

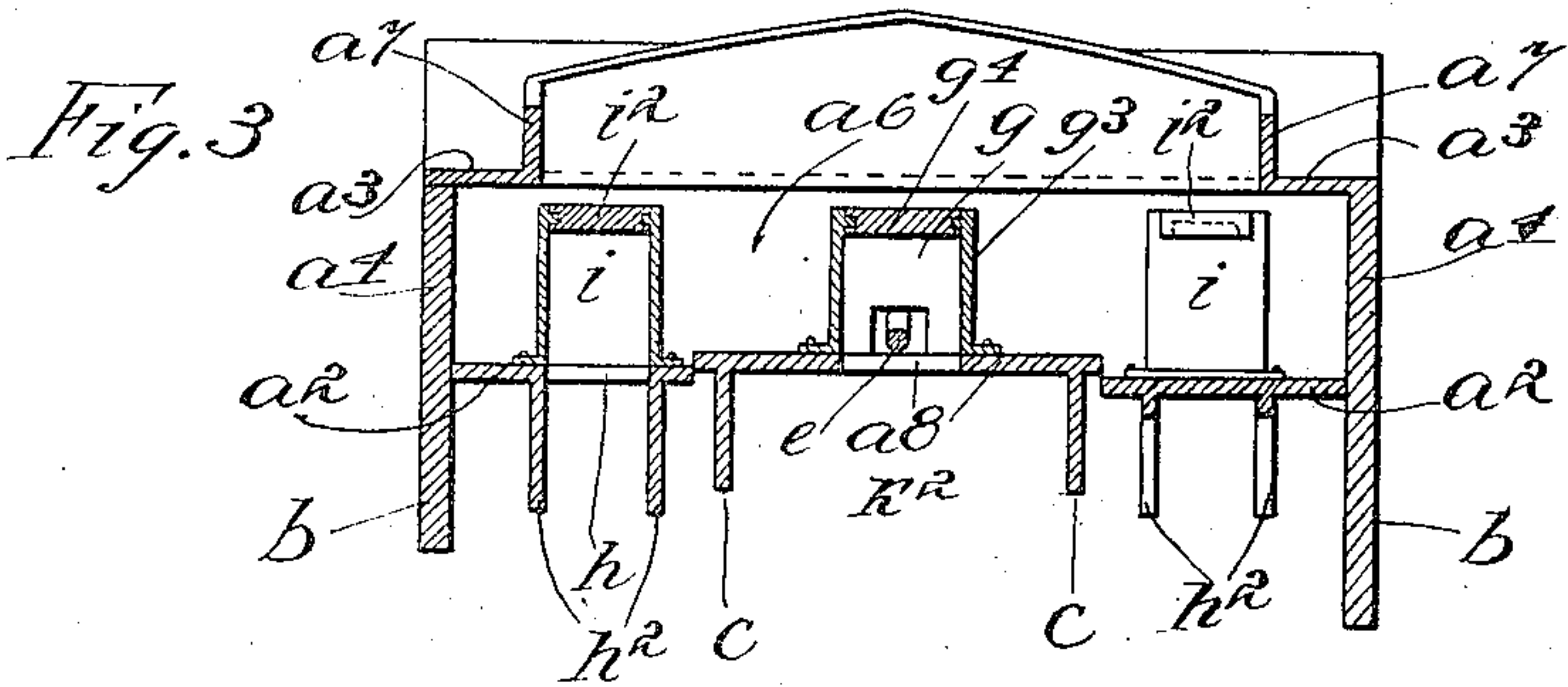
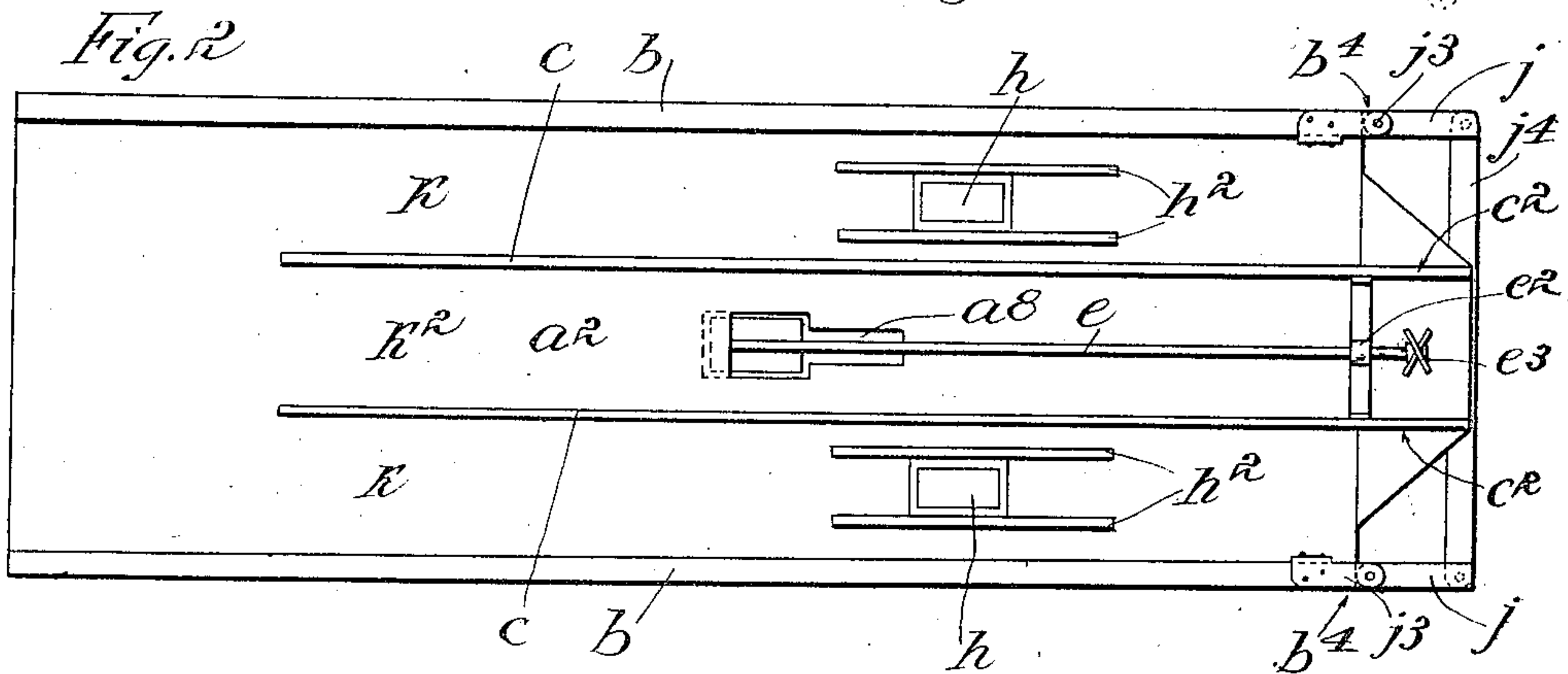
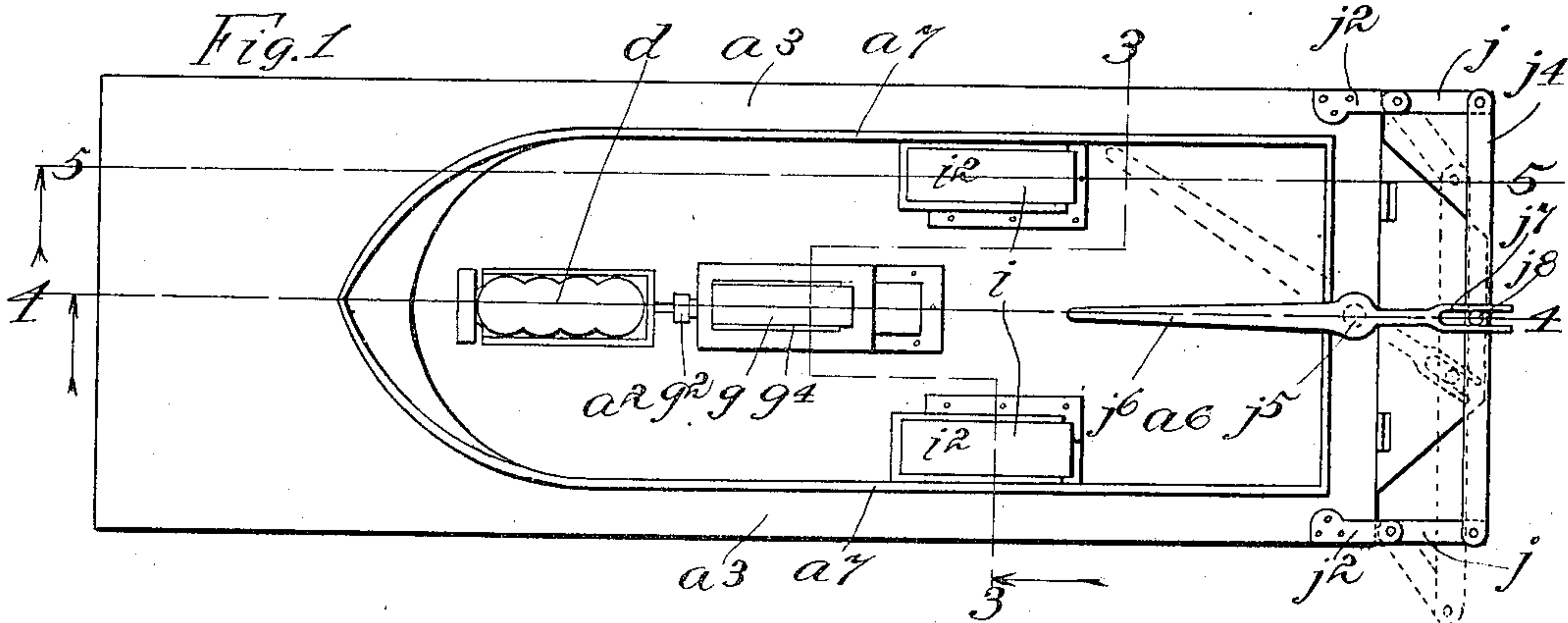
HIGH SPEED BOAT.

APPLICATION FILED MAR. 11, 1909.

961,750.

Patented June 21, 1910.

2 SHEETS--SHEET 1.



WITNESSES:

H. P. Confield
C. E. Mulreany

INVENTOR

John H. Branth

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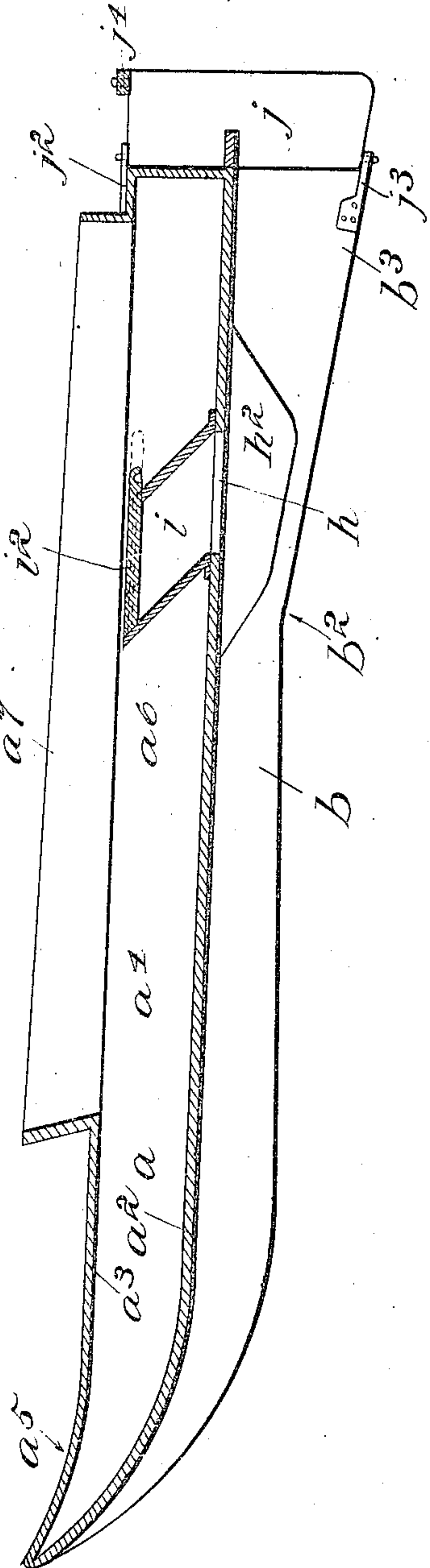
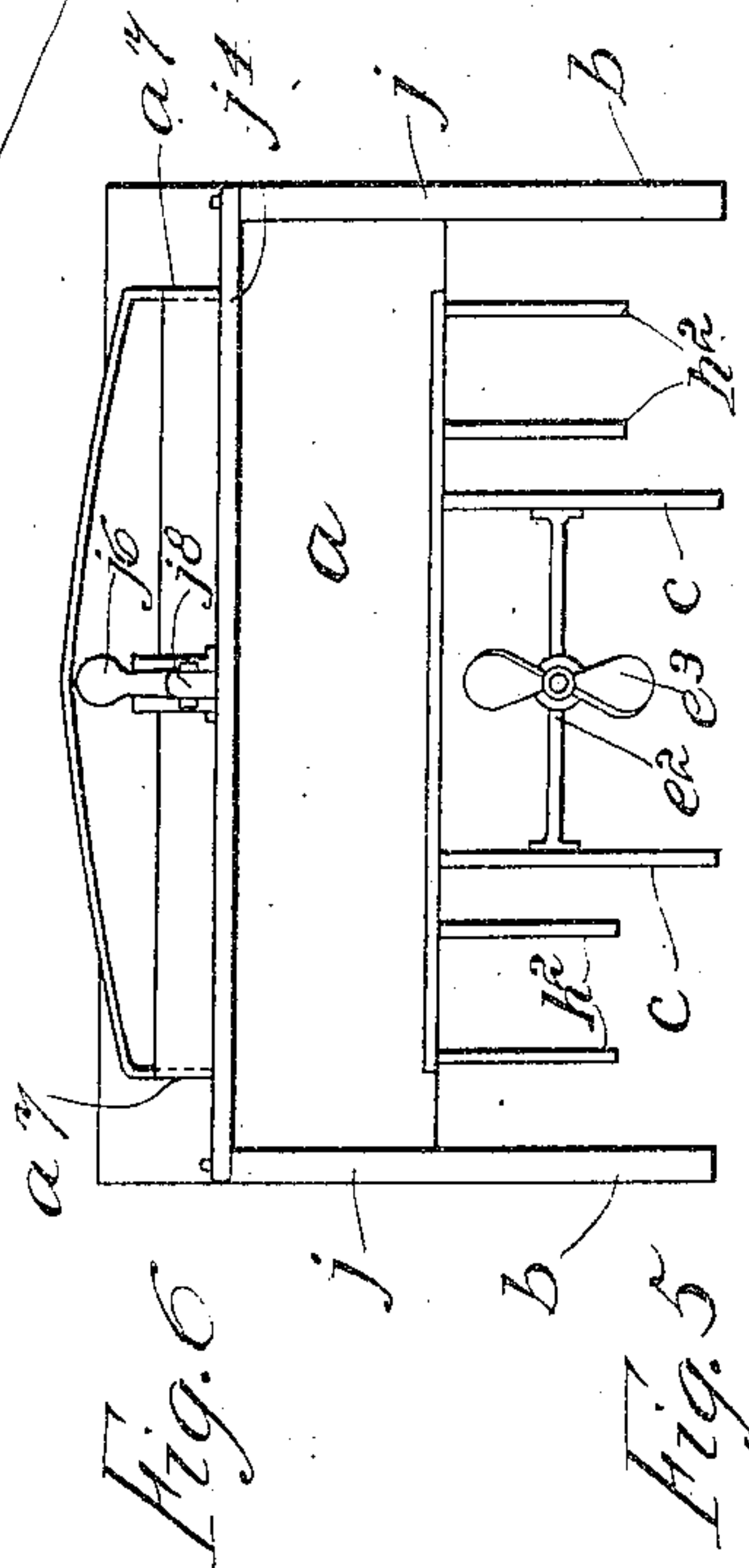
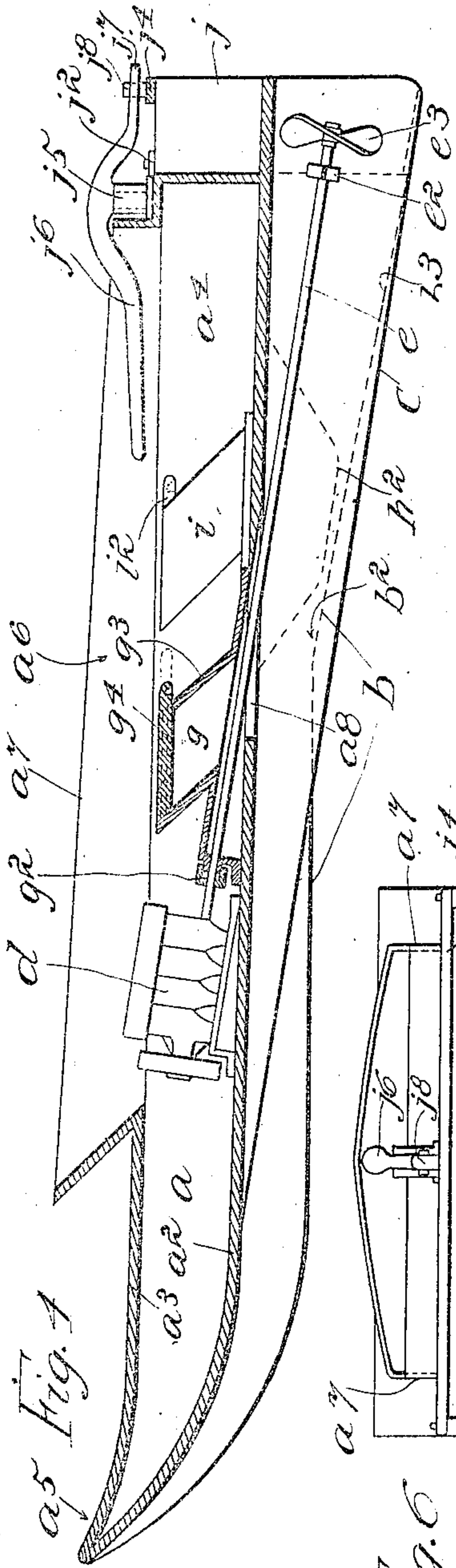
J. H. BRANTH.
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UNITED STATES PATENT OFFICE.

JOHN H. BRANTH, OF NEW YORK, N. Y.

HIGH-SPEED BOAT.

961,750.

Specification of Letters Patent. Patented June 21, 1910.

Application filed March 11, 1909. Serial No. 482,804.

To all whom it may concern:

Be it known that I, JOHN H. BRANTH, a citizen of the United States, and residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in High-Speed Boats, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to high speed boats, and particularly to what are known as hydro-plane boats; and the object thereof is to provide a boat of this class which is so formed and constructed as to prevent the lifting of the bow and depression or "squatting" of the stern when under high speed; a further object being to provide a boat of this class with means for supplying beneath the bottom thereof a film of air which passes backwardly beneath the bottom of the boat; and which operates to reduce friction and prevent the suction or the tendency to form a vacuum under the boat which results in the "squatting" of the stern portion of the boat when under high speed; and with these and other objects in view the invention consists in a boat of the class specified constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a plan view of my improved boat, Fig. 2 a bottom plan view thereof, Fig. 3 a transverse section on the line 3—3 of Fig. 1, Fig. 4 a longitudinal section on the line 4—4 of Fig. 1, Fig. 5 a longitudinal section on the line 5—5 of Fig. 1, and;—Fig. 6 a stern view.

In the practice of my invention, I provide a hull a which is of the general form shown in the drawings, said hull being approximately rectangular in cross section and comprising a bottom a^2 , a deck a^3 and sides a^4 . The sides a^4 of the hull are parallel and the bow thereof is curved upwardly as shown at a^5 , and in the central and rear portion of the hull is the usual cock-pit a^6 provided with a shield a^7 which incloses the bow end of the cock-pit and the sides and rear thereof.

The transverse width of the opening into

the cock-pit is preferably less than the transverse width of the hull as shown in Fig. 1, and the front or bow end of the shield a^7 of the cock-pit is curved and flared as shown, 60 and the sides thereof are parallel or substantially so.

The sides a^4 of the hull are provided throughout their full lengths with downwardly directed side keel-fins b which are tapered to correspond with the taper of the bow and which, from a predetermined point, preferably slightly rearwardly of the longitudinal center of the hull as shown at b^2 , are tapered downwardly and backwardly as shown at b^3 .

Secured longitudinally of the bottom a^2 of the hull and equally spaced transversely thereof are supplemental longitudinal keel-fins c which extend from a predetermined point beneath the bow portion of the boat backwardly and are projected beyond the side keels b as shown at c^2 in Fig. 2, the rear end portions of the side keels being at b^4 .

Within the front end or bow end portion of the cock-pit is placed a motor or engine d with which the propeller shaft e is connected in the usual manner, and said propeller shaft passes downwardly and backwardly through a longitudinally arranged opening a^8 in the bottom a^2 of the hull, and the rear end portion of the propeller shaft e is provided with a support and bearing e^2 through, which it passes and which is mounted between the rear end portions of the supplemental keel-fins c , and the propeller e^3 with which the shaft e is provided is between the rear end extensions c^2 of the supplemental keel-fins c , and the bottom of the hull extends backwardly thereover and covers the propeller.

The opening a^8 in the bottom a^2 of the hull a through which the propeller shaft e passes is inclosed by a longitudinally arranged hood g which is secured to the bottom a^2 and at the front end of which is a stuffing box g^2 through which the propeller shaft passes.

The hood g is provided centrally with a raised portion g^3 which slants forwardly and which is provided at the top with a sliding door g^4 which is adapted to open backwardly, and in the rear portion of the cock-pit a^6 and between the side keel-fins b and the supplemental keel-fins c , the bottom a^2 of the hull is provided with openings h which are inclosed by hoods i secured to the bottom a^2 of the hull which slant forwardly,

and in the top portions of which are placed sliding doors i^2 adapted to open backwardly. The hoods i and the part g^3 of the hoods i and g are extended upwardly to or approximately to the top of the hull, and the doors of said hoods or members may be operated by hand or by any suitable mechanical devices.

Mounted at the stern of the hull and at each side thereof is a rudder j provided with supports j^2 and j^3 secured to the top of the sides of the hull and to the bottom of the side keel-fins b , and pivoted to the top of these rudders and near the outer edge thereof is a transverse bar j^4 , and pivoted centrally of the stern of the hull as shown at j^5 is a tiller arm j^6 adapted to swing in a horizontal plane and provided at its rear end with a fork j^7 through which passes a pin j^8 connected with the bar j^4 , and by means of this construction the rudders j may be swung in either direction by means of the tiller arm j^6 .

The side keel-fins b and the supplemental keel-fins c form side channels k , and a middle channel k^2 longitudinally of the bottom of the hull and through which, when the boat is under high speed, the air rushes, this operation being facilitated by the shape of the bow or the bottom a^2 thereof in transverse section, and by the upwardly directed slant or curve given thereto.

When the boat has reached a comparatively high rate of speed, the doors g^4 and i^2 are opened and air rushes down through the openings a^8 and h in the bottom a^2 of the hull and passes back through the rear ends of the channels k and k^2 , and this passage of air backwardly through the channels k and k^2 from these openings prevents, to an extent, the lifting or elevation of the bow when the boat is under high speed and the "squatting" or depression of the stern of the boat.

In boats of this class as usually constructed, there is a tendency under high speed to produce a vacuum under the hull and especially the stern portion thereof, and this causes the lifting of the bow and the "squatting" of the stern; but with my improvement the air which rushes in through the openings h and a^8 , said movement of the air being occasioned by the high speed of the boat, prevents this tendency to form a vacuum and there is a film of air between the bottom a^2 of the hull and the water, and this reduces friction to a large extent and materially aids, or adds to the speed of the boat.

My invention is not limited to the shape of the bottom edges of the side keel-fins b as herein shown and described, and said side keel-fins may be tapered in any desired manner, or may be of the same width throughout, and this is also true of the sup-

plemental keel-fins c . I also preferably secure to the bottom of the hull and longitudinally of the channels k and at the opposite sides of the air holes or openings h longitudinally ranging shield fins h^2 , the object of which is to control the air which passes through said air holes and to force the same to pass backwardly when the boat is in motion, and it will be understood that the side keel-fins b and supplemental keel-fins c not only serve to form channels for the backward passage of the air beneath the hull of the boat, but they also aid in guiding or steering the boat, and the said side keel-fins b and the supplemental central keel-fins c or the rear end extensions thereof inclose and protect the propeller and also the propeller shaft, and if said fins were to strike an obstruction, the boat could pass thereover without injury to the propeller, and the inclosure of the propeller in the longitudinal channel formed by the central keel-fins causes the propeller to operate with greater force or power on water passing through said channel than it would have when operating in the open, or rearwardly of the boat in the usual manner.

By means of my improved construction, I provide a boat of the class specified which will ride level when under high pressure or under high speed, and which can be easily steered or guided, and by means of the construction of which a maximum speed may be obtained with a minimum power, and my invention is not limited to the exact details of construction herein shown and described; and various changes therein and modifications thereof may be made, within the scope of the appended claims, without departing from the spirit of my invention or sacrificing its advantages.

The forwardly directed slant of the hoods i and the top portion g^3 of the hood g facilitates the downward and backward movement of the air through the bottom of the hull as hereinbefore described, and in practice this inrush of air which, when the boat is under high speed, will be great, may be regulated or controlled by the movement of the doors i^2 and g^4 , and any suitable means may be provided as hereinbefore stated for operating said doors.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A boat of the class described comprising a hull the bottom of which is approximately horizontal in cross section and the bow of which is upwardly curved, the bottom of the hull being also provided at the opposite sides thereof with longitudinally ranging and downwardly directed side keel-fins between which are placed longitudinal supplemental keel-fins, said boat being also provided with a cock-pit in the front end

portion of which the motor is placed, a propeller shaft connected with said motor and passing downwardly and backwardly through the bottom of the hull and between the supplemental keel-fins and provided at its rear end with a propeller.

2. A boat of the class described comprising a hull the bottom of which is approximately horizontal in cross section and the bow of which is upwardly curved, the bottom of the hull being also provided at the opposite sides thereof with longitudinally ranging and downwardly directed side keel-fins between which are placed longitudinal supplemental keel-fins, said boat being also provided with a cock-pit in the front end portion of which the motor is placed, a propeller shaft connected with said motor and passing downwardly and backwardly through the bottom of the hull and between the supplemental keel-fins and provided at its rear end with a propeller, the side portions of the bottom of the hull being also provided with air holes, and means for opening and closing the same.

3. A boat of the class described comprising a hull the bottom of which is substantially horizontal in cross section and the bow of which is curved upwardly, the side portions of the hull being provided with longitudinally ranging downwardly directed keel-fins, and means for propelling the boat comprising a motor mounted therein, a propeller shaft connected therewith and passing downwardly and backwardly through the bottom of the hull of the boat and provided at its rear end with a propeller, the opening in the bottom of the hull through which the propeller shaft passes being inclosed by a hood which extends upwardly and forwardly to or approximately to the top of the hull.

4. A boat of the class described comprising a hull having the usual cock-pit, the bow of the hull being curved upwardly and the bottom thereof being substantially horizontal in cross section, said hull being also provided at the sides thereof with longitudinally arranged and downwardly directed side keel fins, between which are placed equally spaced supplemental keel-fins, and means for propelling the boat, the bottom of the hull being provided between said fins with air openings which are inclosed by hoods which extend upwardly in the cock-pit.

5. A boat of the class described comprising a hull having the usual cock-pit, the bow of the hull being curved upwardly and the bottom thereof being substantially horizontal in cross section, said hull being also provided at the opposite sides with longitudinally arranged and downwardly directed side keel-fins between which are placed equally spaced supplemental keel-fins, a motor placed between the cock-pit, a propeller shaft connected with said motor and extending downwardly and backwardly through the bottom of the hull between the supplemental keel-fins, the opening in the hull through which the propeller shaft passes being inclosed by a hood or casing which extends upwardly in the cock-pit and opens upwardly, and the bottom of the hull being also provided between the side fins and the supplemental fins with openings closed by hoods which open upwardly in the cock-pit.

6. A boat of the class described comprising a hull, the bottom of which is substantially horizontal in cross section and the bow of which is curved upwardly, said hull being also provided with the usual cock-pit, the side portions of the hull being provided with longitudinally ranging downwardly directed keel-fins, and the bottom of the hull being also provided centrally thereof with longitudinally ranging supplemental keel-fins, a motor placed in the cock-pit of the boat, a propeller shaft connected with said motor and extending downwardly and backwardly through the bottom of the hull and between the supplemental keel-fins and provided at its rear end with a propeller, said propeller being provided with side guards and a top cover or shield, the opening in the hull, through which the propeller shaft passes being closed by a hood or casing which extends upwardly in the cock-pit and opens upwardly and the bottom of the hull being provided between the side fins and the supplemental fins with openings closed by hoods which open upwardly in the cock-pit.

In testimony that I claim the foregoing as my invention I have signed my name in presence of the subscribing witnesses this 10th day of March 1909.

JOHN H. BRANTH.

Witnesses:

H. R. CANFIELD,
C. E. MULREANY.