July 2, 1946. C. A. DAVIS 2,403,057

MOORING DEVICE

Filed April 26, 1944 2 Sheets-Sheet 1

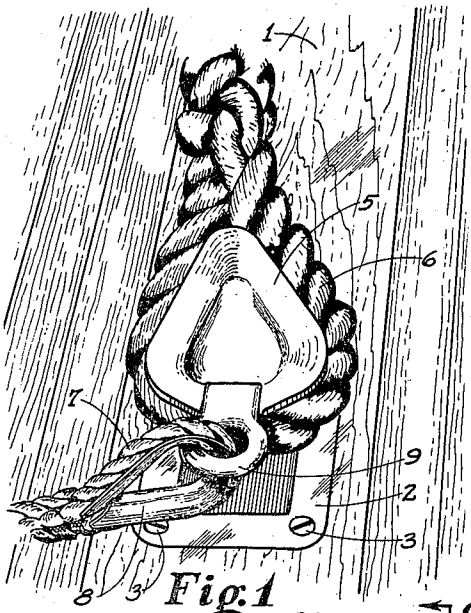


Fig. 1

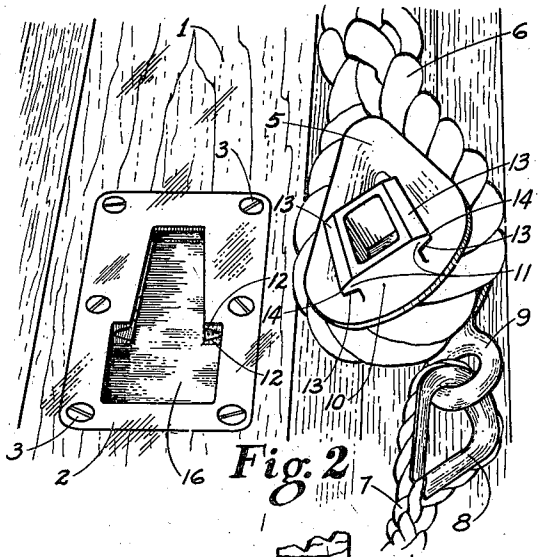


Fig. 2

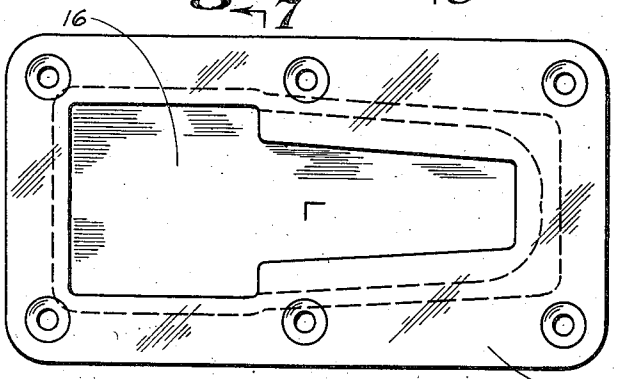


Fig. 3

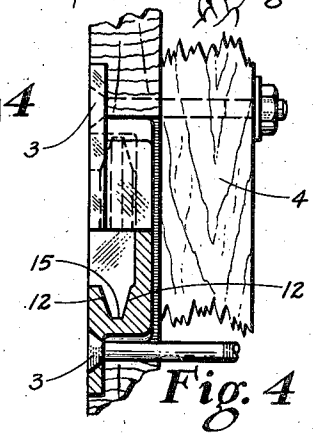


Fig. 4

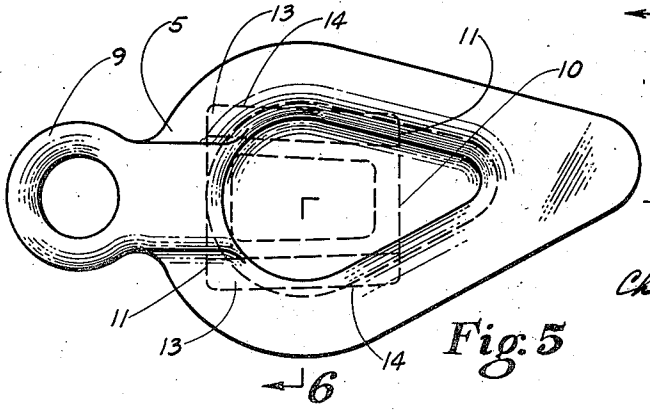


Fig. 5

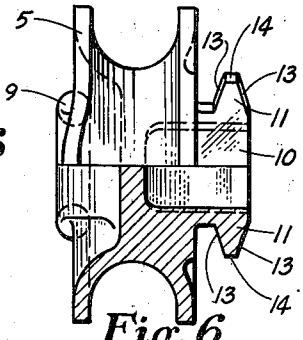


Fig. 6

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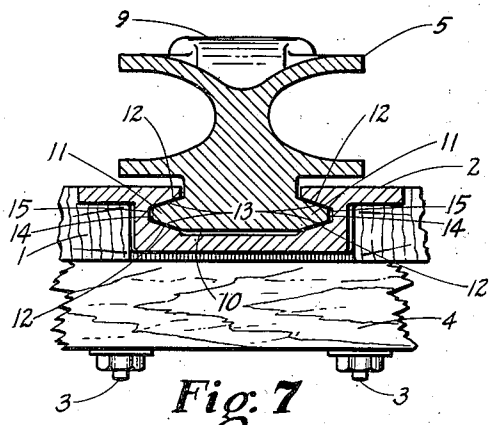


Fig. 7

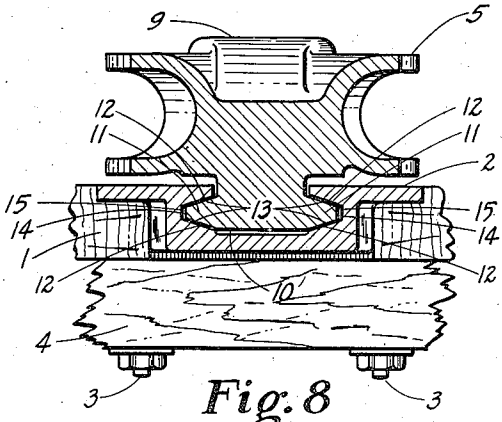


Fig. 8

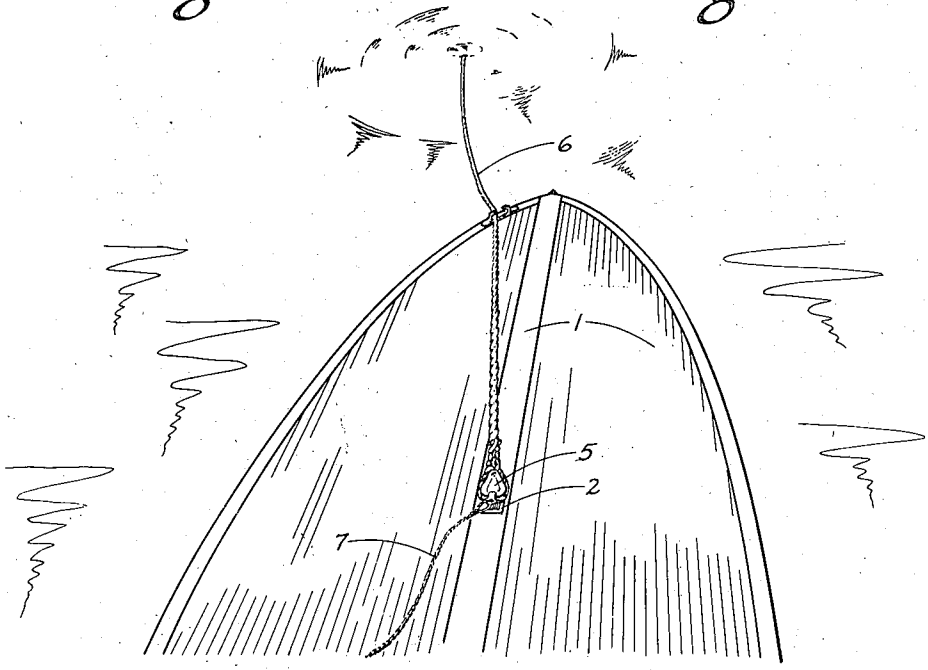


Fig. 9

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Patented July 2, 1946 2,403,057

UNITED STATES PATENT OFFICE

2,403,057

MOORING DEVICE

Charles A. Davis, Peoria, Ill.

Application April 26, 1944, Serial No. 532,734

3 Claims. (Cl. 114—230)

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My invention relates to mooring devices and more particularly to a mooring device mounted on the deck of a boat. Mooring cleats and posts, in common usage, usually project above the deck of a boat or ship in such a position as to occupy useful space or hazard free movement by persons or of lines or ropes to be used in the operation of the vessel. Some devices, while eliminating these difficulties, impose others in the necessity for maintaining at hand loose appurtenances necessary to effect secure fastening or by occupying needed space below deck, or by being of such weight as to render their use undesirable by operators of light weight craft used for racing.

The object of this invention is to overcome these difficulties and to provide a means for quickly and securely fastening mooring, or other lines to the deck, and for easily detaching such fastening. The device is flush mounting and consists of no parts not permanently affixed to the vessel or its mooring. It is of such nature that there is no obstruction above deck when the vessel is in use or away from its mooring, and such that there is a decidedly reduced requirement of space below deck by the device at any time. Uses other than those mentioned will be obvious from the description to follow, which description, considered along with the accompanying drawings, explains one way of applying the device. These disclosures are merely to illustrate the principle of the invention.

The objects stated are attained by means of the parts illustrated in the accompanying drawings in which—

Figure 1 is a perspective of the entire device as it would appear looking forward on the deck of a vessel; Figure 2, a perspective showing the two main parts disengaged, as they might appear looking forward in preparation for making fast to or casting off from the mooring; Fig. 3, a plan view of the flush mounting deck plate; Fig. 4, a cross section of this plate on the line 4—4 Fig. 3, with added details to show a method of securing this plate to a light deck; Fig. 5, a plan view of the mooring line thimble portion of the device; Fig. 6, a cross section of this thimble on the line 6—6, Fig. 5; Fig. 7, a cross section on the line 7—7 of Fig. 3 which line is located near the maximum width of the engaged parts, also showing a cross section on the same plane of the mooring line thimble when fully engaged, and added details of the fastening to the deck; Fig. 8, a cross section on the line 8—8 of Fig. 3 which line is located near the minimum width of the engaged parts, the illustration being otherwise similar to Fig. 7; and

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Fig. 9, a perspective view showing the bow portion of a small vessel lying at its mooring with the device in use.

Similar numerals refer to similar parts throughout the several views.

In Fig. 1 the deck 1 of usual construction for a small boat is shown with the flush mounting deck plate 2 let into the deck and held by screws or bolts 3 passing into or through the deck or a reinforcing plate 4, Fig. 4, beneath the deck, whichever arrangement gives adequate strength, and with the mooring line thimble 5 held in place by the method to be described, having the mooring line 6 attached along with a safety line 7 spliced into its thimble 8 which has previously been attached to the mooring line thimble through the open ring 9 integral with the mooring line thimble, and provided for that purpose. The safety line 7 is advantageous in providing a fastening for pick-up or marking buoys or attaching dinghy, when vessel is away from mooring.

Reference to Fig. 2 discloses the method of engaging the two parts of the invention by showing on the underside of and integral with the mooring line thimble 5, the appearance of a sliding T head 10, the engaging portions forming the arms 11 of the T which are inclined toward each other. The angle between the arms 11 is designed to be small enough so that engaging surfaces 13 of the sliding T head will not disengage from the mating T slot surfaces 12 in the deck plate 2 without some appreciable pull in direction opposite to that applied by the mooring line in restraining the vessel at its mooring, which could not develop within the mooring line itself; but this angle is also large enough to prevent wedging to such extent that inconvenient force would be required to disengage the connecting members. The two similar engaging arms 11 of the T head 10 are further formed with surfaces 13 inclined to each other, at a constant angle all along their length, in a manner contrived to prevent lost motion between them and the mating surfaces 12 in the deck plate as these eight surfaces wear in use. The sliding T head 10 and T slot latch 12 are preferably, though not necessarily, designed so that clearance exists between the vertical surfaces 14 of the sliding T head on the mooring line thimble 5, and the vertical surfaces 15 of the corresponding T slot 12 in the deck plate 2, in order to assure bearing as intended, only on the sloping portions 13 of the T head and of their mating surfaces 12 in the T slot. To attach the line to the vessel, the assembly of the thimble 5, with its integral T head

10, mooring line 6, and safety line 7 shown in Fig. 2 would be picked up, inverted, the projecting T head placed into the open portion 16 of the deck plate, and the aforementioned assembly pushed into the T slot of the deck plate, engaging the several mating surfaces of the device. To detach the line a dinghy or marking buoy would be attached to free end of safety line first, then the mooring line thimble assembly would be pulled toward the unslotted open portion 16 of the deck plate, lifted, and dropped overside, clear of the vessel.

Figure 3, a plan view of the flush mounting deck plate 2, which contains the T slot 12, shows this part in more detail, especially in that the length of the sloping T slot is shown in relation to the length of the engaging sliding T head shown in dotted lines on Fig. 5, the importance of this feature being that before any wear has occurred, the mating surfaces are to be just completely engaged, but as any wear develops, the sliding T head of the mooring thimble may occupy positions further toward the narrow end of the T slot in the deck plate, with no change in the operating characteristics of the device.

Figure 4 shows a section on line 4—4 of Fig. 3, which further clarifies the design of the flush mounting deck plate and illustrates a possible method of fastening to a light weight deck. It is apparent that the deck plate need not be flush mounting, and the illustration is intended to show only one possible way of applying the invention.

Figure 5 illustrates the mooring thimble 5 and T head 10 in more complete detail, showing a design intended to be permanently spliced into the mooring or other line. Fig. 6, a cross section on line 6—6 of Fig. 5, shows further details of the mating surfaces on the projecting sliding T head as well as recesses for reducing the weight of the part. It is obvious that cleats, belaying pins, winches, dead eyes, and appurtenances other than the thimble shown could be incorporated as an integral part of the projecting sliding T head shown, and it is the purpose of these illustrations to show the principle of the fastening without limiting it to the particular application shown.

Figure 7 and Figure 8 are sections on the lines 7—7 and 8—8, respectively of Fig. 3, having added the integral mooring line thimble 5 and sliding T head 10 in the engaged position, and a portion of a typical deck 1. These views considered in relation to each other further illustrate the taper of the arms 11 of the sliding T head and their corresponding slots, in that Fig. 7 is a section on a line through a wider portion of the connecting members, while Fig. 8 shows how their width has decreased due to the taper described. Fig. 7 and Fig. 8 also illustrate the unchanging angle existing between each pair of the engaging surfaces 13, on the sliding T head, and the corresponding surfaces 12 of the T slot, it being observed that these angles are the same in both of the sections shown.

Figure 9 is a perspective view of the forward portion of a small boat lying at its mooring, with the mooring device in use. Fig. 9 thus serves to illustrate in a general way, the relative orientation of the parts in such an installation.

I claim:

1. In a mooring device, a flush face deck plate having a depressed open section in alignment with a tapered T slot section, a mooring line thimble having a projecting mating T head section for the T slot section in the deck plate proportioned and formed for insertion in the T slot section through the open section, the transverse projecting sections of the T head parts being formed in mated angular keyed relationship with the sections tapered longitudinally away from the open slot, the arrangement providing a snug gripping latched fit in the longitudinal direction away from the slot and reverse release movement by relatively light manual force, and a safety line ring integral with the mooring line thimble providing attachment means to either a buoy or a vessel.

2. In a mooring device, a flush face deck plate having a depressed open section in alignment with a T slot section, a mooring line thimble having a projecting mating T head section for the slot section in the deck plate proportioned and formed for insertion in the T slot section through the open section, the transverse projecting sections of the T parts being formed in mated keyed relationship, the arrangement providing a snug gripping latched fit in the longitudinal direction away from the slot and reverse release movement by relatively light manual force, and a safety line ring integral with the mooring line thimble providing attachment means to either a buoy or a vessel.

3. In a mooring device, a flush faced deck plate having a depressed key slot, a mooring line thimble having a projecting key section proportioned and formed for insertion in the key slot section of the deck plate, and a safety line ring integral with the thimble, the arrangement providing means to safely attach the thimble to either a vessel or a buoy.

CHARLES A. DAVIS.