

LLOYD'S REGISTER OF BRITISH AND FOREIGN SHIPPING.

ENGINEER SURVEYOR'S REPORT ON MACHINERY.

ENGINES.

Description *Compound, inverted.*
 Made by *The Reichert's Schiffswerfte & Maschinenfabrik*
 When *1871* At *Hamburg*
 Diameter of cylinders *38" & 21"* Length of stroke *26"*
 No. of revolutions per minute *70*
 Point of cut off *at half stroke*
 Diameter of screw shaft *7"*
 Diameter of crank shaft journals *6 1/4" forward half & 7" after half*
 Diameter of screw, or of paddle wheel *10' 6"*
 Pitch of screw *15' 0"*
 No. of blades, *4* Total surface
 No. of bilge pumps *1* and sizes *4 3/4" dia. x 13" stroke*
 Do they pump from each compartment *from Engine & Boiler room & from after hold.*

Are all the bilge suction pipes fitted with roses *yes*
 No. of feed pumps *1* and sizes *4 3/4" dia. x 13" stroke*
 What gauges are there attached to the engines and boilers ... *Gäblers Gauges, Bourdon principle.*
 Description and size of *Steam Cyl. 8" dia. x 9" stroke.*
 Donkey Pump *pump double acting 5" dia. x 9" stroke*
 Where do they pump from *from all holds.*
 No. of bilge injections *1* and sizes *3" dia.*
 Are they connected to air, or circulating pumps, *to Condenser*
 Is there a hand pump in the engine room *no, but donkey can be worked by hand*
 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 *1* Description *Cyl. tubular*
 Made by *The Reichert's Schiffswerfte & Maschinenfabrik*
 When *1875* At *Hamburg*
 Working pressure *65 lbs intended, 48 lbs calculated*
 Tested by hydraulic pressure to *130 lbs*, Date *January 76*
 Description of super-heating apparatus *no special superheater but horizontal dome is surrounded by uptake.*
 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 loaded safety valves each 4 1/4" dia., total area: 28,36 sq"*
 No. of square feet of fire-grate surface in each boiler *37 sqr 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 *vertical cylindrical chimney leading from cyl. combustion chamber through steam space.*
 Where fixed *on deck.*
 Working pressure *30 lbs*

Tested by hydraulic pressure to *60 lbs*, Date *1875*
 Description and area of safety valves *2 lever loaded, 1 3/4" dia total area 4,8 sqr."*
 No. of square feet of fire grate *7 sqr 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 ... *both*
 Are they fixed sufficiently high on the ship's side to be seen without lifting the stoke hold plates *not all*
 Are the discharge pipes above or below the deep water line *all 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 *15th April 1876.*
 Are the pipes, cocks, and valves arranged so as to prevent an unintentional connection between the sea and the bilge *yes as far as possible*
 Is the screw shaft-tunnel water tight and fitted with a sluice door on bulkhead *yes.*

Manufacturer.

A. F. F. F.

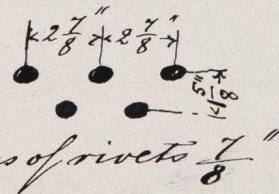
I hereby certify that the whole of the above are correct particulars of the Machinery and Boilers of the Iron (or Wood) Screw (~~Paddle~~) Steam Vessel *"Hamburg"* owned by *Messrs R. M. Sloman & Co.* of the Port of *Hamburg* of *490* Tons Register, and *80* Registered Horse Power, and that they have been carefully inspected and examined by me at *Hamburg* and found to be at this date, viz., *24th April* 18*76* in good order and safe working condition.

Ernst Voh
 Engineer Surveyor to Lloyd's Register of Shipping.

16263 Iron

Particulars of main Boiler.

Internal dia 11'-6"
 Length 8'-9"
 intl dia of furnaces 37"
 length of do 6'-0"
 Thickness of shell plates $\frac{3}{4}$ ", double riveted
 do of front ends $\frac{3}{4}$ "
 do tube plates $\frac{11}{16}$ "
 do furnaces $\frac{1}{2}$ "
 do combustion chamber $\frac{5}{8}$ "
 do horizontal dome $\frac{7}{16}$ " (or steam sheet)
 Dia " do do 51"
 length " " 9'-10"
 screwed stays dia 1 $\frac{1}{4}$ "
 pitch of do 7 $\frac{1}{2}$ " x 7 $\frac{1}{2}$ "
 longitudinal ties 1 $\frac{3}{4}$ " dia, fixed at ends to double angle irons.
 pitch of do 15" x 15".



Donkey Boiler:

Internal dia 42",
 Height - 8'-3"
 intl dia of fire box 36"
 height of do 45"
 dia of funnel leading from
 top of fire box through steam
 space 9"
 length of funnel inside of boiler 40"
 one galloway tube in fire box.

Thickness of shell plates $\frac{3}{8}$ ", single riveted
 do of fire box $\frac{7}{16}$ ";
 do internal part of funnel $\frac{3}{8}$ ".

