March 30, 1965 E. A. KUTSI 3,175,234

FOLDING BOAT

Filed July 15, 1963 2 Sheets-Sheet 1

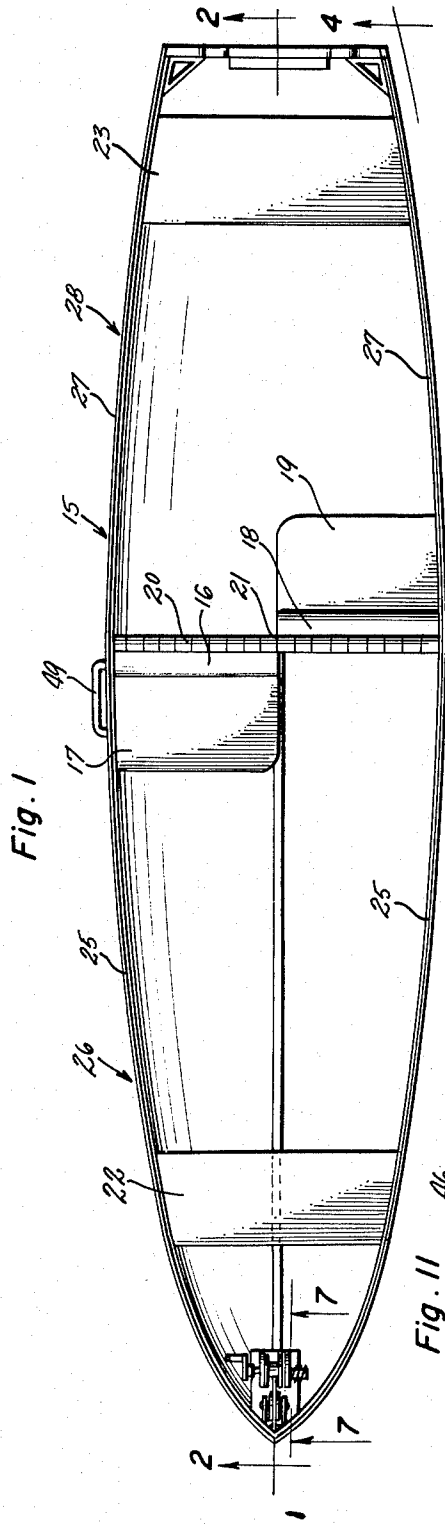


Fig. 1

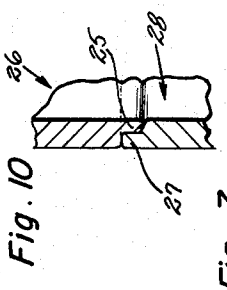


Fig. 10

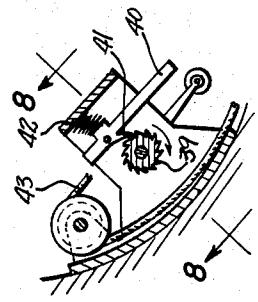


Fig. 7

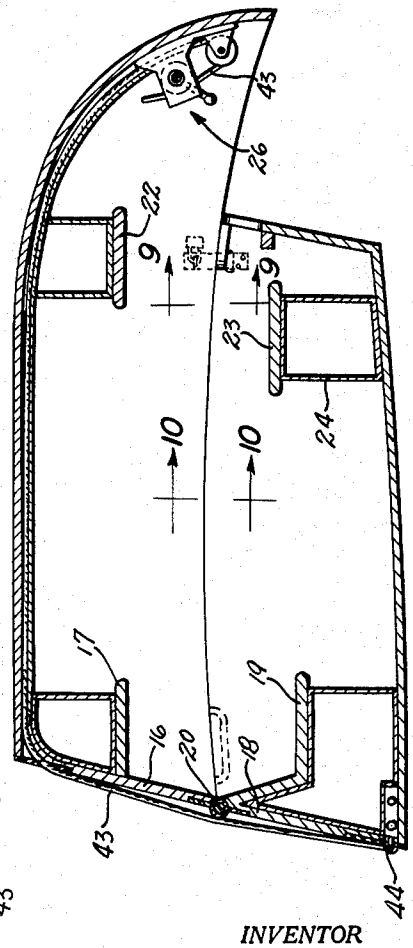


Fig. 3

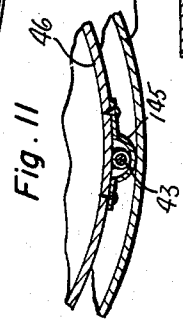


Fig. 11

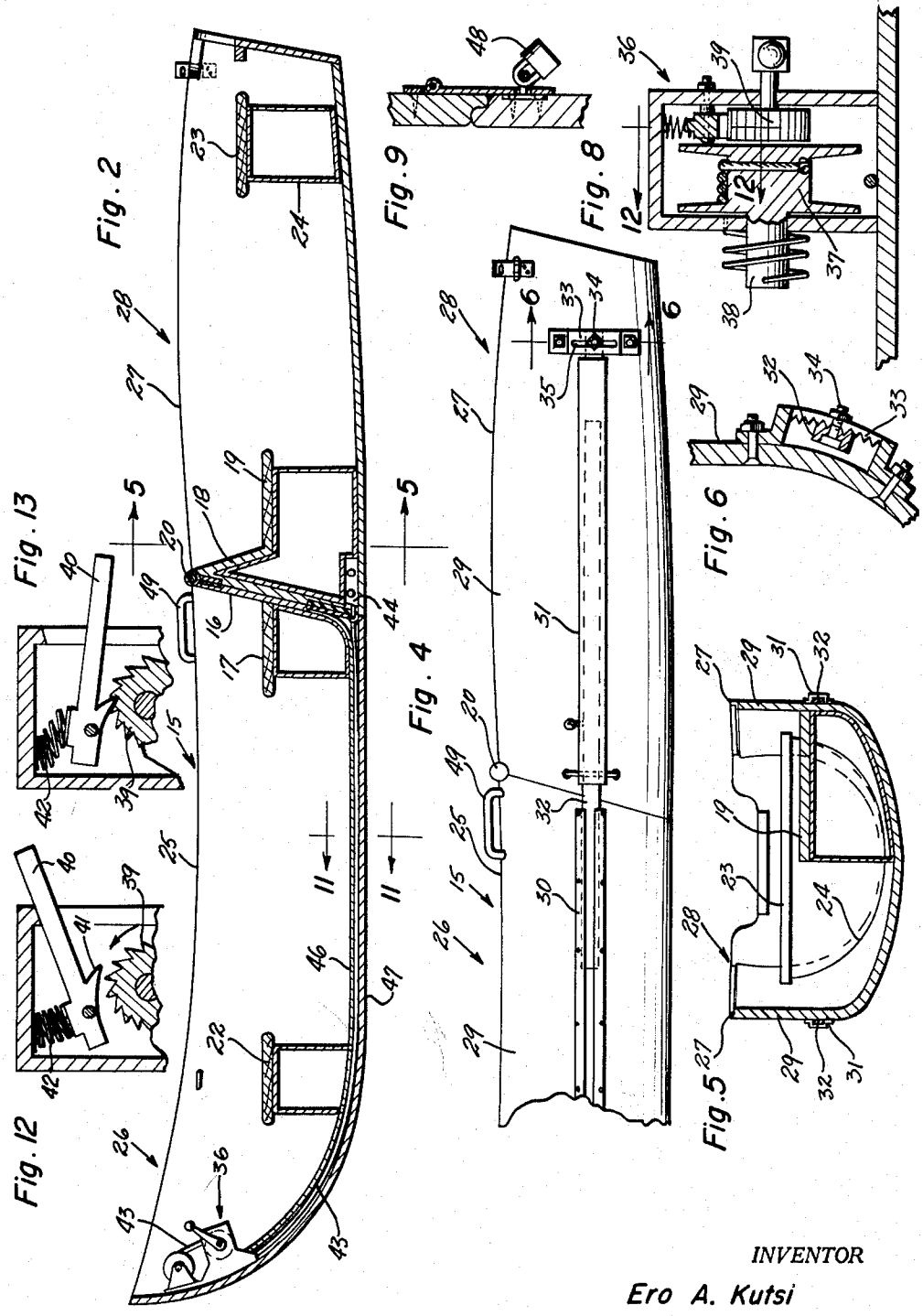
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March 30, 1965 E. A. KUTSI 3,175,234

FOLDING BOAT

Filed July 15, 1963 2 Sheets-Sheet 2



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3,175,234

FOLDING BOAT

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6 Claims. (Cl. 9—2)

This invention relates to boats and, more particularly, to small boats generally used for fishing and transported to the lake or other desired body of water on a boat trailer towed behind an automobile.

Small fishing boats are becoming more and more popular with city and suburban dwellers, since they can be transported from one's back yard on a trailer to whatever body of water one desires to fish in; however, there is still one big drawback that limits their use. The owner of the boat is limited in the length of boat he can have either by reason of lack of storage space or by the nature and size of his automobile used for towing.

It is, therefore, the principal object of this invention to provide a boat that can be folded in approximately half its length, thereby taking up a minimum of space while being towed to the water or kept in storage.

Another object of this invention is to provide a folding boat that, for all practical purposes, is actually two boats hinged together, thereby offering its user greater safety on the water, for if one-half of the boat becomes damaged by being punctured on a rock or the like, the other half of the boat will keep the entire craft from sinking.

Another object of this invention is to provide a folding boat that can be successfully handled by one person due to its unique construction.

Another object of this invention is to provide a folding boat that will serve as a waterproof compartment for the transporting of camping, hunting, and fishing equipment and the like when traveling by automobile.

Another object of this invention is to provide a folding boat that can be transported on a smaller boat trailer than is otherwise possible, thereby reducing the initial cost of the required trailer.

Another object of this invention is to provide a folding boat which, when folded and padlocked for towing on the road, will present an excellent thief-proof compartment for the transporting of an outboard motor and other equipment, which would otherwise either be left tempting to thieves on the boat or else take up valuable needed space in the automobile.

Still another object of this invention is to provide a folding boat that does not require any complicated mechanism in order to secure the two halves in either a folded or an open position.

Other objects and advantages of this invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same:

FIGURE 1 is a top view of this invention in an open position ready for use.

FIGURE 2 is a sectional view of this invention taken substantially along line 2—2 of FIGURE 1 as viewed in the direction indicated by the arrows.

FIGURE 3 is a sectional view of this invention taken along the same lines as that of FIGURE 2 but with the boat in a folded position.

FIGURE 4 is a partial side view of this invention as indicated by the arrowed lines and numeral 4—4 on FIGURE 1.

FIGURE 5 is a sectional view of this invention taken substantially along line 5—5 of FIGURE 2 as viewed in the direction indicated by the arrows.

FIGURE 6 is a sectional view of this invention taken substantially along line 6—6 of FIGURE 4 as viewed in the direction indicated by the arrows.

FIGURE 7 is an enlarged sectional view of this invention taken substantially along line 7—7 of FIGURE 1 as viewed in the direction indicated by the arrows.

FIGURE 8 is a sectional view of this invention taken substantially along line 8—8 of FIGURE 7 as viewed in the direction indicated by the arrows.

FIGURE 9 is a sectional view of this invention taken substantially along line 9—9 of FIGURE 3 as viewed in the direction indicated by the arrows.

FIGURE 10 is a detailed sectional view of this invention taken substantially along line 10—10 of FIGURE 3 as viewed in the direction indicated by the arrows.

FIGURE 11 is a sectional view of this invention taken substantially along line 11—11 of FIGURE 2 as viewed in the direction indicated by the arrows.

FIGURE 12 is a detailed sectional view of this invention taken substantially along line 12—12 of FIGURE 8 as viewed in the direction indicated by the arrows.

FIGURE 13 is a detailed sectional view of this invention taken along the same lines as that of FIGURE 12 but with the pawl in an engaged position.

In the drawings, wherein for the purpose of illustration is shown the preferred embodiment of my invention, the numeral 15 generally denotes a fishing boat having a watertight bulkhead 16, the upper part of which forms a back rest for a seat 17 and a like watertight bulkhead 18, the upper part of which forms a back rest for the seat 19 which faces rearward, while the first mentioned seat faces forward. The two aforesaid seats are located in the longitudinal center of the boat, therefore permitting a piano type of hinge 20 to be mounted on the top of each of the aforesaid bulkheads 16 and 18, which meet in the lateral center 21 of the boat, which is also provided with a bow seat 22 and a stern seat 23, which rest on a tank 24 as do all of the other seats, although their air tanks are not indicate by any reference character, as this form of construction is well-known and after used in the art of small boat making.

The gunwale 25 of the forward section 26 of the boat 15 is of a contour that will permit its nesting into the gunwale 27 of the rear section 28 of the boat 15 when the two sections are folded together, as shown in FIGURE 3 of the drawing, while FIGURES 9 and 10 clearly show the actual nesting of the gunwales when the boat is folded for transportation as shown in FIGURE 3 of the drawing.

Looking now at FIGURES 4 and 5 it will be seen that each side 29 of the boat 15 is provided with a forward and a rear splash guard 30 and 31 that are U-shaped when viewed from the end. These two longitudinal members are connected together by means of a locking bar 32 that is slidably located within the aforesaid splash guards 30 and 31, thereby providing a stable means of locking each half of the boat together in an open position as shown in the already mentioned FIGURE 4, where it is also seen that the rear end of the aforesaid splash guard 31 is pivotally secured to the internally toothed fitting 33 by means of the bolt 34, thereby permitting the aforesaid splash guard 31 to move up or down on the toothed fitting 33, since this fitting contains a vertically disposed slot 35 in which the bolt 34 rides, thus providing tension on the aforesaid locking bar 32. The splash guard 31 is of such a length as to hold the entire length of the aforesaid locking bar 32 when the boat is in a folded position. It should be stated at this time that there is a slot in the upper part of the aforesaid splash guard 31 and a knob which is secured to the aforesaid locking bar 32 that projects through the aforesaid slot. This knob is used in adjusting the position of the aforesaid locking bar 32. Attention is also directed to the fact that the end of the aforesaid splash guard 31, which is nearest the front end of the boat, is pivotally secured to the hull of the boat.

The boat 15 is equipped with a second locking device that will give additional security to one riding in a boat of this type. The second locking device consists of a winch 36 having a horizontally mounted spring loaded drum 37 supported by a shaft 38, on which is also mounted a ratchet wheel 39 over which is hingeably mounted a pawl engaging lever 40 having a pawl 41 and a tension spring 42 secured thereto. A cable 43 is wound around the spring loaded drum 37 and connected to the fitting 44 located at the lowermost portion and lateral center of the rear section 28 of the boat, as already indicated by the reference numeral 21. The cable 43 is located in a cable tube 45 secured to the underside of the flooring 46 of the hull 47 of the forward section 26 of the boat, as one can see on examination of FIGURES 1, 2, 3, and 11 of the accompanying drawings. From further examination of the drawings it will be noted that the coil spring 50 around shaft 38, FIGURE 8, is secured at the other end. When the boat is in open position of FIGURE 2 and is to be moved to closed position of FIGURE 3, lever 40 and pawl 41 are moved to the position of FIGURE 12. As the boat is folded, cable will be unwound from drum 12, winding said spring. While the boat is folded this spring is under tension. As the boat is unfolded the said spring will take up the slack in the cable and the cable will not tangle between the two bulkheads 16 and 18. This mechanism obviously permits one to draw the two sections of the boat together when they have been placed in an open position, thereby preventing any water and mud from entering between the bulkheads as well as providing the necessary rigidity for a boat in which four people and their fishing tackle may ride. It is also obvious that one only has to release the pawl 41 of the mechanism by raising the pawl engaging lever 40 in order to permit the cable to unwind from the spring loaded drum 37 when folding the boat when it is not in use.

The only other parts of this novel boat that have yet to be mentioned are the two inverted U-shaped handles 49 that are located one on each gunwale of the boat near its centrally located seats 17 and 19. The purpose of these handles is, of course, to make it easier for one to take the boat on or off whatever vehicle it is towed to the water on and for folding the boat, since each inverted U-shaped handle is located on the rear portion of the forward part of the boat as best shown in FIGURES 1 and 2 of the accompanying drawings.

The way in which this boat is folded and unfolded is obvious from the description of its construction and detailed operation of the mechanisms described alone with the same.

I have hereinbefore disclosed the preferred mode of practicing my invention, but I reserve the right to make such and any changes as might occur to one skilled in the art to which this invention appertains, or to make any and all such alterations as may be permitted under the doctrine of equivalents.

Having thus fully described my invention I claim as new, and desire to secure to myself by Letters Patent of the United States:

1. A folding boat comprising forward and rear sections, each section of which has a bulkhead hinged together in a manner that permits the said forward section to fold back over the said rear section when the said boat is not in use, and two separate and independent mechanisms, one of which is a hand-operated winch secured to the front end of said front section, said winch having a cable secured around a spring loaded drum and extending down the center and inside the said forward section to securement at the forward end of the said rear section of the said boat, thereby providing a means of locking the said forward section to the said rear section in a watertight manner in an end to end position when the said boat is ready for use.

2. A folding boat comprising forward and rear sections, each section of which has a bulkhead hinged together in a manner that permits the said forward section to fold back over the said rear section when the said boat is not in use, and two separate and independent mechanisms, one of which is a hand-operated winch secured to the front end of said front section, said winch having a cable secured around a spring loaded drum and extending down the center and along the floor of said forward section to securement at the forward end of the said rear section of the said boat, thereby providing a means of locking the said forward section to the said rear section in a watertight manner in an end to end position when the said boat is ready for use, and the other one of the said mechanisms comprising longitudinally placed U-shaped members on the outside of each section of the said boat and a locking bar on each side of the boat, each bar slidably located inside the U-shaped members on that side of the boat.

3. A folding boat comprising forward and rear sections, each section of which is provided with a gunwale having a rounded edge adapted to nest into the other gunwale when the said boat is folded together, and each section of which has a bulkhead hinged together in a manner that permits the said forward section to fold back over the said rear section when the said boat is not in use, and two separate and independent mechanisms, one of which is a hand-operated winch secured to the front end of said front section, said winch having a cable secured around a spring loaded drum and extending down the center and under the floor of said forward section to securement at the forward end of the said rear section of the said boat, thereby providing a means of locking the said forward section to the said rear section in a watertight manner in an end to end position when the said boat is ready for use, and the other one of the said mechanisms comprising longitudinally placed U-shaped members on the outside of each section of the said boat and a locking bar on each side of the boat, each bar slidably located inside the U-shaped members on that side of the boat.

4. A folding boat comprising forward and rear sections, each section of which is provided with a gunwale having a rounded edge adapted to nest into the other gunwale when the said boat is folded together, and each section of which has a bulkhead hinged together in a manner that permits the said forward section to fold back over the said rear section when the said boat is not in use, and two separate and independent mechanisms, one of which is a hand-operated, spring loaded winch of the pawl and ratchet type, secured to the front of the front section, the said winch having a cable secured around a spring loaded drum and extending down the center and inside the said forward section to securement at the forward end of the said rear section of the said boat, thereby providing a means of locking the said forward section to the said rear section in a watertight manner in an end to end position when the said boat is ready for use, and the other one of the said mechanisms comprising longitudinally placed U-shaped members on the outside of each side of each section of the said boat and a locking bar on each side of the boat, each locking bar slidably located inside the U-shaped members on that side of the boat.

5. A folding boat comprising forward and rear sections, each section of which is provided with a gunwale having a rounded edge adapted to nest into the other gunwale when the said boat is folded together, and each section of which has a bulkhead on the top of which is secured a piano type of hinge extending the full length thereof, thereby permitting the said forward section to fold back over the said rear section when the said boat is not in use, and two separate and independent mechanisms, one of which is a hand-operated, spring loaded winch of the pawl and ratchet type, secured to the front of the front section, the said winch having a cable se-

cured around a spring loaded drum and extending down the center and inside the said forward section to securement at the forward end of the said rear section of the said boat, thereby providing a means of locking the said forward section to the said rear section in a watertight manner in an end to end position when the said boat is ready for use, one locking mechanism comprising a splash guard extending along each side of each section, the splash guards on the same side of the boat being aligned and having aligned longitudinal openings when the boat is ready for use and a locking bar in the aligned openings on each side of the boat.

6. A folding boat comprising forward and rear sections, each section of which is provided with a gunwale having a rounded edge adapted to nest into the other gunwale when the said boat is folded together, and each section of which has a bulkhead on the top of which is secured a piano type of hinge extending the full length thereof, thereby permitting the said forward section to fold back over the said rear section when the said boat is not in use, and two separate and independent locking mechanisms, one of which is a hand-operated, spring loaded winch of the pawl and ratchet type, secured to the front of the front section, the said winch having a cable secured around a spring loaded drum and extending down the center and inside the said forward section to securement at the forward end of the said rear section of the said boat, thereby providing a means of locking the said forward section to the said rear section in a watertight manner in an end to end position when the said boat is ready for use, the other locking mechanism comprising a splash guard extending along each side of each section, the splash guards on the same side of the boat being aligned and having aligned longitudinal openings when the boat is ready for use and a locking bar in the aligned openings in each side of the boat, and each section of the said boat having seats mounted on top of air tanks, the said air tanks providing a means of preventing the said boat from sinking in the event that the hull is ever punctured.

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