
THE LAUNCHING OF THE GRAMOPHONE IN AMERICA 1890-1896¹

By Raymond R. Wile

Sometime in 1886 or 1887 Emile Berliner realized that it might be possible to enter the talking machine business with a system that would not infringe upon the patents of Thomas A. Edison or those of the Volta Laboratory Association. Because of the need to skirt patent specifications, he made it a habit to consult with the patent attorney Joseph Lyons. By late 1887 he was ready to apply for what would be one of his major patents, but upon application the patent examiners raised a series of questions concerning anticipations. This problem had not been encountered with foreign equivalent applications, and those applied for in Great Britain and Germany met no problems.

The American problems and requirements did not prevent Berliner, the inventor, from journeying to Germany in late 1889 in an attempt to establish a gramophone business there. By July of 1890, most obstacles to a commercial exploitation had been overcome and a marketing effort was begun. Sales were to continue at a diminishing rate until the mid-1890s as popularity waned. Having accomplished what was possible in Germany, the inventor returned to the United States in late fall 1890.²

One of his first moves on returning home was to offer his invention to the promoter of the North American Phonograph Company, Jesse Lippincott. But the financier was either unimpressed or so caught up with his own problems and those of his company (by May 1891 he was forced to assign his assets for the benefit of creditors) that he turned Berliner down.³ The refusal meant that investor interest in the gramophone would have to be rekindled. An expanded version of an 1888 folder probably appeared at this time while *Scientific American* was persuaded to devote space to another article. An address also was prepared and delivered before the American Institute of Electrical Engineers in New York on December 16, 1890. And Professor Houston of the Franklin Institute was induced to prepare a new article for its *Journal*.⁴ All of this activity provided a unique rostrum from which to woo backers. These efforts bore fruit shortly afterwards when the inventor and a small group of New Yorkers organized the American Gramophone Company as a New Jersey Corporation with its principal office in New York City and a local office in Jersey City, NJ.

The objects for which this Company is formed are to engage in and carry on the business of making and selling all kinds of Gramophone apparatus and records and leasing gramophonic recording instruments, and selling and licensing others to sell gramophonic reproducers and gramophonic records, and all rights, franchises and privileges in connection therewith, and engaging in all business and undertakings in any way growing out of or concerning or relating to any of the objects or purposes herein referred to ...⁵

Capitalization was set at \$1.2 million divided into shares with a par value of \$10.00. Among the incorporators, each held one paid up share while Berliner was allotted an additional 111,990 shares as a consideration for his patents and rights. Thus 111,999 were committed at the beginning leaving 8,001 to provide working capital.⁶ If all were sold, and *if* sold at par, the new company would have the relatively small amount of 80,010 dollars for operation. Unless it was intended to sell territorial rights, the new operation certainly was starting with a small capitalization and on a small scale. One report was filed in September 1891, and then almost all documentary evidence ceases.⁷

Berliner immediately turned over his patents and applications to the new company.⁸ Further developmental work began when a New York clockmaker was commissioned to design a clock-work machine. Although a prototype was prepared, the instrument proved impractical. It was too weak and too noisy. Development of the rival graphophone and the phonograph were to be more successful since these instruments required much less power to perform their tasks.⁹ By 1891, the North American Phonograph Company and its local licensees had discovered the lucrative coin-operation potential of the talking machine and the direction of the industry slowly was turning from business applications to amusement. The current machines were still much too costly for wide spread home use, but if enough of the original rental stock was sold off at a reduced price and the local companies continued with coin-operated machine parlors there would be a steady demand for pre-recorded amusement cylinders to supply the needs of the machines and the very small but growing home market. The *Proceedings of the First Convention of Local Phonograph Companies* gave a faint inkling of future events; by the time of the Second Convention in 1891, it was necessary to discuss at length the problems and practices connected with phonograph parlors. Should a viable method for preparing multiple copies of pre-recorded cylinders be developed, Berliner would find his potential market completely preempted. And were the North American Phonograph Company to develop an inexpensive spring-driven machine, Berliner would see his dreams crumble. It is important for us to remember that the majority of American homes were not then wired for electricity and battery-operated machines were impractical for home use.¹⁰

There was also the possibility that if Berliner were successful in marketing his system he would be open to attack for patent infringement concerning some details. He had attempted to skirt all of the patented features of the phonograph and the graphophone, and indeed this was the probable reason for the close connection with Joseph Lyons, the patent attorney, during the developmental process. In the event that there was some aspect that he had missed, he approached Pollock and Mauro, a firm that had on earlier occasions performed patent work both for himself and for the Graphophone group. At one time in June 1888 Berliner had even prepared a deposition for them to use in a proposed suit of the Volta Graphophone Company against the Edison Phonograph Company and its agents.¹¹ With such a background, this firm was in a strong position to prepare a written evaluation. They thoroughly examined the system, but could find no aspect that infringed patents held by others.

It is beyond all dispute that in its essential and distinguishing principles of operation the gramophone system is substantially and materially different from the phonograph or graphophone. The points of resemblance, if any exist, must be found in details of minor importance, which would not affect the main question. The development of the two systems, however, has been upon divergent lines, so that features peculiar and important to the one are of necessity inapplicable to the other; and we have not found in your instruments and method of procedure any detail, device, or operative step which could properly be said to infringe upon any unexpired patent.

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We therefore conclude that you can lawfully make and use the gramophone in its present form... In our opinion the patents aptly describe the invention, and are adequate to secure and protect it.¹²

With these assurances, American Gramophone must have more actively promoted the development of the gramophone, but other than the discovery of letterheads using Laboratory of the American Gramophone, there is little formal evidence of its existence.¹³ Despite the paucity of information, we can ascribe much of the practical development to this period. At the time of his Franklin Institute lecture of 1888 Berliner had been able to show a duplicate of an etched record made by following the usual steps for making a stereotype. The record had been pressed into wax which subsequently was dusted with finely textured graphite and then electroplated with copper. Sometime later a negative was prepared by depositing copper upon such an electrotype. Eventually, the system was changed; an etched zinc plate could be impressed into softened hard rubber under both heat and pressure—thus providing a hard rubber negative. This was then impressed into very hard beeswax which also was dusted with finely divided graphite and plated with copper to make a good mold or matrix. In Germany, the technique had been simplified when it became possible to deposit copper directly onto the zinc recordings to prepare matrices. All of this was further modified for the new company through the help of a Philadelphian, Max Levy.¹⁴

With the additional New York capital, it now was possible to rent a small two-story building, possibly a former stable, on New York Avenue. The downstairs was used for processing while the upstairs was set aside for recording. Although numerous matrices must have been prepared, few records that can positively be ascribed to this period seem to have survived. *Berliner Records in the Library of Congress* lists two zinc discs and one pressing No. 205 dated June 20th, 1892. It also is possible that undated numbered pressings which do not fall into the later numerical blocks from 1894-1895 may date from this period.¹⁵

These records could not be produced until a predecessor company of the American Hard Rubber Company was able successfully to overcome problems that had been encountered with hard rubber.¹⁶ Hard rubber is a difficult substance to deal with; pressings had to be made under a sufficient amount of pressure at the same time that heat was being applied, while air pockets had a tendency to be trapped between the sheets of rubber and the matrices forming valleys and pits in the final pressings. It also was discovered that sulphur present in the hard rubber compound tended to erode the matrices and eventually render them unusable.¹⁷

Berliner had complained as early as 1888 of the need for a proper experimenter. His assistant Werner Suess was basically a mechanic, and was hampered by his advanced age, so that Berliner must have felt keenly the need for additional expert help. He had also relied upon his young nephew Joseph Sanders, but Sanders was available only before and after school. A new source of expert assistance was found in one Edward L. Wilson who developed a coin-operated gramophone in 1891. He applied for a patent on December 3, 1891 and received letters patent in the remarkably short period of four months, on April 5, 1892. The invention appeared sufficiently original to have avoided the tangled claims and interference experienced by numerous other applicants for coin-operation patents on the phonograph.¹⁸

Berliner lured Wilson to Washington and introduced him to the secrets of recording. Wilson soon improved the recording head and applied for patent protection on August 11, 1892. Here too the application traveled through the examination process in record time with a formal patent issued on January 10, 1893. Unfortunately, a tendency

towards paranoia became apparent and Wilson left the laboratory in 1894. After maligning his former employer in at least one vicious anti-semitic diatribe addressed to Edison's attorneys, Dyer and Seely, he subsequently was institutionalized and passed away while in confinement. Since the patents had never been assigned to the company, Berliner was not able to use the Wilson improvements, although obviously they had been developed while Wilson was in the employ of the American Gramophone Company.¹⁹

Some of the slack in the laboratory was taken up by employing other relatives and friends. Joe Sanders' brother, "Sip" Sanders, and others such as William Sinkler Darby must have obtained employment at this time, especially since Joe had gone back to Germany to serve an apprenticeship between 1893 and 1896. Soon enough new developments were completed to allow another presentation at the Franklin Institute on January 9, 1893 resulting in the Institute commissioning its Committee on Science and the Arts to examine thoroughly the entire system with the view of possibly presenting an award. After an investigation, the Committee did not see fit to recommend a presentation.²⁰

During the latter portion of this period, a young Washingtonian, Fred Gaisberg, dropped in at the Berliner laboratory with a friend, Billy Golden. There he found,

...a funny German who had started experimenting with a flat-disc talking machine record and wanted to make some trials. I was only too eager to see him at work. We found Emile Berliner in his small laboratory on New York Avenue and received a warm welcome from the inventor. Billy was right. Berliner certainly did make me smile. Dressed in a monkish frock he paced up and down the small studio buzzing on a diaphragm. 'Hello, hello!' he recited in guttural, broken English. 'Tvinkle, tvinkle, little star, how I vonder vot you are!' Berliner delighted in creating effects and the youthful enthusiasm I showed must have gratified him. I was introduced to the inventor and invited to witness the making...[of a record]. Berliner placed a muzzle over Golden's mouth and connected this up by a rubber hose to a diaphragm. I was at the piano, the sounding-board of which was also boxed up and connected to the diaphragm by a hose resembling an elephant's trunk. Berliner said, 'Are you ready?' and upon our answering 'Yes,' he [began the recording apparatus]....Before I departed that day, I exacted a promise from Berliner that he would let me work for him when his machine was ready for development.²¹

In the spring of 1893, Berliner arranged for the chartering of a new company, the United States Gramophone Company, a West Virginia organization. In April, the rights to patents and applications that had been obtained by the American Gramophone Company were transferred to the new company. By September 16, he was able to report to his friend, Dr. Wahl of the Franklin Institute,

The GR[amophone] has been so far under the control of some NY people who all have their own business and did not push the invention as it should have been. It has now reverted to my control, I am president, own the majority of the stock and have elected my own directors and the Headquarters(sic) is here. This will enable me to put some energy into the thing because all I need is capital for legitimate manufacturing and we can then go ahead in the market.²²

Gaisberg now received a postcard from the inventor asking him to come and see him. His previous experience with Charles Sumner Tainter, the Columbia Phonograph Company, and the American Graphophone Company were to be prime selling points.

I detailed these qualifications to Berliner, who told me I was just the person he was looking for. He informed me that in recent months his laboratory experiments had culminated in the production of a recording and reproducing apparatus and also a recording process sufficiently advanced to place on the market. He also confided to me that three of his relatives and friends had formed a small syndicate to exploit his gramophone. With the

limited funds available he wanted to make a small programme of songs and music for demonstration purposes in order to raise capital for promoting a company.

My value to Berliner rested on the fact that I could collect quickly a variety of effective talent to make these demonstration records. Professional phonograph vocalists of established reputation like George J. Gaskin, the Irish tenor, Johnny Meyers, the baritone, and Dan Quinn, the comedian, were expensive, but they had loud clear voices and provided us with effective records of 'Down went McGinty to the Bottom of the Sea,' 'Anchored,' 'Sweet Marie,' 'Comrades' and so forth. We averaged up by employing lower-paid local talent secured from the beer-gardens and street corners of Washington. [These included such individuals as the monologist and former Indian Medicine Troupe member George Graham and his side kick John O'Terrell.]²³

The new company almost immediately moved the laboratory and recording room to 1205 G Street NW which remained the location from late 1893 into 1894. Here Berliner worked diligently at ironing out additional problems that cropped up in his process. Perhaps the best indication of success was in a further move of the recording room and laboratory. The new address was in reality a dual one, quarters in the powerhouse of the Capital Traction Company and recording space and offices at 1410 Pennsylvania Avenue, a block away.²⁴ The powerhouse, an enormous building, occupied the entire city block bounded by 13th and 14th Streets and D and E Streets and housed a large and varied assortment of Washington businesses. Of importance was the nearby location of two Washington firms that specialized in photo-engraving and electroplating, the "Joyce Electro-Engraving Company and an electro-plating shop named Bromwell."²⁵ The 1410 Pennsylvania Avenue location, just next to the Grand Army of the Republic Hall, also gave the fledgling firm a little additional exposure.

With the creation of a backlog of matrices, it now became possible to plan marketing strategies. The first tactic seems to have been to standardize the record size at 7 inches, although an infrequent example at 5 inches appeared in the future. Secondly, the public and merchants were offered three options. The first was to have custom recordings made at the recording studios. By now the Berliner concept of having discs for correspondence purposes was virtually abandoned, but it was hoped that a steady market for personal recording could develop. An even more interesting proposal used the gramophone as an advertising medium. Local merchants were advised that,

We will make for you any special plate, containing, besides an interesting musical piece, etc., a bit of advertising such as you may suggest; manufacture as many hard rubber copies as you may order at regular wholesale rates; and distribute [sic] them gratis to people buying Gramophones....Nobody will refuse to listen to a fine song or concert piece, or an oration—even if interrupted by the modest remark: 'Tartar's Baking Powder is the Best,' or 'Wash the Baby with Orange Soap,' etc.

The third option offered a wide range of machines. Besides the original hand-propelled machine, with all of the inherent problems of incorrect speeds and wow, the public was offered a "Battery Motor Gramophone (Type B) and an Incandescent Current Motor Gramophone (Type C)." The Battery Model was directly driven by a small, governor-controlled electric motor while the Incandescent Motor model was a strange hybrid in which a hand-powered machine was mounted on a box containing a small electric-powered motor which was attached by a small pulley cord. As a result, the machine could be operated either electrically or detached and hand propelled. Despite the several offerings of machines, only the hand propelled version seems to have survived in limited number. One or two battery powered machines, one of which is in the National Museum of History exist, while none of the Incandescent motor models are known to have survived.²⁶

After preparing jigs, patterns, and tools, the company was ready for a marketing effort. Quarters were rented for a factory and a showroom at 109 North Charles Street in Baltimore and a William B. Todd was installed as manager. We have no knowledge of the length of time this location was occupied, although Berliner in 1898 estimated that 1,000 machines and 25,000 records were sold in the fall of 1894. In January 1895, sales may have begun in Washington, even though we do not know of a retail outlet; there is no such listing in the annual City Directories.²⁷ The relatively slow pace of sales and the start-up costs must have placed a tremendous strain on the tenuous finances of the Company while the outside financing that Berliner obviously was relying upon was not forthcoming. Fred Gaisberg, meanwhile, had fallen under the magnetic spell of a retired Methodist minister who was attempting to insure the passage of a bill through Congress to secure a right of way for an Eastern Shore Railroad scheme. B. F. Kearns seemed to be the solution for all of the problems. Following an introduction to Berliner, Gaisberg sat back to await results from Kearns, but none of the promised introductions took place, nor had any demonstrations of the Berliner system been arranged. Kearns, however, had managed to borrow from both Gaisberg and Berliner. "At the end of six months we were no further along, except that I [Gaisberg] had personally lent Kearns \$40 and Berliner \$200, and Kearns' family was reduced to living on liver at ten cents a pound. But Kearns never lost heart; he told Berliner that if he would only furnish him with a talking doll he could get him a million dollars."²⁸

With the sales performance of the Baltimore store and factory to use as an example, it was decided to send Kearns and Gaisberg out to interest backers. Letters of introduction gave them an entrée to the former colleagues of Berliner at the Telephone Company on Milk Street in Boston. Although amused by the demonstration, they showed no interest in the machine. "Well," they chuckled, "has poor Berliner come down to this? How sad! Now if he would only give us a talking doll perhaps we could raise money for him." Boston was the headquarters of the Edison Toy Phonograph Company which had become mired in a seemingly endless series of legal suits and countersuits with Edison blocking production and marketing. Since several of the Telephone directors had been investors and backers of that company, they naturally were interested in having Berliner develop a similar device.²⁹

Having met with no success, the two stopped off in New York on their return in order to demonstrate the gramophone for F.A.O. Schwarz, of toy fame. Schwarz also was involved in the marketing of the Edison Talking Doll, and as a result envisioned the Berliner system as primarily leading to a doll. Before the disappointed pair could leave New York, they were caught in a great snow and ice storm. With little in the way of funds they were forced to rely upon free lunch counters to survive during the remaining part of the week.³⁰ Returning to Washington, they were forced to admit defeat. The situation became increasingly critical, if evidence from monthly release sheets is considered. The surviving lists show a decreasing number of records per release although 25 to 30 a month were promised on the January sheet. Later in the year another demonstration was arranged at the Franklin Institute. This resulted in the publication of another Berliner lecture, *Technical Notes on the Gramophone*. It is possible that eventual backers were introduced to the system at this lecture.³¹

We do not know when or how William C. Jones became acquainted with the gramophone, although later events would seem to indicate that it was through B. F. Kearns. Jones saw the money-making promise of the situation and set about acquiring the rights to organize a company. Berliner, who was desperate enough to clutch at any possibility, signed a long agreement with Jones on September 2, 1895. The agreement

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actually would cost Jones the usual \$1 paid in hand and \$1500 if he were unsuccessful in organizing a group. If he were successful, the rewards would be limited only by the terms that he could impose on the new group.³²

The contract spelled out most of the responsibilities of the company which was eventually organized.

1. The agreement "transferred and set over to the party of the second part, the sole and exclusive right to manufacture, sell, lease and deal in said inventions, made or to be made by said Berliner in the United States."
2. A 10% royalty on the retail price would be paid for all gramophones, sound records, and other accessories, provided that it was not less than 50¢ on completed gramophones. If it were decided to lease or rent machines, the royalty would be mutually agreed upon.
3. Jones agreed to pay \$1,500 upon the signing of the contract, and within sixty days a further sum of \$13,500 (if not paid the contract would be null and void and no damages would be recoverable) which would be an advance payment upon royalty due the first year. In the second year, \$35,000 in royalties would be due and during the first three years at least \$75,000 in royalties would be due. After the first three year period, the licensee would diligently and in a business-like manner promote the business "in the interest of the gramophone invention" and in doing so be absolved from any fixed amount of royalty.
4. The second party would form a company within sixty days.
5. All rights would accrue by assignment of Jones to the company.
6. The licensor would make any necessary modifications in writing necessary to assure the conveyance and rights.
7. United States Gramophone agreed to prosecute any infringement, but the party of the second part would after three years bear half of the cost of litigation. United States Gramophone agreed to place in trust 10,000 shares to be sold at five dollars per share if necessary against any loss resulting from injunctions or decrees. If after ten years this were not necessary, the stock would be transferred back.
8. The licensee agreed to make a true monthly report and to allow an examination of its books at any time.
9. The right to manufacture discs and records would be retained under the control of the licensee and would not be granted to a third party nor would any recorder be sold within three years without the assent of both parties.
10. All apparatus would have a patent stamp and a serial number to aid in the discovery of infringers.
11. If the terms were not fulfilled, the licensor would have the right of cancellation after notice in writing and a further sixty days non-fulfillment. The same would be true if the party of the first part did not carry out its obligations.
12. The party of the second part, or successor agreed to purchase for cash "all gramophones and gramophone goods now in stock, which were in good saleable condition, paying manufacturer's prices," and "all manufacturing machines owned by said United States Gramophone Company, which may be available for use in their work," also at reasonable prices.
13. In the case of the termination of the agreement, all matrices would be sold back to the licensor at fair cost valuation less wear and tear.³³

An additional agreement made with Emile Berliner specified that any defects that might be found in the organizational rights of the U.S. Gramophone Company would not affect the rights and privileges being transferred, that Berliner would execute any

necessary papers, that he would allow the use of his name, and that the manufacture of all matrices would be carried on in Washington under Berliner's personal supervision during the first three years of the contract. This was to hold true unless other arrangements were made because of refusal, death, or additional contract. Berliner was to receive \$5,000 each year, paid monthly, and compensation for all laboratory and experimental expenses.³⁴

By October 4 Jones apparently had succeeded in interesting a group of potential investors, but the necessity of meeting the payments scheduled for the first year gave them pause. Before they would invest, it was obvious that Jones would have to arrange for a modification of terms. An additional agreement was entered into which allowed more evenly spread payments during the first year. The remaining payment schedule was retained as originally determined. However, if the assignees diligently promoted the business, the dates on which payments were required could be extended into a fourth year.³⁵

These changes proved acceptable, and "the Berliner Gramophone Company was incorporated by Virginia charter October 8, 1895, recorded in Roanoke, Virginia, in Charter Book 4, page 105. The incorporators were Thomas S. Parvin, structural steel, in the Stephen Girard Building; his partner and associate, Max H. Bierbaum; Joseph Goldsmith, clothing manufacturer, Fifth and Market Streets; [and] William J. Armstrong and Thomas L. Latta, contractors doing business under the name of Armstrong and Latta." Paid in capital amounted to \$25,000. The incorporation was handled by Frederick Leonard.³⁶

In one of its first moves, the new company initiated two new agreements with Jones. The first put on record the assignment of all Jones' newly acquired rights. The text specified that he "does hereby grant, bargain and sell, assign, transfer and set over unto the said Berliner Gramophone Company, its successors and assigns, forever, all his right, title and interest in and to all the said inventions of Emile Berliner, Esq., which have been, or which shall hereafter be made having relation to the recording and reproduction of sound...." Since a large portion of the Company's stock was held by Jones, an additional agreement insured the payment of royalties and monies due to Berliner. The agreement required him to transfer 5,100 shares of his holdings to be sold or held in trust to guarantee such payments.³⁷

Almost immediately, plans were made to transfer the operation of most of the gramophone business to Philadelphia. Quarters were found at 1026-1028 Filbert Street in an old building, and a recording studio was set up at 29 South 11th Street, above a shoe store. Thus, recording took place both in Washington and Philadelphia. Later, space was acquired at 1032-1036 Filbert Street.³⁸

One of the first moves made by the licensee was to attempt to set up local marketing agreements on the pattern of the now bankrupt North American Phonograph Company. By licensing the sale of goods, the fledgling company could generate income from the proceeds of territorial rights. One of the first contracts was arranged with a somewhat mysterious New Yorker. Frank Seaman had arrived from the midwest a few years earlier and entered the advertising business. In a credit report, the R. G. Dun Mercantile Agency reported little about him except that he paid his bills on time and was regarded favorably by those with whom he transacted business in Yonkers. He appointed as manager William Barry Owen who already had honed his marketing skills in a scheme to sell Zimmerman auto harps. After signing an agreement in the early portion of 1896, the New York Gramophone Co., Frank Seaman, proprietor, was organized to market the invention in New York and New Jersey. Soon new life was breathed into the gramophone

business as Seaman and Owen exhibited their marketing skills. A second company, the New England Gramophone Company, was organized by Alfred O. Tate, Edison's former private secretary, and William C. Jones. Nothing is known of this organization other than a mention in Alfred Clark's unpublished memoir, and another in a later contract. Lacking other contracts, the Berliner Gramophone Company had to supply the remaining portions of the country, except for the District of Columbia which was reserved for the United States Gramophone Company.³⁹

From the beginning, the Company found it useful to restrict its role to that of an assembler of parts and equipment. Perhaps the experience of the United States Gramophone Company or the need for capital to pay the amounts called for in the contract with Berliner made the group cautious. The fact that Jones and his friends held major portions of the stock and that only \$25,000 in cash had been made available seriously hampered the operation. In fact, Gaisberg again noted that the managers, Jones and Kearns, borrowed money from him, eventually paying it back in the form of Berliner Gramophone Company stock. Fragmentary evidence indicates that much of the early business consisted of working down the inventory of records, machines, and parts acquired from the United States Gramophone Company. The bulk of these machines were still hand-wound and until newer models, controlled by spring motors, could be developed and perfected, the management prudently relied on outside suppliers when necessary to perform the basic manufacturing tasks. This practice was to continue during the entire sales existence of the Company.⁴⁰

The problem of providing the motive power to rotate the gramophone turntable was paramount in the minds of all concerned. Gaisberg in his memoirs mentioned the difficulty of maintaining proper speed, and this despite his proficiency in the use of the equipment. Williams C. Jones and B. F. Kearns, the managers of the Company, constantly were requesting a clockwork gramophone, but Berliner was unsuccessful in designing one. In February, Fred Gaisberg, who by now had become an inspector for the licensee, took note of an advertisement in an edition of a local paper that he later recalled as probably being the *Philadelphia Ledger*. "Why wear yourself out treading a sewing-machine? Fit one of our clockwork motors," it proclaimed. Noting that the address was nearby on Twelfth Street, he immediately sped to the location to check out the information. On arriving he found a venerable pattern-maker, probably George Whittaker, who possessed very little sight. After the needs of the Gramophone were described, the proprietor assured his questioner that there would be no problem in fitting a spring motor to the Gramophone, even though none of his sewing machine motors had as yet been sold.⁴¹ The apparatus proved a massive affair weighing a couple of hundred pounds and powered the sewing machine for what Gaisberg thought an extremely short time. The gramophone managers provided the pattern maker with a hand-wound machine and awaited results.

Whittaker, hampered by his poor eyesight and lack of equipment, was forced to cast about for a machine shop to construct his model.⁴² Fortunately, he followed the lead of an employee of Eldridge R. Johnson who owned an establishment in Camden, New Jersey. Belford Royal's action in directing Whittaker to Camden permanently affected the development of the industry. A week later, Johnson arrived with a machine patterned on Whittaker's ideas which proved impractical.⁴³ Among the drawbacks was an old-fashioned fan governor incapable of providing the degree of control necessary. Johnson, who by now was convinced of the importance of this project, commenced the design of one of his own motors and submitted it soon afterwards,

...and which was finally accepted by the Berliner Gramophone Company, they giving him an order for 200 machines, and making arrangements for advancing him capital for enlarging his shop to build the same.... In the first Johnson model the spring was wound by a lever, and the governor was similar to the governor on a steam engine (not springs). Later on, when the first machines were delivered, they didn't govern.

Gaisberg remembered a meeting over Johnson's shop at which William Barry Owen was present where the subject of discussion was the large number of machines being rejected because of poor governing.⁴⁴ Nonetheless, the Berliner Company must have felt it was nearing a solution and that there would soon be an improvement. In May, the *Scientific American* was persuaded to run a story concerning the gramophone. The invention was pictured on the front cover and in a long one and one-half column story. The account featured the hand-propelled machine, one driven by an electric motor, and a prototype spring-motor model. Extreme caution was shown when the "popularity" of the hand-propelled model was described.⁴⁵ By the time a proper spring motor model was firmly in the gramophone orbit, the company had expended some \$30,000 in the attempt to market the hand-powered versions.⁴⁶

The *Scientific American* article probably was run at the behest of Frank Seaman, and also because of the Company's confidence that things were bound to improve. In addition, on one page Seaman advertised, not as the New York Gramophone Company, but as the National Gramophone Company, a firm name that was not formally in existence until October. The Berliner Company also offered machines. Since the Seaman ad specified that machines could be supplied east of the Rocky Mountains it seems obvious that Seaman and Owen already were expanding the territorial scope of their efforts.⁴⁷

In such a situation, it seems obvious that difficulties experienced with the Johnson motors must have been particularly galling. As long as the motors were not perfected, the national plans were impeded. On one summer day in 1896, Alfred Clark recalled crossing on the ferry to Camden with Owen and calling at the Johnson workshop. The smallness of the operation was apparent. In the one story building "only a few mechanics were employed. The business office was a platform partitioned off from the rest of the workshop by glass and occupying a space of something like 10 ft. x 6 ft. The only desk was a high drawing desk and on a high stool with compass and pencil in his hand sat Mr. Johnson, a tall youthful appearing man."⁴⁸ Gaisberg in his memorandum on the first spring motor noted it was decided at this or a similar meeting that the fault was in a governor similar to that of a steam engine. He noted that the "suggestion was put forward that the 'governing' be modelled on the principle of the governing of the Edison spring motor."⁴⁹

On the basis of this possibility, Owen now attempted to get the situation moving and arranged for an initial order of a redesigned machine provided the cost could be kept down, the machines of the earlier order being too expensive. Alfred Clark mentioned, "When Mr. Owen said that should the delivery of these be satisfactory he would place a further order for 3,000 I thought I detected a twinkle in Johnson's eye which indicated some slight doubt of the soundness of Mr. Owen's optimism."⁵¹ Johnson, in his uncertainty, made a proposition to another resident of Camden, Mr. Levi Montross, a machinist experienced in the manufacture of machinery and parts. The purpose was to gain financial assistance and help with plans for selling. Johnson recalled these events.

After some further experimenting we decided to sell the machine as it was at that time, and to make improvements as the business progressed. We secured our first order from the Berliner Gramophone Company, August 10, 1896, it being specified that the machines

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were to be constructed so as to operate the Berliner records.... The new Gramophone as constructed by us met with unusual success from the start, and I believe that its development very largely induced Mr. Seaman to enter into a contract with the Berliner Gramophone Company, as Mr. William Barry Owen, who at that time had charge of the selling department for Mr. Seaman, had been following my experiments very closely.⁵²

Montross's contribution to the enterprise was much more than Johnson acknowledged. The early machines owed much to Montross's design, and he was able to apply for and patent his conception. The first order had been for 500 machines and while these were still imperfect or unpatentable they were successful enough for Seaman to plan to widen his base. Sometime in the period after May 1896, the date of the issue of the *Scientific American*, he signed an additional contract with the Berliner Gramophone Company encompassing the Western States.⁵³ He also continued advertising nationally as the National Gramophone Company, and not as the New York Gramophone Company. In Philadelphia, the situation was becoming ever more serious as the Berliner Gramophone Company fell further and further into debt. With its limited capitalization, Jones and Kearns were increasingly cautious and loath to take any risks whatsoever. Henry K. Smith, in an affidavit executed in 1900, estimated the indebtedness in the fall of 1896 as standing between \$15,000 to \$20,000, a large amount for a company that had been organized with only \$25,000 in available cash.⁵⁴ In the latter part of the year, Berliner even considered abrogating the basic contract because of non-payment of royalty, as well as forcing the Berliner Gramophone Company into receivership.⁵⁵

We do not know when the hard rubber records were replaced by those utilizing a new substance, imitation hard rubber. *The Scientific American* of May 1896 specified that the recordings were made of hard rubber and the *Phonoscope*, a new periodical devoted to talking machines and amusement devices, in its first issue of November 15, 1896 mentioned hard rubber in a small article on the Gramophone. It is possible, however, that the article originally appeared in a sample issue distributed earlier, but no copies of that issue are thought to exist now. But bills from the Duranoid Company for pressing records in the new substance were introduced in the court contests of 1900, and these were dated in October 1896.⁵⁶ Fred Gaisberg chronicled the change-over.

Pondering over [the problem Berliner] remembered that the Telephone Company had abandoned vulcanized rubber and adopted a plastic material for their telephone receivers. The Duranoid Company of Newark, N.J. were button manufacturers who undertook to furnish pressings on a similar substance from matrices supplied by Berliner. The new substance was a mixture of powdered shellac and byritis, bound with cotton flock and coloured with lamp black. It was rolled under hot colanders into 'biscuits.' When heated, these 'biscuits' were easily moulded under pressure and when cooled they retained the impression.

I was present when Berliner received the first package of gramophone records from the Duranoid Company. With trembling hands he placed the new disc on the reproducer and sounds of undreamed quality issued from the record.⁵⁷

The stage was now set for Seaman's complete involvement and the salvation of the Berliner Gramophone Company. To show the desperate straits of the Company, one only has to examine the correspondence and the contract from October 1896 with Frank Seaman. There was no monetary payment of any significance, with the execution in goods wiping out past advances. On the basis of this contract, Seaman proceeded to organize the National Gramophone Company on October 19, 1896 although the Berliner Gramophone Company never formally acknowledged its existence.⁵⁸

The story of the gramophone during the remaining years of the century was one of increasing record issues, sales and influence. But, as has happened throughout all of the

history of this industry, the situation was to deteriorate into a bitter series of suits, countersuits, and antagonisms. The culmination of these contests left Berliner outside the development of his own invention in the United States, the term gramophone no longer used in the United States (although it was retained in other portions of the world), and Frank Seaman permanently separated from the business that he did so much to spark during the short period of existence of his National Gramophone Companies. These events lay the future. Those involved with the Gramophone now saw only a situation in which a majority of the problems were at last being ironed out, and the proverbial pot of gold was just over the next rise.

New York Locations

New York Gramophone Company, Frank Seaman, Prop. Feb. 1896-Oct. 1896.

874 Broadway. McIntyre Bldg. 3 rooms on 9th floor. 18th & Broadway.

Moved to Lincoln Bldg. 1 Union Square West, but maintained 874 Broadway as a mailing address.

Store located at 27 East 14th Street

National Gramophone Company, Oct. 1896-1899

Lincoln Bldg. 1 Union Square West

Back to: 874 Broadway. Moved back in early 1897.

Store at 27 East 14th Street

National Gramophone Corp., 1899-1901. Entered proceedings for voluntary dissolution, Sept. 1901; still in existence in 1908. Dissolved by decree in 1926.

874 Broadway.

Rooms on first floor (store). 18th & Broadway.

Room on second floor, rooms on third floor, rooms on fifth floor, rooms on sixth floor, rooms on ninth floor

(In 1899 John C. English was making records on tenth floor.)

Officers:

New York Gramophone Co.

Frank Seaman

William Barry Owen

National Gramophone Company

Frank Seaman

William Barry Owen (replaced after summer 1897 by Oliver La Dow).

Emile Berliner and the Gramophone Philadelphia Locations, 1888-1900.

Franklin Institute - 7th Street between Market and Chestnut. Scene of 1888, 1893, 1895 Berliner lectures. Awarded Berliner the John Scott Medal in 1896.

Law Offices of Frederick Leonard. Walnut and Fifth. It was here that the incorporation papers were drawn up for the Berliner Gramophone Co. Mr. Leonard acted as legal adviser and drew up various stock pooling agreements.

Factory and Offices of the Berliner Gramophone Company, 1026-1028 Filbert Street.

Later additional space was acquired at 1032-1036. 1895 or 1896 until late 1897.

Recording Studio of Berliner Gramophone Co. 29 South 11th Street, between Market and Chestnut Sts. 1895 or early 1896 through late 1897.

Stephen Girard Building, 21 South 12th St., between Market and Chestnut. Offices of Thomas R. Parvin.

Retail Store operated by Berliner Gramophone Company 1896? Alfred Corning Clark was General Manager.

Henry B. Whittaker, pattern-maker. It was Whittaker who advertised a spring driven

sewing machine and who promised to attempt to adapt a spring drive to the gramophone (March 1896). 446 North 12th Street. Listing in 1895 and 1897 Philadelphia City Directory.

Factory, Recording Studio, and Offices of Berliner Gramophone Company. 424 South Tenth Street, 10th and Lombard. 1897-1900.

Notes:

1. As has been true with earlier portions of my history, I owe more than can adequately be expressed to the kindness of numerous individuals and institutions. The present work would have been impossible without the willingness of Robert Sanders and other Berliner family members who allowed me to utilize the papers of Emile Berliner and Joseph Sanders. The majority of these papers are now deposited at the Library of Congress, although some important Sanders material is still in family hands. Both Mr. Sanders and his wife were extremely gracious. I only regret that pressures of time and work prevented extending my stay. The staff of the Motion Picture, Broadcasting and Recorded Sound Division of the Library of Congress, Robert Carneal, Gerald Gibson, and James Smart, always have been hospitable and quick to share any new information. A portion of the material used here is derived from the papers of Eldridge Reeves Johnson which now are located at the University of Wyoming, Laramie. Eldridge R. Fenimore Johnson directed me to the papers while Gene Gressley, their gracious curator, saw to it that calendaring was speeded up so that I might use the material conveniently. My reliance on this material will become more apparent in later segments.

All of the heads of the National Archives sections and regional branches that I have utilized were consistently helpful: Dr. Robert Plowman of Philadelphia, Pennsylvania and Joel Buchwald of Bayonne, New Jersey immediately come to mind. A good interlibrary loan operation is critical to the success of any research endeavor and that of Queens College fits this model role. Mrs. Mimi Penschansky, Mrs. Ruth Hollander, and Ms. Izabella Taler were often forced to cope with seemingly odd requests for periodicals and books. They succeeded admirably, and often located materials that had not circulated for years at their home repositories. In one case, I was the first borrower in more than 75 years.

I also have been able to benefit from suggestions by Allen Koenigsberg and Tim Brooks. Both individuals are unique in possessing more than a passing acquaintance with the sources of talking machine history in the early years. Allen, through his extremely useful publication *APM* has often located new and unknown documents that have proven critical in the construction of this history. It was through Mr. Koenigsberg that I verified details of the development of the spring motor gramophone, and the photographs of the early Johnson machine were provided through his courtesies.

I also must single out the continued assistance of Robert Truax of Washington, D.C. Because of his interest in the history of the District of Columbia and in the early sound recording industry, Mr. Truax has discovered local information that I was unable to uncover. The details and pictures of the local Berliner Laboratory locations owe their existence to his help.

Scholarly research often owes much to the kindness of granting agencies. This paper, and indeed much of my research, is indebted to grants from the New Jersey Historical Commission, the Faculty Research Award Program of the City University of New York (FRAP 11042), and the Board of Higher Education/Professional Staff Committee Program (BHE/PSC 12061). Through their kindness I have been able to examine all of the major informational sources used here.

2. Recording was still taking place in Germany in 1894 according to Joseph Sanders who was in Germany "helping in some recording work of another brother of Mr. Berliner who had taken this branch up in Germany." See testimony of Joseph Sanders in *American Graphophone Company versus the American Record Company*. (U.S. Circuit Court for the Southern District of New York. In Equity), p. 57 (printed record) NARC—Bayonne. The American Patent Office questioned several of the claims of the Berliner application and

repeatedly returned to the inventor for modifications. The items changed or modified may be easily ascertained by comparing the final American issue with the British patent which also had been applied for on November 7, 1887. The British was granted with no change while the American waited until July 28, 1896 (No. 564,588). Thomas Edison had been hampered with his American phonograph work by poor patent work and consequently found most of his American protection non-existent because of his willingness to allow expunging, or his unwillingness to pay for renewals. The majority of his American improvements were not even protected since a major 1878 patent was applied for after its British counterpart and the American Patent Office refused to accept an application that was post-dated.

3. The offering of the gramophone to Jesse Lippincott is mentioned in Alfred Clark's unpublished memoir *His Master's Voice: A Record*. Chapter 5, p. 13. A portion of the document is available in the Johnson Papers at UW-LAR.
4. A preprint of the American Institute lecture is mounted in Berliner's scrapbook. BP-RS-LC
5. Certificate of Organization of the American Gramophone Company. Filed April 23, 1891. p. 1 & 2 passim. File No. X7333-. N.J. - Sec. of State.
6. *Ibid.* p. 3.
7. *Report for 1891 of the American Gramophone Company, of Directors, Officers, etc.* Filed Sept. 11, 1891. File No. X7333- N.J. - Sec. of State.
8. *United States Gramophone Co. and Berliner Gramophone Co. against Standard Talking Machine Co., Charles G. Conn, Albert T. Armstrong and Emory Foster* (U.S. Circuit Court for the Southern District of New York. In Equity No. 6919). Bill of Complaint, p. 3 NARC—Bayonne.
9. A picture of the clock-work machine appears in the previously cited Berliner scrapbook. Berliner himself mentioned the weakness of the motor and the noise in his privately printed *Three Addresses*, p. 37.
10. The first convention mentions the slot machines and pre-recorded cylinders infrequently. The Second Convention *Proceedings* consisted of 143 pages. At least 36 were devoted to slot machines and good and cheap musical cylinders. ENHS. It should also be realized that the real explosion of interest in talking machines can be attributed to the introduction by the American Graphophone Company and its marketing arm The Columbia Phonograph Company, General of the Eagle Graphophone selling at \$10.00 in 1897.
11. The text of the deposition of Emile Berliner appears in both *American Graphophone Company versus the United States Phonograph Company, Victor H. Emerson and George E. Tewksbury on Letters Patent Nos. 341, 214, 341, 288.* (U.S. Circuit Court. District of New Jersey. In Equity No. 3668), p. 146 (printed record) and *American Graphophone Company versus The United States Phonograph Company and George E. Tewksberry on Patent No. 341, 287.* (U.S. Circuit Court. District of New Jersey. In Equity No. 4005). Testimony on behalf of defendant, Nov. 4, 1898, Philip Mauro Exhibit No. 3, p. 74. —Both ENHS and NARC—Bayonne. Berliner's deposition was dated June 21, 1888.
12. Pollock and Mauro Opinion, September 28, 1891 as entered as an exhibit to the deposition of Emile Berliner in *American Graphophone Company versus the National Gramophone Company and Frank Seaman.* (U.S. Circuit Court. Southern District of New York. In Equity No. 7063) Preliminary injunction papers, pp. 25-33. The document is dated by Berliner on p. 19. NARC—Bayonne.
13. Examples of the Letterhead are found on Berliner letters to Dr. Wahl of the Franklin Institute. The Company also is mentioned by Berliner in a letter of 9/16/93. FIA.
14. The description of the manufacturing process has been modified from that of Emile Berliner in *Technical Notes on the Gramophone.* (Reprint from Franklin Institute. *Journal*, Dec. 1895, p. 419-437), p. 15 of reprint. Also details appear as a portion of Patent 548,623 Sound-record and method of making same.
15. The existence of the New York Avenue address was verified in correspondence of Joseph Sanders and in Washington City Directories. On checking the real estate atlas for the year in question the smallness of the building was noted leading to the assumption that it might have been an ex-stable. The listing *Berliner Records in the Library of Congress* was issued on the occasion of the meeting of the Association for Recorded Sound Collections in Washington, February 22, 1978. Since then the collection has been increased by further family donations.

- A check with other holdings of earlier Berliner Gramophone records has failed to locate other early pressings from the period.
16. A promising development of pressing celluloid had been abandoned since it was found that copies could not withstand the ravages caused by heavy reproducers and steel needles. A similar situation was encountered in 1907-08 when the American Graphophone Company's marketing arm, the Columbia Phonograph Company, General, attempted to introduce the celluloid-surfaced Marconi Disc Records. Joseph Sanders, who was involved with the experiments, later took out a patent on such a process. When Edison was developing his disc record it was deemed expedient to take out a license.
 17. In Berliner, *Three Addresses*, p. 35, it was mentioned as a hard rubber company in the midwest. Joseph Sanders identified it as the American Hard Rubber Company in Sanders to B. L. Aldridge 5/27/53 SP. But the American Hard Rubber Company was not in existence at the time so the organization must have been one of the predecessor organizations. In the same letter he mentioned the difficulties in working with the substance. Other details appear in Patent 548,623.
 18. Wilson's Patent No. 472,417—Coin-operated gramophone (Application 12/3/91—granted 4/5/92).
 19. No. 489,666—Sound recording instrument (Application 8/11/92—granted 1/10/93). See also E. L. Wilson to Dyer and Seely 10/2/94 ENHS and testimony of Joseph Sanders on June 28, 1905 concerning the institutionalization and death. *American Graphophone Company versus the American Record Company*. (U.S. Circuit Court for the Southern District of New York. In Equity No. 8939), p. 49 NARC—Bayonne.
 20. See testimony of Joseph Sanders *loc. cit.* p. 49. File No. 1755 FIA.
 21. Fred Gaisberg *Music on Record* p. 15-16. Gaisberg's recollection is in error at several spots. The date must have been 1893 since the New York Avenue address was in existence between 1892 and 1893 and there was an interval between the first meeting and a later interview. Gaisberg gave 1891. He was also in error when he stated that he saw the first gramophone record made during his visit. Successful recordings had been marketed in Germany and certainly others had been made previously in America.
 22. E. Berliner to Dr. Wahl 9/16/93 contained in File No. 1755 FIA.
 23. Gaisberg *op. cit.* pp. 16-17.
 24. Information concerning the G Street address is found in the Washington City Directory of 1894. The dual location of the powerhouse and 1410 Pennsylvania Ave. was discovered in Joseph Sanders' testimony *loc. cit.* Charles Sumner Tainter of graphophone fame, also mentioned laboratories in the same building. Both Tainter and Berliner lost valuable equipment and experimental records when the building burned in September 1897.
 25. Joseph Sanders to B. L. Aldridge 5/27/53. SP.
 26. Texts taken from a series of circulars of the United States Gramophone Company that are among the papers in the Berliner scrapbooks. BP - LC.
 27. Location from the Baltimore City Directory. Original indication of the Baltimore address and the sales figures are found in Deposition of Emile Berliner in the papers in opposition to a preliminary injunction. *American Graphophone Company versus National Gramophone Company and Frank Seaman* (U.S. Circuit Court for the Southern District of New York. In Equity No. ____). The text was taken from a printed appeal record.
 28. Gaisberg *op. cit.*, p. 20.
 29. Berliner had been an experimenter for the Telephone Company and had been stationed in Boston. W. W. Jacques, one of the inventors responsible for the Edison Toy Phonograph Company, had also worked with Berliner in Boston. In 1890/91 the relationship between Edison and the Edison Toy Phonograph Company had deteriorated completely and ended in a drawn out series of suits and countersuits. Marketing of the doll was thus completely blocked.
 30. *Ibid.* An examination of the *New York Times* microfilm file shows such a storm on Thursday, February 7, 1895 with aftereffects lasting until Sunday, February 10, 1895.
 31. E. Berliner, *Technical Notes on the Gramophone* (Reprint from Franklin Institute Journal) BP-RS-LC.

32. See agreement between United States Gramophone Company and William C. Jones, September 2, 1895 as reproduced in *Frank Seaman versus Eldridge R. Johnson*. (U.S. Circuit Court for the Eastern District of Pennsylvania. In Equity. October Session 1900, No. 20) Bill in Equity and Exhibits, pp. 36-37 passim. NARC - Philadelphia.
33. *Ibid.* pp. 36-40 passim.
34. Agreement Emil [sic] Berliner and W. C. Jones, September 2, 1895 in *Ibid.* pp. 41-42 passim.
35. Agreement United States Gramophone Company and W. C. Jones, October 4, 1895 in *Ibid.* location pp. 42-45 passim. In addition Jones negotiated a secret agreement with Berliner providing for a rebate to him of one third of the royalties paid by the Berliner Gramophone Company to the United States Gramophone Company during the first year and five percent in the following year. The existence of this understanding was discovered in 1898 when the amount of \$2,302.26 appeared in the accounts of the United States Gramophone Company's Annual Report. Earlier figures probably did not exist because of the indebtedness of the Berliner Company to U.S. Gramophone. A case brought by the Berliner Gramophone Company for the recovery of these funds was noted in the Legal Notices section of *The Phonoscope*, Vol. II, No. 10 (October 1898), p. 9. The only copy of a United States Gramophone Company Annual Report [1898] was mounted in a Berliner scrapbook. This was given by Robert Sanders to the Library of Congress. The *Phonoscope* article did not mention the court jurisdiction in which the case was brought and the papers consequently have not been located.
36. *William E. Stokes Talking Machine Associations* (typescript) p. 1 Johnson Papers - UW - LAR. Fred Gaisberg. *The First Spring Motor Gramophone* (May 23, 1992) (unpublished typescript) Also Johnson Papers - UW - LAR. Because of the potential size of the financial obligations assumed by the investors in the Berliner Gramophone Company, the lawyer, Frederick Leonard, who handled the incorporation arranged for a stock voting trust with Thomas L. Latta, Joseph Goldsmith, and Thomas S. Parvin acting as trustees. The agreement was entered into on November 1, 1895 and was to remain in force until the United States Gramophone Company received \$75,000 in royalties. A renewed agreement was later arranged on May 11, 1899. These agreements were entered into the record of *Samuel Ford and William C. Smith versus Berliner Gramophone Company* (U.S. Circuit Court for the Western District of Virginia. In Equity.). This type of agreement laid the groundwork for still another type of agreement—the organization of a trust in 1909—The Consolidated Talking Machine Company of America which exchanged trust certificates for shares in the Berliner Gramophone Company. The United States Gramophone Company and later the Johnson Sound Recording Company.
37. Agreement William C. Jones and Berliner Gramophone Co. 1 Nov. 1895 as "Complainant's Exhibit No. 5" in *Victor Talking Machine Co. & U. S. Gramophone Company versus American Graphophone Co.* (U.S. Circuit Court for the Southern District of New York. In Equity No. 8628) NARC—Bayonne. Agreement William C. Jones with Thomas L. Latta, Joseph Goldsmith and Thomas S. Parvin and Berliner Gramophone Co. Nov. 1, 1895. Entered as an exhibit in *Samuel Ford and William C. Smith individually and on behalf of such stockholders of the Berliner Gramophone Company as may join in this action against Berliner Gramophone Co.* (U.S. Circuit Court for the Western District of Virginia. In Equity No. 555) WNRC.
38. Address of the Company and Recording Studios ascertained from several sources, including *Berliner Gramophone. Directions...* (Reprinted by Allen Koenigsberg). The *Scientific American* for May 16, 1896 gives 1032-1036 Filbert Street. The Recording Studio address appeared in E. Berliner to W. H. Wahl 10/29/96. FIA. Fred Gaisberg in "Emile Berliner picks a winner," *The Gramophone* Dec. 1943, p. 97 recalled the recording studios as being on 12th Street.
39. Alfred Clark *op. cit.* Ch. 5, p. 15, Ch. 6, p. 5. The New York Gramophone Co., Certificate of Incorporation filed in New York County on 2/18/96. Alan J. Adami, Head Clerk, N.Y. State Dept. of State to R. Wile 4/28/82. For additional mention of the New England Gramophone Company see also "Agreement Berliner Gramophone Company and Frank Seaman, October

- 10, 1896," in *Frank Seaman versus Eldridge R. Johnson...* p. 23 and Frederick M. Leonard to Thomas S. Parvin 10/8/96 in the same location p. 21. *Affidavit of Frank Seaman in Frank Seaman versus the Berliner Gramophone Company.* (U.S. Circuit Court for the Western District of Virginia. In Equity) 170 (p. 505 of printed appeal record) NARC—Philadelphia and WNRC—National Archives Annex.
40. *Affidavit of William C. Jones in Samuel Ford and William C. Smith...against Berliner Gramophone Company...* gives details of the size of the Jones holding.
 41. See *Goldberg Music on Record* p. 21; Gaisberg. *The First Spring Motor Gramophone* p. 2. Dale Kramer [Eldridge Reeves Johnson; a biography] (final revision of unpublished manuscript) p. 49, JP-UW-LAR. Philadelphia City Directory, 1895. See also Allen Koenigsberg. *Patent History of the Phonograph, 1877-1912.* Brooklyn, APM Press, 1990. p xxxix-xii.
 42. Clark *op. cit.* Ch. 6, pp. 1-2 passim.
 43. Gaisberg. *First spring motor...* p. 2.
 44. *Ibid.*
 45. *Scientific American* May 16, 1896, p. 311. There is no evidence that this machine was ever manufactured.
 46. Affidavit No. 1 of Eldridge R. Johnson in *Frank Seaman versus Eldridge R. Johnson* p. 3 NARC—Philadelphia.
 47. *Scientific American* May 16, 1896.
 48. Clark *op. cit.* Ch. 6, pp. 2-3.
 49. Gaisberg. *First spring motor...* p. 3.
 50. E. R. Fenimore Johnson. *His master's voice was Eldridge R. Johnson.* 2nd ed., p. 43.
 51. Clark *op. cit.* Ch. 6, p. 3.
 52. Affidavit No. 1 of Eldridge R. Johnson in *loc. cit.*, p. 4.
 53. Gaisberg specifies the number in *First Spring Motor...* p. 3. For Western contract see Frederick M. Leonard to Thomas S. Parvin 10/8/96 in *loc. cit.* Ch. 6, p. 3.
 54. *Affidavit of Henry K. Smith in Samuel Ford...versus Berliner Gramophone Company.*
 55. See Berliner to Seaman 12/12/96 as introduced in *Frank Seaman versus the United States Gramophone Company* (U.S. Circuit Court for the Southern District of West Virginia. In Equity No. ____).
 56. See *Frank Seaman versus Berliner Gramophone Company.* There may have been earlier bills since the purpose of introducing them was to show payments by Seaman after mid-October 1896.
 57. Gaisberg. *Music on Record.* p. 18.
 58. The contract will be detailed in a later section. The Certificate of Incorporation of the National Gramophone Company was introduced in *American Graphophone Company versus the National Gramophone Company.* NARC—Bayonne.