

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Inverted Compound-*
 Made by *Messrs Gouley & Co.*
 When *—* 1871 At *Dundee*
 Diameter of cylinder *42" & 70"* Length of stroke *36"*
 No. of revolutions per minute *65*
 Point of cut off *16 inches*
 Diameter of screw shaft *11 inches*
 Diameter of crank shaft journals *12 1/8 inches*
 Diameter of screw, ~~or of paddle wheel~~ *14 feet*
 Pitch of screw *22 feet*
 No. of blades, *4* Total surface *—*
 No. of bilge pumps *1* and sizes *6 1/2" x 10" stroke Double Acting*
 Do they pump from each compartment *Yes*

Are all the bilge suction pipes fitted with roses *Yes*
 No. of feed pumps *1* and sizes *5 1/2" x 10" stroke Double Acting*
 What gauges are there attached to the engines and boilers ... *one steam one vacuum to Engines one steam to Boiler*
 Description and size of Donkey Pumps ... *Double Acting 6" dia. 9" inch stroke*
 Where do they pump from ... *Fore hold after hold Engine Room and Stoke hole*
 No. of bilge injections *one* and sizes *3 1/2" diameter*
 Are they connected to air, or circulating pumps *Circulating*
 Is there a hand pump in the engine room *Stoke hole*
 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 *Cylindrical 6 furnaces*
 Made by *Messrs Gouley & Co.*
 When *—* 1871 At *Dundee*
 Working pressure *55 lbs*
 Tested by hydraulic pressure to *120*, Date *1871*
 Description of super-heating apparatus *Cylindrical*
 Can each boiler be worked separately *No.*

Can the super-heater be shut off and the boilers worked separately *no*
 Description and area of safety valves on each boiler ... *two dead weighted total area - 39.2 sq. inches*
 No. of square feet of fire-grate surface in each boiler *36 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. *Yes.*

DONKEY BOILER.

Description *Cylindrical vertical*
 Where fixed *in stoke hole.*
 Working pressure *38 lbs.*

Tested by hydraulic pressure to *—*, Date *—*
 Description and area of safety valves *dead weight - 3.1 sq. inches*
 No. of square feet of fire grate *12.5 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 ... *Common Cocks.*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates ... *Some are*
 Are the discharge pipes above or below the deep water line *above.*
 Are they each fitted with a discharge valve on the plating of the vessel *Yes*

What pipes are carried through the bunkers *none.*
 How are they protected *—*
 When were the stern tube, propeller, screw shaft, and all connections examined in dry dock *27 March - 1876*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *Yes. G. non-return valves.*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *Yes.*

Manufacturer.

I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (~~Wood~~) Screw (~~or Paddle~~) Steam Vessel *Rainbow* owned by *Genl Steam Nav? Co.* of the Port of *London.* of *638* Tons Register, and *250* Registered Horse Power, and that they have been carefully inspected and examined by me at *Deptford* and found to be at this date, viz., *28 March - 1876* in good order and safe working condition.

Reed F. C.
7 Feb - 2. 2. 0 22.2.0
26.5.76
William Parker
 Engineer Surveyor to Lloyd's Register of Shipping.