BOX CASE.

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description 2 cyl. High pressure Inverted
Made by Messrs Pattison & Atkinson
When July 28th 1877 At Newcastle
Diameter of cylinders 12" Length of stroke 16"
No. of revolutions per minute 100
Point of cut off 5/8 ths of Stroke
Diameter of screw shaft 4"
Diameter of crank shaft journals 3 7/8"
Diameter of screw, ~~or of paddle wheel~~ 6'.3"
Pitch of screw 7'.6"
No. of blades, 131 Total surface 11 sq ft.
No. of bilge pumps 1 11 and sizes 3" dia 3 3/4" stroke
Do they pump from each compartment Eng'ne room only

Are all the bilge suction pipes fitted with roses Yes
No. of feed pumps 1 11 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 1/4" dia 5" Stroke
Where do they ~~pump~~ it from ..... Sea, Eng-Room bilge & 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 1 Description Cylindrical tubular
Made by Softly & Son
When July 28th 1877 At North Shields
Working pressure 55 lbs
Tested by hydraulic pressure to 110 lbs, Date June 24th 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 ~~each~~ boiler ..... Two dead weight each 2 1/4 dia = 7.8 sq. inches
No. of square feet of fire-grate surface in each boiler 13.4 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~~
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 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
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 24th 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 None

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* T. Williams Bro *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 28th 1877 *in good order and safe working condition.*

Amount of Fee for Survey ... ... £ 2 : 2 : 0
Certificate — 0 : 5 : 0
Travelling Expenses, if any, £ —

Received payment
7/8/77

George W. Manners
Engineer Surveyor to Lloyd's Register of Shipping.
North Shields