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(54) **A groove holder for a spiral groove handle**

(57) The present invention relates to a groove holder (10) for a tiller lock for a tiller extension with a spiral groove handle comprising a base plate (1) and a foldable holding plate (3) for receiving the handle. The base plate (1) comprises a substantially rectangularly shaped cut-out between two legs (1A,1B) at one end interconnected by an interconnecting section (1C) and being somewhat resilient. Holes (11A,11B) are provided in the free ends of

the legs (1A,1B) for receiving a shaft (4), on which the holding plate (3) is pivotably mounted via a through hole (31). A longitudinal V-shaped edge (8) at the centre of the hole (11A,11B) of at least one of the legs (1A,1B) is arranged to mesh in cross-wise milled cuts (5) in the holding plate (3) at the through hole (31) so that said holding plate (3) can be blocked in at least a folded down position and a folded up position. The outer edges (9) of the base plate (1) are round.

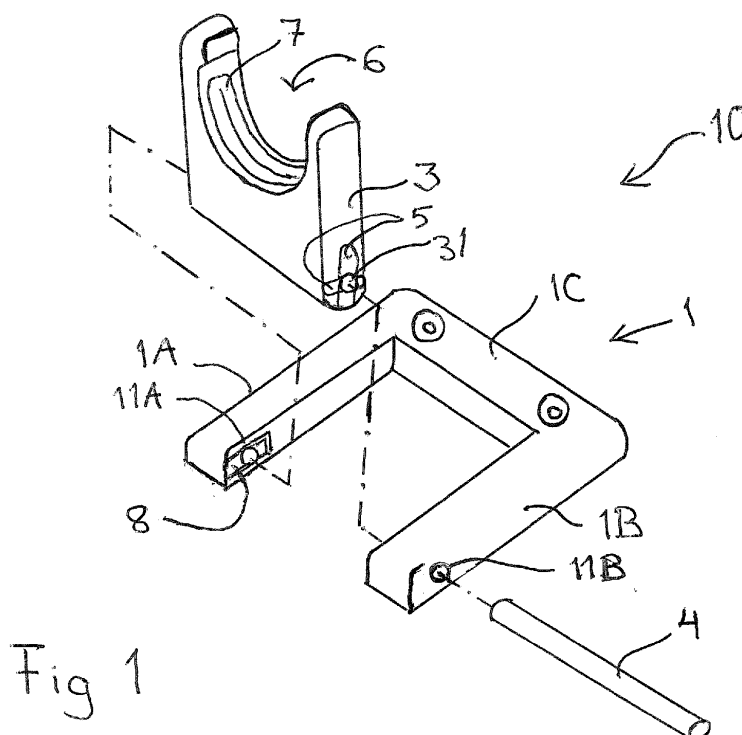


Fig 1

Description

TECHNICAL FIELD

[0001] The present invention concerns a groove holder for a tiller lock for a boat with a tiller and a tiller extension with a spiral groove handle having the features of the first part of claim 1.

BACKGROUND

[0002] In boats with a tiller it is often necessary to lock the tiller to keep the course when the helmsman is forced to leave it, for example at fishing or when trimming sails at sailing. An old method in local fishing boats or workboats was a "hack board", placed on edge across the boat afore the rudderstock below the tiller. The board was provided with a number of traces, "hacks", on the top edge, in which a sheet metal strip, fastened on the underside of the tiller, could be put down, thus securing the tiller and keeping the course.

[0003] Modern boats, especially sailing boats, often lack this facility owing to the design of the cockpit. Different arrangements apply in place. An example is an endless rope attached to the tiller head and led out into the respective sides of the boat and aft around the cockpit, where it can be locked by any type of sheet clip. Most of these devices are cumbersome, difficult to set to the exact course, and are lacking possibilities to make small adjustments.

[0004] The need of a modern tiller lock, allowing quick and easy locking, and by means of which an accurate course adjustment, large or small, can be performed by a single grip, resulted in the invention of the Swedish tiller lock "Styrman Jonsson" ("Helmsman Jonsson"), see Swedish Patent No. 520 104. It is based on an, in modern sailboats, common fitting, the tiller extension, which is a tube connected by a swivel to the tiller head, thus allowing the helmsman to steer the boat sitting on the coaming of any side of the cockpit.

[0005] The tiller lock consists mainly of a tiller extension that has a handle with a spiral groove cut, (a trapezoidal thread), the spiral groove handle, which can be put down in an in each side mounted groove holder, which lock the tiller to the wanted rudder angle. By turning the handle when it is in one of the groove holders, the rudder angle can be tuned along the full length of the spiral groove.

[0006] The groove holder has a folding holding plate with a U-shaped cut which in its bottom has half a worm, with the measure and pitch of the threading of the handle, in which the handle fits in. The cut, somewhat deeper than the diameter of the handle, has resilient shanks to get hold of the handle and secure it from unintended lifting when in use.

[0007] The holding plate is mounted in a metal bottom plate with four right angle ears, by a shaft through the lower edge of the holding plate and holes in an anterior

pair of ears, the rear pair being provided to protect the holding plate when folded down.

[0008] The groove holder is provided with a device to keep the holding plate in one of three positions: 0°, (folded down), or 90° or 180° (folded up), consisting of a stop spring between the metal bottom plate and the holding plate, with corresponding notches in the latter.

[0009] The groove holders are mounted one on each side and usually horizontally, on the cockpit coaming and in about a right angle to the tiller head. At use the holding plate is folded up to 90° and the spiral groove handle is placed in it with a slight pressure. Should the coaming be too small for horizontal mounting, the groove holder is to be mounted vertically on the inside of the coaming and at use folded up to 180°.

[0010] This device works, from a technical point of view excellently, but suffers from a disadvantage due to the fact that the position of the groove holder on the coaming is the same as the place where the helmsman normally is sitting at manual steering. Its angular form and comparative height result in an uncomfortable seat and restrict the movement. Further, clothes and lines are easily caught in it.

SUMMARY OF THE INVENTION

[0011] It is therefore an object of the present invention to provide an improved groove holder for tiller locks or helm locks with tiller extensions. It is a particular object to provide a groove holder through which the above mentioned drawbacks can be overcome. Other particular objects are to provide a groove holder which is capable of securely holding a tiller extension, in place, allowing setting to an accurate course, and easy adjustment thereof. Still further objects are to provide a groove holder which is cheap and easy to fabricate, easy to mount and operate, which is durable and which does not run the risk of interfering with or damaging clothes, lines, other equipment or persons, particularly the helmsman, and which even allows comfortably sitting on it.

[0012] Therefore a groove holder as initially referred to is provided which additionally comprises the features of the characterizing portion of claim 1. Advantageous embodiments are given by the dependent claims.

[0013] It is an advantage of the groove holder according to the invention that it, in addition to being secure, allows secure setting of the course, also allows persons on the boat to sit and move freely without risking themselves or their clothes being damaged by, or stuck in, the groove holder, or having to sit uncomfortably or in a non-optimal position when steering manually. It is also an advantage that a groove holder is provided through which any risk of interfering with lines or other equipment on the boat is eliminated. It is also an advantage that a groove holder is provided which is easy to operate, and to transfer from an operative to a non-operative position and vice-versa.

BRIEF DESCRIPTION OF THE DRAWINGS

[0014] The invention will in the following be more thoroughly described, in a non-limiting manner, and with reference to the accompanying drawings, in which:

- Fig. 1 is an exploded view of a groove holder with a base plate and a holding plate according to the invention,
- Fig. 2A is a front view of the holding plate in a folded up position,
- Fig. 2B is a side view from the right of the holding plate,
- Fig. 2C is a top cross-sectional view of the holding plate, along the lines B-B in Fig. 2A,
- Fig. 3A is a side view of the outer end of a leg (shank) of the base plate seen from the inside of the rectangular cut-out formed by the legs (shanks),
- Fig. 3B is a front view of the outer end of a shank of the base plate, and
- Fig. 3C is a view of the leg (shank) in Fig. 3A seen from above.

DETAILED DESCRIPTION

[0015] Fig. 1 shows a groove holder 10 in an unmounted state. It comprises a base plate 1 which comprises a substantially rectangular plate with a rectangular cut-out so that two parallel, resilient shanks or legs 1A, 1B are formed, in the following for reasons of simplicity only referred to as the ends of which on one side being interconnected by an interconnecting section 1C. Close to the outer, free, ends of the legs 1A, 1B holes 11A, 11B are provided through the legs which extend in a direction substantially in parallel with a longitudinal extension of the interconnecting section 1C and in a plane parallel to a main plane of extension of the base plate. The purpose of the holes 11A, 11B is to receive a shaft 4 on which a holding plate 3 is to be mounted for connecting the base plate 1 and the holding plate 3 such that the holding plate 3 is located between the legs 11A, 11B. The holding plate 3 is provided with a U-shaped cut-out adapted to take up a spiral groove handle. At its outer edge, facing away from the U-shaped cut-out, i.e. from the ends of the legs formed by the U-shape, the holding plate 3 is provided with a through hole 31 for mounting on the shaft 4. Cross-wise milled cuts 5 are provided in the axle or through hole centre for, here, allowing the holding plate 3 to be folded or pivoted to assume (here) three different positions around the shaft 4 by means of cooperation with a V-shaped edge 8 provided on the inside of the leg or legs

1A, 1B. At the bottom of the U-shaped cut-out 6 half a worm 7 is provided which can be grasped for the purpose of folding up the holding plate 3.

[0016] The shape and size of the cut-out in the base plate defining the space between the legs 11A, 11B and the interconnecting position 1C is preferably such as to be substantially contiguous with the outer peripheral sides or edges of the holding plate 3.

[0017] At the interconnecting portion 1C holes are schematically indicated for mounting of the base plate 1, by means of screws, bolts or similar, to the boat. Such mounting means can be provided for in any appropriate manner. All upper edges 9 of the base-plate are rounded or bevelled to assure that a person, the clothes, etc. will not be damaged if the person is sitting on, or getting in contact with the groove holder 10. It also assures that lines, ropes or other necessities or equipment will not be caught or entangled. Through the rounded shape, a helmsman or any one else may also comfortably sit on the groove holder.

[0018] One or both of the legs or shanks 2A, 2B is/are provided with a longitudinal V-shaped edge 8 (see Fig. 3) adapted to, in a mounted state, mesh with the cross-wise milled cuts 5 in the holding plate 3 to keep the holding plate 3 in one of (here) three different folding positions with respect to the base plate 1, a first folded down portion (corresponding to 0°), a 90° first folded up position and a second 180° folded up portion. The cooperating V-shaped edge 8 and the milled cuts 5 act as a positioning arrangement.

[0019] The interconnecting portion 1C of the base plate 1 preferably, at least in portions behind the legs or shanks 2A, 2B, has a somewhat larger thickness than the legs or shanks and the holding plate 3, in order to prevent that the movement is hindered or affected by friction against the mounting surface during folding of the holding plate 3. For folding up of the holding plate 3, it can be gripped by a finger in the U-shaped cut 6 behind the worm 7 and pulled.

[0020] The groove holder 10 according to the invention has a low profile with no sharp edges or protruding parts. The lowest height thereof, in a folded down position, is determined by the thickness of the holding plate 3. In state of the art groove holders a base plate is formed by a metal bottom plate. According to the present invention this is replaced by a base plate preferably of the same material, and substantially having the same thickness, as a holding plate 3, which enables a particularly low profile.

[0021] Arranging and blocking the holding plate 3 in one of e.g. two or three folding positions is enabled by means of the longitudinal V-shaped edge 8 in the axle centre (of the hole 11A, 11B) of one or both of the legs or shanks 1A, 1B, meshing with the cross-wise milled cuts 5 (Fig. 2A) in the holding plate 3 when mounted on the shaft 4.

[0022] In a preferred embodiment the base plate 1 and the holding plate 3 are manufactured by means of injec-

tion moulding. It should however be clear that they (one or both plates) can also be made by any other appropriate manufacturing method. Although preferably consisting of the same material (e.g. plastic) they may also be made of other, or of different, materials.

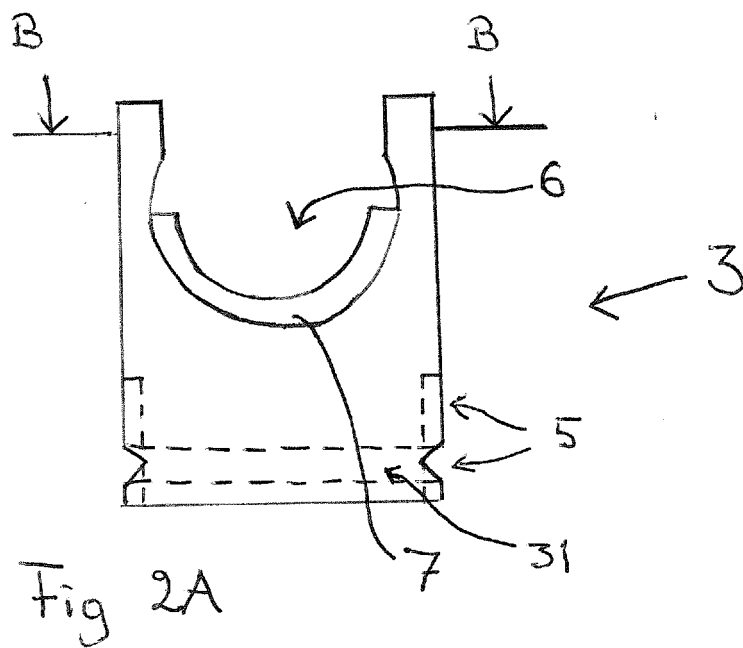
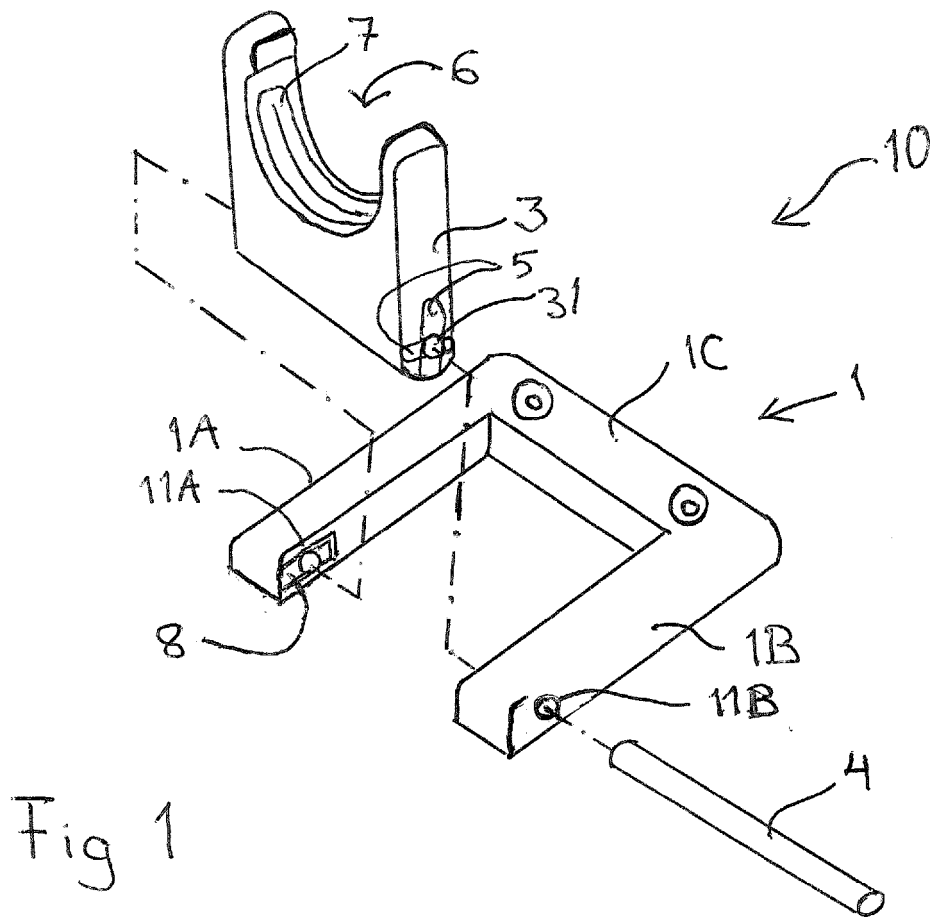
[0023] The invention is not limited to the specifically illustrated embodiment but can be varied freely within the scope of the appended claims.

Claims

1. A groove holder (10) for a tiller lock for a boat with a tiller and tiller extension with a spiral groove handle, wherein the groove holder (10) comprises a base plate (1) adapted to be mounted on a rim or similar of a boat, a foldable holding plate (3) which can be folded up and down and which is adapted to receive a spiral groove handle,
characterized in
that the base plate (1) comprises a substantially rectangularly shaped cut-out formed between two legs or shanks (1A,1B) which at one end are interconnected by an interconnecting section (1C) so that they are at least somewhat resilient, that holes (11A, 11B) are provided in outer, free, ends of the legs or shanks (1A,1B) for receiving a shaft (4) between them, that the holding plate (3) is adapted to be pivotably mounted on said shaft (4) by means of a through hole (31), a positioning or blocking arrangement being provided which comprises a longitudinal V-shaped edge (8) provided at the centre of the hole (11A,11B) of at least one of the legs or shanks (1A, 1B) cross-wise milled cuts (5) provided in the through hole (31) of the holding plate (3) which is adapted to receive said shaft (4), the V-shaped edge (8) being arranged to mesh in said cross-wise milled cuts (3), so that said holding plate (3) can be folded and kept or blocked in at least a folded down position and a first, folded up, position, and in that the outer edges (9) of the base plate (1) are rounded or bevelled.
2. A groove holder according to claim 1,
characterized in
that each leg (1A,1B) of the base plate is provided with a longitudinal V-shaped edge (8) at the centre of the respective hole (11A,11B).
3. A groove holder according to claim 1 or 2,
characterized in
that the V-shaped edge(s) (8) is/are arranged at a position at the centre of an axis defined by the arrangement of the holes (11A, 11B).
4. A groove holder according to any one of claims 1-3,
characterized in
that the thickness of the interconnecting portion (1C) somewhat exceeds a thickness of the holding plate

(3) and of the legs or shanks (2) to avoid friction against a mounting surface on the boat rim or similar when the holding plate (3) is folded up/down.

5. A groove holder according to any one of the preceding claims,
characterized in
that the holding plate (3) is pivotably mounted such as to allow it to assume two different folded up positions, forming 90° and 180° respectively with respect to the base plate (1) and the folded down position in which the holding plate (3) is located between the legs or shanks (1A,1B) such that a substantially smooth surface is formed by the upper side of the base plate (1) and a surface of the holding plate (3).
6. A groove holder according to any one of the preceding claims,
characterized in
that the holding plate (3) and the base plate (1) are made of the same material, preferably fabricated through injection moulding.
7. A groove holder according to any one of the preceding claims,
characterized in
that the holding plate (3) comprises a U-shaped cut-out (6) located at an edge opposite the through hole (31) which is adapted for taking up the shaft (4) and that the U-shaped cut-out (6), at its bottom, comprises half a worm (7) facilitating gripping for folding up of the holding plate (3).



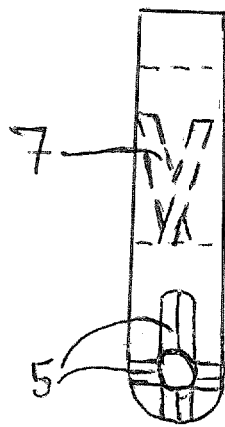


Fig 2B

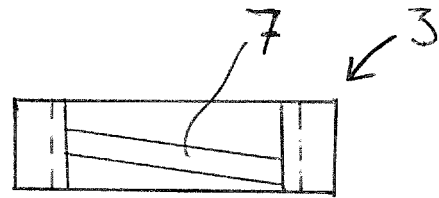


Fig 2C

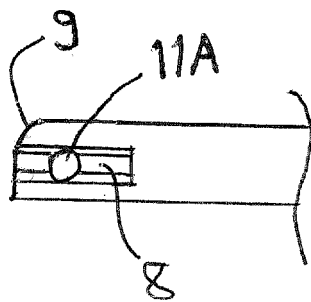


Fig 3A

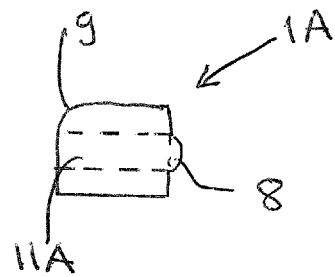


Fig 3B

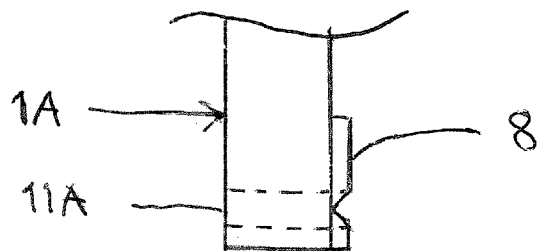


Fig 3C



EUROPEAN SEARCH REPORT

Application Number
EP 12 15 4185

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 5 133 274 A (GRANT KENNETH J [US]) 28 July 1992 (1992-07-28) * figure 2 *	1	INV. B63H25/00 B63H25/06
A	US 4 080 918 A (BONHARD ROBERT BRUCE) 28 March 1978 (1978-03-28) * figure 1 *	1	
A	US 3 279 410 A (YOUNG ROBERT O) 18 October 1966 (1966-10-18) * figure 1 *	1	
A	US 1 679 395 A (GORDON BAILEY GEORGE) 7 August 1928 (1928-08-07) * figure 1 *	1	
A	US 3 826 213 A (RIEBANDT R) 30 July 1974 (1974-07-30) * figure 4 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			B63H
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 4 June 2012	Examiner van Rooij, Michael
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 12 15 4185

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04-06-2012

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 5133274	A	28-07-1992	NONE	
US 4080918	A	28-03-1978	NONE	
US 3279410	A	18-10-1966	NONE	
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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- SE 520104 [0004]