(No Model.) 2 Sheets—Sheet 1

H. M. GRIFFITHS.

METALLIC VESSEL.

No. 454,865. Patented June 30, 1891.

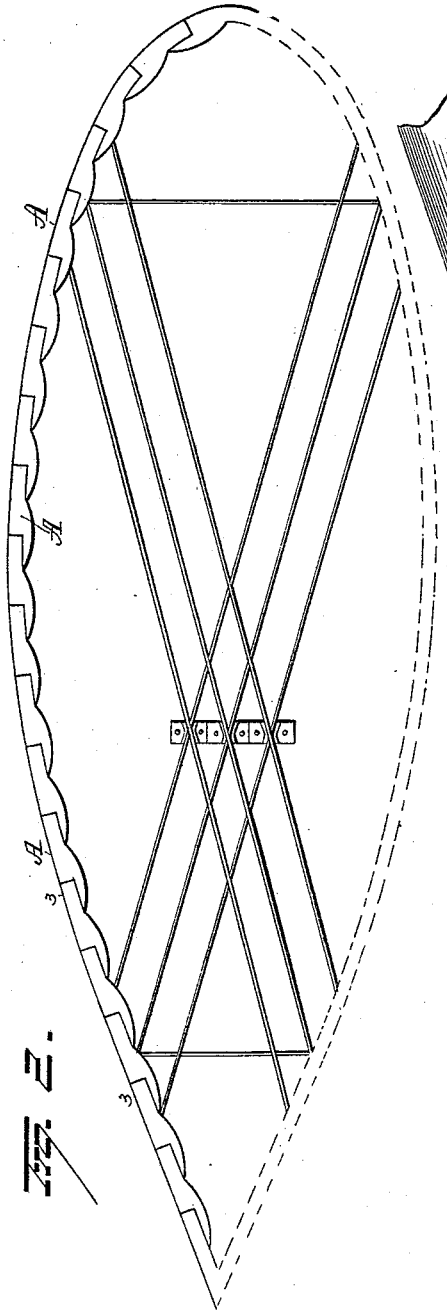

Fig. 2.

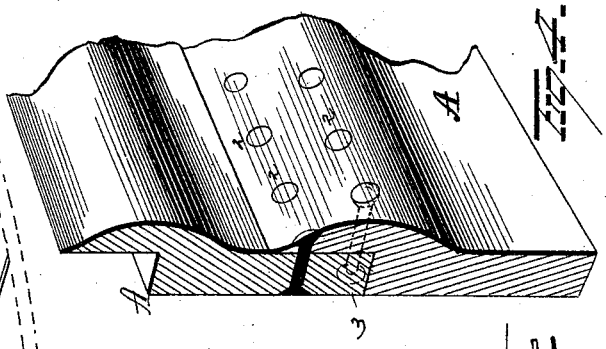

Fig. 4.

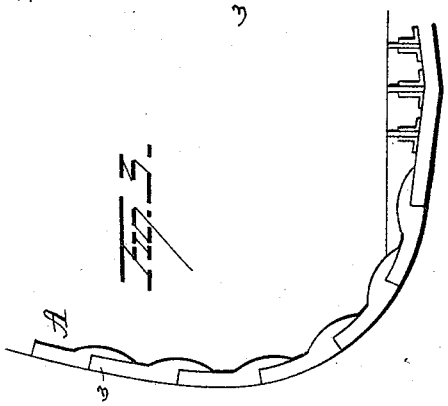

Fig. 3.

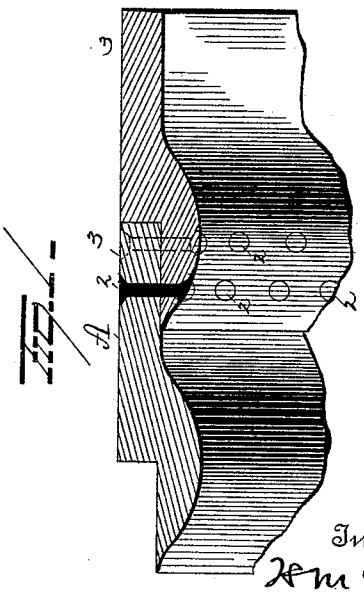

Fig. 1.

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Inventor
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Lysett & Lysett.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

H. M. GRIFFITHS.

METALLIC VESSEL.

No. 454,865. Patented June 30, 1891.

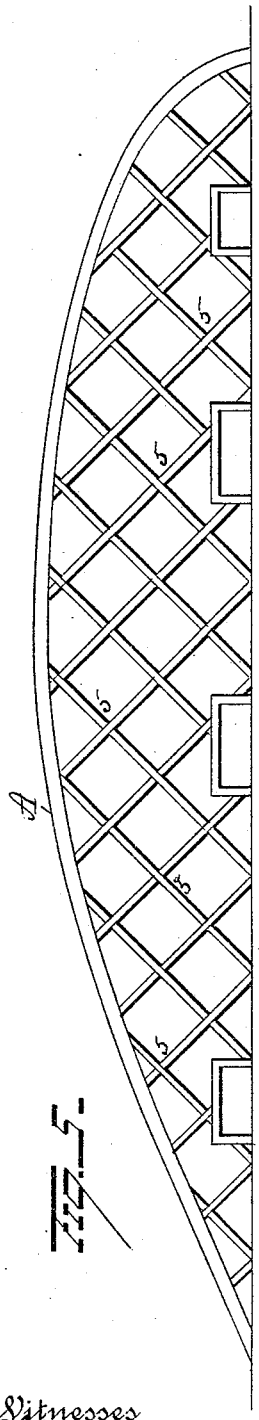

Fig. 1.

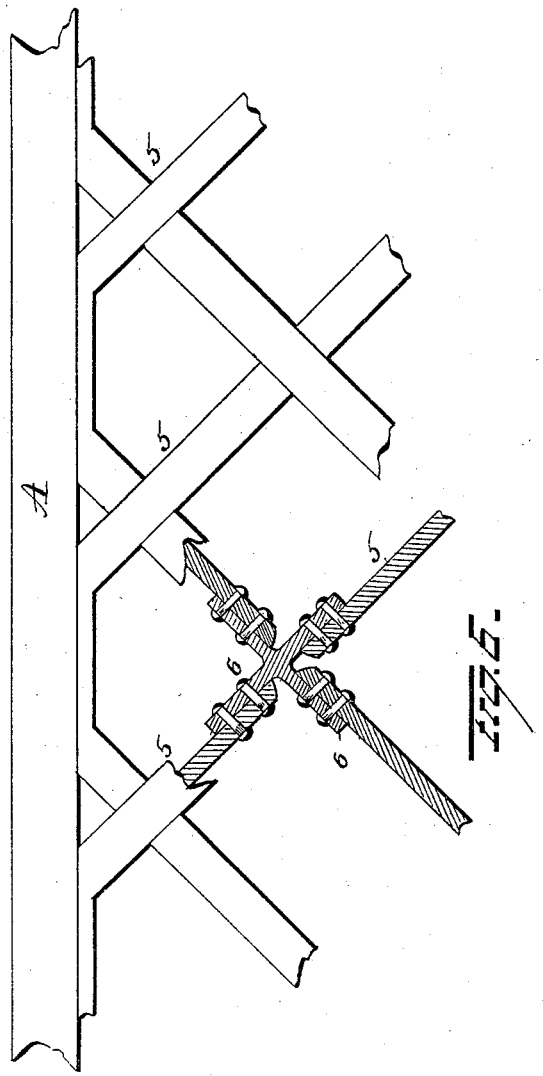

Fig. 2.

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By his Attorney
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HERBERT MERWIN GRIFFITHS, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF THREE-FOURTHS TO EDGAR B. GRIFFITHS AND GEORGE F. GRIFFITHS, OF SAME PLACE, AND EDGAR E. DURYEA, GEORGE DURYEA, AND LOUIS T. DURYEA, OF GLEN COVE, NEW YORK.

METALLIC VESSEL.

SPECIFICATION forming part of Letters Patent No. 454,865, dated June 30, 1891.

Application filed July 11, 1890. Serial No. 358,382. (No model.)

To all whom it may concern:

Be it known that I, HERBERT MERWIN GRIFFITHS, of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Metallic Vessels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in metallic vessels, the object being to increase the capacity, reduce the weight, add strength, and thus diminish the cost of construction of vessels, together with a corresponding decrease in the number of parts and quantity of material necessary in the manufacture of the vessels.

With this end in view my invention consists in plates of iron, steel, or other metal rolled with a bulb or rib on one edge and rabbeted or recessed out to receive the opposite edge of the adjoining sheet, whereby one continuous sheet is formed with one smooth side and one ribbed side, the former to constitute the outside and the latter the inside, the ribs or bulbs serving as transverse or longitudinal braces, as the case may be, thus dispensing with the use of half the ordinary rivets required and doing away with frames and ordinary angle and Z bars.

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

In the accompanying drawings, Figure 1 is a detail showing a portion of my improvement. Fig. 2 shows a portion of a vessel in horizontal section with the plates extending transversely. Fig. 3 is a view in transverse section of a vessel in which the plates extend longitudinally. Fig. 4 is a detail. Fig. 5 is a plan view of the deck, and Fig. 6 is an enlarged view of the crossing-braces.

A A represent a series of plates which constitute the hull or body of the vessel. These plates are made in narrow strips flat on one side, and on the opposite side and near the edge each plate is provided with a longitudinal bulb or rib. This edge is rabbetted or recessed for sufficient depth to receive the opposite edge of the adjacent plate and also two or more rows of rivets 2 2, if need be, to hold them rigidly together at their contiguous edges to constitute a continuous sheet of metal. The thin straight edge 3 opposite the bulb edge on each plate enters the rabbet of the next plate, as indicated. The sheet thus formed is arranged so that the plates either extend longitudinally of the vessel from bow to stern, in which instance the bulbs or ribs take the place of ordinary longitudinal keelsons and distribute the strength throughout the structure equally, the atwarthship bulkheads taking the place of angle or Z bar frames, and thus dispensing with the framework which ordinarily is indispensable in the manufacture of vessels, or else they extend transversely or vertically, the bulbs or rivets in this instance also taking the place of the usual braces or angle or Z bars constituting the frame. In either case the bulbs or ribs perform the important function of bracing the structure and equalizing the structure throughout the entire hull of the vessel.

The decks are constructed on beams 5 5, running diagonally across the vessel, preferably at an angle of ninety degrees (more or less) from center line of deck. These beams are held together at the crossings by the cast, wrought-iron, steel, or other metal connections 6 6, to the four arms of which the beams are riveted or otherwise secured. The ordinary decking is placed on top of this framework. The frame is further braced and furnished with diagonal plates 7 7, crossing each other through the longitudinal center of the vessel, as shown in Fig. 2, and when necessary connecting with the boiler and engine keelsons in fore and aft directions. In the event that vessels are constructed on this principle the plates 7 7 preferably are made to extend from the bottom to the lower deck, thereby dividing the vessel into water-tight compartments, which may be used for the storage of freight, thus preventing the shifting of cargo and rendering the vessel bouyant and proof against sinking.

Vessels of this construction combine strength, simplicity, efficiency, and economy

of construction. They are easily made and extremely durable, as well as capable of being easily repaired or reconstructed.

It is evident that slight changes might be resorted to in the form and arrangement of the several parts described without departing from the spirit and scope of my invention, and hence I do not wish to limit myself to the particular construction herein set forth; but,

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

1. A vessel constructed of plates or strips of metal, one edge of which is provided with an integral rib or bulb and provided with a recess, and the opposite edge being thin and adapted to enter the recess of the adjacent plate or strip, substantially as set forth.

2. A vessel composed of plates of metal having one thin edge and one recessed or rabbeted edge with a bulb or rib thereon, the recesses adapted to receive the thin edges of the adjacent plates, and the ribs adapted to form braces in the interior of the vessel, substantially as set forth.

3. In a vessel, the combination, with metal strips or plates provided with ribs or bulbs on one edge and a recess inside of the latter to receive one edge of an adjacent plate or strip, of a deck constructed of beams secured to the inner walls of the vessel and crossing one another, substantially as set forth.

4. The combination, with metal strips or plates provided on one edge with a rib or bulb and a recess back of said rib or bulb adapted to receive one edge of an adjacent plate or strip, of diagonal plates located on the bottom of the vessel and crossing each other, said diagonal plates connected at their ends and along their lower edges with the body of the vessel, substantially as set forth.

5. A metallic vessel composed of plates secured together and diagonal plates on the bottom of the vessel connected at their ends with the body of the vessel and crossing one another on the longitudinal center of the vessel, thereby dividing the bottom into compartments, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HERBERT MERWIN GRIFFITHS.

Witnesses:
G. R. SALISBURY,
LOUIS M. NULTON.