Nov. 2, 1965 J. P. JONES, JR 3,215,361

WATER SKI TOWLINE PLAYOUT AND RETRIEVAL APPARATUS

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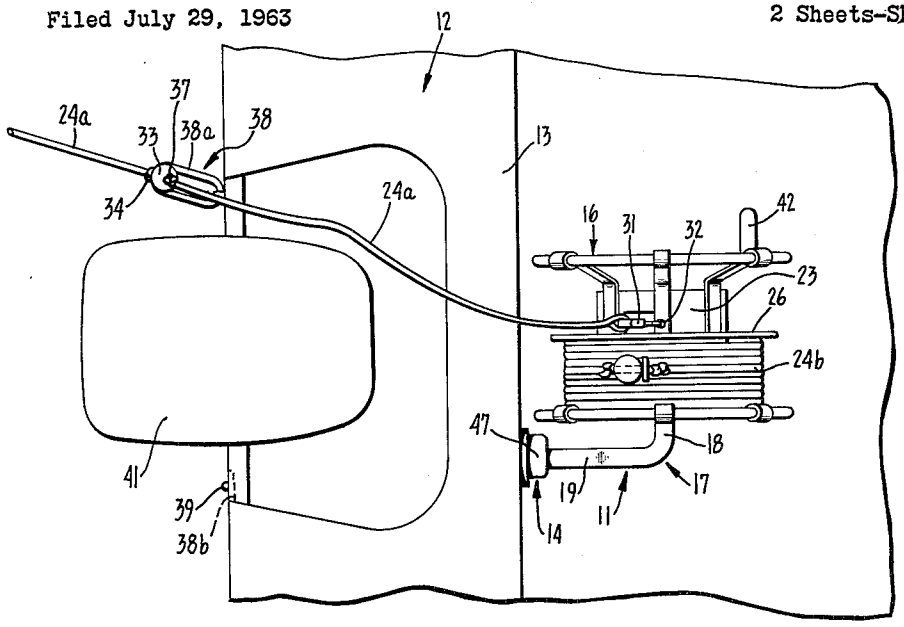


Fig. 1.

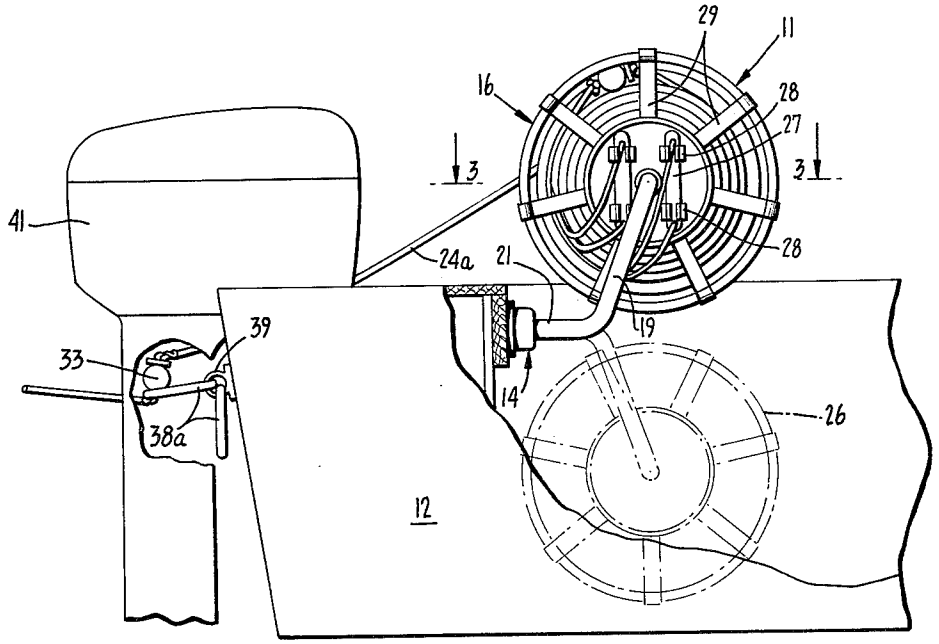


Fig. 2.

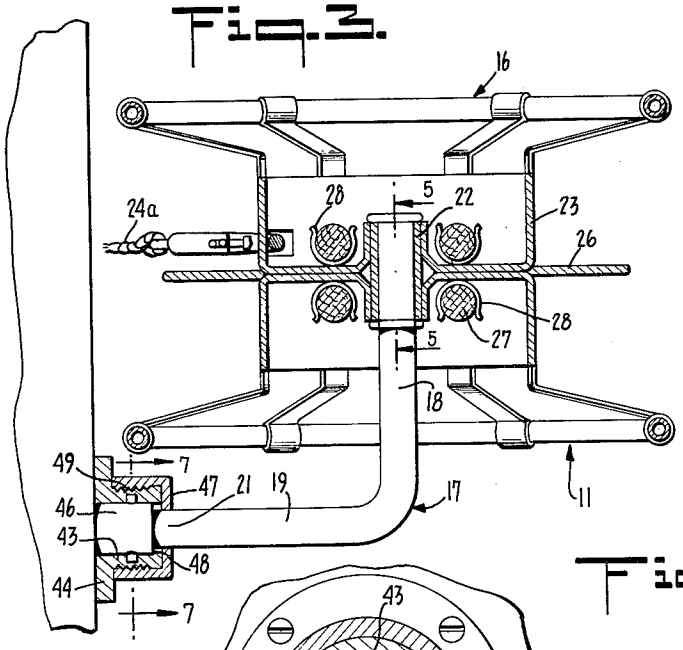
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Fig. 3.



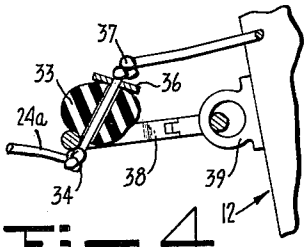


Fig. 4.

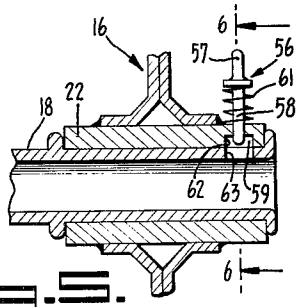


Fig. 5.

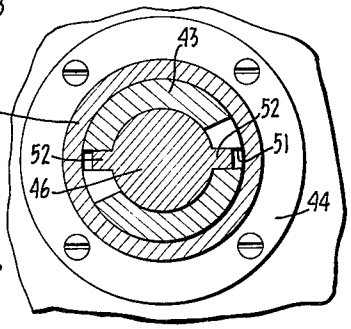


Fig. 7.

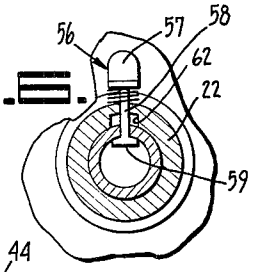


Fig. 6.

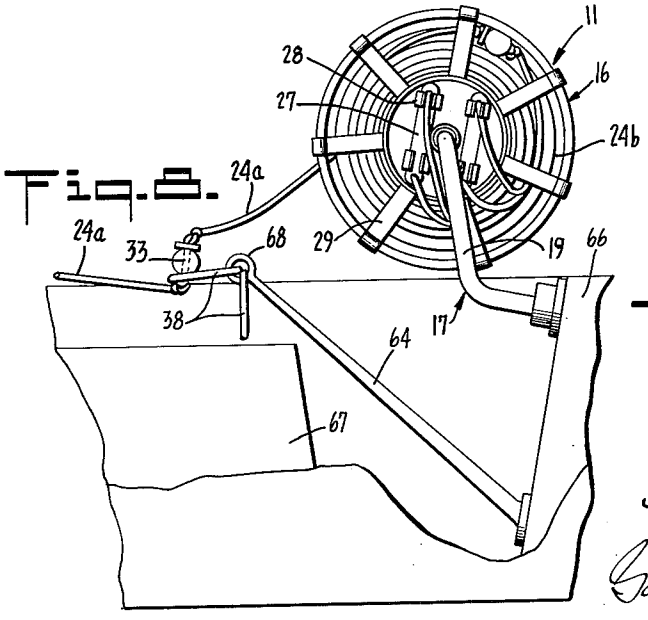


Fig. 8.

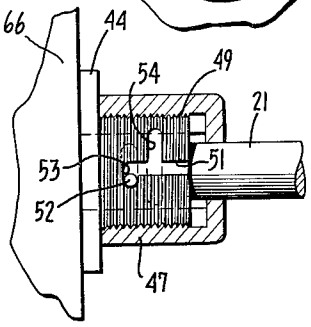


Fig. 9.

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WATER SKI TOWLINE PLAYOUT AND RETRIEVAL APPARATUS

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Filed July 29, 1963, Ser. No. 298,347
6 Claims. (Cl. 242—86.5)

This invention relates to the sport of water-skiing, and is particularly directed to apparatus for quickly playing out and retrieving one or more towlines without danger of entanglement or knotting of the lines.

In the sport of water-skiing, it is the usual practice to cast towline from a boat to a skier in the water. As a result, the line frequently becomes entangled and knotted. The skier must therefore untangle the many knots in the towline prior to being towed. This usually entails treading of water on the part of the skier during the untanglement procedure such that the skier becomes somewhat exhausted before the primary goal of water-skiing has even been attempted. Moreover, precious skiing time is lost in righting the tow line. When the skier has finished skiing, the tow line of course strings out in the water behind the boat and is susceptible to snaring or being sliced by other boats in the vicinity. It is therefore desirable that the towline be retrieved as rapidly as possible. Heretofore, however retrieval has been generally accomplished by hand pulling and coiling of the line. Aside from the slowness of this procedure, it also is frequently productive of entanglement and knotting of the line.

It is therefore an object of the present invention to provide apparatus for rapidly playing out and retrieving water ski towline in a tangle-free manner.

Another object of the invention is the provision of towline playout and retrieval apparatus which will accommodate multiple towlines without interaction therebetween.

It is still another object of the invention to provide apparatus of the class described wherein a reel is employed for towline playout and retrieval, which reel is arranged for detachable mounting upon a boat so as to be entirely portable.

It is yet another object of the invention to provide apparatus of the class described wherein the reel is selectively pivotal in its mounting between an active position for playout or retrieval service, and an inactive inconspicuous out of the way position when not in use.

Another object of the invention is the provision of apparatus of the class described wherein the reel may be selectively locked against rotation when not in use.

One other object of the invention is to provide apparatus of the class described, wherein resilient balls secured to each towline engage hooks secured to the boat to provide a universal action when the line has been played out while simultaneously absorbing forces on the line to relieve tension on the reel.

It is a further object of the invention to provide towline playout and retrieval apparatus which is readily adapted to use with both outboards and inboards.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

FIGURE 1 is a fragmentary plan view of water ski towline playout and retrieval apparatus in accordance with the invention as employed with a boat having an outboard motor.

FIGURE 2 is a fragmentary elevation view with portions broken away and corresponding to FIGURE 1.

FIGURE 3 is a sectional view taken at line 3—3 of FIGURE 2.

FIGURE 4 is a fragmentary sectional view on an enlarged scale taken in a vertical plane through the hook means of the apparatus as engaged by the resilient ball of a towline.

FIGURE 5 is a sectional view on an enlarged scale taken at line 5—5 of FIGURE 3, particularly illustrating lock means for selectively locking the reel of the apparatus against rotation on its axle, the lock means being depicted in unlocked position to permit rotation of the reel.

FIGURE 6 is a sectional view taken at line 6—6 of FIGURE 5, illustrating further details of the lock means, the lock means being depicted in locked position to prevent rotation of the reel.

FIGURE 7 is a sectional view on an enlarged scale taken at line 7—7 of FIGURE 3, showing details of mounting means for providing selective pivotal movement of the reel unit between active and inactive positions, as well as selective detachment of the reel unit from the boat.

FIGURE 8 is an elevation view of the playout and retrieval apparatus as employed with a boat having an inboard motor.

FIGURE 9 is a fragmentary side elevation partially in section of the mounting means.

Referring now to the drawings, FIGURES 1 and 2 in particular, the water ski tow rope playout and retrieval apparatus will be seen to include a reel unit **11** for mounting upon a boat. In FIGURES 1 and 2, the reel unit **11** is illustrated as being mounted on an outboard motor boat **12**, and in this case the unit is secured to the transom, or an elevated cross-rib **13** near the back of the boat, adjacent the midline thereof. In the attachment of the reel unit **11** to the boat, mounting means **14** are preferably employed which are arranged to facilitate selective pivotal movement of the reel unit between an active playout and retrieval position, as depicted in full line in FIGURE 2, and an inactive position, as depicted in phantom line, when not in use. In addition, the mounting means **14** is adapted to permit the ready detachment of the reel unit such that same is portable and may be conveniently stored in the bilge of the boat if desired.

The reel unit **11** includes a reel **16** mounted for rotation upon a substantially L-shaped axle member **17**. The axle member **17** has an axle portion **18** with a post portion **19** right angularly turned therefrom, the post portion having an angularly turned stub **21** at its end for operable association with the mounting means **14**. The axle portion **18** is rotatably engaged by a bearing bushing **22** provided centrally of the hub **23** of the reel **16**.

As an important feature of the invention, the reel is preferably adapted to carry a plurality of towlines **24**, although a single line may of course be provided. More particularly, in order to accommodate multiple towlines, the reel is provided with at least one partition **26** transverse to the hub **23**. The towlines **24** are wound upon the reel between the sides and the partitions. In the illustrated embodiment two towlines **24***a*, **24***b* are wound upon the reel between one side and a single central par-

tition **26**, and between this partition and the other side of the reel. Moreover, the towline handles **27** secured to the outer ends of the lines may be conveniently releasably retained at the sides of the hub **23**. To this end, resilient U-brackets **28** are secured to the hub sides to retentatively engage the handles. More particularly, the reel is preferably provided with spokes **29** which project radially outward from the sides of the hub **23** to define the outer portions of the sides of the reel between which the towlines are carried. Thus, when the towlines are fully wound upon the reel, the outer ends of the lines may be led through the spaces between the spokes and the handles **27** engaged with the U-brackets **28**. Aside from the handles being thereby retained in an out-of-the-way location, retention of the handles by the brackets serves to maintain the towlines in tautly wound position on the reel, even during rotation thereof.

As an extremely important feature of the invention, the playout and retrieval apparatus is so arranged that multiple towlines may be separately played-out to independently supported operable positions wherein line tension is relieved from the reel. Thereafter, the towlines may be separately and independently retrieved by the reel. In this regard, the towlines **24** are respectively provided with quick change snap hooks **31** at their inner ends which may be quickly snapped into engagement with apertures **32** provided in the hub **23**, or quickly released therefrom. In addition, resilient balls **33**, of hard rubber or the likes are secured to the respective towlines at positions spaced from the hooks **31**. Securance of a ball to each line is advantageously facilitated by the line extending through the ball with a knot **34** in the outer portion of the line engaging the adjacent side of the ball, and a washer **36** engaging the opposite side of the ball and in turn engaged by a knot **37** in the inner portion of the line. The balls are respectively engageable with corresponding karabiners **38**, or equivalent quick opening loop implement, which engages vertically oriented eyebolts **39** secured to the transom **13** of the boat laterally of the outboard engine **41**. As illustrated, one karabiner is provided on one side of the motor while the other karabiner is on the other side of the motor. It will be appreciated, however, that both karabiners may be alternatively provided in engagement with a single eyebolt **39**, or that a number of karabiners may engage each of several eyebolts.

Thus, in the play-out operation of the apparatus, the handle **27** of one towline, e.g., towline **24***a*, is snapped from the brackets **28**, and sufficient line withdrawn from the reel to enable the line to be threaded into one of the quick opening karabiners **38***a* at the back of the transom **13**. A skier positioned in the water behind the boat can now reach around the stern and grasp the handle, which is conveniently positioned by the karabiner. The boat is now propelled forward while the skier in the water grasps the handle of the towline, the towline thus unwinding off the reel automatically, straight and true without any tangles. The lapsed time interval required to completely unwind the line is but a matter of seconds, rather than many minutes as required to cast out the line by hand. With the line unwound, the resilient ball **33** spaced from the inner end of the line engages the karabiner and thus stops the line. In this regard it will be appreciated that the ball is spaced from the hook **31** by a distance greater than that between the reel and the karabiner such that the ball engages the karabiner before all slack is taken up in the line (see FIGURE 1). The skier is now ready for take-off, and full propulsive power is applied to the boat. The substantial stress now applied to the towline by the skier as he becomes water-borne is absorbed by the ball in its engagement with the karabiner. This is depicted in FIGURE 4 which illustrates the ball in a somewhat flattened condition during the absorption of stress. Moreover, the ball and karabiner provide a universal joint action which provides an unusually wide range of lateral motion to the skier. In fact, the extreme freedom of motion enables an experienced skier to make up to a 180° arc behind the boat. At the same time it will be appreciated that the ball engaging the karabiner relieves all towline stress from the reel. Thus, the quick acting hook **31** at the inner end of towline **24***a* may be disengaged from the hub of the reel when this line is in use or has been played-out. Thus, towline **24***a* may be rendered independent of the reel. Now, the other towline **24***b*, if not previously played-out simultaneously with line **24***a* may be played-out from the reel in an independent manner. When completely played-out the ball of this line engages the karabiner **38***b*, and thus a second skier may be towed entirely independently of the first skier with the same freedom of motion.

After the skiers have had their fill of skiing, the towlines **24***a*, **24***b* may be quickly retrieved in a tangle-proof manner. Towline **24***a* may be first retrieved by first snapping the hook **31** into engagement with aperture **32**, the hook associated with towline **24***b* being previously disengaged from the aperture. The reel is then rotated as by means of crank handle **42** to wind towline **24***a* upon the reel, the karabiner **38***a* being opened and the line withdrawn so as to unobstruct the handle. When fully wound the associated handle **27** of towline **24***a* is engaged in the brackets **28**. Now hook **31** of towline **24***b* is engaged in aperture **32**. The winding procedure is repeated and towline **24***b* is retrieved in a similar manner. The time required to retrieve both towlines is but a matter of seconds. Moreover, it will be appreciated that the lines may be readily retrieved while the boat is in motion.

When not in use it is of course desirable that the reel unit **11** be disposed in an out-of-the-way position. As noted hereinbefore, the mounting means **14** is preferably arranged to facilitate selective pivoting of the reel unit between active and inactive positions, as well as complete removal of the reel unit such that same may be stored in the bilge of the boat or the like. To the foregoing ends, the mounting means **14** preferably includes a cylindrical sleeve member **43** with an outwardly flared flange **44** at one end to facilitate rigid attachment of the sleeve member to the transom **13** of the like, as best shown in FIGURE 3. The sleeve member is adapted to receive the stub **21** at the end of the post portion **19** of the axle member **17**, and this stub is provided with an enlarged end as generally indicated at **46**, which is rotatably engageable in the sleeve member. An internally threaded cup **47** is concentrically disposed on the stub in rotatable relation thereto and abuts the shoulder between the stub proper and enlarged portion **46** thereof, preferably through the intermediary of a resilient washer **48**. The internal threads of the cup are engageable with external threads **49** of the sleeve member **43**. Thus, the reel unit **11** may be detachably secured to the sleeve member **43** by inserting the enlarged stub portion into the bore of the sleeve member and screwing the cup on the external threads **49**.

With the reel unit thus detachably mounted, the axle member would normally be freely pivotal in the sleeve member. However, the sleeve member is arranged in the manner of a bayonet joint to provide locking of the axle member in positions separated by 180°. One position is such that the reel unit is elevated from the transom **13** or the like and is hence active In the other position the reel unit is of course retracted within the confines of the boat, and is accordingly inactive. More particularly, as best shown in FIGURES 7 and 9 the sleeve member **43** is provided with a pair of diametrically opposed longitudinal slots **51** extending from the end thereof which are arranged to receive a pair of diametrically opposed pins **52** which project radially outward from the enlarged stub portion **46**. At the closed terminal ends of the longitudinal slots **51**, there are provided short circum-

ferential slots **53** extending therefrom in a given circumferential direction, e.g., clockwise. The closed terminal ends of the circumferential slots are appropriately positioned such that when the pins **52** engage same, the post portion is locked in an upwardly extending position of alignment with a vertical plane, the axle portion being thus horizontally disposed. In addition, circumferential slots **54** are provided in the sleeve member which extend from the longitudinal slots substantially 180°. Slots **54** are longitudinally spaced from slots **53**. Thus with the pins **52** engaging the longitudinal slots **51** the stub portion of the axle member may be translated from the circumferential slots **53** to a position wherein the pins are adjacent the circumferential slots **54**. The stub portion of the axle member may be translated from the circumferential slots **53** to a position to be rotated, the pins traversing circumferential slots **54**. Upon 180° of rotation, the pins engage the ends of these slots and thus lock the axle member in a position wherein the reel unit is retracted within the boat. Thus the bayonet joint defined by the slotted sleeve member and pins of the stub, facilitate selective locking of the reel unit in active and inactive positions.

When the reel unit is in inactive position, it is preferable that the reel be locked against rotation on the axle portion **18** of the axle member **17**. Therefore, the apparatus of the present invention is arranged for selective locking of the reel to the axle portion. More particularly, as shown in FIGURES 5 and 6, a latch **56** is provided to the foregoing end. The latch includes an operating knob **57** from which a stem **58** depends, the stem having a rectangular key **59** at its end. The stem slidably extends through a radial aperture in the bearing bushing **22** of the hub adjacent one side thereof. The stem is normally resiliently urged outwardly by a spring **61** to a position wherein the key is disposed in a conformed rectangular recess **62** in the interior bore wall of the sleeve. Thus the key is normally disposed in a retracted position which is non-obstructing to rotation of the sleeve upon the axle portion **18** of the axle member **17** (see FIGURE 5). However, the axle portion **18** is hollow and provided with a rectangular aperture **63** which matches the recess **62** and is alignable therewith. When the aperture and recess are aligned, the knob **57** may be depressed against the loading of spring **61** to in turn urge the key through the aperture. The knob is then rotated such that the key is turned transverse to the aperture, the ends of the key at this time engaging the interior bore wall of the axle portion **18** on opposite sides of the aperture (see FIGURE 6). The stem in extending through the aperture **63**, locks the bearing sleeve to the axle portion.

Although the play-out and retrieval apparatus of the invention has been to this point described with particular reference to an out-board motor boat, the apparatus may be employed with slight modification upon an in-board motor boat. Most in-board boats are provided with a post **64** which projects upwardly from a cross rib **66** disposed forwardly of the motor housing **67**, as shown in FIGURE 8. An eye **68** is provided at the upper end of the post at a position overlying the motor housing. In the use of the play-out and retrieval apparatus on an in-board, the post **64** takes the place of the eyebolt **39** previously mentioned with respect to out-board service. More particularly, the karabiners **38** are engaged in the eye **68** of post **64**. The reel unit is mounted on the cross-rib **66** of the in-board on the towlines led through the karabiners on the post **64**. The operation of the play-out and retrieval apparatus on an in-board is then the same as that described relative to the out-board.

What is claimed is:

1. Water ski playout and retrieval apparatus comprising a reel unit adapted for mounting on a boat, said reel unit including a rotatable reel having a hub and a partition transverse to said hub, said hub having apertures respectively positioned in the regions between said partition and the sides of the reel, a plurality of tow lines respectively wound upon said reel in said regions, a plurality of quick release hooks secured to the inner ends of said towlines and engaging respective ones of said apertures, a plurality of resilient balls respectively secured to said towlines at positions spaced from said hooks, a plurality of quick release karabiners engageable by said balls, eye means for securing said karabiners to said boat, said reel unit further including a substantially L-shaped axle member including an axle portion rotatably engaged by said reel and a post portion right angularly turned from the axle portion, and mounting means adapted for attachment to a boat, said mounting means detachably securable to said post portion and including means for selective locking of said post portion at positions spaced substantially 180° apart.

2. Apparatus according to claim **1**, further defined by said post portion including an angularly turned stub at its end, said stub including an enlarged end portion; and said mounting means comprising an externally threaded sleeve adapted for rigid attachment to a boat, said sleeve having longitudinal slots and pairs of circumferential slots extending from the longitudinal slots, pins projecting from said enlarged end portion of said stub and engaging said slots, and an internally threaded cup concentrically rotatably engaging said stub and in end engagement with said enlarged end portion, said cup threadably engaging the external threads of said sleeve.

3. Apparatus according to claim **1**, further defined by said axle portion having an aperture and being hollow and said reel including a bearing bushing concentrically rotatably engaging said axle portion, and latch means including a stem carried by said bushing and selectively depressible into said aperture of said axle portion.

4. Water ski playout and retrieval apparatus comprising a reel having a hub with a central bearing bushing and spoked sides extending upwardly from the hub, said reel having a central partition transverse to said hub, said hub having apertures between said partition and the respective sides of the reel, a pair of towlines respectively wound upon said reel between the partition and spoke sides thereof, quick change hooks secured to the inner ends of said towlines and engaging said apertures, resilient U-brackets secured to the sides of the hub of said reel for retaining handles secured to the outer ends of said towlines, an axle member having an axle portion concentrically rotatably engaged by said bearing bushing and a post portion right angularly turned from the axle portion, said post portion having an angularly turned stub at its end, mounting means for securing said stub to a boat, at least one eye adapted for securance to a boat, at least one quick release karabiner engaging said eye, and a resilient ball secured to each towline at a position spaced from said hook and engageable with said karabiner.

5. Apparatus according to claim **4**, further defined by said mounting means comprising an externally threaded sleeve adapted for rigid attachment to a boat, said sleeve having diametrically opposed longitudinal slots and pairs of circumferential slots extending from the longitudinal slots at longitudinally spaced positions, said stub having an enlarged end portion and a pair of pins projecting from said enlarged end portion, said enlarged end portion engaging said sleeve with the pins engaging said slots, and an internally threaded cup concentrically rotatably disposed on said stub adjacent the enlarged end portion thereof, said cup threadably engaging said sleeve.

6. Apparatus according to claim **4**, further defined by said bearing bushing having a rectangular recess in its inner bore surface and said axle portion being hollow and having a conformed rectangular aperture alignable with the recess, and a latch including a stem extending through said bushing in slidable and rotatable relation thereto, said latch having a rectangular key at the end of the stem disposable in said recess and insertable through the con-

formed rectangular aperture, said latch being spring loaded to normally maintain said key in retracted position in said recess.

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