

1894.

# LIST OF APPARATUS

FOR THE PSYCHOLOGICAL LABORATORY,

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—MADE BY THE—

## GARDEN CITY MODEL WORKS,

124 CLARK STREET, CHICAGO, ILL.

### 1. AESTHESIOMETER. FIG. 1.

PRICE, \$5.00.

The apparatus is used for determining the distance upon the skin at which two points are just perceived as two, and for the study of the perception of length upon the skin. With two instruments comparisons of length are more readily made. The apparatus consists of a brass rod grooved at its lower end, upon which an oval shaped handle of hard-rubber moves freely up and down; and of a hard-rubber frame, along which the pair of hard-rubber points can be set by turning a thumb-screw at the center. By this motion the two points diverge simultaneously and to an equal extent from the center. By means of an ivory scale fixed to the frame the distance can be read to the nearest half-millimeter. The instrument is held by the handle and lowered until the points are in contact with the skin; at the moment of contact the handle is freed from the rod, so that the weight of the frame and rod exactly indicate the amount of pressure with which the points bear upon the skin. This can be increased by placing metal caps over the head of the rod; the movement also ensures an even contact of the two points.

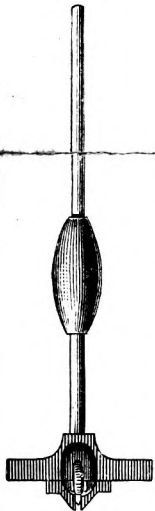


Fig. 1.

### 2. SET OF AESTHESIOMETERS.

PRICE UPON APPLICATION ACCORDING TO THE NUMBER IN A SET.

These are constructed precisely as the former instrument, except that the points are not adjustable. They obviate the necessity of constantly adjusting the points, the distance between the points being stamped upon each instrument. A convenient set for the more sensitive portions of the skin consists of points at .5, 1, 1.5, 2, 2.5, 3, 4, 5 and 6 mm., and for less sensitive portions, 8, 10, 12.5, 15, 17.5, 20 and 25 mm.

They are also useful in determining the capacity to distinguish lengths upon the skin. They can be supplied in sets of any number and of any distances between the points. A case holding ten instruments can be supplied upon application.

### 3. PRESSURE ATTACHMENTS.

PRICE,

An attachment can be supplied to either No. 1 or No. 2 for testing the pressure sense of the skin. It consists of a hard-rubber button which in No. 1 is screwed into the brass adjusting screw, in No. 2 is substituted for the points, and of a tray to be screwed on to the top of the rod. The weight brought to bear upon the skin is determined by the weight of the instrument less the handle; and is varied by placing additional weights in the tray. With a pair of such attachments comparison of weight can be conveniently and rapidly made.

### 4. TEST WEIGHTS. FIG. 3.

These consist of hard-rubber boxes  $1\frac{1}{2}$  in. in diameter and 4 in. high, with top and bottom screwed in by means of a key. The test consists in arranging the weights in order or in comparing them in pairs.

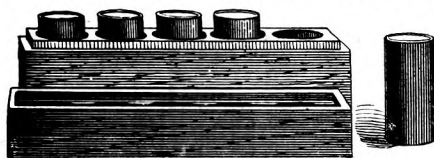


Fig. 3.

The capacity of the box varies from 50 to 500 grammes. They can be weighted as desired. The usual set consists of nine weights, weighing respectively 300, 305, 310, 315, 320.3, 331, 341.5, 364.1 and 388.4 grammes, and labeled inconspicuously with a letter the key to which is furnished with each set. The first five weights form a series increasing by 1-60; the first, third, fifth, sixth and seventh a series increasing by 1-30, and the first, fifth, seventh, eighth and ninth a series increasing by 1-15. The boxes can be weighted in any way that may be desired. They can be supplied at 50 cents each, with an additional charge of 25 cts. for weighting. A wooden case holding five boxes can be furnished for \$1.00. Set of 9 in two cases, \$8.50.

368.25  
367.75

## 5. PRESSURE APPARATUS.

An improved form of the apparatus described in the *American Journal of Psychology*, Vol. II, page 55, is under consideration. Correspondence is invited.

## 6. APPARATUS FOR THE SENSE OF ROUGHNESS AND SMOOTHNESS.

A series of graded wires and of graded wire surfaces are suitably mounted, and are used in groups to be arranged in order or to be compared in pairs. The one set involves the "joint-sense" and the other a form of "active touch". Prices upon application.

## 7. APPARATUS FOR THE JUDGMENT OF LENGTHS BY MOVEMENT.

The principle of the apparatus is similar to that of the test weights, the test consisting in arranging in order or comparing in pairs definite series of lengths by moving the finger between stops. The construction is such as to prevent the length from being seen. Prices upon application.

## 8. ELECTRIC COLOR WHEEL. FIG. 4.

An ordinary electric motor is supplied with an attachment for clamping color-discs, and with a counting attachment to be used in connection with an Ewald Interruption Counter or an electric pen. By setting the apparatus near the edge of the table discs of any size may be used.

PRICE, with a No. Porter motor

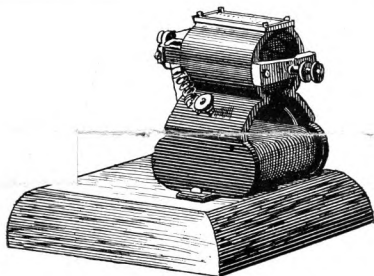


Fig. 4.

The purpose of the apparatus is to show a desired object and have the moment of exposure simultaneous with the making or breaking of an electric circuit; it is thus useful for a variety of reaction experiments and similar observations. The view shown is that of the back of the instrument; from the front nothing is visible but a circular opening 1½ in. in diameter in a black upright board 5x16 inches. By pressing a spring-steel key against a soft-rubber cushion an aluminum screen is noiselessly withdrawn from the opening and exposes whatever is placed on the cards, the opening closing itself upon the release of the key. A pressure of a spring upon the track holding the cards drops the card just exposed and allows the next card to fall in place. A set-screw on the contact wheel enables one to time the starting of the chronoscope with the beginning, middle or end of the exposure, and also to change from a make to a break of the circuit. Special attention is directed towards securing a noiseless motion. A set of sixteen cards for typical reaction demonstrations is furnished with each instrument.

## 9. EXPOSURE APPARATUS. FIG. 5.

PRICE, \$8.50.

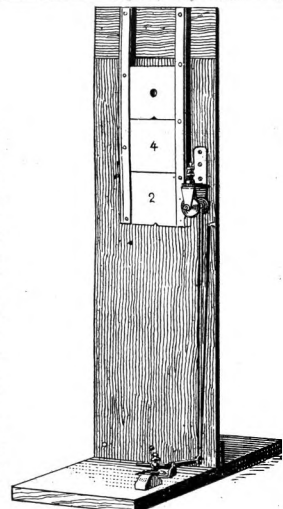


Fig. 5.

## 10. CASE FOR THE HIPPI CHRONOSCOPE. FIG. 6.

PRICE,

A nicely finished hardwood case lined with cloth, and the upper portion fitted with a double box, reduces the noise of the chronoscope to a minimum. A tightly fitting shutter in front and a smaller one in back enables one to make all necessary adjustments. The key for winding is inserted through a hole in a glass plate in front of the dials, and the entire front of the case can be readily reviewed. It is economical to order only the works of the Hipp Chronoscope without the usual mounting if it is intended to fit it with the above case.

## 11. ELECTRIC ATTACHMENT FOR THE STOP WATCH. FIG. 7.

PRICE, \$5.50 WITHOUT WATCH.

By means of an electric magnet and a counteracting coiled spring the stop-watch can be started and stopped by closing and opening an electric circuit and the instrument thus becomes

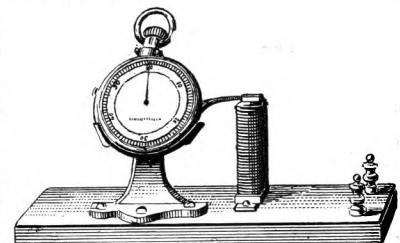


Fig. 7.

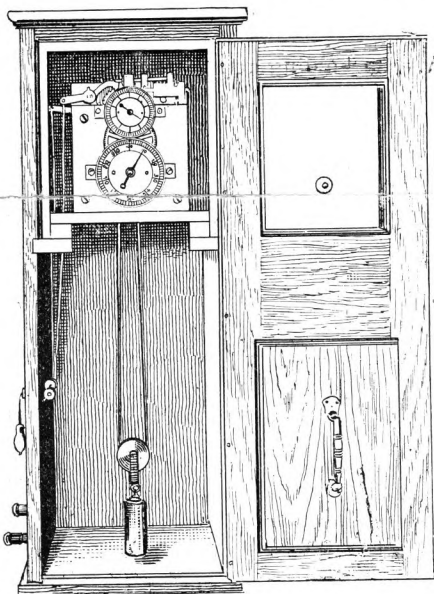


Fig. 6.

serviceable for a great variety of demonstrations and experiments in the field of time reactions. It is particularly serviceable for "chain reactions". The chronoscope to which it is most readily fitted is that supplied by Dr. Stöhrer & Sohn, Leipzig, Germany, for 35 Marks.

## 12. SIMPLE REACTION KEY. FIG. 8a.

PRICE, \$2.50.

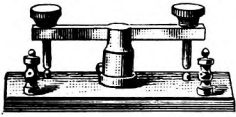


Fig. 8a.

A simpler but less accurate form can be made of wood for

By means of this key a slight contact ensures a closing or opening of a circuit without fail; at the point where the key is pivoted a steel spring holds the key in one of two positions, in one of which the circuit is closed and in the other open. It is therefore not necessary to hold the key down, but simply to touch it—a great advantage in reactions, as it prevents the frequent loss of readings of the chronoscope due to the failure of the subject to maintain the contact. The key is made of hard-rubber and brass.

## 13. COMPLEX KEY. FIG. 8b.

PRICE, \$7.00.

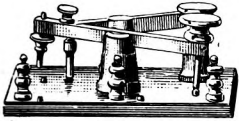


Fig. 8b.

By means of this key one circuit is made and another broken at the same instant; an additional attachment enables one of the circuits to be made and maintained or made for a brief period only. The principle is an elaboration of that used in the simple key. The key is especially designed for use with No. 16, and in connection with No. 17 enables one to make or break two circuits simultaneously.

## 14. FALL APPARATUS.

PRICE UPON APPLICATION.

A steel bar of any desired length, and mounted on an iron tripod, carries at its top a magnet; a ball held by this magnet is dropped by the breaking of a circuit by means of the key No. 15, at the same instant that the chronoscope is started, and in its fall breaks a circuit by which the chronoscope is stopped. As the distance of fall of the ball can be regulated at will, the theoretical and recorded time of fall can be readily compared.

## 15. REVERSING RELAY.

PRICE, \$3.50.

An attachment is added to an ordinary relay, by means of which the making of a circuit is connected into a break, or vice versa. It is frequently difficult or impossible to use in combination several instruments, because the one acts upon the making and the other only upon the breaking of a circuit; with such a relay in the circuit this difficulty is avoided.

## 16. FIVE-FINGER REACTION KEY. FIG. 9.

PRICE, \$7.50.

The cut shows a view of the top of the key. At each end is the adjustable hand-rest. The first and the last of the keys are a little longer than the others, to suit the position of the thumb and little finger. As in No. 12, the keys, when once closed, remain closed; and when once open, remain open. The key is reversible, serving in one position as a make-key, in the other as a break-key. In the center of each key are places for attaching numbers, letters or any desired marks. The key is equally fitted to the right or left hand.

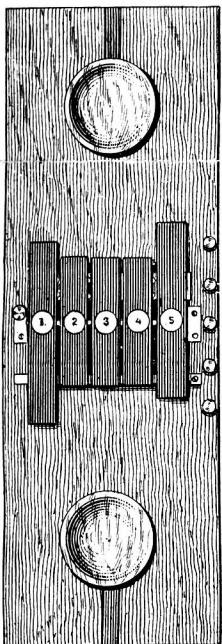


Fig. 9.

## 17. SPEECH KEY. FIG. 10.

PRICE, \$3.50 EACH, WITHOUT STANDARD.

Used for giving verbal stimuli and making verbal reactions. A bit of wood fitted to the teeth is pivoted at the long end of a lever, the short end of which plays between a hard rubber and a brass contact. The bit is held between the teeth (with the head exerting a slight pull away from it), and the natural movement of separating the teeth in speaking, starts or stops the chronoscope. Each key can be used either for making or breaking a circuit by simply slipping a rubber band from one side to the other of the main pivot. The length of the movement is adjustable. The keys are made to be mounted on a  $\frac{3}{4}$ -inch standard.

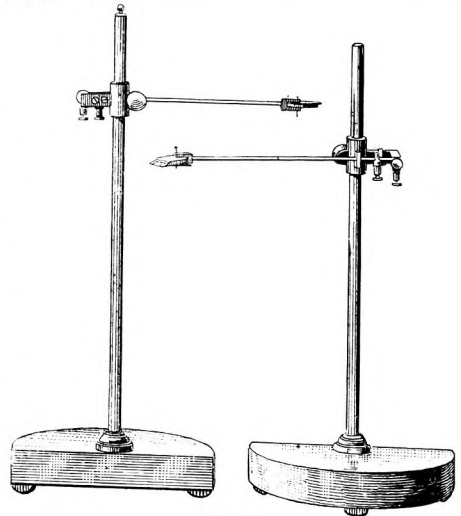


Fig. 10.

## 18. TEMPERATURE APPARATUS.

The principle of this apparatus consists in maintaining a stream of water at a constant or a gradually changing temperature within a pair of thin metal tubes. In its most complete form there are three pails: one for hot, one for cold, and one for water of neutral temperature. By means of rubber tubing these are all connected with two metal tubes, in turn connected with a glass tube within which lies a thermometer. A specially designed clamp enables one to control quietly and accurately the temperature in either tube, and thus the fineness of the temperature sense may be readily determined by the minimum difference of temperature of the two tubes that can be perceived. By an equally simple device the tube is instantly brought back to its original temperature. For gradual changes of temperature only one clamp is used.

## 19. AUTOMATOGRAPH. FIG. 11.

PRICE, \$6.00.

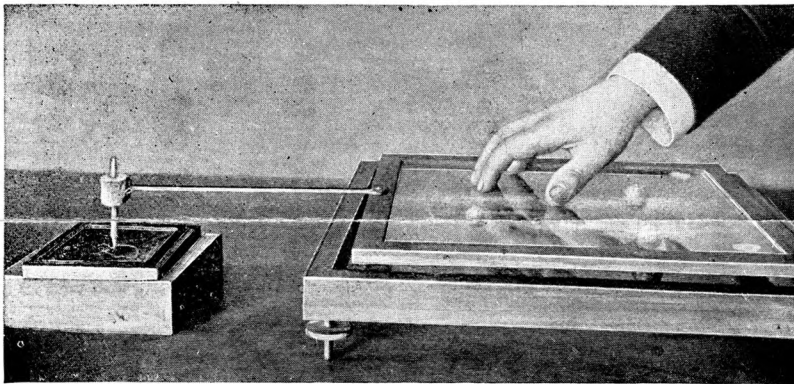


Fig. 11.

It is more fully described in the *Popular Science Monthly*, April, 1892, and the *American Journal of Psychology*, Vol. III, page 398.

The automatograph is designed to illustrate involuntary movements. It consists of a light plate glass moving on three balls, which in turn rest on a heavy plate glass suitably mounted. The tracings of the movements are made by a hard-rubber pencil held freely within an aluminum tube held by an aluminum arm about eight inches in length. The point of the pencil reproduces every movement of the automatograph upon a smoked-glass plate or revolving cylinder. The instrument is constructed of the best material through-

## 20. A SIMPLE AUTOMATOGRAPH. FIG. 12. PRICE, \$1.00.

This is adapted for the coarser involuntary movements, is a modified form of the device used for recording in the larger automatograph, and may be held in the hand. See the *Popular Science Monthly*.

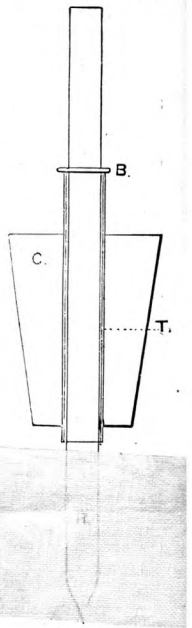


Fig. 12.

## 21. MEMORY APPARATUS. FIG. 13. PRICE, \$12.00.

Used for exposing a series of words, numbers, pictures, etc., in succession, and testing the ability to recall the series shown. The apparatus consists of a wooden slide, 6x15 inches, fitted with a brass frame for clamping a card upon which are printed the words or other impressions to be exposed. By a simple movement of a lever at the back the slide drops at a turn, and the words appear successively in the opening. The size and position of the opening is adjustable, so that several series may be contained on one card. The size of the apparatus is such that a score of persons can see the letters exposed if desired. It can be constructed in any size desired.

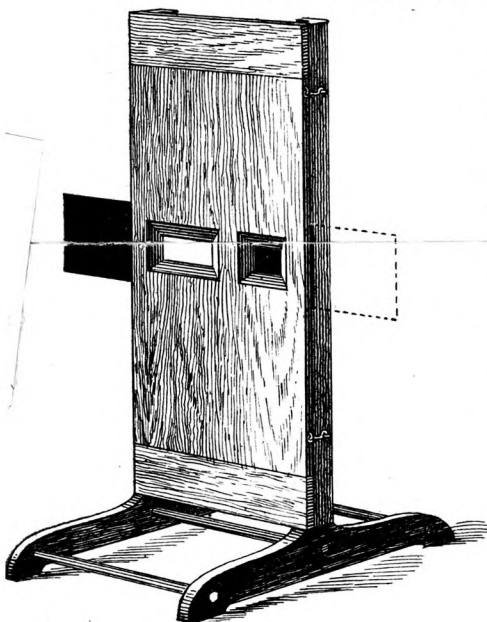


Fig. 13.

Any desired modifications of the above instruments to suit special requirements will be cheerfully made.

Correspondence is solicited, and should be addressed to

**THE GARDEN CITY MODEL WORKS,**

124 CLARK STREET,

CHICAGO, ILL.