

August 1st, 1895.

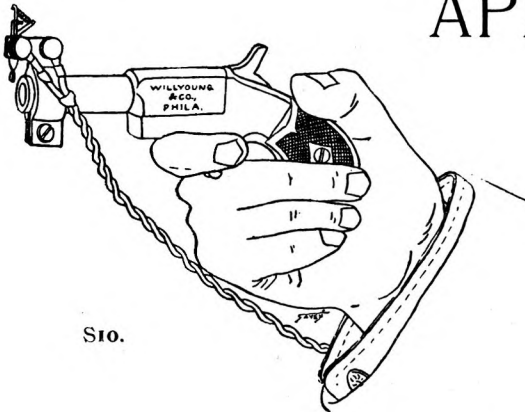
Circular No. 103.

ILLUSTRATED  
PRICE LIST<sup>OF</sup>

# PSYCHOLOGICAL APPARATUS

FOR THE  
NEW CHAUTAUQUA  
BOOK,

“THINKING,  
FEELING,  
DOING,”



510.

—BY—

DR. E. W. SCRIPTURE,

(Director Yale Psychological Laboratory.)

[LETTER OF AUTHORIZATION.]

The great hindrance to the teaching of experimental psychology has lain in the lack of adequate, easily obtainable apparatus. In the past years I have tried to help along by manufacturing for others some articles in the laboratory workshop, but I have found it necessary to restrict this to a few special pieces. To overcome these difficulties, I have found an apparatus-maker who is willing to make pieces strictly according to my directions. In order that matters may be kept under proper control, the firm of Elmer G. Willyoung & Co., Philadelphia, has been constituted the sole authorized makers of all apparatus, diagrams, etc., listed under my name, which are required to experimentally illustrate my book, “THINKING, FEELING, DOING,” and also of some other apparatus of my invention similarly listed. All such apparatus has been made from designs and models carefully tested and approved.

E. W. SCRIPTURE,

*Director of the Psychological Laboratory, Yale University,*

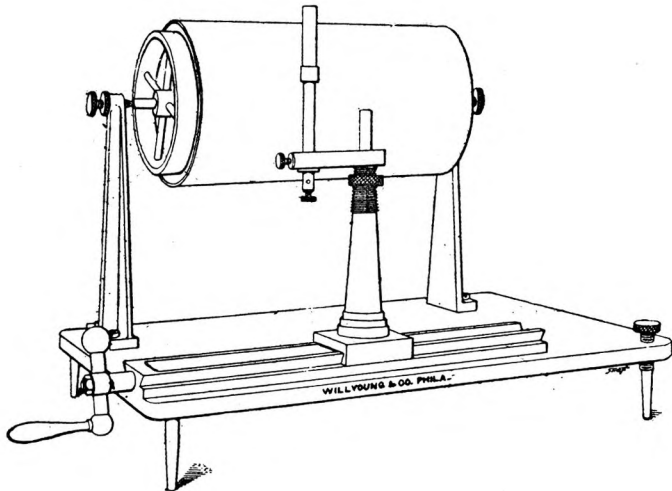
*New Haven, Conn.*

August 1, 1895.

## ANNOUNCEMENT.

The apparatus of this list is either made from designs furnished by Dr. Scripture or from manufacturers' designs based upon his suggestions, and finally revised and approved by him.

All of the pieces here listed are accurately and substantially, although plainly, made. In order to keep the cost low and bring the apparatus within the reach of all, superfluous finish has been avoided as far as possible.

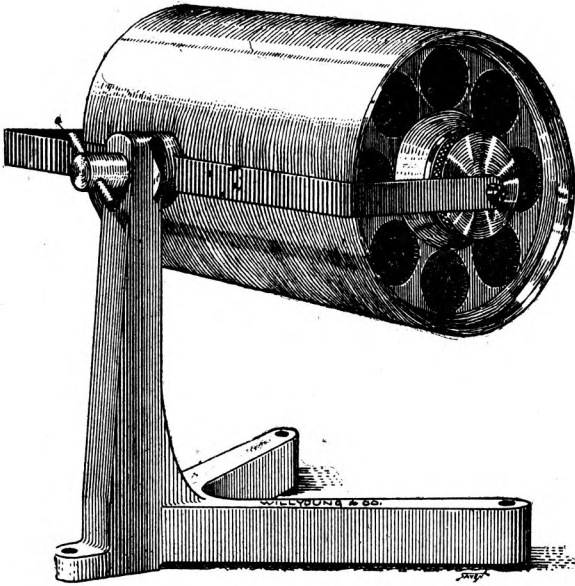


### S 1.

**S1. Scripture's Recording Drum.** (See T. F. D., p. 31.) Of brass and iron. Drum 12 inches long by  $6\frac{1}{4}$  inches in diameter. To be twirled by hand or run by belt from motor. Has carriage for marker or fork which may be advanced along the drum by a small handle . . . . . **\$35 00**

**S1B. Student's Drum.** This is of different design from S1 and smaller, but may be used for the same purpose. Drum is 6 inches long by 4 inches in diameter, and may be whirled by hand or driven by belt from small motor. Has time marker carriage (not shown in the cut) which may be advanced as in S1 . . . . . **\$20 00**

**S2. Glazed Paper for Recording Drums.** In packages of 100 sheets, to fit either S1 or S1B, as ordered, and with gummed ends . . . . . **\$1 00**



S 1 B.

S5A. **Scripture's Electric Fork.** (See T. F. D., p. 31.) This is a tuning fork giving 200 complete vibrations per second and mounted upon a wooden stand. The vibrations are maintained by a small electro magnet placed between the prongs; the circuit of this magnet makes and breaks, as in a vibrating bell, by means of a spring attached to one prong of the fork. It is used to maintain the rate of vibration of the time marker when working with the Recording Drum. The end of one prong of this fork is plated so as to work as a mirror thus, with the aid of S21, allowing of the experiments of figs. 41-46 (T. F. D.), to be performed . . . . . \$16 00

S6. **Gilbert's Time Marker.** For use with S1 and S1B. Will give almost perfectly smooth curves up to 250 vibrations per second . . . . \$6 00

S7A. **Simple Recording Point.** (See T. F. D., pp. 31 and 32, figs. 6 and 7.) Each . . . . . \$1 25

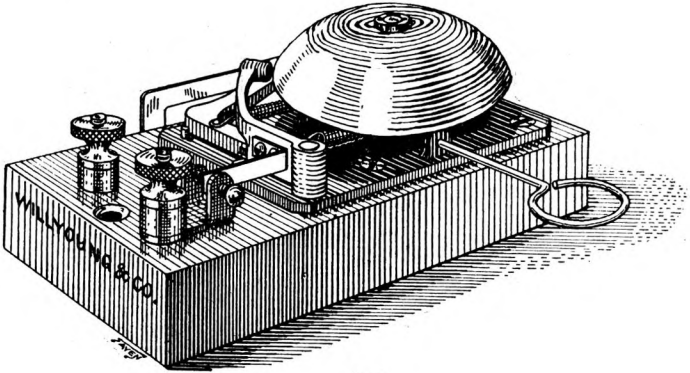
S7. **Spark Coil.** For use with the recording drums, S1 or S1B. Complete, with separate condenser, which may be placed *around* the break, thus producing a strong spark with a minimum current. Full directions are sent with each coil . . . . . \$12 00

*To perform the experiments of fig. 6, two of these coils and two simple recording points will be needed.*

S8. **Scripture's Telegraph Key.** (See T. F. D., p. 31.) A modified telegraph key with both front and back contacts. With all adjustments and mounted upon wood base . . . . . \$4 00

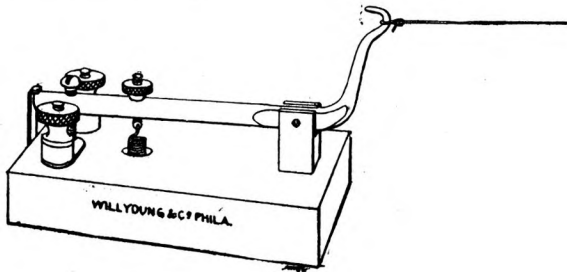
S9. **Scripture's Reaction Key.** (See T. F. D., p. 43.) Of hard rubber and steel . . . . . \$8 00

S10. **Scripture's Pistol Key.** (See T. F. D., p. 45.) Complete, with reliable 22-calibre blank cartridge pistol and 5 feet flexible conductor . . \$5 00



S 11.

S11. **Simple Bell Signal.** For performing exactly same function as S10 when noise of pistol is objectionable. The drum circuit is broken just as the hammer strikes the bell . . . . . \$4 00



S 12.

S12. **Scripture's Runner's Key.** (See T. F. D., p. 45.) Of brass, on wood base. This can also be used in place of S9 . . . . . \$2 50

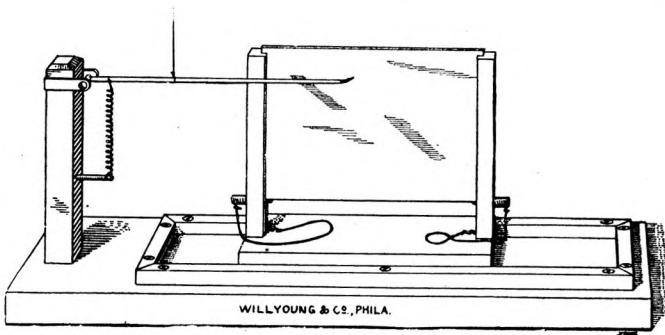


S 13.

S13. **Scripture's Touch Key.** (See T. F. D., p. 46.) Circuit is lead into handle by a pair of twined flexible conducting cords, 4 feet long, **\$5 50**

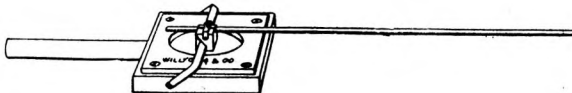
S15. **Scripture's Foil Apparatus.** (See T. F. D., p. 56.) Consists of fencer's foil, with 6 feet flexible conductor attached to handle; white signal disc on rod; two metal discs; a number of flexible conductors . . . . **\$12 00**

S16. **Scripture's Thought and Action Apparatus.** (See T. F. D., p. 59.) A straight rod is set up horizontally; three upright sticks are mounted upon this rod. The far stick carries a flag which may be suddenly thrown aside, thus giving a signal and at the same time breaking a circuit and producing a spark record upon the drum. The subject at once reacts and knocks down the two remaining sticks, making spark records, so that the first gives the reaction time, and the difference between the two the velocity of the blow. All this may be done by an arm movement of any kind and to any extent. The flag and the nearest stick form a signal and a reaction key for experiments on sight. By moving the flag in one of two ways, or fast and slow, the time of discrimination, time of choice, etc., can be determined for two, three or four possible cases. The use made of the apparatus in the book is only one of a large number . . . . . **\$15 00**



S 17.

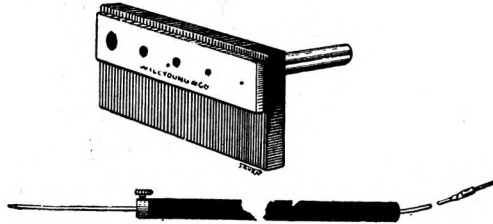
S17. **Scripture's Graphic Recorder.** Specially designed to replace apparatus of fig. 31 at small cost. Will perform the functions of the latter sufficiently well to show all experiments on pages 67-69. Consists of a base board with pillar at one end, upon which is delicately pivoted a light bamboo pointer. The pointer is balanced by a spring so as to respond to very slight vertical forces. A smoked glass plate runs upon a guide in front of the pointer, so that curves of steadiness may be traced . . . . . **\$5 00**



S 18.

S18. **Marey's Receiving and Recording Capsules.** (See T. F. D., p. 68.) Of hard rubber, with flexible diaphragm, easily removable; each . . . . . \$4 00

S19. **Tongue Attachment for Tambour.** (See T. F. D., p. 71.) \$4 00



S 20.

S20. **Scripture's Steadiness Gauge.** (See T. F. D., p. 74.) A strip of brass is mounted upon a hard rubber block,  $2\frac{3}{4} \times 1\frac{3}{8} \times \frac{1}{4}$  inches thick. In the brass are five rubber circles of 1, 2, 3, 4 and 5 mms. diameter. One terminal of a circuit goes to this brass strip and the other to a needle to be held by the hand. Length of needle and handle is  $2\frac{1}{2}$  feet over all. *A small electric bell S20A, or telegraph sounder S20B, and battery should be used with this.* \$6 00

S20A. **Electric Bell.** Giving single taps. For use with S20; as also in experiments on rhythm . . . . . \$1 50

S20B. **Giant Telegraph Sounder.** For same purpose as S20A . . \$4 00

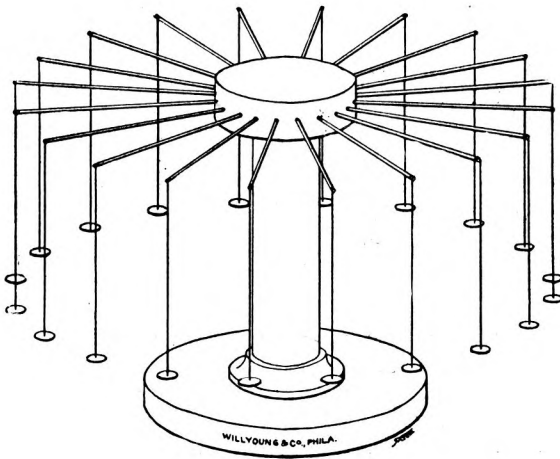
S21. **Manometric Capsule.** (See T. F. D., p. 77.) Of light metal, with lug fitting upon a  $\frac{5}{8}$  inch rod and funnel for speaking into. To be used with S5A. With support . . . . . \$6 00

S22. **Scripture's Spring Dynamometer.** (See T. F. D., p. 78.) A wood base has an upright pillar, from which is hung a 12-pound spring scale. A thumb rest is provided near the base of the pillar, while a finger hook is fixed to the scale. With swinging stop, as described in book . . . . . \$4 25

S23. **Hypnotiser.** (See T. F. D., p. 102.) To hypnotize by strain of the eye muscles. A canvas-faced metal band binds about the forehead and carries, projecting forward, a lead wire, terminating in a highly polished nickel-plated ball. This ball may be placed anywhere, relatively to the eyes, by bending the wire . . . . . \$5 00

S24. **Scripture's Touch Weights.** (See T. F. D., p. 103.) Twenty circles of black cardboard, 1 cm. diameter, are hung as in figure. Their weights are 1, 2, 3, 4, etc., up to 20 milligrams, inclusive. Each stick is marked and is withdrawn from the holder when in use . . . . . \$3 00

S25. **Scripture's Apparatus for Least Noticeable Change in Pressure.** (See T. F. D., p. 106.) This is a special balance, with beam mounted over a heavy metal base. Scale pans are fastened upon the ends of the beam and above it. At one end is a light rod projecting downward and



S 24.

terminating in a leather-faced metal disc,  $\frac{5}{8}$  inch in diameter. Funnel and box of sand accompany this . . . . . **\$6 00**

S27. **Scripture's Simple Aethesimeter.** (See T. F. D., p. 110.) A pair of 5-inch compasses have hard rubber tips. At the butt a sector is fixed to one leg while a pointer, fixed to the other, plays over it. The sector is graduated in mms. of chord connecting the two compass points . . . . **\$2 00**

S29. **Scripture's Test Weights.** (See T. F. D., p. 103.) A set of hard rubber cylinders, 38 mms. long by 32 mms. in diameter. Are more or less weighted with lead, so as to have weights of 100, 103, 106, 109, etc., up to and inclusive of 130 grammes. Each cylinder has its weight stamped upon it. **\$6 00**

S30. **Scripture's Pencil for Hot and Cold Spots.** (See T. F. D., p. 118.) A thin metal tube, about size of an ordinary lead pencil, has one end drawn out to a point. A hard rubber jacket covers the entire tube save the point itself. The tube may be filled with either hot or cold water and will maintain its temperature constant for some time. A little stopper closes the tube . . . . . **\$2 00**

S33. **Scripture's Olfactometer.** (See T. F. D., p. 124.) Complete, with both tubes, rubber tube, nose piece, and standard odor solutions in glass bottles. The base board forms the bottom of a thin box, so that the whole closes up compactly when not in use . . . . . **\$3 00**

S36A. **Appunn's Reed.** This replaces the **Giant Fork** (p. 134 of T. F. D.) at a small cost. It is a single strip or prong of steel, capable of adjustment so as to give rates of vibration varying from 4 to 24 per second, thus serving to show the lower limits of audible sound . . . . . **\$6 00**

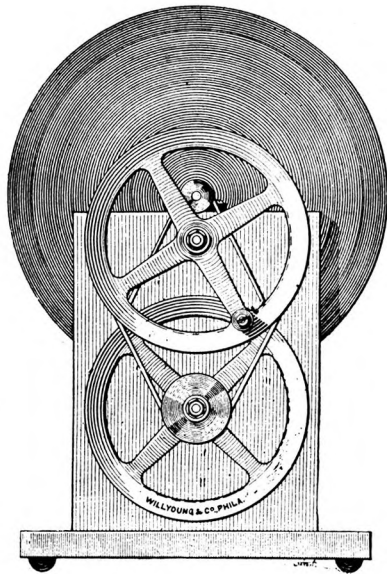
\*S37. **Galton's Whistle.** (See T. F. D., p. 135.) Koenig's form sounded by small rubber bag attached to the whistle. Adjustable to give vibrations varying from 8000 to 90,000 per second . . . . . \$8 00

S38. **Forks for Least Noticeable Difference.** (See T. F. D., p. 146.) A pair of forks is mounted upon resonators. One fork is adjusted to 320 complete vibrations per second. The other carries two sliders running on a scale graduated in vibrations and allowing the rate of the fork to be varied from about 305 to 335 complete vibrations per second . . . . . \$20 00

S39. **Gilbert's Tone Tester.** (See T. F. D., p. 141.) As shown in the figure referred to. Of metal, neatly finished . . . . . \$6 00

S41. **Scripture's Audiometer.** (See T. F. D., p. 147.) As shown in the figure referred to. Wood base board is about 4½ feet long, with coils about 4 feet apart . . . . . \$8 00

S42. **Bradley's Color Top.** (See T. F. D., p. 154.) Complete, with eight paper discs, 1½ inches in diameter, and in the six standard colors, together with white and black, and eight other similarly colored discs ¾ inch in diameter . . . . . \$0 06



S 43.

S43. **Color Wheel.** (See T. F. D., p. 154.) Our own design. Iron japanned metal work upon hard wood base. Wheel is driven by hand (motor

*\*This can be imported duty free for schools and colleges at a somewhat less price.*



may be used if desired) and speeds up to and exceeding 3000 revolutions per minute may be obtained. All mechanism is *behind* the upright support, so that the observer's attention is not distracted. Four sets of color discs of 10 inches,  $7\frac{3}{4}$  inches,  $5\frac{1}{2}$  inches and  $3\frac{1}{4}$  inches in diameter are furnished, each set consisting of six discs, giving the six standard colors, together with two discs giving white and black. There are also several graduated circles from which the relative amounts of color being mixed together may be read off . . . . . **\$8 00**

S44. **Color Cone.** (See T. F. D., p. 158.) Made from the diagram in T. F. D., fig. 88, but cemented to a double cone. 12 inches peak to peak and 8 inches in diameter. The relation of standard colors, tints, hues, shades, etc., is very interestingly shown . . . . . **\$4 00**

S44A. **Color Cone Diagram.** This is the diagram of S44, printed on heavy paper, ready for cutting out . . . . . **\$1 00**

S45. **Package of Colored Papers.** (See T. F. D., p. 155.) A package of 200 squares, 4 x 4 inches, containing each of the standard spectrum colors, together with the intermediate hues and a large number of tints and shades of each. Many interesting color-matching experiments may be performed with these papers . . . . . **\$0 10**

S46. **Perimeter.** (See T. F. D., p. 181.) Arc has a radius of about 17 cms. Test object runs upon a little carrier. This has been designed expressly for showing, in a simple, practical way, the principal phenomena of vision limits so far as they are interesting to the psychologist . . . . . **\$9 00**

S49. **Scripture's Book Stereoscope.** (See T. F. D., p. 200.) For combining book and all other stereoscopic pictures. A special form of stereoscope, having the extension support movable, so that eye-piece can be brought up near the printed page . . . . . **\$1 00**

S50. **Millimeter Scale.** (See T. F. D., p. 188.) Of polished hard wood, 20 cms. long. Divisions in mms. . . . . **\$0 15**

S52. **Scripture's Electric Shoe.** (See T. F. D., p. 255.) For the same purpose as S51, but using the spark method. A little yoke piece, carrying the electric contact, clamps upon each heel, provision being made for varying widths of heel . . . . . **\$2 50**

S53. **Scripture's Electric Baton.** (See T. F. D., p. 260.) A rod is so made that each change of direction makes a spark record upon the drum, a pair of flexible conductors joins the baton to the battery . . . . . **\$3 00**

S54. **Scripture's Electric Dumb Bells.** (See T. F. D., p. 262.) A pair of light iron dumb bells is joined to a pair of flexible conductors going to battery. Every time they are brought together, a spark record is made upon the drum . . . . . **\$2 00**

S55. **Scripture's Hallucination Apparatus.** (See T. F. D., p. 266.) Two metal posts are mounted six inches apart upon a wooden base board and joined by a German silver wire forming part of an electric circuit. A special key, to be held in the palm of the hand, allows the circuit to be made or broken at will without the knowledge of the subject who holds the wire between thumb

and finger. When the current is properly adjusted, the subject will often imagine the current to be on when it is not, and *vice versa* . . . . . \$3 00

S56. **Gilbert's Suggestion Blocks.** (See T. F. D., p. 266.) A set of 14 apparently solid black discs, 6 cms. in diameter by 3 cms. thick; have weights of 15, 20, 25, etc., up to and including 80 grams. There are also a large disc 9 cms. in diameter and 3 cms. thick, and a small one 3 cms. in diameter and 3 cms. thick, both weighing 55 grams. Each disc has its weight stamped upon it in small figures . . . . . \$4 00

S58. **Scripture's Blind Spot Cards.** (See T. F. D., p. 185.) Set of 4. Three as shown in figs. 103, 105 and 107 of the book and one of a new design. The cards are large, however, being 4 x 6 inches and printed in blue and red colors . . . . . \$0 15

\*S210. **Runne's Graphic Chronometer.** This is a chronometer stop-watch mounted in a rectangular metal case. It can be used as a very accurate stop-watch (see T. F. D., p. 256.) It can also be used to write seconds or fifths of a second directly on the drum (see T. F. D., p. 256) by means of a fine pointer actuated from the escapement. Is also arranged to break a circuit for running a sounder, bell, Geissler tube, etc. (see T. F. D., p. 256) or for making sparks. Size, 46 mms. high and wide by 16 mms. deep. Weight, 200 grams. . . . . \$40 00

S319. **Small Water Motor.** For heads of water 20 feet and upwards. For driving drum, color wheel, etc. . . . . \$20 00

S320. **Electric Motor.** For driving drum, color wheel, etc. For battery, 50 volt, and 110 volt circuits . . . . . \$22 00

S322. **Edison-Lelande Cell—Type Q.** For operating spark coils, etc. Capacity, 150 ampere hours. Each . . . . . \$1 85

**Insulated Copper Office Wire, No. 16, B. & S.** For making connections, etc. Per lb. (about 100 feet) . . . . . \$0 35

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## SETS OF APPARATUS.

For the convenience of Chautauqua Circles and others wishing to study Dr. Scripture's book experimentally and systematically, Dr. Scripture has arranged three complete sets of apparatus out of the preceding pieces. Normal Set, No. 1, contains sufficient apparatus to illustrate the fundamental phenomena of taste, smell, vision, etc., while Set No. 2 contains additional pieces, enabling some of the phenomena to be demonstrated more elaborately, and also allowing reaction time experiments to be made. Set No. 3 is a very complete set and will enable almost all of the experiments to be thoroughly shown. *Each set is supplied in a special containing case in which the pieces are to be permanently kept when not in use and from which they can be readily withdrawn.* A very low net price, equal to the aggregate of the individual items, discounted about 10 per cent., has been placed upon the sets, so as to bring them, so far as possible, within the reach of all.

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*\*This can be imported duty free for schools and colleges at a somewhat less price.*

**NORMAL SET, No. 1.**

S17.	Graphic Recorder . . .	\$5 00
S22.	Spring Dynamometer . .	4 25
S24.	Touch Weights . . . . .	3 00
S27.	Simple Aesthesiometer . .	2 00
S29.	Test Weights . . . . .	6 00
S30.	Pencil for Hot and Cold Spots . . . . .	2 00
S33.	Olfactometer . . . . .	3 00
S37.	Galton's Whistle . . . . .	8 00
S39.	Tone Tester . . . . .	6 00
S42.	1 doz. Color Tops . . . .	60
S44.A.	Color Cone Diagram . . .	1 00
S45.	1 doz. pkgs. Colored Papers . . . . .	1 20
S49.	Book Stereoscope . . . .	1 00
S50.	Millimeter Scale . . . . .	15
S56.	Suggestion Blocks . . . . .	4 00
S58.	Blind Spot Cards . . . . .	15
	<b>Total,</b>	<b>\$47 35</b>

Net price in special containing case . . . . . 43 00

**NORMAL SET, No. 2**

Contains the following pieces in addition to those of Set No. 1:

S1B.	Student's Drum . . . . .	\$20 00
S2.	Glazed Paper . . . . .	1 00
S5A.	Electric Fork . . . . .	16 00
S6.	Time Marker . . . . .	6 00
S7.	Spark Coil . . . . .	12 00
Sr1.	Bell Signal . . . . .	4 00
Sr2.	Runner's Key . . . . .	2 50
Sr3.	Touch Key . . . . .	5 50
S322.	2 Cells Battery . . . . .	3 70
	½ lb. Wire . . . . .	18

**Total,** **\$70 88**

Total of Set No. 1 . . . . . \$47 35  
 Net price of Set No. 2, in special containing case . \$106 00

**NORMAL SET, No. 3**

Contains the following pieces in addition to those of Sets Nos. 1 and 2:

Sr6.	Thought and Action Apparatus . . . . .	\$15 00
S52.	Electric Shoe . . . . .	\$2 50
S53.	Electric Baton . . . . .	3 00
S54.	Electric Dumb Bells . . . .	2 00
S20B.	Graphic Chronometer . . . .	40 00
S210.	Giant Telegraph Sounder . .	4 00

**Total,** **\$ 66 50**

Total of Set No. 2 . . . . . \$118 23  
 Net price of Set No. 3, in special containing set . . \$165 00

**NOTE**—With each set are furnished diagrams showing how the apparatus must be arranged for the various experiments and directions as to manipulation.

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We deal in all kinds of **scientific instruments** and **apparatus**, and give to this line of work our sole and undivided attention. By personal visits of some one of our firm among the principal laboratories of this country and abroad, from time to time, supplemented by correspondence with leading scientific educators, we endeavor to keep thoroughly in touch with the best methods of laboratory training and to understand its needs.

In devising our apparatus, we make it as **simple** as possible. We have, in general, abandoned the idea of brilliant polish and lacquer, and design our products upon the same principles as would be used in machine designs, viz: **finish and accuracy in functional parts, strength and dignified plainness in structural parts.** In this way we are enabled to produce apparatus which, by its very appearance, *invites* use, at prices considerably less than would have been effected upon the old idea, thus allowing schools a much larger and more efficient equipment for the same amount of money.

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We have catalogues on file from almost every instrument manufacturer of any importance in the world, and can quote prices. Our card catalogue enables us, often, to give information regarding instruments or instrumental methods otherwise almost unobtainable.

We are now preparing a line of instruments and apparatus suitable for the **High School** teaching of physics, and covering the branches of mechanics, hydrostatics, pneumatics, acoustics, optics, electricity, etc. A list of this will issue this fall. Teachers will do well to write us before placing their orders.

The following special lists have just been issued or are in press:

- No. 102. Ammeters and Voltmeters.
- No. 104. General Catalogue of Psychological and Physiological Apparatus, Chronographs, Myographs, etc.
- No. 105. List of New Electrical and Scientific Instruments. (*In press.*)
- No. 106. The Rowland D'Arsonval Galvanometer. (*In press.*)
- No. 107. Testing Sets and Cable Testing Apparatus. (*In press.*)
- No. 108. Wimshurst machines. (*In press.*)

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