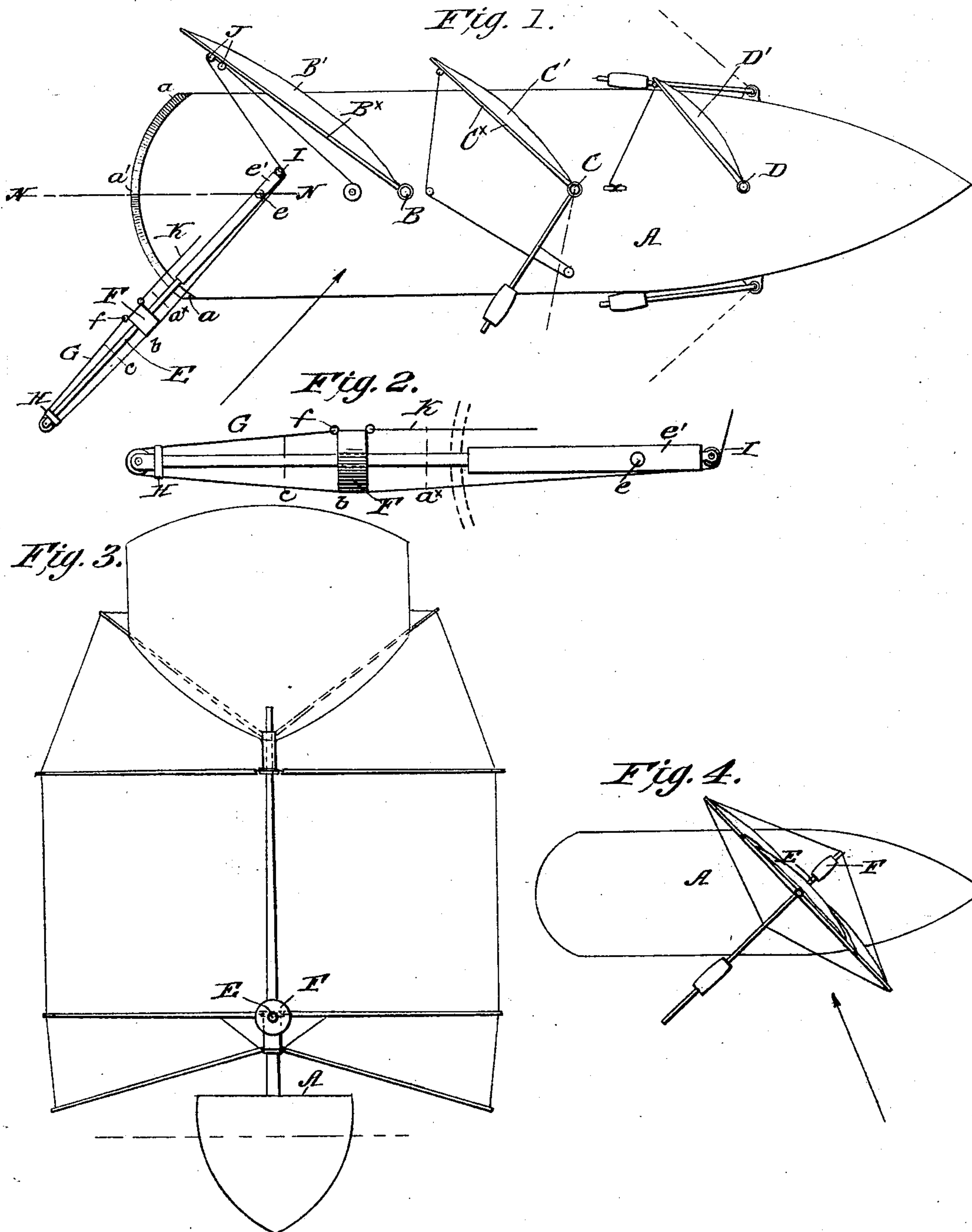


(No Model.)

J. P. POOL.
BOAT BALLASTING DEVICE.

No. 521,388.

Patented June 12, 1894.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES P. POOL, OF BROOKLYN, NEW YORK.

BOAT-BALLASTING DEVICE.

SPECIFICATION forming part of Letters Patent No. 521,388, dated June 12, 1894.

Application filed October 25, 1893. Serial No. 489,150. (No model.)

To all whom it may concern:

Be it known that I, JAMES PURCELL POOL, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Boat-Ballasting Devices, of which the following is a specification.

My invention relates to ballasting devices for yachts, or sea going vessels, which can be quickly and automatically shifted to prevent the vessel careening from its natural or upright position, either through accidental movement, wind, or wave.

The invention has for its object to provide devices of this character, simple in their construction, which will serve to balance the vessel under almost any condition of wind or wave motion, which will impart additional safety, and which can be easily manipulated. With other objects in view, which hereinafter will appear, the invention consists in such novel arrangement and peculiar combination of parts as will be first described in detail and then particularly pointed out in the claims, reference being had to the accompanying drawings, in which—

Figure 1 is a diagrammatic plan view of a threemasted vessel with my improvements applied thereto. Fig. 2 is a detail view of the adjustable ballast boom hereinafter particularly referred to. Fig. 3 is a front view of a boat showing a modified arrangement of the ballast devices and Fig. 4 is a plan view of the parts shown in Fig. 3, the sails and ballast boom being adjusted to the position they are set when going against the wind.

In the practical application of my improved ballast boom devices, one or more of such booms are used in connection with the yacht or vessel, which are attached to, or adjustably connected with pivotal bearing points on the deck, the sides of the vessel, the masts, rudder posts in the hold, or to such other part as may be found the most practicable, but in all cases in such a manner as to be capable of being readily shifted to overcome the careening force of the wind. In their connection with such yachts or vessels, I prefer, however, to connect such ballast boom with the sail booms, whereby they will be automatically operated to shift their position as

the sail is shifted in tacking or hauling to the windward.

Referring now to the drawings, and more particularly to Figs. 1 and 2, which illustrate the preferred arrangement of the several parts, A indicates the deck of a vessel, B the mizzen mast, C the main mast, and D the fore mast, to which the sails and rigging B' C' D' are connected in any well known manner. When connected with the stern of the vessel, the ballast devices comprise a boom E, pivoted as at e to the deck, and extended when not in use as a ballast, longitudinally rearward on the line N N, it being normally held to move to such direction by inclining the bearing portion of the deck from the sides to the center as indicated at a a' a in Fig. 1, such movement being augmented by a roller or ballast ball F, loosely held on the boom E, such roller forming when the ballast boom is set in operation, as a shifting ballast, it being held for longitudinal adjustment thereon for a purpose presently explained.

G indicates a rope or cable, which connects at one end to an eye f on the ballast ball or roller F, extends out over a guide or stop H for such roller at the outer end of the boom, passes over the front face of the pulley I at the inner projecting end e' of the boom, over guide pulleys J J, on the sail boom B^x, and from thence to a winch or other mooring on the deck.

In practice the boom E is slightly elevated from its pivot point outward, to cause the ballast ball F to normally seek its innermost position by gravity. It may however be operated inwardly by a rope K connected thereto as shown in Fig. 2.

So far as described, it will be readily understood that when the wind is from the direction indicated and the sail swings out in direction to which the boat careens, the rope G, as it is drawn out by the swing of the sail boom B^x will swing the boom E on its pivot, and at the same time draw the ball ballast F outwardly to a degree proportionate to the outward swing of the boom B^x, such boom E being pulled from its longitudinal or natural position with the same force as is exerted by the wind on the main sheet or sail B'.

It will be manifest that as the ballast ball is adjusted outwardly on the boom, automatically or otherwise, it exerts at different points increased force; when at *b* twice the force of that when at *a*^x, and at *c*, twice the force at *b*, &c.

When the ballast boom is connected with the inner masts, (as for instance the main mast C,) it is connected with the boom C^x, has as its pivot the main mast, and projects at right angles to the sail. In this construction, the weight may be fixedly connected with the outer end of the boom as shown.

If desired additional ballast booms may be secured to the forward sides of the hull and held to operate independently of the sail as shown in Fig. 1, and any means, such as steam, hand or electric power used to swing them outward when necessary.

In Figs. 3 and 4, I have shown my improved ballast devices connected with a boat having a double sail. In this construction the ballast boom is connected with the sail boom, so it will be at the rear of the boat when she is going before the wind, and will be on the windward side of the boat when she is going against the wind, or tacking. In this construction the ballast ball is held to slide on the boom whereby it can be quickly drawn into the center of the boat (toward the mast) when going before the wind, it being held to its outer position when going to windward. If desired a short boom having a gravity sliding ball may be projected oppositely from the long boom to form a slight counter balance to the main mast.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. As an improvement in means for ballasting boats, the combination with the boat body and the sail boom, of a weighted boom pivoted on the boat, connections between such sail and weight booms, arranged substantially as shown, whereby such weight booms will be projected at right angles from the sail, to the windward, as and for the purposes set forth.

2. As an improvement in boat ballasting devices, the combination with the sail boom of a swinging ballast boom pivoted at its inner end to the boat and projected over it, a weight longitudinally movable on such ballast boom, and a cable connected to such weight, passed over the outer end of the ballast boom, back over the inner end, and connected to the sail boom, all arranged substantially as shown, whereby the ballast boom is drawn to the windward as the sail swings leeward and the weight slid out on the ballast boom a degree proportionate to the wind pressure on the sail to balance the boat, substantially as set forth.

3. In a ballast means for boats, the combination with the boat having ways *a a'*, inclined downward and inward from the outer edges of the taffrail and the sail boom having guides, of the ballast boom having guides at the inner and outer ends and pivotally connected at its inner end to the boat, a roller weight longitudinally movable on the ballast boom adapted to travel on the ways *a a'* when at its innermost position, a cable connected to such weight, extended outward over the outer boom guide, then inward over the inner boom guide, then over the sail boom guides, and a winch or fastening on the boat for the free end of such cable, and means for pulling the weight inward, all arranged substantially in the manner shown and described.

4. As an improved means for ballasting boats &c., a weighted ballast boom connected with the sails of the boat and projected over the side thereof and operated thereby to be moved toward the windward as the sail moves or fills leeward, substantially as and for the purpose described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 18th day of October, 1893.

JAMES P. POOL.

Witnesses:

ALONZO W. SMITH,
JAMES A. TRUMBULL.