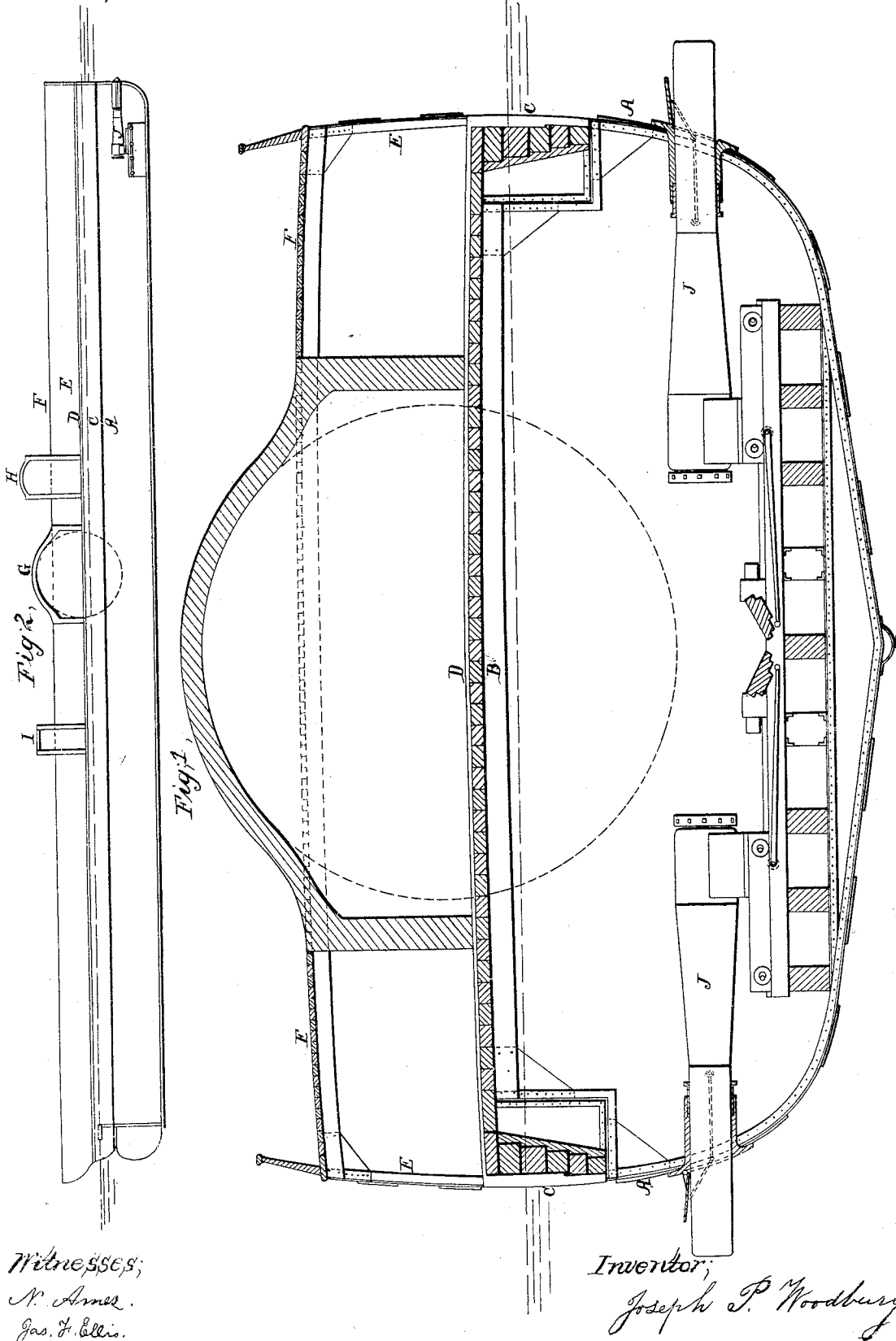


*J. P. Woodbury*  
*Armor Clad.*

*N<sup>o</sup> 4,1802.*

*Patented Mar. 1, 1864.*



*Witnesses;*  
*N. Ames.*  
*Geo. F. Ellis.*

*Inventor;*  
*Joseph P. Woodbury*

# UNITED STATES PATENT OFFICE.

JOSEPH P. WOODBURY, OF BOSTON, MASSACHUSETTS.

## IMPROVED CONSTRUCTION OF WAR-VESSELS.

Specification forming part of Letters Patent No. **41,802**, dated March 1, 1864.

*To all whom it may concern:*

Be it known that I, JOSEPH P. WOODBURY, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in the Construction of War-Vessels; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a midship section, and Fig 2 a "sheer plan" or side elevation.

Like parts are indicated by the same letters in both figures.

My improvement relates more particularly to what are known as "iron-clad," "armor-clad," or "plated" war-vessels, the great practical objection to which is, first, if the armor-clad or plated sides and deck of such a vessel are raised but slightly (a foot or two) above the water-level, as in the "monitor" boats, it has not sufficient buoyancy for a good sea-going ship, and necessarily affords low, cramped, dark, and unwholesome quarters for officers and crew; and second, if the armor-clad or plated sides and deck of such a vessel are raised sufficiently high above the water-line (ten feet, more or less) to afford the requisite sea-going qualities, the ship must be comparatively heavy, crank, of deep draft, and necessarily very large and expensive.

The nature of my invention therefore consists in so constructing a war-vessel as to have while in action all the advantages of any iron-clad, armor clad, or plated vessel in use, and at the same time afford the requisite qualities for a good sea-going vessel, as well as storage room and healthy quarters for officers and men, which object I accomplish by making an invulnerable deck raised a little (a foot or two) above the water-level, the sides of the vessel being armor clad or plated downward from said deck in the usual manner, and by continuing upward from said deck ten feet (more or less) the sides and ends of the vessel to the upper or spar deck of any suitable material, (wood or metal,) only sufficiently strong and thick to withstand the action of the sea, and presenting as little resistance as possible to shot and shell while in action, the space between said invulnerable deck and the upper or spar deck affording the storage and necessary

quarters for officers and men, thus making in all respects a perfect war-vessel, offensive, defensive, sea-worthy, comfortable, and healthy.

My improvement further consists in combining with a vessel thus constructed a submarine gun or guns substantially such as described in the patent granted to me by the United States of America, May 6, 1862, and numbered 35,193, to which more particular reference is made.

My improvement also further consists in combining with a vessel thus constructed a casemated battery or batteries, a turret, or a revolving battery or batteries, such, for instance, as that described in the Letters Patent of the United States granted to John Ridgeway, October 21, 1862, to which more particular reference is made.

To enable others skilled in the art to make and use my improvement, I will now proceed to describe its construction and operation.

A is the hull, constructed, in the usual manner, of wood or iron.

B is the main deck, of sufficient strength to receive and support the deck armor or plating and assist the same in resisting the impact of shot.

C is the side armor or plating, of any suitable material, of sufficient strength to withstand the effect of shot and shell.

D is the deck armor or plating, of any suitable material, of sufficient strength to withstand the effect of shot and shell.

E E are the sides of the vessel above the bomb-proof deck D, of wood or metal, and of only sufficient strength to withstand the action of the sea, while they offer as little resistance as possible to the passage of shot and shell.

F is the upper or spar deck, of the same material as the sides E E.

G is a bomb-proof casemate, a turret, or a revolving-battery of any description, as, for instance, the revolving battery patented in the United States by John Ridgeway, dated October 21, 1862, and numbered 36,730, to which more particular reference is made.

H, Fig. 2, represents a shot proof pilot-house, from which the whole vessel is directed and governed, being provided with an aperture to afford ingress and egress for the officers and crew at the top, which may be opened and closed, and from which pilot-house the submarine gun or guns can be directed, to be

fired by means of a speaking-tube, or fired directly by the officer pulling a wire attached to the lock of the same. The pilot-house is also provided with "peep-holes" for observation, and furnished with pipes, through which bad air is expelled and fresh air drawn in, by means of blowers, in the usual manner.

I, Fig. 2, is a shot-proof smoke-stack.

J is one of my submarine guns constructed and operated substantially as set forth in the Letters Patent of the United States granted to me May 6, 1862, and numbered 35,193, to which more particular reference is made.

My improvements may be applied to any kind of vessel propelled by steam or sails. I propose, however, to make use of four engines, working in pairs, and boilers of large size, and twin propellers, one under each counter astern, of sufficient power to propel the vessel with great speed or turn it quickly around at will.

The space between D and F is intended to be occupied by the officers and crew, except in time of action, the sides and top of which space, being built of light materials and with sufficient lights and openings for ventilation, afford dry, healthy, and comfortable quarters.

There should be constructed just above the bomb-proof deck scupper-holes with suitable valves or stoppers opening outward of sufficient number and size to free said deck from water in case that openings should be made by shot in action so as to admit water in a

rough sea, said valves or stoppers being so constructed as to open automatically outward by the pressure of water from the deck and close automatically by the external pressure of the water.

In time of action the berths, hammocks, and other furniture may be carried below the bomb-proof deck, so that shot and shell may pass through and through the sides E E without doing any other damage than simply making holes, which can be readily stopped after the action is over. In time of action the officers and crew are also in the bomb proof tower, pilot-house, or below the bomb-proof deck.

I propose to use on the spar-deck light long-range rifled cannon mounted on pivots *en barbette*.

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

In a vessel constructed with a vulnerable upper deck and sides above an invulnerable lower deck and plated bottom, resting a battery or batteries immediately on or below said invulnerable deck, substantially as and for the purpose described.

JOSEPH P. WOODBURY.

Witnesses:

N. AMES,

JAS. F. ELLIS.