Nov. 17, 1964 H. O. LONG 3,156,935

WATER SKIING APPARATUS

Filed Jan. 30, 1963 3 Sheets-Sheet 1

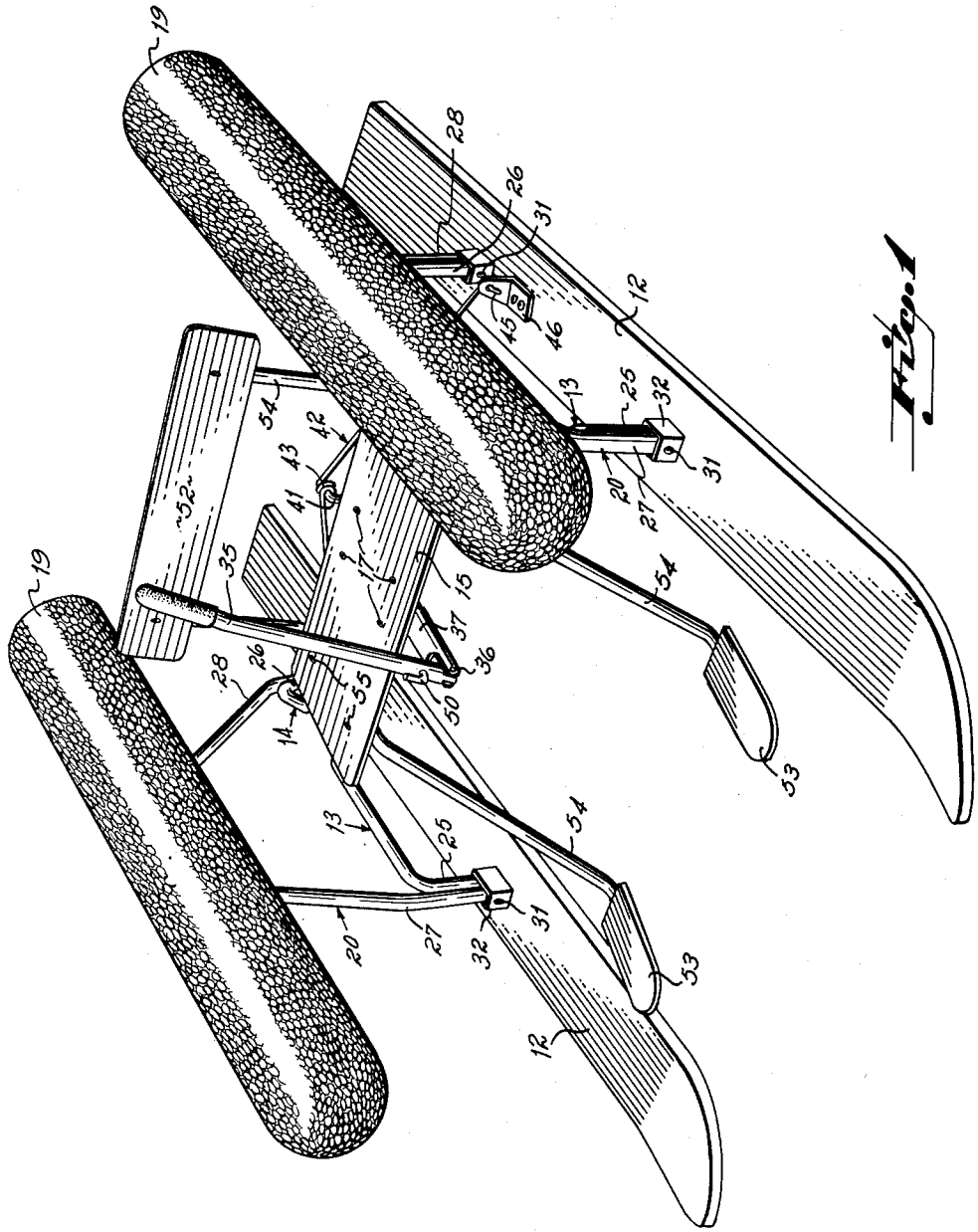


Fig. 1

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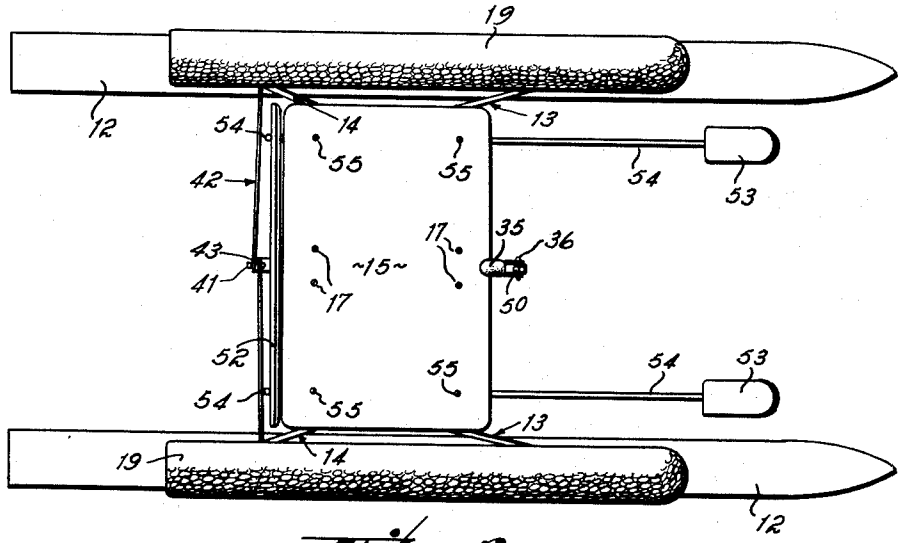


Fig. 2

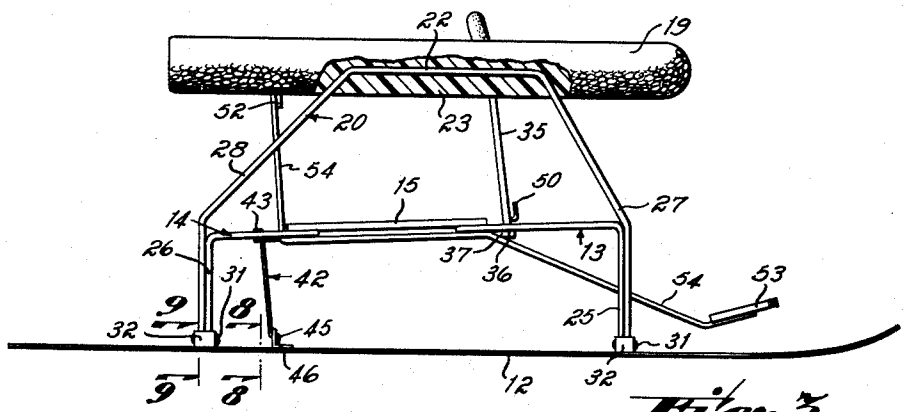


Fig. 3

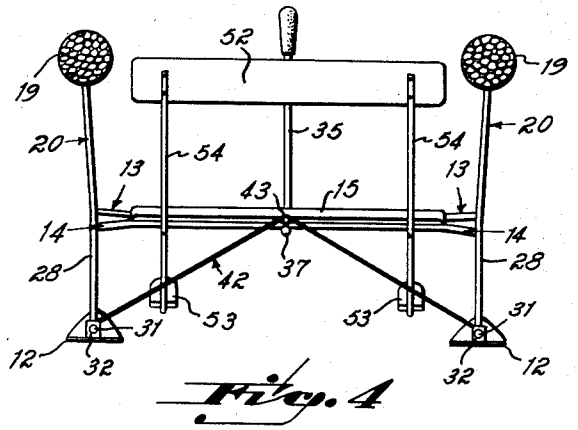


Fig. 4

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WATER SKIING APPARATUS

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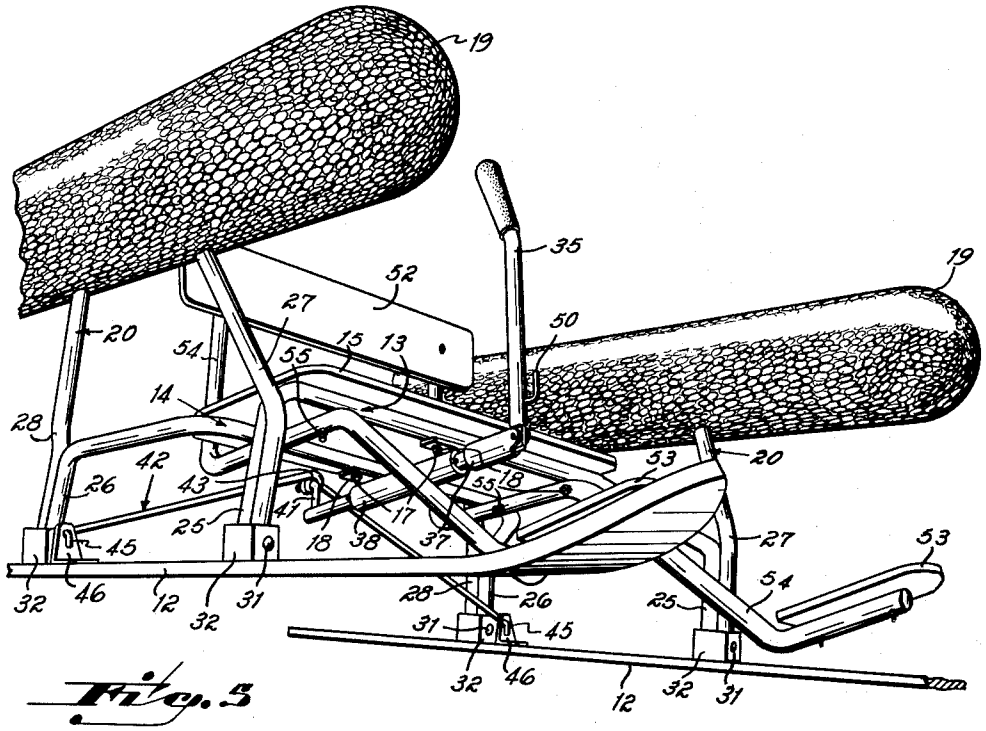


Fig. 5

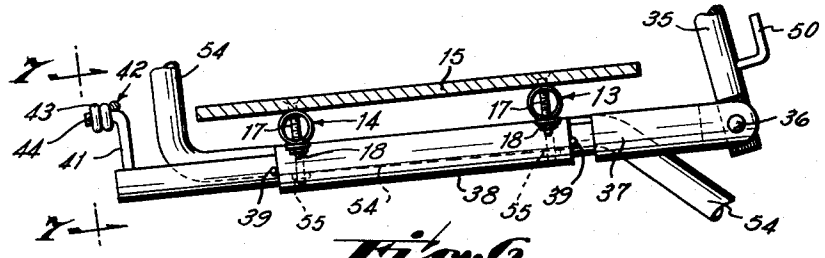


Fig. 6

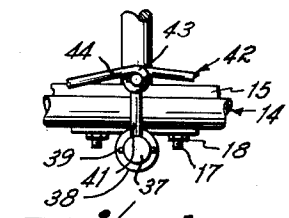


Fig. 7

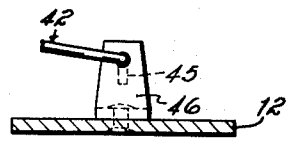


Fig. 8

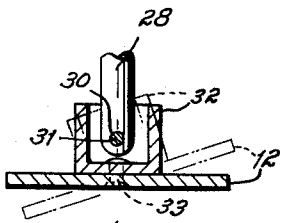


Fig. 9

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3,156,935

WATER SKIING APPARATUS

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Filed Jan. 30, 1963, Ser. No. 254,874
2 Claims. (Cl. 9—310)

This invention relates to water skiing apparatus and is particularly directed to water skiing apparatus having a seat for supporting the skier as he is towed behind a boat.

Water skiing is rapidly becoming one of the most popular of the aquatic sports, partly because of the rapid increase in the number of boats being manufactured and sold, but more importantly because of the extraordinary excitement and exhilaration which attends the participation in the sport. As is well-known, water skiing is performed by a person on skis, the person grasping a bar on the end of a tow rope which is pulled by a towing boat. The boat is driven at a speed high enough to permit the movement of the skis on the surface of the water to provide the support for the skier above the surface of the water. The skier, by shifting his weight from one side to the other, while rolling his ankles to pivot his skis, can change his course to swing back and forth behind the boat and to ride over the boat's wake, thereby giving added impetus to his forward motion. The exact factors which contribute to the popularity of the sport do not admit a precise definition, although certainly the ability to move and maneuver at comparatively high speeds and the apparent weightlessness on the water are important considerations.

One disadvantage of the sport is that not all persons have the muscular coordination and balance required to participate, and even if the ability to water ski is present, the strain of holding on to the towing bar over a long period of time requires rather a higher degree of physical fitness than the casual weekend skier normally possess.

The objective of the present invention has been to provide skiing apparatus on which a skier can derive excitement and entertainment without requiring any natural ability to ski, and without requiring the physical fitness necessary to ski over a long period of time.

It is acknowledged that there have been attempts to devise apparatus adapted to be towed by a boat, the apparatus supporting an occupant in a manner not wholly unlike water skiing. None of these attempts has been marked with any degree of success, and it is believed that the lack of success is due to inherent deficiencies in design which detract from the essential enjoyment to be derived from the use of the apparatus. Most prior designs are characterized by the employment of pontoons having rudder type steering apparatus. The resultant structure proves to be nothing more than a catamaran type boat towed by another boat, a combination which in no way approximates actual water skiing.

The present invention is distinguishable from the prior art by its strucutre which provides a closer approximation to the true water skiing sport. The structure includes a support to which two skis are mounted, each being pivoted to the support for pivotal movement about a longitudinal axis. A steering lever is provided for pivoting the skis in synchronism about their longitudinal axis in much the same manner as a water skier shifts his weight and rolls his ankles to cause the skis to incline to the horizontal plane in order to change directions. The skis in all material respects resemble true water skis, in that they are constructed of flat planar strips which are pointed and upturned at the forward ends. Thus, the angle of attack which the skis of the invention have with respect to the water is identical to that of true water skis.

Another important feature of the invention is the provision of a float on each side of the support, the float being spaced upwardly from the skis so as to avoid interference in any way with the pivotal operation of the skis. Preferably the floats provide sufficient buoyancy to support not only the apparatus but additionally the skier on the support. The skier can sit in the water on the apparatus and be fully supported by the floats while waiting for the towing boat to raise the apparatus out of the water in a fashion quite similar to that associated with true water skiing. If for any reason it is necessary for the skier to become disengaged from the towing rope, the skier can sit comfortably on the apparatus while waiting for the towing boat to reutrn, and in this way the skier is not required to expend his energy maintaining himself afloat after he has been expelled from his skis or otherwise separated from the towing boat.

It has been an objective of the invention to manufacture the floats as elongated sausage-like members of expanded polystyrene foam. A solid block of polystyrene foam is unusually strong as well as being very light and inexpensive. The material therefore is ideally suited for this environment where it is likely to experience rather rough treatment and where it is important that the structure attached to the skis is as lightweight as possible in order to preserve the true skiing action.

It has been another objective of the invention to provide a joystick type steering lever having means for attaching the tow rope to it in such a way that release of the steering lever automatically releases the tow rope. This protective device prevents any accidents which might occur due to the towing boat pulling the apparatus when the skier has gotten into trouble or perhaps even pulling the skiing apparatus over on top of the skier.

These and other objectives and advantages of the present invention will become more readily apparent from the following detailed description of the invention taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a perspective view of the invention.

FIG. 2 is a top plan view of the invention.

FIG. 3 is a side elevational view partly in section of the invention.

FIG. 4 is a rear end elevational view of the invention.

FIG. 5 is a perspective view taken from the bottom of the invention.

FIG. 6 is a fragmentary elevational view of a portion of the steering system mounted below the seat.

FIG. 7 is a view taken along line 7—7 of FIG. 6.

FIG. 8 is a cross sectional view taken along line 8—8 of FIG. 3.

FIG. 9 is a cross sectional view taken along line 9—9 of FIG. 3.

Referring to the drawings, particularly FIGS. 1 and 5, the skiing device has a pair of skis **12** which are secured to forward and rearward U-shaped support members **13** and **14** which are disposed transversely between the skis and are secured to a seat **15** by means of bolts **17** passing through the seat and supports **13–14**, the bolts being secured by nuts **18**. A pair of floats **19** are fixed to the supports **13–14** by U-shaped standards **20**, each having a bight portion **22** of the U embedded in a respective float as indicated in FIG. 3. The floats preferably are molded of expanded polystyrene beads and standards **20** can be either molded integrally with the floats or can be disposed in a recess formed in the floats, the recess being closed by a plug **23** to secure the standards to the floats.

The main supports **13** and **14** have forward depending legs **25** and rearward depending legs **26** to which the forward and rearward depending legs **27** and **28** respectively of standards **20** are welded. The extremities of the legs are bored as at **30** (FIG. 9) to receive a pivot pin **31**.

The ends of the legs are inserted into a box shaped bracket **32** which is fixed to the skis as by a rivet **33** or in any other suitable manner. The pivot pin **31** for each of the legs is secured to the forward and rearward walls of the box shaped bracket to secure the skis to the depending legs of the supports and standards and to permit limited pivotal movement of the skis with respect to those legs since the brackets will strike the supports. The limited pivotal movement is important in order to prevent the force of the water on an inclined ski from turning the ski through an angle of approximately 90° so that it cuts too deeply into the water and does not give the proper support to the apparatus on the water.

The pivoting of the skis is caused through a joystick type lever **35** which is pivoted on a pin **36** to a steering shaft **37** rotatably mounted on the supports **13** and **14** underneath the seat **15**. The shaft **37** passes through a sleeve **38** which is welded to the supports **13** and **14**. Pins **39** project from the shaft at each end of the sleeve **38** and prevent longitudinal movement of the shaft with respect to the sleeve but permit rotational movement of the shaft with respect to the sleeve.

An L-shaped lug **41** is fixed to the rearward end of the shaft **37** and projects upwardly from it. A steering linkage **42** has a central bearing member **43** pivotally secured on the lug **41** and held on the lug **41** by a pin **44** projecting from the lug. The steering linkage **42** has its ends **45** pivotally secured in L-shaped brackets **46** which are fixed to respective skis **12**. The pivotal connection is spaced above the pivotal axis formed by the pivot pins **31** so that the application of a force on the linkage will cause the skis to pivot.

The steering lever **35** has at its lower end, closely adjacent the pivot pin **36**, an L-shaped lug **50**. When the lever is vertical or rearwardly inclined, a loop from the tow rope is placed on the lug **50** and held securely there. If, however, the steering lever is released, the force of the towing rope quickly causes the steering lever to pivot in a forward direction and permits the towing rope to slip off the lug **50**. Thus, mere release of the towing lever effects disengagement of the skiing apparatus from the towing boat and enables the operator to avoid any disastrous collisions. It should be noted also that the location of the towing lug **50** close to the pivot pin **36** gives the operator of the apparatus approximately a 10–1 mechanical advantage in holding the steering lever in its vertical position against the force of the tow rope and consequently greatly minimizing the strain on the skier during the operation of the apparatus.

A back **52** and feet supports **53** may be mounted in fixed relation to the seat **15** by rods **54** which are secured to the seat by bolts **55**. The feet supports **53** are preferably of a minimum width dimension so that they provide as little interference as possible through engagement with the water as the apparatus passes over the water.

In the operation of the invention, the skier initially sits in the seat **15** and holds the steering lever **35** vertical with a tow rope attached to the lug **50**. The skier is held in that partially submerged position by the buoyancy of the floats **19**. Thus, the attitude of the skier is quite similar to that of a person using ordinary skis. As the tow boat moves forward, the upwardly curved forward

ends of the skis as well as the angle of inclination of the skis with respect to the water surface causes the apparatus to ride up out of its submerged condition until it planes on the surface of the water. The lever **35** can be moved to the left or right to cause the skis to pivot about the depending legs of the supports **13** and **14** in such a manner to cause the apparatus to turn to the left or right respectively. Thus, the steering of the apparatus insofar as it is accomplished by the pivoting of the skis is quite similar to that of true skiing.

In the event that it is necessary to disengage the apparatus from the towing vehicle, all that is required is the release of the lever **35** which will immediately pivot forwardly and permit the tow rope to slide off the lug **50**.

I claim:

1. Water skiing apparatus comprising,
a support having downwardly depending legs on each side thereof,
a seat mounted on said support,
two spaced parallel skis each mounted on respective depending legs of said support for pivotal movement about longitudinal axes,
means mounted on said support for pivoting said skis in synchronism about said longitudinal axes,
a float mounted to and above said support on each side of and above said seat and spaced above said skis,
and means confining the pivotal movement of said skis within predetermined limits.

2. Water skiing apparatus comprising,
a support having downwardly depending legs on each side thereof,
a seat mounted on said support,
two spaced parallel skis each mounted on respective depending legs of said support for pivotal movement about longitudinal axes,
means mounted on said support for pivoting said skis in synchronism about said longitudinal axes, and
two floats one being mounted to said support on each side of and spaced above said seat.

References Cited by the Examiner

UNITED STATES PATENTS

1,586,458	5/26	Newby	115—22.3
1,600,735	9/26	Pederson	280—21.1
2,323,847	7/43	Sampsell	280—21.1
2,451,781	10/48	Steele	115—70
2,620,199	12/52	Maly	280—21.1
2,940,409	6/60	Chaffee	114—70 X
2,948,251	8/60	Replogle	9—310 X
2,950,923	8/60	Forney	9—310 X
2,980,927	4/61	Waters	9—347
3,013,515	12/61	Morel.	
3,027,574	4/62	Meehan	9—310
3,081,107	3/63	Cantelli	280—21.1
3,081,729	3/63	Lee	9—310 X
3,119,131	1/64	Yoder	9—310

FOREIGN PATENTS

1,022,518	12/52	France.

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