

L. J. 198.

THE MECHANICS' MAGAZINE

AND

Journal of Engineering, Agricultural Machinery, Manufactures, and Shipbuilding

(Registered for transmission abroad.)

[EDITED BY R. A. BROOMAN.]

VOL. 5.—No. 117. [NEW SERIES.]
VOL. 74.—No. 1963. [OLD SERIES.]

LONDON: FRIDAY EVENING, MARCH 22, 1861.

PRICE, FOURPENCE.
By Post 5d.

PRINCIPAL CONTENTS.

LEADERS:—	PAGE
The Armstrong Job.....	189
Ocean Telegraphy.....	190
Paraffine: its Past, Present, and Future.....	190
Harbours of Refuge.....	191
Boot and Shoemaking by Machinery.....	192
The Ventilation of Coal Mines.....	192
Combustion of Wet Fuel.....	193
The Manufacture of Dies for Coinage.....	195
Capt. E. P. Halsted on Iron Ships.....	196
Nature's Distillations.....	198
Harrison's Improvements in Electric Telegraphs.....	198
Greenwood's Projectiles.....	199
Hunter's Mining Machinery.....	199
Grimaldi's Steam Generator.....	200
Cockley's Improvements in Driving Agricultural Machines.....	201
Silver's Registered Ebonite Rifle-Sight Protector.....	202
PROCEEDINGS OF SOCIETIES:—	
Institution of Naval Architects.....	202
Institution of Civil Engineers.....	203
CORRESPONDENCE:—	
Construction of the Armstrong Gun.....	205
The Best Form and Material for Ships.....	205
Improvements in Shipbuilding.....	205
The Trial of Reaping Machines at Canterbury.....	206
The Resistance of Cast Iron to Internal Pressure.....	206
The Best Fan for a Foundry Cupola.....	206
A Plan to Prevent Railway Accidents.....	206
Our Weekly Gossip.....	207
Meetings for the Week.....	207
Abridged Specifications of Patents.....	208
Provisional Protections.....	209
Notices of Intention to Proceed with Patents.....	210
List of Sealed Patents.....	210
Patents on which the Third Year's Stamp Duty has been Paid.....	210
Patents on which the Seventh Year's Stamp Duty has been Paid.....	210
List of Specifications Published.....	210
Prices Current of Metals.....	210

POLYTECHNIC. — MR. RAMSDEN'S
NEW MUSICAL ENTERTAINMENT ON OLD
ENGLISH SONGS and BALLADS, every Evening at 8.

LECTURES ON ASTRONOMY, illustrated by Splendid
Diagrams, on Monday, Wednesday, and Saturday, at Half-
past Two. All the other LECTURES, DISSOLVING
VIEWS, &c., &c., continued.

The Laboratory is open for Analyses and Students.
NOTICE.—THE INSTITUTION will be OPEN to the IN-
DUSTRIAL CLASSES EVERY SATURDAY EVENING
on PAYMENT of 6d. EACH, and the Directors are willing
to negotiate with Schools, and Religious and other
Societies for the admission of numbers on the most liberal
terms.

RAILWAY ACCIDENTS.—The Railway
Axle Box Company call the attention of railway
directors and engineers to the increased safety and other
advantages derived from the use of their PATENT
GREASE-TIGHT and DUST-EXCLUDING AXLE-
BOXES, by the use of which the risk and danger of hot
axles are entirely removed, and a great saving effected in
the wear and tear of the bearings and journals, and the
consumption of grease. Upwards of 100,000 of the Patent
Axle Boxes are now in use on the principal home and
colonial railways. Further particulars may be obtained at
the office of the Company, 9 Arthur-street West, London-
bridge, E.C.

NEW STEAM CONVEYANCE.—Will
shortly be made public, the particulars of an entirely
NEW ENGINE for COMMON ROADS, having among
others the following important improvements, viz., entire
absence of escape of steam from exhaust or otherwise; no
noise; an arrangement of boiler whereby the risk of explosion
from shortness of water and other causes is entirely
obviated; an improved method of steering, &c.—For
further particulars, apply at the Office of the "Steam Con-
veyance," 12 Buckingham-street, Adelphi, W.C.

CLOCK PALLET.
TO THE CHRONOMETER and WATCH
TRADE, Dealers, and Merchants.—A Large STOCK
of the very best description of Jewel Holes, set and un-set.
Chronometer Pallets, Duplex Rollers, Ruby Pins, Draw-
plate Holes, Dovetails, Stone Files, Diamond Points, Caps
and Points for Marine Compasses, &c.—SAMUEL
HOLDSWORTH, Chronometer and Watch Jewel-Hole
Manufacturer, &c., 220 Upper-street, Islington, London.
S. H. supplies the best Houses in the Trade in London.—
Diamonds, Rubies, Sapphires, Crysolites, &c., bought
and sold.

AN ENGINE DRIVER wishes for a
SITUATION. Can take charge of any class of Sta-
tionary Engines or Locomotives. Can do his own repairs.
No objection to town or country. Satisfactory character
given by the last employers. Address to A. C., 16 Ashford-
street, Hoxton, N., London.

ENGINEERS' TOOLS.—Tool-makers having
Lathes, Planing Machines, Slotting, Shaping, or
Boring Machines to dispose of, and ready for immediate
delivery, are requested to send particulars and price
addressed to A. B., care of Mr. James Russell, 2 Cannon-
street, London, E.C.

FOR SALE.—A HORIZONTAL HIGH-
PRESSURE STEAM ENGINE, 20-in. cylinder and
4-ft. stroke, with THREE BOILERS, in good order. Also
a large HELVE HAMMER and TILT HAMMER, with
Cam Ring and necessary gearing.—Apply to A. Mac Vicar,
19 Robertson-street, Glasgow.

PUMPING ENGINES.—For SALE, TWO
BEAM ENGINES, each of 25-horse power, with
the whole of the machinery and pipes, lately in use in the
engine-house of the Portsmouth Water-Works; consisting
of air-vessel, two force-pumps, 13-inch buckets, two outside
pumps, two nearly new cylinders, two new slides, and
two boilers 30ft. long. To be removed by the purchaser.
Price £280. Apply to E. Galt, Esq., Granada-road, South-
sea; or to Mr. Bradbear, at the Water-Works Office,
Landport, Portsmouth.

IMPORTANT TO ENGINEERS.—BARS
and RODS or SHEETS of R. MUSHET'S PATENT
GUN METAL supplied to order, and guaranteed to stand
a tensile strain of 75 tons per square inch, or 20 tons per
square inch beyond the breaking strain of Krupp's cele-
brated metal.—Apply to ROBT. MUSHET & CO., Forest
Steel Works, Coleford, near Gloucester.

PATENT INDIA-RUBBER DRIVING
BANDS, Vulcanized Gas Tubing, Garden Hose,
Valves, Steam Packing.—MOSES, SON, and DAVIS, 21
Gutter-lane, Cheapside. Works, Bow-common.

TO ENGINEERS, CONTRACTORS, &c.—
The New VITRIFIED CAST-IRON PIPES, com-
bining perfect cleanliness and incorrodibility.—For parti-
culars, apply to J. W. WILSON, Consulting Mechanical
Engineer, 9 Buckingham-street, Strand, London.

T. W. RAYNER, Plumber, Painter, Brass
Framer and Finisher, Ship's Portable Brass Fire
Engine, Bilge, Main, and other Pump Maker, 95 Old Gravel-
lane, St. George's-in-the-East.—Patent Water-Closet
Manufacturer to Her Majesty's Emigration Commissioners.
—Every description of Brass-work Made and Repaired.

HART & SON, MALLEABLE IRON-
FOUNDERS, 4 Vine-street, York-road, Lambeth.
Orders for Malleable Iron Castings executed within a
week.

FORREST & BARR, ENGINEERS and
MILLWRIGHTS, GLASGOW.—Manufacturers of
Patent Safety Derrick Cranes; Sawing, Planing, and
Wood-working Machinery; High-pressure and Condensing
Steam Engines; Grain Mills and Builders' Plant.

THE BEST and CHEAPEST TEAS and
COFFEES in England are to be obtained at
PHILLIPS and Co., Tea Merchants, 8 King William-
street, City. A Price Current free. See also large adver-
tisement in last number for each month of MECHANICS'
MAGAZINE.

MR. T. MEACHAM, Consulting Engi-
neer, Surveyor, and Valuer of Steam Boats, and
all kinds of Machinery.
2 NEW LONDON-STREET, MARK-LANE, E.C.

SUPERIOR SURVEYING and DRAW-
ING INSTRUMENTS, new and second-hand, at very
reduced Prices, at SUFFELL'S, 132 Long-acre, London,
W.C.; every instrument requisite for Surveyors, Engineers,
Architects, Draftsmen, &c.

The Society's Improved Drawing Case, 10s. 6d.; the
Architect's Pocket Set of Electrum, 21s.; the Engineer's
Set in Mahogany Case, 25s. and 32s.; Magazine Set, 45s.
and 63s.; the Improved Pocket Folding Set, 12s. 6d. and
16s.; Measures and Scales of all Nations.

Forwarded to all parts on receipt of remittance or
London reference. Price List rec.

WHY BURN GAS IN DAYTIME?
CHAPPUIS' REFLECTORS

Diffuse Daylight in Dark Places,
and at Night they Save
Fifty per Cent.
of Gas.

PATENTEE AND MANUFACTURER,
P. E. CHAPPUIS,
69 FLEET STREET, LONDON.

142 CHEAPSIDE.
NEOTERIC CUTTING, RHABDOLO-
GICAL FITS, TELESMATICAL TASTE, MELLI-
FLUENT COURTESY, and a COAT for a GUINEA.
Trowsers and Vests at exceedingly Low Prices.

CLIFFORD'S PATENT for UNLASHING,
LOWERING and DISENGAGING BOATS.—For
full particulars, see page 2 of the advertisement sheet of
the last and next number of the MECHANICS' MAGAZINE.

TO PRINTERS, PUBLISHERS, AND
AUTHORS.—W. H. WEBBE, Artist and Engraver
on Wood, 2 Lyon's-inn, Strand, W.C., and Bexley-heath,
Kent.—Illustrations for newspapers, books, and magazines,
designed and engraved in a superior manner, at moderate
charges. For specimens, see popular publications of the
day. Woodcuts for advertisements and manufacturers'
catalogues.

NEW PATENT SALINOMETER FOR
BOILERS USING SALT WATER.—These instru-
ments possess many advantages over those hitherto used.
A current being maintained through them, they are con-
stantly in action, and the density of the water can at any
time be read off, while the engineer cannot be scalded, nor
the hydrometer broken, as is often the case with the one
ordinarily used. The Committee of the Franklin Institute
advise the "more general and punctual use of this valuable
gauge, which ought not to be neglected on any boilers
using salt water, and they commend it to the notice of all
engaged in the manufacture of such boilers." By its use
a great saving in boiler and fuel is effected.—M. A. SOUL
and CO., Engineers and Steamship Furnishers, Leaden-
hall-street, London, E.C.

BENTON AND STONE,
Mandrill Tube Works, St. Paul's-square,
Tehfield Rolling Mills, Fresh-street,
Birmingham.

Manufacturers of Brass, Copper, and German-silver Tubing,
for optical, mathematical, and musical instruments; beer-
machines and other pump cylinders; garden engines and
syringes, and for all other work requiring exactness of
sizes and perfect finish.

BRICK and TILE MACHINES.—BULMER
and SHARP'S PATENT MACHINES are guaran-
teed to make 25,000 bricks in ten hours. Before ordering
any other see these at work. Illustrated Circulars post-
free on application to WILLIAM BULMER, Corporation-
road, Middlesbro'-on-Tees.

SMITH'S DEPOT for New and Second-hand
Machinery, 204 High Holborn, three doors from
Newton-street.

MOULTON'S PATENT COMBINATION
STEEL AND INDIA-RUBBER SPRINGS for
Railway Carriages, Locomotive Engines, Buffers, Valves,
&c.—The attention of engineers and others is respectfully
solicited to the above Spring, which possesses increased
power by the combination of a metal spring or springs
embedded in india-rubber, whilst the india-rubber is
strengthened by the additional coherence imparted to it
by the metallic spring. Steel in strips or other forms is
also embedded in India-rubber Valves, by which means the
strength and elasticity can be regulated.

Full particulars relative to the above, and all other
articles secured by the before-mentioned patent, may be
had on application to the patentees, S. MOULTON & CO.,
Manufacturers of India-rubber Springs, Steam Packing,
Washers, Hose, Tubing, Garments, Blankets, Sheeting,
Elastic Hot-Water Beds, Cushions, &c., &c., Kingston-
India-rubber Mills, Bradford, Wilts.

HAVE YOUR OWN GAS WORKS:
—5-light, £25; 50 do., £120; 1,000 do., £1,000;
making pure oil-gas, or coal-gas, from 2s. 6d. 1,000.
Towns, Mansions, Farms, Ships, Mines, &c., fitted. (See
"Cottage Gas Works," 6d., Herbert, Cheapside. Shown
at Fitzmaurice Works, St. John's-square, Clerkenwell.
JAS. COPCUTT, Manager. Not Lime Lights.