

No. 616,780.

Patented Dec. 27, 1898.

G. FRASER.
MARINE VESSEL.

(Application filed Apr. 9, 1898.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

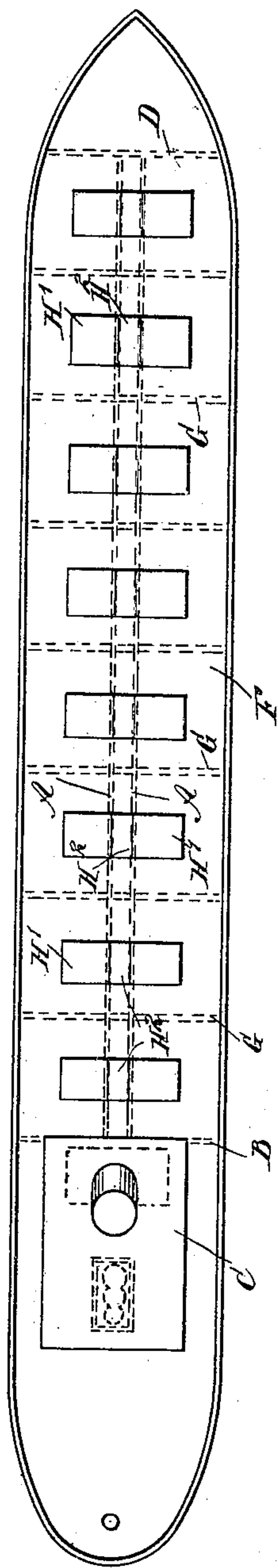


FIG. 2.

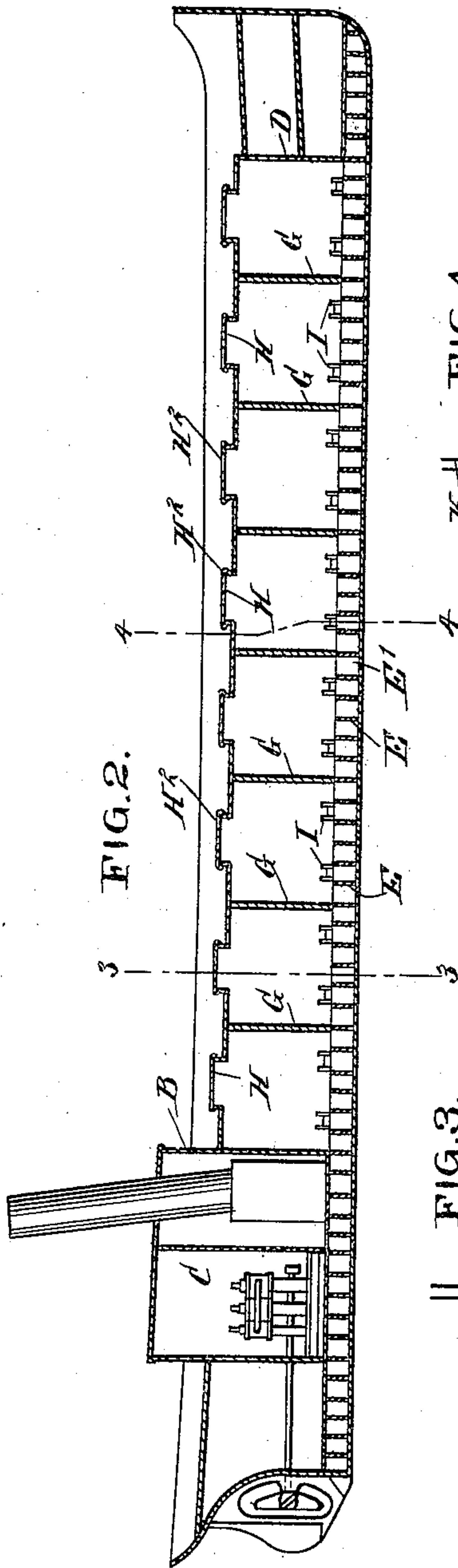


FIG. 4.

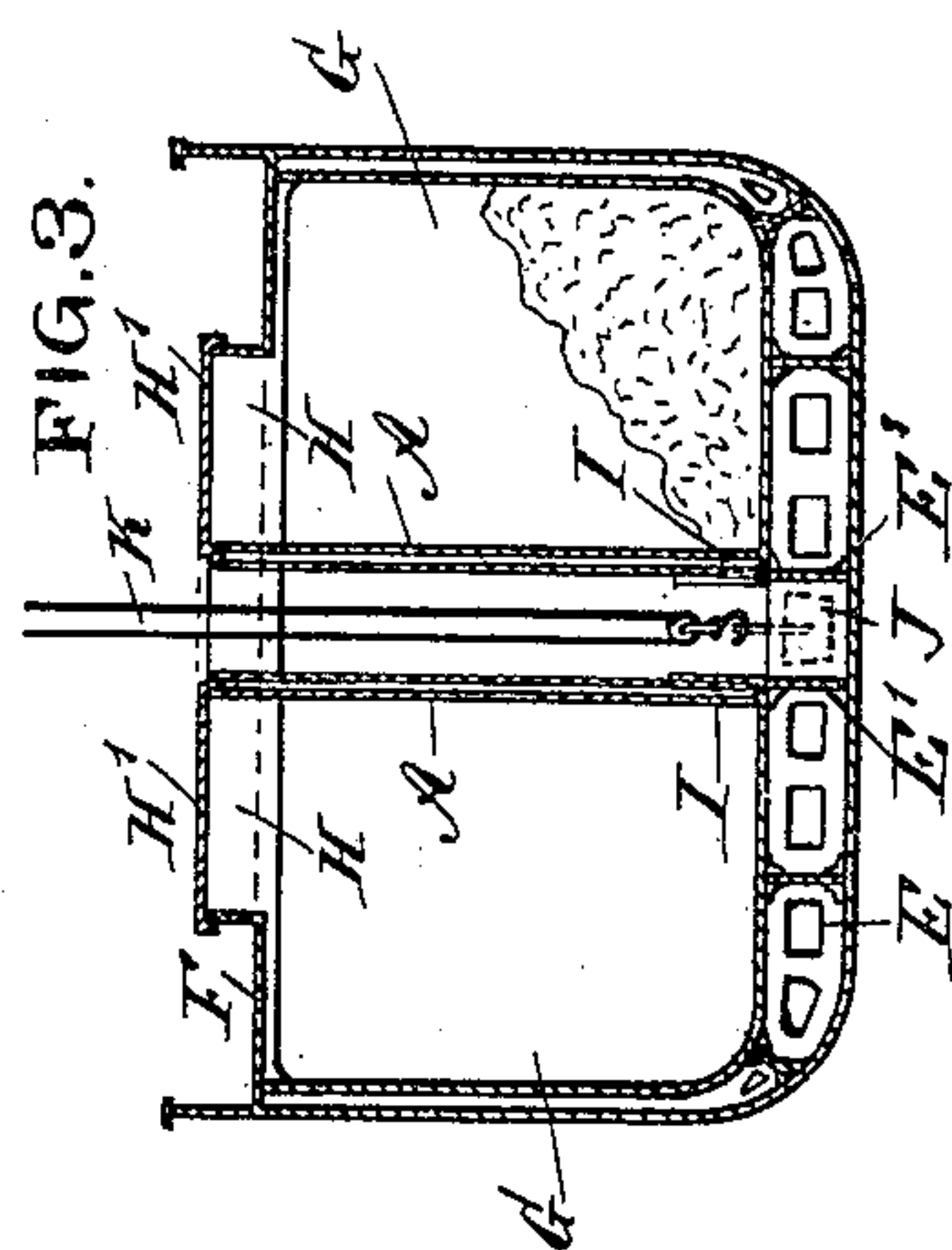
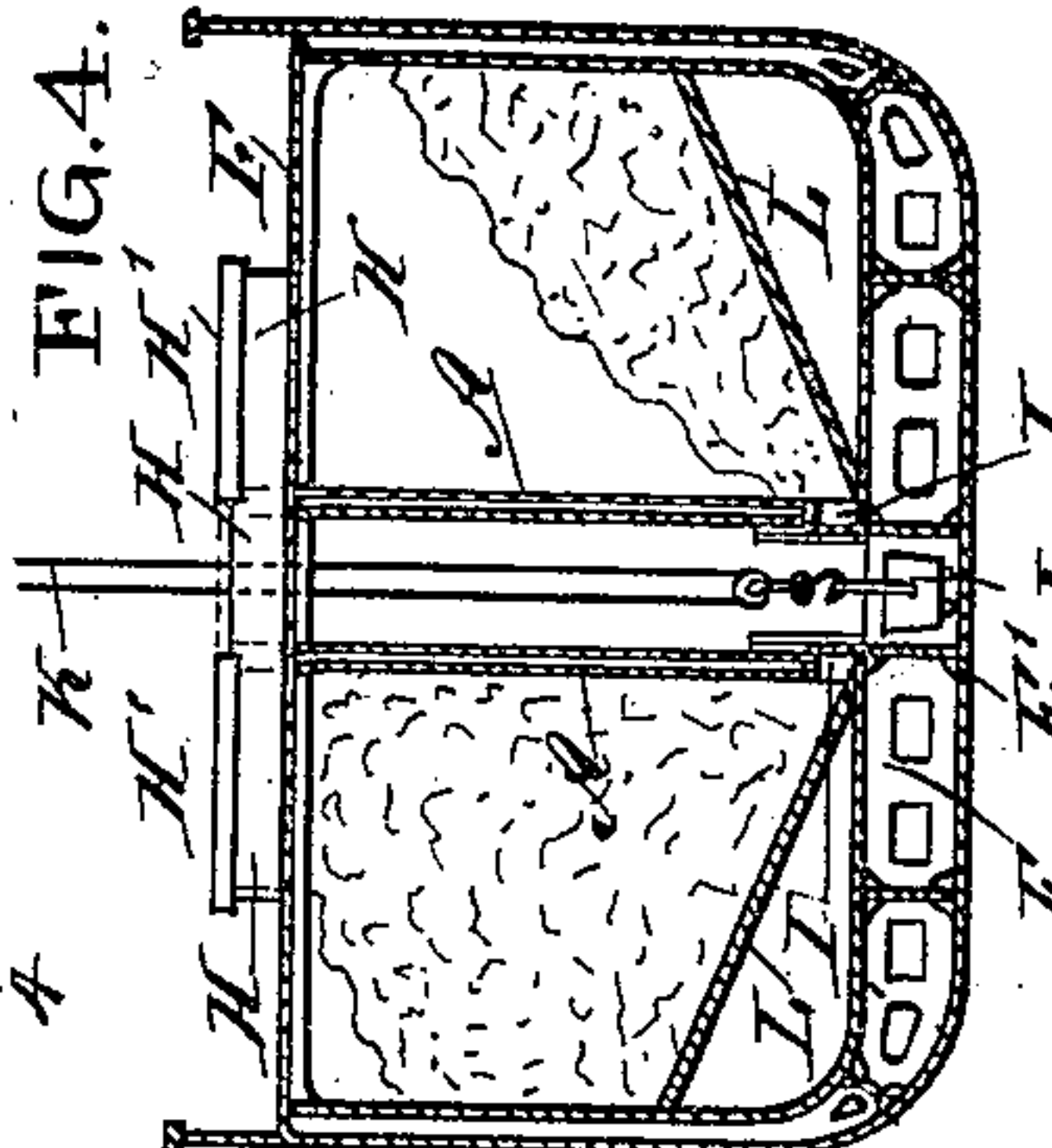


FIG. 4.



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FIG. 5.

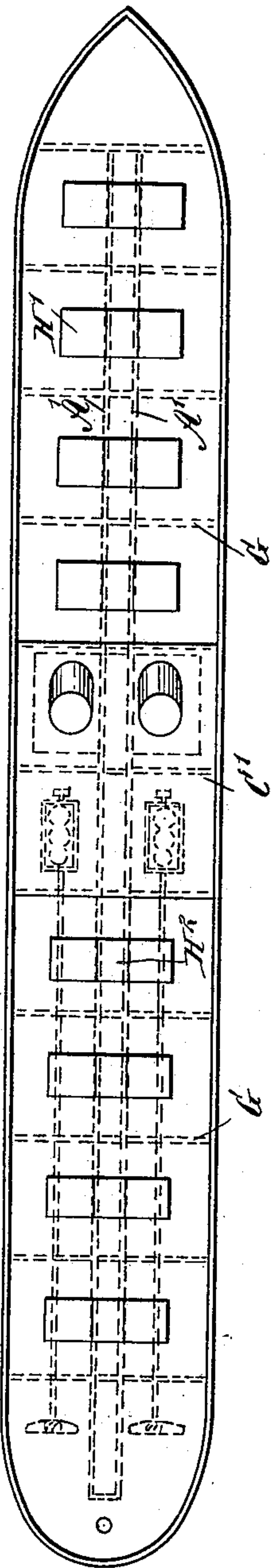


FIG. 6.

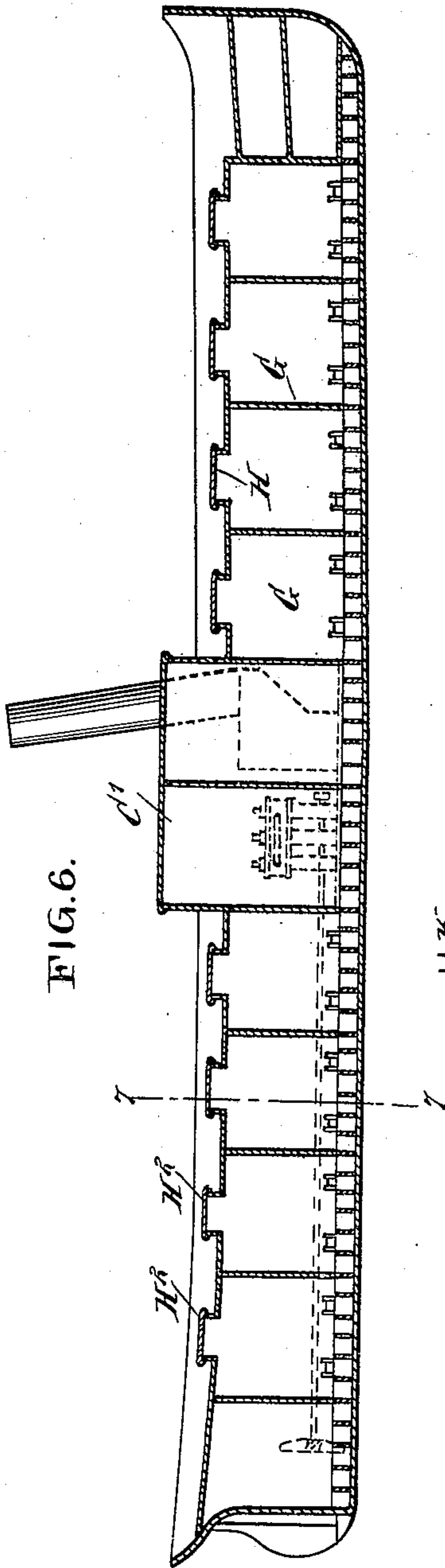
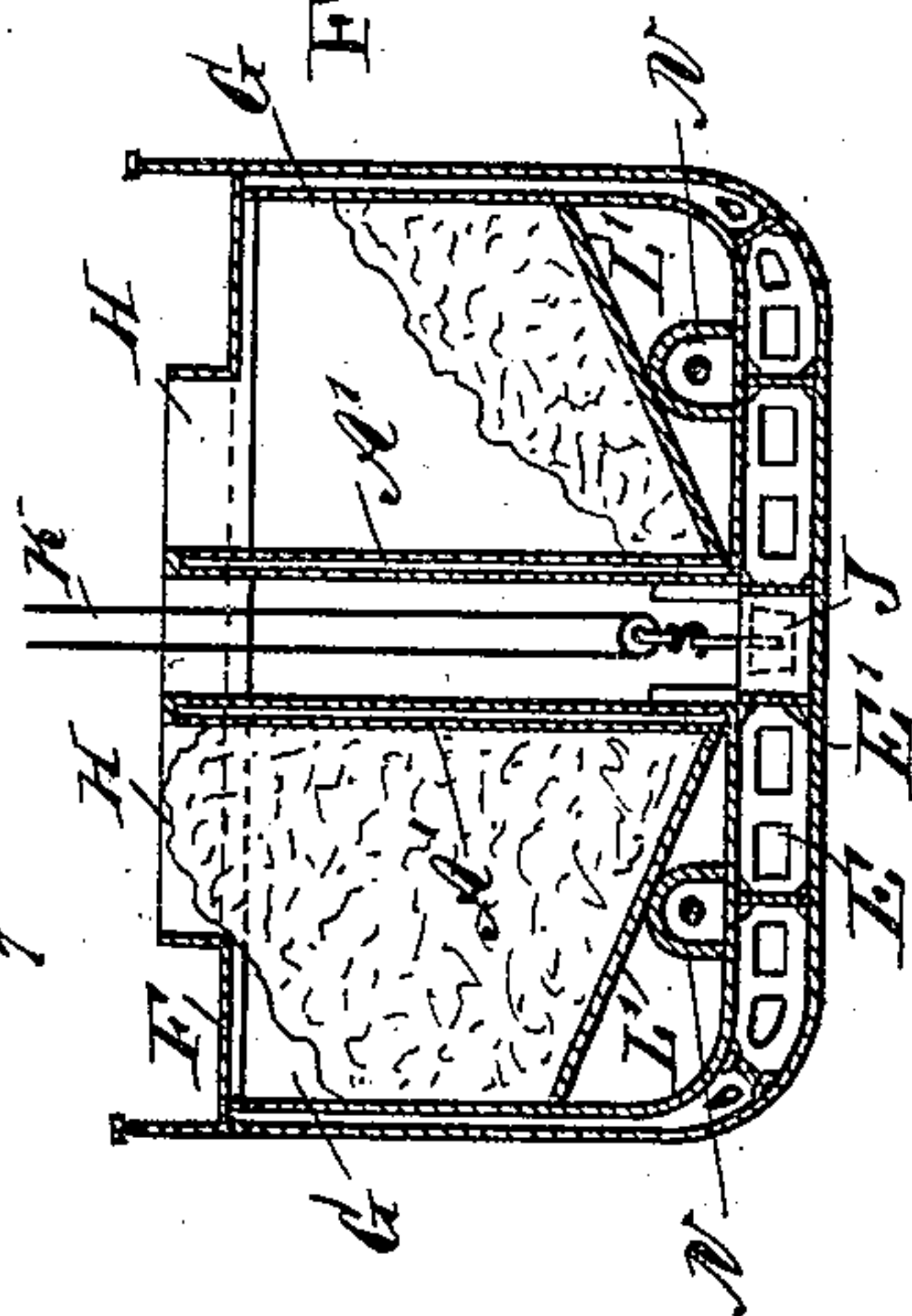


FIG. 7.



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GRAHAM FRASER, OF NEW GLASGOW, CANADA.

MARINE VESSEL.

SPECIFICATION forming part of Letters Patent No. 616,780, dated December 27, 1898.

Application filed April 9, 1898. Serial No. 677,050. (No model.)

To all whom it may concern:

Be it known that I, GRAHAM FRASER, of New Glasgow, in the Province of Nova Scotia and Dominion of Canada, have invented a new and Improved Marine Vessel, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved marine vessel more especially designed for carrying coal, ore, grain, or any other similar material in bulk, the vessel being substantial and strong and arranged to permit of conveniently loading it with the desired cargo and of removing the same with great ease and without requiring manual labor, at the same time preventing the cargo from shifting.

The invention consists of novel features and parts and combinations of the same, as will be described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement arranged as a single-propeller steamer. Fig. 2 is a longitudinal sectional elevation of the same. Fig. 3 is an enlarged transverse section of the same on the line 3 3 of Fig. 2. Fig. 4 is a similar view of the same on the line 4 4 of Fig. 2. Fig. 5 is a plan view of the improvement arranged as a twin-screw steamer. Fig. 6 is a longitudinal sectional elevation of the same, and Fig. 7 is an enlarged transverse section of the same on the line 7 7 of Fig. 6.

The marine vessel is provided with longitudinal bulkheads A A, arranged parallel to one another on opposite sides of the middle of the vessel, said bulkheads terminating at the rear end at a transverse bulkhead B in front of the boiler-room C, and the forward ends of said longitudinal bulkheads terminate at the collision-bulkhead or chain-carrier D, as plainly indicated in Figs. 1 and 2. The bulkheads A A rise from the transverse frames E upward to the deck F of the vessel, the lower edges of the bulkheads resting on keelsons E', as is plainly indicated in Figs. 3 and 4. Transverse bulkheads G are arranged

a suitable distance apart and extend from one side of the vessel to the other, so as to divide the hull thereof into compartments, one on the outside of each bulkhead and one between two bulkheads of the adjacent transverse bulkheads G. Hatches H are provided for each compartment thus formed, said hatches being adapted to be closed by covers H' for the outer compartments and covers H² for the hatches between the bulkheads A A, as plainly indicated in the drawings.

For very light material, such as grain, the middle hatch-covers H² are removed, so that the outer compartments as well as the middle compartments can be filled; but in loading ore or like heavy material the middle hatches remain covered, so that only the side compartments are filled with the material.

As indicated in Fig. 2, the lower ends of the transverse bulkheads G rest on a corresponding frame E, so that the entire vessel is rendered very strong and durable to readily carry heavy loads without danger of straining the frame of which the hull is constructed, it being understood that the longitudinal and transverse bulkheads act as braces for strengthening the vessel.

The lower end of each bulkhead is provided at each side compartment with a door I, adapted to be closed by a gate, so that the material stored in the compartment can be readily passed through the open door into a scoop or bucket J, located in the corresponding middle compartment between adjacent frames E to bring the top of the bucket below the door, as is plainly indicated in Figs. 3 and 4. The bucket J is carried by a suitable hoisting and lowering device K, of any approved construction, for lowering the empty bucket and for raising the filled one out of the middle compartment to carry the load to a suitable place of discharge.

The bottoms L of the compartments may follow the lines of the frames E, as indicated in Fig. 3; but I prefer to make said bottoms slightly inclined upwardly and outwardly, as indicated in Fig. 4, so that the material contained in a compartment readily slides by its own gravity through the door I into the bucket to avoid shoveling of the material by hand or other means.

It will be seen that by the arrangement described buckets may be let down simultaneously into each of the middle compartments for discharging material from the several
5 compartments into the buckets and at the same time insuring a quick unloading of the vessel.

In the arrangement shown in Figs. 5, 6, and 7 the longitudinal bulkheads A' A' extend
10 from the stern to the bow, the engine-room C' being amidships, and the spaces between the bulkheads in the engine-room are arranged for use as coal bunkers or stores. The engines are placed between said longitudinal
15 bulkheads and the sides of the vessel, and the sloping floors L' L' furnish sufficient room for the shaft-tunnels N, as will be readily understood by reference to Fig. 7. Otherwise the construction is the same as above described in reference to Figs. 1, 2, 3, and 4.
20 The sloping floors are not essential and can be removed when light cargoes, such as grain, are carried. Struts may be placed between the bulkheads to prevent the same from bulg-
25 ing when heavy cargoes are carried.

As indicated in Fig. 3, the bulkheads A may extend from the hatches to the coamings thereof, but otherwise the bulkheads terminate at the deck.

30 By the arrangement described the vessel is considerably strengthened for carrying heavy cargoes, such as ore, and the discharge of the cargo is greatly facilitated. The use of the bulkheads makes it practicable to locate the
35 hatches closer together for the purpose of obtaining quick trimming and delivery, and the bulkheads also prevent the cargo from shifting, so that the safety of the ship is materially increased. Shoveling of the material
40 when unloading the cargo is entirely dispensed with. Consequently the expense of handling the material when unloading is greatly reduced.

Having thus fully described my invention,

I claim as new and desire to secure by Letters 45 Patent—

1. In a marine vessel, the combination with the body of the vessel provided with the keelsons E' E' and the transverse bottom frames E, of two parallel longitudinal bulkheads 50 spaced a short distance apart, one on each side of the longitudinal center of the vessel, said bulkheads extending from the transverse bottom frames to the deck with their lower ends registering with the keelsons, transverse 55 bulkheads spaced a suitable distance apart and intersecting the longitudinal bulkheads, said transverse bulkheads extending from one side of the vessel to the other and from the deck to the transverse bottom frames with 60 their lower ends registering with certain of said transverse frames, whereby the vessel will be strengthened and side and middle compartments formed, the middle compartments extending below the bottoms of the side 65 compartments to receive a bucket, and doors leading from the side compartments to the middle compartments above the bottoms of the same, substantially as herein shown and 70 described.

2. A marine vessel provided with two parallel longitudinally-extending bulkheads on opposite sides of the longitudinal center of the vessel, and transverse bulkheads spaced a suitable distance apart and extending from 75 one side of the vessel to the other and intersecting the longitudinal bulkheads, to form outside and middle compartments in the hull of the vessel, and doors leading from the outside compartments to the middle compart- 80 ments between the bulkheads, and aligned hatches for each set of compartments, located adjacent to one another in a transverse direction, substantially as shown and described.

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Witnesses:

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