

(No Model.)

S. STUART.
CONSTRUCTION OF SHIPS, &c.

No. 566,485.

Patented Aug. 25, 1896.

Fig. 2.

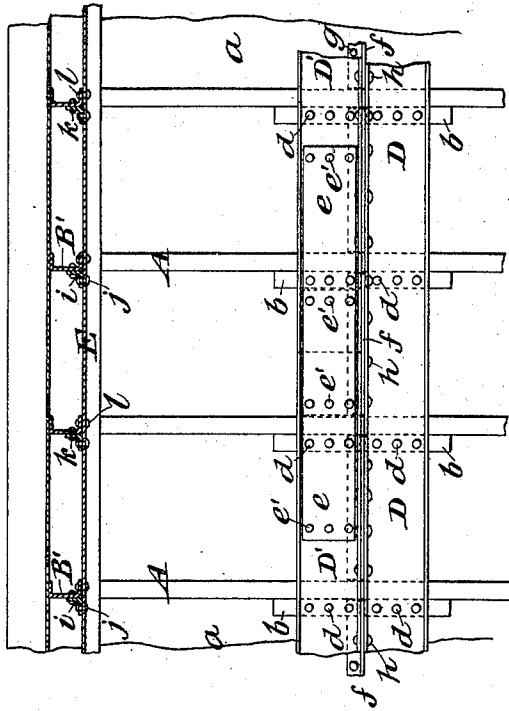
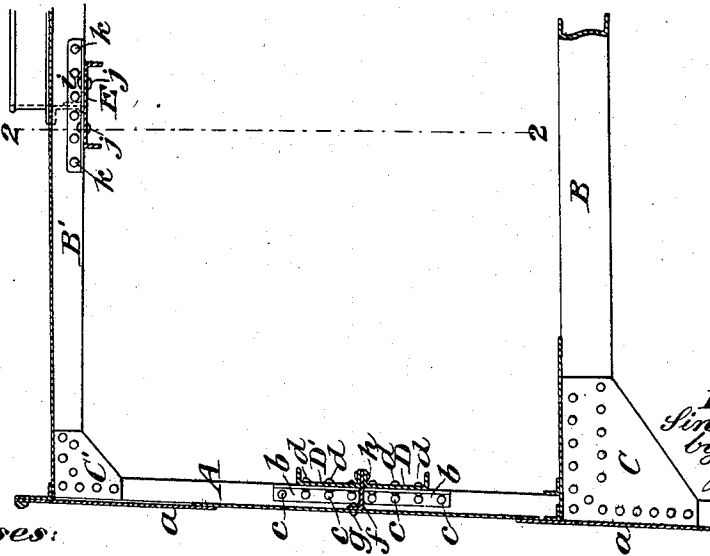


Fig. 1.



Witnesses:
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SINCLAIR STUART, OF PLAINFIELD, NEW JERSEY.

CONSTRUCTION OF SHIPS, &c.

SPECIFICATION forming part of Letters Patent No. 566,485, dated August 25, 1896.

Application filed January 8, 1895. Serial No. 534,174. (No model.)

To all whom it may concern:

Be it known that I, SINCLAIR STUART, of Plainfield, in the county of Union and State of New Jersey, have invented a new and useful Improvement in the Construction of Ships and other Vessels, of which the following is a specification.

This improvement relates to ships and other vessels constructed of steel or iron, and its object is to provide for the construction of vessels having great longitudinal stiffness and strength. The improvement is not only applicable in the construction of new vessels, but may be used to give additional strength in a longitudinal direction to vessels of ordinary construction already in existence.

Figure 1 in the accompanying drawings represents a transverse vertical section of portions of one side wall and decks of a vessel embodying my improvement. Fig. 2 represents a longitudinal vertical sectional view taken in the line 2 2, Fig. 1, looking from the right of that figure.

A A designate the upper portions of upright frames, such as are commonly employed in the construction of vessels of steel and iron. These may be of channel or angle form in their transverse section. B B' are the transverse deck-beams, represented as of channel form and as connected, as is common, with the frames A A by bracket-plates C C'. The plating *a a* is applied outside of the frames A A in the usual manner.

D D' designate stringers of steel or iron of channel form in transverse section, which constitute one of the principal features of my invention. These stringers run lengthwise of the vessel throughout the whole or any portion of its length and lie close to the inside of the frames A A with the flanges of the channel inward and their webs against the said frames, and they are secured to the frames by angle-clips *b b*, which are riveted to the sides of the frames by rivets *c c* and to the stringers by rivets *d d*. Each stringer may be composed of several sections of as great length as can be obtained from the rolling-mill, the several sections of each being united by butt-straps *e e*, applied within the bosom of the channel and also on the back thereof and securely riveted thereto by

rivets *e' e'*. There may be any number of these stringers applied below the upper deck or between the decks, but I prefer to arrange them in pairs, as shown in the drawings, so close together as only to leave room between them for angle-straps *f f*, which are each long enough to fill the spaces between the frames A A. These angle-straps are riveted to the side plating *a a* by rivets *g* and are riveted between the contiguous flanges of the two stringers D D', constituting the pair, by rivets *h h*. The stringers thus applied and fastened are so securely incorporated into the structure of the vessel as to add greatly to its strength and stability, and it will be understood that they may not only be applied in the original construction of a vessel, but may be added to a vessel of ordinary construction without any alteration of the original structure.

E designates a stringer of channel steel or iron arranged lengthwise of the vessel directly under the transverse deck-beams B' with the flanges of the channel downward. There may be any number of such stringers E, each running the whole or any part of the length of the vessel and arranged with the backs of their channels close under the deck-beams, to which they are fastened by angle-clips *i i*, which are riveted to the stringer by rivets *j j* and to the deck-beams B' by rivets *k k*. The lower flanges of the deck-beams B' are also riveted to the stringers E through the bosom of the latter by rivets *l l*. The longitudinal stringers E, which contribute greatly to the longitudinal stiffness of the vessel, may be applied to a vessel in construction or may be added to a vessel already constructed.

What I claim as my invention is—

1. The combination with the upright frames and outside plating of a vessel, of stringers of channel form in transverse section arranged one above another in pairs lengthwise of the vessel inside of and with their webs against the said frames, and angle-straps interposed and riveted between contiguous flanges of the two stringers of a pair and riveted to the outside plating, substantially as herein described.

2. The combination with the upright frames

and outside plating of a vessel, of stringers
of channel form in transverse section ar-
ranged one above another in pairs length-
wise of the vessel inside of and with their
5 webs against the said frames, angle-clips riv-
eted to said frames and stringers, and angle-
straps interposed and riveted between con-

tiguous flanges of the two stringers of a pair
and riveted to the outside plating, substan-
tially as herein described.

SINCLAIR STUART.

Witnesses:

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