J. REID & G. SIMPSON.

SHIP.

APPLICATION FILED APR. 24, 1911.

1,065,549.

Patented June 24, 1913.

2 SHEETS—SHEET 1.

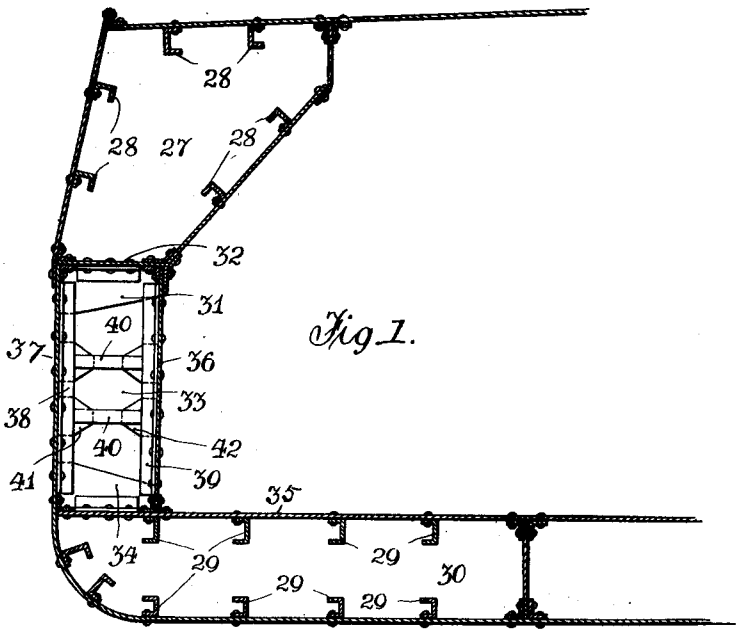

Fig. 1.

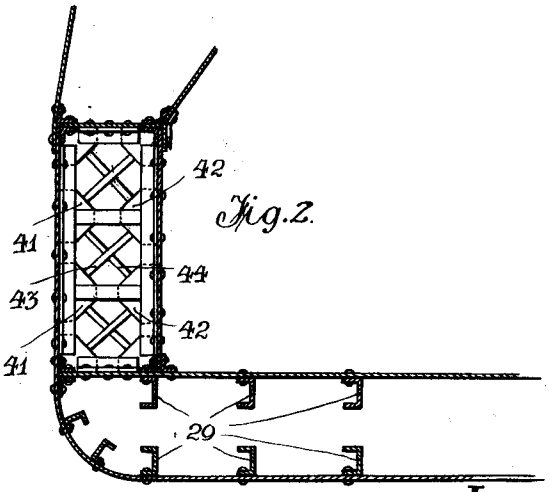

Fig. 2.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

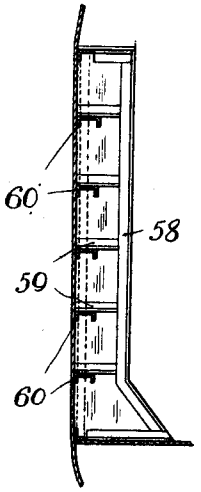
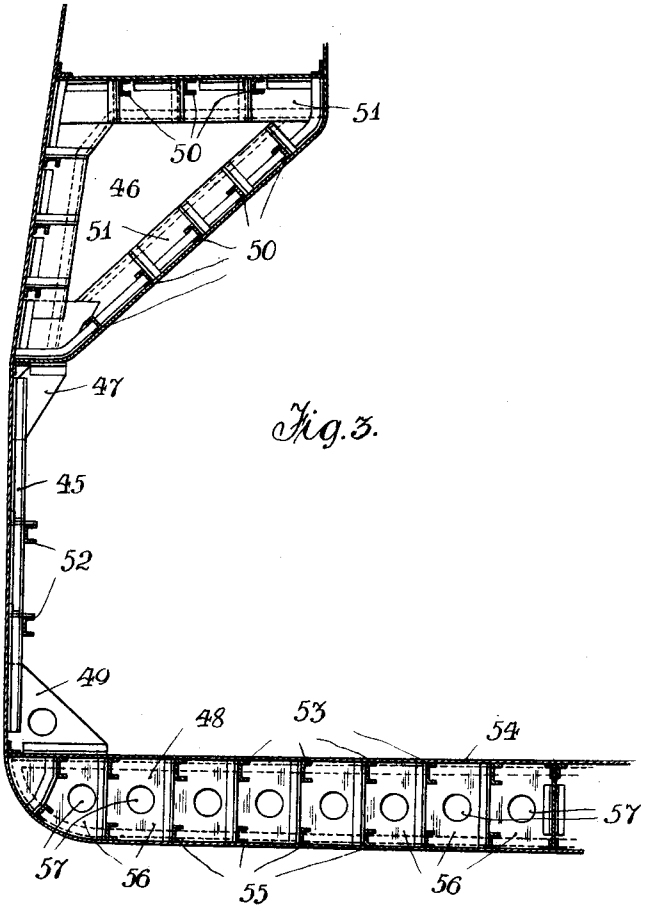


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

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SHIP.

1,065,549. Specification of Letters Patent. Patented June 24 1913.

Application filed April 24, 1911. Serial No. 623,001.

To all whom it may concern:

Be it known that we, JOHN REID, a subject of the King of Great Britain, and GEORGE SIMPSON, a citizen of the United States of America, both residents of Whitehall Building, 17 Battery Place, in the city of New York, State of New York, United States of America, have invented certain new and useful Improvements in Ships; and we do hereby declare that the following is a full, clear, and exact description of the same.

The invention relates to improvements in ships, as described in the present specification and illustrated in the accompanying drawings that form part of the same.

The invention consists essentially in the novel construction and formation, whereby ballast tanks are disposed in a certain manner and whereby the wall of the ship and the framing is arranged with great powers of resistance to the elements.

The objects of the invention are to devise a very strong construction of hull, particularly for ships carrying cargo in bulk, to dispose the weight evenly and to resist the forces of tension and compression brought into play by the turbulence of the elements, and generally to provide a ship of comparatively cheap and very durable construction.

In the drawings, Figure 1 is a transverse section of one half the ship, showing the construction of the framing in the top side wing ballast tank, the bottom ballast tank, and a section view therebetween of the transverse framing supporting the side wall under said top side tank and inclosing a buoyancy space. Fig. 2 is a section of the modified form of the framing in said buoyancy space. Fig. 3 is a transverse section, showing a modified form of the framing. Fig. 4 is a detail of another form of framing between the top side tank and the bottom framing.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, in the top side wing tank 27, 28 are channel beams rigidly secured to the walls of the tank 27 on all sides and extending fore and aft of the ship.

29 are channel bars rigidly secured to the walls of the bottom tank 30 and running fore and aft of the ship.

31 are brackets rigidly secured by suitable angle pieces to the division plating 32 between the top side tank 27 and the buoyancy space 33.

34 are brackets rigidly secured by suitable angle pieces to the inner bottom 35, dividing the bottom tank 30 from the buoyancy space 33, said brackets 31 and 34 being secured to the walls 36 and 37 by the vertical angle pieces 38 and 39.

40 are braces rigidly secured to the brackets 41 and 42, said brackets being secured to the angle pieces 38 and 39.

In Fig. 2 a slight variation is shown in this buttress framing, in which the brackets 41 and 42 are further connected by the rods 43 and 44, said rods being rigidly secured to said brackets 41 and 42, otherwise the construction of Fig. 2 is substantially the same as in Fig. 1.

In Figs. 3 and 4, the vertical frames 45 are shown joined to the top side tank 46 by the bracket 47 and to the bottom tank 48 by the bracket 49. 50 are fore and aft girder members within the top side tank 46. 51 are transverse framings arranged at intervals within said top side tank 46 and joined to the fore and aft girders 50. 52 are fore and aft girders secured over the vertical frames 45. 53 are longitudinal girders secured to the inner plating 54 of the tank 48. 55 are fore and aft girders secured to the bottom plating of the ship within the tank 48. 56 are transverse plates supporting the inner bottom 54, said plates having the customary holes 57 therethrough.

In Fig. 4, 58 are vertical frames standing out from the side wall of the ship between the top side tank 46 and the bottom tank 48 with the brackets 49 forming an open framing between the said top side tank and the said bottom tank. 60 are fore and aft girders secured to the side walls of the ship and to the brackets 59. This framing is only a slight modification of the framing shown in Fig. 3 and corresponds to the transverse framing within the top side tank 46.

What we claim as our invention is:

In a device of the class described, in combination, a top side ballast tank having a main framing therewithin formed of fore and aft channel irons, a bottom ballast tank having a main framing therewithin, formed of fore and aft channel irons, and buttress framing extending from said bottom ballast tank to said top side ballast tank and form-

ing reinforcing pillar frames at intervals throughout the length of the ship between said tanks, said buttresses being formed of vertical channel irons extending between brackets connected to said ballast tanks by angle irons and braces crossing between the verticals intermediate of the length thereof.

Signed at the city of Montreal, Province of Quebec, Canada, this second day of March, 1911.

JOHN REID.
GEORGE SIMPSON.

Witnesses:
P. SHEE,
F. A. BURNS.