

MAR 23 1900  
Periodicals Department

# THE PHONOSCOPE

*A Monthly Journal Devoted to*  
**SCIENTIFIC AND AMUSEMENT INVENTIONS**  
APPERTAINING TO  
**SOVND & SIGHT.**

SECOND COPY.

ENTERED AS SECOND-CLASS MATTER AT THE NEW YORK, N. Y., POST OFFICE

Vol. II

No. 6

New York, June, 1898



## Principal Features of this Number



AN IMPORTANT DECISION

WHAT ARE THE X RAYS

SLOT MACHINES

OUR TATTLER

GENERAL NEWS

X-RAY ITEMS

THE FIELD OF ELECTRICITY

SOME OF THE CELEBRATED ARTISTS WHO SING FOR THE  
MICRO-PHONOGRAPH. (Illustrated.)

WHERE THEY WERE EXHIBITED LAST MONTH

NEW RECORDS FOR TALKING MACHINE. New Records  
Manufactured by the Leading Companies

THE LATEST POPULAR SONGS. List of the Latest Metro-  
politan successes

NEW FILMS FOR PROJECTING DEVICES

# GRAPHOPHONES

**T**HE farthest advance made in the art of recording and reproducing sound is represented in the Graphophone. It has been made remarkably simple in its mechanism and easy in its operation, and at the same time its efficiency as a recording and reproducing machine has been increased. It is the simplicity and perfection attained in the Graphophone that has so greatly stimulated the public interest in talking machines. These are facts that dealers should note. The Graphophone is simple, easily operated, durable in construction, comparatively low in price and perfect in its production of speech, song or music. These are the points that sell it and that have made it necessary to vastly increase factory facilities in order to meet the demand.



## Graphophones with Clockwork Motor:

The Eagle Graphophone, \$10

The Columbia Graphophone, \$25

The Bijou Graphophone, \$40

The Universal Graphophone, \$50

There are three Models of Graphophones made with special view to their use in the home: the "Eagle," the "Columbia" and the "Bijou." The "Universal" Graphophone, while especially adapted to the needs of the office, is of so versatile a character that it can be used also for entertainment purposes. In fact, the new Universal Graphophone, equipped with a clockwork motor that will run about an hour at one winding, is an ideal machine for home entertainment or for giving exhibitions.



All Graphophones reproduce musical and other records loudly and brilliantly. There is no difference in this respect between the Eagle (\$10) and the highest-priced machine.

**Graphophones of any model, except the Eagle, are supplied with electric motors when such motors are desired.**

A great device for money-making as well as a great attraction for a store is a Coin-Slot Graphophone. A Coin-Slot Graphophone that runs with a clockwork motor can be set up in any place and be ready to receive nickels and produce music is sold for \$50. The price of a Coin-Slot Graphophone in small cabinet with electric motor is \$65, and the price of the same machine in a large cabinet is \$100. The small cabinet is of convenient size to be placed upon a table or counter. The large cabinet is intended to stand on the floor.



The Graphophone has been found to be a most satisfactory machine for exhibitors to handle. Outfits are arranged especially to suit the needs of the exhibitor. When a large amplifying horn is used the reproductions of music are loud enough to fill large exhibition halls.

This Company's establishment is manufacturing headquarters of the world for all Graphophone and talking machine supplies. COLUMBIA RECORDS have become famous because they are made under the direction of the most expert record makers. Our facilities enable us to supply records unrivalled in quality at less than the cost at which others can make inferior ones.



*Amplifying Horns, Musical and other Records and Supplies of all kinds can be obtained at any of our offices . . . . .*

WRITE FOR CATALOGUE B-N

**COLUMBIA PHONOGRAPH COMPANY** DEPARTMENT B-N

143-145 Broadway, Corner Liberty Street, New York City

Retail Branch: 1155-1157-1159 Broadway

PARIS, 34 Boulevard des Italiens  
CHICAGO, 211 State Street  
ST. LOUIS, 720-722 Olive Street  
SAN FRANCISCO, 723 Market Street

PHILADELPHIA, 1032 Chestnut Street  
WASHINGTON, 919 Pennsylvania Avenue  
BALTIMORE, 110 E. Baltimore Street  
BUFFALO, 313 Main Street



**BETTINI Micro-Phonograph Recorder and Reproducer**  
For the Edison Electric and Triple Spring Motor Phonograph

**BETTINI Micro-Reproducer**  
(Special Model.) For Edison Home Phonograph

The only diaphragms that indeed successfully records and reproduces female voices, flutes, violin, cello, etc. The most natural reproduction, clearer and louder than with any other diaphragms distinctly audible in large hall and theatre and yet with no metallic resonance.

**BETTINI Special Reproducing Horns**  
In corrugated tin and aluminum, all aluminum and also in brass for Bettini Micro-Reproducer

**BETTINI Phonograph Speed Indicator**

**SPECIALTY** HIGH-GRADE RECORDS, HIGH-CLASS AND POPULAR MUSIC BY LEADING PERFORMERS AND WORLD-FAMED ARTISTS . . . . .

A MOST COMPLETE OPERATIC REPERTOIRE

SEND FOR CATALOGUE

Edison's Phonographs, Graphophones and Complete Bettini Micro-Phonograph and Outfits

**BETTINI PHONOGRAPH LABORATORY**

110 FIFTH AVENUE, NEW YORK

From the N. Y. Evening Telegram :  
\* \* \* \* Lieutenant Bettini has a most interesting laboratory in this city, and he has been much favored by the great European artists that have been heard in public in this country, both on the dramatic and operatic stage. I spent a delightful afternoon in his laboratory yesterday, and was astounded to hear in turn a reproduction, perfect in every detail, of the voices of these great artists: Mmes. Calve, Melba and Nordica; MM. Tamagno, Tasalle, P. Plancon, Maurel and Signori Ancona, Nicolini and Campanini, Tomaso Salviini, Coquelin, Sarah Bernhardt, Ellen Terry, Lillie Langtry, Mme. Rejane and her leading man, M. Maury, have each spoken into the Bettini Phonograph. Ex-President Benjamin Harrison and "Mark Twain" have each left a record of their voices behind them.

**EXCELSIOR AND MUSICAL PHONOGRAPH CO.**

57 WEST 24th STREET, NEW YORK

... QUARTETTES ...

... DUETTS ...

The Excelsior Quartette Stands at the Head Their Records are Pre-eminent in Volume Quality and Eveness. They have no Equal



Each Record Is a Gem in Itself . . . . .  
Vocals are a Specialty With Us

S. Holland Dudley is "King Supreme" of record makers, surpassing all phonograph singers in clearness and perfect enunciation.

Roger Harding's negro songs are the very best on the market and his side remark and by-play adds amusement to his records, making them highly amusing.

Wm. F. Hooley, the famous basso, has a field alone. Mr. Hooley's records are, without question, the best in volume, that have ever been made.

BANDS AND ORCHESTRA RECORDS

NOVELTIES

... ORCHESTRA BELL SOLOS, BANJO DUETTS ...

TALKING RECORDS

... CAL STEWART: Yankee Dialect Stories ...

# CUBAN - WAR - FILMS

The Cuban War Pictures were taken by William Paley, representative of Thos. A. Edison, with the co-operation of *The New York Journal* and the assistance of Karl Decker and the *Journal* staff.

We refer by permission of Mr. F. F. Proctor, Prop., and Mr. J. Austion Fyasz, Gen. Mgr., to the exhibitions of these Cuban War Films by the Edison War-Graph, at Proctor's Theatres, New York city.

### THE FOLLOWING ARE THE SUBJECTS WHICH ARE READY FOR DELIVERY:

- No. 1.—THE FUNERAL OF NINE OF THE VICTIMS OF THE "MAINE" DISASTER. (150 foot strip). A most impressive scene, showing nine hearses covered with flowers, the caskets being entirely covered by the American Flag. The whole scene passes before the spectator just as it occurred, and its effect is pathetically realistic.
- No. 2.—U. S. S. "IOWA."—A panoramic view of this majestic ship.
- No. 3.—U. S. S. "INDIANA" COALING AT SEA.—A panoramic view of the "Indiana."
- No. 4.—THE WRECK OF THE "MAINE" IN HAVANA HARBOR.—This is a panoramic view, showing the wreck of the "Maine."
- No. 5.—PANORAMIC VIEW, SHOWING ENTRANCE TO HAVANA HARBOR AND MORRO CASTLE.
- No. 6.—PANORAMIC VIEW OF U. S. S. "DETROIT."
- No. 7.—PANORAMIC VIEW OF U. S. S. "CINCINNATI."
- No. 8.—PANORAMIC VIEW OF U. S. S. "CASTINE."
- No. 9.—PANORAMIC VIEW OF U. S. S. "NASHVILLE."
- No. 10.—"BUCCANEER," WAR CORRESPONDENTS ON BOARD.—The "Buccaneer" is shown proceeding under full steam.
- No. 11.—U. S. S. MONITOR "TERROR" TAKING ON AMMUNITION AND COALING AT DOCK.
- No. 12.—U. S. S. GUNBOAT "MARBLEHEAD."
- No. 13.—SECRETARY OF THE NAVY LONG AND CAPTAIN SIGSBEE, THE HERO OF THE "MAINE," COMING FROM NAVY DEPARTMENT.
- No. 14.—THE "NEW YORK."—The Flagship of the Fleet.
- No. 15.—S. S. "COPTIC" IN A STORM ON THE PACIFIC OCEAN. A thrilling picture of the ocean rising and falling in the great fury of a storm.
- No. 16.—HEAVING THE LOG S. S. "COPTIC" IN A STORM ON THE PACIFIC OCEAN.
- No. 17.—OLD GLORY AND THE CUBAN FLAG, IN COLORS. Our special artists produce a beautiful effect in the coloring. Cost of coloring \$5.00 extra.
- No. 18.—TENTH U. S. INFANTRY. Disembarking from cars at Ybor City and marching to camp 100 feet.
- No. 19.—NINTH U. S. CAVALRY WATERING HORSES. Taken at Tampa. 100 feet.
- No. 20.—TENTH U. S. INFANTRY. 2d BATTALION. 100 feet.
- No. 21.—CAVALRY SUPPLIES UNLOADING AT TAMPA.
- No. 22.—MILITARY CAMP AT TAMPA. Taken from train.
- No. 23.—NINTH INFANTRY BOYS MORNING WASH. Every soldier will appreciate this subject.
- No. 24.—CUBAN VOLUNTEERS MARCHING FOR RATIONS.
- No. 25.—CUBAN REFUGEES GOING TO BREAKFAST.
- No. 26.—TRANSPORT "WHITNEY" LEAVING WITH THE FIRST TROOPS FOR CUBA.
- No. 27.—STEAMER "MASCOTTE" ARRIVING AT TAMPA.
- No. 28.—BATTERY "B" ARRIVING AT CAMP. A battery of the 4th U. S. Artillery.
- No. 29.—COLORED TROOPS DISEMBARKING OF 24th U. S. INFANTRY.
- No. 30.—CUBAN REFUGEES WAITING FOR RATIONS.
- No. 31.—MARINES FROM THE CRUISER "NEW YORK." The best marching scene, showing the "goal." 50 and 150 feet.
- No. 32.—SERPENTINE DANCE IN NATIONAL COLORS. A most interesting effect.
- No. 33.—ROOSEVELT'S ROUGH RIDERS EMBARKING FOR SANTIAGO
- No. 34.—BLANKET TOSSING A NEW RECRUIT.
- No. 35.—9TH AND 13TH INFANTRY BATTALION DRILL.
- No. 36.—LOADING HORSES ON TRANSPORTS.
- No. 37.—WAGON SUPPLY TRAIN EN ROUTE.
- No. 38.—71ST N. Y. VOLUNTEERS EMBARKING FOR SANTIAGO
- No. 39.—TRAINED CAVALRY HORSES.
- No. 40.—TRANSPORT SHIPS AT PORT TAMPA.
- No. 41.—SOLDIERS WASHING DISHES.
- No. 42.—14TH U. S. INFANTRY DRILLING.
- No. 43.—TROOPS EMBARKING AT SAN FRANCISCO.
- No. 44.—CUBAN VOLUNTEERS EMBARKING.
- No. 45.—CALIFORNIA TROOPS MARCHING TO EMBARK.
- No. 46.—TROOP SHIPS FOR PHILLIPINE ISLANDS. 150 feet.

ALL THE GENUINE EDISON AND LUMIERE MILITARY AND NAVAL FILMS CARRIED IN STOCK

## MACUIRE & BAUCUS, Limited, Selling Agents for T. A. EDISON.

TELEPHONE, 2040 Cortland.  
CABLE ADDRESS, "Cousinhood," NEW YORK and LONDON.  
LONDON ADDRESS, WARWICK COURT, W. C., ENGLAND.

### 44 Pine Street, New York City

T. B. HARMS & CO.

HENRY J. HAGEN

JOHN KAISER

## HARMS, KAISER & HAGEN

MAKERS OF

# ❖ ORIGINAL ❖ RECORDS ❖

. . . . 18 EAST 22d STREET, NEW YORK

Bands, Orchestras, Vocal Quartettes, Talking Records and Solos of all description.

We make a specialty of making first-class "original" records of distinguished artists; all records made on Edison Blanks. We handle no duplicates.

Dealers in Phonographs, Graphophones and Supplies

Sole Agents for the Celebrated Kaiser Horn made of paper fibre on correct acoustic principles

. . . . SEND FOR CATALOGUE AND PRICE LIST . . . .

# The Phonoscope

(Copyrighted, 1896)

A Monthly Journal Devoted to Scientific and Amusement Inventions Appertaining to Sound and Sight

Vol. II.

NEW YORK, JUNE, 1898

No. 6

## An Important Decision

The decision of the United States Circuit Court, Southern District of New York, (Judge Shipman) in *American Graphophone Company vs. Loring L. Leeds and Leroy W. Baldwin* rendered June 19, 1898, settles certain questions of prime importance in the art of recording and reproducing sounds. The case was exhaustively presented in a record of seven hundred closely written pages, containing everything done or proposed by Edison and others prior to the invention of Bell and Tainter. The defendants presented, among other proof, three depositions by Mr. Edison himself. The question "who invented the successful talking-machine, including the record engraved in wax-like material, and the reproduction of sounds from such records?" is no longer a question, so far as a judicial determination upon complete evidence can settle it.

From a business point of view, the decision confirms the right of the American Graphophone Company to control absolutely the engraving process of recording, the blank, the sound record, and the reproducing instruments in use at the present day.

On the subject of the anticipation of the graphophone patent by the prior Edison phonograph, Judge Shipman said:—

"From the Edison phonograph much was anticipated. It came into public use in about 1879, but in actual service it disclosed radical defects and it ceased in 1880 to have a position as an article of ordinary use. The record was made by indentation upon a surface of yielding material, such as paper saturated or coated with something like paraffin and a sheet of metal foil, or tin foil, over the underlying sheet. The tin foil received an impression from a rigid diaphragm having an indenting point secured to its center. The great difficulty arose from the pliable character of the material upon which the record was attempted to be made. As stated by Mr. Tainter, the indenting point bent the tin foil down and around the point of contact and distorted the indentations. The record was perishable, was easily obliterated and was easily injured when removed from the machine, and after a short trial the tin foil indenting process fell into disuse."

The essential features of the invention of Bell and Tainter are thus distinguished:

"The experiments of the patentees of the patent in suit commenced in 1881 and resulted in the abandonment of any process of indentation, or of embossing, upon a pliable material and in the substitution therefor of the cutting or the engraving the record in the form of a groove with sloping walls in a waxy substance, without fibre and slightly cohesive, in which a clean cut could be made. It was found necessary that the material should be cut or engraved at the point of the blade, and that it should be capable of being readily removed in chips or shavings. The rigid reproducer was also abandoned and a loosely mounted reproducer was substituted in its place, so loosely mounted that resting against the recording material by gravity, it was guided by the record and followed all the elevations and depressions in the groove. The

material of the record and the reproducer are each necessary parts of the invention. Either part without the other would be ineffectual, but in combination both tend to make an operative and successful instrument."

On the claim that Edison and others had used wax and wax-like material for receiving records of sounds prior to Bell and Tainter, Judge Shipman says:—

"He did not use, unless experimentally, a blank made of wax, or a waxy substance, which was to become, by itself, the sound record to be used for reproduction. It was unnecessary to describe the theories of the French scientists in regard to the material for recording, because while they used wax or stearine or paraffin upon the surface of a recording cylinder made of metal or of glass, none of them attempted to reproduce the sounds from a wax or paraffin or stearine record, but the reproduction was from the metal surface. *The declaration in the specification that 'no one has reproduced sounds from wax record by rubbing a style or reproducer over it,' is true, and it is furthermore true that this combination first shown in the patent in suit, either in method of operation or in the character of its results, converted the noteworthy, but short lived, instrument of Edison into a machine of widespread use and of permanent utility.* Each member of the combination was new, the result was new and was not attained by the application of an old device to a similar subject. (Penn R. R. Co. v. Truck Co., 102 U. S. 490)."

It was contended by the defendants that Edison's British patent of 1888 contained descriptions of the freely-mounted or "Gravity" reproducer, which is an important feature of all talking-machines. Referring to these descriptions the Court holds as follows:

"These descriptions are confessedly vague and it is confessedly difficult to know the interpretation which the writer placed upon some of the words which he uses.

*Bell and Tainter made an actual, living invention, which the public are able to use, and a court is not called upon to struggle to decipher an anticipation in the unfinished work and the surmises of earlier students of the same subject.*

Another important question which this decision sets at rest is the contention that the modern "Soap" blank is essentially different from the "wax-like" material of the original graphophone patent. The judgement of the Court on this question is expressed in the following words:

"Infringement is denied because their apparatus is not intended for use 'with a sound record formed in wax or a wax-like material,' but with the sound record now commonly in use and called a 'metallic soap record,' which is said to have been the invention of Mr. Edison and to have been patented in 1890. The material which is described in the patent is a waxy, or amorphous or slightly cohesive substance which can readily be cut and can readily be removed in chips or shavings. The metallic soap blank is substantially a mixture of stearic acid or stearine and ozokerite, paraffin and ceresine and is a cohesive wax-like material, without fibre. Mr. Edison in two patents Nos. 484,583

and 484,584, in speaking of the phonogram blanks in use in 1892, says 'the surface is ordinarily of wax, or a stearate or hard metallic soap or other wax-like material or composition.' The criticism in regard to the material is not well founded."

The case was argued by Mr. Phillip Mauro for the complainant and Messrs. William Houston Kenyon and A. Parker-Smith for the defendants.

## What are the X-Rays?

It is now three years since Röntgen, professor of physics at Wurzburg, published an account of his discovery of the so-called X-rays. The scientific journals of the world were immediately flooded with articles describing investigations of the remarkable phenomenon. In the year 1895-96 there were at least one thousand of these articles. During the past year this number had dwindled to less than one hundred; and the leading scientific periodical in Germany, Wiedemann's *Annalen der Physik und Chemie*, had just published Röntgen's original article, as if in irony of the futile attempts of the army of investigators to extend the work of the original discoverer. Röntgen seems, indeed, to have anticipated subsequent workers in many points. He found that the so-called rays could not be bent or refracted like ordinary light rays in passing from air to a denser medium; and, apparently with the firm conviction that he had discovered a new manifestation of light radiation, and since he could not discover reflection and refraction of these-rays, he asks: "Are these rays an evidence of longitudinal vibrations of the ether?"

Now, we know that the light-waves move up and down in the ether of space with a motion which is transverse to the direction of their propagation. This transverse motion is like the rise and fall of the waves of the sea. A ship rises and falls with such transverse motion, and does not move to and fro in the direction of propagation of the waves. Such a to-and-fro or longitudinal movement has never been discovered in the case of light, and the suggestion of Röntgen immediately awakened the utmost interest among scientific men. If the X-rays are due to a longitudinal movement in the ether, their absence of reflective and refractive power can be explained. No advance, however, has been made in connecting the mysterious phenomenon with longitudinal movements in the ether, and the general trend of scientific opinion is toward the belief that the X-rays are extremely short waves of ultra-violet light, less than one hundred-thousandth of an inch in length; and no microscope now made could show such waves to the eye; for it is barely possible to separate lines which are one hundred-thousandth of an inch apart. I have said that the general belief is that the X-rays are due to a wave motion in the ether. The experiments, however, which I am about to describe lead me to believe that in the X-ray phenomena we have really two classes, so to speak, of phenomena—one an electrical polarization of matter in space, and another a manifestation of light at surfaces where the electrical polarization is

converted into ordinary fluorescent and phosphorescent light. According to this electrical hypothesis, one should not expect to observe reflection and refraction of the electrical rays in the ordinary sense, and one should expect to treat the light observed where the X-rays strike just as one treats ordinary fluorescent and phosphorescent light.

Let us first consider what we mean by electrical polarization, electrical induction, phosphorescence, and fluorescence. In the magnetic needle we have a body which possesses two poles—a south pole and a north pole. The needle is thus said to be polarized. If we had an infinite number of such needles, without sensible weight, we could stretch a chain from the earth to the sun, and we could call this a polarized chain of particles the subtle vibration of which, under certain conditions, could form a medium of physical communication between a distant body and the earth. Such a polarized chain can also be formed by electrical polarization and induction. If we suppose that the earth and the sun are both electrified, then an infinite number of pith-balls, without sensible weight, existing in space between the earth and the sun, would arrange themselves by electrical polarization and induction, also in invisible polarized chains, between these bodies, and the direction of these chains would constitute invisible lines of electric force. The slightest quiver in these chains or lines of force would constitute an interchange of energy through illimitable space. When these lines of force become sufficiently intense, and when they undergo a rapid change at the surface of certain substances, these substances exhibit fluorescent or phosphorescent light. We are familiar with phosphorescence in the case of the brimstone match, and we can perceive fluorescence in kerosene oil by looking at the surface of this oil obliquely. The principal difference between fluorescence and phosphorescence resides in this; phosphorescent bodies glow in the dark after having been exposed to light (even a piece of ordinary paper is phosphorescent), while fluorescent substances in general cease to exhibit light in the dark.

Now the X-rays excite both fluorescence and phosphorescence very powerfully, and when they were discovered many investigators endeavored to discover them in ordinary sunlight, and in the electric light, which also excites these states. These attempts were failures. Nevertheless, many believe that ordinary sunlight is due to the conversion of the electrical energy of the sun, transmitted across the ninety millions of miles of space by electrical polarization or induction, into intense fluorescent and phosphorescent light, by an agency similar to that of X-rays. I mention this bold hypothesis to show how far-reaching the mysterious phenomena of these rays appear to many minds. These rays are produced by electrical currents, and the question also arises: Are they given off from our telegraph- and telephone-wires when messages fly over these wires—not sensibly, but even in a minute degree? The experiments which I am about to describe were instituted for the purpose of studying the effect of the X-rays on the electrical polarization of matter which I have endeavored to describe. If we could stretch a telegraph-wire between the earth and the sun, and send powerful current of electricity over it, could we fill the extremely rarefied space around the wire with X-rays? Would they be given off from every element of such a conductor when the electrical charge in the conductor was made to fluctuate? Since it is impossible to realize such an experiment, I resolved to imitate the conditions as nearly as possible in the laboratory. To do this required the expenditure of enormous electrical force. Instead of stretching a wire from the earth to the sun, I narrowed, so to speak, the distance between these bodies to six inches, and, inclosing a wire of this length in a

glass vessel, I imitated the vast region of rarefied space by pumping out the air from this vessel. This was the form of vessel in which I studied the manifestation of the X-rays. The electrical apparatus used for the production of the intense electrical forces is probably the most powerful that has ever been used to study these rays. Electric discharges varying in length from one inch to eight feet can be studied by its means. The source of the electricity consists of ten thousand storage-batteries; and the effect of this battery is so heightened that an electric force of over two million volts can be obtained. The ordinary electric-arc street-lamp is generated by means of an electric pressure of less than one thousand volts. The energy in the X-rays, however, does not manifest itself by a dazzling light. Its light-manifestation is a weird yellow glow which barely enables one to obtain a photograph of the tube in which it is generated. Its energy is shown by the extraordinary activity which is given to small particles of matter. By means of the electric discharge of high pressure or electromotive force one can see through timbers a foot thick, and also see the beating of the human heart through the flesh.

Immediately on sending such powerful discharges through the form of vessel I have described, I discovered that the rays were generated from every point of the six inches of wire. They made the walls of the tube gleam with a weird, fluorescent light, and, penetrating to the outer air, enabled me to detect their presence by photography. Our flight of imagination in picturing a telegraph-wire stretching from the earth to the sun, giving forth mysterious rays into space, has therefore a basis of fact.

The continuous wire tube may have various forms. One of the most interesting, from a scientific point of view, is a spherical bulb through the center of which runs a straight, continuous wire at the center of which is a little mirror of aluminum. When a powerful electric discharge is sent along this wire at a certain stage of the vacuum in the tube, the mirror reflects a beam like a search-light to the walls of the tube, and the point where this beam strikes glows with a phosphorescent light and emits the X-rays. Moreover, if one should stand on an insulated stool and touch with the finger this spot on the outside of the bulb, one could reflect back another search-light of X-rays to the opposite side of the bulb, and throw a shadow of the mirror and the wire on the inside of the bulb. This shadow can be thrown to one side or the other, according to the position of the touching finger. These so-called search-lights contain the X-rays, for they show all the manifestations of the latter, such as their power to pass through thin sheets of aluminum, to produce light in fluorescent substances, and to exhibit the skeleton of the hands. Now these effects can be produced by making the continuous wire either positive or negative—that is, by making it either an anode, the way in, or a cathode, the way out. We have hitherto thought of the cathode rays as a phenomenon of the cathode—that is, of the terminal in a Crookes tube by means of which the discharge is conducted out of the tube; and we have never spoken of anode rays. My experiments show conclusively that the term "cathode rays," which are accompanied by the X-rays—the latter probably being a heightened manifestation of the former—is only a limited name for a more general phenomenon which I am tempted to call electrostatic rays. The anode rays have all the qualities of the cathode rays; they are not, however, so powerful.

It is highly important that the investigator of the phenomena of the X-rays should himself exhaust the Crookes tubes, and should study their manifestations at different stages of the rarefied medium in which they are produced. The effects

produced by electricity in such tubes as the air is gradually withdrawn are very beautiful. At first there is a bright pink glow which fills the entire tube; then there are cloud-like masses of white light, which float like feathers through the tube; then comes a yellow fluorescent light which makes the whole interior of the tube luminous. This last effect is produced by the cathode and anode and X-rays, or by what I prefer to call the electrostatic rays. For a time there was a long discussion in regard to the source of the X-rays. Some maintained that they came only from the cathode, others that they proceeded from the anode, and others that they emanated from any surface where the cathode rays struck. My experiments show that the contestants were like those who are said to have disputed whether a shield was gold or silver. Each contestant saw only one side of the shield. In truth, one side of it was gold and the other silver. There are anode rays as well as cathode rays, and either produce by electrical induction a manifestation in any desired direction. This inductive effect is shown by touching the Crookes bulb containing the continuous conductor with the insulated finger or with an insulated piece of metal.

The continuous wire tube has shown that lines of electric force radiate from the surface of a conductor in a rarefied medium, and produce the X-rays at every point of this conductor. This is true whichever way the electric current flows in the conductor; with such a tube the distinction of cathode rays disappears, and we have a more general manifestation of X-rays.

While trying a great variety of forms of tube, I came across many interesting manifestations of electrification outside the tubes. One of these is of practical interest to surgeons and physicians; for I obtained what is called the X-ray burn by electrification when there were no X-rays which could be detected. I say by electrification, for the burn was evidently produced by the impinging of the electrostatic lines of force on the skin of the hand. The latter was exposed to the neighborhood of a tube containing a continuous conductor. At a certain stage in the vacuum, before the X-rays could be distinguished, peculiar forked brush discharges proceeded from the tube; and these discharges, impinging on the skin, produced the peculiar so-called X-ray burn, which often results from exposure to the X-rays. The skin shows a peculiar red tint, especially after exposure to the cold; it is extremely irritable, and after about three weeks the surface peels. The effect is like that of a severe sunburn. These forked brush discharges can pass through sheets of glass half an inch thick, and leave their impression on photographic plates which are carefully insulated from the ground, and which are shielded from all light in plateholders. When these photographic impressions are examined they resemble in a striking manner the centers of disturbance on the burnt hand when the latter are examined with a microscope. The photographs resulted from minute electrical discharges on the surface of the plate, and the burn was also in this case, and probably in all cases, due to similar discharges on the skin.

There is another remarkable phenomenon shown by the X-rays, which further supports my belief that these rays are a manifestation of an electrical disturbance in space. It is well known that an ordinary electrical current cannot pass through a vacuum. At a certain degree of extreme tenuity of the air or any gas the so-called vacuum stops electrical discharges, just as if a piece of glass should be interposed in an electrical circuit. If the X-rays illuminate such a vacuum, however, an electrical current can be made to pass with extreme ease over spaces which had completely stopped its flow. No effect of ultra-violet light with which I

have been able to experiment can produce a similar effect. The phenomenon is an electrical one.

The phosphorescent effects produced by the X-rays also support the electrical theory. Whenever such rays strike certain crystals, the latter shine vividly in the dark. The X-rays can lead one to the spot where there is a Crookes tube entirely concealed from view behind a thick door, or behind timbers a foot thick. All that is necessary to discover such rays is a diamond ring and a darkened room. As one approaches the hidden tube the diamond emits a lambent flame.

The phosphorescent effects produced by the X-rays can also, in certain notable instances, be produced by directly electrifying the phosphorescent bodies, even when the most intense ultra-violet light fails to produce any trace of phosphorescence.

Have we, then, answered the question: What are the X-rays? I believe that the experiments which I have described support the theory that there are really two classes of phenomena—one an electrical disturbance in a medium, another the conversion of this electrical disturbance into fluorescent and phosphorescent light at the surfaces of suitable screens or in the body of suitable crystals. My experiments certainly show that there are anode rays as well as cathode rays, and that both are subject to the well-known laws of electrical induction. One should not expect, therefore, that the electrical rays or lines of force should be reflected and refracted like waves of light. I believe that when we have answered the question: What are the X-rays? we shall be able to state more exactly than at present the relations between light and electricity. The question, therefore, has become one of the most important in physical science.—John Trowbridge, in *Century Magazine*.

## Our Tattler

"Pardon me," said a colored man to Harry A. Sackett, as he walked into his kinetoscope and phonograph store at 1381 Broadway on Saturday. "Pardon me, but am I right in resuming that it is possible to make a shadow picture of one of my descent that will cause his hair to seem straight?"

Mr. Sackett, whose business includes cutting silhouettes, replied that it was.

"Sure, now?" asked the visitor. "I done see your minettascope dance, and it look like the ladies was kicking fire into your eyes to keep a man from seeing what he done paid good lawful and legitimate money to see."

"The silhouettes," said Mr. Sackett, "are not cut out by the kinetoscope. I cut out the silhouettes, following the outlines of a shadow cast on a screen."

"Here, man!" exclaimed the stranger. "Here! Wait! Just you wait! And that ain't all. I done listen to your talking repliances. There ain't no satisfaction retained from them, neither. Squawk like a parcel of blackbirds in a cherry tree. There ain't no man to make a fool of me three recessional times. Minnettascopes for one, talking machines for two; you want to travel very circumspectious before you make it shadow picture for three."

"If your picture is not satisfactory," explained the artist, "you will not have to take it."

"You see you make it so; that's what you do!" said the negro menacingly. "I want it so it will show me side face for my face and full front cross my shoulders."

"Very well," said the silhouette man.

"And get that hair straight," said the other, settling himself before the shadow screen.

"Perhaps you better draw in your lips," suggested the artist. "They will go better with straight hair if you draw them in."

"I s'pect you can cut 'em off easier than I can draw 'em in," replied the colored man. He threw back his head and puffed out his chest. He did not relieve this haughty tension until the silhouette man put the finished cutting in his hands, not without pride in its tactful combination of accuracy and omission.

"Yah," howled the sitter as he took the card in his hand and surveyed the silhouette. "I ain't to be insulted by no man. I done warn you that, too. Ain't I told you make hair straight and cut lips off—and what you done? You done made my face black, like it was the under side of a crow's wing. You cut that out white and you cut it out quick, or there going to be trouble right here. You lightning change fakir, you ain't going do me with none of your fresh tricks, that you ain't."

"Look here," said Sackett, "you be careful."

"Who be careful? Who? You go say be careful to yourself. Gimme a white face or let me go on out of here."

Sackett refused to make a white silhouette, and the man went out, apparently disgusted. Ten minutes later three black faces appeared at his door, and three voices chanted in chorus:

Shadow maker, tall and thin,

Whoever saw a shadow of him?

Mr. Sackett is thin and tall. He took the coup-let as a personal reflection. The gathering populace on the sidewalk laughed and jeered in a way that showed they shared his opinion. His sorely taxed temper gave way. He sallied out to the door. The negroes ran a little way and then pelted him with stones. With a whoop of rage the silhouette man gave chase. He caught his former sitter and held him until relieved by a policeman. At the station the colored man said he was Herbert Pointer. When the case came up in the West Forty-fourth Street Court, Pointer was very humble. He said he would like to end the matter with an apology, but Sackett wouldn't withdraw the charge and Pointer was held for further examination.

Some modern inventions are a boon to humanity and others are not. The phonographic clock which has just been launched upon the market in Germany belongs to the latter category. One must admit the alarm clock in the theory of modern life, but a phonographic alarm clock adds insult to injury. If one must be wakened one must; but how can one turn over and take the final luxurious forty winks when the depressing programme of a busy day has been shouted into one's ears? Things that seemed natural and practicable the night before present an appalling front in the early morning; and the breakfast hour, announced in strident tones, is much more insistent than when suggested by an impersonal metallic clang.

Some valuable possibilities the new invention does possess. The housewife needn't laboriously explain breakfast details to the servant at night, and find the next morning that all important points have been conscientiously forgotten. She sets the phonographic alarm for an early hour, talks directions into it, and the next morning the cook is wakened by a stern voice telling her exactly what is expected of her in regard to breakfast preparation.

Paterfamilias, too, can work the combination. No more will he sit up until his pretty daughter's caller goes home and resort to time-honored hints to hasten the departure. He will not slam shutters and noisily lock doors and bid the other members of the family good night at the top of his voice and drop his shoes on the bedroom floor with a force that shakes the parlor chandeliers, and call down to the daughter that she must be careful about turning off the gas and locking the door. He will never be goaded by a sense of parental

duty into walking into the parlor and making a scene and reducing the daughter to a point of tears. Oh, no; he will simply set the phonographic alarm for the hour when he thinks young men should end their calls. Then he will go serenely to bed; and when the fatal hour strikes a specimen of the old gentleman's finest irony will be hurled at the offending guest. Exit young man. The maiden wrathfully weeps alone.

The Gusher.—Those Spaniards have no idea of civilized warfare.

The Guyer.—Not a bit! I understand they begin fighting before the kinetoscope is in position.

## Slot Machines

Erich Schmidt and Adolf F. Schneider, of New York city have invented a coin-operated lock for wheels. The object of this device is to provide means whereby a bicycle rider may securely lock his wheel by dropping a coin into a proper receptacle. The casing of the device comprises a keeper provided with a gate. A lock is carried by the casing, the bolt of which is adapted to engage the gate of the wheel-keeper. A lock-lever prevents the withdrawal of the key from the lock and is adapted to receive a coin from a coin-receptacle. A plunger is arranged to remove the coin in a direction to raise the lock-lever from the key so as to enable the wheel to be removed.

Policemen of the liquor squad recently visited the lobby of the Park Theatre and seized eight nutoscopes which were on exhibition there. Two men were arrested, charged with exhibiting the nutoscopes, which are said to have been of an improper nature.

## Where They Were Exhibited Last Month

### Biograph

Wonderland, Detroit, Mich.; Keith's, Boston, Mass.; Hopkins Theatre, Chicago, Ill.; Keith's Theatre, New York City; Nickelodeon, Milwaukee, Wis.; City Park, Denver, Colo.

### Graphoscope

Park City Theatre, Bridgeport, Conn.

### War-Scope

Tony Pastor's Theatre, New York City; Pleasure Palace, New York City.

### Cineoscope

North School Building, Lancaster, O.

### Veriscope

Grand, Pueblo, Col.; Holliday St. Theatre, Baltimore, Md.

### Cinematograph

Eden Musee, New York City.

### Cineograph

Atlantic City, N. J.

### Projectoscope

Y. M. C. A., Zanesville, O.

### Animotoscope

Y. M. C. A., Wilkesbarre, Pa.

# THE PHONOSCOPE

COPYRIGHTED 1396

PUBLISHED MONTHLY BY

THE PHONOSCOPE PUBLISHING CO.

4 EAST 14TH STREET, NEW YORK, U. S. A.

RUSSELL HUNTING, Editor.

EMIL IMANDT, Manager.

## SUBSCRIPTION:

United States and Canada . . . . . \$1.00 per year  
 Foreign Countries . . . . . 1.50 "  
 Single Copies . . . . . 10c. each  
 Back numbers can be obtained at regular rates.

## ADVERTISING RATES FURNISHED ON APPLICATION

All communications must be addressed to The Phonoscope Publishing Co., 4 East 14th Street, New York City, to insure prompt attention.

THE PHONOSCOPE is the only journal in the world published in the interest of Talking Machines, Picture Projecting and Animating Devices, and Scientific and Amusement Inventions appertaining to Sound and Sight.

Correspondents in London, Paris, Berlin, Amsterdam, Madrid, Alexandria and Constantinople, Australia, South America, Central America, Canada and 108 cities in the United States.

The Publishers solicit contributions from the readers of THE PHONOSCOPE, and suggest that any notes, news or items appertaining to sound and sight would be acceptable.

Roger Harding is turning out some fine negro records.

Cal Stewart's talking records are meeting with great success at the watering places.

Liepmann Kaiser, of the Excelsior Phonograph Company, has just returned from another very successful trip.

Dan W. Quinn, the popular baritone, has recently added a number of new songs to his repertoire.

F. Hooley is making a hit with "The Soldier and the Man," "The Lost Chord" and "Down Deep in the Cellar."

Joseph Cullen, of Cullen & Cullen, the popular banjoists, was in town recently perfecting arrangements with the various phonograph companies.

A new stand for holding any size horn has been placed on the market and deserves a large sale. It can be attached to the smallest machine and does not take up any room.

John T. Williams, Jr., has accepted a responsible position with the Southern New England Telephone Company. He was formerly connected with the American Graphophone Company.

The Lyric Phonograph Company, despite the dull season, are receiving some very fat orders, especially from foreign and private parties, for which they receive the full catalogue price.

We understand from reliable information that the Columbia Phonograph Company have concluded to keep their musical department in New York city and not remove it to Bridgeport, Conn., as was originally intended.

G. M. Van Horn, of the Excelsior Musical Phonograph Company will place ten Multiplex Phonographs in the Food Show, which is to be held in New York city. His purpose is to show the quality of their records.

Since the Phonograph Sapphire Company have removed to New York City, they have been kept busy furnishing sapphires for the trade. They have received several orders from abroad and are about to place something new on the market, but are unwilling to disclose it at present.

A small party comprised of Len Spencer and his brother Harry, accompanied by Mr. and Mrs. V. H. Emerson, are paying a very enjoyable visit in Washington, D. C. They are the guests of Mr. Spencer's mother, Mrs. Sara A. Spencer, of the Spencerian Business College.

What Matt Sheenan does not know about phonographs is not worth knowing. He had been in the employ of the Edison Phonograph Company for eight years and is now permanently situated with the Norcross Phonograph Company. Aside from being a good machine hand he makes a first-class salesman, and is always willing and obliging.

Among the passengers who were lost on the "La Bourgogne" were Mr. and Mrs. Anthony Pollok. Mr. Pollok's name is one well known in talking machine circles, as he took prominent part in the litigation over the Graphophone patents. He was the senior of the firm of Pollok & Mauro, attorneys for the American Graphophone Company. He was among the most distinguished and successful patent lawyers of the country.

A traveling phonograph operator giving his name as Will Henderson was recently ordered out of Colorado Springs, Colo., by the police. He has been exhibiting a series of pictures purporting to be representations of the burning and lynching of Henry Smith, the negro, at Paris, Tex., several years ago. Henderson used a phonograph in connection with the pictures and the sounds reproduced were said to be the cries of the negro as he was roasting to death.

Mr. A. T. Harms, of Harms, Kaiser & Hagen, is spending his vacation at his farm up the state. A week or so ago he met with rather a serious accident, having slipped on a board in the record room and sprained his knee cap, which will somewhat mar the pleasant time he expected to enjoy during his vacation. He has been kept very busy in the theatrical business and this together with his record-making plant and music publishing business, has kept him hustling of late. Mr. Henry J. Hagen, of the above firm has been enjoying his vacation for the past two weeks at Asbury Park. Mr. John Kaiser intends to spend his vacation on the shores of Maine and says wherever he hears the sound of a phonograph he will (as Casey says) run like the Devil.

Messrs. Reed & Dawson, of Newark, N. J. who have for sometime been in the retail business, have concluded to sell at wholesale. Several months ago we mentioned the fact that Mr. T. H. Reed turned out some very good violin records. Since then he has made improvements. Being a musician and playing three different instruments perfectly, he certainly understands the musical part of a record, and he will no doubt be successful. While our representative was in his laboratory recently he heard a few of his violin, violin and piano and violin, piano and cornet records which he considered excellent. Mr. Reed has brought out three new aspirants in the record business: Mr.

G. A. Simonds, Baritone, F. E. Nichols, Baritone and A. C. Sweet, Cornetist, and judging from their first attempt there is no doubt but they will rank among the leaders.

The war between the supporters of the Tesla and Edison systems of electric lighting has broken out in a new place, with first blood for the Tesla adherents. The Kings County Electric Light and Power Company, which works under his patents, underbid by four cents per lamp, the Edison Electric Illuminating Company. It will in all probability secure from Commissioner Kearney the rights for the borough of Brooklyn, which will amount to about \$750,000 per year for street lighting, but way beyond that it will gain the right to open streets and string wires all through the borough.

The men behind the Tesla idea, who have spent \$2,000,000 in the last year getting a plant ready, include Roswell P. Flower, Felix Campbell, William Berri and Seth L. Keeney. The Edison Company has been supplying Brooklyn for four years, and they are not going to see their plant go to waste without a struggle.

In the period of a few hours came gladness and sorrow into the Edison home. Sunday was a day of anxiety to the illustrious inventor. It terminated in a great joy, tempered by keen grief. The cause of joy was a stranger at Lleyellu Park—a small pink individual in a befrilled slip, nestling in Mrs. Edison's arms. The cause of grief was a soldier's form lying stark under the torrid sun of Santiago.

On the day that brought another baby Edison into the world, news came that Mrs. Edison's brother had died. Theodore Miller was one of the Rough Riders. When war was declared, he was studying law in this city. A son of Lewis Miller, of Akron, Ohio, and a last year graduate of Yale, he had every prospect of entering upon a successful career at the Bar. But his patriotism was too strong to resist the call to arms, and he was one of the first to enlist in Roosevelt's famous troop. Like his brother, Assistant Engineer John V. Miller, of the Marblehead, he went to the front.

There was no thought of bereavement in Edison's home at West Orange, N. J., on Sunday morning. All thoughts were centered on the invalid, his second wife. A doctor was in the house, and the establishment was controlled by a nurse, who wore an air of the greatest importance. Servants rushed hither and thither without paying the slightest attention to the inventor, who paced the floor of his study in solitude and gloom.

Such was the situation when a telegram arrived. It was very brief, merely announcing to Mr. Edison that his wife's soldier brother was dead. No explanation was given, and Mr. Edison could only conclude that Theodore Miller had succumbed to wounds received in the furious skirmish in which the Rough Riders were engaged recently.

It was disquieting news to him. It seemed an ill augury for that most fateful of days. At the best, it could not but tinge with sorrow the rejoicing of a young mother, for he knew that his wife was deeply attached to her handsome brother.

But bad news was forgotten when the quivering note of a babe fell on the inventor's ear. Thrusting his head from the door, eager for news, a passing handmaid assured him that "it" was a boy, and a beauty. Not long thereafter he was at his wife's bedside, holding her hand and admiring the morsel of an Edison which the nurse had decked out in the soft white garments prepared for him.

Not for many hours thereafter did he pluck up courage to communicate his news to the mother. She wept softly, but it seemed to comfort her to hold her child the tighter to her bosom.

## X-Ray Items

### Does Electric Light Affect the Brain?

The electric light, universal and indispensable to human progress, has brought a new terror to mankind.

The incandescent lamp with the bulb, hanging over every desk, found in every office, every workshop, every factory, every public building, at our elbows, over our heads, carries in its rays, according to the belief of many well-known physicians, the germs which shall slowly, imperceptibly affect the mind.

Every electrician, from Edison and Tesla downward, knows that the ultra-violet ray, which we laymen know as the X-ray, enters infinitesimally into the composition of the incandescent light. The proportion of the violet ray is of the minutest, but in this incandescent light hanging over the desk or the bench at an altitude of a few inches above the worker's head, there is sufficient of the violet ray to gradually destroy the nerves of the scalp and thus lay the foundations of nervous disorders and resultant insanity.

The man of the business desk, the mechanic, the professional man, suffering from nervous headaches, may suppose the trouble to be intercranial, when, as a matter of fact, the scalp nerves, both numerous and delicate, being exposed for many hours each day to the rays of the electric lamp, have been weakened and finally destroyed. More than a decade has passed since the electric light first came into universal use. In these ten years the scope of action has increased exactly five hundredfold. Of just how many professional men, bookkeepers, typewriters and others have been driven to insanity and death under the gentle penetrating influence of the violet ray there is no clear record, although many physicians hold that at least fifteen per cent. of the total number of cases of nervous prostrations recorded each year may be attributed to this cause.

Dr. Alfred C. Crain, a physician who has obtained a wide professional reputation in his treatment of nervous disorders, is responsible for the discovery of newest among causes of insanity.

"There is insanity in the ordinary electric incandescent light," says Dr. Crain, "as there is gold in the water of the ocean, and the germ of many nervous disorders masquerades as the violet ray."

"I have arrived at this conclusion only after long study of the subject, and after minute, painstaking collection of the necessary data. Of what this data consists," said the doctor, "I am not prepared to tell. I feel that my discoveries should first be disclosed to the medical press and to my professional brethren.

"When the electric light first replaced oil and gas," continued the doctor, "a number of experiments were made with the view of proving that the light had no effect upon the brain or upon the eyes. But these experiments were not sufficiently extended. It was impossible to form any conclusion regarding the cumulative effect of certain of the component rays of this light.

"As physicians administer minute quantities of drugs to counteract the effects of organic disease, so the violet ray absorbed by the nerves of the scalp will continually destroy them. That the X-ray destroys animal tissues was long established."

In conclusion Dr. Crain cited two of the test cases that had fallen within his own experience. A young girl undergoing a course of study with a view to entering Vassar College was seized with severe headaches and nervous depression. Dr. Crain, treating the case as one of ordinary caliber, prescribed complete rest, and incidentally administered tonics. The patient's condition grew steadily worse.

Dr. Crain finally discovered that the girl had been in the habit of reading at her desk with an ordinary incandescent droplight that hung within a few inches of her forehead.

"Stop the use of the light," said Dr. Crain and the headaches vanished.

A second case cited by Dr. Crain was that of a newspaper artist attacked by neurasthenia. The substitution of a student's lamp for the powerful bulb light provided by the management of the newspaper removed the trouble.

Dr. Cyrus Edson, admittedly one of the first medical authorities of the world on the properties and qualities of the violet ray, accepts Dr. Crain's view in a modified form.

"The cumulative effect of the X-ray upon the nerves," said Dr. Edson, "has never been scientifically observed. I had a case, however, in which I suggested to the patient, a public official in the City Chamberlain's department, that he should alter the arrangement of the lights at his desk in order to be relieved from headaches. I know that the X-ray will destroy animal tissues. There are many established cases in which the hair, beard and eyelashes fall out from its effects, and the effect of the X-ray is identical with that of great heat. Undoubtedly the subject is worth serious consideration, because while the X-ray itself may not directly penetrate through the scalp to the brain, it is reasonable to suppose that it may affect the nerves of the scalp, and a nervous disorder frequently degenerates into complete mental collapse. The whole subject should be threshed out as being an important and integral part of inquiry as to the effects of modern civilization and modern appliances upon the growing proportion of mental and physical disorders."

Dr. Robert Safford Newton, the criminologist of the District-Attorney's office, recalls cases in which elevator men had complained of headaches while riding in cars in which incandescent lights were used. With the removal of the lights the headaches disappeared.

Dr. Edson, Dr. Crain and several medical experts on nervous diseases have been busily making extensive experiments in this new field of investigation, and some interesting and startling results may presently be expected.

### False Gems Detected by Roentgen Rays

Imitation diamonds can be quickly and readily distinguished by means of the X-ray. Under the Roentgen radiation diamonds are extremely transparent, while the highly refracting glass used in imitations is almost perfectly opaque. This fact, put strikingly in evidence by recent experiments of Sir William Crookes, makes it possible for dealers and purchasers to detect false gems.

It was while experimenting with various substances seen under the Roentgen rays that this interesting and valuable discovery was made. Sir Walter Crookes, as a result of his investigation has produced a photograph in which a black diamond, set in a gold frame, and a large Delhi diamond, of a fine pink color, together with an imitation in glass of a pink diamond, are shown as they appear when exposed to the X-rays for a few seconds.

The result, as pictured by the *Leisure Hour*, of London, shows that the diamonds permitted the rays to pass through them, while the glass stopped them almost completely.

As the experimenter explains, it is not essential that a photograph should be taken in order to exhibit the difference of transparency of diamonds and glass for Roentgen radiation, for if the three objects had been placed between a source of the rays and a phosphorescent screen the shadow would be thrown upon the screen and appear as the objects do in the photographs.

## The Field of Electricity

### National Rivalry in the Development of Electrical Equipment \*

While many electrical corps have been formed for active service in the field and on the water, the necessity of having an advisory body to which the government could submit matters of importance in the prosecution of war by electrical means, of offense and defense, has only just taken form. Willard E. Case has submitted to the council of the American Institute of Electrical Engineers a suggestion for the organization of such a bureau, which would be recruited from the universities, colleges and electrical societies, of the country. While entirely subordinate to the regular governmental electrical staff, it should ably supplement that body, as it would be drawn from the highest intellectual sources available in the electrical field. It would, in fact, be the "brains" of electrical war prosecution, in contradistinction to the "hands" which would be represented by those in active service at the front. While America has gone beyond any other country in the construction of electrical war appliances, the whole field is yet in a tentative state. Many apparently valuable inventions have yet to be put to a practical test and many problems have to be solved before much electrical machinery on which great hopes are now resting will be reduced to the plane of assured and standard practice. The solution of many of these problems, by the aid of the experience gained in the present conflict, could with advantage be entered on by the proposed bureau, which could also receive, pass upon and if necessary recommend for the adoption of the government any new inventions for increasing efficiency of the army or navy and promoting the effectiveness of measures for the defense of the country.

E. George Tidd, in a paper on the future prospects of electricity on board ship, declares that in nearly all marine electric installations sufficient consideration is not given to the question of providing adequate spare or duplicate plant. Every boat that is used for passenger traffic, except, perhaps, the very small ones, should be fitted with at least two sets of plant. By this is meant not absolutely duplicate plant in all cases, but a safe rule is to have the additional set capable of running about two-thirds of the entire number of lamps. The ordinary plant will thus be equal to all the work, except in case of accident, when the other plant will come in. Mr. Tidd anticipates before long a very large increase in the number of electric motors used on shipboard, and expects to see the day when electric wires will replace all the steam pipes that at present hamper a deck for the use of winches, etc. He strongly impresses upon marine engineers the importance of gaining some slight knowledge, at all events, of electrical matters. A dynamo is one of the simplest of machines to work, and does not need the constant attention that must be given some other kinds of machinery; but its operation must be understood, and it requires some care to keep it in order.

While the American navy is electrically the best equipped in the world it has no supplementary staff with sufficient technical knowledge and skill to take hold of the electrical side of operations in fighting time. In this regard England is ahead of us, for with electrical resources, both in the army and navy, much inferior to our own, it has organized an electrical engineer volunteer corps, which is already in training.

[NOTE.—Lack of space prevents us from finishing this article. Will be concluded in our next issue.]

# Some of the Celebrated Artists Who Sing for the Micro-Phonograph



Miss Lizzie B. Raymond



Miss Dora Valesca Becker



Lady X



Miss Gertrude Silva



Mlle. Lora



Private Office in the Bettini Phonograph Laboratory in New York.



Mr. Henri Marteau



Mr. Emilio de Gogorza



Mlle. Yvette Guilbert



Sig. Campanari



Sig. Alberto de Bassini



Miss Marie Engle



Mr. Hans Kronold



Sig. Tomaso Salvini



Mme Chalia



Mme. Sarah Bernhardt



Sig. L. Fregoli



Mme. Clementine de Vere Sapio



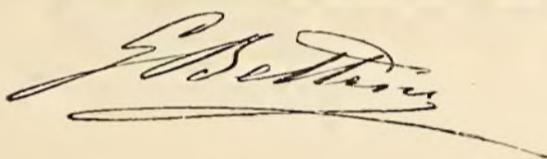
Sig. Dante Del Papa



Mlle. L. de Brelor



Mr. Pol Placon



Mme. Torriani



Mme. Rejane



Mme. Strakosch



Mme. F. Saville

Great amount of credit is due Mr. Bettini for the manner in which he gets up his printing matter to advertise his wares. Neither time nor expense are spared in this direction. His latest catalogue for June is indeed the most elaborate we have ever

seen in the phonograph business. A handsome half-tone engraving of himself and also of his laboratory adorns some of the pages. Half-tones of some of the artists employed are also seen in the various pages.

We are pleased to reproduce herewith some of the illustrations contained in this catalogue and would stat that any one desiring same, can write to Mr. Bettini, who will give this matter his prompt attention.

## The Edison-Bell Phonograph Corporation Limited

The following is quoted from the *Dundee Courier*, March 25, 1898.

### PHONOGRAPH CASE AT PERTH. ALLEGED INFRINGEMENT.

Sometime ago an action was raised in the Perth Sheriff Court at the instance of the Edison-Bell Phonograph Corporation, Limited, against Andrew Grey, South Street, Perth, seeking (1) interdict against the defender infringing their letters patent by making, selling, or using any machines for recording and reproducing speech in which the recording material is composed of a waxy substance; (2) payment of £200 as damages; and (3) delivery of all phonographic machines alleged to have been in the defender's possession. The defender denied infringement, and called upon the pursuers to produce the original grant of letters patent and the assignments by which they averred they had acquired right to it. After a hearing, the Sheriff found that, failing the produc-

tion by the pursuers of the original documents, it was necessary for them to produce extracts of their title, in terms of the Patents, Designs, and Trade Marks Acts, 1883, and that the pursuers not having done so had not produced a sufficient title to sue. His Lordship therefore sustained the defender's plea of no title to sue, and dismissed the action. The pursuers appealed to the Court of Session. The appeal came before the Second Division of the Court of session recently. The counsel for the pursuers (the Solicitor-General and Mr. Clyde) did not attack the Sheriff's judgement on the merits, but maintained that he should have pronounced an order upon the pursuers to lodge the documents, and only dismissed the action if they failed to implement such an order. The defender's counsel (Mr. Dewar,) in reply, maintained that the documents should have been produced before the closing of the record, but he expressly stated that he did not object to the pursuers now being allowed to produce them provided they paid expenses. Their Lordships of the Second Division therefore recalled the Sheriff's interlocutor in order to allow the pursuers now to produce their title, and remitted to the Sheriff "to dispose of the expenses of this appeal as expenses in the cause." On the case again coming before Sheriff Grahame, the defender asked that he should be found entitled to the expenses. The pursuers

objected that the meaning of the Second Division's interlocutor was that the Sheriff should decide the expenses of the appeal as the expenses of the whole case in his final judgment. If, however, the Sheriff were of opinion that he was entitled now to decide the question, the pursuers claimed the expenses of the appeal. After hearing parties on the question of expenses, the Sheriff has issued his decision in favor of the defender. His Lordship points out that it is the practice of the Appeal Court itself to decide the question who is to bear the expenses of the appeal, and in the present case the Appeal Court must be held not to have done so, in respect of there being exceptional circumstances in the case, which made it expedient that special authority be given to the Sheriff-Substitute to decide the question. If the Court had meant to reserve the question of the expenses of the appeal until the case had been finally decided it is to be presumed it would have said so. Seeing the pursuers' contention in the Sheriff Court was not sustained in the judgment given upon their appeal, and that the judgment of the lower Court was recalled in respect of the pursuers producing the title which they formerly declined to produce, his Lordship found the defender entitled to the expenses of the appeal. Agents—For pursuers, Messrs J. & J. Miller, solicitors, Perth; for defender, Messrs M'Cash & Hunter, solicitors, Perth.

## New Films for "Screen" Machines

### CUBAN REFUGES WAITING FOR RATIONS.

A group of escaped reconcentrados, saved from the fate of starvation imposed by the Butcher, Weyler. They stand in line waiting, each man with his tin dish and cap. One expects to see just such men as these, after the centuries of Spanish oppression and tyranny. As they come forward, their walk, even, is listless and lifeless. The picture affords an exceedingly interesting facial character study. At one side stands a group of officers from the camp near by, accompanying several ladies who are seeing the sights.

### CUBAN VOLUNTEERS MARCHING FOR RATIONS.

Taken at the Cuban Volunteer Camp at West Tampa, Fla. Men are falling into line, two abreast, every man with his tin cup and dish. Command is given "forward march," and the column approaches the audience. A fine looking body of men, worthy of a people battling for freedom. Figures are life size and life like. Prominently displayed upon their military hats is the emblem Cuba Libre, a single star in a red tri-cornered field. An accurate and interesting subject.

### BURIAL OF "MAINE" VICTIMS.

Taken at Key West, Fla., March 27, 1898. First comes a detachment of sailors and marines in the left foreground, while at the right is seen a crowd of small colored boys, which precedes any public procession in the South. Then follow the nine hearses, each coffin draped with the flag. At the side of each wagon walk the pall bearers, surviving comrades, their heads bowed in attitudes of grief. Next come naval officers and marines, and lastly a procession of carriages, followed by a large crowd on foot. The scene is reproduced as it actually occurred. The figures are life size and well in the foreground.

### SECRETARY LONG AND CAPTAIN SIGSBEE.

Taken at Washington, in front of the Navy department, and shows Secretary of the Navy Long and Captain Sigsbee of the ill-fated "Maine" coming down the steps. As they reach the bottom a waiting attache approaches the Secretary and hands him a letter. In the meantime Capt. Sigsbee and his friend walk toward the immediate foreground, in earnest conversation. They are quickly joined by the Secretary and the attache. Here they halt and apparently debate some important question. Additional action is lent to the scene by ladies and gentlemen descending the steps. The background is formed by the handsome building of the Navy Department. The figures are full life size, and are excellent portraits of the famous Captain and the Secretary. The picture excites the keenest interest whenever it is shown.

**WAR CORRESPONDENTS.** Shows a phase of the war excitement as it affects newspaper men at Key West, Florida. About a dozen war correspondents of the different New York papers are running up the street in a bunch to the cable office to get copy of cablegrams to be in turn transmitted to their different papers. They rush directly toward the audience, turn a corner in the immediate foreground and disappear down a side street. A good-natured struggle occurs here, to see who will make the turn first. Curious natives watch the unusual scene. A horse and carriage follow at a seemingly slow pace, showing by comparison what a rapid head-on foot race has been witnessed.

## New Records for Talking Machines

The following list of new records has been compiled from lists sent us by the leading talking machine companies of the United States ❀ ❀ ❀ ❀ ❀

A Night at the Play J. W. Myers  
A Spaniard Lives Up Stairs Roger Harding  
All I Want Is My Chickens Len Spencer  
America Forever John Havens  
Aria (La Sonambula) Miss Estella L. Mann  
Archbishop Corrigan's Address Jack Simonds  
Asleep at the Switch J. W. Myers  
Baby Let Me Bring My Clothes Back Home Len Spencer  
Banda Rossa March Metropolitan Band  
Bendimer's Stream Atwood Twitchell  
Bell Trio (Pinafore) Original Lyric Trio  
Boston Commandery March Metropolitan Band  
Bred In Old Kentucky Roger Harding  
Camp Meeting Jubilee Excelsior Quartette  
Chin. Chin Chinaman S. Holland Dudley  
Cold Sweat is on My Brow. "Chimes" Original Lyric Trio  
Couldn't Help It—Had To Dan W. Quinn  
Dancing In the Dark Metropolitan Band  
Daughter of the Regiment Metropolitan Band  
Dear Heart Miss Estella L. Mann  
Don't Get Gay Roger Harding  
Don't Send Her Away J. W. Myers  
Father, Won't You Speak to Sister Mary? S. Holland Dudley  
Flowers of Spring (Mikado) Original Lyric Trio  
Forgive the Past, and Take Me Home Again Excelsior  
Forget All Thy Sorrow Robert Webb  
Hamburg to Berlin (Quickstep) Metropolitan Band  
Henry Did Joe Hart  
Her Golden Hair Is Cut Short Now Dan W. Quinn  
He is Sleeping in Klondike Fate To-night J. W. Myers  
High Old Time Excelsior Quartette  
I Don't Love No Coon to Hurt My Feelin's Len Spencer  
I Love You Best Mama Dear Miss Estella L. Mann  
I Love You In the Same Old Way Dudley and Harding  
In a Museum Cal Stewart  
It Is He (Olivette) Original Lyric Trio  
It Will Be Mine Joe Hart  
Jack's the Boy S. Holland Dudley  
Just Break the News to Mother Excelsior Quartette  
Just a Small Room, But It's Home J. W. Myers  
Just Wait and See Maguire Dan W. Quinn  
King Cotton March Metropolitan Band  
Lady of the White House Gavotte Metropolitan Band  
Legend of the Bells (Chimes) Miss Estella L. Mann  
Lucinda Jane Joe Hart  
Mam'selle Marie Dan W. Quinn  
Mary's Not As Green As She Looks Dan W. Quinn  
Medley of Irish Airs Metropolitan Band  
Miss Cadenza Brown Dan W. Quinn  
Mr. Johnson Don't Get Gay John Havens  
Mr. Johnson Don't Get Gay Original Lyric Trio  
Mr. Johnson Don't Get Gay Len Spencer  
Move On Joe Hart  
Mulcahey's Birthday Party Jack Simonds  
My Dad's Old Violin J. W. Myers  
My Love is an Arbutus Atwood Twitchell  
My Love Is All For Thee Miss Estella L. Mann  
Negro Wedding In Southern Georgia Excelsior Quartette  
On a Bicycle Cal Stewart  
Oujus Animan, from Rossini's Stabat Mater Metropolitan Band  
Our Language As Its Spoken Dan W. Quinn  
Poor Mourner Excelsior Quartette  
Rhapsodie Table d'Hote Dan W. Quinn  
Rory, Bory, Alice Dan W. Quinn  
Sing Again That Sweet Refrain Robert Webb  
Summer (Chaminade) Miss Estella L. Mann  
Sunny Southern Home Excelsior Quartette  
Suzette (March Song) John Havens  
Sweetheart May Dan W. Quinn  
That Was Me Joe Hart  
There's No Flag Like the Red, White and Blue Campbell  
The Caroussel Galop Metropolitan Band  
The Cat Got It Aunt Hannah John Havens  
The Catchemaliveograph Dan W. Quinn  
The Copper and the Cook Dan W. Quinn  
The Four Leaf Clover Atwood Twitchell  
The Lad That Wears the Blue Albert Campbell  
The Old Days (Telephone Girl) J. W. Myers  
The Yankee Doodle Boys Dan W. Quinn  
'Tis Not True Miss Estella L. Mann  
Yankee Doodle Dewey John Havens  
You're the Only Girl For Me Miss Estella L. Mann  
Wein Bleibt Wein (March) Metropolitan Band  
When Dewey Comes Sailing Home J. W. Norris  
What Did Dewey Do To Them? Dan W. Quinn  
Whitecomb Riley's Poems Jack Simonds  
When She's Just About To Fall J. W. Myers  
Uncle Josh At Delmonico's Cal Stewart

## The Latest Popular Songs

The following is a list of the very latest popular songs published by the leading music publishers of the United States ❀ ❀ ❀ ❀ ❀

A Yankee Man-of-War Chas. Archer 1  
A Boy Without a Sweetheart Geo. M. Cohan 9  
All I Want's Is My Chickens J. W. Stern 3  
All For the Love of a Girl Chas. K. Harris 4  
Arouse, Columbia Arouse Charles Puerner 2  
As the Clock Strikes Two W. A. Stanley 8  
Better Than Gold 4  
Break the News To Mother Chas. K. Harris 4  
Big Black Lou M. B. Garrett 7  
Bowery After Dark, The John F. Wilson 4  
By the Banks of the Shannou M. B. Garrett 7  
Cast Aside Chas. K. Harris 4  
Charter Day March (Two-step) Robert Becker 1  
Cupid's Dream (Waltzes) Warner Crosby 5  
Dear Mam'selle Marie Ben Jerome 1  
Don't Say Good Bye Forever Gilmore and Lenard 3  
Don't Give Up the Old Love for the New 3  
Don't You Dare To Start Nothing With Me B. Fagan 1  
Down Ole Tampa Bay W. T. Francis 1  
Fight For Honor (March) S. C. Bougher 2  
First Victory (March) Rudolph Aronson 2  
Forgiven G. J. Couchous 7  
Good Mister Mailman J. E. Howard 2  
Gone Astray Herbert Dillea 5  
His Time Will Come M. H. Rosenfeld 3  
Heaven Is My Home W. T. Jefferson 1  
Heliobas (Mystery Dance) W. C. O'Hare 1  
I Don't Like No Cheap Man Williams and Walker 3  
I Love Her Just The Same Chas. K. Harris 4  
I Love My Dolly Best Malcolm Williams 5  
I Love You More and More Each Day E. Nattes 1  
I Wish My Rent Was Paid Charles B. Ward 2  
I Want My Lulu Karl St. Clair 9  
I Wonder If the Old Place Looks the Same R. H. Barker 1  
I've Been Faithful To You Chas. K. Harris 4  
In the Barracks March (Two-step) J. A. Silberberg 1  
I'll Kiss You Good-Bye, Soldier Malcolm Douglas 8  
If We Should Never Meet Again 2  
Just Behind The Times Chas. K. Harris 4  
Katie O'Neil M. B. Garrett 7  
Kiss Your Goosie Woosie Bennett Scott 9  
Lakewood Society, Waltzes Walter F. Ullmer 8  
Marie Louise Monroe H. Rosenfeld 7  
Margaret J. E. Nicol 5  
Mr. Vandyke From Klondyke Wm. L. Berry 2  
My Heart's Delight 3  
My Girl's Dad Hattie Starr 1  
My Sweetest Girl Leander Richardson 2  
My African Queen Barney Fagan 4  
My Love Is the Same As Of Old Chas. Horwitz 4  
My Sweetest Girl Andrew Mack 2  
My Old Fashioned Girl Fred Hylands 9  
Oh, Ebenezer Dave Reed 3  
On the Boulevard Joseph E. Howard 4  
Organ Grinder's Serenade. The Chas. K. Harris 4  
Oh, Liza! How I Despise Her Ford and Bratton 1  
Oh, Sue! I'm Surprised at You J. E. Nicol 5  
Old Man's Story, The Harry Castling 7  
Perhaps She Is Somebody's Mother Al Trabern 5  
Remember the Maine Walter A. Phillips 2  
Rough Rider's Patrol, The Elmer de Lacy Bennett 8  
Salome (Intermezzo) Wm. Loraine 7  
Scientific Man, The Henry E. Pether 2  
Sister Flossie's Bright Red Hair Nat D. Mann 1  
Something Must Have Struck Her Wrong M. Woodward 1  
Sunshine On My Side Of the Street J. Morningstar 1  
Shadow Dance (The Mysterious) Paul Cohen 1  
She's Somebody's Mother Chas. Lawler and J. Blake 2  
She Is More To Be Pitied Than Censured W. B. Gray 9  
Sweet May McVey M. H. Rosenfeld 3  
Take Your Clothes and Go Irving Jones 3  
Tally Ho Will Goodwin 9  
There'll Come A Time Chas. K. Harris 4  
The Highwayman Reginald De Koven 2  
The Lady With the Rag-Time Walk Armstrong Bros 9  
Two Little Dolls Fred J. Hamill 2  
Time is Money Tilbury and Barnes 2  
Trolley Party (March) M. B. Garrett 7  
Uncle Sam, Why Are You Waiting? M. H. Rosenfeld 3  
Van Courtlandt (March) R. E. Sauce 5  
Vigina Ma Baby Harry Jonas 2  
When I Come Back Walter Hawley 4  
While Uncle Sam Goes Marching Into Cuba Couchous 7  
When Thou Art Near G. J. Couchous 7  
While the Dance Goes On Chas. K. Harris 4  
Won't Somebody Give Me a Kiss? 5

Note.—The publishers are designated as follows: 1 M. Witmark & Sons; 2 T. B. Harms & Co.; 3 Jos. W. Stern & Co.; 4 Chas. K. Harris; 5 Myll Bros.; 6 O. Diston Company; 7 Couchous; 8 Gagel Bros.; 9 W. B. Gray.

## Exhibitors' Directory

**Kaiser, John,**  
18 East 22d St., N. Y.

**Brooklyn Talking Machine Co.**  
1182 Bedford Avenue  
Brooklyn, N. Y.

Phonographic Exhibitor  
Moving Picture Exhibitor

"Sim Hedley" (Originator of Sim Hedley's Trip to Boston.)  
"Nuff Said," Now is your chance. Send for list and prices  
of records. Orders filled promptly. Address  
SIM. HEDLEY, FRESNO, CAL.

**THE SILVER DIAPHRAGM FOR THE GRAPHOPHONE**  
The Composition Diaphragm for the Phonograph im-  
proves the Tone, Lessens the Harsh and Blasting Noises, can-  
not Break. Sent by mail for 30 cents. Inserted in Repro-  
ducer for 40 cents.  
Silver Diaphragm Co., Greenfield, Mass.

## Wants and For Sale

Special "Want" and "For Sale" advertisements will  
be inserted in this column at the uniform rate of  
three cents a word, each insertion. Answers can  
be sent in charge of "The Phonoscope" if desired.  
All letters received will be promptly forwarded  
to parties for whom intended, without extra charge.

**FOR SALE.**—Edisons Latest, The Standard  
Phonograph. Price \$20.00 complete, weighs only  
17 pounds; with this machine you can Record,  
Reproduce and Shave just the same as with the  
high priced machines. Address Greater New York  
Phonograph Co., 4 East 14th Street, New York.

**FOR SALE.**—New and second-hand Talking-  
Machines, Kinetoscopes, Batteries, Films,  
Records, Tubing, etc., etc. Address E. B.,  
care of Phonoscope, 4 East 14th St., New York.

**WANTED.**—\$5,000 will buy a one-half interest in  
the Standard Phonograph Record Company with  
J. W. Myers; \$3,000 of which will remain in the  
business as working capital to enable company to  
manufacture original records to meet the unusu-  
ally large demand for our records that will be  
made next fall. Address, Standard Phonograph  
Record Company, cor. Broadway and 37th Sts.,  
New York City.

**FOR SALE.**—Records, Records, Records. We  
will act as Purchasing Agent for those desiring  
records of any description: Regular rates; satis-  
faction guaranteed. Address, G. W., care of  
Phonoscope, 4 East 14th Street, New York.

**FOR SALE.**—Complete talking machine outfit  
consisting of 1 Eagle Graphophone with carry-  
ing case, 6 master records, 3 blank cylinders, 2-  
way hearing tube, horn, 1 bottle of oil and 1 oil  
can. Price \$15. J. W., care Phonoscope, 4 E. 14th  
Street, New York.

One New Eagle Graphophone, including Oak  
Carrying Case, 1 Two-Way Hearing Tube, 1  
Reproducing Horn and 1 Dozen Selected  
Records,

**: : COMPLETE FOR \$13.00 : :**

ALSO

One New Standard Edison Phonograph, includ-  
ing 1 Automatic Reproducer or 1 Standard  
Recorder and Reproducer, 1 one-way Hearing  
Tube, 1 14-inch Japanned Horn, 1 Camel's  
Hair Chip Brush, 1 Oil Can, 1 Oak Case and  
1 Dozen Selected Records,

**PRICE COMPLETE \$21.50**

Address M. A.,

CARE The Phonoscope Publishing Co.,

4 East 14th St., New York.

ESTABLISHED 1891

## Phonograph Sapphire Co.

(JUDGE BUILDING)

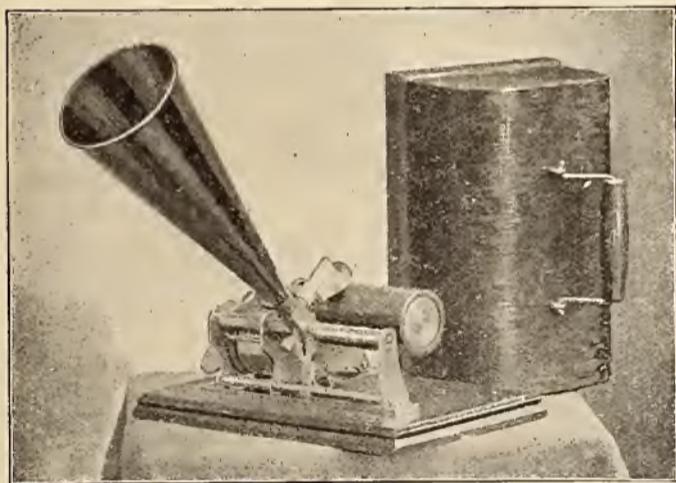
16th Street and 5th Avenue NEW YORK CITY

## Sapphire Jewels for all Kinds of Talking-Machines

We Manufacture and Repair Recording Styluses, Duplicating  
Recorders, Reproducing Points and Shaving Knives.

EXPERIMENTAL WORK A SPECIALTY

ALL OUR JEWELS ARE GUARANTEED TO  
BE OF THE HIGHEST CLASS



The Eagle Talking Machine, \$10.

**Selected  
Records**



50 Cents Each  
\$5.00 Per Doz.

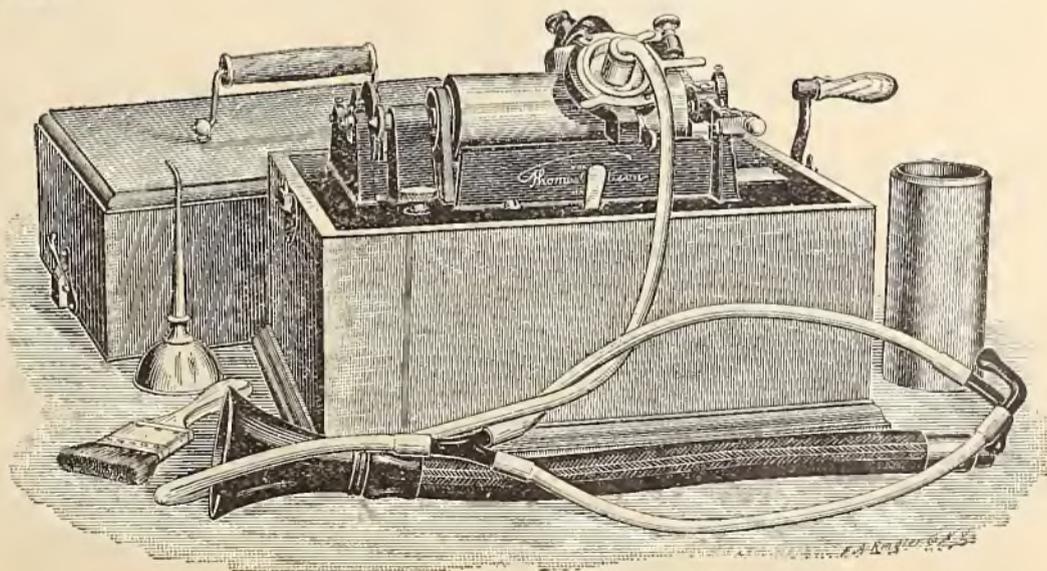
## THE Greater New York Phonograph Co.

4 East 14th Street

NEW YORK CITY

SUPPLIES AND ACCESSORIES FOR  
ALL KINDS OF TALKING-MACHINES

SEND FOR CATALOGUE



New Standard Phonograph, \$20.

# Lyric Phonograph Company

## ORIGINAL RECORDS ONLY

Signature Stamped on End of Each Record Original  
FOR PHONOGRAPH AND GRAPHOPHONE

### ONLY COMPANY MAKING

GRAND OPERA, COMIC OPERA, STANDARD AND  
POPULAR, COMIC AND COON SELECTIONS WITH  
FEMALE VOICE

## THE ORIGINAL LYRIC TRIO

Miss ESTELLA LOUISE MANN,  
Mezzo-Soprano

Mr. JOHN C. HAVENS, Tenor

Mr. WM. F. HOOLEY, Basso

Don't be deceived by other so-called  
Trios. There is only one

The Original Lyric Trio

Lyric Phonograph Co.

114 WEST 34th STREET

(ELEVATOR) NEW YORK CITY, U. S. A.

SEND FOR CATALOGUE



ESTELLA MANN



## STORAGE BATTERIES

Rented ☼ Recharged ☼ Repaired

STORAGE-BATTERY WORK OF EVERY DESCRIPTION

Our cased batteries will not leak. No corroded connections. Highest capacity, greatest durability.

The Storage Battery Supply Co.

239 East 27th Street, New York

## A BARGAIN

FOR SALE—A limited number, Coin-Slot Automatic, large Cabinet Graphophones to sell at one quarter cost; these machines can be placed advantageously to make money also a good advertiser in the proper place. Address,

E. DORING, Hoboken, N. J.

"A LITTLE SPICE NOW AND THEN  
IS RELISHED BY THE WISEST MEN"

RECORDS      RECORDS

ALL RECORDS "ORIGINAL," "no duplicates," made one at a time, every word guaranteed to be clear and distinct, and we are the only parties now making them. Send for list and prices. Address,

JOHN MONROE,

254 1/2 Morrison St., Portland, Ore.

## J. W. MYERS

— ORIGINAL —

# - RECORDS -

MADE ONLY BY  
PHONOGRAPH

STANDARD RECORD COMPANY

N. W. COR. BROADWAY & 37th STREET,  
NEW YORK

All the Latest and Most Popular **SONGS** Carefully Selected

From all the Leading Music Publishers in the United States as Soon as Published. All RECORDS MADE by OR Under the Personal Supervision of

J. W. MYERS

PRICE ONE DOLLAR EACH TEN DOLLARS PER DOZ.

ALL OUR RECORDS ARE GUARANTEED ORIGINALS  
CAN BE USED ON EITHER GRAPHOPHONE OR PHONOGRAPH  
THE BEST ARE THE CHEAPEST

SEND FOR CATALOGUE

## STANDS

## STANDS

Why have that large Stand for your Horn, which is always in the way? When you can have a neat, nickel plated contrivance which can be attached to any talking-machine and increase to the beauty of the same. Will hold any size horn on the smallest machine. Send for sample. \$1.25 and \$1.50 each.

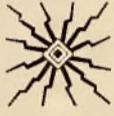
B. BORMANN

4 East 14th Street, New York City

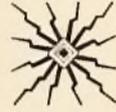
STANDS

STANDS

# Metropolitan Band Records



SIGNOR G. PELUSO, Director.



The Metropolitan Band Records are acknowledged the world over to be the very best grade of originals in the market. Each and everyone is a master record, loud, clear and musical, and the perfect reproduction of a full military band of eighteen first-class musicians.

**\$8.00 Per Dozen.**

**Barrel Lots 60 Cents Each.**

## OPERATIC

- S1 Aida (Selections)
- S2 Bohemian Girl (Selections)
- S3 Bride Elect (March)
- S4 Carmen (Selections)
- S5 Der Freischutz (Selections)
- S6 Ermine (Selections)
- S7 El Capitan (March)
- S8 Ernani (Selections)
- S9 Faust (Selections)
- S10 Faust (Soldier's Chorus)
- S11 Fra Diavolo (Overture)
- S12 Geisha (Selections)
- S13 Gypsy Baron (March)
- S14 Il Trovatore (Selections)
- S15 Le Prophete (Coronation March)
- S16 Lucia (Selections)
- S17 Lucia (Sextette)
- S18 Lohengrin (March)
- S19 Martha (Selections)
- S20 Maritana (Selections)
- S21 Mignon (Selections)
- S22 Midsummer Night's Dream (March)
- S23 Merry Wives of Windsor (Overture)
- S24 Messiah (Hallelujah Chorus)
- S25 Orpheus (Overture)
- S26 Poet and Peasant (Overture)
- S27 Rigoletto (Selections)
- S28 Rigoletto (Quartette)
- S29 Rob Roy (Selections)
- S30 Robin Hood (Selections)
- S31 Serenade (March)
- S32 Semiramide (Selections)
- S33 Stradella (Overture)
- S34 Stabat Mater (Inflammatius)
- S35 Tannhauser (Fest March)
- S36 Traviata (Selections)
- S37 William Tell (Overture)
- S38 Zampa (Overture)
- S39 Serenade (Waltz)
- S40 Les Huguenots (Selections)
- S41 Mikado (Selections)
- S42 Beggar Student (Selections)
- S43 Circus Girl (Selection)
- S44 Tannhauser (Selections)

- S45 Boccaccio (Selections)
- S46 Mascot (Selections)
- S47 Merry War (Selections)
- S48 Cavalleria Rusticana (Selections)
- S49 Queen's Lace Handkerchief (Selection No.1)
- S50 Queen's Lace Handkerchief (Selection No.2)
- S51 Olivette (Selections)
- S52 Heart and Hand (Selections)
- S53 Anvil Chorus
- S54 Black Hussar (Selections)
- S55 Daughter of the Regiment
- S56 Intermezzo (Cavalleria Rusticana)

## MARCHES, WALTZES, ETC., ETC.

- S100 American Patrol (Drum Effects)
- S101 Belle of the Season (March)
- S102 Charge of the Red Hussars
- S103 Chopin's Funeral March
- S104 Father of Victory (March)
- S105 Handicap Two-Step (March)
- S106 Happy Days in Dixie (Two-Step)
- S107 Hickory Corner's Two-Step
- S108 High School Cadets (March)
- S109 Jolly Coppersmiths
- S110 La Paloma (Waltz)
- S111 La Marseillaise
- S112 Light Cavalry Charge (Overture)
- S113 La Czarine (Waltz)
- S114 Lime Kiln Club Soiree (Clog Effects)
- S115 Liberty Be'l (March)
- S116 Merry Minstrel (March)
- S117 Manhattan Beach (March)
- S118 International Medley
- S119 Narcissus
- S120 Napoleon's Retreat from Moscow (1812)
- S121 Off to Camp-March
- S122 Remus Takes the Cake (Two-Step)
- S123 Schubert's Serenade
- S124 Schubert's Ave Maria
- S125 Star Spangled Banner
- S126 Stephanie Gavotte
- S127 Southern Airs (Medley)
- S128 Second Battalion (March)
- S129 Stars and Stripes Forever (March)
- S130 Traumeri (Schuman's)
- S131 Under the Double Eagle (March)

- S132 Virginia Skedaddle
- S133 Washington Post (March)
- S134 Scorcher (March)
- S135 Gallant Knights (March)
- S136 Chilian Dance
- S137 Zenda Waltz
- S138 Albion (Fantasie)
- S139 Funicoly Funicola (Neapolitan)
- S140 Gladiator March
- S141 Gems of Southern Songs
- S142 National Airs (Medley)
- S143 United States Cavalry Mount
- S144 Gen. Miles War Review March
- S145 Medley Popular Coon Songs
- S146 Babbie Waltz
- S147 Auld Lang Syne and Home Sweet Home
- S148 Artists' Life Waltz
- S149 Skirt Dance
- S150 Spanish Fandango
- S151 Pomona Waltz
- S152 Hungarian Dance
- S153 Corncracker Dance (Clog Effects)
- S154 How I Love My Lou
- S155 Mexican Midnight Dance
- S156 Nearer My God to Thee
- S157 Midway Plaisance (March)
- S158 Day Dreams (Romanza)
- S159 Rose Waltz
- S160 Little Flatterer (Gavotte)
- S161 Patrol Comique (Drum Effects)
- S162 Boston Commandery March
- S163 Lady of the White House Gavotte
- S164 The Carousal Galop
- S165 King Cotton March
- S166 Hamburg to Berlin (Quickstep)
- S167 Rosalind Waltzes
- S168 The Patriot's Medley
- S169 Wein Bleibt Wein March
- S170 Cujus Animam (Stabat Mater)
- S171 The Volunteer's Medley
- S172 America Forever March
- S173 Banda Rossa March
- S174 Georgia Camp Meeting
- S175 Dancing in the Dark
- S176 Raymonde Overture
- S177 Medley of Irish Airs

MADE ONLY BY THE

**NORCROSS PHONOGRAPH CO.**

Rooms: 10, 11, 12, 13 and 14

New Zealand Building, Broadway and 37th Street

**NEW YORK CITY**



# THE EDISON PHONOGRAPH AGENCY

F. M. PRESCOTT . . . PROPRIETORS . . . C. E. STEVENS

## EDISON BUILDING

44 BROAD STREET

NEW YORK, N. Y.

Latest Edison Films at reduced prices, \$10 each  
Send for Catalogue F..

Edison Records, 50 Cents each; \$5.00 per dozen  
Send for new Catalogue R

THOMAS A. EDISON'S

- PHONOGRAPHS
- RECORDS
- PROJECTOSCOPES
- ORIGINAL FILMS
- KINETOSCOPES
- KINETOPHONES
- X RAY APPARATUS
- FAN MOTORS
- LALANDE BATTERIES
- ELECTRO DENTAL
- ELECTRO SURGICAL

OUTFITS  
AND SUPPLIES

WE SOLICIT DEALERS' AND EXPORT TRADE ESPECIALLY

TELEGRAPHIC ORDERS FILLED SAME DAY AS RECEIVED FROM STOCK IN NEW YORK

Retail Customers are invited to visit our show-rooms in the Edison Building and see all the different types and sizes of Edison machines in operation

Write for Catalogue and Price List P of everything manufactured at the Edison Laboratory

*Export and Retail  
.. Departments ..*

### Edison Building

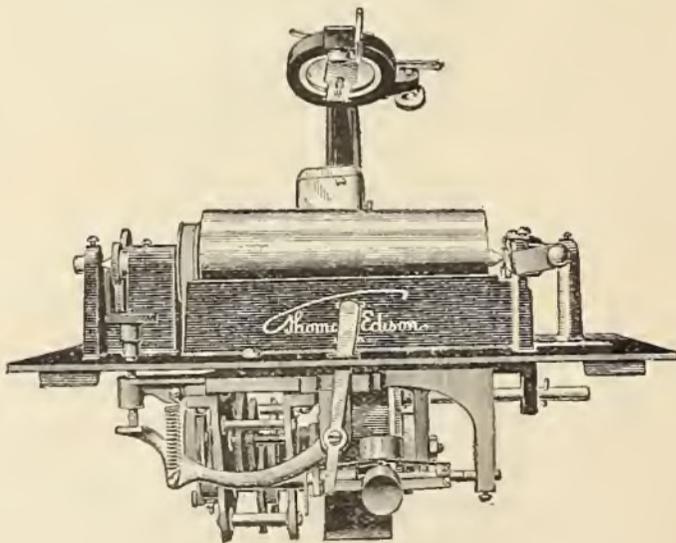
44 Broad Street New York, N. Y.

### EDISON'S NEW STANDARD PHONOGRAPH

THE MECHANISM OF WHICH IS ILLUSTRATED BELOW IS A MARVEL. WEIGHS BUT 17 POUNDS

and does as good work as the Class M or Home Phonograph

Write for Descriptive Circular and Discount in Quantities



#### NEW EDISON STANDARD PHONOGRAPH

Complete with oak body box and cover, automatic or standard speaker, as preferred, with sapphire points, sapphire shaving knife, hearing tube, speaking tube, oil can and chip brush. Runs 3 records with a single winding.

A 1 1/2-inch tin japanned horn supplied in place of hearing tube if desired.

Price complete, \$20.00

Machine on Exhibition in our Showroom

Send for Catalogue of New Musical Records by New Artists

### JUST OUT Edison's Combined Projectoscope and Stereopticon . . . . .

Either part can be used independently of the other or in conjunction . . . .

The titles and a brief description of films can now be thrown on the screen while the film to be shown next is being placed on the Projectoscope. The Stereopticon attachment can also be used for illustrated songs and regular stereopticon views.



Write for Supplement 3 of new War films Also Includes 3 films of Bull Fights and many Mexican views

GLASS SLIDES WITH NAMES AND BRIEF DESCRIPTION OF FILMS 50 Cents each

Stereopticon Attachment alone and Instructions for converting '97 Model Projectoscope into a combined machine \$25.00

ANY ONE CAN MAKE THE CHANGE

The Edison Combined Projectoscope and Stereopticon, '98 Model, illustrated above, is complete with 2 objective lenses and 2 condensers, 1 lamp serving for both lenses. Electric, calcium or acetylene light can be used with good results.

Price of machine as per illustration and with Resistance Coil \$100.000

Machine on Exhibition in our Showroom

Send for Illustrated Catalogue No. 6

## EDISON PHONOGRAPH AGENCY

Cable Address: FUSE, New York

EDISON BUILDING, NEW YORK, N. Y.