Aug. 30, 1955 J. R. BILLINGHAM 2,716,246

WATER SKI

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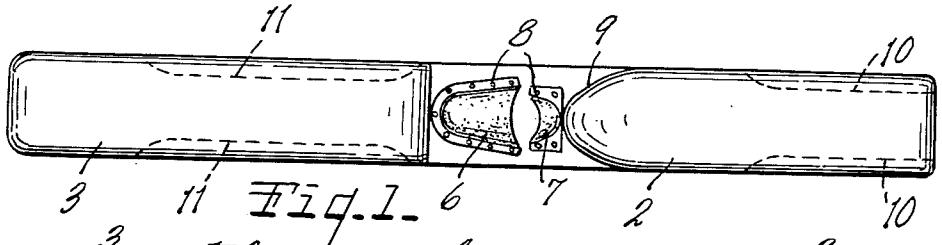


Fig. 1.

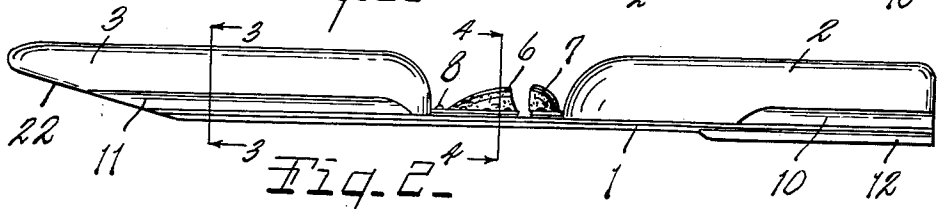


Fig. 2.

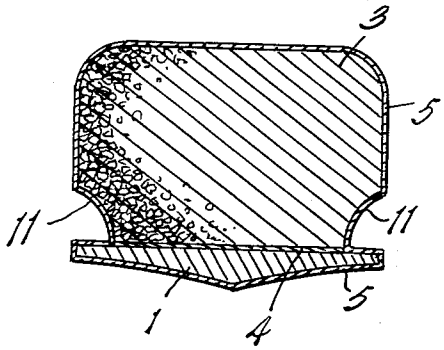


Fig. 3.

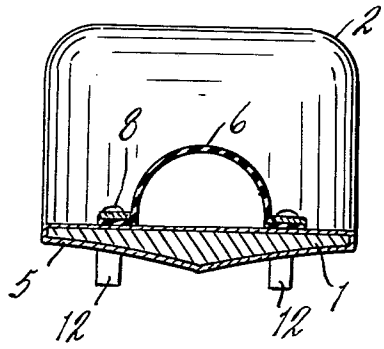


Fig. 4.

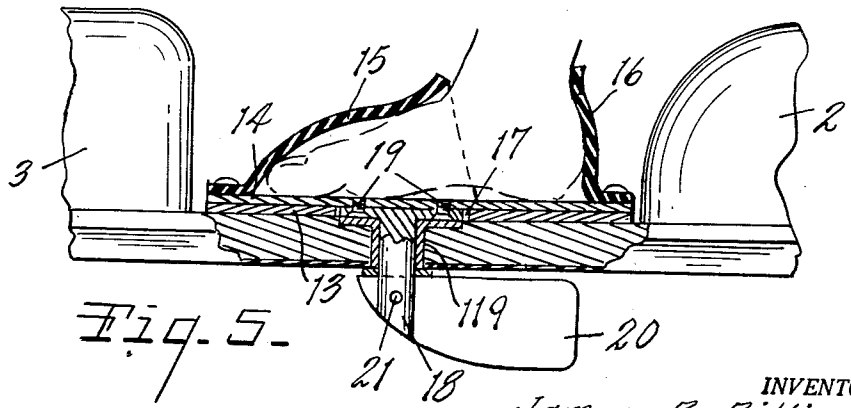


Fig. 5.

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WATER SKI

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9 Claims. (Cl. 9—21)

This invention relates to improvements in water skis. The principal objects of this invention are:

First, to provide a water ski with sufficient buoyancy to support the skier in the water without forward motion and without creating undue friction or drag on the ski when the ski is in motion.

Second, to provide water ski which is light and durable and at the same time sufficiently strong to withstand the stresses of high speed water skiing.

Third, to provide a modified form of water ski which is both buoyant and steerable at the desires of the skier. Other objects and advantages of the invention will be apparent from consideration of the following description and claims. The drawings of which there is one sheet illustrate two highly practical forms of the ski.

Fig. 1 is a plane view of a first practical form of the ski.

Fig. 2 is a side elevational view of the ski shown in Fig. 1.

Fig. 3 is a transverse cross sectional view taken along the plane of the line 3—3 in Fig. 2.

Fig. 4 is a transverse cross sectional view taken along the plane of the line 4—4 in Fig. 2.

Fig. 5 is a fragmentary view partially in longitudinal cross section of a modified form of a ski having a provision for steering the ski.

The ski shown in Figs. 1 to 4 includes an elongated wooden body 1 which is preferably convexly V shaped on the underside to provide lightness and strength in the ski as well as stability in motion. Secured to the top surface of the board 1 is a rear buoyant body 2 and a forward buoyant body. The buoyant bodies are preferably integral blocks of expanded polystyrene plastic material which are extremely light while at the same time having sufficient strength to hold their own shape and withstand considerable loads as are applied to them by the skis moving through the water. The buoyant bodies are secured to the surface of the board as by a layer of adhesive 4. The entire surface of the ski including the buoyant bodies 2 and 3 and the upper and lower surfaces of the board 1 are covered with a continuous integral coating of plastic material 5 to prevent water from being absorbed into the board and buoyant bodies.

Positioned between the buoyant bodies 2 and 3 is a conventional water ski binding including a front instep receiving portion 6 and a rear heel retaining portion 7. The foot retaining portions are formed of relatively heavy sheet rubber material secured to the board by suitable screws or fasteners 8. The rear buoyant body 2 tapers forwardly to the heel retaining binding 7 in a stream line contour as at 9 to permit water to flow freely from around the skier's foot and the bindings 6 and 7. The lower side edges of the rear buoyant body 2 are longitudinally grooved or fluted as at 10 in order to reduce friction of the water flowing along the sides of the rear buoyant body when the ski is moved rapidly through the water. The lower side edges of the front buoyant body are similarly grooved or fluted as at 11 and this flute forms an additional downwardly facing surface which assists in supporting and elevating the front end of the ski as the speed of the ski increases. At high speeds the forward end of the ski is usually out of water and the flutes 11 are then inoperative. Stabilizing fins or ribs 12 are secured to the bottom of the ski along the rear ends to assist in holding the ski straight in the water.

The modified form of ski shown in Fig. 5 may be the same as the first form of ski just described except that a lower fixed friction plate 13 is secured to the board of the ski between the buoyant bodies. The lower friction plate 13 has an upper surface that frictionally engages a movable upper friction plate 14. The binding members 15 and 16 are secured to the upper friction plate and the lower friction plate 13 is apertured as at 17 under the position that the ball of the skier's foot will occupy when in the ski bindings. A circular flanged column 18 is secured to the under side of the upper friction plate as by screws 19 and projects downwardly through the hole 17 in the lower friction plate and through an alined hole 119 in the board of the ski. At its lower end the column 18 is slotted to receive the forward upper end of a rudder 20. The rudder may be rigidly or swingably secured to the column as by a pin or rivet 21.

With the modified form of ski and its rudder mounting it is possible for the skier to shift his weight to the ball of the foot directly over the column 18 and by twisting the foot to cause the rudder to turn laterally in either direction for steering the ski in the water. When the skier's weight is distributed equally between the ball of the foot and the heel or more greatly on the heel of the foot, the friction created between the friction plates 13 and 14, primarily at a point spaced from the column 18, permits the pressure of the foot to be used to twist the ski bodily without turning the rudder 20. By this means the skier can control the direction of the ski as a whole and prevent the ski from twisting or turning laterally from the line of motion of the ski and skier.

The underside of the forward end of the forward buoyant body 3 is desirably sloped upwardly as is shown at 22 in Fig. 2 and the same contour is employed on both forms of the ski.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A water ski comprising an elongated flat body of wood, a forward buoyant body of expanded polystyrene secured to the top of the front of said elongated body and projecting forwardly therefrom in an upwardly and forwardly inclined under surface, a rear buoyant body of expanded polystyrene secured to the top of the rear end of said elongated body and spaced rearwardly from said front buoyant body, a water ski binding secured to said elongated body between said buoyant bodies, an integral continuous coating of water impervious plastic material covering all surfaces of said buoyant bodies and said elongated body, said buoyant bodies having elongated recessed flutes formed along their lower edges and above said elongated body with the flutes in the rear buoyant body opening to the rear end of the ski, and elongated fins secured along the under side of said elongated body and extending to the rear end thereof.

2. A water ski comprising an elongated flat body of wood, a forward buoyant body of expanded polystyrene secured to the top of the front of said elongated body, a rear buoyant body of expanded polystyrene secured to the top of the rear end of said elongated body and spaced rearwardly from said front buoyant body, a water ski binding secured to said elongated body between said buoyant bodies, and an integral continuous coating of water impervious material covering all surfaces of said buoyant bodies and said elongated body, said buoyant bodies having elongated recessed flutes formed along their

lower edges and above said elongated body with the flutes in the rear buoyant body opening to the rear end of the ski.

3. A water ski comprising, an elongated flat body, a forward buoyant body of expanded polystyrene secured to the top of the front of said elongated body, a rear buoyant body of expanded polystyrene secured to the top of the rear end of said elongated body and spaced rearwardly from said front buoyant body, a water ski binding rotatably secured to said elongated body between said buoyant bodies and having frictional engagement with said elongated body, and integral continuous coating of water impervious material covering all surfaces of said buoyant bodies and said elongated body, and a rudder secured to said binding and positioned on underside of said elongated body.

4. A water ski comprising an elongated flat body, a forward buoyant body of light rigid material secured to the top of the front of said elongated body, a rear buoyant body secured to the top of the rear of said elongated body and spaced rearwardly from said front buoyant body, and a water ski binding secured to said elongated body between said buoyant bodies, said buoyant bodies having elongated recessed flutes formed along their lower edges and above said elongated body with the flutes in the rear buoyant body opening to the rear end of the ski.

5. A water ski comprising an elongated flat body, a forward buoyant body of light rigid material secured to the top of the front of said elongated body, a rear buoyant body secured to the top of the rear of said elongated body and spaced rearwardly from said front buoyant body, and a water ski binding secured to said elongated body between said buoyant bodies, said rear buoyant body having elongated recessed flutes formed along its lower edges and above said elongated body with the flutes opening to the rear end of the ski.

6. In combination with a water ski having an elongated flat body, steering mechanism comprising a lower plate secured to said body and having an upwardly facing friction surface located near the longitudinal center of the ski, buoyant bodies secured to the top of said flat body in front and in rear of said surface, a foot plate having a downwardly facing friction surface disposed on said upwardly facing surface of said first plate, a foot binding secured to said foot plate, a column secured to the underside of said foot plate and extending downwardly below the position the ball of the foot will occupy in said binding and through said lower plate and flat body, and a rudder secured to the bottom of said column below said flat body.

7. In combination with a water ski having an elongated flat body, steering mechanism comprising, an upwardly facing friction surface located near the longitudinal center of the ski, a foot plate having a downwardly facing friction surface disposed on said upwardly facing surface, a foot binding secured to said foot plate, a column secured to the underside of said foot plate and extending downwardly below the position the ball of the foot will occupy in said binding and through said flat body, and a rudder secured to the bottom of said column below said flat body.

8. In combination with a water ski having an elongated flat body, steering mechanism comprising, an upwardly facing friction surface located near the longitudinal center of the ski, a foot plate having a downwardly facing friction surface disposed on said upwardly facing surface, a foot binding secured to said foot plate, a column secured to the underside of said foot plate and extending downwardly from a point off set from the position the longitudinal center of the foot will occupy in said binding and through said flat body, and a rudder secured to the bottom of said column below said flat body.

9. A water ski comprising, an elongated relatively wide and thin body, a forward buoyant body secured to the top of said flat body, and rear buoyant body secured to the top of said flat body and spaced rearwardly from said front body to form a foot well between the buoyant bodies, the lower side edges of said buoyant bodies being recessed to form flutes along the edges of the flat body with the flutes along the rear body opening to the rear end of the ski, the forward end of said rear body being forwardly tapered and rounded to facilitate escape of water from said foot well.

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