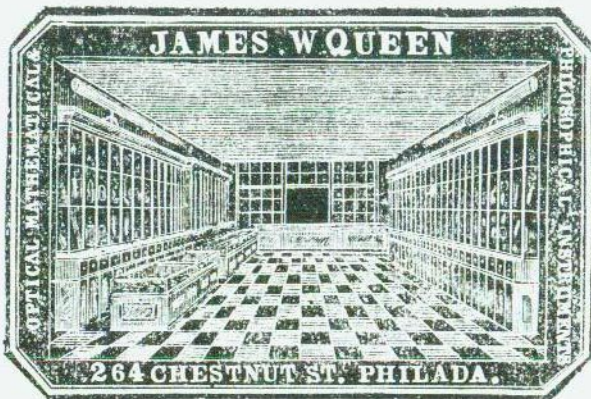


CATALOGUE
OF
MATHEMATICAL
Optical & Philosophical
INSTRUMENTS,

FOR SALE
WHOLESALE AND RETAIL
BY



JAMES W. QUEEN,
No. 264 Chesnut Street. East of Tenth Street,
PHILADELPHIA.

PRINTED BY WM. M'CANN, 38 NORTH THIRD STREET.

INTRODUCTION.

By furnishing an illustrated catalogue, purchasers residing at a distance may be better enabled to know the general appearance of the various articles offered for sale and the prices thereof, and can order the same by the description or catalogue number.

Having been connected for seventeen years as an active partner in the oldest optical establishment in Philadelphia, and only leaving the same upon the dissolution of the firm, I trust that the experience there practically obtained will be a sufficient warrantee that all articles offered for sale will be as represented with reference to their various merits.

In the Mathematical department, the best facilities are had for furnishing instruments of all the various qualities and prices; during a recent visit to the largest Mathematical Instrument Manufactories in England, France and Germany, arrangements were made for a constant supply of such articles as are used by Engineers and Architects and in Schools and Colleges; the prices and qualities of which will be found to compare favourably with any other establishment in this country.

In the optical branch the same facilities are possessed and every attention will be given to the quality of the various instruments, as to Optical and Mechanical precision; particular attention is requested to the MAGIC LANTERNS and DISSOLVING APPARATUS; for many years past I have devoted much time to the construction of these articles and can now offer instruments of the most approved form and convenient arrangement for Public or Private use.

In the manufacture of Gold and Silver Spectacles, and Double Eye Glasses, no establishment can surpass my facilities for furnishing a perfect article, the same workmen which have been employed for so many years, still continue to supply me with their superior handiwork and every pair of spectacles or Eye Glasses before being offered for sale will undergo a rigid personal supervision. The quality or purity of the gold is stamped upon the spectacles so that no purchaser can be deceived.

For some time I have been sensible of the want of a store in Philadelphia for the sale of Philosophical Apparatus, there having been none of that kind in the city for Fifteen or Twenty years past, in view of this deficiency I have made arrangements for a constant supply of the same with Mr. L. C. Francis of this city whose character as a workman is so well known that it is not necessary for me to say more than that whatever he does, is well done. With very few exceptions all the articles offered for sale in this line

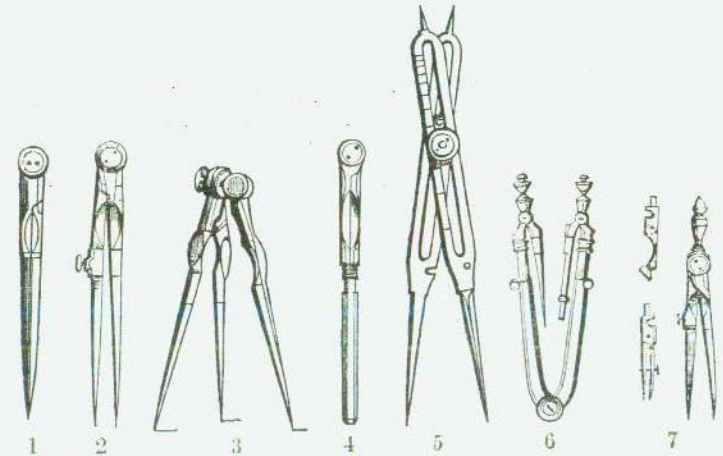
will be of Mr. Francis' Manufacture. This department will be constantly enlarged as my facilities are extended and every improvement in Apparatus will be immediately embraced.

The prices noted will be strictly adhered to and are the lowest for cash; a moderate charge will be made for boxes when Apparatus is to be packed for Transportation; all bills for Magic Lanterns and slides, amounting to Fifty Dollars, or over that sum will be entitled to a discount of Five per ct., and no charge made for boxes or packing.

Wholesale dealers and the Trade will receive a liberal discount from Catalogue prices.

JAMES W. QUEEN.

MATHEMATICAL INSTRUMENTS.



FIGURE

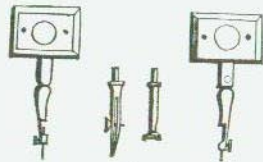
PRICE

1.	Brass Dividers, brass joints, rivet-heads, 5 inch	12cts.	6 inch	.18
1.	" " steel joints, screw-heads, 5 inch	25cts.	6 inch	.37
1.	Fine " " " " turned-checks, 4 inch	50cts.	5 inch	
		62cts.	6 inch	.75
2.	Fine Dividers, steel joints, hair spring, 5 inch	\$1.00,	6 inch	1.37
2.	" " " " " " superior, 5 inch	\$1.37,		
	6 inch	-	-	1.75
1.	German Silver, steel joints, turned checks, superior, 5 inch			.75
1.	" " " " " " " " 6 inch			.87
2.	" " " " hair spring, fine, 5 inch	\$1.50,	6 inch	1.75
2.	" " " " " " superior, 5 inch	\$1.75,		
	6 inch	-	-	2.00
3.	Three Legged Dividers, brass, \$2.62, German Silver \$2.75, to			3.50
	Bisecting " " " " " "			.50
4.	Pocket Dividers, German Silver,			2.00
5.	Proportional compasses, brass, \$1.50 to \$300, full divided,			
	\$7.00 to			8.50
5.	Proportional Compasses, German Silver, \$7.25 to			9.00
6.	Pillar Compasses, brass, \$5.50 and \$5.75, German Silver			
	\$6.75 and			6.00
7.	Dividers, brass, three inch, with pen and pencil point, med. qual			1.25
7.	Dividers, German Silver, with pen, pencil and needle point,			
	fine quality,			2.50

MATHEMATICAL INSTRUMENTS, CONTINUED.



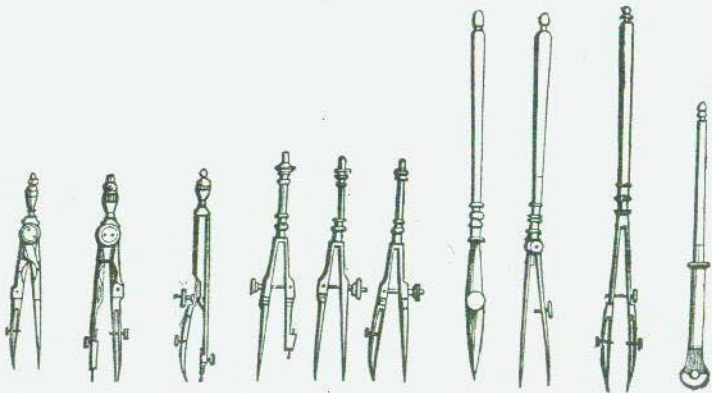
8



9

FIGURE	DESCRIPTION	PRICE
8.	Dividers, brass, 5 inch, med. qual., with pen and pencil point, 6 inch	.75 .87
8.	Dividers, brass, 5 inch, med., qual., with addition of lengthening bar,	.87
8.	Dividers, German Silver, 6 inch fine quality, pen, pencil, bar and needle point,	3.25
9.	Furniture for Beam compasses, brass, \$3.00 with adjusting screw,	3.75
9.	Furniture for Beam Compasses, German Silver, \$4.25 to	5.00

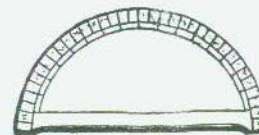
BOW PENS & PENCILS, SPACING DIVIDERS & DRAWING PENS.



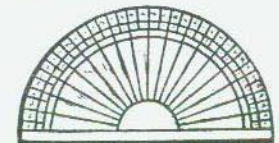
10	11	12	13	14	15	16	17	18	19
10.	Bow Pens, brass, 50cts. to								
									1.25

FIGURE.	DESCRIPTION	PRICE.
11.	" " with joint in each leg, German Silver,	2.25
	Bow Pencils, do do do do	2.25
12.	Bow Pens, with adjusting screw, brass, \$1.25 German Silver,	1.50
12.	" " " " " and hinge to pen, Brass, \$1.50 German Silver,	2.00
12.	Bow Pens with adjusting screw, and pencil point, Ger. Silver,	2.25
12.	Bow Pens with adjusting screw, German Silver, with Pencil and needle point and extra Pen point,	3.50
13.	Bow Pencils solid steel, German Silver, or Ivory handles,	1.75
14.	Spacing Dividers, " " " " " " " "	1.50
15.	Bow Pens, " " " " " " " "	1.75
16.	Drawing Pens, - - - - 25, 37 and	.50
17.	" " with hinge, - - - -	.50
17.	" " " " and protracting pin, 62 and	.75
17.	" " " " extra fine - - - -	1.25
17.	" all German Silver for red ink, - - - -	.75
18.	" Double or Railroad Pens, \$1.75 and - - - -	2.50
19.	Roulettes for dotting lines, 50, 62, and - - - -	.75

SQUARES, PROTRACTORS, &c.



20



21



22



23

20.	Brass Protractors, assorted sizes, 12½cts to	1.50
20.	" " with steel blade, 2 to 3 feet long,	7.50
20.	German Silver Protractors with horn centre and moveable arm, divided to ½ degrees, \$4 to	6.50
20.	German Silver Protractors, whole circle, horn centre and moveable arm divided to ½ degrees, \$4.75 to	8.75
21.	Horn Protractors, 4 inch 12½cts. 5 inch 25cts. 6 inch	.37
22.	Ivory Protractors for Engineers, 6 inch \$1.50, 2.00, 2.50 and	3.00

FIGURE		PRICE
22.	Ivory Protractors for Engineers, 2½ inch wide very superior, 6 inches long	\$3.50 and 5.00
22.	Ivory Protractors for Engineers, 12 inch, extra wide and full, Ivory Scales, 6 inch usual quality,	8.00 .62
23.	Ivory Scales, 12 inch, chain on edge only, 20x40 30x50 40x60 \$2.25 to	3.00
23.	Ivory Scales, 12 inch, chain on edge only, 50x100	3.75
	" " 12 inch for Architects, 2.25, 2.50, 3.00 and	3.25
23.	Ivory Scales, 12 inch, 16 scales off edge, in tenths or twelfths, \$3.50 and	4.00
23.	Boxwood Scales, 6 inch usual quality,	.25
22.	" Protracting Scales, 6 inch	.62
23.	Boxwood Scales, 12 inch chain, 10 to 60 on-edge,	1.00
	" " 12 inch, 16 Scales off edge in tenths or twelfths	1.50
	" " 12 inch Architects graduated from ¼ to 3 inches,	1.50
	" " 3 Sided Chain, giving 6 scales all on edge,	3.00
	" " 3 Sided Architects, giving 12 scales all on edge, \$2.50 to	3.00
	Boxwood Comparative scales, giving the foot of various countries,	5.50
	Boxwood Gunter scales, 1 foot 37 and 75cts., 2 feet	.75
	" Pocket Rules, 1 foot 4 fold, 25 to 75cts., Ivory do. 62cts. to	2.00
	Paper Scales, 18 inches long, in sets of six, graduated from ¼ to 3 inches, per set	2.00
	Routledges Rule with descriptive book,	2.25
	Heathers Treatise on Mathematical Instruments, London,	.37

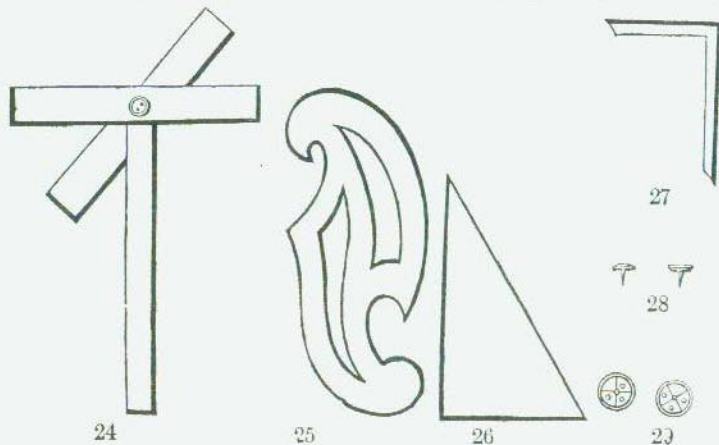


FIGURE		PRICE
24.	T. Squares, wood with arm, 18 to 30 inches long,	.75
24.	T. " " " " and swivel head,	1.25
24.	T. Squares, wood with arm, and swivel head and brass edges to arm, \$1.75 to	2.50
25.	Irregular Curves, various sizes, 25 to 37 and	.50
25.	Ebony Triangles, 37cts., Pear Wood, do.	.25
27.	German Silver Squares and Triangles, 50 cts. to	2.50
28.	Pins to fasten paper to the drawing board, brass, 25, 37 and 50cts. German Silver, per dozen	.60
29.	Horn Centres, to prevent the Dividers from marking the paper,	.18



30.	Parallel Rules, Ebony, 6 inch 37cts. 9 in. 62, 12 in. 75, 15 in.	1.00
30.	" " Ivory, 6 inch	1.00
30.	" " Brass, fine, 9 inch \$1.75, 12 inch \$2.50, 15 in.	3.12
	" " Brass on rollers, 9 inch \$4.25, 12 inch	5.75
	" " Ebony, " 12 in. \$2.62, 15 in. \$3.37, 18 in.	4.00
	" " " " Ivory graduated edges, 12 in. \$4.25, 18 inch	6.00
31.	Pentagraphs of Ebony, very accurately made, \$14.00, Brass	22.00

SURVEYING CHAINS AND TAPE MEASURES.

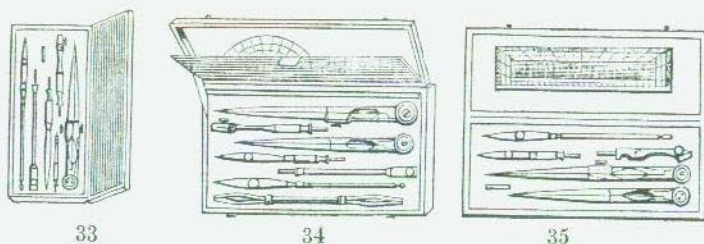
Surveying Chains, 2 pole 50 links, No. 9 wire \$1.25, No. 8 \$1.50, No. 7	2.00
Surveying Chains, 4 pole 100 links, No. 9 \$2.00 No. 8 \$2.50, No. 7	3.50
Surveying Chains, 50 feet, 50 links, oval links, No. 7 wire,	2.50
" " 100 " 100 " " " "	5.00
32. Holland Tape Measures in Patent Leather Boxes, 20 feet 60 cts., 25 feet 65 cts., 33 feet 75 cts., 50 feet \$1.00, 70 feet \$1.12, 100 feet	1.50
Scotch Tapes, a superior article, 33 feet \$1.50, 50 feet 2.00, 70 feet	2.25
London Tapes of the very best manufacture, 50 feet \$2.62, 70 feet	3.00

FIGURE

Metallic Tapes, a new article, the most durable for Engineers and Surveyors having strands of wire woven with the linen thread, 50 feet \$2.87, 70 feet 3.50, 100 feet - - - 4.75
 Steel Measures, 33 feet, to wind up in a leather box, same as Tape Measure, - - - - - 8.00
 Spring Tape Measures for the pocket, in Brass and German Silver cases, 3 to 6 feet long.
 Tape Measures in Ass Skin cases, from 6 to 50 feet long.

PRICE

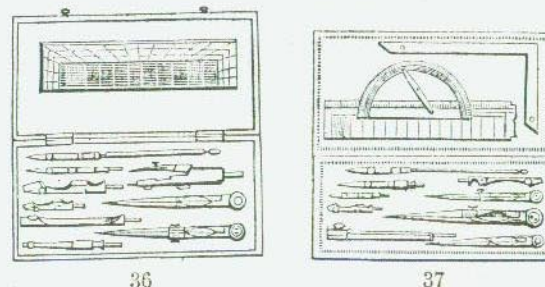
CASES OF MATHEMATICAL DRAWING INSTRUMENTS.



- | | | | |
|-----|---|--|------|
| 33. | No. 636, Morocco case—small German Silver Instruments— | | |
| | Needle point, 4 inch dividers, fine quality, | | 3.50 |
| 33. | No. 25, Wood box, Brass instruments, without needle points, | | |
| | medium quality, | | 1.25 |
| 34. | No. 32, Wood box, Brass instruments, 5 in. dividers, medium | | |
| | quality, box scale, | | 1.75 |
| 34. | No. 33, Wood box, Brass instruments, 6 in. dividers, medium | | |
| | quality, Ivory scale, | | 2.25 |
| 34. | No. 600, Morocco, Brass instruments, common quality, box | | |
| | protractor, (figure 22), | | 1.75 |
| 35. | No. 154, Morocco, German Silver instruments, fine quality, | | |
| | Ivory protractor, (figure 22), | | 3.50 |
| 35. | No. 054, Morocco, German Silver instruments, with addition of | | |
| | lengthening bar, | | 4.25 |
| 35. | No. 645, Morocco, German Silver instruments, without plane | | |
| | dividers, | | 3.00 |
| 35. | No. 023, Morocco Box, Brass Instruments, good quality, | | 2.50 |
| 35. | No. 599, do do do do common quality, | | |
| | box protractor, | | 1.25 |

FIGURE.

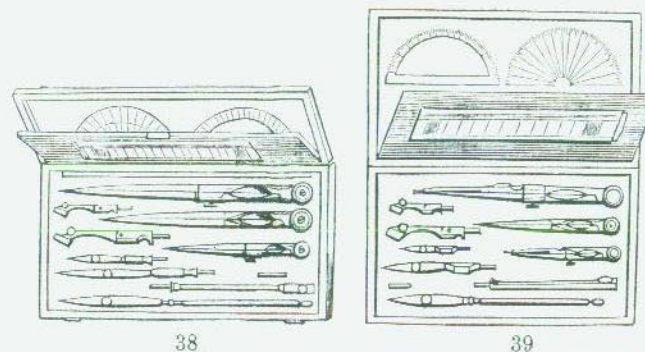
PRICE.



36

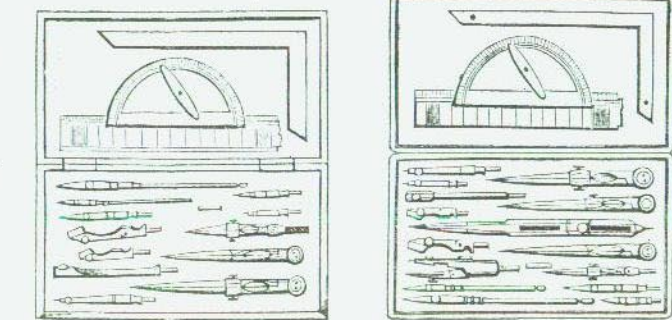
37

- | | | | |
|-----|--|--|------|
| 36. | No. 736, Morocco Box, german silver instruments, fine quality, | | |
| | Ivory protractor, | | 6.50 |
| 37. | No. 745, Morocco Box, german silver instruments, fine quality, | | |
| | | | 6.50 |



38

39

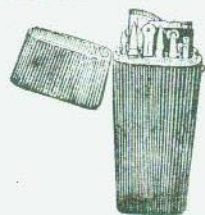


40

41

- | | | | |
|-----|--|--|------|
| 38. | No. 15, wood box, brass instruments, medium quality, | | 3.50 |
| 39. | do 29. do do do needle points, med. qual. | | 3.75 |
| 39. | do 39. do do do do with bow pen | | 4.25 |

FIGURE.		PRICE.
39.	do 40, wood box, brass instruments, needle points, with bow-pen and proportional compasses,	6.00
39.	do 585, Morocco case, brass instruments, fine quality,	5.50
40.	do 305, wood box, german silver instruments, fine quality,	10.00
40.	do 535, do do do do with bow pen,	13.00
40.	do 036, do do do do do and hair dividers	14.00
41.	do 845 wood box, german silver instruments, fine quality,	25.00
41.	do 655, do do do do with addition of Railroad Pen, (fig. 18),	27.00
41.	do 455 wood box, lock and key, superior quality, without the proportional compasses, but with double drawing pen, (fig. 18), and additional pen, (fig. 17),	30.00
41.	do 126, wood box, lock and key, german silver instruments, superior quality, with addition of Railroad Pen, (fig. 18), and one Pen, (fig. 17),	40.00
41.	do 326, Same as No. 126, but with addition of furniture for Beam Compasses, (fig. 9),	48.00



42

42.	do 5, Fish skin cases, brass instruments, box scale,	2.50
	do 55, do do do Ivory scale,	2.75
	do 57, do do do Ivory scale, steel joints,	3.50

COMPOUND MICROSCOPES,

NEATLY MOUNTED IN BRASS AND PACKED IN MAHOGANY CASES,

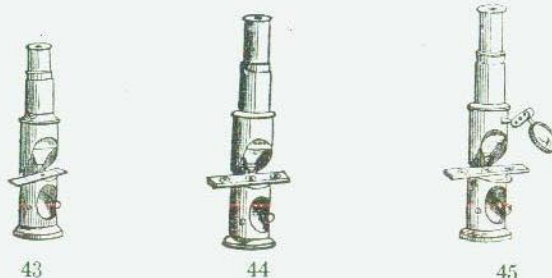
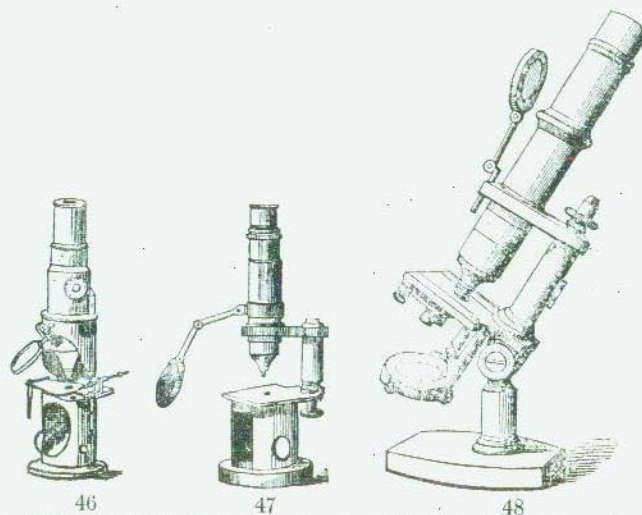


FIGURE.		PRICE.
43.	With one object lens, power about 15 diameters,	\$2.00 and 2.50
44.	do two do do do 50 do	3.50
45.	do three do do do 60 do with condensing lens for opaque objects,	\$5.50 and 6.00

ACHROMATIC MICROSCOPES,



46.	With three object lenses, power about 60 diameters, and rack work, for more readily adjusting to focus,	\$8.50 and 10.00
46.	Three lenses, power about 50 diameters,	16.00

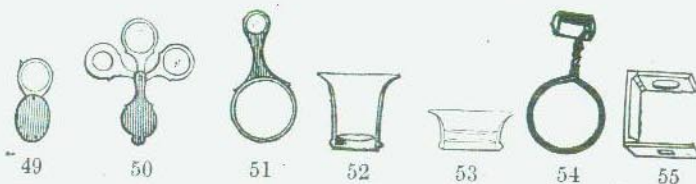
FIGURE.	PRICE.
	Oberhaeusers Students Microscope, magnifying 300 diameters, 27.00
47.	Oberhaeusers Microscope with five eye-pieces, three Achromatic object glasses, varying in power from 40 to 800 diameters, with Camera Lucida and horizontal eye-piece for sketching the magnified image, 100.00
	The same with Polarizing Apparatus in place of the Camera Lucida, 100.00
	Nachet's Microscope, (similar in form to figure 45) with two eye-pieces and two object glasses, 45.00
48.	Nachet's Horizontal Microscope, with three eye-pieces and 3 object glasses, and Camera Lucida, for drawing, power about 600 diameters, 80.00
	Surgeons Microscope for examining inside of the ear, 3.75
	Sets of Achromatic object glasses in three brass cells, varying in price with the focus of the glasses, \$4.50 to 9.00
	Eye-pieces mounted in brass, different powers, 2.50 to 3.00
	Finely prepared Microscopic objects, portions of insects, &c., 20 cents to 50
	Finely prepared injected anatomical preparations, 75
	Infusoria preparations, 25
	Glass slips for mounting Microscopic preparations, per dozen, 36
	do do with cells, do do injections, " " 2.25
	Very thin glass for covering do preparations per oz \$1.50, per dozen, 25
	Glass dishes and covers for Microscopic slides, per dozen, \$1.25 to 3.00
	Marine Glue, used in preparing Microscopic slides, Prepared Paper for covering do do
	Wythes Microscopist, with directions for preparing objects, injections, &c., 1.25
	Subscriptions received for the London Quarterly Microscopic Journal, per annum, 4.00

I will import to order Powell & Lealand's Microscopes at the following prices,—the cash must be paid at the time the order is given :

Brass Stand, two Eye pieces and Rack work Stage, (no object glasses),	\$119.40
Iron Stand, two Eye-pieces, Lever Stage, (no object glasses),	61.20
Large Stage and Frog Plate,	10.20
Bull's Eye Condenser,	6.80
Small do do	6.20

FIGURE.	PRICE.
	Forceps, - - - - - 3.40
	Animalculæ Cages, - - - - - 4.10
	Pliers, - - - - - 1.40
	Steel Disc, - - - - - 4.10
	Two inch Object Glass, - - - - - 21.50
	One inch do do - - - - - 21.50
	One-half inch Object Glass, - - - - - 28.60
	do do do to adjust, - - - - - 34.00
	One-quarter inch Object Glass, - - - - - 35.70
	One-eighth do do do - - - - - 50.00
	One-twelfth do do do - - - - - 64.30
	One-sixteenth do do do - - - - - 71.40
	Achromatic Condenser, - - - - - 35.70
	Polarizing Apparatus, - - - - - 17.00
	Micrometer Eye-piece, - - - - - 28.60
	Side Reflecting Illuminator, - - - - - 6.80

SIMPLE MICROSCOPES OR MAGNIFYING LENSES.



49.	Single Magnifying Lenses, mounted in horn, various sizes, 37, 50, 62 and - - - - -	1.00
49.	Double Magnifying Lenses, mounted in horn, 1½ in. diameter, - - - - -	75
50.	Triple do do do do and with horn or brass rims, - - - - -	1.25
50.	Double Magnifying Lenses, mounted in horn, and with horn or brass rims, - - - - -	87
50.	Single Magnifying Lenses, mounted in horn, and with horn or brass rims, - - - - -	62
51.	Magnifying Glasses, mounted in horn frame for examining engravings, maps, daguerreotypes, &c., various sizes, 25 to - - - - -	3.00
52.	Watchmaker's Glasses, various sizes, 25 to - - - - -	50
53.	Engravers Glasses, formed of two plane convex lenses, giving a high power and flat field, mounted in horn, wood, and metal frames, 62 to - - - - -	2.00

FIGURE.		PRICE.
54.	Coddington and Stanhope lenses, Ivory \$1.50, German Silver 2.00, Silver 3.50 and	4.00
55.	Linen Provers, for ascertaining the quality of Linen, &c., by giving the number of threads in a given space, 25 to	75

ACHROMATIC SPY GLASSES, TELESCOPES, &c.



56.	No. 25, Wood body, brass tubing, three draws, six inches long, closed—fifteen inches extended—object glass $1\frac{1}{2}$ inch diameter,	3.00
56.	No. 42, same as No. 25, but larger, being ten inches closed and thirty inches extended—object glass $1\frac{1}{2}$ diameter,	6.00
57.	No. 35, Wood body, brass tubing, 6 draws, 4 inches long, closed—16 inches when extended—object glass $\frac{3}{4}$ diameter,	3.75
57.	No. 36, Same as No 35, but object glass $1\frac{1}{2}$ diameter,	5.25
57.	No. 44, Wood body, brass tubing,, 5 draws, $7\frac{1}{2}$ inches closed, 28 inches extended, object glass $1\frac{1}{2}$ inches diameter,	8.50



58.	Three feet Naval Spy Glass, 1 draw, closing to 20 inches, object glass $1\frac{1}{2}$ inch diameter, medium quality, wood, leather and cord bodies, \$5.25 to	6.75
	The same with two draws—more portable, at the same prices.	
58.	Three feet Naval Spy Glass—1 draw, closing to 20 inches, object glass $1\frac{1}{2}$ inch diameter, very fine quality,	9.00
	The same with 2 and 3 draws—more portable, same price	

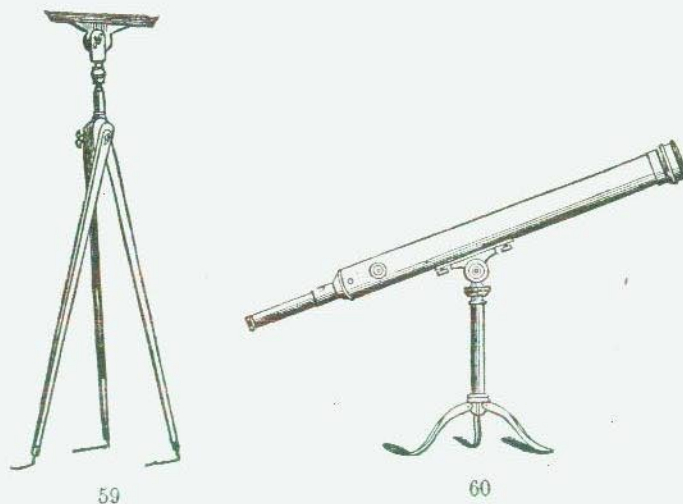


FIGURE.		PRICE.
59.	A very convenient wood stand for Spy Glasses, with vertical and horizontal motion,	3.50

ASTRONOMICAL TELESCOPES.

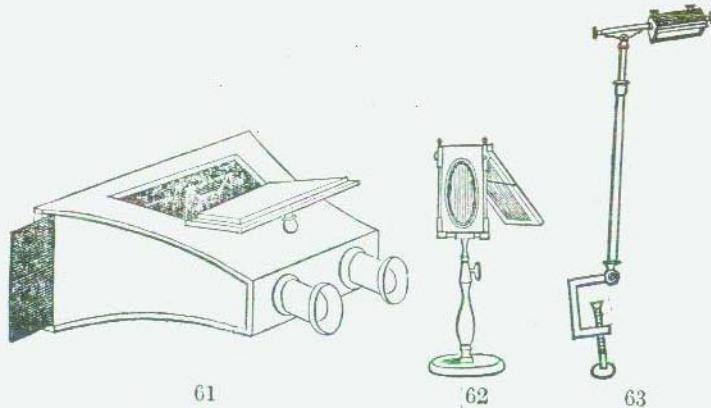
60.	No. 1, Achromatic Telescope, 44 inches long when shut up, when at focus 58 inches, object glass scant 3 in. diameter, 1 Terrestrial and 1 Celestial eye-piece and Sun glass, rack work adjustment for focus, tripod stand; stand and body made entirely of Brass, with strong wood case,	100.00
60.	No. 2, Achromatic Telescope, 33 inches when shut up, when at focus 45 inches, object glass, $2\frac{3}{8}$ inches diameter, 1 Terrestrial and 1 Celestial eye-piece and sun glass, mounted, &c., as No. 1,	55.00
60.	No. 3, Achromatic Telescope, 27 inches when shut up, when at focus 36 inches, object glass 2 inches diameter, 1 Terrestrial and 1 Celestial eye-piece and sun glass, mounted, &c., as No. 1,	43.00
60.	No. 4, Achromatic Telescope, 21 inches when shut up, when at focus 30 inches, object glass $1\frac{1}{2}$ inches diameter, 1 Terrestrial and 1 Celestial eye piece and sun glass, mounted, &c., as No. 1,-	30.00

FIGURE.

60. No. 5, Achromatic Telescope, 16 inches when shut up, when at focus 26 inches, object glass $1\frac{1}{2}$ inches diameter, 1 Terrestrial and 1 Celestial eye-piece and sun glass, mounted, &c., as No. 1, - - - - - 23.00

PRICE.

MISCELLANEOUS.

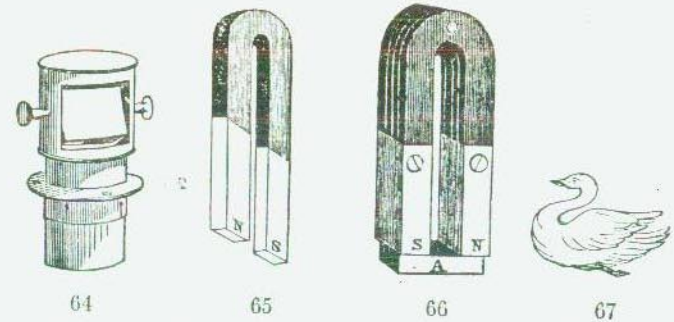


61. Wheatstones Stereoscope, this beautiful instrument gives to two viewers diagrams of one object taken at different angles, an appearance of real solidity; mounted in polished wood case, each, - - - - - 3.00
Stereoscopes in Jap. tin case, - - - - - 1.50
Stereoscopic daguerreotypes, of statuary, scenery, public buildings, &c., each, - - - - - 1.00 and 2.00
Stereoscopic daguerreotypes on glass, transparent, each, - - - - - 2.00 and 2.50
Stereoscopic daguerreotypes on paper, each, - - - - - .62 and 1.00
Neat pasteboard stereoscopes with 24 lithographed pictures, each, - - - - - 2.00
Periphanscopes, an amusing optical illusion, 1.00 and 1.25
Thaumatrope, do. do. 24 diagrams, 0.50
Multiplying Telescopes, do. do. 12 objects, 0.75
Transparent pictures, producing a beautiful effect when held to the light, each, - - - - - 0.37
Black Glass Mirrors in cases for viewing Landscapes in prospective, each \$2.00 to - - - - - 4.50

FIGURE.

62. Diagonal mirrors for viewing prints, - - - - - 2.00
Views in France, Germany, &c., for the above, pr doz. 0.75 to 1.75
Glass prisms for decomposing light 3 in. 37 cts, 4 in. 75 cts, 5 in. 1.00, 6 inch - - - - - 1.50
Claude Lorraine, glasses showing the effect of color upon landscapes, - - - - - 2.75
63. Camera Lucidas, for sketching scenery, \$1.00 to - - - - - 12.00

PRICE.



64. Prismatic lenses, the best arrangement for making Camera Obscuras, \$3, \$4, and - - - - - 5.00
65. Horseshoe magnets $2\frac{1}{2}$ inch, 12 cts., 3 inch 25 cts., 4 inch 37 cts, 5 inch 50 cts, 6 inch - - - - - 0.62
66. Compound horseshoe magnets, three bars, 4 inch \$2.50, 5 inch \$3.50, 6 inch - - - - - 4.00
67. Magnetic swan, fish, dog and bird, &c., each 25 cts to - - - - - 0.50
Natural loadstone, or magnetic iron ore, specimen, - - - - - 0.25
Numeral frame with 120 balls - - - - - 1.25
Set of 13 wood models of solid geometry, viz: cube, sphere, hemisphere, prisms, pyramids, spheroids, cones and frustum of cone, - - - - - 1.25
Dissected cube, for illustrating cube root, in box - - - - - 1.00
Set of 64 one-inch cubes in box, for numeration, cube root, &c., - - - - - 2.00
Dissected cone, with pins, showing the circle, ellipse, parabolic, hyperbolic sections, \$2 to - - - - - 3.50
Mathematical paradox, or curious block, which fits exactly, and passes through a square, a circle and triangle, - - - - - 0.50
Platina Points for Lightning Rods, made of pure and solid Platina, \$1.00 to - - - - - 4.00

SPECTACLES, EYE GLASSES, &C.

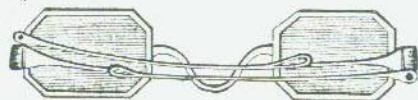


FIGURE.

	PRICE.
Gold Spectacles, 18 karat, heavy broad sliding sides.	\$17.00
“ “ 18 “ light narrow “ “ \$13 and	14.00
“ “ 18 “ sides without joints, for ladies	11.00
“ “ 16 “ heavy broad sliding sides, -	15.00
“ “ 16 “ light narrow “ “ -	11.00
“ “ 16 “ sides without joints, \$8 and	9.00
“ “ 14 “ heavy broad sliding sides, -	14.00
“ “ 14 “ light narrow “ “ -	10.00
“ “ 14 “ slides without joints, - - -	6.75
“ “ 14 “ Gossamer pattern, for ladies, -	6.00
“ “ 12 “ heavy broad sliding sides, - - -	12.00
“ “ 12 “ light narrow “ “ - - -	8.50
“ “ 12 “ sides without joints, \$5 to - - -	6.00
Silver Spectacles, heavy sliding sides, per pair, - - -	2.50
“ “ light “ “ “ “ \$1.50 and - - -	2.00
“ “ sides without joints, “ “ 1.50 “ - - -	1.75
“ “ with divided glasses for far and near sight, \$2.50 to	3.00
“ “ with slide glasses for shading the eyes from light	
and wind, \$3.00 to - - - - -	4.00
Gold and Silver Spectacles of any size or pattern made to order at	
equally low rates.	
Light Blue Steel or Gossamer Spectacles, sliding sides, \$1 to	3.00
“ “ “ “ “ “ turn pin or swivel sides,	
\$1 to - - - - -	3.00
Light Blue Steel or Gossamer Spectacles, swivel sides for near sight,	1.25
“ “ “ “ “ “ single joint sides, for ladies	1.25
“ “ “ “ “ “ “ “ “ “ “ “ medium	
quality, - - - - -	75
German Silver Plated and common Steel Spectacles put up in dozens	
for the retail trade with good quality glasses at low prices, Mo-	
rocco Spectacle cases 12 and 18 cents; Stell do 25 cents; Tin do	
25 cents; Papier Mache do 25 cents; German Silver 50 cents;	
Silver do \$7 to - - - - -	10.00
Glasses and Pebbles of all kinds fitted to old frames, and particular	
attention given to suiting the sight with the proper degree or focus,	

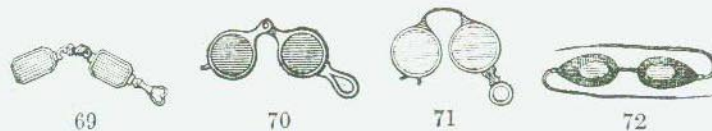
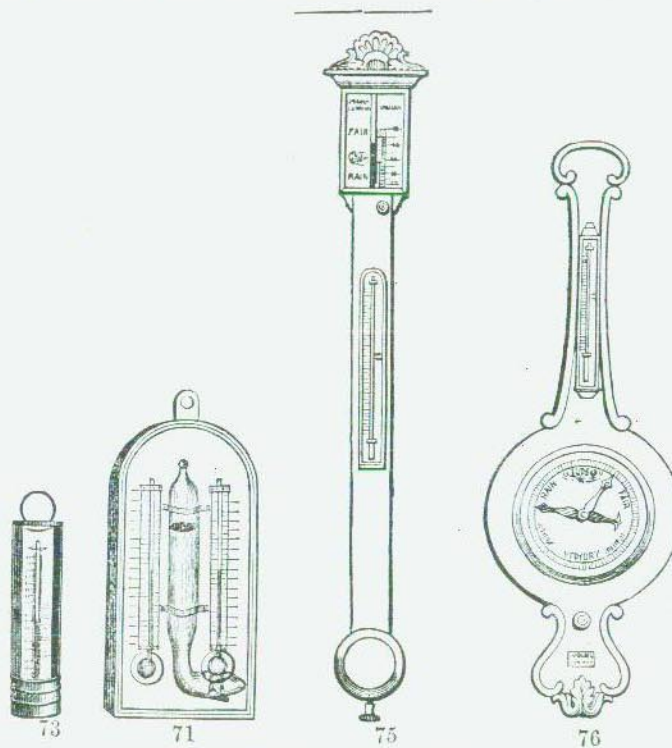


FIGURE.

	PRICE.
69. Gold Eye Glasses, various forms and patterns, to fold, \$7.50 to	18.00
69. “ “ “ with spring, \$8.50 to - - -	18.00
69. Gold Plated Eye Glasses, various forms and patterns, with	
spring \$4 and - - - - -	5.00
70. Eye Glasses, horn and tortoise shell, to fasten on the nose	
75 cts. to - - - - -	1.50
70. Silver Eye Glasses to fasten on the nose, - - -	1.50
71. Steel Eye Glasses, with steel spring to fasten on the nose, \$1 and	1.50
71. Horn “ “ “ “ “ “ - - -	1.00
71. Tortoise Shell Eye Glasses with steel spring to fasten on the	
nose, \$1.75 to - - - - -	4.00
72. Wire gauge Eye Protractors for railroad traveling, - - -	75



THERMOMETERS, BAROMETERS, &c.

73. Thermometers, usual form, japanned tin case, 7 in. 62, 8 in.

FIGURE		PRICE
	75, 10 in. \$1, 12 in. - - - - -	1.25
	Thermometers in Boxwood, the tube sunk into the wood 8 inch	50
	Thermometers in Boxwood, finely finished 6 to 10 inch \$1, to	1.62
	Thermometers, for travelling; in morocco case, 4 inch \$1, 6	
	inch \$1.25, 8 inch - - - - -	1.50
	Thermometers in leather cases, a superior article, 8 in., Ivory	
	scale, graduated with Fahrenheit, Reaumer and Centigrade	
	scales, each, - - - - -	4.25
	Thermometers, in leather cases, 6 inch Fahrenheit and Reau-	
	mur, - - - - -	3.00
	Thermometers, in leather cases 4 inch, 4 scales, 2 on each	
	side, - - - - -	3.50
	Thermometers, Chemical—on Boxwood, the lower part jointed	
	for immersing the bulb into liquids, ranging to 600°, \$2 to	3.00
	Thermometers, self-registering, box-wood scale for day or	
	extreme heat, - - - - -	2.00
	Thermometers, self-registering, boxwood scale for night or	
	extreme cold, - - - - -	1.75
	These Thermometers can be set to register the greatest degrees	
	of heat or cold in the absence of the observer.	
	Rain Gauges of Painted Tin, - - - - -	2.50
	do do Copper, - - - - -	3.50
	do do with graduated float, - - - - -	5.00
84.	Masons dry and wet bulb Hygrometer, with explanation and	
	tables, - - - - -	3.00
	Saussures Hygrometer, for showing by means of a hair the	
	moisture in the air, \$2.50 to - - - - -	6.50
75.	Plain Pediment Barometer, - - - - -	9.00—10.00
"	do. do. do. with Rack Vernier, Scales gradu-	
	ated on Ivory and Thermometer in front, - - - - -	13.00
"	Pediment Barometer, superior, with two readings, - - - - -	20.00
	do do with glass cistern in brass case - - - - -	35.00
"	Mountain Barometer, on tripod stand, - - - - -	50.00
76.	Wheel (or Circular) Barometer, mahogany and ornamental	
	frames, various sizes and patterns, - - - - -	15.00 to 25.00
"	Anteroid Barometer, without fluid or mercury. This instru-	
	ment, from its portability and non-liability to derange-	
	ment, will prove a valuable companion to the scientific	
	traveller; and, being of an ornamental form, is well	
	adapted for the hall, library, or draawing room.	
	Price, 15.25; with thermometer, 18.00	

FIGURE.

PRICE.

"	Bourdon's Metallic Barometer—a new and beautiful instru-		
	ment, made with open dial, showing the arrangement of		
	the mechanism. Of its accuracy, Prof. Henry, of the		
	Smithsonian Institute, speaks as follows: "We have re-		
	tained one of the Metallic Barometers. The instrument		
	performs very well. We have carefully compared it with a		
	standard instrument for several weeks, and find the differ-		
	ence very small. Various sizes, each, - - - - -	18.00 to	25.00
"	Urinometers for Physicians. In paper cases, 0.87; morocco,	1.00	
	do. do. with test glass, - - - - -	1.50	
	The same with thermometer, &c., much more complete, - - - - -	3.50	
"	Hydrometers, for weighing acids, syrups, alkalis, spirits, &c.		
	&c., made of glass, each - - - - -	00.50	
	do. do. syrups and spirits, made of brass,		
	do. do. do. German silver,		
	do. with Traller & Richter's scale, and thermome-		
	ter attached,		

POCKET COMPASSES, SPIRIT LEVELS, &c.



77



78

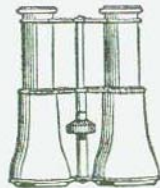


79

77.	Brass Pocket Compasses, every quality and form	37 cents to	3.00
	Wood do do common, 25 cts, fine, with stops, \$1 to		1.75
	Plated and gilt do form of watch, very fine, each \$3.75 to		6.00
78.	Geological Compasses, calculated for giving the angle or dip		
	of a vien or strata, 2 inch \$4.50, 3 inch 5.50, 4 inch, -		6.75
	Compasses with sights, for running lines, morocco cases \$5 to		8.00
	do do 4 inch diameter, wood case, - - - - -		5.50
79.	Prismatic Compasses, mounted in Brass, - - - - -		15.50
79.	Schmalcalders prismatic or azimuth compasses	17.00 to	21.00
80.	Spirit Levels mounted in brass, from 3 to 6 inches long, per		
	inch, - - - - -		25



80



81

FIGURE.

	PRICE.
Glass Bulbs for Spirit Levels, unmounted, per inch,	06
Hour Glasses in Rosewood frames, \$2.25, common mounting	75
Half-hour Glasses do do 1.75, do do	62
Two and three Minute Glasses for Daguerreotypists, -	50
Three Minute Sand Glasses in bronze, egg-boilers, -	37
81. Double Opera Glasses, with achromatic object glasses of best quality, equally adapted for the Theatre, or for viewing Scenery; a great variety of styles, from \$2.50 to -	18.00
81. The Marine Opera Glass, an excellent article for sea and river use, -	15.00
Weighing Scales, with lever, 3 inch dish, 2.50, 4 inch	4.00
Night alarms, a portable article for travellers, wakes you at any hour, -	4.00
Clynometer Levels, a portable instrument for the pocket, by which the angle of a strata or vein can be ascertained, and by means of sights a level can be taken, -	8.00
Miniature Perambulator, an instrument for measuring curved lines, roads, railroads or canals on maps, -	1.50

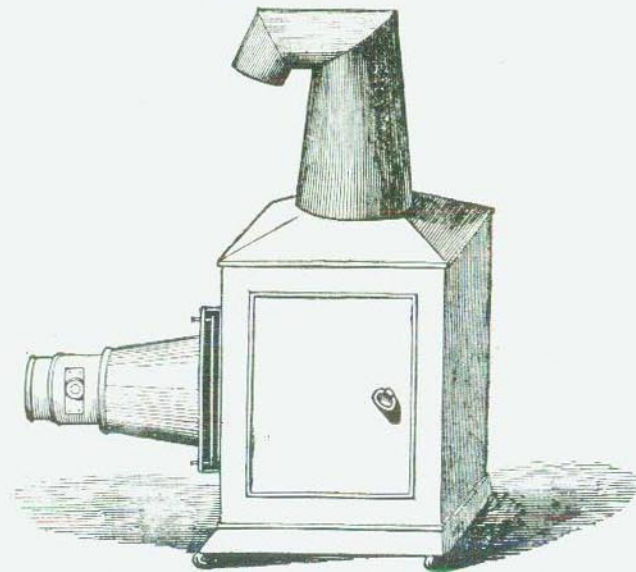
MAGIC LANTERNS AND SLIDES.

The Magic Lantern was invented by Kircher, about the year 1650; it consists in its simplest form of a condensing and object lens; a lamp is placed in a tin box, and the light thrown in a condensed state upon pictures painted in transparent colors, an enlarged image of which is thrown upon a screen or wall. The Magic Lantern, for a long period, was only considered an optical toy to amuse children; but from recent improvements, it has become a popular medium for conveying instruction, and may be employed in illustrating any branch of scientific information when it is desired to give a vivid and enlarged representation of phenomena to a large assemblage of persons. The Binoptric dissolving Lantern, with the oxygen illuminating apparatus is the most perfect instrument yet invented.

FIGURE.

PHANTASMAGORIA LANTERNS.

PRICE.



82

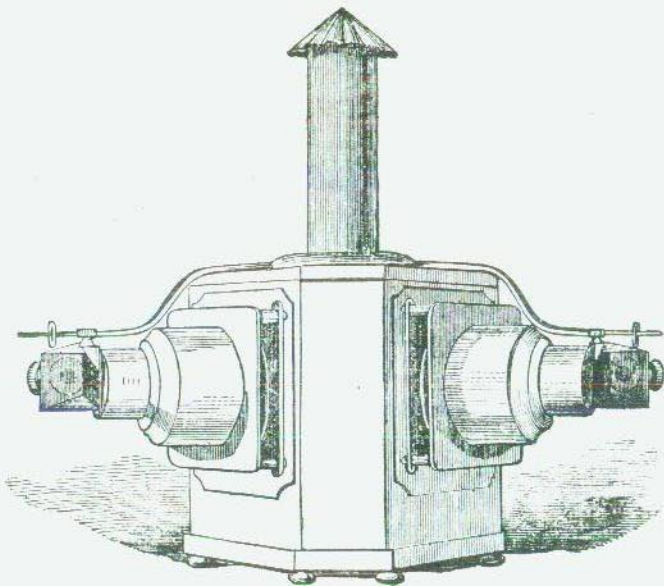
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| 82. No. 1, Improved Phantasmagoria Lantern, with rack adjustment for focus, spring to hold slides, Solar Lamp to burn lard or oil, with condensing Lenses 4 inches in diameter, the box 10 by 8 inches, and 16 high, - | \$23.00 |
| No. 2. Same Lantern, with condensing Lenses 3½ diameter, - | 18.00 |
| No. 3. do do do slip tube in place of rack - | 16.00 |
| 4. A pair of the above Lanterns, with 4 inch condensers and rack adjustments; arranged on a stand with the apparatus for producing the dissolving effects, - | 51.00 |
| No. 5. A pair of the above with 3½ condensers, and rack adjustments, arranged on a stand with the apparatus for dissolving effects, - | 41.00 |
| No. 6. do do do slip tubes - | 37.00 |

THE DISSOLVING VIEWS.

The exhibition of the dissolving views has been well described by Messrs. Carpenter & Westley, of London, "As one of the most extraordinary and magical effects that the Lantern is capable of producing. No term can better express these wonderful changes than 'Dissolving;' for while the spectator is viewing a painting, it is made most imperceptibly to melt into quite a dissimilar picture. A painting representing the exterior of a Cathedral being under view, this is insensibly changed into the interior of the same building without the observer being able to detect any apparent alteration, until the new picture appears to grow perfectly distinct before him; hence he is led to suppose the change to have taken place upon the

same painting—whereas a new view has been substituted, without leaving the screen in darkness for an instant." The mode of producing this pleasing and fascinating illusion is by the employment of two Phantasmagoria Lanterns,

OR OF THE BINOPTIC LANTERN,



83.

Of which the inventor, Dr. Becchey, says: "This Dissolving Apparatus possesses, within as small a compass as a single Lantern of the ordinary description, all the powers of two Lanterns, with only one lamp of intense brightness, free from the objectionable smell and great heat of ordinary lamps, whereby a disc of twenty feet for each tube may be obtained. Each disc is capable of being darkened to any required extent, without the least shadow on any portion of the picture; and from the superiority in the optical arrangements of the apparatus, each picture is perfectly flat and well defined to the extreme edge. As the discs may be thrown either together on one circle, or united at various distances in length upon the screen, the number of effects which may be produced may be easily imagined; they present, first, a succession of dissolving views, so accurately and gradually dissolving, that the most experienced eye cannot perceive the operation going on. Secondly, various effects, as falling snow, &c., succeeded by sunshine and rainbow; volcanoes in eruption, &c. Thirdly, double discs, as the two hemispheres of the globe on the screen at once, full size—or two separate portions of one diagram of extended length, without crowding, as at present, all the objects into one disc. Fourthly, combinations of two

moving or revolving slides on one circle, as all the planetary system in motion, &c., &c., or all the vagaries of two chromatropes taken in combination, and permutations of one or two together. The portability of the apparatus is also of importance: the whole can be packed—viz., the Lantern, gas bag, retort, purifier, &c.—with several dozen slides, in a case two feet square, and about eighteen inches deep—a decided advantage over every other description of dissolving view apparatus."

A small Lamp is used with the Dioptric, a stream of oxygen gas is thrown upon the flame, producing an intense light, but little inferior to the Hydro-Oxygen light, and free from all the risk of explosion attendant upon the latter, as only the oxygen is used in connection with an Oil Lamp.

83. The Binoptic has two sets of condensers of $3\frac{1}{4}$ inches diameter, whereby two slides or diagrams, producing the dissolving effect, can be used at the same time—also the necessary apparatus for generating the gas, as above; all complete. \$140.00
The Lamp, and all the apparatus for making the gas, which can be used in the three first named Lanterns described in this list. 25.00

The Lanterns are priced without any reference to Slides whatever.—that is, the prices are for the Lanterns when complete and ready for use, with lamps and necessary appendages, including printed instructions, but no slides accompany any of the lanterns at the prices above named.

Small Magic Lanterns, and twelve slides accompanying each lantern, calculated for the amusement of children—the paintings of various humorous designs—from \$2.50 to \$15.00, for the lantern and slides.

THE POLYORAMA PANOPTIQUE.

An instrument for dissolving views, by which one painting will dissolve into another, or change from day to night, merely by viewing them through the medium of reflected or transmitted light.

This is quite a different article from the Magic Lantern, as but one person can see the views at the same time. The observer, while holding the instrument before a strong light, looks through a convex lens at the picture, and at the same time produces the dissolving effect by a change in the admission of the light, giving a most pleasing and interesting effect. They are packed in neat square boxes, with 12 diagrams, and the various adjustments, and priced according to size.

No. 3, with 12 views, about $3\frac{1}{2}$ inches square,	\$3.25.	No. 4, 12 views, about 5 inches square,	\$5.00.
No. 5, 12 views, 7 inches square,	\$8.00.	No. 6, 12 views, about 12 inches square,	15.00
No. 4, with 6 views, and Camera Obscura attachment,			4.00
No. 5, do 10 do do do do			8.00

FIGURE

SLIDES OR PAINTINGS.

PRICE

ASTRONOMICAL DIAGRAMS.

Of the following Views in Eleven Sliders, packed in a Box, with a Description.

System of Ptolemy, Copernicus, Tycho Brahe, Newton, Telescopic view of the Moon, of Jupiter, of Saturn, Comparative sizes of the Planets, Comparative distances of the Planets, Orbit of a Comet, Comet of 1811, Signs of the Zodiac, Inclination of the Planets' Orbits, Direct and Retrograde Motion, (Lever Moveable).—Rotundity of the Earth, the Seasons, Phases of the Moon, the Earth's Shadow, Cause of the Sun's Eclipse, do Moon's Eclipse, Inclination of the Moon's Orbit—(moveable)—Eclipse of the Sun, with a transit of Venus, (moveable), Eclipse of the Moon, Spring Tide at New Moon, do Full Moon, Neap Tide, the Constellation Orion, do Ursa Major, Various Nebulae, A Portion of the Milky Way: Per Box, \$10.00 to \$18.00.

MOVEABLE ASTRONOMICAL DIAGRAMS.

THE MOTION PRODUCED BY BACK-WORK,

In a Set of Nine Sliders, Packed in a Box, with a Lock.

Slider No. 1.—The Solar System, showing the Revolution of all the Planets, with their Satellites, round the Sun; 2, The Earth's Annual motion round the Sun, showing the Parallellism of its Axis, thus producing the Seasons; 3, This Diagram illustrates the cause of Spring and Neap Tides, and shows the Moon's Phases during its revolution; 4, This Diagram illustrates the Apparent Direct and Retrograde motion of Venus or Mercury, and also its stationary appearance; 5, A Diagram to prove the Earth's Rotundity by a ship sailing round the Globe, and a line drawn from the eye of the observer placed on an eminence; 6, This Diagram illustrates the Eccentric Revolution of a Comet round the Sun, and shows the appearance of its Tail at different points of its Orbit; 7, The Diurnal motion of the Earth, showing the rising and setting of the Sun: Illustrating the cause of day and night, by the Earth's Rotation upon its Axis; 8, This Diagram illustrates the Annual Motion of the Earth round the Sun, with the Monthly Lunations of the Moon; 9, This Diagram shows the various Eclipses of the Sun, with the Transit of Venus, the Sun appears as seen through a Telescope: Per Box, \$30.00.

Superior set with slide, No. 10, Showing the various Eclipses of the Moon, \$40.00

Superior set with slide, No. 11, showing the various Eclipses of Jupiter's Moon's; No. 12, Showing the principal Stars in the North Hemisphere Revolving around the Polar Star, 48.00

Sets of six slides with Auroras, as represented in Lardner's Lectures, six views, in a box, per set, 9.00

Set of slides with Water Spouts, as represented in Lardner's Lectures, five views, in a box, per set, 7.50

SELECT SCRIPTURE SUBJECTS.

In 12 Sliders, containing 38 Subjects, packed in a box, each Glass 2½ inches diameter.

Slider No. 1. Adam and Eve driven out of Paradise, Hagar and Ishmæl,

FIGURE

PRICE

Abraham offering Isaac, Rebecca at the Well, 2, Joseph sold into Egypt, Joseph meeting his Father, the finding of Moses. 3, The Ark of the Covenant, the Dress of the High Priest, the Altar of Incense. 4, The Altar of Burnt Offering, an Aaronite or Scribe, the Golden Candlestick. 5, Return of the Spies, the Brazen Serpent, Balaam and his Ass. 6, Sampson and the Lion, Esther before Ahasuerus, the Infant Samuel, Elijah fed by Ravens. 7, David and Goliath, David Dancing before the Ark, Nathan reproving David. 8, The Annunciation, the Birth of Christ, Christ brought to the Temple. 9, The flight into Egypt, the Holy Family, Christ and the Woman of Samaria. 10, Christ Stilling the Tempest, the Good Samaritan, The Lord of the Vineyard and Laborer. 11, The return of the Prodigal Son, Trial of Peter's Faith, Herodias with the Head of John the Baptist. 12, The Crucifixion, the Women at the Sepulchre, the Morning of the Resurrection, the Disciples at Emmaus. Per Box, \$30.00.

SUPERIOR VIEWS IN THE HOLY LAND, EGYPT, FRANCE, SWITZERLAND, ENGLAND, AMERICA.

In Single Slides, the Glasses 3½ inches diameter, and particularly adapted to the Binoptric Lantern, or Lantern No. 1.

Pyramids of Gizeh—Ruins of Andernach—Isola Bella—Tiber—Edfou—The Simphon—Noammon, Thebes—Gold Diggers, Australia—Scene in the Desert—Pharaohs Bed on the Nile—St. George's Hall, Gibraltar—Philoe, Egypt—Tombs at Petrae—Arc l'Etoile, Paris—Ascent to Sinai—Cottage near Thun—Convent of St. Catharine—Frontier of Egypt and Nubia—Abu Simball—Prairie on fire—Lahnneck Castle—Rheineck Castle, Rhine—Falls of Niagara—Bridge of Sighs, Venice—Sidon—Pool of Hebron—Absalom's Tomb, Garden of Gethsemane—Mount Hermon—Rialto, Venice, Bay of Naples and Mt. Vesuvius—Ducal Palace, Venice—The Kings Bastion, Gibraltar—Castle of Spiez—Pass of the Tete Noir—Martigny—Venice—Melrose Abbey—Interlachen, Oberwessel—Castle of Chillon—Balbec, &c., &c., each \$4.50.

SUPERIOR VIEWS IN THE HOLY LAND, PALESTINE, &c.

In single slides, the glasses 3 inch diameter.

Garden of Gethsemane—Cedars of Lebanon—Rachel's Tomb—Lake Tiberias—Mt. Hermon—Karnak—Jerusalem—Nazareth—Mt. Moriah—Cyprus—Sidon—Vale of Nazareth—Dead Sea—Tyre—Fords of Jordan—Antioch, and a variety of others, each \$3.50.

PAINTINGS IN PAIRS OR SETS, FOR DISSOLVING VIEWS AND EFFECTS.

All 3½ inches diameter, adapted to the Binoptric Lantern, or Lantern No. 1.

Scene in North Dover, Summer, Water-mill in motion, winter scene, lever slide with moon rising, three slides	14.50
Mosque of Omar, day and night views, with windows illuminated, three slides,	11.00
Esquimaux Village, with Aurora Borealis, as seen by Ross and Parry, three slides,	8.50
Poppleton church, summer and winter scene, with illuminated clock, three slides,	11.00

FIGURE.

	PAGE.
Storm at Sea, Ship in calm, storm, wreck, lightning and life boat, four slides,	15.50
Ship on fire, ship in full sail, ship on fire; "a sail, a sail," life boat, four slides,	14.50
Serenade scene, Moonlight; view, Venice; Gondola approaches, and a lady appears on Balcony to greet it, one slide,	6.50
Katz on the Rhine, moon rising and cottage window illuminated, two slides,	7.00
Lake Geneva, summer view changing to winter, two slides,	9.00
Newby Abbey, moonlight do do	15.00
Mt. Vesuvius in eruption, with view of Pompeii, before and during destruction,	9.00
Water mill at Lungern, summer and winter, two slides,	10.00
Scene in Yorkshire, with rainbow, three slides,	9.00
Burns Cottage, summer and winter, two slides,	8.50
Mount Blanc, two slides,	7.00
St. Paul's by night with effect, moon rising, two slides,	

THE CHROMATROPE OR ARTIFICIAL FIRE WORKS:

Producing most surprising and entertaining Kaleidoscopic effects; an almost endless variety of designs are made to rotate round each other, exhibiting radiating stars, fountains, &c., \$3.75 to	6.00
Lever slides, the motion produced by a lever attached to a glass; various subjects—as a ship at anchor, old man taking off his hat, the fidler, horse drinking, Phrenologist, blacking boots, &c., &c., \$2.75 to	4.00

TEMPERANCE SLIDES.

Set of Drunkard's Progress, ten slides,	15.00
Progress of Intemperance, 6 do	9.00
Scenes from Uncle Tom's Cabin, single slides,	1.50

COMIC AND MOVEABLE SLIDES.

A large variety, as a Lion's Head, moving eyes and mouth, Tiger's Head, do, Human Skull do, Choice Spirits, (in a tub), the Night Mare, Sailor riding a Pig, Merlin's Cave, with a sea view, Boy Fishing, Juggler, Opening Rose, exposing Cupid, Blooming Carnation, do, Tulip, Turk's Caps, Wreath of Flowers and Good Night, Passion Flower, Performance on two Chairs, Horsemanship, Peacock with opening Tail, Harlequin falling to pieces, Tailor and Goose, Cat following a Rat, Sportsman shooting, Boy catching Butterfly, Equestrian at Astley's, Blue Beard, moving Eyes and Mouth, a Pear (Pair) Old Woman and Looking Glass, Cat and Mice, Chameleon changing color, Birth of Cupid, Lion seizing a Horse, Farmer and Dog, the Tythe Pig, Stuck Fast (Lad in a Tree), Barber Shaving, Barber and Skull, Death on Pale Horse, Man wishing good night, takes off his hat; Clown whose head falls off, Dancing Clown, Tumbling do., Punch Bowl, Water Drinker, Lamp Black, (a Sweep in a Cask,) Cauliflower changing to a Venus, Cook and Calve's Head, the Growing Nose, Changes of Insects from Larva and Pupa to perfect Insects, Animal Spirits, Naval Engagements between two ships, Navigation, (boys sailing a boat) Dutch Dentist taking out a Tooth, Battle of Nile, with clouds, do. of Navarino,

FIGURE.

PRICE.

do. Pine Apple, changes to a Clown; Cupid among the Roses, Bottled Porter, Taking off a Boot, Cobbler at Work, Blacksmith do., Tailor sewing, Black Draught, Dancing Sailor, Tight Rope Dancer, (male,) Female do. Jim Crow dancing, Child with skipping rope, Harlequin and Chest, Clown opening a Chest, Clown and the Old Gentleman, &c. &c., each slide 1.25 to 3.00.

LONG MOVING SLIDES, WITH SHIPPING, &c.

Noah entering the Ark, Crossing of the Red Sea, Burning of the Missouri at Gibraltar, per slide,	5.00
Various other Long Moving Slides, with Shipping &c. per slide, 2.50 to	3.50

LONG SLIDES OF VARIOUS HUMOROUS SUBJECTS.

The Old Man and his Ass, or the folly of trying to please every one, 8 views on two slides,	7 to 8.00
Slides, with 3 to 6 Paintings on each, various humorous subjects, per slide,	1.25 to 2.00
Natural History Slides, 4 views on each slide, per slide	1.00

All the slides marked as sets, or in boxes, are only sold in that way, and not separated. All the diagrams enumerated can be used in any of the Lanterns described. The views of $3\frac{1}{2}$ inches in diameter are more suitable for the Binoptic or Phantasmagoria with 4 inch condensers; if used in a Lantern with smaller condensers, a portion of the painting is lost.

The Cash always to accompany an order for Magic Lanterns or Slides.

ELECTRICAL APPARATUS,

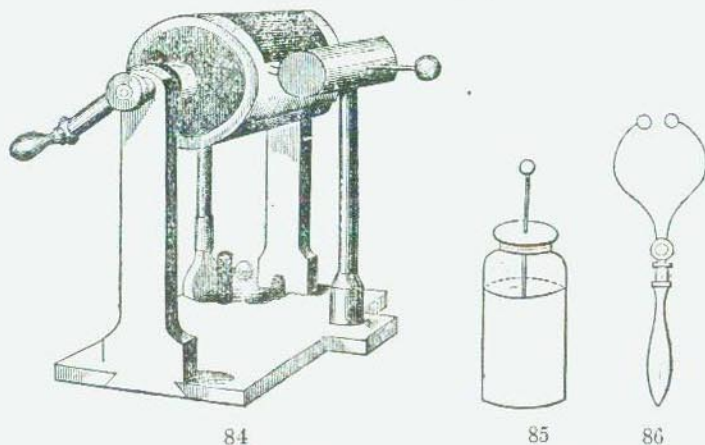


Plate Machine, brass mounted, with glass pillars on mahogany stand and insulated prime conductor, diameter of plate 36 inches, 140.00

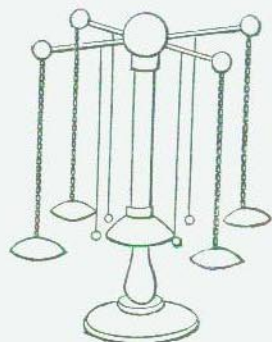
FIGURE.

PAGE.

do.	do.	do.	30 inches,	100.00
do.	do.	do.	24 inches,	50 to 60.00
do.	do.	do.	18 inches,	30 to 40.00
do.	do.	do.	16 inches,	25 to 30.00
Plate Machines, diameter of plate 8 to 12 inches, common mounting,				
				6 to 15.00
84.	Cylinder Electrical Machine, 10 inch cylinder and insulated conductor, neatly mounted on mahogany stand,			30 to 35.00
	do.	do.	8 inch cylinder,	20 to 25.00
	do.	do.	6 do.	12 to 14.00
	do.	do.	5 do.	10.00
85.	Superior Leyden Jars, Pints 1.00, Quarts 1.25, 2 Quarts 1.75			
"	Lightning Jars, 1.00, 2.00, and 3.00			
"	Spotted Jars, Pint 2.00, Quart 3.00			
"	Battery of 9, one gallon jars,			25.00
"	do. 9, half gallon jars,			20.00
"	do. 9, quart jars,			15.00
86.	Best Jointed Discharger, with glass handle,			3 to 4.50
	Best plain, without joint,			2.00



87



88



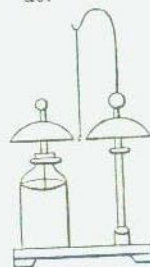
89

87.	Metallic Plates on adjusting stand for Dancing Images,			1.50
"	do.	do.	on insulated stand do. do.	5 to 6.00
"	Pith Images for the Metallic Plates,			
"	Pith Balls, per doz.			0.50
88.	Chime of Five Bells on insulated stand,			5 to 6.00
89.	Chime of Three Bells, to suspend from the conductor,			3.00
90.	Chime of Two Bells, one of them being connected with the interior of a Leyden jar,			4.00
90.	Chime of Three Bells, connected in same way with the Leyden jar—common finish,			2.75
"	Insulated Stools, neat and strong,			3.50 to 6.00
"	Spiral or Diamond Tubes,			2, 3, & 4.00
"	Bennet's Electroscope, a delicate instrument, showing the presence of Electricity in any body brought in contact with it, by the separation of the slips of gold leaf,			2.50 to 3.50
"	do.	do.	with condenser,	6.00

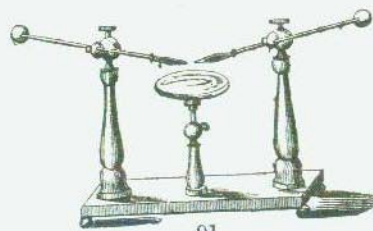
PRICE

FIGURE

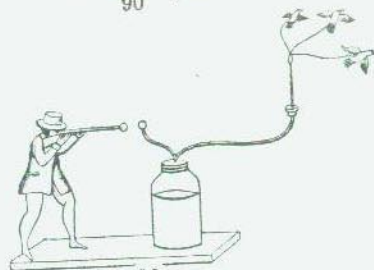
Coulomb's Torsion Electrometer,		\$10 and 15.00
Quadrant	do.	Box-wood scale, 1.50
do.	do.	Ivory scale, 2.50



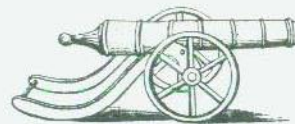
90



91

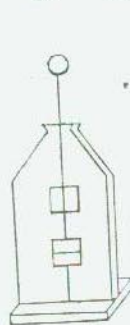


92

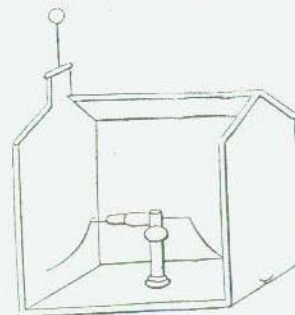


93

91.	Universal Discharger, with adjusting table and press,			6.00
92.	Electrical Sportsman, as the jar is being charged with Electricity, the birds fly off as represented in the drawing, when the jar discharges itself in connection with the sportsman's gun, the birds fall as if shot,			5.00
93.	Electrical Cannon, made of brass, mounted on brass wheels,			4.50
	do	Pistol,	do do	2.50 and 3.00



94

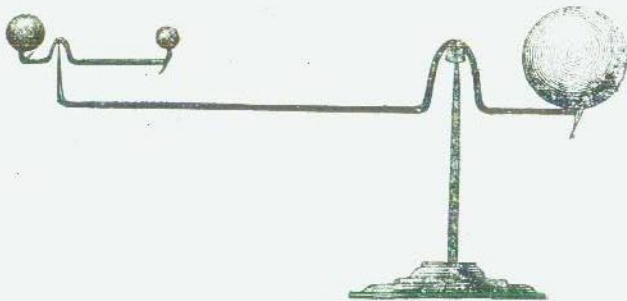


95



96

FIGURE.		PRICE.
94.	Mahogany Model of the Gable End of a House, for illustrating the effects of perfect and broken conductors, - -	1.50
95.	Mahogany Model of an Obelisk, which is thrown down by the simple discharge of a highly charged jar, - -	3.00
96.	Mahogany Model of Lightning House, hinged to be blown down by Gas Pistol within; also illustrating the effects of broken and perfect conductors, as in fig. 94, - -	6.00



97

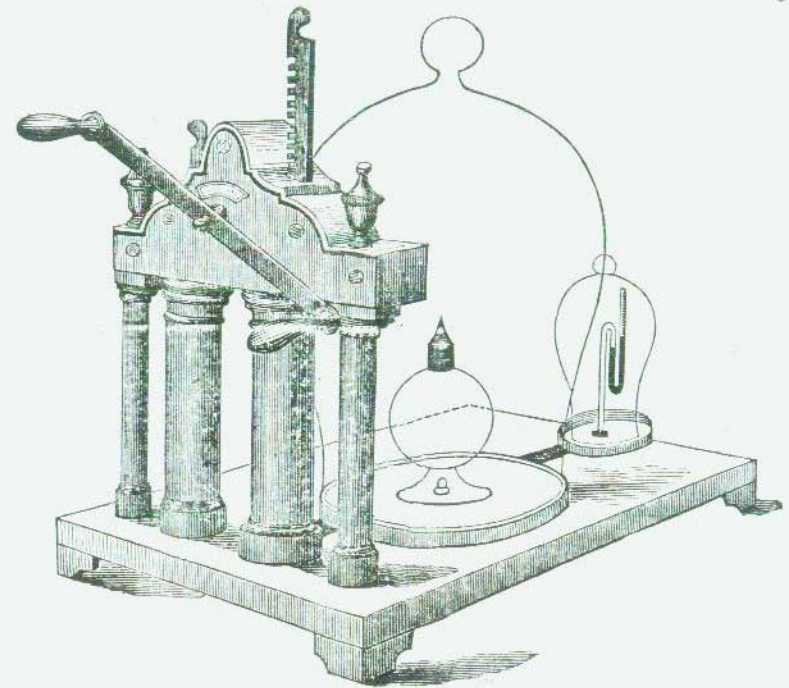


98

97.	Electrical Orrery, which represents the motion of the Sun, Earth, and Moon, rotating about the common centre of gravity between them, while the Earth and Moon again move round their common centre of gravity, 2.50 to	3.50
98.	Head of Hair, when placed upon the prime conductor of a machine, and the machine excited, each hair is repelled, and stands on end, presenting a grotesque appearance, 1.00	1.00
Figures of a Vase, Lyre, Bottle, &c., arranged upon glass plates with pieces of tin foil, which are rendered luminous		

FIGURE.		PRICE.
	by passing the electrical spark through them, each plate, .75	
	Luminous Word, - - - - -	2.50 to 4.00
	Electrical Bucket, - - - - -	.75
	Rod of Sealing Wax, - - - - -	1.00 to 1.50
	Egg Stand, - - - - -	1.50 to 2.00
	Electrophorus, - - - - -	3.50 to 6.00

AIR PUMP AND APPARATUS.

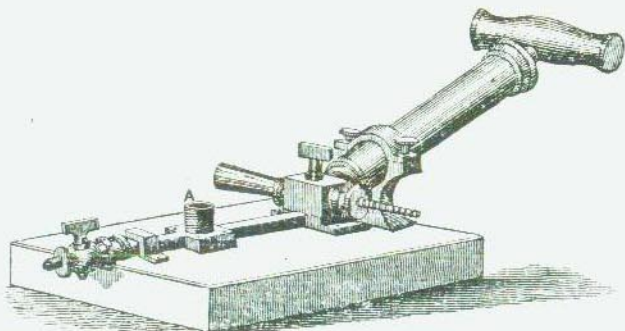


99

FIGURE.

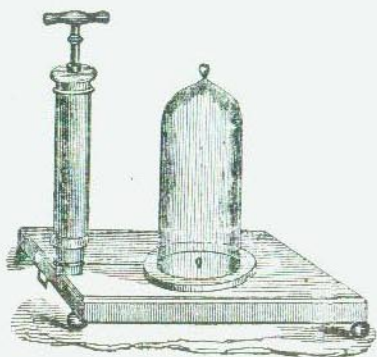
PAGE.

99. Large Double Barrel Air Pump, with mercurial guage, 50 to 75.00
 „ Small Double Barrel Air Pump, without the guage, - 35.00



99 B

- “ B Air Pump, with single inclined barrel, glass plate, Receiver, 2 clamps, so arranged that four experiments may be performed at the same time—a very useful instrument, * 25.00



100



101



102

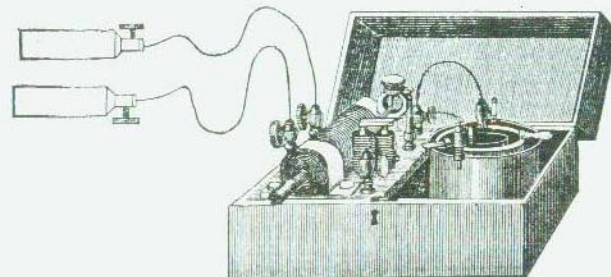
* The Brass Plate for the Receiver screws on at A. It is omitted in the sketch, to show the construction of the instrument.

FIGURE

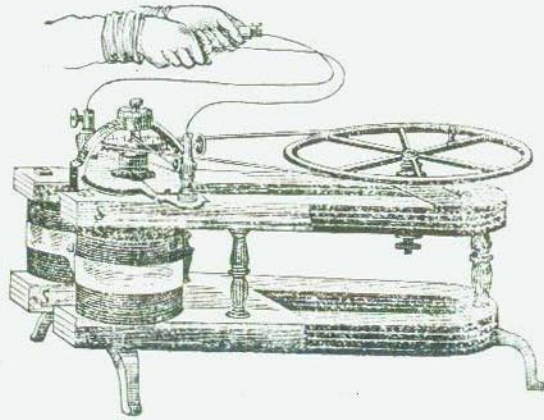
PRICE

100. Single Barrel Air Pump, on mahogany stand, with glass receiver, - - - - - 8, 12, & 15.00
 Single Barrel Air Pump, on cast iron stand, the barrell set at an angle, for greater convenience in using, - - - 15.00
 101. Brass Plate, with sliding rod, hook, and clamp, - - - 3 to 4.00
 102. Fountain for Vacuum, cock, jet, and stand, - - - 4 to 5.00
 Pneumatic Paradox, of glass—the wooden ball being placed upon the cup end of the glass tube, cannot be blown off, while on the other end it can be supported upon a jet of air, it is used with the mouth, - - - .38
 Hand Glass .75 ; Bladder Glass, - - - - - 1.00
 Double Hand Glass, or Philosophical Hand-Cuffs, - - - 3.50
 Bolt Head Experiment, - - - - - 1.25
 Brass Hemispheres, - - - - - 3 to 6.00
 Guinea and Feather Apparatus, - - - - - 4 to 6.99
 Bladder and Weights - - - - - 3 to 4.00
 Mercury Cup, 1.00 ; Receiver for do. - - - - - 2 to 3.00
 Bell in Vacuo, 2.50 to 4.00 ; Air Mills, - - - - - 6.00
 Copper Vessel for Condensed Fountain, - - - - - 8, 15, & 20.00
 Revolving Jet for do. do. - - - - - 1.50
 Air Gun Jet for do. do. - - - - - 1.00
 Condensing Syringes for the above, - - - - - 2.50 to 5.00
 Fire Syringe, - - - - - 2.00
 Half Doz. Bursting Squares, with wire guard, - - - 2.50
 Wire Guards for the above, each, - - - .75 to 1.00

ELECTRO-MAGNETIC AND GALVANIC APPARATUS, &c.

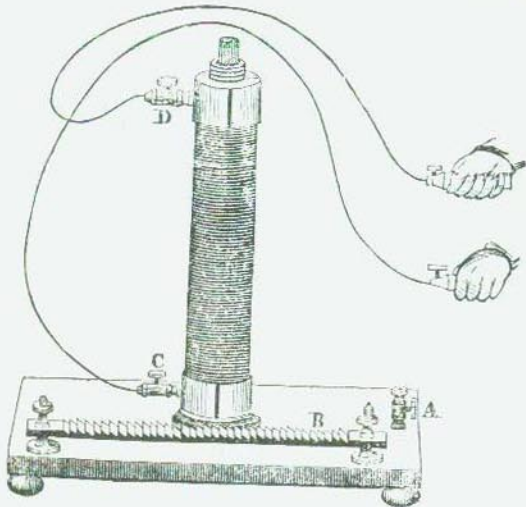


103

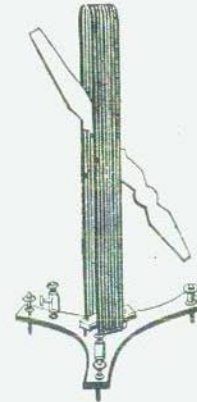


104

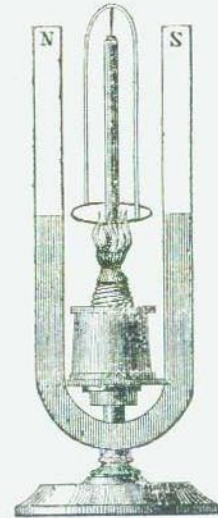
- | | | |
|------|--|-------------|
| 103. | Portable Self-Acting Medical Apparatus, with Battery, in neat box, | 10.00 |
| | Improved Magneto-Electric Machine, with two compound Magnets, arranged for shocks, sparks, and decomposition of water—a superior instrument, | 75.00 |
| | do. do. do. do. a single compound Magnet, | 35 to 45.00 |
| | Magneto-Electric Machine, small size for Medical use, in box, 15 | to 20.00 |



105

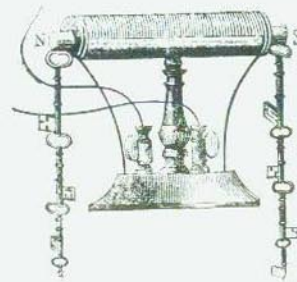


106



107

- | | | |
|------|---|--------------|
| 105. | Analytical Apparatus, for illustrating the effect and object of the soft iron bar or wires, the primary or battery coil of large wire, and the induced coil of fine wire, all of which are generally used in Electro-Magnetic apparatus for shocks, whatever the form may be, | 12 to 18.00 |
| 106. | Rotating Thermo-Electric Arch, with U Magnet, | 4.00 |
| 107. | Upright Galvanometer with levelling screws, on tripod stand, | 6.00 |
| | Galvanometers, | 3 to 10.00 |
| | Magnetic Beam Engine, | 12.00 |
| | Magnetic Bell Engine, | 10.00 |
| | Apparatus to decompose water, | 3.50 to 5.00 |



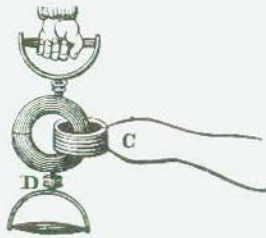
108



109

FIGURE.

PRICE.

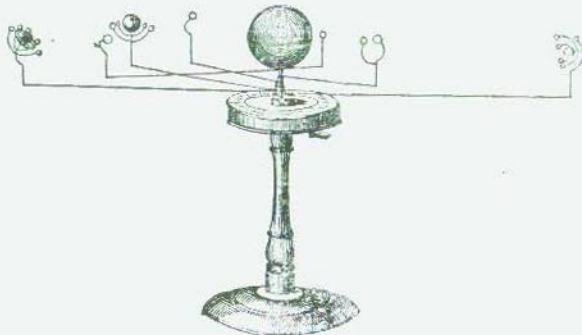


110



111

108. Helix on Stand, for showing the induction of magnetism in a soft iron bar, - - - - - 2 to 3.00
 109. Electro-Magnets of Soft Iron, wound with copper wire, 1.50 to 10.00
 110. Helical Ring and Armatures, ball and socket handles—will sustain 150 to 200 lbs. - - - - - 5 to 6.00
 111. Grove's Batteries, single series, with binding screws, 2 to 2.50

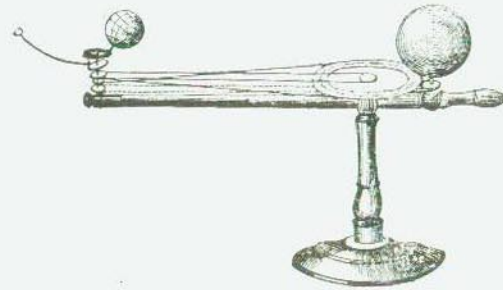


112

112. School Orrery. The primary planets are made to revolve around the Sun by a crank and gearing, or they can be moved by the hand into various positions to illustrate opposition, conjunction, and other phenomena of the solar system, - - - - - 9.00

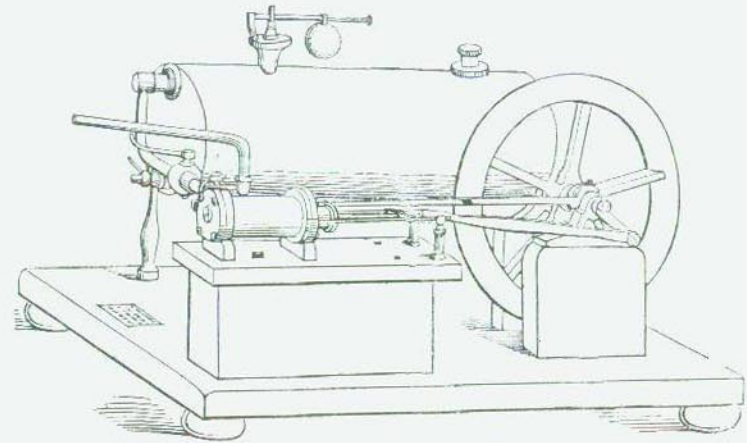
FIGURE

PRICE



113

113. A Tellurian, similarly mounted, and of the same character with the Orrery. All the phenomena of the seasons, the cause of eclipses, &c., are easily illustrated, - - - - - 8.00



114

114. Working Model of High Pressure Horizontal Steam Engine. beautifully finished, on mahogany stand, - - - - - 27.00
 do. do. Condensing—the pump and condenser in glass cistern, working beam and lift pump, - - - - - 125.00
 do. do. Oscillating Steam Engine. the wheel and cylinder on top of boiler; - - - - - 8.50

FIGURE.

PRICE.

MECHANICS.

A Set of Mechanic Powers—viz.: A Bent Lever; compound do. and straight do. on stand; Pulleys, with five illustrations, on stand; Wedge, with brass divided arc, capable of being set to any angle, on stand; wheel and axle on stand; Inclined Plane on stand, with divided arch carriage; Screw and Revolution of Forces, on vertical black board. The above are mounted on solid mahogany bases and turned pillars, the brass work handsomely finished; the whole accompanied with a double set of brass weights, from one pound to one ounce—two sizes, - - - - - 75 to 100.00

do. do. do. same as above, but mounted on two mahogany stands, - - - - - 50.00

Atwood's Machine, 7 feet Pillar, friction pulley 4 inches diameter, Pendulum for Seconds, brass weights, &c., mounted on tripod stand with adjusting screws, - - - - - 50.00

Do do do very superior, with clock movement, - - - - - 100.00

Whirling Table for demonstrating by experiment, central forces and the laws of the Planetary Orbits, - - - - - 50.00

Do do very superior and large size, 100.00

HYDRAULICS.

Model of Force and Lift Pumps with Glass and Metal Barrels, per pair, \$12.00 to - - - - - 15.00

Model of Archimedian Screw, - - - - - 7.00

Hero's Fountain, - - - - - 6.00

Apparatus for Spouting Fluids, \$5, \$10 and - - - - - 20.00

Working Model of Hydraulic Press, Glass Cylinders, - - - - - 40.00

Model of Centrifugal Pump, \$6 to - - - - - 10.00

FIGURE

PRICE.

Model of Water-Wheels, Overshot, Undershot and Breast, 10.00

do do Mounted with Tank, the whole to be put in motion by a stream of water, - - - - - 25.00

Nicholson's Portable Balance for Specific Gravity, \$3.50 to 6.00

HYDROSTATICS.

Brass Beams mounted on Brass Pillar with Grain Weights, from one tenth to one thousandth of a grain, packed in neat Mahogany Boxes; also, Scale Pan and Cup for Specific Gravity. - - - - - 10.00

Glass Globe and stop-cock for weighing Air or Gas, - - - - - 2.00

Hydrostatic Bellows, - - - - - 10.00

Syphons of Glass or Metal, 75 cts. to - - - - - 2.50