Feb. 8, 1966 B. G. BIEHL 3,233,257

CANOE

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FIG. 1

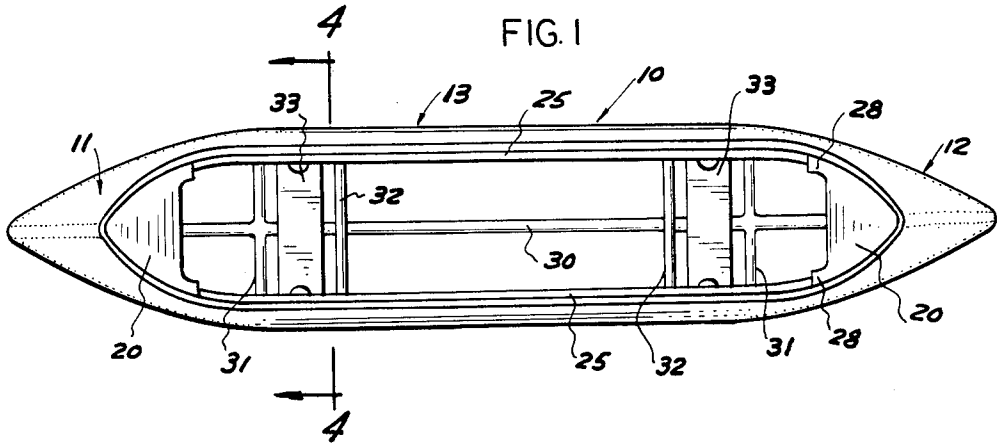


FIG. 2

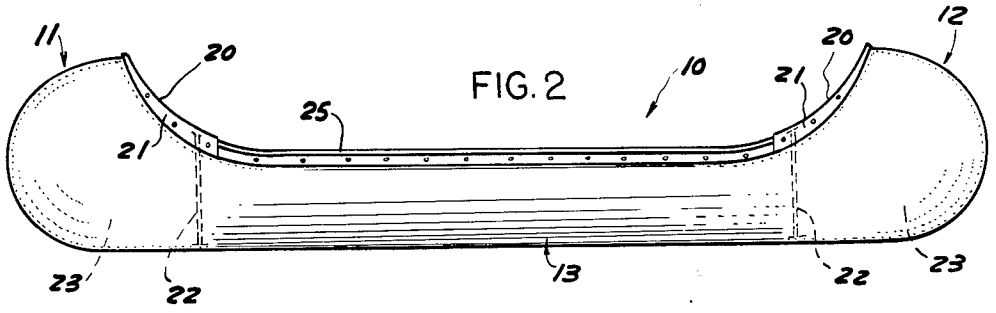


FIG. 3

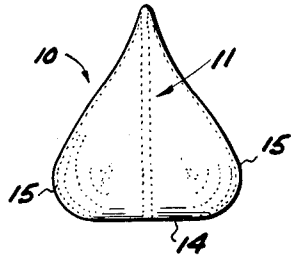
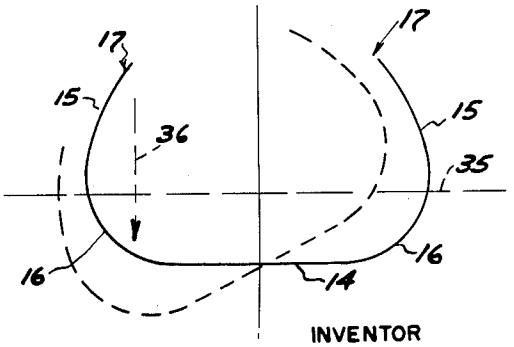


FIG. 8



INVENTOR

BRENT G. BIEHL

BY Cullen, Howson & Cantor

ATTORNEYS

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CANOE

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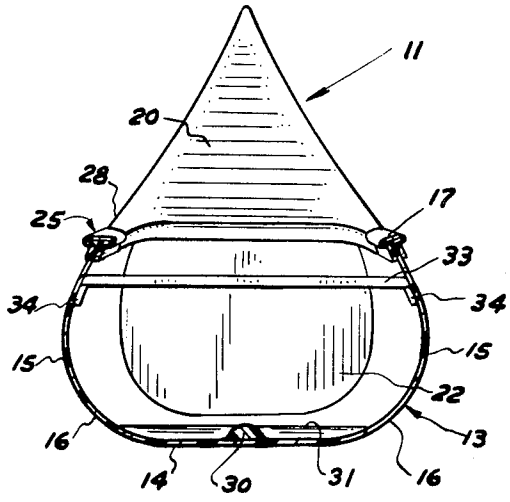


FIG. 4

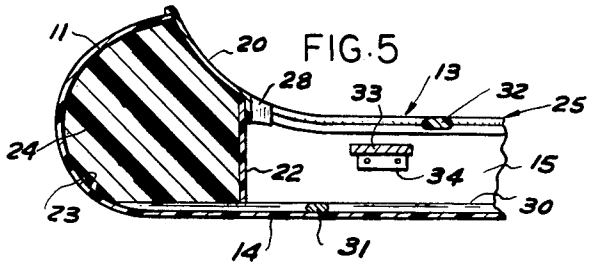


FIG. 5

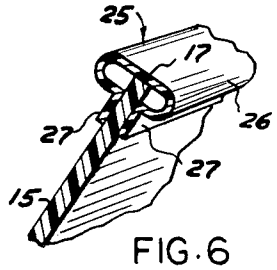


FIG. 6

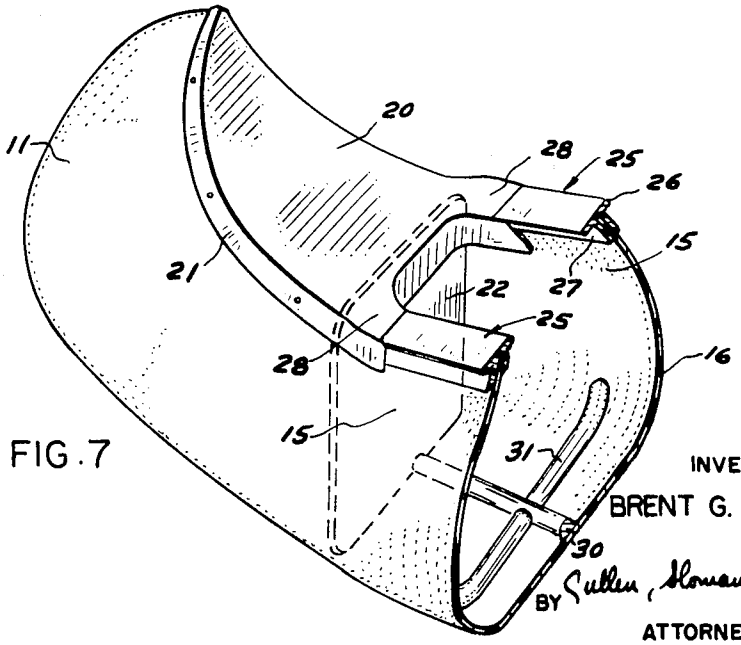


FIG. 7

INVENTOR
BRENT G. BIEHL
BY Sullen, Hosman & Cantor
ATTORNEYS

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CANOE

Brent G. Biehl, 19796 Damman St., Harper Woods, Mich.

Filed Mar. 5, 1965, Ser. No. 437,450
1 Claim. (Cl. 9—6)

This invention relates to a canoe, and more particularly, a canoe which is, for all practical purposes, non-tippable.

Conventional canoes, whether made of sheet metal, wood and fabric, or plastic, are all of essentially the same basic design and are all characterized by being highly unstable and easily tipped by either the occupants thereof, or by rough water. Thus, the conventional canoe requires some considerable skill in handling in order to prevent the canoe from tipping during ordinary usage.

Thus, it is an object of this invention to provide a canoe having a hull design which resists tipping and which causes the canoe to float right side up even when filled with water, and, which, for all practical purposes will not tip despite unskilled or improper handling or the action of rough water.

These and other objects and advantages of this invention will become apparent upon reading the following description, of which, the attached drawings form a part.

In these drawings:

FIG. 1 is a plan view of the canoe hereof.

FIG. 2 is an elevational view.

FIG. 3 is a front end view.

FIG. 4 is an enlarged, cross-sectional view taken in the direction of arrows 4—4 of FIG. 1.

FIG. 5 is an elevational, cross-sectional view of a portion of the front end of the canoe.

FIG. 6 is an enlarged, fragmentary view of a portion of the side of the canoe.

FIG. 7 is a perspective, fragmentary view, to an enlarged scale, of the front end.

FIG. 8 is a schematic view of the hull in cross-section.

Referring to FIGS. 1 and 2, the canoe 10 is formed of a generally U-shaped in cross-section hull having a bow section 11 and a stern section 12, separated by a midship section 13. The hull may be made of a suitable fibrous glass reinforced plastic, or of any of the other materials conventionally used in canoe construction, such as sheet aluminum, etc.

The hull bottom portion 14 is flattened and the sides 15 are outwardly bowed so that their lower edges are curved inwardly at 16 to integrally join the flat bottom and so that their upper edges 17 are arranged closer together in cross-sectional distance or beam than the distance measured between the midpoints of the sides. Thus, the opening at the top of the canoe is considerably narrower in beam than is the beam measured between the sides, below the opening.

The bow and stern sections are each provided with a water-tight deck or cap 20, extending between the upper edges of the side walls of the canoe, with the caps having depending edge flanges 21 overlapping the upper edges of the side walls and secured thereto by means of a suitable adhesive. At the transverse free edges of the decks, water-tight bulkheads 22 are provided, to extend the full height and width of the hull at such locations, so that, together with the decks, they form closed bow and stern flotation chambers 23 which, preferably, are filled with a light-weight, buoyant material 24, such as foamed polystyrene and the like.

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The bow and stern ends each curve upwardly and extend upwardly roughly twice the height of the upper edges of the side walls relative to the flat bottom of the hull. Thus, the bow and stern are higher than those of a conventional canoe.

The free upper edges of each side wall 17 are covered with an extruded aluminum, or the like, gunwale strip 25 having an upper, hollowed, flattened portion 26 and a pair of parallel legs 27 between which the upper edges 17 of the side walls 15 are snugly fitted and preferably are adhesively secured by means of a suitable adhesive. If desired, for additional strength, rivets (not shown) may also be used through the legs 27 and the side walls.

Each of the decks 20 is provided with side extentions 28 which overlap and cover the end portions of the gunwale strip, as shown, for example, in FIG. 7.

In order to stiffen and rigidify the hull, a keel strip 30 is provided on the inside of the hull and runs the length of the hull. In addition, a suitable number of bottom cross ribs 31, extend transversely on and are secured to the bottom of the hull.

The canoe is provided with conventioanl thwarts 32 and with seats 33 mounted upon cleats 34 secured in turn, by screws, rivets or adhesives, to the side walls 15. Thus, in general, the canoe appears to be substantially the same as a conventional canoe, with the most apparent differences being the high bow and stern ends and the bowed side walls resulting in a narrower open top relative to the beam of the canoe.

In operation, the canoe is handled in the same way as are conventional canoes, with the occupants using paddles and paddling in the conventional manner.

FIG. 8 schematically illustrates the canoe in water 35, when a force 36 (arrow) is applied off center of the canoe. Such a force may consist of a person standing near one side of the canoe or even sitting on the gunwale, which in an ordinary canoe would result in the canoe immediately turning over.

However, as shown in dotted lines, the canoe herein will tip to the point where the bow and stern sections and the curved side walls will stabilize in the water relative to the tipping force, and this will take place before the canoe tips. Thus, the canoe is almost impossible to tip when carrying normal loads such as two or three occupants plus their normal baggage, even when sudden movement of these off-balances the canoe. Nor, will the canoe tip in rough water or heavy waves and, even if filled with water, will remain upright.

This invention may be further developed within the scope of the following attached claims. Accordingly, it is desired the foregoing description be read as being merely illustrative of an operative embodiment of this invention and not in a strictly limited sense.

I now claim:

A canoe comprising:

an elongated, upwardly opening hull having curved side-walls and a substantially flat bottom portion, said hull tapering toward pointed bow and stern ends;

said hull side-walls bulging outwardly to a considerable extent adjacent said flat bottom portion and curving inwardly towards each other to a considerable extent at the upper edges thereof, whereby the maximum width of the canoe at any point along its length between said end portions lies just below the

waterline of the loaded canoe, and whereby the width of the canoe at any point between said end portions decreases continuously and rapidly as the height above the water line increases;

said bow and stern ends curving upwardly above said bottom portion of said hull to a height approximately twice the height of the upper edges of said hull side-walls between said bow and stern ends;

the open upper portion of said bow and stern ends being covered with a water-tight deck extending between said side-walls to form short covered end sections;

each end section being sealed off by a water-tight bulkhead to form a flotation chamber extending upwardly into said end portions.

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MILTON BUCHLER, *Primary Examiner.*