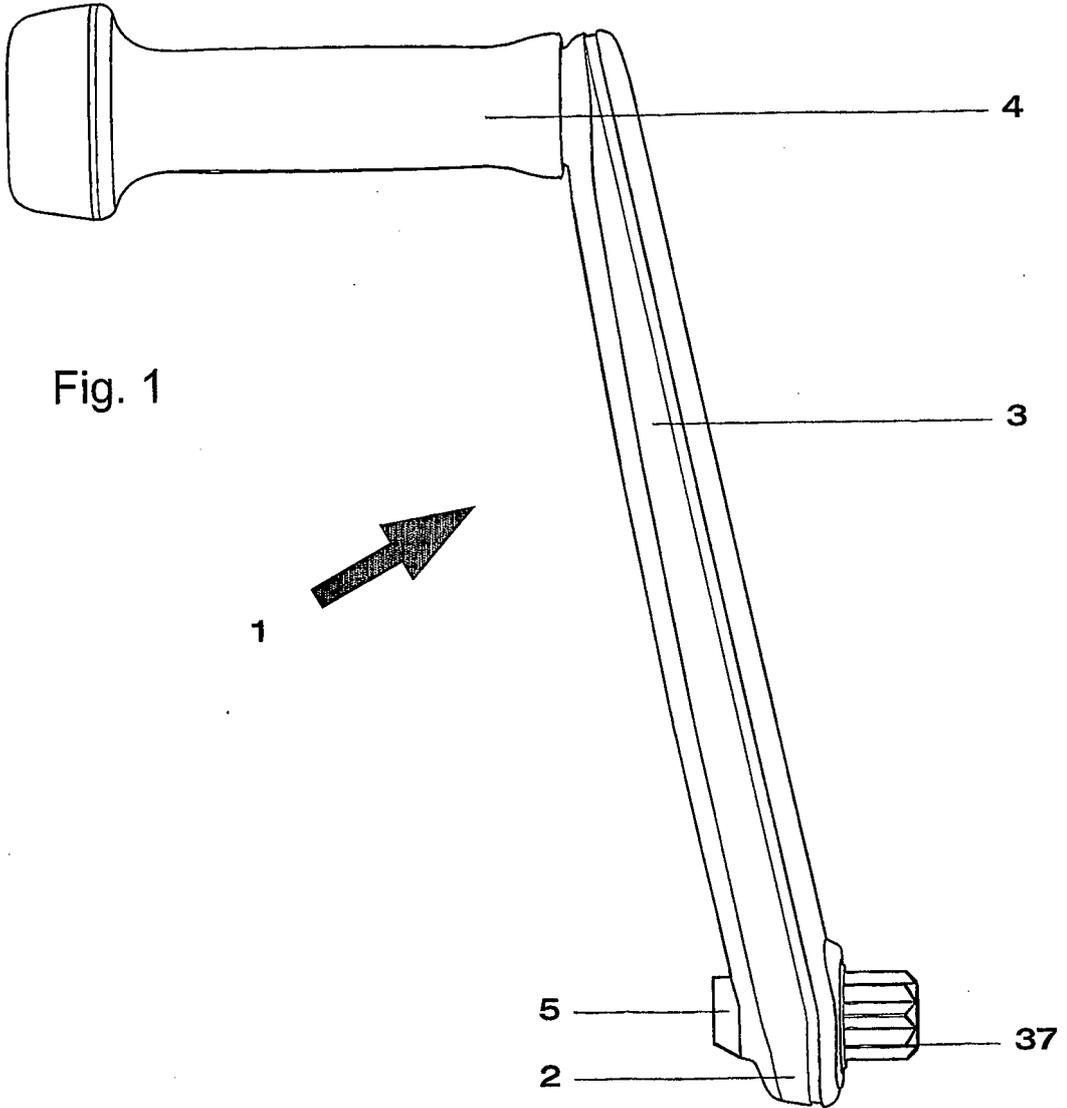
1. Verfahren, in dem eine Seilwinde (L) ein Aufwickeln in einer Lage, genauso wie ein Abwickeln, bei zwei oder mehr Geschwindigkeiten ermöglicht, das Verfahren mit einer drehbar montierten Seiltrommel (38) und einer Welle (6), die diese über ein Getriebe (7-14) antreibt, wobei ein Seil um die Trommel (38) aufwickelbar ist, und ein erstes Forcierungsmittel, wie zum Beispiel eine Kurbel (1), um es der Seiltrommel (38) zu ermöglichen, mittels der Antriebswelle (6) unter Verwendung von mindestens zwei verschiedenen Getriebestufen in einer ersten Richtung angetrieben zu werden, **dadurch gekennzeichnet, dass** die Lockerung der Lage auf ein eingestelltes Maß dadurch ermöglicht wird, dass ein Mittel (5, 35) in/auf der Kurbel zur gleichen Zeit, während das Kurbeln ausgeführt wird, betätigt wird, ein Antriebsrad (7) des Getriebes, das im Normalfall während die Kurbel gekurbelt wird in der gleichen Richtung antreibt, und zwar mittels eines zweiten Forcierungsmittels (17) in Form eines Steuerschiebers (17), der bei Betätigung des Mittels (5, 35) in/auf der Kurbel das Antriebsrad (7) des Getriebes trägt, um über Stifte (19), die in Umfangsrichtung von der Mantelfläche des Schiebers (17) durch schieberförmige Aussparungen in der Eingangswelle hervorstehen und in einem Schlitz (20) stecken, der dem äußeren Umfang der Eingangswelle gegenübersteht und in dem Antriebsrad (7) angeordnet ist, zwangsweise um einen Weg von der bestimmten Position verschoben zu werden und dabei aus dem Antriebseingriff mit der Eingangswelle (6) genom-

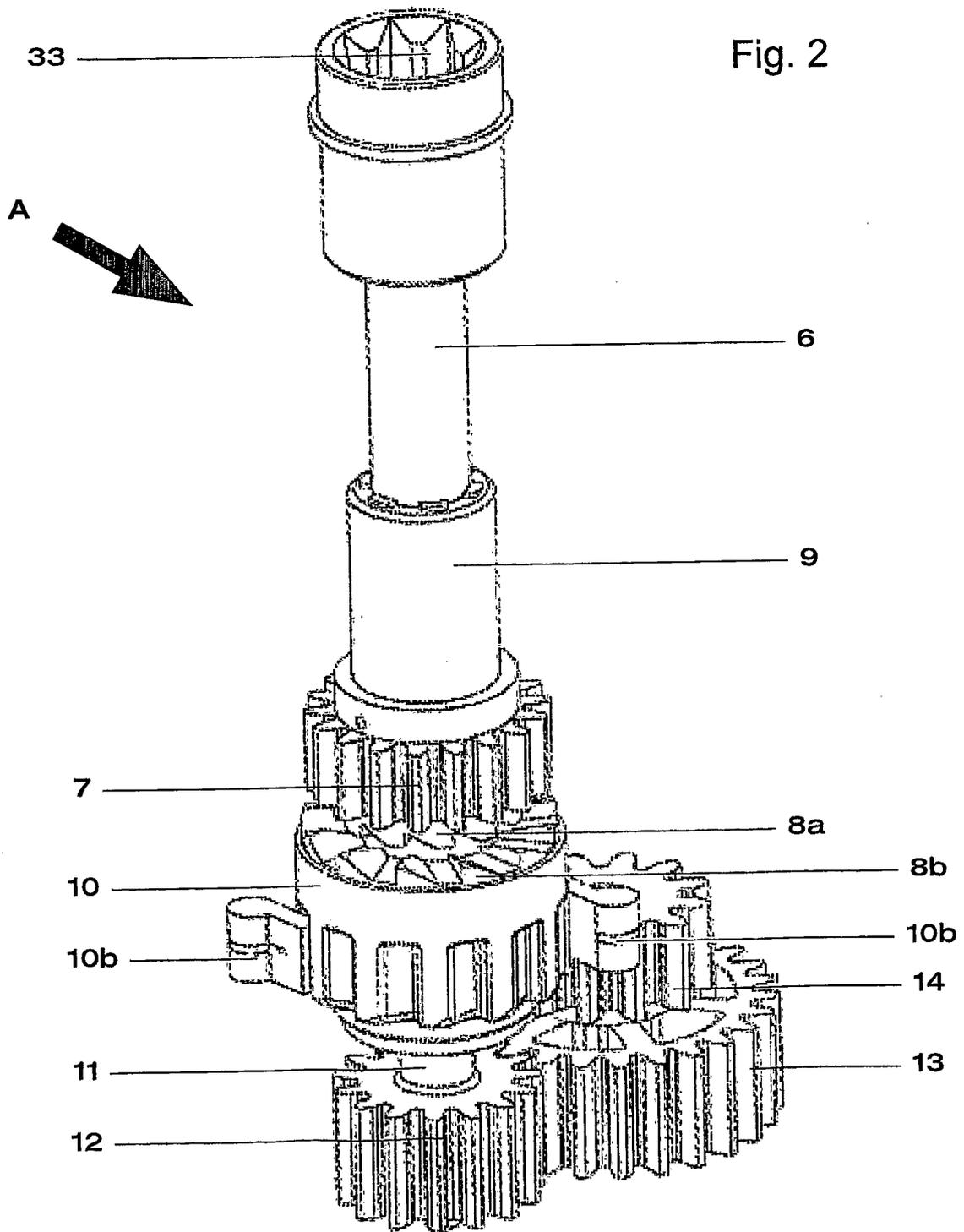
- men wird, wobei die Fähigkeit des Antriebsrads (7) ein Drehmoment zu übertragen dadurch ausgesetzt wird, dass es von den Antriebselementen auf der Antriebswelle angrenzend an das Antriebsrad (7) aus dem Eingriff genommen wird, sodass die Antriebskopplung zwischen der Kurbel (1) und dem Getriebe (7-14) zeitweise ausgesetzt ist, wobei auf der Trommel der Winde aufgewickeltes Seil unter einer Last des Seils herauslaufen kann.
2. Verfahren nach Anspruch 1, **dadurch gekennzeichnet, dass** das Antriebsrad (7) des Getriebes (7-14) durch Lösen einer nicht selbsthemmenden Kegelkupplung aus dem Antriebseingriff genommen wird.
 3. Verfahren nach Anspruch 1 oder 2, **dadurch gekennzeichnet, dass** das Antriebsrad (7) koaxial mit der Kurbelwelle angeordnet ist.
 4. Verfahren nach Anspruch 3, **dadurch gekennzeichnet, dass** das Antriebsrad (7) in einer Ausgangsposition mittels des federvorgespannten Steuerschiebers (17) positioniert wird, der in der Kurbelwelle (6) angeordnet ist und in ihr in einer bestimmten Position angeordnet ist.
 5. Verfahren nach Anspruch 4, **dadurch gekennzeichnet, dass** der Steuerschieber (17) mittels eines Knopfes (35) an der Oberseite des Kurbelhandgriffs (H) betätigt wird, der so über einen Hebelmechanismus (34) in der Kurbel wirkt, dass ein Aktuator (45) in dem Antriebsteil der Kurbel angehoben oder abgesenkt wird.
 6. Vorrichtung für eine Seilwinde (L), die einerseits eine drehbar montierte Seiltrommel (38) und ein Paar Wellen (6, 11), die diese über ein Getriebe (7-14) antreiben, wobei um die Trommel (38) ein Seil (43) gewickelt ist, verkörpert und andererseits ein Forcierungsmittel, wie zum Beispiel eine Kurbel (1), um zu ermöglichen, die Seiltrommel (38) mittels einer der Antriebswellen mit zwei unterschiedlichen Getriebeübersetzungen in einer ersten Richtung anzutreiben sowie eine Lage abzuwickeln, **dadurch gekennzeichnet, dass** sie zum Erreichen des letzteren des Weiteren ein Mittel (5; 35, 34) auf/in der Kurbel (1) verkörpert, das mit einem Steuerschieber (17) zum zwangsweisen Betätigen des Mittels (5; 35; 34) in/auf der Kurbel, um, indirekt über Stifte, die durch schieberförmige Aussparungen in der Eingangswelle (6) in Umfangsrichtung von deren Mantelfläche hervorstehen und in einem Schlitz (20) stecken, der dem äußeren Umfang der Eingangswelle gegenübersteht und in dem Antriebsrad angeordnet ist, das Antriebsrad um einen Weg von der bestimmten Position verschieben und es dabei antreiben kann, und zwar so, dass es durch das aus dem Eingriff bringen aus den Antriebselementen, die auf der Eingangswelle (6) angrenzend an das Antriebsrad angeordnet sind, die Möglichkeit des Übertragens eines Drehmoments verliert, um eine in der Winde angeordnete Kupplung aus dem Eingriff zu bringen, und zwar so, dass unter der Voraussetzung, dass das Seil (43) auf der Trommel (38) geladen ist, es möglich ist, von der Seiltrommel (38) abzuwickeln.
 7. Vorrichtung für eine Seilwinde nach Anspruch 6, **dadurch gekennzeichnet, dass** die Kupplung eine nicht selbsthemmende Kegelkupplung (26) ist.
 8. Vorrichtung nach Anspruch 6 oder 7, **dadurch gekennzeichnet, dass** das Antriebsrad (7) um die Kurbelantriebswelle (6) angeordnet ist.
 9. Vorrichtung nach Anspruch 8, **dadurch gekennzeichnet, dass** der Steuerschieber (17) mittels eines Knopfes (35) an der Oberseite des Kurbelhandgriffs (H) betätigbar ist, der so über einen Hebelmechanismus (34) in der Kurbel wirkt, dass ein Aktuator (45) in dem Antriebsteil der Kurbel anhebbar oder absenkbar ist.

Revendications

1. Procédé dans lequel un treuil à câble (L) permet de treuiller en serrage une écoute à deux ou plus de deux vitesses, ainsi que de treuiller en relâchement, le procédé mettant en oeuvre un tambour de câble monté de façon à pouvoir tourner (38) et un arbre (6) entraînant celui-ci par l'intermédiaire d'une transmission (7 à 14), un câble pouvant être enroulé autour de ce tambour (38), ainsi que des premiers moyens de forçage, tels qu'une manivelle (1), pour permettre au tambour de câble (38) d'être entraîné à l'aide de l'arbre d'entraînement (6) dans une première direction à l'aide d'au moins deux dispositifs d'engrenages différents, **caractérisé en ce que** le relâchement de l'écoute d'une ampleur ajustée est permis par le fait que des moyens (5, 35) dans/sur la manivelle sont actionnés en même temps lorsque que l'actionnement de la manivelle est effectué, un engrenage d'entraînement (7) de la transmission, qui, dans le cas normal, produit un entraînement dans la même direction que celle dans laquelle la manivelle est actionnée, à l'aide de deuxièmes moyens de forçage (17), sous la forme d'un coulisseau de commande (17), qui, lors de l'actionnement des moyens (5, 35) dans/sur la manivelle, actionne l'engrenage d'entraînement (7) de la transmission par l'intermédiaire broches (19), qui font saillie de façon circonférentielle à partir de la surface d'enveloppe du coulisseau (17) à travers des cavités en forme de coulisseaux dans l'arbre d'entrée et se colent dans une fente (20) faisant face à la périphérie

- extérieure de l'arbre d'entrée et qui sont disposées dans l'engrenage d'entraînement (7), qui est obligatoirement décalé d'une certaine distance à partir de ladite certaine position, et **en ce qu'**une liaison est mise hors de prise d'entraînement avec l'arbre d'entrée (6), la capacité de l'engrenage d'entrée (7) à transférer un couple étant suspendue par le fait qu'il est désengagé d'éléments d'entraînement sur l'arbre d'entrée au voisinage de l'engrenage d'entraînement (7), de telle sorte que le couplage d'entraînement entre la manivelle (1) et la transmission (7 à 14) soit temporairement suspendu, le câble enroulé sur le tambour du treuil pouvant s'échapper sous la charge du câble.
2. Procédé selon la revendication 1, **caractérisé en ce que** l'engrenage d'entraînement (7) de la transmission (7 à 14) est mis hors de prise d'entraînement par le relâchement d'un couplage à cône non auto-verrouillant.
3. Procédé selon la revendication 1 ou 2, **caractérisé en ce que** l'engrenage d'entraînement (7) est disposé coaxialement à l'arbre de manivelle.
4. Procédé selon la revendication 3, **caractérisé en ce que** l'engrenage d'entraînement (7), dans une position initiale, est positionné à l'aide du coulisseau de commande sollicité par un ressort (17) situé à l'intérieur du vilebrequin (6) et situé dans une certaine position à l'intérieur de celui-ci.
5. Procédé selon la revendication 4, **caractérisé en ce que** le coulisseau de commande (17) est actionné à l'aide d'un bouton (35) au sommet de la poignée de manivelle (H), qui agit par l'intermédiaire d'un mécanisme de levier (34) à l'intérieur de la manivelle, de telle sorte qu'un actionneur (45) dans la partie d'entraînement de la manivelle soit élevé ou soit abaissé.
6. Dispositif pour un treuil à câble (L), mettant en oeuvre, d'une part, un tambour de câble monté de façon à pouvoir tourner (38) et une paire d'arbres (6, 11) entraînant celui-ci par l'intermédiaire d'une transmission (7 à 14), un câble (43) étant enroulé autour de ce tambour (38), et, d'autre part, des moyens de forçage, tels qu'une manivelle (1), pour rendre possible l'entraînement du tambour de câble (38) à l'aide de l'un quelconque des arbres d'entraînement dans une première direction au niveaux de deux dispositifs d'engrenages différents, ainsi que le treillage en relâchement d'une écoute, **caractérisé en ce que**, pour l'accomplissement de ce dernier, il met de plus en oeuvre des moyens (5 ; 35, 34) dans/sur la manivelle (1), qui sont reliés à un coulisseau de commande (17) pour actionner de façon obligatoire les moyens (5 ; 35 ; 34) dans/sur la manivelle pour, indirectement, par l'intermédiaire de broches, qui, à travers des cavités en forme de coulisseaux dans l'arbre d'entrée (6), font saillie de façon circumférentielle à partir de la surface d'enveloppe de celui-ci et se collent dans une fente (20) faisant face à la périphérie extérieure de l'arbre d'entrée et qui sont disposées dans l'engrenage d'entraînement, décaler l'engrenage d'entraînement d'une distance à partir de ladite certaine position, et **en ce qu'**une liaison peut entraîner celui-ci, de telle sorte qu'il perde la possibilité de transférer un couple par le fait qu'il est désengagé d'éléments d'entraînement, qui sont disposés sur l'arbre d'entrée (6) au voisinage de l'engrenage d'entraînement, de façon à désengager un couplage qui est disposé dans le treuil, de telle sorte que, pourvu que le câble (43) sur le tambour (38) soit chargé, il soit possible de produire un relâchement d'écoute à partir du tambour de câble (38).
7. Dispositif pour un treuil à câble selon la revendication 6, **caractérisé en ce que** le couplage est un couplage à cône (26) d'un type non auto-verrouillant.
8. Dispositif selon la revendication 6 ou 7, **caractérisé en ce que** l'engrenage d'entraînement (7) est disposé autour de l'arbre d'entraînement à manivelle (6).
9. Dispositif selon la revendication 8, **caractérisé en ce que** le coulisseau de commande (17) peut être actionné à l'aide d'un bouton (35) au sommet de la poignée de manivelle (H), qui agit par l'intermédiaire d'un mécanisme de levier (34) à l'intérieur de la manivelle, de telle sorte qu'un actionneur (45) dans la partie d'entraînement de la manivelle puisse être élevé ou abaissé.





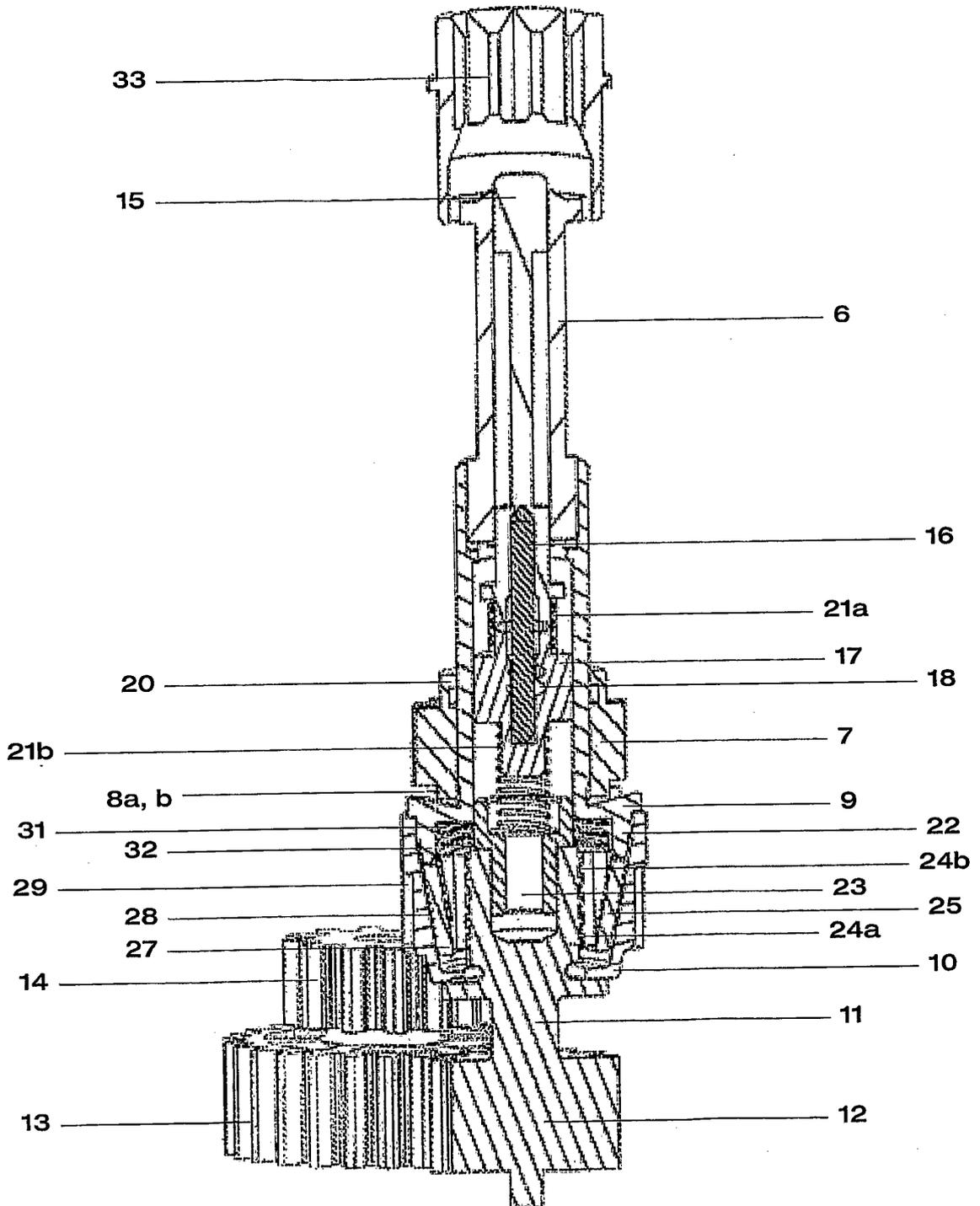


Fig. 3

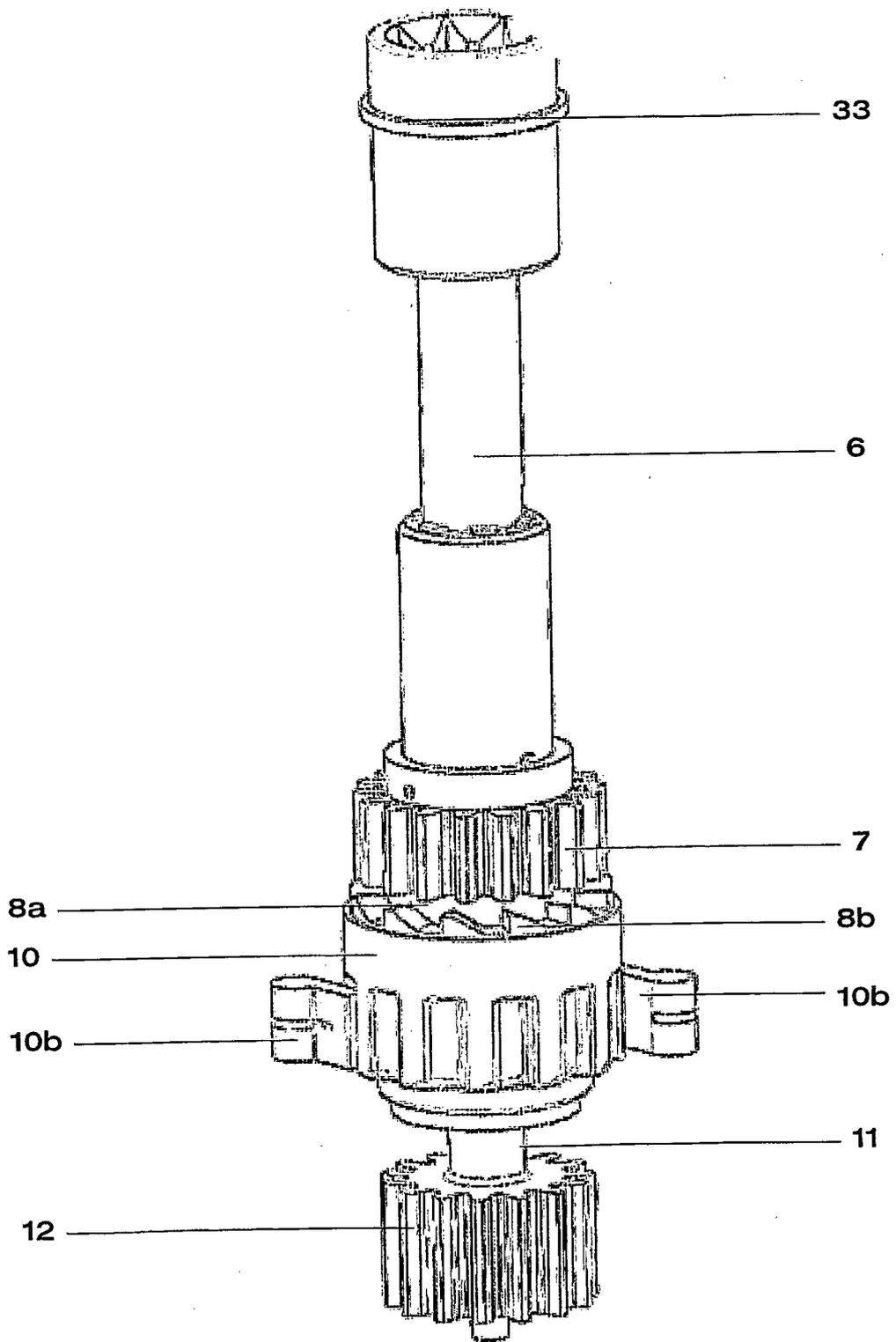
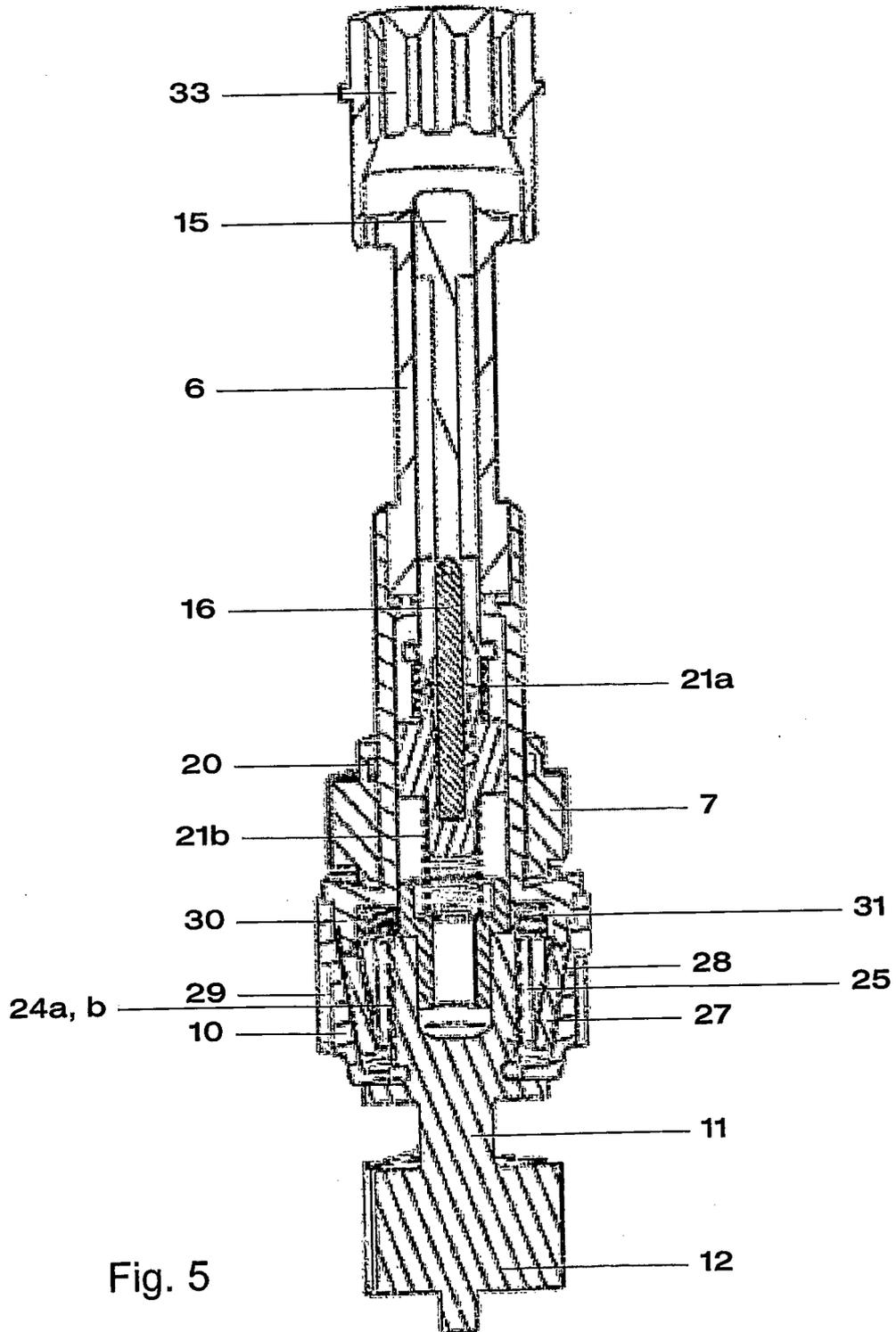


Fig. 4



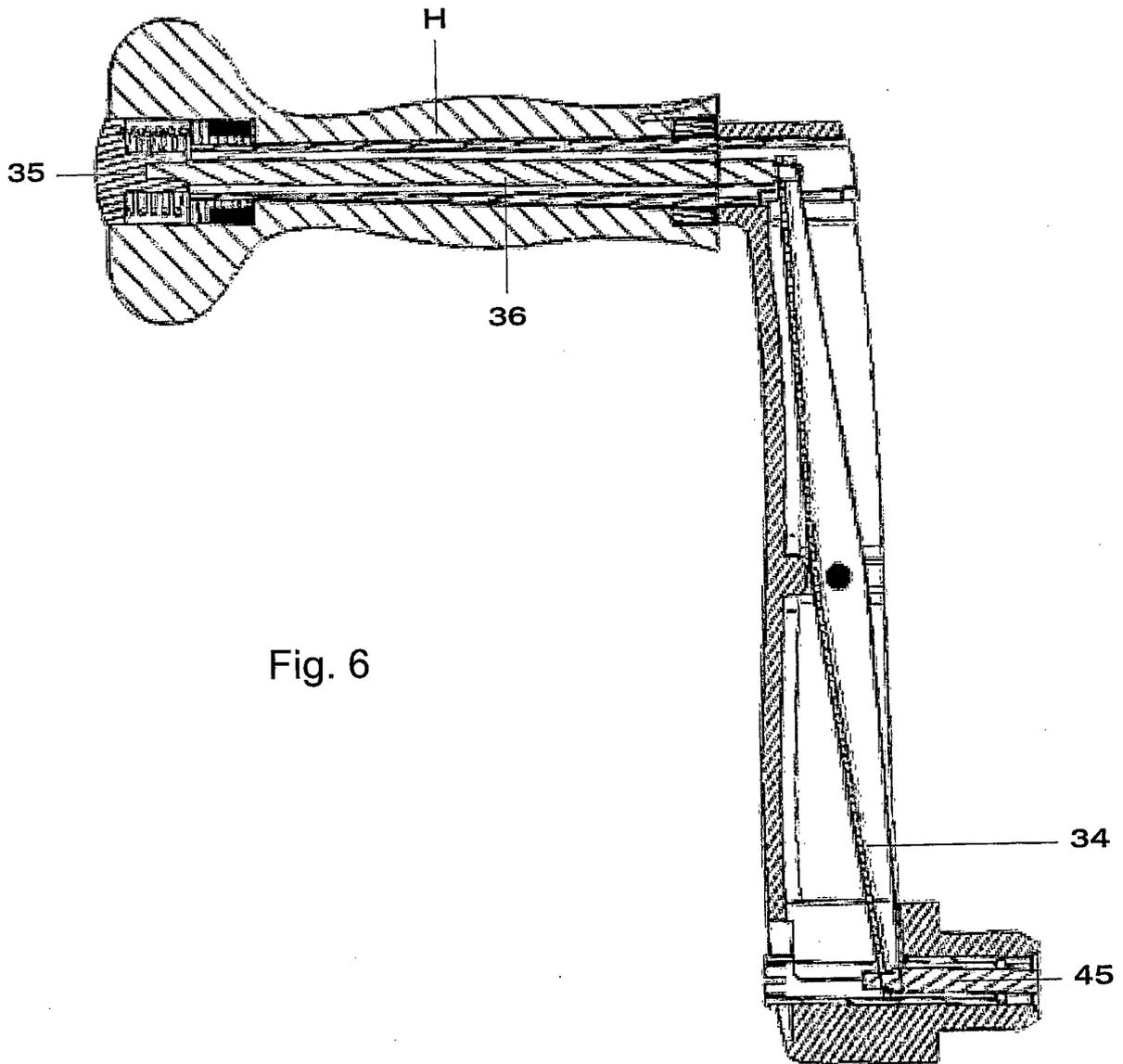
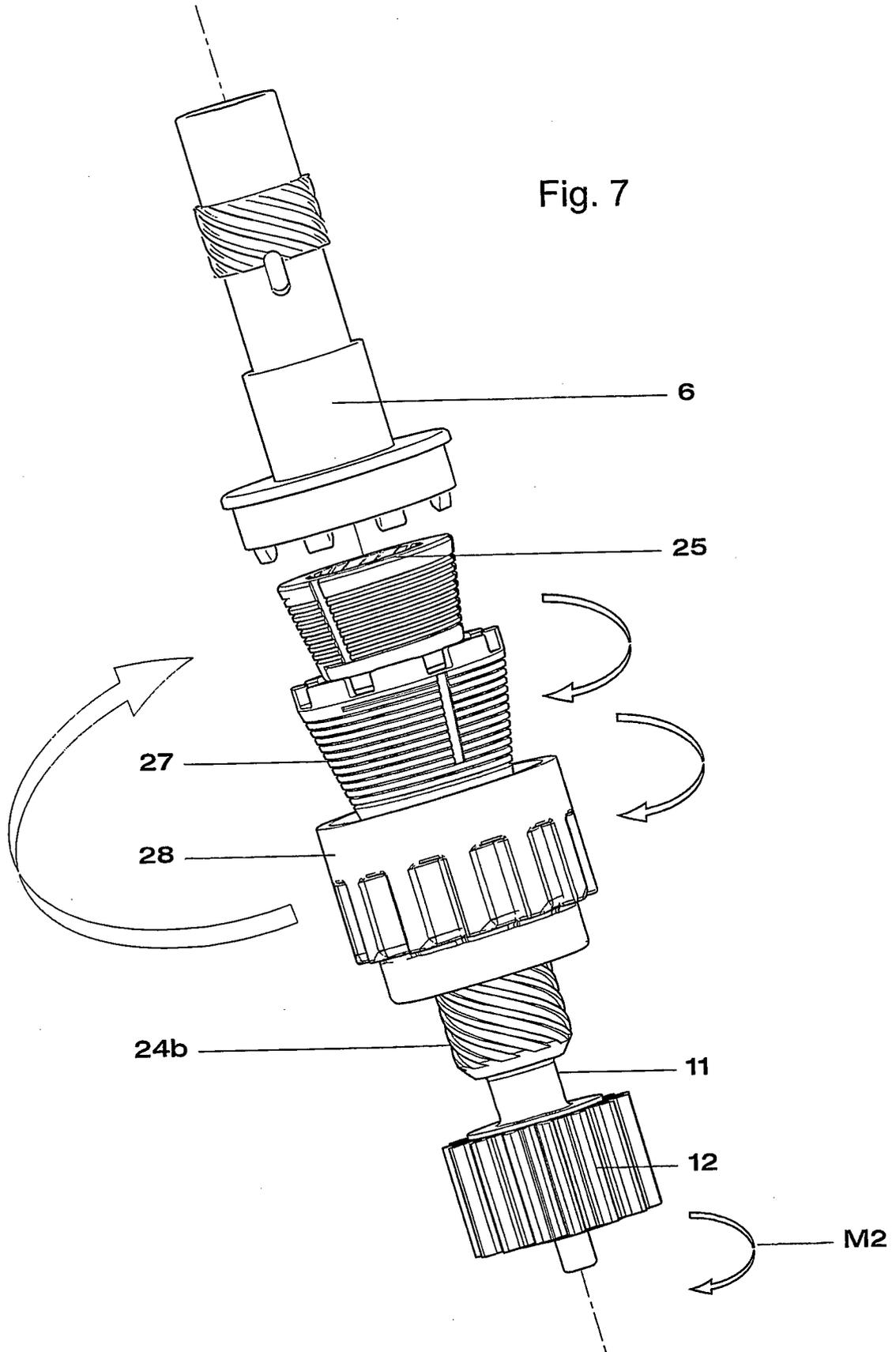


Fig. 6

Fig. 7



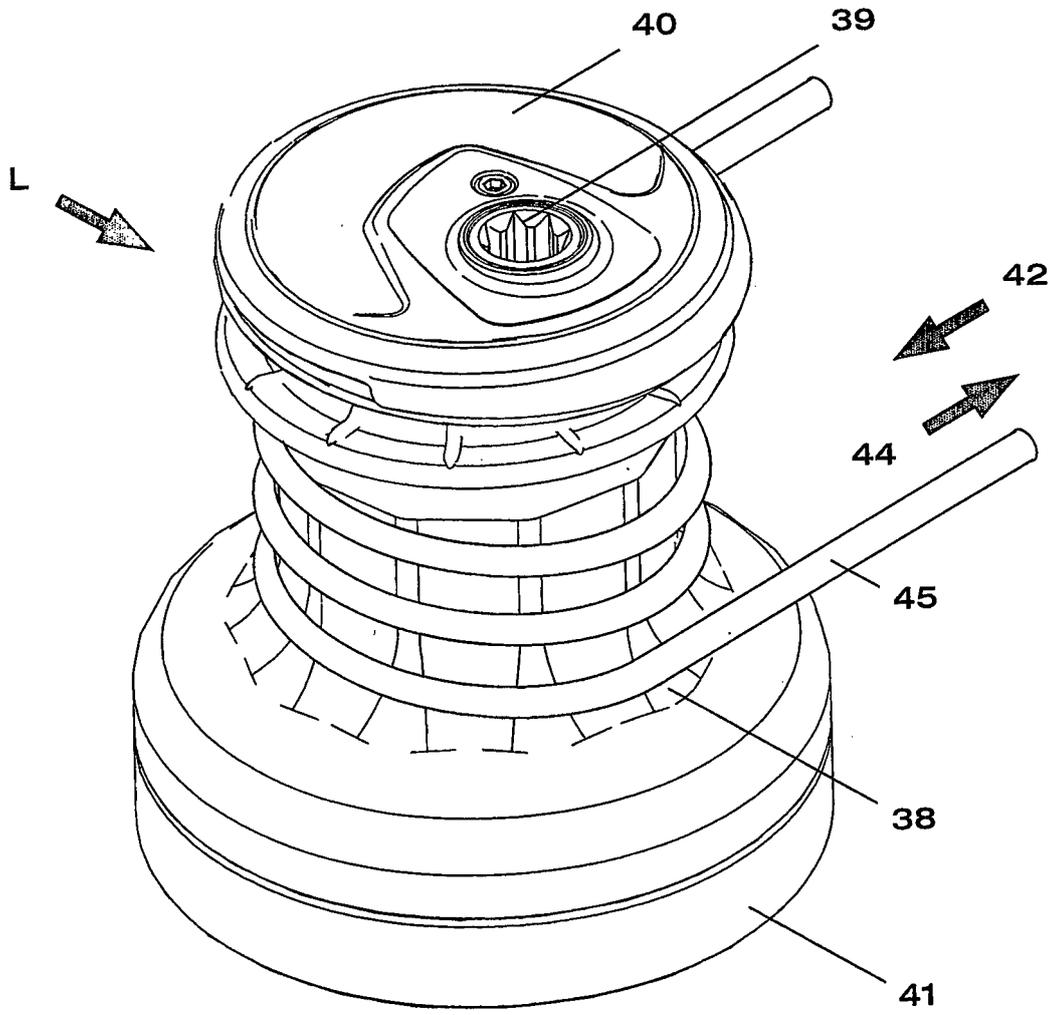


Fig. 8

REFERENCES CITED IN THE DESCRIPTION

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