

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY. ENGINES.

No. *18336 Iron*

Description *Compound, Inverted, Surface Condensing*
 Made by *Palmer's Co.*
 When *1873* At *Newcastle*
 Diameter of cylinder *52" x 98"* Length of stroke *53"*
 No. of revolutions per minute *About 50*
 Point of cut off *Not ascertained*
 Diameter of screw shaft *15"*
 Diameter of crank shaft journals *15 1/8"*
 Diameter of screw, or of paddle wheel *Not ascertained*
 Pitch of screw *24.0"*
 No. of blades, *4* Total surface *Not ascertained*
 No. of bilge pumps *2* and sizes *9 1/2 x 12 1/2" Single Acting*
 Do they pump from each compartment *from fore, main, & after holds, stokehold, & engine room. & from sea in addition by one bilge pump*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *2* and sizes *6 1/2 x 30 1/2" Single Acting*
 What gauges are there attached to the engines and boilers ... *3 Steam, 1 Vacuum, 1 Compound, 1 South Acting*
 Description and size of Donkey Pumps *dia 6" x 8" 2 1/2 hp.*
 Where do they pump *from fore, main, & after holds, stokehold, engine room & sea*
 No. of bilge injections *1* and sizes *8 1/4 dia*
 Are they connected to air, or circulating pumps *Circulating pump*
 Is there a hand pump in the engine room *Yes*
 Can it be worked by the main engines *No*
 Is there a deck hose of sufficient length to reach to any part of the vessel *Yes*

MAIN BOILERS.

Number *Two* Description *Cyl. Multitubular Double End*
 Made by *Palmer's Co.*
 When *1873* At *Newcastle*
 Working pressure *X*
 Tested by hydraulic pressure to *Not ascertained*
 Description of super-heating apparatus *Two vertical superheaters, three tubes in each*
 Can each boiler be worked separately *Yes*

Can the super-heater be shut off and the boilers worked separately *No*
 Description and area of safety valves on each boiler *Two live & weight on each boiler Area of Two*
 No. of square feet of fire-grate surface in each boiler *2043.9 sq. feet*
 Are there separate blow off and brine cocks on each boiler, independent of those on the vessel's skin *Yes*
 Are all pipes, cocks, roses, and pumps in connection with the machinery accessible at all times. *Suction pipes in holds not accessible when ship is loaded.*

DONKEY BOILER.

Description *Vertical Water tubes in furnace*
 Are fixed *In stokehold*
 Working pressure *38 lbs*

Tested by hydraulic pressure to *Not ascertained*
 Description and area of safety valves *One direct weight 1/2 cwt Area*
 No. of square feet of fire grate *14.19 sq. feet*

PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Yes*
 Are they Kingston valves or common cocks ... *Kingston & stop valves and common cocks*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *No*
 Are the discharge pipes above or below the deep water line *About level*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes. Cock on ships side for discharge from distilling apparatus Manufacturer.*

What pipes are carried through the bunkers *Suction pipes to fore hold*
 How are they protected *Wood casing*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *April 1877*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Yes*
 Is the screw shaft-tunnel water tight and fitted with a sliding door on bulkhead *Yes*

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood) Screw (or Paddle) Steam Vessel *W. Hampden* owned by *Wm. Milburn & Co*
 of the Port of *London* of *1248 1/2* Tons Register, and *500* Registered Horse Power,
 and that they have been carefully inspected and examined by me at *London*
 and found to be at this date, viz., *May 23* 18 *77* in good order and safe working condition.

Amount of Fee for Survey ... *See Repair Report* *James Blair & James Milburn*
 (Travelling Expenses, if any, £ ...)
 Engineer Surveyors to Lloyd's Register of Shipping.