A. G. LE MEILLE.

BOAT.

APPLICATION FILED OCT. 15, 1910.

996,654.

Patented July 4, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

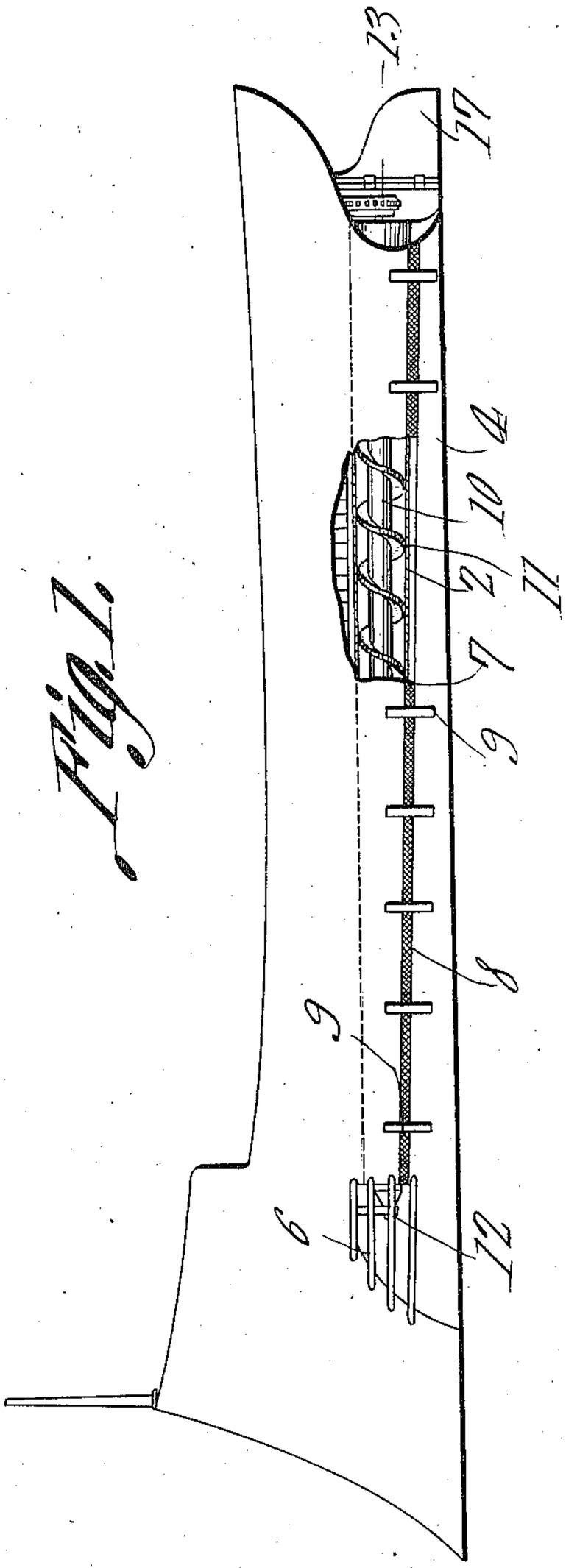
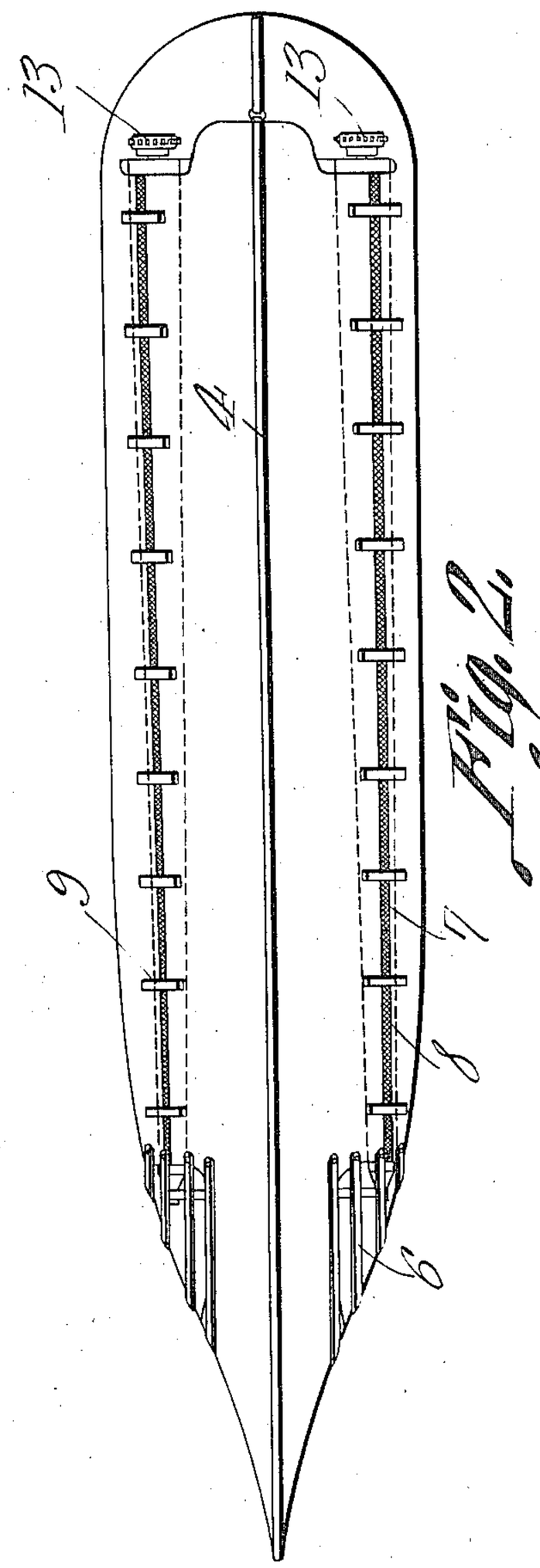


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

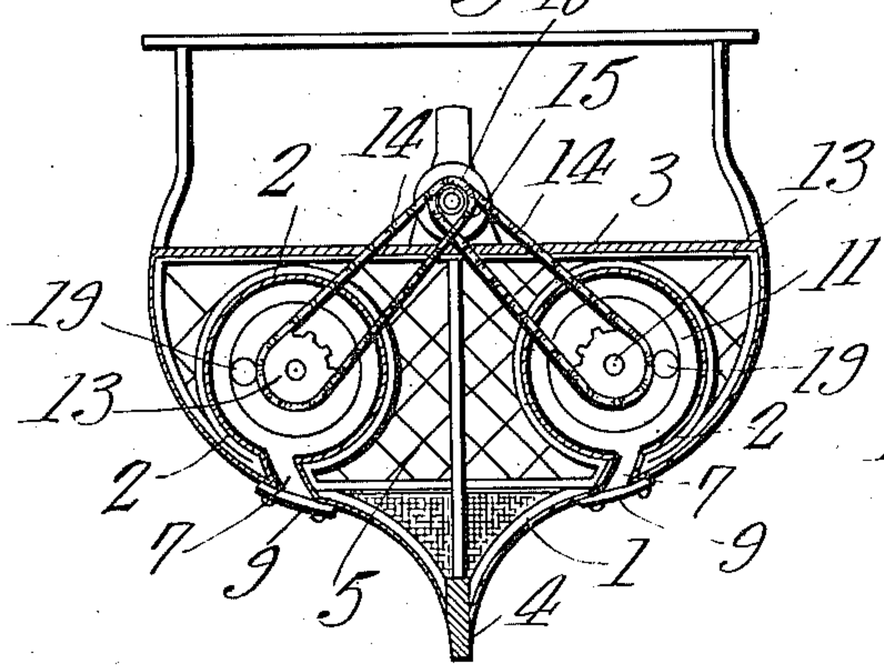


Fig. 4.

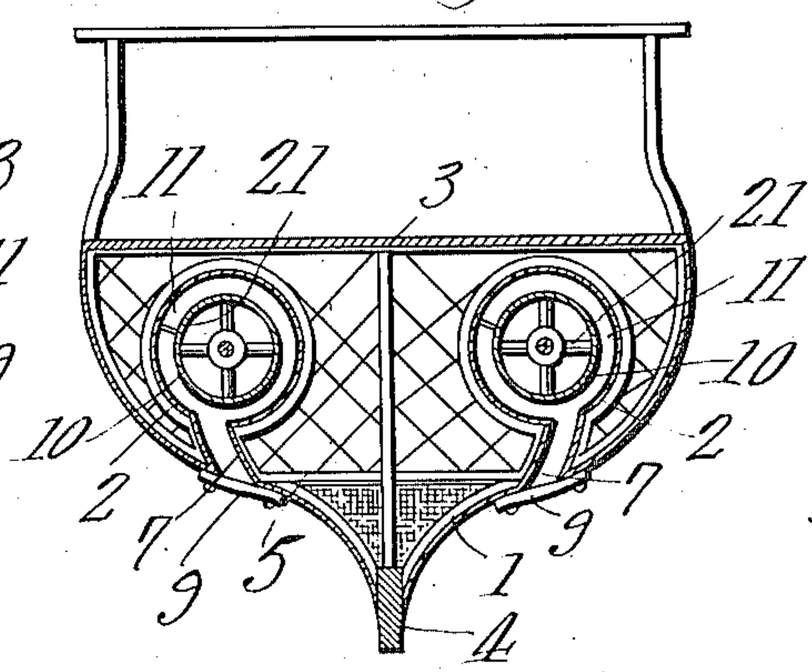


Fig. 5.

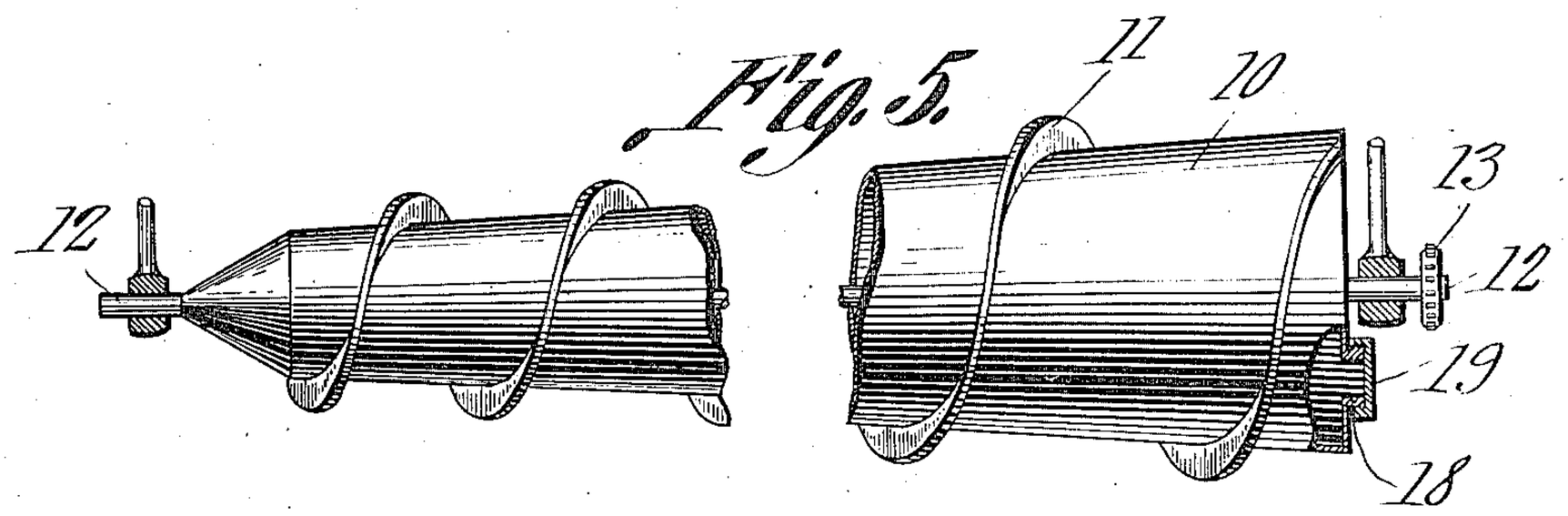
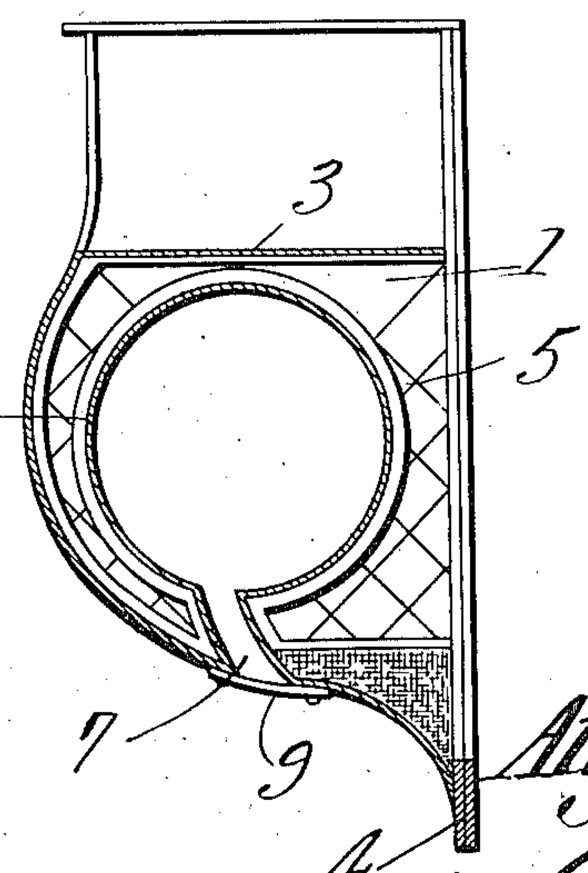


Fig. 6.



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UNITED STATES PATENT OFFICE.

AUGUSTE GEORGE LE MEILLE, OF ATHENS, GEORGIA.

BOAT.

996,654. Specification of Letters Patent. Patented July 4, 1911.

Application filed October 15, 1910. Serial No. 587,263.

To all whom it may concern.

Be it known that I, AUGUSTE GEORGE LE MEILLE, a citizen of the United States, residing at Athens, in the county of Clarke and State of Georgia, have invented a new and useful Boat, of which the following is a specification.

This invention relates to motor boats and more particularly to mechanism for propelling the same.

One of the objects of the invention is to provide propelling means including screws extending practically throughout the length of the hull and which are mounted within and supported by said hull so as to be thus protected from injury and in no wise change the general appearance of the boat compared with other boats built for high speed.

A further object is to provide propelling elements so constructed as to add to the buoyancy of the boat and thus reduce the power necessary to propel it at an even speed.

A further object is to provide propelling mechanism which is especially advantageous upon rough seas inasmuch as a portion of either or both of the propelling elements is always submerged or partly submerged and the strain upon the boat and its engine is thus greatly reduced.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the claims without departing from the spirit of the invention.

In the accompanying drawings, the preferred form of the invention has been shown.

In said drawings: Figure 1 is a side elevation of a boat having the present improvements embodied therein, a portion of the hull being broken away. Fig. 2 is a bottom plan view of the boat. Fig. 3 is a rear elevation of the propelling mechanism, the adjacent portion of the boat being shown in side elevation. Fig. 4 is a horizontal section through the boat at a point between the ends thereof. Fig. 5 is a view partly in elevation and partly in section of a portion of one of the buoyant propelling elements. Fig. 6 is an enlarged transverse section through one side portion of the boat, the propeller being removed.

Referring to the figures by characters of reference 1 designates the hull of the boat, the bow thereof being preferably shaped as shown in Figs. 1 and 2 so as to cut through the water and to thus be subjected to the minimum resistance. The hull is provided, within each side portion thereof, with a longitudinally extending cylindrical propeller casing 2, both ends of each casing being open. The lower deck 3 of the boat is arranged above these casings and the space between the deck and the keel 4 is partly filled with braces, such as indicated at 5 and by means of which the hull structure is kept rigid and serves to fully protect the propeller casings from becoming crushed from any cause.

The front end of each of the propeller casings has a grating 6 extended thereacross and formed within the bottom of the hull at each side thereof is a longitudinally extending inlet opening 7 through which water is free to pass into the adjacent propeller casing 2. These longitudinal openings 7 have protecting screens 8 secured across them and, arranged at intervals across these openings are tie strips 9 which serve to hold the walls of the openings 7 in proper relation to each other under all conditions.

A propelling member is mounted for rotation within each of the casings 2 and extends longitudinally throughout the length thereof, each of these members including a hollow tapered core such as shown at 10 and two spiral blades 11 surrounding the core and extending from end to end thereof. Trunnions 12 project from the ends of the core and are mounted within suitable bearings provided therefor, there being a sprocket 13 upon the rear trunnion of each propelling element and the two sprockets being driven by chains 14 receiving motion through sprockets 15 from the drive shaft 16 of the boat. The mechanism utilized for transmitting motion to the propelling elements from the drive shaft is preferably arranged between the hull and the rudder 17 as clearly indicated in Fig. 1. Each of the cores 10 has an opening 18 in the rear or large end thereof and this opening is normally closed, as by means of a screw cap 19. The trunnions 12 may be formed by the end portions of the shaft 20 extending cen-

trally through the core 10, there being spiders 21 at desired intervals within the core for reinforcing said core.

It is to be understood of course that when a boat is provided with propelling mechanism such as has been described, all space below the deck 3 is practically useless except for housing the propelling mechanism. This, however, is not objectionable, inasmuch as the boats provided with the mechanism described are especially designed for high-speed passenger service or for use in warfare.

It will be apparent that when the propelling elements are rotated at a high speed water will be forced by them rearwardly from the casings 2 and will enter said casings through the grated front openings and through the longitudinal openings 8. Because of the peculiar shape and arrangement of the propellers, the boat will be operated with practically no vibration of the propelling elements and, as said elements utilize hollow cores, they increase the buoyancy of the boat to a considerable extent and thus reduce one of the obstacles to high speed.

As the propelling elements extend practically throughout the length of the hull, it will be apparent that should the boat be rolled from side to side or pitched in the direction of its length, a portion of either or both of said propelling elements will always be partly or entirely submerged and the resistance offered to the driving engine will be maintained and said engine thus relieved to a very great extent from the strain to which engines are usually subjected when driving the ordinary propeller wheels through rough seas.

Attention is particularly directed to the fact that the propeller casings do not require any considerable power of resistance as they are fully protected from all outside pressure by the hull.

By providing each of the propelling elements with a normally closed orifice, said elements may be emptied of any water which may pass thereinto as a result of leaks and which reduces the efficiency of the propelling elements as floats.

What is claimed is:—

1. The combination with a boat, of longitudinally extending propeller casings housed within the hull of the boat at the sides thereof, said casings having longitudinally extending openings in the bottom thereof, the ends of the casings being open, means extending across the front and bottom openings for preventing the admission of foreign substances to the casings, and a propeller mounted for rotation in each casing.

2. The combination with a boat, of longitudinally extending propeller casings housed within the hull of the boat at the sides thereof and tapered toward their front ends, said casings being open at their ends and having longitudinally extending openings in the bottom thereof, means extending across the front and bottom openings for preventing the admission of foreign substances to the casings, and a propeller mounted for rotation within each of the casings, each propeller including a buoyant tapered core and a spiral blade upon the core.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

AUGUSTE GEORGE LE MEILLE.

Witnesses:
WARREN J. SMITH,
PAUL H. SMITH.