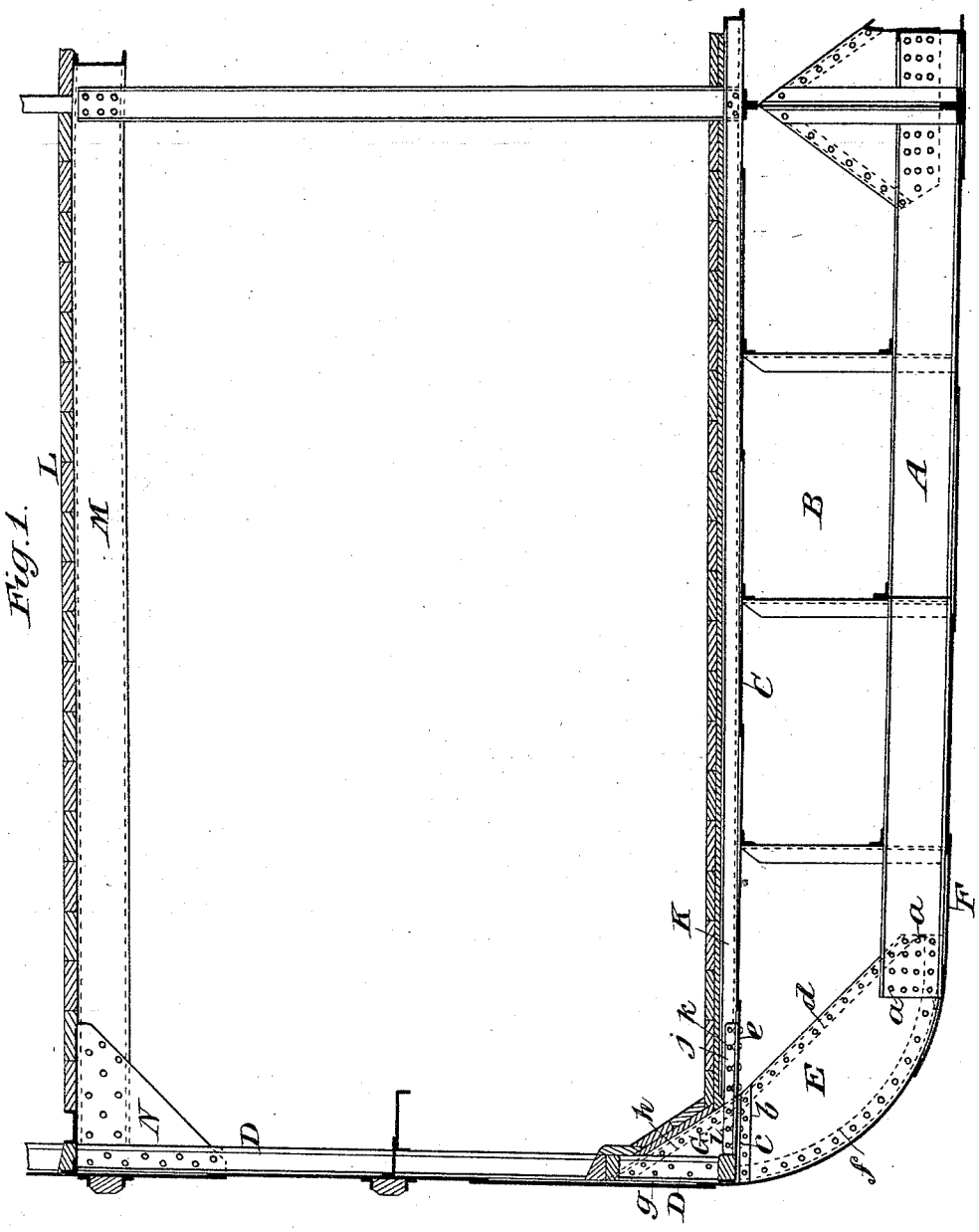
(No Model.) 2 Sheets—Sheet 1.

S. STUART.

CONSTRUCTION OF SHIPS.

No. 526,823. Patented Oct. 2, 1894.

Fig. 1.



Witnesses
C. L. Sundgren
George Barry.

Inventor:
Sinclair Stuart
by attorneys
Brown & Seward

(No Model.) 2 Sheets—Sheet 2.

S. STUART.

CONSTRUCTION OF SHIPS.

No. 526,823. Patented Oct. 2, 1894.

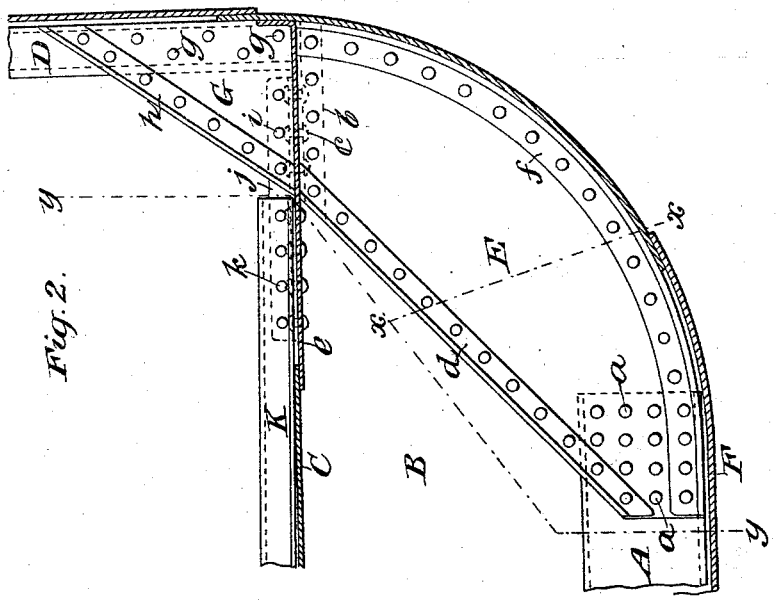


Fig. 2.

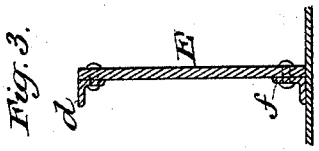


Fig. 3.

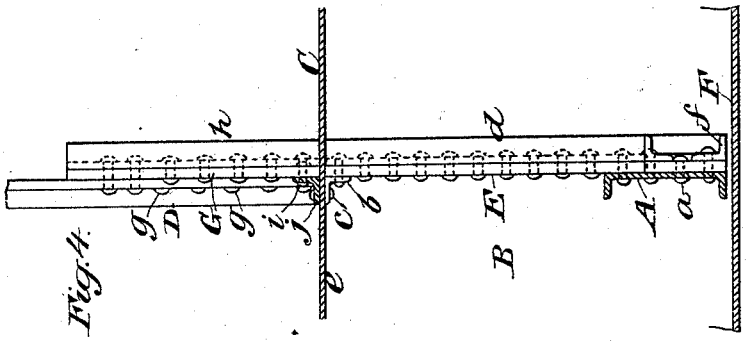


Fig. 4.

Witnesses:
C. L. Sundgren
George Barry.

Inventor:
Sinclair Stuart
by attorneys
Brown & Seward

UNITED STATES PATENT OFFICE.

SINCLAIR STUART, OF PLAINFIELD, NEW JERSEY.

CONSTRUCTION OF SHIPS.

SPECIFICATION forming part of Letters Patent No. 526,823, dated October 2, 1894.

Application filed March 14, 1894. Serial No. 503,549. (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 invention is in part applicable to all ships and other docked vessels constructed of iron or steel and it relates in part particularly to such vessels having water ballast tanks.

The object of my invention is to obtain great strength in proportion to the weight of material employed.

I will first describe my improvement in detail with reference to the accompanying drawings and afterward point out its novelty in claims.

Figure 1 represents a transverse section of parts of one side and of the bottom of a vessel embodying my improvement. Fig. 2 represents a similar section on a larger scale than Fig. 1, through the bilge and adjacent parts; Fig. 3, a section taken lengthwise of the vessel in the line *x x* of Fig. 2; Fig. 4, a section taken lengthwise of the vessel about in the line *y y* of Fig. 2.

Similar letters of reference designate corresponding parts in all the figures.

A designates one of the floor channels constructed of channel iron or steel arranged to present its flanges in the direction of the length of the vessel. These channels are of such length that they terminate at the lower turn of the bilge.

B is the tank extending all across the bottom of the vessel and having its top C at about the height of the upper turn of the bilge.

D is one of the side frames represented as of bulb angle iron. This frame instead of being continued to the floor of the vessel as is common in iron and steel ships, terminates at the upper turn of the bilge and above the tank top C.

The interruption between the floor channel A and the side frame D is occupied by a wide bracket plate E which is arranged within the tank B and conforms to the bilge of the vessel. The lower end of this bracket plate which extends to the bottom plates F of the vessel, is lapped over the face of the channel A and riveted thereto as shown at *a a*. The upper end of said bracket plate is connected by an angle-iron *b* and rivets *c c* with the margin strake *e* of the tank top C, the said margin strake extending to the side of the vessel at or near the upper turn of the bilge. The said bracket plate is represented as stiffened by an angle-iron *d* riveted along its inner edge and an angle-iron *f* riveted along its outer edge and conforming to the bilge. This bracket plate E within the tank gives very great strength to the bilge of the vessel and affords greater facility for the construction of a vessel with a water ballast tank.

Above the top of the water ballast tank is a bracket plate G which occupies the angle between the side of the vessel and the margin strake *e* of the water ballast tank top. This bracket plate laps against the side of the angle frame D and is riveted there by rivets *g*. The bottom of said bracket plate is riveted by rivets *i*, to an angle-iron *j* which is also riveted to the margin strake *e* of the tank top by the same rivets which secure the angle-iron *b* of the lower bracket plate E to the margin strake. The said angle-iron *j* is represented as further riveted by rivets *k* to the deck beam K which lies immediately above the water ballast tank top. The inner edge of the said bracket plate G is stiffened by having riveted to it an angle-iron *h*. This bracket plate G combines with the bracket plate E to form a practically continuous connection between the side frames and the floor channels.

In Fig. 1, I have represented the deck L as supported upon channel-iron beams M, of which, however, only one is visible in the drawings, the said channel-irons having their webs arranged vertically and having their flanges presented in the direction of the length of the vessel. These beams which make a very strong support for the deck, are connected to the side frames by brackets N in substantially the same manner in which the angle and T-beams in common use are connected.

What I claim as my invention is—

1. In an iron or steel vessel having a water ballast bottom tank, the combination with the floor channels and with the margin strakes in the top of the tank extending all the way

to the sides of the vessel at or near the upper turn of the bilge, of bracket plates arranged within the tank conforming to the bilge and united with the said margin strakes close to the bilge and also united with the floor channels, substantially as herein set forth.

2. In an iron or steel vessel having a water ballast bottom tank, the combination of floor channels terminating at the lower turn of the bilge, side frames terminating above the tank at the upper turn of the bilge, brackets conforming to the bilge arranged within the tank and connected with the floor channels and with the margin of the tank top, and bracket plates above the tank top connecting the margin of said top with said side frames, substantially as herein set forth.

SINCLAIR STUART.

Witnesses:
FREDK. HAYNES,
GEORGE BARRY.

Correction in Letters Patent No. 526,823.

It is hereby certified that in Letters Patent No. 526,823, granted October 2, 1894, upon the application of Sinclair Stuart, of Plainfield, New Jersey, for an improvement in the "Construction of Ships," an error appears in the printed specification requiring the following correction, viz: In line 9, page 1, the word "docked" should read *decked;* and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 9th day of October, A. D. 1894.

[SEAL.]

JNO. M. REYNOLDS,
Assistant Secretary of the Interior.

Countersigned:

JOHN S. SEYMOUR,
Commissioner of Patents.