

# THE MECHANICS' MAGAZINE

AND

Journal of Engineering, Agricultural Machinery, Manufactures, and Shipbuilding.

[Registered for Transmission Abroad.]

[EDITED BY R. A. BROOMAN.]

VOL. 6.—No. 139. [NEW SERIES.]  
VOL. 75.—No. 1985. [OLD SERIES.]

LONDON: FRIDAY EVENING, AUGUST 23, 1861.

PRICE FOURPENCE.  
By Post 5d.

## PRINCIPAL CONTENTS.

	PAGE
Precautions against Fires:—	
The Royal Mint and Tower	109
Wages of Women	109
Leviathan Workshops. No. II:—	
The Enfield Small Arms Factory	110
Artillery Experiments in the United States	111
Distinguishing Lights by Occultation	112
Literature	113
Meeting of the Social Science Congress at Dublin	113
Report of the Submarine Telegraph Committee	114
Vavasseur's Machine for Rifling Cannon	116
Congress of Artists at Antwerp	116
Gwynne and Co.'s Floating Fire Engine and Steam Tug	116
Auriferous Steel	117
Electric Telegraph in Bagdad	117
Holman's Method of Communicating and Transmitting Motion for Pumps	117
Gunnery Experiments on Jones's Target	117
Telegraphic Intelligence	118
CORRESPONDENCE:—	
Deep Sea Lead	118
A Method of Stopping and Modifying the Stroke of Single and Double Action Pumps	118
How to Prevent Large Fires.—Steam Fire Engines Extraordinary	118
Scientific Gossip	119
Abridged Specifications of Patents	120
Provisional Protections	121
Patent Applied for with Complete Specification	121
Notices of Intention to Proceed with Patents	121
List of Sealed Patents	121
Patents on which the Third Year's Stamp Duty has been Paid	121
Patents on which the Seventh Year's Duty has been Paid	121
List of Specifications Published	121
Price Current of Metals	121

**PATENT NEGOTIATION OFFICES.**  
5, PARLIAMENT-STREET, WESTMINSTER, S.W.—For the Purchase, Sale, and Profitable Working of PATENTED INVENTIONS, address ALLEN, BROTHERS, Engineers and Architects, as above.

**GLoucester WAGGON COMPANY**  
(LIMITED).—Manufacturers of Railway Rolling-Stock, for Sale or Hire. Ironwork for Carriages and Waggon supplied. Agent—W. G. CRAIG, Engineer (London offices), 74, Cannon-street, E.C.

**TO INVENTORS.**—All intending PATENTERS should procure the Printed Information regarding Patents, their Cost, and the Mode of Procedure to be adopted. Issued Gratis by the GENERAL PATENT COMPANY (Limited), 71, Fleet-street, London.  
ROBERT M. LATHAM, Secretary.

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

**BELL, BROTHERS, NEWCASTLE-ON-TYNE**, beg to intimate, that, having become Sole Licensees in this Kingdom of Professor Deville's method of producing Pure Aluminium, they are now in a position to supply from their Works here both this metal and its compound with copper, known under the name of Aluminium Bronze.

**PROPELLING SAILING VESSELS.**  
BARGES, &c., by STEAM and AIR. Ten times the propelling power of the Marine Engine from the same quantity of fuel. Small boats, 18 inches, which will travel against a head-wind; fuel a little spirit. Price 7s. 6d.; rail free 100 miles. JAS. PARKER, Inventor, 6, Lifford-road, Cumberwell.

**THE PATENT OIL GAS APPARATUS**, for Lighting Mansions, Factories, Picture Galleries, Barns, &c., may be seen in Daily Operation, managed by a Lad. The gas being perfectly pure, is not destructive of the most delicate ornamental work or paintings, and has not ONE-FIFTH the heating property of coal-gas. Address, ALLEN, BROTHERS, Engineers and Architects, 5, Parliament-street, Westminster, S.W.

**FOR SALE.**  
**CHANDLER and OLIVER** are prepared to SELL the whole or any part of their PATENT for STEAM WINDING ENGINES and PLOUGHS.

**CHANDLER and OLIVER'S PATENT** obtained a 2nd prize at the Agricultural Meeting, Long Sutton; a 1st prize at the Canterbury Show; and a Medal at the Leeds Show.

The WINDING TACKLE can be fitted to Engines of any maker, and the Plough can be made to take any kind of apparatus necessary for Cultivating the Soil, such as Scarifiers, Tines or Broad Shares, &c. Any Engine now used by farmers can be fitted with the Tackle. It is light and simple, and an ordinary Farm Labourer can work it.

The Engine can be used for Thrashing without taking the PloUGHing Tackle off, not requiring more than three or four horses to take it from place to place.

These Engines are very useful for Pile Driving or Drawing Ballast up inclined planes; at the same time they can be used for Pumping. Farmers will find them most useful for all purposes. (Described in the MECHANICS' MAGAZINE, December 31, 1858.)

For further information, apply to ROBERT CHANDLER, Engineer, Old Ford-road, Bow, near London, where the Engine may be seen; or Mr. OLIVER, Farmer, Hatfield, Herts.

**TO ENGINEERS, ARCHITECTS, &c.**  
P. E. CHAPPUIS, PHOTOGRAPHER,  
69, FLEET-STREET, LONDON.  
PHOTOGRAPHS OF MACHINERY, BUILDINGS, SHIPS, &c.,  
Taken at the Shortest Notice.

**W. B. PASSMORE, TELEGRAPH AGENT AND CONTRACTOR**  
FOR THE  
EXECUTION OF TELEGRAPH WORKS, AND SUPPLY OF INSTRUMENTS,  
AND STORES OF EVERY DESCRIPTION,  
235 and 236, Gresham House, Old Broad-street, London.

**WANTED, No. 20 (May 13, 1859) of the MECHANICS' MAGAZINE, New Series.** Double price will be paid for all copies sent to the Publisher, 103, Fleet-street, E.C.

**WANTED, a SITUATION as FOREMAN BOILER MAKER**—Locomotive or Marine. Testimonials good. Address, J. T. 9, Oxford-street, New-road, Whitechapel, London.

**A PARTNER WANTED.—A MACHINIST,** to join the ADVERTISER in Manufacturing his Celebrated Patent—VICTORIA SIDE-DELIVERY REAPING-MACHINES. Address, stating amount of capital, &c., to RT. HELLARD, Ironmonger, North-street, Taunton, Somerset.

**WANTED, a DRAUGHTSMAN** accustomed to DESIGNING the largest class of MARINE ENGINES, and accustomed generally with Machinery. Applications, stating salary required, with testimonials as to ability character, &c., to be addressed to MARTIN SAMUELSON and Co., Hull.

**FOR PRIVATE SALE.—Two Marine Engines,** of 9-horse effective power each, and Tubular Boiler, of great strength; with Two Screw Propellers and Shaft. The whole in excellent order. Constructed for the Franklin Expedition. Also, Spare Piston, Eccentrics, &c.; and a lot of Engineers' Tools. Apply to THOS. AGGS and CO., 153, Fenchurch-street, E.C.

**LATHE, by WHITWORTH, for SALE.**—Self-acting, Sliding, Surfacing, Screw Cutting LATHE, 6-inch centres; bed, 6 feet long; with full set of change wheels, chucks, tools, and drilling apparatus, for foot or power; nearly new; guaranteed correct, and in good order. May be seen on application to Mr. F. WISE, C.E., Chandos Chambers, Buckingham-street, Adelphi, London, W.C.

**STEAM ENGINES FOR SALE.**—Messrs. E. PAGE and CO., Engineers, Victoria Iron Works, Bedford; and Laurence Pountney-place, Cannon-street, E.C., have the following first-class Horizontal Engines ready for immediate delivery, viz.:

One 5-inch Cylinder, 10-inch stroke,	
Two 8-inch " 18-inch "	
Two 10-inch " 18-inch "	
One 14-inch " 24-inch "	
One 17-inch " 30-inch "	
One 20-inch " 36-inch "	

They can be seen at any time at their London Establishment, and prices had on application.

**ENGINEERS' TOOLS READY FOR DELIVERY.**—E. PAGE and CO., Victoria Works, Bedford, and Laurence Pountney-place, Cannon-street, E.C., have the following ready for delivery, viz.:—Self-acting Slide and Screw Cutting Lathes, 7, 8, and 12 inch centres, with 9ft., 13ft., and 18ft. beds; Self-acting Slide Lathes, 7 and 8 inch centres, 15ft. and 17ft. beds; Foot Lathes, 6 inch centre, 6ft. bed; Screw Cutting Drilling Machines, for 1/2, 1, 1 1/2, and 2 inches; Planing and Shearing Machines, for 1/2, 1, and 2 plates; Planing Machine, to plane 4ft. long, 2ft. wide, 2ft. high; Slotting Machines, 6 and 9 inch stroke; Shaping Machine, 6 inch stroke; Bolt Screwing Machine, with taps and dies, for 1 to 1 inch; Taps and dies for hand-screwing; Hatchet Braces, Vices and Stands, Slide Rests, Crab Winches, &c., &c. On view at their London Establishment. Particulars of Prices to be had on application.

**ON SALE, a CONDENSING BEAM PUMP-ENGINE CYLINDER,** 6 1/2 inches diameter, 7 feet stroke; all complete, and in excellent condition. Address, Box F 34, Post-office, Manchester.

**TO COLLIERY PROPRIETORS.—On SALE,** about 200 YARDS of PUMP-TREES, and WORKING BARREL, 19 inches bore, in 9 feet lengths, nearly new. Price £4 per ton, delivered on Rails. Address, Box F 34, Post-office, Manchester.

**ON SALE, several STEAM-ENGINES,** on the Beam, Horizontal, and Vertical principles, from 10 to 50-horse-power, suitable for Mining or Manufacturing purposes; also one Cornish Boiler, 30 feet long, 5 feet diameter, with two tubes through; one ditto, 30 feet by 7 feet; one ditto, 24 feet by 7 feet; also, four Egg-end Boilers, 30 feet by 5 feet. For further particulars and prices, address Box F 34, Post-office, Manchester.

**BRICK AND TILE MACHINES.**  
**E. PAGE AND CO.'S PATENT HAND-POWER MACHINES** are the most simple and efficient extant. The cost is also considerably less than those of other makers. They will make from 3,000 to 14,000 per day, according to the size of the machine, and can be seen in operation, daily, at the Manufacturers', Laurence Pountney-place, Laurence Pountney-hill Cannon-street. Price Lists forwarded.

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

MANCHESTER MEETING, 4th to 11th September, 1861.  
Reception Room, the Portico, Manchester.

PRESIDENT:  
WILLIAM FAIRBAIRN, Esq., LL.D., F.R.S., &c.

The objects of the Association are:—"To give a stronger impulse and more systematic direction to scientific inquiry; to promote the intercourse of those who cultivate science in different parts of the British Empire with one another and with foreign philosophers; to obtain a more general attention to the objects of science, and a removal of disadvantages of a public kind which impede its progress."

### GENERAL ARRANGEMENTS.

Wednesday, 4th September.—OPENING MEETING and PRESIDENT'S ADDRESS, at eight p.m., in the Free-trade Hall.

SECTIONAL MEETINGS daily, as usual, from the 5th to the 10th inclusive.

Thursday, 5th September.—SOIREE (Microscopes), in the Free-trade Hall.

Friday, 6th September.—EVENING DISCOURSE, Saturday, 7th September.—SOIREE (Telegraphs), in the Free-trade Hall.

Monday, 9th September.—EVENING DISCOURSE, Tuesday, 10th September.—SOIREE (Field Naturalists' Society), in the Free-trade Hall.

Wednesday, 11th September.—CONCLUDING GENERAL MEETING, in the Free-trade Hall.

On Thursday, 12th September.—Important EXCURSIONS.

Gentlemen desirous of attending the meeting may make their choice of being proposed as life members, paying £10 as a composition, or annual subscribers, paying an admission fee of £1, and (additional) £1 annually, or associates for the meeting paying £1.

Ladies may become members on the same terms as gentlemen; or ladies' tickets (transferable to ladies only) may be obtained in the Reception Room, by members, on payment of £1. Life members receive gratuitously the reports of the Association which may be published after the date of payment.

Annual subscribers receive gratuitously the report of the Association for the year of their subscription, and for every following year of subscription without intermission. Associates for the meeting are entitled to the report of the meeting at two-thirds of the publication price.

In order to facilitate arrangements for the meeting, it is desirable that application for tickets should be made as early as possible.

Forms of proposal will be supplied in the Reception Room during the meeting; or the names of candidates for admission may be transmitted to the Local Secretaries.

As the funds which the Association has to expend for its scientific objects consists only of the payments made by its members and associates, it is particularly desirable that every opportunity should be taken of increasing their number.

Compositions and subscriptions of new members or associates will be received by the Local Secretaries until the commencement of the meeting; afterwards, as well as the subscriptions and arrears of former members, by the Local Treasurer.

For information respecting the local arrangements, application may be made by letter addressed to any of the Local Secretaries for the meeting, at the "Portico, Manchester."

R. D. DARRISHIRE, } Local Secretaries  
ALFRED NEILD, } for the Meeting.  
ARTHUR HANSOME, }  
H. E. ROSCOE, }

## BRITISH ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

MEETING IN MANCHESTER,  
4TH TO 11TH SEPTEMBER, 1861.

### RAILWAY PASSES.

Reception Room, Portico, Manchester, August, 1861.

The Executive Committee have arranged with the under-mentioned Railway and Steam Packet Companies to issue to gentlemen and ladies attending the meeting in September, as members or associates, PASSES entitling the bearer to a ticket to Manchester and back for one fare, between the 2nd and 14th of September.

Lancashire and Yorkshire Railway Company.  
London and North-Western Railway Company.  
Manchester, Sheffield, and Lincolnshire Railway Company.  
Great Northern Railway Company.  
North-Eastern Railway Company.  
Midland Railway Company.  
Caledonian Railway Company.  
Great Western Railway Company.  
City of Dublin Steam-packet Company (via Holyhead).

North Lancashire Steam Navigation Company (to Fleetwood).  
Belfast Steamship Company (to Liverpool).  
Glasgow and Liverpool Royal Mail Steam-packet Company.

Application for these passes must be made (the sooner the better), to Local Secretaries, B. A. Portico, Manchester, stating the names of those who will use them, and if any are not yet members or associates, their full names and addresses, and the particular class of membership desired.

The pass cards will have to be exchanged at the Railway or Packet-office for the Company's special ticket.

R. D. DARRISHIRE, } Local Secretaries  
ALFRED NEILD, } for the Meeting.  
ARTHUR HANSOME, }  
H. E. ROSCOE, }

See other Advertisement.

## THOMAS WILSON'S BREECH-LOADING RIFLE.

MR. THOMAS WILSON having resumed the sole working of his Patent, begs to invite special attention to his NEW SERVICE RIFLES and CARBINES; also to his DOUBLE RIFLES and SHOT GUNS, which being constructed according to his recently-patented improvements, and under his own immediate inspection, he can confidently recommend to sportsmen and others, as combining in the cheapest and simplest form the most efficient, safe, and durable system of breech-loading arms ever introduced.

Orders, and all communications, to be addressed to the Patentee, 45, Church-street, Birmingham, where the Patent Rifles and every information as to cost and other details can be obtained.