

Steel Mercantile Boiler by Riley Bros of Stockton for
Messrs P. Darnell & Sons No 128.
1902 Boiler.

80 lbs "working pressure"

Plate 70. $\frac{2.8125 - .8125}{2.8125} \times 100 = 71.1$

Rivet 70. $\frac{2 \times 52 \times 85}{2.8125 \times 4375} = 72$

Shell $\frac{18.5 \times 71.1 \times (7-21)}{75} = 87 \text{ lbs.}$

Fire Box $\frac{89600 \times 5.93^2}{2.75 \times 59} = 195 \text{ lbs.}$

" $\frac{8800 \times 19}{59 \times 32} = 88 \text{ lbs.}$

Combustor $\frac{100 \times 8^2}{8.75^2} = 83 \text{ lbs.}$

" Stays $\frac{99 \times 6000}{8.75 \times 4.5} = 90 \text{ lbs.}$

" Lugs $\frac{9000 \times 5^2 \times 1.25}{(23-7) \times 9.5 \times 23} = 80 \text{ lbs.}$

Combustor top $\frac{120 \times 8^2}{9.5^2} = 85 \text{ lbs.}$

Front tube $\frac{150 \times (9 + \frac{9}{2})^2}{14.5^2} = 89 \text{ lbs.}$

Back " $\frac{140 \times 9^2}{11^2} = 95 \text{ lbs.}$

Stay tubes $\frac{7500 \times (6.49 - 4.9)}{12.75 \times 9 - 21} = 127 \text{ lbs.}$

Side plates $\frac{145 \times 10.5^2}{14.5^2} = 92 \text{ lbs.}$

" " Stays $\frac{7500 \times 5.41}{26.5 \times 14.5} = 104 \text{ lbs.}$

" " Steel $\frac{9000 \times 3.55}{26.5 \times 14.5} = 83 \text{ lbs.}$

W.R.H.
22 Jan 1895

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