Feb. 14, 1967 F. M. COLLINS ETAL 3,303,813

WATER SKI LAUNCHING SYSTEM

Filed Oct. 6, 1965 2 Sheets-Sheet 1

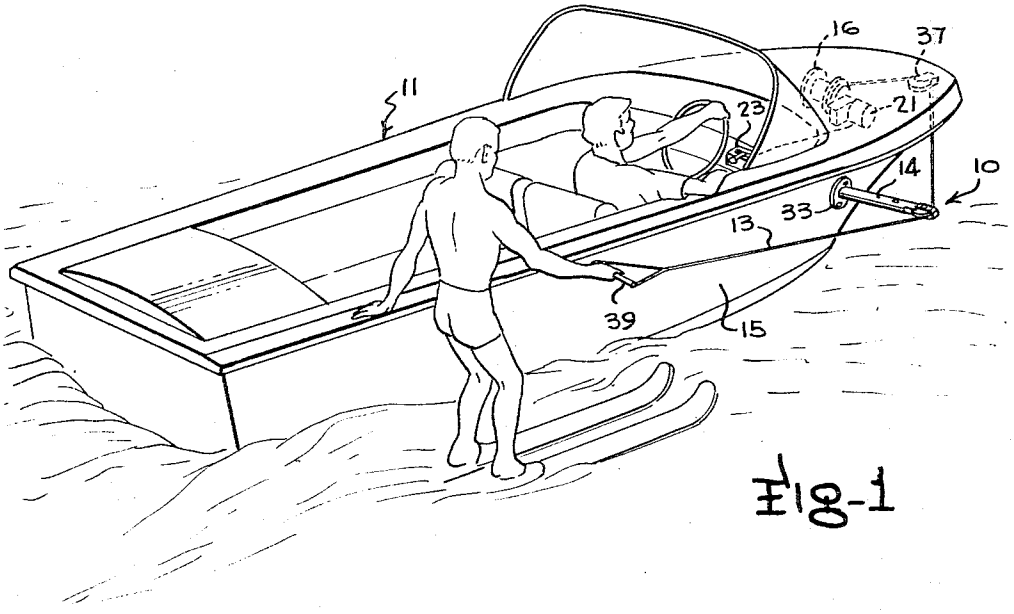


Fig-1

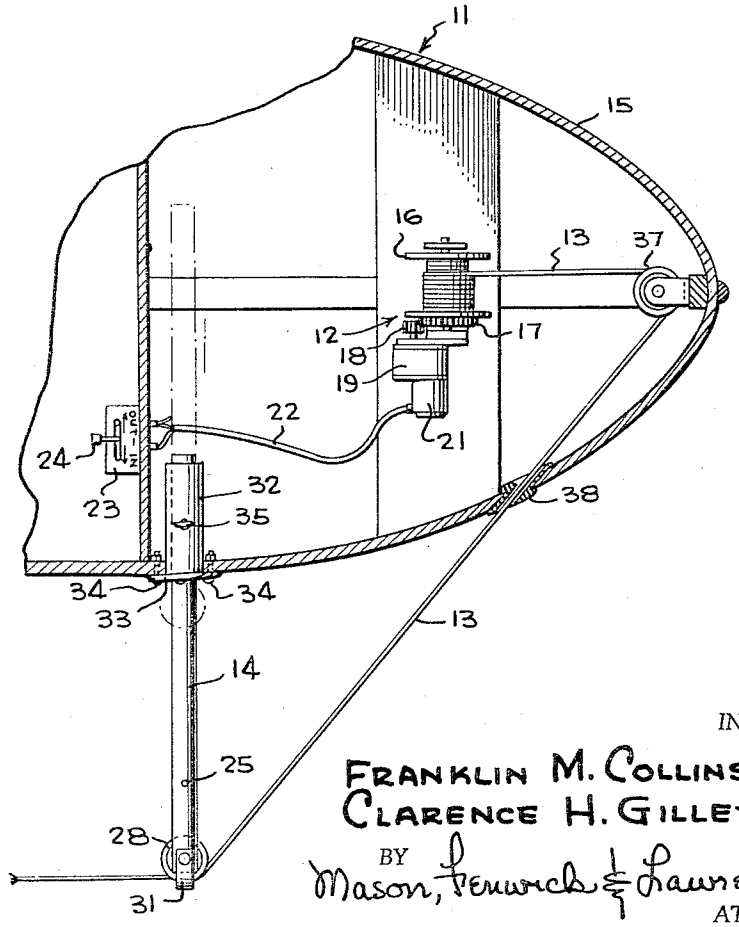


Fig-2

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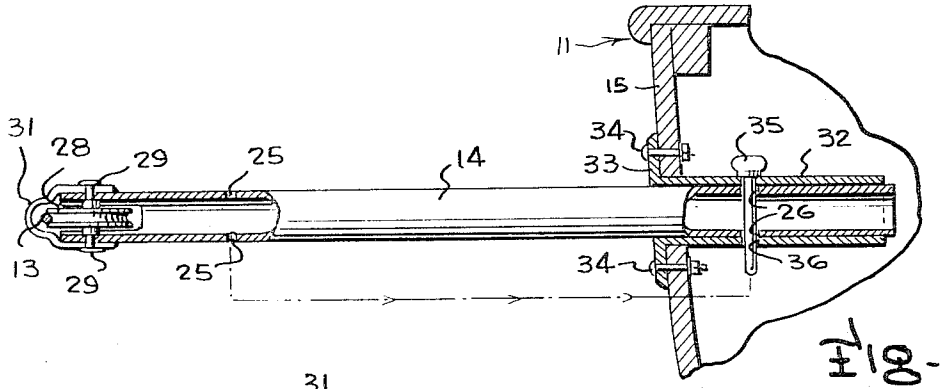


Fig-3

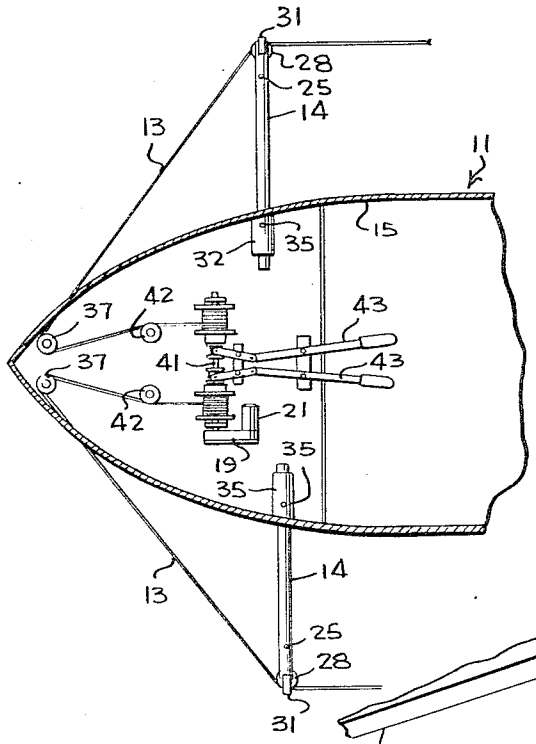


Fig-4

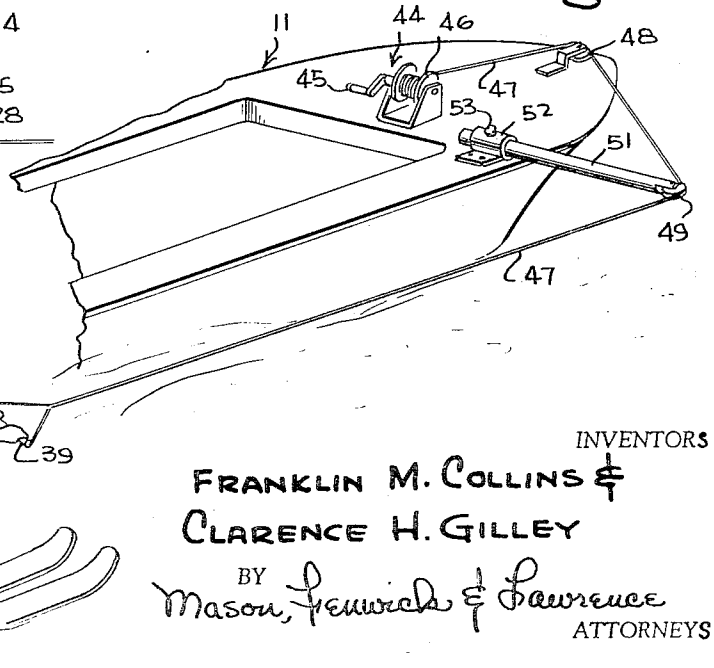


Fig-5

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WATER SKI LAUNCHING SYSTEM

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6 Claims. (Cl. 114—235)

The present invention relates in general to launching and retrieving apparatus and more particularly is concerned with a novel type of boat mounted apparatus for launching and retrieving a water skier.

The launching and retrieving of a water skier is relatively hazardous and, of course, would tend to make it difficult for a novice skier to learn the sport. In addition, some water ski tow craft are underpowered, making it rather difficult to start a water skier when both the boat and the skier are stationary in the water. It is generally desirable to launch a water skier while the tow craft is underway.

Therefore, an object of the present invention is to provide an apparatus for launching a water skier from the boat which is generally adaptable for installation upon any size boat of the type used to a tow a skier.

Another object of the present invention is the provision of a water skier launching apparatus utilizing an extensible boom extending from the side hull of the tow boat having a pulley system permitting the towline to be positioned alongside the boat, so that the skier may hold onto the boat when starting and stopping, thereby making it easier for the novice skier to learn the sport.

Another object of the present invention is the provision of a water skier launching apparatus which has suitable winch apparatus to both reel out and reel in the towline.

Another object of the present invention is to provide a water skier launching apparatus which is of simple construction having long wearing characteristics which is cheaper to manufacture and highly effective when utilized in the desired manner.

Further aims, objects and advantages of this invention will appear from a consideration of the following description and the accompanying drawings showing for purely illustrative purposes embodiments of this invention. It is to be understood, however, that the description is not to be taken in a limiting sense, the scope of the invention being defined in the appended claims.

In the drawings:

FIGURE 1 is a perspective view of one embodiment of the present invention mounted upon a suitable tow boat with a water skier positioned alongside in a desired manner;

FIGURE 2 is a partial horizontal section view looking downwardly through the bow of the boat showing in plan view the apparatus of the present invention;

FIGURE 3 is a partial vertical section view through a bow section of the boat showing the extensible boom arm partially in section and partially in side elevation;

FIGURE 4 is a partial horizontal section view similar to that of FIGURE 2; however, showing another embodiment of the present invention utilizing dual extensible boom arms; and

FIGURE 5 is a perspective view of the present invention similar to that of FIGURE 1; however, showing the invention mounted topside of the tow boat and being manually operated.

Referring to the drawings wherein like reference characters designate corresponding parts throughout the several figures, the water ski launching and retrieving apparatus is generally indicated by the numeral **10**. The apparatus **10** is designed to be mounted upon a suitable type of tow boat **11** and generally in the forward bow

section of the boat. In the embodiment of FIGURES 1 to 3, the apparatus is mounted in a concealed manner and includes a motorized winch **12** which is adapted to reel in and reel out the water ski towline **13**. The towline **13** is preferably positioned alongside the boat for easy handling by the water skier by means of an extensible boom arm **14** which projects outwardly from the hull **15** of the boat.

The motorized winch **12** is mounted in a convenient position in the forward portion of the tow boat and generally comprises a takeup drum **16** having sufficient capacity to reel in all of the towline **13**. At one side of the takeup drum **16** is a gear **17** which meshes with the motor output gear **18** affixed to the output of the winch gear box **19**. The gear box **19** is an integral part of the housing for the high torque electrical motor **21**. The motor **21** is preferably supplied with electrical energy through the electrical cable **22** from the boat's battery power supply (not shown). For ease of control by the boat driver, the winch is provided with a towline winch control panel **23** having a winch control handle **24** which may be moved by the driver in the appropriate direction to cause the reversible motor **21** to effect either reeling in or reeling out of the towline **13**.

As noted above, the extensible boom arm **14** projects outwardly from the hull of the boat **15** and is generally an elongated tubular member having a pair of boom arm retaining pin apertures **25** and **26**. At the outermost end of the boom arm a longitudinal slot **27** is provided in which there is rotatably mounted a boom arm idler pulley **28** upon a pulley axle **29**. The idler pulley **28** and the end of the boom arm **14** are protected by a guard member **31** affixed to each end of the pulley axle **29** and extending in a curving manner about the end of the boom arm **14**. In order that boom arm **14** may be held substantially rigid within the boat, there is provided a boom arm support **32** of elongated cylindrical cross-section which accepts the boom arm **14** in sliding engagement. The boom arm support is affixed to the boat hull **15** by means of a radial flange **33** and a plurality of boom arm support fasteners **34**.

It is contemplated that the boom arm **14** should have two or more positions in which it may be fixed relative to the boat hull. There should be at least two positions corresponding to the boom arm retaining pin apertures **25** and **26** which preferably represent the withdrawn and the extended positions of the boom arm **14**. As seen in FIGURES 1 to 3 the boom arm is in an extended position whereby the retaining pin **35** passes through the pin apertures **36** of the boom arm support **32** and thence through the boom arm retaining pin aperture **26**. If it is desired to retract the boom arm, retaining pin **35** would be withdrawn and the boom arm reciprocated into the boom arm support until the retaining pin aperture **25** would align itself with the boom arm support aperture **36**, at which time the pin **35** would be inserted therethrough.

Whether in the extended or withdrawn position, the boom arm **14** supports the towline **13** by means of the idler pulley **28**. The towline **13** is positioned about the takeup drum **16** and then passes around the bow idler pulley **37**, through the boat hull grommet **38** and then about the boom arm idler pulley terminating thereafter in the towline handle **39**.

In the embodiment shown by FIGURE 4 there is provided a dual system in which a boom arm **14** extends from each side of the boat with each boom arm provided with independent towliness **13**. The towlines **13** are mounted about a takeup drum **16** in the same manner as previously described. However, the plural takeup drums are mounted in a side by side relation upon a common drive axle **41**. In order that the towliness **13** may be fed to the

center of each takeup drum, there is a separate drum idler pulley 42 positioned forward of the drums so that the towlines are centrally positioned herein, it is desired that the drums may be operated concurrently or independently of one another. For this reason, there is provided a pair of operating levers 43 which engage a suitable clutch mechanism upon each drum so that the selected drum may be caused to engage the drive axle 41 upon command of the boat driver. Upon the winch motor 21 being energized, the gear box 19 imparts power to the drive axle 41 and thence to the desired takeup drum depending, of course, upon whether the drum is engaged with the drive axle. In this manner, each of the dual systems may be operated independently to launch and retrieve water skiers at each side of the boat.

In the third embodiment of the present invention shown by FIGURE 5 it is desired to have a mechanical launching and retrieving apparatus which might be preferably mounted upon the topside of the bow of the boat. Such a system might well embody the hand operated winch 44 having a suitable handle 45 to rotate a takeup drum 46 thereby reeling in or reeling out a towline 47 which is positioned about a bow idler pulley 48 and a boom idler pulley 49. The boom idler pulley 49 would be affixed in the manner previously discussed to a boom arm 51 which would be slidably received within a boom arm support 52 and secured thereto in a fixed relation by pin 53. It is anticipated that the winch 44, idler pulley 48 and boom arm support 52 would be fastened to the topside of the boat.

While the invention herein has been described utilizing a fixed length boom arm, it is contemplated that other boom arms of different construction may be utilized. Boom arms which telescope might be easily substituted for the fixed length boom arm as described herein.

In operation of the apparatus of the invention, the person preparing to water ski would essentially sit upon the gunwhale of the boat until the boat reaches normal skiing speed. At this time, the skier would ease himself downwardly over the side of the boat until the skis are touching the water in a manner parallel to the direction of motion of the boat. At the same time the skier would maintain one hand upon the towline handle 39 and one hand upon the gunwhale of the boat. In this manner the skier would attain instant planing upon the water and he would maintain proper balance by holding onto both the towline handle and the boat. After proper balance and feel has been attained, the boat driver would then allow the towline 13 to be reeled out thereby positioning the skier rearwardly of the boat in the normal manner. At the end of the skiing period, the boat driver would then cause the towline to be reeled in thereby moving the skier beside the boat so that the skier may once again grasp the boat for balance. At this point, the skier would then be able to sit down upon the gunwhale of the boat so as to gain confidence in the skiing operation without having to take the necessary falls. Using the apparatus of the present invention, a novice skier learns how to ski in a matter of minutes without having to experience the rigors of falling during the starting and stopping phases of water skiing.

Various modifications may be made in the invention without departing from the spirit and scope thereof, and it is desired, therefore, that only such limitations shall be placed thereon as are imposed by the prior art and are set forth in the appended claims.

What is claimed is:

1. Water skier launching and retrieving apparatus for use in conjunction with a boat to selectively position a water skier from alongside the boat to the rear thereof comprising, a towline, a boom arm assembly mounted on the boat so as to project from the side of the boat at such distance forward of the transom to allow the skier to hold onto the side of the boat at desired times, the boom arm assembly including a support member affixed to the boat and a boom arm engaging the support member, the boom arm having a free end projecting outwardly from the boat to one side thereof, a reel means mounted upon the boat adapted to windably receive the towline, the towline being slidably engaged with the free end of the boom arm, means to transmit rotary energy to the reel means.

2. Water skier launching and retrieving apparatus according to claim 1 wherein the boom arm is extensible outwardly from the boat through telescoping movement in relation with the support member.

3. Water skier launching and retrieving apparatus according to claim 2 wherein the support member is of elongated cylindrical construction, locking means adapted to interlock the boom arm at selected locations with respect to the support member.

4. Water skier launching and retrieving apparatus according to claim 3 wherein the locking means include a series of locking apertures in the boom arm and at least one locking aperture in the cylindrical portion of the support member, the apertures in the support member being adapted to effect registry with an aperture in the boom arm, a retaining pin adapted for insertion through the registered apertures to effect locking of the boom arm to the support member.

5. Water skier launching and retrieving apparatus according to claim 4 wherein the means to transmit rotary energy to the reel means include an electric motor, gear means transmitting rotary energy from the electric motor to the reel means, control means in electrical connection with the electric motor adaptable to energize the motor whereby the reel means are rotated to windably retract the towline.

6. Water skier launching and retrieving apparatus for use in conjunction with a boat to selectively position one or more water skiers from alongside the boat to the rear thereof comprising, a plurality of towlines, a pair of boom arm assemblies mounted on the boat so as to project from the side of the boat at such distance forward of the transom to allow the skier to hold onto the side of the boat at desired times, each boom arm assembly including a support member affixed to opposite sides of the boat and a boom arm engaging each support member, the boom arms each having a free end projecting outwardly from the boat to one side thereof, each boom arm being extensible outwardly from the boat through telescoping movement in relation with the associated support member, each support member being of elongated cylindrical construction, locking means adapted to interlock each boom arm at selected locations with respect to each support member, the locking means including a series of locking apertures in the boom arm and at least one locking aperture in the cylindrical portion of the support members, the apertures in the support members being adapted to effect registry with an aperture in the boom arms, a retaining pin adapted for insertion through the registered apertures to effect locking of each boom arm to its associated support member, reel means mounted upon the boat adapted to windably receive the towlines, the towlines being slidably engaged with the free end of the boom arms, means to transmit rotary energy to the reel means including an electric motor, gear means interposed between the electric motor and the reel means, control means in electrical connection with the electric motor adaptable to energize the motor whereby the reel means are rotated to windably retract the towlines.

No references cited.

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