# CREATION OF THE ELDRIDGE REEVES JOHNSON MEMORIAL

***Elwood McKee***

ARSC Members who have visited the Eldridge Reeves Johnson Memorial in Dover, Delaware, know that this museum, in its attractive setting, offers both students of phonograph history and the general public a fascinating glimpse of a pioneer of recorded sound and the industry he helped to create and build. The Johnson Memorial was started almost contemporaneously with ARSC, in the mid-1960s. Its origins and purpose are best described in the words of Johnson's son, whose bequest to the State of Delaware made the museum possible.

The following preamble to the Eldridge Reeves Johnson Memorial agreement, written by E. R. Fenimore Johnson, has been made available to Journal readers through the kind permission of the State of Delaware Bureau of Museums and Historic Sites:

ELDRIDGE REEVES JOHNSON MEMORIAL PREAMBLE

This preamble is considered necessary for a correct and full understanding of the purposes of the Memorial; the physical facilities required to house and display the memorial exhibit, and the maintenance and operation of said exhibit.

My father, Eldridge Reeves Johnson, was a Dover boy, son of Asa S. Johnson, a contractor and house builder in Dover. Father was born in Wilmington, Delaware.

I have decided to create a memorial to my father. The form of the memorial will be a museum section displaying talking machines, records, other relics of the Victor Talking Machine Co., of Eldridge R. Johnson Manufacturing Machinist, and of such competitive products as may be needed to portray the mechanical talking machine era. My father was one of the industrialists who played a substantial part in the building up of the prosperity of this country to the point where it has become the envy of the world. This in itself was a commonplace event in the late 19th and early 20th centuries. In itself it is not a sufficiently outstanding performance to warrant remembering any one man beyond the many who participated in our national growth. My father was not the inventor of the talking machine. He was always quick to give the credit to Thomas A. Edison, to whom that honor solely belongs. My father was the inventor of many improvements of the basic device but there were many other talking machine inventors of equal and even greater importance, especially Emil Berliner. My reason for regarding my father as deserving to be remembered is that he is the one man who by personal greatness halted the petty quarrels which were retarding the progress of the newborn industry,

and then by his inventive and business genius made it possible for the first time in the world's history for good music to be heard in even the most humble home. In this day in which music is heard everywhere at any time we have no conception of how little music entered into the life of the average person only seventy years ago.

Not long after my father founded his firm, The Victor Talking Machine Company of Camden, New Jersey, talking machines made their way all over the world. Travellers encountered them from the Eskimos' arctic igloos to the thatched huts of the tropics. They became fixtures in all classes of homes. They were almost invariably a feature of the plush parlors of the rich and the great. Seventy-five percent of these pleasure-giving machines bore the "His Master's Voice" dog and talking machine trade mark which my father, in his wisdom, selected and made famous by placing it on products of only the very finest quality. The secret of his success was a quality product sold always at a fair price. For this feat of putting "The Gift that Keeps on Giving" into the homes of the common man, I ask the ultimate recipient of my donations to see to it that my father is not forgotten.

In the latter part of his life he became a philanthropist and many of his philanthropies serve, to some extent, as his memorials, but as was characteristic of him, he did not attach his name to his good works or give any thought to the preservation of the history of his life by providing a repository for his personal papers and relics. A memorial, such as a statue or a mere relic and paper repository, would not have been pleasing to him. Therefore, it is my intention to create a memorial of a nature which I believe would have pleased him, which is one predominantly of service to people.

Physically my plan is that a room shall be arranged as a replica of an old time Victor Talking Machine Co. exclusive dealer showroom and manager's office--of not less than 700 square feet of floor space; such things as my father's desk and personal relics to be displayed in the manager's office and his fireproof files containing his papers to be kept there; such things as I possess which pertain to the old Victor Talking Machine Co. of Camden, New Jersey, and its affiliated companies to be displayed in the showroom. It was the custom to display the large floor type talking machines in the center of the showroom, to have one side of the showroom equipped with record shelves and a counter, and the other side of the showroom equipped with record audition booths which were part glass walled and substantially soundproof.

The sales person met the customer upon the floor, and if interested in Victrolas, the various models were pointed out, but if the customer was interested in buying records, the salesman would go behind the counter and draw out such records as the customer cared to play, escort the customer into a record booth and leave the pile of records upon a table which was equipped with one of the smaller table model talking machines. The sales person withdrew and allowed the customer to play the records before buying.

It will be necessary to protect the relics from being handled, and, therefore, they must be either under locked glass on the top of the desk or in locked strong glass cases. My father's papers must be in locked fireproof business files, which of course will look natural in the store manager's office. Account books and written records shall not be loaned to members of the general public.

The talking machine industry has had many names and the name talking machine is now obsolete. However, I shall continue to use the words "talking machine" as the name of the industry which made records of sounds and the devices which reproduce sound by mechanical means. From the date of its inception to the present time the industry can naturally and easily be divided into the mechanical period and the electrical period. There was a brief over-lap during which the records were recorded by

electrical means but continued to be reproduced by purely mechanical means. It is the relics and records of the mechanical era, not the electrical era, which I desire to preserve for the public benefit. By records, I do not mean only the platters or disks from which sound was reproduced, I mean also written records and pictures.

There are certain basic elements of knowledge of the mechanical talking machine era which probably were never written down and which exist today only in the memory of such men as myself who lived through the latter part of it and which will, consequently, fade rapidly from human knowledge as we who are all now elderly people, die off. Therefore, I take the trouble to preserve some of it by mention in this preamble.

Any attempt to operate a talking machine motor which has lain idle for a number of years will in all probability rapidly destroy the motor and irreparable damage may occur within the first few turns. This damage in the case of the talking machine motor will far exceed that which normally happens to a clockwork mechanism which has lain idle for an equal number of years. The damage can be prevented by suitable lubrication but only if the following point is borne in mind. Talking machine motors incorporate a principle which is even today usually regarded as a mechanical impossibility. The principle is that a worm can drive a spur gear wheel, but a spur gear wheel cannot be used to drive a worm. Prior to my father's discovery that this seemingly basic principle was wrong, the talking machine industry was plagued by a quavering sound on each prolonged note. My father invented the spring motor which overcame this quaver and what he did was to cause the spring to drive a large spur gear and the spur gear to drive a spindle on which there was a very steeply pitched worm gear. The surface of the teeth of both gears had to be close to perfection and required regular effective lubrication. As an ex-repairman of talking machines I give it as my opinion that one full turn of this main drive spur gear against the surface of the worm without suitable lubrication is sufficient to destroy the surface of the worm, and it is further my opinion that the replacement of this worm by having a new one made would cost at least $100 and possibly more than that today.

The next point to bear in mind about the old time talking machines is that their reproduction was dependent upon the use of natural rubber in the "sound boxes." Sound boxes were later called "reproducers." These devices of course correspond to what is now known as a "pick-up." Here again an attempt to play a talking machine which has long been idle will result in not only a completely distorted idea of the quality of the reproduction but also in the swift destruction of the records so played. This destruction will come about in the following manner. The hardening of the rubber in the reproducer will make the needle much stiffer. Therefore, the needle's resistance to being wiggled by the groove of the record will be materially increased. This in turn will swiftly increase the wear on the needle point and change it from a device which slides smoothly through the groove into a cutting tool which will cut away the finer wiggles in the groove. The old time records had a life of only 25 to 125 playings. Even though the record chosen to be played had never been played before, there is the near certainty that the quality of the record will be materially impaired during a single playing with any kind of needle if the rubber in the sound box has become hardened. An attempt to play the old records with even the most modern needles will almost certainly destroy some of the quality of the old record during the first playing. The needles used on the old records were softer than the records. The old records probably can be reproduced with safety on a modern record player having a feather touch needle, but of course such a reproduction will give no conception whatsoever of the quality of the original reproduction ability of the record and its original means of reproduction, the mechanical talking machine.

The only way that a true knowledge of the reproduction of the old time talking machines can be obtained and preserved for the future is for a qualified repairman to relubricate the talking machine motor and renew the rubber parts of the sound box and tune the sound box in accordance with the ancient practice before any attempt is made to run the motor or reproduce sound from a record. Once the talking machine has been put in good order and the record serviced carefully by a person who knows how to service a record, that is, how to clean it and how to restore it to its original flatness, then it will be possible to hear the sound as it was heard by many millions of people 40 to 70 years ago. Even when these things have been done it would be highly inadvisable to play the records many times because, as I have previously stated, their life is sometimes very short. In the case of a record in which a powerful singer has sung loudly, and the record has already been played perhaps 15 or 20 times, it may so happen that no more than one perfect reproduction will be left in the record. Therefore, I prohibit the playing of the old records on the ancient talking machines until the machines have been restored. I require the Museum, when and if it restores old talking machines, to have a tape recorder or other recording device available and to re-record the reproduction of the records contemporary with the old talking machines for posterity. It would then be possible to so arrange the exhibit that persons desiring to know how the old time talking machine sounded could hear the reproductions of the various models on display by means of a replaceable magnetic tape, or a modern "platter," as present day records are sometimes called. Most of the relic records are warped and I require that those which are so badly warped as to affect the reproduction be flattened. The flattening technique shall be worked out by experiments on electrically recorded records before any attempt is made to play mechanically recorded records. This makes it possible to operate them without damage. Even then they shall be played only to that extent which is necessary to record their performance by a modern method of recording. There is no ancient technique for flattening records which is why I require the Museum to devise one.

There was a long series of major improvements in talking machines and records and the reproduction of the earlier types, which when compared to middle mechanical age types and final types of the mechanical age talking machines, would add greatly to the interest of an exhibit and improve the mechanical knowledge of anyone having aptitude for mechanics.

The course of development of the talking machine was substantially as follows: The basic invention was a mechanical means of impressing sound waves upon a substance strong enough to drive a mechanical means which recreated sound waves in air with sufficient power to be audible. The improvements of the before mentioned mechanism to that power output which permitted the abandonment of tubes to peoples' ears by the substitution of a horn. The replacement of the hill and dale, (i.e., deep to shallow cut in the record by a horizontal cut in a groove of constant depth.) The flat record. The balancing of the sound box diaphragm with springs. The tone arm which did away with the pivoting the whole horn. The various refinements of record manufacturing. The elimination of the visible horns by curving the horn downward into the cabinet and out of the front under the motor, (i.e., "The Victrola.") The several methods of decreasing the volume of the sound, such as bamboo needles, thin steel needles, and the double door over the horn mouth. The interesting failure by the V.T.M. Co. called the Augzitophone, [sic, (i.e., Auxetophone)] a compressed air device which proved that sound reproduced from records could carry several miles. The first automatic record changer to be successfully sold in quantity, a V.T.M. Co. invention and product. The utter failure of the next model of record changer. The electrically recorded records. The exponential horn and

the last great improvement of mechanical sound reproduction, the V.T.M. Co.'s Orthophonic Victrola, a Western Electric Company development.

The above mentioned developments and/or inventions are not in perfect chronological order buy [sic] very nearly so. I hope that I shall be able to describe them and many others of less import in greater detail and make sketches too. Unhappily, few, if any, men still alive know the history and the mechanical techniques as I do.

Curators and their lay friends will, I hope, research into the talking machine history and collect relics until the exhibit becomes complete. It was a great age, the mechanical age.

Fenimore Johnson's brief backward look at the history of the Victor Talking Machine Company and his father's role in creating the phonographic industry is valuable original source material for us today. Equally important, however, is his perceptive view of ways in which not only the facts but the flavor of phonographic history can be presented. His ideas for specialized rerecording and reproduction of historical recordings in a museum setting deserve implementation at a number of institutions.

The Johnson Memorial deserves the continuing support of collectors. Those who wish to donate Victor Talking Machine Company products, documentation, or contribute in other ways, should write or call Jim Stewart, Administrator or Ann Horsey, Curator of Collections at the Bureau of Museums and Historic Sites, P.O. Box 1401, 102 South State Street, Dover, DE 19903, telephone (302) 736-5316.