

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Inverted direct Compound*
 Made by *John Stewart*
 When *1872* At *Blackwall London*
 Diameter of cylinder *24" x 42"* Length of stroke *30 inches*
 No. of revolutions per minute *average 60*
 Point of cut off *21 inches*
 Diameter of screw shaft *8 1/2 inches*
 Diameter of crank shaft journals *8 1/2*
 Diameter of screw, or of paddle wheel *10 feet*
 Pitch of screw *15 feet*
 No. of blades, *4* Total surface *34 feet*
 No. of bilge pumps *2* and sizes *4 1/2 inches*
 Do they pump from each compartment *only from Engine room*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *2* and sizes *4 1/2 inches*
 What gauges are there attached to the engines and boilers ... *2 Bourdon's gauges in stoke hold*
1 water gauge to each boiler and test cocks
 Description and size of Donkey Pumps ... *1 double acting pump 5 1/2" plunger 2 1/4"*
 Where do they pump from ... *the first one is connected with the water ballast tank and bilges*
both are connected with boiler and deck for deck hose.
 No. of bilge injections *None* and sizes *—*
 Are they connected to air, or circulating pumps *—*
 Is there a hand pump in the engine room *No*
 Can it be worked by the main engines *—*
 Is there a deck hose of sufficient length to reach to any part of the vessel *yes*

MAIN BOILERS.

Number *2* Description *horizontal circular tubular*
 Made by *John Stewart*
 When *1872* At *Blackwall London*
 Working pressure *60 lbs*
 Tested by hydraulic pressure to *150 lbs*, Date *1872*
 Description of super-heating apparatus *None*
 Can each boiler be worked separately *—*

Can the super-heater be shut off and the boilers worked separately *—*
 Description and area of safety valves on each boiler *2 lever weighed 18, 84*
 No. of square feet of fire-grate surface in each boiler *27, 5*
 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 *horizontal circular tubular*
 Where fixed *on deck*
 Working pressure *45 lbs*

Tested by hydraulic pressure to *90 lbs*, Date *1871*
 Description and area of safety valves *one lever weighed 2, 95*
 No. of square feet of fire grate *8, 94*

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 *yes with the exception of sea cock for ballast donkey*
 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 *Now*
 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 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 (~~or Wood~~) Screw (~~or Paddle~~) Steam Vessel *Rio Fejo*, owned by *Companhia Phetis* of the Port of *Oporto* of *1639* Tons Register, and *80* Registered Horse Power, and that they have been carefully inspected and examined by me at *Antwerp* and found to be at this date, viz., *9th November 1877* in good order and safe working condition.

Amount of Fee for Survey ... £ *4* : 0 : 0

(Travelling Expenses, if any, £ *—*)

Engineer Surveyor to Lloyd's Register of Shipping.