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An establishment provided with three or four of such figures, would be sufficient to fit perfectly, and without any subsequent alteration, the clothing of an army of several hundred thousand men, at whatever distance they might be from the establishment.

The inventor states it as his intention to present this figure to his Majesty the Emperor of all the Russias.

212 NEWTON, WM., & SON, 66 Chancery Lane, and
3 Fleet Street—Manufacturers.

Large manuscript celestial globe, 6 feet in diameter, in which the positions of the stars are laid down from Flamsteed's Catalogue, brought up to the year 1850.

Pair of 25-inch globes, in carved rosewood frames.

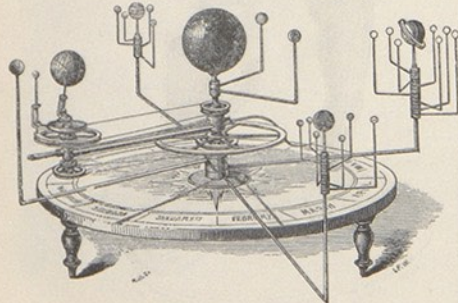
Slate globes of various sizes, with the meridians and parallels of latitude marked upon them, so that outline maps may be drawn by the student with pencil.

Variety of globes of various sizes, and in different kinds of mounting.



Newton and Son's Terrestrial Globe.

Complete orrery, or planetarium, in which the motions of the earth and moon, and of the planets and their satellites, are effected by mechanism, actuated by clockwork.



Newton and Son's Planetarium.

Orreries, for educational purposes.

Armillary sphere, mounted in a brass meridian, and attached to a brass stand.

Spherical sun-dial for a lawn.

[A celestial globe is an inverted representation of the heavens, on which the stars are laid down according to their relative positions. The eye is supposed to be in the centre of the globe. A terrestrial globe is a representation of the surface of the earth as far as it is known. The diurnal motion of this globe is from west to east, whilst that of the celestial globe is from east to west, to represent the apparent diurnal motion of the sun and stars.—J. G.]

213 BENTLEY, JOSEPH, 13 Paternoster Row—Inventor
and Publisher.

Plano-globe. The northern and southern hemispheres are printed on circular pieces of pasteboard; each is confined to its revolving movement, by a brass meridian, allowing the same facility in working problems as the ordinary globe.

215 PLANT, FREDERIC, Nottingham—Inventor.

Mechanical orrery: the sun being represented by a luminous body.

Model of a self-regulating steam-boiler feeding apparatus, being a substitute for the common force-pump and regulating float, &c.

218 ADORNO, J. N., 6 Golden Square—Inventor and
Patentee.

A machine designed to measure and exhibit the ratio between the periphery and diameter of the circle.

A machine or instrument designed to draw ellipses derived from cylinders and cones, and also the other conic sections, as parabolas and hyperbolas.

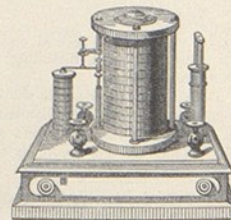
A terrestrial and celestial globe combined, with the constellations arranged for facilitating the solution of astronomical problems, and for geographical and nautical purposes; with an apparatus to show the passage of the earth among the signs of the zodiac in its annual orbit, and the position of the sun in the opposite signs.

A terrestrial globe, capable of separation into pieces, which may be used as convex maps for navigation, and other geographical purposes.

Twelve patent convex maps of the earth, invented by the exhibitor, to form a geographical sphere, or to be used separately for marine purposes, and to constitute useful and ornamental fittings for rooms or cabins.

220 HORNE, THORNWAITE & WOOD, 123 Newgate Street—
Manufacturers.

Electro-galvanic machine and set of instruments, for medical galvanism. The current of galvanism produced by this machine "flows only in one direction," and the quantity and intensity of the current are capable of being easily regulated. Represented in the following cut:—



Horne and Co.'s Electro-Galvanic Machine.

Apparatus for exhibiting dissolving views, chromotropes, &c., by the oxyhydrogen lime light, with illustrative

673 MACFARLANE, G., 85 *Newman Street*—Designer.

Improved cornean (cornet à piston), with short action valves, direct passage of the air, and can be played with ease.

673A BURSILL, G. H., 9 *York Terrace, Hornsey Road, Holloway*—Inventor.

Patent compensating cistern barometer; the mercury, by a self-acting contrivance, is always preserved upon a level within the cistern, notwithstanding any alteration of temperature, or any rise or fall of the barometrical column.

Artificial hand, possessing elastic properties; which enable those who require it to pick up, seize, and even make use of minute objects. Invented by Sir G. Cayley, Bart.; improved and manufactured by Mr. James Buckingham, 13 Judd Place East.

674 NEWMAN, J., 122 *Regent Street*—Inventor and Manufacturer.

Standard barometer. The frame consists entirely of metal; the cistern, when required for long journeys, is all of iron, so arranged as to be made portable for travelling, by the lower part shifting a quarter of a turn; thus obviating the objection so long made to the wood cistern and leather bag. The scale is marked off from an authentic standard scale (verified by the late Mr. Baily), and terminates in a point; it is capable of being adjusted with great accuracy to the surface of the mercury in the cistern, and when the vernier at the upper part of the scale is adjusted to the surface in the tube, the exact length of the column of mercury is in this way measured; the diameter of the tube is 0·6.

Portable mountain barometer; consists of a metal frame, with the iron cistern similar to the standard barometer, and has all the data marked on it for the corrections, for reducing the observations to those of the standard barometer.

Standard thermometer, divided to fifths of a degree. Maximum and minimum register thermometers. Maximum thermometer, with black bulb for solar radiation.

Minimum thermometer in the focus of a mirror, for terrestrial radiation.

Daniell's dew-point hygrometer.

Mason's wet and dry bulb hygrometer.

Lind's wind gauge.

The foregoing meteorological instruments are described by the Committee of Physics and Meteorology, in their Report published by the Royal Society, and made by the exhibitor for the various magnetic observatories.

Usual copper rain gauge, with accurately turned circle 12 inches diameter.

Howard's rain gauge and evaporator.

Sykes' thermometer and boiler, for measuring heights by the boiling point.

Miners' safety-lamp, as made for Sir H. Davy.

Miners' safety-lamp, as improved by the exhibitor.

Improved air-pump with metallic valves, and ground glass plate, which exhausts to within $\frac{1}{16}$ th of the Torricellian vacuum.

Rain and wind gauge, contrived to register the quantity of rain and direction of the wind, at the precise time, on a cylinder which has motion given to it by a clock; the register paper is replaced at the end of each month.

Self-registering tide-gauge; consists of a cylinder, moved by means of a clock 1 inch to the hour, and a pencil moved by the float 1 inch to the foot. The pencil, by being attached to a chain carried over two small brass cylinders, the one containing a spring, is so contrived that there is no loss of time in marking the change of the tide; so that the exact moment of the commencement of its rise or fall is registered, and its progress for every portion of time, from the highest to the lowest point, is traced on the paper. The paper for this instrument was laid down by the Admiralty, and is used with metallic pencils. On the face of the clock is shown the height of the tide during observation, and it also registers the highest and lowest for the day.

674A STEPHENSON, R., *Great George Street, Westminster*

—Inventor.

Machine for tracing.

675 NEWSON, HENRY, 18 *Percy Street, Tottenham Court Road*—Inventor.

Patent wire trusses, single and double, the latter passing round one hip only.

675A OAKEY, H., 81 *Dean Street, Soho*—Inventor.

New musical atlas, a work on the theory of music, which consists of a series of moveable diagrams, by the aid of which all the intervals, scales, chords (nearly 700 in number), inversions, &c., are brought to view; and the difficult problems in the science may be solved instantaneously by musical amateurs at any period of their studies.

Guide to harmony, and treatise on the musical atlas.

676 BIGG, H., & SON, 29 *Leicester St.*, and 9 *St. Thomas's Street, Southwark*—Manufacturers, Inventors, & Proprietors.

Patent artificial leg, constructed without metallic or external springs; colour, that of the natural limb; surface, admitting of ordinary soap and water washing.

Artificial hand with jointed fingers, and apparatus for enabling the wearer to use it as a natural hand.

Spinal supports, for lateral posterior curvature, and anterior curvature; and for vertebral and muscular weakness.

Self-acting spring crutches.

Instruments for fixed contraction of the knee (*ankylosis*); fractured patella; clubbed feet, (*talipes valgus et varus*); and contracted heel (*talipes equinus*).

Trusses:—P. Aston Key's, with pad, whose surface is continually changing; L'Estrange's patent for radical cure of hernia; Bigg & Son's convolute; and for umbilical hernia.

Instrument for support of prolapsus ani.

Aneurism needle; hernia knife; embryotomist; and

explorator, invented by the exhibitors.

676A BROWN, DAVID STEPHENS, *Alexandria Lodge, Old Kent Road*—Inventor.

Registered barometer, 39 feet high, range of scale 27 feet, manufactured by Casello and Co., 23 Hatton Garden.

677 READHOUSE, CHARLOTTE, *Newark-on-Trent*—Designer and Producer.

Lunar globe; a model of the moon, giving a general idea of the relative position of the mountains, valleys, and plains of our satellite, in relief.

[The distinctive structural peculiarities of the lunar regions are,—1st. A vast distribution of annular mountains, thrown up like ramparts round plains or valleys, having rugged ridges, and a conical hill rising out from the centre of many of them. Sir John Herschel, who computes the height of the highest of these mountains, at 1½ English miles (though Schroeter gives 5 miles as his calculation), testifies that they offer, in its highest perfection, the true volcanic character, and, speaking from his own observation, says that, "in some of the principal ones, decisive marks of volcanic stratification, arising from successive deposits of ejected matter, may be clearly traced with powerful telescopes."

2. Extensive plains, having the appearance of alluvial soil—relieved, however, with a number of crater-formed mountains (Copernicus, Kepler, Aristarchus, &c.), and small rocky eminences, with here and there circular cavities of various dimensions. These "large regions" (to use Herschel's term) are scattered over with fragments of rock, ashes, &c. They are given in neutral tint on the model.

3. Hundreds of cup-shaped valleys dimpling the general surface in every direction, and giving the idea of a contraction or settling down of the exterior on the receding

interior, according to a theory proposed by Mr. Nasmyth at the last meeting of the "British Association."



Readhouse's Lunar Globe.

The model illustrates the more reflective localities of the moon in dull gold bronze, displaying a number of bright rays, which seem to spread over a large section of the southern regions of the hemisphere, and diverging from a common centre (Tycho).]

677A SHADBOLT, G., 2 Lime Street Square—Inventor.

Sphæro-annular condenser, for condensing light in a peculiar manner, on transparent objects while under examination by the microscope. Diagrams and description, illustrative of the action and construction of the condenser.

678 JACK, W., 38 Devonshire Street, Portland Place, and 14 Ratcliff Row, St. Luke's—Manufacturer.

Mr. Clendon's new form of tooth-forceps and elevators. Improved adjusted forceps. Forceps for irregular front teeth. Forceps for roots of teeth. New stopping instrument, invented by the exhibitor.

678A MORTON, Professor, Royal Veterinary College, Camden Town—Inventor.

Medicated cotton for setons.
Galvano-arsenical apparatus.

679 BELL, THOMAS, 19 Homer Street—Inventor.

Watches, to go for one or three years, keep correct time, and show the day of the month; some are furnished with centre and others with ordinary seconds and quarter seconds; maintaining power whilst winding; duplex and other escapement; and composition balances.

Time-pieces and clocks, on the same construction.

A turret clock, to strike the hours and quarters; with best gun metal wheels and bosses, or holes; tempered and polished steel pinions of high numbers; dead-beat escapement, with adjusting pallets; tempered steel escape wheel, and tempered steel racks, snails, and hammer tails to the striking work; and improved pendulum, with adjustment of the same.

Interior hour, minute, and seconds hands, and dials for regulating and setting the hands upon clock faces, by patent metal lines instead of cords, to suspend weights. Balanced hands, &c.

679A BETTLE, PHILIP, 11 Regent Street, City Road—Maker or Producer.

Model of a steam-engine, of new design and workmanship. It is worked by machinery contained in the pedestal.

680 OFFORD, D., Great Yarmouth—Inventor.

The improved truss for hernia.
Improved instruments for the treatment of uterine diseases.

681 RICKMAN, WILLIAM CHARLES, 21 Park Side, Hyde Park Corner, and Pole Hole, Wexford—Inventor and Designer.

Road level: two varieties of an instrument for use in agriculture, drainage, and other purposes. This instrument enables a person unacquainted with the practice of levelling, and without calculation, or the aid of an assistant, to know the level of the ground, and also its rise or its fall. Only one observation is necessary, and the result is then found stated upon the dial. J. Peirce, maker, Wexford.

681A SOMALVICO & Co., Hatton Garden—Manufacturers.

Wheel barometer; ornamental gilt frame, improved porcelain plates.

Barometer in papier maché inlaid with pearl; ebony sides.

Standard pediment barometer, with extra large tube, and improved glass cistern showing the rising and falling of the mercury in the tube.

Improved mariner's barometer; combined marine tube, siphon tube, and hygrometer, to indicate the changes quicker than the ordinary marine barometer; making a complete and sensitive instrument for ascertaining the variations of the atmosphere correctly.

New siphon pedestal, or pocket barometer, 8 inches long.

Improved engineer's guide gauges, combined with barometer for correction.

Vacuum steam-pressure gauge, on a new principle: a great improvement on the former; prevents the water mixing with the mercury.

Steam-engine indicator: for showing the working quality of the exhibitors' patent brewers' liquid prover; requires no tables. Engines, walking-stick telescopes, with compass and hygrometer, and with double eyeglasses to spring out of the stick.

Improved sextant, with patent universal lunar lamp, which may be set to any angle, the observer being able to read off the sextant during rough weather or at night.

Solid limb sextant.

Model representing the circulation of the blood.

Improved self-generating coffee-pot, and for producing hot water in a few minutes, with an extinguisher which puts out the flame of the lighted spirit at any moment required; and portable cistern for travelling.

Case of mathematical instruments, &c.

682 COXETER, JAMES, 23 Grafton Street East—Manufacturer.

Aneurism needle, for facilitating the tying of deep-seated vessels. Scissors guillotine, for removing the tonsils. Scissors for excising the uvula. Artificial leech without piston or spring. A compound needle for injecting small cysts, designed by John Marshall, Esq., assistant-surgeon to University College Hospital. Forceps, for applying ligatures to arteries. A forceps so constructed that the ligature might be readily slipped over the points on to the vessel, originally designed by James Luke, Esq., improved by the exhibitor by adding Liston's spring catch and tenaculum teeth, and cutting out the head, so as to leave only, as it were, four fine wires for