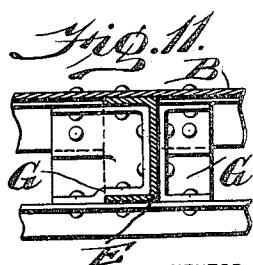
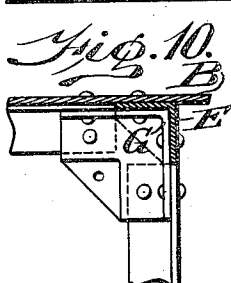
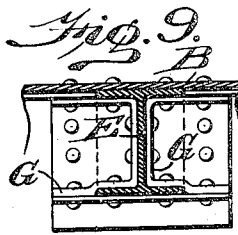
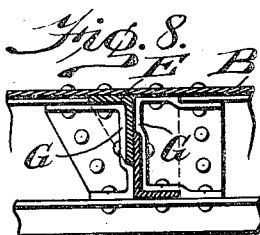
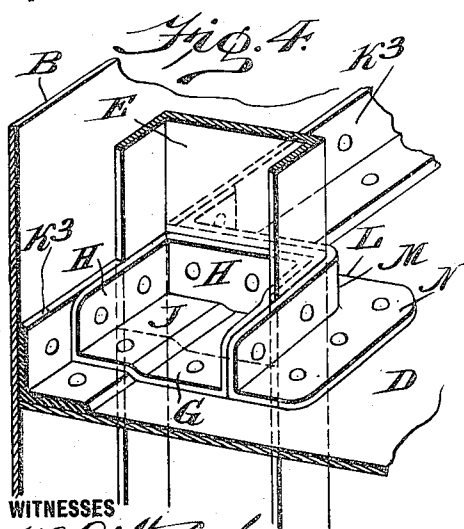
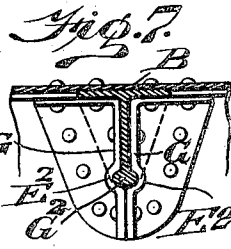
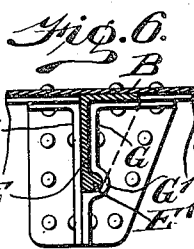
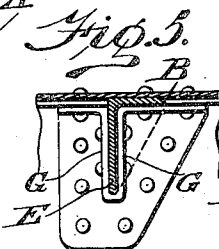
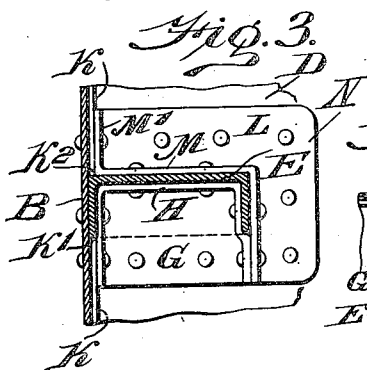
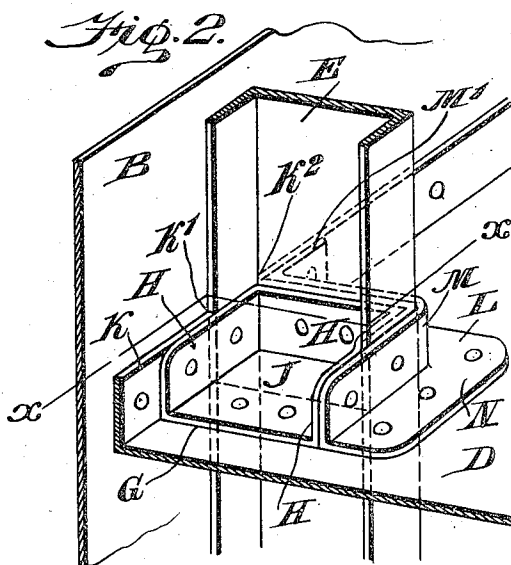
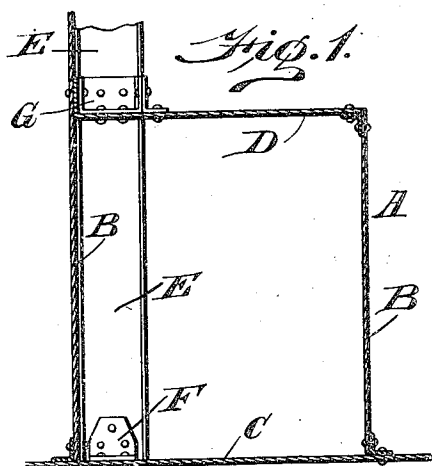


E. B. WHEELER.
METALLIC STRUCTURAL JOINT.
APPLICATION FILED NOV. 29, 1911.

1,064,580.

Patented June 10, 1913.



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METALLIC STRUCTURAL JOINT.

1,064,580.

Specification of Letters Patent.

Patented June 10, 1913.

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To all whom it may concern:

Be it known that I, EDWIN B. WHEELER, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Metallic Structural Joint, of which the following is a specification.

My invention consists of an improvement in a ship and other tank construction involving novel means for strengthening or stiffening the connection of a tank or compartment with adjacent members of such construction and rendering the existing joints water, oil, air, gas, gasoline, and dust tight, the features involved being multiplied in the ship according to the number of the same required.

The invention is satisfactorily illustrated in the accompanying drawing, but the important instrumentalities thereof may be varied, and so it is to be understood that the invention is not limited to the specific arrangement and organization shown and described.

Figure 1 represents a vertical section of a portion of ship's construction embodying my invention. Fig. 2 represents a perspective view partly in vertical section thereof on an enlarged scale. Fig. 3 represents a horizontal section thereof on line $x-x$ Fig. 2. Fig. 4 represents a perspective view partly in vertical section of a modification thereof. Figs. 5 to 11 inclusive represent horizontal sections of modifications.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings:—A designates a tank formed of metal, whose sides B B are riveted or otherwise firmly connected to the floor C. The top D of said tank is pierced or cut out for the passage therethrough of the metallic channel frame E whose lower end is firmly connected with the floor C by means of the angular bracket F or other suitable means.

G designates a metallic box which is composed of the sides H and the bottom J, portions of said box entering the channel frame E and being riveted thereto, the bottom J resting on the top D of the tank and being riveted thereto.

The margin of the top D is provided with the vertical flange K which is riveted to the side B of the tank and has the contiguous side H of the box G riveted thereto, said side being also riveted to the contiguous

ous side of the channel frame E. The flange K is cut away in vertical direction to allow the adjacent side of the frame E to pass therethrough, said side abutting against the walls of the cut away portion as at K', K², for bracing and to facilitate calking and for other purposes. Surrounding the frame E and the portions of the box G outside of the latter is an angular bracket L which is L-shaped in cross-section, being composed of the vertical sides M, and the horizontal base N, said sides being riveted to the frame E and the vertical sides of the box G. The base N is riveted to the top D of the tank, thus firmly connecting the various members stated, it being evident that the contiguous parts of the matter may be calked, and so water, oil, air, gas, or gasoline and dust tight joints are provided for said parts.

In Fig. 4 I show an angle beam K³ employed in lieu of the flange K, the same having the bottom J of the box G riveted to the lower horizontal limb thereof, and the adjacent side H riveted to the upper vertical limb thereof.

In Figs. 5 to 11 inclusive I show various modifications. In Fig. 5 the channel frame or beam E is L-shaped and the angle-bracket G is correspondingly shaped so as to embrace opposite sides of one limb of said beam, and having limbs which abut against the adjacent members, said angle-bracket and its flanges being properly secured in position. In Fig. 6, the beam E is provided on one of its limbs with a projecting bead E', said limb being embraced by separate angle-brackets G, G, on opposite sides of the limb, one of said angle-brackets having a bulge G' so as to receive and embrace said bead. In Fig. 7, the beam E is provided on one of its limbs with a bead G², the same projecting from opposite sides of the limb, the latter being embraced by separate angle-brackets G each of which is provided with a bulge E², the bulges receiving and embracing said bead. In Fig. 8, the beam E is divided, its transverse limbs meeting and overlapping forming a double L-shape. In this case a plurality of angle-brackets G G is employed, they being made to accord with said divided beam E. In Fig. 9, I show an I-beam E and a plurality of angle-brackets G G is employed, they being made to accord with said beam. In Fig. 10, the beam E and angle-bracket G are respectively L-shaped and in Fig. 11, the beam is double L-shaped,

and a plurality of angle-brackets G is employed, they being respectively on opposite sides of the transverse portion of the beam, but in all of these cases the beam and the 5 contiguous members are embraced and firmly connected by riveting or otherwise, the same as in the channel beam of Figs. 1, 2, 3 and 4, while the angle-brackets in all cases may be caulked as also the boxes in said 10 figures, so that the joints of the contiguous parts are rendered water, oil, air, gas or gasolene and dust tight.

While I have designated the member H as a box, as in Figs. 1, 2, 3 and 4, and it 15 enters the frame or beam E it constitutes an auxiliary angle-bracket so that said beam is embraced within and without on opposite sides the same as is accomplished by a plurality of angle-brackets as in the other 20 figures. The edges of the flanges of the angle-bracket and box afford calking-edges which are suitably caulked or upset by a proper calking tool, such as is employed in calking tanks, boilers, ships' plates or similar 25 lar structures, to form water, oil, or air tight joints between the bracket, box, beam and compartment-member where the beams pass through such members. The angle-bracket and box thus form simple and efficient means 30 for making tight-joints between beams and walls, decks or partitions through which they pass.

The invention is applicable to marine, drydock, and other tank construction and 35 so not to be considered as limited to ships.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. In a tank construction, a flanged beam, 40 a compartment-member formed with an opening through which said beam passes, and an angle-bracket of L-shaped cross section embracing said beam to close the space between the latter and the opening and having its flanges secured to the beam and to the 45 compartment-member to afford calking edges.

2. In a tank construction, a flanged beam, a compartment member having an opening 50 through which said beam passes, a flanged angle-bracket of L-shaped cross section constructed to embrace said beam and having

its flanges secured to the latter and to the compartment member, and a flanged box shaped to fit into said beam and secured to 55 the latter and to the compartment member, the flanges of said bracket and box affording calking edges.

3. In a tank construction, a flanged beam, a compartment member having an opening 60 through which said beam passes, a flanged box shaped to partly fit into said beam and secured to said compartment member, a flanged angle-bracket of L-shaped cross-section constructed to embrace said beam and 65 secured to the compartment member, and fastening means through the flanges of said angle-bracket, beam and box, the edges of said bracket and box affording calking edges.

4. In a compartment having a top and sides, the combination of a beam passing through the compartment and secured to one side thereof, a bracket of L shaped cross 70 section, a box, said bracket and box secured to fit around the exposed sides of said beam, an angle bar connected to the top and said side of said compartment, one side of said box and said bracket overlapping said angle 75 bar.

5. In a tank construction, a flanged beam, a compartment-member having an opening through which said beam passes, a flanged 80 plate of L-shaped cross section constructed to embrace three sides of said beam and overlapping the adjacent sides of the compartment-member, a part of which member 85 forms the final boundary of the flanged beam, all securely riveted together to afford calking edges.

6. In a construction of the character 90 stated, a compartment member, a beam therethrough, two flanged plate boxes bounding web and inner surfaces of flanges of said beam and overlapping the compartment 95 member, a clip of L-shaped section and compartment member forming final boundary of above mentioned beam, all securely riveted together to afford calking edges.

EDWIN B. WHEELER.

Witnesses:

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