

## **Specification of Samuel Seaward : economizing and applying steam.**

### **Contributors**

Seaward, Samuel.

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A.D. 1831 . . . . . N<sup>o</sup> 6060.

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S P E C I F I C A T I O N

OF

SAMUEL SEAWARD.

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ECONOMIZING AND APPLYING STEAM.

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LONDON:

PRINTED BY GEORGE E. EYRE AND WILLIAM SPOTTISWOODE,

PRINTERS TO THE QUEEN'S MOST EXCELLENT MAJESTY:

PUBLISHED AT THE QUEEN'S PRINTING OFFICE, EAST HARDING STREET,  
NEAR FLEET STREET.

*Price 5d.*

1854.





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A.D. 1831 . . . . . N° 6060.

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**Economizing and Applying Steam.**

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**SEAWARD'S SPECIFICATION.**

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, SAMUEL SEAWARD, of the Canal Iron Works, in the Parish of All Saints, Poplar, in the County of Middlesex, Engineer, send greeting.

WHEREAS His most Excellent Majesty King William the Fourth, did, by  
5 His Letters Patent under the Great Seal of the United Kingdom of Great Britain and Ireland, bearing date at Westminster, the Fifteenth day of January, in the first year of His reign, give and grant unto me, the said Samuel Seaward, my exors, admors, and assigns, His especial licence, full power, sole privilege and authority, that I, the said Samuel Seaward, my exors, admors,  
10 and assigns, or such others as I, the said Samuel Seaward, my exors, admors, and assigns, should at any time agree with, and no others, from time to time, and at all times, should and lawfully might make, use, exercise, and vend, within that part of His Majesty's United Kingdom of Great Britain and Ireland called England, His Dominion of Wales, and Town of Berwick upon Tweed, my Inven-  
15 tion of "AN IMPROVEMENT OR IMPROVEMENTS IN APPARATUS FOR ECONOMISING STEAM AND FOR OTHER PURPOSES, AND THE APPLICATION THEREOF TO THE BOILERS OF STEAM ENGINES EMPLOYED ON BOARD PACKET BOATS AND OTHER VESSELS;" in which said Letters Patent there is contained a proviso obliging me, the said Samuel Seaward, particularly to describe and ascertain the nature of my said Invention, and  
20 in what manner the same is to be performed, and to cause the same to be enrolled in His Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same (reference being thereunto had) will more fully and at large appear.

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*Seaward's Improvements in Apparatus for Economizing Steam, &c.*

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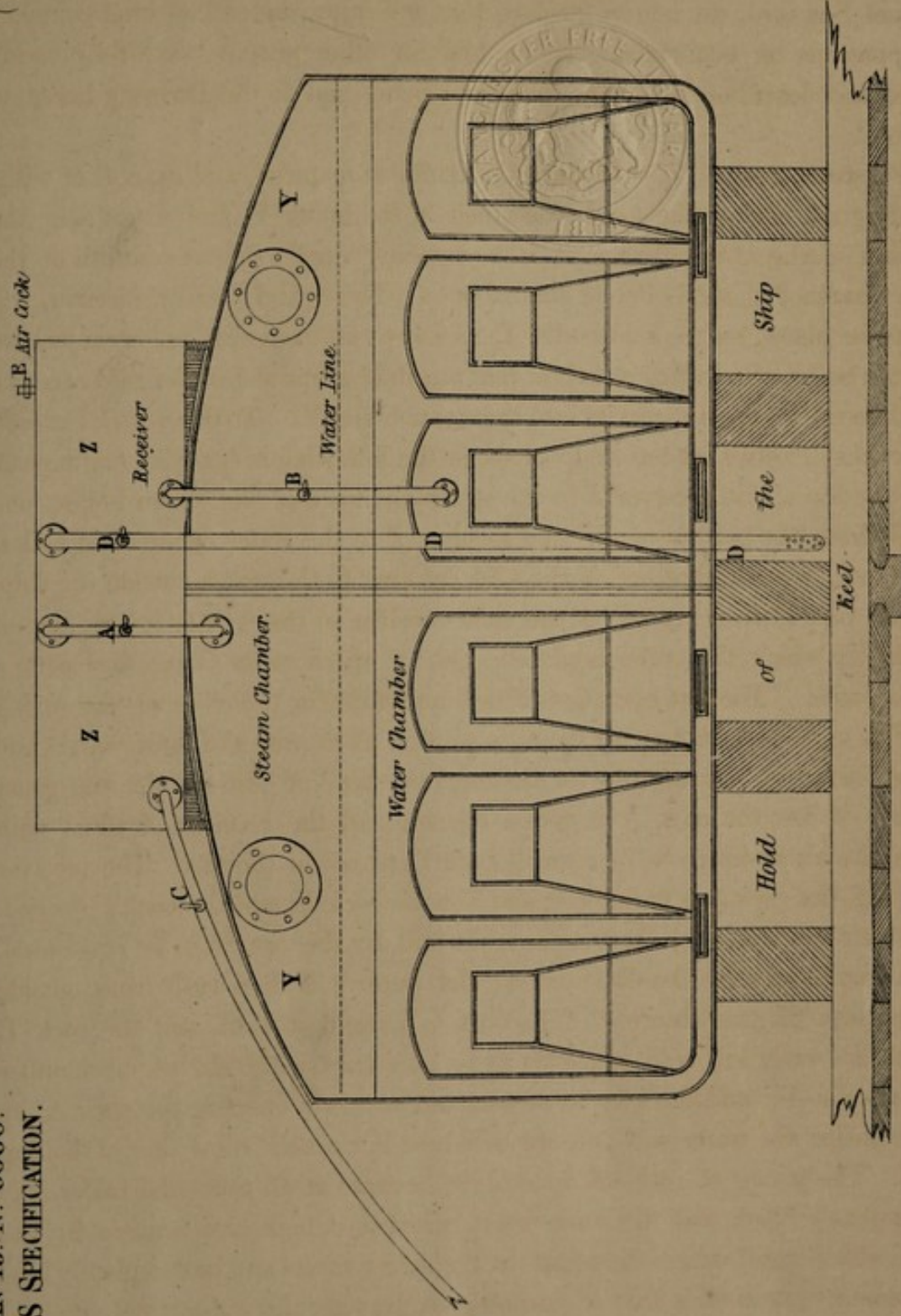
NOW KNOW YE, that in compliance with the said proviso, I, the said Samuel Seaward, do hereby declare that my improvement or improvements in apparatus for economising steam and for other purposes are fully ascertained and described as follows, reference being had to the Drawing hereunto annexed :—

5

I construct a vessel, Z, of iron or other suitable material, and capable of withstanding the heat of the steam contained in the boiler Y, and of resisting the pressure of the atmosphere, and of a capacity equal to one-twentieth of the water chamber of the boiler or thereabouts. This vessel I call a receiver, and it is to be placed on the said boiler Y, as shown in the Drawing, or anywhere 10 near the boiler, of a sufficient height that any fluid contained in the said receiver will descend by its own gravity into the steam boiler Y.\* To this vessel I attach four cocks or valves, and as many pipes, in the following order, viz<sup>t</sup>, one pipe A from the top of the receiver Z to the steam chamber of the steam boiler, one pipe B from the bottom of the said receiver Z to the water chamber of boiler, 15 one pipe C from the bottom of the said receiver to the water outside the ship, and one pipe D from the top of the said receiver to the well or lowest part of the ship in which the boiler is placed, each of which cocks is supplied with a cock or valve. The first operation of this apparatus for the effecting the saving of fuel is as follows : when the steam is so high as to raise the safety valves and 20 escape, either in consequence of the engines standing still or the too great quantity of fire, the cock A is to be opened and the receiver Z filled with steam, the air rushing out by a small cock E, placed at the top. The receiver being full, the cock A is to be shut, and also the cock E, and the cock C opened. The steam contained in the said receiver will by this operation be condensed, 25 and a partial vacuum thereby formed ; the water will then rush from outside the ship and fill the receiver. The cock C being then shut, and the cock B opened, the water will descend slowly by its own gravity into the water chamber of the boiler Y ; and this can be accelerated by again opening the cock A, by which means the water will descend at a heat not much below that of boiling 30 water. The saving of fuel will be evident, because at all times the boiler may be completely filled, and the water itself raised to a high temperature by the steam, which would otherwise escape at the safety valves and be completely lost. The second operation is that of pumping or drawing the water from the hold of the ship. To effect this, the cock A is again opened, and the receiver thereby 35 filled with steam. Upon closing the cock A, the cock D is opened, and the water will rush from the hold of the ship and fill the receiver. The cock D being shut and the cock C opened, the water contained in the receiver will run overboard, by opening the small air cock E in the top. This operation

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SEAWARD'S SPECIFICATION.

(1 SHEET)



The enroled drawing is not colored.

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Printers to the Queen's most Excellent Majesty. 1854.

Mulby & Sons, lith.



*Seaward's Improvements in Apparatus for Economizing Steam, &c.*

can be repeated till the ship is perfectly dry. Fifty or sixty tons of water per hour can be discharged with great facility in a boat of one hundred horses power by simply employing the spare steam while the engines are at rest. If on opening the cock B or the cock D, as described in the two foregoing operations, it is found that the steam contained in the receiver Z does not condense with sufficient rapidity, the effect may be accelerated by throwing in a small jet of water, by means of a force pump or otherwise.

Now, having described my improved apparatus, I do hereby declare that I claim the same when applied to the boilers of steam engines employed on board packets boats, and other vessels, for economising steam, and for the other purposes herein-before mentioned, but not when employed for any other purpose.

In witness whereof, I, the said Samuel Seaward, have hereunto set my hand and seal, this Thirteenth day of July, 1831.

SAMUEL (L.S.) SEAWARD.

15 **AND BE IT REMEMBERED**, that on the Thirteenth day of July, in the year of our Lord 1831, the aforesaid Samuel Seaward came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and every thing therein contained and specified, in form above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose.

HENRY.

20 Inrolled the Thirteenth day of July, in the year of our Lord One thousand eight hundred and thirty-one.

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General's Appointment is Appointed for Appointment, &c.

can be repeated till the ship is perfectly dry. Fifty or sixty tons of water per hour can be discharged with great facility in a boat of one hundred horse power by simply coupling the steam engine while the engine is at rest. It is obvious the work of the cock is described in the two foregoing sections. It is found that the steam contained in the receiver X does not combine with sufficient rapidity, the effect may be accelerated by throwing in a small jet of water, by means of a force pump or otherwise.

Now, having described my improved apparatus, I do hereby declare that I claim the same which is applied to the boilers of steam engines employed on board of frigates, boats, and other vessels for economical steam, and for the other purposes herein-before mentioned, but not when employed for any other purpose.

In witness whereof, I the said Samuel Fensholt have hereunto set my hand and seal, this Thirtieth day of July, 1831.

SAMUEL FENSOLT (s)

AND BE IT REMEMBERED, that on the Thirtieth day of July, in the year of our Lord 1831, the above-said Samuel Fensholt came before me and laid the Bill in his Chancery, and acknowledged the Specification therein, and all and every thing that the said Samuel Fensholt has therein written. And also the Specification therein was stamped according to the tenor of the Statute made for that purpose.

Inwitness the Thirtieth day of July, in the year of our Lord One thousand eight hundred and thirty-one.

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Printers to the Queen's most Excellent Majesty. 1831.