

HAZEL KRANTZ

Eldridge R. Johnson, Builder of Talking Machines

The founder of the Victor Talking Machine Company put Emile Berliner's device into every respectable home.

ALONG WITH the first ripples of the tide of technology in the United States came the little machine shops, sired by the harness making and agricultural implement repair workshops. It was a while before the manufacturers of early machines got the bright idea of making replaceable parts. If a machine broke down, the owner would take it down to his little neighborhood fix-it shop and have a replacement made for the ailing part.

Inevitably, inventive dreamers also came to the machine shops to have their theories translated into nuts-and-bolts reality. This kind of business was hardly lucrative to the mechanic. Most inventors started out poor and ended up destitute, with the machine shop's bill leading all the rest. There had to be another incentive beside immediate profit. This was not only the natural curiosity of the born tinkerer about making something work, but a gambling fever too. The world seemed wide open for new and

marvellous inventions. Each small-town mechanic had a dream of participating in the development—and subsequent untold riches—of the great invention, the better mousetrap.

One of these little model-making shops was called Scull & Johnson in Philadelphia, Pa, operated by a young

An 1898 Gramophone built by Johnson.





The Victor-Victrola

man named Eldridge Reeves Johnson. The company had been founded in 1886 by Captain Andrew Scull as an outlet for the talents of his son John, a mechanical engineer. Unfortunately, the son died at an early age and the father was left with the business in which he took a desultory interest. His employee, Eldridge Johnson, bought out Captain Scull's interest in 1894, a sensible move prompted by the reality that the business did not earn enough to support two owners.

To be technical, it didn't support one owner. But in spite of hardship and financial travail, Johnson was of that breed that seemed indigenous to American soil, the man who wanted to be his own boss. Born in Wilmington, Delaware in 1867, he had drifted around the country, earning a good living as a skilled mechanic. He settled in Philadelphia and accepted the opportunity of becoming sole proprietor of the struggling machine shop with a sense of moving into a life design.

If you're in the vicinity of Dover, Delaware, an interesting side trip is a visit to the Delaware State Museum, at Meeting House Square, 316 S. Governors Ave. An entire building, the Eldridge Reeves Johnson Memorial Building, is devoted to memorabilia of Johnson's career, ranging from the earliest talking machines of the outside horn type to Orthophonic models and the rare Aux-e-to-phone. Also included are thousands of Victor records. The items are displayed in a reproduced Victrola dealer's store. The building is open to the general public Tuesdays through Saturdays from 11:30 a.m. to 4:30 p.m. and on Sundays from 2:00 p.m. to 4:30 p.m. It is closed on Mondays and legal holidays, but open to researchers by appointment any day except Monday. For information on tours and group visits, telephone (302) 678-4280.

As he said later, "Being the proprietor and manager of a repair machine shop was well calculated to either break a man's spirit or fit him for better opportunities." Johnson viewed his early struggles as just part of the mosaic of his career.

We often have an image of these pioneers of the machine age as pragmatic fellows who channeled their values into pure mechanistic lines—technology was to provide the halcyon of human existence (they used words like "halcyon"). But Johnson's nature radiated in many directions, mingling curiosity with an almost mystical visionary attitude. He was not only concerned with putting the right gears together to make wheels turn. He dreamed of the future implications of the device. When he was confronted with an early "talking machine" it was not merely a strange toy to him; in his imagination he translated it into the significant medium of education it has become. Nor was he concerned only with technology. In later years, he invested in things like the original manuscript of "Alice in Wonderland," endowed churches and a community center, placed a statue of Peter Pan in front of the Public Library of Camden, New Jersey, and became close friends with artists such as Caruso.

A PARTIALLY EDUCATED PARROT

During the early days when he was trying to combine his machine repair business with a manufacturing sideline producing a book-binding machine he had developed, someone brought Johnson one of the new "talking machines" for alterations.

As Johnson described it, "The little instrument was badly designed. It sounded much like a partially-educated parrot with a sore throat and a cold in the head, but the little wheezy instrument caught my attention and held it fast and hard. I became interested in it as I had never been interested before in anything. It was exactly what I was looking for. It was a great opportunity and it came to me as it can never come to any other man in the talking machine business again. Other opportunities may come to other people, but that was the great opportunity and I

Closeup of the drive system used in the 1898 Gramophone.



\$15
for this genuine
Victor-Victrola

This instrument is a genuine Victor-Victrola, of the same high quality which characterizes all products of the Victor Company, and is equipped with all the exclusive Victrola patented features, including:

Controlled sounding boards and amplifying compartment of wood — carries the tone of every changing note and word through the sounding board in a perfectly material to its exact and true frequency.

Muffling doors — give the tone a soft, mellow, and pleasing quality which can be obtained by turning down at will, thereby by opening or closing the doors.

Tapering tone arm — with its special tone and powerful smooth tone, carries its special tone and powerful smooth tone and powerful smooth tone in the sounding board, thereby giving it its special tone.

"Gone with it" soundless table — a special table construction carrying the sound from the tone arm which enables the Victor Victrola to have the most perfect tone in the world.

Exhibition sound box — an extra sound box which can be used for the purpose of exhibiting the sound of the tone arm in a special way.

Victor Victrola IV, \$15.
Retail price \$25 to \$30.

All we ask is that you go to any Victor dealer's in any city in the world and hear your favorite music on this Victor Victrola.

Victor Talking Machine Co., Camden, N. J., U. S. A.

July 20, 1912. Are you ready to take care of the demand? (See pages 2 and 3)



An early Victor ad for a Gramophone. Note the price!

was ready for it—thanks to a chain of favorable circumstances, one link of which, if missing, would have changed this account totally.”

It was with this attitude of being precisely in the right place that Johnson later formed his partnership with Emile Berliner. Johnson recounts the story of his own role in bringing Berliner's device to reality. “Mr. Berliner had given the world the greatest basic improvements in the talking machine since the day of Mr. Edison's original discovery, and I happened to be the man who happened to be there at the right time to give this great discovery the needed improvements and refinements, and to manufacture it in such forms and designs as to become most popular with the buying public. My years of hard experience in model making and repair work had well qualified me to cope with intricate designs and processes. I immediately undertook a course of experimenting with talking machines and made discovery after discovery until a talking machine of the disc Gramophone type, capable not only of reproducing sound in its own mechanical fashion and in a tone of its own but of reproducing the tone true to the original sound, stood in my laboratory.”

VICTOR TALKING MACHINE COMPANY

Johnson founded the Victor Talking Machine Company in 1901, manufacturing machines inspired by Emile Berliner's original design. During the period 1898 to 1915, patents awarded to Eldridge Johnson for talking machines, recording devices, cabinets, and improvements on the devices came to about 60, plus ten more issued in conjunction with other developers. The Victor machines, offering the marvel of speech and music actually reproduced in

recognizable form, became the status symbols of their day; no respectable home would be without one. Johnson had truly latched onto the one-in-a-million lucky strike dreamed of by every freelance machinist and his impecunious inventor clients. There was luck, and incidentally, the will to work toward a goal, envisioning a concept and then laboring to bring it into tangible form.

Johnson had a sense of people moving together to create something. One of his favorite quotations was, “No man can be happy who is not in touch with Humanity.” This included the people who worked for him. It may sound paternalistic, but there was a clarity of focalization when the head of the Victor Talking Machine Company said to his employees “We seek to improve everything we do every day.”

Some of the improvements on the talking machine brought litigation in their wake. A dispute over patent rights with the Berliner Company cost the Victor Talking Machine Company over a million dollars for the right to a patent which expired within a few months after it had been acquired. Eldridge Johnson took the litigation in stride. It was his contention that “It is a bad plan to fight a patent unless you are perfectly sure that you are right.”

Always on the side of agreement rather than wasteful recrimination, Johnson arranged to merge his own interests with that of the Berliner litigants so the two could utilize their combined power. By 1927, the Victor Talking Machine Company had branches in Yokohama (JVC) Great Britain, Europe, Canada, Chile, Argentina, Brazil, as well as the United States. In 1929, the RCA Company obtained the U.S. rights to the name and the trade mark.

HIS MASTER'S VOICE

Eldridge Johnson had thoughts of great achievement in technology, even a sense of pride at becoming a tycoon of industry. But it's doubtful, although he was interested in scientific marketing, that he ever dreamed he would become one of the heroes of the advertising business, celebrated in the folk annals recounted by professors in college marketing courses. Yet it was Eldridge Johnson who immortalized a trademark that rivals Mickey Mouse in worldwide familiarity, “His Master's Voice.”

Eldridge Johnson's desk much as it appeared during his lifetime. It is on display at the Delaware State Museum.



The painting which forms the basis for the trade mark, done by Francis Barraud, is of a not really throughbred bull terrier, Nipper, listening to an old Edison phonograph. Celebrated as the most copied painting in the world, it has a poignant history.

Nipper originally belonged to Francis Barraud's brother, E. M. Barraud, a painter of theatrical scenery. In fact, E. M. Barraud's skill was so great, he was often summoned for curtain calls along with the casts of the productions for which he had designed the scenery. Always, standing by his side, was his dog Nipper.

E. M. Barraud died at the age of 39, leaving the dog, who thereupon adopted Francis Barraud, a photographer turned painter. Francis Barraud owned one of the early phonographs. One day it seemed as if the dog was listening with special intensity to a recording. Barraud listened carefully; the voice on the recording did indeed resemble that of his dead brother. He quickly sketched the scene and the painting followed. Eldridge Johnson happened to see the painting. He suggested it to his partner, Emile Berliner, as a natural trademark for their fledgling company. He was right.

MANUFACTURING TALKING MACHINES

In 1913, Eldridge Johnson described the intricacies involved in the manufacture of the phonograph. "The manufacture of the Victor and Victrola calls for skill and workmanship far beyond that of watch manufacturing and violin making. Watches are constructed to measure time at intermittent intervals, but a talking machine record

must revolve evenly, true to pitch, and maintain the same percentage of accuracy through each degree of its revolutions. It must measure out billions of vibrations so small that the eye can detect but few of them so accurately as to make the true tone of the original. The construction of the parts that record and reproduce the sound to a satisfactory volume without destroying its beauty is most difficult and complicated, and calls for an organization of experts with a greater variety of skill than any other business."

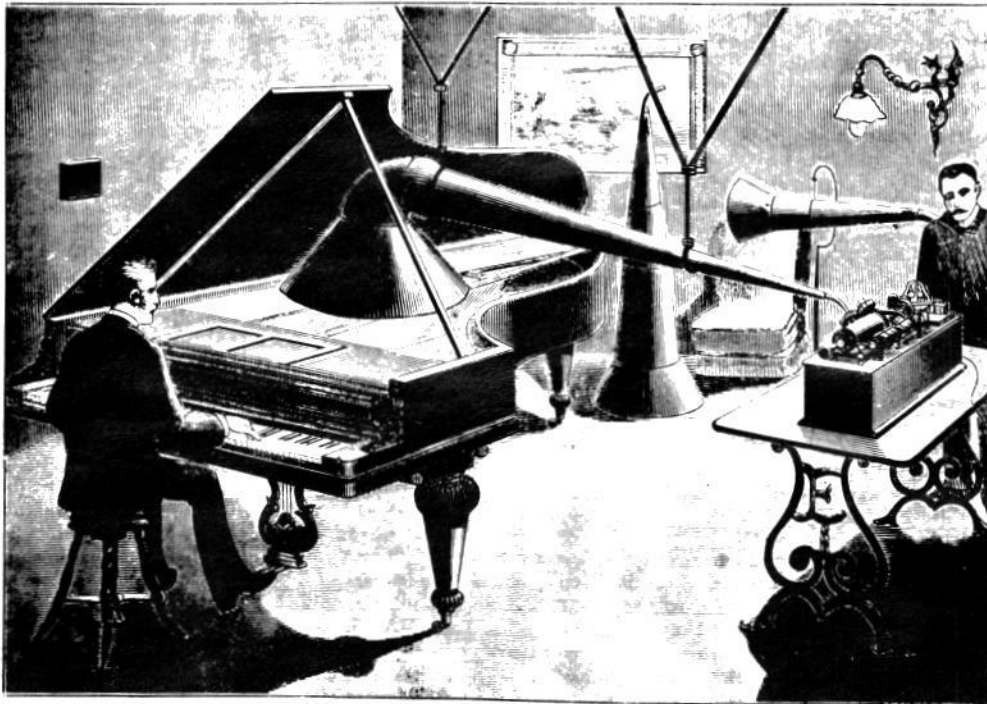
At that time, Eldridge Johnson predicted that it would take another twenty-five years to perfect the talking machine. He would probably be astounded, sixty-five years later, to hear the cacophony of experts uttering cries of "Eureka" at quad, or direct-to-disc, or the newest magnetic computerized tape, all guaranteed at last to truly reproduce for posterity that which the human ear has no trouble in handling.

But then again, perhaps Johnson, who died in 1945, would not be so astonished after all. With his sense of his own position in the scheme of things he might agree that even his most ardent dreams of technological excellence must, rightly, always fall short of perfection.

REFERENCES

Material for this article came from a pamphlet compiled by Mrs. Eldridge Reeves Johnson in 1951. Our thanks also for their assistance to the people at the Delaware State Museum in Dover and to Mr. Shortell of RCA. ■

Edison's Parisian Triumph



Apparatus for registering piano music by the phonograph.

EDISON, the illustrious American inventor who recently came to Paris in order to visit our great universal exposition, belongs, through his discoveries, to the privileged class of the benefactors of humanity. The respect that he has found among us is justified, and to it we add our humble tribute by summarizing in this place the extraordinary history of the great physicist, whose debut was so modest, and whose labors, already so important, have obtained applause throughout the world.

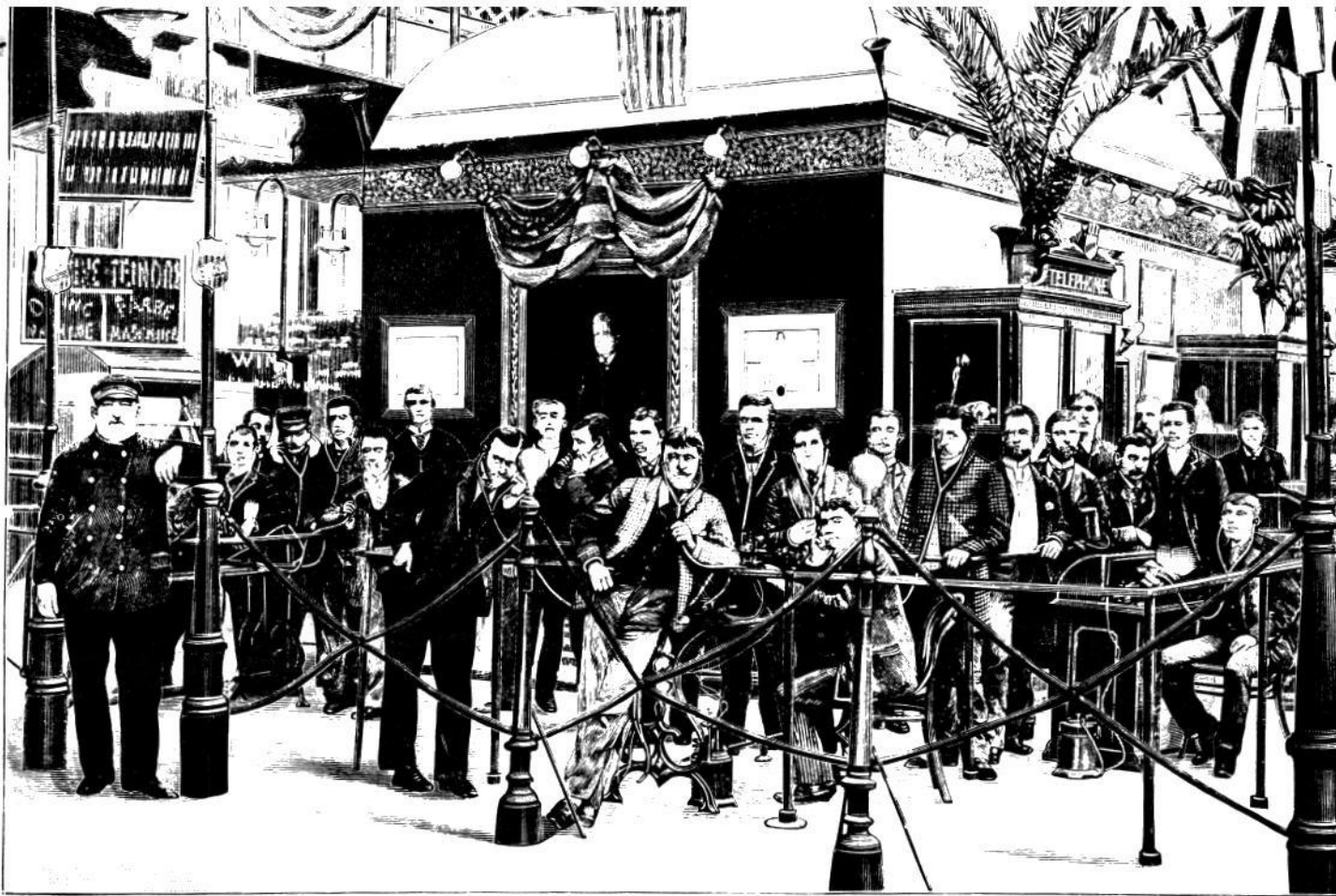
Edison was born in Milan, a little village in Ohio on the 11th of February, 1847. He is, therefore, not yet forty-three years of age.

He received from his mother an elementary education which he himself completed by assiduous toil, passing

It may appear, both in the timing of the subject matter and the ornate verbosity of style, that db has been caught in a time warp. In reality, we swiped this article from the October 12, 1889 issue of Scientific American, happily in the public domain. Scientific American, incidentally, had lifted the piece from a French publication, La Nature.

whole nights in reading such scientific works as fell into his hands. At the age of twelve, while simply a train boy on the Canada and Central Michigan Trunk Railway, he started a newspaper, or rather a journal of reference, which was printed on the train, while running from station to station, with a press and type bought at second hand and placed in a corner of the baggage car. This was the young American's first invention, for *The Grand Trunk Herald*, of which he was the sole owner, publisher, editor, compositor, printer, and vendor, was the first journal ever printed upon a railway train. In his printed sheet, the young publisher furnished all the practical information that he could procure from station to station, such as regarded the carriages that ran to places in the vicinity of the stations, amount of fare, hotels to be recommended, and likewise news of all sorts caught on the fly and printed while the train was in motion. There was here an essentially original idea, and one that was absolutely remarkable when we consider that it was conceived and put into execution by a child twelve years old.

Edison was not satisfied to be a journalist and reporter. He made use of his leisure time in the study of mechanics, electricity, and chemistry, and always in the corner of the baggage car that was reserved for him. But one



Edison's assistants posed listening to his phonograph at the Paris exposition.

day, an unfortunate experiment set fire to the car, and the conductor of the train, being angry, put the little printer off the train along with his press, his books, his products, and his chemical apparatus, that had gradually found their way into the baggage car and converted it into a genuine laboratory.

The experience gained by Edison in his multiple functions upon the train permitted him then to become a telegraph operator at Port Huron, Mich. and to more thoroughly study telegraphy, which his inventions have caused to make so remarkable a progress. His first invention, duplex telegraphy, dates back to 1864, and quadruplex telegraphy, the use of which is now so general, was conceived, if not realized, at about the same date.

In 1868 Edison went to Boston, and it was then that he began to be appreciated at his just values. Here it was that he opened the first shop to work up his inventions, which as yet remained more especially in the domain of telegraphy. Shortly afterward he entered the service of the Gold and Stock Exchange and of the Western Union Telegraph Company, which bought his inventions from him and thus started his fortune. A factory for 300 workmen was built at Newark, N.J. for the manufacture of stock and market telegraphs, but the management of this left Edison too little time to occupy himself with his inventions, and he soon relinquished it for the thereafter historic Menlo Park laboratory, whence have proceeded most of the inventions that have rendered his name so justly celebrated.

ORANGE, N.J. LAB

Later on, the Menlo Park laboratory being found inadequate, Edison abandoned it in order to found a special establishment at Orange, where his shops for construction

and experiment, greatly enlarged, now form a true industrial city. Edison has touched every branch of the applications of electricity with success. His telegraphic inventions, which began his fortune, are in widespread use in America.

Although it is not just to attribute, as is too often done, the merit of the invention of the telephone to Edison, to the detriment of the true inventor, Graham Bell, it cannot be denied that Edison has introduced important improvements into this invention. The first carbon transmitter employed in practice was that of Edison, for which, everywhere since, there has been substituted transmitters based upon the Hughes microphone; but the electrophone, a loud-speaking telephonic apparatus, is a first-class invention, the original idea of which belongs to Edison.

The general principle, too, of the incandescent lamp burning carbon in a vacuum long antedates the labors of Edison, but it was the great inventor who, through his numerous researches, rendered the incandescent lamp practical, and truly produced, in lighting, that revolution which we have witnessed for some years back.

THE PHONOGRAPH

The most remarkable, the most incontestable, and the least contested of Edison's inventions is, without doubt, the phonograph. We have many times referred to the improvements introduced into the original invention but it seems to us of interest to return to it again and point out some of the modifications adopted for the faithful reproduction of speech, or of pieces of music, which, reproduced by the improved phonograph that we recently described, astonish and delight the numerous visitors who daily crowd around the apparatus in the machinery gallery or in the American section of industrial arts. All those who have heard the phonograph of 1878, and who



Registration of a cornet solo.

compare it in mind with the one of 1889, will certainly be struck with the progress made during this first period of ten years, and will agree with us that, although the fine promises made at first might have seemed premature and stamped with exaggeration, none of them can today be considered as impossible to realize materially. Edison is still young enough to keep all his promises, even those that his as enthusiastic as sincere admirers have often hastily made in his name, *Gloire, comme noblesse, oblige.*

AN IMMENSE EAR TRUMPET

When one has heard the new phonograph speak at the exposition, he is astonished at the distinctness exhibited in the reproduction of piano and wind instrument music.

It has seemed to us of interest to indicate the means employed for registering the airs obtained by the aid of these musical instruments. FIGURE 1 shows the immense ear trumpet which leads the sounds of a grand piano to the wax cylinder of the phonograph. The apparatus, as here represented, is the one that is operating in the room set apart for Mr. Edison at the exposition. For the registration of the airs obtained by means of a brass instrument, a cornet of smaller size suffices, as may be seen in FIGURE 2.

The phonographic experiments at the exposition are having great success, and the crowd does not cease to show how much it appreciates the interest thereof. FIGURE 3 represents the aspect of these remarkable experiments executed in the machinery palace. We reproduce a photograph which shows numerous auditors listening, through the intermedium of double speaking tubes, to the speech or music registered and reproduced by this wonderful apparatus; but these auditors merit on the part of our readers a special examination, for they consist of the various co-laborers and young engineers of the great American savant. One of Mr. Edison's representatives, Mr. Hammer, has been kind enough to communicate to us a copy of this photograph, which may be considered as a historic piece from a scientific point of view. All the young American scientists are grouped in the attitude of the public when it is listening to the phonographs, and they have taken care to place themselves in the presence of the picture which reproduces the features of their master, Edison.

The illustrious American inventor long ago gained everyone's admiration by his discoveries, and we may add that when one has the honor of seeing him close by, it is soon recognized that he knows how to enhance his merit by those rare qualities—simplicity and modesty. ■