Aug. 28, 1951 K. P. THOSS 2,565,580

BOAT MOORING DEVICE

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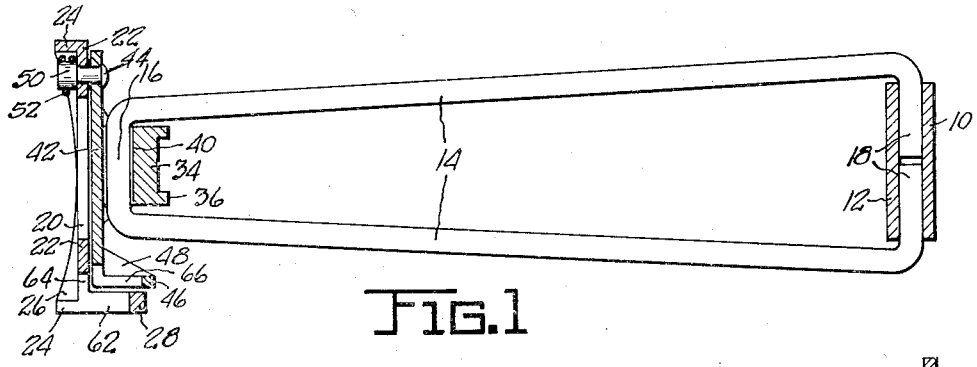


FIG. 1

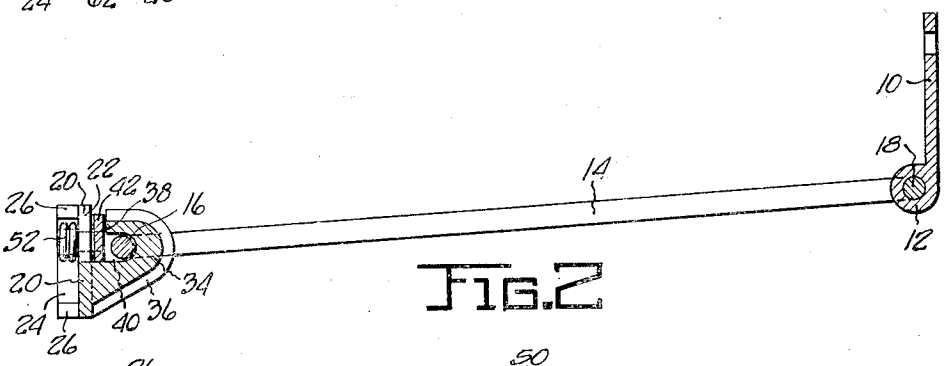


FIG. 2

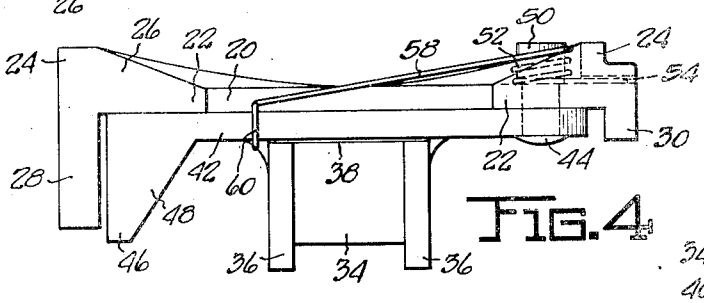


FIG. 4

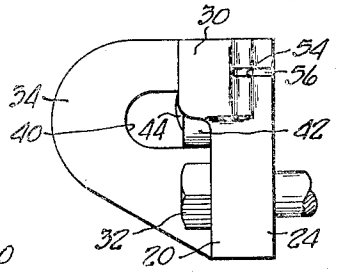


FIG. 5

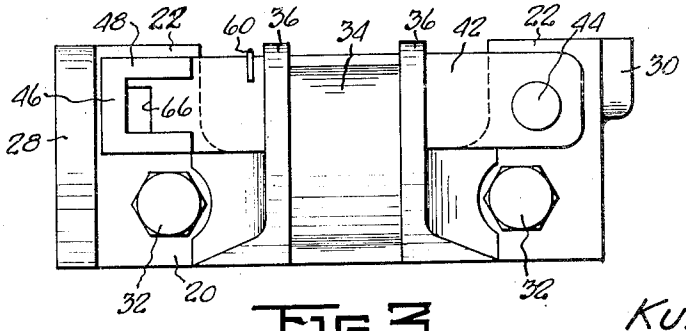


FIG. 3

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BOAT MOORING DEVICE

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8 Claims. (Cl. 114—230)

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This invention relates to improvements in boat mooring devices.

The primary object of the invention is to provide a device of this character which will serve to securely moor a boat in predetermined position adjacent to but spaced from a pier or other mooring member in a manner to prevent the boat from striking the pier but flexibly to permit the boat to rise and fall with waves and tides.

A further object is to provide a device of this character with novel locking means which may be manipulated easily and rapidly by hand to effect connection and disconnection of the boat with respect to its moorage, and which is locked effectively and in a manner to prevent accidental release of the boat in rough water conditions.

A further object is to provide a device of this character which includes a rigid elongated loop member adapted to be pivoted on a horizontal axis at one end to a moorage, such as a pier, and engageable at its opposite end in a hook projection of a fitting carried by the boat and provided with a shiftable retainer normally spring urged to a position cooperating with the hook to define a socket in which the end of said loop may rotate about an axis parallel to said first named axes but in which movement transverse of said axes is restricted.

Other objects will be apparent from the following specification.

In the drawing:

Fig. 1 is an assembled top plan view of the device with parts shown in section.

Fig. 2 is an assembled side view of the device with parts shown in section.

Fig. 3 is a view of the lock fitting in front elevation.

Fig. 4 is a top plan view of the locking fitting.

Fig. 5 is an end view of the locking fitting viewed from the right in Figs. 3 and 4.

Referring to the drawing which illustrates the preferred embodiment of the invention, the numeral 10 designates a hinge plate adapted to be secured to a pier or other moorage and provided with a cylindrical portion 12 at one end whose axis is positioned substantially horizontally. An elongated rigid loop member preferably formed of circular bar stock has a pair of elongated runs 14, a transverse run 16 and a pair of inturned end portions 18. The end portions 18 are journaled in the cylindrical socket 12 of the hinge.

The fittings, best illustrated in Figs. 3 to 5, is adapted to be secured to the boat at a side or end thereof above water level for detachable connection with the elongated loop member at

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its transverse portion 16. This fitting preferably constitutes a metal casting having a flat plate portion 20 of substantially U-shape to provide a pair of upstanding end portions 22. Rearwardly projecting vertical flanges 24 extend across the opposite ends of the plate 20 and form abutments adapted to engage the surface of the boat to space the plate portion 20 outwardly from the outer surface of the portion of the boat wall which it engages. By virtue of this construction it will be observed that the plate 20 can be secured to either a curved or a flat surface of the boat. The tapered reinforcing flanges 26 are preferably formed at the upper and lower edges of the plate portion 20 integrally with the plate portion 20 and the flanges 24. At one end the plate is provided with a forwardly projecting end flange 28, and at its opposite end the plate is provided with a small forward projection 30 which preferably terminates flush with the upper edge of the plate portion 20. The plate 20 is provided with suitable apertures adapted to receive the shanks of securing bolts or screws 32 by means of which the plate portion is fixedly secured to the wall of the boat.

Intermediate its opposite ends and in inwardly spaced relation to the upwardly projecting legs 22 of the U is formed an integral hook portion 34 preferably provided with marginal thickened reinforcing ribs 36. The hook projects forwardly and outwardly from the plate portion 20 and the inner edge 38 of its free upper end terminates in a plane spaced forwardly and outwardly from the front face of the plate portion 20. The dimensions of the hook are preferably such that the entire hook lies between the planes constituting projections of the bottom edge of the plate portion 20 and the upper edges of the legs 22 of the U. The central reduced dimension portion of the U-shaped plate is preferably of such dimensions that the socket 40, as well as the tip 38 of the hook, lie opposite the cut-out between the plate legs 22.

An elongated rigid retainer arm 42 is pivoted at 44 to the leg 22 from which the lug 30 projects. The retainer 42 is of a width substantially equal to the length of the plate legs 22, and the pivot 44 is so located that the bottom edge of the retainer plate will bear against the hook portion 34 when it is in its operative position illustrated in Fig. 3 substantially parallel to the plate 20. As best illustrated in Fig. 2, the thickness of the retainer arm 42 is slightly less than the spacing between the hook end portion 38 and the plate 20 to fit freely therein with clearance and

also to close the socket formed by the hook. The free end of the retainer arm 42 terminates adjacent to but spaced slightly from the flange 28 and includes a transverse forwardly projecting flange 46 and rigid reinforcing longitudinal flanges 48.

The pivot pin 44 includes a rearwardly projecting cylindrical stud portion 50 around which an intermediate coiled portion 52 of a spring wire fits. One end portion 54 of the spring projects into a slot 56 formed in the adjacent rearwardly projecting flange 24. The other end of the spring wire includes an elongated run 58 terminating in a hook portion 60 which engages over the upper edge of the retainer bar 42 at the side of the hook 34 opposite that at which the pivot pin 44 is located. This spring serves normally to position the retainer bar 42 in locking position best illustrated in Figs. 2 and 3.

It will be apparent that when the fixture illustrated in Figs. 3 to 5 is secured upon a boat which is to be moored by the elongated pivoted member 14—18, the retainer bar is pivoted to an upward position clear of the hook 34 and of the space between the projecting arms 22 of the plate 20. The transverse portion 16 of the arm can then be passed between the wall of the boat and the tip 38 of the hook through the space between the projections 22 to engage in the socket of the hook. Thereupon the retainer bar can be lowered to the position shown in Fig. 3, closing the hook socket and effectively locking the arm portion 16 in said socket. This position of the retainer is thereafter maintained effectively by the spring to prevent accidental release or disengagement and the boat is anchored to its moorage at a spacing determined by the length of the arms 14 and preferably approximately 12 to 15 inches, so that an occupant of the boat may readily step from the boat to the pier. The socket defined by the hook is of slightly larger size than the cross-sectional dimension of the arm portion 16 so that the parts will not bind, and the socket is substantially parallel to the axis of the cylindrical member 12 so that the elongated arm is free to pivot or rock in a vertical direction relative to both the boat and the anchorage pin. Consequently, as the water in which the boat is moored becomes rough, the boat is permitted to rise and fall with the waves, but the rigid character of the arm prevents the boat from striking its moorage. By reason of the elongated character of the socket of the fitting which receives the part 16 of the arm, as best illustrated in Fig. 1, it will be apparent that the device will prevent any substantial movement of the boat in a horizontal direction. Thus it may be possible with some small boats to use a single fitting and a single arm to effectively hold the boat. However, I prefer to use the arms and the fittings in pairs spaced apart so that such horizontal swinging of the boat is prevented by its connection at two spaced points with the moorage through the medium of the fittings and the arms.

The device also facilitates locking of the boat to its moorage. Thus, as best illustrated in Fig. 1, the flange 28 may have an opening 62 formed therein and communicating with an opening 64 in the plate 20. Likewise, the flange 46 of the retainer bar 42 may have an opening 66 formed therein and preferably extending slightly into the retainer bar 42. The opening 66 registers with the openings 62 and 64 and permits the passage therethrough of a locking member, such as the bow of a padlock, which will prevent pivotal movement of the retainer arm 42 away from its locking position.

While the preferred embodiment of the invention has been illustrated and described herein, it will be understood that the construction shown is illustrative and not limiting and that changes in the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. A boat mooring device adapted to be secured to a boat for detachable connection with the free end of an elongated arm pivoted at one end about a horizontal axis and having a transverse end portion substantially parallel to said axis, comprising a rigid plate having a fixed forwardly projecting hook portion whose free end is rearwardly return bent and terminates in forwardly spaced relation to said plate for free insertion of said arm end portion therepast, and a retainer plate pivoted to said first plate in laterally spaced relation to said hook and normally positioned between said first plate and the open side of said hook portion, said retainer plate overlying said first plate and adapted to swing in a plane parallel to the plane of said first plate to a position clear of said hook.

2. A boat mooring device adapted to be secured to a boat for swiveled locking engagement with a transverse portion of the free end of a pivoted member, comprising a plate, a hook rigidly carried by and projecting forwardly from said plate and having a rearwardly return bent terminal portion spaced from said plate, said hook being adapted to receive said transverse portion therein, and a retainer pivoted to said plate to swing in a plane parallel to the plane of said plate and adapted to span and close the mouth of said hook.

3. A boat mooring device adapted to be secured to a boat for swiveled locking engagement with a transverse portion of the free end of a pivoted member, comprising a plate, a hook fixedly carried by and projecting forwardly from said plate and having a rearwardly return bent terminal portion spaced from said plate whereby said hook is adapted to receive said transverse portion therein, a retainer overlying and pivoted to said plate and adapted to span and close the mouth of said hook, and a spring carried by said plate and engaging said retainer and normally urging said retainer to locking position.

4. A boat mooring device adapted to be secured to a boat for swiveled locking engagement with a transverse portion of the free end of a pivoted member, comprising a plate, a hook fixedly carried by and projecting forwardly from said plate with its terminal portion return bent and spaced forwardly from the plane of the front surface of said plate, said hook being adapted to receive said transverse portion therein, and a retainer pivoted to said plate to swing in a plane parallel to the plane of said plate and adapted to span and close the mouth of said hook, said plate being substantially flat and of substantially U-shape and having a pair of spaced leg portions, said retainer being pivoted to one leg portion and adapted to span the space between said leg portions, said hook being positioned with its socket and terminal portion positioned between said plate leg portions and confronting the space between said plate leg portions.

5. A boat mooring device adapted to be secured to a boat for detachable locking engage-

ment with a transversely extending end portion of a rigid elongated pivoted member, comprising a substantially flat elongated rigid plate having a central portion of reduced width and comparatively wide end portions, a rigid hook fixedly carried by said central portion and including a return bent tip spaced between the end portions of said plate and outwardly off-set from the plane of the front face of said plate, and a rigid retainer arm pivoted to one end portion of said plate spaced from said hook to swing in a plane parallel to the plane of said plate, said retainer being normally positioned to span and close said hook.

6. A boat mooring device adapted to be secured to a boat for detachable locking engagement with a transversely extending end portion of a rigid elongated pivoted member, comprising a substantially flat elongated rigid plate having a central portion of reduced width and comparatively wide end portions, a rigid hook fixedly carried by said central portion and including a return bent tip spaced between the end portions of said plate and outwardly off-set from the plane of the front face of said plate, a rigid retainer arm pivoted to one end of said plate spaced from said hook to swing parallel to said plate and normally positioned to span and close the mouth of said hook, and rearwardly projecting flanges carried by the ends of said plate and engageable with the boat to space said plate outwardly therefrom.

7. A boat mooring device adapted to be secured to a boat for detachable locking engagement with a transversely extending end portion of a rigid elongated pivoted member, comprising a substantially flat elongated rigid plate having end portions and a central portion of reduced width, a rigid hook fixedly carried by said central portion and including a return bent tip spaced between the end portions of said plate and outwardly off-set from the plane of the front surface of said plate, a rigid retainer arm pivoted to one end portion of said plate spaced from said hook to swing parallel to said plate and normally positioned to span and close the mouth of said hook, an apertured forwardly projecting flange carried by the free end of said retainer, and a flange projecting forwardly from said plate adjacent said retainer flange and having an aperture registering with said retainer flange aperture.

8. A boat mooring device adapted to be secured to a boat for detachable locking engagement with a transversely extending end portion of a rigid elongated pivoted member, comprising a substantially flat elongated plate having a central portion of reduced width, a hook carried by said central portion and including a return bent tip spaced between the end portions of said plate and outwardly off-set from said plate, a rigid retainer arm pivoted to one end of said plate spaced from said hook and normally positioned to span and close the mouth of said hook, rearwardly projecting abutment members carried by the ends of said plates, said retainer arm being pivoted on a pin having a portion projecting rearwardly from said plate, and an elongated spring having an intermediate loop encircling said pin and end portions engaging said plate and said retainer arm.

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