# THE ROYAL POLYTECHNIC

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## INSTITUTION,

FOR THE ADVANCEMENT OF

We Arts and Practical Science;

ESPECIALLY IN CONNEXION WITH

AGRICULTURE, MINING MACHINERY, ANUFACTURES,

BRANCHE, OF INDUSTRY,

AND OTHER

309, REGENT STREET, AND 5, CAVENDISH SQUARE,

CATALOGUE FOR 1841. NEW EDITION.

LONDON: W. CLOWES & SONS, 14, CHARING CROSS.

Price One Shilling.



GREAT HALL, Royal Polytechnic Institution? SOD, RIEGENT STREET.

INCORPORATED BY ROYAL CHARTER.



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Price One Shilling.

#### DIRECTORS.

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BANKERS. UNION BANK OF LONDON, Argyle Place, Regent Street.

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R. J. LONGBOTTOM, Esq., 5, Cavendish Square.

ADMISSION TO THE MORNING OR EVENING EXHIBITION, ONE SHILLING EACH.

## ANNUAL SUBSCRIPTION, ONE GUINEA.

ANNUAL SUBSCRIBERS of Two GUINEAS have the privilege of personally introducing a Friend, or Two Children under twelve years of age.

Family Ticket, to admit Subscriber's Family and One Friend, Three Guineas.

Annual Subscription to the Association in Cavendish Square (to include Admission to the Institution), Three Guineas each, and Three Guineas Entrance.

A Modified Scale for Schools.

ASSOCIATION,

DURS OF THE DIVERBERENT EXHIBITIONS

## No. 5, CAVENDISH SQUARE,

IN CONNEXION WITH THE

## ROYAL POLYTECHNIC INSTITUTION.

Noblemen and Gentlemen, particularly those residing in the neighbourhood of Cavendish Square, are informed that an ASSOCIATION, connected with the ROYAL POLY-TECHNIC INSTITUTION, is established, to which has recently been added the St. George's Chess Club; and that Apartments in the House in Cavendish Square are appropriated for the use of the Members.

The ASSOCIATION is to consist of not more than Three Hundred Members, having a LIBRARY and READING ROOM, furnished with all the Newspapers and interesting Periodicals.

A Prospectus may be obtained of the Secretary, Mr. R. J. LONGBOTTOM, who will afford every information.

## HOURS OF THE DIFFERENT EXHIBITIONS.

#### MORNING.

O'CLOCK. Half-past 10 OPEN.

- 12 ELECTRO-MAGNETIC and ELECTRICAL DEMONSTRA-TIONS, &c.
- Half-past 12 COINING-PRESS and ELECTRO-MAGNETIC MOTIVE MA-CHINE.
  - 1 DISSOLVING VIEWS.

EVENING.

- 2 CHEMICAL LECTURE, or LECTURE ON THE STEAM-ENGINE.
- Quar.-past 3 ELECTRICAL LECTURE.
- Quar.-to 4 COINING. 4 DIVER, BLOWING-UP of SUNKEN VESSEL, and DIVING-BELL.
- Half-past 4 The MICROSCOPE and DISSOLVING VIEWS.

N.B. MUSIC from 3 to 5 o'Clock daily.

O'CLOCK.

- 7 OPEN.
- Half-past 7 DIVER, and BLOWING-UP SUNKEN SHIP. 8 LECTURE and EXPERIMENTS.
  - 9 DIVING-BELL, PREVENTION of SHIPS SINKING ILLUS-TRATED, and the BUDE LIGHT.
- Half-past 9 COINING.
  - 10 MICROSCOPE and DISSOLVING VIEWS.

N.B. The BAND will play during the EVENING.

These arrangements vary occasionally.

## LIST OF THE ROOMS IN THE INSTITUTION.

#### 1. Entrance Lobby.

- 2. Manager's Room.
- Waiting Room.
   (Private) Chemist's Consulting Room.
- Laboratory and Pupils' Class Room.
   Engineer's Workshop.
   Engine Boilers and Gasometer Room.

- 8. Hall of Manufactures.
- Theatre and Microscope Room. 9. 10. (Private) Apparatus and Chemist's
- Consultation Room.
- 11. (Ditto) Chemist's Assistant's Room.
- 12. (Ditto) Student's Room .- A.
- 13. (Ditto) Student's Room .- B.
- 14. (Ditto) Eastern Skylight Room.
- 15. (Ditto) Student's Room .-- C.
- East Balcony Room.
   Gallery of Great Hall.
- 18. Great Hall.

- 19. West Balcony Room.
- 20. Upper West Room. 21. Middle West Room.
- 22. South-West Skylight Room.
- 23. North-West Skylight Room. 24. Extreme West Room.
- 25. Room for Lectures in Experimental
- Philosophy. 26. South-West Basement Room.
- 27. North-West Basement Room.
- 28. Upper North-West Room. 29. Ladies' Waiting Room for Photographic Portraits, on the Attic floor.
- 30. Gentlemen's Waiting Room for ditto. 31. Room for taking the Photographic
- Portraits.
- 32. (Private) East Reading-Room of the Polytechnic Association.
- 33, (Ditto) West Reading-Room.

THE success which attended the Establishment of the POLY-TECHNIC INSTITUTION in 1838, has rapidly increased within the last twelve months. This marked and gratifying patronage is not less flattering to the Directors than it is indicative of considerable public advancement in those branches of Education which are explained and assisted by ocular demonstration. The object of the Managers has been to invigorate, by the most simple and interesting method of illustration, those sound and important principles upon which Science is based, and to afford to the inquirer the means of obtaining a general knowledge of the processes by which the wonders of art and manufacture are produced; and in the pursuit of this object they hope it will be considered that little has been left undone which time and circumstances placed within their control, and that the accomplishment of the past will be accepted as a guarantee for future progress and improvement.

The education of the eye is, undeniably, the most important object in elementary instruction. A child will pass many years before he can be made thoroughly to understand, by unassisted description, the cause of motion in a Steam Engine, but a brief acquaintance with the sectional and working models of the Institution will teach him a lesson he can never forget. In like manner, the powers of Galvanism, the properties of Electricity, the mysteries of Chemistry, the laws of Mechanics, the theory of Light, the developments of the Microscope, the wonders of Optics, the beauty of Sculpture, the construction of Ships, with various other matters in Science and Art, are made palpable by exhibition; and thus, instruction is rapidly and pleasurably communicated in awakening curiosity, excitement, and attention, and by such means leaving behind a valuable and durable impression.

But in offering facilities for obtaining that knowledge which Lord Bacon has justly denominated " power," the Directors of the POLYTECHNIC INSTITUTION have not been unmindful of the inducement which a path of flowers opens to its acquisition. They have therefore surrounded the visitor with much to delight as well as to instruct. Every quarter of the globe contributes its interesting share, for there is scarcely a territory into which the spirit of adventure has carried travellers that has not its memento deposited in the Institution, by the aid of which Natural History may be illustrated. SCIENCE unfolds her stupendous discoveries in the way most acceptable to the multitude, namely, by popular demonstration, the nature and extent of her important truths being fixed upon the understanding by the ready agency of the eye. The attractions of ART are made manifest in various forms of beauty and workmanship; and the details of MANUFACTURE, with the manipulations of all descriptions of handicraft labour, are exemplified by the exhibition of numerous interesting models and specimens.

While the combined amusement and instruction of all classes has been the grand object unceasingly pursued by the managers of the Institution, they have not forgotten that particular circumstances require corresponding arrangements.

They here allude to those branches of scientific inquiry, in which pupils are to be instructed, with the view of becoming professors hereafter; and they particularly call attention to the departments of Chemistry and Experimental Philosophy, over the first of which Mr. MAUGHAM, Chemist to the Institution, presides; the experiments and lectures in the second being conducted by Mr. BACHHOFFNER. The laboratory and lecturerooms under the management of these gentlemen, are very complete.

Another important feature, is the establishment of a School for the proper instruction of Engine-drivers on Railways, and others; and the Directors are happy to be able to add, that they are extensively supported by Railroad authorities in this important undertaking.

A Class, also, for the instruction of Officers in Her Majesty's Navy, and others interested in Marine Engines and Marine Navigation, is opened.

In addition to which, arrangements have been made with Professor LANG, M.A., who attends at the Institution daily to give instruction in all branches of the Mathematics.—(See particulars of each class, pages 10 to 13.)

It would be superfluous to point out the numerous and important advantages which have been conferred upon Inventors, Patentees, and Manufacturers, by the facilities which the ROYAL POLYTECHNIC INSTITUTION possesses for bringing prominently before the public the results of their genius or labour. And the Directors desire to add, that Mechanics and others will invariably find the utmost attention paid to their interests by the proper announcement and display of Models, &c., deposited in the Institution; it being as much their aim, on the one hand, to interest the attention of the public to works of merit, at it is, on the other, to provide the necessary attraction for the many thousands who visit the Exhibition weekly.

#### DESCRIPTION

OF THE

## **ROYAL POLYTECHNIC INSTITUTION.**

THE Building, having its public entrance at 309, Regent-street, near Langham-place, extends 320 feet in depth, and includes the Mansion, No. 5, Cavendish-square.

The first apartment which the visitor enters is a HALL, 45 feet long by 40 wide, devoted to Manufactures and Machinery.

The principal Staircase of communication leads to a spacious apartment, which contains the magnificent Escriban or Secretaire of Marguerite de Parma, valued at 2500 Guineas; and a beautiful Series of Models of Ships. This Room is terminated by a Balcony, commanding a view of the interior of the Great Hall and Galleries of the Institution. This and the opposite Balcony contain two METALLIC REFLECTORS, by means of which a whisper may be distinctly heard across.

Over the Hall of Manufactures is a THEATRE, or LECTURE-ROOM, capable of containing five hundred persons, in which LEC-TURES on the STEAM-ENGINE, CHEMISTRY, NATURAL PHILOSOPHY, ÆROSTATION, the CHEMICAL ARTS, and DAGUERREOTYPE, are delivered and illustrated on a most extensive scale. A OXY-HYDROGEN MICROSCOPE, by Cary, being by far the largest ever constructed, is here exhibited on a screen containing 425 square feet. Here also are to be seen Dr. Lardner's beautiful Working Model of a Bolton and Watt's Steam-engine, and the Sectional Model of the same on a much larger scale; to which are added, models of Locomotive and Marine Engines.

Beneath the Hall is the very extensive and complete LABORA-TORY, under the superintendence of Mr. MAUGHAM, Chemist to the Institution, who presides over a Chemical Class, unconnected with the Public Department of the Institution; there are also Private Rooms for the use of Noblemen and Gentlemen. Analysis of MINERALS, EARTHS, DYES, or other substances, can be obtained at the Laboratory. For terms and further particulars, application should be made to Mr. LONGBOTTOM, the Secretary, at the Entrance in Regent Street.

The GREAT HALL, 120 feet long, 40 feet wide, and 40 feet high, is entered from the principal staircase. In the centre are two Canals, containing a surface of 700 feet of water, attached to which are all the appurtenances of a DOCK-YARD, constructed by the Government Engineers, the Models deposited by favour of the Lords of the Admiralty, with an extensive series of LOCKS and WATER-

Drawing No

Invalid Carriage.

#### DESCRIPTION.

8

WHEELS in motion; affording the means of illustrating Lectures on NAVAL ARCHITECTURE and HYDROSTATICS.

At the junction of the two Canals is a large circular Reservoir, into which a DIVING-BELL, capable of containing four or five Persons, is lowered to a considerable depth under the water, air being supplied by two powerful AIR-PUMPS, so that Visitors may descend with convenience. A DIVER (clothed in a Patent Water and Air-tight Diving Dress), exhibits the art of carrying on various operations under water; and the Method of Blowing-up Sunken Vessels by Voltaic Electricity is exhibited daily by Mr. BACHHOFFNER. A Model of a Ship, containing a small charge of gunpowder, is sunk some depth under water, to which the Diver attaches wires communicating at a considerable distance with a Voltaic Battery, which, when connected, instantly explode the powder, and the vessel is shattered to pieces, thus illustrating Colonel PASLEY's method of destroying the Wreck of the Royal George. An illustration of the Patented Plan for preventing Ships from sinking, and for raising them when sunk without injury, is also given.

Lectures on the ELECTROTYPE, or Method of Producing duplicates of Medals and Engravings by Electricity; also on the Method of Protecting Ships from Lightning; on the ELECTRO-MAGNETIC MOTIVE MACHINE; and many other subjects in EXPERIMEN-TAL PHILOSOPHY, are given daily, in the new Lecture-Room and in the Hall.

Adjoining this Lecture-Room is an apartment (No. 26), containing Capt. BOSCAWEN IBBETSON'S remarkable Model of the Undercliff of the Isle of Wight. This extraordinary work of art and labour is trigonometrically correct, every portion of it having been modelled strictly according to scale. Viewed through the magnifying glasses it exhibits not only the general appearance, but every minute part of the Island, presenting to the eye a vivid and perfect representation of one of the loveliest scenes in the world.

The following is a brief geological account of this interesting place :----" The remarkable tract of coast called the ' Undercliff' extends from the south point of the Isle of Wight, nine miles to the eastward. Its surface is distorted in form, somewhat resembling in miniature the volcanic features of Southern Italy; for although the latter has been formed by the action of fire, and the former by that of water, both have been moulded when in a state of partial fluidity. The soil is of a boggy nature, is intersected with numerous springs, and in it are imbedded in the utmost confusion detached masses of the weatherworn cliff rock, forming in places natural terraces on the face of the cliff, and inclining inwards at different angles towards the land. From the sea-beach of iron sand, strewed with shingle and boulders, rises a cliff of 60 feet, and from it a rugged and irregular ascent of 320 feet in height, half a mile in extent, composed of vegetable soil, chalk, green sand-stone in masses and fragments, and of blue marle, the whole mingled indiscriminately and irrigated by numerous springs.



Fig. 2.



Fig.1. Represents the external appearance of the Invalid Carriage. Fig.2. Is a section shewing the suspended Cot and seats for two attendants.

The back part of the Carriage is so constructed as to fall down to allow the Cot to be withdrawn, and to be replaced with the Invalid upon it. By ingenious contrivances all motion is avoided; so that a Journey may be performed by the most delicate Invalid, without any more fatigue than would be experienced in lying upon a sofa.

The Invalid bed Carriage may be engaged for any Journey, and further particulars obtained of the Proprietors.

S. MARKS & SON,

Langham Place, Cavendish Square,

LONDON.

Thus much constitutes the 'Undercliff.' Above it appears the perpendicular, serrated profile of the Upper Cliff, 260 feet in height, from which the surface of the Down proceeds with a slight descent for a quarter of a mile, and then gradually rises in the extent of half a mile to a vertical height of 200 feet, being the highest land in the island-780 feet above the level of the sea. The strata are nearly horizontal, with a slight dip to the north-east. They are the upper part of the secondary or supermedial order, and consist of chalk, chalk-stone, green sand-stone, blue marle, and iron or red sand."\*

In a Room (No. 27) next to the one containing the Model of the "Undercliff" is exhibited Three Paintings on Glass, two copied from Martin's celebrated Pictures-" Joshua commanding the Sun to stand still," and "The Destruction of Nineveh,"-and the other from Danby's "Opening of the Sixth Seal;" and a series of beautiful Daguerreotype Pictures illuminated, and exhibited under a magnifying power, shewing views in Greece, Italy, France, England, and other parts of Europe. The Visitors will find most charming Cosmoramic effects produced by looking at these Paintings through the Magnifying Glasses.

In other parts of the Institution the following interesting objects will also be met with :--

The celebrated Porcelain Table, which cost Buonaparte £12,000, with Portraits of the Emperor and Thirteen of his Marshals painted thereon by Isabey.

An unique Porphyry Table, from the Swedish Government, valued at £3000.

A Picture of Canton, by a Chinese artist, 25 feet long, exquisitely finished, viewed through magnifying glasses.

Osler's Anemometer.

An Orrery on a scale of one-eighth of an inch to 1000 miles, an exclusive instance of the relative proportions of the Sun, Earth, and Planets.

Taylor's Electro-Magnetic Engine at work.

On the Canals are working Models of the Archimedean Steam-boat, Stevens's Patent Paddle-wheel, Captain George Smith's and Captain Carpenter's Patent Propellers.

The Centrifugal Rail-road Model in action.

A New Double Cylinder Expansive Steam-engine, (by Humparys,) working with less than one-third of the fuel consumed by ordinary engines ; with numerous other Works, descriptions of which will be found numbered in the Catalogue.

The Photographic Portraits.

Monsieur Moineau's extraordinary Machinery.

The whole interior of the building is warmed by BRAMAH'S Hot Water Apparatus.

\* The visitor is referred to West Balcony Room, No. 19, in which are deposited all the Geological strata, plants, and insects, produced in the Island.

#### Prospectus.

## SCHOOL

## FOR THE PRACTICAL EDUCATION

## RAILWAY ENGINE DRIVERS

#### AT THE

## ROYAL POLYTECHNIC INSTITUTION,

#### 309, REGENT STREET.

No subject for greater regret presents itself, in connexion with railroads, than the undeniable fact of the supply of properly taught Engine Drivers being altogether inadequate to the demand. The rapid extension of railroads without any corresponding increase in the number of railway servants, especially drivers, properly qualified beforehand for their duties by an appropriate engineering education, is the root of the evil—an evil, the magnitude of which is daily increased by the opening of new lines.

A knowledge of this circumstance, while it marks the extent and nature of the mischief, as clearly points out a remedy. In order to keep pace with the continually increasing demand for Engine Drivers whose practical acquaintance with every part of their responsible duties shall justify their being employed, and offer sufficient security to the public, it is only necessary to place the means of acquiring the right sort of knowledge within their reach.

Fully aware of the deep inportance of this matter, and both ready and willing to do all in their power to remedy this very serious inconvenience, the Directors of the ROYAL POLYTECHNIC INSTITUTION announce their having opened a school, within the walls of their establishment, where engine-drivers and others will be taught the nature and practice of their duties by professors and masters who possess the necessary practical and theoretical qualifications. Perhaps there is no place in London where such an undertaking could be so successfully carried on as at the POLYTECHNIC INSTITUTION, because every department connected with instruction in the physical sciences is amply stored with proper instruments, books, and working models, as well for the communication and illustration of elementary as of profound knowledge ; so that the pupil comes to his lessons with every requisite assistance provided beforehand.

The following is a syllabus of the course of study :----

- 1. On the expansive property of steam according to the density of the atmosphere and the power exerted on the piston, including stationary engines, whether condensing or high pressure, as well as the locomotive.
- 2. On the mechanical structure of the steam-engine.

## MARINE ENUINEERING.

- 3. On the velocity of bodies on planes when a certain force is applied, particularly referring to *inclines* or *declines*, in order to shew when it is necessary to increase or diminish the force of the engine.
- 4. On the tangent at which, at any given velocity, the engine is likely to go off the rails when running on the curves.
- 5. On the strength or size of ropes or chains necessary to draw weights or loads on the rail-road, whether on inclined planes or not.
- 6. On the strength of tubes requisite for boilers, and on the proper weight with which to load the safety valve.
- 7. On the power of traction on engine or rail.
- 8. On the quantity of water and coke required per mile.
- 9. On the resistance of the atmosphere in high winds.
- 10. On the duties of the working engineer, whether in the station, on the road, or in case of accident.

In order to impart to the student the whole amount of knowledge comprehended in this syllabus (the possession of which, it is self-evident, will qualify any working man to become a superior enginedriver), a series of lectures will be delivered regularly by the Professor of the Institution. This gentleman will be assisted by a working engineer of considerable experience in engine-driving, whose long practice on railways pointed him out as a person peculiarly competent to explain and demonstrate, by means of the proper models, the uses and actual working of all the parts of a locomotive engine, in every position in which it may be placed. Thus the property of steam and its application to locomotive machines, theoretically taught by one, will become fully understood and made useful by the practical demonstrations of the other.

With the view of rendering the establishment of this school as extensively useful as possible, the lectures (a plain practical course) are upon the most useful branches of mechanical art, and comprise a description of the mechanical powers practically illustrated; explanations of the various manufactures in metals; the principles and construction of high and low-pressure engines; chemical demonstrations, &c; also a thorough grounding in the management of working engines, whether in the station, on the road, or in cases of accident.

A certificate will be given from the Institution (signed by the Professor) to every student at the period of his having qualified himself to undertake the situation of a rail-road Engine Driver, which document will materially assist him in obtaining employment. The fee for the whole course of instruction (which is given in the evening) is  $\pounds 2.2s$ , including the use of all the models and instruments; and the time to be occupied, will, in ordinary cases, average about three months.

Further particulars may be obtained on application to the Secretary, Mr. R. J. LONGBOTTOM, at his office, 309, Regent Street.

N.B.—The Public generally have the opportunity afforded them of entering into this Class of Engineers.

#### MARINE ENGINEERING.

#### SYLLABUS

OF A SUBSCRIPTION COURSE OF LECTURES ON THE STEAM ENGINE AND STEAM NAVIGATION,

#### For Naval Officers and other Gentlemen.

These Lectures are intended to give to those connected with Steam Navigation the most extensive information on the nature of the Marine Steam Engine, and the properties of Steam as a Motive Power. The Lectures will be illustrated by Sectional and Working Models, and other appropriate Apparatus, with requisite Drawings, &c. Every new improvement will be fully discussed, and its merits shewn.

#### TO BE DELIVERED

BY MR. MAUGHAM, Professor of Chemistry to the Chemical School of the Institution, and Lecturer on Natural and Mechanical Philosophy, &c. &c.,

#### AT THE ROYAL POLYTECHNIC INSTITUTION,

#### EVERY MONDAY AND FRIDAY EVENING, AT EIGHT O'CLOCK.

It is intended to make these Lectures a Subscription Course; and as soon as Twenty-five Gentlemen have entered, the Course will commence. Terms, Two Guineas the Course.

#### PLAN OF THE COURSE.

#### LECTURE I.

On Atmospheric Pressure—its Influence on the Boiling Points of Water and other Liquids. On the Barometer and its uses, &c. &c.

#### LECTURE II.

On Heat and Combustion. On Fuel for Engines, and on the best mode of calculating the heating value of different kinds of Fuel for generating Steam, so as to enable the Commander of a Steam Ship, when in any foreign port, to select that fuel which shall be most eligible for a long voyage.

#### LECTURE III.

On Steam Boilers. The pressure of the Atmosphere the Datum upon which the Elasticity of Steam is calculated. On Steam Safety Valves. On Marine Boilers, Water Ways, Flues, Detector Pipes, Glass Water Gauges, Copper Floats, Reverse Valves, and Pressure Gauges, &c.

#### LECTURE IV.

Further Remarks on Boilers and Boiler Apparatus, and on the several ways by which Boilers have been burst. On the use of Sea Water and other Waters for Boilers. Cements for Boilers.

#### LECTURE V.

On the principle upon which Steam acts as a motive power. On the method of calculating the power of Steam, and its *effective* power when applied to the Engine. Steam Indicator, &c.

#### LECTURE VI.

The several parts of Steam Engines explained, including a description of, and a comparison between Atmospheric, Condensing, Non-condensing, Expansive, and Rotatory Engines.

#### LECTURE VII.

On Marine Engines in particular. On Steam Navigation. The method of propelling Steam Vessels. Paddle Wheels and their modifications; their Action, Motion, Centre of Pressure, &c. On the Reefing of Paddles. Spiral Propeller.

#### LECTURE VIII.

Further observations on Steam Navigation. On the absolute necessity of diminishing, in certain cases, Steam power at Sea, when used in conjunction with Sails. Recapitulatory Remarks. Conclusion.

#### For further Particulars apply to Mr. R. I. LONGBOTTOM, Secretary.

N.B.—In connexion with these Lectures, Professor LANG, M.A., will commence, on Tuesday and Thursday Evenings, a Course of Lectures on Mathematics, especially applicable to Civil Engineering. Terms, a Guinea-and-a-Half the Course.—(See next page.)

## Mathematical Lectures;

REV. D. LANG, M.A., &c.

BY THE

## LECTURER ON MATHEMATICS TO THE INSTITUTION.

#### FIRST COURSE.

PRACTICAL MATHEMATICS—CONSTRUCTION of PLANE GEOMETRICAL FIGURES—USE and CONSTRUCTION of PLANE-SCALE—GUNTER'S SCALE—SECTORS—SLIDING RULE—VERNIER'S SCALE—PRINCIPLES of SCALE DRAWING—MENSURATION of SURFACES and SOLIDS—The FUNDAMENTAL RULES of ALGEBRA—and USE of LOGARITHMIC TABLES.—TWENTY LECTURES.

#### SECOND COURSE.

PLANE GEOMETRY-The FIRST SIX BOOKS of EUCLID-ALGEBRA to QUADRATIC EQUATIONS-CONSTRUCTION of LOGARITHMIC TABLES, and PLANE TRIGONOMETRY.-FIFTY LECTURES.

N.B.—From Ten till Two daily, Professor LANG gives private lessons in the Institution, on Spherical Trigonometry—Conic Sections —The Differential and Integral Calculus—Mechanical Philosophy, and every practical application of the Mathematics.

Examinations conducted, and Gentlemen prepared for Naval and Military Schools, and the Universities.

For terms and particulars apply to Mr. R. I. LONGBOTTOM, Secretary.

## HALL OF MANUFACTURES.

The Machines in this Hall are worked by Steam Power.

#### ON THE RIGHT HAND.

- 1 An Ivory, Hard-wood, and Brass-Turner's Workshop, with two Lathes, for turning Ivory, Hard-wood, or Brass, with a Rose-Engine. Oval, Eccentric, and Ornamental Turning.
- 2 A Dutch Loom, for Weaving Ribbons, &c.
- 3 Glass working, by the Bellows and Lamp. The manufacture of a great variety of Fancy Articles is continued throughout the day.
- 4 A Power-Loom, for Weaving Checks.
- 5 A Braiding Machine.
- 6 A Twisting Ditto.

7 A Warping Mill.

8 A Four-horse Power Double-cylinder Expansive Condens-

ing Steam Engine. By Edward Humphrys, of Lambeth.

ing Steam Engine. By Edward Humphrys, of Lambeth. The advantage of this engine is its small consumption of fuel as compared with engines of the ordinary kind, which renders it an object of considerable interest to all connected with the use of steam power. In order to judge of its comparatives werits in this respect, it is only necessary to inform the reader, that engines of the best common condensing single-cylinder engine (Watt's principle) will do with two pounds, and as much work by the combustion of one pound of coal, as the best common condensing single-cylinder engine (Watt's principle) will do with two pounds, and as much as a common high-pressure engine will do with six pounds. The plan of using two cylinders to obtain the advantage of the expansive action of steam, one in the state of high pressure, and the other of condensation, is not new, it having been introduced in the county of Cornwall, by an engineer of the name of Woolf, as far back as the year 1814, where it was used for draining some copper-mines; and from that time to 1820, it did greater duty with a given quantity of coal than any other engine. However, from the (then existing) difficulty of ma-mines can be not using two pounds and a half of coal to the horse power, per hour that this kind of engine has been again brought into notice. The builder having further improved on Woolf's principle, is able to guarantee the consumption (= 33,000lbs. raised one foot high per minute). Several engines of some mag-nitude made by him are doing this duty.

#### ON THE LEFT HAND.

1 Explanation and Sale of Mechanical Puzzles.

- 2 and 3 A Copper-plate Printing Press at work, Steel and Copperplate Engraving, Medallion Ruling, Embossing, &c.
- 4 Cary's Manufactory of Optical Instruments, and also for the grinding and working of Lenses, &c. N.B.-A great variety of interesting Microscopic Objects shewn.
- \*\*\* The Names of all Depositors, and their Addresses, are to be obtained of the Secretary, at the Entrance, with the Prices of such Works as are sent for Sale.

## Gallery in the Great Hall.

#### LEFT HAND.

. A Royal Bengal Tiger, which measured, when killed, 121 hands in height, and 11 feet in length. Killed and deposited by T. B. BEALE, Esq.

2 A Bas-relief in Plaster.

3 Specimens of Cuttings with Scissors. By Mr. WINDSOR.

4 A Figure in Plaster of a Female, to imitate Marble. Presented by - NOLAN, Esq.

5 Plaster Cast. The Piping Faun. Deposited by - NOLAN, Esq.

5\*A Plaster Group—Arria and Pœtus.

6 An Orrery, in which the relative sizes of the Sun, Earth, Jupiter, Saturn, &c. are compared.

The model of the earth is one inch in diameter, the other planets are in the same proportion. The comparative diameter of the sun is 9 feet 23 inches. Deposited by WILLIAM FOY, Esq.

## GLASS CASE (MARKED W.)

Thirteen Models of Agricultural Implements, &c. Deposited by Messrs. COTTAM and HALLEN, viz.-

7 Beatson's Scarifier.

8 Smith's (of Deanston) Sub-soil Plough.

9 An Improved Sluice-Cock.

- 10 Morton's Revolving Break Harrow, with Extirpator.
- 11 A Park Roller, in two parts.
- 12 A Mole Plough; with Windlass, Plate, and Anchor.
- 13 A Double-frame Couch Rake, with Three Wheels.
- 14 A Single-spiked Roller, for Breaking Clods.
- 15 A Northumberland Two-row Roller Turnip-Drill.

16 Finlayson's Harrow.

#### GALLERY.

- 17 A Bone-Crusher, with a Double Set of Rollers, and a Horse Power.
- 18 Specimen of a New Application of the Art of Engineturning on Glass, peculiarly adapted for Hall Lamps, Parlour Blinds, Windows, Conservatories, &c. Executed by the Inventor, Mr. C. LONG, 6, Palace-row, New-road.

## GLASS CASE (MARKED A.)

- 19 to 23 A Coorg Knife and Belt, a Chinese Bow, and a Bamboo Quiver and Arrows. Deposited by Mr. M. SMITH.
- 24 A Pair of North American Moccassins, from the Mohican Tribe. Presented by R. J. LONGBOTTOM, Esq.
- 25 A Malay Crease. Deposited by Mr. MARTIN.
- 26 to 30 Two Weapons of War, from Nepaul; three ditto of the Malays; and an Opium Pipe, Lamp and Box. Deposited by Dr. SUTHERLAND.
- 31 Series of various Utensils and Ornaments from Madagascar. Deposited by Mrs. MATHIAS.
- 32 Case containing Foreign Insects. Deposited by W. MOGG, Esq.
- 33 A set of Figures to illustrate Cavalry Movements. Presented by MAJOR WATHEN.
- 34 and 35 Specimens of Engraving, from Original and Electrotype Plates. By Mr. Palmer, Newgate Street.
- 36 Hindostanee Dagger.
- 37 to 47 Twelve Hindoo Figures.
- 48 Model of the Shop Front of Messrs. Saunders & Woolley, 170, Regent-street. Executed and Deposited by themselves.
- 49 A beautiful Specimen of English Japanned Wood, in a Pillar and Claw Table. Deposited by Mr. WATSON.
- 49\*A Chess Board painted to imitate Minerals. By Miss C. E. Wilson, 63, Newman Street.

## GLASS CASE (MARKED B.)

- 50 Two Specimens of Casting in Type Metal. Deposited by Mr. WILKINSON.
- 51 A fine Cast in Bronze. Deposited by Mr. DANGER.
- 52 Two Specimens of Crace & Son's Papier Machée.

53 Enamel Portrait of a Lady.

54 Series of 23 Articles, illustrating the English Manufacture of Glass at the Falcon Glass Works, Bankside. Deposited by Mr. APSLEY PELLATT.

These beautiful specimens of British skill consist of—1. Roughed and bright Etruscan jug. 2. Amber engraved claret jug. 3. Medicean vase, arabesque border. 4. Engraved chalice, vine and grape border. 5. Tazza cut green glass. 6. Amber engraved hock decanter. 7. Ditto, polished engraving. 8. Decanter with engraving of equestrian figures from the Elgin marbles. 9. Amber engraved toilet decanter, arabesque border. 10. Ditto, with foliage. 11. Ditto, stained and engraved. 12. Ditto, antique shape, with birds. 13. Ditto, with amber embossment of gems. 14. Ditto, topaz, new shape. 15. Knob for curtains, with cameo. 16. Door knob rosette. 17. Ditto, with cameo figure-head. 18. Cameo, with embossed arms. 19. Ditto, head from Dacier's medal. 20. Ditto, with gem. 21. Ditto, rosette. 22. Decanter with 6 angles, shewing the refractive effect of large flat angles in strong flint glass. 23. Crystal plate in patent intaglio engraving, with the Queen's portrait, surrounded by figures from Thorwaldsen's "Triumph of Constantine," beautifully executed.

- 55 Series of objects illustrating the Manufacture of Worcester China, with Specimens of the Services executed for Windsor Castle. Deposited by Mr. DANIELL.
- 56 Series of objects illustrating the Manufacture of English Porcelain. Deposited by Mr. T. RICHARDS.
- 57 Series of Objects illustrating the Manufacture of Earthenware. Deposited by POUNTNEY & GOLDNEY, Pottery, Bristol.
- 58 Four Specimens of Parallel Glasses, for Quadrants, Sextants, &c.
- 59 A Prism. Deposited by Mr. PORTER.
- 60 Specimens of Ashes from Hay, Oat, Wheat and Barley Ricks. Presented by A. TUPPER, Esq.
- 61 Eight Pieces of Unannealed Glass. Deposited by Mr. J. DROIT.
- 62 Optical Lenses, composed of Amber. Deposited by the Patentees, E. SOLOMONS and Co., Opticians, &c., No. 36, Old Bond Street, and No. 1, Old Jewry, City.
- 63 A Painting, Strolling Players on the March. By R. J. LONGBOTTOM, Esq.
- 64 A Chess Table, painted on Slate, in imitation of various Marbles. Deposited by Mr. G. WILSON.
- 65 Compound or Multiplying Mirror. Deposited by Mr. GOULD. 66 A Painting, by Vandyck. Deposited by Capt. JOHN BROWNE.

B

#### GALLERY.

67 to 69 A Landscape, and its Companion, by GAINSBO-ROUGH; and a Portrait of Gainsborough, painted by himself. Deposited by Mr. JOHN WHITE.

#### GLASS CASE (MARKED C).

70 and 71 Six Busts in Wax. Deposited by C. A. RIVERS.

- 72 and 73 A Figure of Pomona; and a Bust of a Lady, both in Wax. Modelled and deposited by Mr. N. PALMER.
- 74 to 76 Three Mechanical Carvings in Ivory: Bust of Scott and Two Children; and One Ditto in Marble—Bust of Alexander. By Mr. Cheverton.
- 77 Model of the Baptistus of Pisa.
- 78 Model of the New Chapel of Ease, Shenley, Herts. Deposited by Mr. S. STAPLES.
- 79 Specimen of Ivory Turning :-Bust of the Queen. Deposited by Mr. STAIGHT.

80 A Model of a Chinese Pagoda, in Ivory. By Mr. Staight.

80\*Two Pictures, formed entirely of Glass. By Carl Reif.

- 81 Model of Waltham Cross. By Miss M. L. Collyer.
- 82 A Painted Ostrich Egg. Executed and deposited by Madame COMOLERA.
- 83 Model in Alabaster of the Leaning Tower of Pisa.
- 83\*Electrotype Seals, and Impressions from them. By Mr. Barclay, Engraver, 22, Gerrard Street.
- 84 Benham's Instantaneous Light Apparatus.
- 84\*A Chiragon, or Hand-rest for the Blind, to enable them to write straight and at equal distances. Invented by Mr. STIDOLPH, 7 Bedford-place, Kensington.

85 Model of the Cathedral of Pisa. By Mr. Corotti.

86 Card Model of the Thames Tunnel, with Map and Plan.

87 to 90 A Scagliola and two Mosaic Circular Table Tops. 91 and 92 Two Cases of Stuffed Birds.

- 92\*A Water Colour Drawing : The Nautch, or Indian Dance, in the Palace of Moorad Alee, Ameer of Sind. Sketched by Capt. MELVILLE GRINDLAY, in 1808.
- 93 A Coloured Drawing: The Annunciation.

#### GLASS CASE (MARKED D).

94 Griffin's Post-Office Letter Balance.

95 Hooper's ditto.

96 Dampier's Patent Geometric Balance. Deposited by J. G. HUGHES, 158, Strand,

This most valuable self-adjusting weighing-machine, upon the unerring principle which it is founded, and simplicity in use, cannot fail to recommend itself.

- 97 Series illustrating the Manufacture of Steel from British Iron. Deposited by HOLLIS, SOLLY, and SON.
- 98 Patent Letter Balance. Invented by PROFESSOR WILLIS, of Cambridge, Manufactured by JOSEPH and EDMUND RATCLIFF, St. Paul's Square, Birmingham, and Deposited by Mr. L. BOOTH, Duke Street, Portland Place, London.

The recent Post-Office Regulations have suggested a new problem in weighing machines, namely, to make them indicate rapidly, not exact weights, but the number of entire ounces next greater than the weight of the letter or packet. In this balance the employment of separate ounce weights, placed in a rack, so as to be lifted or deposited in succession, compels its index to move through definite steps.

- 99 Elleston's Letter Balance.
- 100 Whinfield's Mercurial ditto.
- 101 and 102 Pair of Vases made of the Lizard Steatite Stone. From W. PEARCE'S, Marble Works, Truro.
- 103 Ronketti's Thermo-barometer.
- 104 Bakewell's Angle-Meter.
- 105 Patent Glass Tubes for preserving and using Oil Colours. Deposited by the Patentees, Messrs. WINSOR and NEWTON.

Many desirable objects have been obtained by the invention of these tubes. The colour is deposited in an air-tight glass cylinder of a convenient length, through which its exact tint may be seen without unclosing it, thereby entirely obviating the necessity of examination, to which the old plan of keeping it is exposed. One end of the cylinder is fitted with a plug removable at pleasure ; the other is provided with a screw-piston, which, on being turned and pressed forward, projects the contents upwards and towards the plug.

- 106 \* A Box inlaid with 152 varieties of Wood. Deposited by Miss A. POTTS.
- 106 to 108 Specimens of Numismatic Engraving, by R. EDWARDS, 26, Lisle Street.
- 109 Alexander's Ventilating Eye Shade.
- 110 Specimen of Embossed Glass, by Miss WILSON.
- 111 to 116 Six Acoustic Instruments. Deposited by W. H. CUR-TIS, Esq.
- 117 Drawing in Frame—"Winter Island."

B 2

GALLERY.

118 Model of a Rotatory Disc Engine. Deposited by Dr. SPURGIN.
119 A Model of a Throttle Valve. Deposited by Mr. HEMMING.
120 and 121 Two Models of Zeitter & Co's. Elastic Arches for Piano-Fortes, &c.

The New Patent Piano-Fortes, manufactured by ZEITTER & Co., have all the latest improvements, particularly Wrought-iron String Plates, Wrought-iron Bracings over the Sounding Board, and an additional Iron Bar on and under the Wrest Plank. Also the Newly-invented Sounding Board, for which they obtained His late Majesty's Royal Letters Patent, and which has been admitted by the first professors to be the most important improvement ever applied to Piano-Fortes for the production of a full and equal quality of tone, it being on a principle somewhat similar to the violin, warranted not to lose its elasticity, or to yield by the pressure of the strings (invariably the case with Sounding Boards on the old construction) and to stand well in extreme climates.

122 Six Portraits of North American Indian Chiefs. Deposited by Mr. CAMPBELL.

#### GLASS CASE (MARKED E).

123 to 161 Busts of the Queen, Prince Albert, and Duke of Wellington; three Malaga figures; a Derbyshire inlaid Table, with Engraved Border; and 32 other beautiful objects in Alabaster and Black Marble. Deposited by Mr. TENNANT, 149, Strand.

162 Portrait of the Rev. Dr. Butler, late Bishop of Lichfield. Deposited by Mr. BOYS, Golden Square.

The original picture was painted by J. Phillips, Esq. R.A. The engraving is by Mr. Samuel Cousins, A.R.A. It is an excellent likeness.

163 Landscape and Figures. By G. POUSSIN. Deposited by J. ROGERS, Esq.

#### GLASS CASE (MARKED F.)

164 Salterian Chemical Razor Strop.

- 165 to 167 Read's Patent Flexible Tubes, Hollow Probang, and newly invented Catheter, &c., for Cattle.
- 168 Specimen of Cloth manufactured from Glass. Presented by Sir GEORGE CAYLEY, Bart.
- 169 An Improved Double-spring Crutch. Deposited by Mr. SPARKS.

170 Nest of the Tree Wasp of South America. Deposited by Mr. A. P. LANE.

171 Patent Double Gun. By C. JONES, St. James's Street.

- 172 Carvings in Wood. Deposited by Mr. T. ASKEW.
- 173 Day's Patent Gun and Pistol. Deposited by Mr. HUBBARD.
- 174 A Six-barrelled Gun, so constructed that six shots may be fired in as many seconds. Deposited by Signor ZILIANI.
- 175 Double Cocoa-Nut, from Seychelles Island. Presented by ARTHUR TUPPER, Esq.
- 176 Specimen of Talc from Sweden. Deposited by Mr. PORTER.
- 177 Various Specimens of War and other Instruments, Drinking Utensils, Grass Pouches, and Articles of Dress, from the Mandingo Tribe, western coast of Africa. Deposited by W. FINDEN, Esq.

178 and 179 Two Small Garden Engines, by Mr. Read.

- 180 Pair of North American Snow-shoes. Deposited by W. FIN-DEN, Esq.
- 181 Engraving; whole-length Portrait of H.R.H. the Duke of Cambridge. Deposited by Mr. BOYS, Golden Square.

The original picture (in the possession of the family), which is esteemed a most faithful likeness, was painted by Mr. Lucas, and the engraving executed by Mr. Henry Cousins.

182 A Painting, by Ansdell, of Liverpool, of the Alpacas, first exhibited at the British Association, Glasgow, 1841. Deposited by W. DANSON, Esq.

These animals come from Peru, and live on the Cordilleras, or high mountains, where rain falls five months in the year. In a moist atmosphere, like Scotland and Wales, their wool is as fine as silk (samples of it, and of articles of dress manufactured from it, may be seen in the case below). It is believed they would be a valuable acquisition as a new breeding stock on the high and waste lands in the United Kingdom. They are very hardy, and not at all affected by the cold.

## GLASS CASE (MARKED G.)

- 183 Samples of the raw Alpaca Silky Wool, shewing its various natural colours, and Specimens of different kinds of manufacture from the above, in imitation of silk, some black as jet without dye.
- 184 Samples of Sheep's-wool from Astrakan, Odessa, Buenos Ayres, and New South Wales; and a Scotch tarry or fleece.

The above are deposited by W. WALTON, Esq.

- 185 A Shirt made in the Phillippine Islands, from the Abacas a species of palm-tree, the harsh filaments of which, without spinning, the Indians convert into texture, equal to the finest muslins of Bengal. Deposited by W-WALTON, Esq.
- 186 An Idol, carved in granite, from St. Domingo.
- 187 to 211 A series of Porphyry Ornaments. Deposited (for Sale) by Mr. SAMPSON. See No. 239 and following Numbers.
- 212 A Painting, by Hogarth, in an unfinished state. Deposited by Captain J. BROWNE.
- 213 Bust of Her Majesty, at 10 years of Age. By W. Behnes, Esq.
- 214 Scagliola Circular Pedestal. Manufactured and Deposited by Mr. SKELTON.
- 215 Bronzed Cast of the figure of Apollo.
- 216 Plaster figure of the late Mr. Telford.
- 217 A Plaster Group.
- 218 An Entomologist Night-Trap Lantern. Deposited by Mr. LANE.

### GLASS CASE (MARKED X).

- Nine Models of Agricultural Implements, &c. Deposited by Messrs. COTTAM and HALLEN, viz.—
- 219 A Self-clearing Double-spiked Roller, for breaking Clods.
- 220 A Potatoe Washer.
- 221 A Double-wheel Creasing Plough.
- 222 A Thirteen-row Suffolk Lever Drill.
- 223 A Double Oil-cake Breaker, for Feeding Cattle.
- 224 Cottam's Rising and Falling Harrow.
- 225 A Heavy Triangular Cultivator.
- 226 A Portable Thrashing Machine.
- 227 A Six-row Suffolk Drill.

## 228 to 230 Crosley's Pneumatic Telegraph.

Intelligence may be transmitted from one Station to another many miles distant, by means of a Tube containing Atmospheric Air. A gas-holder, or other collapsing vessel, is connected with the air tube at one station, containing a small volume of air as a reservoir to compensate for any changes of volume, arising from compression or variation of temperature, and for supplying any casual loss from leakage, so that any degree of pressure which may be given, shall be uniformly maintained. Thus, by means of Ten different weights, numbered from ONE to TEN, and having a pressure Index at the opposite extremity, with TEN corresponding divisions, it will be evident, that if a weight of any required number be placed upon the collapsing air-vessel at one station, the same number will speedily appear on the Index at the other; whereby an infinite variety of numbers may be transmitted, corresponding to a dictionary of words, or sentences, in the usual manner.

## 231 A Figure in Stained Glass, painted by E. BAILEE.

Represents Ernest the Pious, or Confessor, who died in 1546. Inheriting the principalities of Brunswick and Luneburg, as surviving representative of the intermediate line, he was the founder of both branches of the existing dynasty. The inheritance was again divided at his decease, by which partition Henry, his eldest son, established the line of Wolfenbuttle, in 1569, and William, his yongest son, established the line of Brunswick Luneburg. It was a descendant of the last-mentioned prince, Duke Ernest Augustus, who was raised to the dignity of Ninth Elector of the empire in 1692; and George Lewis, a son of the same Ernest Augustus, succeeded to the Crown of Great Britain in 1714, by virtue of his descent, on the female side, from James 1.—Penny Cyclopedia.

- 232 Drawing of a proposed Monument to Lord Nelson. By Captain GEORGE SMITH, R.N.
- 233 Lithographic Drawing of Queen's College, Bath; and Cavendish Chapel, Ramsgate. By Mr. JAMES WILSON
- 234 Dr. Arnott's Hydrostatic Bed. Manufactured by Mr. WIL-LIAMS, Upper Cleveland-street.
- 235 Three Specimens of Photogenic Drawing (on pier). By Mr. J. T. COOPER, Jun.
- 236 A Water-colour Drawing (on pier) :---View of Ashted Gate, near Epsom, Surrey. By J. PARRY.
- 237 Portrait of the Duke of Wellington (on pier), in his official costume as Chancellor of the University of Oxford. Deposited by Messrs. HODGSON and GRAVES, Printsellers to the Royal Family.

For this admirable portrait his Grace was pleased to give the painter a final sitting in March last, when, to mark his extreme approval, and place this picture beyond the reach of all competition, he wrote with his own hand on the canvas, his autograph as Chancellor of the University of Oxford. The engraving has been beautifully executed by Mr. G. H. Phillips, from the original picture painted by H. P. Briggs, Esq., R. A., for the Earl of Eldon.

238 A Rustic Chair. Deposited by Mr. GRAY.

more with Air when under

#### Middle West Room.

(No. 21).

- Various superb Ornaments in Porphyry, from the Royal Swedish Porphyry Works. Deposited by Mr. SAMSON, viz.-
- 239 to 257 Vases of Swedish Porphyry of the Crater form, of various dimensions.
- 258 to 261 Vases approaching the Amphora form, with voluted handles.
- 262 to 294 Vases resembling the supposed Holkion, a kind of Balsamarium.
- 295 and 296 Vases of the Cylix or Tazza form.
- 297 to 308 Urns approaching the Lecythus form.
- 309 to 322 Ditto resembling the Roman Cinerary form.
- 323 and 324 Ditto of the Diota form.
- 325 A Tea and Coffee Service, originally a present from John George the Churfürst of Saxony, to the Lady of Field Marshal Baner, on the occasion of his gaining the Battle of Breitenfelt. Deposited (for sale) by Mr. SAMSON.

N.B. Orders for porphyry vases, ornaments, &c. will be received by Mr. Samson, the agent, or the attendant in the room, and the articles will be executed upon any plan which may be furnished.

Also various sizes and forms of butter-coolers, soap-dishes, night-lamps, knifehandles, knife-rests, paper-pressers, snuff and tobacco boxes, ink-stands, salts, toilet-stands, painters' pallets, &c., seal-handles, table-slabs, candlesticks, pictureframes, chess-boards, plates, cups, saucers, watch and clock-stands, and egg-cups. PESTLES AND MORTARS. In consequence of the great hardness of the

PESTLES AND MORTARS. In consequence of the great hardness of the Swedish porphyry, as well as its resisting the action of oil or acids, the pestles and mortars will be found of infinite benefit to chemists.

- 326 Painting on Glass. Deposited by Messrs. HOADLEY and OLD-FIELD, 6, St. James's Place, Hampstead Road.
- 327 Paintings on Glass (in Window), with figures of the Earl and Countess of Pembroke, and various Heraldic Devices and Coats of Arms. By Messrs. HOADLEY & Co.

#### Gallery-continued.

- 328 Design for the Improvement of Holborn. By Mr. J. P. BURNARD.
- 329 Pumps for supplying the Diver with Air when under Water.

- 330 Mechanical Bedstead. Invented, Patented, and Deposited by J. W. THOMPSON, 184, Maddox Street, Hanover Square.
- 330\*Model of a Patent Spring Bedstead. Deposited by Mr. WILKIE, Nassau Street, Middlesex Hospital.
- 331 A Patent Expanding and Contracting Table; which, from a size capable of dining four persons only, can be expanded to a size capable of accommodating twenty-four. Invented and Deposited by Mr. JUPE, 67, New Bond-street.
- 332 An Improved Wheel Barometer, &c. (on pier). By J. PORTER.
- 333 An Engraving—a River Scene in Devonshire. Engraved by LUCAS, after F. R. LEE. Deposited by the ART-UNION SOCIETY of LONDON.
- 334 A Rustic Table.
- 335 Portrait of His Grace the Duke of Wellington, in his Robes as Chancellor of Oxford. Deposited by Mr. F. G. MOON, Publisher in Ordinary to Her Majesty.

Numerous as have been the portraits of "the greatest Commander of his age, and the most eminent Statesman of his time," one was yet wanting which should represent him associated with the veneration and learning of the University over which he presides. Honoured and distinguished by the choice of that learned body—an honour which reflected lustre on themselves—the accession of the Duke of Wellington to the Chancellor's Chair of Oxford, is, and will be, one of the most remarkable epochs of its history. The original portrait, which is unsurpassed as a faithful likeness, was painted by J. Lucas, Esq., at Walmer Castle, and subsequently presented by the Duke himself to the University of Oxford. The engraving by Mr. S. Cousins, A.R.A., is an admirable transcript of the original.

- 336 A Case of Preserved Insects. Deposited by BOSCAWEN IBBET-SON, Esq.
- 336\*A Waterproof Cape and Waterproof Legging. Deposited by the Patentees, HALL and Co., Wellington Street, Strand.

These Articles are not only perfectly waterproof, but so light that they may easily be folded up and put in the pocket without the least incumbrance.

- 337 Two Specimens of Marquetaire for Floors. Deposited by Mr. GREENWOOD.
- 338 Scagliola Pedestal. Deposited by Mr. SKELTON.
- 339 Fine Specimen of Brain Stone. Deposited by WILLIAM NURSE, Esq.
- 340 Specimen of Woolfe and Son's Creta Lævis.

#### GLASS CASE (MARKED H).

- 341 The Flying Windmill. Deposited by M. TRELUDDRA.
- 342 Double Case containing Brazilian Insects. Deposited by Mrs. CHISNALL, Richmond Park.
- 343 and 344 Two Cases, Insects.
- 344\*Samples of Horse-hair Fabric, with Flesh Gloves, and Velvet Brush, made of the same material. Deposited by Mr. DINNEFORD, 172, New Bond-street.
- 34.5 A Gentleman's Patent Pannus-Corium, or Leather-Cloth Shoe; and a Lady's ditto, in a Patent India-rubber Golosh. Deposited by the Patentees, HALL and CO., Wellington Street, Strand.
  - The Pannus-Corium Boots and Shoes, for tender feet.

The India Rubber Goloshes are light, durable, elastic, and waterproof, and resemble the finest morocco leather.

- 346 Specimens of Imperial Waterproof Composition for Shoeleather, without Indian-rubber. Deposited by Mr. M'MILLAN.
- 347 Specimen of India-rubber Web, for Shoes.
- 347\*Perry's Patent Filter Inkstand.
- 348 Specimens of Patent Elastic Boots. Deposited by J. SPARKS HALL, 308, Regent Street.
- 349 Patent Photolypon, or Self-acting Candle-Extinguisher. Deposited by Mr. S. JONES, 201, Strand.

This is one of the most simple and valuable of modern inventions, inasmuch as it may oftentimes prevent the loss of human life. It is so constructed that, without soiling the fingers, it can be readily placed over a candle, and so adjusted as to cause the light to be extinguished at any precise moment of time.

350 Jones's Patent Boot and Shoe Drying and Warming Last.

The object of this invention is to obviate the disagreeable necessity of drying and warming wet or cold boots and shoes by the fire, a plan as destructive as it is inconvenient. By filling the tin last with boiling water and then placing it inside a damp or cold boot or shoe, the leather will speedily become dry.

- 351 A Pair of Slippers, the uppers composed of Glass. Presented by Sir GEORGE CAYLEY, Bart.
- 351\*Shoes now worn by Ladies in the Drawing-Room in the South of France, without Stockings, or with the finest Gossamer Silk Stockings. Deposited by Mr. MAUGHAM.
- 352 Specimens of Lloyd & Co's. Patent prepared Sheet Cork, for Shoes.
- 353 Specimens of Elastic-Sole Boots and Shoes. Deposited by J. DOWIE, Charing Cross, Manufacturer.

354 Model of a Bench for enabling Shoemakers to work standing, or sitting on a high Stool. Deposited by Mr. DOWIE.

355 and 356 Platow's Patent Automaton Coffee Urns.

- 357 to 360 A Club, Basket, Dish, and Fishing-line, from New Zealand; and a Pillow from the Friendly Islands. Presented by CAPTAIN CLINDON.
- 361 Patent Tablet, for Sharpening Razors. Deposited by Mr-HIGHAM.
- 362 and 363 Two Engravings. Deposited by Mr. BOYS, Golden Square.

These are companion prints, referring to a momentous period of English history, both painted by W. Fisk, Esq., and engraved by Mr. James Scott. One represents "The Last Moments of King Charles I.," and the other, "Cromwell's Family interceding for the life of Charles I." They are much esteemed by all judges of the art of engraving.

364 Specimen of French Polishing, by C. CONOLLY.

365 Painting of George III. By West.

#### GLASS CASE (MARKED I).

- 366 A Series of objects illustrating the Manufacture of Silk; with several Specimens of English Manufacture. Deposited by COOPER and SONS, Waterloo Place.
- 367 Specimen of Clouded Satin, Manufactured for Swan and Edgar, by STONE and KEMP, Spital Square. The Design is printed on the warp before it is woven.
- 368 Specimens of Silk in the Raw State.
- 369 A Coat of Mail of an Indian Warrior, made with the scales of the Pentadactyla, or Short-tailed Manis, from the East Indies. Deposited by Major-Gen. ALEXANDER.

370 The Pentadactyla. Deposited by Ditto.

- 371 A Grebe Skin. Deposited by Mr. NICHOLAY.
- 372 to 385 Various Specimens of War and other Implements, Fishing Tackle, and Articles of Dress, from New Zealand. Deposited by T. M. BATTERSBY.
- 386 Six Dissections of Coleopterous Insects. Deposited by Mr. LANE.
- 387 The Sea Swallow. Deposited by Sir G. CAYLEY, Bart.
- 388 to 411 Twenty-four Specimens of African Stuffed Birds. Deposited by Mr. MOGG.

#### GALLERY.

- 412 and 413 Two Specimens of Engraving from Original and Electrotype Plates. By E. Palmer, 103, Newgate Street.
- 414 A Painting. Deposited by Madame de COMOLERA.
- 415 A Case of Stuffed Birds.

#### GLASS CASE (MARKED J.)

- 416 Shelf containing 25 Specimens of Fossils, Crystals, and Minerals.
- 417 Specimen of Asbestos.
- 418 Two Specimens of Bismuth crystallized in cooling, after being melted.
- 419 and 420 Specimen of Landscape Marble, and Arborescent Oxide of Manganese on Lithographic Stone.
- 421 Specimen of Native Copper.
- 422 Various Specimens of *Lapis Lazuli*, Agates, native Gold and Platinum, and several Minerals.
- 423 Forty-six Geological Specimens of Earths, Rocks, &c.
- 424 Fourteen Casts of the Teeth and Bones of the Iguanodon Hylæosaurus and Gavial, from the originals in the British Museum.
- 425 Shelf containing 120 Geological Specimens. The above deposited by Mr. TENNANT, 149, Strand.
- 426 A beautiful Cast of the Head of the Ichthyosaurus Communis, with its sclerotic orb. Deposited by Mr. DECK.
- 427 Portrait of the Queen.

This Portrait of the Queen was drawn at Windsor Castle, in the first year of Her Majesty's Reign.

428 A Lithographic Stone (Three Portraits of C. Kemble, Esq.,) from which Impressions have been taken; with a Set of Materials used in Drawing upon Stone.

Deposited by R. J. LANE, A.R.A.

- 429 An Impression from the above.
- 430 Painting :-- Landscape and Figures.

#### GLASS CASE (MARKED K).

Series of Specimens of English Agricultural Soils, Earths, and Manures. Deposited by Mr. LANCE, viz.-

#### UPPER SHELF.

431 CALCAREOUS SOILS:

APPROPRIATE MANURES:

Chalk and Shell Marls. Clay and Galt. Chalk and Oolite. MITROTRIATE MANURES.

Carbonized Humus. Ditto, with Bone-Dust.

#### SECOND SHELF.

ARGILLACEOUS SOILS:

Clay and Clay Loams.

432

433

Animalized Carbon, for the Clays, and Carbonized Humus, with Bone-dust, for Loams.

#### THIRD SHELF.

SILICIOUS SOILS:

Sands and Sandy Loams.

Animalized Carbon. Carbonized Humus, with Bone-dust, for Loams.

#### FOURTH SHELF.

#### LEFT HAND.

434 ALLUVIAL AND VEGETABLE SOILS:

Peat Bog, &c.

Animalized Carbon, with additional Lime, and Pulverized Earths.

#### RIGHT HAND.

435 MAGNESIAN SOILS:

Magnesia, Lime, &c. Carbonized Humus, with Bone-dust.

29

#### GALLERY.

#### FIFTH SHELF.

(Specimens of various Improved Manures.

- 436 {Ditto of various Corn. Model of a Hop-Press.
- 437 Specimen of a Deposit found in Berkshire after an inundation of the Thames. Presented by Colonel CHALLONER.
- 438 A Fog Alarum for Steam Vessels, for preventing Collision at Sea. Deposited by Captain G. SMITH, R.N.
- 439 A case of Stuffed Birds.

## GLASS CASE (MARKED L.)

- 440 Shelf containing numerous Casts from Fossils, &c. Deposited by Mr. DECK.
- 441 Three Shelves containing the commencement of a Series of Specimens of Minerals, which will be continued as opportunity permits, for the purpose of exemplifying the character of the Minerals from which are extracted the Metals of Commerce.
  - These Minerals have been Analyzed in the Laboratory of the Institution by Mr. MAUGHAM.
- 442 Specimens of Photographic Portraits; taken by Beard's Patent Process.
- 442\*A Miniature Daguerreotype Picture-a View in Paris. Deposited by Captain GRINDLAY.
- 443 A Sample of Gum Copal. Deposited by Mr. NAYLOR.
- 443\* Four Ancient German Guns, and a double-barrelled Pistol. Deposited by Mr. T. CASTON.

444 A Painting. Fruit. By Madame de COMOLERA.

444\*A Photogenic Drawing. By BOSCAWEN IBBETSON, Esq.
445 Two Indian Exercising Instruments. Deposited byMr.JACKSON.
446 A Painting. Death of Lord Chatham. By the late B. WEST. Deposited by E. MORGAN, Esq.

## GLASS CASE (MARKED M).

- 447 Model of a Harp. By Mr. BLAZDELL.
- 448 and 449 Geological Sections of the Isle of Wight, with section. Deposited by Mr. LOWRY.
- 450 Model of Alum Bay. Deposited by Mr. DECK.
- 451 and 452 Medallions of the Queen and Prince Albert, in Wax. Deposited by Mr. W. PICKMAN.
- 453 Layton's Rotatory Navigator.
- 454 Various Specimens of English Coral, Fossil ditto, and Madrepores. Deposited by Mr. J. HEGGERTY.
- 455 Ditto, ditto.
- 456 Thirty-two Specimens of the Geology of the Isle of Wight. Deposited by Mr. DECK.
- 457 Hawkins's patent everlasting Gold Pens.
- 458 to 462 Five castings in Bronze, from Nature. Deposited by Mr. WILKINSON.
- 463 Curious Specimens of Sponge and Fossil, from Chalk. Presented by Mr. TAIT.
- 464 Rich Specimen of Copper Ore. Presented by JAMES CLYMO, Esq.
- 465 Plowman's portable Letter Copier.
- 466 Cowell's improved Bill Files.
- 467 to 499 Thirty-three Specimens of rare Minerals. Deposited by Mr. NEWTON.
- 500 Four Impressions from Silver Snuff-Boxes; two Impressions, from Miniature Mountings, for Bracelets; and an Engraving, by R. EDWARDS, from a Picture by LANCRETE. Engraved for Her Majesty, and Deposited by R. EDWARDS, 26, Lisle Street, Leicester Square.
- 501 Specimens of Cloth 4000 years old, taken from a Mummy
- 502 Model of Else's Apparatus for Cleaning Chimneys.
- 503 Photogenic Drawing, by BOSCAWEN IBBETSON, Esq. 504 Mosaic circular Chess Table.

## GLASS CASE (MARKED N.)

- 505 to 527 Shelf with 23 Glass Bottles, each containing some natural product of the East Indies. Deposited by Dr. ROYLE.
- 528 Shelf containing various other Specimens of ditto. Deposited by ditto.
- 529 to 599 Seventy-two Specimens of Earths taken in boring a Well 220 feet deep at Colebrook Cottage, Islington, shewing the difference of the Strata at every foot after the first hundred feet, which were principally blue clay. Deposited by Mr. WEBB. N.B. The numbers on the specimens indicate their depth in feet from the surface.
- 600 Specimens of New Zealand Flax and Cloth. Deposited by Miss WILSON.
- 600\*Three Fossils from the Chalk Pits, Dorking.

601 A Wasp's Nest, and various other articles, from Guiana.

- 602 Seventeen Geological Specimens from Antigua. Deposited by the Rev. S. Isaacson.
- 602\*Specimens of Fossil Coal Plants, and of a Fossil Fish. Presented by Mr. NOTTINGHAM.

603\*Specimen of Artificial Granite. Deposited by Mr. WILLIAMS,

- 603 & 604 Marriott's Patent Weighing-Machine, and Standard Measuring Machine; by means of which Visitors can be weighed and measured, and obtain a Certificate, without extra charge.
- N.B. The measuring-machine is on the pier opposite the weighing-machine.
- 605 Imitation Marble Pedestal. Deposited by Mr. BARRON.
- 606 A Bas-Relief in Plaster.
- 607 Improved Arnott's Stove, attached to the refreshment counter. Manufactured by Mr. JONES, Castle-street.

## On the Right-hand Pier, East End of Gallery.

608 The Horographic Orrery, Constructed by T.RICHARDS, Droitwich, Is an exemplification of the Copernican-Newtonian system of Astronomy, exhibiting the Sun (a perfect illuminated sphere, with brilliant rays, &c.) apparently poised in space, occupying one of the foci of the Earth's elliptic path. In the immediate vicinity of the Sun, the hour and minute of the day are pointed out by, and among, clusters of Stars; distant from which the Earth is seen a perfect globe (apparently without support), receiving its light from the Sun; its axis inclined, and always preserving its parallelism, performing its diurnal revolutions, exemplifying the sidereal and solar day, the length of the day and the hour at all places upon its surface, its annual revolution round the Sun, and consequent changes of Seasons, its Perihelion and Aphelion distances. The day of the month is pointed out as the Earth progresses in her orbit, as are also the signs of the Zodiac, and the principal Stars, and degrees the Earth and Sun are passing through, the nutation of the Earth's axis, the precession of the Equinoxes, &cc. The Moon (likewise a perfect globe) is represented receiving her light from the Sun, and reflecting it back upon the Earth, performing her monthly revolutions round the Earth, illustrating Eclipses of the Sun and Moon, exemplifying the causes of the Tides, accompanying the Earth in her annual revolutions round the Sun, &c.

The harmony and perfect agreement of the apparent (as exhibited in the Egyptian Clock) and real motions of the Sun, Earth, and her Satellite, as shown by the Orrery, are strikingly evident. The simple and intelligible exemplification of the above-mentioned systems of Astronomy, afforded by these novel pieces of mechanism, renders them peculiarly well suited for the inculcation of a sound knowledge of this most interesting Science.

#### 609 (Back of Pier). Skin of a Boa Constrictor of great size and rarity, brought from India by the Right Honourable the Countess of Cardigan. Deposited by Mr. NICHOLAY.

610 and 611 Two Portraits. Deposited by Mr. BOYS, Golden-Square.

These are companion engravings, (opposite to each other on the two piers) both executed by Mr. James Scott. One is a portrait of the Duke of Wellington, and the other of Sir Robert Peel, Bart.; both are half-lengths, and of a convenient size for framing. They will be recognized as excellent likenesses.

#### On the Left-hand Pier, East End of Gallery.

#### 612 An Egyptian Astronomical Clock. Constructed by Mr. T RICHARDS, Droitwich,

Is an illustration of the Ptolemaic or Egyptian system of Astronomy; representing the Eastern Hemisphere of the Earth as a fixed body; the Tides in pro gressive motion round the Earth, demonstrating their theory, &c.; the Moon surrounded by Stars, performing her diurnal revolution round the Earth, to a second of time; exhibiting her phases, and in her progress, indicating her age, with the most minute accuracy; her position in the heavens, her proximity to the Sun (in degrees) and reverse position; her time of rising, southing, setting, &c. The Sun, as a body, is represented making his apparent diurnal revolution round the Earth, and indicating his progress by degrees, hours, minutes, &c. His situation in the heavens, or point of the compass he is in, is shown; together with the minute he rises and sets each current day, throughout his unequal variations from the Solstices to the Equinoxes; the relative duration of day and night, and number of degrees he describes above the Horizon; his meridian altitude; length of twilight, the constellation of the Zodiac he is passing through, the day he entered the sign, and number of stars composing the Asterism, the day of the week, and the heathen god from which the day derived its name. The ebbing and flowing of the tide in the Thames, is seen in a view of London, and the time of high water is pointed out. The day and name of the month, are exhibited accurately throughout the year, with the number of days in each month. The Clock has been in action two years, and fully realizes the expectations of the Inventor. The mechanism and combinations being quite free from perplexity, its motions are exempt from derangement, and require no other attention than a common Timepiece.

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#### GREAT HALL.

613 Trinity House Portrait of the Duke of Wellington. Deposited by Mr. BOYS, Golden Square.

This engraving was executed by Mr. Henry Cousins, from the original picture painted by John Lucas, Esq., for the Corporation of the Trinity, acknowledged to be the finest portrait of the Duke by that artist. It represents His Grace as Master of the Trinity House, painted as the Duke actually is, every part of the composition depicting his living attitude, manner, and appearance,

614 (Back of Pier). Boa-Constrictor Skin similar to the one described at No. 609.

#### Between the Piers.

- 615 A curiously constructed Glass Dial, the Hand containing the Works. Presented by Sir GEORGE CAYLEY, Bart.
- 616 Shafting for Driving Hall's Patent Hydraulic Belt or Water Elevator, and other Models, &c.
- 617 A Self-Registering Anemometer and Rain-Gauge (similar
- to the one erected at the Philosophical Institution, Birmingham), for the purpose of registering the Records of Storms. Invented by Mr. A. FOLLETT OSLER, of Birmingham.

618 and 619 Two Phantasmascopes, (one on each side of the Gallery on the brass rails). By looking through the apertures in the revolving disc, the figures will appear to be "playing on the fiddle," and "playing at leapfrog."

End of the Gallery.

#### The Great Hall.

#### LEFT HAND.

- 620 An Improved Bee-hive. Deposited by Mr. NUTT.
- 621 A Cottage Bee-hive. Deposited by Mr. NUTT.
- 622 An Improved Velocipede. Deposited by Mr. JACKSON, Tottenham.
- 623 Read's improved Garden-engine.
- 624 Glass Enamel (in window) of Richard Cœur de Lion. W. TUSSELL, 14, Museum-street.
- 625 and 626 Model of a Double Truss Girder, without Ironwork; and Method of preventing the Deflection of Timber. Deposited by E. GARDNER.
- 627 Thompson's Patent Alarm Lock.

- 628 Eight Specimens of Lawrence's Zinc drawn Rain-Pipe and Tubing.
- 629 Hayter's Locomotive Chair.
- 630 Model of Davies's Fire Escape.
- 631 A Model of the Metropolitan and Whitehall Patent Wood Pavement.
- 631\*An improved Baker's Rasp. Invented and deposited by Colonel COLSTON.
- 632 Specimen of Plaster or Cement on Wood for Preventing Fire in Buildings. Manufactured by the Fire-Preventive Cement Company, Upper Ground Street, Blackfriars Bridge London

Company, Upper Ground Street, Blackfriars Bridge, London. The Fire-Preventive Plaster is intended as a substitute for the common lime plaster, which, by the power of its composition, effectually adheres to wood so as completely to shield it from the agency of fire. A brief survey of the cause of the destruction of premises by fire will show how easily and securely, by the adoption of a composition like this, houses, and all description of timber framing, may be guarded from this dangerous enemy.

The specimen is a model of a ceiling (parts 1 and 2 being painted, and number 3 the natural colour of the fire-plaster), the reverse side of which presents the joists (covered with the fire-plaster) ready to receive the flooring of the next chamber, and between their interstices the laths upon which the fire-preventive cement or plaster forming the fire-proof ceiling is attached. The divisions have different appearances. A, The laths of the ceiling here are visible, and fire falling upon them *from above* would destroy them. B, The keys of the plastering (as they are technically called) are *turned*, or smoothed down, so as to encase the laths. C, This division, in the building phrase, is "pugged," *i. e.* fillets of wood are attached to the joists, upon which clay is closely packed; the effect of which is, that the floor is rendered solid and unshakeable, and all communication of sound cut off. The fillets of wood, however, in this case are covered to the depth of an inch with the fire-preventive plaster, which not only deadens the sound, but affords a greater protection to the joists. The same Model turned on edge will afford the representation of a partition.

633 A Model of a Fire-escape.

634 A Model of Wivell's Fire-escape. Deposited by Mr. WIVELL.

- 635 Hicks's Machine for rivetting Leather-bands.
- 635\*An improved Holdfast, for Chair-Makers and Carvers. Deposited by Mr. G. W. LOCK.
- 636 Design for a Railing round the Monument to Lord Nelson. Designed and Deposited by Captain SMITH, R.N.
- 637 A Great Gun Lock, fitted with a Lever on the principle applied to Congreve's Rockets. By Captain G. Sмith, R.N.
- 638 and 639 Two Models of a Hot-air Furnace-feeder. By Schauffelens. Deposited by Mr. FLORENCE.

The advantages resulting from the invention, (made in 1828,) at the iron-works on the Clyde, of feeding high furnaces with hot-air (which has since been applied to most of the iron-works in every part of the kingdom) first gave rise to the pre-

GREAT HALL.

sent discovery ; by which, the method of feeding fires, hitherto confined to blastfurnaces only, is now extended to all kinds of enclosed fire-places, without the aid of mechanical power ; which, in every previous instance, had been indispensable. The HOT-AIR FURNACE-FREDER is simple and inexpensive in its construction. It is not subject to damage or derangement, and its application will not, in most cases, require stoppage of the works. It may be adapted to almost every arrangement of the chinney or furnace, even when the flues of the latter are carried, as in some instances, to a considerable distance underground. It is applicable to the boilerfires of Steam-engines, the Furnaces of Breweries, Distilleries, Water-works, Gasworks, Glass-houses, Potteries, Brick-kilns, Bleach-works, Dye-works, and, generally, to every kind of enclosed fire-place. During the last three years, many of these furnaces have been erected at various places on the Continent, where they are now in full operation, and have effected a saving of fuel, which, varying from 20 to 25 per cent. has never fallen below the former.

639\*Specimen of Benson, Logan, and Co's Patent Metallic Cement.

640 Dr. Spurgin's Self-supporting Chain Bridge.

641 Model of a Safety Railroad. Deposited by Dr. SPURGIN.

642 Thompson's Alarm Lock.

643 Fire Escape. Deposited by Mr. W. A. GRAHAM.

This machine has a librating and revolving motion, about vertical and horizontal axes; by which the assistants are enabled to present the chair at any window of the house, and to carry the person to be saved beyond the reach of the flames in the descent. The principles of its action are equilibrium and parallelism. As the assistants are intended to act as counterpoises, by keeping a perpendicular pull upon the hand-ropes, their number may be diminished, by attaching any weighty substance that may happen to be at hand, to the hook on the lower lever. The strain on the long shaft is relieved by the stay-rope, and the guide-ropes of the parallel motion keep the chair in such a position, that it may be entered without the slightest danger of its overturning.

644 The Manufacture of Fancy Basket Work.

645 Fire Escape. Deposited by Captain GEORGE SMITH, R.N.

646 Thompson's Alarm Lock.

647 Model of a Budgerow. Deposited by Dr. JACKSON.

648 Model of a Mogul Procession. Deposited by Mr. COLMAN.

## GLASS CASE, (MARKED O).

6481 Yates's Fire Escape.

649 Patent Composition Metal Pipe, and Metallic String, for Horticultural Purposes. Deposited by Mr. J. WALBY.

650 Model of Thompson's Wrought-iron Boiler.

650\*Card Model of St. Paul's Cathedral.

651 A Solitaire, or Portable Tea and Coffee Pot.

652 A Model for a Park-gate Lodge.

653 A ditto at Querns, near Cirencester. Designed and Deposited by Mr. F. S. CRAWLEY.

654 Model of a Cottage Ornée.

655 Brockenden's Patent Caoutchouc Stoppers.

655\*Ede's Portable Chemical Laboratory, containing Ninety Tests, Re-agents, Blow-pipe, &c. &c. Deposited by Mr. EDE, Bishopsgate Street Within.

656 Ancient Clock.

657 Raper's Patent Water-proof Cloth.

658 Specimens of an improved Wig. By Mr. PREVO.

The improvement consists in its possessing permanent adhesion, without pressure or obstruction of the circulation of the blood in the temporal and auricular arteries, which are left free.

659 Parker's Coffee Pot.

660 Webster's improved Steel Music Wire.

661 An Improved Fire Alarum. By Mr. RAMSEY.

662 Scagliola Pillar, By Mr. SKELTON.

663 Antique Bust.

notfather of

Jay

633\*Specimen of Electrotype Engraving. By E. Palmer.

664 South American Lasso. Deposited by J. LOGAN, Esq.

665 Sheet of Ivory, of extraordinary size, cut by Pape's Patent Machine.

665\*Pair of large Alabaster Vases. Deposited by Mr. CORROTTI. 666 and 667 Pair of Antique Green Breccia Vases.

668 and 669 Two Models for the Nelson Monument. By Mr. R. Day.

670 Jeffrey's Patent Respirator.

671 Model of a Sociable. Deposited by Mr. WOOL.

- 672 and 673 Specimens of Embossed Glass. Deposited by Mr. HUDSON, 74, Red Lion Street, Clerkenwell.
- 674 Stereotomy of the Cube into Sections, applicable to the Shape and Combinations of all the Materials appropriated to Building, Paving, &c. Invented and presented by COUNT DE LISLE.
- 674\*Portraits of Her Majesty the Queen and His Royal Highness Prince Albert. Engraved by Thomson, after Drawings by A. Wivell.

#### GREAT HALL.

- 675 Agricultural Model in Wax.
- 676 Model of a State Carriage, built for John VI. late King of Portugal. Deposited by Mr. WOOL, Coach Builder, No. 38 Margaret-street, Cavendish Square.
- 677 Specimens of Mechanical Sculpture. Produced by striking rapidly a Cast-Iron Mould on the Surface of the Marble. Deposited by Mr. E. B. WOODCOCK.
- 678 A Bust of the Queen.
- 678\*A Design for a Church. By Mr. Harbour.
- 679 Model of a Wheel with Elastic Spokes. Presented by Mr. A SHANKS.
- 680 Scagliola Pillar, by Mr. SKELTON.
- 681 Plaster Cast of a Bust.
- 682 Bird's-Eye View of Port Nicholson, in New Zealand. Deposited by Mr. MOON, Threadneedle-street.
- 683 Bust from the Antique.

#### GLASS CASE (MARKED P).

- 684 to 723 A Series of Objects illustrating the Manufacture of Caoutchouc, or India-rubber; with Specimens of the Raw Vegetable Gum, in various forms as it is imported ; and likewise numerous articles manufactured from it, from the ropes for the breechings of a Ship's Guns, to the silk-like fabric of a Lady's Dress. Presented by R. W. SIEVIER, Esq., Holloway.
- 724 Specimens of Patent Wire Rope. By R. W. SIEVIER, Esq.

725 Specimen of Modelling in Wax, by the late A. Rouch, Esq. Deposited by WM. CROFT FISH, Esq.

This UNIQUE model, which occupied the late distinguished artist many years, and whose pious feelings rendered him peculiarly adapted to the creation of such a work, exemplifies THE RESURRECTION. "As it began to dawn towards the first day of the week, behold, there was a great earthquake: for the angel of the Lord descended from heaven, and came and rolled back the stone from the door of the sepulchre; his countenance was like lightning, and his raiment white as snow. And for fear of him the soldiers did shake, and became as dead men."-Matt. xxviii.

The time chosen by the artist is the instant at which egress is made by our Saviour from the sepulchre after the removal of the stone by the angel which guarded the entrance.

Christ is represented advancing from the sepulchre in the full vigour of life, and by the two outstretched fore-fingers of his hand, directs attention to the "house opened, not made with hands, eternal in the heavens," and to the victory he has achieved over Sin and Death, which is farther exemplified by the double key. The angel, awed by the glory of the risen Saviour, is seen worshipping on his knee, veiling his face with his robes.

The soldiers of the watch are represented terrified at the "great earthquake," and the re-appearance of the crucified Saviour. One, in his endeavour to screen himself, falls to the ground, whose utter prostration is exemplified by his weight bending the handle of his spear; others fall upon him, and to mark the general consternation, another is pourtrayed without his helmet.

*The sepulchre* exhibits in the interior the white napkin which had been bound about his head, and on the top of the entrance a skull emblematical of mortality; at the back *two Palm Trees* springing from one root, typical of the two-fold victory which is further illustrated by the *Serpent* retreating from the back of the sepul-chre at the instant the Saviour advances from the front, while over-spreading it is seen the PASSION-FLOWER and the IVY, the former exemplifying the sufferings of Christ in obtaining our redemption, and the latter that his kingdom shall last for ever. This is the only instance known of the Resurrection being thus exemplified

725\*Specimen of Electrotype Engraving. By E. Palmer.

- 726 Saddle-flaps from Arracan.
- 727 Captain Carpenter's Sub-marine Propeller.
- 728 Two Apparatus for Cooking.
- 728\*A Patent Enamel-lined Saucepan. Deposited by S. GALE and CO., 320, Oxford Street.
- 729 Bramah & Dickson's Rotatory Engine. Deposited by Messrs. WATKINS & HILL.

This consists of a cylinder having an inner cylinder, whose axis is eccentric to the outer one, and which is furnished with four blades or pistons working freely through it. The steam acts on the outer edges of the blades and drives them round, thus producing rotatory motion.

730 Specimen of Page's new method of Lettering Marble.

- 731 Fair's Patent Ventilator.
- 732 Model of a Wooden Bridge, erected at Terrebonne, near Montreal, N.A.
- 733 A Model of the Bucentaure, the State Galley of the Doge of Venice. Deposited by Mr. COLMAN.
- 734 Two Burmese lacquered Bowls.
- 735 Downer's Patent Alarm Letter-box.
- 736 Pair of Siam Buffalo Horns. Presented by S.W.GRIFFIN, Esq.
- 737 Model of Cowell's Patent Sash-suspender.
- 738 Specimens of Wildey and Co.'s Cocoa-nut Fibre, in Matting, &c.

739 A Tin Case of Preserved Mutton.

This Case was landed from the Fury, August, 1825, in lat. 72° 47', and long. 91° 50'; and taken from thence, July, 1833, by Capt. Sir John Ross, R.N.

#### GREAT HALL.

740 Scagliola Pillar. By Mr. SKELTON.

- 741 Marble Bust of the late Richard Paul Joddrel, Esq. By R. W. Sievier, Esq.
- 742 Cast of Bust from the Antique.
- 742\*A Pair of Esquimaux Snow Shoes.

#### GLASS CASE (MARKED Q).

- 743 Painted Screens in Imitation of Japanned Work. Deposited by Mr. STAIGHT.
- 744 Specimens of Papier Machée. Deposited on Account of the Birmingham Mechanics' Institution, by Mr. ROBINSON.
- 745 Specimens of Carving in the Elizabethan Style. By Mr. WINGFIELD.
- 746 Paper Fruit Basket, Clay's manufacture. Deposited by SMALL and SON.
- 747 Specimens of Papier Machée.
- 748 Specimens illustrating the Manufacture of Corkscrews.
- 749 Specimens of Needle and Fish-hook Manufacture.
- 750 to 764 Series illustrating the Manufacture of German Silver.
- 765 to 783 Specimens illustrating the Manufacture of Plated
- Candlesticks; also Plated Forks, Ladles, and Spoons. Deposited on Account of the Birmingham Mechanics' Institution, by Mr. ROBINSON.
- 784 to 796 Specimens of Wire and Woven Wire.
- 797 and 798 Benham's Hot-Water Plates.
- 799 Clarke's Patent Blower and Fumigator.
- 800 Specimen of Pearl Button Manufacture.
- 801 Series, illustrating the Manufacture of Hats. Deposited by Mr. PRITCHARD, 239, Regent Street.
- 802 Various Drawings of Davies's Carriages.
- 803 Model of Wivell's Fire Escape.
- 804 A Painting-The Holy Family.
- 805 Patent Self-rolling Mangle. Deposited by Messrs. BARNARD and JOY.

806 Whitley's Model of the Thames Tunnel.

- 806\*Model of the Stern of a Vessel, shewing two methods of fitting Propellers instead of Paddle-wheels. By Capt. GEORGE SMITH, R.N.
- 807 and 808 Model of a Marquee and Rick Cloth. Deposited by Mr. B. EDGINGTON.
- 809 Brassington's Patent Hydraulic Water Ram.
- 809\*Model of a Steam-vessel, with a Duck's Foot Propeller. Deposited by Mr. PHYSICK.
- 810 A Sectional Model of the Rum-Sheds in the West-India Dock, with the Swing-crane on the Quay. Deposited by Mr. F. H. YATES.
- 810\*Specimen of Electrotype Engraving. Deposited by Mr. PALMER.
- 811 Specimen of Embossing on Glass. By Mr. HUDSON.
- 812 Strutt's Brick Tally for Shrubs and Plants.
- 813 Model of a Vessel fitted with Captain Carpenter's Propellers.
- 814 A Bamboo Seat.
- 815 Case of Cowvan's Canton Razor Straps.
- 815\*A Chair found in an Indian Tomb. Deposited by TURNER, Esq.
- 816 Wivell's Fire-Escape. Deposited by Mr. WIVELL.
- 817 Specimen of Harford's Chain Cable Iron, tied cold. Deposited by Mr. MANBY.
- 818 Scagliola Pedestal. By Mr. SKELTON.
- 819 Skull Sculptured in Marble. Deposited by R. W. SIEVIER, Esq.
- 820 Stags' Horns from the Ohio. Deposited by Mr. WILKINSON.
- 821 Bust of Ajax.
- 822 A very perfect Hornets' Nest.

#### GLASS CASE (MARKED R.)

823 Handcock's Upright Castor. Deposited by Mr. J. G. HUGHES, 158, Strand.

This Castor, so long and anxiously required, embraces many advantages. The rollers inside revolve on a fixed axle; which axle, being a circular ring running through the centre of each roller, assists the motion of the ball, which no weight can prevent acting freely. This was fully proved at the Woolwich Dock-yard, when tried, to the satisfaction of the Lords of the Admiralty, under the beam of a steam-engine, one ton and a half weight. Obeying instantly, in a direct line, the impetus given to it, is not the least of its many advantages; and the glass ball being a non-conductor the tone of piano-fortes is materially improved by its application.

#### GREAT HALL.

- 824 Huxley's Castors.
- 825 Model of an Iron Portable Flour-mill, used by Buonaparte
- in the first Russian Campaign. Deposited by Messrs. COT-TAM and HALLEN.
- 826 Apparatus for giving Notice when a House takes Fire.
- 827 Model of an Hydraulic Press. Deposited by Mr. WAKTINS.
- 828 Paradise's Improved Door-plates.
- 829 Weedon's Stomach Pump.
- 830 Case containing 15 Scalpels, 16 Instruments for Insect and Botanical Dissections, 5 Pairs of Scissors, and 8 Pairs of Forceps, of different kinds. Deposited by T. WEEDON.
- 831 to 833 Impression of a Doubloon, corroded to a loaded Pistol; a Copper Pot; a Piece of Chain; and a variety of articles recovered from the Royal George, fifty-three years after she foundered.
- 834 Part of a Quadrant, recovered from the Wreck of the Pomona Frigate, lost on the Needles, Isle of Wight.
- 835 Piece of the Boyne, burnt at Spithead.
- 836 Piece of the Timber of the Mary Rose, sunk at Spithead 295 Years ago. Deposited by the Hon. FULKE GREVILLE.
- 837 A Mass of corroded Copper Coin, and Bars of Copper,
- from the wreck of the Abergavenny. Deposited by Mr. C. A. DEANE.
- 838 Parts of the Venerable Ship of War, lost in Torbay in 1823, showing the operation of the Teredo Navalis. Deposited by Mr. J. HEGGERTY.
- 839 A Turkish Yataghan, brought up from the state cabin of the Admiral Pacha's Frigate Yacht, sunk at the Battle of Navarino. Deposited by M. R. SCOTT, Esq.
- 840 Model of a Double-screw Jack. Deposited by Mr. A. SMITH.
- 841 Brown's Patent Level.
- 842 Illustrations of Gun-Flint Making.
- 843 Percussion Rifle Shells, water and fire-proof. By Capt. NORTON.
- 844 Captain Norton's Percussion Lead, for exploding charges of gunpowder under water.
- 845 A Percussion Hand Grenade. By Capt. NORTON.

- 846 Water-proof Percussion Primes.
- 847 Percussion Caps, having the orifice covered with tin-foil.
- 848 A Rifle Arrow. Deposited by Captain NORTON.
- 849 Rifle Cartridges for the new two-grooved Rifle. Invented and deposited by Ensign A. R. MARGARY, 26th Regt.
- 850 Elev's Patent Wire Cartridges, for Shooting at long distances. Warehouse, 36, St. James's Street, London.

These Cartridges are composed of a cage of wire, inclosed in a thin paper case, with a wadding attached, fitting the bore of the gun. The shot are placed within the wire: and the principle of their action is extremely simple. On leaving the gun, the paper is torn in pieces, and the shot immediately begin to quit the cases passing through the meshes of the wire net. In the last Edition of "Instruction, to Sportsmen" Colonel Hawker says, "They are now worth their weight in gold." Captain Ross, one of the most experienced shots in Europe, in a letter to the Patentee, declares them to be "the greatest improvement in gunnery introduced for many years."

- 851 A Quadrant with improved Shades. Deposited by Mr. HUNT.
- 852 Four Specimens of Patent Wire-Rope,
- 853 Carter's Safety Gas Valve.
- 853\*Part of the Cable of the Royal George. Deposited by the Hon. Tulke Greville.
- 854 Black Marble Pedestal, late the property of Murat. Deposited by C. MURRELL, Esq.
- 855 Marble Bust of Lord Brougham. Deposited by R. W. SIEVIER, Esq.
- 856 White's Aquatic Life Hat.
- 857 An Observatory Bee-hive, on an improved principle. Invented and deposited by Mr. NUTT.

\$58 The DIVING BELL. Constructed by COTTAM and HALLEN. To illustrate the principle of this machine, take a glass tumbler, plunge it into

To illustrate the principle of this machine, take a glass tumbler, plunge it into water with the mouth downwards; you will find that very little water will rise mto the tumbler; which will be evident if you lay a piece of cork upon the surface of the water, and put the tumbler over it; for you will see, that though the cork should be carried far below the surface, yet that its upper side is not wetted, the air which was in the tumbler having prevented the entrance of the water; but as the air is compressible, it cannot, when condensed, entirely exclude the fluid. The first diving bell of any note was made by Dr. Halley, and is most com-monly seen in the form of a truncated cone, the smallest end being closed, and the larger one open. It is weighted with lead, and so suspended that it may sink full of air, with its open base downwards, and as near as may be parallel to the horizon, so as to be close with the surface of the water. Mr. Smeaton's diving bell was a square chest of east-iron, four feet and a half in height, four feet and a half in length, and three feet wide, and affording room for two men to work in a half in length, and three feet wide, and affording room for two men to work in it. It was supplied with fresh air by a forcing pump. This was used with great success at Ramsgate. Other contrivances have been used for diving bells.

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The first diving bell we read of in Europe, was tried at Cadiz, by two Greeks, in the presence of Charles V., and 10,000 spectators. It resembled a large kettle inverted. The first person who brought the diving bell into vogue with us was Phipps, an American blacksmith, in the reign of Charles II., and who, from the fortune he acquired from a Spanish ship, to which he went down, laid the foundation of the honours of the Mulgrave family.

The diving bell in the Great Hall, is composed of cast-iron, open at the bottom, with seats around, and is of the weight of three tons; the interior, for the divers, is lighted by openings in the crown, of thick plate-glass, which are firmly secured by brass frames, screwed to the bell; it is suspended by a massive chain to a large swing-crane, with a powerful crab, the windlass of which is grooved spirally, and the chain passes four times over it into a well beneath, to which chain is suspended the compensation weights; and it is so accurately arranged, that the weight of the bell is, at all depths, counterpoised by the weights acting upon the spiral shaft; the bell is supplied with air by two powerful air-pumps, of eight-inch cylinder, conveyed by the leather hose to any depth. The bell is put into action several times daily; and visitors may safely descend a considerable depth into the tank, which, with the canals, hoid nearly 10,000 gallons of water, and which can, of required, be emptied in less than one minute.

- 859 Deane's Patent Water-tight Diving-Dress and Helmet, with flexible Tubes, and Air-tight Belt, &c. &c.
- 860 A Mast-rigging Model; showing specimens of Wirecordage. Deposited by Mr. ANDREW SMITH.
- 861 Read's Improved Garden Engine.
- 862 and 863 A Grass Hammock; and a Cloak from the Fibre of the Aloe.
- 864 A Bushman's Spear. Deposited by Sir G. CAYLEY, Bart.
- 865 Crooks used by the Monks on Mount St. Bernard. Deposited by the Rev. W. HUTCHING.
- 866 Specimen of Electrotype Engraving. Deposited by Mr. PALMER.
- S66\*A Plaster Bust of Lord John Russell. Deposited by Mr. HOLLINS.
- 867 A Black Marble Pedestal, late the property of Murat. Deposited by C. MURRELL, Esq.
- 867\*Drawing (on Pier) of Marks's Invalid Carriage. Deposited by Mr. MARKS, Langham-place.
- 868 A Plaster Bust.

#### GLASS CASE, (MARKED S).

- 869 to 875 Four Tigers' Skulls, two Wild Boars' ditto, and an Alligator's ditto. Deposited by Dr. JACKSON.
- 876 Windpipe of the Whooper, or Wild Swan. Presented by Sir GEORGE CAYLEY, Bart.

#### GREAT HALL.

- 877 Jaws of the Bottle-nose Shark. Deposited by Mr. SKINNER.
- 878 Skull of a Porpoise. Deposited by Mrs. FRANKINET.
- 879 Skull of a Walruss (Male).
- 879\*Skull of a White Fox, from the Arctic Regions. Deposited by W. MOGG, Esq.
- 880 Skull of the Alpaca, or Peruvian Sheep. Deposited by W. WALTON, Esq.
- 881 to 891 Specimens of a complete Mummy of a Female, supposed to have been the Wife of a Priest, in the Reign of one of the Pharaohs, 1800 years B. C.

Exhibiting in detail the first or most approved method of embalming among the ancient Egyptians, as ascertained and described by Dr. Granville in his Essay on Egyptian Mummies, seen in the "Transactions of the Royal Society" in 1825. Illustrated by specimens of primitive Mummies of recent subjects made by Dr. Granville in 1825; to exemplify the successive steps in the process of Egyptian mummification.

An ancient Mummy and Arm presented to Dr. Granville by Sir W. Horton, when Under Secretary of State for the Home Department. It was sent home by the English Consul from the Coast of Africa. It is placed as a contrast of the rare as well as of two very different modes of embalming among the ancient Africans, the latter being evidently greatly inferior. Several specimens of muscles, fibres, and of the internal organs, one of which is

Several specimens of muscles, fibres, and of the internal organs, one of which is the most ancient in existence of diseased uterus—a dissected pelvis, to shew the beautiful symmetry of that part of the Egyptian female on which depends the peculiarity of the race.

Several specimens of stuff of which the bandages are formed.

- 892 Specimen of Aberdeen Polished Granite Column and Vase. Deposited by Messrs. MACDONALD & LESLIE, Aberdeen. Agent, Mr. Louis Baronto, 363, Oxford Street, and 69, Strand.
- 893 Patent Sounding-Machine. Deposited by Messrs. BRAITH-WAITE, MILNER, and Co.
- 894 A Drawing representing the Royal George under water, the frame surrounded with several of the articles brought up. The small anchor was made from iron recovered from the wreck.
- 895 PORTRAIT OF THE QUEEN. Deposited by Messrs. HODGSON and GRAVES, Printsellers to the Royal Family.

This is an engraving, executed in the first style of mezzotinto by Mr. Ryall, of the authentic State Portrait of THE QUEEN, in the imperial Dalmatic robes, seated on the throne in Westminster Abbey, painted by G. Hayter, Esq., M.R.S.L. (Her Majesty's Historical and Portrait Painter), for Buckingham Palace, by command of Her Majesty. This whole-length portrait of the QUEEN in her Coronation Robes is allowed to be the most correct and perfect portrait of Her Majesty ever painted.

- 896 Figure in Plaster.
- 897 A Steatite or Soap-stone Vase. Deposited by W. PEARCE, Truro.

#### GREAT HALL.

897\*A Series of pieces of Lead, and other Metals, shewing the different stages in Delbruck's Patent Autogenous Soldering Process. Deposited by Mr. Delbruck, 311, Oxford-street.

898 Ballot-Box; Invented by B. JOLLY;

Which can be arranged for the election of any less number of persons than the number of holes, and in which the balloting balls register themselves when admitted, by the key at the back of the box being turned by the returning officer or person appointed, who is prevented from seeing for whom the person votes by a screen. The same balls are used by each voter. 898\*A New Zealand Carved Box.

- 899 Head Carved on the Bone of a Whale, by a Native of Van Diemen's Land. Deposited by Mr. COOZE.
- 899\*A Model of a Cotton-Press and Hydraulic Pumps. Deposited by Messrs. COTTAM and HALLEN.
- 900 Crosley's Improved Rain-Gauge. Deposited by Messrs. WATKINS and HILL, Charing-Cross.
- 900\*A Sectional Model of a Ship. By Mr. HUNT, of Plymouth. Deposited by Captain CODRINGTON, R.N.
- 901 Patent Shadowless Self-regulating Lamp. Deposited by Mr. T. EDGE, Westminster.
- 902 Model of the Luxor Monument.
- 903 Model of Spinal-adjusting Sitting Crutches. Deposited by Mr. SPARKS.
- 904 Benham's Patent Portable Freezing Apparatus.
- 905 A Safety Screw-plug Bull's Eye; to give light to a Ship from her sides below water. Invented by Mr. LAING.
- 906 Iron Hoop, taken from the Bowsprit of the Royal George.
- 907 The first Dead-eye brought up from the wreck of the Royal George. Presented by Col. PASLEY.
- 908 Model of Mr. Gillivray's plan to supersede the use of Climbing Boys.
- 909 Bust from the Antique.

## GLASS CASE, (MARKED T).

- 910 A Model of an Improved Excavating Cart for Common Roads. Deposited by Mr. W. PALMER.
- 911 and 912 Two Models of an Improved Rudder. Deposited by W. PARSONS, Esq.
- 913 Roberts' Miners' Safety Lamp.
- 914 Model of a Plan for Raising Sunken Vessels.

- 915 and 916 Specimens of Wood prepared by Kyan's Process, after being buried in a Fungus Pit. Deposited by Mr. J. THOMPSON.
- 917 Model of Burgess's Patent Axle. Deposited by Mr. WILLIAMS.
- 918 Brandreth's Patent Horse-power. Deposited by Messrs. COTTAM and HALLEN.
- 919 A Model of a Weather-tight Fastening and Cill-bar. Deposited by ANDREW SMITH.
- 920 A Model of the Pontoon Bridge, Boat, and Carriages, used by Buonaparte in his passage to Russia, and in crossing the Alps.
- 921 A Model of the Railroad, used by Buonaparte, in going to Russia; with the four Ammunition Waggons used for transporting it.
- 921\*Model of a Self-acting Drain Trap for Sewers, &c. Deposited by J. BISHOP, Esq.
- 922 A Model of "The Albert" Steamer, one of the Niger Expedition Vessels. Deposited by Mrs. TROTTER.
- 923 Model of an Esquimaux Canoe. Deposited by W. MOGG, Esq.
- 924 A Model of the Brig Yacht, "Wanderer." By the Hon. R. TULKE GREVILLE.
- 924\*Working Model of the "Archimedes" Steam Boat. Deposited by Mr. SEWELL.
- 925 Model of a Cutter Yacht. Deposited by E. GARDNER.
- 926 Model of Stevens's Double Ordnance for carrying away the Masts of a Ship at one Fire. Deposited by J. STEVENS, Esq.
- 927 Robson's Signal Lights.
- 928 Method of Reshipping a Rudder in a heavy Sea, by MARTYN ROBERTS, Esq., F.R.S.
- 929 Portable Punching-press. Deposited by Lieut. GREEN.
- 930 A Model of a Circular Stern, for a Ship. Deposited by Mr. BONNIWELL.
- 931 A Model of a Circular Sawing-machine. Deposited by Mr. BRACKENBURY.
- 931\*A Model of a Field Gun, formerly belonging to the Duke of York. Deposited by Mr. NICHOLAY.
- 932 A Model of a Tinman's Raising-press. Deposited by Mr. F. H. YATES.

#### GREAT HALL.

- 933 A Model of Graham's Cone, for projecting a line over a House when on Fire.
- 934 and 935 A Universal Dial, on a Plain Cross; an Anelemmatic Dial, which sets itself; a Cylinder ditto; and a Universal ditto. Deposited by Mr. ALDERSLEY.
- 936 Model of a Fire Escape. By Mr. Garner.
- 937 Model of a Wind Guard and Lightning Conductor. Deposited by Mr. H. F. YATES.
- 938 Scagliola Pillar, by Mr. SKELTON.

939 Bust of the late Mr. Nash. Deposited by W. BEHNES, Esq.'

- 939\*Specimen of Woolf's Creta Lævis.
- 940 Flexible Voice-conductor, used as a Carriage Check-string. Deposited by Mr. M. M. CARSON.
- 941 Potts' Patent Picture-Rail Moulding. Deposited by Mr. NOTTINGHAM, King William-street, Strand.

The apparatus in this and the contiguous compartments are specimens of the new and improved method of hanging pictures on walls, patented by Mr. Potts. The rail is fixed directly beneath the cornice, forming an ornamental moulding either as rail is fixed directly beneath the cornice, forming an ornamental moulding either as a substitute for a gilt moulding, or to be adapted as the bottom member of the cor-nice, and is applicable to any style of decoration. Its enormous strength is proved by the immense weight attached to one length of it. The pendant rod and cross-bar shew the method of hanging and inclining a picture to any angle at pleasure, to suit a varying or particular light, and also the facility of hanging small or cabinet paintings. The whole is fixed up without brackets, allowing the hooks to traverse to any part of the room, and preserving a continuous line of moulding.

- 942 Reubens and his Family, by himself. Deposited by J. ROGERS, Esq.
- 943 A Model of a Grain Dressing-Machine, on an Improved plan. Deposited by Mr. J. DRY.
- 944 A Model of Hall's Patent Stove.
- 945 Beautiful Model of a Locomotive Engine and Tender. Deposited by H. CONWAY, Esq.
- 946 to 957 A Model of a Steam-boat, with Life-boat, and various other improvements, by Capt. Geo. SMITH, R.N., viz.-

(A) The Lever Target, for teaching seamen to fire with correctness, without expending powder or shot in practice; adopted in the Navy 1826.

(B) A Floating Target for firing Shot at, as seen in the accompanying drawing. (C) A Spare Anchor, made for the convenience of stowage, and for sending off

to ships in distress. (D) A Temporary Rudder, fitted with chain-rings, instead of Pakenham's plan, with a lower cap, which is very cumbrous, and impedes the ship's way.

(E) A Lower Mast, fished with iron-fishes and chain-hoops, tightened by wedges or screws, proposed to secure a mast from falling on its being wounded in action, or sprung.

(F) Paddle Wheels, fitted with grooved and cogged wheels, for the application of manual labour at the capstan and winches, in case of accident to the engine, or to be used before the steam is up. The novelty consists in combining the power of capstans with winches.

(G) A Break, formed of four bolts, to lock the Paddle Wheels, (when requisite to secure them,) to connect or disconnect the engine, to ship or unship the floats, &c.

(H) A Fog Alarum for steam-vessels; the model represents a gong or bell struck by machinery, instead of employing a man constantly for that purpose during a fog. (I) Method of Dismounting Guns. (A 32-pr., wt. 56 cwt., was fired and dis-mounted in 55" on board H.M.S. Excellent.)

(J) Method of giving Additional Depression to Great Guns, when required to fire close alongside, or when the ship is heeling over in a breeze.

(K) Suggestion for an improvement to Great Gun Sights; and a mode of fitting a Shifting-bolt to Carronades, for the purpose of keeping the slide and carriage

a Shifting-bolt to Carronades, for the purpose of keeping the slide and carriage square with each other, to prevent them from upsetting.
(L) A Life-boat, formed of the upper section of the paddle-box; the ends are maed with two air-tight cases or tanks; the model is intended to show the practicability of every steam-vessel carrying two large boats, for the purpose of saving the lives of the passengers and crew, in the event of the vessel being burnt, wrecked, or such a callier for the callier for the caller for the transmission of the passengers and crew, in the event of the vessel being burnt, wrecked, or such a callier for the caller for the caller for the transmission of the caller for the caller for the transmission of the caller for the transmission. sunk by collision, &c., &c. The model is fitted to shew an easy method of getting the boats into the water when required. This plan has been adopted and fitted to Her Majesty's Steam Vessels Carron and Firefly, and to the Pacific Company's Vessels Chili and Peru, and ordered for those of the Royal Mail Company, and of the Niger expedition.

958 A Model of Mr. Curtis's Acoustic Chair, designed not only for the use of Deaf Persons, but also for conveying intelligence from one house to another.

"The original is of the size of a large library chair, having a high back, to which are affixed two barrels, for sound, so constructed as not to appear unsightly; at the extremity of each barrel is a perforated plate, which collects sound from all points into a paraboloid vase. By this contrivance, sound is concentrated and impressed more strongly upon the ear, by being confined to a small quantity of air. The convex end of the vase serves to reflect the voice, and to render it more distinct. Further, the air inclosed in the tube being excited by the voice, communicates its motion to the ear, which thus receives a more powerful impression. By means of sufficient tubes, this chair might be made to convey intelligence from St. James's to the Houses of Lords and Commons; and even from London to Windsor."-Curtis on the Ear.

- 959 A Built Model of a Frigate.
- 960 Pratt's Patent Compendium.
- 961 An Engraving of the Triumphal Entry of His Grace the Duke of Wellington into Madrid ; August 12, 1812. From the celebrated Picture by the late W. HILTON, Esq., R.A. Deposited by Mrs. PARKES, 22, Golden Square.

In the history of the Duke of Wellington's campaigns, it is recorded that the Spanish ladies, upon the occasion of his Grace's entry into Madrid, threw before Spanish ladies, upon the occasion of his Grace's entry into Madrid, threw before his horse shawls and veils of exquisite workmanship and of the finest texture. The entrance of Lord Wellington into Madrid was grand in the extreme. His Lordship was attended by the flower of the British army, and by the Generals of the allied army. He was met by the Spanish nobility, the dignitaries of the church, the magistrates, and all the principal inhabitants, who presented him with the keys of the city. The splendour of Rubens pervades the painting, but blended with more exquisite female beauty than distinguishes the works of that justly celebrated master. celebrated master.

#### GREAT HALL.

961\*A Patent Elastic Saddle. Deposited by Mr. LAURIE, 296, Oxford Street.

#### GLASS CASE, (MARKED U).

- 962 A Brass Eagle, and several Bullets, from the Field of Waterloo.
- 963 to 1002 A Series of Forty Figures, Utensils, and Models, illustrating the Customs of the Hindoos. Deposited by Mr. COLMAN.
- 1003 Fountain Jets. Deposited by Mr. R. CUNDALE.
- 1004 Scagliola Pillar, by Mr. SKELTON.
- 1005 Bust of a Lady.
- 1006 Specimens of Engraving, from Original and Electrotype Plates. By E. Palmer.
- 1007 A Portrait of Hogarth. Presented by W. M. NURSE, Esq.
- 1008 Charles's Improved Iron Plate for Cellars.
- 1009 Model, showing the Crank applied to the Universal Joint. Deposited by W. A. GRAHAM, Esq.
- 1010 Davy's India-rubber Horse Collar.
- 1011 and 1012 Joyce's Improved Horse Collars.
- 1013 A Salamander Foot-stool, for heating Carriages and Rooms.

This Apparatus is heated by means of a small Tea-Urn Heater, and the heat is retained for a considerable length of time, by being surrounded by an iron case, containing Calais sand; an ornamental outer case covering the whole. De-posited by Mr. CHARLES RICKETS, Agar Street, Strand.

- 1014 Improved Hose-Web, without seams; one Specimen has been in use two years. Deposited by M. VAUCHER, Esq.
- 1015 Model of a Stone Coffin and Coffin Case. Deposited by Mr. JOHNSON, New Road.
- 1015\*Model of a long 12-Pounder, with Carriage and Limber complete. Deposited by Mr. RILEY, Gunmaker, Holborn.
- 1016 Built Model of a Ship.
- 1017 A Model of a new method of Paving Roads with Wood.
- 1018 Cottam's Dynamometer, or Plough Gauge.
- 1019 Crockford's Improved Ball Valve for Water-tanks, Cisterns, &c.
- 1020 An Instrument for the Cure of Shortsightedness. By Dr. Franz, retisen hotsudeles.

1021 A Lens.

- 1021\*A Chain Fire Escape. Invented and deposited by Mr. BAYLIS, 273, Strand.
- 1022 A Scagliola Pillar. By Mr. SKELTON.
- 1023 Bust of Demosthenes.
- 1024 Bust from the Antique.

#### GLASS CASE, (MARKED V).

1025 A Perspective Model; exhibiting the effects of Foreshortening and Convergence.

This Model shows the effect on the eye, produced by the surface lying obliquely to the point of view. This effect arises from perpendicular, as well as horizontal surfaces. Invented by A. PARSEY, Professor of Perspective, No. 19, Warwickstreet, Regent-street.

- 1026 A Perspectronometer. An Instrument invented by Mr. PARSEY ; which defines the apparent reduction of lines, under any angle of inclination.
- 1027 A Model of Visual Geometry ; showing the natural manner in which the Trapezoid is created by the eye, or what is really seen ; showing the distinction between the Optical and the Mathematical Sections of the Visual Rays. Invented by A. PARSEY.
- 1028 A Silver-banded Portfolio. Deposited by Mr. DIXON.
- 1029 An Improved Wind-Gauge.
- 1030 Steam-Engine, invented by Giovanni de Branca, a native of Spain, A.D. 1629.
- 1031 A Model of an Hydraulic Press. Deposited by Mr. GRAFTON.
- 1032 The Ælopile, invented by Hero, the celebrated philosopher of Alexandria, 120 years before the Christian era.
- 1033 A Machine for Cutting Transverse Sections of Wood. Deposited by Mr. NEEVES.
- 1034 Blackwell's Curling Comb.
- 1035 A Water-colour Drawing-Mercury, Venus, and Cupid. By Mr. A. Parsey.
- 1036 Model of a North American Indian Canoe. Deposited by the Rev. S. Isaacson.
- 1037 to 1040 Four specimens of the Patent Shrapnel Corkscrew. Deposited by ---- SHRAPNEL, Esq.

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1041 and 1042 Platow's Patent Gas Moderators.

1043 A Model of a Lathe. Deposited by Mr. SCHOLL.

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#### GREAT HALL.

1044 A Model of a Carriage, to be propelled by Electromagnetism. Deposited by Mr. LYNN.

1045 and 1046 Models of Meggett's Patent Anchors.

1047 and 1048 Two Models for securing the Linch-pin on Wheel-carriages. Invented and Deposited by M.VAUCHER, Esq.

1049 An Apparatus for Purifying Gases. Deposited by Mr. PORTER.

1050 Pair of Pruning Shears. Deposited by Mr. DURHAM.

1051 Model of Dredge's Patent Suspension Bridge.

1051\*Hemming's Patent Protector Gas Meter.

1052 Heinke's (Dr. Arnott's) Stove. Deposited by Mr. F. Heinke, 103, Great Portland Street.

1053 Patent Section Tappet. Mr. B. WOODCROFTS.

1054 Specimens of Water-proof Cloth and Silk.

1054\*A Plaster Cast, to imitate Marble :-- Female Figure.

1055 Read's Fire Engine.

- 1055\*A Patent Railway-wheel, with Wood-faced Tyre. Deposited by BROCKELBANK, DIRCKS, and Co., Liverpool.
- 1056 Read's Garden Engine.
- 1057 A Librating Shifting-power Double-Barrel Pump. Invented and Deposited by Dr. SPURGIN.
- 1058 Model of a Bridge, upon the Patent Tension Principle. Deposited by J. WHITE, Architect.

Deposited by J. WHITE, Architect. The substance of the tension bearers, which are represented in white deal, is, in execution, intended to be of wrought iron of the best quality, the blocks to be of cast iron, the keys or wedges of prepared iron. The base may be pile heads, or natural rock, and should it be requisite to continue the same system on account of the badness of the soil, any length of bearers may be adopted until a perfectly sound resistance and support are obtained. The principle admits of application to railways, where, if employed, the substance of the rails may, according to the quality of the iron, be diminished to 1-5th, 1-6th, 1-8th, 1-10th of what is com-monly employed, and the security will be much greater than in the ordinary mode monly employed, and the security will be much greater than in the ordinary mode of fixing the rails.

- 1059 A Model of Whinfield's Wood Pavement.
- 1060 Batten's Patent Compresser, for checking and stopping Chain-Cables. Deposited by Messrs. BAILY and Co., Holborn.
- 1061 Engraving; Bolton Abbey in the olden time. Deposited by Mr. BOYS, Golden Square. (On the Pier).

This unrivalled work of art was executed by Mr. Samuel Cousins, A.R.A., from the celebrated picture painted by Edwin Landseer, Esq., R.A. It is deservedly considered one of the most popular of modern engravings.

1062 Series shewing the Manufacture of Shoemakers' pliers.

#### Elliptic Counter, Great Hall.

- 1063 An Hydraulic Press. Deposited by Dr. URE.
- 1064 to 1070 Seven interesting Models of the Machines used in the Washing and Manufacturing of Woollen Cloth, viz., One Warping Mill; One Set of Stocks for Fulling Cloth; One Gig Mill for raising ditto; Two Shearing Machines; One Dressing ditto; One Loom. Deposited by Messrs. NEWTON and BERRY.
- 1071 A Model of a German Blast, or Blowing-Machine. Deposited by Mr. TAYLOR.
- 1072 A Model of a Whim-cage; with Two Horses, Pulleys, Ropes, &c., complete.
- 1073 A Model of Monsieur Pleney's Brick-making Machine. Deposited by R. COMINS, Esq. 3, Hare Court, Inner Temple.
- 1074 and 1075 Specimens of Wire Rope. Deposited by Messrs. FOX and Co.
- 1076 Model of a Machine for making Bricks, invented by the Marquis of Tweeddale. Deposited by Messrs. COTTAM and HALLEN.
- 1077 A Model of a Whim; with Ropes and Buckets. Deposited by Mr. JOHN TAYLOR.
- 1078 A Drawing (on Pier). Horizontal View of Mr. BEALE'S Rotatory Engine, laid down on a Scale of 3 Inches to the Foot. By Mr. W. SPENCE, 97, Leadenhall-street.
- 1079 An Ore-crushing Machine. Deposited by Mr. TAYLOR.
- 1080 Model of a Sugar-crushing Machine. Deposited by Mr. DON.
- 1081 A Model of a Three-throw Compensating-Crank, for Pumps. Deposited by - BRUNTON, Esq.
- 1081\*Working Model of a High-pressure Steam Engine and Boiler. Deposited by Mr. SEWELL.
- 1082 Model of a High-pressure Engine. By W. Pemberton, Manchester.
- 1083 Model of a Rotatory Steam Engine.
- 1084 A Portable or Pedestal Engine, with Boiler complete. Deposited by Mr. SCHOLL.
- 1085 A Portable or Pedestal Engine. Deposited by Mr. CLARK.

1086 Model of a High-pressure Engine. Deposited by Dr. POTTS.

- 1087 Model of Gough's Portable Churning Engine. By Mr. N. Gough, Manchester.
- 1088 A Model of a Screw Cutting Machine. Deposited by Lieut.
- 1089 Dr. Spurgin's Paddle-wheel, which causes no Back-water.
- 1090 A Revolving Engine. Deposited by Mr. YATES.
- 1091 Model of a High-pressure Engine.
- 1092 A Cross-head High-pressure Engine and Boiler, with Lathe and Circular Saw. Deposited by M. SCOTT, Esq.
- 1093 An Ore-crushing and Sifting Machine. Deposited by Mr.
- 1094 Dr. Spurgin's Endless Chain Ladder for Mines.
- 1094\*A Model of a Marine Steam Engine with Rennie's patent Trapezium Paddle-wheel. Dep. by G. RENNIE, Esq.
- 1095 A Model of a Double Cylinder High-pressure Steam Engine. Deposited by the Hon. Col. GREVILLE.
- 1095\*A One-horse Beam-engine. Deposited by Messrs. BARKER and This is supplied with steam from the boiler in the Boiler-room by a pipe pass-

ing through the yard to it and the others.

1096 A Three-quarters Horse-engine. Deposited by Mr. LUMSDEN. This differs from the common engine in its parallel motion in the crank being placed overhead, and in its having a tappet motion to work the slide, instead of the more usual way of an eccentric.

1097 A Condensing, or Low-pressure Engine, with Boiler. Deposited by Mr. HURWOOD.

Deposited by Mr. HURWOOD. In the High-pressure Engine, steam of high elastic force is admitted into the cylinder, and having performed its duty of driving the piston up and down, is suffered to escape or blow off into the open air. In this kind of engine the waste steam-pipe, instead of opening into the air, opens into a vessel called the condenser, which is a cylinder surrounded with water, and into which a jet of cold water is constantly playing. When the steam comes in contact with the water it is condensed, or restored to its original form of water. Now since, it is known that steam occupies about 1.800 times the space that it did in the shape of water. that steam occupies about 1,800 times the space that it did in the shape of water, that steam occupies about 1,800 times the space that it did in the shape of water, it is evident, if we condense the steam, *i. e.*, reduce it to the form of water, we shall have very nearly a vacuum on one side of the piston, while the steam exerts its full force on the other side of it; thus we get rid of the negative pressure which we have in the High-pressure engine, and which is a serious drawback to its power. The Condensing Engine must be provided with a condenser, air-pump, cold and hot water pumps. The use of the condenser has been described; the air-pump pumps the water and gaseous matter out of the condenser into the hot well, whence a part of the former is forced into the boiler by the plunger or hot-water whence a part of the former is forced into the boiler by the plunger or hot-water pump. The cold-water pump is to keep the condenser constantly surrounded with cold water, and to furnish the water for injection.

- 1098 A Model of a Cornish Back-shot Water-wheel, with bobs, shears, shafts and pumps, complete. Deposited by Mr. TAYLOR. This Machine is now in use in the Tin and Copper Mines in Cornwall.
- 1099 Model of Pickworth's Paddle-wheel. Deposited by Mr. PICKWORTH.

## Space between the Canals.

1100 An Hydraulic Press. Deposited by Messrs. COTTAM & HALLEN.

- 1101 Plan for regulating the Tidal Water of the River Thames, at London, by Floating Caissons, which shall present their Sterns to the flowing tides, and their Broadsides to the ebbing tides at scant water. By J. WHITE, Esq.
- 1102 Andrew Smith's Paddle-wheel.
- 1103 and 1104 Two Portraits of Horses; one in Wax, and the other in Plaster. Deposited by Mr. M'CARTHY.
- 1105 Patent Double Gasometer and Aërometer, for measuring Gas. Deposited by Mr. HUTCHINSON, Vauxhall Gas Works.
- 1105\*A Map, in Relief, of France and Switzerland, shewing the Towns and Roads, and the courses of the Rivers. By Mons. CHAUVET, 62, Margaret Street.
- 1106 Design for the Nelson Monument. By Mr. C. FOWLER.
- 1107 Hale's Patent Horizontal Windmill.
- 1108 Lipscombe's Water Filter.
- 1109 Carson's Hypozygone, or Driving Regulator.
- 1110 Design for the Nelson Memorial. By Captain George SMITH, R.N.
- 1111 A Model of St. John's Church, Paddington. By Mr. C. Fowler.
- 1112 A Model of a Design for the Fitzwilliam Museum, Cambridge. Deposited by Mr. BARDWELL.
- 1113 Portraits of Her Majesty the QUEEN and His Royal Highness Prince ALBERT. Deposited by Messrs. COL-

Thighness Frince ALBERT. Deposited by Messrs. COL-NAGHI and PUCKLE, Printsellers, by Appointment, to the Queen. The original miniature portraits from which these engravings have been made were painted in Buckingham Palace, by Mr. Ross, A.R.A., miniature painter to the Queen, whom Her Majesty honoured with repeated sittings for the purpose. One of them, that of the Queen, is in the possession of His Royal Highness Prince Albert; the other, that of the Prince, is frequently worn by Her Majesty as a bracelet. The engravings, on steel, were executed by Mr. Ryall. They are well-suited both for framing and the album.

1114 Specimen of Hudson's Embossed Glass.

Hall's Patent Hydraulic Belt or Water Elevator.

This entirely novel and important invention is one of the cheapest, simplest, and most powerful hydraulic ma-

#### GREAT HALL.

1114\*Model of the Parthenon. Deposited by W. NICHOLAY, Esq.

1115 Model, and small Iron Carriage, to illustrate the nature of the centrifugal force. Deposited by Messrs. SHARD & RIBERS.

1115\*Butter's Tangible Arithmetic and Geometry.

Squares, Triangles, Rhomboids, Cubes, Prisms, Pyramids, and various other Devices formed of the Cubes, used as Illustrations of Butter's "Tangible Arithmetic and Geometry, illustrated by 144 Cubes, in a Box." Models of Butter's Trinomial Cube, and of the three Binomial Cubes that can

be formed out of the pieces composing it.

1116 Taylor's Electro-Magnetic Motive Machine. Deposited by

1117 Gifford's Paddle-wheel. Deposited by Mr. GIFFORD.

1117\*An Electro-Magnetic Pendulum. Deposited by Messrs. WATKINS and HILL.

- 1118 and 1119 A SELF-FEEDING COINING PRESS, showing the Method of Coining at the Mint, by which process Fifty Medals are struck off in a minute; and a Machine for Cutting Blanks for the Medals. N.B. The Medals may be purchased at 3d. each.
- 1120 Apparatus for explaining the principle of Mr. Coles's Patent Anti-friction Railway Wheels and Carriages.

1120\*A Built Model of the Sultana. Deposited by - HALE, Esq.

1121 Portrait of His Grace the Duke of Wellington. Deposited by Messrs. COLNAGHI and PUCKLE, Printsellers, by Appointment to the Queen.

This full-length print of the Duke of Wellington, engraved in mezzotinto on steel, by Mr. Lupton, is from the admirable portrait of his Grace painted by H. P. Briggs, Esq. R.A. for the town of Sheffield. The publishers feel themselves justified in stating, that as a likeness of his Grace, it is equalled only by the celebrated pic-ture painted in 1823 by Sir Thomas Lawrence, now in the collection of the Right Hon. Charles Arbuthnot. As a whole-length portrait of the most illustrious warrior and statesman of modern times, in the costume of every-day life, it may justly be said to be unrivalled both for fidelity of feature and of person.

1122 Specimens of Hudson's Embossed Glass.

## Canals and Reservoirs.

1123 HALL'S Patent Hydraulic Belt or Water Elevator. (For description, see page 57.)

## 1124 Locks.

At the bottom of the Canals are, a series of Models of Canal-Locks, to point out the method of raising and lowering barges. These consist of eight pairs of iron lock-gates with sluices, and models of foot-bridges, for the purpose of crossing the locks. The gates inclose six pounds, or locks; and, being built to a scale of one inch to the foot, show a rise of fifty-eight inches; or, if in practice, a rise of fifty-eight feet. These models are put into action daily: the model of a vessel will pass from one canal, down, through the tunnel under the floor, to the opposite locks; by which it will be raised into the canal on the opposite side. opposite locks; by which it will be raised into the canal on the opposite side.



to the piston, 60 pounds of mechanical lore applied to the piston, 60 pounds of water will be raised; and this is the extent of its capacity under the most favour-able circumstances. But in the case of a force or lift pump, where water has to be carried above the height of thirty feet by the force of compression, this per-centage will materially decrease in proportion to the height to which the water has to be elevated. This part of the subject appeared to us to be so all-important and absorbing, that we made a point of having an experiment tried in our own presence, in order to discover if the state-ment made by Mr. Hall, that his belt would lift at great depths from 85 to 90 pounds of water for every 100 pounds of power employed, was substantially correct. The result of that experiment, which was made at a well in the Portman Market, 130 feet deep, was, that steam power equal to 107,892 pounds lifted 96,460 pounds of water, or nearly 90 per cent.

Here, then, we have the simplest hydraulic machine known, which shall do more work than the most complex can get through ; and the cost of which, both in its original construction and subsequent working, shall be a great deal less. Its portability, too, is another great fea-ture in the way of recommendation."

#### GREAT HALL.

1125 A Model of a Burmese War-boat, from Rangoon. These Boats generally run from 100 to 120 feet long, 6 or 7 feet wide, and 3 or 4 feet deep, and carry from 100 to 150 men.

1126 Model of a New Zealand Canoe. Deposited by Mr. BATTERSBY.

- 1126\*Model for illustrating the Action of Intermitting Springs. By J. WHARTON, Esq., Dryburn, Durham.
- 1127 Model of the Archimedes Steam Vessel. Deposited by - SMITH, Esq.
- 1128 Captain Henvey's Life Buoy.
- 1129 Model of a Frame for a Floating Breakwater, each Frame constituting a portion of a Harbour of Refuge. Deposited by J. WHITE, Architect.
- 1130 A Model of a Revenue Cutter. Deposited by Mr. GODDARD.
- 1131 A Model of a Sloop of War, fitted with Mr. Snow Harris's Lightning Conductors.
- 1132 Model of a Baltimore Clipper. Deposited by Mr. KIRKMAN.
- 1133 A Model of the Royal George.
- 1133\*Model of a Steam-boat, with Stevens's Patent Paddlewheels.
- 1134 Model of a Steam-boat fitted with Capt. Carpenter's Patent Propellers.
- 1135 and 1136 Two Models of Chinese Junks.

1137 Mr. J. R. Bakewell's Patent Pneumatic Marine Preserver. Vessels fitted up with this "Preserver" will not sink although filled with water, and otherwise heavily laden. By its means ships can also be raised when sunk.

- 1138 A Model of a Cutter Yacht. Deposited by Mr. BETHEL.
- 1139 A Model of a Bombay Grab. Deposited by Major-General ALEXANDER.
- 1140 Model of a Steam Frigate of 36 Guns propelled by Blades out of the reach of Shot (not the Archimedian Screw) on two Shafts, one on each side of the Stern Post, instead of Paddle-wheels. She has four large Boats fitted on a new plan, to be got in and out with Davits, so as to be independent of Masts and Yards (which are liable to be wounded or carried away). On the Deck are Models of a 10-Inch Gun on a Pivot, forward and aft, and of Mr. Monk's new 56-Pounder in Midships,

also on a Pivot. By Captain George Smith, R.N. N.B. The Engines and Boiler being Working Models take up much more space comparatively than they would in a full-sized vessel.-Patented in November, 1838. ginal construction and subsequent marking, shall be a great deat. Its partability, too, is another great fea-ture in the way of recommendation."

1141 Locks.

Here is shown the method of passing a vessel up an inclined-plane, by the resistance of her own paddles, as practised by vessels that surmount the American rapids.

1142 Cups for giving an Electric Shock by placing separate hands or fingers in both at the same time.

#### 1143 Building Dock.

On the left-hand side of the Circular Basin are Models, to scale of one quarter of an inch to one foot, of a Building Dock, or Slip, with the capstans and palls, and the model of a ship of war in the progress of building. The vessel is placed on the slip, or stocks; and the method of supporting her while building, is shown by the raking-shores, which are not struck until the vessel is ready to be launched.

#### 1144 Launching Slip.

On the right-hand side, and opposite, is a three-decker, without stores or rig-ging; representing the state of a ship with the raking shores struck, and the slip laid, ready to be launched. The cradle and slip, with the method of fixing the dogshores, are here clearly shown Every piece of timber being removed, the whole mass is retained by the dog-shores only, which, when struck away by a smart blow, allow the ship to rush with great rapidity into her native element. A Model of a powerful Windlass is also placed here, for the purpose of bringing the vessel back on to the slip.

#### 1145 Dry Dock.

On the left hand, near the Pier, is the model of a Dry Dock for repairing Ships, with Models of four Capstans and Palls, and a pair of large Floodgates with with Models of four Capstans and Pails, and a pair of large Floodgates with Sluices. The capstans, which are used for opening and closing the gates, are connected with machinery built in the solid masonry, and act upon the gates by means of chains connected with them. The gates are partly supported by rollers placed at the points, running upon an iron tram, placed upon the floor of the dock-cill. This model shows correctly, the method by which a first-rate ship, with all her stores, may be docked, and the whole of her bottom inspected in a few hours. few hours.

#### 1146 Graving Slip.

On the right of the Pier is a Graving Slip, for laying vessels on. The cap-stans and palls on each side, show the means of hauling the ship on to the slip.

#### 1147 Pier.

On the Pier is placed a Model of the Masting-Sheers, with treble action blocks and fall, and the model of a mainmast slung; also, the hand-blocks and fall, for the purpose of stepping the mast, and the connexion of the great falls by means of snatch-blocks with the capstans. The method by which the strain is relieved from the top of the upright spar, is plainly to be seen, by inspecting the manner in which the supporting chains are placed.

## 1148 A New Fire-Alarum (on Pier).

- 1148\*Specimens of Engraving, from Original and Electrotype Plates. By E. Palmer.
- 1149 A Water-colour Drawing :-- View of Woolwich Dockyard. By G. SCHARF.

1149\*Brass Pedestals for giving an Electric Shock by placing separate hands on both at the same time.

#### SOUTH-WEST SKYLIGHT ROOM.

60

- 1150 Model of an Ice Sledge, for Saving Drowning Persons, and
- 1150\*Model of an Ice Boat, for the same purpose. By Mr. J. Wilson.
- 1151 to 1153 Three Water Wheels, in Motion, viz.—A Breast Wheel, an Undershot Wheel, and a Backshot, or Pitchback Wheel.
- 1154 The Water Ram. Manufactured and Deposited by R. CUNDALE 51, Marylebone Lane.

A useful and simple machine for raising water to any height without the aid of any other force than the momentum of a part of the water to be raised. The action of the machine depends entirely on the force that is generated whenever a body is put in motion; and its effect is so great as to give the apparatus the appearance of acting in defiance of the established laws of hydrostatic equilibrium; for a moving column of water of small height is made to overcome and move another column much higher than itself.

#### End of Great Hall.

## South-West Skylight Room.

- 1155 A Lithographic Press, in daily operation. Deposited by Mr. FRIEDEL.
- 1156 A Cutler's Shop, where is exhibited the process of making Clasp-knives weighing only the 490th part of an ounce, with other miniature Cutlery. By B. WARNER.
- 1157 A Drawing of Dick's Suspension Railway.
- 1158 A Chinese Map. Deposited by W. M. NURSE, Esq.
- 1159 A Plaster Cast group of figures—the Deluge. Designed and Deposited by Mr. SCOULAR, 91, Dean Street, Soho.
- 1160 Sculpture, by R. W. SIEVIER, Esq.

1161 Ditto, in Marble, by ditto.

1162 Medallion Bas-relief, by Mr. LOFT.

## North-West Skylight Room.

1163 Sculpture, by R. W. SIEVIER, Esq.

1163\*Model of a Sleeping Infant and Dog. Deposited by Mrs. E. CAYLEY.

#### 1164 An Engraver's Desk.

The art of Gem and Seal Engraving is practised here throughout the day, by J. GIFFORD. Visitors may have Seals or Rings engraved during their stay in the Institution, or they will be sent to their residences.

- 1164\*Suit of Armour, in imitation of Steel, on Papier Machée. By Messrs. CRACE, Wigmore Street.
- 1165 A Cast from Canova's celebrated Group of the Graces. Deposited by Mr. LOFT.
- 1166 A Superb Mosaic Porphyry Table. Deposited for Sale, by Mr. SAMSON.

The slab of this unique table is composed of nearly ten thousand pieces of the most rare and beautiful specimens of Swedish Porphyry. The pedestal is a solid piece. The execution of this magnificent work of art occupied five of the most ingenious workmen at Elfdal, in Sweden, during a period of eight years and nine months.

nious workmen at Elfdal, in Sweden, during a period of eight years and nine months. The Swedish Porphyry is ascertained to be much harder than Egyptian or any other Porphyry, and capable of receiving the finest polish; also of resisting the action of oils and acids. Time and weather do not affect it.

- 1167 to 1169 Three Porphyry Circular Table Tops. Deposited by Mr. SAMSON.
- 1170 to 1180 Specimens of Electrotype, by Mr. BACH-HOFFNER.
- 1181 Frame containing three Objects, viz., an impression from an engraved plate,—an impression from an Electrotype duplicate of the same plate,—and an Electrotype Matrix or Mould of another Engraving. Deposited by Mr. J. WILLIAMS, Electrotypist, 44, Paternoster Row.

Mr. Williams is prepared to multiply, by voltaic electricity, fac-simile copies of engravings of any size, or of any value, without their being distinguished from the original plates.

- 1182 to 1279 Upwards of one hundred beautiful Continental Daguerreotypes, many of them taken by Daguerre himself, from the most celebrated places in France, Italy, and other parts of Europe.
- 1280 The Original Carving, in Wood, of the Crucifixion, by Michael Angelo, from which Rubens copied his celebrated Painting in the Cathedral at Antwerp. Deposited for Sale by — ASBURY, Esq.
- 1281 Corotti's ingenious Copper Lamp-furnace, Steam-boiler, and Water-bath, for heating Vessels, containing Six different Colours of melted Wax, for Moulding Figures, Busts, Fruits and Flowers, in Plaster of Paris Moulds, wetted; the very curious process of doing which, is exhibited daily. Also, by Mrs. Corotti, the process of making Fruits, Flowers, and Vegetables, in Rice Paper.

#### LECTURE ROOM.

## Extreme West Room.

(No. 24.)

This room is appropriated for Modelling.

## Room for Lectures on Experimental Philosophy.

#### (No. 25.)

- 1282 A Map of North America, exhibiting the recent Discoveries.
- 1283 A Map of South America, on which is delineated the Modern Discoveries, and showing the New States. Deposited by JAMES WYLD, Geographer to the QUEEN, Charing-Cross, East.
- 1284 A Map of Europe, exhibiting the Great Roads and Physical Features.
- 1285 A General Map of Africa, describing the Progress of African Discoveries.
- 1286 A Powerful Electro-Magnet;—its supporting power is 2,240 lbs.

This instrument is simply a bar of soft iron, bent into the form of a horse-shoe magnet, around which are wound a series of convolutions of insulated copper wire. When a voltaic current is made to circulate through these coils, and, consequently, at right angles to the axis of the iron bar, powerful magnetic effects are instantly developed, and the bar of soft iron becomes a temporary magnet, capable of supporting the enormous weight of one ton, or 2,240 lbs. This effect is maintained only during the flow of the voltaic current; for when the latter is cut off by breaking the connexion, the bar of soft iron instantly returns to its original state, being no longer magnetic.

- 1287 A New Arrangement for the Voltaic Battery. Deposited by Dr. HOSKINS.
- 1288 An Apparatus, showing the Rotation of the Magnet on its axis, by the transmission through one-half of its length, of a voltaic current.
- 1289 Bachhoffner's Revolving Electrepetor.
- 1290 A Powerful Magnet. By SCHMIDT.
- 1291 Powerful Magnetic-Electrical Machine.

The advantages of this arrangement are, that having two distinct inductors the full effects of quantity and intensity are developed; the use of mercury is avoided, and the wire coils being in metallic contact with the iron armature, a considerable increase of power is obtained. This machine is on a larger scale than has ever yet before been made; the magnets, 10 in number, weigh 156 lbs. The inductors are put in rapid motion by the foot of the operator. The intensity inductor has 894 yards of insulated copper wire, one twenty-eighth of an inch diameter. The quantity inductor has 100 yards of insulated copper wire, one-tenth of an inch diameter. For a detailed description of this instrument, see Transactions of the London Electrical Society, September 4th, 1838. Also, Edinburgh Phil. Mag, for October, 1836; Sturgeon's Quarterly Annals of Electricity, for January, 1837; Poggendorff's Annalen der Physik, No. 10, 1836; Silliman's American Journal of Science, No. 2, 1838; and Pouillet's Traite de Physique, 1837.

#### 1292 Crosse's Voltaic Battery.

The peculiarity in this arrangement is that of being excited by water without the addition of either acid or alkali. It consists of 286 pair of copper and zinc plates, each pair being in a glass jar, by this means perfect insulation being secured. This Battery gives shocks, decomposes water, charges the Leyden phial with a low intensity, and deflects the Gold-leaf Electroscope.

1293 Bachhoffner's Electro-Magnetic Machine.

This small, but powerful instrument, consists of a wooden cylinder, around which is coiled a stout insulated copper wire, of about two or three hundred feet in length; upon the latter, but not in metallic connexion with it, another thin insulated copper wire, of great length, is coiled; and the ends of the first, or thick wire, are connected with the *electrodes*, or poles, of a Voltaic Battery; the ends of the thin wire being furnished with brass conductors, for receiving the shock. On the connexion with the Voltaic-Battery being rapidly made and broken, very powerful shocks are received, by grasping the conductors with the hands.

1293\*Bain's Electro-Magnetic Machine, for accurately and expeditiously measuring the depth of the Ocean.

This machine consists of a common sounding lead and line. In the line are two metallic wires, for the purpose of transmitting a current of electricity. On the deck of the vessel is placed an alarum, the hammer of which strikes the moment the lead touches the bottom.

1294 Bain's and Barwise's Electro-Magnetic Clock.

1294\*The Model of a Pile-driving Machine, worked by Electro-Magnetism. Manufactured for the Institution by Mr. WATKINS.

1295 Professor Henry's Flat-Ribbon Coil.

- 1296 A 36-inch plate Electrical Machine, mounted on Mr. Snow Harris's principle. Made for the Institution by Messre. WATKINS & HILL, Charing Cross.
- 1297 An Electrical Cannon. Deposited by Captain GEO. SMITH, R.N.
- 1298 An Hydrostatic Fountain.
- 1299 Standard Barometer. Deposited by Mr.C. CALDERARA, Fetter Lane.
- 1300 to 1340 Forty Specimens of Electrotype, by Mr. BACH-HOFFNER.
- 1341 Nott's Patent Stove. Deposited by Mr. BENHAM, Wigmore Street.

## South-West Basement Cosmoramic Rooms.

#### (No. 26.)

#### First Room.

- 1342 Mr. Boscawen Ibbetson's Trigonometrical Model of the UNDERCLIFF of the Isle of Wight, viewed through magnifying glasses .- (For a description of this Model, see pages 8 and 9 in the Catalogue).
- 1343 A Design for a Swiss Boat House. By Mr. GRAY.

#### Second Room.

This Room contains three Paintings on Glass, also viewed through magnifying glasses, being Copies from

- 1344 "The Opening of the Sixth Seal," by DANBY.
- 1345 "The Destruction of Nineveh," and
- 1346 " Joshua commanding the Sun to stand still." Both by MARTIN, and
- 1347 to 1355 A Series of beautiful Daguerreotype Pictures magnified, and exhibited by artificial light, - being Views in Greece, Italy, France, England, and other parts of Europe.

#### Passage.

1356 A Panoramic View of the City of Canton, by a Chinese Artist, exhibited through Magnifying Glasses.

This is admitted to be one of the most correct and beautiful works of the kind from the hands of a Chinese Painter.

#### WEST BALCONY ROOM.

## West Balcony Room.

## (No. 19.)

- 1357 Colossal Dissected Model of the Human Eye, and an oblong Glass Case, containing Colossal Dissections of the Human Eye. Modelled by Mr. GEORGE SIMPSON, Surgeon to the Westminster General Dispensary.
- 1358 A Model of the Human Ear, (in Papier Machée,) of 144 Times the Natural Size.

A model of this important organ, which has had too little attention paid to A model of this important organ, which has had too little attention paid to it, owing to its minute and complicated construction, is now exhibited on an enlarged scale, showing the external convoluted Ear, with its eartilaginous and bony passage, (in which the ceruminous glands, which secrete the wax, are situated.) leading to the Drum, or membrane of the Tympanum. By means of this Colossal Model, the difficult, but interesting study of *Acoustics* is greatly facilitated, the Temporal Bone being so divided, as to show, at one view, the cavity of the Tympanum, or Intermediate Ear, with the small chain of Bones,—viz. the *Malleus, Incus, Orbiculare, Stapes*, the Muscles attached to them, and the *Eusta-chian Tube*, or *Trumpet*—the passage from the Mouth to the Ear—the supposed use of which is to preserve the equilibrium of the atmospheric pressure on the *Tympanum*. The *Labyrinth*, or *Internal Ear*, is also seen, divided into the *Cochlea, Vestibulum*, and *Three Semicircular Canals*, on the Membranes of which the nervous pulp of the *Auditory Nerve* is beautifully expanded to receive the the nervous pulp of the Auditory Nerve is beautifully expanded to receive the sonorous vibrations, and to convey them to the Sensorium.

1359 The Invisible Girl. Invented & Deposited by Mons. CHARLES. The ancient Magicians were very successful in making Acoustics or Sound The ancient Magicians were very successful in making Acoustics or Sound subservient to their purposes in their endeavours to awe the ignorant. For this purpose, a phenomenon similar to the Invisible Girl, was frequently and success-fully used. The Speaking Head of Orpheus, at Lesbos, and the Statues of Delphos, were famous throughout all Greece and Persia, as they predicted, though in equivocal language, the destinies of men, nations, and events, as best suited the views of the priesthood of those times. Odin, who imported into Scandinavia many wonderful magical arts, possessed a Speaking Head, said to be that of Minos. Gerbert who filled the papal chair under the name of Sylvester II., formed a Speaking Head of brass. Albertus Magnus invented a Head which spoke and moved also; it was composed of china, and Thomas Aquinas was so alarmed when he saw and heard it, that in his haste to escape from it, he broke it into pieces, much to the dismay of Albertus. Lucian tells us that the impostor alarmed when he saw and heard it, that in his haste to escape from it, he broke it into pieces, much to the dismay of Albertus. Lucian tells us that the impostor Alexander made a figure of Æsculapius speak by transmitting his voice through the gullet of a crane to the mouth of the statue. At the Court of Charles II., a wonderful exhibition was introduced, which surprised every one who heard it for a length of time, but when the astonishment was at its height, a person was dis-covered by one of the pages in an adjoining apartment. The questions, it seems, had been proposed to an apparently isolated wooden figure, by whispering into its ear, each question being answered through a pipe communicating with the figure. Theodoretus states, that in the fourth century, when Bishop Theophilus broke to pieces the statues at Alexandria, he found some which were hollow, and which were so placed against a wall, that those who were in the secret could conceal were so placed against a wall, that those who were in the secret could conceal themselves behind them, and address the ignorant spectators through their mouths. The whole of these it will clearly appear were formed upon the same principle as the Invisible Girl.

N.B. The attendants (or Inventor when present) will explain the phenomena of the Invisible Girl to the visitors.

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#### WEST BALCONY ROOM.

#### WEST BALCONY ROOM.

- 1360 Model of the Custom-House, with a Design for a Pier for landing Goods and Passengers. Deposited by – WROUGHTON, Esq.
- 1361 Specimen of Modelling in Wood—A Fox Chase. By Mr. R. B. DAVIS.—(For sale.)
- 1362 A Glass Case, containing numerous Fossil and Geological Specimens from the Isle of Wight. Deposited by BOSCAWEN IBBETSON, Esq.
- 1363 to 1372 Ten Specimens of Fossil Remains. Deposited by BOSCAWEN IBBETSON, Esq.
- 1373 Glass Case, with arranged Specimens of the Strata of the Isle of Wight. Deposited by BOSCAWEN IBBETSON, Esq.
- 1374 Model of the Canton Berne. Deposited by BOSCAWEN IBBETSON, Esq.
- 1375 The Chordæolian, a new Musical Instrument, uniting the Pianoforte with an improved Seraphine.

It has two rows of keys, with pedals, which unite the keys at pleasure, and increase and diminish the tone, enabling the performer to produce most beautiful effects, which render the instrument suitable for every description of music. It is manufactured within the usual form and dimensions of the pianoforte, by the inventor, R. Snell, 7, Globe Terrace, Ball's Pond.

- 1376 Iron Rocking Chair. Deposited by Messrs. COTTAM & HALLEN.
- 1377 A Curious Specimen of Caligraphy on one entire Sheet of Paper, executed by a British Officer during three years' confinement in a French prison. Deposited by JAMES FAIRLIE.
- 1377\*A "Prince Albert" Walking Stick, enclosing a Telescope, Compass, &c. Deposited by Messrs. DAVIS, 33, New Bond Street.
- 1378 A Magnificent Double-barrelled Gun, and a Brace of Pistols, richly inlaid with Gold and Silver. Made for the Schah of Persia. By W. F. MILLS, 120, High Holborn.
- 1379 Specimens of Painting, in the Chinese style; and of Flower Painting on Velvet. By Miss VERNET.
- 1380 A Painting of our Saviour, by GUIDO. Deposited by GREGORY, Esq.
- 1381 Original Sketch, by WEST. Raising of Lazarus. Deposited by E. MORGAN, Esq.
- 1382 Beautifully Painted Papier Machée Table. Deposited by Mr. HARVEY, Hatton Garden.

- 1383 Specimens of Papier Machée Tea Trays, inlaid with Mother-o'-Pearl, &c. Deposited by Mr. HARVEY.
- 1384 An Illustration, in Caligraphy and Water-Colour Drawing, of the First Chapter of Genesis. Designed and executed by Mr. Louis Gluck ROSENTHAL. Deposited by A. HAMILTON, Esq.
- 1385 Specimen of Carving in Wood. Executed by J. R. GOD-FREY, 9 Years of Age. Deposited by Mr. PETER AUBE.
- 1386 Peau en Plastique Ornaments. Manufactured by Mr. ESQUI-LANT, No. 4, Doris Street, Kennington Cross.

These Ornaments have an advantage over every other kind as to relief and durability, together with a flexibility that enables them to bend to any shape, to be placed in corners, &c. &c.; they will gild equal to Wood, and may be painted to imitate China.

1387 A Specimen of Penmanship. Presented by Mr. J. GILLOTT, Steel Pen Manufacturer, Birmingham.

1388 and 1389 Two Specimens of China in the biscuit state.

1390 The celebrated *Table des Mareschaux*, painted in the Palace of the Tuilleries for the Emperor Napoleon, by ISABEY

The slab of porcelain on which the portraits are painted is of Sêvres manufacture, said to be the largest ever made. In all there are fourteen portraits—one of the Emperor himself, in the centre, and thirteen others of his Marshals around. The execution of this unique and most magnificent work of art occupied the painter many years, at a cost to Napoleon of several thousand pounds. It was presented by the Emperor to the city of Paris; but at the restoration of the Bourbons, it was removed from the Louvre, where it had been deposited.

- 1390\*An Improved Double-Cushion Reclining Chair. Deposited by Mr. TOPLIFF, 27, Little Queen Street, Holborn.
- 1391 Portrait of William Prince of Orange. By WEENYNX. Deposited by J. ROGERS, Esq.
- 1392 Case of stuffed Birds, from South America.

1393 Ditto.

1394 Ditto.

1395 Ditto.

- 1396 The pattern Model of the Crown in which Her Majesty Queen Victoria was crowned. By Miss ROYER.
- 1396\*Model, in Composition, of "Sterne's Monk." Deposited by Mr. COOPER.
- 1397 An Improved Drawing Board, for Straining Paper. By Mr. WILSON.
- 1398 Frame of Drawings of Improved Carriages. By J. HOLLOWAY, 99, Long Acre.

#### EAST BALCONY ROOM.

#### UPPER WEST ROOM.

1399 A Painting of the Holy Family. Deposited by P. NORTON, Esq.

1400 Fine Specimen of Painted Glass, by Messrs. HOADLEY and OLDFIELD.

- 1401 Large Metallic Reflector.
- A whisper may distinctly be heard between this and the one in the opposite Balcony.
- 1402 Two Specimens of Slate-a Smooth Slab and Roller. Deposited by Dr. POTTS.
- 1402\*The Four Seasons, by Caraveggio-Spring-Summer-Autumn-Winter.

### Upper West Room.

#### (No. 20.)

This room contains a variety of curious and interesting Machinery of a novel description, patented by M. Moinau de Montauban.

1403 A Clock propelled by a Compensation Wheel.

This Clock is kept in motion by a Ball being placed in the Cup on the outside of the Wheel, causing the leverage to be on one-fourth of the wheel only. The Ball is returned to its original position by an Archimedes Screw. It is so arranged that one Ball is admitted on to the wheel every two hours.

- 1404 A Telegraphic Clock, moving by the power of a weight, which, pressing upon the wheel, answers the same purpose as the Balls of No. 1403.
- 1405 A Clock moving on the same system as No. 1403, but the Balls of which are raised by means of a lever.

1406 A Ditto-similar to No. 1404.

- 1407 A Ditto ditto.
- 1408 The several portions of Machinery composing an Apparatus called the "Volant Moteur Perpétuel."
- 1409 The Suspension Apparatus of No. 1408.
- 1410 A large Musical Table, playing the following Airs, by Rossini, -

William Tell. Barber of Seville. Semiramede.

1411 A Ditto—playing

Jenny Jones.

Paddy Carey. • Waltz of the Thousand Flowers. Jim Crow.

1412 A Painting of our Saviour washing the feet of his Disciples-(on Staircase, over entrance to East Balcony Room). Deposited by Mr. BROUGHTON.

## East Balcony Room.

#### (No. 16.)

This Room is papered with Martin's Patent Oil-Colour Marble Paper; Factory, Lower Mansfield Place, Kentish Town; Agents, Messrs. Jackson and Graham, 37, Oxford Street.

- 1413 and 1414 Two Burmese Musical Instruments. Deposited by Dr. JACKSON
- 1415 A Musical Instrument from Africa. Presented by W. HAD-DON, Esq.
- 1416 and 1417 Two Indian exercising Instruments. Deposited by Dr. JACKSON.

## GLASS CASE (MARKED Y.)

- 1418 Series of Models of Figures and Utensils, illustrating the Habits and Manners of the South Americans.
- 1419 Series of Fossils.
- 1420 Various Indian Figures and Utensils, also Fossils and Shells, from the Southern Hemisphere, &c.
- 1421 Ten Specimens of Argentiferous Lead Ore, from the Kenmare Mines on the property of the Marquis Lansdowne. Presented by R. W. SIEVIER, Esq.
- 1422 Specimens of Vitreous Rock, from Beddgelert, North Wales.
- 1423 Specimens of Copper Ore, from Beddgelert. Presented by R. W. SIEVIER, Esq.
- 1424 Series of Specimens illustrating the Geological Formation of Scotland.
- 1425 Curious ornamented Horn from South America.
- 1426 to 1432 Various Figures manufactured from Tobacco. Deposited by J. LOGAN, Esq.

#### BASEMENT STORY.

#### EAST BALCONY ROOM.

#### GLASS CASE (MARKED Z.)

- 1433 Fine Specimen of Manganese Ore. Presented by C. WING. Esq.
- 1434 to 1455 Series of Clay Models of Figures and Utensils illustrating the Manners, Dress, and Customs of the Hindoos, and their various grades; viz. of Jogees, Kitmudgas, Bearers, Fishermen, Fugeers, Mahomedan Figures, &c.
- 1456 Six Models of Boats from the East Indies. Presented by Earl DUNDONALD.
- 1457 A Model of the State Boat of the Niewaub of Moorshedabad, and a Dinghee, carved in Ivory.
- 1458 A State Carriage, drawn by Oxen.
- 1459 A Palankin and Bearers; a Mohamedan Priest; a Messenger and two Bullocks, carved in Ivory.
- 1460 Three Figures of Animals, carved in Green Stone.
- 1461 A white Copper Balance Lamp.
- 1462 Eight Bronze Figures, used as Weights by the Burmese.
- 1463 Various Shell Bracelets and Ornaments; and Ornaments from Rangoon.
- 1464 and 1465 An Alligator, preserved in spirits; and the Nutmeg in its various states. Deposited by Dr. JACKSON.
- 1466 A Model of the Centurion, Commodore Anson's Ship, with a Patent Launching Slip. Deposited by Mr. BONNI-WELL.

Six Models and Specimens from the Admiralty, viz .--

- 1467 Model of the Royal George.
- 1468 A Fifty-gun Ship, built in 1707.
- 1469 Diana Frigate, with 50 Brass Guns.
- 1470 Section of a First-rate, shewing the inside fittings.
- 1471 Life Boat.
- 1472 A Congreve Rocket.
- 1473 A Model of a Patent Hydraulic Graving Dock, for elevating Vessels out of the Water, to examine them. Deposited by W. PITCHER, Esq.

- 1474 An Arnott's Stove.
- 1475 Alexander's Electro-Magnetic Telegraph. Deposited by WATKINS and HILL.
- 1476 A large Metallic Reflector. A Whisper may be distinctly heard between this and the one in the opposite Balcony.
- 1477 Ward's improved Drum.
- 1477\*Model of the French Frigate "Artois." Deposited by Mr. PHILLIPS.

## Theatre and Microscope Room.

- In this Room, which is capable of containing 500 Persons, are delivered daily Lectures on Chemistry, the Steam Engine, &c. &c.
- Here also are Two Glass Cases, containing Sectional and Working Models of the Steam Engine, and a variety of Apparatus used for illustrating the Lectures.

## **Basement Story**.

- 1478 A Cooking Stove. Deposited by Mr. DEAR.
- 1479 A Thermocrat Stove. Deposited by Messrs. LIVERMORE and SIEBE.
- 1480 An improved Kitchen Range.
- 1481 A Patent Safety Pedestal Stove. Deposited by the Patentees, NETTLETON and SON, Sloane Square.
- 1482 RICKETS'S Gas-Oven for Baking Bread, &c., &c.
- 1483 A Calorifere Gas-Stove for warming Halls, Shops, Chapels, and other Places, without any Chimney.
- 1484 A Gas Roasting and Boiling Apparatus.
- 1485 A Diluted-Gas Cooking Apparatus; also used for Economically Warming Bookbinders' Tools.

This Apparatus requires only a small stream of Coal-Gas to produce an intense heat, which may be increased or decreased at pleasure. It is worked without any Chimney, and emits neither dust, smoke, nor noxious vapours.

#### BASEMENT STORY.

- 1486 A Diluted-Gas Cooking Apparatus, for Stewing, Boiling, Steaming, and Baking.
- 1487 Nott's Patent Stove. Deposited by Mr. BENHAM, Wigmore Street. 1488 Dr. Hodgkin's Cooking Apparatus.

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