

(No Model.)

3 Sheets—Sheet 1.

E. P. STRATTON.
CONSTRUCTION OF VESSELS.

No. 522,744.

Patented July 10, 1894.

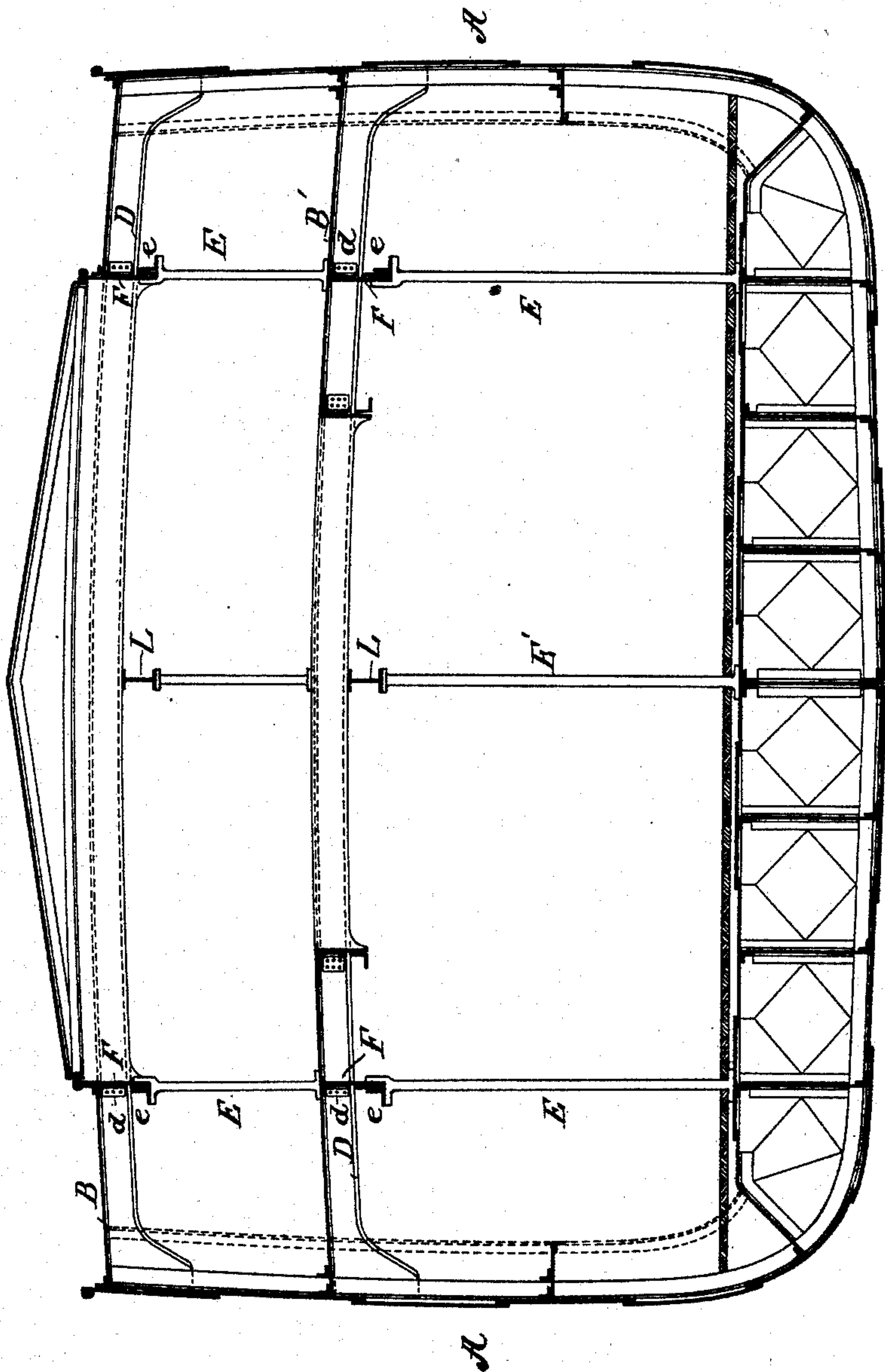


Fig. 1.

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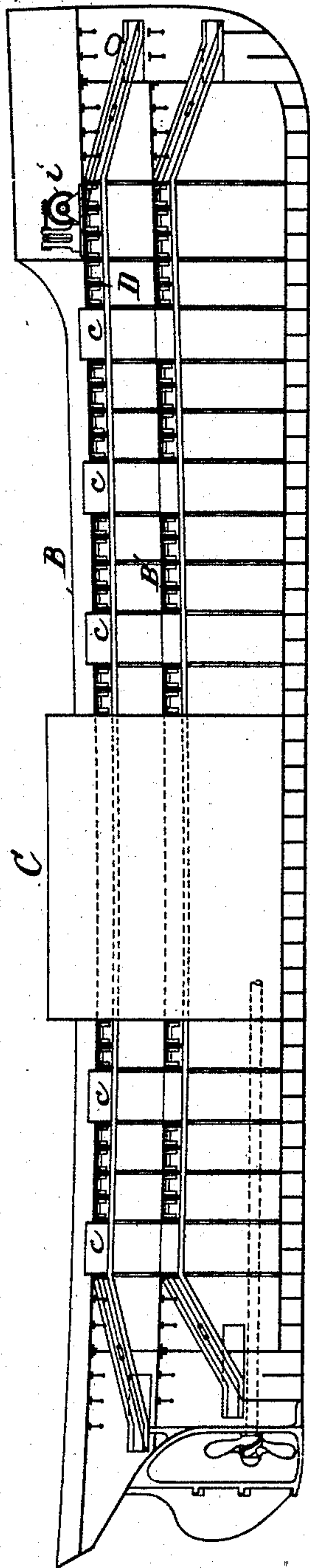


FIG. 2.

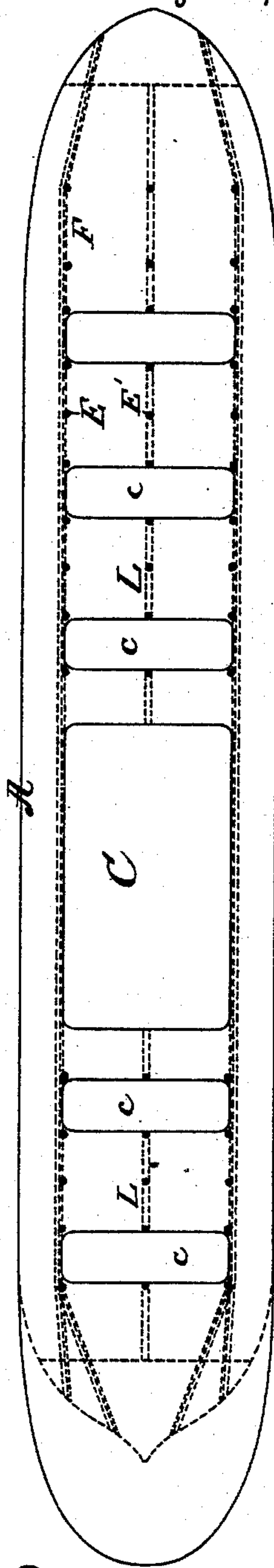


FIG. 3.

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(No Model.)

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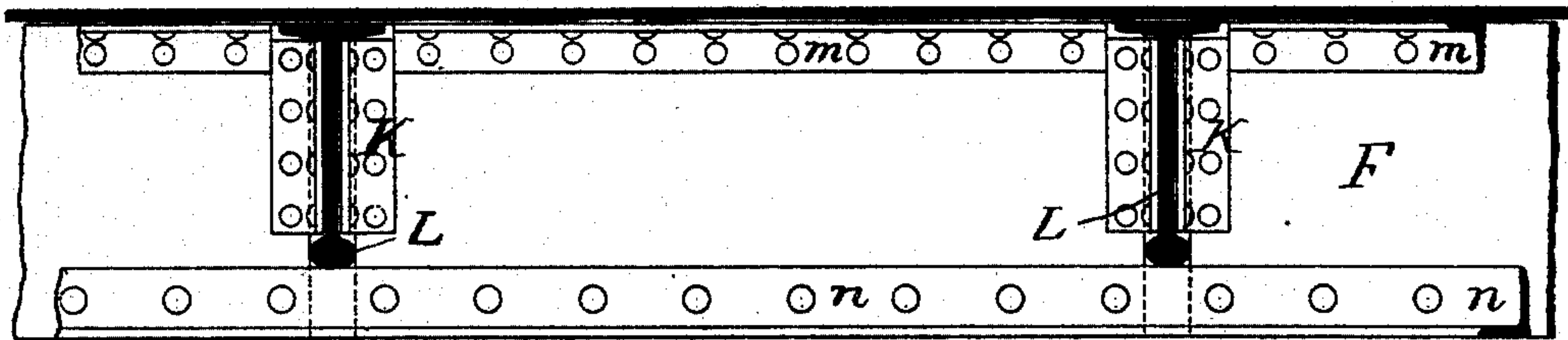


FIG. 4.

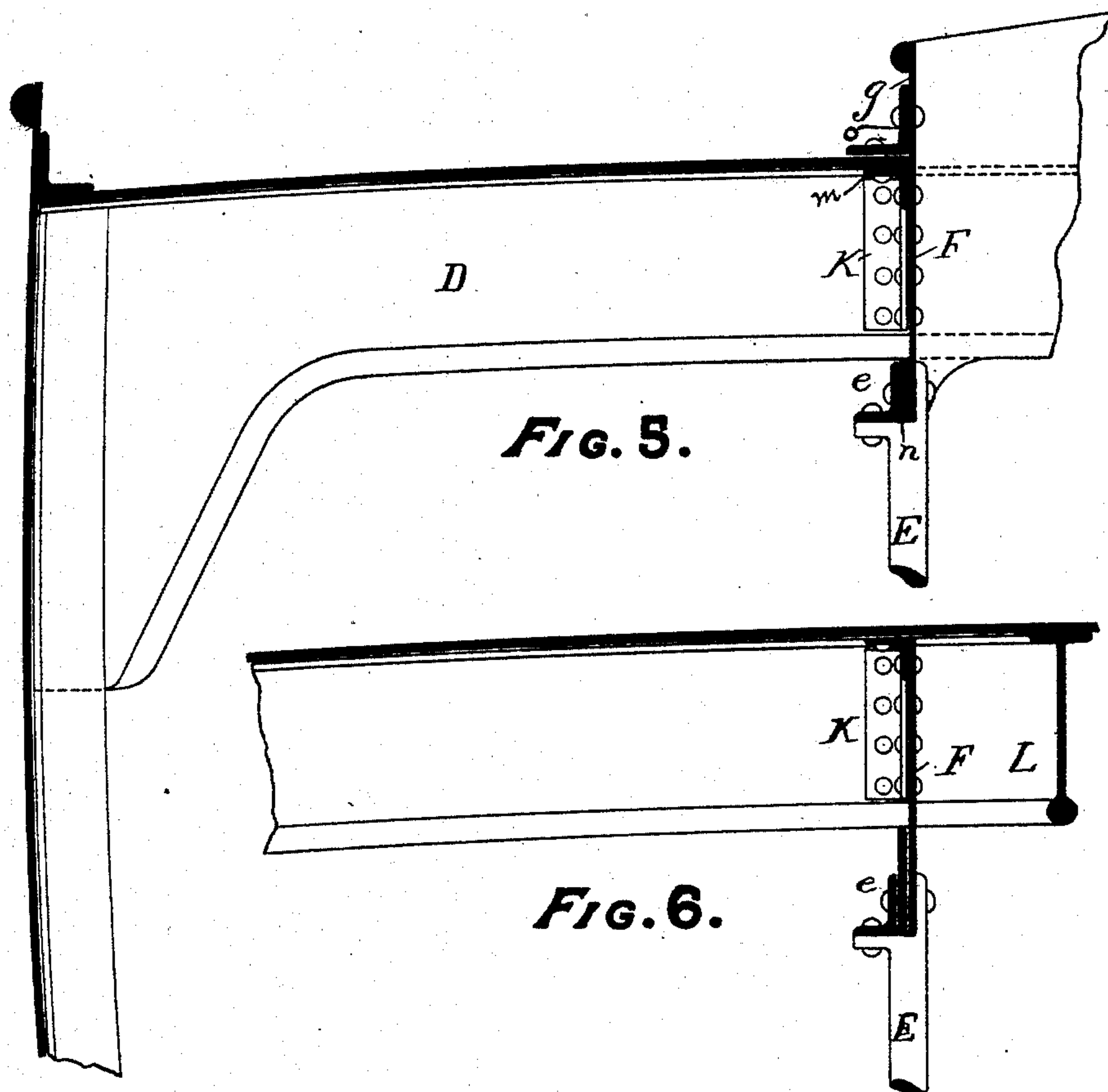


FIG. 5.

FIG. 6.

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UNITED STATES PATENT OFFICE.

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CONSTRUCTION OF VESSELS.

SPECIFICATION forming part of Letters Patent No. 522,744, dated July 10, 1894.

Application filed December 20, 1893. Serial No. 494,186. (No model.)

To all whom it may concern:

Be it known that I, ELIPHALET PLATT STRATTON, a citizen of the United States, residing at College Point, in the county of Queens and State of New York, have invented certain new and useful Improvements in the Construction of Vessels, of which the following, taken in connection with the accompanying drawings, is a specification.

The invention is more particularly applicable to vessels designed for large freight carrying capacity wherein great length and also breadth of beam with comparatively light draft and limited depth of hold are desired, together with large areas of hatch openings to insure rapid loading and discharge of cargo. It is obvious that in a vessel of such proportions the longitudinal, vertical and transverse strength and upper chord of the vessel would normally be very much reduced and the continuity of deck practically destroyed, and it is the object of my invention to overcome the weakness incident to such construction and prevent the wringing, twisting, or breaking of the hull when propelled through the water against a head or quartering sea.

The invention consists in the adaptation of longitudinal transverse and vertical girders and beams whereby the hull is strengthened to the maximum with a given or minimum amount or weight of material by a novel distribution and co-operation of such parts.

To enable others to construct and apply my invention I will first describe the same in detail of construction and subsequently point out in the claims its novel characteristics and what I desire to secure by Letters Patent.

In the accompanying drawings:—Figure 1 represents a vertical transverse section of the hull of a vessel containing my invention; Fig. 2 a longitudinal sectional view of the same; Fig. 3 a plan view, and Figs. 4, 5 and 6 enlarged views of structural details, in which similar letters of reference indicate corresponding parts in the several views.

The hull of the vessel is represented at A, the upper deck at B, the lower deck at B', and the hatches at C and c.

The large amidship hatch C is designed to accommodate the propelling power and the smaller hatches c for the reception and discharge of freight, being distributed through-

out the length of the decks to facilitate access to all parts of the vessel.

The transverse deck beams represented at D are secured to the hull of the vessel at their respective ends and supported by the vertical stanchions E and longitudinal girders F which extend fore and aft from one extreme end of the hull to the other continuously and preferably in line with the outboard edges of the hatch openings, on each side of all hatches so as to make their combings continuous fore and aft to a point forward or aft of all such deck openings, as shown in Figs. 2 and 3, and form a tie at the intersection of the transverse beams and also at the hatch combings.

The enlarged detail views Figs. 4, 5 and 6, show the several methods of connecting and securing the respective parts, the longitudinal girders being riveted or otherwise secured to the fore and aft sides of the transverse deck beams and to the deck above as shown at d and of a width or depth to extend below said beams to accommodate the angle irons e as shown in Figs. 1, 5 and 6, and also above said beams to form a part of each of the hatch combings as illustrated at g, Fig. 5.

The longitudinal girders F may be secured at their respective ends to the bow and stem of the vessel in any desirable manner and be directed to conform to the converging lines of the hull at these points as shown in the plan view Fig. 3. The terminal of these girders F with the hull of the vessel may also be located adjacent to the hawse pipes at the bow or relatively to the strain transmitted through the windlass (represented at i, Fig. 2), in such manner that the anchor cable strain is felt or transmitted throughout the connected system of girders.

The central longitudinal support between the hatch openings is composed of "I" beams L arranged fore and aft, resting upon the central vertical stanchions E' and connected athwartship at the forward and after side or head-ledges of each respective hatch combing the tapered form of girder forming the forward and after head ledges as shown, thus overcoming in a remarkable degree all panting or vibration in the flat deck space existing between the hatches.

In the enlarged views Figs. 4, 5 and 6, the connection of the longitudinal girder F with

the transverse deck beams D and the vertical stanchion supports E is clearly illustrated, the vertical angle irons *k* and the longitudinal angle irons *m* being secured directly thereto, and to each other at the intersection, while the lower end of the transverse deck beam D rests upon the angle iron or plate *n* that is riveted to the lower edge of the girder and also to the vertical supporting stanchion E. As shown in Fig. 5 the longitudinal girder plate F extends above the deck forming the hatch combings *g* which is reinforced by the angle iron *o*.

By my invention it will be seen that the continuous fore and aft girders with vertical support and connection with the transverse beams and the decks form a tie that resists in all directions the various wringing and twisting strains to which the hull of the vessel is subject, including all panting or vibrating of the decks, and at the same time imparting a deck strength essential and sufficient for the service intended.

I claim—

1. In the construction of vessels a series of longitudinal girders secured at the respective

extremities of the hull and to the intersecting transverse deck beams, said girders extending in depth above and below said beams and having vertical supports at each intersection, as set forth.

2. In the construction of vessels a longitudinal girder extending continuously fore and aft, and secured at the respective extremities of the hull and to the intersecting transverse beams in line therewith, said girder extending below the beams sufficient to connect with a vertical support and above said beams to form a hatch combing, substantially as shown.

3. In the construction of vessels substantially of the type described, the combination with the continuous longitudinal girders of intermediate transverse beams or plates located at the forward and after ends of the respective hatches, and forming such part of the hatch combing, as set forth.

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Witnesses:

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