

# REPORT ON MACHINERY.

5425

Received at London Office THURSDAY 20 DEC 1883

No. 5425

No. in Survey held at Hull Date, first Survey March 13. 83 Last Survey 30<sup>th</sup> Nov 1883  
 Reg. Book. Steel on the Steam Ship "Rosario" (Number of Visits 26) 1862.06  
 Tons 1221.06  
 Master Hull Built at Hull By whom built Charles S. B. & Co. L<sup>td</sup> When built 1883  
 Engines made at Hull By whom made Charles C. when made 1883  
 Boilers made at Hull By whom made Charles C. when made 1883  
 Registered Horse Power 140 Owners Thomas Nelson, Sons & Co Port belonging to Hull

## ENGINES, &c.—

Description of Engines Vertical inverted, triple cylinder compound with 3 cranks  
 Diameter of Cylinders (3) 20 1/2, 33, & 58 Length of Stroke 36 No. of Rev. per minute 60 Point of Cut off, High Pressure 19 Low Pressure 19  
 Diameter of Screw shaft 10 Diam. of Tunnel shaft 9 1/2 Diam. of Crank shaft journals 10 1/4 Diam. of Crank pin 10 1/4 size of Crank webs 12 x 7  
 Diameter of screw 14.6 Pitch of screw 16.0 No. of blades 4 state whether moveable yes total surface 52 sq. ft  
 No. of Feed pumps 2 diameter of ditto 3 3/4 Stroke 20 Can one be overhauled while the other is at work yes  
 No. of Bilge pumps 2 diameter of ditto 3 3/4 Stroke 20 Can one be overhauled while the other is at work yes  
 Where do they pump from all compartments (hold & bilges) & one from the sea with a delivery to the deck  
 No. of Donkey Engines Two Size of Pumps Ballast 7" x 12" <sup>Feed duty 4 x 6 - Common patent double run</sup> Where do they pump from the feed donkey from the bilge system from sea & bilge with delivery to deck overhead. Boiler & much exhaust to tank. The Ballast engine pumps from the tanks & from the bilge system (non-return valve intervening) also from sea & bilge delivery to deck & water tank.  
 Are all the bilge suction pipes fitted with roses yes Are the roses always accessible yes Are the sluices on Engine room bulkheads always accessible no  
 No. of bilge injections one and sizes 4 1/2" Are they connected to condenser, or to circulating pump to circulating pump.  
 How are the pumps worked The bilge, feed & air pumps are worked by rockshafts from piston and shaft. The centrifugal pump for circulation, thro' condenser driven by separate engine  
 Are all connections with the sea direct on the skin of the ship yes Are they Valves or Cocks Both  
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates yes Are the discharge pipes above or below the deep water line above  
 Are they each fitted with a discharge valve always accessible on the plating of the vessel yes Are the blow off cocks fitted with a spigot and brass covering plate yes  
 What pipes are carried through the bunkers none How are they protected X  
 Are all pipes, cocks, valves, and pumps in connection with the machinery accessible at all times yes in engine room  
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilges yes  
 When were stern tube, propeller, screw shaft, and all connections examined in dry dock now new  
 Is the screw shaft tunnel watertight reputed and fitted with a sluice door yes worked from upper platform in engine room

## BOILERS, &c.—

Number of Boilers Two Description Circular, multitubular Whether Steel or Iron Steel  
 Working Pressure 150 lbs Tested by hydraulic pressure to 300 lbs Date of test 20<sup>th</sup> Sept. 83  
 Description of superheating apparatus or steam chest none fitted  
 Can each boiler be worked separately yes Can the superheater be shut off and the boiler worked separately X  
 Area of square feet of fire grate surface in each boiler 30 Description of safety valves Spring loaded No. to each boiler 2  
 Area of each valve 9.6 sq. in Are they fitted with easing gear yes No. of safety valves to superheater X area of each valve X  
 Are they fitted with easing gear X Smallest distance between boilers and bunkers or woodwork 10 Diameter of boilers 11.7  
 Length of boilers 10.0 description of riveting of shell long. seams triple rivet butts circum. seams double rivet caps Thickness of shell plates 1 3/32  
 Diameter of rivet holes 1/8 whether punched or drilled drilled pitch of rivets long = 5 1/8 Lap of plating 16 3/4 Butts straps  
 Percentage of strength of longitudinal joint 78 working pressure of shell by rules 159 lbs size of manholes in shell 16 x 12  
 Size of compensating rings 28 x 24 x 1 No. of Furnaces in each boiler 2  
 Outside diameter 41 length, top 6.6 bottom 8.9 thickness of plates 9/16 description of joint welded if rings are fitted Corrugated  
 Greatest length between rings 6 working pressure of furnace approved 150 lbs combustion chamber plating, thickness, sides 9/16 back 9/16 top 9/16  
 Pitch of stays to ditto, sides 7 1/2 to 8 back 8 1/4 x 7 top 7 1/2 x 7 1/2 If stays are fitted with nuts or riveted heads nuts working pressure of plating by rules 150 lbs Diameter of stays at smallest part 1 5/16 working pressure of ditto by rules 150 lbs end plates in steam space, thickness 7/8  
 Pitch of stays to ditto 18 x 15 how stays are secured able nuts & washers working pressure by rules 150 lbs diameter of stays at smallest part 2 1/4 center rows working pressure by rules 176 lbs Front plates at bottom, thickness 13/16 Back plates, thickness 13/16  
 Greatest pitch of stays 12 x 8 1/2 x 7 1/2 working pressure by rules 150 lbs Diameter of tubes 3 1/2 pitch of tubes 5 x 5 thickness of tube plates, front 12/16 double butt straps back 3/4 how stayed stay tubes pitch of stays 1 1/2 in mid width of water spaces 1 1/2  
 Diameter of Superheater or Steam chest length thickness of plates description of longitudinal joint diam. of rivet holes  
 Pitch of rivets working pressure of shell by rules diameter of stay thickness of plates If stiffened with rings  
 Distance between rings working pressure by rules end plates of superheater, or steam chest; thickness how stayed  
 Superheater or steam chest; how connected to boiler No steam chest, no superheater

State of Report is also sent on the Hull

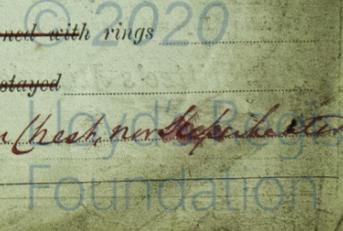
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Form No. 8-4/83

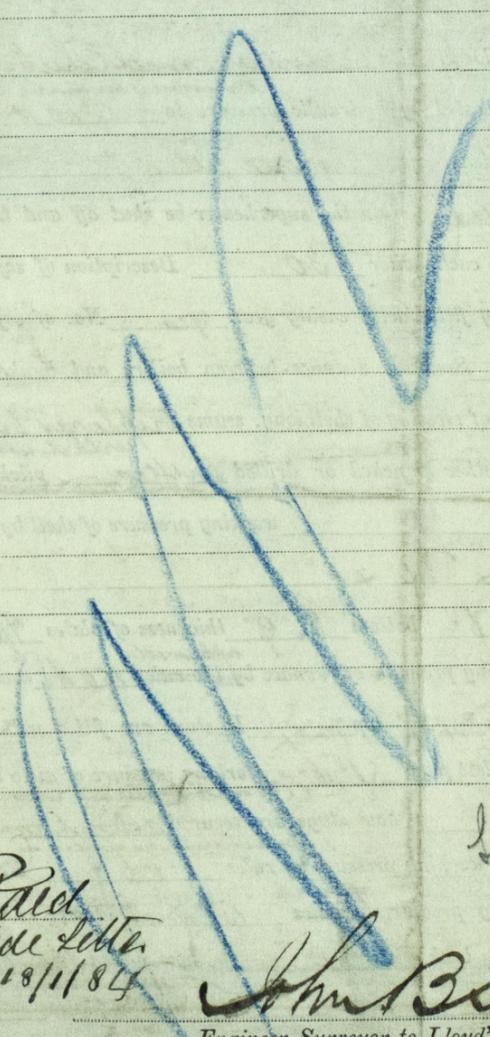
HUL396-0200



**DONKEY BOILER**— Description *Blake's patent. Vertical cylinder with external furnace & chamber.*  
 Made at *Manchester* by whom made *Blake & Co.* when made *1883* where used *on deck*  
 Working pressure *60 lb* tested by hydraulic pressure to *120 lb* No. of Certificate \_\_\_\_\_ fire grate area *18 sq. ft* description of safety  
 valves *Spring loaded* No. of safety valves *2* area of each *7 sq. in.* if fitted with easing gear *yes* if steam from main boilers can  
 enter the donkey boiler *no* diameter of donkey boiler *6' 0"* length *12' 0"* description of riveting *Lang's Patent with Cap.*  
 Thickness of shell plates *7/16"* diameter of rivet holes *3/4"* whether punched or drilled *punched* pitch of rivets *2 1/2"* lap of plating *4"*  
 per centage of strength of joint *67 1/2%* thickness of crown plates *7/16"* stayed by *hemispherical top*  
 Diameter of furnace, top *2' 2"* bottom *5' 0" x 4' 7"* length of furnace *4' 6" on long side* thickness of plates *13/32"* description of joint *single rivet Cap*  
 Thickness of furnace crown plates *7/16" steel* stayed by *gusset to shell* working pressure of shell by rules *64 lb*  
 Working pressure of furnace by rules *60 lb* diameter of uptake \_\_\_\_\_ thickness of plates *7/16" + 7/8"* thickness of water tubes \_\_\_\_\_

**SPARE GEAR.** State the articles supplied:— *1 Propeller shaft. 4 propeller blades 76 studs nuts for d.*  
*1 Air pump rod. 2 main bearing bolts. 2 top & 2 bottom end bolts for connecting rods*  
*1 Cut coupling bolts 1/2 cut screw nuts for each piston. 24 studs for 9 lanes covers, fitted.*  
*1 L.P. valve spindle. 1 Eccentric strap 1 cut Relay feed pump valves. 1 Spring for each Escape valve*  
*2 Safety valve springs. { Bolt & nut assembly. Part of piston assembly*  
*10 cut fire bars. { supplied in ship stores —*  
 The foregoing is a correct description,  
 EARLE'S SHIPBUILDING & ENGINEERING COY. LIMITED  
*M. Pearson* Manufacturer.

**General Remarks** (State quality of workmanship, opinions as to class, &c.)  
*The machinery & Boilers of this vessel, made, tested & fitted on the ship in*  
*accordance with the rules of good workmanship & material are in my opinion in*  
*safe working condition. The donkey Boiler was purchased as found supplied by the*  
*Owners & tested by me after having been placed on the ship.*  
*The case is respectfully submitted as eligible for the notation*  
 ✠ **L.M.C. 12.83** *in the Register Book*



*Submitted this 12th Dec 1883*  
*to the L.M.C. 12.83*  
*M*

The amount of Entry Fee £ *2* : : received by me,  
 Special .. £ *21* : : "  
 Donkey Boiler Fee .. £ *2* : : "  
 Certificate (if required) .. £ : : 18

*Paied*  
*Yrde Letter*  
*18/11/84*

*John B Stevens.*  
 Engineer Surveyor to Lloyd's Register of British & Foreign

(Travelling Expenses, if any, £ \_\_\_\_\_)  
 Committee's Minute THURSDAY 27 DEC 1883 18

*M. Pearson*