

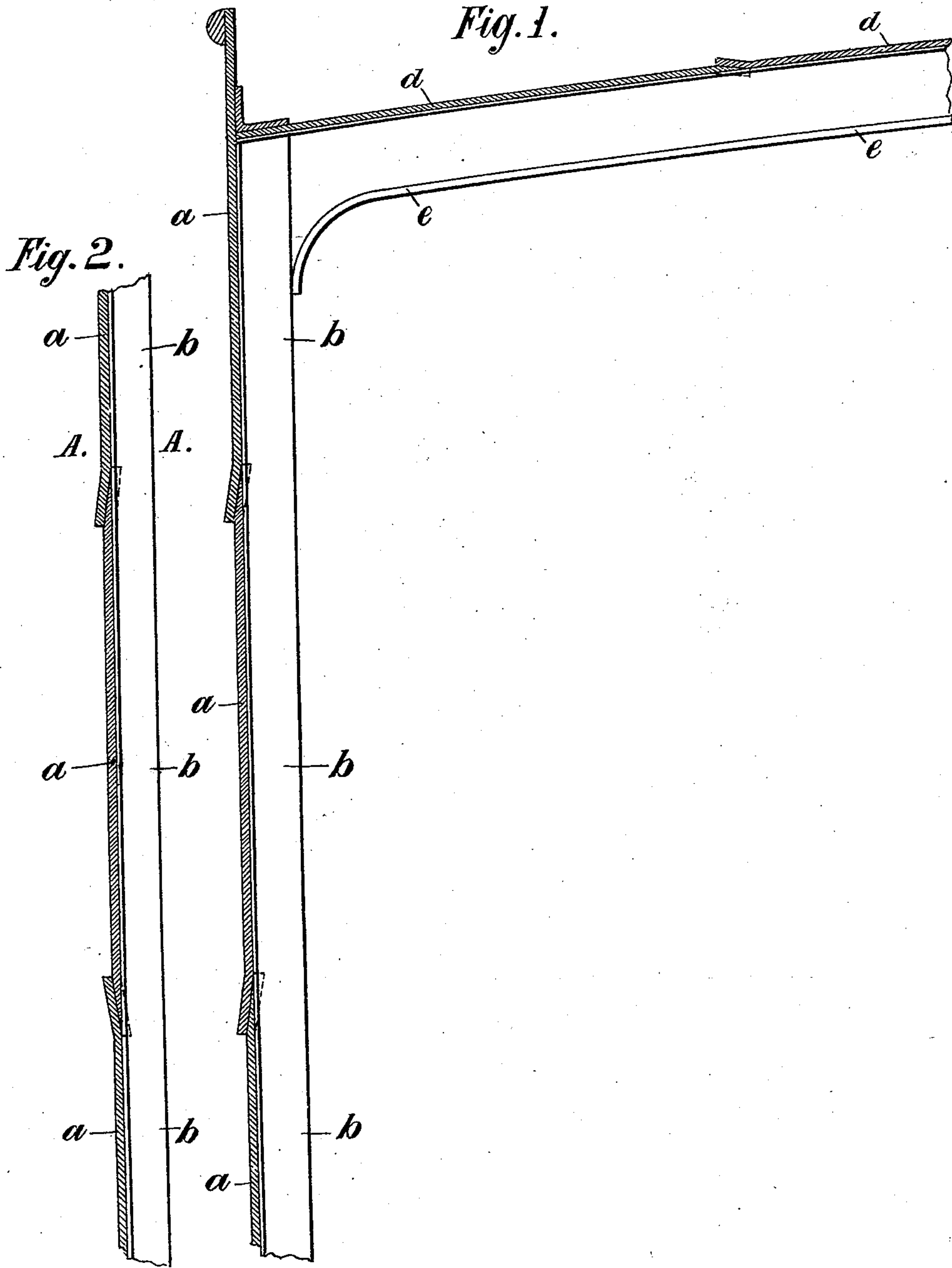
(No Model.)

2 Sheets—Sheet 1.

W. STEWART.  
PLATING FOR VESSELS, &c.

No. 534,183.

Patented Feb. 12, 1895.



Witnesses.  
G. W. Rea.  
Thos. A. Green

Inventor.  
William Stewart,  
By James L. Norris  
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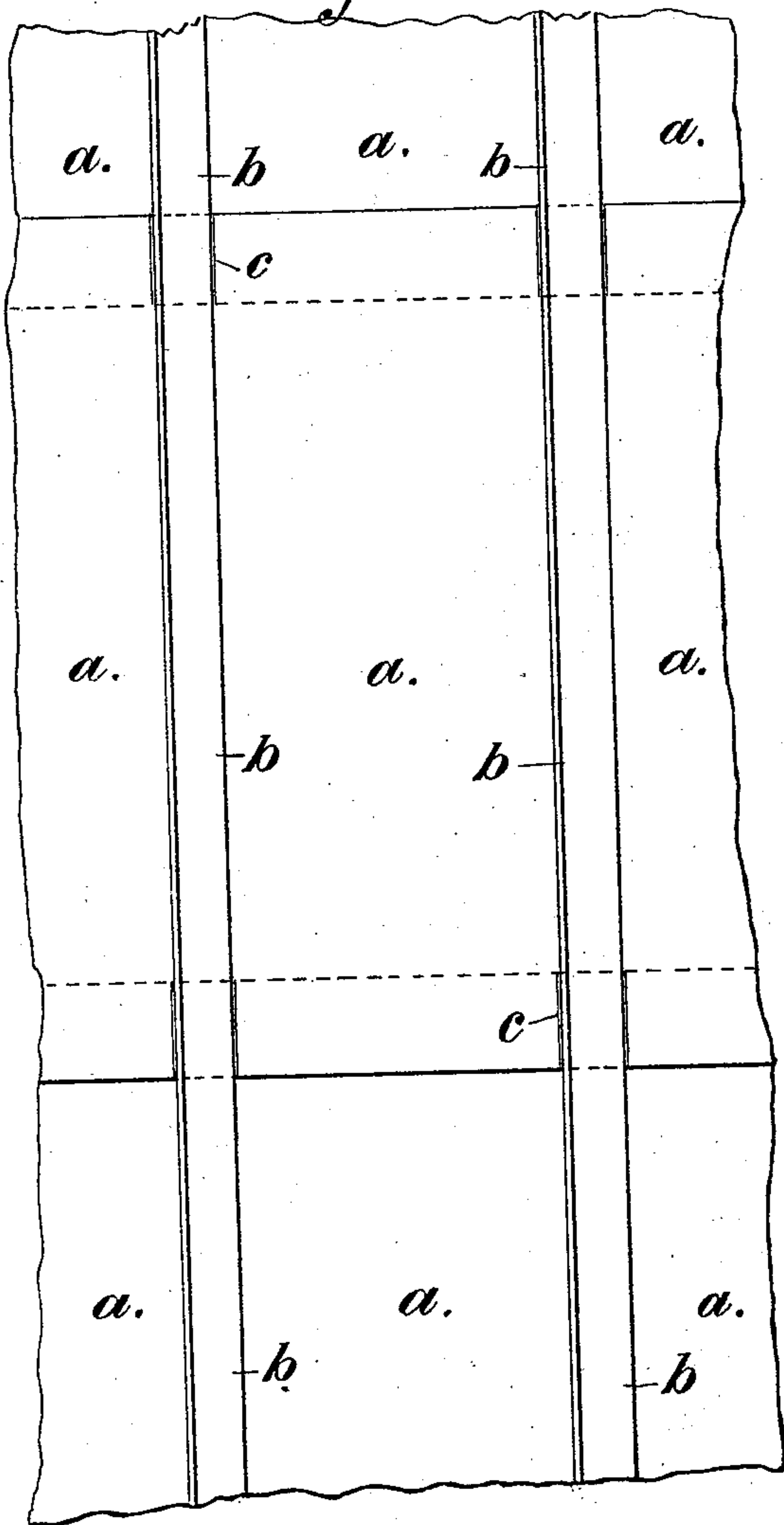
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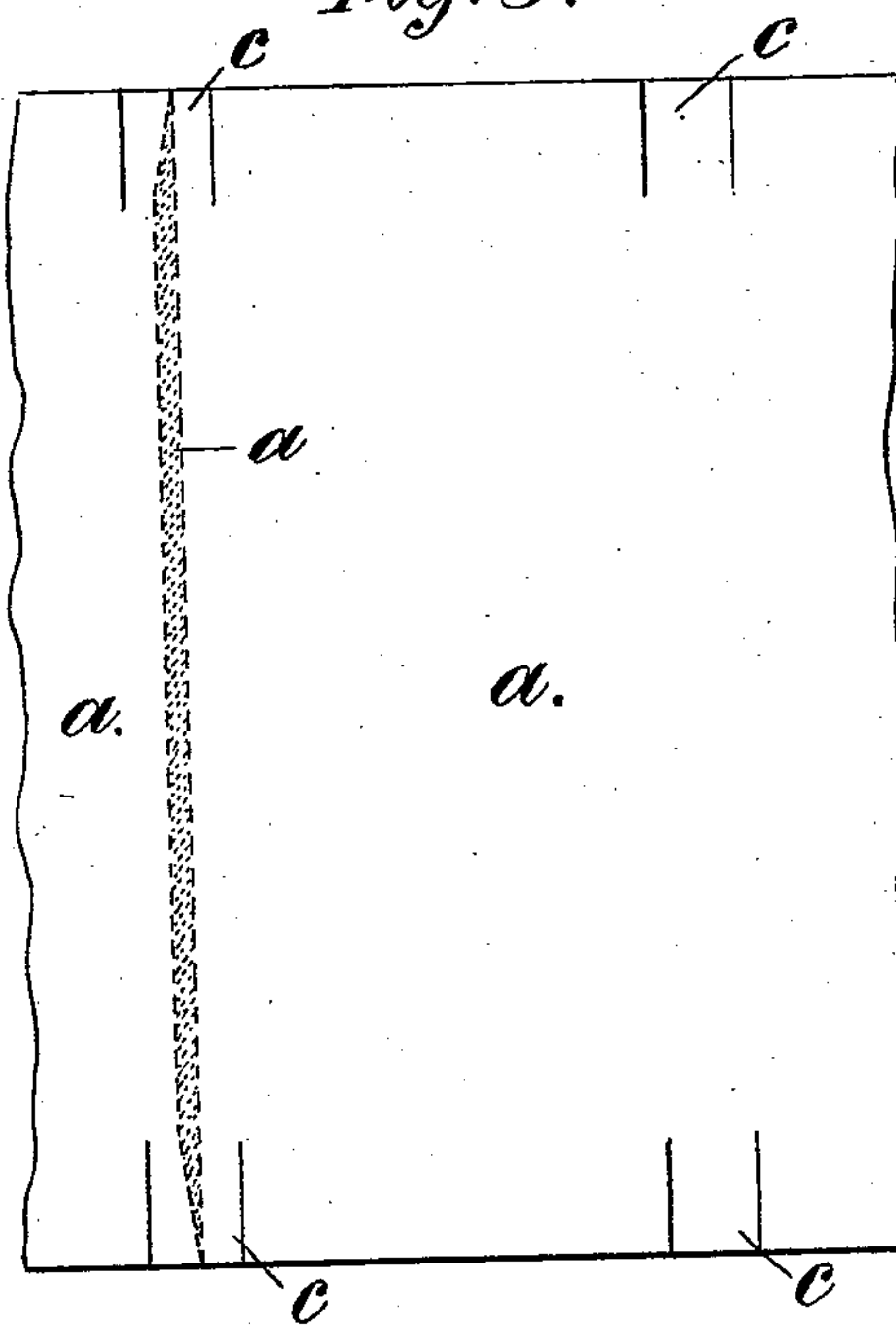
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*Fig. 3.*



*Fig. 5.*



*Fig. 4.*



*Witnesses.*

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# UNITED STATES PATENT OFFICE.

WILLIAM STEWART, OF LIVERPOOL, ENGLAND.

## PLATING FOR VESSELS, &c.

SPECIFICATION forming part of Letters Patent No. 534,183, dated February 12, 1895.

Application filed August 16, 1894. Serial No. 520,496. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM STEWART, a subject of the Queen of Great Britain and Ireland, residing at Liverpool, in the county of Lancaster, England, have invented new and useful Improvements in Plated Structures, as Navigable Vessels, Pontons, and other Vessels, of which the following is a specification.

This invention has reference to structures comprising metallic frames and plates, riveted or bolted to said frames, and together. For instance, it relates to plated structures, as ships' hulls, decks, deck-houses, bulkheads, tanks, &c.; pontons, caissons, liquid and gas holders or containers wherein plating is secured to frames; and other like or analogous structures wherein plates of iron or steel or other metal are employed in connection with frames or frame work, and fastened to them as well as together. The invention has mainly for its object to provide improvements in plated structures by which the weight of such structures, and also the cost of same, is diminished.

The invention will be described, for convenience, as applied to ships' hulls.

According to this invention, the use of filling strips, usually employed between some of the platings or strakes, of the hull and the frames, is obviated, and without alteration of the ordinary form or construction of such frames, all the plates being by it caused to come in contact with or against the frames. The horizontal meeting edges of the plates which overlap each other, are turned the one in and the other out, and the parts of the inwardly turned edges of the plate where they come in contact with the frames, are cut away at the inside in such a manner that the inside surface of the plate lies evenly on the frame throughout. The plates may be riveted or fastened together and to the frames in the usual or any suitable way.

The invention may be applied to ships having the plating or strakes arranged according to the "clinker" mode of building, or to the ordinary mode.

The above description of the invention as applied to the hull of a ship is suitable to other plated parts of ships, and other plated structures, having the characteristics above referred to.

In the drawings illustrating this invention, I show the invention applied to an iron or steel ship.

In the drawings, Figure 1 is a cross section showing the invention applied to the side plating of the ship, and also to a deck, the plating of the ship's side being of the "clinker" type. Fig. 2 is a cross section; Fig. 3 an inside elevation, and Fig. 4 a sectional plan at A A, Fig. 2, showing the invention applied to a ship having plating of the usual type or kind. Fig. 5 shows the inside of plate alone, i. e., without the frames in position.

Referring to the drawings, *a* are the ship's side plates, and *b* are the frames, which are of ordinary construction being straight or even on their outer surface. The plates, with longitudinal joints, as will be seen by the drawings, at their meeting edges overlap each other, and are turned, the one inward, and the other out. The parts of the inwardly turned edges where they come opposite to and in contact with the frames are cut away, making channels *c* in the edges of the plates, the channels being so cut that the surface of the plate from edge to edge at these parts (that is, where they come opposite the frames) are even throughout, and lie evenly on the frames *b*; and at the same time, admit of the inner surface of the adjacent plate lying on the frame bar evenly from the edge of the cut away plate to the next joint. A section of the plate taken through the cut away parts, that is, channels *c*, is illustrated by the dotted lines in Fig. 5. Thus, the whole set of strakes or plates in the ship, constructed as shown, throughout the length of the frame come in contact with the plates; and the effects above stated are thereby obtained.

In a "clinker" built vessel, as shown in Fig. 1, each plate will have one edge bent inward and the other outward, the inwardly turned edge having the cut away portion or channels *c* provided in it; while in a vessel with the ordinary arrangement or form of plating shown in Figs. 2, 3, 4, and 5, the different rows of plating are differently formed and constructed; namely, the successive strakes or rows of plating have both their edges turned outwardly and inwardly, respectively. Thus these plates alone having the inwardly turned edges are provided with



the cutaway portions or channels *c*. The deck plating and structure is precisely similar to the side plating. The plates in this case—  
Fig. 1—are designated *d*, and the deck beam  
5 *e*, the edges of the plates at the joint being bent inwardly and outwardly as shown, and the inwardly turned edges being cut away in exactly the same manner as set forth with reference to the side plating.

10 Having fully described and shown by drawings my invention as applied to ships, its application to other plated structures, such as those hereinbefore specified, will be understood to be those connected with the construction of plated structures without further description.  
15

What is claimed in respect of this invention is—

In plated structures, such as navigable

vessels, pontoons and the like, the combination with the frames or beams, of rows or strakes of plating connected by lap joints in which the overlapping edges of the plates are bent away from each other, the one inward and the other outward, and the said inwardly  
25 turned edges of the plates cut away to form channels *c* to receive the frames or beams and permit the inner surfaces of all the plates to come in close and even contact with said frames or beams, as shown and described. 30

In testimony whereof I hereunto affix my signature in presence of two witnesses.

WILLIAM STEWART.

Witnesses:

ERNEST RICHARD ROYSTON,

JOHN HINDLEY WALKER,

*Both of 15 Water Street, Liverpool.*