

16600 Iron

Port

Sunderland July 4th 1876

Details of Main Boilers of the Steam Ship

"Arago"

2064.24 tons

Diameter 10' 4" Length 24' 0"
 Thickness of shell plates $\frac{1}{8}$ "
 Description of riveting of longitudinal joints Double & Double butt straps of circumferential joints Double
 Pitch of rivets ditto $3\frac{5}{16}$ " ditto $3\frac{5}{16}$ "
 Diameter of rivets ditto $1\frac{5}{16}$ " ditto $1\frac{5}{16}$ "
 Lap of plating ditto Straps 8" broad ditto 4' 4"
 Size of manholes in circular shell None except the superheater connection
 How compensated for By flange of superheater connection
 Number of furnaces in boiler 4
 Diameter of furnaces 4' 0" Length of furnaces 7' 6"
 Thickness of furnace plates $\frac{1}{16}$ "
 Description of joint of furnaces Single butt straps and double riveted
 Whether strengthened with rings Furnace plates flanged Greatest length between rings 3' $\frac{1}{2}$ "
 Thickness of combustion chamber plating $\frac{1}{16}$ "
 Diameter of screw stays to ditto $1\frac{1}{4}$ " over thread pitch of stays $1\frac{1}{2}$ " x 8"
 End plates, thickness $\frac{1}{4}$ "
 Diameter of longitudinal stays to end plates $2\frac{3}{8}$ " pitch of ditto $16\frac{1}{2}$ " x $16\frac{1}{2}$ "
 How stays are secured Long bolts with nuts inside & out
 Diameter of tubes 4" outside pitch of tubes $5\frac{1}{2}$ " x $5\frac{1}{2}$ "
 Thickness of tube plates $\frac{3}{4}$ "
 Stayed by Stay tubes. Nuts on each side of both plates pitch of stays 11" x $16\frac{1}{2}$ "
 Description of steam receiver Horizontal cylindrical with dished ends
 Diameter of ditto 3' 2" length of ditto 29' 10"
 Thickness of plating of ditto $\frac{1}{2}$ " ends $9\frac{1}{16}$ "
 Ends, how stayed One stay through receiver $3\frac{1}{2}$ " dia.

$$\text{Shell } \frac{51520 \times 1\frac{3}{4} \times \frac{1}{8}}{122\frac{1}{4} \times 6.5} = 80 \text{ lbs Working Pressure}$$

$$\text{Furnaces } \frac{89600 \times \frac{1}{16}^2}{3\frac{5}{8} \times 48} = 98 \text{ lbs " "}$$

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Foundation