Nov. 4, 1969 D. S. CODMAN, JR 3,475,773

CONVERTIBLE BOAT HULL

Filed May 9, 1968 3 Sheets-Sheet 1

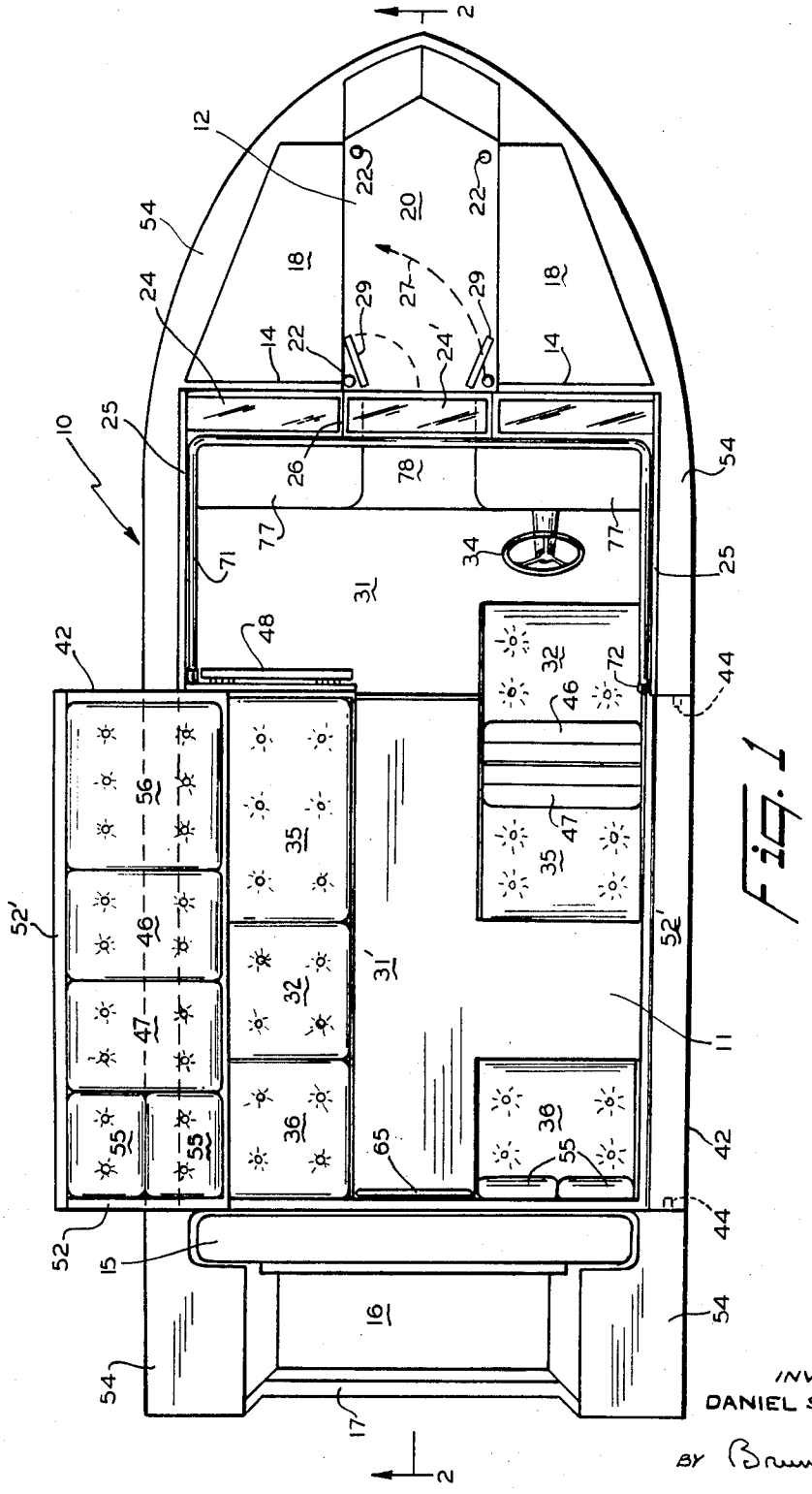


Fig. 1

INVENTOR.
DANIEL S. CODMAN, JR.

BY Brumm & Jenney
Attys.

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CONVERTIBLE BOAT HULL

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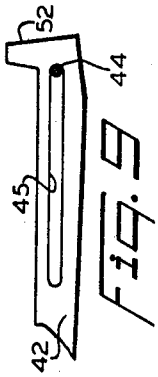


Fig. 9

Fig. 3

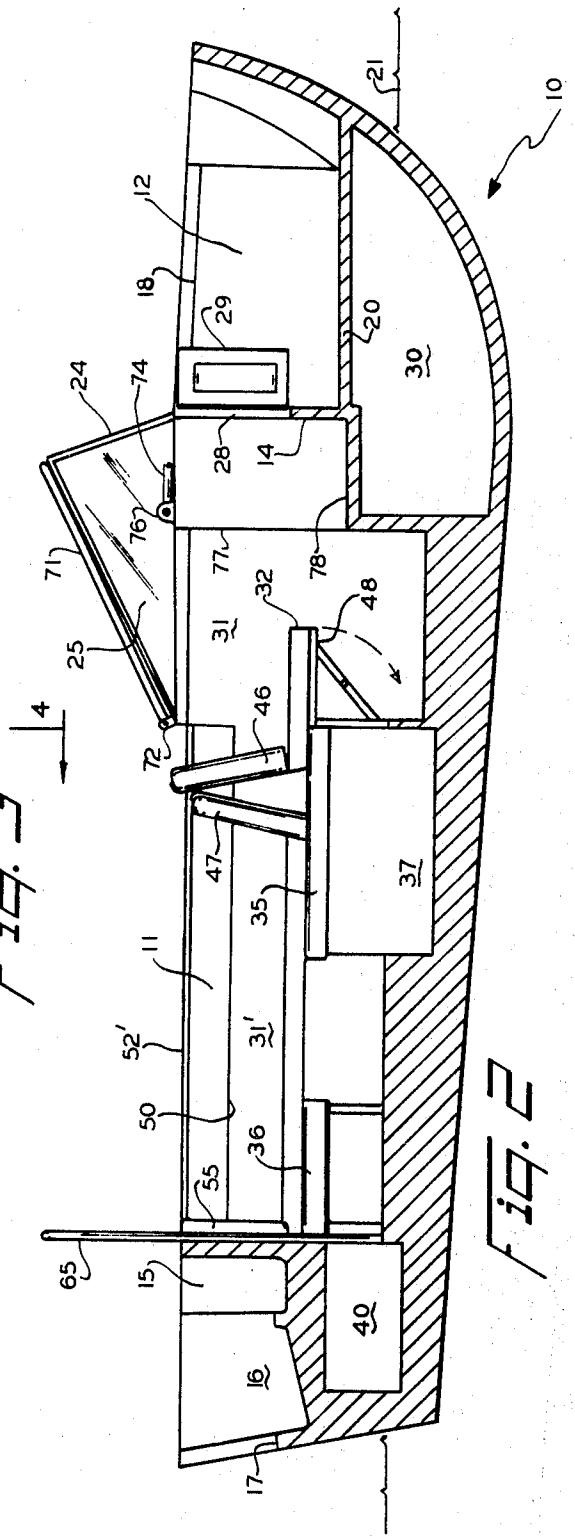


Fig. 2

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CONVERTIBLE BOAT HULL

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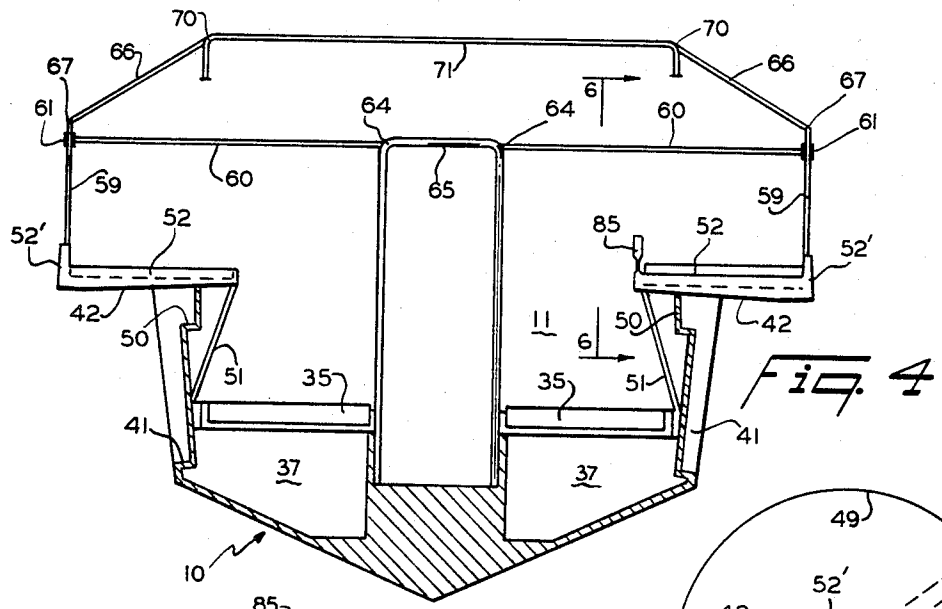


Fig. 4

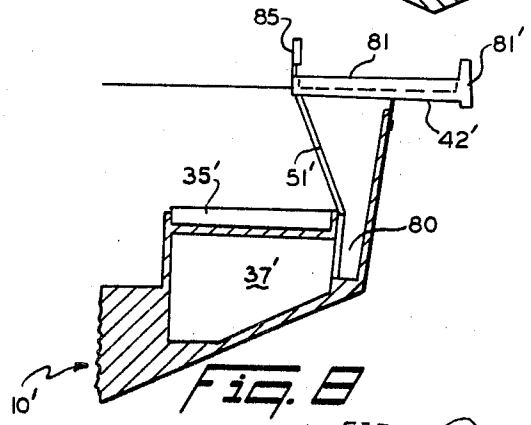


Fig. 8

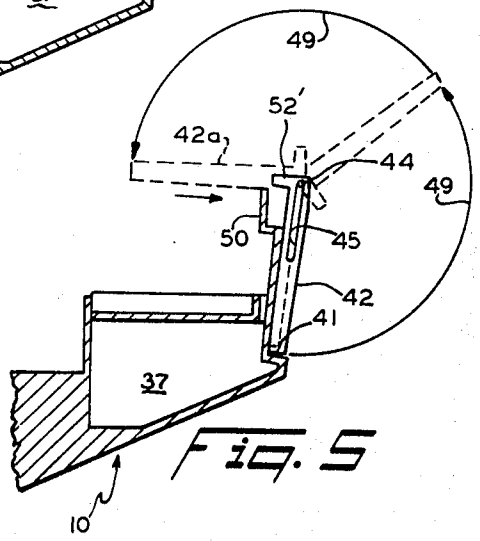


Fig. 5

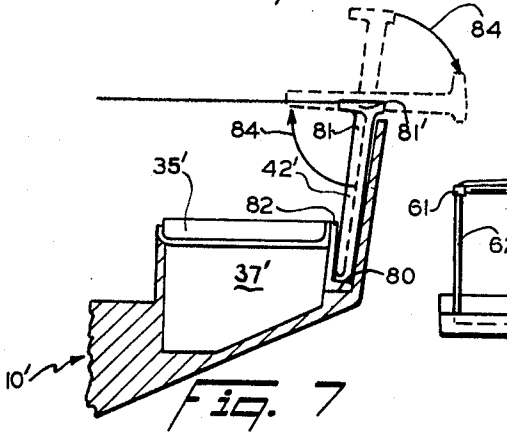


Fig. 7

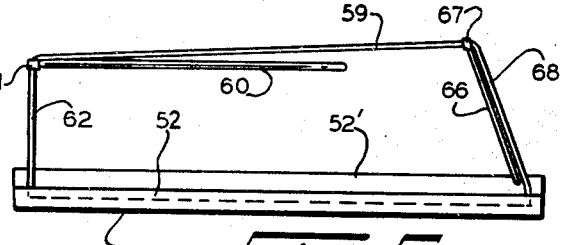


Fig. 6

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3,475,773

CONVERTIBLE BOAT HULL

Daniel S. Codman, Jr., Utica, N.Y.
(132 North St., Apt. 3, Newtonville, Mass. 02160)

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Int. Cl. B63b 29/00
U.S. Cl. 9—1 6 Claims

ABSTRACT OF THE DISCLOSURE

A trailable, normally open boat that can be converted into a cabin cruiser having four bunks. The bunks and other accessories that are used for the conversion normally are all folded into or stored within the hull of the boat, two of the bunks being folded into recesses in the hull sidewalls to form a part thereof. When not converted to a cruiser, the boat looks substantially like a conventional open runabout.

BACKGROUND OF THE INVENTION

This invention relates generally to small boat construction, and has particular reference to a novel boat hull construction whereby an open runabout type boat can be quickly and easily converted into a cabin cruiser.

Constructions have heretofore been developed for converting open motorboats into cruising type boats with sleeping accommodations. One such development known to the applicant is disclosed in U.S. Patent No. 3,325,836, issued June 20, 1967 to E. Lankford, Jr. The Lankford construction effects the conversion by mounting a detachable top enclosure on the deck of an open motorboat, the top enclosure having sides which fold down to become beds. A problem with the Lankford construction is that the detachable top enclosure or superstructure is relatively cumbersome and probably would require two or more people to attach and detach. Also, with this detachable top structure there is the problem of what to do with it when not in use, or when trailing the boat behind a car. Additionally, since the top enclosure must necessarily raise the center of gravity of the boat, there could be a stability problem in rough water or heavy winds.

SUMMARY OF THE INVENTION

In the present invention, everything that is required to convert the open motorboat into a cruiser with sleeping accommodations is contained within the hull of the boat. As a result of the conversion, four bunks are provided, two of the bunks being formed from seats in the boat and the other two being rotated out of recesses in the sidewalls of the boat hull in which recesses they normally are stored. The recess stored bunks and boat hull also carry foldable bow members which can be erected to support a protective cover for the bunks and the boat cockpit.

With the hull construction of the invention, the conversion can be easily and quickly accomplished by one person. Since everything used in the conversion is contained within the boat hull, a separate top structure is not required and the problems of attaching, detaching and storing same are eliminated. Moreover, the center of gravity of the boat remains substantially the same so that the possibility of a safety problem is not introduced.

BRIEF DESCRIPTION OF THE DRAWING

FIGURE 1 is a top plan view of a boat embodying the invention with the bunks on the port side set up for use;

FIGURE 2 is a vertical longitudinal section through the boat taken substantially on line 2—2 of FIGURE 1 but without the bunk beds being set up;

FIGURE 3 is a reduced side elevation of the boat as converted to provide sleeping accommodations;

FIGURE 4 is a vertical transverse section through the boat taken substantially on line 4—4 of FIGURE 3;

FIGURE 5 is a fragmentary sectional view corresponding to the right side of FIGURE 4;

FIGURE 6 is an elevational view of a bunk panel and cover supporting bow, looking substantially in the direction of arrows 6—6 in FIGURE 4;

FIGURES 7 and 8 are fragmentary sectional views corresponding to FIGURE 5, but showing a modified form of bunk storage and operation; and

FIGURE 9 is an enlarged, fragmentary end elevation of a bunk panel showing the means for connecting the panel to the boat hull.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Reference is now made to FIGURES 1 (starboard side) and 2 of the drawings which show the boat in its unconverted form, i.e., as an open motorboat or runabout. In this form, the boat has a generally conventional appearance and is adapted for use as a water ski towboat, for fishing or just riding about. The boat hull is generally indicated by the reference number **10**, and in the embodiment shown would have an over-all length of around 17 feet.

The boat has a main cockpit **11** and a forward cockpit **12** separated by a wall or bulkhead **14**. To the rear of the main cockpit there is a storage well **15** for the cockpit cover and behind that a well **16** for receiving the powerhead of an outboard motor (not shown), the latter being mounted on the transom **17** of the boat. Alternatively the boat can be equipped with an inboard-outboard type motor.

The forward cockpit **12** is self-bailing, i.e., its floor or deck **20** is above the waterline (indicated at **21** in FIGURE 2) and is provided with drain holes **22** which communicate with the exterior of the hull. On either side of the cockpit well **12** are storage lockers, the hatches or covers **18** of which are located close to the deck level. Above the wall **14** between the forward and main cockpits is a windshield comprising a transverse section **24** and two longitudinally extending wing sections **25**. To permit access to the forward cockpit from the main cockpit, the transverse portion of the windshield is formed with three panels with the center panel **24'** being hinged at one side **26** to permit it to be swung out of its normal plane in the direction of the arrow **27**.

Below the openable windshield panel **24'** there is a passageway **28** through the wall **14**, which passageway can be closed by doors **29**. As shown in FIGURE 2, the passageway does not extend down to the level of the deck **20** whereby a portion of the wall **14** is left between the cockpits to prevent water received in the forward cockpit from flowing back into the main cockpit **11**. The area **30** of the hull beneath the forward cockpit is preferably utilized as a buoyancy tank.

The deck of the main cockpit is stepped with the forward portion **31** though being a little lower than the rear portion **31'**. A pair of transversely spaced, forwardly facing seats **32** occupy the forward portion of the cockpit with the driver's seat being on the starboard side behind the steering wheel **34**. Behind the seats **32**, in back to back relation therewith, is a pair of rearwardly facing seats **35** and at the rear of the cockpit—spaced as shown from seats **35**—is another pair of forwardly facing seats **36**. Storage lockers are provided beneath the seats **35** as indicated at **37** in FIGURES 2 and 4, there being addi-

tional stowage space to the rear of and beneath seats **36** as shown at **40** in FIGURE 2.

In accord with the invention, two of the supports which are made up into bunk beds are normally contained within and form a part of the hull **10**. Thus, as best shown in FIGURES 3, 4 and 5, each hull sidewall is formed with a substantially rectangular shallow recess **41** in which a bunk panel **42** is stowed. In the preferred embodiment of the invention, the hull has a molded Fiberglas construction and the panels are unitary molded plastic members.

Each bunk panel **42** is connected to the hull by a pair of pivot pins or stub shafts **44** which project from the end walls of its recess into grooves **45** formed in the end of the panel, see FIGURES 1 and 9. The pivot pins are located near the top edges of the recesses, FIGURE 5, and with the panels in their substantially vertical stowed position, the pins engage one end of the grooves **45**. As indicated in FIGURES 3 and 5, one side of each bunk panel is substantially flat and, in stowed position, is flush with the unrecessed portion of the hull sidewall and forms a continuation thereof. It is contemplated, however, that if the hull sidewall is contoured, the exposed bunk side can be correspondingly contoured because this side becomes the underside of the bunk as will appear from the description below. When in stowed position, suitable latch means (not shown) hold the lower portions of the bunk panels in position in their recesses.

To convert the boat into a cruiser with sleeping accommodations, the cushioned backrests **46**, **47** for seats **32** and **35**, respectively, are removed and the cushions for seats **32** are removed. The latter normally rest partially on the seats **35** and partially on supporting shelves **48** which can be folded down into a vertical space-saving position.

After removing the backrests **46** and **47**, the bunk panels **42** are rotated about their pivot pins **44** through approximately 270° in the direction of the arrows **49** in FIGURE 5. This positions the panels in a substantially horizontal position as indicated by dash lines at **42***a* with the previously exposed side of the panel now being the underside thereof and resting on the upper edge of an inwardly offset portion **50** of the hull sidewall. After rotation of the panels into the position shown at **42***a*, they are pushed outwardly into the positions shown in FIGURE 4, such movement being permitted by the grooves **45** in the panel ends and being terminated when the pivot pins engage the opposite ends of the grooves from those in which they were positioned when the panels were in stowed position. After the panels have been pushed out over the sides of the boat as shown, they are releasably engaged by the ends of rod members **51** to prevent them from tipping in either direction about the longitudinal axis defined by their pivot pins. The opposite ends of the rods **51** are swingably connected to the boat hull so that they can be swung out of the way when not in use.

The upper side of each bunk panel **42** (the unexposed side in stowed position) is formed like a tray with a shallow upstanding flange **52** extending continuously around its periphery. On the outboard side of the panel the flange **52'** is deeper than elsewhere and forms a part of the deck or gunwale of the boat when stowed. Thus, as indicated in FIGURES 1 and 5, the outside surface of flange **52'** is flush with and forms a continuation of the narrow deck **54** which extends along the sides of the main and forward cockpits at the upper edge of the hull.

When the bunk panels have been secured in the position shown in FIGURE 4, seat cushions are assembled on the panel to form a bunk mattress. Thus, as shown in FIGURE 1, the mattress may comprise the backrest cushions **46**, **47** and **55** from seats **32**, **35** and **36**, and one additional cushion **56** that is stored in a locker when not in use.

After the bunk panels **42** have been set up as above described to provide two upper bunks, the other two bunks can be set up utilizing the seats **35** and **36**. This is accomplished by spanning the space between each pair of these seats with the seat cushion **32** which is removed from its FIGURE 2 position along with backrest cushions **46** and **47**. Thus a full lower bunk is provided as shown on the port side of the boat in FIGURE 1. As can be observed from FIGURE 4, the location of the upper bunks out over the sides of the boat in offset relation to the lower bunks enables the latter to be used without too much likelihood of the occupants bumping into the upper bunks.

A protective cover **58**, FIGURES 3 and 4, can be erected over the main cockpit **11** and the set up bunks. This cover, which can be of waterproof canvas or heavy sheet plastic, is supported by bows and extension rods carried by the hull or by the bunk panels **42**. FIGURE 6 illustrates a bow **59** which is swingably connected to the port bunk panel, the bow being adapted to be folded down and contained within the panel flange **52** when the panel is stowed in its recess **41**. As shown in FIGURE 4, both bunks are provided with these bows.

When the upper bunks are being set up, the bows **59** are swung up into vertical position after which a rod **60** that is pivotally connected at **61** to the vertical, rear leg **62** of each bow is swung from a position in the plane of the bow through an arc of 90°. This positions the free end of the rod so that it can be releasably connected at **64** to a ski tow bar **65**, FIGURES 4 and 2, the bar having an inverted U-shape and being releasably mounted at the rear of the main cockpit **11**.

In addition to the rod **60**, each of the bows **59** carries a rod **66** that is pivotally connected to the bow at **67**. The rods **66** are adapted to be swung upwardly in the plane of the inclined, front legs **68** of the bows and have their free ends releasably connected at **70** to a rearwardly inclined bow **71**, FIGURES 4 and 3. The rods **60** and **66** serve to maintain the bows **59** in vertical position as best shown in FIGURE 4. The ends of bow **71** are pivotally connected to the boat at **72**, FIGURES 1 and 2, and when not in use the bow rests against the upper edge of the windshield **24**, **25** as shown.

The forward portion of cover **58** is supported by bows **74**, **75**, FIGURE 3, and the ends of these bows on each side of the boat are pivotally connected to a common bracket **76**. Bracket **76** is mounted on a slide (not shown) whereby it can be slid aft to enable the bows **74**, **75** to rest against the upper edge of the windshield **24**, **25** when not in use like the bow **71**. The cover **58** can be provided with a releasable or integral back curtain (not shown) and, if desired, side curtains can be provided to extend between bow **71** and bow **75**. When the cover is set up, access to the main cockpit may be had by opening the center windshield panel **24'** and passageway **28**. The cover is high enough so that normal standing room is provided in the forward portion **31** of the main cockpit. The cover supporting bows can be made of tubular aluminum or steel, and the rods **60** and **66** can be tubular rather than solid if desired.

It should be understood that it is not intended that the boat be converted as above described when the boat is underway. This will only be done when the boat is tied to a dock or anchored. As best shown in FIGURES 1 and 2, a pair of storage areas or lockers **77** are provided on the rear side of the wall **14**, the lockers having a passageway **78** therebetween in communication with the passageway **28**. For cruising and/or camping use, the lockers can be fitted with a removable camper icebox, a sink, a camping stove (none of which is shown), or other equipment that may be desired by the user.

FIGURES 7 and 8 illustrate a modified form of the invention wherein the bunk panels **42'** that are made up into the upper bunks are stowed in recesses **80** formed in the interior of the hull sidewall, the bunks when stowed

forming a part of the sidewall. As with the panels **42**, panels **42'** are formed with a peripheral flange **81** which flange is deeper along one side **81'** than elsewhere and forms a part of the deck of the boat when stored. The panels **42'** are slidably and pivotally connected to the hull in the same manner as panels **42**, i.e., by means of interconnecting pivot pins and grooves (not shown) at the ends of the panels.

The bunk panels **42'** are set up for use by pulling them upwardly until the lower panel edge has cleared the upper edge **82** of the inside wall of the recess **80**, see FIGURE 7, after which they are rotated approximately 90° as indicated by the arrows **84**. This positions the panels in a substantially horizontal position as shown in FIGURE 8, and they are releasably secured in this position by rod members **51'** which are the same as the members **51** previously described. When in use, the upper bunks in both modifications of the invention can be provided with removable bars **85** to help prevent the bunk occupant from rolling out.

From the foregoing, it will be apparent that the invention provides a very practical and efficient construction for converting an open motorboat into a cruiser with comfortable sleeping accommodations. As will be apparent to those familiar with the art, the invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof.

What is claimed is:

1. A boat comprising a hull having a gunwale and a recess formed in at least one of its sidewalls below said gunwale, a bunk panel normally stowed in a substantially vertical position in the recess, the panel forming a part of the hull when stored, the panel being movable upwardly into a substantially horizontal position adjacent the gunwale of the boat for use as a bunk, and means to releasably secure the panel in said horizontal position.

2. A boat as defined in claim **1** wherein one longitudinal edge of said bunk panel forms part of the gunwale of the boat when the panel is in stowed position.

3. A boat comprising a hull having elongated recesses in its sidewalls, a bunk panel normally stowed in a substantially vertical position in each recess, means connecting said panels at each end to the hull for both pivotal and sliding movement relative thereto, the panels being movable out of the recesses into a substantially horizontal position adjacent the upper edges of the hull, and coacting means on the hull and panels to releasably secure the latter in horizontal position for use as bunks.

4. A boat as defined in claim **3** wherein said recesses are formed on the outside of the sidewalls and the bunk panels in stowed position are substantially flush with the unrecessed portions of the sidewalls and form a continuation thereof.

5. A boat as defined in claim **3** wherein the means connecting the hull and panel ends comprise a pivot pin carried by the hull adjacent each end of the recesses and a groove in each panel end into which a pivot pin projects.

6. A boat as defined in claim **3** together with means supported by the bunk panels for supporting a protective cover above the panels when the latter have been secured in horizontal position.

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TRYGVE M. BLIX, Primary Examiner

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296—23