

of deficiencies? *Yes*  
h. If of Iron or Steel give  
sprit are constructed, showing

BOX 0467

# LOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

## ENGINEER SURVEYOR'S REPORT ON MACHINERY.

### ENGINES.

Description *2 cyls. High pressure inverted*  
 Made by *Messrs. Pattison & Atkinson*  
 When *July 28<sup>th</sup> 1877* At *Newcastle*  
 Diameter of cylinders *12"* Length of stroke *16"*  
 No. of revolutions per minute *100*  
 Point of cut off *5/8<sup>th</sup> of stroke*  
 Diameter of screw shaft *4"*  
 Diameter of crank shaft journals *3 1/8"*  
 Diameter of screw, or of paddle wheel *6' - 3"*  
 Pitch of screw *4' - 6"*  
 No. of blades, *(3)* Total surface *11 sq. ft.*  
 No. of bilge pumps *(1)* and sizes *3" dia. 3 3/4" stroke*  
 Do they pump from each compartment *Engine room only*

Are all the bilge suction pipes fitted with roses *Yes*  
 No. of feed pumps *(1)* and sizes *3" dia 3 3/4" stroke*  
 What gauges are there attached to the engines and boilers ... *1 Steam gauge*  
 Description and size of Donkey Pump ... *Vertical single action 2 1/2" dia 5" stroke*  
 Where does ~~it~~ pump from ... *Sea. Eng. room bilged tanks*  
 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 *No*

### MAIN BOILERS.

Number *(1)* Description *Cylindrical tubular*  
 Made by *Sofley & Son*  
 When *July 28<sup>th</sup> 1877* At *North Shields*  
 Working pressure *55 lbs*  
 Tested by hydraulic pressure to *110 lbs*, Date *June 24<sup>th</sup> 77*  
 Description of super-heating apparatus ... *None*  
 Can each boiler be worked separately *one boiler only*

Can the super-heater be shut off and the boilers worked separately *None*  
 Description and area of safety valves on boiler ... *Two dead weight each 2 1/2" dia = 7.8 sq. inches*  
 No. of square feet of fire-grate surface in each boiler *13.4 sq. ft.*  
 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 \_\_\_\_\_  
 Where fixed \_\_\_\_\_  
 Working pressure \_\_\_\_\_  
 Tested by hydraulic pressure to \_\_\_\_\_, Date \_\_\_\_\_  
 Description and area of safety valves \_\_\_\_\_  
 No. of square feet of fire grate \_\_\_\_\_

### PIPES, COCKS, AND CONNECTIONS.

Are all connections with the sea direct on the skin of the ship *Yes*  
 Are the 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*  
 Are the discharge pipes above or below the deep water line *Bilge discharge above*  
 Are they each fitted with a discharge valve on the plating of the vessel *No*

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 *June 24<sup>th</sup> 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 sluice door on bulkhead *Yes*

(Signed) *Pattison & Atkinson* 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 *Lizzie & Annie* owned by *J. H. Williams & Co.*  
 of the Port of *Liverpool* of *62.40* Tons Register, and *25* Registered Horse Power,  
 and that they have been carefully inspected and examined by me at *Newcastle & North Shields*  
 and found to be at this date, viz., *July 28<sup>th</sup> 1877* in good order and safe working condition.

(Signed) *George W. Mansuet*  
 Engineer Surveyor to Lloyd's Register of Shipping.