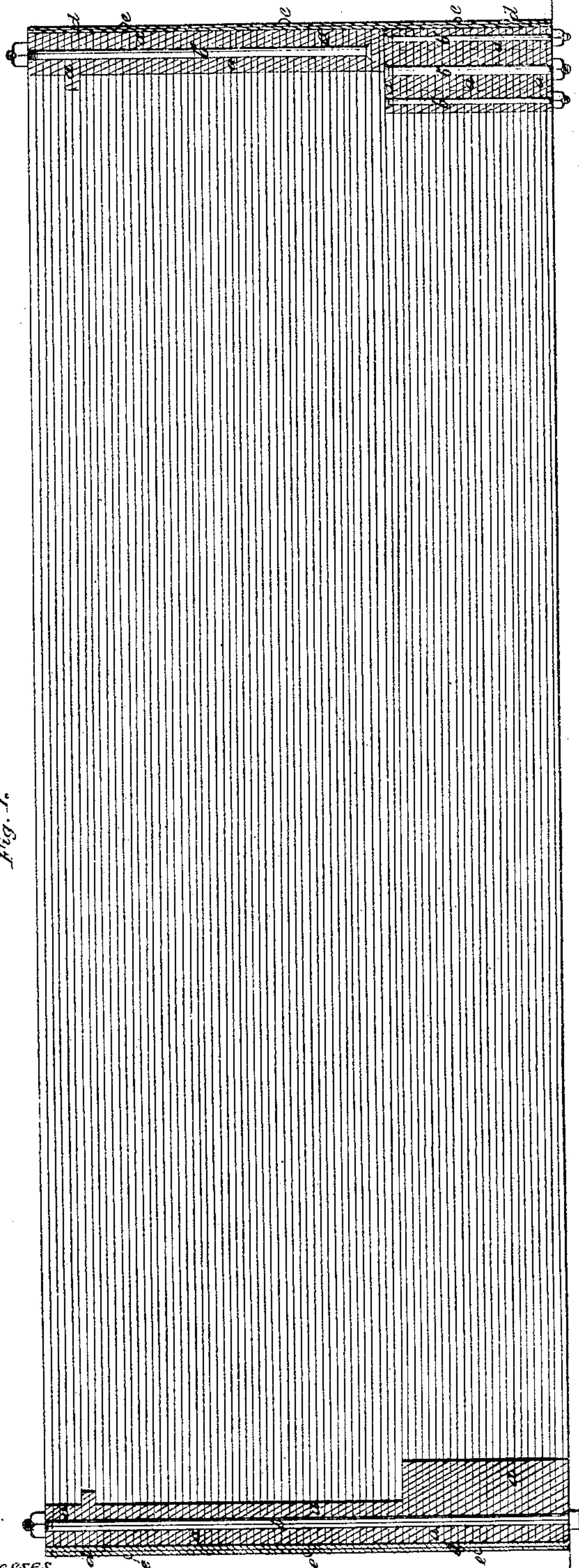


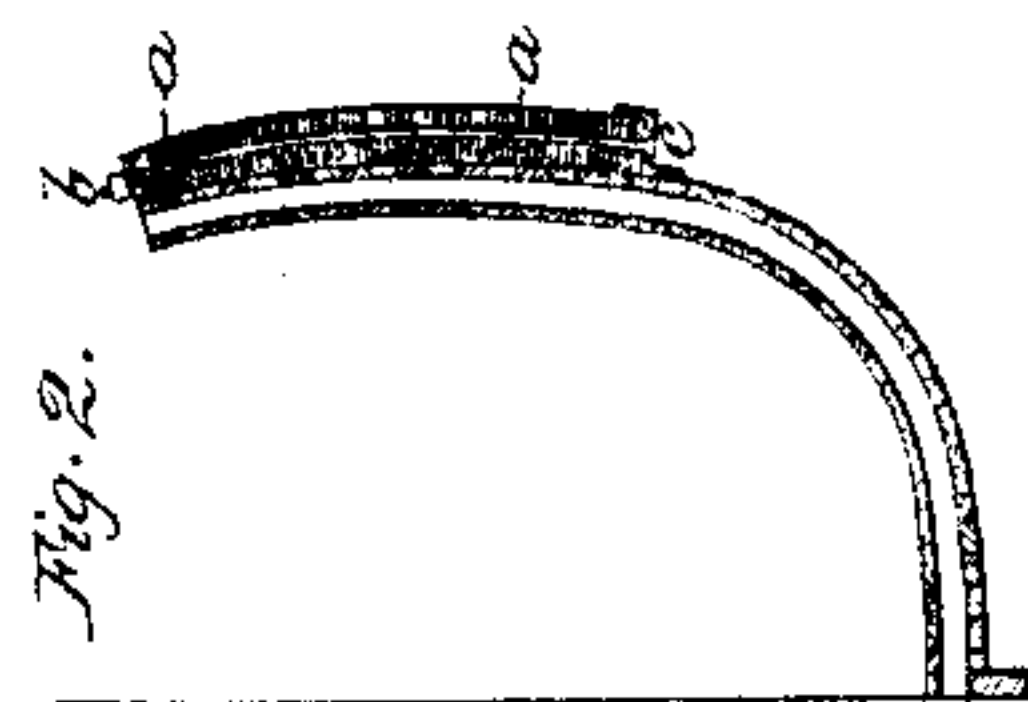
*J. S. Underhill,  
Armor Clad.*

*N<sup>o</sup> 46,037.*

*Patented Jan. 24, 1865.*



*Fig. 1.*



*Fig. 2.*

*Witnesses*

*W. C. Coombs  
G. W. R. R.*

*Inventor*

*J. S. Underhill.*



# UNITED STATES PATENT OFFICE.

J. S. UNDERHILL, OF NEW YORK, N. Y.

## IMPROVED VESSEL OF WAR.

Specification forming part of Letters Patent No. 46,037, dated January 24, 1865.

*To all whom it may concern:*

Be it known that I, J. S. UNDERHILL, of the city, county, and State of New York, have invented a new and useful Improvement in the Construction of Vessels of War and Fortifications; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of a turret constructed according to my invention. Fig. 2 is a transverse section, on a much smaller scale, illustrating the application of my invention to the plating of the side of a war vessel.

Similar letters of reference indicate corresponding parts in both figures.

This invention consists, in the construction of the turrets for vessels or batteries and of the armor for the hulls or other parts of vessels of war, of plates arranged horizontally, or nearly so, with their edges inward and outward and secured together by bolts which pass through them in a vertical or nearly vertical direction, in combination with vertical plates, applied in the manner hereinafter specified, to prevent the penetration of projectiles in the joints between the horizontal plates.

To enable others skilled in the art to apply my invention to use, I will proceed to describe it with reference to the drawings.

In the construction of turrets the whole structure may be composed of plates *a a*, arranged horizontally one upon another, as hereinbefore mentioned, and illustrated in Fig. 1, and bolts *b b'*, passing vertically or upward and downward through holes drilled in the said plates. On the left-hand side of Fig. 1 the plates are represented as all secured together by a single bolt, *b*, long enough to pass through the whole series, and on the right-hand side they are shown as secured by shorter bolts, *b'*, each passing through several of the series. I propose to alternate the longer and shorter bolts. The plates are so arranged that their ends break joint with each other. The

thickness of the turret may be composed of single plates of suitable width, as shown at the left-hand of Fig. 1, and in the upper part of the right side thereof; but in the lower part of the latter side the thickness is represented as composed of plates of unequal width arranged to break joint. The lower part is represented of greater thickness than the upper part, and near the top two of the plates are represented of greater width and projecting externally to form a ledge for the support of the roof of the turret.

In applying my invention to the armor-plating of the hull of a vessel a stout double-angle plate, *c*, is bolted to the hull of the vessel at a suitable distance below the water-line for the support of the plates, and the bolts *b* are inserted through this angle-plate and bent to correspond with the vertical curvature of the side of the vessel.

To prevent pointed shot from entering between and wedging apart the plates *a a*, I apply to the exterior of the plating one or more thicknesses of vertical plates, *d d*, by screwing them to the plates *a a* by short screws *e e*.

The system of plates *a a*, by supporting one another, make a very strong structure for turrets, and when used as armor for the hulls do not strain the vessel like plates which are bolted through the hull, and in either application the bolts cannot be started by the impact of projectiles, the advantage of which, more especially in the case of turrets, has been demonstrated by recent experience.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination of the horizontal plates *a*, vertical bolts *b b'*, vertical plates *d d*, and screws *e e*, all constructed, applied, and secured in the manner and for the purposes herein specified.

J. S. UNDERHILL.

Witnesses:

J. W. COOMBS,  
GEO. W. REED.