

BOILERS. N^o 973. 2 OFF. FOR MESSRS. SIR J. LAING & SONS. S.S. N^o 637.

<u>WORKING PRESSURE 180 LBS. PER SQ. INCH. TEST PRESSURE 500 LBS. PER SQ. INCH. TO LLOYDS REQUIREMENTS.</u>			
<u>ALL PLATES, RIVETS, & STAYS OF STEEL, TUBES OF IRON LAP WELDED. ALL HOLES TO BE DRILLED IN POSITION</u>			
<u>TENSILE STRENGTH OF SHELL PLATES, BUTTSTRAPS & GIRDERS TO BE NOT LESS THAN 22% NOR MORE THAN 35 TONS PER SQ. INCH.</u>			
"	"	OTHER	" 26 " 29
"	"	LONGITUDINAL STAYS	" 28 " 32
"	"	RIVETS & SCREW STAYS	" 26 " 30
<u>ELONGATION OF SHELL PLATES, BUTTSTRAPS & GIRDERS & LONGITUDINAL STAYS TO BE NOT LESS THAN 20% IN A LENGTH</u>			
"	"	OTHER	" " 25%
"	"	SCREW STAYS	" " 23%
"	"	RIVETS	" " 25%

[illegible]

508 PLAIN TUBES $3\frac{1}{2}$ " EX. DIA. STEELLED TO $5\frac{1}{2}$ " EX. DIA. AT FRONT END FOR A LENGTH OF $3'-7\frac{1}{2}"$ LONG @ 2 L.W.G.
 28 STAY $3\frac{1}{2}$ " $3\frac{1}{2}$ " $3'-7\frac{1}{2}"$ $\frac{3}{8}$ " THICK
 120 $3\frac{1}{2}$ " $3\frac{1}{2}$ " $3'-7\frac{1}{2}"$ $\frac{5}{16}$ "
 120 $3\frac{1}{2}$ " $3\frac{1}{2}$ " $3'-7\frac{1}{2}"$ $\frac{1}{2}"$

STAY TUBES SCREENED 3 THREADS PER 1" CONTINUOUS THREAD AT BOTH ENDS FOR A LENGTH OF $3'$.
 8 STAY TUBE NUTS TO SUIT $3\frac{1}{2}$ " EX. DIA. END OF STAY TUBES $\frac{3}{4}"$ THICK.

HEATING SURFACE SQ	SQ FEET
HEATING SURFACE IN ONE TUBE =	
" " " 388 TUBES	2579.0
" " " 4 FIRE BOXES	384.0
" " " 4 FURNACES	170.0
" " " BACK TUBE PLATES	55.4
" " " FRONT "	47.0
TOTAL IN ONE BOILER	2934.4
" " TWO "	5868.8
TOTAL GRATE SURFACE WITH 5-5 BARS	154.25
" AREA THRO. TUBES	34 sq.
RATIO. — AREA THRO. TUBES GRATE AREA	.221
TOTAL STEAM SPACE TO 6'	
ABOVE TOP OF TUBES	= 1158 CFT.

<u>STAY TUBE THUS</u>	(X)	5/8" THICK
_____ n _____ n _____	(S)	5/16" n
_____ n _____ n _____	(O)	1/4" o
<u>PLAIN</u> n n	(O)	NE 8 L S W G

RIVETTING OF FRONT & BACK CROSS SEAMS

$\frac{1}{8}$ " HOLES $2\frac{5}{8}$ " APART

$\frac{1}{8}$ "

$1\frac{1}{2}$ "

$\frac{1}{8}$ "

$2\frac{5}{8}$ "

$2\frac{5}{8}$ "

— SCALE, $\frac{1}{2}$ " = 1 FOOT. —

— MAIN STAYS (STEEL) —		— SCREW STAYS (STEEL) —	
3 BARS 12"-1" LONG X 3" DIA.		50 BARS 12'-0" LONG X $\frac{25}{32}$ " DIA.	
20 * 12'-1" * X 2 $\frac{3}{4}$ " *		25 * 12'-0" * X 2 $\frac{3}{4}$ " *	
6 * 12'-0" * X 2 $\frac{3}{4}$ " *		2 * 12'-0" * X 2 $\frac{3}{4}$ " *	

— GIRDER STAYS STEEL —
40 OFF 1-3 $\frac{3}{4}$ LONG x 1 $\frac{3}{4}$ DIA OT

SHELL PLATING AS DRAWN FOR
STARBOARD BOILER TO OPPOSITE
HAND FOR PORT.

SHELL 1 1/32
TENSILE STRENGTH = 29 1/2 = 33 TONS

SCREW STAYS $1\frac{3}{4}$ " DIA. O.T.
9 THREADS PER INCH.
EFF. DIA. AT BOTTOM OF
THREAD = $1\frac{10}{32}$ " FITTED
WITH NUTS ON INSIDE
TO PROTECT $\frac{3}{8}$ " ON
OUTSIDE & RE.

This technical drawing shows a cross-section of a boiler. At the top, a horizontal line represents the boiler head, with a dimension of 1'-0" from the centerline to the top edge. Below this, a horizontal line is labeled "SOLID STEEL STAYS 2 1/8" DIA STAYED UP TO 5/4" DIA AT ENDS 6 THREADS PER INCH". Below the stays, a horizontal line is labeled "EFF. DIA AT BOTTOM OF THREAD = 5.037". Below this, a horizontal line is labeled "GIRDERS 2 PLATES 1/8 THICK". Below the girders, a horizontal line is labeled "388 TUBES IN ONE BOILER". At the bottom, a horizontal line is labeled "TUBES 1 1/2" DIA". On the left side, a vertical line is labeled "SCREWED". On the right side, a vertical line is labeled "STAYS 1 1/2" DIA".

PLAIN TUBES $3\frac{1}{4}$ " EX DIA SWELLED TO $3\frac{3}{8}$ " EX DIA AT FORE END NO. 8 & 9
STAY . . . $3\frac{1}{4}$ " . . . $3\frac{3}{8}$ " . . . $\frac{5}{8}$ " $5\frac{1}{4}$ " EX DIA
SCREWED INTO BOTH TUBE PLATES 3 THREADS PER I.
CONTINUOUS THREAD EFF DIA AT BOTTOM OF THREAD = (FORE END $2\frac{1}{2}$ "
(BACK END $3\frac{1}{4}$ ") FITTED WITH SINGLE NUTS WHERE SHOWN ON
OUTSIDE OF FORE END ONLY.

7-4
OVER TUBE PLATES
13'
16 PLATE
13'
16 DOUBLING PLATES

Hand-drawn technical drawing of a furnace layout. The drawing shows a plan view of a furnace with various dimensions and labels. Key features include:

- Overall Dimensions:**
 - Top width: $17' - 32"$
 - Left side height: $5' - 3\frac{1}{2}"$
 - Right side height: $5' - 4\frac{1}{2}"$
 - Bottom width: $9' - 11\frac{1}{2}"$
- Labels and Annotations:**
 - OVER CORRELATIONS (top left)
 - LENGTH OF FURNACE (top center)
 - DEIGHTON'S (center)
 - FURNACES (right side)
 - MEASURE DA (right side, vertical)
 - FIRE BRICK 5' - 0" LONG (TWO LENGTHS) (center)
 - 2' - 10 5/8" (center, horizontal)
 - 2' - 10 5/8" (bottom center, horizontal)
 - 1/2" HOLES (bottom left)
 - 2 1/4" APART (bottom left)
 - 9' - 11 1/2" (bottom right)
- Other Features:**
 - Top and bottom wavy lines representing corrugated metal or insulation.
 - Vertical lines indicating structural supports or walls.
 - Horizontal lines indicating the furnace boundaries and internal divisions.

Position of verbiage in Central City, N. M. amended,
in 1890, 1891, 1892, 1893, 1894, 1895, 1896, 1897, 1898, 1899, 1900, 1901, 1902, 1903, 1904, 1905, 1906, 1907, 1908, 1909, 1910, 1911, 1912, 1913, 1914, 1915, 1916, 1917, 1918, 1919, 1920, 1921, 1922, 1923, 1924, 1925, 1926, 1927, 1928, 1929, 1930, 1931, 1932, 1933, 1934, 1935, 1936, 1937, 1938, 1939, 1940, 1941, 1942, 1943, 1944, 1945, 1946, 1947, 1948, 1949, 1950, 1951, 1952, 1953, 1954, 1955, 1956, 1957, 1958, 1959, 1960, 1961, 1962, 1963, 1964, 1965, 1966, 1967, 1968, 1969, 1970, 1971, 1972, 1973, 1974, 1975, 1976, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984, 1985, 1986, 1987, 1988, 1989, 1990, 1991, 1992, 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2

BOILERS. № 973

— SECTION AT LINE A. B. —

SUNDERLAND

George Clark Limited

2 Boilers N° 943

N.P. = 180 lbs

Sin g haining's s/s N° 634

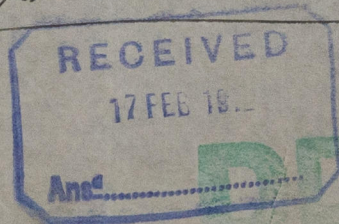
Mark on boilers:—

N° 3043
LLOYD'S TEST
360 LBS
31-8-1912 L.C.D.



Laertis

Std. Rpt. No 25456



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Lloyd's Register
Foundation

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