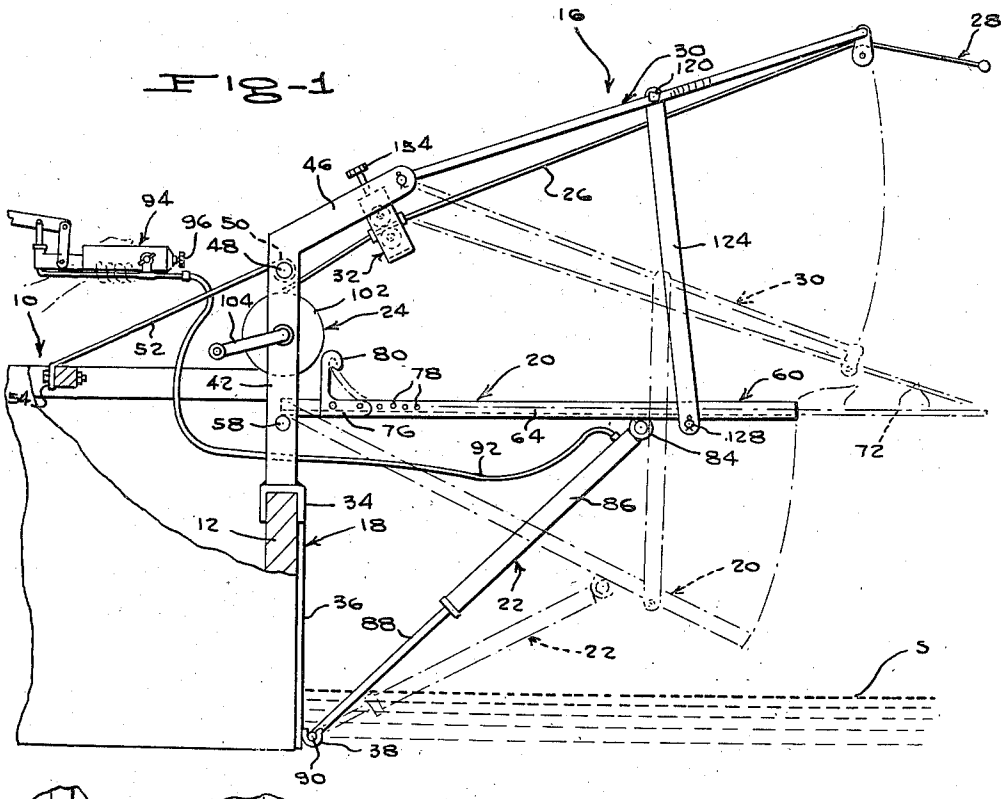
Feb. 4, 1958 W. R. CORRELL 2,821,726

WATER SKIER LAUNCHER AND RETRIEVING APPARATUS

Filed June 15, 1956 2 Sheets-Sheet 1

Fig-1



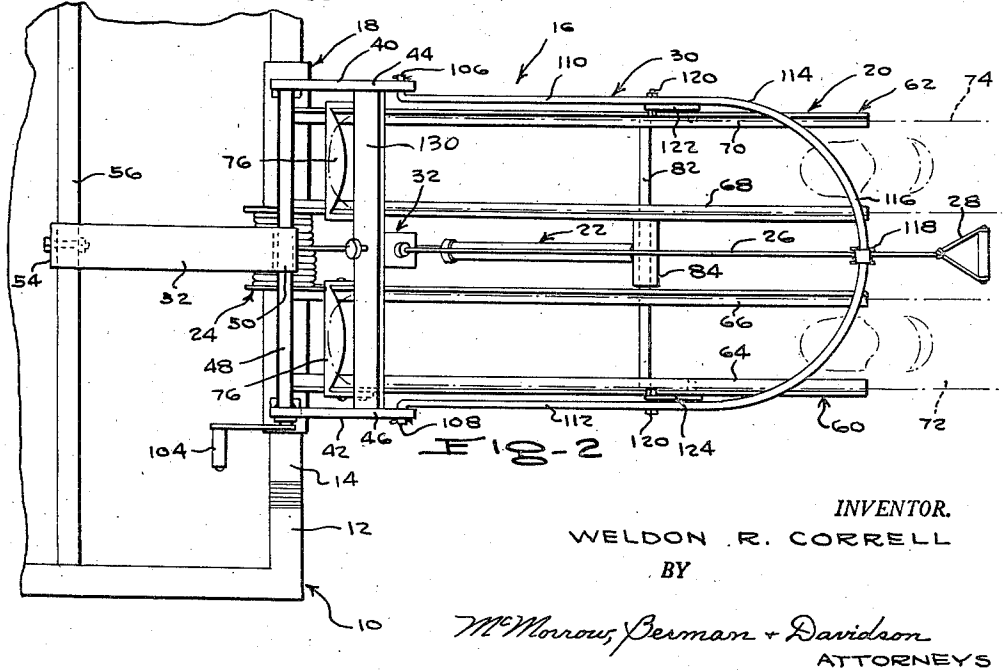


Fig-2

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WATER SKIER LAUNCHER AND RETRIEVING APPARATUS

Filed June 15, 1956 2 Sheets-Sheet 2

Fig-3

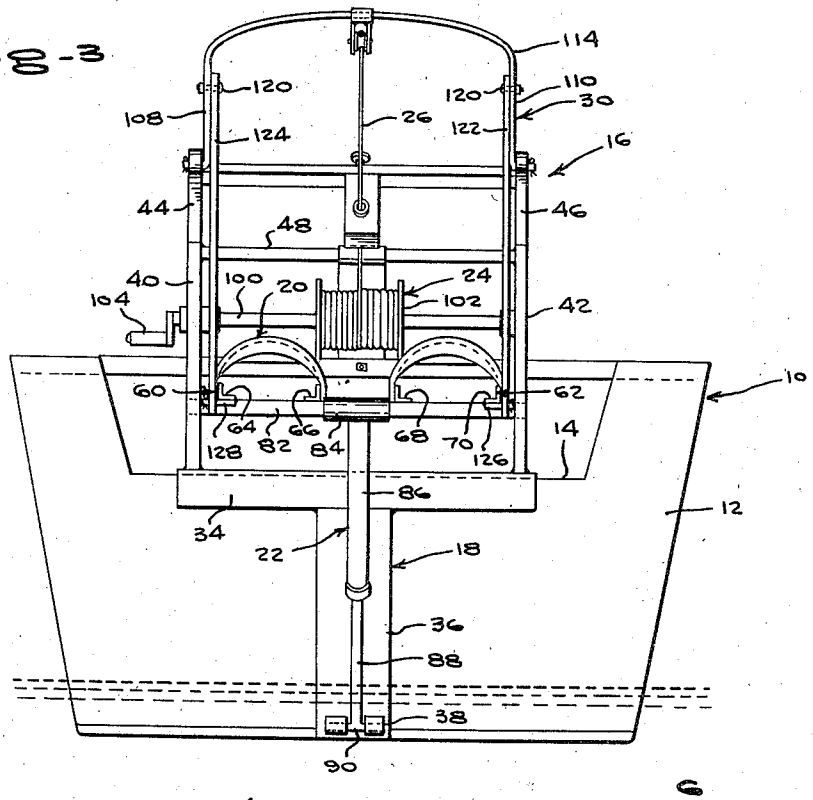


Fig-4

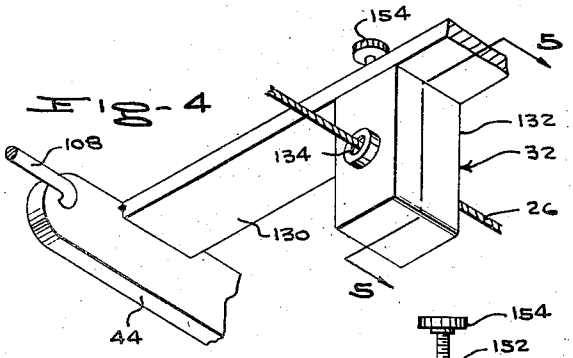


Fig-5

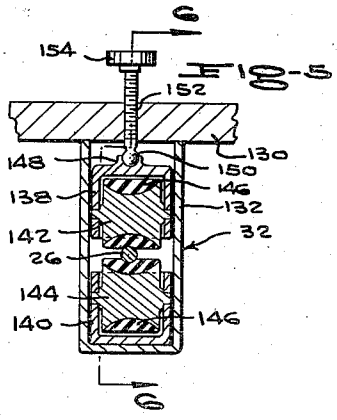
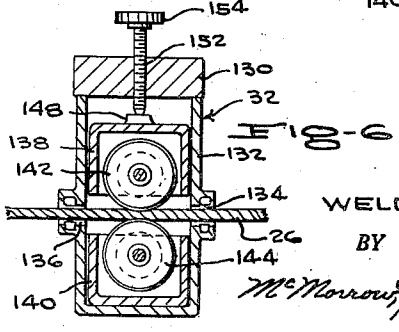


Fig-6



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2,821,726

WATER SKIER LAUNCHER AND RETRIEVING APPARATUS

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Application June 15, 1956, Serial No. 591,653

6 Claims. (Cl. 9—21)

This invention relates generally to launching apparatus and is more particularly concerned with a novel water skier launching and retrieving apparatus from different type water craft.

The launching of a water skier or retrieving of the same on moving water craft is relatively hazardous and awkward tending to reduce the popularity of the sport. Some water craft are under powered making it rather difficult to start a water skier from a stand still position on the bank of a body of water, for example. It is generally desirable to launch a water skier while the water craft is moving.

A primary object of invention is to provide novel water skiing launching and retrieving apparatus including means whereby a skier may be readily launched and retrieved with a minimum amount of effort and maximum efficiency and expediency.

A further object of invention in conformance with that set forth is to provide novel water skier launching and retrieving apparatus which includes a support member having means for mounting the same on the stern portion of a boat, said support member having pivotally secured for vertical pivotal movement toward and away from the surface of a body of water a launching platform, power means for pivoting the launching platform, winch means incorporating a tow line thereon, and support means for the tow line disposed in overlying pivotal relationship relative to the launching platform being simultaneously pivotal on the support member with the launching platform wherein the trailing end of the tow line incorporating a handle, if desired, will be disposed in an optimum position for engagement by a water skier, and upon lowering the trailing end of the launching platform toward the surface of the body of water the water skier's skis are automatically launched to the desired position for skiing.

And yet another object of invention in conformance with that set forth resides in specific details of construction of the various portions of the novel apparatus which combine to perform the desirable functions heretofore set forth.

And a still further object of invention in conformance with that set forth is to provide novel water skiing launching and retrieving apparatus which is readily and economically manufactured, easily installed and maintained, and highly satisfactory, safe and practical for the purpose intended.

These together with other objects and advantages which will subsequently become apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawing forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view of the novel launching and retrieving apparatus secured on a fragmentary rear end portion of a boat, showing in solid lines the position of the apparatus prior to launching a water skier, and in phantom lines the position assumed by the apparatus when a water skier is launched, portions being broken away and shown in section for clarity;

Figure 2 is a top plan view of the novel apparatus;

Figure 3 is a rear elevational view of the novel apparatus, the handle for the trailing end of the tow line being removed for purposes of clarity;

Figure 4 is an enlarged fragmentary perspective view of a portion of the apparatus, showing a casing portion for an adjustable residual-drag assembly for the tow line of the apparatus;

Figure 5 is a sectional view taken substantially on line 5—5 of Figure 4; and

Figure 6 is a sectional view taken substantially on line 6—6 of Figure 5.

Referring to the drawing in detail, indicated at **10** is a fragmentary aft portion of a boat for towing a water skier, said boat including a rear vertically extending transverse stern portion **12** which may have a central transverse notch portion **14** opening into its upper edge.

The water skier launcher and retrieving apparatus is indicated generally at **16** and includes a support member **18**, a ski launching platform **20**, power means **22** for vertically pivoting the launching platform as subsequently will be described in detail, a winch assembly **24**, said winch assembly including a tow line **26** having a suitable handle **28** secured on the trailing end for engagement by a skier, and tow line support means indicated generally at **30**, the support member incorporating thereon an adjustable residual-drag assembly indicated generally at **32** for engagement with an intermediate portion of the tow line **26**.

The support member **18** includes transverse channel shaped base member **34** which is received over the upper edge of the stern **12** of the boat within the notch portion **14**, said base member **34** having depending from a central portion a suitably secured support plate **36** juxtaposable on the outer surface of the stern **12** of the boat, said plate **36** including on its lower edge a suitably secured transverse journal portion **38** for a purpose to subsequently become apparent. Extending vertically in spaced relationship from the upper surface of the base member **34** are suitably secured support arms **40** and **42** which include rearwardly extending upper end portions **44** and **46**, respectively. Extending transversely between opposite inner surface portions of the support arms **40** and **42** is a transverse brace rod **48** which has suitably secured on a central portion thereof a tubular end portion **50** of a forwardly extending brace plate **52**, the other end of the brace plate **52** being suitably secured as seen at **54** to a transverse brace member **56** secured at opposite ends in any suitable manner to oppositely disposed portions of the gunwales of the boat upon which the apparatus is mounted.

Extending transversely between lower intermediate portions of the support arms **40** and **42** is a suitably journaled support shaft **58** defining a horizontal pivot axis for the ski launching platform **20**. The ski launching platform **20** comprises a pair of parallel track-ways **60** and **62** comprised of elongated parallel structural members **64** and **66**, and **68** and **70**, which have an L-shaped cross section, side flanges thereof being disposed in vertically extending relationship for receiving side edge portions of water skis **72** and **74** therebetween. The structural elements **64** and **66** have extending transversely between opposite forward end portions thereof a bracket element **76** which may be longitudinally adjusted relative to the track-ways by means of a plurality of transverse aperture portions **78** in the structural members **64** and **66**, see Figure 1, said bracket elements **76** including vertically disposed downwardly directed hook end portion **80** which is engageable over the forward upper edge of a water ski

also clearly seen in Figure 1. The structural members **68** and **70** have extending transversely across the opposed forward end portions a similar bracket element **76**, see Figure 2. When the launching platform **20** is lowered into the position shown by the phantom lines of Figure 1, the rear or trailing ends of the skis **72** and **74** upon engaging the surface S of the body of water onto which the skier is to be launched will be caused to raise slightly tilting the skis from under the hook end portions **80** of the bracket elements **76** and thus as the tow line **26** is paid out the skis will be disposed on the surface of the water in a substantially angular position off the launching platform which is that position desirable when being towed through the water while participating in this sport.

The track-ways **60** and **62** have extending transversely below an intermediate portion of the structural elements **64** through **70** a suitably secured brace rod **82** which has journaled about an intermediate portion thereof a sleeve member **84** integral with the upper end of a fluid cylinder **86** constituting a part of the power means **22** which consists of an extensible fluid motor. The cylinder **86** has extending therefrom a piston rod **88** connected to a suitable piston member disposed within the cylinder **86** (not shown), the lower end of the piston rod **88** terminating in a transverse shaft portion **90** received in the journal sleeve portion **38** previously described. The cylinder **86** is in communication with a suitable flexible pressure line **92**, see Figure 1, which may be connected to a suitable pressure control source such as a manually operable pump assembly indicated generally at **94** which will include suitable valve means **96** for relieving the pressure developed thereby, thus by actuating the pump assembly **94** the piston rod may be extended as shown by the solid lines in Figure 1 wherein the launching platform **20** will be disposed in a substantially horizontal position, this position being that assumed by a skier prior to being launched upon the surface of a body of water. Upon actuation of the control valve assembly **96**, the piston rod **88** will extend into the cylinder **86** whereafter the weight of a skier will cause the launching platform **20** to be disposed in the angular position shown by the phantom lines of Figure 1 whereafter the skier will be launched as previously described.

The support arms **40** and **42** have extending transversely therebetween a suitably journaled support shaft **100** which has secured on an intermediate portion thereof the winch assembly **24** which comprises a suitable reel member **102** about which the tow line **26** is convolutely disposed, one of the end portions of the shaft **100** having suitably secured thereon an actuating crank **104** for dispensing and retrieving the tow line **26**.

The upper end portions **44** and **46** of the support arms **40** and **42**, respectively, have extending transversely through rear end portions thereof aligned apertured portions which have journaled therethrough suitably secured trunnion portions **106** and **108** of parallel leg portions **110** and **112**, respectively, of a U-shaped bail member **114** of the tow line support means **30**. The bight portion **116** of the bail member **114** has depending from a central intermediate portion thereof a suitably secured pulley assembly **118** through which the tow line **26** is entrained for facilitating the paying out of the same from the winch assembly. Pivotally connected at their upper ends by means of suitable transverse pivot elements **120** are rigid connecting links **122** and **124** respectively connected at their upper ends to an intermediate portion of the legs **110** and **112**, respectively, of the bail member, the lower end portions of the link elements **122** and **124** being pivotally connected to suitably secured laterally extending stub shaft elements **126** and **128**, respectively, secured on a lower surface portion of structural elements **70** and **64** of the trackways, see Figure 3.

Extending transversely between the upper ends **44** and **46** of the support arms **40** and **42** is a suitably secured transverse support member **130** which has depending therefrom a suitably secured housing member **132** of the adjustable residual-drag assembly **32**. The housing member **132** has extending through opposite side wall portions aligned aperture portions **134** and **136** through which an intermediate portion of the tow line **26** is disposed, see Figure 6. Reciprocably disposed within the housing member **132** are a pair of U-shaped yoke elements **138** and **140** which open toward each other from opposite sides of the intermediate portion of the tow line **26**, said yoke elements **138** and **140** having journaled therein friction wheels **142** and **144**, respectively, which are in peripheral engagement on opposite sides of the tow line **26**, the outer surfaces of the friction wheels being comprised of a suitable resilient friction increasing material **146**. Yoke element **138** includes on its upper portion boss portion **148** which rotatably receives therein the cylindrical end portion **150** of an externally threaded adjusting screw **152**, said adjusting screw being received in a threaded bore portion in the support member **130**, see Figure 5, the upper end portion of the adjusting screw **152** extending through the support member **130** and having secured thereon an integral handle **154**. Rotation of the handle **154** will accordingly dispose the yoke elements toward or away from each other thus adjust the clamping engagement of the friction wheels **142** and **144** with respect to opposite sides of the tow line **26**. This expedient is utilized for applying a residual drag on the tow line when the same is being payed out by the winch assembly, or when the tow line is being retrieved.

The manner of launching a water skier has been previously described, and a water skier may be retrieved by lowering the launching platform **20** utilizing the winch assembly **24** and tow line **26** for drawing the skier's skis upon the track-ways **60** and **62** whereafter the launching platform will be raised to the substantially horizontal position shown in Figure 1 by the solid lines.

It will be noted that the tow line support means **30** is simultaneously raised and lowered by virtue of the connecting links **122** and **124**, disposing the handle **28** of the tow line adjacent the hands of the skier, and when a skier is launched onto the surface of a body of water the tow line support means **30** will be angulated downwardly toward the surface of the body of water, this being a desirable position obviating the tendency of a boat to turn over when making turns while towing a water skier.

Various positional directional terms such as "forward," "rear," etc. are utilized herein to have only a relative connotation to aid in describing the device and it is not intended to require any particular orientation with respect to any external elements.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the appended claims.

What is claimed is:

1. Water skier launching and retrieving apparatus comprising a support member including means for mounting the same in vertically extending relationship on the stern of a boat, a ski launching platform arranged in trailing relationship with respect to said support member and having one end pivotally mounted on said support member for vertical pivotal movement of said platform about a horizontal axis, power means in engagement with the ski launching platform for pivoting the trailing end of the launching platform toward and away from the surface of a body of water for retrieving and launching water skis, a winch assembly on said support member including a convolutely disposed tow line, tow line support means arranged in spaced overlying relationship with respect

to said platform and having one end pivotally mounted on said support member for vertical pivotal movement of said tow support means about another horizontal axis, said tow line support means including journal means in engagement with an intermediate portion of the tow line as it is payed out and retrieved, and linkage means extending between the tow line support means and launching platform affording simultaneous vertical pivotal movement thereof.

2. Water skier launching and retrieving apparatus comprising a support member including means for mounting the same in vertically extending relationship on the stern of a boat, a ski launching platform arranged in trailing relationship with respect to said support member and having one end pivotally mounted on said support member for vertical pivotal movement of said platform about a horizontal axis, power means in engagement with the ski launching platform for pivoting the trailing end of the launching platform toward and away from the surface of a body of water for retrieving and launching water skis, a winch assembly on said support member including a convolutely disposed tow line, tow line support means arranged in spaced overlying relationship with respect to said platform and having one end pivotally mounted on said support member for vertical pivotal movement of said tow support means about another horizontal axis, said tow line support means including journal means in engagement with an intermediate portion of the tow line as it is payed out and retrieved, and linkage means extending between the tow line support means and launching platform affording simultaneous vertical pivotal movement thereof, the ski launching platform comprising a pair of parallel spaced track-ways for receiving water skis thereon, and means on a forward end portion of the track-ways for detachably engaging the leading end of skis when the launching of the same and releasing said skis when the launching platform is lowered.

3. Water skier launching and retrieving apparatus comprising a support member including means for mounting the same in vertically-extending relationship on the stern of a boat, a ski launching platform arranged in trailing relationship with respect to said support member and having one end pivotally mounted on said support member for vertical pivotal movement of said platform about a horizontal axis, power means in engagement with the ski launching platform for pivoting the trailing end of the launching platform toward and away from the surface of a body of water for retrieving and launching water skis, a winch assembly on said support member including a convolutely disposed tow line, tow line support means arranged in spaced overlying relationship with respect to said platform and having one end pivotally mounted on said support member for vertical pivotal movement of said tow support means about another horizontal axis, said tow line support means including journal means in engagement with an intermediate portion of the tow line as it is paid out and retrieved, and linkage means extending between the tow line support means and launching platform affording simultaneous vertical pivotal movement thereof, said support member including a pair of spaced support arms, the winch assembly extending transversely between the support arms, and an adjustable residual-drag assembly on the support member engageable with an intermediate portion of the tow line as it is payed out and retracted.

4. Water skier launching and retrieving apparatus comprising a support member including means for mounting the same in vertically extending relationship on the stern of a boat, a ski launching platform arranged in trailing relationship with respect to said support member and having one end pivotally mounted on said support member for vertical pivotal movement of said platform about a horizontal axis, a power means in engagement with the ski launching platform for pivoting the trailing end of the launching platform toward and away from the surface of a body of water for retrieving and launching water skis, a winch assembly on said support member including a convolutely disposed tow line, tow line support means arranged in spaced overlying relationship with respect to said platform and having one end pivotally mounted on said support member for vertical pivotal movement of said tow support means about another horizontal axis, said tow line support means including journal means in engagement with an intermediate portion of the tow line as it is payed out and retrieved, and linkage means extending between the tow line support means and launching platform affording simultaneous vertical pivotal movement thereof, said power means comprising an extensible fluid motor assembly pivotally connected at one end to a horizontal pivot axis portion on the launching platform, means at the opposite end of the fluid motor assembly for pivotal connection to a lower rear portion of a boat stern, and control means for supplying power to said fluid motor assembly.

5. Water skier launching and retrieving apparatus comprising a support member including means for mounting the same in vertically extending relationship on the stern of a boat, a ski launching platform arranged in trailing relationship with respect to said support member and having one end pivotally mounted on said support member for vertical pivotal movement of said platform about a horizontal axis, power means in engagement with the ski launching platform for pivoting the trailing end of the launching platform toward and away from the surface of a body of water for retrieving and launching water skis, a winch assembly on said support member including a convolutely disposed tow line, tow line support means arranged in spaced overlying relationship with respect to said platform and having one end pivotally mounted on said support member for vertical pivotal movement of said tow support means about another horizontal axis, said tow line support means including journal means in engagement with an intermediate portion of the tow line as it is payed out and retrieved, and linkage means extending between the tow line support means and launching platform affording simultaneous vertical pivotal movement thereof, said support member including a pair of spaced support arms, the winch assembly extending transversely between the support arms, and an adjustable residual-drag assembly on the support member engageable with an intermediate portion of the tow line as it is payed out and retracted, said tow line support means comprising a U-shaped bail member pivotally connected at end portions thereof to upper ends of the support arms, the journal means comprising a depending pulley assembly over which the tow line is entrained, the linkage means comprising elongated rigid link elements pivotally connected at opposite ends to overlying portions of the bail member and launching platform.

6. Water skier launching and retrieving apparatus comprising a support member including means for mounting the same in vertically extending relationship on the stern of a boat, a ski launching platform arranged in trailing relationship with respect to said support member and having one end pivotally mounted on said support member for vertical pivotal movement of said platform about a horizontal axis, power means in engagement with the ski launching platform for pivoting the trailing end of the launching platform toward and away from the surface of a body of water for retrieving and launching water skis, a winch assembly on said support member including a convolutely disposed tow line, tow line support means arranged in spaced overlying relationship with respect to said platform and having one end pivotally mounted on said support member for vertical pivotal movement of said tow support means about another horizontal axis, said tow line support means including journal means in engagement with an intermediate portion of the tow line as it is payed out and retrieved, linkage means extending between the tow line support means and launching plat-

form affording simultaneous vertical pivotal movement thereof, said support member including a pair of spaced support arms, the winch assembly extending transversely between the support arms, and an adjustable residual-drag assembly on the support member engageable with an intermediate portion of the tow line as it is payed out and retracted, said adjustable rsidual-drag assembly being secured on a transverse support member on the support arms and including an enclosed housing member, an intermediate portion of the tow line extending transversely through opposed aperture portions in the housing member, U-shaped yoke elements reciprocably disposed in the housing member opening toward each other on

opposite sides of the tow line, friction wheels journaled in the yoke elements in peripheral engagement with the opposite sides of the tow line, and an adjusting screw extending through the housing member in engagement with one yoke element for urging the yoke elements toward and away from clamping engagement with the tow line as it is payed out and retracted from the winch assembly.

References Cited in the file of this patent

UNITED STATES PATENTS

2,738,525 Roberts ---------- Mar. 20, 1956