

[54] TURNBUCKLE

[76] Inventor: Sytze Arnold Kuipers, Stripe 11,
Terhorne, Netherlands

[22] Filed: Sept. 12, 1973

[21] Appl. No.: 396,359

[52] U.S. Cl. 403/45, 403/46

[51] Int. Cl. F16b 7/06

[58] Field of Search 403/43, 44, 45, 46, 47,
403/48; 254/54, 67; 29/175 R;
114/109; 301/93

[56] References Cited

UNITED STATES PATENTS

| | | | |
|-----------|--------|-------------------|--------|
| 778,889 | 1/1905 | Plowden | 403/44 |
| 2,845,288 | 7/1958 | Cierpik, Jr. | 403/46 |

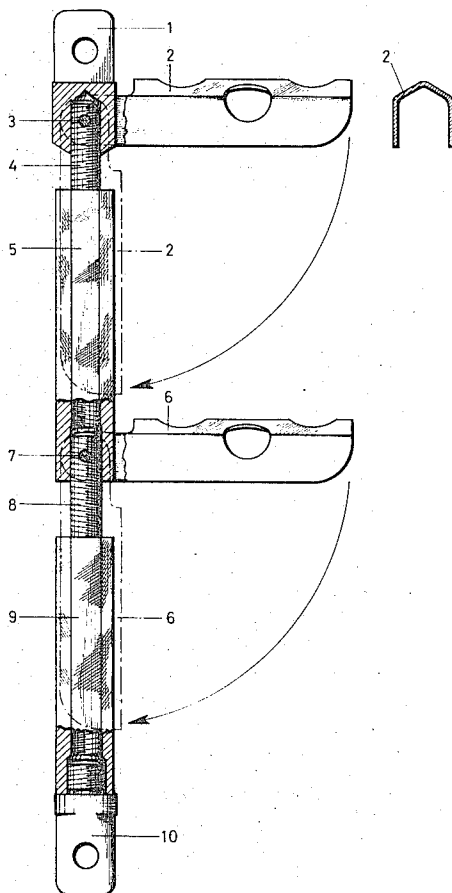
Primary Examiner—Andrew V. Kundrat

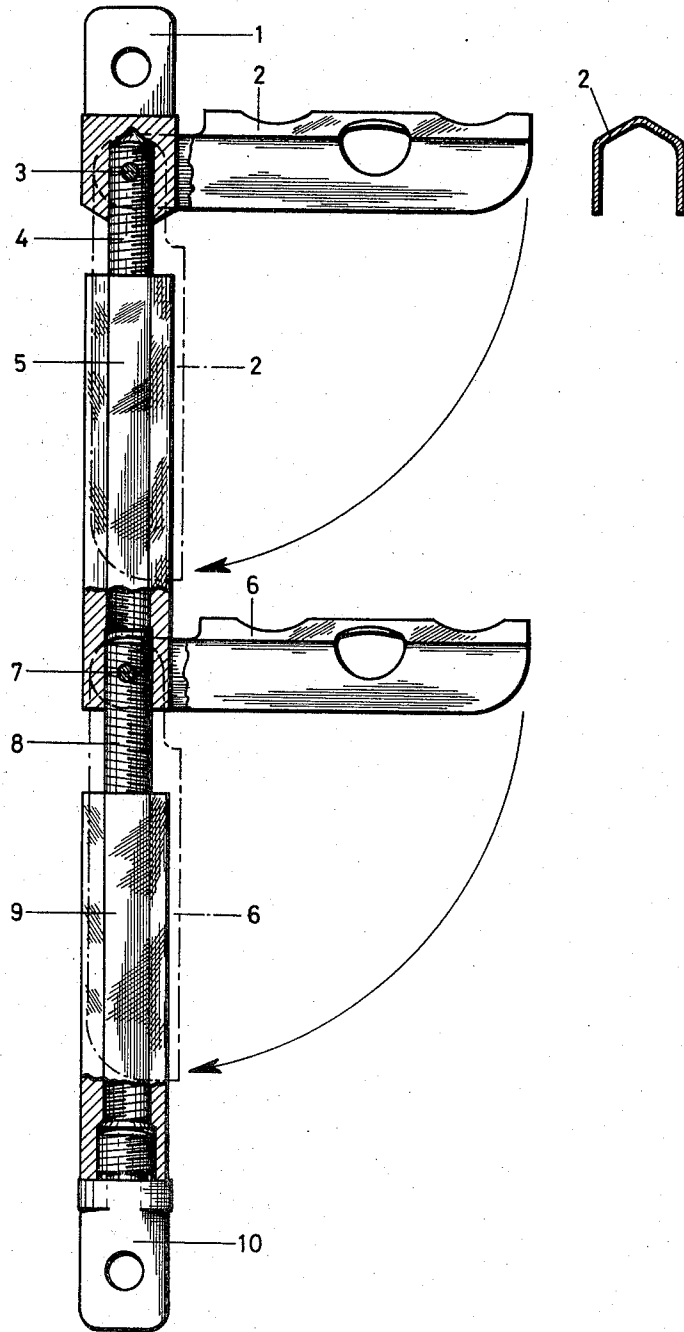
[57]

ABSTRACT

The present invention relates to a turnbuckle comprising three oblong sections which are screwed together in a direct line with internally threaded sleeve and externally threaded rod portions which are oppositely threaded on either side of the centre of the turnbuckle, and two locking arms which are so pivoted so as to swing in the same locking direction about a transverse axis to the rod portions that a substantially channel-sectioned portion of each of said locking arms can be brought into tight-fitting engagement with the hexagonal outer circumference of the adjacent sleeve portion for preventing relative rotation of the three sections.

1 Claim, 1 Drawing Figure





TURNBUCKLE

A turnbuckle is disclosed in U.S. Pat. Specification 2,845,288. This known turnbuckle is of the conventional type with an intermediate section in the form of a sleeve or barrel having opposite threads on either side of its centre and end sections which are both in the form of externally threaded rods which are screwed into the sleeve. Consequently, the two locking arms are each pivoted to one of the end sections and lock onto the barrel between them.

When using this turnbuckle in the standing rigging of a sailing vessel one of the rod-shaped end sections is usually secured by means of a yoke or fork at its free end to a fixed structural part of the vessel such as futtocks while the other end section is secured in a similar manner to the lower end of a shroud or stay. When tensioning or slackening the shroud or stay by rotating the barrel or sleeve in one direction or the other the lowermost section of the turnbuckle which is secured to a fixed point will remain stationary and the locking arm on the uppermost section can be conveniently used as a handle for holding that section, together with the shroud or stay to which it is secured, against rotation, thus eliminating the necessity of using a special tool. Rotating the barrel, however, will require the rather awkward use of a tool such as an open-ended spanner or a pin wrench inserted in a cross-bore of the barrel. Particularly when it is desirable to be able to adjust the tension of the standing rigging when under sail not only each member of the crew will be obliged to always carry a suitable tool but also the member of the crew entrusted with the adjustment will be able to hold on to the upper handle with only one hand while he is at work with the tool in his other hand. This is a patent imperfection of this known turnbuckle.

A further imperfection is constituted by the fact that the lower locking arm, when in its locking position, is always pointing upwards so that in the event of using the turnbuckle for the purpose and in the manner described above this lower locking arm, unlike the upper one, will be prone to be swung down and unlocked such as by a sheet being hauled in along the shroud unless it is properly fastened itself, which fastening again is an awkward and tedious job to accomplish and to undo, particularly in a rough sea.

The object of the present invention is to provide a turnbuckle of the kind described in which the above-mentioned imperfections are attended to.

According to the invention this object is attained in that one of the two end sections is in the form of an internally threaded sleeve screwed onto an externally threaded rod portion of the middle section.

When a thus constructed turnbuckle is used in the standing rigging of a sailing vessel with its sleeve end secured to a fixed structural part of the vessel the lowermost locking arm which is pivoted to the rod portion of the middle section screwed into the sleeve end can be used as a handle to rotate the middle section in one direction or the other for tensioning or slackening the concerning rigging wire without any need for a tool so that the person carrying out the operation has both his hands available for holding fast while performing his task. Moreover, the lowermost locking arm as also the uppermost one, when in locking position, is pointing downwards so that, even when it is not secured in that position, it is not likely to be unlocked by an external force.

An embodiment of the invention will now be described in detail with reference to the drawing which shows a turnbuckle in unlocked position partly in cross-section.

The turnbuckle according to the invention is intended for use in the standing rigging of a sailing vessel and as usual consists of two oppositely threaded end sections 4 and 9 which are in screwed engagement with a middle section of which the two halves 5 and 8 are correspondingly oppositely threaded.

One of the end sections 4 is in the form of a right hand screwed rod onto one end of which a forked end piece 1 is screwed and fastened by a locking pin (3).

The other end section 9 is in the form of an elongated hexagonal nut or sleeve having internal left handed threads and in a counter bore at one end of which a forked end piece 10 is tightly screwed.

One half 5 of the middle section is in the form of an elongated hexagonal nut or sleeve having internal right handed threads along the greater part of its length while the remaining short length at one of its ends has left handed threads for receiving one end of its other half 8 which is in the form of a left hand screwed rod. The two halves are fastened to one another by a locking pin 7.

Each of the locking pins 3 and 7 of the screwed rod end section 4 and the middle section 5, 8 also serves as a fulcrum or pivot pin for a channel-sectioned locking arm 2 and 6, which locking arms, as indicated in the drawing by arrows, can be swung from their full line horizontal position to their broken line position in which they lockingly engage the hexagonal sleeve half of the middle section and the hexagonal sleeve end section.

It will be appreciated that the length of the locking arms 2 and 6 is such that they are adapted to lock onto the respective hexagonal sleeves even when the turnbuckle is extended to its maximum capacity.

In use, the sleeve end section of the turnbuckle with its forked end 10 is secured to an eye on the sheathing or boarding of the vessel or to futtocks or any other suitable fixed part of the hull while the rod section with its forked end 1 is secured to an eye at the lower end of a rigging wire which is to be tensioned. By transversely swinging out and taking hold of the upper locking arm 2 with one hand and of the lower locking arm 6 with the other hand and rotating the latter clockwise or counter clockwise the wire can be tightened or slackened, as the case may be, to the desired degree without the use of any tool. Subsequently the turnbuckle is locked by swinging both locking arms down into engagement with the respective hexagonal sleeves located below them. By dimensioning the channel-sectioned locking arms for making a reasonably tight fit with the sleeves no securing of the arms against becoming undone will be necessary.

It is to be understood that the embodiment of the turnbuckle described above is merely an example and is susceptible of various structural modifications without departing from the scope of the invention as laid down in the claim.

I claim:

1. A turnbuckle comprising three oblong sections which are screwed together in a direct line with an internally threaded sleeve end section and an externally threaded rod end section oppositely threaded respectively to opposite ends of the centre section of the turn-

3

4

buckle, and two channel-sectioned locking arms pivoted to the center section and one of said end sections respectively about an axis transverse to the sections such that a substantially channel-sectioned portion of each of said locking arms can be brought into tight-fitting engagement with a hexagonal outer circumfer-

ence of an adjacent sleeve portion for preventing relative rotation of the three sections, one of the two end sections (3, 9) being in the form of an internally threaded sleeve (9) screwed onto an externally threaded rod portion (8) of the middle section (5, 8).

* * * * *

10

15

20

25

30

35

40

45

50

55

60

65