

[54] **GRILLAGE FOR A BOAT**

[72] Inventor: **Ned K. Momany**, Dickson, Tenn.

[73] Assignee: **Winner Boats**, Dickson, Tenn.

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[51] Int. Cl. B63b 43/10

[58] Field of Search 9/6, 3; 114/68, 69

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Primary Examiner—Andrew H. Farrell

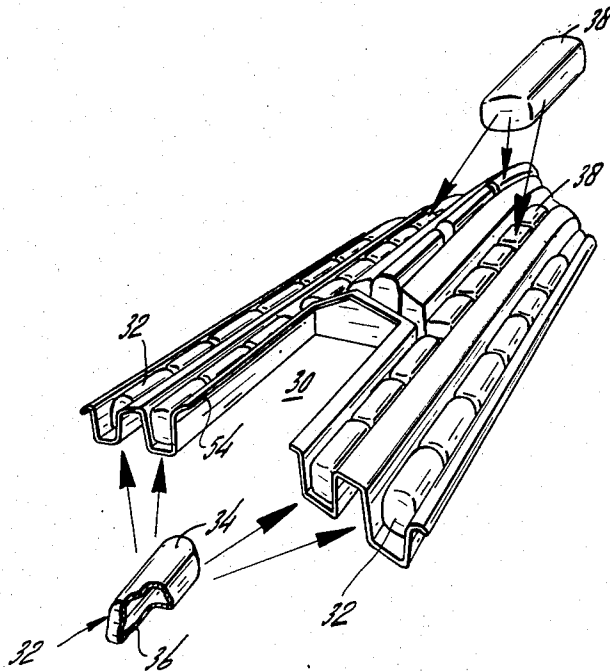
Attorney—David H. Semmes

[57]

ABSTRACT

Reinforcing and flotation grillage for a boat of the fiberglass type. The grillage is configured complementary with the bilge interior, so as to define a plurality of longitudinally extended flotation compartments and includes air pressurized floats wedged into flotation compartments and laminate deck covering so that the boat is both strengthened and buoyed by grillage.

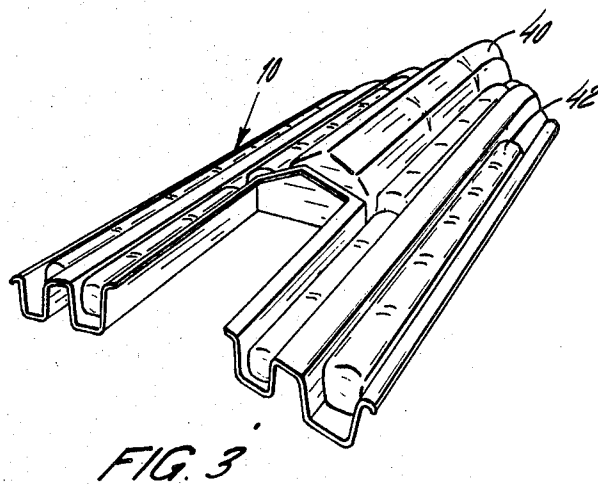
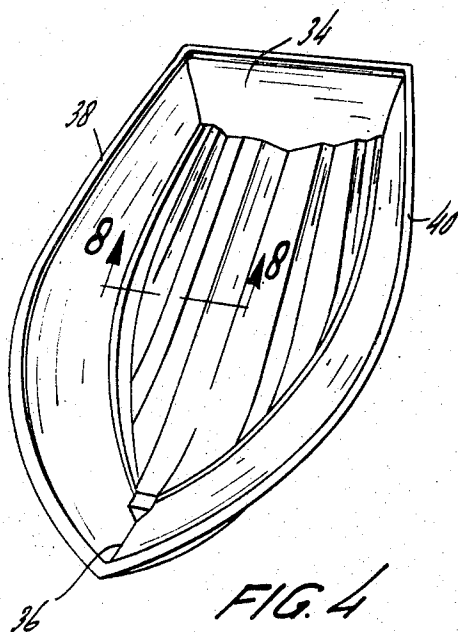
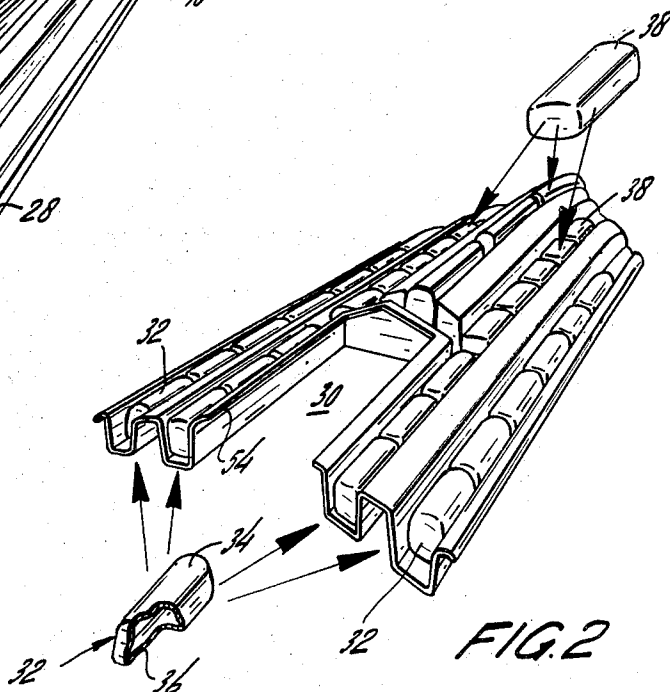
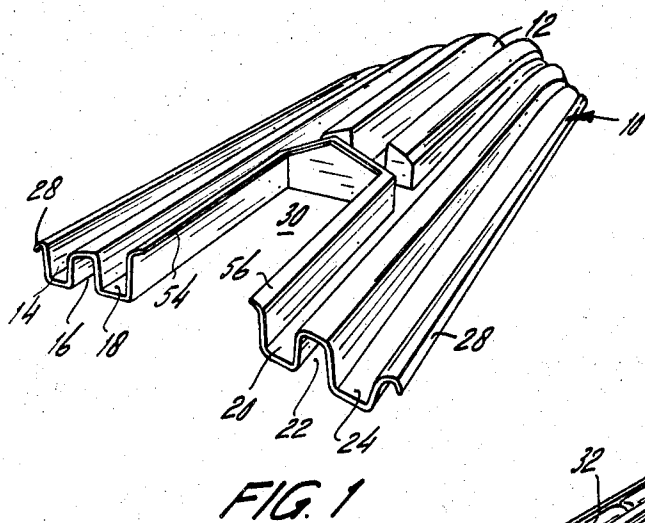
3 Claims, 8 Drawing Figures



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2 Sheets-Sheet 1



INVENTOR
NED K. MOMANY

BY David H. Lemmes
ATTORNEY

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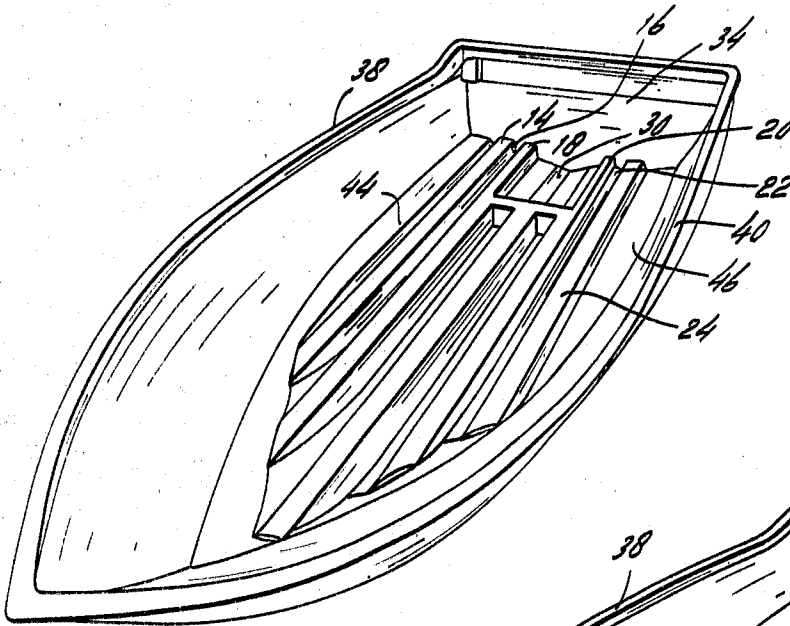


FIG. 5

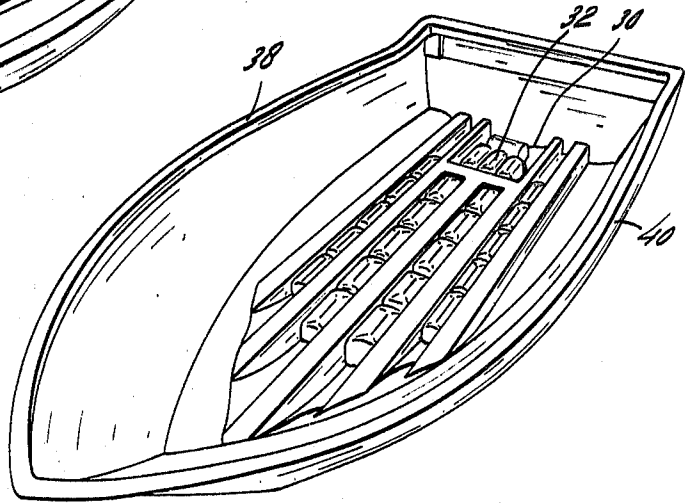


FIG. 6

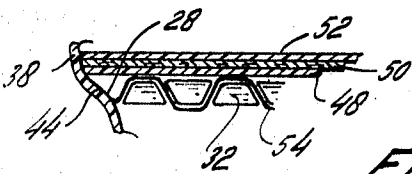


FIG. 8

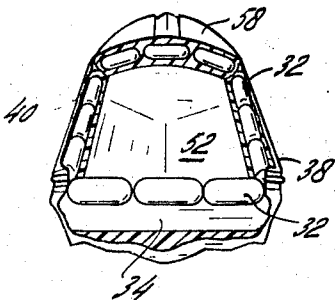


FIG. 7

INVENTOR

NED K. MOMANY

BY

David H. Lemmes

ATTORNEY

GRILLAGE FOR A BOAT

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates to buoyant watercraft, particularly a molded fiberglass construction having a hull-defining bilge, gunwhale, bow, and stern portions. A great deal of recent attention has been given to reinforcing the relatively thin fiberglass hulls, so as to provide a more rigid and buoyant construction which can withstand the stresses placed upon the hull during cruising. Earlier inventors have employed a plurality of half-round longitudinally extending stringers and have forced polystyrene foam or the like into compartments intermediate the stringers with the intent to provide flotation. The stringers are without lateral support and, consequently, do not provide the desired rigidity. The foam is objectionable because it becomes water-soaked to the extent that its flotation characteristics cannot even be estimated.

2. Description of the Prior Art

Prior inventors, while attacking the problem of strengthening the fiberglass hull, have not developed a stringer or grid which is capable of totally reinforcing the hull. Applicant's invention is applicable to any number of fiberglass hull constructions and comprises a single molded piece of fiberglass that is welded into the hull so as to provide flotation compartments which are essentially stressed with air-pressurized floats. As a result, there is nothing to deteriorate, become water-soaked, or lose shape inside the hull, and the boat planing surface is rigidly reinforced over a broad area.

SUMMARY OF THE INVENTION

According to applicant's invention, a grillage reinforcement is constructed, so as to define a plurality of longitudinally extending flotation compartments, alternately open to the bilge interior and the cockpit. The grillage is installed while the boat is in its original mold, air-pressurized floats are secured within the compartments, and on top of the grillage a plywood and fiberglass cockpit deck, extending from chine to chine is bonded in place. With the cockpit deck in place, a load-bearing truss is formed which spreads any forces on the planing surface over the entire hull, making it many times stronger, as well as buoyant.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a bottom perspective view of the grillage prior to the insertion of the flotation elements and insertion within the hull;

FIG. 2 is a like perspective, showing the air-pressurized bottom floats wedged into the grillage flotation compartments;

FIG. 3 is a like perspective, showing the individual floats secured to one another by means of fiberglass mats 40 and 42, extending longitudinally over the floats;

FIG. 4 is a perspective view, showing the grillage in place within the bilge and covered by the fiberglass and plywood or deck;

FIG. 5 is a similar perspective, showing the grillage in place prior to the insertion of the top floats;

FIG. 6 is a like perspective, showing the placing of the top flotation elements;

FIG. 7 is a reduced perspective, partially in section, showing the placing of the gunwhale upright floats; and

FIG. 8 is an enlarged fragmentary vertical section, showing the bonding of the grillage and flotation elements beneath the fiberglass-plywood-fiberglass deck.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIG. 1, grillage structure 10 is illustrated as having peripheral flanges 28 engageable with that portion of the bilge adjacent the chine of the boat. The grillage structure may be fiberglass molded to define a plurality of longitudinally extending flotation compartments 14, 16, 18, 20, 22, and 24.

Also, there will be defined a center line bow flotation compartment 12 and a stern well 30, having inwardly extending flanges 54 and 56.

As illustrated in FIG. 2, a plurality of trapezoid-shaped, air-pressurized flotation elements 32, having narrow top 34 and broadened bottom 36 may be press-fitted into the longitudinal flotation compartment. A rectangular shaped, air-pressurized float 38 may be positioned in the bow compartment. All floats 32 and 38 are then secured to each other by a fiberglass mat 40 and 42 bonded to both the floats and the grillage, as illustrated in FIG. 3. The construction may then be inserted into the bilge as in FIG. 5, flanges 28 being secured to the bilge portions 44 and 46 by bonding. Then, as illustrated in FIG. 6, the remaining flotation elements 32 are inserted and the entire construction may be covered with a deck bond consisting of an initial fiberglass mat layer 48, an intermediate plywood layer 50, and a final bonded fiberglass mat 52 to achieve the appearance shown in FIG. 8.

In addition to the air-pressurized floats 32 and 38, an upright flotation characteristic may be obtained by positioning the floats in the freeboard, transome, and cockpit fore panel. As will be apparent, damage to one or more of the floats will not impair the over-all buoyant characteristics of the boat and the grid, itself, while enhancing flotation also rigidizes the entire planing surface of the boat. Manifestly, variations in position of the grillage and float elements may be employed without departing from the spirit of the invention.

We claim:

1. Grillage for a boat of the type having a hull including, bilge, gunwale, bow, and stern portions, dividing a cockpit, comprising:

A. a grid complementally conformed with the bilge interior and having:

i. a peripheral flange, and

ii. a plurality of longitudinally extending flotation compartments being alternately opened to said bilge interior and said cockpit, so as to support air pressurized floats above and beneath said grid and said longitudinally extending compartments being balanced with each other on either side of the boat's center line;

B. a plurality of independent, air pressurized floats supported within the flotation compartments, so as to extend parallelly with the center line of said boat, said floats being trapezoidal in cross-section, so as to be wedged into said longitudinally extending compartments within said bilge and stern portions;

C. a sternwell compartment disposed across the center line of said boats;

D. a fiberglass mat covering pressurized floats within said longitudinally extending and sternwell compartments;

E. a deck covering for the top of said grillage including:

i. a fiberglass mat secured at its periphery to engage said bilge and said flange and secured at its median portions to said grillage and said pressurized floats;

ii. a plywood sheeting secured on top of said mat and configured to said bilge interior; and

iii. a fiberglass mat secured above said plywood sheeting and against said bilge so that said grillage, pressurized floats, said deck covering, and said bilge are unitary;

F. a center line flotation compartment longitudinally extending from the bow to said sternwell and being deeper than said other compartments, so as to accommodate a deeper pressurized float.

2. Grillage for a boat as in claim 1, including in said bow, center line floats of rectangular cross-section, positioned so that their flat surfaces extend vertically parallel to the center line of said boat.

3. Grillage for a boat in claim 1, including a plurality of trapezoidal floats mounted in the gunwales of said boat and peripherally fore and aft of the boat cockpit, so as to provide upright flotation characteristics.

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