

ILLUSTRATED CATALOGUE

OF

ELECTRO-MEDICAL INSTRUMENTS,

MANUFACTURED AND SOLD

BY

THOMAS HALL,

(SUCCESSOR TO PALMER & HALL,)

ELECTRICIAN,

MANUFACTURER AND IMPORTER OF

MAGNETIC GALVANIC,

AND

TELEGRAPHIC INSTRUMENTS.

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BOSTON, MASS.

No. 158 WASHINGTON STREET.

1859.

PREFACE TO CATALOGUE

The manufacturing of Magnets and Galvanic Instruments was first commenced in this country by Mr. Daniel Davis, Jr. in the year 1825. Previous to that time all the Galvanic Instruments used in the country were imported from Europe. The latter having had an old machine coil to repair, for the purpose of exhibiting the same, he was one for an instrument, with some improvements upon the one he repaired. He found a ready sale for it. This induced him to engage in the manufacture of them. At that time they were very rough and imperfectly finished, compared with those we now make. They were very well suited for medical purposes. The mode of preparing the zinc was by means of a retort placed on the top of a brick side of the coil. This was a great objection to them for medical purposes, as the fumes were very injurious. This was remedied by the invention and adoption of the turning instrument in connection with the secondary zinc coil, tried by Mr. Davis. It is now universally used for this purpose both in this country and Europe. The following is a general arrangement of the instruments in the catalogue. The current is extremely low, and the instruments are adapted to medical purposes. The arrangement is such as to enable the student to make experiments in the study of Galvanism and the study of the human system of physical science in our colleges and schools. It is a most valuable and interesting of instruments, so that we now have a complete set of the most elegant instruments adapted to the study of Galvanism.

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## PREFACE TO CATALOGUE.

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THE manufacturing of Magnetic and Galvanic Instruments was first commenced in this country by Mr. Daniel Davis, Jr., in the year 1836. Previous to that time, all the Galvanic Instruments used in this country were imported from Europe. Mr. Davis, having had an old induction coil to repair, saw the principle upon which it acted, and made one for amusement, with some improvement upon the one he repaired. He found a ready sale for it. This induced him to engage in the manufacture of them. At that time they were very rough and inconvenient instruments, compared with those we now make. They were very seldom used for medical purposes. The mode of breaking the current was by means of a ratchet placed on the top or by the side of the coil. This was a great objection to them for medical purposes, as the shocks came very irregularly; this was remedied by the invention and adoption of the vibrating armatures in connection with the secondary coils contrived by Mr. Davis. It is now universally used for this purpose both in this country and Europe. By this ingenious arrangement the instruments are self-operating, and the current is extremely fine. Making induction coils led to making models for motive power, and various pieces of apparatus to illustrate galvanism and electro-magnetism. The adoption of this branch of physical science in our colleges and schools created a constant demand for this class of instruments, so that we now manufacture over five hundred distinct instruments adapted to this branch of studies.

## PREFACE TO CATALOGUE.

For several years they were used only for illustrating the principles of galvanism, &c., there not being any practical use for them except being occasionally used for medical purposes. Like most new theories in medical science, this agent was extremely slow in coming into use among the medical profession. One of the greatest obstacles in the way of this agent was, that there were no books on this subject whereby a physician could inform himself how to apply electricity to various diseases. This defect is remedied now to a great extent; there are some very valuable works on medical electricity, by some of the first physicians in Europe and America. Among the most prominent stand the names of Golding Bird, of England, M. Duchenne and M. Becquerel, of France, Middeldorpf, of Germany, and Dr. W. F. Channing, of this city. This last gentleman has paid especial attention to electricity as a therapeutic agent, having constructed and devised a great many new and useful instruments in this department. We are greatly indebted to him for his suggestions and advice in the construction of the various instruments described in the following catalogue. Many of them, and the manner of applying them, are original with him.

Having been engaged with Mr. Davis in the manufacture of these instruments from 1840 until his retirement from business in 1849, and subsequently successor to him in the firm of Palmer & Hall, until 1857; having had eighteen years' experience, and possessing great facilities and conveniences for the manufacture of instruments in this line, — it is my intention that no efforts on my part shall be wanting to sustain the previous high reputation of these instruments, or to render them unsurpassed by those of any other maker.

THOMAS HALL.

# HALL'S CATALOGUE.

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Persons ordering will please state the number and price of instruments.

All instruments carefully packed and warranted, with cost of box added to bill.

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## INSTRUMENTS.

No. 1. Single Coil Instrument, in black walnut box, with draw to contain directors, wire, &c., large size, de-

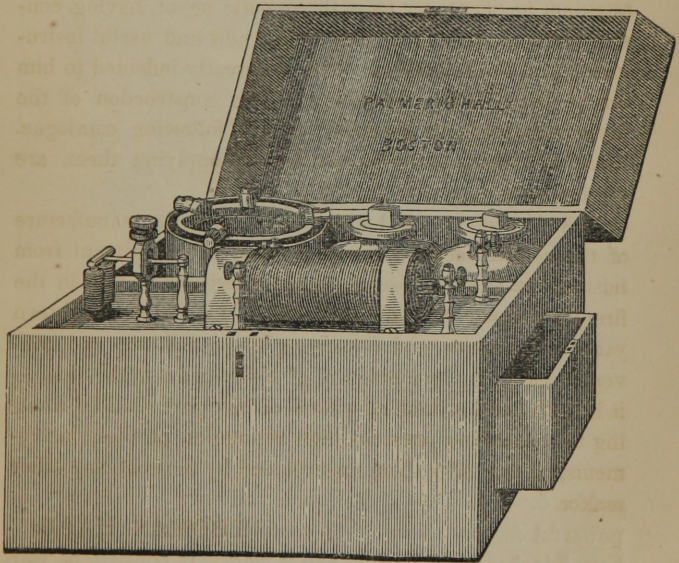


Fig. 1.

signed for physicians' use, containing ground stopple bottles for solutions. This instrument is thoroughly made, and beautifully finished. Price, \$20.00.

No. 2. Double Coil Instrument, same size as Fig. 1, with the addition of a quantity coil and graduated battery. Price, \$25.00.

No. 3. Same size as Fig. 1, silver plated. Price, \$25.

No. 4. Double Coil Instrument, silver plated. \$30.00.

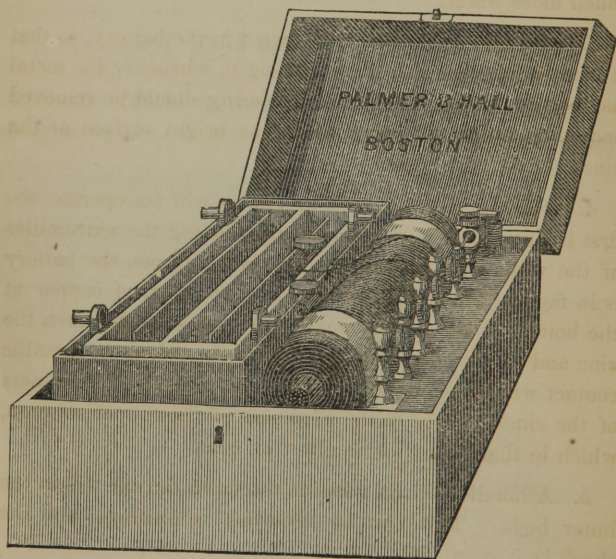


Fig. 5.

No. 5. Dr. Page's Portable Battery. This is very powerful for its size. It is contained in a black walnut box, 5 inches high, 7 wide, and 9 long. It consists of coil,

5 inches long and two inches in diameter, with square battery, handles, and flexible wires. Price, \$12.00.

DIRECTIONS. — 1. Connect the wires as represented in the cut.

2. The solution to be used in this battery, is one of sulphate of copper, (blue vitriol,) containing about two ounces of blue vitriol to a pint of water. To prepare it, a saturated solution is first made, and to this solution is then added as much more water.

3. The zinc plate becomes coated in the battery, so that it is necessary to clean it after using it, whenever the metal has become thickly furred. The coating should be removed each time, so as to expose again the bright surface of the zinc.

4. If the electro-magnetic apparatus will not operate, see first if any spark is perceptible on rubbing the extremities of the wires from the battery together. If not, the battery is in fault. This may be owing to a sediment of copper at the bottom of the battery, making a connection between the zinc and copper, or to the zinc being somewhere in metallic contact with the copper; or it may be owing to the foulness of the zinc plate, or to the weakness of the copper solution, which in that case will have lost its color.

5. A bundle of iron wires is shown in the cut within the inner helix. This can be removed at pleasure, and the shock thus regulated.

6. The positive pole may be determined from the negative by taking the handle-directors in the hands, the negative always being felt the most sensibly.

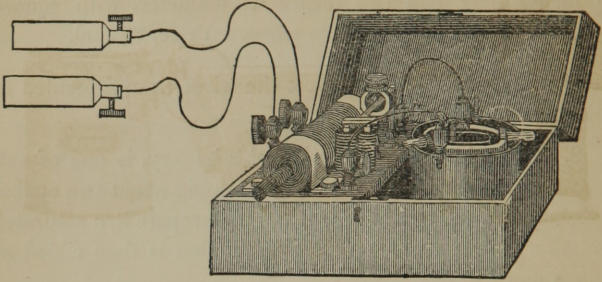


Fig. 6.

No. 6. Coil and Battery, in box, for family use. A very convenient form, including handles and wire. Price, \$10.00.

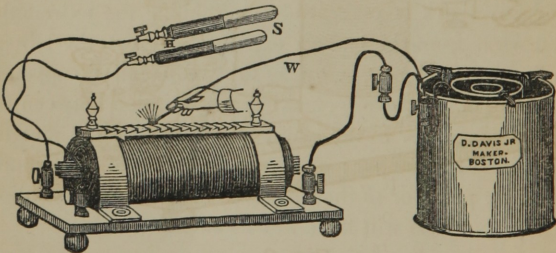


Fig. 7.

No. 7. Double Helix and Vibrating Electrotope, with battery and handles. Neatly mounted on rosewood base. Price, \$8, \$10, and \$12.00.

No. 8. Small Coil, in neat rosewood box, with battery and handles. Price, \$8.00.



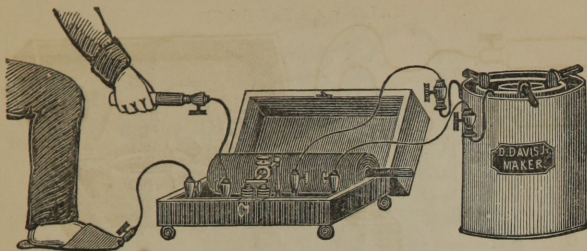


Fig. 8.

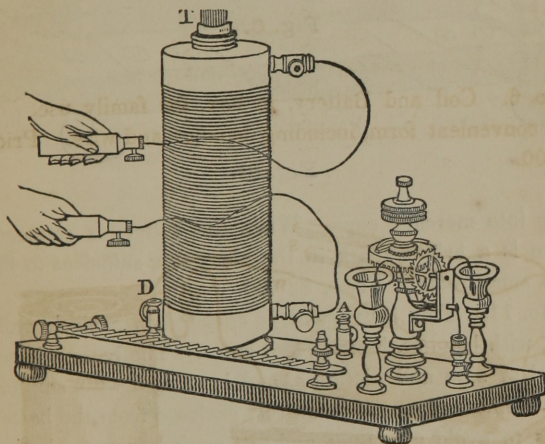


Fig. 9.

No. 9. Compound Electrotome with Clockwork. This is a very powerful instrument, and is used principally to illustrate the induction current in colleges and medical schools. Price, \$20.00.

No. 10. Horizontal Compound Electrotome. This is the same as Fig. 9, with the exception of being horizontal. The current is broken by clockwork, attached to wires dip-

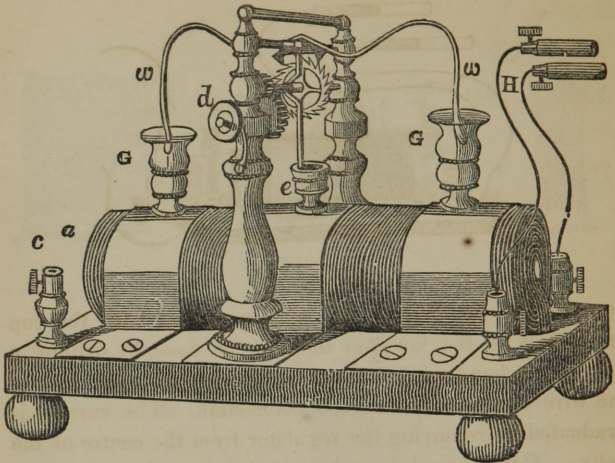


Fig. 10.

ping into mercury cups. When the battery is connected, there is a bright spark in the glass cup, sufficient to light up a small room. Price, \$20.00.

No. 11. This instrument is enclosed in a black walnut box, with handles, battery, and wires. The battery is composed of zinc and platinum, and is excited with sulphuric acid. The instrument is entirely enclosed from the battery, so as to avoid all fumes and dirt arising from the battery. This battery needs no cleaning, being always ready for action. Price, \$14.00.

Instruments used for the application of Galvanism in the Extraction of Teeth.

No. 12, Represents helix, with handles and wires complete. In order to operate the instrument, connect the short wires as represented in the figure. Connect the flexible wires with the cups at the end of the helix marked P and N. Attach the handle to the wire connected with the

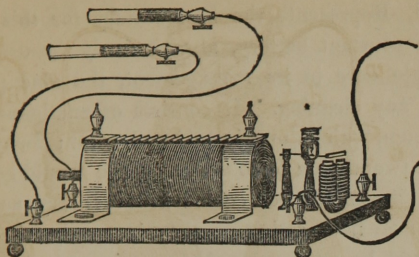


Fig. 12.

cup marked P. Attach the wire connected with the cup marked N to the forceps; this can be done by drilling a hole in the handle of the forceps, and inserting the end of the wire so as to make good connection. The current is graduated by removing the regulator from the centre of the helix. Care should be taken to insulate the gums and cheek from the forceps, so as to cause the whole current to go direct to the tooth: a slight current has been found the best to produce the desired effect.

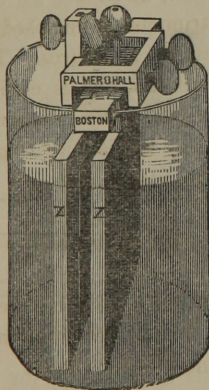


Fig. 13

No. 13, Represents the best battery for this purpose, as it is a constant battery, always ready for use, and requires little care in its management, the zinc plates not requiring any cleaning. It consists of amalgamated zinc and platinum, with sulphuric acid and water; for a solution, about one twentieth acid to water. Care should be taken to keep the zinc plates well coated with mercury, as that prevents the acid from acting on the zincs only when in use. They should be amalgamated once a month, if used constantly. To amalgamate the zincs, clean them well with a strong solution of sulphuric acid and water, then rub them in a dish of quicksilver, rubbing it on with an old tooth brush. See that the zincs are well coated with mercury, as the action of the battery depends a great deal on the amalgamation. Do not let the platinum plate touch the zincs, as that would stop the action of the battery. Disconnect the battery from the instrument when not in use.

This battery is peculiarly adapted to dentists' use, as it is always ready, day and night, and there is no cleaning of the zincs, as in the sulphate of copper batteries. It is also the battery used by dentists for gilding their plates.\*

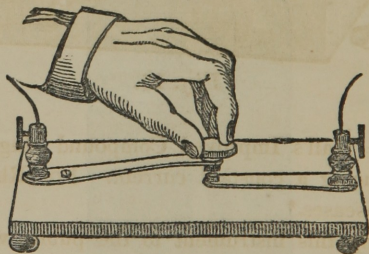


Fig. 14.

No. 14, Represents a footboard, for letting the current on the forceps by the foot or hand, a very convenient

\* See Hall's Instructions for Electro-Gilding and Silvering.

method of operating, as you need no assistant. This is connected by the wire in between the instrument and the handle which the patient holds. By pressing the spring down it closes the circuit. By releasing the pressure the current is broken. By this arrangement you can let the current on at pleasure.

Dentists' set complete, including battery, helix, footboard, wires, and handles. Price, \$12.00.

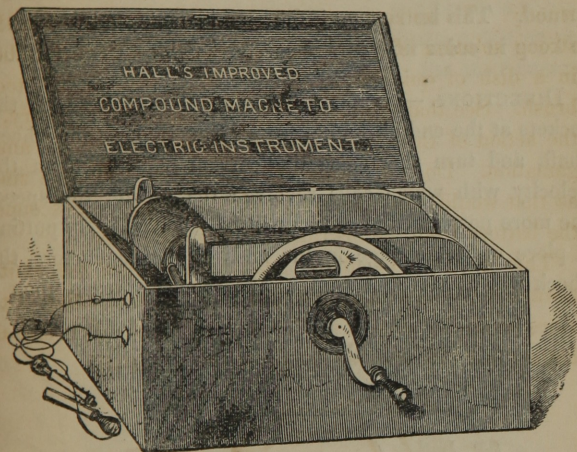


Fig. 15.

No. 15. Hall's Improved Compound Magnetic Instrument, producing a constant current. For Rheumatic and Nervous Diseases.\*

In offering this instrument to the public, we would call their attention to the following advantages over all others now in use.

This instrument is arranged with a Pole Changer, so that

\* An application for a patent has been made.

you can determine which is the positive or negative pole, (the negative pole being the strongest,) which is very essential to know in applying it for diseases. The coils revolve without belt or band, so that it cannot get out of order. Having a magnet at each end of the coils, we get a very powerful current, which can be controlled by the U armature. Shocks can be obtained by turning the crank either way. The changing of the positive or negative pole in the conductors depends upon the direction in which the crank is turned. This instrument is thoroughly made, and warranted to keep in order for years if carefully used. Price, \$10.00.

DIRECTIONS. — Connect the conducting wires with the sockets at the end of the box, screw the crank on the wheel-shaft, and turn slowly, as the current depends upon the velocity with which coils revolve; the greater the speed, the more powerful the shocks will be received. By putting a piece of wet sponge in the ends of the conductors, the shock will be more pleasant, as the sponge spreads upon a

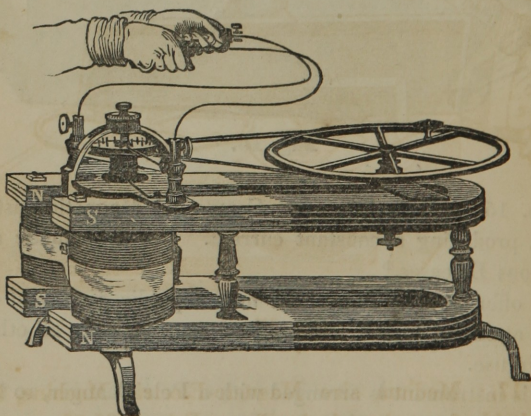


Fig. 16.

larger surface of the skin, and obviates that pricking sensation which is so unpleasant. In applying it, hold the conductor in one hand, and apply the other to the part affected. To produce a constant current, pull the lever at the end of the box.

No. 16. Large size Magneto-Electric Machine, for hospitals and institutions. The advantages that this instrument possesses over the induction coils is, that there is no battery; it is always ready; by turning the crank you produce a current. This is used very extensively in Europe, but we do not think it gives so steady a current as the instruments worked with the battery. Price, \$50.00.



Fig. 17.

No. 17. Medium size Magneto-Electric Machine, in box, suitable for a physician's office. Price, \$35.00.

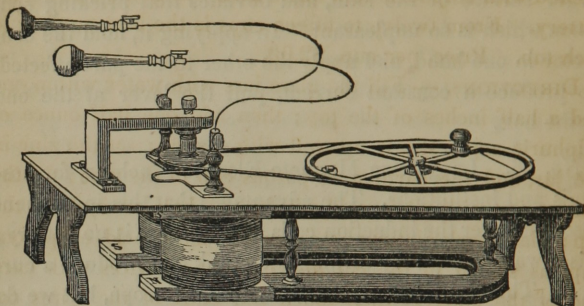


Fig. 18.

No. 18. Magneto-Electric Machine, without box, neatly mounted on rosewood base. Price, \$25.00.

No. 19. Magneto-Electric Machine, with Single Magnet. This is intended for institutions. Price, \$30.00.

No. 20. Largest Size, run with Clockwork, with four coils, producing quantity and intensity at the same time. Double Compound Magnets. Well made and finished. Price, \$100.00.

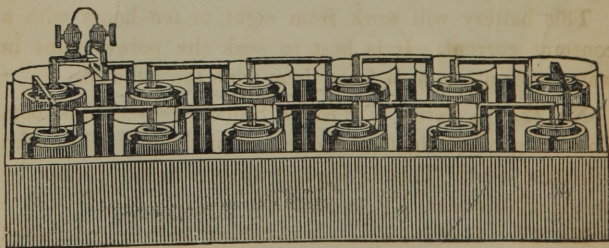


Fig. 21.

No. 21. A Series of Twelve Grove's Battery, in box. We consider this battery the best for the electro-chemical baths. It consists of amalgamated zinc and platinum,



excited with sulphuric and nitric acid. It is a very intense battery. From twelve to fifteen cups is the best number to each tub. Price, per cup, \$2.00.

**DIRECTIONS.** — Fill the glass jars with water within one and a half inches of the top; then add one half ounce of sulphuric acid; stir it up well with a stick; set the zinc in the jar, and the earthen or porous cup in the zinc; fill the porous cup with nitric acid within one half an inch of the top; place each platinum strip in the nitric acid, or porous cup, as shown in the cut above; connect wires with each end of the battery, then touch the ends of the wires together, — if there is a spark, the battery is in good order.

Care should be taken to keep the zincs well coated with mercury, as that prevents the acid acting on the zinc only when in use. They should be amalgamated once a week if used constantly. To amalgamate the zincs, you clean them well with a strong solution of sulphuric acid and water, then rub them in a dish of quicksilver, — put it on with a brush. See that the zincs are well covered with mercury, as the action of the battery depends a great deal on the amalgamation.

This battery will work from eight to ten hours with a constant current. It is best to soak the porous cups in water after using, as it frees them from the old acid.

No. 22. A Series of Twelve Smee's Batteries, in box. Consisting of amalgamated zinc and platinum, excited with sulphuric acid. This is applied directly to the patient by means of directors. Price, \$24.00.

No. 23. Hall's Improved Constant Battery, composed of copper and zinc, excited by sulphate of copper. The zinc is placed in the centre of a porous cup, filled with water. The porous cup is placed within a cylinder of sheet copper, surrounded with crystals of sulphate of copper, set within a glass jar. Fitted in boxes of ten cups each.

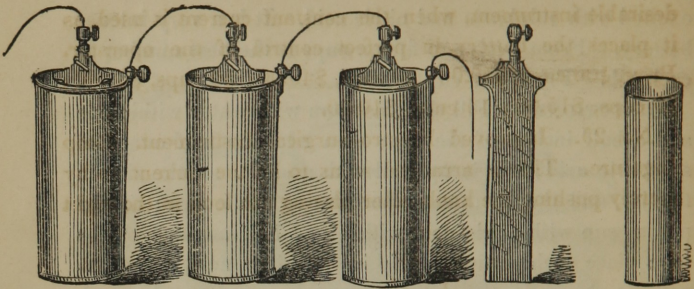


Fig. 23.

The advantage of this battery as a medical agent is very great, as it will remain in constant action from nine months to a year without replacing, except with water, to replace that which has evaporated. Price, per cup, \$1.25.

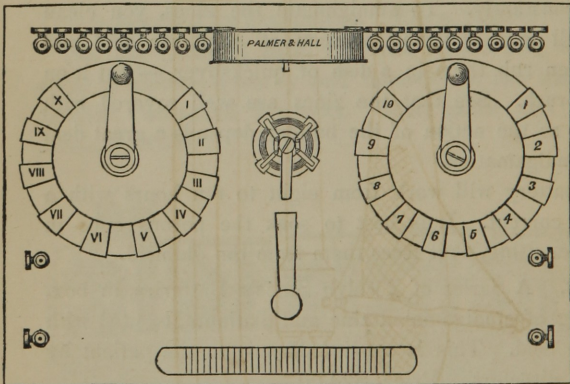


Fig. 24.

No. 24. Manipulator. This is a very ingenious instrument, contrived by Dr. William F. Channing, for bringing any number of batteries into circuit at pleasure from one to one hundred cups. It is arranged with a pole-changer, break-piece, key, and clock-work electrotope. This is a very

desirable instrument, when the constant current is used, as it places the battery in perfect control of the operator. Price, 100 cups, \$50.00; 50 cups, \$40.00; 30 cups, \$30.00; 20 cups, \$15.00; 15 cups, \$10.00.

No. 25. Improved Electro-Surgical Instrument. Loop Ligature. This is arranged so as to let the current on by merely pushing the knob, after placing the loop in the right

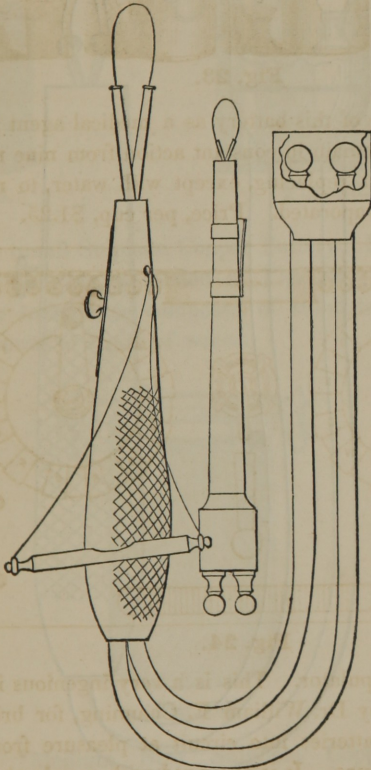


Fig. 25.

position. The battery current is produced by four cups of Bunsen's battery, composed of zinc and carbon, giving a powerful quantity current. It is let on to the instrument by means of large flexible wires. Price, \$8.00.

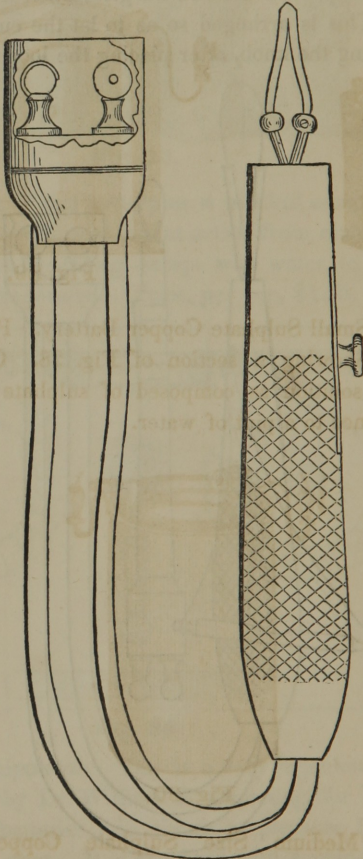


Fig. 27.

No. 26. Directors for Destroying the Nerves of Teeth, by means of red hot platina wire. Price, \$3.00.

No. 27. The same as No. 25, with the exception of lancet instead loop. Price, \$8.00.

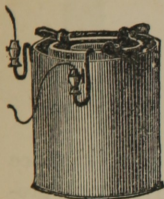


Fig. 28.

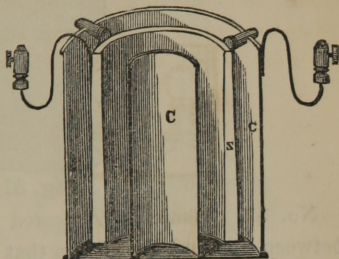


Fig. 29.

No. 28. Small Sulphate Copper Battery. Price, \$2.00.

No. 29. Showing a section of Fig. 28. C C copper, Z zinc, the solution as composed of sulphate of copper, about one ounce to a pint of water.

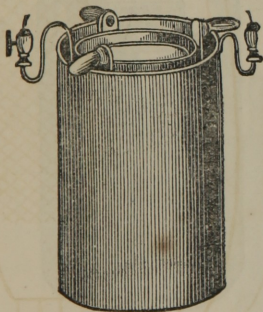


Fig. 30.

No. 30. Medium Size Sulphate Copper Battery. Price, \$5.00.

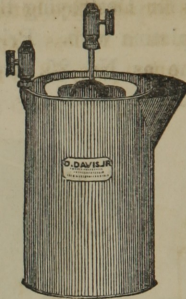


Fig. 31.

No. 31. Daniels's Protected Battery. The difference between this and Fig. 30 is, that the zinc cylinder is protected by a porous cup. By this arrangement the battery is more constant, and will remain in action for several days, but is not so powerful. Price, \$2.00.

No. 32. Large Size ditto. Price, \$4.00.

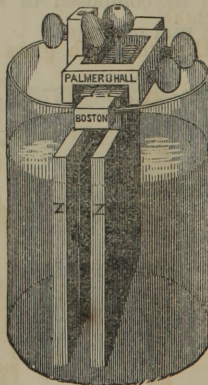


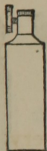
Fig. 33.

No. 33. Smee's Constant Battery. This is composed of zinc and platinized silver, sulphuric acid and water, for solution. It is very constant, and will remain in action for

several months. This for an office battery is decidedly preferable over all others, as it is less expensive to work, and less trouble. Price, 1 quart jars, \$2.50; 3 quart jars, \$3.50.



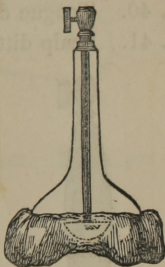
Figs. 34.



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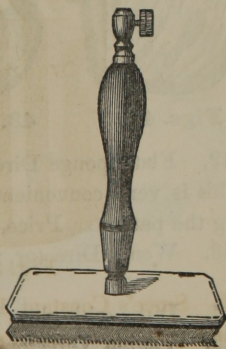
37.

No. 34. Directors for the Hand. German silver, with insulated handle. Price, per pair, \$2.00.

No. 35. German Silver Handle. Per pair, \$1.25.

No. 36. Silver Plated Surface Director, with insulated handle. Per pair, \$2.00.

No. 37. Sponge Director, with glass handle. 75 cents.



Figs. 38.

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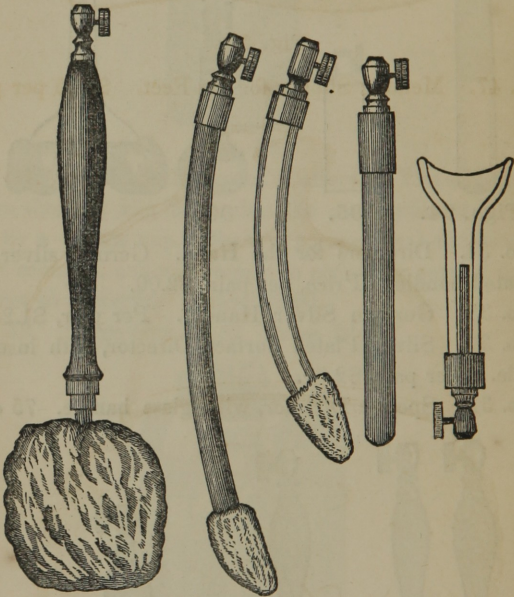
41.

No. 38. Ear Director, silver plated, with insulated handles. Price, 75 cents.

No. 39. Rectum ditto. 75 cents.

No. 40. Tongue ditto. 75 cents.

No. 41. Scalp ditto. \$1.25.



Figs. 42.

43.

44.

45.

46.

No. 42. Flat Sponge Director, with long insulated handle. This is very convenient, as you can apply it without disrobing the patient. Price, \$1.25.

No. 43. Womb Director, with insulated handle. Price, \$1.25.

No. 44. Ditto, with glass handle. \$1.25.

No. 45. Vagina Director, silver plated. Price, \$1.25, and \$1.50.



No. 46. Dr. Channing's Eye Glass. 75 cents.



Fig. 47.

No. 47. Metallic Slipper for the Feet. \$1.25 per pair.

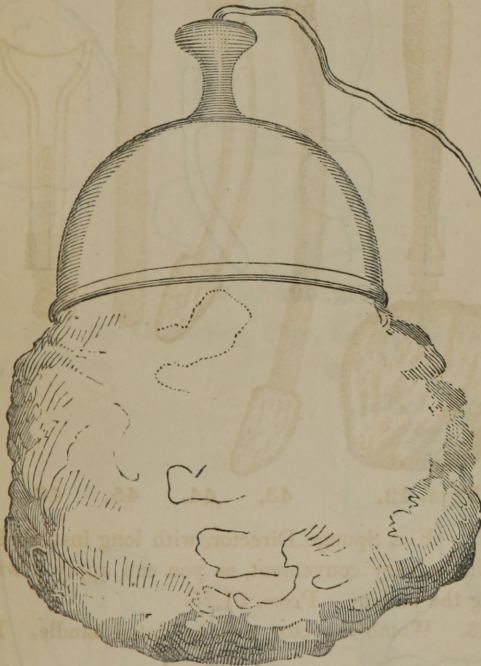


Fig. 48.

No. 48. Hall's Hard Rubber Sponge Cup. This is used by placing the hemisphere in the palm of the hand,

and letting the knob project through the fingers. The sponge is fastened in the cup by a spring. By this arrangement the sponge can be taken out of the cup and washed, which is very desirable. Price, without sponge, 75 cents; with sponge, \$1.37.

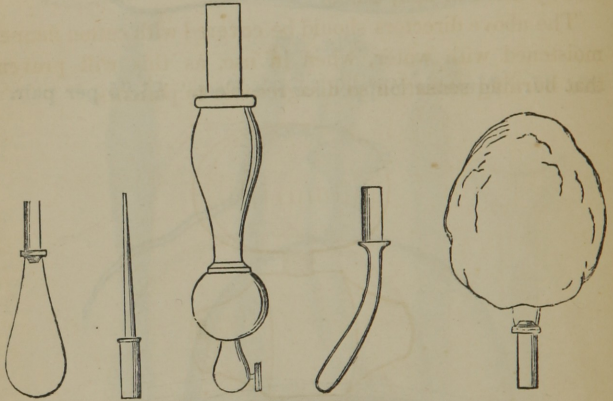
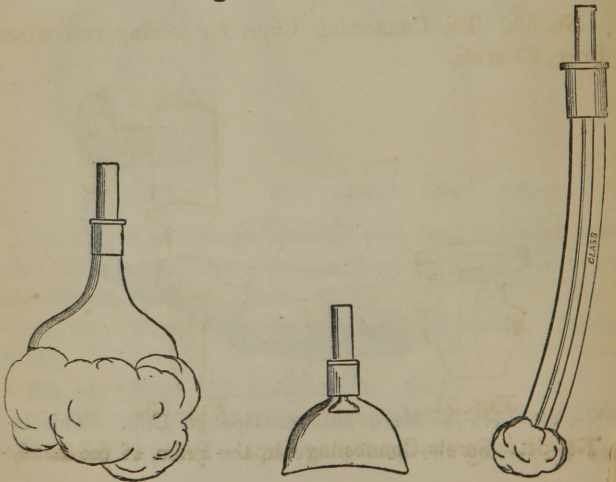


Fig. 49.



No. 49. Hall's Universal Handle, embracing the Tongue, Ear, Eye, Rectum, Sponge, Womb, and Vagina Directors. Silver plated. By this arrangement, all the directors are fitted to one handle. They can be fitted in the draw of the instrument, and take up but little room. Price, \$5.00. Neatly fitted in box, \$6.00.

The above directors should be covered with cotton flannel, moistened with water, when in use, as this will prevent that burning sensation so disagreeable to patients.

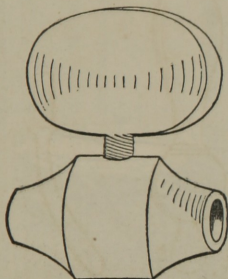


Fig. 50.

No. 50. Tie Connecting Cups, for joining two wires. Price, 25 cents.

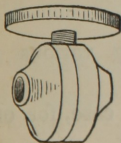


Fig. 51.

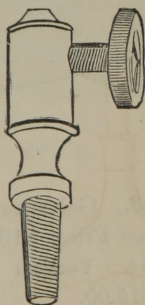


Fig. 52.

No. 51. Screw Connecting Cups. Price, 17 cents.

No. 52. Screw Cups. Price, 17 cents.

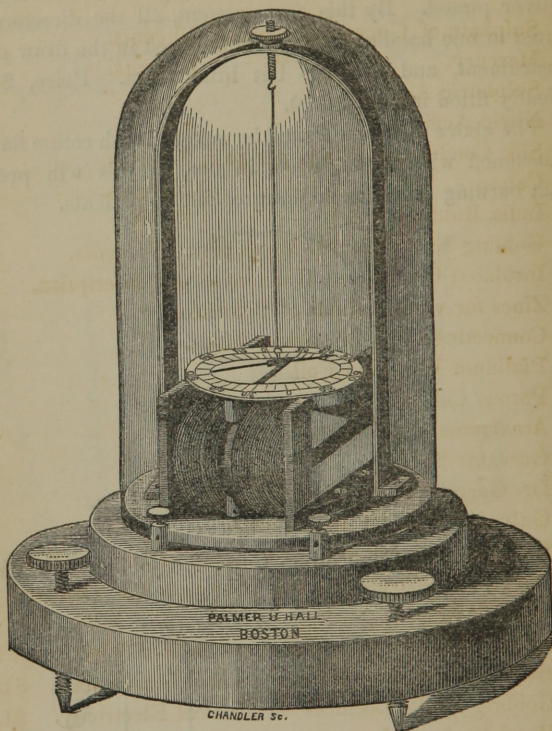


Fig. 53.

No. 53. Galvanometers, for testing various galvanic currents. Price, \$10.00 to \$35.00.

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