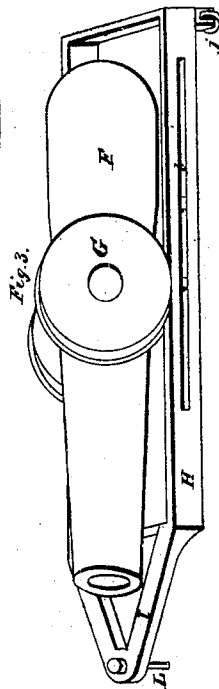
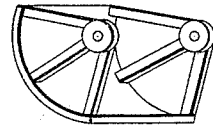
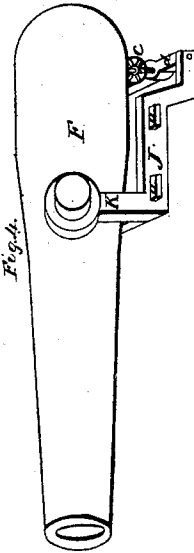
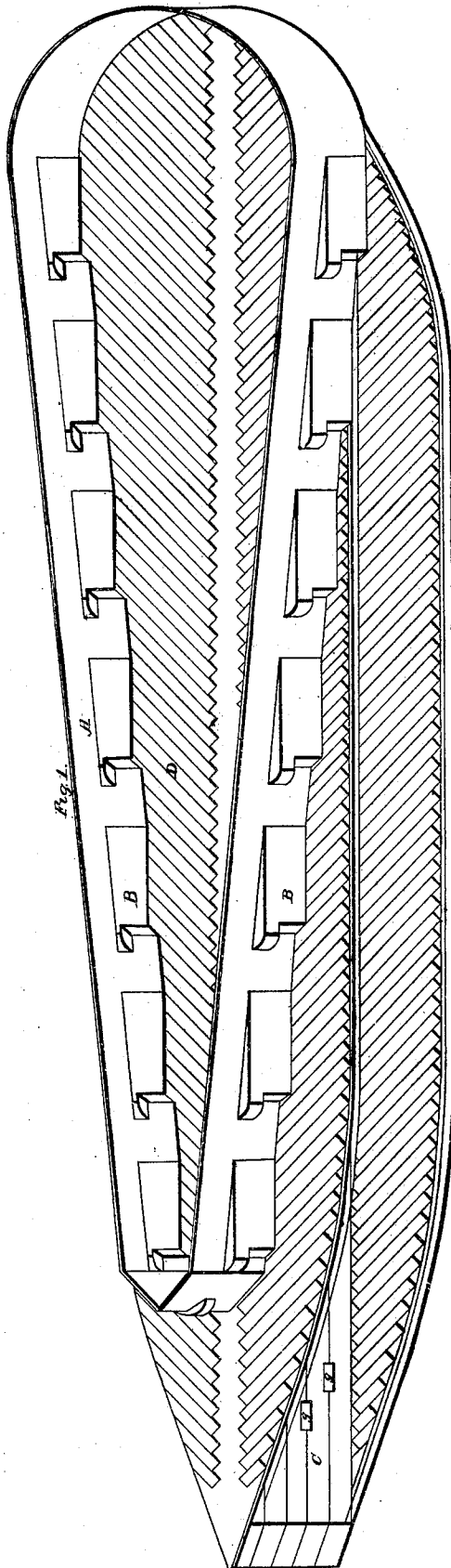
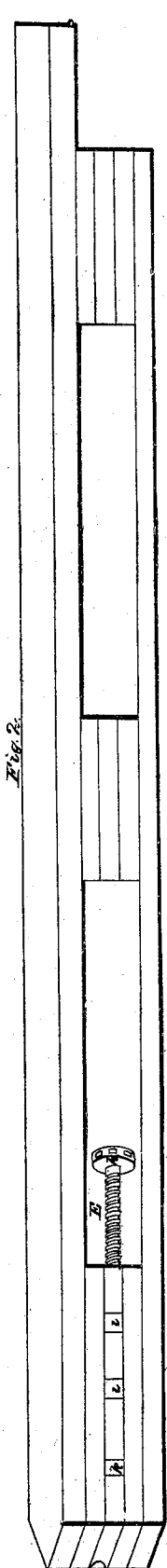


*P. Andrew
Building.*

N^o 39,788.

Patented Sep. 8, 1863.



UNITED STATES PATENT OFFICE.

PETER ANDREW, OF CINCINNATI, OHIO.

IMPROVEMENT IN THE CONSTRUCTION OF WAR-VESSELS.

Specification forming part of Letters Patent No. 39,788, dated September 8, 1863.

To all whom it may concern:

Be it known that I, PETER ANDREW, of Cincinnati, county of Hamilton, and State of Ohio, have invented a certain new and useful Improvement in the Construction of Vessels of War to be used as Rams and Gun-boats; and I hereby declare that the following is a full and sufficient description thereof, reference being had to the annexed drawings, making part of the specification, and to the letters of reference marked thereon.

In the drawings which illustrate my improvement, Figure 1 is a perspective view of the vessel, showing the gun-deck and deck-plank as braces abutting against the beam, sides, and port-holes; Fig. 2, perspective view of a modification of the beam, showing shaft E; Fig. 3, perspective view of the gun and carriage; Fig. 4, a perspective view of the gun and guide-rails attached; Fig. 5, a perspective view of the circular shutter for the port-hole.

My invention is embraced in the following several devices: first, the peculiar construction of the gun deck; second, the form and arrangement of the port-holes; third, the arrangement and adaptation of the deck-plank, with the central timber or beam, C, bracing each other; fourth, the combination of the beam and decks for giving strength to the vessel used as a ram by means of lock-pieces *g*.

A represents the sides of the gun-deck; B, the port-holes; C, the beam forming the extreme end of the bow, from stem to stern, through the middle of the vessel, to serve as a battering-ram; D, planks of the deck and bottom for bracing in time of collision; E, shaft that can be screwed out of the bow end of the beam when the vessel is used as a ram; F, the gun; G, wheels upon the trunnions of the gun; H, side rails of gun-carriage; I, projection from front cross-rail for attaching the gun-carriage to the port-hole; J, guide-rails for guiding the gun in time of recoil; K, projections from guide-rails, through which the trunnions of the gun pass for fastening it to the carriage; L, pin passing through projection I, for attaching gun-carriage to the port-hole and holding the gun in position, so that the muzzle may be run out at any change in the range of the gun.

Letter *a* represents projections from guide-rails sliding in slot *b*, which is adapted to said projection; *c*, wheel and screw for elevating

and depressing the muzzle of gun; *d*, cross-rail and journals through which screw of *c* passes; *g*, pieces inserted in the beam or the seams to prevent the beam-pieces of timber from sliding on each other during collision; *h*, capstan-head on shaft E; *i*, nuts inserted in the beam through which the shaft is screwed; *j*, wheels for moving the gun-carriage; *k*, opening in the beam for access to the stuffing-box.

The sides of the gun-boat diverge from a point in the middle of the vessel near the bow, and run obliquely across the deck backward and outward in a direct line toward the stern to the outside of the hull, and may extend a little beyond it, forming a half-circle at the stern, or, instead of a half-circle, it may be formed wedge shaped, as by the meeting of two right lines at an angle of eighty or ninety degrees—thus >. The drawing shows the semicircular form. This arrangement of the sides gives the deck a wedge form. At a few feet from the extreme point the sides diverge at right angles for giving room for a gun to be used pointing directly over the bow. This gun will have a lateral range from the side port-holes as great as that of other guns. The aft side B of the port-holes projects from the side of the vessel. The projection begins opposite the gun, and being for the length of the gun, or a little more, depending upon the diameter of the gun in part, and also in part on the obliquity of the sides of the hull, as compared with the medial longitudinal line. The gun, when discharged toward the bow, lies in this projection, which extends upward from the deck a little above the gun, except at the opening, where it is contracted to the size of the port-hole. The shutter is hinged to the projecting side, or a circular shutter, such as shown in drawings, Fig. 5, may be used, which may probably answer the purpose better. This will be turned into the vessel when the port is opened. Other devices may be used. The beam *c* runs through the vessel from stem to stern, extending from the gun-deck downward to the bottom of the vessel, constructed of heavy pieces of timber bolted together, and having pieces *g* inserted at the seams to prevent them from slipping at the time of collision. The deck and bottom plank will be heavy, extending horizontally, but obliquely, from the medial line to the sides of the vessel. This arrangement of the planks makes them braces, and causes

the whole weight of the vessel to be thrown on beam at the moment of collision, each plank of the deck and bottom bearing a portion of the weight and distributing it throughout the whole length of the beam. Doorways, with heavy frames, are made through the beam. Beams may be made, as shown in Fig. 2, solid from top to bottom, except at intervals.

For the purpose of reaching the weakest part of the hold of the opposing vessel and making a hole in it below the water-line, the iron shaft E is used. This shaft passes through a copper cylinder, having a stuffing-box to prevent leakage. The cylinder is inserted in the bow end of the boat's beam. The outer end of the shaft is wedge form, corresponding to the bow of the vessel. The inside end has a screw upon it working in nuts, which are inserted in the beam. The capstan-head *h* upon the shaft is for screwing it out when required. The engine and boilers should be, as far as practicable, fastened to the beam. The gun-carriage is arranged to occupy as little space as possible, and is in other respects adapted to the port-hole. It is simple in its construction. Two parallel horizontal rails, H, connected at each end by cross-rails, the one toward the muzzle of the gun having projection I, connecting the gun-carriage to the port-hole by pin L. Wheels for moving the cannon are placed upon the trunnions, said wheels having flanges which traverse the parallel rails H, to prevent the gun at the time of recoil from being thrown from the carriage. The guide-rails J, having projections *a*, which slide in slot *b*, are arranged, or there may be flanges at the upper and lower edges, passing over the edges of rails H, while the trunnions of the gun pass through projections from the guide-rails. These guide-rails are also connected by cross-rails at each end, one near the breech of the gun, having journals which pass through the guide-rails. This rail is enlarged in the center, where the screw for elevating and depressing the muzzle of the gun passes through it.

The advantages claimed for the construction of a vessel like that above are, that, when making an attack with her bow toward the opposing vessel or fort, the vessel attacking presents no surface that can be effectually struck by a shot, and while in this position all the guns on both sides can be discharged at an object at the same time, and every gun may be aimed at the same spot. While pursuing an enemy she can constantly discharge her guns from both sides without changing her course, and can also do so when she is used as a ram.

The advantage claimed for the vessel as a ram is in the beam and the arrangement of the deck and bottom planks as braces, causing the whole weight of the vessel at the time of collision to be thrown upon the beam throughout the entire length of it. By this arrangement a crushing blow can be dealt without injury to the attacking vessel.

Having now described the nature of the invention and the mode of constructing and using the same, I will proceed to state the claims.

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

1. Constructing the gun-deck of oblique plank, in combination with the gun-battery to be used thereon, substantially as and for the purpose set forth.

2. Constructing port holes with projecting sides, substantially as and for the purpose described.

3. The combination of beam *c* with the deck-plank, when the same are locked together and braced, substantially in the manner and for the purpose set forth herein.

4. The lock-piece, *g g*, in combination with the ram part or the beak of the vessel, substantially in the manner and for the purpose set forth.

PETER ANDREW.

Witnesses:

WM. F. KELLY,
C. C. HARDING.