June 2, 1964 A. K. TYLL 3,134,992

WATER SKI

Filed Jan. 3, 1963

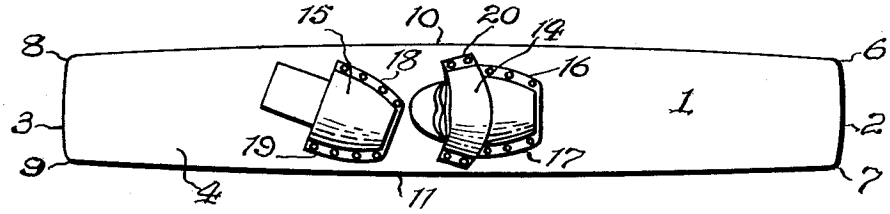


Fig. 1

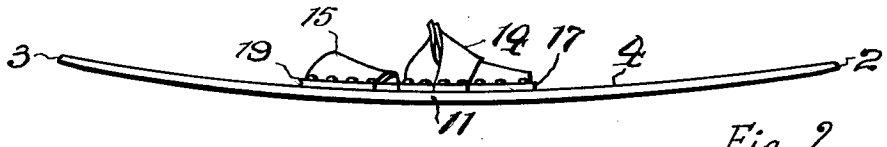


Fig. 2

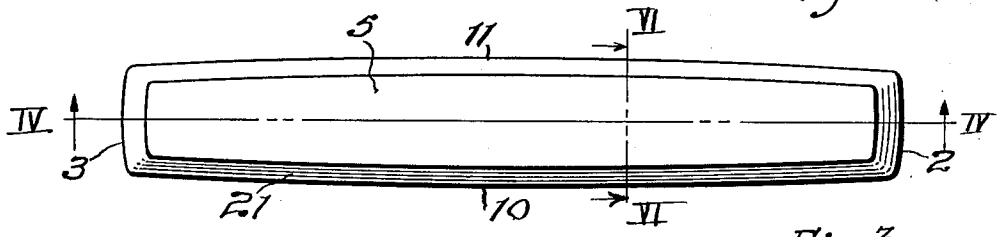


Fig. 3

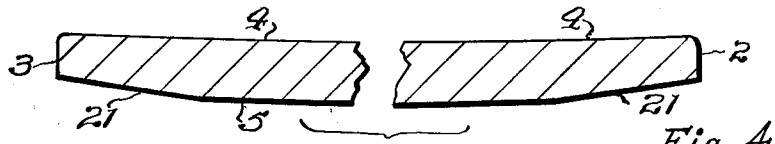


Fig. 4

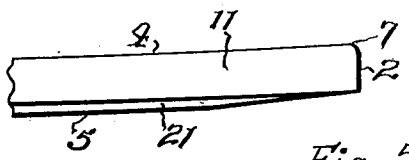


Fig. 5

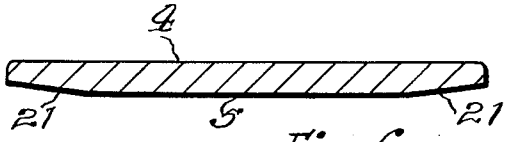


Fig. 6

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WATER SKI

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The invention relates to "Water Skis," more particularly defined as "Trick Skis," as same are well suited to the performance of desired maneuvers on a fluid medium such as water, when constructed according to my invention and wearer is accelerated by power at predetermined speed on said medium.

The invention is also directed to a method of locating bindings on one or both skis as desired.

The object is to provide a ski of the character indicated in which the top surface is designed to accommodate the wearer in a position for proper balance either on one or two skis and each ski undersurface is designed to effectively engage the fluid medium to enable the skier to perform the desired evolutions.

Another object is to provide a ski which is durable, and lends itself to production in quantity by well known or approved methods of manufacture.

Another object is to provide a ski in which the desired proportions of length to width; weight to size; and shape to surface are variable within limits without detracting from the effectiveness of same during operation.

Another object is to provide a ski in which both the top and bottom longitudinal curvatures are substantially that of arcs of a circle and the bottom is provided, adjacent all edges, with a peripheral plane having similar characteristics throughout its length and width and angled upwardly from said bottom.

Another object is to provide a method for locating the bindings or means for releasably attaching a ski, or skis, to the wearer so that the ideal conditions for proper balance may be attained by my novel and simple method.

A further object is to provide an article of the character described in which the above and other objects may effectively be attained as will appear from the following detailed specification.

In the accompanying drawing—

FIG. 1 represents, in top elevation, a ski constructed according to my invention.

FIG. 2 represents a side view of the embodiment shown in FIG. 1 with the means for attaching a ski to the feet of the wearer in place on said surface.

FIG. 3 represents a bottom view of the embodiment shown in FIGS. 1 and 2.

FIG. 4 represents a section on an enlarged scale taken on the line IV—IV of FIG. 3, looking in the direction of the arrows; the ski being right side up.

FIG. 5 represents a detail in side elevation, on an enlarged scale, of either tip of a ski constructed according to my invention; and

FIG. 6 represents a cross section on an enlarged scale of a ski constructed according to my invention taken on the line VI—VI of FIG. 3 and looking in the direction of the arrows; the bindings or attaching means having been omitted; and the ski being right side up.

Referring to the several figures of the drawings, the ski body generally is denoted by **1** and its tips or ends, herein called front and rear, by **2** and **3**. The body top is **4** and the flat bottom portion (flat in width, curved in length) is shown as **5**. Numerals **6, 7, 8, 9** denote the rounded top corners of ends **2** and **3**.

The sides **10, 11** of body **1** may be substantially straight but are preferably formed as opposed symmetrical arcs faired into the rounded top corners of ends **2** and **3** as is clearly evident from an inspection of FIGS. 1 and 3.

As may be seen in FIG. 2, foot engaging means, normally heavy elastic straps, are denoted by **14** and **15**. These straps are secured to the top of body **1** by means **16, 17, 18, 19, 20** which are normally metal strips screwed or otherwise securely fastened thereover to said top **4** after having been precisely located as will be more fully set forth below.

An important feature of my invention is the dihedral shown in FIG. 3 and comprises a plane surface **21** approximately 1½ inches in width angled from the flat bottom section **5** to the sides **10, 11** and, in the preferred embodiment, to the ends **2** and **3**. It will be noted that this plane surface extends entirely around the periphery of the ski bottom **5**, in its preferred form, but could be omitted from the ski ends without departing from my inventive concept.

Said plane surface **21** is shown in FIG. 3 as extending entirely around the ski bottom.

When the skier causes the ski body to tilt during the use of the ski, this tilt causes a change in surface presentation of the bottom and peripheral plane surface to the fluid medium. The advantages of the structure, which include this peripheral plane surface, are that same eliminates edge-catching while turning or side sliding and permits a smoother and easier turn.

I have found, by actual test in performance, that certain proportions and dimensions of the skis tend to give the best results and that skis constructed according to my invention with the following specifications are very satisfactory.

Length overall—48½ to 52 inches.

Width—7⅞ inches at center.

Width at point ½ inch from ends, 6½ inches.

Dihedral (flat surface—angled from bottom to sides)—width 1½ inches.

Intersection of said flat surface with sides ⅛ inch above horizontal bottom plane.

Dimensions from upper end surface to base plane of body 1½ inches. Ski bottom—between longitudinal dihedral sections 4⅞ inches.

Thickness—⅝ inch.

Top and bottom longitudinals—concentric arcs of a circle having a radius of 199 inches.

Top edges rounded off on ¼ inch radius.

Ends rounded off on arcs having 24¼ inch radii.

Material—buoyant, non-resilient.

Weight—dependent upon material used for construction but preferably about 130 ounces for each ski.

The method of locating the binding or bindings on the top of a ski comprises placing a foot of the wearer on the longitudinal center of the ski so that the prolongation of the shin bone to said top surface, at right angles thereto, intersects said longitudinal; indicating the position of said foot on the top and placing the binding across the top of said foot, at a position where the weight of the wearer is supported approximately on the center of the ski. Said binding may then be attached to the said top by any well known or approved means, such as **16** and **17**, as shown in FIG. 2. If a rear cup or strap for said foot is desired it may be secured as at **18** (see FIG. 2), but the nature of the binding is not part of my invention.

When it is desired to fit a single ski with bindings for both feet, as is customary for many uses, the first or forward binding **14** is located as above described and the second or rear foot is placed on the top surface at an angle comfortable to the wearer and indicated on said surface. Said angle may be to the right or left of the longitudinal center depending upon which foot is forward, i.e., whether the wearer is left or right footed. The location of strap **15** (FIG. 2) is proper for a left foot forward and, as indicated above, may vary for individual preference and

balance. An angle of approximately 30° from the longitudinal has been found to be satisfactory.

It will be understood that the exact material from which the ski is to be constructed is not vital as long as it is buoyant, stiff and resistant to warping or distortion. Hardwood, well cured and having glued edges has proven satisfactory but I do not limit the invention to any particular method of manufacture as the invention is directed to the structural features outlined above.

Since it is evident that various changes may be made in the precise form and relationship of the several elements without departing from the spirit and scope of my invention. I do not intend to be limited to the specific embodiments herein shown and described except as set forth in the appended claims.

What I claim is:

1. An article of the character described comprising a ski body, ends of similar contour and dimensions, foot engaging means on the top of said body located between said ends, a bottom of said body, said bottom being flat surfaced transversely and curved substantially throughout longitudinally, and a complete peripheral plane surface angled upwardly from said bottom whereby tilt of the body causes a change in surface presentation of the bottom and plane to a fluid medium.

2. The combination according to claim 1 in which the body has sides formed in the shape of opposed identical symmetrical arcs.

3. The combination according to claim 1 in which the body top and bottom are formed in concentric curves throughout the major portion of their lengths.

4. The combination according to claim 1 in which the upper end surfaces of the peripheral plane surface are approximately 1½ inches above the base plane of the lowest portion of the bottom of said body.

5. The combination according to claim 1 in which the total peripheral plane surface is substantially two-thirds that of the flat bottom width.

6. The combination according to claim 1 in which the overall body length is substantially ten times the maximum flat bottom width.

7. The combination according to claim 1 in which the overall body length is at least ten times the maximum flat bottom width.

8. The combination according to claim 1 in which the body length is at least six times the body width and the body thickness is substantially one twelfth of the body width.

9. An article of the character described comprising a symmetrical body top, its sides shaped in opposed identical symmetrical arcs, its tapered ends having partially rounded corners, foot engaging means located at the center of said body on the top of same, other foot engaging means angled with respect to said first foot engaging means, a transversely flat bottom, a peripheral plane surface angled upwardly from said bottom to said sides and ends and joining said sides at an angle, rounded upper edges on said top, and said body being of substantially uniform thickness, whereby any tilt of the body causes a change in surface presentation of the bottom and peripheral plane surface to a fluid medium.

References Cited in the file of this patent

UNITED STATES PATENTS

1,918,508	Wheeler	July 18, 1933
2,823,397	Wagner	Feb. 18, 1958
2,955,300	Hedlund	Oct. 11, 1960
2,971,207	Eicholtz	Feb. 14, 1961
3,056,148	Abbott	Oct. 2, 1962
3,067,440	Blake	Dec. 11, 1962

FOREIGN PATENTS

365,010	Italy	Nov. 19, 1938
376,861	Italy	Nov. 29, 1939
194,765	Austria	Jan. 10, 1958

OTHER REFERENCES

How To Make It—Book of Crafts (pages 172–173), by Curtiss Sprague, 1st edition, Pelham, N.Y., Bridgman Publishing, Inc., 1941.