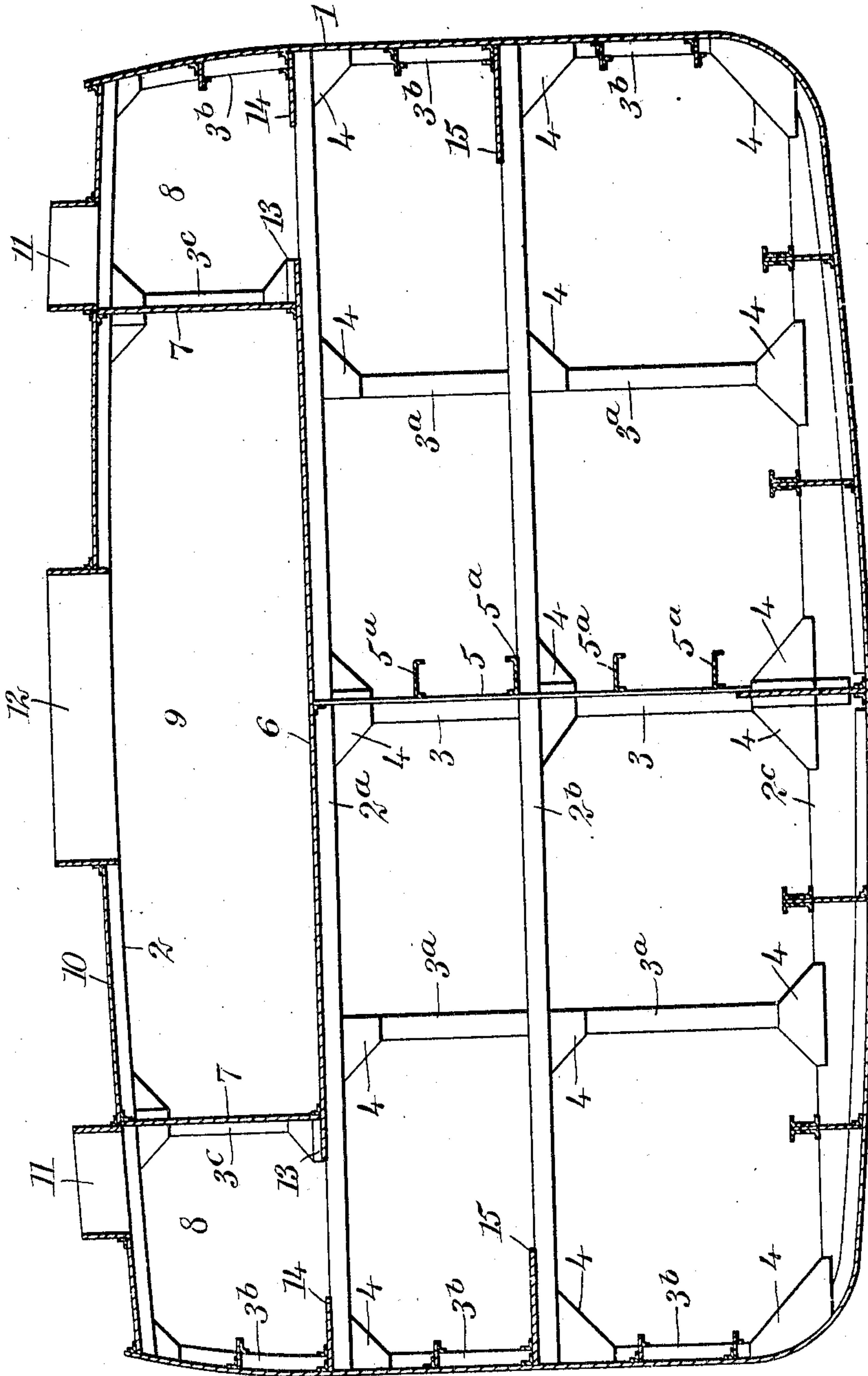


No. 843,390.

PATENTED FEB. 5, 1907.

C. E. BURNEY.
SHIP FOR CARRYING LIQUID CARGOES IN BULK.
APPLICATION FILED AUG. 29, 1906.



WITNESSES

J. A. Brophy
W. W. Holt

INVENTOR

Charles E. Burney

BY *Mumford*

ATTORNEYS

UNITED STATES PATENT OFFICE.

CHARLES E. BURNEY, OF NEWPORT NEWS, VIRGINIA.

SHIP FOR CARRYING LIQUID CARGOES IN BULK.

No. 843,390.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed August 29, 1906. Serial No. 332,427.

To all whom it may concern:

Be it known that I, CHARLES E. BURNEY, a subject of the King of Great Britain, and a resident of Newport News, in the county of Warwick and State of Virginia, have invented a new and Improved Ship for Carrying Liquid Cargoes in Bulk, of which the following is a full, clear, and exact description.

This invention is an improvement in ships for carrying petroleum or other liquid cargoes in bulk, and consists of the novel arrangement and construction hereinafter described.

In carrying petroleum in bulk in steamships and other vessels it is usually required by insurance rules that an expansion-trunk be fitted above the main or tank deck, so as to insure the main tanks being kept full when the vessel is transporting its cargo by sea, the object of this requirement being to maintain the stability of the ship. The usual practice at present adopted is to fit above the tank-deck an expansion-trunk a certain width across the middle line of the ship, about one-third its breadth, more or less, leaving empty spaces between the trunk and the ship's sides. This arrangement is unsatisfactory in new vessels or ships in that the construction is complicated and expensive, requiring the cutting and bracing of numerous frames, and also in converting old ships designed for carrying general cargoes into tank-steamers as the side frames have to be cut and braced with bracket-knees or other means at the top of the main-deck stringer-plate in order to make the tank-deck oil-tight along the ship's sides.

The object of this invention is to overcome these and other disadvantages by dividing the ship longitudinally into two tanks communicating with each other at suitable points and having longitudinal oil-tight bulkheads running the entire length of the tanks a certain distance from the shell-plating above the main or tank deck beams, thus forming an expansion-trunk at each side next to the shell of the vessel open to the tanks below and also providing a wide empty space extending along the longitudinal center of the ship above the tank-deck to be used for the general cargo. By this construction greater facility for the carrying of the general cargo is provided, and also is added an additional element of safety against a side collision. The bulkheads forming sides for the expansion-trunks running fore and aft some

feet inside the shell of the ship act as side-collision bulkheads, and if at sea the shell of the ship adjacent to these side trunks were pierced by accident the oil inside and seawater outside would simply mix through the motion of the ship and the seaworthiness of the ship remain undisturbed, as the empty space or surplus buoyancy now being along the center line of the ship remains intact, since it is protected by the bulkheads referred to and may properly be termed "side-collision" bulkheads.

Reference is to be had to the accompanying drawing, forming a part of this specification, in which the figure is a transverse section through the center of a ship embodying my invention.

The numeral 1 indicates the hull or shell of a ship which is braced at the sides and bottom by the usual plates and beams and has running athwart the usual deck-beams 2, 2^a, and 2^b and bottom beams 2^c, said deck-beams being supported by stanchions 3 at the center of the ship and by stanchions 3^a and 3^b at each side thereof, the stanchions 3^b forming the side frames of the ship and all of said stanchions being connected to the beams by plates 4, as shown.

Passing longitudinally through the center of the ship is a plate 5, reinforced by channel-bars 5^a and running to the height of the deck-beam 2^a and dividing the ship into two tanks, suitable openings being left in the plate 5 in order that the tanks may communicate.

6 indicates the main or tank deck, which is secured to the beam 2^a and has fastened to it near each end upwardly-projecting bulkheads 7 and reinforced by the stanchions 3^c, spaced a short distance from the shell of the ship, forming therewith expansion-trunks 8 at each side of the ship and also a central longitudinal space 9 in the center of the ship for the general cargo. The expansion-trunk and general cargo are covered over by an upper deck 10, secured to the deck-beams 2, and are provided with a hatchway 11 for each of the expansion-trunks and a hatchway 12 for the compartment 9, the hatchways 11 being preferably arranged contiguous to the bulkheads 7 and the hatchway 12 in the center of the ship.

The connection between the expansion-trunks and the main tanks is slightly contracted by overhanging edges 13 of the deck 6 and oppositely-disposed plates 14, fastened to the shell of the ship and to the deck-beams

2^a. This materially impedes the splashing of the oil when the ship is rolling, as do also plates 15, secured to the shell of the ship and to the deck-beams 2^b.

5 A tank vessel thus constructed is found not only to possess the advantages hereinbefore indicated, but is rendered more steady in a seaway, operating on the same principle technically known as "winging the weights,"
10 which consists in removing weights on board of a ship from the center line out to the ship's sides, causing her to be steadier and roll more easily.

15 Although I have described the invention in detail, it is evident that various immaterial changes may be made without departing from the spirit of the same, and I consider that I am entitled to such modifications as fall within the scope of the annexed claims.

20 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A ship for carrying liquid cargoes, comprising a main tank, a deck covering said
25 tank, and bulkheads rising from said deck providing expansion-trunks between them and the shell of the ship over said tank.

2. A ship for carrying liquid cargoes in
30 bulk, comprising a tank at the bottom of the ship, a main or tank deck covering the tank, bulkheads upwardly extending from the tank-deck providing, in connection with the shell

of the ship, an extension-trunk at each side of the ship, and an intermediate compartment for the general cargo of the ship. 35

3. A ship for carrying liquid cargoes in bulk, comprising tanks in the ship's bottom, a main or tank deck covering the same, bulkheads upwardly extending from the tank-deck forming, in connection with the shell of
40 the ship, expansion-trunks at each side of the ship and a compartment for the general cargo of the ship intermediate the bulkheads, and a hatchway over each of the expansion-trunks and over the central compartment. 45

4. A ship for carrying liquid cargoes in bulk, comprising tanks in the bottom of the ship, a main or tank deck partially covering the tanks, having upwardly-extending bulkheads forming in connection with the shell of
50 the ship, expansion-trunks at each side of the ship and a compartment for the general cargo intermediate the bulkheads, and splash-plates connected to and extending from the sides of the ship forming contracted openings connecting the expansion-trunks with the tanks. 55

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

CHARLES E. BURNEY.

Witnesses:

JOHN C. CRAVEN,
W. B. COLONNA.