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J. P. POOL.

NAVIGABLE VESSEL.

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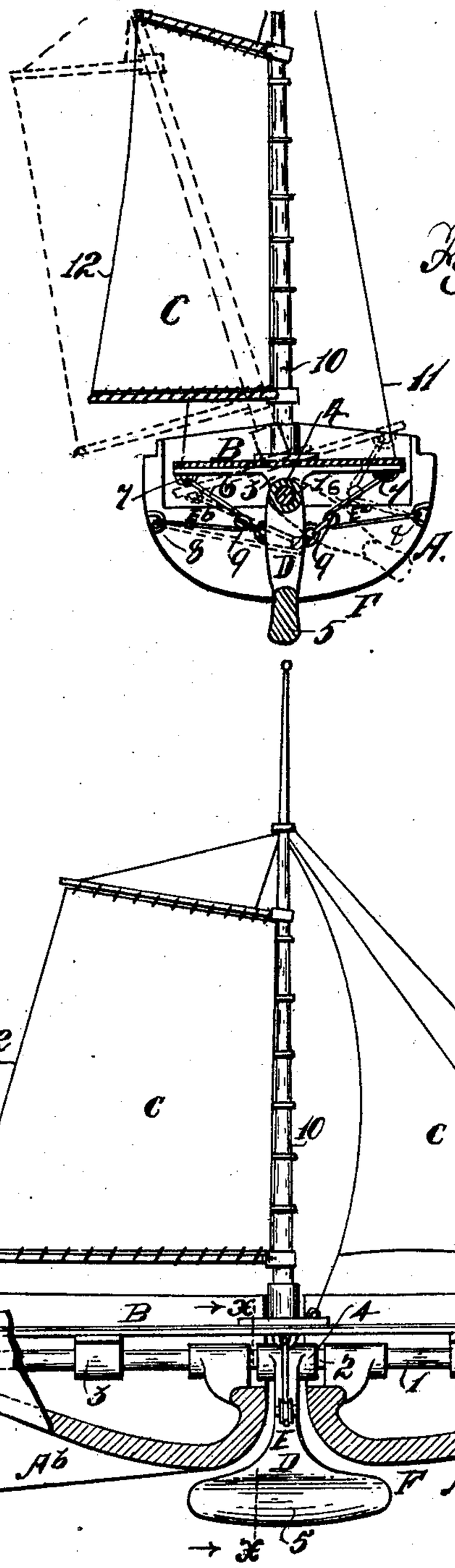

Fig. 2.

Fig. 1.

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UNITED STATES PATENT OFFICE.

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NAVIGABLE VESSEL.

No. 861,894. Specification of Letters Patent. Patented July 30, 1907.

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To all whom it may concern:

Be it known that I, JAMES P. POOL, a citizen of the United States, residing in the borough of Brooklyn, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Navigable Vessels, of which the following is a specification.

This invention relates to navigable vessels, and it has for its object to provide vessels of the character described of improved stability in their course through or upon the supporting element, whereby and wherein the customary careenings, gyrations and oscillations of such vessels as at present constructed may be substantially overcome.

In carrying out the invention I provide a supporting member which rests directly upon or moves through the supporting medium; a load carrying member independent of but connected with the supporting member and capable of movement relative to the supporting member; and a ballast or counterpoise member which is operatively connected with the load carrying member in such manner that it shall execute movements simultaneously with those of the load carrying member and such as shall compensate for the careenings, gyrations and oscillations of said load carrying member due to the unstable support of the load carrying member by the supporting member in the supporting medium.

In the drawing: Figure 1 is a side elevation partly in section of a sailing vessel constructed according to the invention. Fig. 2 is a vertical transverse sectional view of the same, taken upon the line X—X, Fig. 1 and looking in the direction of the appended arrow, the parts being shown in full lines in the normal relative positions, and in dotted lines in the position assumed according to the novel construction and operative connection of parts.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring with particularity to the drawing, the vessel comprises a supporting member or hull A, a load carrying member or deck B, carrying the propelling sail elements C, a ballast member D carried by the hull A and movable laterally with relation thereto, and operative connections E between the deck B the ballast member D and the hull A. The deck B is movably connected with the hull A and mounted to oscillate laterally upon a central longitudinal pivot line. The ballast member D is arranged substantially centrally of the hull A which is preferably cut away, as at F, to form a forward hull portion A^a and an aft hull portion A^b between which the ballast member D is disposed and depends as a keel.

A preferred form of construction and connection of parts and members is as follows:—The hull portions A^a and A^b carry, and are connected rigidly together, by a shaft or beam 1 which extends longitudinally of the vessel and bridges the cut away portion or space between the hull portions A^a and A^b, as at 2. The deck B is supported directly upon and tied to the shaft 1 by bearings 3, which, with proper conformation of the lower portion of the deck and the upper portion of the hull, permit the deck to oscillate laterally in both directions with the shaft as a central longitudinal support. The ballast member or keel D is suspended directly from the shaft 1 by a collar or knuckle 4, at the portion 2 of the shaft, in such manner as to be capable of lateral oscillation, or oscillation in the same plane as the oscillatory plane of the deck B, and its proportioning may be such as to approximately extend across and fill the space between the hull portions A^a and A^b. The keel D may extend below the lowermost portion of the hull A and be weighted at its lower portion, as at 5.

The operative connection E comprises a member E^a and a member E^b arranged at either side of the vessel; the member E^a being connected with one side of the hull A, and the corresponding sides of the deck B and keel D, and the member E^b being connected with the opposite sides of the hull A deck B and keel D. Each of the members E^a and E^b consists of a rope, cable or chain 6 which is connected at one end, as at 7, with the deck B, is connected at the other end, as at 8, with the hull A, and intermediate of its ends is passed about a pulley block 9 secured to the keel D at the upper portion of the latter.

The sail elements C may be of any preferred type, and, as shown, comprise a mast 10 stepped in the deck B and stayed to the same, as at 11, and a sail proper 12 carried by the mast.

The operation of a vessel constructed as described will be manifest from the foregoing description taken in connection with the accompanying drawing and the following statement. Normally the parts and members, in sailing, occupy the relative positions shown in full lines in Figs. 1 and 2, with the deck B extending in a horizontal plane and the keel D depending beneath the deck in a vertical plane. If, now, any disturbance of the equilibrium of the deck occurs, causing it to oscillate relative to the hull A, one side of the deck is elevated and the other side of the deck is depressed; and the cable 6 which is connected with the elevated side tends to straighten out, and, in doing so, swings the keel D laterally in the direction of the elevated side of the deck. The elevation of the side of the deck is thus opposed by the weight of the keel as it is increasingly imposed upon the elevated side of the deck, the result being ultimate return of the deck, under the weight of the keel, to normal horizontal position. If the weight of the keel be sufficient, it is manifest that but slight oscillation of the deck will be permitted; and the points of connection of cables 6 with the hull, deck and keel may be so relatively dis-

posed that the oscillations of the keel may excel in degrees of an arc the corresponding oscillations of the deck, causing an increased balancing power on the part of the keel over that obtained were the keel connected with the deck in fixed angular relation. The normal relative dispositions of the points of connection of each of the cables 6 with the deck, hull and keel, must, manifestly be other than arrangement in a straight line. As the cable 6 on one side of the vessel tends to straighten out, because of elevation of the corresponding side of the deck, the other cable 6 is slackened by the depression of the corresponding side of the deck, thus permitting the above described oscillation of the keel.

The invention, while hereinabove described as embodied in a sailing vessel, comprehends broadly any type of navigable vessel comprising a supporting member, a load-carrying member, and a ballast member, the latter member being movable with relation to the supporting member and operatively connected with the load-carrying member, and the load-carrying member being movable with relation to the supporting member. I therefore do not wish to be understood as limiting myself to the specific construction, relative arrangement and operative connection of parts herein described and illustrated, but reserve the right to vary the same in adapting the invention to varying conditions of use, without departing from the spirit of the invention or the terms of the following claims:

Having thus described my invention, I claim and desire to secure by Letters Patent:

1. A vessel of the character described comprising a supporting member, a load carrying member connected with and movable with respect to said supporting member and a ballast member engaging the water and movably mounted with respect to said supporting member and operatively connected with said load carrying member to have simultaneous movement.

2. A vessel of the character described comprising a hull and deck supported upon the hull and movable with relation to the hull and provided with sail elements, a ballast member carried by the hull engaging the water and movable with relation to the hull, and operative connections between the deck and the ballast member.

3. A vessel of the character described, comprising a hull, a deck carried by the hull and capable of oscillation upon the hull, a depending ballast member carried by the hull engaging the water and movable with relation to the hull, and operative connections between the deck and the ballast member whereby the ballast member is moved in the relative movement of the hull and deck.

4. A vessel of the character described, comprising a hull, a deck carried by the hull and capable of lateral oscillation upon the hull, a keel carried by the hull and capable of lateral oscillation, and operative connections between the deck and the keel.

5. A vessel of the character described, comprising a hull, a deck carried by the hull and capable of oscillation upon the hull and provided with sail elements, a keel carried by the hull and capable of oscillation with respect to the hull, and operative connections between the keel and the deck.

6. A vessel of the character described, comprising a hull, a deck carried by the hull and capable of lateral oscillation upon the hull, a keel carried by the hull and capable of lateral oscillation, and operative connections between the deck and the keel.

7. A vessel of the character described, comprising a hull, a deck carried by the hull and capable of lateral oscillation upon the hull and provided with sail elements, a keel carried by the hull and capable of lateral oscillation, and operative connections between the deck and the keel and the hull.

8. In a vessel of the character described, a hull consisting of two distinct and separated forward and aft portions, and a depending keel pivotally suspended between the said portions of the hull.

9. A vessel of the character described, comprising a hull consisting of two separated forward and aft portions, a deck carried by the hull and capable of oscillation upon the hull and provided with sail elements, and a depending keel suspended between said portions of the hull and operatively connected with the deck.

10. A vessel of the character described, comprising a hull consisting of two separated forward and aft portions, a deck carried upon the hull and capable of lateral oscillation upon the hull and provided with sail elements and a depending keel suspended between said portions of the hull and operatively connected with said deck at both sides of the same.

11. A vessel of the character described, comprising a hull consisting of two separated forward and aft portions, a deck carried upon the hull and capable of lateral oscillation upon the hull and provided with sail elements, and a depending keel suspended between said portions of the hull and operatively connected with the said deck and with the said hull at both sides.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES P. POOL.

Witnesses:
M. R. MATTEO,
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