

May 25, 1965

A. SAIKO

3,185,474

WATER SPORT TOWING DEVICE

Filed July 28, 1961

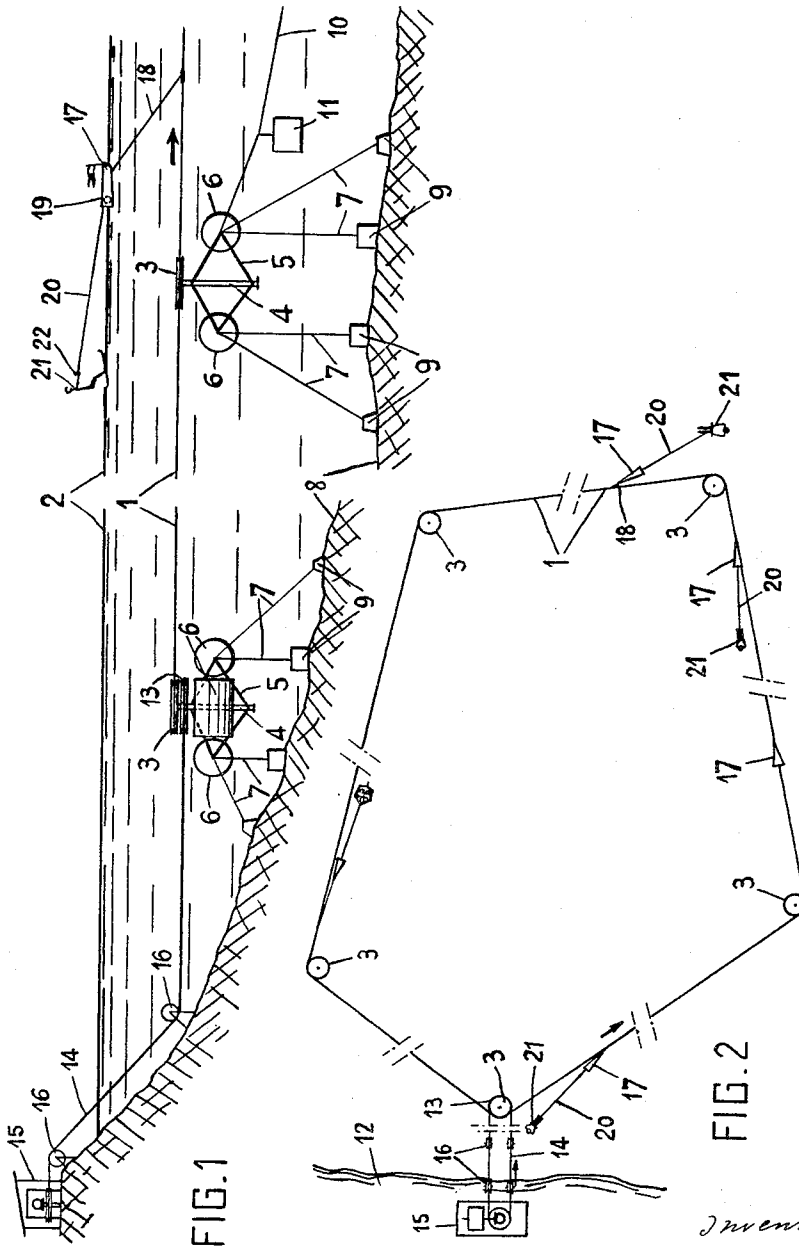


FIG. 1

FIG. 2

Inventor
Akiyoshi Saito
By Michael S. Striker
Attorney

1

3,185,474

WATER SPORT TOWING DEVICE

Alphons Saiko, Brunnigasse 6, Bern, Switzerland

Filed July 28, 1961, Ser. No. 127,717

Claims priority, application Switzerland, July 29, 1960,
8,678/60

3 Claims. (Cl. 272—32)

The invention refers to towing devices for purposes of propulsion in sporting activities on water.

In carrying out various sporting activities on water, and in particular for water-skiing purposes, there is employed in view of the high speeds desired propulsion by means of motor. In the case of water-skiing a motor boat draws the skier or skiers each on a rope behind it, but in view of the considerable speeds involved requires a comparatively large area of water and thereby constitutes for other persons engaged in sporting activities in the vicinity a danger of collision which is only to be avoided with difficulty. It is, however, also a disadvantage that in view of these conditions water-skiing is available only to a limited circle, and the noise of travelling motor boats, particularly in the vicinity of inhabited localities, is found to be an annoyance.

It is the object of the present invention to overcome these disadvantages, and the invention accordingly relates to a towing device for purposes of propulsion in sporting activities on water, in which an endless towing rope is guided by means of guide pulleys below water along a horizontal polygonal track and is capable of being driven by means of a motor, floats on the surface of the water each being connected by a rope to the towing rope to serve as a traction means for the object to be towed on the surface of the water.

The path of movement of the towing rope is normally arranged 3 to 4 meters below the surface of the water, and its disposal may be admirably adapted to local conditions by the number and distribution of the guiding points. The objects to be towed are not only water-skiers, but also for example inflatable boats, rafts and boats for 2 to 3 persons capable of being steered to a limited extent, so-called surf riders, inflated animals, chairs and the like.

The invention will be described more precisely in the following in conjunction with the form of embodiment illustrated by way of example in the accompanying drawing.

FIG. 1 is a diagrammatical elevational view of the essential parts of a towing device, and

FIG. 2 is a diagrammatical plan view of the towing device.

The towing device for purposes of propulsion in sporting activities on water possesses an endless cable 1, which is guided a few meters below the surface 2 of the water by means of a plurality of horizontally disposed guide rope pulleys 3 along a circulatory polygonal track practically parallel to the surface of the water, the rope pulleys 3 each being located at a corner of the polygonal track (FIG. 2). Each rope pulley 3 is secured with its vertical spindle 4 in a supporting frame 5, which for the purpose of obtaining a strong buoyancy is furnished with a plurality of cylindrical air floats 6 and by means of bracing cables 7 is so anchored to block weights 9 located on the water bed 8 that it is maintained in a stationary position at the same level as the other frames 5. In the event of shallow depth of the water bed the frame might be equally well secured to posts or to a concrete base and would then not require any air containers. In order to keep the cable 1 sufficiently tensioned also in the event of a comparatively large distance between two rope pulleys 3 there is provided on the convex side of the corner of the polygon on the frame 5 a tensioning cable 10, which extends with as little inclination as possible to a point of anchorage on

2

the bank or on the water bed 8 and is loaded with a suspended weight 11.

The rope pulley 3 situated nearest to the bank 12 is coupled with a rope pulley 13, which is mounted thereunder on the spindle 4 and by means of an endless transmission cable 14 is rotatable by a driving station 15 located on the bank, which station possesses a motor, regulatable for example in continuous fashion, and a reduction gear. The transmission cable 14, proceeding from the driving station 15 and back, is guided by way of guide pulleys 16 on a level with the rope pulley 13.

To the cable 1 there are connected a multiplicity of floats 17 disposed in spaced relation to one another on the surface 2 of the water, each by means of an inclinedly disposed cable 18, which engages with the lower side of the front part of the float 17. In the rear part of the float 17, which is for example of boat-like form, there is provided at least one rope-winding means 19, from which a rope 20 passing out at the rear end of the float 17 is partially unwound against the action of a resilient winding force when a water skier 21 grasps the free end of the rope furnished with a grip 22 and allows himself to be drawn along by the cable 1, moving in the direction of the arrow, by way of the connecting cable 18, the float 17 and the rope 20. The unwinding of the rope 20 results upon the starting of the water skier from a starting ramp and initially reduces the rate of tow transmitted to the skier. If the water skier releases the grip 22, the rope 20 with the exception of a short end is wound up automatically at moderate speed by the winding means 19.

In place of water skier other objects to be towed may be hitched on to the rope 20, the rope readily permitting of a considerable lateral deflection from the general direction of towing, which appreciably increases the attraction from a sporting point of view.

The towing device as described may readily be employed for sporting activities, as despite the continuous operation the users are able to change after one or several turns.

Instead of being on land the motor drive for the towing cable 1 may equally well be provided in floating fashion on the water or below water.

What I claim is:

1. A towing arrangement for water sport comprising, in combination, an endless towing cable; a plurality of guide means for guiding said endless towing cable in a towing plane substantially parallel to and spaced below the surface of a body of water, said plurality of guide means arranged in said towing plane at the corners of a polygonal towing track and adapted to guide said endless towing cable movable in longitudinal direction along said polygonal towing track in said towing plane parallel to and spaced below the surface of said body of water; a plurality of support means each secured to and supporting one of said guide means, each of said support means located below the respective guide means to which it is secured; a plurality of float means each secured to one of said support means permanently tending to lift the same in said body of water, each of said float means located also below the respective guide means; a plurality of flexible anchoring means each secured at one end thereof to the ground at the bottom of the body of water and at the other end thereof to one of said float means an support means, each of said flexible anchoring means being of such length as to locate said guide means in said towing plane spaced below the surface of said body of water and to locate said support means and said float means spaced below said towing plane and spaced further from said surface of said body of water than said guide means, so that said guide means are located above said support means, driving means for moving said endless flexible towing cable guided by said guide means along said polygonal track in said towing plane spaced below the

3

surface of said body of water; a towing float on the surface of said body of water; and elongated pulling means attached at one end to said towing float and at the other end to said towing cable and having a length greater than the distance between said towing plane and said surface of said body of water, whereby said elongated pulling means will project during pulling of an object located on the surface of the water in an inclined direction to the surface of the water and will move during pulling thereof in the space between said towing plane and said surface of said body of water which space is free and unobstructed due to location of all said support means, all said float means, and all said anchoring means below said towing plane.

2. A towing arrangement according to claim 1, wherein each of said guide means is a pulley for guiding the endless flexible towing cable.

4

3. A towing arrangement according to claim 1, wherein said driving means for moving said endless flexible towing cable includes a driving pulley engaging said cable.

References Cited by the Examiner

UNITED STATES PATENTS

1,448,306	3/23	Lezert -----	272—39 X
1,772,526	8/30	Steinhart -----	272—32

FOREIGN PATENTS

803,496	7/36	France.
1,229,031	3/60	France.

RICHARD C. PINKHAM, *Primary Examiner.*

15 DELBERT B. LOWE, *Examiner.*