

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. 5

New York, May, 1898

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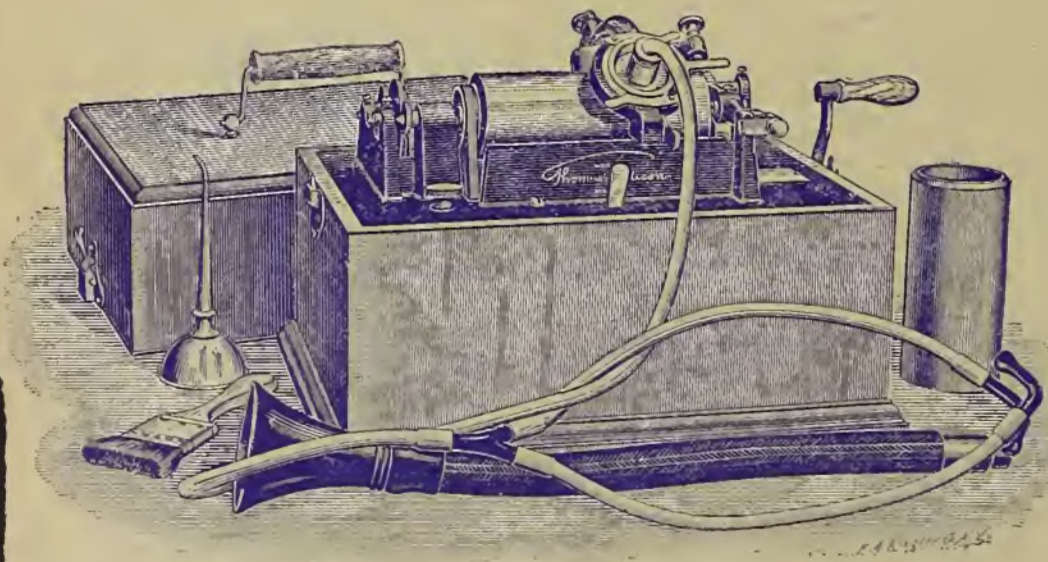
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WRITE FOR CATALOGUE NO. 21.

The Phonoscope

PUBLISHED MONTHLY BY

The Phonoscope Publishing Company

4 East 14th Street,

New York, U. S. A.



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Foreign Countries 1.50 per year

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The Phonoscope

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

Vol. II.

NEW YORK, MAY, 1898

No. 5

About the Electrical Show

Exhibits Which Interest Amateur Electricians, Amuse Children and Please Everybody

When President C. O. Baker, Jr., of the Electrical Exhibition Company who, with the New York Electrical Society, is responsible for the grand showing in Madison Square Garden, escorted Chauncey M. Depew through the building the other night, the opinion was expressed on all sides that there was a great deal to be seen, and that every one interested in invention and investment of capital should take the chance to see it. New York found the Electrical Show at the Garden worthy of a large patronage, and people who came from a distance were not disappointed in finding everything, from the largest to the smallest of electrical devices, placed so that he who runs may read, and the person who reads understands what is intended to be told. There was a great deal in Madison Square Garden which had an especial interest, and the general public found so much to admire and so much to amuse it that it was no wonder that each day brought new developments all tending to make up an exhibition which ran successfully until the end of the month.

The educational part of the show was important. While electrical contrivances dazzled the eye and little things amused everybody, the student of electricity and the man who thinks earnestly about what he sees found an afternoon or an evening, or both, at Madison Square Garden a good investment of time. The show was impressive in a way, for from the tank and fountain in the center to the wondrous machinery, which really harnesses power that in inexperienced hands would be dangerous, there was something to interest everybody, from the basement of the Garden to the arena circle and the main floor.

What the children can do with very simple appliances and no machinery in making electrical apparatus was an interesting exhibit in the arena circle, and the theatrophone and phonograph and gramophone, and enough telephones to serve a nation, were exhibited in perfection. So, also, with electrical cooking and heating, the freezing of water, the storage of electric current, and the searchlights and electricity in warfare, as shown in the explosion of mines in the tank, where everything was scientifically done, and the force of the explosives measured and adapted to the destruction of the toy boat without danger to any one. This was operated by wireless telegraphy and a wave that passes any obstruction until it does its work. The Cuban dynamite gun was a curiosity, and the complete electrical printing plant, which did its work every afternoon and evening, was worth seeing.

The X-ray experiments were entirely new, and so it was all over the building, anywhere the visitor may go. In the assembly-room, where the Moore illuminated chapel was an object of especial interest, there was always a congregation of listeners to the music of the organ, all being impressed with the peculiar lighting by vacuum tubes, where daylight

was actually duplicated. In the concert hall adjoining it, where the wax tableaux were emblematic of electricity, and many valuable exhibits and curiosities were on exhibition, there were a series of phonograph concerts, in which the best records of vocal and instrumental music ever taken by the phonograph and the process of taking the records were shown. This was under the direction of "Willie" Edison, second son of Thomas A. Edison. In addition there was also produced on the kinetoscope many of his father's latest and best animated pictures, including many that were particularly applicable to the present warlike situation. Joseph Sachs, one of the most brilliant lecturers of the New York Board of Education, gave a series of lectures on electricity, and they were illustrated by forcible experiments, among them nature's process of making diamonds. Professor F. B. Owens, of the Omaha University, of Nebraska, gave a lecture, being sent here by the exposition company of that city, and so did Professor Fujioka, of Tokio, Japan, who was visiting this city especially to see the exhibition.

Many of the exhibitors introduced novel experiments in electrical demonstrations, which were easily understandable by every one who took interest enough to ask a question. The system by which a diver can be in constant communication with those above in charge of the air pump was shown at the New York Telephone Company's exhibit, where the diving suit was on exhibition and the telephone at work, the helmet containing receiver and transmitter so placed as to be always in position for use, the wires passing through the hose pipe, and the telephone set and batteries on the boat. A marine set of telephones was also shown for communication between the bridge or conning tower of a warship and all the many departments contained in one of Uncle Sam's iron sides. Another telephone set was the "field set," which contained telephone stations, batteries, signaling apparatus and line wire, all in complete outfit. The wire was on a reel to be slung over the shoulder of the scout or orderly, who becomes a moving telephone station, keeping up a constant communication over the wire, he pays out with the terminus in the staff headquarters.

The display of war bulletins at night by means of the magic lantern and the pictures of noted people and of vessels in the Navy was an exhibit appreciated by the audiences and of value to everybody. The members of the Auxiliary and Educational Committee, of which T. C. Martin was the chairman, were active in the advancement of the exhibition, and Marcus Nathan, the general manager, had arranged for a number of special experiments in various departments during the week, with the intention that the exhibition this year shall make a record of value commensurate with the expectations of the inventors and the manufacturers who have aided in making it what it is.

An interesting feature of the exhibition was the National Morse telegraph tournament. Telegraph operators from all over the country contested for prizes, which were given for the highest rate of speed and accuracy. During the afternoon three classes tested their ability at sending and receiving

messages from one of the anterooms of the concert hall in the building into the main auditorium. In all about twenty-five young women and men sat down to do the best they could, under the supervision of Frederick Catlin, a well-known expert operator. In the woman's class, which required the sending of the greatest number of words within the period of five minutes, the first prize, \$80 and the second, \$60; the winners were Miss J. McManus employed by the Postal Telegraph Company in New York, first; Miss Emma R. Vanselow, New York, second. In the class requiring the sending of 230 words within five minutes the first prize was \$90, and was won by Charles F. Edney, of the Associated Press. F. M. McClintock, of the Associated Press, Memphis, Tenn., won the second prize, \$70. In the 240-word's class, J. D. Hinnant, employed by the Anglo-American Telegraph Company, won the first prize, sending 252 words, and F. M. McClintock, of Memphis, Tenn., won the second prize, sending 243 words. David C. Grant, *The Toledo Commercial*, Toledo, Ohio, was highly commended in both the 230 and the 240 word classes.

Novel Musical Device

The Gally Tonograph Will Faithfully Record Improvisations—A Great Aid to Composers

An invention that has come to the notice of several Brooklyn musicians has won their approval and praise. The device is known as the Gally tonograph, and is the work of Robert A. Gally of this borough. The prime object of the invention is the recording of improvisations and the recording of any complete or partial idea for the future elaboration of the composer. It is also applicable for the purpose of a scientific analysis of technical elements of phrasing that go to make up the artistic style of playing. The advantage is great over any other invention bearing on the same idea, as it is made strictly for personal use.

Connected to a piano or organ this device is not noticeable to the outsider. The keys of the instrument are connected with little wires and the action of pressing them down causes these wires to move for the length of the time that they are depressed. Back of the wires is placed a roll of common paper and after an ink pad has been placed over the wires the recording operation is ready to begin. When the player starts to record he pulls a knob situated on the side of the reproducer and then plays in the ordinary manner, entirely unconscious of anything to be done beside the perfect rendering of the music. The paper slowly moves over the wires and each depression is marked on it by a corresponding dash. After the musician has finished the mechanism is stopped and the paper is taken from the inker. Following the playing the marks on the paper are cut out and the operation of reproduction is ready. This is done by placing the film in the same position as previously. By a simple piece of mechanism a bellows is started and the music is reproduced by the ordinary process.

Around the Corner

There are several different mechanical devices on the market that will reproduce music in a fairly successful manner, but the tonograph in this one respect alone, is superior. Where the others give reproduction that somewhat resembles the original, this instrument gives an exact copy. The greatest benefit in this method is that every style of playing can be carefully noted and all slurring, attacks and accentuation can be reproduced with much greater perfection than is done in regular manuscript. A composer can think of some theme at a time when he has not the patience to sit down and write it out. All that he has to do is to play it on a piano or organ that has the tonograph attached and at any future period he can reproduce it exactly as played originally. The printing process is really a musical short-hand or tonography, which records not only pitch and general duration, but all the requisites of perfect musical ideas.

During Alexandre Guilmant's recent visit to Brooklyn he played for Mr. Gally and on a recent visit to the studio of Abram Ray Tyler, where the invention has been exhibited, a reporter had a chance to hear the same piece played in the precise manner that the great organist composed the improvisation. At the time that it was reproduced Guilmant was on his way to his home in Paris, yet no one could have told the difference in tonal effect if he had been sitting at the organ himself during the rendering. The playing of the instrument with the invention attached has no effect on the keys in the least and the organ or piano can be used with equal facility in every way. It will not only attach itself to a portable instrument, but can be attached to the largest church pipe organs. It is particularly desirable for teachers as an aid to the instruction of scholars. The teacher's style of playing a piece or an etude can be taken and the pupil's rendition can be compared with that in order to make the latter more perfect. All attacks, such as arpeggio, broken chords and perfect time, are also shown, as the length of the marks and the perfect symmetry are evidence whether the composition is perfect or not.

The invention was produced in a rather unexpected manner, as Mr. Gally did not expect to bring it to the notice of the public for some time to come. When Alexandre Guilmant gave his first organ recital at the New York Avenue Methodist Church he was asked to inspect the invention. He seemed so pleased with it that he played an improvisation for the device to record. Upon his second visit to this borough, in the presence of William C. Carl and Abram Ray Tyler, he heard his original composition played. The success was so marked that it was decided to have the public in general know of the invention. The record of his composition is now kept by Mr. Gally and will be one of the leading examples of the work that the tonograph can do.

The inventor, Robert A. Gally, is a musician of considerable experience. He has studied harmony and thorough-bass with Otto Floershein and composition and orchestration with Horace W. Nichol. For the past ten years he has lived in this borough at 15 Kosciusko street. The tonograph may be described as an amanuensis, which will preserve themes that can afterward be improved upon and as a machine that will analyze all technical details of phrasing. Upon the organ that has more than two manuals the stop and swell work is recorded as perfectly as every other part.

Those interested in Scientific and Amusement Inventions, Sound Reproducing Machines, Picture-Projecting devices, Automatic Slot Machines, and other inventions pertaining to Sound and Sight will do well to advertise in these columns.

Can People Now Look Without Being Seen Themselves?

Kirby Fitzpatrick, of Hartsville, Tenn., a student of the University of Nashville, who has a scientific bent of mind, has made an invention, which, to say the least of, is very novel and unique, and when properly perfected will no doubt place the young inventor on a plane with Röntgen, with his X-rays or Tesla and his telegraphy without wires, etc. Mr. Fitzpatrick calls his invention the refractroscope. At the request of a reporter Mr. Fitzpatrick prepared for the following interesting article, enumerating and illustrating the various uses in which the refractroscope can be utilized:

"I do not claim, in inventing the refractroscope, to have made any great or startling discoveries, but only to have made a new application of the old law of refraction. Every student, I presume, understands this law, how and why rays of light entering a denser medium from a less dense, as from air to glass, or vice versa, are refracted in proportion to the difference of the density of the mediums and to the angle at which the light enters. It is this principle that makes a dipper handle appear bent when in water, and apparently elongates the discs of the sun and moon when near the horizon.

This principle of refraction as applied to the refractroscope is illustrated by the following simple experiment: When the sunlight enters a dusty room through a small hole, it may be observed that it passes in a straight line to the opposite wall. Now, hold a prismatic lens—a wedge-shaped paper-weight will serve—in this line of light, and it will be bent by the prism, throwing the light spot on the wall at a different point. Place your eye at this point and you may see the sun through the opening, but remove the prism and the light spot will return to its former place, so that you can no longer see the sun without moving the eye.

Applying this principle to a bent tube, with prism at the joints we have the refractroscope.

The rays of light are omitted by a candle entering the tube and at the first prism thus enabling him to see through a bent tube—"to see around the corner." This has been accomplished by reflection, where you see the image, but never before by refraction, where you see the actual object.

By increasing the number of joints and prisms, you may bend the tube to any extent, and by reversing the prisms, bend it in any direction. The refracting power of a prism is one-half the strength of the prism; therefore, a tube bent at a given angle, as five degrees, must have a prism of twice that strength—ten degrees. A tube with sixteen joints of twenty-two and one-half degrees each, each joint having a forty-five degree prism, would complete a circle; thus we can actually see the back of our own head. Now, theoretically this circle may be of any given magnitude, providing the prisms are in the proper ratio. A tower 985 feet high overcomes the curvature of the earth seventy-six and three-tenths miles, i. e., a man on a tower of this height can see thirty-two and three-tenths miles in either direction. Three hundred and twenty-six such towers, seventy-six and three-tenths miles apart, each surmounted by a huge prism, two and three-fifths degrees stronger, would make a chain encircling the globe, by means of which an observer with a powerful telescope could actually see around the globe. Of course, this theory on so large a scale is wholly impracticable, because the prismatic coloring, diffusion of light and the cost of erecting such a line would go to make it so. The Eiffel Tower of Paris is 985 feet high, costing \$1,300,000; 326 such towers would cost \$423,800,000; then, further, the ocean depths are practically impassable, but our mountain

peaks, 15,000 feet in height, would serve well for towers. Diffused light can be focused; a prism two and three-fifths degrees strong gives practically no prismatic coloring, all of which facts go to show how and to what relative cost the theory may be applied, and practically on a smaller scale, especially in surgical, military and secret service affairs.

Cuba is ninety-five miles off the coast of Florida. Would it not be highly practicable at present to have a tower half way between Florida and that island, so that a commander on our own shores could look down upon a battle in Havana harbor, and by telephone communication personally direct the fight?

Placing a large prism on a neighboring hill-top the spy, with field-glass, could watch the manoeuvring of an army on the opposite side with more dispatch and safety than by climbing the hill-top in person. Likewise, in naval warfare, where to climb the mast were too difficult, slow and hazardous, the prism could be placed to incalculable service in the making of observations. The prism could, of course, be raised and lowered at will to protect it from the shot of the enemy. Also, we might easily construct our warships by the use of prisms so that every vital point of the hull could be under the commander's eye, and thus he might instantly see when and where any breach was made.

I think that the prism would be of the greatest efficiency in the secret service; for by silently elevating a strong prism to an upper window the detective could look into the interior of a dive as if his face were at the window. Thus, too, the festive serenader could take his bearings and often avoid pouring his sentimental cata-walls into the ears of unoffending parties.

The refractroscope, I think, reaches its highest practical value when applied to surgery.

The present sestroscope can only be used in the bladder, because it must have an open cavity in order to secure the proper angle for the light, but the sestroscope could be greatly improved by inserting prisms into the shaft so as to make the tube properly curved.

Theoretically, the application of the law is unlimited. By taking Omaha as a central observatory, and utilizing our mountain peaks for towers, a line of prisms might be constructed to each of our ports, so that a spy could at one glance sweep our whole coast, catching sight of a vessel while still far out at sea. Or by extending a line along the Atlantic seaboard from Cuba to New York we might allow the lolling money kings of Wall street to gloat over the blood and carnage of the Spanish wars. Then, again, the sailor by looking back at a huge chronometer on shore, could determine his longitude, or by looking far over the horizon see the approaching storm-clouds in time to shift his sail in safety. Astronomers often take long journeys for the purposes of placing themselves in a position to observe a transit or other phenomenon. Then why not utilize a line of prisms for such observations? Dr. Nansen, in 1895, went within 360 miles of the North Pole. If navigators would exert their energies upon a northern tower, might we not hope from the warmth of our own fireside to look down upon the frozen bosom of the polar seas? Then, too, the lover in a foreign land by wire could call his lady-love before the refractroscope, thus communicating the contents of his little head, saving his railroad fare. But owing to the quality of nineteenth century courting, I should think it unethical to facilitate the process.

Then finally, placing the giant prism in the west and focusing the sun's rays on it, may we not in some visionary age hope to refract the sunlight around the earth, to light the cities of the midnight world, or by turning our prisms to the northern zone, robe the bleak Laplands of their grewsome darkness?

'Graphs, 'Phones and 'Scopes

The Antiphone

Interest in an invention called the antiphone has been stimulated by the present war. The antiphone, which is extensively used in the German army and navy, is an ingenious device contrived especially to protect the hearing of men who have to do with the firing of heavy guns, and used as well by others who would avoid the ill effects of loud noise such as cannonading. The inventor is Capt. Plessner, a gallant officer of the German army, who, by the way, is a brother of Mrs. Louise Pollock, of Washington, who has been so prominently engaged in the introduction of the kindergarten policy in this country since 1863.

The Meteorograph

An unusual phenomenon occurred while the weather bureau at Topeka, Kansas, was making some examinations of the conditions of the atmosphere in regard to temperature, humidity and pressure. The instrument used for this work is called a meteorograph and its mechanical workings are as complex as its name. It was fastened to a kite which was about a mile high when a very strong bolt of lightning struck it and started viciously down the steel wire for the operators on the ground.

As it traveled at its usual velocity, the men had not decided just what course to pursue when the unexpected shock arrived. It was so strong that the wire could not carry it and it divided near the ground striking G. H. Noyes and his assistant, C. H. Bushnell, the operators. Mr. Bushnell was severely shocked but was not injured as the current was broken by the rubber boots which he was wearing. The part of the bolt which struck Mr. Noyes was more severe as it was conducted to the earth through nails in his shoe and the platform on which he was working.

The current burned his foot quite severely and also burned a hole in his stocking. He says the current was of sufficient strength to kill him instantly if it had been constant.

The conducting wire was about the size of ordinary broom wire but was too small for the current although it is sufficient for ordinary currents. It was so badly burned that it would break like a lead wire although it is made of the best of steel.

The Stethophone

The March Stethophone, invented by Rev. D. B. March, Ph. B., of Black Heath, Ont., is now patented in Canada, United States, France and Great Britain. The latter patents arrived last week. The German patent is also granted and will be forwarded in a few days. The stethophone is being sold to physicians in Canada by Messrs. Lyman, Sons & Co., of Montreal and S. B. Chandler & Co., Toronto. It is said to be an instrument possessing the merits the inventor claims for it.

Scientific Botany

In an article on "Animated Pictures" J. Miller Barr, after describing the kinetoscope, cinematograph and other types of machine for producing the moving pictures now so familiar to the public, suggests some lines along which they may be made useful in scientific investigation or demonstration. The facts involved are well known to students and their application in one of the directions suggested, namely, the study of a growing plant, was described several years ago in this department; but Mr. Barr's

treatment of the subject is especially interesting as showing that it is approaching a more familiar and popular phrase, says the writer of the *Popular Science Monthly*.

Suppose the mechanism of our camera to be altered in such wise that successive exposures may be made at relatively long intervals of time, while the duration of each exposure can be varied at will. With this end in view, the camera should be provided with clockwork capable of running for twenty-four hours continuously. Thus equipped, we should be ready to experiment on objects—such as growing plants—whose changes are of too gradual a nature to be perceived by the eye. * * * The experiments might extend over a period of weeks, or even of many months, according to the nature of the plant selected. But the resulting film, when placed in the cinematograph for exhibition, would be 'reeled off' in the course of a minute or two, so that we should have, as it were, a greatly magnified representation of the movements involved in plant growth. * * *

"Such views could not fail to produce an effect at once marvellous, unique and instructive. As pictured upon the canvas, the plants would grow and develop before the eyes of onlookers, throwing out leaf upon leaf, and visibly increasing their dimensions. Here and there a flower or flower-cluster might make its appearance, the individual blossoms bursting forth suddenly and remaining visible bursting forth a brief period only. The process is clearly applicable to greenhouse or indoor plants of every description, from stately palms or tree ferns down to the most delicate mosses or lichens. Thus, the general phenomena of plant growth may be illustrated with a vividness never before realized. As object-lessons in botany, such motion pictures would be invaluable, while the general public, not less than the advanced student of science, would regard them with feelings of the keenest interest. * * *

"This graphic method should theoretically be applicable to insects and animals as well as to plants. In practice, however, it can be successfully applied only to the lower and the higher forms of animal life. On the one hand, we could picture the growth of certain lowly organisms in the borderland between the animal and vegetable worlds; on the other, we could portray the development of a child, or even the life changes of a human being from childhood to old age.

"Turning now from the earth to the heavens, we shall see that similar methods are applicable to the most prominent of celestial bodies—viz., the sun. The photographic art has long since been applied with conspicuous success to the glowing solar disk, with its dark spots and brighter patches or 'faculae;' and such photographs are now taken from day to day at leading observatories in various parts of the globe. During recent years, moreover, astronomers have contrived to photograph, under ordinary conditions, the surroundings of the great luminary—including the chromosphere and prominences, but excepting the corona, which cannot as yet be studied in the absence of an eclipse.

"I shall not attempt to describe the many interesting features shown in such photographs; nor is it necessary in this place to indicate the precise means whereby solar picture films can be produced. The chief point to be noted is that changes—often of a rapid and striking character—are continually occurring both in the sun's photosphere and its gaseous surroundings. The cinematograph will enable us to actually see such changes taking place; and it may be possible in this way to obtain new light on certain fascinating, though recondite, problems presented by the sun, while the complex solar movements may in any case be pictured in a manner that cannot fail to prove deeply interesting and instructive."

New Electric Bedstead Lamp

Novel Device is the Latest Which Makes Reading in Bed a Real Luxury

The lamp is of English design and is just the thing for invalids and bad sleepers. It is of but two candle-power and is intended for use with a small accumulator, or can be operated directly from the electric light mains where they are available. The lamp can be turned or swiveled in any desired direction, and gives a very gentle light, which can be instantly lighted or extinguished. It is made in several styles either for attachment to an iron or brass bedstead or a wooden one. The consumption of current is so small that a charged battery of medium size would feed it almost indefinitely, while the absence of any odor and the ease with which it is lighted, by a simple key or by a screw, makes it very convenient and desirable.

Two Famous Inventors

Thomas Alva Edison, "the Wizard of Menlo Park," was thrown upon the world at fifteen years of age. He became a newsboy on a railway line, but he found time to edit a little weekly paper, read Newton's "Principia" and make experiments.

He became a telegraph operator and one of his clever inventions was a device which he called into play when he wanted to take a little nap. This automatic device would answer the central office with the assurance that Mr. Edison was awake when he was dozing peacefully. Edison also invented an automatic repeater to transfer messages from one wire to another.

His first invention that brought him in anything was an improved stock printer, for which he received \$40,000. Everybody knows about his phonograph, incandescent lights, kinetoscope and Rineto-phonograph. Edison says that the time is near "when grand opera can be given at the Metropolitan Opera House at New York without any material change from the original and with artists and musicians long dead."

Nicola Tesla is considered by many scientific men to be a more original genius than Edison. He was born in Servia and came to America and was employed by Edison. Tesla does away with the filaments inside the bulbs of small electric lights and makes diluted air do their work.

Tesla sends currents of high pressure through space without any conductor at a voltage many times greater than that employed in electrocution. He sends currents through his body that vibrate a million times a second or two hundred times greater voltage than is needed to produce death.

Tesla's aim is to hook nature's machinery directly to man's, pressing the ether waves directly into man's service without the generation or intervention of heat. By so doing an enormous proportion of energy could be saved that now goes to waste. Tesla's polyphase motors were adopted for converting into electricity the power of Niagara Falls.

It is thought that the Niagara Falls Power Company can before very long furnish Chicago with energy at less cost than the steam made here by coal is furnished. Electricity is carried to Frankfort from Laufen, where it is created, with a loss of only four per cent. Electricity is generated at the falls at Folsom, Cal., and is taken by overhead wires to Sacramento, twenty-four miles, with a loss of not over twenty per cent.

THE PHONOSCOPE

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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.

Recent developments in the talking-machine trade assure manufacturers and dealers alike that the business is still in its infancy. The necessary appurtenances to the several types of the various makes of talking-machines are becoming more and more numerous. This complication is a direct result of the legitimate growth of the wonderful business not even dreamed of by our ancestors. Statistics tell us that upwards of 200,000 talking-machines of various makes are now in use. In every country on earth will be found a talking-machine of some kind. From every nook and cranny of the habitable globe are received, daily, orders for more machines. Mail, freight and express deliveries are slow and this very rapid age insists on conducting its business, where practicable, by the telephone and telegraph. These recent methods are rapid but expensive. Appreciating the growth of the business during the past twelve months and anticipating the gigantic strides to be taken along these lines, it has been deemed wise, in order to assist in the development, to formulate a telegraphic code for the general use of manufacturers, wholesalers, jobbers, retailers and all who are in any manner interested in the business. This code serves a twofold purpose. Firstly, it is a comprehensive dictionary, unabridged, of all terms and all parts of all talking-machines yet invented. Secondly, it enables the correspondence of all to be conducted with dispatch and accuracy at a nominal cost.

By this code one in any part of the world can order instantly by one word any machine or part of any talking-machine. The code can be utilized and much money saved by its use by dealers in this country as well as in distant lands. Any order or inquiry pertaining to any talking-machine, or its parts or supplies, can be transmitted instantly by means of this code.

Its cost can be saved on any one message sent. We will suppose the San Francisco dealer, not wishing to await the mail's delivery, sends this message to a manufacturer in New York:

"Send me as soon as possible by Express, C. O. D., the following records: Twenty-four assorted band, orchestra and instrumental records, thirty-six assorted vocal (singing) records and twelve sample exhibition records, as loud as possible for horn in concert entertainment. Ship to-day by the Wells Fargo Express Co., so as to arrive here by July 3d."

The telegraphic rate from New York to San Francisco is \$1.00 for ten words and seven cents for each additional word.

This message would necessitate the ordinary tariff on forty-eight words, \$3.66. By the code the order could be placed with ten words as follows:

"Kapten knives Itabit Jemals Innocent Hummock Lifesome Elemina Advocant Redcoat."

At an expense of \$1.00; a saving of \$2.66.

Hunting's telegraphic code which is now on the press will be a necessity to all in the talking-machine business. Its cost is nothing compared with the information contained. It is a volume of 360 pages and the compiler guarantees the trade that the code will be in the hands of the leading dealers throughout the world. The novel features of the work are several. Not only will the book contain a detailed list of each and every interchangeable part of each and every talking-machine yet invented, but it will contain numerous illustrations of machines and component parts photographed to scale so that the appearance of the several machines may be judged at a glance.

Editions will be published specially adapted for each class of talking-machines so that a dealer in any one machine only will not be bothered by irrelevant information concerning other machines in which he has no interest.

In conclusion the compiler assures subscribers to this code that the greatest available skill has been utilized in its composition. Highest authorities have been constantly consulted and conciseness, correctness and completeness are its features. The work has been formulated in accordance with decisions of the International Telegraphic Conference of Paris and is in full compliance with rules and regulations laid down by the said conference and contains only such words as are officially recognized and accepted by the usages and customs of all nations.

Hunting's Talking-Machine Telegraphic Code may be purchased from leading dealers in all portions of the habitable globe.

Our Correspondence

All questions pertaining to Talking Machines, Picture-Projecting Inventions, Automatic Coin-in-Slot devices, Amusement Inventions, etc., will be cheerfully and fully answered in this column. Inquiries for this department should be addressed, Information Department, The Phonoscope, 4 East Fourteenth Street, New York, U. S. A. ❖ ❖ ❖ ❖ ❖

PORTLAND, Ore., May 27, 1898.

EDITOR OF THE PHONOSCOPE:

It has been several months since we wrote for your valuable paper, so it might not be amiss to jot down a few jottings from this "neck of woods." In regard to the business, I may say that up to the first of April it was fairly good, but since that it has been very light, though last week was a great improvement.

There is no use in mincing the matter, the cheap machines and cheap records have knocked the life out of business.

When you see two great "lubbers"—big burly men—going around the country with a machine that costs \$10.00—and records that cost 50 cents each and only about twelve records at that, surely the business is getting into a corner. When a machine is given away with an order for 1,000 cigars, 5-cent cigars at that.

When a man can get a talking-machine with a suit of clothes, or a pound of tea, surely we may soon expect to see them displayed on the "49-cent counter." Now what is a fellow to do that has a first-class machine that costs \$100.00? With records that cost \$12.00 per doz., "Echo answers: 'What?'"

The Projectoscope is still in the field; there are two still running in Portland. There are, however, many for sale. It is a poor week when I am not importuned to help someone sell a Projectoscope; even while I am writing this, a "professor" comes in and wishes me to try and sell one for him, saying he had just landed here "from the North," which means, here on the coast, Alaska.

Poor business here, I think, may be accounted for in part, on account of the war with Spain, but I think it only temporary; it will resume I think after a little.

Why is it that some of the record-makers in the East are so slow?

One man had my money *one hundred and four* days, and in that time I wrote four letters of inquiry to him, getting a reply to the last one only.

Now, another party has had my order, with the money, over fifty days. I have written twice—no response as yet. It seems to me that a man who buys records ought to get some little recognition; it would seem that the least they could do would be to write and say they received the money and would ship records *when they got ready*; this would seem to be the fairer way. Yet I ought not kick for I have made much money from his (?) records, and yet I do wish he would "*Russell*"—for I need them, and shall soon be forced to go *Hunting* around some other place for them.

We have kept hammering away at the license on phonographs here until we think it nearly knocked out. In fact we have paid no license this quarter, which began April 1st. Recently one of the inspectors told me that the council had decided that the intent of the law was to collect license only on operators on the street; that I had a place of business which would exempt me, and yet I paid it for a year. Now can I sue for "alimony," and recover?

"Sir" Walter Scott Gray, of the Columbia Co., Chicago, sojourned a week in our village, and did some business in the adjoining towns. He gave us to understand that his trip West had resulted in good business, and thought he would return in a couple of months or so. Mr. Gray happened to be here during the "rainy season" and when he went away we discovered that he was a full-fledged "web-foot" that is, he had flanges between his toes. This is a rich country, there is nothing like it.

Two weeks ago I planted a "Casey" record in the front yard of the post-office, and now there are several Irishmen growing out of the ground there that will be fit to run for aldermen at harvest times.

Everybody in Portland is talking of Dewey. There is a great call for songs and music on the great naval battle at Manila. Dewey is certainly king of the Phillipines.

JOHN MONROE.

The class day exercises of the graduating class of Syracuse University were changed entirely through the actions of the undergraduates. In order to prevent interruption from the under classmen, as they delivered their farewell words of advice, the seniors decided to use the phonograph and megaphone. The orators of the day delivered their speeches to the mechanical instruments, and thought surely that all obstacles had been overcome and were congratulating themselves.

The juniors found one of their fellows who was ready to spoil the programme, and five minutes before the time for the commencement of the exercises he crawled along the edge of a gallery overlooking the stage, and with a whoop dropped on the end of the megaphone, which was protruding from the organ loft. He fell with a crash to the platform, carrying the instrument with him.

General News

The Lyric Phonograph Company, of New York City, will open a branch in San Francisco, Cal., about the first of July.

We have been promised something entirely new and novel in the line of opera selections from the Norcross Phonograph Co.

The American Graphophone Company has declared a dividend of $1\frac{3}{4}$ per cent. on the preferred stock, payable May 15 to stock-holders of record May 1, 1898.

There has been placed on the market a recorder which is adapted to any style of graphophone and retails at a very nominal figure. The manufacturers guarantee that it will produce fine results.

Mr. C. E. Stevens, formerly general manager of the sales department of the National Phonograph Co., has resigned that position and is now one of the proprietors of the Edison Phonograph Agency.

Mr. C. H. Wilson, of Schenectady, who has been connected with the General Electric Supply Co. for eight or nine years, now fills the capacity of general manager for the National Phonograph Co.

Mr. R. Allan has perfected a new blank which he claims will not break when dropped on the floor, readily receives the recording sapphire, does not wear out, and can safely be sent through the mail.

Mr. Frank Dorian, manager of the Paris office of the Columbia Phonograph Company, who has been visiting his friends here, has sailed for Paris. Mrs. Dorian and her little son will spend the summer in this country.

American Mutoscope Co. have opened a very elaborate exhibition parlor at 1193 Broadway, New York City. The Mutoscope heretofore has not been exhibited in this manner, having been exhibited in saloons and places of amusements.

The Emerson Graphophone Company, formerly of 67 Plane Street, Newark, have removed to larger quarters and are now located at 67 Central Avenue, where they will keep on hand talking-machines and records of every description.

C. D. Emerson has been taking some very good records of the Trinity Chimes. In order to obtain these records Mr. Emerson is compelled to go to the top of the Trinity Church and arrange the machine in such a manner that he can procure the chimes evenly.

A curiously annoying theft it that of a negative film of the late solar eclipse, taken for the cinematograph by one of the British astronomical expeditions to India. Somewhere between Buxar, in India, and London one of the boxes was opened and only the eclipse film taken out.

Mr. Norcross, of the Norcross Phonograph Co. claims to have taken 620 band records in three hours. While his statement has been very much doubted he was willing to wager on it, but as yet no one has taken him up. The company just received a sample order for 1,000 records from England.

Mr. H. A. Shattuck, formerly manager of the Standard Talking Machine Co., has taken full charge of the advertising and printing department of the Edison Manufacturing Co., and the National Phonograph Co. This is not his first attempt in this line, and judging from the interest shown in his work he ably fills the position.

The phonograph was utilized in a new way at a republican banquet at Grand Rapids, Mich., recently. Congressman Smith, a member of the house committee on foreign affairs, was unable to be present on account of congress being in session. However, the audience listened and applauded a speech by him which was rendered through the phonograph.

The John H. Perrigo Agents Supply House, Milo, Maine, John H. Perrigo, Prop., has just put in a very large supply of records and all fixtures to repair phonographs and graphophones, films, projecting machines, etc., where he will supply the Eastern agents at short notice, saving time and express charge. This is the only house of its kind East of Boston.

William P. Hackett, of Winchester, Ky., has invented a coin-controlled apparatus for dispensing liquids. This apparatus consists of a faucet, a cylinder with piston and rod connected to and operating the faucet, a compressed-air valve connected to the cylinder, a coin carrier operating the air valve, a liquid receiving and weighing device and a discharge air-valve controlling the escape of air from the cylinder, the discharge valve being opened by the movement of the liquid receiving devices. By inserting a coin into the apparatus, a certain amount of liquid is dispensed.

An interesting and delightful dinner party was given Tuesday evening, May 24, in one of the elegant private dining rooms of the Waldor-Astoria by Mr. and Mrs. E. D. Easton to a small number of their intimate friends. The guests were not aware until they assembled that the occasion was the fifteenth anniversary of the wedding of the host and hostess. Mr. Easton is President of the American Graphophone Co., and of the Columbia Phonograph Co. A pleasant event of the evening was the appearance of several of the most eminent record makers for talking machines, who complimented Mr. Easton and entertained the company with a delightful programme. Those who took part in the entertainment were Russell Hunting, Vess L. Ossman, Steve Porter, George J. Gaskin, Geo. Schweinfest, Cal Stewart, Fred Watson, Fred Hylands and Dan Quinn.

Mr. G. H. Mann, Assistant Superintendent of the Louisville and Nashville Railroad, sent some of Miss Mann's (his daughter) records to Mr. W. W. Watson, Chief Dispatcher of the Louisville, Henderson & St. Louis Railroad, who is considered quite a critic on talking-machines and records, and who uses the phonograph for taking dispatches. While Mr. Watson was listening to the records he was called upon the 'phone by Mr. Fred Hudson, Chief Freight Agent at the depot at the other end of Louisville. After receiving the message Mr. Hudson was asked to listen to one of the records through the telephone to ascertain whether it could be heard distinctly. In reply he stated that it was very distinct and asked Mr. Watson to keep the records until the following Monday when he would bring Mrs. Hudson to listen to them. He claims that he never heard any finer or clearer records and would never purchase any but originals hereafter.

The firm of Harms, Kaiser and Hagan, comprising the T. B. Harms Music Publishing Co., Mr. Henry J. Hagen and Mr. John Kaiser, have entered the field of making original records for phonographs and graphophones. The T. B. Harms Co., having extensive interests in the theatrical business and being in touch with the popular and noted singers are in a position to place first-class talent upon their catalogue. Mr. Henry J. Hagen is one of the expert record takers whose experience dates back to the experimental stage of the phonograph and has been with various leading firms in the East. Mr. John Kaiser is the owner and originator of the celebrated Kaiser horn and has been known in phonograph circles for many years. They have records of the following artists: Mr. Joe Hart, late with Hallen and Hart, Chas. B. Ward, the original Bowery Boy and well-known composer. The Metropolitan Quartette, Atwood Twitchell, the Imperial Band, Cal. Stewart and New York Symphony Orchestra.

It is stated the improved apparatus of M. Lioret that reproduces speech and music with such loudness and distinctness that they can be heard in the largest hall, or to a long distance in parks out of doors. With the source of sound hidden from view, the illusion of an orator speaking or of a musical concert is said to be perfect. The important special features of this French phonograph are a cylinder of celluloid, a style of sapphire, a very wide vibrating disc set in a flat box forming a resonator, and a modified form of trumpet fixed to the resonator. The special trumpet has near the center of its length a small strip of metal held in an aperture by a screw, the extraordinary result being a doubling of the sound and a great increase in clearness. The even more remarkable trebling of this effect is produced by a second trumpet, which is of thin metal in the form of a truncated cone, and is placed in front of the trumpet. The record cylinders are prepared only in a special registering phonograph, the celluloid being softened for the purpose by a secret process.

During Sousa's Grand Concert Band engagement at the Pittsburg Exposition recently, there was quite an unique event took place in connection with the concert of Friday afternoon. Mr. F. F. Howe, of Crafton, who has one of the Edison home phonographs, assisted by Mr. F. C. Yanda, arranged and took successfully upon wax cylinders a number of productions of this famous band. One in particular was the popular air, "Stars and Stripes," Sousa's own composition and production. Much credit is due these gentlemen for the good results obtained under the conditions which must be contented with in recording the music of a band at a place of that kind. We understand this is the first and only attempt to catch the music of this famous band outside of rooms specially prepared and arranged for that sole purpose by the different talking-machine companies at their laboratories. These cylinders can be preserved and the record thereon reproduced at will any number of times by those having a talking-machine. In this progressive age one can remain at home and listen to the latest operas and music by the most famous bands. These machines are the results of the invention of Thos. A. Edison, and are indeed wonders. Voices or sounds of any kind can be recorded on these cylinders, laid away, and reproduced at any future time exactly as they were placed thereon.

After a long series of careful experiments a well-known firm has perfected the new wide-angle adjustable objectives. By means of these objectives the operator is enabled instantly to adjust the size

of his picture to the size of the screen at any distance. The great value of these objectives will at once be appreciated when it is understood that an operator who is forced to use his machine in a small hall or on a stage behind the curtain, say twenty or twenty-five feet from the screen, can at once adjust the objective to make a large life-size picture. If in his next exhibit he must use his machine at the back of a large hall, say, fifty, sixty or seventy feet from his screen, he can instantly re-adjust his objective to make the required sized pictures. These objectives can be used on any machine, provided they can be brought near enough to the moving film.

The operation of the lens is so simple that any one can use it. To make a large picture it is only necessary to push the inside sliding tube in as far as it will go, with the lens end innermost. To diminish the size of the picture, gradually draw the tube out, focussing the lens in the same way as with any other objective. To still further diminish the picture, draw the inside tube all the way out, reverse it with the lens end out, sliding it backward and forward to get the proper size image. When it is drawn all the way out the smallest size picture is produced.

Mr. H. W. Schroeder, of Kansas City, has hit upon an idea, perfected it and made successful records of a woman's voice. May C. Hyers, known as the "Black Patti," sang several solos into the phonograph, which were afterwards reproduced with good results.

The method by which Mr. Schroeder has regulated the diaphragm to a woman's voice is very simple. Near the base of the horn, which conveys the voice into the machine, is a valve operated by an air bulb connected with it by a small hose. The bulb is held in the singer's hand and when she reaches particularly high notes in her song she presses the bulb, which opens the valve, allowing part of the volume of sound to escape. Thus the excessive vibration of the diaphragm is reduced and the needle properly records the tones. That the voice may not be interrupted by the piano, a separate horn, with the opening close to the back of the piano, conveys the accompaniment to the recording machine.

Every sound that agitates the needle of the diaphragm makes its own individual record in the wax. An expert can read by the lines in the wax whether it is of an orchestra or the voice of a man or woman speaking or singing. Edison expects to be able to compile a code for the reading of wax records, whereby one can read a message spoken into a phonograph by examining the lines.

Mr. Liepman Kaiser, of the Excelsior and Musical Phonograph Co., has just returned from a trip amongst the merchants interested in talking-machines, records, etc. He stopped at Pittsburg, Pa., Wheeling, W. Va., Zanesville, Columbus and Cincinnati, O., Indianapolis, Ind., Detroit, Kalamazoo and Grand Rapids, Mich., then sailed by boat to Chicago having a pleasant ride on Lake Michigan; from there to St. Paul and Minneapolis and home. He claims that during his trip he learned people were becoming more educated in the talking-machine business and wanted higher class records than heretofore. For the benefit of others who go out on the road to sell original records, Mr. Kaiser would advise to give Cincinnati, Grand Rapids and Kalamazoo a wide berth as he claims the majority only handle duplicates. Business was quite brisk in all the other places visited, especially Chicago, and the firm he represented were very much pleased with the result, making it doubly interesting to him. Mr. Andem, of Cincinnati, O., one of the heavy-weights in the business out West is a very pleasant gentleman.

He says he reads THE PHONOSCOPE regularly. Another energetic phonograph man with whom he was very much pleased to meet was Mr. Mansfield, of the Michigan Electric Co., and also Mr. H. H. Myers, of the Ohio Graphophone Co. of Cincinnati, O.

Letters

This column is open to any of our patrons who have a complaint to make, a grievance to ventilate, information to give, or a subject of general interest to discuss appertaining to Sound Producing Machines, Picture Projecting Devices, Slot Machines, Amusement Inventions or Scientific Novelties in general.

THE PHONOSCOPE PUBLISHING CO.

The machines for recording and reproducing sound are certainly a marvelous invention and so regarded by all persons who have seen or heard them; but how few have stopped to consider what an old machine it is and how many years it has been invented before it was put to its present use of talking as natural as a human being or of reproducing a full brass band, etc.

After all that has been written and said of the wonderful phonograph (of which a more appropriate name would have been Lathophone) and graphophone and their supposed inventors it stands to-day, with the exception of the diaphragm, nothing more than an automatic turning lathe.

Trace back sixty years or more when feed lathes were introduced and common in all machines and sawers' shops and you have the date of the machine that would talk, but could not until the diaphragm and engraving tool for recording sound was invented and placed thereon, which give it life.

As for the reproduction of sound, that was never invented, but was a discovery, and discoveries are not inventions, according to numerous interpretations of patent decisions.

The principle idea by which the talking-machine was made a success and of which the writer claims to be the first inventor, was in using a diaphragm in connection with an engraving point to obtain the record. The reproduction of sound as heretofore stated is not an invention.

Take away the diaphragm and engraving point from your talking-machines and you then have a lathe whose principle is so old that the inventors are unknown.

T. W. SEARING.

An Afternoon's Recreation With the Edison Phonograph

On Friday afternoon, June 3d, Mr. Joseph Bernhardt, of Public School No. 21, 55 Marion Street, New York City, gave a highly instructive entertainment under the above title to the Primary Teachers' Association in the Chapel of the Normal College, 68th Street and Park Avenue. A very interesting programme of musical selections, consisting of operatic, vocal and patriotic reproductions, was rendered with loudness and brilliancy. In the course of his address the lecturer took occasion to refer to the practical uses of the phonograph, among which he instanced especially its capabilities in the line of languages. Mr. Bernhardt has written a little book which he hopes to have published soon on German pronunciation, and in connection therewith he has recorded on a single phonograph cylinder the names of the letters of the German alphabet, the sounds of the vowels, double vowels, diphthongs, and modi-

fied vowels, and an exercise of over 200 words, in groups of fours, illustrative of every distinct species of sound peculiar to the German language. After a practical experience with the instrument of several years during which he has trained his voice to bring out the more delicate shades of German utterance, every word and syllable is reproduced with startling force, precision and clearness. The idea is for the pupil to sit down before a phonograph or graphophone and with the book open see the printed word and hear its pronunciation at one and the same time. In other words, it is a training of the eye and ear, *without the aid of a teacher*, in the pronunciation of the German language. The method has been tested and has proved itself infallible.

Mr. Bernhardt referred to a number of other practical applications of the phonograph and concluded with a brilliant reproduction of the "Battle of Manassas." The Programme was interspersed also by a number of finely rendered musical selections on the piano by Miss Mary C. Costigan, of Public School No. 137. The auditors expressed themselves as highly delighted with the phonograph and referred to the afternoon's entertainment as perfectly "fascinating."

Men and Machinery

The mechanics themselves are at war with the progress and dominance of machinery. They see in it their daily and tireless foe, which is always winning new fields from them, taking away their jobs, destroying the usefulness of their fingers by its greater speed and accuracy, ruining their prospects, supplanting their knowledge. Every new and better machine seems to throw many men out of work, and they see no end to it if "the supremacy of machinery is allowed to go on." Every day there is something new, and every day some one loses his place because a better machine dispenses with his services; so they hate machines and sometimes smash them, and always oppose new ones. That every one of them is better off for past inventions they forget; that railroads, steamboats and machines of past times of every kind have given to workmen comforts, luxuries, pleasures beyond the wildest dreams of their forefathers, they ignore. All they see is their job and its loss. No wonder it is so; the job is their daily living. No one can lose the bread from his mouth without rage and fear. But they should look a little further ahead and see that the more machines there are the more men are employed. Shut off the steam and electric works from New York City to-day and to-morrow one-half of New York would be obliged to move out of town. The city could not even feed one-half its population at hand labor. Two-thirds of them would have to leave and go to the country to get work and bread. The more machines produce, the more there is for everybody; and the more there is wanted the more work there is for everybody. Because one merchant fails, there is no reason for all merchants to rail and storm. Mechanics must learn to manage better. Because one class of laborers lose their work temporarily, the rest need not chafe and strike. The only way is to manage to know more, to be quick to shift the new conditions, to be ready to change and to learn novelties. The world must improve, though the individual is hurt. We build railroads and canals, though men are killed doing it. We mine coal and sail ships and run electric wires and break horses and blast rocks, though lives are lost at these and other employments. In the same way we must go on inventing and using improved machines, though some are thrown out, because that way lies the prosperity and plenty of the future world.

Our Tattler

Alfred.—Did you ever experiment with the X-rays, Professor?

Morris.—Yes, confound it. The last "X"-raise I made was on a full house and the pot went to the other fellow on a four-in-hand.

Mother—What in the world shall we do? Our son cannot afford to marry, yet he is determined on it.

Father—I'll fix him. The very next night he comes in late, I'll fix that d—phonograph to screeching out some of your midnight talks to me.

As the agent for the phonograph paused at the door he felt a friendly tap on the shoulder.

"You can't sell any talking-machine in there," said the stranger.

"Why not?" asked the agent.

"They already have a United States senator in the family."

The men of science have been teaching us to believe that the day is not far distant when the reporter—in his professional capacity—will be killed by the phonograph. In the interests of pure science an Indian paper turned on a phonograph to "take down" a speech at a meeting, and this was the result: "Mr. Chairman—hem—ladies and gentlemen—We are met—hem—on this—hem—auspicious occasion—'speak up'—'old yer 'ead up'—on this auspicious occasion—'out with it'—to—er—to—'let 'em 'ave it'—'go it, old brass lungs—to—er—really, in face of such interruption, I cannot go on—'go on'—'don't apologize'—on this auspicious occasion, to—er," and so on.

Horrors! It has been invented at last and henceforth every afternoon at home is liable to end in a Kilkenny fight. The thought-reading machine is here.

It is exhibited just at present at a Masonic festival in St. Louis. The thought-reading booth has entirely outdone the Egyptian palmist's and the Seventh Daughter's. To the thought-reading booth flock young and old. It—the instrument by which one's soul is revealed—is operated by keys like those of a telegraphic instrument. The operator reads the visitor's thoughts. He does not proclaim them by word of mouth, but immediately flashes upon a canvas screen photographs of the thoughts—a picture of the beloved, perhaps; one of the Easter bonnets; one of the dearest foe and so on.

Imagine it at a dinner party announcing "why does old Gen. Trinkew positively booze? It's disgusting." "I wonder if the waiter we hired for this occasion only will fail to find things and act as though he had never set foot in the house before." "How can Eunice wear lavender with her complexion; she looks positively saffron"—and so on. But that is too horrible to contemplate. It is needless to say that the thought-reading machine is never without its appreciative audience at the St. Louis fair.

It was a Cincinnati man who rushed into a long-distance telephone office, carrying his grip as if fresh from his train, and asked to be connected with his home.

He had nothing in particular to say, but it seemed to give him pleasure to hear the voices of the dear ones in the home he had left. First the wife exchanged a few words; then, one after another, each of the five children came to the 'phone and "helloed," told about their school trials and triumphs and related the doings of the pet pony and the cat and the canary.

Every five minutes, as is the custom in costly long-distance work, the manager notified the proud papa, but he always answered, "I'll take five minutes more," until, last of all, the baby had been held up to the transmitter and had piped, "Hello, papa!"

Then the Cincinnati man paid \$108 and went away happy.

It only cost a Chicago man about \$10 to telephone from somewhere in Michigan to his dog. He was called away from home suddenly on business. The animal was missing him terribly, the family wrote, refused to take his meals and might die. Of course, letters and telegrams didn't reassure the pining dog, though his friends tried hard to explain things.

So the dog was taken to a telephone receiver, and at the other end of the wire, the Chicago man began a series of cheerful, if slightly, inane remarks:

"Wh' ze matter, old boy?" he began, and the dog commenced to prick up its ears. "Brace up, old fellow. Was its precious dogums lonesome, hey? Too bad! Shouldn't leave him, so he shouldn't. Coming back soon, dogums. There now. Be a good dog and dontee k'y."

When the conversation ceased the dog barked, as much as to say: "Can't make me believe he's dead after that."

There have been many cases of courtship by long-distance telephone; a little ingenuity and a few round, white dollars often enable an absent one to keep himself not forgotten, even in a multiplicity of suitors buzzing about the girl he left behind him.

And, of course, cases are accumulating until they are no longer a novelty of bank and corporation directors attending meetings by 'phone, or even presiding over meetings a thousand miles away. The long-distance telephone enables men in distant cities to discuss and close great business deals as comfortably as if they were in the same office.

X-Ray Items

X-rays for the Wounded

A portable X-ray apparatus, intended for use in the Cuban campaign, has been designed by Prof. R. A. Fessenden, of the Western University of Pennsylvania. The new machine is said to be about the size of a Webster's unabridged dictionary and weighs but twenty-five pounds. It includes a dynamo and can be driven by a small gasoline motor or a gas turbine. The outfit is said to be sufficiently powerful to send enough rays through the body to illuminate clearly the fluoroscope.

Telegraphy by Electric Rays

Professor Zickler, of Bruenn, Austria, has invented a new system of wireless telegraphy, which gives promise of being free from the defects of the Marconi system. The new invention renders possible simultaneous listening to or reading by other persons.

Professor Zickler's system employs electric light rays for the transmission of telegraphic signs. These may easily be issued toward one fixed direction.

The new system can be used at night. Professor Zickler will soon make experiments on a large scale by means of reflectors.

X-rays in Horticulture and Medicine

Investigators have demonstrated in various ways the influence of Roentgen rays on living organisms. In recent experiments, Messrs. Maldiney and

Thormenin have proven that the rays hasten the germination of seeds and that the result, which is of no practical value, is not due to heating of the soil. They conclude also that the rays do not hasten the formation chlorophyll. Dr. Edward Schiff of the Vienna University has shown more important effect, having on the one hand removed superfluous hair from the body without the slightest inflammation, while on the other hand, he has successfully treated lupus by an artificial inflammation that could be regulated in intensity at will. In these two kinds of cases, at least, the X-rays may have a real value in medicine.

Two Kinds of X-rays

The latest discoveries regarding the Roentgen rays are reported to have been tested by Professor Valenta, of the Vienna State School of Photography. The fact that there are two distinct kinds of these rays, he states, is not generally known. One of them has the faculty of penetrating everything, even metal and bones. This kind is formed only when the glass tube is void of air. That is a condition very soon arrived at, and till the other day no means of preventing it was known. Now, however, glass tubes are made with a bulb fused to the top and filled with caustic potash and connected with an electric apparatus. As soon as the air in the tube is exhausted the current passes through the bulb, heats the caustic potash, which creates water steam, and this latter fills the glass tube with air. For this reason they are called self-regulating tubes. There is also a great success in the photographic application of these rays to chronicle. Now films made of celluloid are used as plates; they are coated on both sides, and the screen is prepared with a fine-grained mass. The result of all this is that the picture is more expressive, and that the time of exposure has been considerably reduced. An entire human figure can now be taken in two or three minutes, whereas formerly three to four hours were requisite.

Where They Were Exhibited Last Month

Biograph

Smith's Auditorium, Bridgeport, Conn.; Wonderland, Detroit, Mich.; Keith's Theatre, Boston, Mass.; Keith's Union Square Theatre, New York City; Opera House, Chicago, Ill.; City Park, Denver, Colo.

Graphoscope

Masonic Opera House, Circleville, O.

Projectoscope

Upland Church, Chester, Penn.

Cinematograph

Empire Theatre, Detroit, Mich.; Eden Musee, New York City.

Animotoscope

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

Vitascope

Baldwin Theatre, San Francisco, Cal.

Wargraph

Roof Garden, Masonic Temple, Chicago, Ill.; Proctor's Theatre, New York City.

Magniscope

Temple Theatre, Laramie, Wyo.; Lyceum Theatre, Denver, Colo.

Veriscope

Park Theatre, Boston, Mass.; Lyric Theatre Hoboken, N. J.

Moving Picture Advertising

With the advent of warm weather comes the awakening of a new feature in metropolitan advertising, the use of moving pictures. This device has been hibernating somewhat through the cold season, when it is difficult to collect a crowd on the streets of New York; but now when the hazy evenings descend again over Broadway, large canvas screens are unfolded in every place where passers-by can obtain a good view, and with the turning of a bright light upon the canvas, the people begin to gather.

Presently a picture appears on the screen, which we immediately recognize as having stared at us all winter long from the fences or street cars. We have even wondered if that girl offering us some new brand of cigars didn't sometimes get tired of holding out her arm that way, and, involuntarily we feel glad that she is at last going to move from her cramped position. She walks about the picture in a most lifelike way, and we go our way feeling as if we were quite well acquainted with the young lady.

The figures cast upon the screen are very lifelike, only the crude coloring and the tremor that the mechanism produces dispelling the illusion.

Phonographs

"I am working day and night now," said a circuit court stenographer, "to get up transcriptions for the supreme court, which convenes June 7. When a lawyer wants a transcript of a case he generally waits until the last moment to order it, and then often get up a transcript of evidence that covers several hundred pages of foolscap, and must work day and night to complete it in time, or the lawyer loses the opportunity to take up his case.

"Although stenographers may use the same system, it is very seldom that one can read the other's notes, and with all our phonographs and modern inventions no way has yet been devised to help the stenographer when he is pushed in this manner. The only thing he can do is to dictate his notes to another stenographer, have him take them down in shorthand, and then write them out himself. This merely divides the work, and the notes have to undergo two translations before they are ready for the eyes of the supreme judges.

"We have tried to use phonographs, into which we could dictate our notes, in English, so that the typewriter operator could take them down in manuscript as they came from the cylinder. But each cylinder, as they are manufactured now, is only large enough to contain the words of one little song or short speech and to dictate a long transcript of 300 or 400 pages would require a bushel basket of them. Besides they are very expensive. The phonograph itself costs from \$65 to \$75 and each cylinder costs twenty cents. It is true you can buy a little machine for shaving them off so that they can be used again, but even then the expense would be enormous. I understand that the phonograph is being used in Jefferson City by the stenographers of the supreme court, but I do not know how they can stand it unless the state pays for it or they are millionaires in their own right.

"If some inventor would get up a big wax cylinder, either very large in diameter or very long, so that it would take down several thousand words as they are spoken into the phonograph, he could do an enormous business with stenographers and court reporters.

"I have been told that Swift & Co. put in thirty phonographs to save stenographers hire. They put four girls on to learn the machines, but I understand they did not work well. To operate a typewriter and put down the words as they come from the phonograph you must have the tubes that deliver the sound in your ears all the time, and the girls claim that the continual thumping and jarring makes them deaf. However, I have no doubt that the phonograph manufacturers will soon invent a sort of megaphone arrangement to deliver the sound, then good-bye, commercial stenographers!

Manager Rich of the Swift Packing Co. stated to a reporter that the phonographs put in at that establishment had so far given very good satisfaction.

Martial Spirit in Song

Big Demand for Music Bearing on the Maine Disaster

Battle songs, war songs, marching tunes and every sort of music that has the ring of militarism in it is finding a place in the sales of the music stores. Several songs descriptive of the wreck of the Maine are already on sale and many more are in press.

"Military music is our specialty to-day," said a music dealer. "I have had all of the old military music in stock got out ready for the increased demand. It is not only the songs and music inspired by the destruction of the Maine that are being called for, but the old songs are finding many purchasers.

"I had four calls to-day for 'Marching Through Georgia' and two calls for 'Dixie.' The 'Star-Spangled Banner,' however, is the favorite of the old songs. It has more friends, but I believe that the foreign war has the effect of making 'Dixie' a great favorite. At present it is regarded as the song of the South alone, but it has more of the elements of a true marching air than any of the others, since the war with a foreign foe had taken place I predicted that 'Dixie' would be the first in favor as a marching tune.

"Of course, the greatest sales now are of the Maine. We have published two such songs, and I suppose every music-house will publish at least one if the excitement keeps up a few days longer."

Some of the Maine songs which are on sale are: "Those Who Died on the Maine," "Our Heroes of the Maine," "The Gallant Dead of the Maine," "The Wreck of the Maine," "The Martyrs of the Maine," "Avenge the Heroes of the Maine," "Heroes Murdered on the Maine." In naming these songs the first thought of the writers is evinced in the fact that the name of the wrecked battleship is in the title.

Gigantic Industry For Wilmington

A \$1,000,000 industry for Wilmington!

This sensational announcement has been whispered among business men and real estate agents the past few days. Desirable locations in and about the city have been inspected by several strangers and more than one local real estate agent has been excited by the prospect of the sale of property at a price twice its value.

The citizens of this town, all of whom would benefit by such a great industry, will be indignant when they learn that representatives of the syndicate intimated to a representative, who had shadowed their movements, that they were dissatisfied with the treatment accorded them by a real estate dealer.

"There could be no better town for our industry than Wilmington," said one of the capitalists. "You have every advantage possessed by the largest cities and you have skillful mechanics whose work in their line is unsurpassed. The location of the city is also admirable, not being too far from either New York, Philadelphia, Baltimore or Washington. But that's no reason for exacting Philadelphia prices for property.

"The man whose work we desire to be carried on named Wilmington as the ideal city in the East for his enterprise and we wished to comply with his desires. But we don't propose to be robbed, and I cannot say now where the proposed industry will be located nor whether the inventor will agree to any other location."

The capitalists were traced to the factory and business offices of S. Lubin, inventor of the Cineograph, at Philadelphia. A conference was held with Mr. Lubin recently, but no facts could be extracted either from the inventor or the capitalists. Wilmingtonians, however, will be interested at this juncture in the following paragraph which appeared in the Call Boy's (Harry L. Knapp) department of the *Philadelphia Inquirer* of September 27 last:

"Lubin, of Cineograph fame, is an inventor. The cineograph, now being exhibited at a local theatre, is one of the finest of moving picture machines in the world. The representation of a rescue at Atlantic City is probably the most sensational living picture ever shown in Europe or America. Few Philadelphians know that in this town are made machines and films that are, in addition to being shown in all parts of America, exhibited in England, France, Australia, Canada, South America and Hawaii. Last week the pictures of a scene at the Japanese Gardens, Atlantic City, was shipped to Singapore, China. The recent enlargement of the Lubin factory demonstrates the value and popularity of this Philadelphia product.

"Many theatrical managers come from New York, the theatrical center of America, to inspect the Lubin plant in this city. Inventions upon which Mr. Lubin is now at work will, it is averred, create a sensation in the scientific world. Recently a party of New York capitalists invited Mr. Lubin to come to New York, offering to furnish him the finest plant in America, together with a financial guarantee for his services, the equal of which has probably never been tendered any other inventor save Edison. The offer was declined. Mr. Lubin declares that no city in the world has the advantages for an inventor possessed by Philadelphia. Twenty factories were employed in making parts of one of his inventions, yet the entire apparatus could have been constructed in any one of them."

Probably the capitalists referred to above are the ones who wish to finance the proposed factory, the rumor about which has caused a sensation here. A prominent member of the Board of Trade said recently that he knew no more about the latter than the rumor, but expressed the hope that the industry might be secured for Delaware's foremost city.

When inventor Lubin was seen he declined to affirm or deny the matter, saying that there might be a million dollar factory or nothing. All depended upon the syndicate of capitalists. "While my factory here is overworked and I cannot supply the demand for the Cineograph and films, I am not anxious to embark in an enterprise of the proportions outlined by the proposed company. Under my own direction the business has prospered amazingly and I have acquired ample money for my future needs.

"The years of work have cost me much in vitality and I am now contemplating a trip around the world. Money is useless when a man is compelled to toil and moil as incessantly as a drag horse. Only by such work could my inventions be perfected, yet I am still at work on improvements."—*Wilmington Sun*.

New Films for "Screen" Machines

U. S. CAVALRY SUPPLIES UNLOADING AT TAMPA, FLORIDA. Here is a freight train of thirty cars loaded with baggage and ambulance supplies for the 9th U. S. Cavalry. In the foreground a score of troopers are pulling, lifting and hauling an ambulance from a flat car. It slides down the inclined planks with a sudden rush that makes the men "hustle" to keep it from falling off. Drill engine on the next track darts past with sharp quick puffs of smoke.

BATTERY B ARRIVING AT CAMP. When Battery B of the 4th U. S. Artillery came to Tampa, Fla., it meant business, and the picture shows it. One by one the big artillerymen pass by in front and reappear in the background, dismounting, unloosening saddle girths and bridles and leading away their mounts. Limbers, gun carriages and caissons in the distance. The sweating horses and the vigorous switching of their tails tell a mute story of hot weather and fly-time.

9th INFANTRY BOYS' MORNING WASH. Imagine forty or fifty soldier boys each with a pail of water on the ground before him, sousing and spattering and scrubbing away for dear life. Soap and towels too. Every man jack of them look as if he were enjoying the wash immensely, and also the novelty of having his picture taken. The big fellow in the center of the picture is laughing heartily. All the figures are clearly outlined, and the whole group is true to life.

MILITARY CAMP AT TAMPA, TAKEN FROM TRAIN. A wide plain, dotted with tents, gleaming white in the bright sunshine. Soldiers moving about everywhere, at all sorts of duties. In the background looms up a big cigar factory; giving the prosaic touch to the picture needful to bring out in sharp contrast the patriotism with which the scene inspires us. The camera was on a rapidly moving train, so the panoramic view is a wide one, and remarkably brilliant.

9th U. S. CAVALRY WATERING HORSES. Taken at Tampa, Fla. Up the road from the camp comes a double file of cavalrymen, a hundred or more, each man leading another horse beside his own. The leader rides a magnificent dapple gray. They approach at a fast walk, with an occasional frisky animal prancing and pirouetting. As they pass by, the spirited action reminds one forcibly of Rosa Bonheur's celebrated 100,000 dollar painting, "The Horse Fair." The figures of both men and horses stand out in bold relief.

10th U. S. INFANTRY DISEMBARKING FROM CARS. A stirring scene; full of martial energy. No ordinary dress parade this, but a picture of *Soldiers*—men with a high purpose. They march up the platform in fours, and left wheel just in front of the camera, passing out of sight in a cloud of dust. The customary small boy is in evidence in great numbers. While the rear guard pass the train pulls out of the station. Literally "out of sight."

10th U. S. INFANTRY, 2d BATTALION, LEAVING CARS. Hurrah—here they come! Hot, dusty, grim and determined! Real soldiers, every inch of them! No gold lace and chalked belts and shoulder straps, but fully equipped in full marching order; blankets, guns, knapsacks and canteens. Train in the background. Crowds of curious bystanders; comical-looking "nigger dude" with a sun-umbrella strolls languidly in the foreground, and you almost hear that "yaller dog" bark.

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 Sailor's Grave By the Sea Geo. J. Gaskin
America Forever Mr. Havens
Behold El Capitan S. Holland Dudley
Belle of Avenue A Myers
Casey As a Fortune Teller Russell Hunting
Casey At the Dentist Russell Hunting
Cavatino "Roberto Le Diable" Miss Mann
Chin, Chin, Chinaman Jacks the Boy "Geisha" S. Holland Dudley
Cold Sweat is on My Brow, "Chimes" Original Lyric Trio
Down at Casey's Miss M. Newton
Don't Be Cross "The Master Miner" Miss Lisle
Fisherman and His Child Myers
Flower Song "Faust" Miss Lisle
Gaspard & Greniehieux "Chimes" Havens and Hooley
Gathering the Myrtle With Mary Jas. W. Reagan
Gallant Emmett Guards Myers
Generals Duets "Queens' Mate" Havens and Hooley
Get Your Money's Worth Len Spencer
He Certainly is a Sweet Black Man Miss Mann
He Certainly Was Good To Me Len Spencer
Henry Did Russell Hunting
Honey, Youse Ma Lady Love Len Spencer
I Dreamt I Dwelt In Marble Halls Miss Lisle
I Live for Thee Miss Mann and I Mr. Hooley
Infelice "Ernani" Chas. Whyte
Infelice "Ernani" Mr. Hooley
I've 'Er Portrait Nex' My 'Eart Dan Quinn
I Want Ma Lulu Miss M. Newton
Kentucky Babe Rodger Harding
Kiss Duett "Mikado" Miss Mann and Mr. Havens
Love Light of My Heart "Bride Elect" Miss Mann and Mr. Havens
Mamma's Ba-bee Knickerbocker Quartette
Masonic March (Descriptive) Edison Orchestra
Maybe Mary Didn't See New York Myers
Miss Malinda Lightfoot Lou Mr. Havens
Moon Song "Mikado" Miss Lisle
Moonlight on the Lake Knickerbocker Quartette
Moloney and the Brick Ed. Leahy
Molly O Jas. W. Reagan
Mulcahey as a Doctor Mr. Jack Simonds
Mulcahey as a Section Boss Mr. Jack Simonds
Mulcahey in the Navy Mr. Jack Simonds
Muleabey as a Judge Mr. Jack Simonds
My Love is All for Thee Miss Lisle
My Dad's the Engineer Myers
Only One Coon in this Town for Me Miss Mann
Our United States Mr. Havens
Old Turnkey "Rob Roy" Mr. Hooley
Old Glory Knickerbocker Quartette
Olcott's Irish Serenade Myers
Off to Philadelphia Mr. Hooley
On the Rolling Deep Chas. Whyte
Put Me Off at Buffalo Myers
Rose, Sweet Rose Miss Mann
Rotiana Dooley (comic Irish Song) Dan Quinn
Ruben Haskins Russell Hunting
Remus Take the Cake Edison Orchestra
Rocked in the Cradle of the Deep Mr. Hooley
Remember Boy You're Irish Jas. W. Reagan
Serenade "Don Giovanni" Mr. Hooley
Simple Little String "Circus Girl" S. Holland Dudley
Sentry Song "Iolanthe" Chas. Whyte
Scanlan's Rose Song Jas. W. Reagan
Sweetest Little Girl in Town Steve Porter
The Church Across the Way Knickerbocker Quartette
The Emblem of the Free Mr. Havens
The Yankee Doodle Boys Mr. Havens
The Girl I Met at a Village Dance Mr. Havens
The Cat Got It Aunt Hannah Mr. Havens
There's Room for One More Star Miss Mann
Toreador Song "Carmen" Chas. Whyte
Trio Iolanthe Original Lyric Trio
Trio "Faust" Original Lyric Trio
Uncle Josh's Visit to a Department Store Cal Stewart
Uncle Josh's Trip to Wall Street and the Stock Exchange Cal Stewart
Uncle Josh's Comments on Signs Seen in New York Cal Stewart
Uncle Sam Tell Us Why Are You Waiting? G. J. Gaskin
Una Vove, Barber of Seville Miss Lisle
Vensano Waltz Song Miss Mann
Verdi's Attila Original Lyric Trio
Walk, McCarty, Walk Ed. Leahy
Willie's Misfit Pants Dan Quinn
Woman, Lovely Woman "Serenade" S. Holland Dudley
Wreck of the Maine Mr. Havens
You May Imagine The Rest Russell Hunting

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 Boy Without a Sweetheart Geo. M. Cohan 9
All I Want's Is May Chickens Sung by 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
Awakening of Venus (Caprice) C. O'Hare 1
Betrothal (Waltzes) Paul B. Armstrong 1
Better Than Gold 4
Break the News To Mother Chas. K. Harris 4
Birth of the Flag (The, March) Walter V. Ullner 8
Black K. P's (The) Hillman & Perrin 1
Big Black Lou M. B. Garrett 7
Bowery After Dark, The John F. Wilson 4
Cast Aside Chas. K. Harris 4
Coon That Stole Ma Honey Wm. H. Kerr 1
Cuscade (March Two-Step) Nat D. Mann 1
Cupid's Dream (Waltzes) Warner Crosby 5
Daddy Knickerbocker (March) Edward F. Kendall 8
Don't Say Good Bye Forever Gilmore and Lenard 3
Don't Give Up the Old Love for the New 3
Dolly (from Bo-Peep) Fred Eustis 1
Gentleman of Color (A) Barney Fagan 1
Good Mister Mailman J. E. Howard 2
Gone Astray Herbert Dillea 5
Her Memory Brings Me No Regret Chas. Graham 1
His Time Will Come M. H. Rosenfeld 3
Honest John Kelly Horwitz & Bowers 1
I Don't Like No Cheap Man Williams and Walker 3
I Love Her Just The Same Chas. K. Harris 4
I Wish My Rent Was Paid Charles B. Ward 2
I Want My Lulu Karl St. Clair 9
If We Should Never Meet Again 2
I've Never G'wine To Lub You Aur More A. Leonard 1
I've Been Faithful To You Chas. K. Harris 4
I've Just Come Back To Say Good-Bye Chas. K. Harris
Just Behind The Times Chas. K. Harris 4
Katie O'Neil M. B. Garrett 7
Kiss Your Goose Woose Bennett Scott 9
Mary's Not as Green as She Looks Ford & Bratton 1
Margaret J. E. Nieol 5
Mr. Vandyke From Klondyke Wm. L. Berry 2
Mlle. New York Maurice Levi 1
My Heart's Delight 3
My Love's a Gambling Man Mathews and Bulger 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
Perhaps She Is Somebody's Mother Al Trahern 5
Prize Cake Walk of the Blackville Swells W. V. Ullner 8
Remember the Maine Walter A. Phillips 2
Revelry (Waltzes) Walter V. Ullner 8
Rosemary (Polka) A. E. B. Leonard 1
Rosie Clancey Arthur Gillespie 1
Scientific Man, The Henry E. Pether 2
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
She's My Only Sister 5
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 Campus (Two-Step) Paul Cohn 1
The Lady With the Rag-Time Walk Armstrong Bros 9
Two Little Dolls Fred J. Haulil 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
Vampire, The (March Two-Step) Warner Crosby 5
Van Courtlandt (March) R. E. Sauce 5
Vigna Ma Baby Harry Jonas 2
Virginia Courtship (Waltzes) Paul Rubens 1
Wave Thoughts (Waltzes) N. D. Mann and J. Silberberg 1
When I Come Back Walter Hawley 4
When Susan Simpkins Marries Jasper Green Hillman and Perrin 1
While the Dance Goes On Chas. K. Harris 4
Who Do You Love? Fred V. Bowers 1
Won't Somebody Give Me a Kiss? 5
You Won't Need to Show Me How Lyn Udall 1

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.

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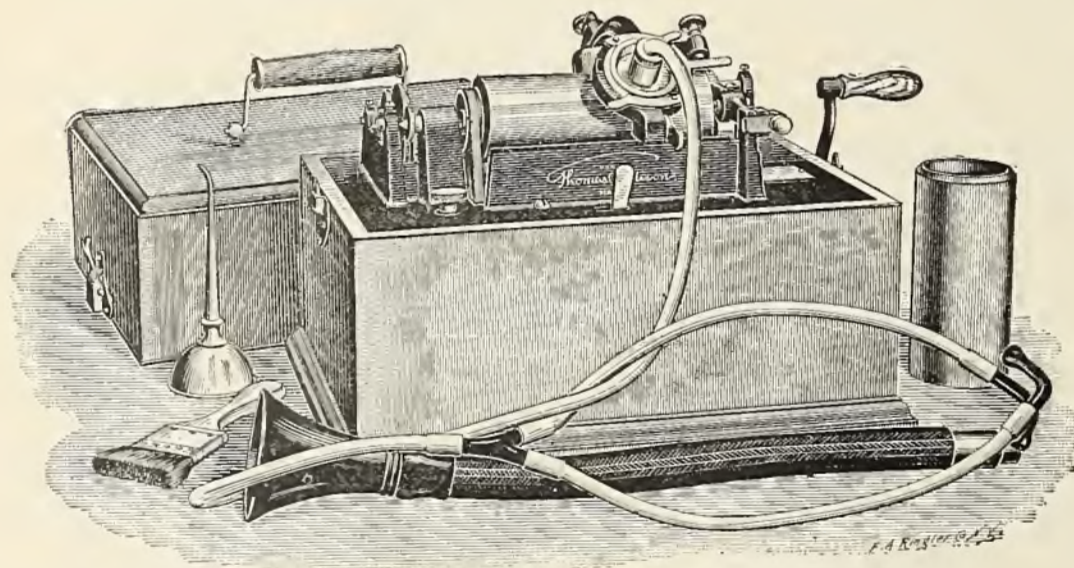
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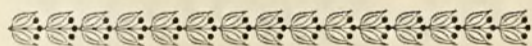
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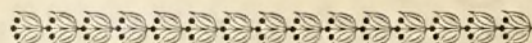
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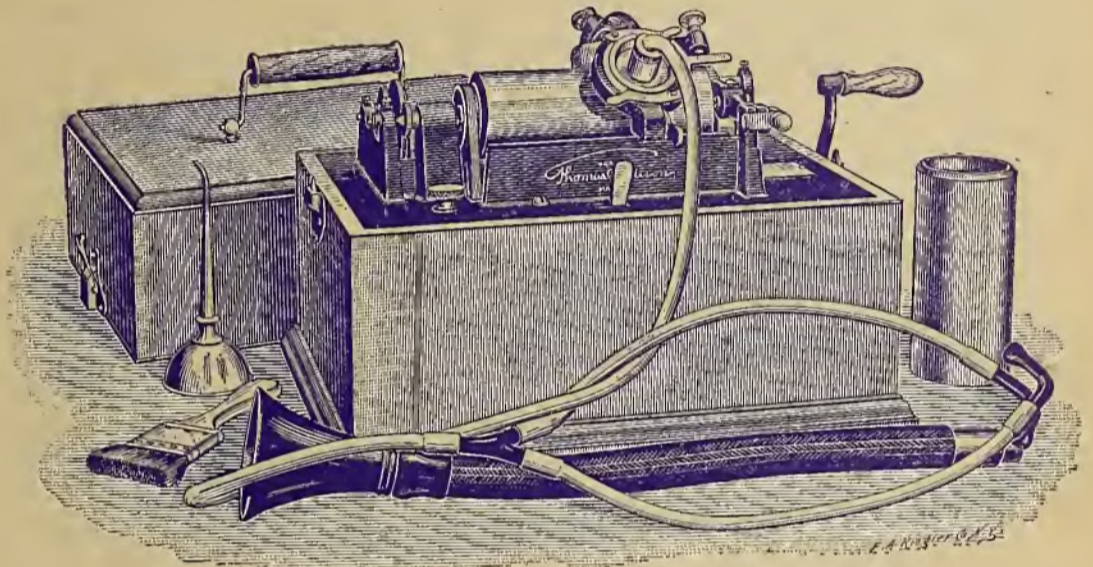
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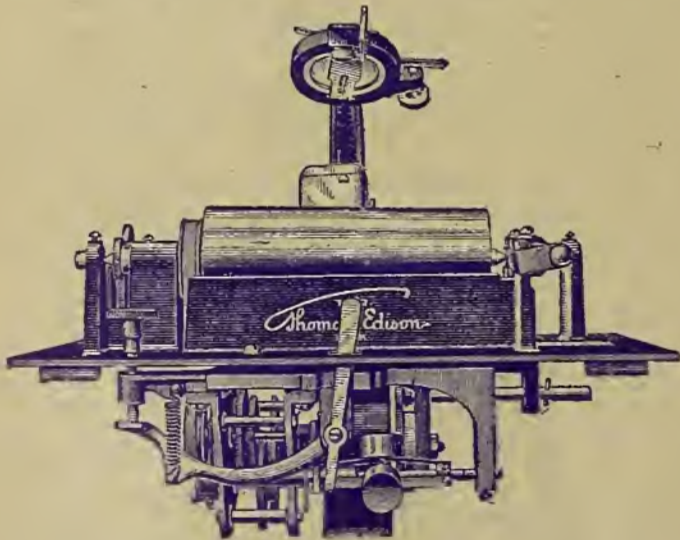
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