

<i>Ditto</i> , as improved by E. M. C. whereby he has removed the inconvenience occasioned by the use of so many separate parts, including stopcocks and four union joints. See No. 4, of the Annals of Electricity.....	2	15	0
<i>Ditto</i> , in mahogany lock-up-case, with two large stout copper gas holders, funnel pipes, and stand for blow-pipe	12	12	0
<i>Improved Portable Hydro-oxygen Microscope.</i> This instrument is capable of showing objects, magnified on a medium from ten thousand to two million times; including objects, patent India rubber gas bags, hydrogen generator, and oxygen retort, from £16. to	36	0	0
<i>Clarke's Anemometer.</i> By appointment of the Inventor, Sir Arthur Clarke, M. D.	2	2	0
<i>Chemical Retort and Lamp Stands</i> of all sizes, from 5s. to	2	10	0
<i>Pneumatic Troughs</i> of all sizes and constructions, from 7s. 6d. to	2	10	0
<i>E. M. Clarke's improved cast iron Mercurial Trough</i> with filling blocks and trays	1	15	0
<i>Plain cast iron Mercurial Trough</i>	0	15	0
<i>Iron Retorts</i> for making oxygen gas with moveable screw top.....	0	12	6
<i>Lead Bottle and Purifier</i> for making hydrogen gas in large quantities. This apparatus is particularly adapted for inflating experimental balloons	1	10	0
<i>Chemical Stopcocks</i> that will stand the test of a high condensation, with brass bodies and gun metal plugs, and vice versa	0	4	0
<i>Male and Female connecting pieces T's, L's</i> } The Screws <i>Brass Caps</i> for retorts and air jars, all sizes } on these are <i>Brass Jets, Blowpipes, Sockets, and Union</i> } all of the same <i>Joints</i>	size of the stopcocks.		
<i>Chemical Thermometers</i> to boiling point of mercury with hinged scale	0	16	4
<i>E. M. Clarke's arrangement of the Zinc Parabolic Mirrors</i> on stands for experiments, with radiant heat. The polish produced on zinc is far superior to silver, and by E. M. C.'s mechanical arrangements all possibility to oxidation is removed. This is a most perfect apparatus. <i>Mirrors</i> 12 inches diameter including iron ball and 3 adjusting stands	5	0	0
<i>Marcett's Steam Apparatus</i> with barometer and thermometer attached. This instrument E. M. C. makes of cast iron thereby doing away with the accidents by explosion which have occurred owing to the action of the mercury on the brass rendering it incapable of confining high pressure steam	3	13	6
<i>Glass Retorts, Receivers, Air Jars, Funnels, Syphons, Tubes, Graduated Measures, Spirit Lamps, Precipitating Glasses, Test Tubes, Flasks, &c.</i> per lb.			
<i>Brass and Iron Retorts and Lamp Stands</i> of all sizes from 5s. to	2	10	0
<i>Superior Membrane Balloons</i> , from Paris, all sizes 7s. 6d. to	1	15	0



FIG. 4.

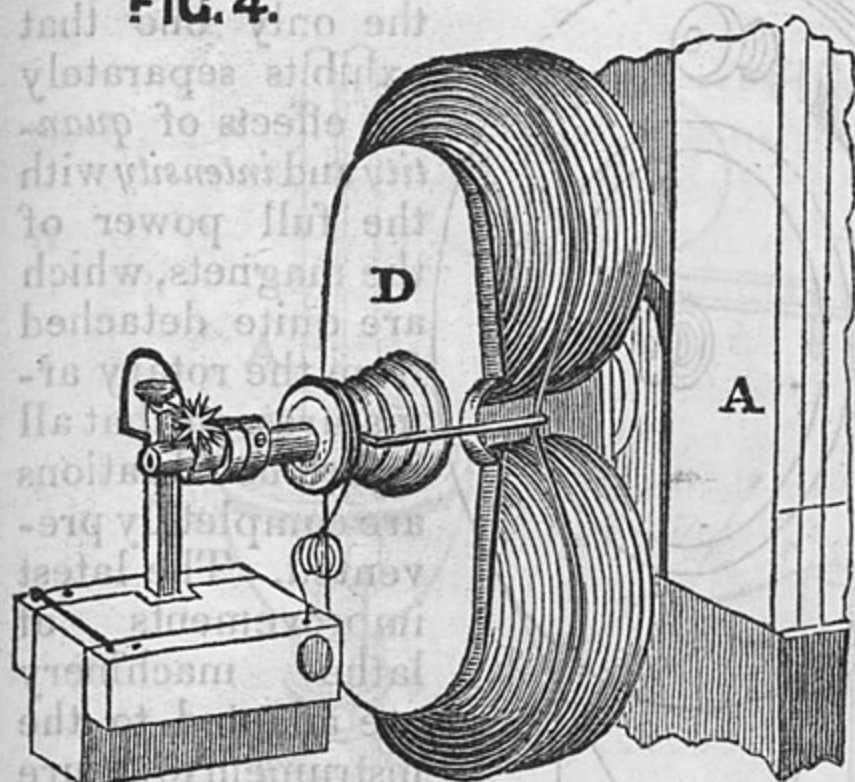


FIG. 2

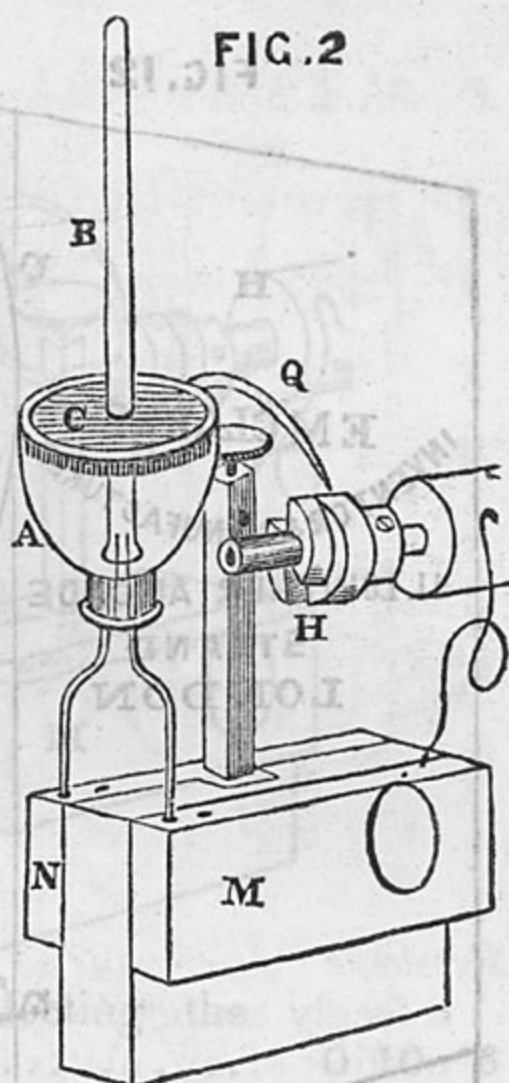


FIG. 7

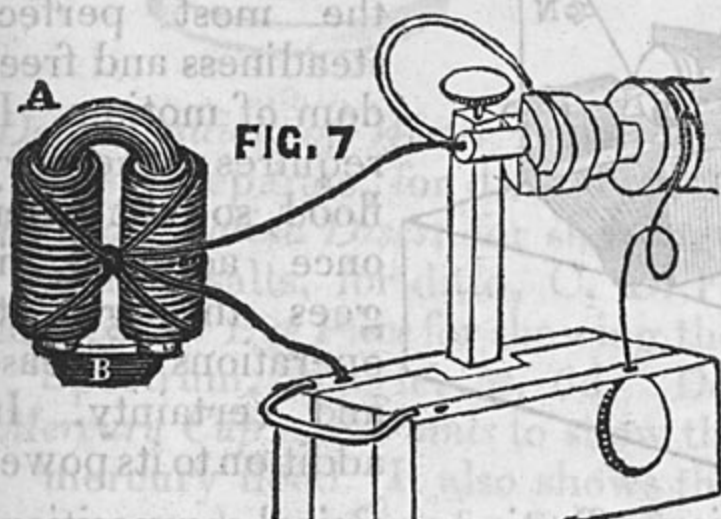


FIG. 8

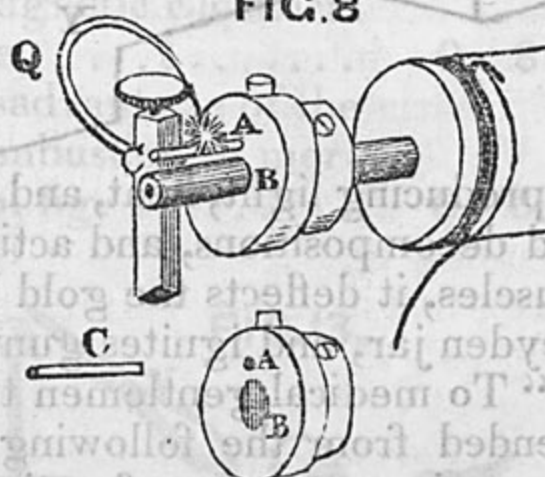


FIG. 6

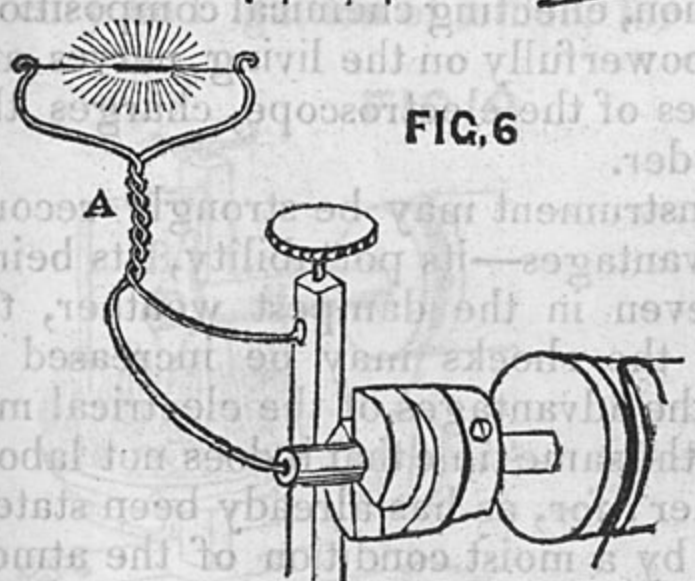


FIG. 5

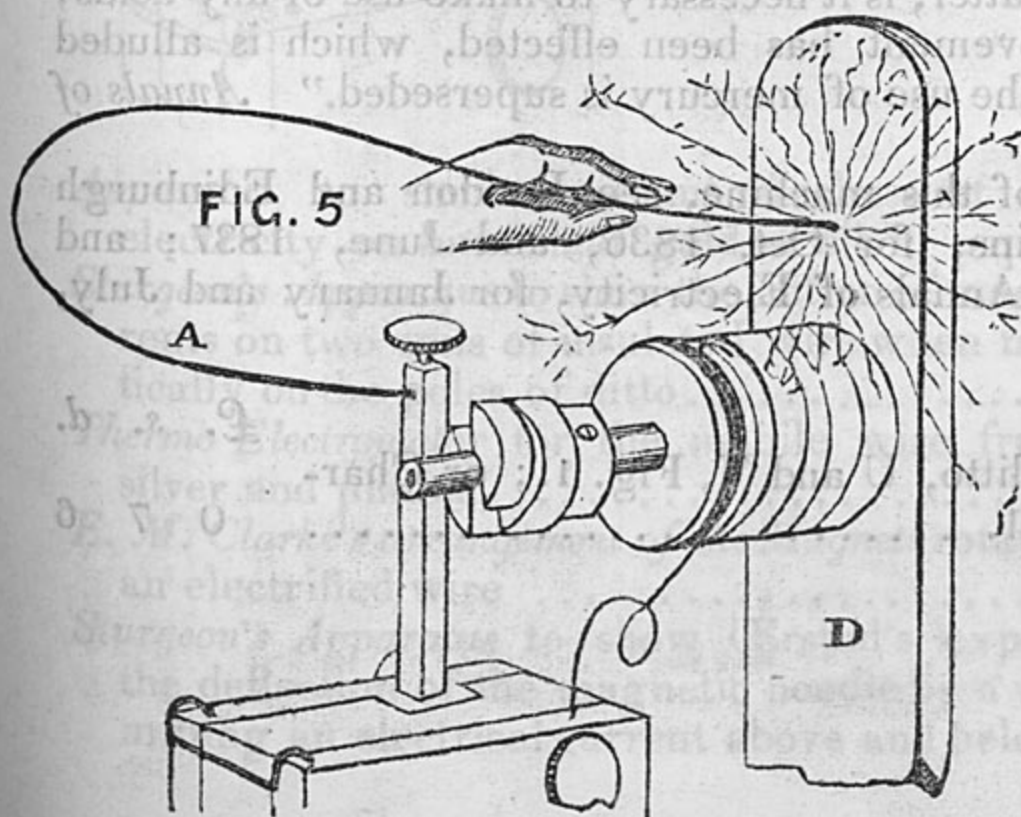
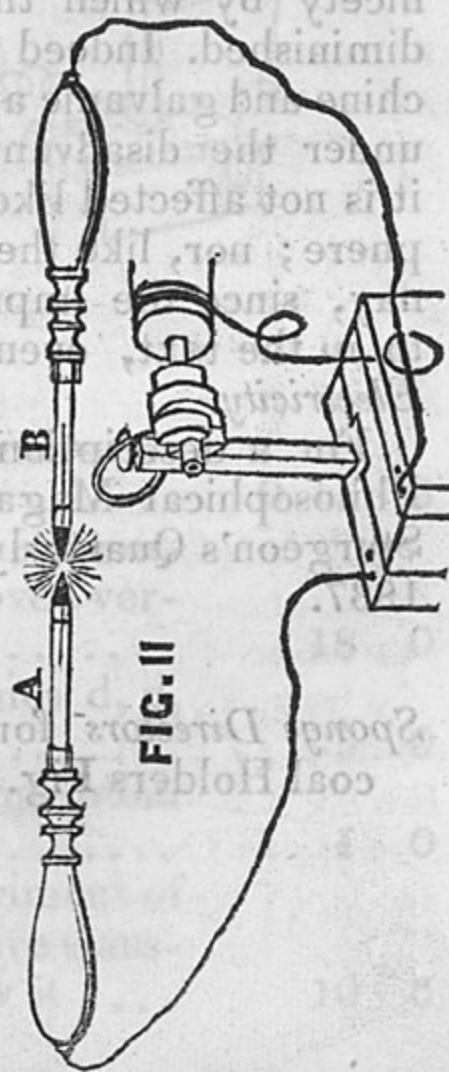
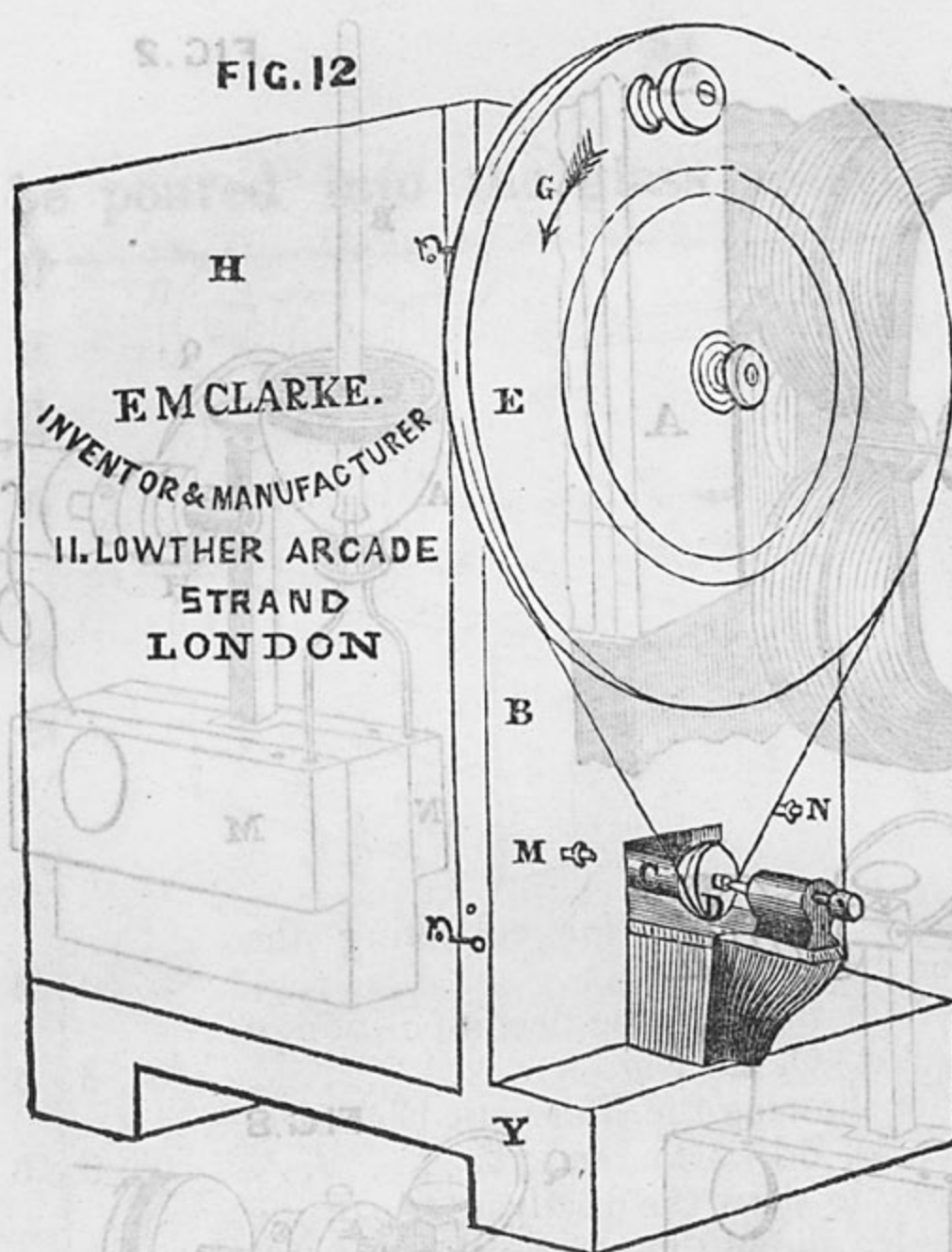


FIG. 11





This Machine is the only one that exhibits separately the effects of *quantity* and *intensity* with the full power of the magnets, which are quite detached from the rotary armatures, so that all injurious vibrations are completely prevented. The latest improvements of lathe machinery are adapted to the instrument to secure the most perfect steadiness and freedom of motion. It requires no mercury flood, so that when once adjusted, it goes through its operations with ease and certainty. In addition to its power

of producing light, heat, and motion, effecting chemical compositions and decompositions, and acting powerfully on the living nerves and muscles, it deflects the gold leaves of the electroscope, charges the Leyden jar, and ignites gunpowder.

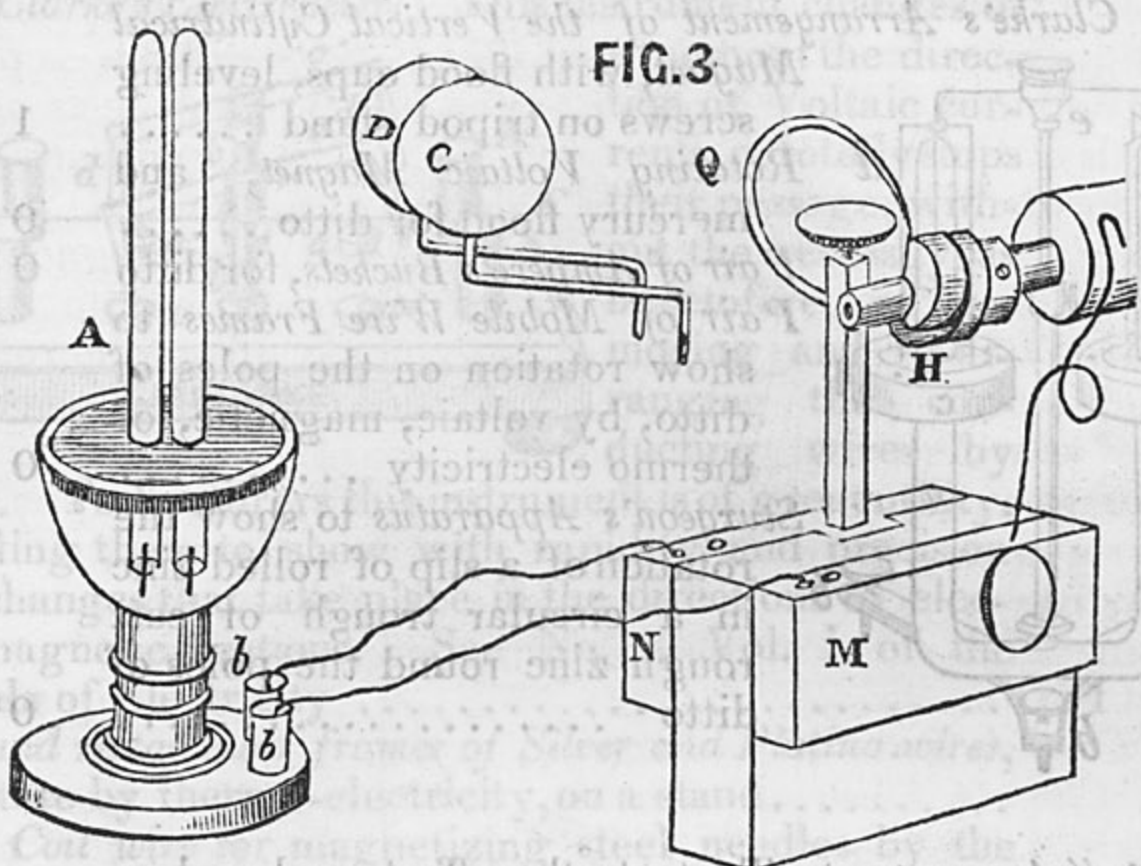
"To medical gentlemen the instrument may be strongly recommended from the following advantages—its portability, its being always in a fit state of action, even in the dampest weather, the nicety by which the power of the shocks may be increased or diminished. Indeed it combines the advantages of the electrical machine and galvanic apparatus, at the same time that it does not labour under the disadvantages of either; for, as has already been stated, it is not affected like the former by a moist condition of the atmosphere; nor, like the latter, is it necessary to make use of any acids; nay, since the improvement has been effected, which is alluded to in the text, even the use of mercury is superseded." *Annals of Electricity.*

For a description of this machine, see London and Edinburgh Philosophical Magazine, for Oct. 1836, and June, 1837; and Sturgeon's Quarterly Annals of Electricity, for January and July, 1837.

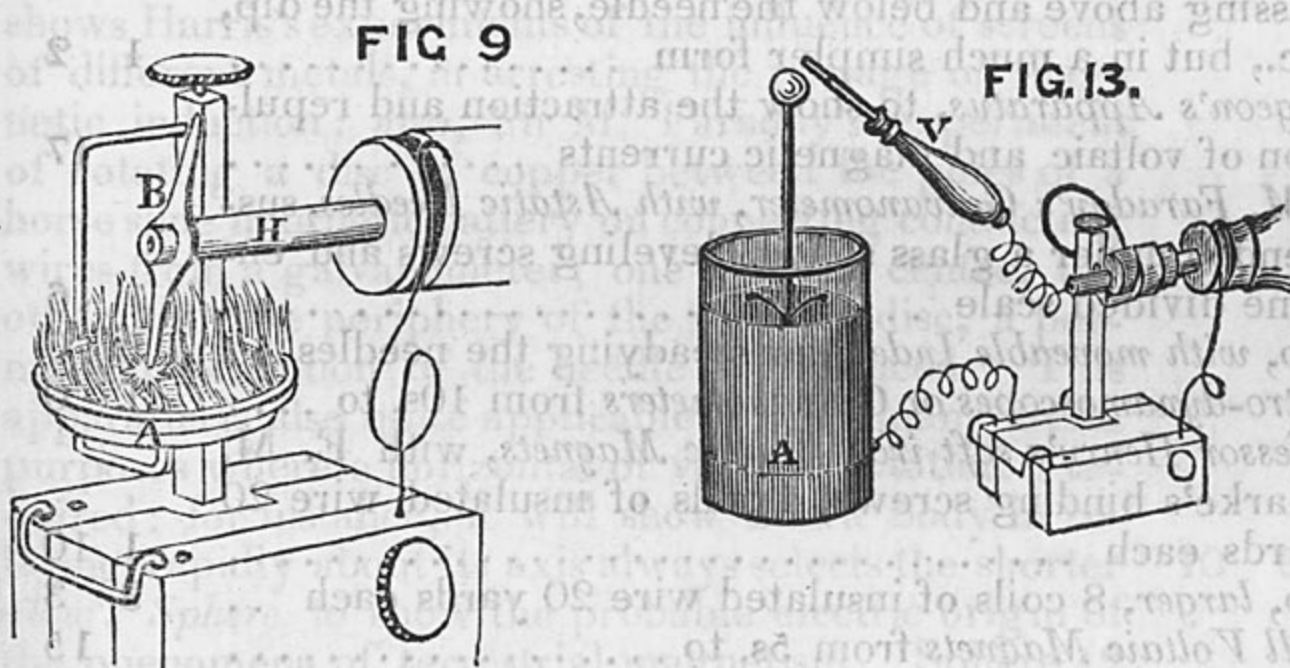
Sponge Directors for ditto, U and V, Fig. 1.; or Charcoal Holders Fig. 11.

£. s. d.

0 7 6

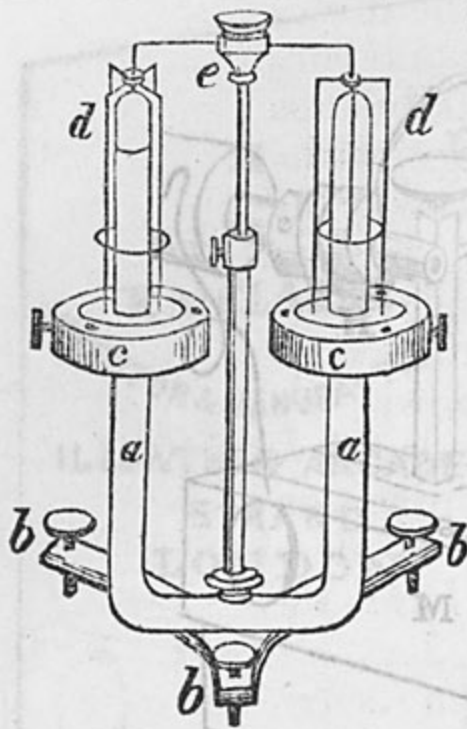


<i>Decomposition of Water Apparatus</i> , for collecting the Gases, separate, for ditto, Fig. 3.	0	10	6
<i>Pair of Platina Discs</i> , for showing the decomposition of neutral salts, for ditto, C, D. Fig. 3.	0	5	6
<i>Micrometer Eye Piece</i> for showing the Magnetic Electrical Spectrum. Single, 5s. 6d. Double,	0	8	6
<i>Mercury Cup and Points</i> to show the disadvantage of the mercury flood. It also shows the combustion of mercury and ignition of æther, for ditto, fig. 9.	0	3	0



<i>Apparatus</i> to show brilliant flashes of magnetic electricity on burnished gold or silver paper	0	15	6
<i>Sturgeon's Apparatus</i> to show the action of magnetic currents on two coils of insulated wire when moved vertically on the poles of ditto.	18	0	
<i>Thermo Electromotor</i> for the mobile wire frames d, d, silver and platina.	5	0	
<i>E. M. Clarke's arrangement of the Magnets</i> rotating round an electrified wire	1	1	0
<i>Sturgeon's Apparatus</i> to show Cæsted's experiment of the deflection of the magnetic needle by a wire transmitting an electrical current above and below it	10	6	

E. M. Clarke's Arrangement of the Vertical Cylindrical



<i>Magnet, with flood cups, leveling screws on tripod stand</i>	1	10	0
<i>Rotating Voltaic Magnet, and mercury flood for ditto</i>	0	10	0
<i>Pair of Ampere's Buckets, for ditto</i>	0	10	0
<i>Pair of Mobile Wire Frames to show rotation on the poles of ditto, by voltaic, magnetic, or thermo electricity</i>	0	5	0
<i>Sturgeon's Apparatus to show the rotation of a slip of rolled zinc in a circular trough of cast rough zinc round the poles of ditto</i>	0	15	0

Preston's "Apparatus to illustrate the effect produced on a freely suspended magnetic needle by the straight portion of an electrified wire. This contrivance affords the means of transporting the straight portion of an electrified wire all round the horizontal magnetic needle in directions parallel to one another, without interfering with its tendency towards the terrestrial magnetic poles"

1 3 0

E. M. Clarke's arrangement of Ørsted's apparatus, possessing all the advantages of the electrical current passing above and below the needle, showing the dip, &c., but in a much simpler form

1 2 9

Sturgeon's Apparatus, to show the attraction and repulsion of voltaic and magnetic currents

17 6

Sir M. Faraday's Galvanometer, with Astatic Needles, suspended under a glass shade, leveling screws and engine divided scale

1 16 0

Ditto, with moveable Index for steadying the needles ..

2 0 0

Electro-dynamoscopes or Galvanometers from 10s. to

1 0 0

Professor Henry's soft iron Voltaic Magnets, with E. M. Clarke's binding screws, 4 coils of insulated wire 20 yards each

1 10 0

Ditto, larger, 8 coils of insulated wire 20 yards each ..

3 3 0

Small Voltaic Magnets from 5s. to

15 0

Sir M. Faraday's Apparatus to show the rotation of an electrified wire round the poles of a magnet

15 0

Ampere's Apparatus to show the rotation of a vertical bar Magnet on its axis

1 1 0

Apparatus to give powerful secondary shocks from a Single Voltaic Pair, with Callan's insulated helical coiled wires

4 4 0

Marshe's Vibrating wire

7 6

Barlow's Wheel to convert ditto into a rotatory motion

18 0

Sturgeon's Disc for ditto, large size

1 7 6

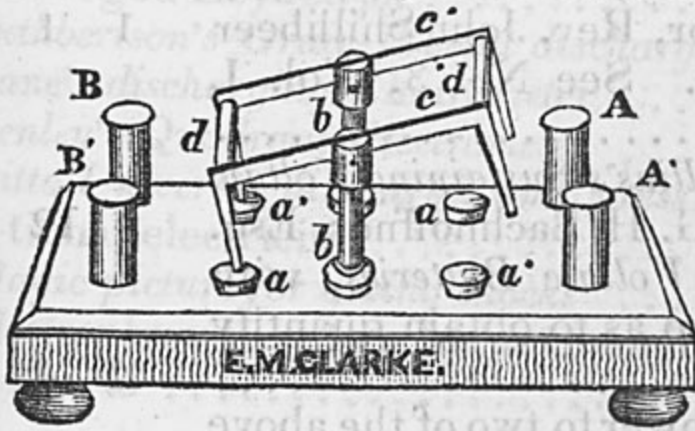
De la Rive's Floating Battery

5 0

E. M. Clarke's arrangement of ditto, being much lighter

7 6

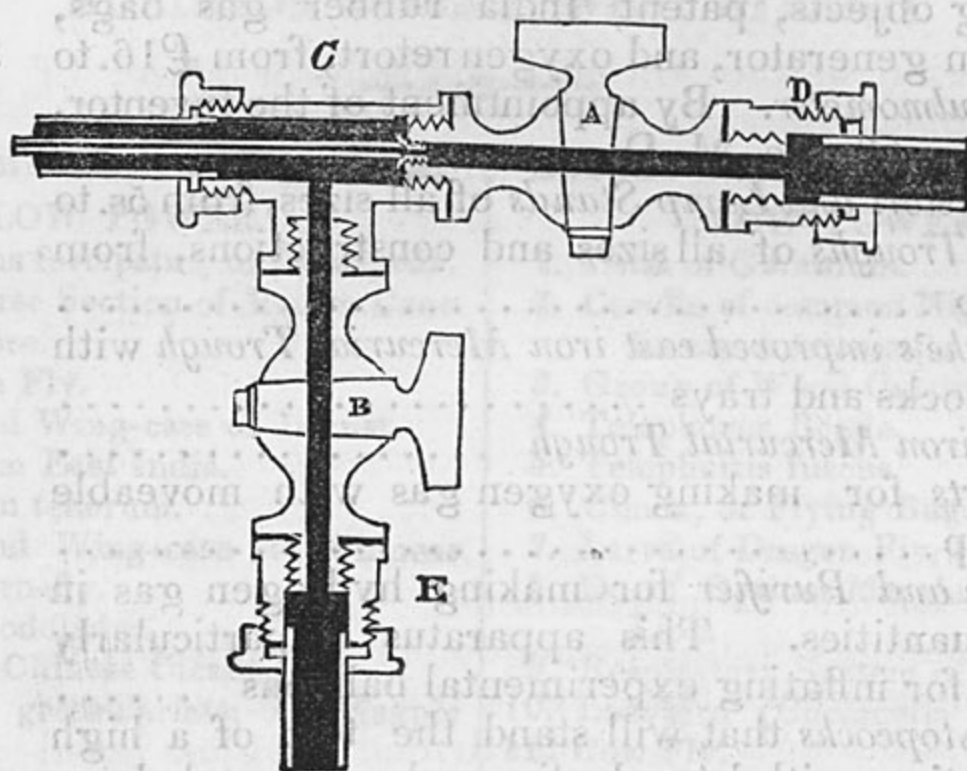
E. M. Clarke's Electrepeter. This instrument changes in a moment the direction of Voltaic currents, or totally stops their passage, without the necessity as heretofore of removing and re-arranging the conducting wires by



- hand. To Lecturers this instrument is of great utility, enabling them to show with rapidity and precision the changes that take place in the directions of electro-magnetic motions. See No. 1. Vol. I. of the *Annals of Electricity* 1 1 0
- Compound rectangular frames of Silver and Platina wires,* to rotate by thermo-electricity, on a stand. 10 6
- Helical Coil wire* for magnetizing steel needles by the induction of a Voltaic current. 1 0
- E. M. Clarke's Combined Apparatus* to show the capacity of different metals for the development of magnetism by induction. A Horizontal Metallic Disc is made to rotate rapidly under a screen of glass, a magnetic needle being placed on a short point on the screen, the needle rotating with the disc. Also, when the compound magnets are made to rotate under the glass screen, and a disc of metal suspended over the screen, it rotates in the same direction with the magnets: also shows Harris's experiments of the influence of screens of different metals, in arresting the passage of magnetic induction: also, Sir M. Faraday's experiment of rotating a disc of copper between the poles of a horse shoe magnetic battery on connecting conducting wires from a galvanometer; one with the centre, the other with the periphery of the rotating disc, a permanent deflection of the needle is produced. This apparatus is also quite applicable to very many useful purposes where a horizontal or vertical rotation is required: for instance, it will show that a body in rotating rapidly about its axis always selects the shorter 10 0 0
- Barlow's Sphere* to show the probable electric origin of the phenomena of terrestrial magnetism. Sphere 12 inches diameter 3 13 0
- Professor Henry's Helical wire coils* for giving secondary shocks from a single voltaic pair, from £1. to 3 3 0
- Rev. N. J. Callan's ditto ditto,* from £2. 2s. to 4 4 0
- Sturgeon's Apparatus* for exhibiting the effect of magnetic currents on different metals by vibrating metallic discs between the poles of a horse-shoe magnetic battery. (This instrument has been improperly called a Magnetometer, but not by the inventor). 2 0 0
- Mullins's Sustaining Voltaic Battery.* By appointment of the inventor, F. W. Mullins, Esq. 1 1 0

<i>Shillibeer's Sustaining Voltaic Battery, and Pole Director.</i>			
By appointment of the inventor, Rev. John Shillibeer	1	1	0
<i>Ditto</i> , combined in any number. See No. 3, Vol. I, Annals of Electricity			
<i>Bachhoffner's Improvement of Mullins's Sustaining Voltaic Battery.</i> By appointment of G. H. Bachhoffner, Esq.	12	6	
<i>Box</i> , containing Ten of the above Voltaic Batteries, with E. M. Clarke's arrangement so as to obtain quantity or intensity in a moment	4	4	0
<i>Ditto</i> , of a larger size, equal in power to two of the above boxes	7	7	0
By permission of the Inventor, (Professor Hare, of Philadelphia) <i>Hare's Calorimeter.</i> This instrument requires no comment, its superiority being well known from £4. 4s. to	12	12	0
<i>E. M. Clarke's Box Voltaic Battery</i>	15		0
<i>E. M. Clarke's Electro-Gasometer.</i> See No. 3. Vol. I, Annals of Electricity	1	10	0
<i>E. M. Clarke's Thermo-Voltmeter, Ditto</i>	2	10	0
<i>E. M. Clarke's Apparatus for the decomposition of water,</i> 2-inch diameter	10	6	
<i>Ditto</i> , 4-inch diameter, £1. 5s. <i>Ditto</i> , 7-inch diameter, £1. 15s. <i>Ditto</i> , 12-inch diameter	4	4	0
The advantages of this arrangement are obvious to any one who has been teased with bits of platina wires made to pass through small holes drilled in a glass vessel having loops turned on the projecting ends, and contact is obtained by merely placing the connecting wire in the loop: it was not only a bad connexion, but 9 cases out of 10 the cement that is used to fasten in the platina wires gave way, just as you were going to use the apparatus, as has frequently happened at lectures.			
<i>Apparatus of various descriptions</i> to show the spark, give shocks, and decompose water, by thermo-electricity, from £1. to	6	6	0
<i>E. M. Clarke's arrangement of the Plate Glass Electrical Machine</i> , whereby positive and negative electricity can be obtained without the usual expense attendant on such machines. Plate 12 inches diameter, with jar and director	5	5	0
<i>Singer's Gold leaf Electroscope</i> as improved by E. M. Clarke	15		0
<i>Ditto</i> , with parallel condensing plates. This instrument shows the divergence of the gold leaves by magnetic electricity	2	0	0
<i>Ditto</i> of a larger size with spherical glass for the lecture table	2	12	6
<i>Open mouthed Leyden jars.</i> These jars take a much higher charge and are less liable to break by sponta- neous discharge than any other construction, A fig. 13, from 2s. 6d. to	15		0
<i>Dr. Kent's Electrical Mortar</i>	8	6	
<i>E. M. Clarke's Lightning plate or Thunder bolt</i>	1	1	0
<i>Coulomb's Torsion Electrometer</i>	2	0	0

<i>Charles's Electrical Sea Saw.</i> Motion is produced by a charged Leyden jar.....	12	6
<i>Cuthbertson's Grain Weight discharging Electrometer</i>	2	5 0
<i>Lane's discharging Electrometer</i>	6	8
<i>Henley's Quadrant Electrometer</i>	6	8
<i>Ditto Universal discharger and press for voltaic or frictional electricity</i>	1	10 0
<i>Magic picture for giving shocks</i>	6	6
<i>Electrophorus, suited for a Chemical Laboratory, from 15s. to</i>	1	10 0



Professor Daniell's Oxy-hydrogen Blowpipe, with Maugham's Jets and Cary's Lime holder. This instrument made as described in the Transactions of the Society of Arts, vol. L., and No. 3, of the Annals of Electricity

1 5 0

