

Mar 13 '99

T.H. Ward.

CATALOGUE OF

INTERIOR & EXTERIOR

Loud Speaking

TELEPHONES

& ELECTRICAL SUPPLIES

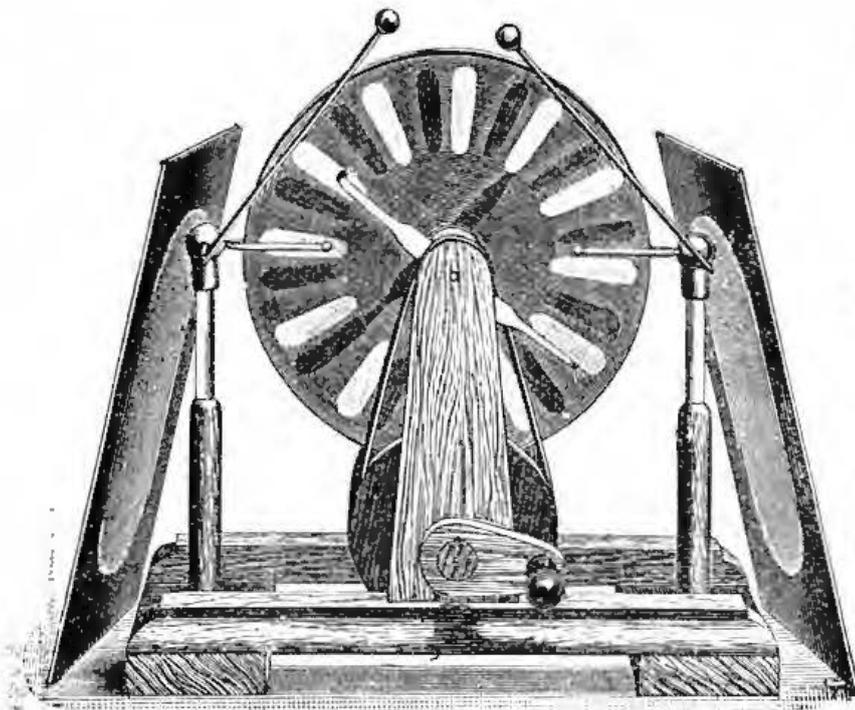
MANUFACTURED BY

MIANUS ELECTRIC CO.

MIANUS, CONN.

WIMSHURST ELECTRIC MACHINE.

Patented Feb. 19, 1889.



Appreciating from personal experience, the demand of experiments for a first-class and serviceable Static Electric machine at a price within the reach of all, we designed the one above. It is not a toy, but a well made physical instrument and will enable any one to perform all of the experiments usually found in works on physics. light gas, give shocks, etc. The frame is of finely finished ash and the plates are eight inches in diameter, giving a spark one inch in length at any

time of year and under any atmospheric conditions, while sparks two inches in length have been obtained under favorable conditions.

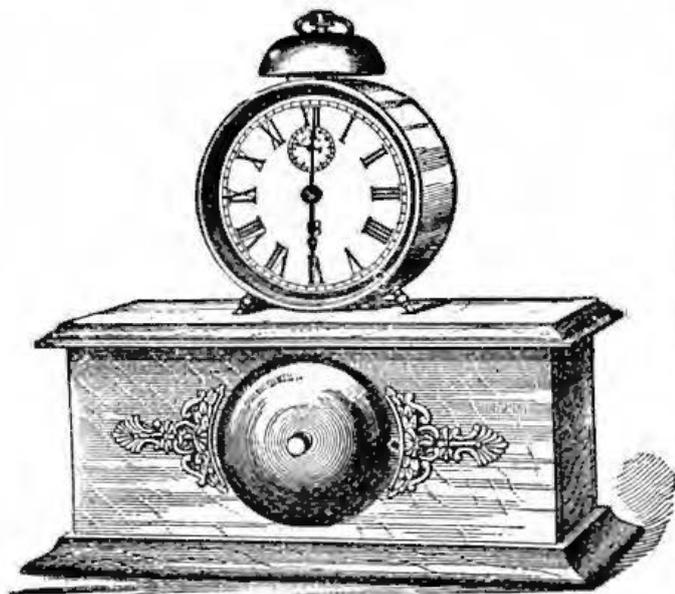
The Electricity from these machines is absolutely safe and harmless and the full strength may be taken through any part of the body with impunity.

Plain and minute instructions, which will enable any boy without tools or previous mechanical or electrical knowledge to successfully put them together, are sent with each machine also a book showing numerous experiments and telling how to make cheap apparatus.

PRICE.—Complete set of parts including two Leyden Jars, book of Experiments, and Instructions for putting together, \$3.50.

WIDE AWAKE ALARM CLOCK.

Finely Finished, Complete \$2.00 each.



You probably know the faults of the regular alarm clock. The first is that the alarm does not ring long enough to always wake the sleeper. The second fault is not of the clock, but the fault of the person it wakes, as after it stops ringing one is liable to go to sleep again. But with the Electric Alarm this cannot happen, as the alarm will ring all day if not switched off. The person has to get up to switch it off, and once out of bed will stay out.

TRADE DISCOUNT SHEET.

- Page 3. Telephones, No. 88, \$8.25; No. 78, \$7.75; No. 58, \$7.25.
" 4. Transmitters, No. 98, \$1.50, with coil, \$1.90.
" 4. " No. 128, \$1.50, with coil, \$1.75.
" 6. " No. 108, 75c.; No. 118, \$1.25; No. 7, 90c.
" 6. " Swedish, \$3.50; No. 7, with coil, \$1.25.
" 7. Telephones, Nos. 38 and 37, \$5.75; No. 18, \$5.00.
" 7. " No. 19, \$7.25.
" 8. Transmitters, Blake, \$1.25, with switch, \$1.50.
" 8. " 8D, \$1.50; No. 1 receivers, 65c.
" 8. Receivers, No. 2, 50c.; Watch Case, 40c.
" 9. Telephone, No. 68, \$2.75.
" 10. " Warehouse, \$10.00.
" 13. Magneto Bells, 5,000 ohm, \$2.25; 10,000 ohm, \$2.70.
" 14. Extension Bells, \$1.40 each, dozen lots, \$1.25 each.
" 15. Induction Coils, 25 per cent. discount.
" 23. Motors, \$7.00 per dozen; Railways, lots of 3, \$2.50 each.
" 24. Desk Sets, No. 1, Set A, \$8.00; Set B, \$9.00.
" 24. " " No. 2, " \$6.00; " \$9.00.

Medical Batteries, lots of 6, \$2.25 each.

Alarm Clocks, lots of 6, \$1.50 each.

Batteries not included with Telephones.

We recommend our Double Strength Battery. See page 16.

No discount on pages not mentioned.

SPECIAL OFFER on Oak Blake Transmitter Boxes. Not varnished,
12c. each. Finely finished with hinges and lock, 18c. each.

Any cut in Catalogue 50c. each net. Always order by number and
carry out the price.

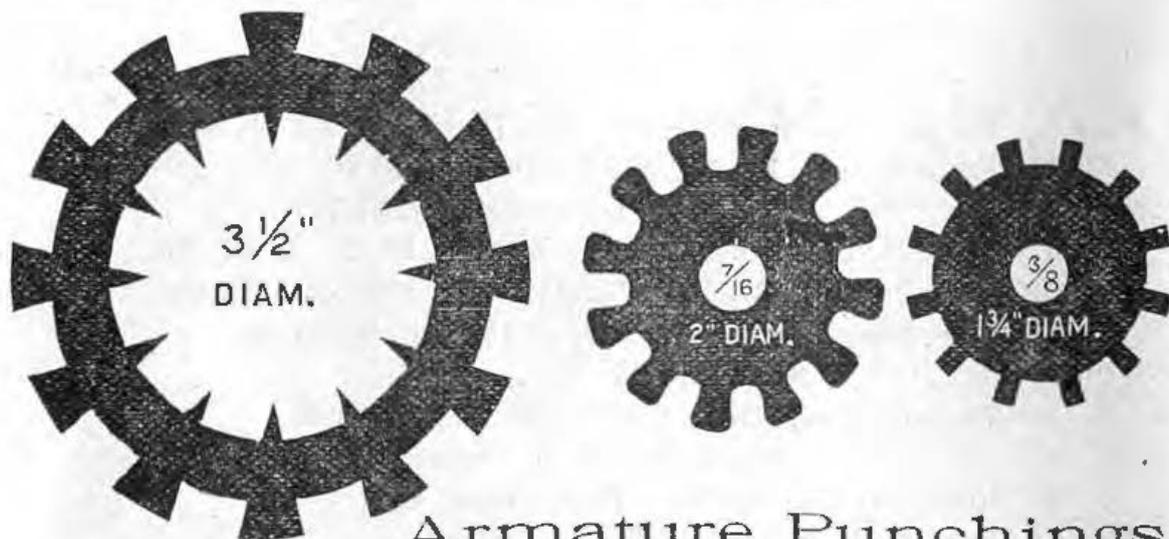
Terms Cash with order or one-fourth cash, balance C. O. D.

Prices subject to change without notice.

MIANUS ELECTRIC CO.,

Mianus, Conn.

R. R. Station and Telegraph Office, Cos Cob, Conn., 30 miles from
N. Y. City.



Armature Punchings.

Made from sheet charcoal iron, 1-32 thick. The 2-inch Rings make an excellent armature for No. 2 Dynamo. Price, 20c. per inch. It takes 4 inches for No. 2 Dynamo, 3-inch punchings, $\frac{5}{8}$ hole, 16 slot, 22c. per inch.

1 $\frac{3}{4}$ -inch 12c. per inch. Suitable for Parkhurst Motor or No. 161 Dynamo. Manufacturers of motors wanting them, in lots of 25 lbs. or over, we can make a low price of 15c. per lb.

Toothed Ring, for making Armature for Motor 641. It makes a very simple Armature to wind and very efficient. Price per set of rings 75c.

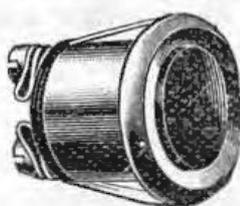
Postage on set 38c. Made of malleable iron, $\frac{1}{2}$ inch thick.

The "P. & B. Electrical Compound



Acknowledged to be the standard for electrical work. A perfect Electrical Insulator. Water, acid and alkali proof, and preservative. An important aid in all branches of electrical work.

Price. Quart Cans, 70c. ; Pints, 40c. ; gal. \$1.75.

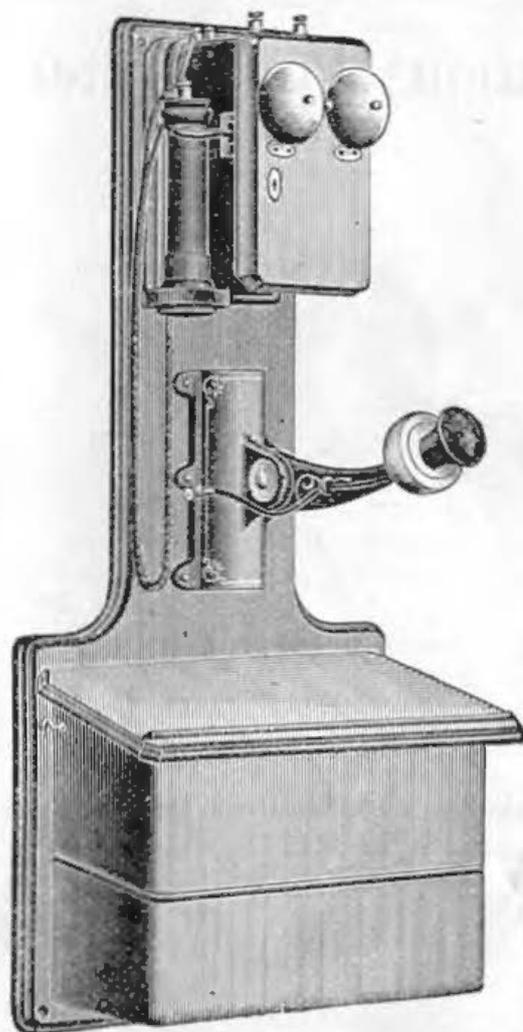


Midget Push Buttons, 12c. each. Doz. lots 10c.
 Black Polished Slate, size 6x12, $\frac{5}{8}$ thick, 50c. each.
 Porous Cups, 3x7 16c. each. 4x7 20c. each.
 Sheet Mica, 1 $\frac{1}{2}$ x2 $\frac{1}{2}$ in., per doz. sheets 8c. 2x4 in. 13c.
 Postage 2c. per dozen extra. Special prices by pound.

Agents Wanted.

You can make money putting in Electric Door Bells. We furnish outfits in $\frac{1}{2}$ doz. lots at 75 cts. each, with wood button, if bronze buttons are wanted see page 22. Electric Bell Fitting, price 25 cts., will help you out if you are not accustomed to putting up bells.

You can get from two to three dollars for each bell put in, giving you a good profit, by combining Telephone Alarm Clock, Medical Batteries &c. a good electric trade can be worked up.



No. 58 Telephone.

It has our best No. 98 Arm Transmitter, Backboard 7½ by 32 inches, SINGLE BATTERY BOX, Complete, Oak or Walnut.

Price.....\$16.00.

If Ball Transmitter is wanted order No. 57.

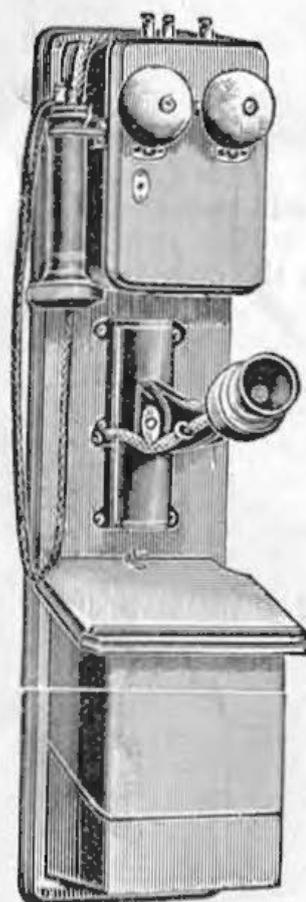
We do not furnish Battery with Telephone for price of Battery. See page 18.

No. 78 Telephone

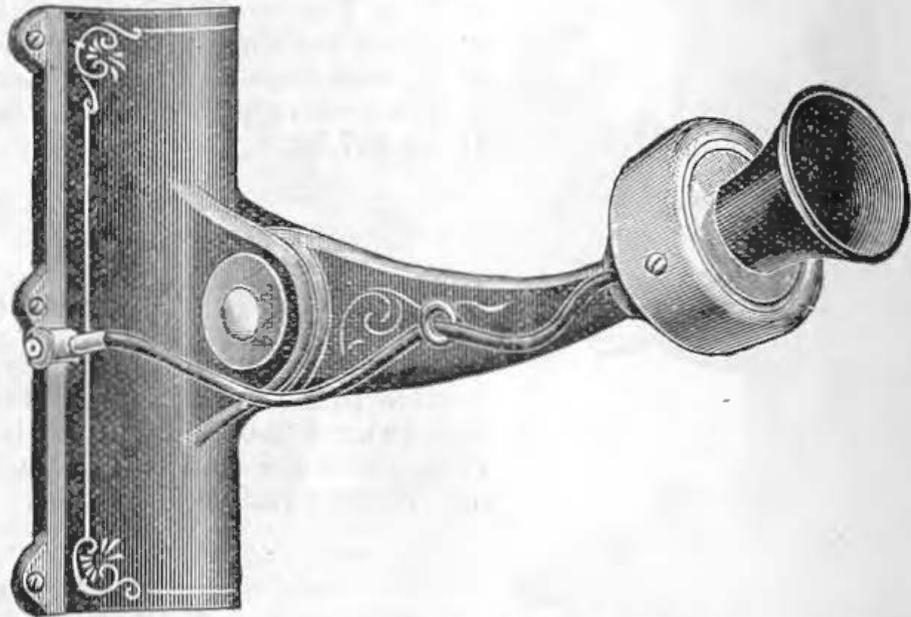
with 98 Transmitter 2 Cell Battery Box, width at bottom 13 in., 31 in. long, complete with 10,000 Ohm Bell Receiver and Cord as shown in cut, Oak or Walnut Price \$17.00.

No. 88 Telephone

same as above with 3 Cell Box, width at bottom 16 in., 31 in. long. Oak or Walnut Price \$19.00. If higher than 10,000 Ohm Bells are wanted see page 13, add. 50c. Net for each 5,000 Ohms.



No. 98 Granular Carbon Transmitter.



The Finest Transmitter on the market. The Loudest talker Best Articulation and Least Induction.

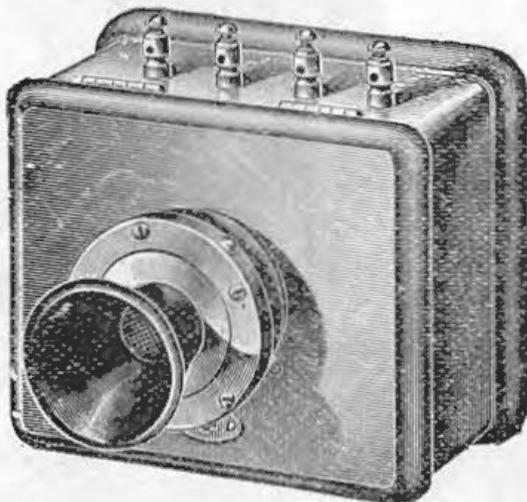
It is finished with the Finest Enamel, two Coats and Hand Rubbed, and ornamented.

Has long Powerful Induction Coil. We guarantee it second to none in the country.

Price complete as in cut with coil \$5.00

Price of arm without Transmitter or coil..... 2.00

If Ball Transmitter is wanted order 97.



No. 128 Transmitter Granular Carbon same internally as No. 98 is fitted on Blake Box hinged on top side so that carbon can be agitated by swinging up the front the same as it can be done in the 98 Transmitter by swinging the arm up and down.

Price without Coil..... \$2.20

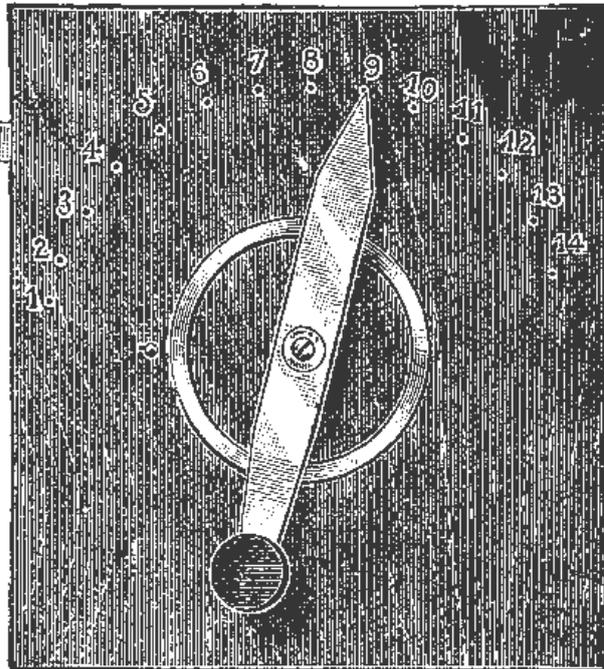
With Coil..... 3.00

We fit Hook on either of the above at 50 cts.

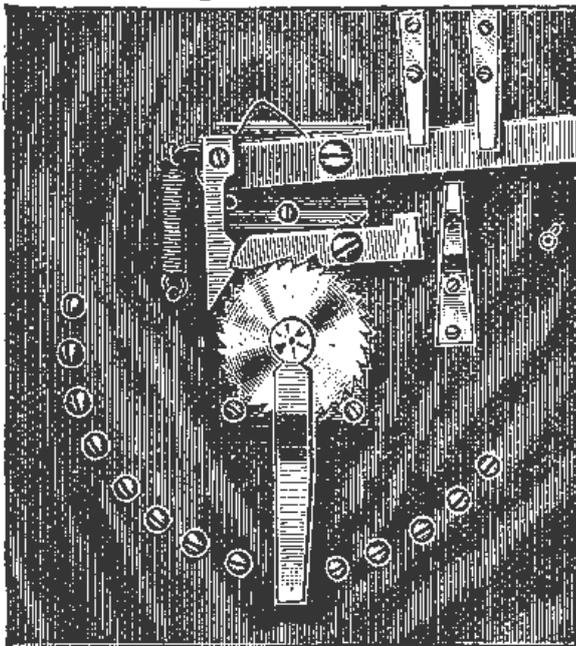
The Home Automatic Switch.

This Switch flies back to the home number when the receiver is placed on the Hook. To use it if station 5 wishes to talk with No. 9, turn switch to 9 and ring up. No. 9 when through place receiver on hook that releases the switch and it flies back to No. 5. We make them to any number of stations up to 20.

The old style switch has to be turned back by hand, the person using it often forgets to turn the switch back when through talking and when he is wanted again his bell will not ring, after the person that wants him spends five or ten minutes in trying



to get him he then starts out for the station he has been trying to call. On his way he is condemning Warehouse Systems



and the man at the other end of the line when he gets there finds that the switch was not turned home. It has been the great annoyance in Warehouse systems.

We are selling the Home to displace the old style switch. They are all put together on base ready to put on backboard. In ordering give the No. of stations in the system.

PRICE \$3.75 EACH.

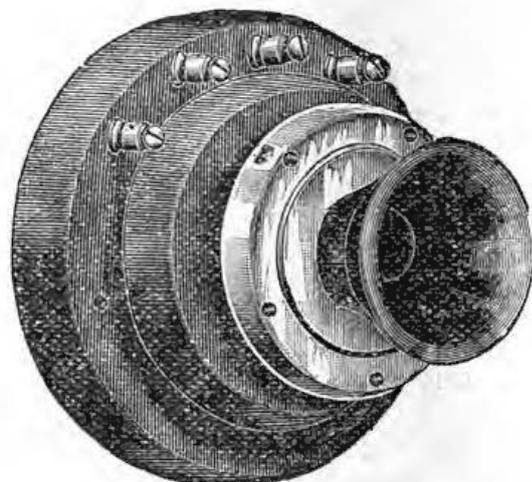
Our warehouse phones on page 10 are fitted with the Home Switch.

ANNUNCIATORS.

2 drop.....	\$2.40
4 ".....	3.30
6 ".....	4.50



No. 108 Transmitter.



No. 118 Transmitter.

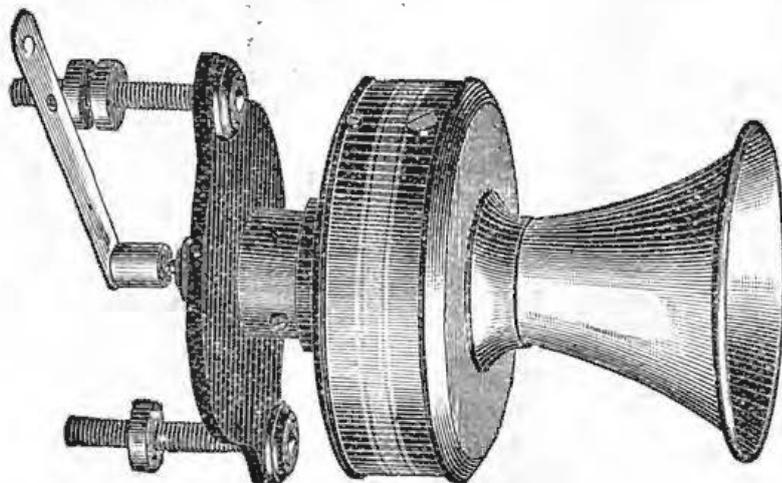
No. 108 Granular Carbon Transmitter.—A long or short distance Transmitter. Adopted by the English Government and used all over Great Britain. It needs no adjustment, and as we construct it, will not pack. This transmitter will not rattle if talked into loud, and a whisper can be heard.

Cut shows transmitter suitable for placing on bell box or transmitter box. Fitted with nickle back if wanted for long arm.

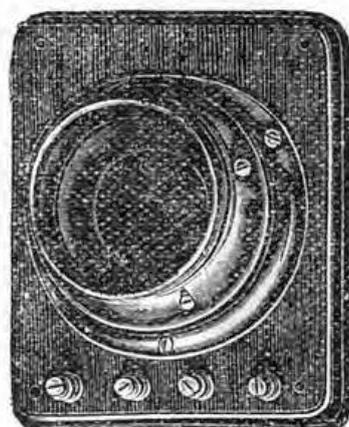
No. 108, without Induction Coil, price.....\$1.80

No. 118 Granular Carbon Transmitter.—Wired up on ebonite base. Has the induction coil in the back of the base with binding posts attached, all ready to put up and attach the wires to.

Price.....\$2.80



No. 44 Transmitter.



No. 7 Transmitter.

No. 44 Swedish Transmitter.—Granular Carbon can be swiveled around and cannot pack as shown in cut.

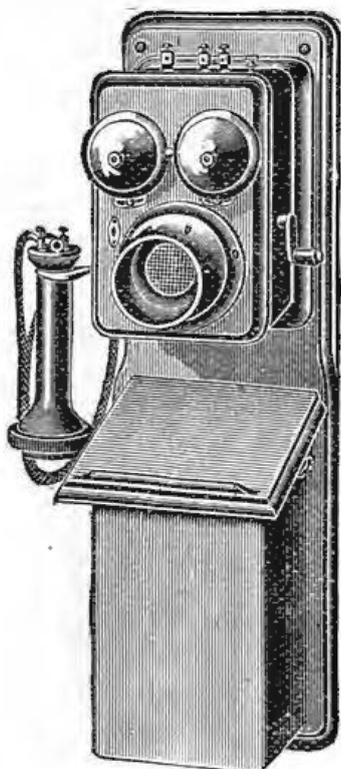
Price.....\$7.00

No. 7 Ball Transmitter.—This is a Carbon Transmitter which we have sold with good satisfaction. Requires no adjusting and can be used on long or short lines.

Price, complete with Induction Coil.....\$2.90

Price, without coil.....2 00

No. 37 Telephone.



No. 7 Transmitter.

If Granular Carbon Transmitter is wanted, order No. 38.

This is one of the best selling Phones we have, and is used for exchange work, private line and factory purposes. Standard bell. Everything first-class. Size of backboard $7\frac{1}{2}$ by 25 inches.

Price, as shown in cut.....\$14.50
 Price per pair..... 29.00

All the wood work of our telephones are finished in hard oil finish and rubbed to a French polish. We consider oak the prettiest wood for telephones.

No. 18 Telephone.

If Ball Transmitter is wanted order No. 17. Standard Bell and Receiver, Long Distance No. 8 Transmitter. Battery can be placed at any point desired and connected by wires to binding posts at bottom of bell box.

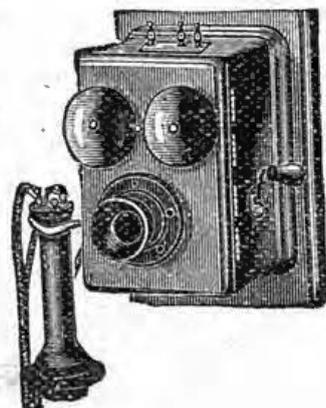
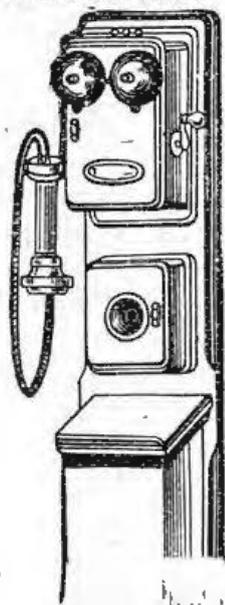
Price each, \$12.50.

Main Line Blake Telephone.

No. 19

Standard Magneto Blake Transmitter, Receiver Cord and Battery Box complete, wired up and ready for use, as shown in cut. Size $7\frac{1}{2}$ by 30 inches, weight 18 pounds.

Price each \$15.00





No. 9 Blake Transmitter and Parts

Price complete \$3. With Switch \$3.60

PARTS—Castings drilled and tapped, carbon button polished German silver, spring, with platinum point fastened in, rubber band, diaphragm screws, &c.

Price 80c. By mail 98c.

8d Transmitter

For desk use this is one of the lightest transmitters on the market. The column is a nickel tube, quartered oak base, nickel plated feet. We finish it with the induction coil in it. There is room also under the base for buzzer push button and switches. The receiver switch can be put on the base or on a block on the desk. We think the best place for the receiver is on the side of the desk. Price \$3.00



Telephone Receivers.

THE BEST MADE.



Standard No. 1 Receiver has hard rubber shell, compound magnet, wound with No. 36 silk wire, jam post. Price 65c.

No. 2 Receiver is precisely same as above except the shell, which is composition imitation of hard rubber. Plain post.

Price 55c. By mail 20c. extra.

We are the largest manufacturer of Receivers in this country.



Gem Watch Case Receiver

This we consider the best Receiver made, it is lighter to hold to the ear and will not get out of adjustment like the Standard Long Receiver.

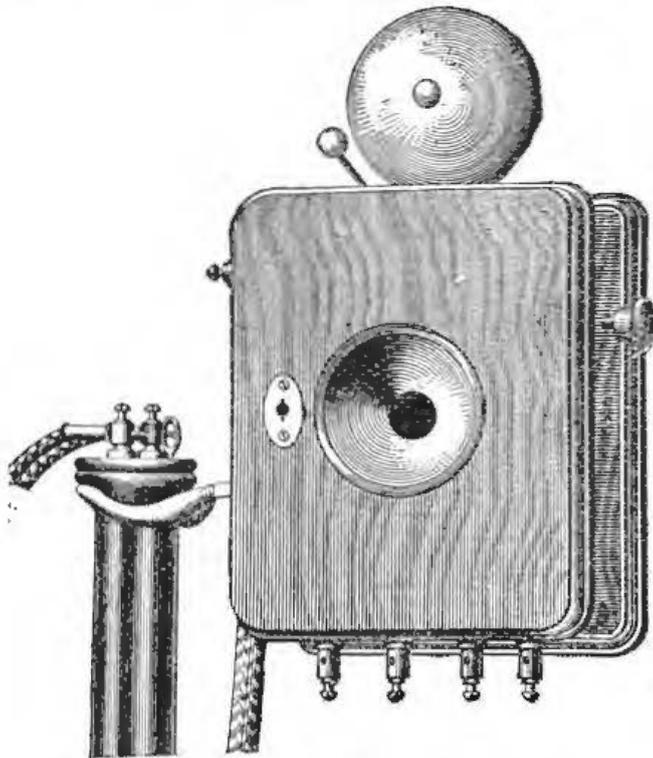
Each 50c. Doz. lots 40c.
By mail 8c. extra.

Receiver Shells, hard rubber, 30c. Imitation 20c.

 Always order by number and carry out the price.

No. 68.

Battery Call,
Push Button,
Interior and
Short Line Phone.



Fitted with No. 8 Granular Carbon Transmitter.

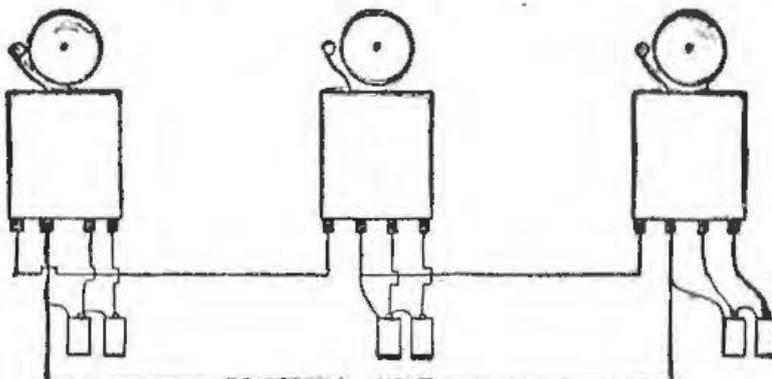
We put Watch Case Receiver on this Telephone.

Our No. 68 is one of the finest Interior Phones ever put on the market. The Transmitter, Call Bell and all parts except the Battery are in a box 5 by 6 inches. If Ball Transmitter is wanted order No. 67.

This Phone is a good seller. We have a number of agents who make a specialty of fitting factories, stores and warehouses with these Phones.

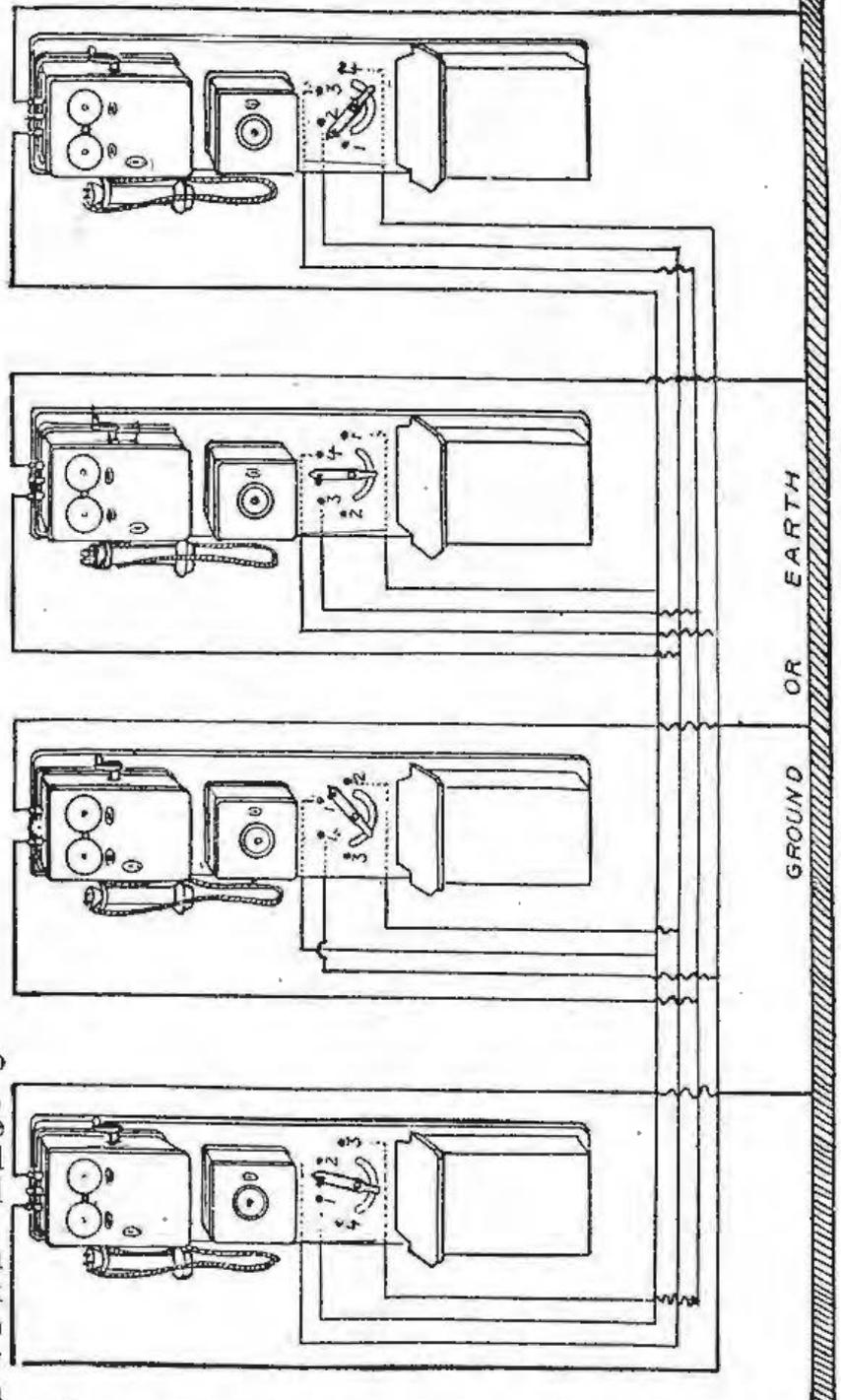
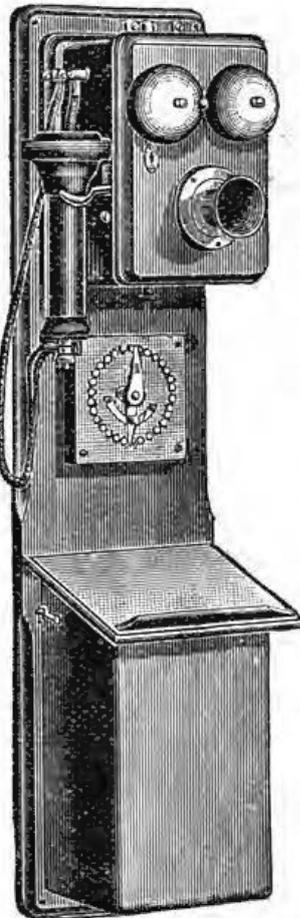
Price, with Receiver and Cord No. 67 or 68.....\$6.00

DIAGRAM FOR WIRING 68 TELEPHONE.



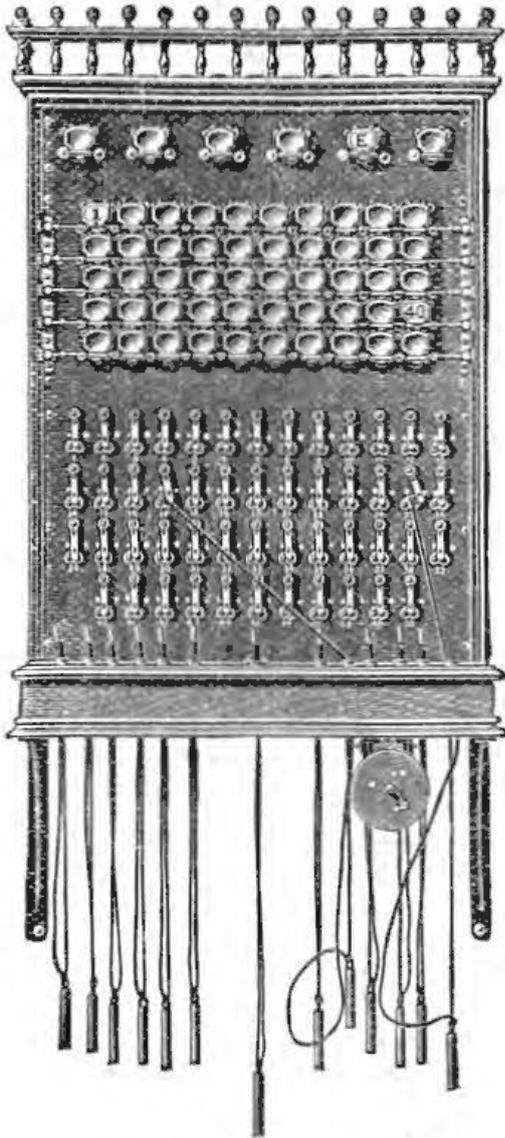
Warehouse Telephone.

Price \$20.00.



When you wish to call up any station, you simply turn the lever to the desired number, ring the bell and the talk goes on. When through you turn the lever back again to your own number, so that any outlying station can call you up by turning their switch-lever to your number. This system does away with the central station, and makes every instrument intercommunicating. By simply turning your switch, you connect with any station desired immediately, and every Phone can be in use at the same time without interfering. For example, in a plant of ten instruments, Nos. 1 and 2, 3 and 4, 5 and 6, 7 and 8 and 9 and 10, can be used at the same time.

Telephone Switchboards.



Cut shows 50 Drop Board.

Price, as shown in cut, \$2.00 per Drop. Metallic circuit \$2.50.

We also furnish the same drop to parties that want to make their own board at 75c. per drop.

- Price of Spring Jacks.. 50c. each
- Jack Plugs..... 25c. each
- Cord..... 10c. yard
- Cord Bushings..... 10c. each

Switchboards are made to order with any number of drops desired.

It is well to always order a larger board than you have subscribers, as the chances are you will be adding more subscribers.



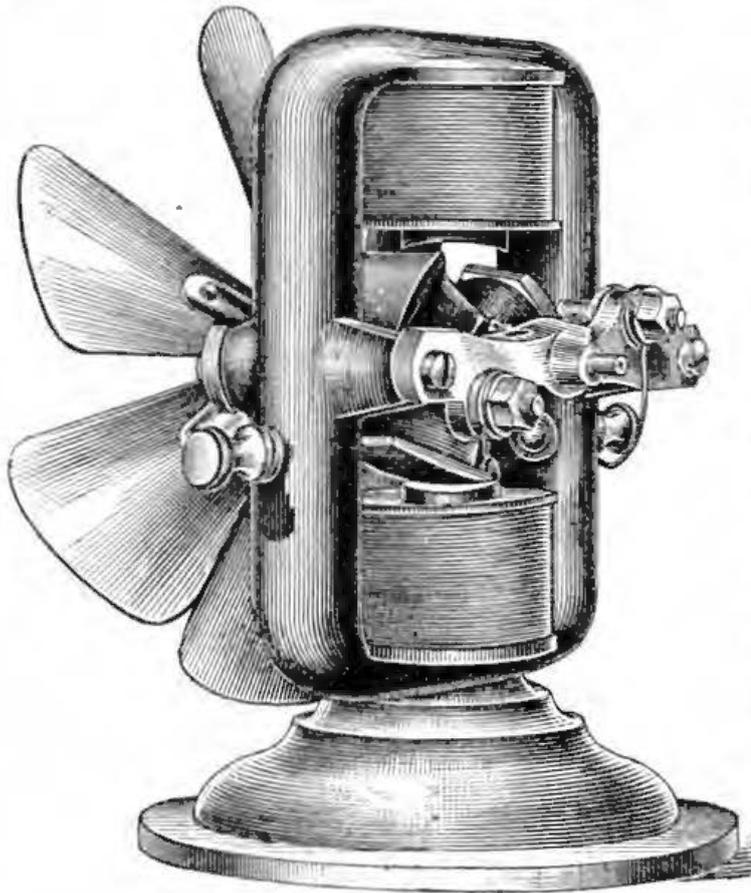
Double Receiver,
For Switchboard Use.
Price, as shown in cut, \$3.50.

Switchboard Weights.



Brass Weights polished. Price each 30 cents. Dozen lots 25 cents.

NO. 3 MOTOR.



Runs a 6-inch fan. Can be tilted backward by a thumb screw under the base so the breeze can be thrown upward. This Motor will also run a light running sewing machine or other light machinery. Capacity from 1-12 to 1-16 horse power. Furnished with a grooved brass pulley for running machinery. When wanted for that purpose the fan can be removed. Wound for battery are 110 volt circuit. Weight four pounds.

Price, complete, with 6-in. six blade Fan, \$3.50. Without Fan, \$3.00.

To parties wishing to wind these Motors themselves we can furnish them at the following prices: (Fans not included)

- SET A**—All parts except wire, with shaft pulley, binding posts, brush holders, spools for winding, field coils on finished and a commutator partly finished, and all screws necessary. Price..... \$1.00
- SET B**—Same as above with wire..... 1.75
- SET C**—All parts fitted ready to wind including all tapping and drilling, making Motor all ready to wind, commutator made 2.00
- SET D**—Same as Set C. only wire included..... 2.75
- Full directions for building will be sent with each set of parts or to all who enclose stamp for same.

Above prices are for Battery, if for 110 Volt Circuit add 50c.

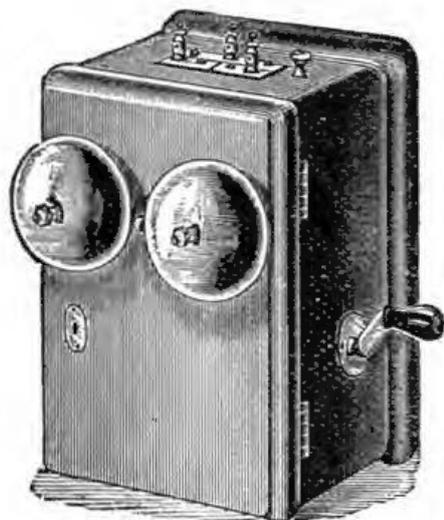
Am-Meters and Volt Meters.

Each..... \$1.50



An inexpensive but accurate voltmeter, reading from 0 to 10 volts and an am-meter reading from 0 to 10 amperes.

For experimental purposes, where the standard instruments would prove too expensive, these will be found both valuable and trustworthy. The mechanism is enclosed in a hardwood case, which gives them an extremely neat and handsome appearance.



Magneto Bells.

Oak or Walnut.

Pony Bells, 5000 Ohms.....	\$3.00
Standard 10,000 Ohm Bells.....	3.25
“ 15,000 “ “	3.75
“ 20,000 “ “	4.25
“ 25,000 “ “	4.75
“ 30,000 “ “	5.25

Fitted with Hook 50ct. extra.

Testing Bells fitted with Hand Strap same price as Magneto Bells.

Magneto Bell Parts.

We can furnish all parts of Magneto Bells at the following prices:—

All parts except box with armature wound and Generator assembled. Ringer Coils wound and ringer assembled. Price \$2.20

Above includes all screws, lock and Hinges.

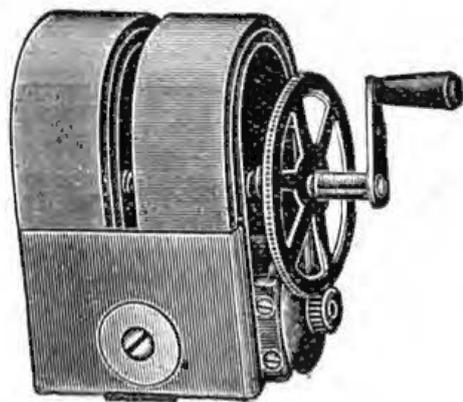
Ringer for Magneto and Extension Bells.



Ringer, coils wound and assembled, with screws, 80c.
Seperate coils, each 35c.

Generator Magnets.

Made of special magnet steel, $\frac{1}{4}$ by $1\frac{1}{4}$, bent, tempered and magnetised, per set of 4 price 28c. In 100 lots 20c.
Ringer Magnets, bent, tempered and magnetised, 5c.

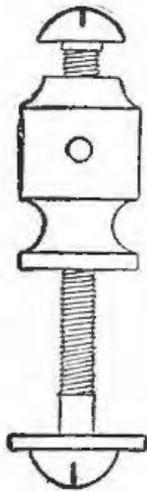


Generator Seperate.

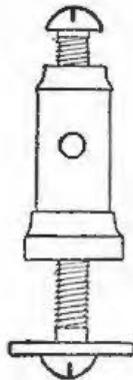
Wound with 36 wire and assembled with two screws in bottom to fasten on to box and crank. Price \$1.40,

Nickel Plated Binding Posts.

(Cuts are exact size)



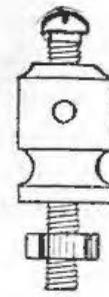
No. 4



No. 3



No. 2



No. 1



No. 5

No. 5 Clamp Post, each
7c. Doz. 60c. 100 \$3.75

NO. 1 Receiver Post has nut on lower part and is knurled on under side to stop it turning, with hole in lower end to solder wire into.

Price each 6c. Per dozen 60c. Per 100, \$3.50.

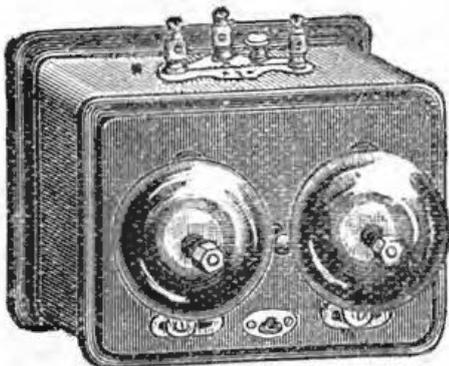
No less than 50 will be sold at the 100 price.

NO. 2, Price each 5c. Per doz. 50c. Per 100 \$2.75.

NO. 3. Suitable for sides of bell boxes, transmitters, etc. Price each 5c. Per doz. 50c. Per 100, \$3.00.

NO. 4, Large Post, suitable for all kinds of work, such as motors, magneto bell boxes, etc. Price each 7c. Per doz. 65c. Per 100, \$3.75.

In all of our Posts we use nickel plated screws instead of knurled thumb screws, as better contacts can be made.



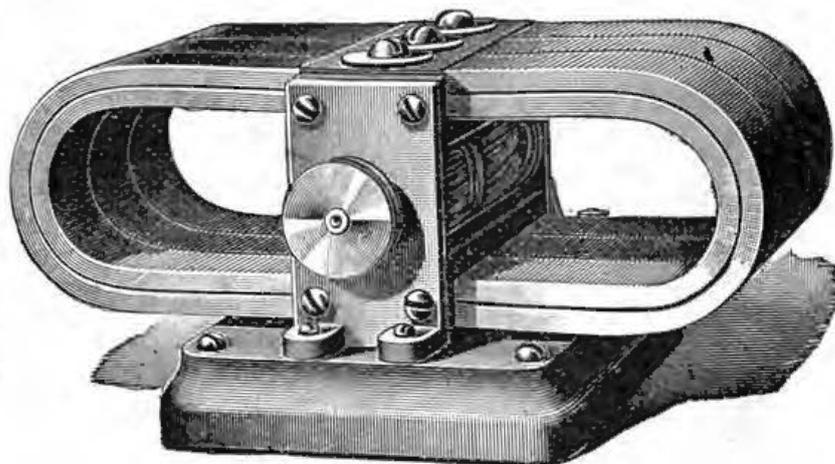
Extension Bells

For placing in different parts of a building, as a call to the Telephone when no one is in the room where the Telephone is located. Price each \$1.75.

No. 60 Power Generator.

(WITH GROOVED OR
FLAT PULLEY, AS
ORDERED.)

For Telephone switch-board use; made with 12 permanent steel magnets, fitted with self oiling bearings. Weight of complete machine, 14 lbs. Wound to ring through 50,000 ohms.



Price...\$10.00

No. 61 Gas Engine Igniter.

The same as No. 60, only wound different for igniting the gas in gas engine cylinders, instead of using battery. Price, \$6.00.

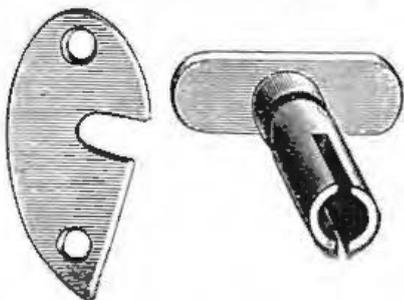
THE DOUBLE STRENGTH BATTERY

For all open circuit work this cell has no equal. It has double the strength of the ordinary carbon cylinder batteries. For telephone transmitters, electric gas lighting, gas engine igniting, and all uses where a good battery is required, it has no equal. Price, each, 55c. Dozen lots, 48c. each. Fifty lots, 44c. each. GIVE IT A TRIAL.



FIBRE FOR INSULATING PURPOSES.

SHEET PRICE PER SQUARE FOOT.		RODS.	
$\frac{1}{2}$ in. thick	.....10c.	$\frac{3}{4}$ in.	... 3c. per inch.
$\frac{3}{8}$ "	.....20c.	$\frac{7}{8}$ "	... 3c. "
$\frac{1}{4}$ "	.....35c.	1 "	... 4c. "
$\frac{3}{16}$ "	.....45c.	$1\frac{1}{4}$ "	... 5c. "
$\frac{1}{8}$ "	.....55c.	$1\frac{3}{8}$ "	... 5c. "

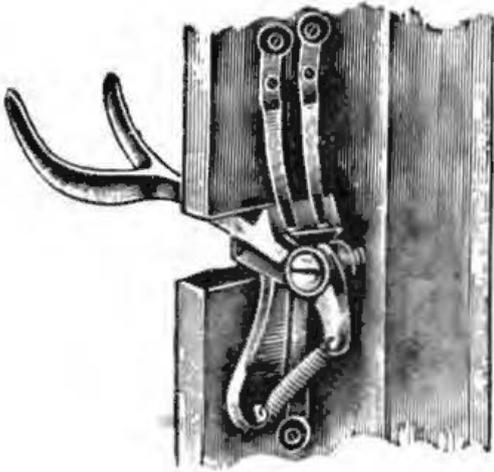


A B C Telephone Locks.

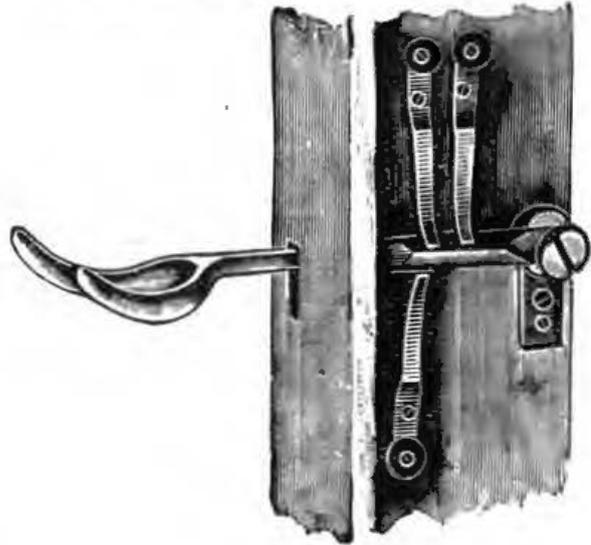
The Escutcheon and Key are not shown in cut.

Price, each, 5c, Dozen, 40c.
Per hundred, \$2.75, Per thousand, \$24.00

GRAVITY HOOKS.



No. 20.



No. 21.

No. 22 Single Hook.



This Hook has the same internal movement as our No. 20. It is intended for Watch Case Receiver, and the Regular Bell Receiver, where it has a Screw

Eye in it for Single Hook. All Hooks have Nickel Plated Escutcheon. Hooks are made from hard bronze nickel plated.

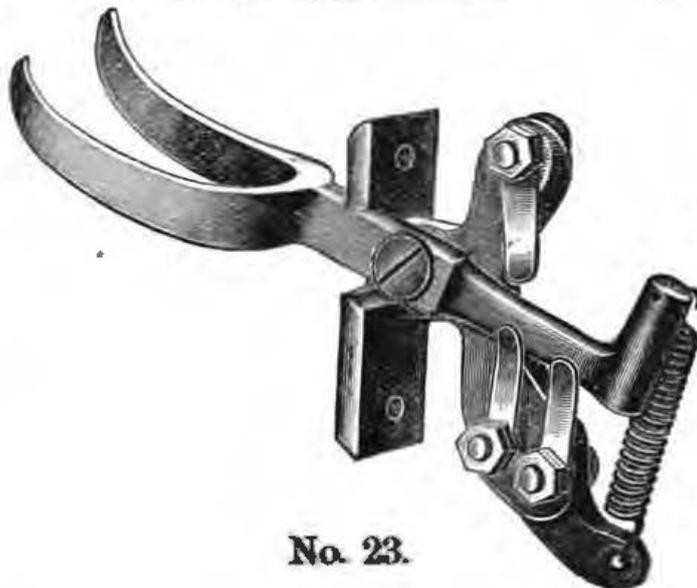
All screws, springs and washers go with every hook.

Each 22c.

In dozen lots 18c.

Hooks by mail, 5c. extra.

In 50 lots 15c.



No. 23.

No. 23 Self-Contained Hook.

Each 40c.

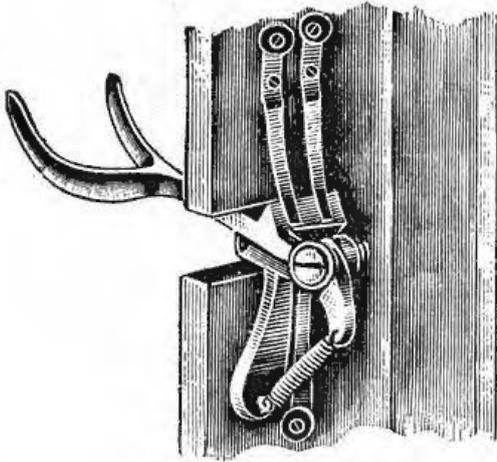
In dozen lots 35c.

In 50 lots 28c.

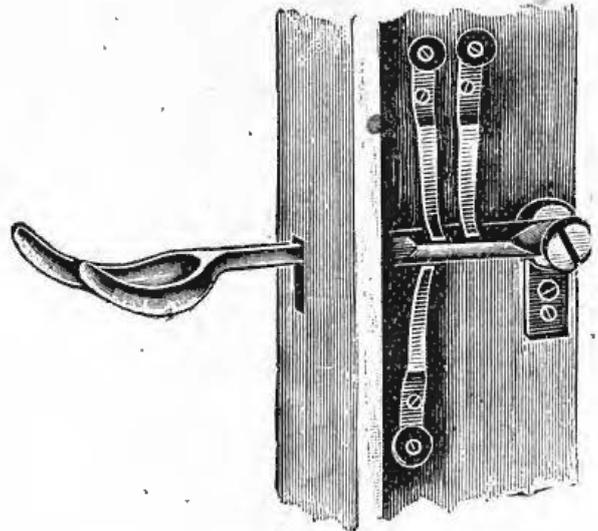
MIANUS ELECTRIC CO., MIANUS, CONN.

There is no Telephone Hook ever made yet that equals the Gravity. Take off the snares and delusions that you have been using on your telephone and put on the best.

Gravity Hooks.



No. 20.



No. 21.

The Roosevelt Gravity Hook patent, No. 215,837 will expire May 27th, 1896. After that date we will be pleased to furnish Hooks at the following prices :

Each.....	35c.	In $\frac{1}{2}$ doz. lots.....	30c.
In dozen lots.....	25c.	In 50 lots.....	20c.

Made from hard bronze nickel plated.

We furnish either No. 20 or 21 hook. Our No. 20 is the most complete hook made, and is suitable for Magneto Bells. No. 21 Hook is intended to go on the back of the box and has lift spring not shown in cut. All screws, springs and washers go with every hook.

Mesco Dry Batteries, 25 cents.

Mianus Electric Company,
Mianus, Conn.

Crow Foot Gravity Battery.



EACH 65 CENTS.

Zinc, 30c. Copper 12c. Jar 6x8 30c.

Caroon Cylinder Batteries,



Complete, 35c. each. In lots of 6, 26c.

Lots of 50, 21c.

If you want extra good battery, use double strength, (see page 16.)

Mesco Dry Batteries.



25c. each. Lots of 6, 18c. Lots of 25, 17c.

Lots of 100, 15c.

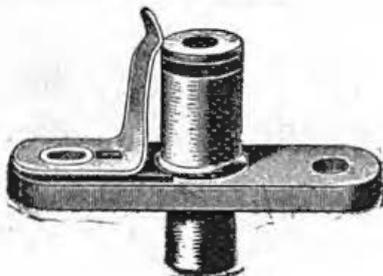
Battery Materials.

Leclanche Zincs, per 100.....	\$2.50, each 5c
Carbon Zincs, per 100.....	2 75, " 5c
Sal Ammoniac, per lb.....	.8c
Blue Vitriol, " ".....	.6c

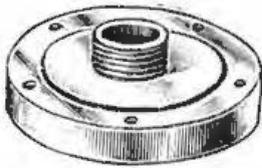
BURGLAR ALARM SPRINGS.

Door Springs.....10c

Window Springs.....12c

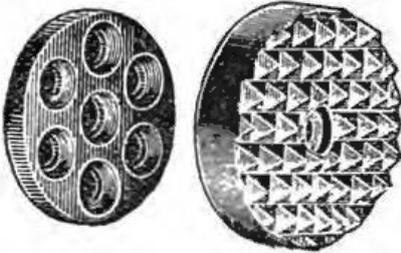


Transmitter Caps.



Nickel plated, each 15c.; doz. 12c.; 100 lots 10c.

CARBONS



Carbon Diaphragms.....8c.; \$5.00 per 100
 Seven Ball Backs.....10c.; 6.00 per 100
 Balls, each..... 2c.; 1.50 per 100
 Pyramid Backs... ..10c.; 7.00 per 100
 Granular Carbon......75c. per lb.

Telephone Mouthpieces.



Cut shows No. 523, inside thread, if outside thread is wanted order 522. Price each 12 cts., dozen lots 9 cts., 100 lots 6½ cts.

Push Button with Metal Bushing.



For using on Magneto Bells, Switch Boards, etc. Price 20 cts. doz. \$1.00 per 100.

Brass Screw Studs same price as Buttons.

Annunciator Wire,

25 cts. per pound.

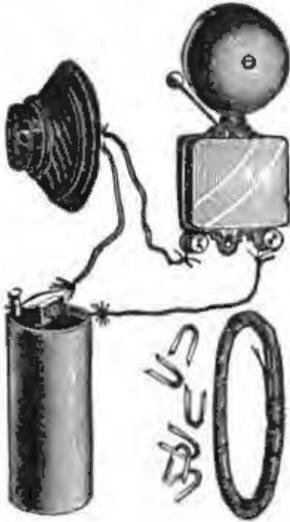
If by mail add 16c. per lb.

Magnet Wire.



COTTON						SILK					
Size	Single	Double	No.	Single	Double	No.	Single	Double	No.	Single	Double
10	\$.22	\$.24	25	\$1.00	\$1.27	20	\$1.18	\$1.61	28	\$2.38	\$3.23
11-12	.23	.24	26	1.10	1.28	21	1.20	1.63	29	2.75	3.76
12-14	.25	.28	27	1.25	1.57	22	1.30	1.76	30	2.95	4.02
15-16	.26	.29	28	1.35	1.69	23	1.42	1.93	31	3.25	4.40
17-18	.29	.32	29	1.50	1.89	24	1.56	2.13	32	3.45	4.53
19	.31	.35	30	1.65	2.07	25	1.81	2.48	33	3.90	5.10
20	.68	.74	31	1.80	2.23	26	2.10	2.88	34	4.10	5.30
21	.70	.88	32	1.95	2.28	27	2.25	3.07	36	7.00	8.88
22	.76	.95	33	2.40	2.85						
23	.88	1.05	34	2.85	3.42						
24	.90	1.14	36	4.37	4.93						

Sizes 10 to 19 Net; 20 to 31 inclusive 60%; 32 to 36 inclusive 50% discount



Door Bell Outfit.

Including 2½ inch Iron Box, Bell, either Dry or Wet Battery as ordered, Push Button, Wire and Staples, as shown in cut.

Price each 85 cents. In lots of six 75 cents.



Wood Base Switches.

(Cut half size.)

1 point 15c.; 2 point 20c.; 3 point 25c.; 4 point 30c. ·
5 point 35c.; 6 point 40c. Postage 3c. each.



No. 74.

No. 74, Ornamental Bronze, 2¼ diam., 20c.
No. 50, " " 5¾x2½ 55c.

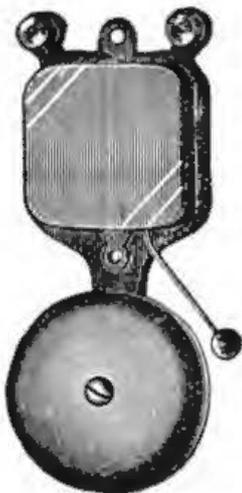
Wood Push 5c. each; 50c. doz.



Wood Buttons are furnished with Bell Outfits. If No 74 button is wanted add 15c., if No. 50 is wanted add 50c. to price of each Outfit.



No. 50.

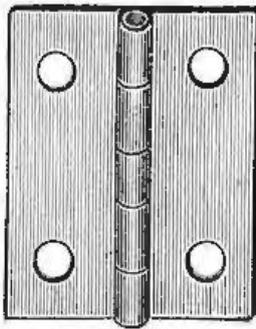


Iron Box Bells.

2½ inch Gongs. Price each 25c. Doz. lots 24c.
25 lots 23c. 50 lots 22c. 100 lots 21c.

3 inch Gongs 2c. each extra.

If by mail add 15c. for postage.



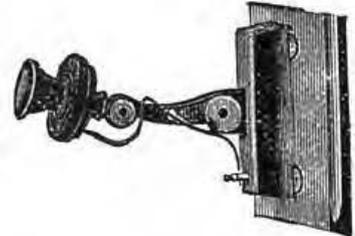
TELEPHONE HINGES.

Brass, nickel plated. Size, one inch middle. Made with brass pin expressly for electrical purposes. Ordinary brass hinges have iron pins. Price per dozen pairs, 30c. Per 100 pairs, \$2.00. Per 1000 pairs, \$15.00.

Annunciator Wire, 25c. per lb.

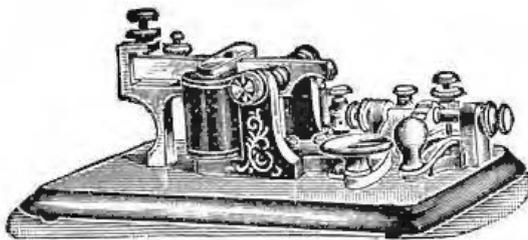
COMPETITION ARM 8B TRANSMITTER.

With Arm Induction Coil and Coil Box, as shown in cut. Price, \$2.00. This is just as good as any instrument we make, only it is cheaper. We also put this Transmitter on double battery box and backboard. Number is 178. Price, \$7.00.



MORSE

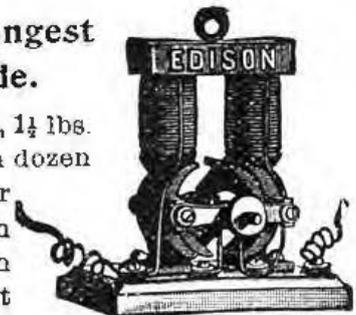
Learner's Telegraph Instrument, \$2.50 each. By mail, \$2.75.



Largest and strongest \$1 Motor made.

4 inches high; weight, 1 1/2 lbs.

Price, \$1. Prepaid to any part of U. S., \$1.35. Special price in dozen lots. As electricity is supplanting steam, so our Electric Motor is taking the place of the toy steam engine. Our Motor will run 2,000 revolutions per minute, and develop sufficient power to run toy mechanical machinery, etc. Any battery can be used, but our 25c. Motor Battery is best.



ELECTRIC LIGHT FOR NECKTIES.

Complete with powerful pocket battery and all accessories. Post paid, \$1.50. Six outfits, \$5.00.

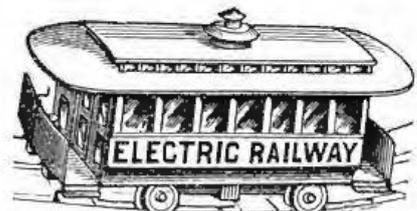
Electricians who want a piece of jewelry that is emblematic, or any one who appreciates a real novelty can now secure one. Battery 4 1/2 x 3/4 x 1 1/4 inches.

We also make a \$3 Necktie Light with double battery and candle power lamp, intended for use on the stage. They are fine. Send \$3 for sample.

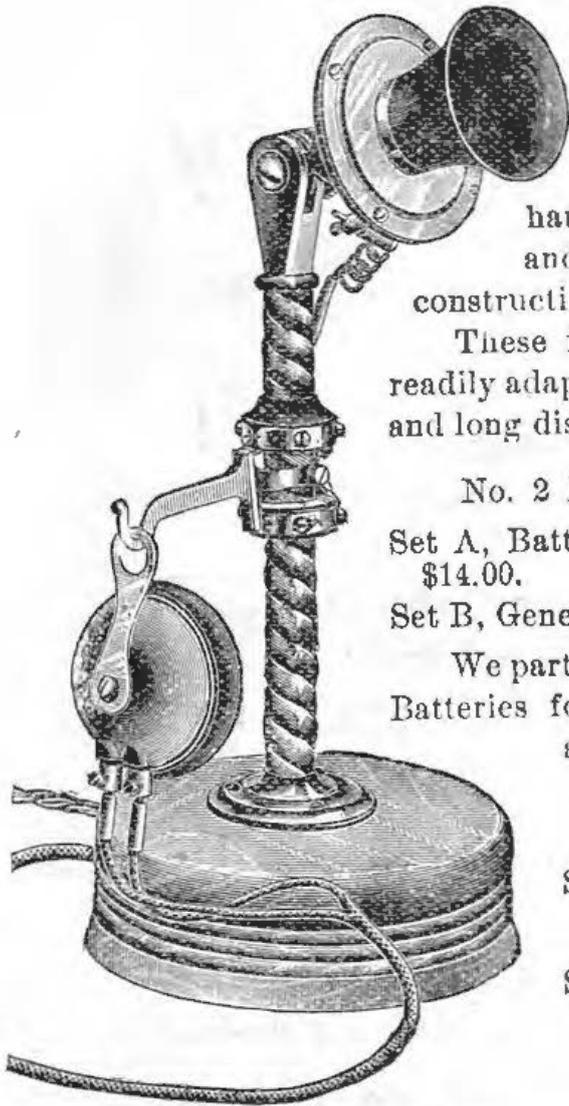


COMPLETE ELECTRIC RAILWAY, \$3.

Just the thing for Window Display. Car 7 inches long, 4 inches high, made of polished brass, weight 1 lb., track 3 feet in diameter, 2-inch gauge. Battery is a zinc-carbon, using bichromate of potash and sulphuric acid solution. Entire outfit packed in a wooden box. Weight ready for shipment, 5 lbs. The chemicals can be obtained in any town, or will be mailed for 10c. per set of 3. Extra parts by mail: Commutator 20c., Trolley 10c., Brushes 10c. Extra Trailing Car, \$1.25. This is a very instructive toy, and harmless.



DESK TELEPHONES.



A convenient arrangement of transmitter, receiver and switch, handsomely made and of substantial construction.

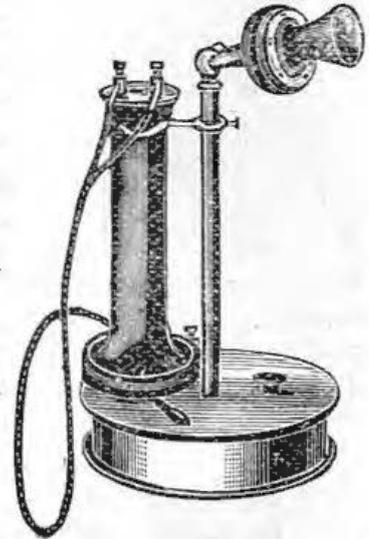
These instruments are readily adapted both to local and long distance work.

No. 2 DESK SET.

Set A, Battery call. Price, \$14.00.

Set B, Generator call. Price, \$20.00.

We particularly recommend "Double Strength" Batteries for use with these instruments and for all other Telephone work. See page 16.



No. 1 DESK SET.

Set A, Magneto call, with Buzzer and Strap. Price, \$7.25.

Set B, Key Complete. Price, \$8.50.

No. 24 LONG LEVER AUTOMATIC HOOK.

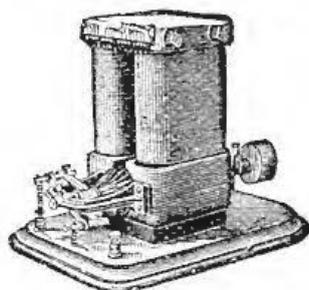
45c. each. Dozen lots, 35c. each. Extends across the inside of Bell-box and is strong and durable. This is a most effective switch for general Telephone work, and is sold separately or can be fitted to Telephones at an extra cost of 25c.

RUBBER COVERED WIRE.

For use in wiring where perfect insulation is required.

No. 16, 1c. per foot, 100 feet, \$1.00.

No. 18, 1c. per foot, 100 feet, 90c.



8-Light Dynamo.

Price finished.....\$30.00

Castings of Field Magnets.....	4.00
Yokes of Armature bearings, with brush arm.....	2.00
Wire for Armature, 20 guage.....	.85
Twelve and one-half pounds wire for Field Magnets, 18 guage.....	4.00
Copper Cylinder for Commutator, with sleeve and ring.....	1.00
Brushes per pair.....	.50
Eight screws for bearings.....	.35
Bolts, for bolting Field together.....	.50
Steel for Armature Shaft.....	.35
Rings for Armature.....	.50
Binding Posts, finished.....	.35
Insulator for Commutator, Mica.....	.35
Screws for Commutator.....	.15
Oil Cups.....	.50
Pulley and set screw.....	.40
Hard Rubber.....	.40
Wood Sleeve.....	.35

As there are some persons who have not the tools for finishing some of the parts, we can supply the finished parts at an additional charge to the price of the parts in the rough as follows :

Boring, bolting and facing.....	\$3.00	Finishing Pulley.....	\$.75
Armature ready for winding.....	3.00	Fitting Brush Holder.....	1.50
Finishing Commutator.....	3.00		

Full instructions and illustrations for building the Dynamo will be found in the *Scientific American Supplement*, No. 600, price 10 cents, which we can supply at the above price.

The power of this Dynamo can be increased to 10 or 12 lamps by winding four extra layers on each section of field magnets, winding armature with one size larger wire, and increasing the speed about 25 per cent.

Price of extra wire.....\$2.25

Parkhurst Motor, No. 759.

Suitable for running Sewing Machines, Foot Lathes or Small Boats.

Price complete.....\$12.00

For parties wishing to make this motor we can furnish the parts at the following prices.

Field Magnets with bolts.....	\$1.00	Armature Bearings and arm.....	\$1.00
Washers.....	.25	Steel Shaft.....	.25
Metal for Commutator with screws.....	.40	Binding posts.....	.25
Brushes, Hard Rubber and Mica.....	.50	Brass for Brush arm.....	.10
Pulley.....	.15	Wire.....	1.25

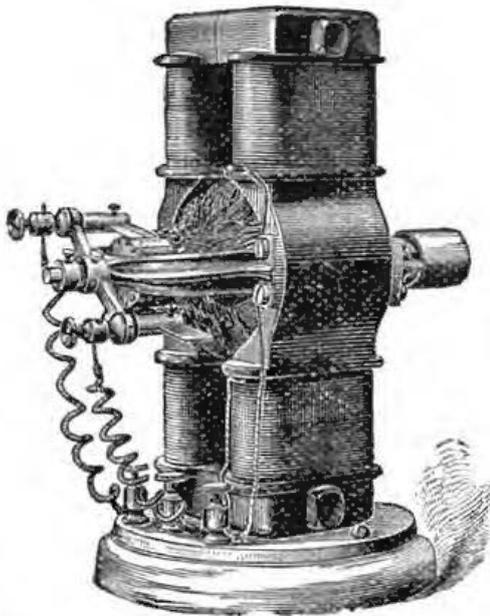
PRICE FOR FINISHING PARTS.

Facing, Bolting and Boring Fields.....	\$1.00
Complete Armature.....	\$8.00
Making Commutator.....	3.50

Full instructions with working drawings for building the above Motor, will be found in *Scientific American Supplement*, No. 759. Will mail copy on receipt of 10 cents.

Simple Electric Motor.

No. 641



About $\frac{1}{2}$ horse power or one man power. Will run a foot lathe, two or three sewing machines, coffee mill or a 15-foot boat.

Price complete, finely finished, with metal armature bearings, \$12.

Described and full instructions for building in the *Scientific American Supplement*, No. 641. Copies mailed on receipt of 10c.

By using cast fields much trouble is saved over using sheet iron field, and it can be wound for a dynamo also. Our field is much better in shape than the sheet iron field. We make them either whole or split. By using the split field the winding is much easier.

Price of Field Magnet in Rough	\$1.50	Price of Wood Spool	.....\$ .50
All screws necessary	.20	Binding Posts	..... .20
Babbitt	.05	Brushes	..... .15
Shaft	.20	Wire	..... 1.50
Bronze Armature Bearings	.70	Boring Whole Field	..... .75
Bolting and Boring Split field	1.50	Boring, Fitting Bronze Yokes	.75

For parties wishing to wind the above with Siemen's Armature we can furnish the rings for 50 cents.

CASTINGS AND PARTS OF THE WATSON

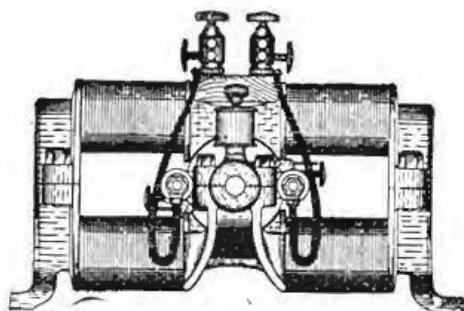
One Horse Power Motor or Ten Light Dynamo.

Set of Castings, complete, including 1 field magnet, 2 pedestals with linings, 2 armature heads, 1 pully, parts for commutator, 4 brush holders, 4 cable connections	.....		\$10.00
Screws	.35	Steel shaft stock	..... .30
Brass nuts, 8 for studs	.25	Eye bolt	..... .25
Brush copper	.25	Wire for armature, No. 16	... .60
Brass strips, per foot	.15	Wire for field, 22 lbs. No. 18	6.75
Four binding posts	.50	Rings for armature	... . 1.00

Price for finishing the different parts, which must be added to the parts in the rough.

Boring field magnet	..... \$2.50	Finishing commutator	.....\$3.75
Finishing shaft and washers	... 3.50	Fitting bearings and brush arm	4.50
Finishing pulley	... .75c.		

The above motor is fully described, with 22 working drawings, in *How to Make a Motor or Dynamo*, by A. E. Watson, which we mail for 25c.



No. 2 Dynamo

This Dynamo is 25 Volt and 8 Ampers.
Price \$12.00. Alternator \$14.00.

Either direct current or alternator.
Will run two 16 candle power lamps or a
small arc lamp. Full description, with
over 30 working drawings in *How to*

Make a Dynamo, which will be mailed on receipt of 10 cents.

PRICE OF MATERIAL IN THE ROUGH.

Field Magnets.....	\$2.55.	Armature .....	.75
All Brass Castings.....	.55.	Pulley.....	.20
The above includes a Set of Casting and Screws.			
Commutator, with Screws...	.25.	Commutator for Altinator	.25
Hard Rubber.....	.25.	Steel Shaft.....	.20
Brushes .....	.20.	Four Binding Post.s.....	.60
No. 14 Wire for Fields.....	2.50.	No. 18 Wire for Armature	.50

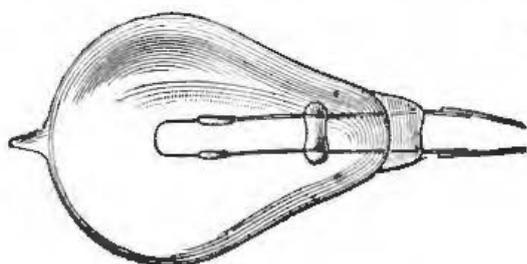
PRICE FOR FINISHING DIFFERENT PARTS.

Boring and Bolting Fields..	\$1.75.	Finishing Armature.....	\$1.50
Finishing Shaft.....	1.50.	Finishing Oil Cups.....	.50
Making Single Commutator.....	1.50		
Making Double Commutator.....	2.50		
Fitting Brush Holder and Brushes for Single Current machine	1.50		
Fitting do do for Direct and Altinator...	1.75		
Boring and Turning Armature Bearings.....	.75		

Price for finishing must be added to the price of material in the rough.

COMMUTATORS

No. 8, 24 Segments, 2 $\frac{1}{4}$ long, 2 diam., hole $\frac{1}{2}$ to $\frac{3}{4}$.	\$3.75.	Postage	25c
No. 7, 6, 8, 10 or 12 Segments, as ordered, 1 $\frac{3}{8}$			
Diam., 1 $\frac{3}{8}$ long, hole $\frac{1}{4}$ to $\frac{1}{2}$,	1.50.	"	10c
No. 1, 2 Segments, 1 diam., 1 long, hole 3-16 to 5 1-6	1.00.	"	5c
No. 2, 2 or 3 Segments, 9-16 diam., $\frac{5}{8}$ long, hole $\frac{1}{8}$	35.	"	2c



Miniature Incandescent Lamps.

1, 2, 3, 4 and 6 Candle power.

Price each, 65c. Dozen lots 50c

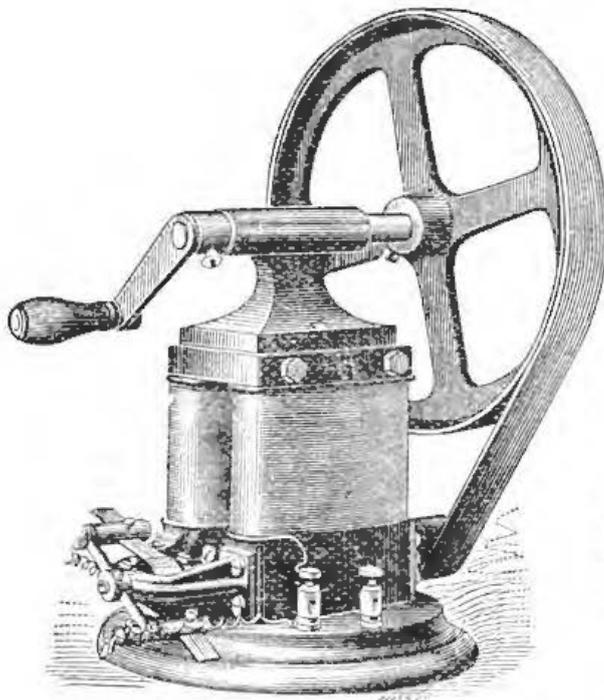
Fan Motor, No. 767.

A small Motor, which will run a 6 inch, 6 blade fan, moveable signs, etc.
 Price of Parts including Wire\$1.75

WILL FINISH PARTS AT THE FOLLOWING PRICES

Bolting and Boring Fields\$.75
 Fitting Armature ready for winding75
 Making Commutator35

We furnish maleable H armature, which makes the construction easier.
 Full instruction, with 15 Drawings, in *Scientific American Supplement*, No. 767, will be mailed on receipt of 10 cents. We make this machine with yokes which makes the construction more simple and better looking than when the Armature bearings are constructed with studs.



Hand Power Dynamo,

No. 161.

Price complete \$18.00

Excellent for school demonstrating purposes, experimenting, &c. Will run one lamp, magnetize steel, operate induction coils, and will for temporary use take the place of 8 or 10 Bunsen cells.

Full description, working, drawings and directions for putting parts together and winding in *Scientific American Supplement*, No. 161, on receipt of 10 cents.

Price of Castings, Screws, &c, \$4.

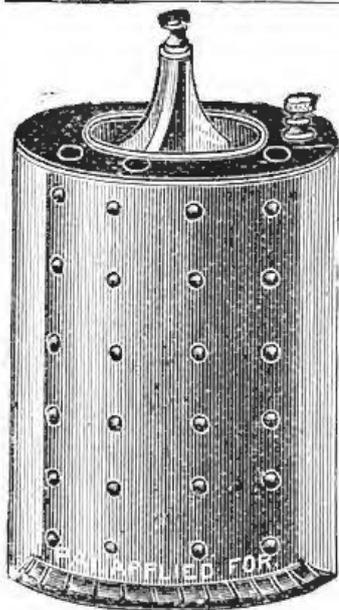
Copper wire for winding, \$2.

PRICE OF SEPERATE PARTS.

Field Magnets .....\$1.25	Fly Wheel .....\$ .75
Brass Plate ..... .25	Armature and Ends... .50
Bearings for Fly Wheel..... .35	Small Pulley..... .15
Crank ..... .15	Hard Rubber..... .15

PRICE FOR FINISHING PARTS.

Fitting Fields .....\$1 00	Fitting Armature.....\$1.25
Boring Bearings..... .75	Fitting Crank, Shaft..... 1.00
Boring and turning the two Pullies..... 1.00	
Making Commutator and Brushes..... 1.00	



The Ideal Bluestone Battery.

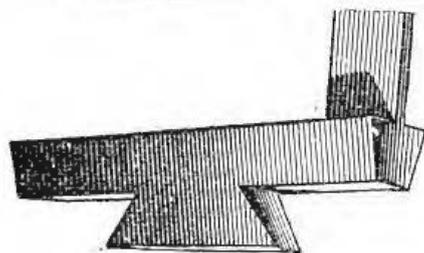
FOR OPERATING SMALL ELECTRIC MOTORS, TURNTABLES, ETC., OR WHERE A CONSTANT STEADY CURRENT IS REQUIRED.

The Long Life Porous Cup Battery.

As a Motor Battery there is no Battery on the market equal to it.

Four (4) Cells will run one fan motor about two months. The motor need not be specially wound; neither are resistance coils nor circuit closing devices necessary when motor is not required for use.

1 Cell complete, 5x7	\$1.75	4 Cells, \$5.00
1 " " 6x8	2.00	4 " 6.00



Copper Commutator Segments

Length of Segments $1\frac{1}{4}$ inches. Suitable for 8 or 16 light dynamos, or small motors where commutator contains from 12 to 32 segments.

Price per Segment 3 cents

By mail, per Segment 4 "

Discount in lots of 100 or more.

Carbon Battery Plates.

ONE-QUARTER INCH THICK.

Long.	Wide.	Cents Each.	Long.	Wide.	Cents Each
3	2	.05	6	$1\frac{7}{8}$	.15
$3\frac{1}{4}$	$2\frac{1}{2}$	.06	6	4	.20
$4\frac{3}{4}$	$1\frac{3}{8}$	.06	7	$1\frac{3}{4}$	.20
$4\frac{1}{2}$	$2\frac{3}{4}$	.09	7	$5\frac{1}{4}$	.20
$5\frac{3}{4}$	$1\frac{5}{8}$	.05	7	4	.30
6	$\frac{5}{8}$	.05	7	$4\frac{1}{2}$	.35
6	$\frac{7}{8}$	.05	8	2	.20
6	$1\frac{1}{2}$	.15	8	$3\frac{1}{2}$	.25
6	3	.20	10	6	.40

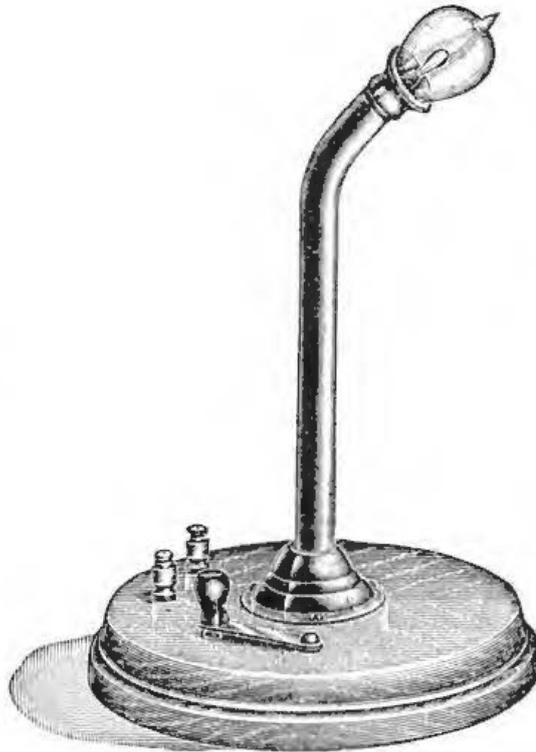
Zinc Battery Plates, 6x10, $\frac{1}{4}$ thick, 50c. each

Brass Fans, for Electric Motors.

6-in. 6 Blade, dipped and lacquered, 55c.	12-in. 6 Blade, dipped and lacquered, \$.85
8-in. " " " 65c.	15-in. " " " 1.25
10-in. " " " 70c.	

The riveting is double. There is no humming. The balance is perfect. The 15-in fan can be used for cealings.

CLIMAX

BATTERY
LAMPS.

Battery Lamps for Sleeping Rooms.

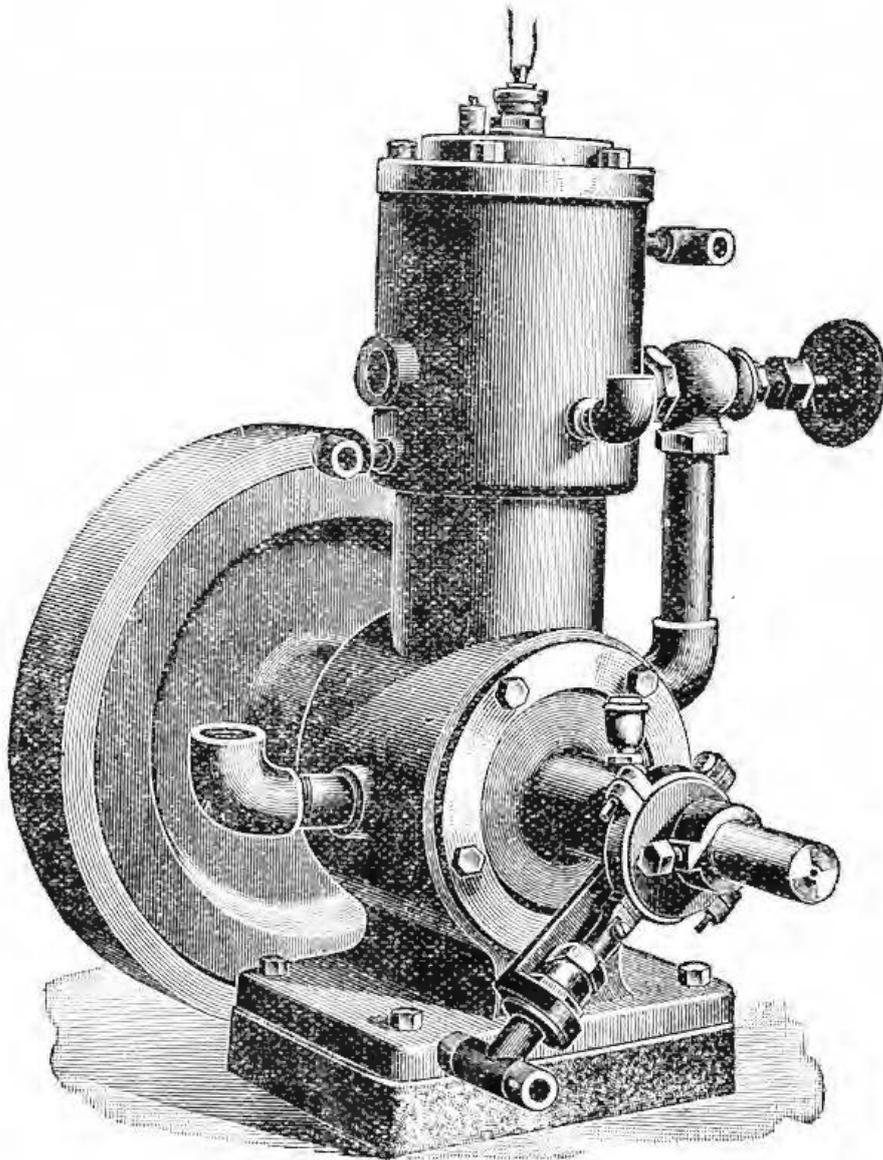
Do not burn an oil lamp all night, as it throws off smoke and carbonic acid gas and burns up the oxygen in the air, and is liable to explode and set fire to the room. With the Electric Lamp you simply turn the switch and the lamp is lighted. Wires can be run to the side of bed, and by placing clock and switch in convenient place, the time of night can be told, by turning switch.

These lamps can be used in the hall, or in any place where a light is needed occasionally.

Dry Batteries will last a year without attention.

Price, as shown in cut with 4 candle power lamp, without battery.....	\$1.50
With 4 Cells of Battery, in varnished hinged lid box....	2.50
With 6 Cells, Battery.....	2.85

Box has Binding Posts attached so that wires can be run from posts on lamp to posts on box.



(Cut shows Marine Engine.)

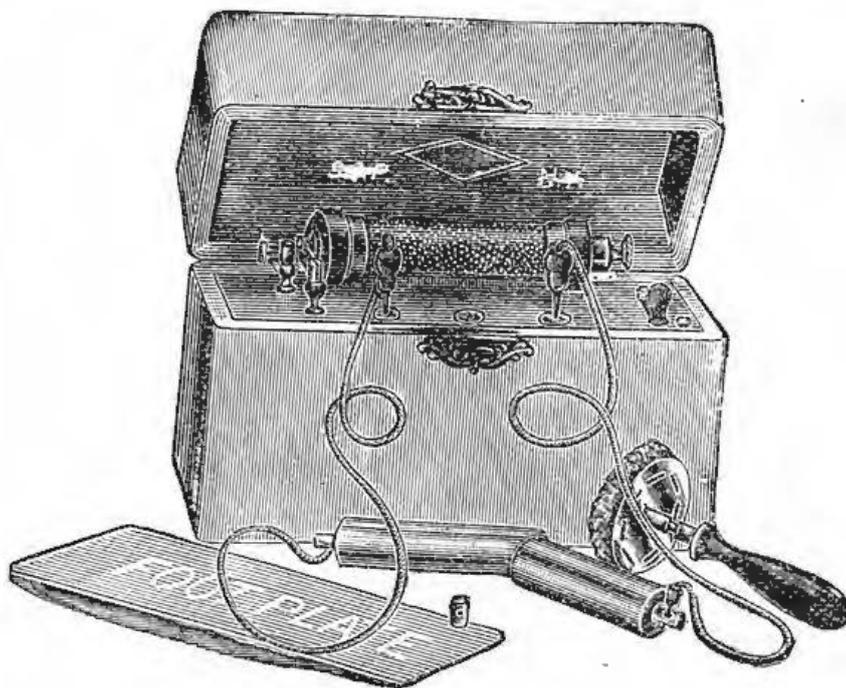
The Palmer One Horse Power Vertical Stationary or
Marine Gas or Gasoline Engine.

SEND FOR GAS ENGINE CATALOGUE CONTAINING COMPLETE LIST OF GAS AND GASOLINE ENGINES, FROM ONE TO SIX HORSE POWER. CASTINGS FOR ONE AND TWO AND ONE-HALF HORSE POWER ENGINES.

COMPLETE LAUNCHES \$178.00 AND UP. BOAT FRAMES.

The Royal Medical Battery.

Price, \$3.75 each.



Uses a Dry Battery.

No Acids Used.

Cut shows Electrodes Sponge, Electrodes and Foot Plate complete.

Why spend your money on belts and other appliances that contain no electricity, when you can buy the Royal Medical apparatus, which is recommended and used by the best physicians.

For Physicians, Patient or Home Use, this is the best and most convenient form of Medical Battery ever produced. Its currents are smooth and even, and their strength can be graded from the mildest perceptible to a power that few can endure. The complete battery is contained in an elegant, highly polished Mahogany case with nickel plated handle. Size, $7\frac{1}{2} \times 5 \times 5\frac{1}{2}$ inches. Weight about 4 pounds.

Three different currents are obtained from the apparatus: The mildest or primary current (alone) by placing the cord tips in the contact holes marked 1 and 2. By placing the tips in 2 and 3, the secondary current (alone) is obtained, and by placing them 1 and 3 the combined currents are given out. The strength of all the currents can be varied by moving the regulator. Full directions with each battery.

For Rheumatism, Sciatica, Neuralgia, etc., electricity has been used for years with great success. For Paralysis and Numbness of arms, hand or limbs, electricity is one of the best remedies and is prescribed by eminent doctors.

For Nervous Diseases, such as Nervous Debility, Sleeplessness, Loss of Vigor or Premature Old Age, electricity stands unrivaled.

The Royal Battery will afford to a company a whole evening of amusement, as it will generate a mile of powerful current and by clasping hands a large number can receive the current at one time.