

Aug. 30, 1932.

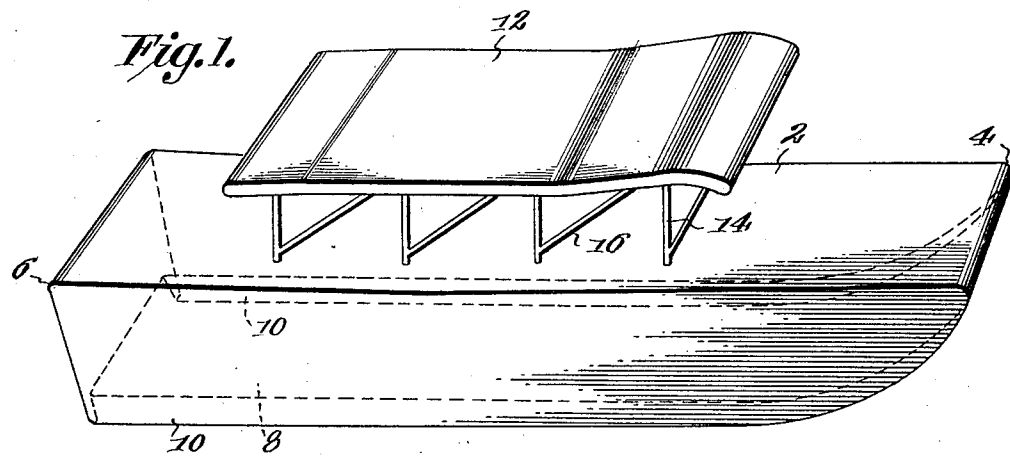
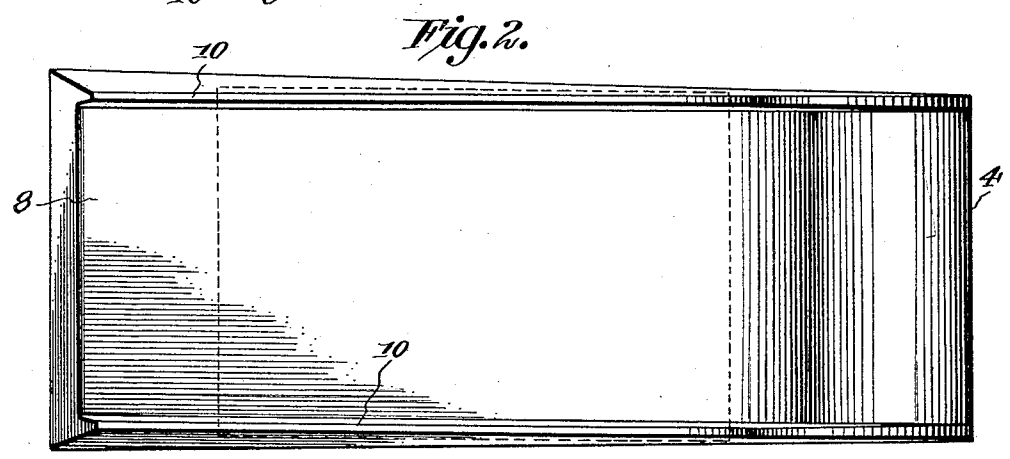
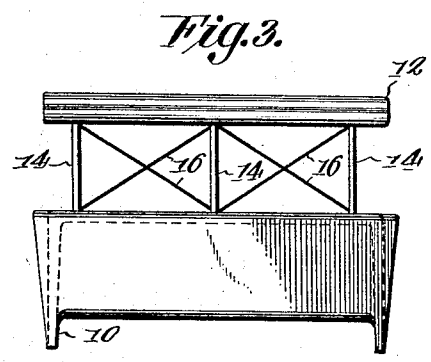
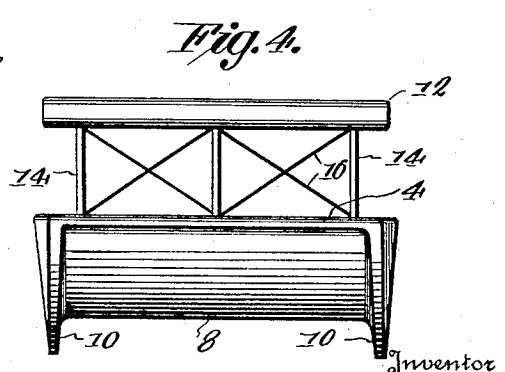
T. B. COLLINS

1,875,190

BOAT

Filed Feb. 27, 1930

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

Fig. 5.

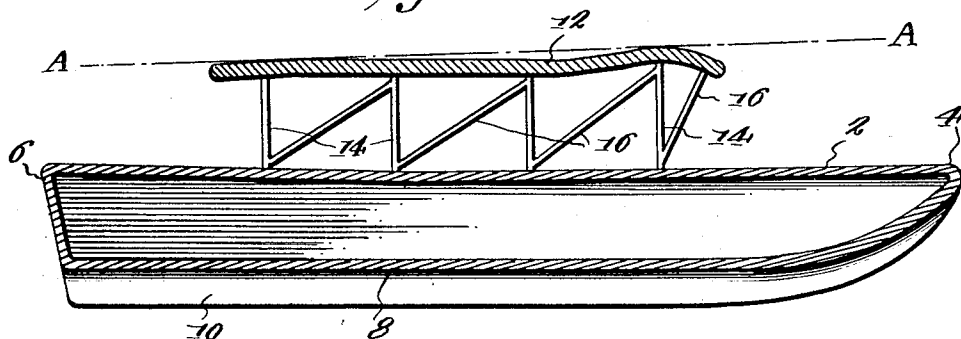


Fig. 6.

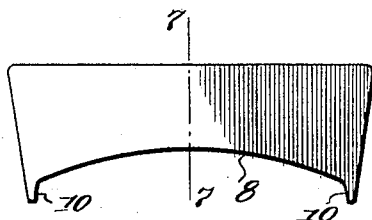


Fig. 7.

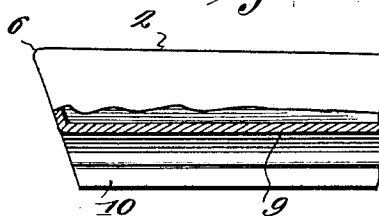
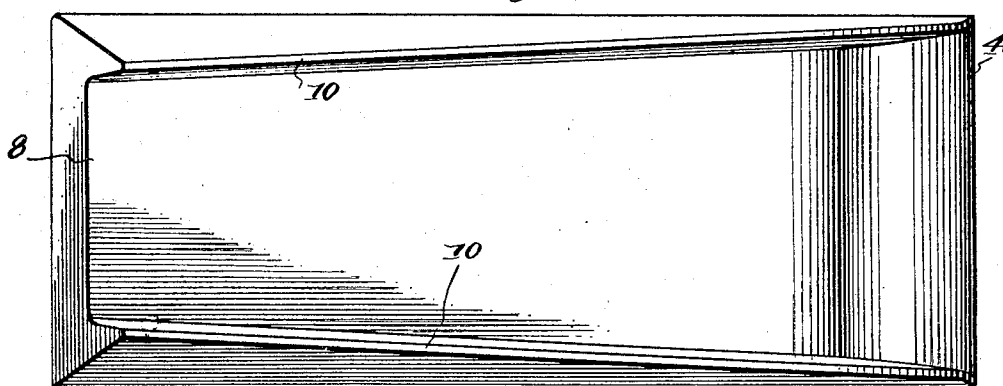


Fig. 8.



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UNITED STATES PATENT OFFICE

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BOAT

Application filed February 27, 1930. Serial No. 431,944.

The present invention relates to watercraft and contemplates the utilization of the natural forces encountered during the operation of the boat as an aid to its travel.

One of the objects of this invention is to construct a boat which by reasons of the special features of the form thereof shall be capable of riding or gliding upon the surface of the water upon a cushion of air.

Another object of this invention is to construct the hull of such form as to cause the same when in forward motion to engage and trap air under the body of the boat and form an air cushion upon which the boat will glide upon the surface of the water with less resistance than boats constructed in the conventional manner.

A further object of this invention is to provide in connection with the hull of a boat an air engaging surface arranged on the upper portion of the boat which inclines slightly upwardly toward the direction of motion so as to engage the air while the boat is moving forward and thereby produce a vacuum on the upper portion of the air engaging surface and an air cushion on the lower part of the surface which will effect a lifting of the boat and relieve the weight of the boat from the water, thereby enabling the boat to glide or ride more lightly on the surface thereof.

A still further object of this invention is to construct a boat which is adapted to travel at a very high rate of speed on shallow water and in waters having debris and marine growth which interfere with boats of the ordinary type.

Other objects and structural details of the invention will be apparent from the following description when read in connection with the accompanying drawings wherein:

Figure 1 is a perspective view clearly illustrating the air engaging surface arranged on the upper portion of the boat,

Figure 2 is a perspective view showing the bottom portion of the boat,

Figure 3 is an end elevation looking toward the bow of the boat,

Figure 4 is a similar view of the boat looking toward the forward end or bow of the boat,

Figure 5 is a side elevation in section,

Figure 6 is a cross section of Figure 5 on line 2—2,

Figure 7 is a longitudinal cross sectional view of Figure 6 on line 7—7,

Figure 8 is a plan view of the bottom of the boat showing a modification.

Referring to Figure 1, the boat is provided with the usual bow 4 and stern 6. The bottom of the boat 8, which is shown in dotted lines, extends substantially parallel to the top portion of the boat until it approaches the forward portion of the boat when it curves upwardly toward the bow 4 as clearly illustrated in the drawings. The boat is provided with depending fins 10 which extend longitudinally of the boat. These fins 10 may be either separate or be formed by extending the side of the boat so as to form enclosing walls. Figures 3, 4 and 6 clearly illustrate the arrangement of the depending fins. On the top portion of the boat there is provided an air engaging surface 12 which is slightly inclined upwardly with respect to the bow. This air-engaging surface may be a plane surface along the line A—A or it may be curved. Figure 1 illustrates the air engaging surface 12 to be curved in such a manner as to produce the desired reaction and the amount of curvature may be changed in accordance with the results desired. The air engaging surface 12 is held in position by the standards 14 which are secured to the deck of the boat, and there is further provided as a strengthening means the braces 16 which are fixed to the standards 14.

It is obvious that the air engaging surface 12 may be supported on the deck of the boat by any other such structure and no attempt is made to show any specific details or construction of the arrangement for securing the surface to the deck or top portion of the boat. Figure 3 clearly shows the longitudinally extending fins 10 depending from the bottom of the boat so as to form or constitute a composite compartment or air pocket. In this view, the bottom of the boat is shown as being flat. However, in Figure 6 the bottom of the

boat 8 is shown as being concave. The depending fins may be either parallel or, as shown in Figure 8, may converge toward the stern of the boat, or they may be so constructed that they increase in width at the stern of the boat so as to produce the same effect. The bottom portion of the boat whether of a flat or a concaved surface is directed upwardly toward the bow of the boat and likewise the depending fins 10 which are shown as adjacent to the side walls of the boat are directed upwardly toward the bow of the boat. These depending fins may be either formed as a part of the sides or wall of the boat or they may be separate fins which are fixed to the bottom of the boat.

Further, the fins may extend throughout either the full length thereof and to such a depth as may be determined by the circumstances and practice for which the particular size of the boat is to be built. Likewise, the load which the boat is to carry and the speed at which it is to be operated are other circumstances which will necessarily change the specification of the boat.

The purpose of these extended side walls or depending fins is to produce a compartment which has either a flat upper surface or a concaved upper surface, under the body of which will entrap the air at the bow when the boat is in forward motion and will be compressed and forced under the hull of the boat and as a result form an air pocket or a cushion on which the boat will ride on the surface of the water. The canopy which is arranged on the upper portion of the boat may or may not be employed with the particular case, but when used will produce a lifting effect to relieve in part the weight of the boat from the water thereby making it possible for the boat to glide more lightly on the air cushion on the surface of the water.

The particular structure of the depending fins in combination with the bottom of the boat may be used either alone or in combination with the air engaging surface arranged on the upper portion of the boat. Likewise, the air engaging surface which may be either plane or slightly curved and inclined upwardly toward the bow of the boat may be used individually or in combination with the particular structure and arrangement of the depending fins.

From the foregoing description, it is believed that the construction and operation as well as the advantages of the present invention will be readily understood and appreciated by those skilled in the art.

What is claimed as new is:

A boat comprising a hull having a smooth bottom directed upwardly at the bow thereof, a pair of spaced longitudinally extending depending fins on the bottom of said boat, said fins converging toward the stern of said boat,

and an air engaging surface on the upper portion of said boat for producing a lifting effect of the boat when in forward motion.

GEORGE R. COLLINS,
Executor for Timothy Banker Collins, Deceased.

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