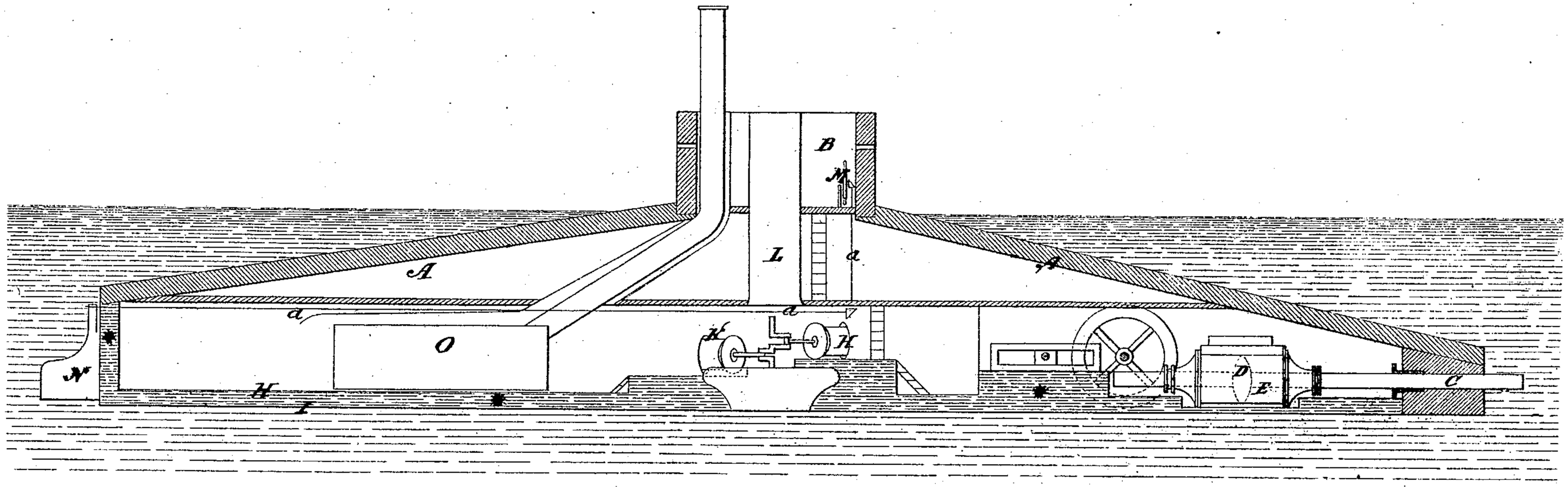
William Brown.

Ram for Naval Warfare.

No. 119,566. Patented Oct. 3, 1871.



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM BROWN, OF PORTSMOUTH, ENGLAND.

IMPROVEMENT IN RAMS FOR NAVAL WARFARE.

Specification forming part of Letters Patent No. 119,566, dated October 3, 1871.

To all whom it may concern:

Be it known that I, WILLIAM BROWN, of St. Mary street, Portsmouth, in the county of Southampton, England, have invented Improvements in the Construction of Steam and Hydraulic Rams used in Naval Warfare; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

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

This invention relates to rams used in naval warfare for the destruction of iron-clad and other ships of war and the demolition of fortifications built in deep water. The improved ram consists of a small sloop fitted with a turret strongly armor-plated, and which will be the only part visible when the sloop is in action. A strong ramming-shaft of hardened steel projects or is worked from the bow of the sloop, and is attached inside the ship to a piston working in a cylinder. This cylinder is supplied with steam of high pressure from an auxiliary boiler, or it may be supplied from the boilers used to propel the sloop. The piston and shaft can be driven at a rate of five hundred to one thousand strokes a minute, although from two to three hundred strokes would, I think, be ample; and as the ram will weigh about thirty tons, it is assumed that a blow would be struck on any object which the sloop was run against sufficient to destroy it. The upper deck and turret or pilot-house are the only portions armor-plated. They therefore can be plated extremely heavy to resist the effects of close fire. The vessel will be made with an inner skin, and the space between the inner and outer skins to be filled with water, so as to bring the ramming-shaft below the armor plate of the enemy's ships when going into action, and so only leave the pilot-house, through which the funnel and ventilating-shaft pass, exposed to the enemy's fire.

The aforesaid sloop's machinery is to be so arranged that she can steam at a very high rate of speed for a few hours, which would be quite sufficient for her to run into an enemy's fleet and destroy it. She could also be used to run into an enemy's harbor, passing the fortifications at its mouth, and quickly destroy a fleet and run out again. But the most efficient quality of the ram would be the defense of harbors, and preventing the landing of a hostile force, as the ram could remain in shallow water until an opportunity occurred of running at one of the enemy's ships, which could not escape, owing to the superior speed of the ram, and one moment's contact would be sufficient to completely smash in her side.

The propelling-engines may be on the hydraulic-pan principle, so as to give great facility in steering, and also to pump out the water necessary to sink the ram to her fighting level; and in order to explain this invention more fully I will now proceed to describe the means by which it may be carried into practical effect, reference being had to the illustrative drawing hereunto annexed and to the letters of reference marked thereon, as follows:

The drawing represents a section from stem to stern of a sloop or steam-ram constructed according to this invention.

A marks the vessel or floating body containing the ramming mechanism; B, turret; C, ramming-bar or rod of hardened steel, fitted and working water-tight through the bow of the vessel. The rod C is connected to a piston at D, working in a steam-cylinder, E, firmly fixed to the vessel's bottom, like the cylinder of a steam-engine, fitted with a slide-valve for regulating the entrance and exit of the steam at the proper times. The vessel A is formed with a double bottom or two bottoms, H I, the space between which, at * *, is to be filled more or less with water for sinking the ram to her proper fighting position or level below the surface of the water of floatation. K K mark hydraulic pumps of the ordinary kind for filling or discharging the water from the space between the vessel's bottoms. L is an air-funnel for ventilation; M, steering-wheel, connected with the rudder N by ropes or chains at *a a*. O is a steam-boiler of the ordinary kind.

I am aware that a shaft has been arranged so as to be thrust in and out; such I do not broadly claim. Neither do I broadly claim sinking or submerging vessels by means of intermediate

water-spaces formed by an inner and outer skin; but

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

The reciprocating shaft, working water-tight in the bow of the ram, in the manner and by the means described, when the said ram is provided with the intermediate water-space formed by the two bottoms H I, whereby the shaft is depressed to work below the surface of the water, as and for the purpose set forth.

WILLIAM BROWN.

Witnesses:

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