

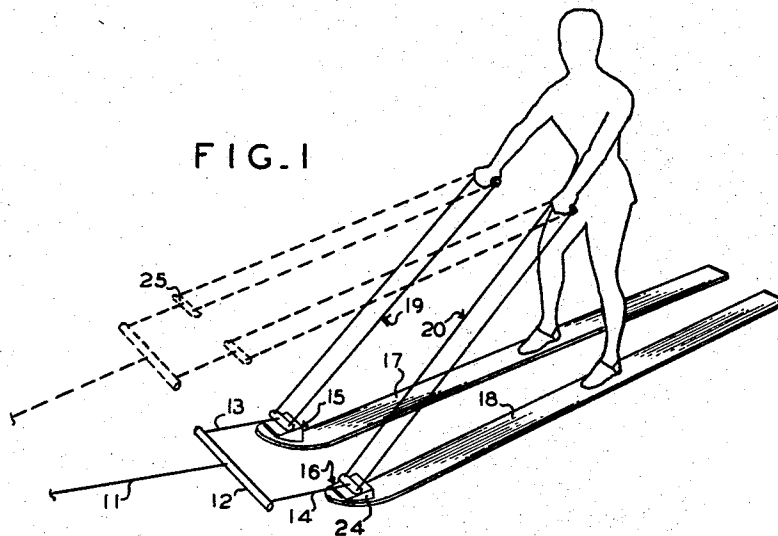
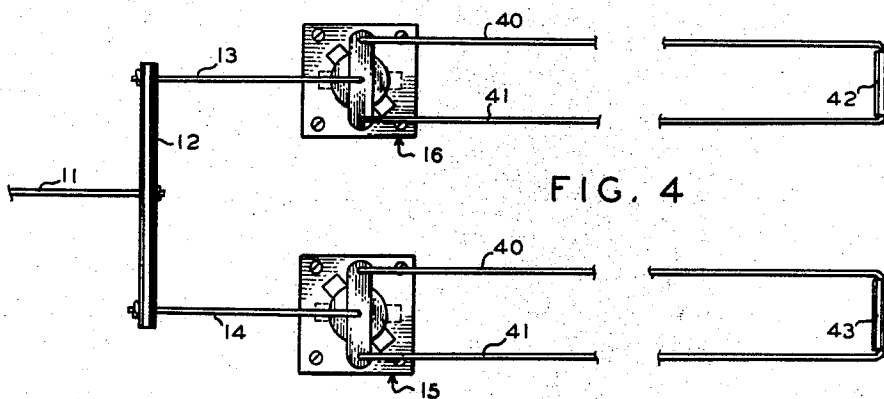
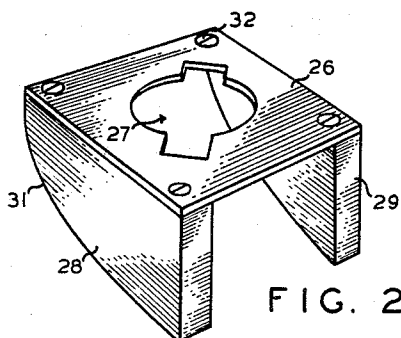
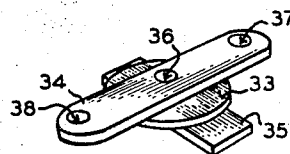
July 26, 1960

T. G. HILL
WATER SKI TOWING DEVICE

2,946,305

Filed Oct. 7, 1957

2 Sheets-Sheet 1



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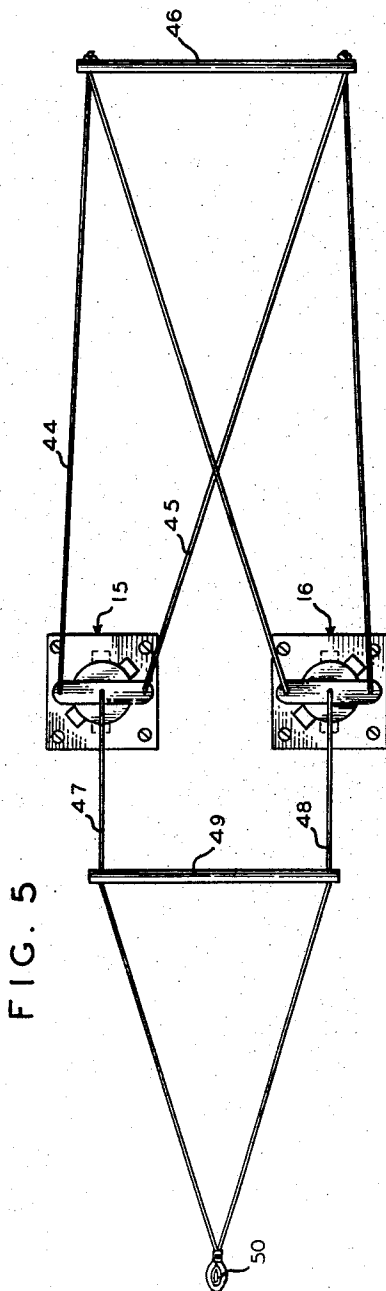
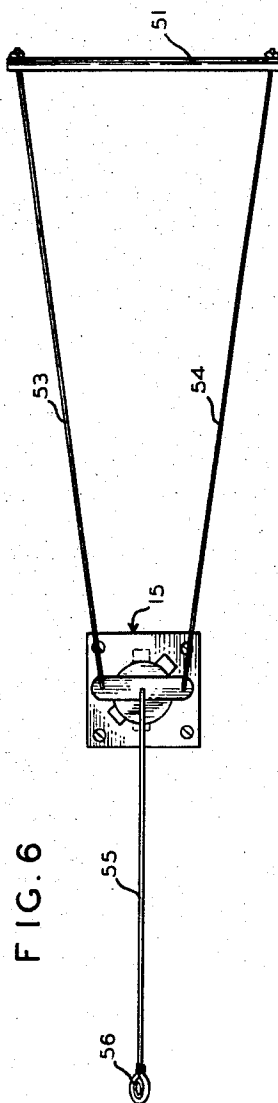
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WATER SKI TOWING DEVICE

Filed Oct. 7, 1957

2 Sheets-Sheet 2



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2,946,305

WATER SKI TOWING DEVICE

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11 Claims. (Cl. 114—235)

This invention relates to a water ski towing device and more particularly concerns a towing rig for use by a water skier which greatly facilitates the procedure of getting the skis up onto the water during the initial towing stages.

Although the sport of water skiing has become increasingly popular in recent years, the number of people who may enjoy this sport is at present limited by the formidable difficulties encountered during the "pull-out" or starting stage. Not only is considerable balance and agility required, but a substantial amount of practice is needed even by persons possessed with the necessary physical attributes.

It is herein contemplated that the water ski towing rig of my invention not only provides a means for permanently avoiding the starting difficulties inherent in the use of conventional towing rigs, but also has considerable application as a training aid to enable neophyte skiers to gain a facility for controlling the skis before attempting mastery of conventional pull-out producers.

It has been recognized that much of the difficulty encountered with present methods of getting under way results from the power boat pulling force being applied at the skier's shoulder level while the high starting drag to be overcome by this force is in the region of the ski binding, i.e., near the skier's ankles. This necessitates the skier to assume various supine and squatting positions during starting in an effort to more closely direct the pulling force through the point of maximum drag. That force which cannot be so directed must be taken up by a stiffening of the body of the skier, particularly his back and leg muscles, to maintain an essential balance of forces.

A further complication exists during the initial towing stage in that the skis tend to be directionally erratic, requiring reflex reactions to maintain the skis under control.

As will be readily appreciated from the foregoing discussion, the redoubtable skill required in present methods of getting under way from both water and shore starts deters many persons from endeavoring to participate in this sport, for even those who have the necessary physical attributes require a substantial amount of practice to master the pull-out procedure with conventional towing rigs.

One of the objects of my invention, therefore, is to provide a novel towing rig for use with water skis which overcomes the aforesaid difficulties encountered during initial acceleration and yet allows the sport to be enjoyed in its customary manner thereafter.

Another object of my invention is to provide a novel towing rig for use with water skis which permits enjoyment of the sport of water skiing by persons of only average agility and without the need of special training and practice.

Yet another object of my invention is to provide a novel training aid device for use with water skis which greatly facilitates mastery of the sport of water skiing.

Still another object of my invention is to provide a novel attachment for water skis which enables the power

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boat pulling force to be transmitted directly to the skis during initial acceleration.

A further object of my invention is to provide a novel attachment for water skis which tends to maintain the skis in spaced parallel relation during pull-out but which thereafter allows the skis to be under the complete control of the skier so that the sport may be enjoyed in its customary manner.

A still further object of my invention is to provide a novel towing rig for water skis which is simple yet rugged in construction and which readily lends itself to the demands of economic manufacture.

In accordance with the objects of the invention, a novel towing rig is provided having a part thereof releasably hitched to the toe of each ski, causing the pulling force from a power boat, or other suitable means, to be directly transmitted through the hitch to each ski.

After pull-out is effected and the high starting drag is no longer present, by a particular manipulation of the handle of the towing rig the skier can release the hitch, causing the power boat pulling force to be transmitted directly to the handle, and thereafter permitting enjoyment of the sport in the customary manner.

In application of the invention to a pair of water skis rather than a waterboard or single ski, a spacer bar may be provided between the skis and tow line to maintain the skis in spaced, substantially parallel relation and to divide the pulling force equally between the skis during the acceleration period.

For a more complete understanding of my invention, reference is now made to the following description, taken in conjunction with the accompanying drawing wherein like numeral designators indicate the same or similar parts throughout the several views, and in which:

Fig. 1 is a perspective view illustrating the general application of one embodiment of the water ski towing rig according to my invention;

Fig. 2 is an isometric view illustrating the keeper member of the hitch assembly;

Fig. 3 is an isometric view illustrating the latching member of the hitch assembly of my invention;

Fig. 4 is a plan view of one preferred embodiment according to my invention utilizing separate handles for the skier to grasp;

Fig. 5 illustrates another embodiment according to my invention wherein a single handle bar is utilized; and,

Fig. 6 illustrates an embodiment of my invention as applied to water skiing wherein only a single ski or waterboard is utilized.

Referring now more particularly to the drawings, Fig. 1 shows the general application wherein a water skier is using a towing rig of one preferred embodiment of my invention during the initial period of getting under way.

As shown by dark lines, the pulling force from a power boat or other suitable means (not shown) is coupled to the water skis through the tow line 11 by way of spreader bar 12 and traces 13 and 14, to the hitches 15 and 16 which are secured to the toes of skis 17 and 18, respectively. Reins 19 and 20 are releasably secured, as hereinafter described, to the toes of their respective skis through hitches 15 and 16, respectively, to assist the skier in steadying himself during the initial acceleration stage.

After the skis have become water-borne, the skier may manipulate the reins, in a manner as hereinafter described, to release the hitches, whereby the pulling force is transmitted from the tow line through the traces and reins to the skier, as shown by broken lines, permitting the sport to be thereafter enjoyed in its customary manner.

The hitch assembly of the present invention is generally characterized by having a keeper member 24, adapted to be permanently affixed to the toe of each ski, and a releasable part termed a latching member, which is general-

ly shown at 25 in Fig. 1, functioning to connect trace 13 with reins 19.

The keeper member, shown by way of example in Fig. 2, consists of a rectangular metal face plate 26 having an opening 27 centrally located therein consisting of a circular hole with slots diametrically extending therefrom. The face plate is supported by generally triangular side members 28 and 29 which are adapted to have a bottom curvature, as at 31, that is complementary to the upturned toe of the ski so as to present the face plate in substantially parallel relation with the longitudinal portion of the ski. The keeper may be affixed to the ski in any suitable manner but is here shown to be secured by screws at the corners of the face plate, as at 32, extending down through the side support members into the ski.

The latching member of the hitch assembly, shown in Fig. 3, is characterized by a circular spacer plate 33 having a control bar 34 welded or otherwise affixed to the topside thereof, and a lug bar 35 similarly affixed to the bottom, but disposed perpendicularly to the control bar. A central hole 36 is provided in the latching member, being drilled or otherwise formed through the control bar, spacer plate and lug bar; and holes 37 and 38 are formed through the outer ends of the control bar, for purposes as will hereinafter become apparent.

The hitch assembly is illustrated in its engaged position in Fig. 4. As here shown in this top plan view, the lug bar 35 and spacer plate 33 of the latching member are adapted for complementary registration with the opening 27 in the face plate 26 of the keeper member. It is further contemplated that the spacer plate be of such thickness with respect to the face plate that upon registration of the latching and keeper members the top of the lug bar will be slightly below the bottom of the face plate. From this construction it will be evident that the latching member may be rotated so as to bring the ends of the lug bar 35 either into or out of registration with the slots in the opening 27 to prevent or permit disengagement of the latching and keeper members by an upward force upon the latching member.

Secured through the holes 37 and 38 in the outer ends of each control bar are reins 40 and 41 extending to handles 42 and 43, respectively, which are adapted to be held by the skier. It has been found that satisfactory securement of the reins to a control bar may be accomplished by merely passing the rein lines through the end holes and knotting them on the other side thereof. In a similar manner, the handles may be secured to the reins merely by passing each rein line through a hole provided along the axis of each handle and effecting a knot in the line on either side. However, it is herein contemplated that the manner of attachment of the reins to the handles and control bar is presented merely by way of example, and the invention is not intended to be limited by this particular construction.

It will be evident, by way of functional description, that when the reins are extended back over the skis and the handles are held perpendicular thereto, the lug bars of the latching members will be out of registration with the openings in the keeper members, and therefore the hitch assemblies will remain in engagement; however, rotation of the handles will effect a like rotation of the control bars so that registration of the lug bars and the openings can be effected by the skier at his convenience. It will be apparent that, upon such registration, the latching members will release from their respective keeper members, whereby the tow line pulling force will no longer be effective upon the skis but will be transmitted directly to the handles through their respective reins.

As further shown in Fig. 4, the spreader bar 12 therein functions to maintain the skis in spaced relation and to transmit a substantially equal pulling force to the traces 13 and 14 from the tow line 11. This is satisfactorily accomplished by providing an elongate bar of wood, or

other suitable material, having three spaced holes there-through, one at the center and one at each end thereof. The tow line may be attached merely by passing it through the center hole and knotting the end thereof on the other side. In a similar manner, the traces 13 and 14 may be attached to the spreader bar and to the latching member of the hitch assembly.

The invention as embodied in a towing rig having a single handle is shown in Fig. 5. It is herein contemplated that the reins 44 and 45 which are of slightly unequal length, be secured from each control bar to opposite ends of the handle 46 in a manner similar to the way traces 13 and 14 are secured to the spreader bar 12 in Fig. 4. From this arrangement it can readily be seen that a clockwise movement of the handle effects a simultaneous and like movement of each control bar to permit disengagement of the latching and keeper assemblies as heretofore described.

Fig. 5 shows the further modification wherein the tow line pulling force is more equally transmitted to the skis. In this arrangement the traces 47 and 48 pass directly through holes at the outer ends of the spreader bar 49 and are secured together a short distance in front of the spreader bar as by a clew or other suitable means for maintaining the traces 47 and 48 of equal length. Alternatively, the traces 47 and 48 may be formed of a single line, having a bight therein provided with a thimble 50, as shown, at a point in the line equally distant from the hitch assemblies. It will be recognized, of course, that the spreader bar arrangements, hereinabove described in particular with respect to Figs. 4 and 5, could be used interchangeably.

The invention as applied to a waterboard or single ski is shown in Fig. 6. In this embodiment a single elongate handle 51 is used having reins 53 and 54 of equal length extending from the ends thereof to the control bar of the single hitch assembly, which may be the same as that provided for a pair of skis as heretofore described. The tow line 11 may then connect directly to the center of the control bar; or, as shown, there may be provided a trace 55 terminating in a thimble 56 which is adapted to be connected to the tow line 11.

It is herein contemplated that the instant invention is applicable to all types of aquatic vehicles or devices that skim or plane over the surface of the water. It is further contemplated that the term "water skier" be understood to include any riders of such aquatic devices or vehicles.

From the above description it will be appreciated that the water ski towing rig of my invention can be used to great advantage in extending the enjoyment of the sport to persons who either have not the necessary physical attributes or do not wish to expend the time or effort necessary to overcome the formidable difficulties encountered during the initial towing stage. It is further apparent that application of my invention to avoid the starting difficulties inherent in the use of conventional towing rigs will, in no way, lessen the enjoyment of the sport, but, on the contrary, will eliminate its least enjoyable aspect. Alternatively, the towing rig of my invention may be used as a training device to assist neophytes in obtaining a facility for manipulating the skis prior to attempting mastery of the difficult initial starting phase with a conventional towing rig.

From the foregoing it will be apparent that I have provided a novel water ski towing device which is well adapted to fulfill the aforestated objects of the invention. Moreover, whereas the invention has been disclosed in particularity with respect to embodiments which give satisfactory results, it will be understood by those skilled in the art to which the invention most nearly appertains, that additional embodiments and modifications thereof may be provided without departing from the spirit or scope of my invention as defined in the appended claims.

I claim:

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1. In combination with a pair of water skis, a towing rig comprising a pair of keeper members each secured to one of said skis, a pair of latching members each releasably secured to one of said keeper members, selectively operable means for simultaneously releasing each of said latching members from its keeper member, and means interconnecting said latching members for maintaining said latching members in mutually spaced relation when the latching members are disengaged from the keeper members.

2. Apparatus as set forth in claim 1 wherein said selectively operable means includes a pair of handles, and a pair of sets of control lines of equal length, each set connecting one of said handles with one of said latching members so that a particular manipulation of said handles is effective to release each of said latching members from its keeper member.

3. In a towing rig, a pair of hitch assemblies each having a keeper member and a companion latching member releasably securable thereto, selectively operable means for simultaneously releasing each of said latching members from its companion keeper member, and towing means interconnecting said latching members for maintaining said latching members in mutually spaced relation when the latching members are disengaged from the keeper members.

4. Apparatus as set forth in claim 3 wherein said selectively operable means includes a pair of handles, and a pair of sets of control lines of equal length, each set connecting one of said handles with one of said latching members.

5. Apparatus as set forth in claim 3 wherein said selectively operable means includes a single elongate handle, and a pair of sets of control lines, each of said sets having lines connected from the opposite ends of said handle to one of said latching members.

6. Apparatus as set forth in claim 3 wherein said towing means includes a spacer bar and a pair of lines connecting said bar with each of said latching members.

7. Apparatus as set forth in claim 3 wherein said towing means includes a spacer bar and a pair of equal length lines, each of said lines being connected to one of said latching members, said lines passing through said spacer bar adjacent opposite ends of said bar and being joined together at the other side thereof.

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8. In combination with a water ski, a towing rig including a keeper member secured to said ski, a companion latching member releasably secured to said keeper member, and manually operable means for selectively releasing said latching member from said keeper member.

9. In combination with a water ski, a towing rig including a keeper member secured to the toe of said ski, a companion latching member releasably secured to said keeper member, a handle, and flexible control lines connected between said handle and said latching member.

10. In combination with a water ski, a towing rig including a keeper member secured to the toe of said ski, a latching member releasably secured to said keeper member, said latching member being rotatable in said keeper member and releasable therefrom upon a predetermined rotation, a towing line connected to said latching member at the center of rotation thereof, a pair of manually actuable control lines connected to said latching member in diametrically spaced relation to the center of rotation thereof, the arrangement being such that the application of unequal pulling force on said manually actuable control lines will cause said latching member to rotate so as to effect release thereof from said keeper member upon said predetermined rotation.

11. In a towing rig, a hitch assembly having a keeper member and a companion latching member releasably secured to said keeper member, and remotely operable means for selectively releasing said latching member from said keeper member, said remotely operable means including a handle, and a set of flexible control lines connecting said handle with said latching member, the arrangement being such that a particular manipulation of said handle is effective to release said latching member from its companion keeper member.

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