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(54) STEERING DEVICE FOR BOATS

(57) Steering device for a boat comprising a lever (2), which lever (2) has an upper handle part (21) and a lower rod part (22), which rod part (22) has a lower end (221) for mounting to the boat.

The handle part (21) has at least one control button (211) intended to generate control signals for one or more components of the boat.

Moreover the lower rod part (22) is mounted so as to rotate with respect to the upper handle part (21) and there are provided means for locking the relative movement between the upper handle part (21) and the lower rod part (22).

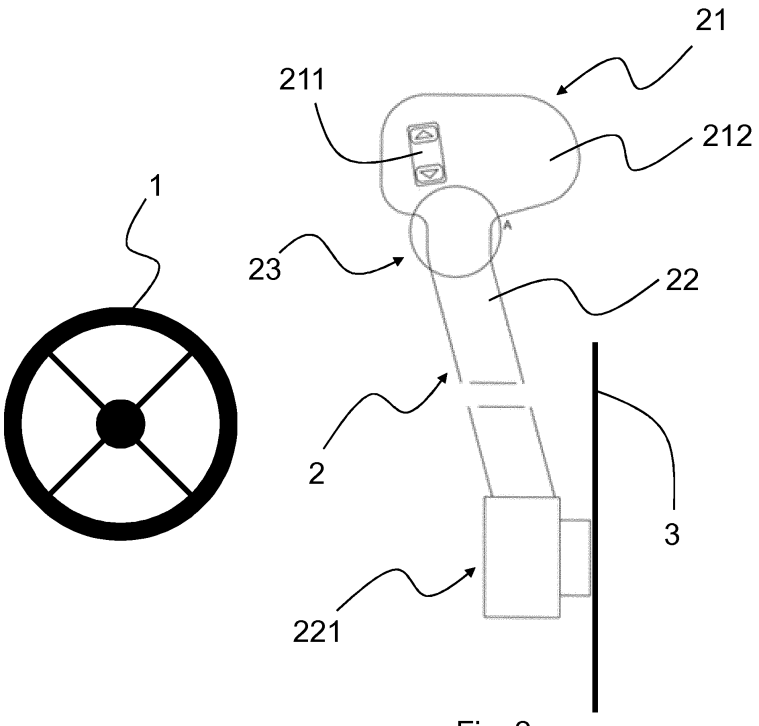

Fig. 2

EP 3 112 252 A1

Description

[0001] The present invention relates to a steering device for a boat comprising a lever, which has an upper handle part and a lower rod part, which rod part has a lower end for mounting to the boat.

[0002] The handle part has at least one control button intended to generate control signals for one or more components of the boat.

[0003] In particular the invention relates to the so called "side mount" levers, that is levers mounted on a side partition wall belonging to a steering station of a boat.

[0004] In order to facilitate the steering of the boat, such levers, in addition to allow the boat speed to be set, integrate further controls intended to regulate the different components of the boat, for example can comprise buttons for regulating the boat trim.

[0005] The positioning of such control buttons is a particularly important aspect to allow the user to easily operate the buttons without moving too much the hand on the lever.

[0006] For this reason levers known in the prior art have the handle part as much ergonomic as possible such to allow the user hand to comfortably hold it.

[0007] Regardless of the arrangement of the handle, the levers known in the prior art have the problem of adaptability.

[0008] Generally the levers are on the right side with respect to the steering wheel and therefore they are operated by the right hand of the user.

[0009] The problem arises when installing the lever, since if there is a partition wall placed between the steering wheel and the lever it will be necessary to mount a specific type of lever that will not be adaptable if the same lever has to be installed on a partition wall placed on the right both of the steering wheel and of the lever.

[0010] This is due to the fact that levers have to provide the control buttons at the thumb of the right hand of the user.

[0011] With the levers known in prior art when passing from one to the other configuration the user should be obliged to operate the buttons with the little finger of the right hand.

[0012] Obviously operating the buttons with the little finger is quite uncomfortable, since the several joints of the user hand allow not only to exert a higher strength by using the thumb than by using the little finger, but also to obtain greater movement sensitivity.

[0013] Therefore there is the unsatisfied need in devices known in prior art to provide a steering lever for boats, particularly of the "side mount" type, that is adaptable to the several configurations of the pilot house of the boat, allowing the control buttons provided on the lever to be easily and comfortably used.

[0014] The present invention achieves the above objects by providing a steering device for a boat, according to the preamble of claim 1 and further having the combination of characteristics of the characterizing part of claim 1.

[0015] Therefore the lever is not more as a single piece, but as two pieces detached from each other, the handle part and the rod part, independent from each other.

[0016] Thus regardless of the configuration of the boat, the lower rod part can be oriented such to allow the control button to be easily positioned for the user, that is to be positioned at the thumb of the user, particularly the thumb of the right hand.

[0017] Once the lower rod part is positioned in the desired manner it is preferred to lock the position thereof to avoid displacements during the operation of the lever.

[0018] For this reason according to one embodiment there are provided means locking the relative movement between the upper handle part and the lower rod part.

[0019] As it will be clear from some embodiments, the lower rod part is rotatable preferably about an axis vertical and perpendicular with respect to the horizontal plane of the boat.

[0020] According to a first embodiment said locking means comprise an elastic element.

[0021] The elastic element will be configured such to push the upper handle part towards the lower rod part.

[0022] As an alternative or in combination with such configuration, the locking means comprise a locking element engaging into suitable seats in the upper handle part and on the lower rod part, such to avoid, in the engaged condition, the relative movement between the upper handle part and the lower rod part.

[0023] Such locking element can be made in any manner known in the prior art, for example it can be composed of a pin penetrating into the surfaces of the upper handle part and of the lower rod part, as well as a mechanical stop or abutment element that can be activated once the lower rod part is positioned in the desired manner.

[0024] Advantageously the upper handle part has a handle head providing the control button placed on the side part of the head at the thumb of the user hand.

[0025] As it will be clear from some shown embodiments, according to such configuration, the rotation of the lower rod part and the fact of maintaining the upper handle part in the fixed position, allow the lever to be mounted both on the right and on the left with respect to a partition wall, such that the button is always towards the thumb of the right hand of the user.

[0026] As an alternative the handle head provided in the upper handle part can have the button placed on the front part of the head towards the side of the thumb of the user hand.

[0027] Also in this case what mentioned above is valid, that is the fact that, by maintaining the upper handle part as fixed and by rotating the lower rod part, the button is always on the thumb side of the right hand of the user.

[0028] Such embodiment allows the button to be positioned not more on the side part of the handle head, but on the front part, such to guarantee the use of the button by the thumb of the right hand.

[0029] According to a further embodiment, the lever is

composed of a tubular body having an inner channel intended to house electric cables for transmitting signals generated by the at least one button.

[0030] The electric cables are provided with a length greater than the length of the tubular body such to allow the lower rod part to rotate.

[0031] Therefore the rotation of the lower rod part does not affect the transmission of the signal generated by the button, since the cables are not damaged by such movement.

[0032] According to a further embodiment the upper handle part and the lower rod part are composed of a tubular body.

[0033] In particular the upper handle part has a first end connection part cooperating with a corresponding second end connection part provided on the lower rod part.

[0034] The connection is preferably obtained by overlapping the inner walls of the first end part with the outer walls of the second end part or vice versa.

[0035] These and other characteristics and advantages of the present invention will be more clear from the following description of some embodiments shown in the annexed drawings where:

Fig.1 is a possible configuration of the steering device of the present invention;

Fig.2 is a further configuration of the steering device of the present invention;

Fig.3a and 3b are two details of the steering device of the present invention.

[0036] It is specified that the figures annexed to the present patent application are about a variant embodiment of the device of the present invention, but such embodiment has to be intended merely for describing the advantages and characteristics of the device of the present invention.

[0037] Such embodiment therefore has not to be considered as limitative of the inventive concept of the present invention that is to provide a steering device for a boat that can be easily adapted to different steering configurations of the boat itself.

[0038] In particular figures 1 and 2 refer to two different configurations: figure 1 is a diagram of a boat steering station, where there is provided a steering member of the steering wheel type 1 and a steering lever 2.

[0039] Particularly the steering lever 2 has an upper handle part 21 and a lower rod part 22, which rod part 22 has a lower end 221 for the mounting to the boat.

[0040] The handle part 21 has at least one control button 211 intended to generate control signals for one or more components of the boat.

[0041] There is further provided a partition wall 3, that in figure 1 is placed between the steering wheel 1 and the lever 2, while in figure 2 it is provided on the right of the steering wheel 1 and of the lever 2.

[0042] In particular the device of the present invention provides the lower rod part 22 to be mounted so as to rotate with respect to the upper handle part 22.

[0043] The fact that the rod part 22 is mounted so as to rotate, allows the same lever 2 to be used both in the configuration of figure 1 and in the configuration of figure 2.

[0044] In particular if the lower mounting end 221 is rigidly connected to the lower rod part 22, by means of a rotation of the lower rod part 22 about an axis parallel to the partition wall 3, it is possible to pass from the configuration of figure 1 to the configuration of figure 2.

[0045] As it will be seen below, the upper handle part 21 remains fixed such that the control button 211 remains fixed in position.

[0046] The lever 2 thus is composed of two independent parts, the upper handle part 21 and the lower rod part 22.

[0047] Such parts are joined with each other through a joining area, denoted by the reference numeral 23 in figure 2, intended to allow the rod part 22 to rotate with respect to the handle part 22.

[0048] According to a first embodiment, such joining area comprises means locking the relative movement between the upper handle part 2 and the lower rod part 22.

[0049] Figures 3a and 3b show two details of such joining area 23 and of the locking means.

[0050] According to the variant shown in figure 3a, the locking means comprise an elastic element 231.

[0051] Under balance condition, the elastic element 231 urges the upper handle part 21 towards the lower rod part 22.

[0052] In particular it is possible to raise the upper handle part 22 towards the direction denoted by arrow A, to rotate the lower rod part 22, preferably by 180° such to pass from the configuration of figure 1 to the configuration of figure 2, after that the upper handle part 21 is released and it returns back in position by means of the spring 231.

[0053] Obviously the joining area 23 can be made in any manner known in the prior art.

[0054] As an alternative or in combination with the elastic element 231, it is possible to provide a connection of the handle part 21 with the rod part 22 obtained by a bayonet coupling or by threading one or the other part.

[0055] In this case it is preferred to provide the upper handle part 21 and the lower rod part 22 to be composed of a tubular body.

[0056] In particular the upper handle part 21 can have a first end connection part cooperating with a corresponding second end connection part provided on the lower rod part 21.

[0057] Therefore the connection is obtained by overlapping the inner walls of the first end part with the outer walls of the second end part or vice versa.

[0058] Moreover as an alternative to what described in figure 3a, it is possible to provide a non-elastic retaining means 232 that prevents the upper handle part 22 from being completely released from the lower rod part 22.

[0059] Advantageously the joining area 23 can provide locking means that comprise a locking element engaging into suitable seats provided on the upper handle part 21 and on the lower rod part 22, such to avoid, in the engaged condition, the relative movement between the upper handle part 21 and the lower rod part 22.

[0060] As said above such locking means can be composed of a pin penetrating the walls of the handle part 21 and of the rod part 22.

[0061] Moreover it is possible to provide mechanical retaining means intended to limit the rotation of the rod part 22.

[0062] For example it is possible to provide stop elements that limit the rotation of the lower rod part 22 to a maximum extent of 180°.

[0063] According to a variant embodiment, the upper handle part 21 has a handle head 212 providing the control button 211 placed on the side part of the head 212 at the thumb of the user hand.

[0064] According to one embodiment shown in figures 1 and 2 the upper handle part 21 has a handle head 212 providing the control button 211 placed on the front part of the head 212 towards the side of the thumb of the user hand.

[0065] With a particular reference to the configurations shown in figures 1 and 2, it is specified that such figures show steering systems where the lever 2 is operated by the right hand of the user.

[0066] Accordingly both in figure 1 and in figure 2 the button 211 is operated by the thumb of the right hand of the user.

[0067] However the characteristics described up to now are valid also for systems perfectly symmetrical with respect to those shown in figures 1 and 2, that is systems where the lever 2 is operated by the left hand of the user and where the steering wheel 1 is on the left of the lever 2.

[0068] Moreover preferably the shape of the head 212 is made as symmetrical with respect at least to a plane parallel to the partition wall 3.

[0069] Finally according to a preferred embodiment the lever 2 is composed of a tubular body having an inner channel intended to house electric cables for transmitting signals generated by said at least one button 211.

[0070] Particularly the electric cables are provided with a length greater than the length of the tubular body such to allow the lower rod part 22 to rotate.

[0071] In particular the length of the cables has to be such to allow the lower rod part 22 to rotate by at least 180°.

Claims

1. Steering device for a boat comprising a lever (2), which lever (2) has an upper handle part (21) and a lower rod part (22), which rod part (22) has a lower end (221) for mounting to the boat,
the handle part (21) having at least one control button (211) intended to generate control signals for one or more components of the boat,
characterized in that
the lower rod part (22) is mounted so as to rotate with respect to the upper handle part (21)
and **in that**
there are provided means for locking the relative movement between the upper handle part (21) and the lower rod part (22).

2. Device according to claim 1, wherein locking means comprise an elastic element (231).

3. Device according to claim 1, wherein the locking means comprise a locking element engaging into suitable seats provided on the upper handle part (21) and on the lower rod part (22), such to avoid, in the engaged condition, the relative movement between the upper handle part (21) and the lower rod part (22).

4. Device according to one or more of the preceding claims, wherein the upper handle part (21) has a handle head (212) providing the control button (211) placed on the side part of said head (212) at the thumb of the user hand.

5. Device according to one or more of the preceding claims 1 to 3, wherein the upper handle part (21) has a handle head (212) providing the control button (211) placed on the front part of the head (212) in the direction of the side of the thumb of the user hand.

6. Device according to one or more of the preceding claims, wherein said lever (2) is composed of a tubular body which tubular body has an inner channel intended to house electric cables for transmitting signals generated by said at least one button (211),
the electric cables being provided with a length greater than the length of the tubular body such to allow said first rod part (22) to rotate.

7. Device according to one or more of the preceding claims, wherein the upper handle part (21) and the lower rod part (22) are composed of a tubular body,
the upper handle part (21) having a first end connection part cooperating with a corresponding second end connection part provided on the lower rod part (22),
the connection being obtained by overlapping the inner walls of the first end part with the outer walls of the second end part or vice versa.

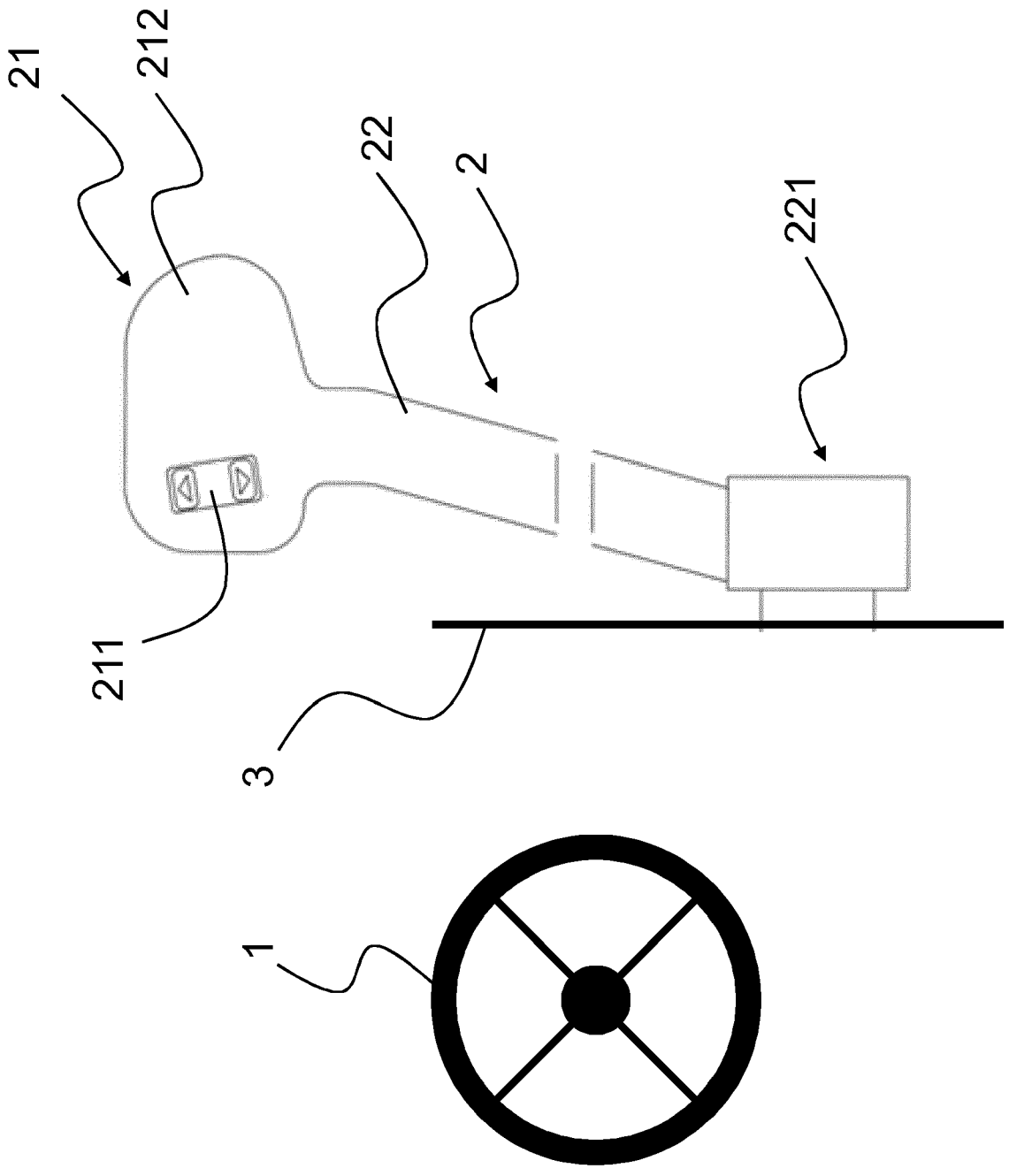

Fig. 1

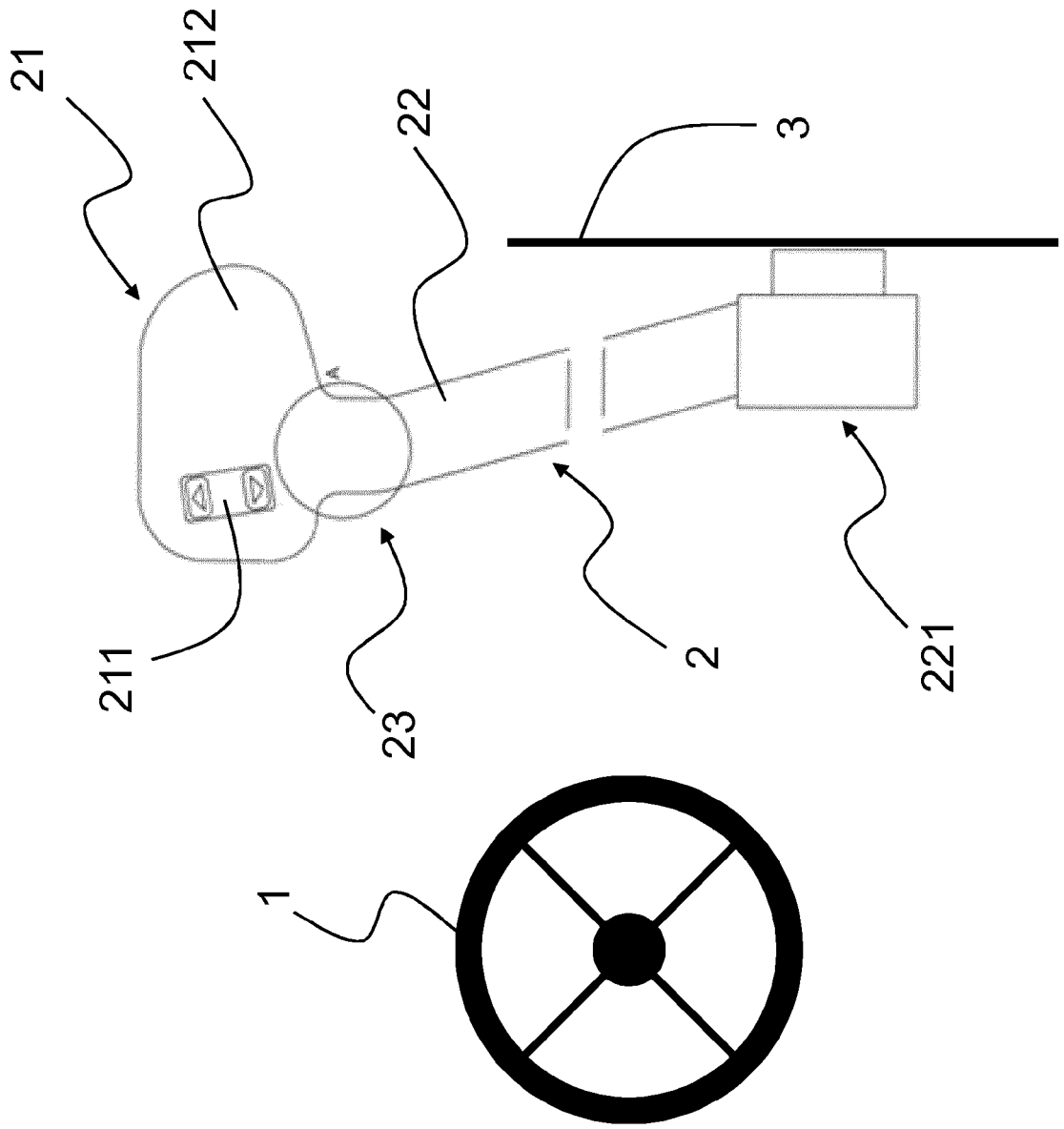

Fig. 2

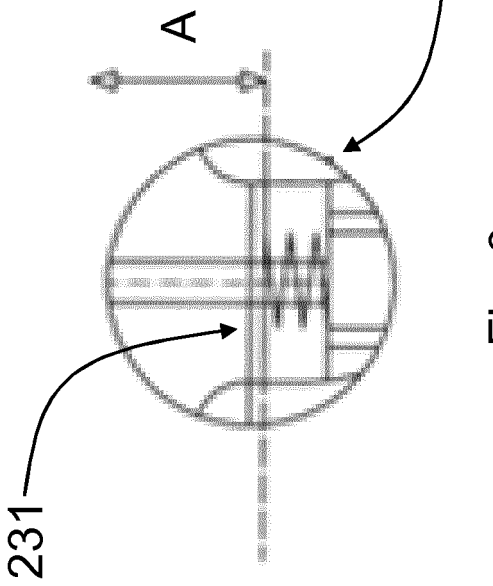

Fig. 3a

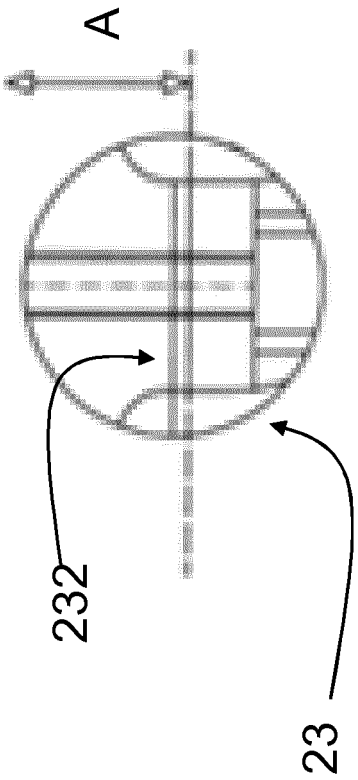

Fig. 3b

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EUROPEAN SEARCH REPORT

Application Number
EP 16 17 6014

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	US 8 888 544 B1 (GUGLIELMO KENNON [US]) 18 November 2014 (2014-11-18) * column 5, line 11 - line 29; figures 3, 4 *	1-7	INV. B63H21/21 G05G1/06
A	US 6 511 354 B1 (GONRING STEVEN J [US] ET AL) 28 January 2003 (2003-01-28) * column 7, line 1 - line 8; figure 3 *	1,6,7	

TECHNICAL FIELDS SEARCHED (IPC)

B63H
G05G

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	5 October 2016	Schmitter, Thierry

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 16 17 6014

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05-10-2016

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US 6511354 B1	28-01-2003	US RE39032 E1	21-03-2006
		US 6511354 B1	28-01-2003

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