THE PIANOLA JOURNAL

The Journal of the Pianola Institute

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Contents

Contents

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The aims of the Institute

A small number of pianola owners and musicians have been concerned for some time at the unnatural break between the world of music rolls and the world of music. Few members of the musical public know much about player pianos, and the Institute aims to bring about a better understanding and appreciation of the instrument in a number of ways.

The Institute publishes a regular journal, puts on public concerts, and has plans for a lending library of rolls, a travelling exhibition, and in addition a roll and information archive, with a small collection of player pianos for listening and study purposes.

The Pianola Institute will endeavour to preserve, research and document the pianola's history, to improve the instrument's present standing, and by the commissioning of new compositions, to ensure that it remains an important musical force for the future.

It is possible to support the work of the Institute by joining the Friends of the Pianola Institute. The Friends' subscription includes a copy of the Journal and regular newsletters. Membership enquiries may be made by post, to Peggy Smith, 128 Grierson Road, London, SE23 1NX, England, or via the Friends' section of the Institute's website at:
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Editorial

It is with sadness that I report the deaths of two people who, although not closely connected with the Institute, played important roles in the field of the player and reproducing pianos.

Albert Petrak was a great enthusiast for the reproducing piano. I first became aware of him through buying catalogues he produced for Ampico, Duo-Art and Welte in the very early 1960s. To my knowledge, these were the first attempt at producing systematic roll catalogues at the time of the revival of interest in the reproducing piano. Along with Gregor Benko, he founded the International Piano Library, which at that time embraced disc, tape and piano roll recordings. Subsquently, Petrak founded his own Reproducing Piano Roll Foundation, which, as far as I could make out, was a ploy to enable him to have material donated to him, rather than having to buy it! We have him to thank for persuading Telarc to publish on CD Wayne Stahnke's realisations of the Rachmaninoff Ampico rolls. Petrak became more or less housebound in later years, but he continued to be as interested as ever in historic piano recordings. He was one of the pioneers in the rebirth of interest in rolls.

Richard Tonnesen will be well known to piano roll enthusiasts for having been responsible for many high quality recuts. With his wife, Janet, he produced copies for a number of specialist labels such as Meliora and BluesTone. At the time when computers were just starting to be used in connection with roll copying, Richard's products set a new standard in accuracy. In recent years, he had been ill, and consequently had not been active in the roll business. I sincerely hope that his perforator will go to a worthy new owner who will put it to good use. When so many rolls are reaching a parlous condition, we cannot have too many sources of good new copies.

At a time when one is concerned about the future of the whole piano roll medium, it is indeed heartening that Stanford University has just bought the roll collection of the late Denis Condon. Denis was an avid collector all his life, having had his appetite whetted by his father, who also owned reproducing pianos. The collection consists of some 7,500 reproducing rolls of various types and several pianos and push-ups (vorsetzers). Stanford, as I understand it, is looking on this resource to complement its already large collection of discs and tapes. One of its specialities is the study of historic performance practice, and of course rolls will be a most valuable addition. The plan is to make this material generally available online, and this will be welcomed by all player and reproducing piano enthusiasts.

Stanford has also acquired a large and valuable collection of catalogues and associated literature from Larry Sitsky, whom roll enthusiasts will

know from his magnificent two-volume *The Classical Reproducing Piano Roll* - Greenwood Press 1990. I am told that these documents will also be put online. Congratulations to Stanford for taking this bold step into what is for them a completely new field.

We should rejoice that there seems to be something of a renewed interest in the reproducing piano. Now we need to work on rejuvenating the foot-operated pianola. The instrument was originally conceived in terms of home entertainment - to furnish music lovers who lacked the time, or the aptitude, to acquire the finger technique to play the piano, but wanted to make music themselves. But after more than 100 years, no instrument has been devised which can vie with the pianola as a means of enabling music lovers to interpret music with such subtle control of all those features which go to make up an individual performance. A great joy of the pianola is that no pianolists, however well they may have mastered the controls, can claim to be the ultimate performer. There is still just that bit more musicality waiting to be revealed. Today, the pianola is not the centre of home entertainment it once was, but there is every reason to suppose that it would still attract a host of music lovers, were it better known.

Our contributors for this Journal include Francis Bowdery, who discusses the seven rolls recorded by the 'King of Ragtime Writers', Scott Joplin. These are the only evidence of the playing of one of the most influential figures in the piano rag genre, but they need to be treated with considerable caution. Francis Bowdery describes what one can and cannot deduce from these historic recordings. Rex Lawson has unearthed an influential but completely forgotten name in the history of the player piano. Joseph Hunter Dickinson was an important figure in Aeolian's Experimental Department, what we would now call R & D, during the period of the emergence of the Pianola and the Duo-Art. His was a fascinating career, a story which has remained untold until now, but he was as crucial to Aeolian's success as some others who are better remembered through their having held front line posts.

Denis Hall

Joseph Hunter Dickinson and the Origins of the Duo-Art

Rex Lawson

Introduction

For this issue of the Pianola Journal, Francis Bowdery has contributed an article about Scott Joplin and his piano rolls. The player piano is often associated with ragtime in the minds of the general public, and certainly ragtime took its place in the history of the instrument, though there were other styles of music which predominated at different times. But ragtime and jazz play a useful role in reminding us of the contribution to the player piano made by the black community. Joplin, in his reputedly polite and classically based way, was followed by many others of African American heritage, such as James Scott, James P. Johnson, Jelly Roll Morton and Fats Waller, all of whom found their way on to early rolls, either as pianists or composers.

But we hear much less about the position of black piano builders and black inventors. Where such information does make it to the Internet, alas, it tends to be taken up by writers whose enthusiasm outweighs their regard for accuracy. Joseph Dickinson is a case in point; look him up on Google, and you will find that he invented the player piano, patented the reed organ, won a prize for a pipe organ that he designed for the Philadelphia Centennial Exposition, and was asked to build a similar instrument for the Portuguese Royal Family. All these examples are not strictly true, and some are glaringly wide of the mark, but they nearly all contain grains of truth, obscured by an understandable desire to right the wrongs of many centuries of social inequality.

But Joseph Dickinson deserves better than to be misreported. He was clearly a very clever man, the main contributing inventor of the Duo-Art reproducing piano, and for years he was Superintendent of the Aeolian Company's Experimental Department at its factory in Garwood, New Jersey. Such achievements, over a century ago, can stand on their own merits, and they don't need to be distorted by the Hollywood treatment. At any rate, this article is an attempt to portray the real Joseph Dickinson, at least as far as we can discern him from our far-off viewpoint at a distance of over a hundred years.

Biographical Background

Our knowledge of Joseph Dickinson's life and career currently comes from five main sources:

(i) social records, such as censuses, marriage certificates and city directories,

(ii) published patents from the US, Canadian and European patent agencies,

Joseph Hunter Dickinson
22 June 1855 - 27 May 1936

(iii) an article and photograph in a book by G.F. Richings, entitled *Evidences of Progress among Colored People*, of which the eighth edition was published in Philadelphia in 1902, although the writing clearly dates from the 1890s,

(iv) a pamphlet written in 1913 by Henry E. Baker, an Assistant Examiner for the US Patent Office, and himself an African American, entitled *The Colored Inventor*, and

(v) contemporary articles in newspapers and journals, such as *Music Trade Review*, an American weekly magazine devoted mainly to the piano and player piano industry, which is available online, thanks to the public-spiritedness of the International Arcade Museum website.

There may be other sources to discover, and in particular it would be very useful to find a good run of the Aeolian Company's staff magazine, *The Aeolian*. But for the moment there is enough to make reasonable sense of the life and work of our chosen inventor.

Joseph Hunter Dickinson was born at Chatham, Ontario, on 22 June 1855, but both his parents were US citizens, born in the South, and in the following year the family moved back to Detroit, where his father, Samuel, was listed in 1860 as a white washer, but in 1870 as a blacksmith. We should remember that such monochrome descriptions may have shades of meaning that we no longer perceive. Someone recorded as a blacksmith by a busy census-taker may well have been an engineer, and not necessarily a mere shoer of horses. Samuel Dickinson was born in about 1800, so he was already in his 50s when the young Joseph was born. One could imagine a clever mechanic working as a slave on the machinery in a cotton mill, and then marrying a much younger woman and heading north when circumstances turned him into a free man. The American Civil War (1861-1865) was in part a reflection of the move to abolish slavery, but not its sole instigator, and no doubt many former slaves were already on their way north in the first half of the 19th century. At any rate, the fact that Joseph Dickinson's father worked with mechanical devices would certainly account for a family aptitude towards such matters.

Dickinson received his formal school education in Detroit, and at the age of fifteen, according to the 1870 census, he had already taken up work, apparently as a waiter, but at some point in that year he joined the crew of the US Revenue Cutter, Fessenden, which helped to patrol the maritime border between the United States and Canada. This short spell on Lake Michigan was somewhat akin to statutory military service, and two years later he finished his tour of duty and entered the employ of the Simmons and Clough Organ Company of Detroit, where he remained for ten years. In 1876 he helped to construct a large combination organ for the Philadelphia Centennial Exposition, which achieved a diploma and a medal for his employers, rather than for him personally.

On 28 April 1880, Joseph Dickinson married Eva Jane Gould, of Lexington, Michigan, the daughter of a well-established organ builder and foundryman in that city, Hezekiah Gould, and in 1882 he joined his father-in-law in the family firm, which was suitably renamed the Dickenson-Gould Organ Company. It should be said that the spelling of the Dickinson surname (and indeed Christian names) seems to vary from time to time! The Gould family was also African American, and in 1884, according to G.F. Richings, in *Evidences of Progress among Colored People*, the firm exhibited one of its larger chapel organs at the World's Industrial and Cotton Centennial Exposition in New Orleans, 'to show the progress of colored people in manufacturing.'

Joseph Dickinson remained with his father-in-law's company for four years, until 1886, at which point he rejoined his former employers in Detroit, who had by now become the Clough and Warren Organ Company, and there he seems to have stayed for most of the remainder of the century, becoming superintendent for the building of the higher grade of organs, according to Richings. However, a short biographical article in *Music Trade Review* in 1906 suggests that he transferred at some point, possibly at the end of the 1890s, to the Farrand and Votey Organ Company.

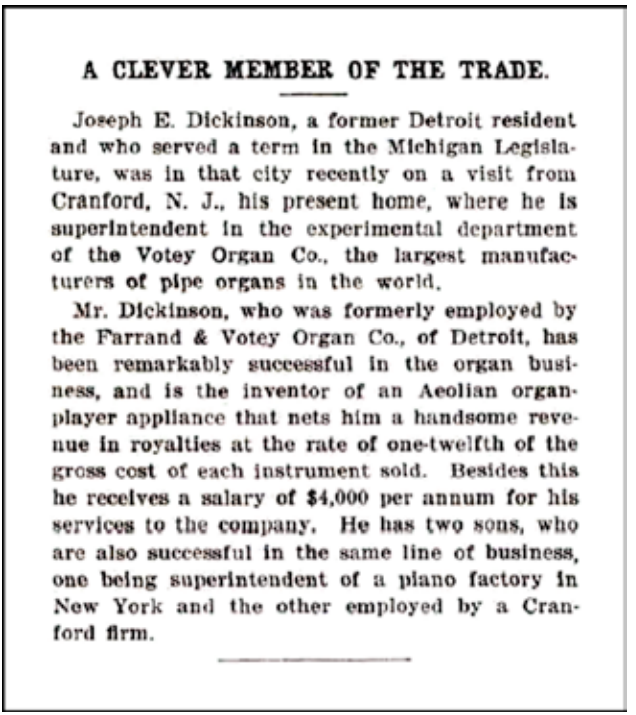
Towards the end of the century he also took up political activity, but one should not imagine that all the descendants of the formerly oppressed black community were by nature ardent revolutionaries. Far from it, for Joseph Dickinson was a relatively prominent member of the Republican Party, and in that capacity was twice elected to the Michigan House of Representatives, on the general legislative ticket of the city of Detroit. In 1897, as the only coloured member of that body, he introduced a bill to suppress mob violence, and in complimenting him, the *Daily Herald*, of Delphos, Ohio, noted that 'it is hoped by thoughtful and conservative colored men that many states will soon enact legislation similar to the Ohio statute, which renders a county pecuniarily liable to relatives of the deceased.'

It is also noticeable that Dickinson's listed racial status varies in different censuses, with a general progression towards classification as 'white' as the twentieth century wore on. Perhaps such a successful man, and indeed a significantly wealthy one, was accorded what was regarded as a respectful favour by census takers of the time. Such considerations, along with Dickinson's political allegiance, are a reminder that we cannot impose contemporary attitudes on previous generations. We are dealing here with a remarkably clever inventor, who became a substantially wealthy man, not a universal freedom fighter.

The association with Farrand and Votey, stated with apparent authority by *Music Trade Review*, is nevertheless not as clear as it might be. In June 1901, Dickinson applied for Canadian and US patents with regard to the principle of what has come to be known as the knife valve, a smoothly sliding throttle

valve taken up on an enormous scale by the Aeolian Company, which can be found in almost all its player instruments from the middle of the first decade of the twentieth century onwards. And yet the US patent was not assigned to Aeolian on issue, although it subsequently took its place in the Company's bound patent volumes, while the Canadian patent was assigned to the D.W. Karn Company, manufacturers of reed organs in that country. It seems most unlikely that someone who already worked for Farrand and Votey would assign a patent to Karn, one of its main rivals in the reed organ field, but far more likely that Dickinson would simply have been known to Edwin Votey, both men being reed and pipe organ builders and inventors, living and working in Detroit. Given the ubiquitousness of the knife valve in subsequent Aeolian instruments, the invention must have impressed Votey enormously, and one could imagine that its inventor might have been invited to join the budding Votey Organ Company at Garwood as a result, with a handsome offer of royalties in return for assignment of the patent, and a salary of $4,000 per annum, roughly equivalent to $250,000 in modern purchasing terms.

The short excerpt from *Music Trade Review* in October 1906 can speak for itself, with grateful thanks to the International Arcade Museum website. It gets Mr Dickinson's middle initial wrong, another small indication that one should not take all that it prints for granted.



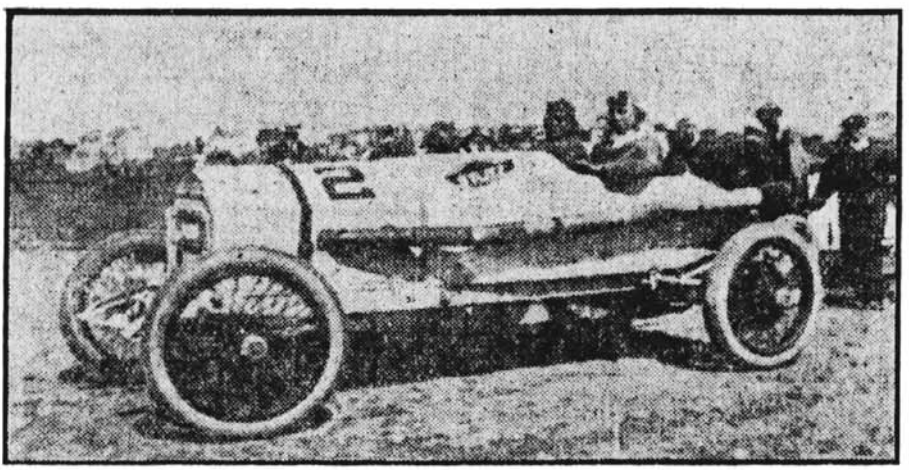
A CLEVER MEMBER OF THE TRADE.

Joseph E. Dickinson, a former Detroit resident and who served a term in the Michigan Legislature, was in that city recently on a visit from Cranford, N. J., his present home, where he is superintendent in the experimental department of the Votey Organ Co., the largest manufacturers of pipe organs in the world.

Mr. Dickinson, who was formerly employed by the Farrand & Votey Organ Co., of Detroit, has been remarkably successful in the organ business, and is the inventor of an Aeolian organ-player appliance that nets him a handsome revenue in royalties at the rate of one-twelfth of the gross cost of each instrument sold. Besides this he receives a salary of $4,000 per annum for his services to the company. He has two sons, who are also successful in the same line of business, one being superintendent of a piano factory in New York and the other employed by a Cranford firm.

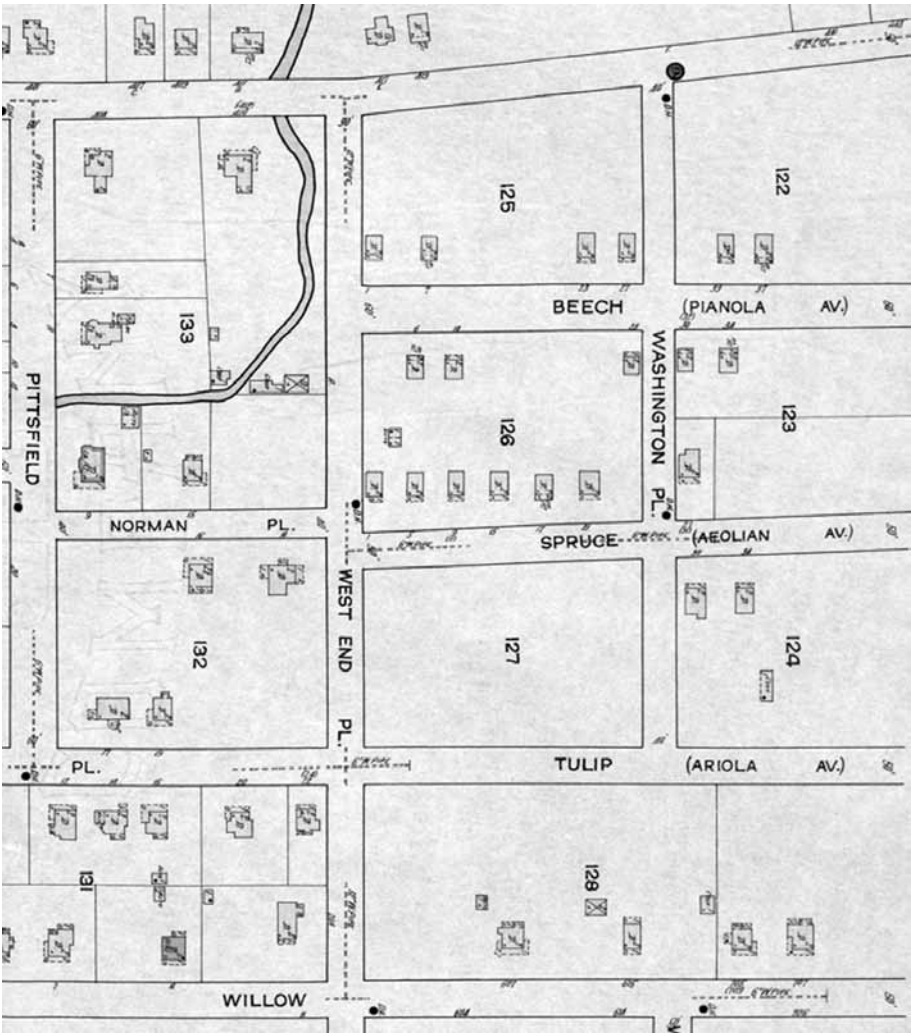
Excerpt from Music Trade Review, October 1906

The two sons mentioned in the article were Joseph William Dickinson, born in 1886, and Samuel Ludeon Dickinson, his elder brother, born five years earlier, in 1881. Samuel was the inventor of a complicated wax cylinder patent for recording piano roll dynamics. Joseph William was for some time employed by the Schubert Piano Company of New York City, and he also seems to have had a slightly wild, parallel career as a racing driver, running his Stutz Special at record-breaking speeds at tracks all over the Eastern seaboard. There is as yet no traced record of the death of either of these two Dickinson sons, though Samuel is recorded in the 1930 US Census. Of Joseph William, there is no mention after 1920, which is rather odd; not even a report of a motor accident or a house fire has turned up, either of which might have carried him off earlier than expected.



JOE DICKINSON IN HIS STURDY STUTZ SPECIAL RACING CAR — RACES HERE SATURDAY.

But to get back to the main subject of this article, Joseph Hunter Dickinson is not to be found in the 1901 Cranford City Directory, but by the time of the 1902 edition he was a resident of the aptly named Aeolian Avenue. Cranford was the adjoining New Jersey township to Garwood, where the main Aeolian Company factory was situated, which housed a number of subsidiary companies as well, including the Votey Organ Company, which at that date was responsible for manufacturing the Pianola and the Aeolian Pipe Organ. It is not known at which stage of the year the Cranford Directory went to press, so one cannot settle on any particular month for Mr Dickinson's removal southwards from Detroit, but it is clear enough that he made the journey relatively soon after his knife valve patent application had been lodged, which again points towards that mechanism as the deciding factor in his offer of employment from the Aeolian Company. The patent was awarded on July 15, 1902, so perhaps he was already in place by that date.



Detail from the 1915 Sanborn map of Cranford, showing former Aeolian-named streets

The Dickinson family address is interesting, and it throws some light on the way in which the local area was developed. H.B. Tremaine, the President of the Aeolian empire, wanted the township now known as Garwood to be called Aeolian, New Jersey, and for a short while it actually was, with one or two street names following suit, such as Aeolian Avenue, Pianola Avenue and Ariola Avenue (a mis-spelling of Aeriola). The Dickinsons initially lived in Aeolian Avenue, then at Aeolian Court, and finally at no. 1, Spruce Street, all within the space of five years, but it is quite clear that they remained in the same house, with the name of the street changing as the local community asserted some civic independence over the paternalistic approach of the main

employers in town. Perhaps the use of spruce for piano soundboards kept a respectable link with Aeolian activities, as did Beech Street as a replacement for Pianola Avenue. The proximity of Orchard Street also hints at the purpose of the Orchard Land Company, one of the Aeolian Company's less obvious subsidiaries. There was clearly an initial desire to build a workers' village, along the lines of Bourneville or Port Sunlight in the north of England.

A salary of $4,000 per annum and royalties on at least the knife-valve patent must have made Joseph Dickinson a reasonably wealthy man, though other Aeolian managers were paid similar and sometimes greater sums. He was not mentioned in Edwin Votey's list of senior Aeolian Company staff from May 1904 (to be found in *Pianola Journal* no. 11), whereas Robert W. Pain was included there as the representative of the Experimental Department, so Dickinson's elevation to the post of Superintendent must have occurred after that date. But, having achieved that position, he remained for roughly twenty years, and the family stayed in Cranford until 1920, at which point Joseph senior would have reached retirement age. By that time both his sons had long since left the family home and set up their own households, and for a while they even entered into a business partnership, selling player pianos to the local community in New Jersey.

Dickinson Bros advertisement, Cranford Chronicle, May 1915

Retirement was evidently something that Joseph Dickinson prepared with great care, and there is evidence from property records published in the New York Times and elsewhere that he began purchasing the land for a very substantial new house at Larchmont, in Westchester County, New York, as early as 1913. But there is little sign that he settled back into a comfortable old age, and his patent applications continued until late 1928, while he still described himself as an 'Experimental Expert' in the US Census for 1925. Perhaps he continued to work from home, once he and his wife moved to Larchmont in 1920, roughly fifty miles away from the Aeolian factory, and ranked by CNN in 2005 as the 11th best place to live in the USA. In addition he clearly became a pivotal figure in the local community, President of the Larchmont Gardens Association, a remarkable achievement for an African American in one of New York's most conservative and leafy suburbs.

The Dickinsons' House at Larchmont in the 1920s
(Photo courtesy the Larchmont Historical Society)

The house that he and his wife either commissioned or built is still standing, and is currently worth nearly five million dollars, with five bedrooms, four bathrooms and 6,126 square feet of living space! In 1920 it still had enormous grounds that have gradually been worn away by the infill of other houses over the intervening years, so if anything it must have been even more valuable at that time, in relative terms. Quite apart from the success of his many other inventions, the ubiquitousness of the knife-valve in Aeolian instruments must have ensured that Joseph Dickinson was generously rewarded for his ingenuity.

Joseph Hunter Dickinson in Later Life
(Photo courtesy the Larchmont Historical Society)

Joseph Dickinson's Inventions

One should always remember that the Aeolian Company sometimes channelled its patents through those who supervised the relevant departments. Patent law originally came about through the activities of enterprising inventors, as opposed to corporate entities, so the system was geared towards individuals taking the notional credit. It is always possible, therefore, that some of Joseph Dickinson's patents were the result of teamwork, just as those of Aeolian's other notable inventors may have been, such as Edwin Votey or Robert Pain. On the other hand, members of the Aeolian Experimental Department were clearly sensitive in cases where they regarded inventions as their own work, as the following excerpt demonstrates, taken from a letter sent in 1908 by Harry B. Tremaine to his cousin, Charles M. Tremaine. It was first published in this writer's article, *Towards a History of the Aeolian Company*, in *Pianola Journal* no. 11, and was kindly made available by Russ Tremaine, grandson of C.M. Tremaine. The man referred to as 'Arthur' was Arthur Tremaine Chester, a young member of the Experimental Department, and a cousin of both H.B. and C.M. Tremaine, which accounts for the first-name familiarity:

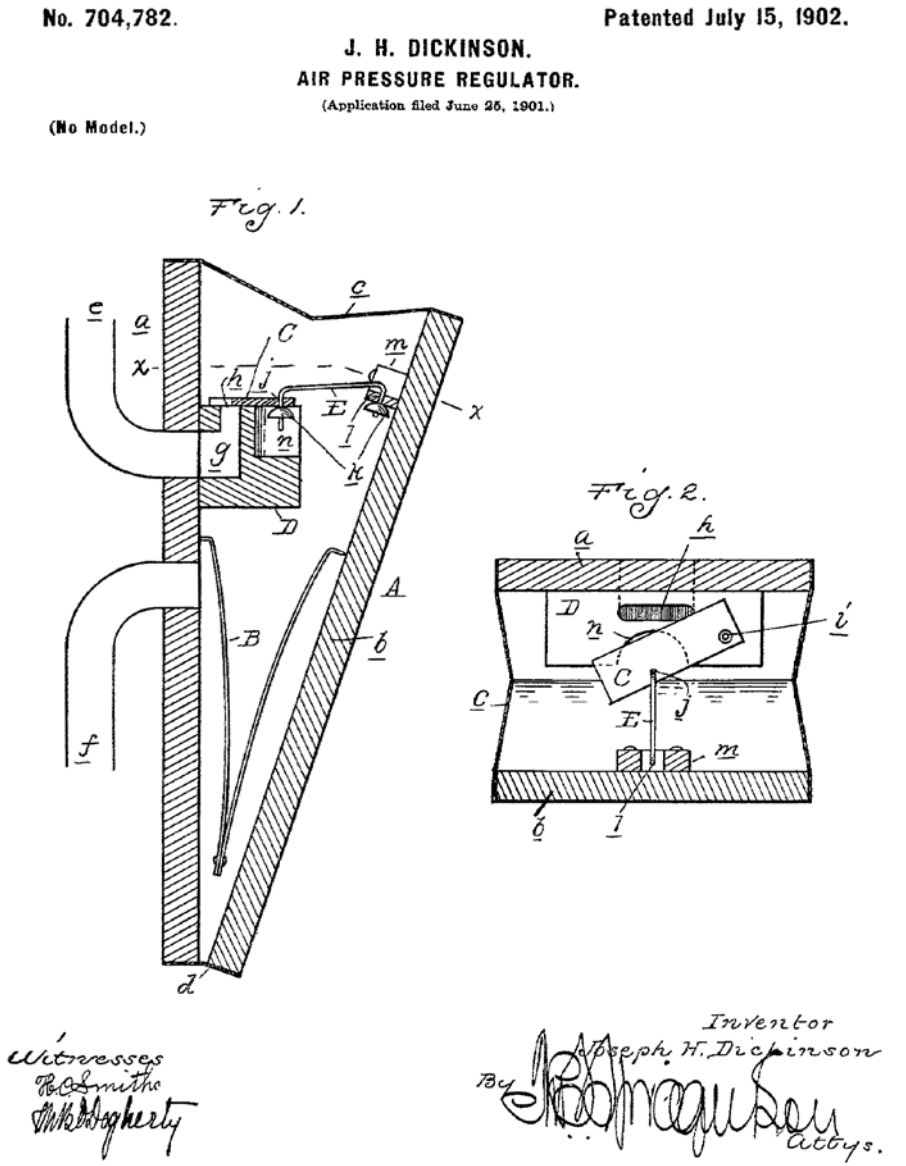
'Before leaving, I had a talk with Mr. Perkins, also with Arthur. I was much interested in what Arthur said, and very much impressed. He suggested writing me in detail, setting forth his ideas. I told him to go ahead and do so. I haven't yet received this letter, but the day after I got here I received a long letter from Votey, saying that Arthur had been to Bob Pain, trying to get Bob to write me that Votey had taken his, Pain's, ideas, and patented them in his name, that he, Arthur, had written me such a letter regarding Votey's taking his ideas, and patenting them in his name, without giving Arthur credit.'

One hundred years on, without individual testimony or recollections, all one can do is to regard each patent as belonging to its nominated inventor, but to keep the possibility of teamwork in the back of one's mind, especially in cases where the invention is of a highly complex mechanism, which would necessarily have demanded the labour of many hands. Joseph Dickinson's final patent, for the multiple roll-changing device that was put to use in the Duo-Art Concertola, was applied for in October 1928, when Dickinson was already 73 years old and had been living far away from the Aeolian factory for a good eight years. Such a complex device must have necessitated a great deal of practical machine work and modification as it took shape. No doubt the fine house in Larchmont included an equally fine workshop, but the invention gives every indication of being the work of a team, perhaps with a well-respected elder statesman supervising the project as it progressed, and being accorded the honour of the patent in recognition of a fine and inspiring career.

Research on the internet suggests that Joseph Dickinson had 51 patents to his credit, 34 in the USA, nine in Great Britain, seven in Canada and one in France, representing 34 actual inventions. It seems sensible to concentrate on his US patents, since the others are simply duplicate applications, made in order to safeguard the more important inventions in other countries. Since we are endeavouring to assess Mr. Dickinson's rightful place in the history of the player piano, it would be helpful to consider each of these patents in turn and, in most cases, in brief, with a few illustrations to help us on our way. Since we are concerned with the player piano, we shall not examine those patents which relate to the phonograph, but by contrast the inventions which need lengthier consideration are those which came to be associated with the Duo-Art reproducing piano, since Joseph Dickinson appears to be the main inventor of that instrument's component parts.

1: PATENT No. 624192 - REED ORGAN
Application: 17.08.1898 Issue: 02.05.1899
This covers the use of stopped wooden pipes to act as resonators for the reeds of a normal reed organ. It is the only patent of Dickinson's to apply solely to the reed organ, and in passing is might be noted that its brief title does not imply that he was the overall inventor of that instrument, as can sometimes be read on the internet. Clough and Warren's reed organs also made substantial use of 'qualifying tubes', which similarly acted as resonators, but these were not Dickinson's invention, being covered by a patent originally awarded to George W. Scribner in 1870.

2: PATENT No. 704782 - AIR PRESSURE REGULATOR
Application: 25.06.1901 Issue: 15.07.1902
This is arguably Joseph Dickinson's most important patent, and probably the main reason why he left Detroit and moved southwards, to join the Aeolian Company in New Jersey. It was applied for on 25 June 1901 and issued in July 1902, the year in which his name (misprinted as Dickerson) first appears in the Cranford street directory, at Aeolian Avenue. It is mirrored in two other patents, a Canadian one applied for three days later, on 28 June 1901, and assigned to the D.W. Karn Company, and a British patent, applied for after a gap of almost a year, on 15 April 1902, and not assigned to anyone. These variations of dates and details perhaps give us a slight clue towards the progress of Mr Dickinson's career, because the British custom was to publish the full address of the applicant, which in this case is given as 1107 Trumbull Avenue, Detroit, showing that his move to New Jersey had not yet taken place. Nevertheless, it would have been most unusual for an individual American inventor to apply for a British patent, whereas it was already common practice for the Aeolian Company to do so.


No. 704,782. Patented July 15, 1902.

J. H. DICKINSON.

AIR PRESSURE REGULATOR.

(Application filed June 26, 1901.)

(No Model.)

Fig. 1.

Fig. 2.

Witnesses
R. L. Smith
M. K. Hagherty

Inventor
Joseph H. Dickinson
By
Attys.

US Patent No. 704782: Joseph Dickinson's Knife Valve

What seems most likely is that Joseph Dickinson applied for the original US and Canadian patents on his own account, and that the applications naturally came to the notice of the musical instrument trade, no doubt including Edwin Votey, who immediately spotted the importance and the elegance of the underlying idea. Perhaps a deal was done between Aeolian and D.W. Karn, to buy out the Canadian rights, or to lease them for use in

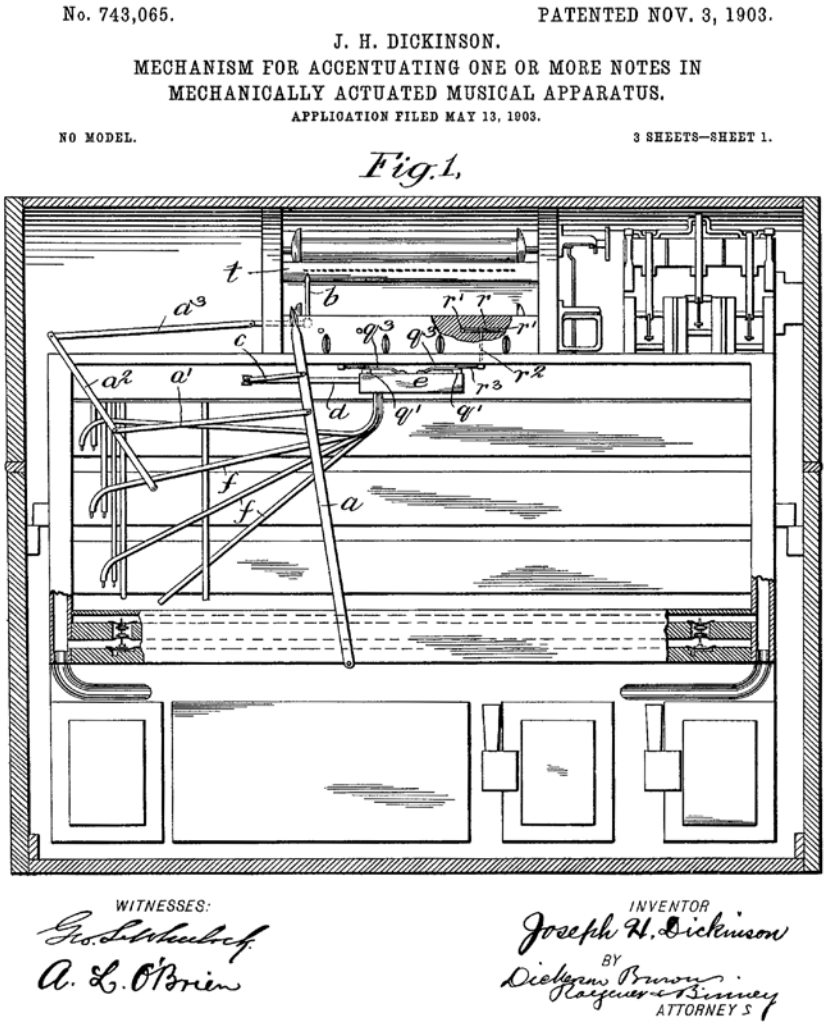
that country, and on the strength of the US patent Dickinson was offered a well-paid job with the Votey Organ Company, by that time mainly based at Garwood, in New Jersey, but probably with some factory space still occupied in Detroit. Once an agreement for employment and patent royalties had been worked out, a British patent was applied for post-haste, with the experienced assistance of the Aeolian legal department, and in due course Joseph Dickinson moved down to Cranford, after serving a reasonable period of notice with Clough and Warren. That puts him in Garwood around the summer of 1902, and to some extent it suggests that *Music Trade Review* was mistaken in thinking that he had worked for Farrand and Votey in Detroit.

Going back to the patent itself, the principle of the polished, sliding wooden valve, with one end attached via a metal link to the moving board of a sprung pneumatic, will be familiar to all those who have ever worked on an Aeolian player piano or reed organ. There must be thousand upon thousand examples of Dickinson's invention, in tempo governors and expression boxes, from Timbuctoo to Kalamazoo, as the children's rhyme has it. The detail, as seen in the drawing (overleaf), is very slightly different from the usual mechanism that one regularly encounters; in most Pianolas the knife valves lie parallel to the sides of the pneumatics in which they are placed, whereas Dickinson's original patent drawing has them parallel with the end.

Either way, the principle is one of the most effective and ubiquitous mechanisms that the Aeolian Company ever manufactured, simple and elegant, and able to last a hundred years without disintegrating, needing only a little graphite once in a decade or so. It can take its place alongside George B. Kelly's wind motor as one of the foundations of the player piano industry.

3: PATENT No. 743065 - MECHANISM FOR ACCENTUATING ONE OR MORE NOTES IN MECHANICALLY ACTUATED MUSICAL APPARATUS
Application: 13.05.1903 Issue: 03.11.1903

The next patent, applied for in May 1903, bears witness to the Aeolian Company's equivalent of the search for the Holy Grail, namely the elusive notion of the 'isolated theme,' which was still talked of in reverential terms by the late Gordon Iles and Gerald Stonehill, elder statesmen of the British player piano community in the late twentieth century. Nowadays we are very used to the Aeolian Themodist, and to its equivalent mechanisms in the player pianos of other makers: ditto-mark perforations at each margin of a piano roll assisting in the creation of accents on either the treble or bass side of a split pneumatic stack. But the Themodist, in its usual form, was a surprisingly late entrant into the world of the player piano, first demonstrated and advertised in February 1907, and creative minds were at work well before that, in an effort to bring out the notes of a melody, above the accompaniment of a musical composition.



US Patent No. 743065: Note Accentuation by Means of a Piston Valve

Joseph Dickinson conceived of the idea of a piston valve, with a hollow piston passing air, through a channel milled around its head, to any one of 65 orifices located along the casing of the valve, each of which controlled one normal puppet valve, via a connecting tube. The puppets were designed to supply either low or high suction to their respective note valves, which were then triggered to operate from perforations in the roll via primary note valves, as would normally be expected. In practice the orifices around the piston valve were grouped in rows of four, on the assumption that in compositions of the time, most accented notes were placed more than four semitones away from their less prominent neighbours.

This is the first of three patents for which Joseph Dickinson applied in connection with his piston valve concept, and, not surprisingly, it is the simplest in mechanical terms, requiring the pianolist to operate the valve manually by means of a lever, with an attached pointer moving along the tracker bar to indicate the note or notes selected. One can imagine how difficult it might be to control such a lever on the fly, at the same time as operating the tempo, subduing and pedal levers, let alone the Pianola pedals, and a later patent seeks to operate the piston valve automatically, which we shall come to in due course.

4: PATENT No. 770563 - PEDAL HOUSING FOR PIANOS EMBODYING MECHANICAL PLAYING MECHANISM
Application: 24.06.1904 Issue: 20.09.1904
This is an interior wooden divider for a Pianola piano, located behind the Pianola pedals inside the instrument, and hiding the pneumatic mechanisms from view, together with a pedal door hinged upwards against a spring catch when open, and adjustable feet for the pedals when deployed, in order to cope with differences of height caused by variable flooring or the use of castor cups. Essentially a number of cosmetic improvements, combined in one overall patent.

5: PATENT No. 772225 - MUSIC SHEET FEED CONTROLLING MECHANISM
Application: 24.06.1904 Issue: 11.10.1904
A simple patent - a device for varying the top spool brake tension on a Pianola, by means of a sprung lever and a roller resting on the surface of the roll, in order to provide a more uniform paper tension throughout the playing of a long roll.

6: PATENT No. 780411 - MEANS FOR CONTROLLING THE TENSION IN WIND WAYS OF MECHANICAL MUSICAL INSTRUMENT PLAYERS
Application: 07.12.1903 Issue: 17.01.1905
The creation of a number of dynamic levels by means of several sprung tension regulators, each level being applied to either or both sides of a divided pneumatic stack, by slide valves attached to levers controlled by the pianolist's left hand. It is worth noting that this patent, amongst others, implies the early practice of a pianolist who pedalled at a regular rate, while using levers to create dynamics, in this case a somewhat crude series of four, between pianissimo and fortissimo. This is in contrast to the accepted later practice of creating the basic dynamics by constantly, and where necessary rapidly, supplying variable foot pressure on the pneumatic pedals, while using subduing levers as a means of variation between the two sides of the pneumatic stack, or in connection with the Themodist device.

No. 780,411. PATENTED JAN. 17, 1905.

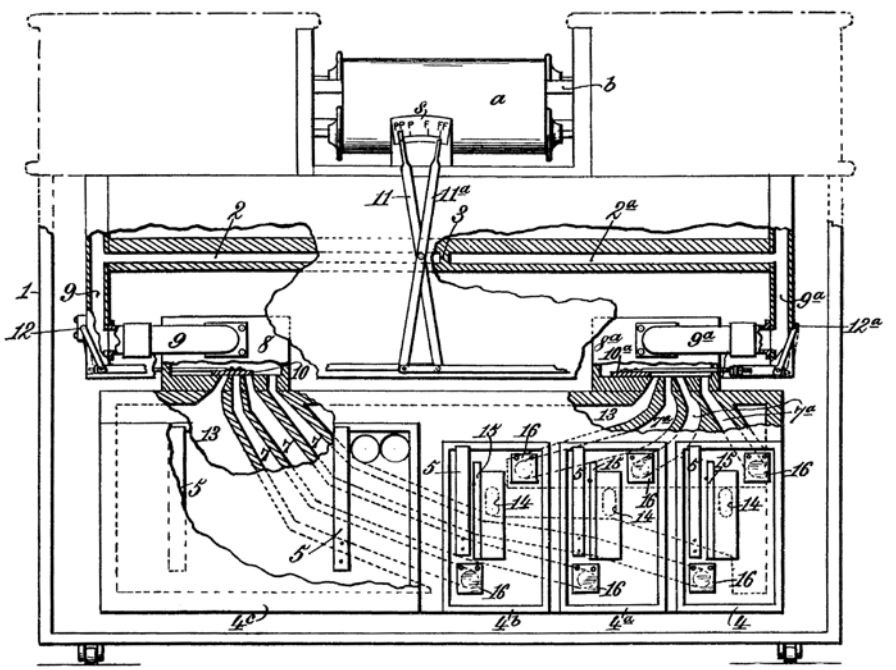
J. H. DICKINSON.

MEANS FOR CONTROLLING THE TENSION IN WIND WAYS OF MECHANICAL MUSICAL INSTRUMENT PLAYERS.

APPLICATION FILED DEC. 7, 1903.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses,
Robt Swatt,
Jno. N. Rea.

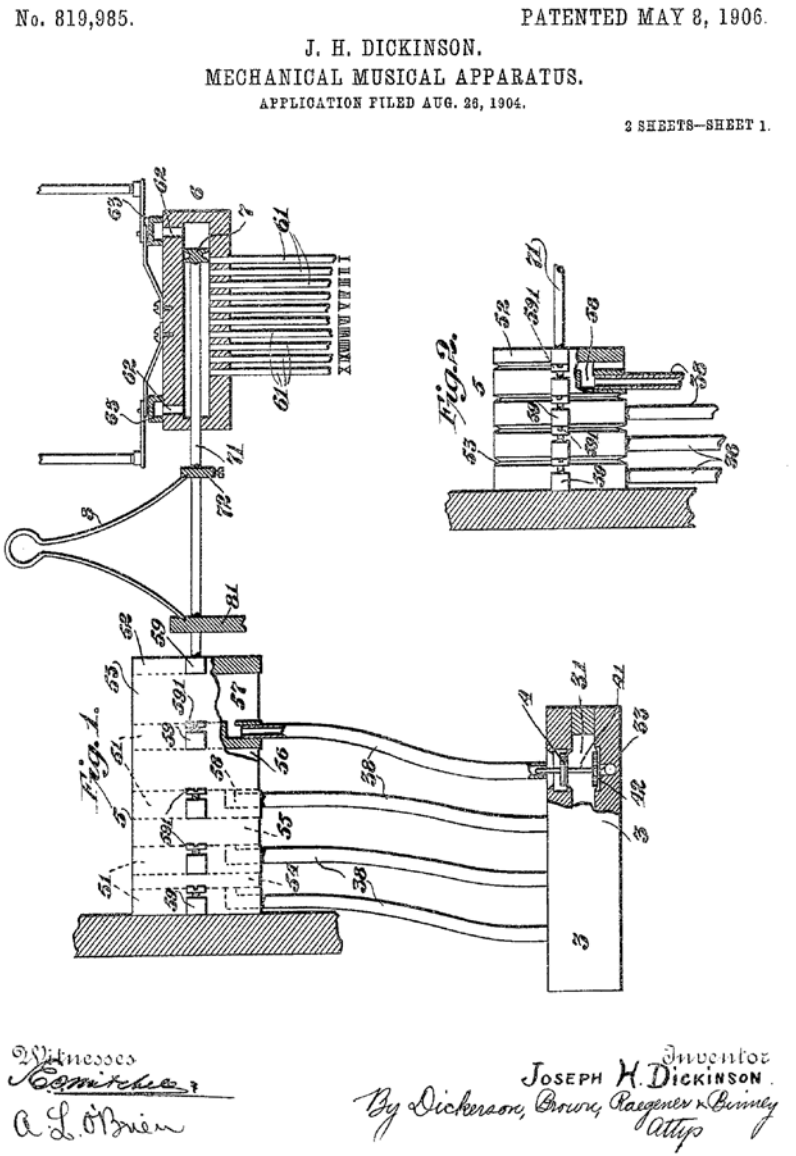
Inventor.
Joseph H. Dickinson.
By James L. Norris.
Atty.

US Patent No. 780411: Using Subduing Levers to Create Terrace Dynamics

This patent was applied for in December 1903, and one can see that Dickinson's knife valves had by now assumed their normal position, parallel to the length of the regulator pneumatics. In addition a series of leather check valves can be seen, each attached by means of two tacks, preventing any feedback to a lower tension regulator, when higher tension was being supplied to the stack. These flap valves are exactly the same as those found in the Duo-Art expression box, which prevent higher Theme suction passing the wrong way into the Accompaniment regulator pneumatic.

7: PATENT No. 819985 - MECHANICAL MUSICAL APPARATUS
Application: 26.08.1904 Issue: 08.05.1906

Following on from patent no. 743065, in which a hand-operated lever was used to select one of ten groups of notes to be accentuated, Joseph Dickinson here modifies his conception, so that four marginal perforations at the bass side of a music roll operate the different stages of a four-part, tiered


No. 819,985. PATENTED MAY 8, 1906.

J. H. DICKINSON.

MECHANICAL MUSICAL APPARATUS.

APPLICATION FILED AUG. 26, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

Fig. 2.

Witnesses
A. L. O'Brien

Inventor
Joseph H. Dickinson.
By Dickerson, Brown, Ragener & Bonney
Attys

US Patent No. 819985: The Accordeon Pneumatic

pneumatic, to achieve the same tenfold selection in a fully automatic way. Anyone familiar with the workings of the Duo-Art will instantly recognise the accordeon pneumatic, with its adjustment screws to ensure the exact travel of each section. One notable difference in this case is that the four stages are set to move by one, two, three and four units, making an overall total of ten when the accordeon is fully collapsed, whereas the later Duo-Art accordeons work on a binary basis, moving by one, two, four and eight units in order to achieve fifteen positions each.

By August 1904, when this patent was applied for, three main components of the Duo-Art were already in existence, therefore, namely the knife valve, the accordeon pneumatic, and the principle of using a group of four contiguous marginal perforations for control purposes, rather than for playing musical notes, all inventions of Joseph Dickinson within the space of three and a half years.

8: PATENT No. 886357 - PUPPET VALVE
Application: 10.10.1907 Issue: 05.05.1908

One of Dickinson's other evident preoccupations was the development of more reliable and efficient note valves. This design is for a threaded brass upper seat for such a valve, with two small, diametrically opposed notches in the top of the thread, so that the seat can be carefully adjusted with an appropriate tool to give the correct travel of operation. This is exactly the style that Aeolian came to use for its Themodist primary valves, where the valve travel was especially critical. Once again, Dickinson has invented a device that can be found all over the world, in thousands and thousands of instruments.

9: PATENT No. 915942 - ADJUSTABLE TRACKER FOR PNEUMATIC PLAYING INSTRUMENTS
Application: 24.11.1908 Issue: 23.03.1909
10: PATENT No. 915943 - ADJUSTABLE TRACKER BOARD FOR PNEUMATIC PLAYING ATTACHMENTS
Application: 24.11.1908 Issue: 23.03.1909

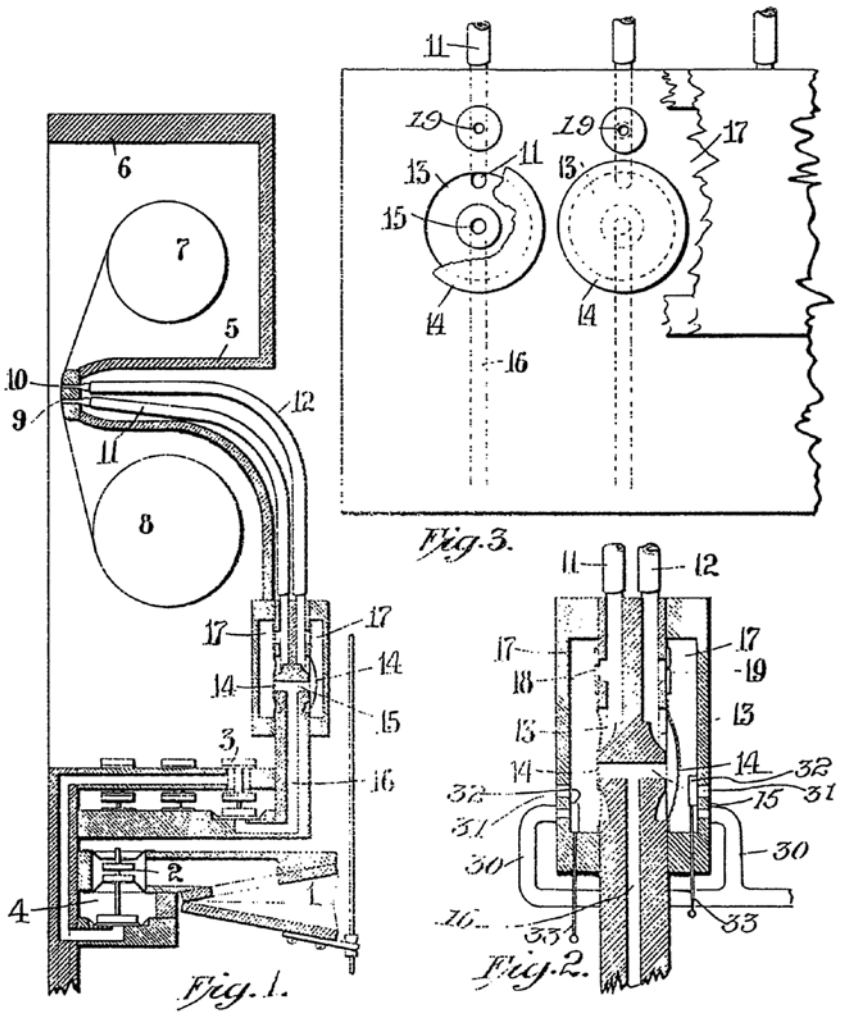
We come now to a pair of patents applied for and granted on exactly the same dates as each other, both connected with the double tracker bars that were needed to play either the normal 65-note or the new 88-note rolls. At the widely-reported Buffalo Convention of Player Manufacturers, which took place on 10 December 1908 at the Hotel Iroquois in Buffalo, NY, it is clear that the industry effectively chose to follow the lead of the Aeolian Company, which was after all the largest player manufacturer in the world, and to opt for an 88-note standard of nine perforations to the inch across the roll. Having won the day, Edwin Votey stated towards the end of the afternoon session that the Aeolian design for an 88-note spooling system would not be patented,

J. H. DICKINSON.

ADJUSTABLE TRACKER FOR PNEUMATIC PLAYING ATTACHMENTS.

APPLICATION FILED NOV. 24, 1908.

915,942. Patented Mar. 23, 1909.



WITNESSES:

INVENTOR.

BY Joseph H Dickinson.
Oscar F. Gunn
his ATTORNEY.

US Patents Nos. 915942 and 915943: Switchable 65/88-note Tracker Bar

J. H. DICKINSON.

ADJUSTABLE TRACKER BOARD FOR PNEUMATIC PLAYING ATTACHMENTS.

APPLICATION FILED NOV. 24, 1908.

915,943. Patented Mar. 23, 1909.

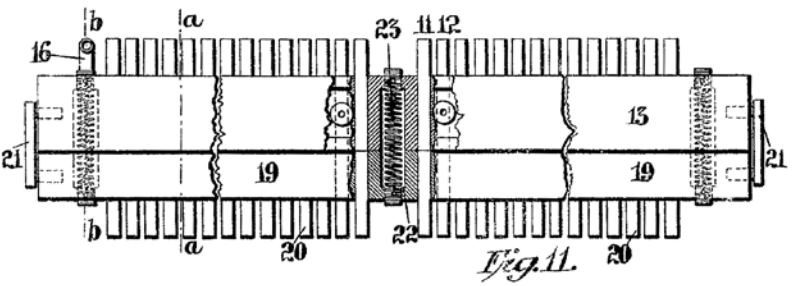


Fig. 11.

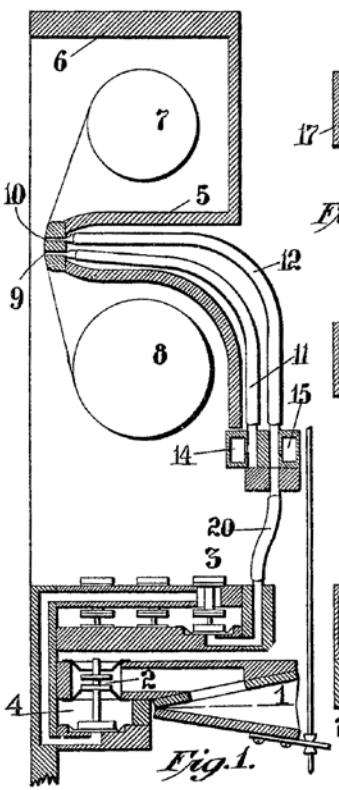


Fig. 1.

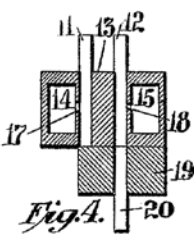


Fig. 4.

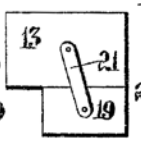


Fig. 7.

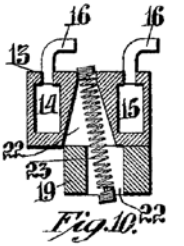


Fig. 10.

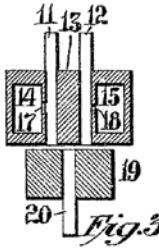


Fig. 3.

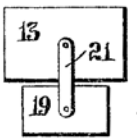


Fig. 6.

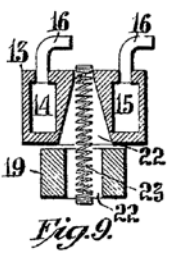


Fig. 9.

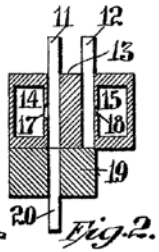


Fig. 2.

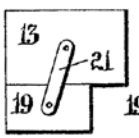


Fig. 5.

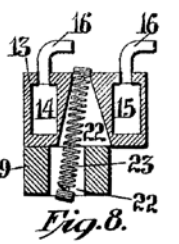


Fig. 8.

WITNESSES:

Thos. Auchincloss

E. M. Tobey

INVENTOR.

Joseph H. Dickinson.

BY Osc. A. F. Gunn

his ATTORNEY.

so that the industry as a whole could adopt it, if it wished. Whether the well-known 88-note spooling system, with its indented slots and clutches, is another of Mr Dickinson's inventions, therefore, is not a matter of record, though it does seem very likely.

But this public spiritedness had its limits, and Aeolian still patented its adjustable spool ends and its double tracker bars, though we should note that it referred to the latter as 'tracker boards' or simply 'trackers.' What we think of as the 'tracker bar,' an entity in itself, was at that date regarded more as the front component part of the 'tracker board,' the whole shelf in the middle of the spoolbox which had originally been constructed out of solid wood.

The date of application for these patents is, at the very least, an interesting coincidence, for it was the very same day that the A.B. Chase Company of Norwalk, Ohio, sent out the invitation and questionnaire for the Buffalo Convention. One could imagine a patent application slowly working its way towards the front of someone's desk, and receiving an extra-special kick once the imminent prospect of public discussion loomed.

It is also interesting to see Joseph Dickinson's mind at work, in providing two very different solutions, one mechanical and one pneumatic, to the challenge of playing two styles of music roll. It was the second of the two patents, the mechanical one, that came to be used by Aeolian for its double-standard instruments, arguably the neatest and most discreet mechanical switching device designed for this purpose throughout the entire player industry. But the first patent, the pneumatic one, although not generally adopted at this time, was nevertheless a very important part of Aeolian's subsequent conception of the Duo-Art, for a smaller version of it was used in the cut-off membrane blocks that switched the function of the note holes at each end of the Duo-Art tracker bar, between dynamic control (for Duo-Art rolls) and the playing of the extreme notes (for 88-note rolls).

As a small personal postscript to the first of these patents, this writer remembers using a modified version of such a changeover block, together with a pair of pneumatic push-buttons, in order to control from a distance the forward and re-roll pneumatics under a Steinway Duo-Art grand piano, on which Percy Grainger played the Grieg Piano Concerto at the Queen Elizabeth Hall in London, in December 1972. The piano, and the changeover mechanisms, came from the Musical Museum in Brentford, and, being already quite old, the changeover block no doubt originated with the Aeolian Company in London, which had staged a number of such concertos in the 1920s. In this it followed the lead of its parent company in the USA, which began the playing of music rolls with orchestra on 17 November 1917, when Harold Bauer and the New York Symphony Orchestra performed the Saint-Saëns Second Piano Concerto at Aeolian Hall in New York. These public concertos continued for several years, around most of America's main musical

cities, and it must have been very satisfying for Joseph Dickinson, who must surely have attended one or two such performances, to sit quietly in the stalls (if his nerves allowed!) and to contemplate the invisible use of his ingenious inventions.

11: PATENT No. 916279 - EXPRESSION DEVICE FOR PNEUMATIC PLAYING ATTACHMENTS FOR MUSICAL INSTRUMENTS

Application: 19.11.1908 Issue: 23.03.1909

(Illustration overleaf)

This is another interesting invention from the historical point of view, issued at the same time as the double tracker bar patents above, and it is the first indication, at least from Joseph Dickinson's patents, of any progress towards the use of the Pianola pedals to create dynamics, thus linking that progression to the new standard of 88-note rolls, and therefore to the Pianola's inexorable development as a serious musical instrument. From our vantage point, beyond the end of the twentieth century, we are well used to the idea that the correlation between power and perceived loudness is exponential. In order to achieve a crescendo, either in the real world of piano playing, or in electronic audio recordings, one needs progressively larger increases in power, the more one climbs up the scale of loudness.

The wooden springs, to be found on the exhauster units of most of the Aeolian Company's 88-note Pianolas, were ultimately the Company's preferred solution, but Dickinson's invention, by means of which the regulator spring of the expression box was progressively stretched as the equaliser collapsed, is an interesting alternative. It had the advantage of being adjustable, so that the stretching of the spring would only occur after a certain suction level had been attained, but the probable disadvantage that a single metal spring would not provide the same increase in force as a well-machined strip of willow. How interesting that the Cranford map shows Willow Avenue in close proximity to Spruce and Beech!

12: PATENT No. 926178 - VOLUME CONTROLLING MEANS FOR MECHANICAL MUSICAL INSTRUMENTS

Application: 16.12.1905 Issue: 29.06.1909

As the first decade of the twentieth century progressed, Joseph Dickinson's inventive skills resulted in ever more complex devices being designed, albeit mechanisms which allowed the pianolist to choose whether the instrument or the player should have the final say in dynamic control. This is the third of his patents based on the use of a piston valve to provide higher power to either or both sides of a variably divided pneumatic stack. Unlike the second patent in the series, there is no accordeon pneumatic to pre-select the stack division, and instead the design reverts to the use of a hand lever and pointer. However,

J. H. DICKINSON.

EXPRESSION DEVICE FOR PNEUMATIC PLAYING ATTACHMENTS FOR MUSICAL INSTRUMENTS.

APPLICATION FILED NOV. 19, 1908.

916,279. Patented Mar. 23, 1909.

Fig. 1.

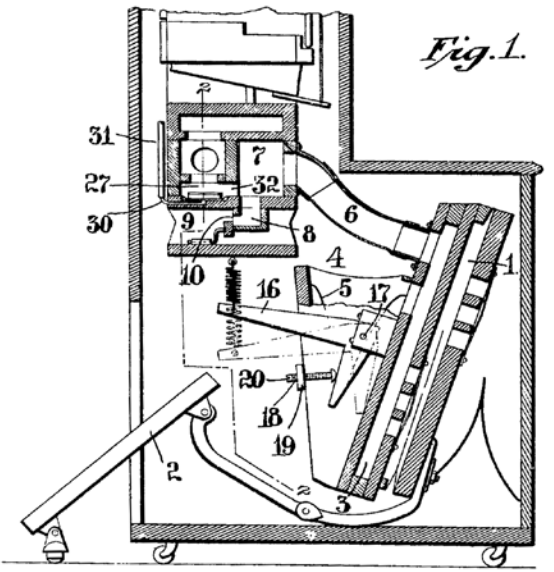
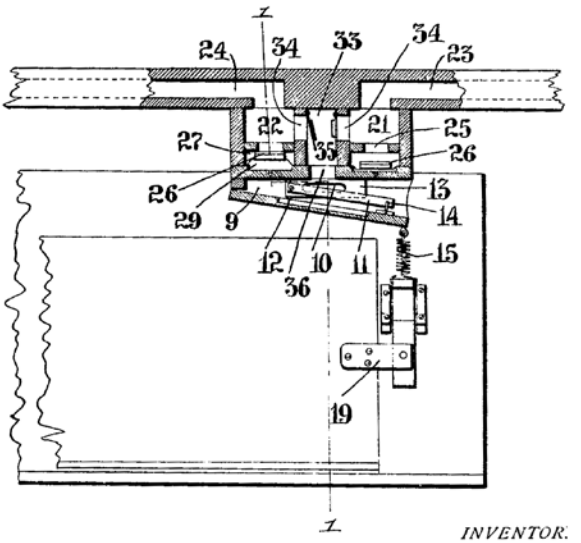


Fig. 2.



WITNESSES:

INVENTOR.

BY Joseph H. Dickinson.

ATTORNEY.

US Patent No. 916279: Variable Spring for Accenting

in this case the pianolist is able either to select the suction levels provided to the stack, by means of levers, or to leave such matters to the instrument itself, using four signal perforations at the bass margin of the roll to do so.

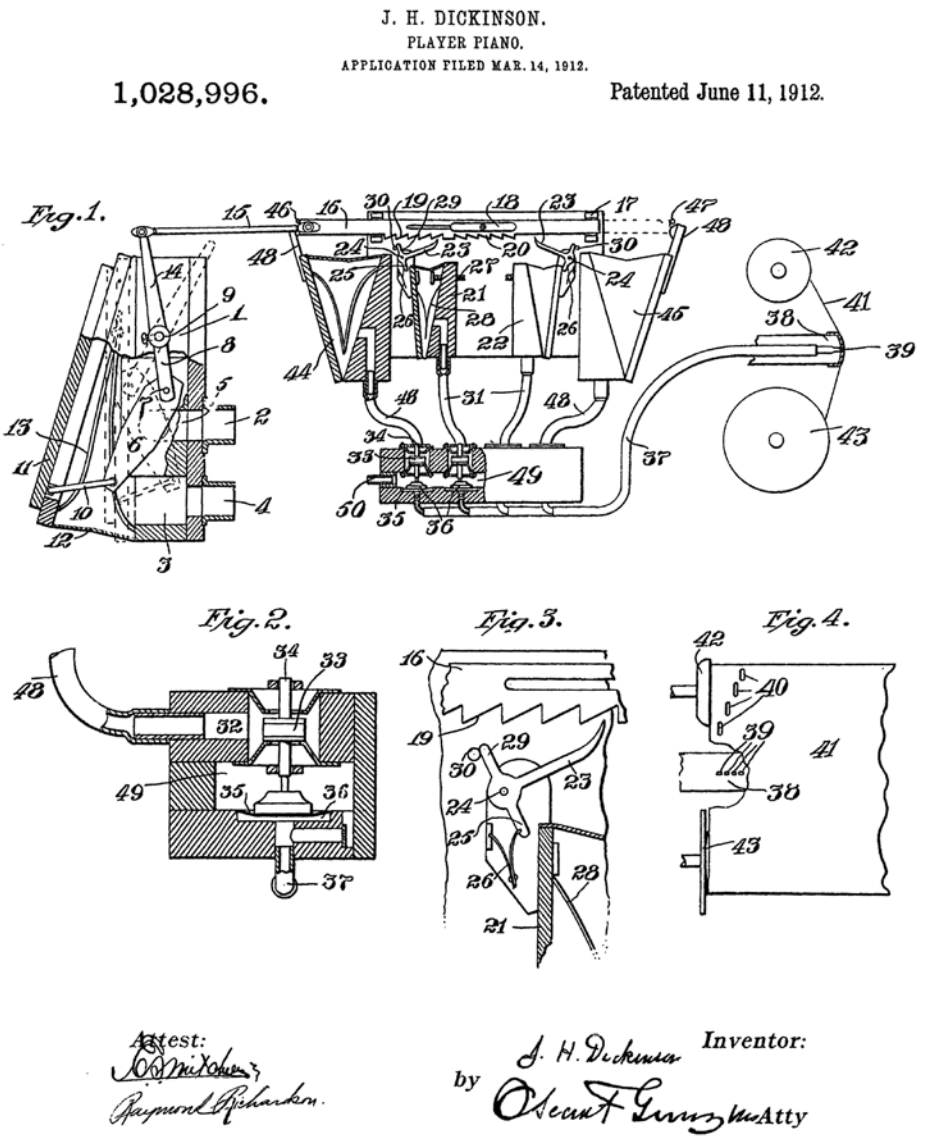
One can see how the general tradition in the USA was moving in a different direction from Europe. The European reproducing piano began roughly in 1905, springing to life fully armed. It was immediately recognised as something quite different from the foot-pedalled player piano, and so on the whole it remained, with even Hupfeld treating its non-reproducing, hand-played rolls as an opportunity for the player at home to contribute the dynamics personally. In America the reproducing piano took longer to develop, and it grew little by little out of the normal player piano, with a mechanism here and a set of perforations there, so that the concept of a human being playing the instrument musically was slowly stifled.

The continuation, from Patent No. 819985, of the use of four marginal perforations to play a part in the channelling of dynamic levels, is another signpost towards the final design of the Duo-Art. In the earlier patent, the four-part coding automatically alters the division between bass and treble on a pneumatic stack, whereas in this case it is the application of two different suction levels to either treble or bass, or to both, that is controlled by the perforations, one stage nearer to the automatic selection of multiple dynamic levels.

13: PATENT No. 1028996 - PLAYER PIANO
Application: 14.03.1912 **Issue: 11.06.1912**

We now move into the second decade of the Twentieth Century, the era when the American reproducing piano was finally born, and it is worth a brief glance at the order in which the various companies brought their wares on to the market. The Aeolian Duo-Art was arguably the last of the major systems to be launched, though there were others which came a little later still, such as the Angelus Artrio from Wilcox & White in Connecticut, and of course the later development of the Welte-Mignon, known generally as the Welte Licensee, did not come about until the American participation in the First World War turned the Germans into enemy aliens, and their property liable to confiscation.

It was certainly Germany that brought the reproducing piano into the world, effectively a good ten years before the Americans produced any serious competition. The Welte-Mignon was definitely the originating instrument, the very first public example of which was aired at the Leipzig Autumn Trade Fair in 1904, and it was available for general sale early in the next year. It then took Ludwig Hupfeld two and a half years to follow suit, launching the Meisterspiel Dea at the Leipzig Easter Fair in 1907, though Hupfeld had brought out a much simpler expression piano, the Phonoliszt, in the autumn


J. H. DICKINSON.
PLAYER PIANO.
APPLICATION FILED MAR. 14, 1912.
1,028,996. Patented June 11, 1912.
Fig. 1.
Fig. 2.
Fig. 3.
Fig. 4.
Attest:
Inventor:
by Atty

US Patent No. 1028996: Rack and Pinion Dynamic Control

of 1905, and had begun the production of recorded rolls in earnest in early 1906. J.D. Philipps und Soehne of Frankfurt first exhibited their Duca piano at the Leipzig Autumn Fair of 1908, and although there were subsequently other German producers, notably Römhildt-Heilbronn, with their Virtuola, the three original companies were the mainstay of the German reproducing piano industry.

In the USA, Welte was the only German company to be commercially successful in its own right, with initial premises on East 17th Street being quickly followed by luxurious showrooms on Fifth Avenue. Hupfeld eventually came to an agreement with the American Piano Company, which announced in September 1911 that it had the exclusive selling and manufacturing rights for Hupfeld rolls on the American continent. And the Philipps trade with the USA was based on the company's orchestrions and cafe pianos, not its Duca reproducing instruments.

The earliest American reproducing piano, the Knabe-Artigraphic, was definitely ready in the autumn of 1911, but it seems to have been produced in extremely small quantities at first, and there were problems with the production of rolls. It went through a couple of changes of name, to Stoddard-Ampico, and in some cases back to Artigraphic again, and its mechanisms were re-thought, with early instruments being replaced free of charge. So although the Ampico is often quoted as being the first American reproducing piano, it changed in many ways during its first few years, and it is at least arguable that it took until 1916, with the Leopold Godowsky concert at the Biltmore Hotel in New York, before it finally came of age.

The order of precedence of all these instruments is perhaps not so important today, except insofar as it helps to understand the competing developments that took place at the same time. But there was something of an explosion of hand-played rolls in America in the early part of 1912, and it is clear that the industry was finally turning to the concept of the automatic piano, slowly relieving the pianolist of any vestigial duties.

It is not so surprising, therefore, that Joseph Dickinson's next patent is his first to make use of automatic mechanisms to create a range of dynamic levels. This he does with two sets of opposing pneumatics, in order to move slowly or more quickly up and down the dynamic range, with the shorter movements held accurately in place by means of rack and pinion devices.

It is also the first of his patents which features a double-ended knife-valve, another mainstay of the Duo-Art expression box. Although Dickinson was the overall inventor of the knife-valve, he was not the originator of the double-ended version, which was in fact patented by Robert Pain, also of the Aeolian Experimental Department, though of an earlier generation than Dickinson, having been born in England in 1831. But Dickinson's patent is the first to bring the double-ended knife-valve under automatic control, and in particular under the control of four perforations on the margin of the music roll, another small but inexorable step towards the principle of the Duo-Art.

As a postscript to the discussion of this patent, one may emphasize that its title, simply 'Player Piano,' does not imply that Joseph Dickinson was the overall inventor of that instrument.

14: PATENT No. 1237179 - MUSICAL INSTRUMENT
15: PATENT No. 1242155 - PHONOGRAPH AND THE LIKE
16: PATENT No. 1252411 - PHONOGRAPH
17: PATENT No. 1253475 - BRAKE
18: PATENT No. 1279522 - TALKING MACHINE

We may dispose of these five patents very quickly, since they apply to phonographs and not to player pianos. However, it is worth simply remembering that the Aeolian Company's involvement with record playing instruments took a great deal of its capital and personnel. It perhaps thought that, by emphasizing the controllability of its instruments, witness the Graduola volume control, it could somehow make up for the fact that the other record companies had long since signed up the best artists on exclusive contracts. But in the end the player piano and the phonograph turned out to be very different; player pianos were expensive and the rolls were cheap, so all the profits lay in the instruments. But with the phonograph, although the records were still less expensive than the cabinets, it was the enormity of the record sales that eventually made the profits, and for that you needed the best musicians.

19: PATENT No. 1285069 - PUPPET VALVE
Application: 31.03.1916 Issue: 19.11.1918

Until the outbreak of the First World War, it must have seemed to the Aeolian Company that money quite literally grew on trees. All it needed was a decent supply of spruce, beech, willow and the other woods that made up a piano, a smattering of metal and rubbercloth, and, hey presto, it had a player piano that could be sold at a high price to an ever-growing customer base. But the outbreak of war changed many things, and in addition it was becoming more difficult to sell its instruments, owing partly to competition from other manufacturers, and partly to its own previous successes, which meant that many people already had a Pianola Piano, and didn't particularly want to buy another one.

There was therefore an effort made in two directions, the development of new products and the reduction of manufacturing costs. It is, regrettably, rather clear that Aeolian ended up belittling its own foot-pedalled player pianos, as part of the campaign to persuade its potential customers that they needed a Duo-Art. How else can one explain the vandalism shown towards Percy Scholes' book, *The Appreciation of Music by Means of the Pianola and Duo-Art*, first published in 1925 in England, but whose American edition excises all reference to the Pianola? This was not merely a sin of omission either, since the verbatim reports of Scholes' broadcast lectures, which constituted the majority of the book, were falsified in order to pretend that all the musical examples were played by means of Duo-Art rolls, whereas they had included

J. H. DICKINSON.

PUPPET VALVE.

APPLICATION FILED MAR. 31, 1916. RENEWED SEPT. 16, 1918.

1,285,069. Patented Nov. 19, 1918.

2 SHEETS—SHEET 2.

Fig. 2.

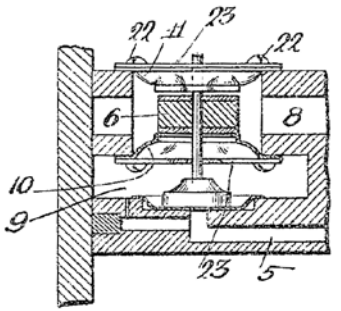


Fig. 3.

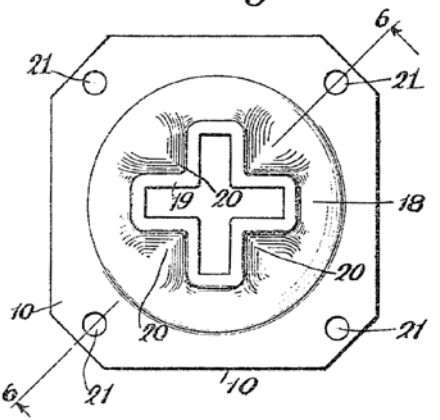


Fig. 4.

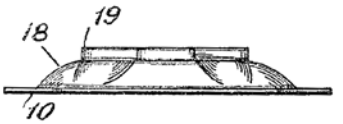


Fig. 6.

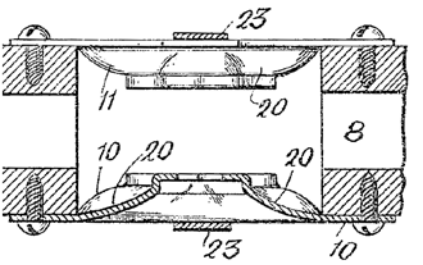
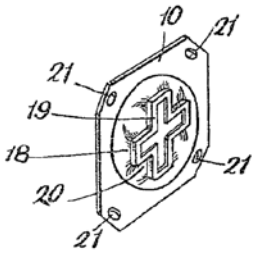


Fig. 5.



INVENTOR

Joseph Hunter Dickinson

BY

E. W. Scheer & ATTORNEY

US Patent No. 1285069: The Cross-valve

many performances by live pianists and, on the Pianola, by Reginald Reynolds, chief Pianolist of the Aeolian Company in London. While the purveying of giant residence organs to millionaire clients no doubt helped to support Aeolian's massive workforce, it was the selling of the Duo-Art to a mass market that pointed towards the real profits.

And Joseph Dickinson was ready to oblige, with a brilliant invention that must have allowed Aeolian huge savings in the manufacture of its pneumatic stacks, by replacing the former double-valve action with a single valve. Such a design is not as simple as it might at first appear; a good throughput of suction or atmospheric air is needed for a prompt response from the note pneumatics, and yet the valve travel must be restricted, to avoid the loss of suction as many notes are played. Dickinson's ingenuity came up with what is nowadays known as the cross-valve, in which the valve seats, instead of having a round profile, are instead formed with a symmetrical opening in the form of a cross.

The theory behind this innovation is very ingenious indeed; when air flows through an orifice, it does so predominantly at the periphery of the opening, at the circumference in the case of a circular design. If you can but increase the overall peripheral length of the opening, while keeping the general size of the valve the same, you end up with a more efficient valve, one that provides greater amplification of power, in relation to its size.

What this meant in practice for Aeolian was that it could manufacture its Duo-Art stacks with single valve actions, as opposed to the former double valve designs. The savings in manufacture must have been very significant, and Dickinson achieved it without altering the dimensions or construction of the overall valves.

Some present-day restorers of the Duo-Art have removed these cross-valve seats and replaced them with round ones, complaining that it is impossible to get the more complex profile to work properly. While one cannot rule out the possible damage done by corrosion over a century of use, it is still possible to restore a good cross-valve stack to impeccable condition, as witness those Duo-Art recordings on the Pianola Institute website which are made on Denis Hall's early American Steinway Duo-Art grand piano.

20: PATENT No. 1300135 - RECORD REPEATING DEVICE FOR PHONOGRAPHS

Phonograph patent, not under discussion in this article.

21: PATENT No. 1314578 - COMBINED TALKING MACHINE AND PIANO

Application: 01.05.1913 Issue: 02.09.1919

One of the Aeolian Company's forgotten projects was its search for an instrument that would provide the singing of a famous soloist - Caruso,

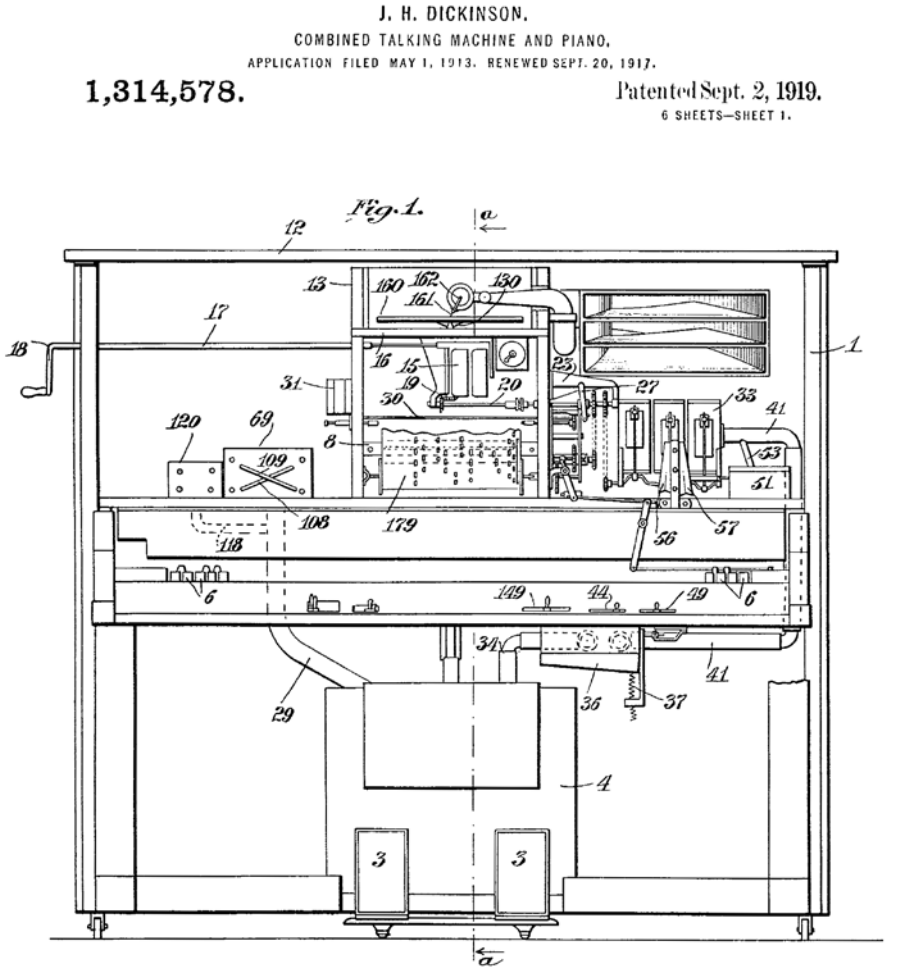
Tetrazzini, for example - by means of an acoustic phonograph (we are using the American terminology, since Aeolian did), while producing the instrumental accompaniment on a real piano. Such an instrument would quite ideally have been called a 'Duo-Art,' and one can certainly see where the title originated. Aeolian was not the only company to have attempted this, and indeed others claimed to have succeeded, though one does wonder whether publicity conscious inventors, such as Charles Stoddard of Ampico, were really as successful as they claimed, when no instruments whatsoever have survived.

One can understand the motives behind such a project; Aeolian presented regular and frequent Pianola recitals at its various Aeolian Halls around the world, and those at its New York headquarters must have especially influenced the Company's senior management. The concerts normally included vocal or instrumental soloists, and it is clear that they were very popular, usually playing to capacity audiences. One can imagine the enthusiasm of patrons, and the many conversations that ensued: 'Oh, if only I could have a singer like that to perform for me at home!' Before the advent of electrical recording, the acoustic gramophone was in no state to reproduce a subtle instrumental accompaniment, but it might satisfactorily allow a 'can belto' tenor to sing at a sufficient volume level to match a domestic player piano. Why not try to combine the two musical devices? But how to synchronise them, especially in the days before electronics had been invented?

Following on from the earlier patents of Joseph Dickinson and others, it is clear that a pattern was emerging, whereby the dynamic control of a player piano might be achieved by means of four control perforations at the bass end of a music roll. Aeolian seems to have asked a number of inventors to apply their brainpower to this project, using the four control perforations at the bass for dynamics, and a further three at the treble for synchronisation purposes. Edwin Votey had a go, and so did others, one even suggesting the annealing of a shellac audio track on to the edge of the music roll.

In the end, none was successful, or, more probably, none came up with an instrument that could be easily operated by a wealthy but tired businessman at the end of a gruelling day, holding a glass of bourbon in one hand, and carrying on a gentle conversation with his house guests at the same time as manipulating a piano roll, a phonograph record, and a plethora of levers and buttons. This elusive project was no doubt the reason why Aeolian was slightly late on the market with the Duo-Art, presumably after someone in authority (perhaps a combination of H.B. Tremaine and Edwin Votey) pulled the plug. But for all that, Joseph Dickinson's proposed solution was remarkably ingenious, and it gives every indication of having been successfully put into practice, albeit in a factory environment.

Dickinson's design places the phonograph turntable above the spoolbox in a higher than normal upright player piano, with a three-part acoustic horn


J. H. DICKINSON.
COMBINED TALKING MACHINE AND PIANO.
APPLICATION FILED MAY 1, 1913. RENEWED SEPT. 20, 1917.
1,314,578. Patented Sept. 2, 1919.
6 SHEETS—SHEET 1.
Fig. 1.

US Patent No. 1314578: Combined Player Piano and Phonograph

on the right, over the position where the Aeolian windmotor is located. It is noticeable that the instrument is still foot-operated, while the predominant motor for the phonograph is clockwork, wound by a very long crank, inserted in the left hand end of the piano case. He achieves synchronisation by means of a regular pattern of two alternating perforations at the treble side of the roll, and very cleverly solves the potential problem of starting the two devices together by placing a small indent on the surface of the record, into which the needle was to be placed at the beginning of the process, and also by using the

player piano windmotor to give a boost to the turntable, in order to overcome inertia at the start of its rotation.

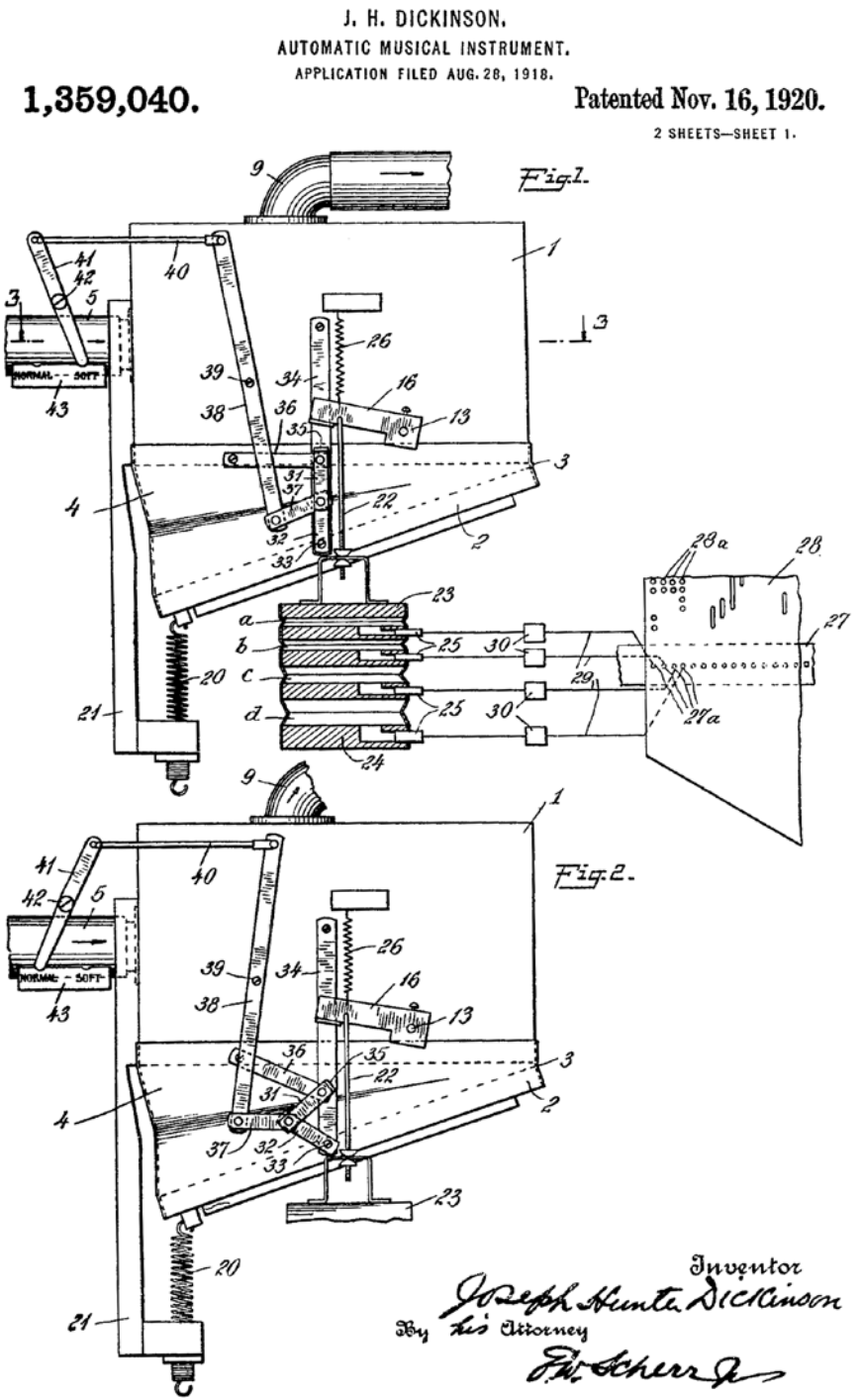
In some respects, it is a pity that such ingenuity is not to be remembered in some surviving instrument, but at least some elements of the designs for this combined project were also used in the development of the eventual Duo-Art reproducing piano, so not everything was lost. And, in view of the later repertoire of the Duo-Art, and the stature of the pianists who recorded for it, perhaps it represented the best outcome in the end.

22: PATENT No. 1359040 - AUTOMATIC MUSICAL INSTRUMENT
Application: 28.08.1918 Issue: 16.11.1920
(Illustration overleaf)
When a Duo-Art piano was delivered to a new customer, Aeolian always instructed its piano tuners and installers to make the instrument suitable for the room in which it was to be played. With new instruments, the Duo-Art mechanism was correctly adjusted at the factory, but the piano hammers needed to be voiced to fit in with the size and acoustic of the customer's house. However, there will have been many occasions when the piano owner wanted to modify the dynamic range, perhaps in order to have music playing as an accompaniment to a singer, or even as an adjunct to dinner - what a terrible thought! For this purpose, it was necessary to design a device that would restrict the overall range of the Duo-Art's performance.

Joseph Dickinson achieved this aim with a simple lever mechanism, operated by the piano owner as necessary, which prevented the dynamic knife-valve from opening more than a predetermined amount. This is a very simple invention, but nevertheless very effective.

23: PATENT No. 1395802 - REWIND DEVICE FOR PHONOGRAPHS
24: PATENT No. 1405572 - MOTOR DRIVE FOR PHONOGRAPHS
Phonograph patents, not under discussion in this article.

25: PATENT No. 1424885 - COMBINED CABINET AND PIANO
Application: 05.11.1918 Issue: 08.08.1922
Many player piano owners will know how convenient it is to store rolls on top of an upright piano. They are readily accessible, you can see the titles easily, and it gets them out of the way of the rest of the room. But there is one distinct disadvantage, namely that every six months or so the unfortunate piano tuner or player technician has to move them all, before he or she can gain access to the interior workings of the instrument. So Mr Dickinson's combined cabinet for the piano was in effect a group of three roll shelves, almost the complete width of the upright, which sat, as if by magic, just the right distance above the top lid. The cabinet was in fact supported by two very

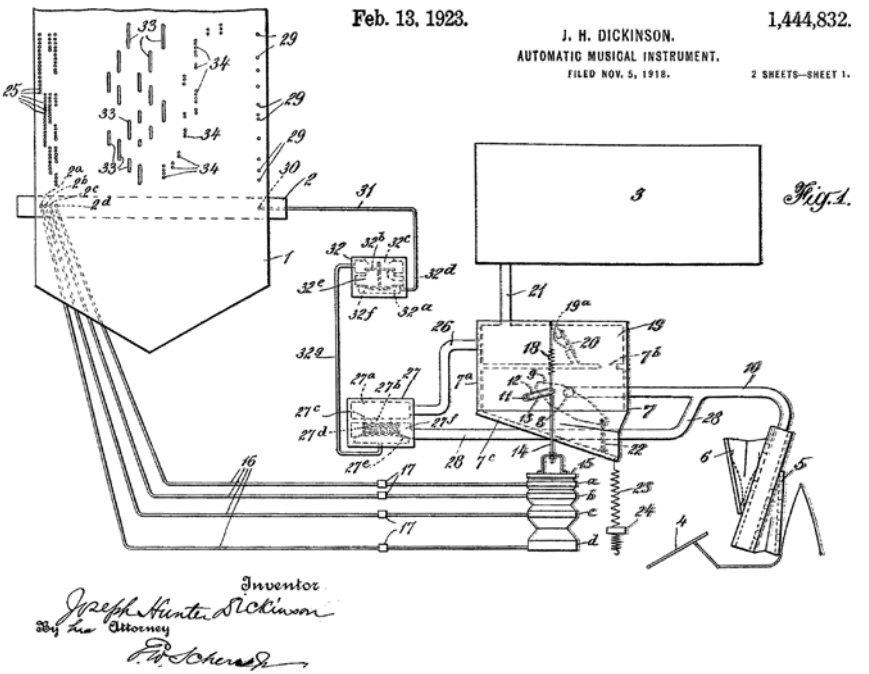


US Patent No. 1359040: Soft Playing Lever for the Duo-Art

solid metal brackets, which bent down at the back and were then screwed in to the rear of the piano. In that way the top lid could be opened just enough to unlock and remove the front panel of the piano, so that the inner workings could be regulated without difficulty. If any DIY enthusiasts amongst our readers are looking for a neat project to enhance their player piano, they could do worse than to download this patent and use the drawings as a practical template!

26: PATENT No. 1444832 - AUTOMATIC MUSICAL INSTRUMENT
Application: 05.11.1918 Issue: 13.02.1923

The Duo-Art, when it was initially launched, was powered by an electric suction pump, just the same as all other reproducing pianos up to that time. However, in 1914 by no means every part of the world had access to electrical power, and it was certainly the Aeolian Company's intention that its instruments should reach into the most far-flung regions, the Arctic, the Antarctic and the outback of Australia springing immediately to mind. The Company clearly decided that it should provide a foot-powered alternative, and, since the profit motive lay at the heart of all Aeolian activity, it made sense to market a less expensive model for those who could not quite afford the original system.



US Patent No. 1444832: Personal Control of Duo-Art Rolls

Thus the foot-pedalled Duo-Art came into existence, covered in this Dickinson patent applied for six days before the end of the First World War. One can clearly see that the coded perforations at the left of the roll, which automatically create the Accompaniment dynamic level, operate on a simplified Duo-Art expression box with only one accordeon controller, whereas the Theme or Solo level is left entirely to the judgment of the performer, who Dickinson assumes will be suitably influenced by the general course of the music. The drawing, for simplicity's sake, depicts Solo or Theme perforations only at the treble side of the music roll, whereas they are in practice to be found on both sides, as we all know.

27: PATENT No. 1446886 - SOUNDBOX FOR SOUND REPRODUCING MACHINES
28: PATENT No. 1448733 - MULTIPLE RECORD MAGAZINE PHONOGRAPH
Phonograph patents, not under discussion in this article.

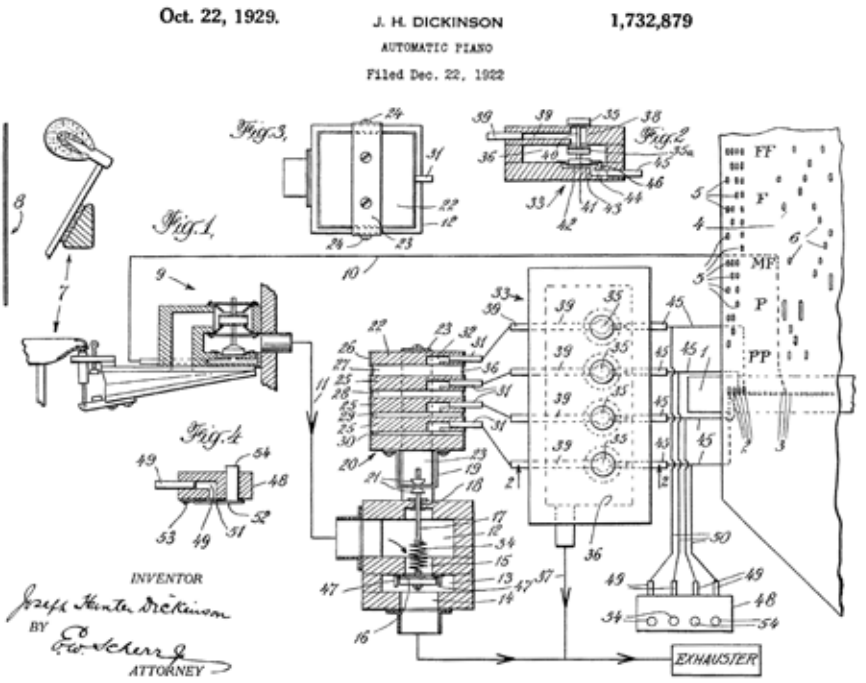
29: PATENT No. 1502618 - PLAYER PIANO AND THE LIKE
Application: 08.06.1920 Issue: 22.07.1924
Over the years one has seen player piano enthusiasts who have enhanced their upright players by installing a hidden light in the spoolbox, probably in combination with subdued lighting in a restful music room. Images like this conjure up a slight air of the nostalgia that has formed such an important part of the presentation of instrument and roll collections in modern times. Well, here is a supreme version of the simple light, described in Joseph Dickinson's final patent as Superintendent of the Aeolian Experimental Department, and applied for exactly two weeks before his sixty-fifth birthday and presumed retirement. In an effort to conserve electricity, especially if supplied by means of a battery, the light only illuminates if the Pianolist is pedalling, thanks to a switch attached to the equaliser on the pedal box, and it also extinguishes when re-rolling, with another switch connected to the Forward and Re-Roll lever. One could imagine an over-sensitive Pianolist creating an especially delicate pianissimo and thereby plunging the instrument into darkness, but perhaps this light was intended more for the sterling pumping of song rolls, to be found nowadays especially on YouTube!

30: PATENT No. 1547645 - AUTOMATIC MUSICAL INSTRUMENT
Application: 20.04.1921 Issue: 28.07.1925
In the early 1920s, the Aeolian Company began to install turbine suction pumps in upright electric Duo-Art pianos, replacing the six- or four-lobe exhausters that had predominated until then. One of the resultant problems was that a turbine takes a considerable time to come to a halt, once it has been switched off, leading to unwanted effects, such as the downward whine of the

electric motor, and the continued and rather noisy rotation of the music roll after it has been rewound. To obviate these problems, Dickinson attached a disc brake to the shaft of the motor, the brake pad being mounted on a medium-sized pneumatic that was hidden inside the pump housing. Normally the pneumatic remained at the same level of suction as was present at the output of the pump, with its brake pad held away from the disc by means of a light spring. Once the pump was switched off, a valve passed atmosphere to the pneumatic, which therefore pressed its brake pad against the disc with a force proportional to the level of suction being produced by the pump. Once the pump had stopped, atmosphere returned to all parts of the mechanism, and the brake thereby disengaged, ready for the next time a roll was to be played.

31: PATENT No. 1732879 - AUTOMATIC PIANO
Application: 22.12.1922 Issue: 22.10.1929

We come now to a pair of patents, representing two contrasting ways of re-designing the Duo-Art expression box. One of the aspects of Joseph Dickinson's inventive character that tends to suggest he was the main technical co-ordinator of the Duo-Art is the way in which his mind clearly



US Patent No. 1732879: Dynamic Control by a Spring Valve

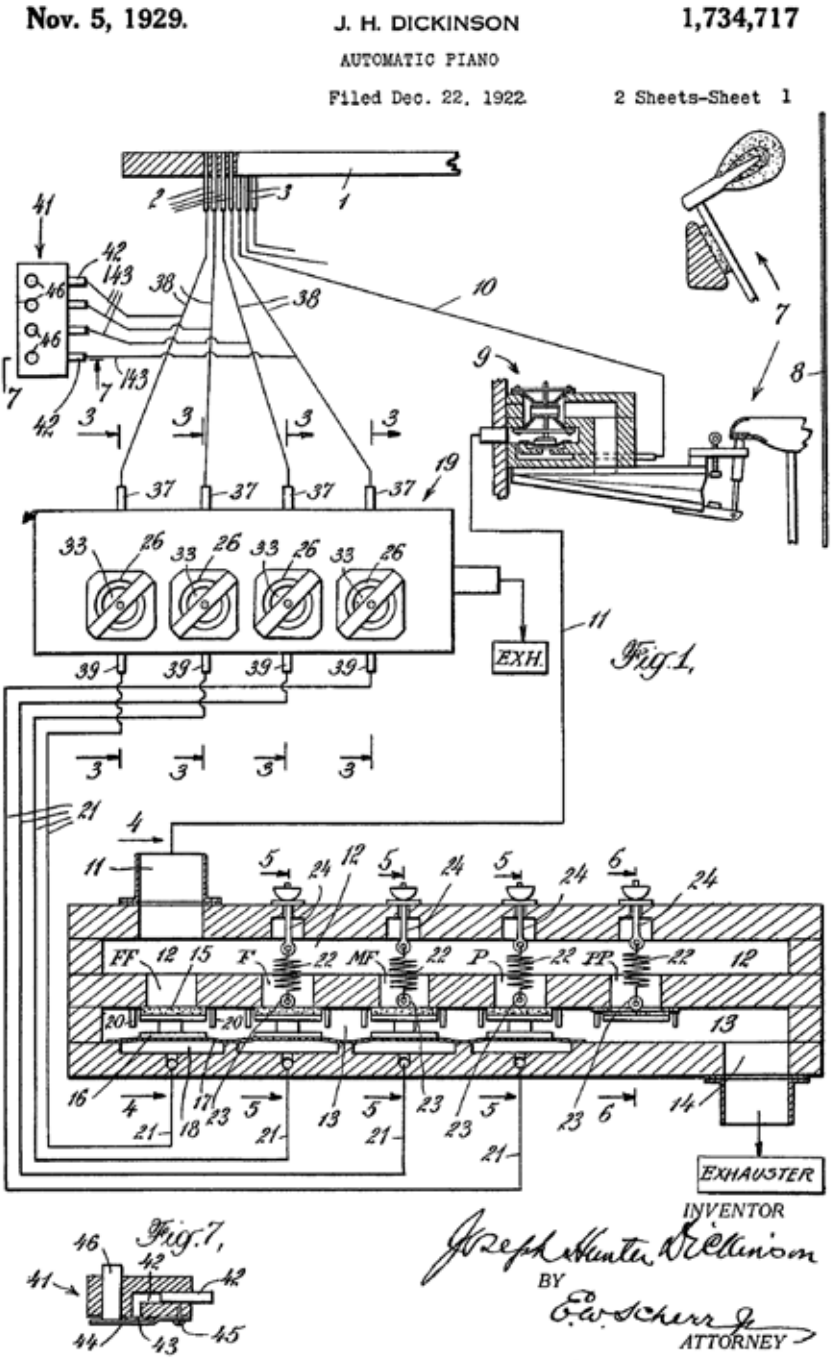
dwells on the instrument after retirement. This first patent is a case in point, which at first sight looks rather like a combination of the Duo-Art and the Ampico 'A'. Dynamic coded perforations on the roll trigger an accordeon controller in the way one might expect, but instead of the accordeon causing a knife valve to slide across a suction input, it pulls on a spring attached to a valve which is held directly against the input, the strength of the spring when fully extended inhibiting the suction and creating a pianissimo dynamic. The accordeon therefore works in the reverse way from that which we have come to expect, releasing the spring when fully open, and thus creating fortissimo, and returning to pianissimo when the accordeon is fully collapsed. The accordeon valves also work the reverse way to normal, providing atmosphere when triggered, so that the logic of the Duo-Art perforations remains the same.

Interestingly, Dickinson also illustrates a series of four push buttons, which could if necessary be operated by the listener, rather than using the Duo-Art perforations on the music roll to control the accordeon. While this might in theory be possible, it would be a very complex business to use such a device in real time, and it perhaps provides a hint towards equipment used in the experimental workshop where this idea sprang to life.

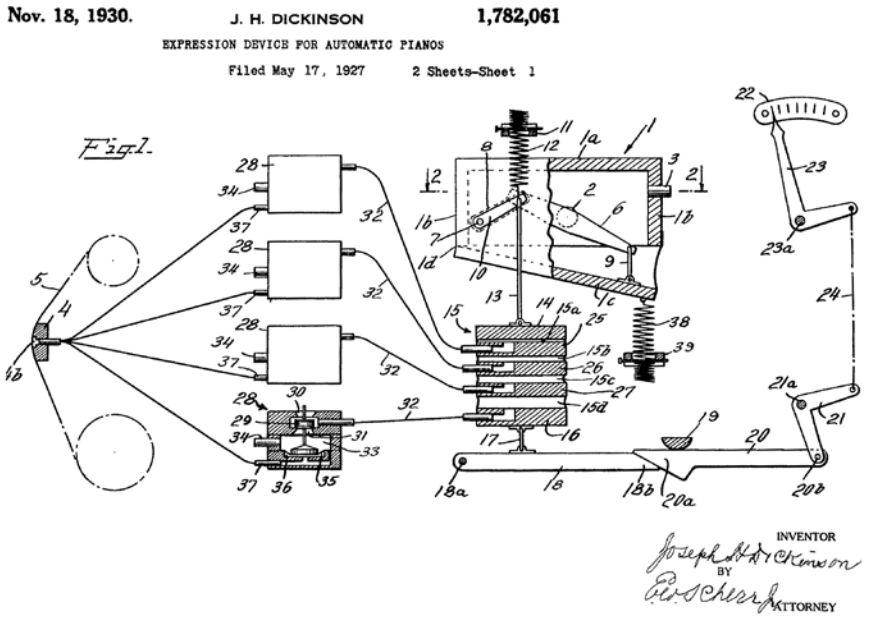
32: PATENT No. 1734717 - AUTOMATIC PIANO
Application: 22.12.1922 Issue: 05.11.1929

The companion patent, applied for on the same day as the previous one, the Friday before the Christmas holiday in 1922, uses a similar principle of sprung valves to create a range of dynamic levels, though it is difficult to see how the mechanism could work in as subtle a way as a normal Duo-Art expression box. In particular, the highest power, operated from the Power 8 position on the tracker bar, would appear to act as a form of crash valve, linking the pneumatic stack directly to the pump, which would then render the other dynamic valves inoperative. Perhaps the intention was to produce an expression box for a less expensive range of player pianos, which might have been seen as easier to manufacture on a production line basis.

It is interesting to note that both of these patents took nearly seven years to be approved and issued, implying a good deal of complex examination in the interim. In particular, the first of the two designs bears similarities to Ampico technology, but clearly the patent examiner was in the end satisfied that there was no interference. In practical terms, however, nothing was made of Mr Dickinson's innovations, no doubt because the Duo-Art had only a limited production life, as the gramophone gradually took hold on society. One further observation is that the drawings now represent many of the pneumatic connections by single lines: a development that presages the ways in which electronic circuits came to be depicted.



US Patent No. 1734717: A Five-Valve Duo-Art Expression Box



US Patent No. 1782061: Variable Dynamic Range Selector

33: PATENT No. 1782061 - EXPRESSION DEVICE FOR AUTOMATIC PIANOS
Application: 17.05.1927 Issue: 18.11.1930

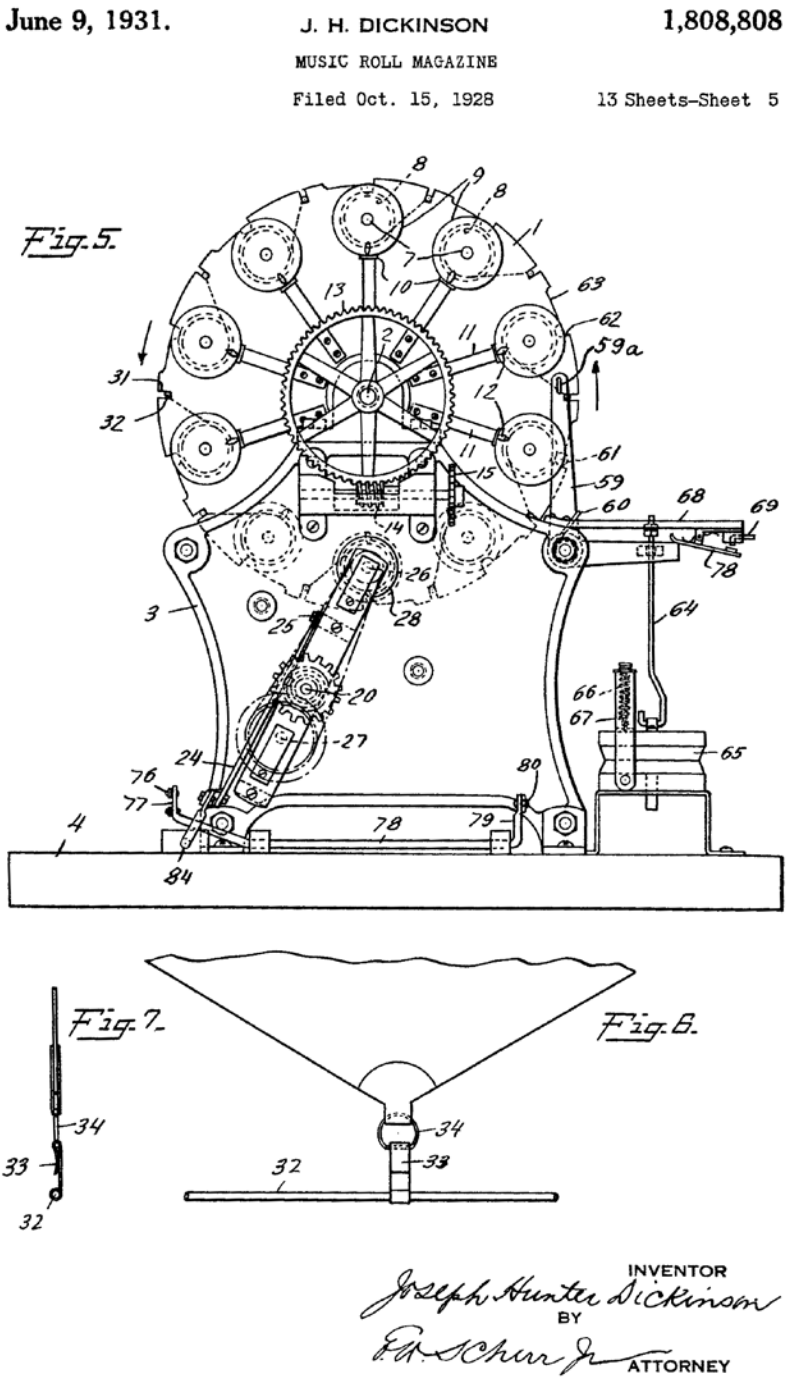
For his penultimate patent, Joseph Dickinson returns to the knife valve principle, which he had originally invented over twenty-five years before. Duo-Art pianos were often supplied with a lever to switch between normal and softer playing, and indeed that very mechanism was one of Dickinson's own inventions. But his earlier device carried two limitations: in the first place it allowed for only two choices of dynamic range, and secondly it restricted the range by effectively applying a limit beyond which the accordeon controller and knife valve could not pass, removing any dynamic variation at the upper levels.

This more subtle approach makes use of a lever and a bell crank to vary the overall position of the accordeon, thus altering its geometrical relationship with the knife valve, and so giving the potential for many different dynamic ranges, each suitably proportioned within its own upper and lower limits. The user simply adjusted the hand lever against a marked scale, and the variation was intended not only to suit the piano to the acoustic of a particular room or the mood of a particular social occasion, but also to allow for adjustment when the ambient temperature or humidity caused the piano to respond in a different way.

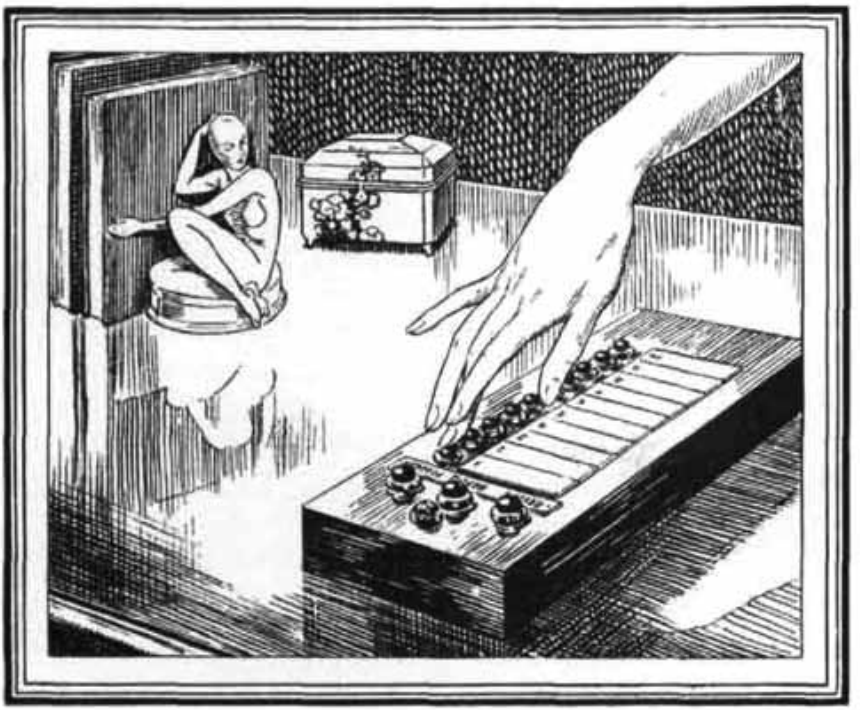
34: PATENT No. 1808808 - MUSIC ROLL MAGAZINE
Application: 15.10.1928 Issue: 09.06.1931

Joseph Dickinson's last patent is also by far his longest, covering twenty-six pages in all, exactly half of which are detailed drawings of a very complex nature. The instrument which the patent describes and depicts was known as the Concertola, a carousel which housed up to ten different rolls, and which allowed the listener to select any roll, in any order, or to play through the entire collection without further intervention.

The Concertola Remote Roll Player



US Patent No. 1808808: The Concertola Multiple Roll Frame



The Concertola Remote Control Unit

Introduced in June 1930, the Concertola could be connected to a Duo-Art grand piano or pipe organ, and it consisted of a floor-standing cabinet and a remote control unit. The cabinet could be had in different models and styles, including a single roll version and the more usual model, which housed ten rolls. The tempo of each roll was selected automatically by the system, and the rolls each re-rolled after playing, ready for the next performance.

The remote control unit included buttons for each choice of roll, with an adjoining frame, in which cards with the roll titles could be inserted, plus extra buttons for playing, repeating and so on. The conception and design of such a complex piece of equipment is somewhat awesome to contemplate, and of course the pianos or organs that were connected had to be fitted with electro-pneumatic valves, because the information from the rolls was converted to electrical signals inside the Concertola cabinet, in order to travel via cable and play remotely without pneumatic delay. If the owner desired, further remote control units could be supplied, to allow operation from other rooms within the owner's house, or, more likely in view of the expense, the mansion or palace!

The development of the Concertola must have taken a whole team to achieve. Like other piano companies, Aeolian was going through hard times as a result of the Depression, and not even the Concertola would be capable of sustaining the player piano as an instrument for the mass market. One can imagine that, by 1930, not many new employees were being taken on, and it was perhaps fitting that a senior and experienced inventor was called back out of retirement to supervise the project, and to liaise with legal staff over the matter of the patent. However the project progressed, the Concertola is clear evidence of a man still at the height of his powers at the age of seventy-five or so.

Reflections

The Internet has treated Joseph Dickinson in cavalier fashion, failing to understand his real importance as an inventor, crediting him with inventions that he did not make, and misrepresenting those that he did. Whatever the case, there is little doubt that he was a remarkably clever man, but one can't force 21st century attitudes on to someone who was born in mid-Victorian times. Dickinson's social and political instincts caused him to join the Republican Party and to list himself (or at least to allow himself to be listed) as a white man for the majority of his adult life. That doesn't square with militancy, but different ages beget different solutions.

He certainly became very wealthy indeed, and there is usually an element of choice in such matters. And he chose to place his retirement home in one of the most exclusive suburbs of New York City, even becoming President of the local Gardens Association. Alongside this overt conservatism and ambition, mirrored in his two photographs, there is the possible hint of sadness in his choice of Westfield, New Jersey, for his own interment, rather than his Eldorado-like retirement village of Larchmont, and it seems likely that his younger son, who continued to live until at least 1920 in Cranford, may have predeceased him, an unhappy circumstance for any parent. Alas, he is no longer here to question or to befriend, but one hopes that this article may in due course be read by those who wish to approach the reality of his life more closely.

With regard to the development of the Duo-Art, it is clearly very difficult, at a distance of roughly one hundred years, to work out the chain of command amongst the Aeolian Company's senior experimenters and musicians. Whereas at Ampico Charles Stoddard was both the chief inventor and the boss, at Aeolian the development staff were nothing like as well known as the senior managers. Harry Barnes Tremaine, the moving force behind the Company, was by far the best known to the public, but his strength lay in the manipulation of talent and meticulous planning, and not in the more technical aspects of the player piano.

Aeolian never documented the Duo-Art's early history, but there is one small clue that has come down to us by chance, reproduced in an issue

of Music Trade Review for 27 June 1914. It takes the form of a verse, recited after the dinner that followed the annual baseball match between teams representing the Aeolian Wholesale and Retail Departments in New York. At that particular time, the tradition was for Lawrence Bogert, one of the retail salesmen at Aeolian Hall, to write and deliver a number of rhyming toasts to senior staff.

Bogert's eighth verse concerns Francis Lincoln Young, one of the Company's senior musical and developmental managers, and it runs as follows:

> Here's to our *Young*, the man who *does things*,
> For, every short time a new wonder he springs,
> He knows how to capture the musical heart,
> And that's why he gave us the grand Duo-Art.

F.L. Young seems to have begun his Aeolian career in 1899, as a Pianolist and salesman in New York, and roughly in 1901 he applied for a patent in connection with the Metrostyle, arguably the most important selling point of Aeolian Pianola Pianos before the Duo-Art came on the scene. His annual salary, in May 1904, was $7,000, considerably more than Joseph Dickinson's, and whereas in 1910 he is mentioned in Music Trade Review as the Retail Manager of the Company, in 1915 he is described as belonging to the Aeolian Invention and Research Department. He certainly appears in a group photograph in 1923, in which the top Aeolian management presented a gold loving cup to H.B. Tremaine, on the occasion of his 25th anniversary with the Aeolian Company.

Thus he seems to be have been a member of the top Aeolian management team for many years, whereas Joseph Dickinson is described as Superintendent of the Experimental Department, a term befitting a more practical leader of a development team. It is certainly possible to imagine the two men working together: Young setting out the musical parameters for the instrument the Company was to devise, and Dickinson working out in practical terms how to accomplish it. That would explain the use of many of Dickinson's existing mechanisms, and it would fit with the apparent credit given to Young in the after dinner toasts in the summer of 1914.

We shall, of course, never know the truth with any certainty, unless a lost issue of *The Aeolian* comes to light, but we can at least reflect that our grandfathers were every bit as clever as we like to think ourselves to be, especially Joseph Dickinson!

I should like to thank one or two individuals and organisations who have helped in the process: Patrick Handscombe, Denis Hall, the International Arcade Museum, and especially, on this occasion, Lynne Crowley and the Larchmont Historical Society, whose wonderful photographs opened a new door to Joseph Dickinson's later years.

Schools of Ragtime – The Piano Rolls of Scott Joplin

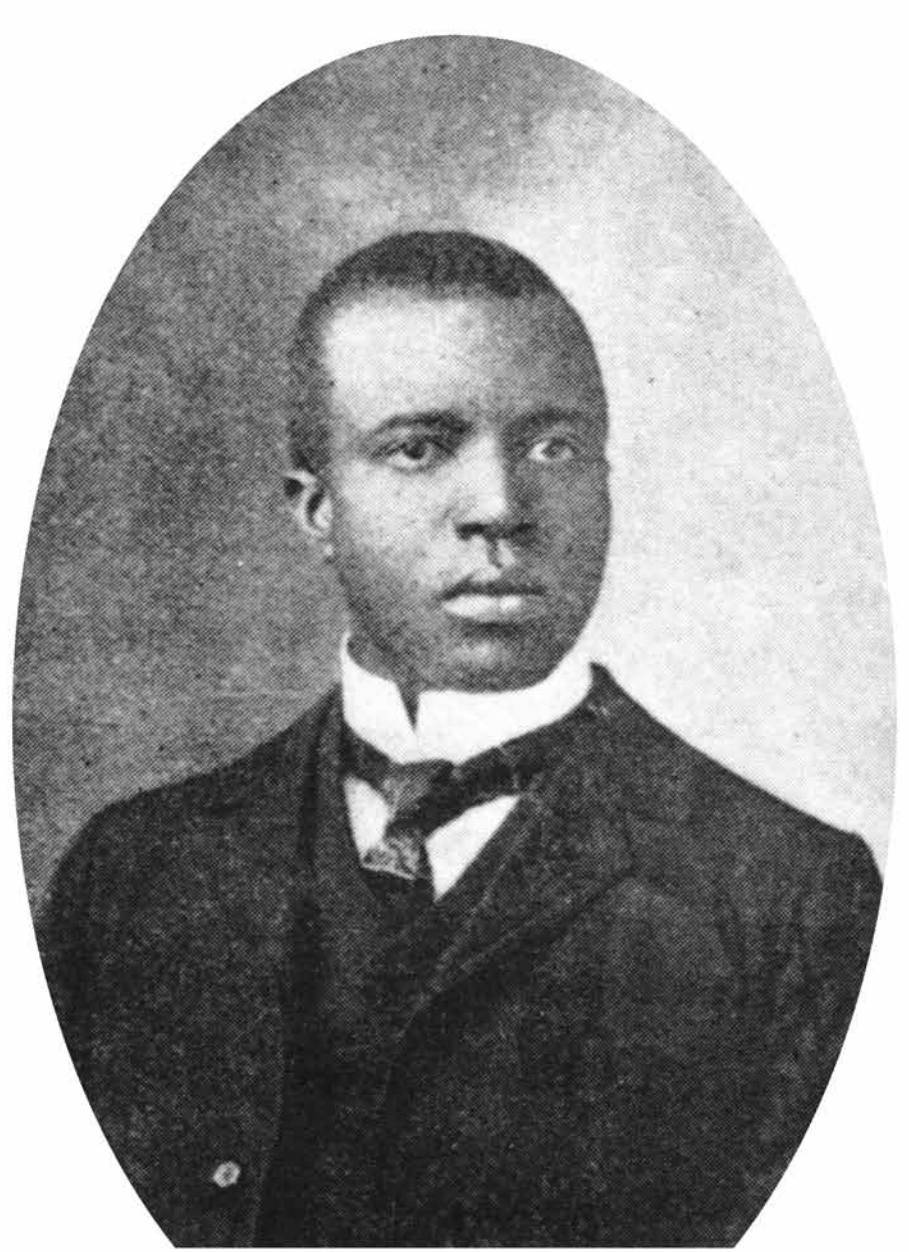
Francis Bowdery

Scott Joplin was born in Linden, Texas, in late 1867 or early 1868. His early musical abilities were encouraged by his mother, who secured lessons with a local German music teacher, Julius Weiss. He became an itinerant musician, singing, conducting and playing in the Mid-West in his young years, later undertaking further study at the George R. Smith College for Negroes in Sedalia, Missouri. His first publications appeared in 1896; the piano piece which made his name, Maple Leaf Rag*, was published by the small St Louis, Missouri firm of John Stark and Sons in 1899, though it may have been composed at least a year prior to this. He completed an opera,* A Guest of Honor*, in 1903, which toured successfully but failed when a manager absconded with the funds. He continued to teach, and to compose and publish the short piano pieces for which he was best known; in the manner of Axel Christenson and others he also published in 1908* School of Ragtime*, a ragtime primer, partly to capitalise on the popularity of the style, but also in an attempt to emphasise the character of his own music. Composing had become Joplin's principal activity, and he moved East to pursue his career, dying in New York in 1917. By the time of his death he had published over fifty piano pieces and a number of songs, as well as having two operas and an earlier dance/revue piece to his name. Much unpublished material remained in MS with his widow, Lottie Stokes, and was seen by Rudi Blesh and Harriet Janis when they were writing* They All Played Ragtime *in the 1950s. Following Stokes' death and protracted legal actions, it seems that these papers are now all irretrievably lost.*

Introduction

1914 was the year of Scott Joplin's last solo piano self-publication, and the beginning of the short final chapter of his brief life: he would die in his forties in April 1917, in the Manhattan State Hospital, New York, USA. The onset of symptoms of dementia paralytica had begun some eighteen months earlier.[1]

His priorities as a composer had shifted from the short piano pieces and rags which had made his earlier career to larger forms, especially opera. *Treemonisha*, his second such work (the first, *A Guest of Honor*, almost certainly is lost), was started around the time of his arrival in New York City in 1907, and self-published in 1911. Recent research has established that a limited tour of the piece did in fact take place, although it failed to attract a major backer in New York City itself.[2] Correspondence, newspaper articles and accounts of Joplin's last years meanwhile mention a symphony, a piano concerto and a musical comedy (possibly a revision of *Treemonisha*), as well as short piano pieces and songs and the inevitable round of piano teaching. Joplin also self-published 'revised extracts' from his opera, in part to coincide with performances of individual numbers.



Scott Joplin
1867 or 1868 - 1 April 1917

Amidst all this, in the spring of 1916 Joplin recorded seven piano rolls, one for the Aeolian Company (Metro-Art/Uni-Record) and six for the Connorized Music Company, both of New York.[3] Piano rolls, and especially hand-played rolls, were big business in the United States. Aeolian and QRS had issued American recordings as early as 1912, at which time the Welte Artistic Player Co. was already producing rolls with equipment derived from the German parent company. By 1916, besides non-expression roll production, the Ampico and Duo-Art reproducing piano systems were also established in the market. Although it would not be until the 1920s that black music and performers would establish a substantial presence on piano rolls and discs, the volume market for popular music ensured early interest in ragtime from the music roll companies. Thus to have popular music recorded by one of its major names was an asset for the companies concerned, particularly in the case of *Maple Leaf Rag*, a best-seller of its day. Posterity would thus gain an illustration of the playing style of 'The King of Ragtime Writers'. In the absence of contemporary disc recordings of the major black players of the day – Tom Turpin, Louis Chauvin, Tony Jackson, James Scott – Joplin's seven piano rolls are among the few documents of pre-novelty piano ragtime style. At least, they should be. By 1916 Joplin's health was in decline, as may be seen from the death certificate cited above, and from Eubie Blake's recollections of meeting him around 1915,[4] when the composer was called upon, and reluctantly agreed, to play *Maple Leaf Rag*:

'So pitiful. He was so far gone with the dog and he sounded like a little child tryin' to pick out a tune - I hated to see him tryin' so hard. He was so weak.'

'He was dead but he was breathing. I went to see him after but he could hardly speak he was so ill.'[5]

Although Joplin's piano playing in health had been praised by associates such as Arthur Marshall, and despite his solo and dance accompaniment performances, it seems unlikely that he had ever been a virtuoso.[6] This, as well as deterioration due to health problems, needs to be borne in mind when assessing the pianist and style that the rolls seem to present.

There is also the matter of the recording technology to consider. It is indisputable that the Joplin presented by the Connorized and Aeolian rolls is not the same: smooth, polished, not notably sensitive in the Connorized, and rhythmically disturbed, approximate and indeed inadequate in the Aeolian. Given the close proximity in time of the recordings, it seems unlikely that this is simply the result of variations in his health, but it is certain that Aeolian and Connorized recorded using significantly different techniques.

An Aeolian recording device had been in existence for some time by 1916,[7] and it was the basis of the recorder employed for the company's Duo-Art reproducing piano rolls. Rather unusually within the industry, it perforated a roll as the artist played, meaning that a recording could be

played back straight away in a rudimentary form.[8] There were strengths and weaknesses to this method. Its immediacy eliminated the layout stage of the 'arranged roll', or the technical work in hand-perforating a carbon-marked original, which were the more usual industry standards. The inevitable drawback of the process lay in the vulnerability to disturbance of very fine rhythm. The recording perforator's punches operated at a frequency of approximately 60 per second; this admittedly rapid rate still raises the question of a fixed real time 'resolution' and the 'phasing' created by it, which no live pianist will exactly duplicate. More significant is the stage of transfer from original to stencil for the production perforator, whose coarser pull-through rate will not match the original's punch rows. Any problems will be at their most audible in music with a strong rhythmic basis – exactly the character of a piece like *Maple Leaf Rag* – and least in music of lyrical contours and rubato. The higher the production roll paper speed, the smoother and more rhythmically stable the musical end result is likely to be, and it can be seen that Metro-Art and Uni-Record rolls are notable for paper speeds rather in the low range – including Joplin's roll of *Maple Leaf Rag*, cut at five and a half feet a minute (tempo 55). One more factor is the Themodist system of accenting for which the roll appears to have been edited, even if the coding was not employed in final production. This procedure involves the displacement by one punch row of an accented note or chord in order to isolate it from surrounding material for the theme device to select; it will be seen that this necessarily disturbs the rhythmic flow even if notes are accented and 'mask' the displacement to some extent. There are no 'snakebite' theme codes in Joplin's Uni-Record roll of *Maple Leaf Rag*; and an introduced discrepancy of one punch row is considerably more audible at paper speed 55 than 75 or 90.

The carbon marked original roll recording and its processing involve both parallels and differences. Much of the technique of transfer from an original is as described above, but an original recorded by such a device working promptly and evenly cannot introduce 'phased' rhythmic distortion, since it contains no pulsation mechanism but works freely in real time. Questions of transfer do arise, whether undertaken automatically (by perforating and 'reading' the original in order to create a stencil) or manually (by graphical or other means) but the absence of one layer of potential distortion should not be dismissed lightly. In practice, companies such as QRS often came to work graphically, directly from the line marked original, to create a 'best fit' for the stencil and resultant production roll, having found that this gave a smoother, more musically satisfactory result in the fundamentally rhythmic music which was the mainstay of business, especially if the pull-through rate of the production perforator was relatively coarse.[9] Joplin's Connorized rolls show the hallmarks of such a process: rhythmic smoothness (and a metronomic,

'quantised' pulse), as well as sameness of articulation and evidence of 'cloning' of repeated sections. An additional feature of these rolls is the presence of textual augmentation which could not be played by two hands either at all, or with the articulation found in the rolls. This has given rise to speculation about the degree of freedom with which Joplin may have played, and is a striking contrast to the roughness of the Aeolian roll, and the accounts of his health at the time.

What, then, do the rolls actually represent ?

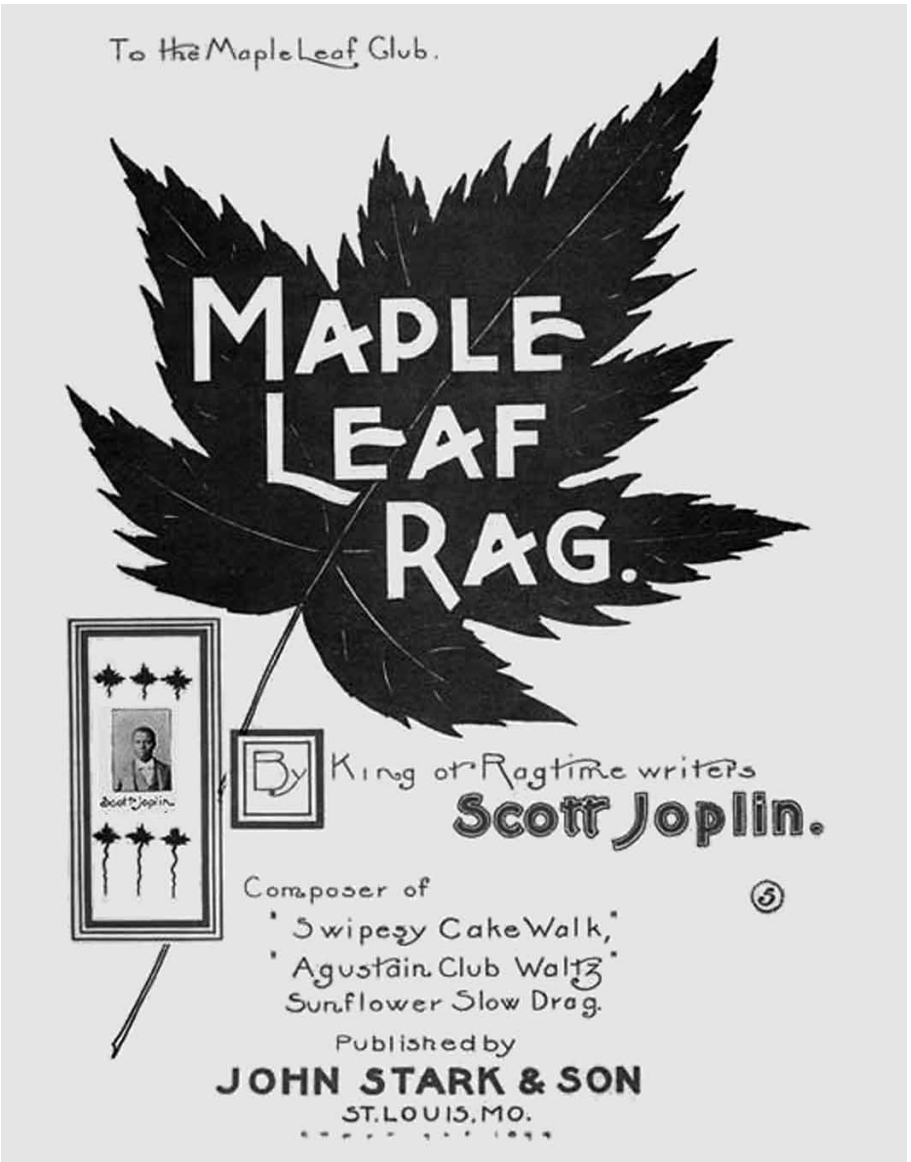
Maple Leaf Rag

This piece is apparently the only item recorded by Joplin for both companies, and thus offers a basis for comparison of the different processes. No documentation is currently known from the Aeolian Co. disclosing any background information on this recording, or any others that may have accompanied it. Although single items, especially by popular artists, are not unknown in the Aeolian catalogues, it certainly is the case that material sometimes remained unissued for technical or commercial reasons.[10] The Connorized Co. issued two advertising releases announcing the securing of Joplin's services, and the issue of the first of the rolls.[11]

The Connorized *Maple Leaf* was issued in April 1916, two months before the Aeolian roll. It is not clear what the production 'lead time' would have been for either company, but the Connorized items are likely to have been recorded in one session.

If played at the marked speed, the roll gives a performance at around crotchet = 96. At this speed, the music has a solid and settled rhythmic swing, aided by the smooth production; it might be noted that this is also very close to the crotchet = 100 marked in some of Joplin's scores as 'Slow March Tempo'. All repeats are played. There are also a number of 'augmentations', notably in the form of semiquaver octave ornamentation in the left hand, which are not found in the score. A number of these would be exceedingly awkward or impossible to play with the smooth non-legato articulation of the roll; meanwhile this articulation is itself found in all parts throughout the roll. There are also octave transpositions in the right hand – an occasional Joplin stylistic feature – and added slurs and flourishes which are strikingly unlike Joplin's harmonic style.

We should divide these features into what clearly cannot be played, and what could be but are not usual features of Joplin's style. The first group are clearly the work of a roll editor and therefore not in themselves features of the original recording. Of the second, there is an ambiguity in the case of the left hand octave work; since the whole roll appears to have been 'reduced' to an homogenous articulation in the processing, it is theoretically possible that some of these could have been played, although in staccato. (They are,



Cover of sheet music of Maple Leaf Rag - 1901

however, quite absent from the Aeolian roll). It should be noted that, *pace* Arthur Marshall,[12] left hand 'fast octaves' do feature in Joplin's compositional style: examples of semiquaver left hand octaves can be found notably in *The Cascades* (1904), but also as an occasional or decorative feature in, among others, *Eugenia* (1905), *Bethena* (1905), *Gladiolus* and *Nonpareil* (1907) and *Reflection Rag* (1917). However, they mostly occur as scale patterns in

keeping with, or ornamentation of, the fundamental harmony. *Cascades*, an unusual case where the trio's octaves are partly thematic material, also unusually contains intervals of more than a tone within the patterns. It is also uncommon for Joplin to employ octaves in forms involving changes of rotation with intervals larger than a tone,[13] although *Eugenia* and *Reflection Rag* do contain examples of this. The Connorized *Maple Leaf* certainly uses semiquaver octaves for emphasis – accelerating motion or density to underline cadences, for example – but the patterns are not based on scales, and therefore unlike Joplin's general practice. The slurs and flourishes vary from the near unplayable to the simply striking or burlesque; they do not resemble Joplin's compositional style and are employed to 'lead the ear' at points where a pianist might make a dynamic emphasis.

The Uni-Record roll is a decided contrast to this. If played at the marked speed, the music emerges at around crotchet = 123 – decidedly fast for the musical material or pianistic comfort. Was this really the correct speed, or a processing error or ill-informed initiative to make the 'stationary Indian' appear more animated?[14] There is no augmentation at all: the roll is the unadorned score. A minor variant occurs at the end of the trio (third strain) – perhaps significantly, following a technical or memory difficulty in the awkward left hand part (bar 63) after which the trio repeat is not taken. With this in mind it may be significant that left hand chords and octaves throughout tend to be skimped or sketched in, rather than being played fully. Meanwhile a subtle rubato is present in the handling of the first strain – the opening two bar pairs (bars 1-2, 3-4) are phrased agogically – and, unusually and as marked, the second strain is played staccato, even against the generally détaché character of the playing throughout. The second, final ending of the fourth strain is varied from the score. This may be only a pianistic simplification, avoiding the right hand tonic/dominant7/tonic chords of the closing bar with the associated rapid changes of hand position; the bass octaves of the preceding bar are also slightly varied (F-F-F-G instead of the score's F-F-G-G which Joplin plays for the first-time close). It is striking, however, that no Joplin rag published after *Maple Leaf* uses the tonic/dominant7/tonic device as a concluding gesture in the final bar. Joplin's vocabulary of harmonic and pianistic devices expanded constantly during his writing career, and he came to approach the final cadence in a remarkable variety of ways, while consistently favouring a static fundamental harmony in the last bar – a solidly affirmative final gesture. While it is not difficult to believe that the composer might have deliberately varied his seventeen year old piece, the Connorized roll follows the score. There is a dynamic line, in common with other Aeolian hand-played output, which is in accordance with the score dynamic markings but also suggests variations of them; the second strain, for example, is not simply played at forte throughout, literally following

the score, but drops to mezzoforte by its third bar (20), crescendoing again to forte for the reappearance of the opening idea at the midpoint (bar 26) and falling away again as before. These dynamics are not exactly the same for the repeat. The trio, without dynamic marking in the score, is taken at mezzo with a crescendo to forte for the E flat minor passage at the climax (bars 63 ff), and a fall back to mezzo for the close; the last strain (also unmarked) is taken at forte with fortissimo for the repeat. There is no guarantee that these values derive from Joplin's performance, but they are musical and plausible, and there is no reason to assume that they do not. The sustaining pedalling is perplexing: blurred, arbitrary and musically implausible - a sign possibly of confusion, or the refuge of overtaxed fingers. It is in contrast to the restrained and apt work found in the Connorized roll and other Aeolian recordings originated by this equipment, which do not tend toward this particular problem. The rhythm throughout is chillingly disturbed. Taken at face value, the Uni-Record roll certainly justifies the lamenting for Joplin which has usually greeted it.

However, there may be another perspective. If the roll is played at a slower speed – bringing the music nearer the crotchet = 100 found in some Joplin scores and the neighbourhood of the Connorized roll – the effect is very different. To a listener familiar with piano rolls, especially in poorly processed or copied incarnations, the suggestion is much more of a roll whose rhythmic definition has been lost through production error.[15] One should also bear in mind the editing for Themodist coding referred to above. This would not excise the technical mishaps, but does leave questions as to what exactly a listener should take from the roll as it stands. On one side, the Uni-Record roll does suggest some pianistic difficulties, especially in rapid lateral movements or changes of hand position – the variants played at the end of the third and fourth strains either avoid or bluff this problem. What can positively be derived from it meanwhile is that Joplin played, or attempted to play, in close correspondence to the score regarding notes and articulation, but with minor textual and dynamic variations and some rubato – the latter a feature not always admitted into the canon of legitimate ragtime piano technique.

The remaining Connorized rolls

Joplin recorded five of his own items and one other for Connorized, all in late March 1916. The choice of items is itself curious: while *Maple Leaf* needs no explanation, only *Magnetic Rag* (1914) and the W.C. Handy item, *Ole Miss Rag* (a 1916 publication and copyright, but first issued on roll in 1913), were at all current at that time. Joplin had self-published the former at a premium in 1914 – a desire to aid its marketing would be very understandable. Is it possible that *Ole Miss* was popular enough for Connorized to request, or a number which Joplin, ever pressed for cash, was also attempting to push

through his publishing enterprise?[16] In the absence of detailed information on current and popular items at the time, one can only speculate. But it is a fact that *Weeping Willow Rag* and *Something Doing* were by the time of recording thirteen years old – a long time in popular music. The sales popularity of the tender and charming waltz, *Pleasant Moments* (1909), is starkly illustrated by the only surviving copy of this roll having taken ninety years from its publication to resurface, found by a New Zealand collector. In sum, then, the basis for choice of repertoire, presumably arrived at between Joplin and Connorized, appears lost to the present time.

One is left, then, with the rolls as they stand and what they may reveal. Michael Montgomery, American ragtime disciple, scholar and collector, sent the rag composer Joseph Lamb tape recordings of Joplin's Connorized rolls of *Maple Leaf, Something Doing, Weeping Willow* and *Magnetic Rag* some fifty years after Lamb had met Joplin and heard him play. Lamb's reaction was guarded: he was 'pretty sure that at least one of them sounded like him – *Weeping Willow* – the others, even *Maple Leaf*, I wasn't so sure about'. [17] It may be that to Lamb's ear, beyond some octave transpositions and the semiquaver left hand octave passages in the last strain, both occasional features in Joplin's scores, *Weeping Willow* contains less in the way of 'intrusive' embellishments than the other rolls. It might also be noted that those sequences, pianistically viable, illustrate a technique found throughout Joplin's Connorized rolls: the left hand embellishments arise from and are 'fitted into' existing bass patterns, rather than displacing them - a curious and almost touching fidelity amid subversion. *Something Doing* and *Magnetic Rag*, like *Weeping Willow*, both feature amplifications of melodies to the octave in ways quite impossible to play, but plausibly suggesting alterations of touch or dynamic – quite reasonably presuming a rather passive form of pedalling on the part of the average pianolist. *Something Doing* contains a curious 'hanging note' in the bass (bar 45), which evokes the muddled pedalling of the Uni-Record roll but may be a production defect. *Magnetic Rag* contains four curious and unique features: employment of then-novel walking bass left hand patterns (in the first and third strains) utterly alien to Joplin's style and score; the omission of the second and fourth strain repeats, not parallelled in the other Joplin Connorized titles but again evoking the Uni-Record *Maple Leaf*; an alteration of the right hand part in the fourth strain (bar 48), in which the right hand is in effect briefly one semiquaver in advance of the left after the first tied chord; and the four-bar introduction commencing at half-speed, with a curious (and rather mechanical) attempt at an accelerando into the first strain. This latter is the only appearance of a rubato effect anywhere in the six Joplin Connorized rolls, and is striking. Musically, a broader tempo for this introduction is justified, though not perhaps in the rather obvious manner presented here; the alteration of rhythm in the second two bars to effect an

accelerando is a pragmatic escape from the ratio problem thus created; and the relatively crude presentation suggests either determination to retain a strong four-pulse, or perhaps difficulty in dealing with more subtle kinds of rubato in the production of the roll. For this writer, the passage suggests that here may be further evidence of a Joplin rubato, the concept of which has not necessarily survived into present day thinking, and signs that, at Connorized, retention of that rubato in processing fell victim to company policy or production limitations.

The roll of the waltz, *Pleasant Moments,* is an at least partially successful attempt at a sensitive treatment of a fundamentally more lyrical piece. The bass treatments are notably more sympathetic than the other issues, with figured bass notes consistently extended to legato. It is however torpedoed by two particularly sour note errors (bars 6 and 31 and recurrences), which also betray 'cloning' of repeated sections – an obvious labour-saving device. (Herein lies a rather shady question of practice regarding treatment of 'hand-played' material and the levelling effect of 'cloning' procedures). We should note that in each case the wrong notes are of a semitone – an interval much more likely to arise from production than pianistic error. On the plus side, the ornamentation, where added (coda of second strain, trio), is delicate and sympathetic.

There remains the roll of *Ole Miss.* The striking feature here is how strongly the piece in Joplin/Connorized hands suggests a blues (six years later, James P. Johnson's QRS roll of the same piece, now titled *Ole Miss Blues,* unmistakeably evokes a much more muscular urban style, possibly even a blue stride solo).[18] The struck/arpeggiated reiteration in right-hand chords which end the two 'head' two-bar phrases in the first strain, also echoed in the last, is not found elsewhere in Joplin's rolls or contemporary Connorized output, to this writer's knowledge. Could this be a glimpse of the real playing of the black folk-descended musician Joplin was so quintessentially? The treatment of the piece is also remarkably 'clean' here, apart from the bass reinforcements and octave transpositions which comfortably dovetail with the style.

Conclusions

When attempting to assess the musical value of these rolls, what their market would have expected of them should perhaps be considered.

Ragtime exploded into popularity for a relatively brief time in America between the turn of the century and the onset of the First World War in Europe; like most popular music fads, it quickly both died away and dissolved into other styles. Ragtime is mentioned in early advertisements for the Aeolian push-up Pianola; the first thus-titled 'rag' publication in score was *Mississippi Rag* by William Krell, a (white) bandleader, in 1897. Popular music was 'arranged' on to music rolls long before the employment of roll recording

You will take a Pianola to Your Summer Cottage

Why not purchase one now and have the benefit of it during the time you still remain in town?

The Presence of a Pianola in the Home Enables you and every member of your household to play upon the piano even if you literally do not know one note from another—not only one or two selections, but every piece of music ever written for the pianoforte. Grand and light opera, Liszt's Rhapsodies, Sousa's marches, Strauss waltzes, and the latest rag-time hits are practically "on you fingers' ends." You have all the pleasure of hand playing because you control the expression, which is the soul of music.

The spontaneity with which the public has recognized the special value of the Pianola in the country home appears like mental telegraphy. This entertainer is considered a necessity in every well-equipped Summer Home. Have you considered the Pianola question in relation to *your* Summer Home? It would pay you to look into this matter now. The demand for Pianolas during the month of May a year ago reached such proportions that we were considerably embarrassed in supplying instruments in woods to match pianos, and in many instances we were obliged to delay shipment.

The price of the Pianola is $250

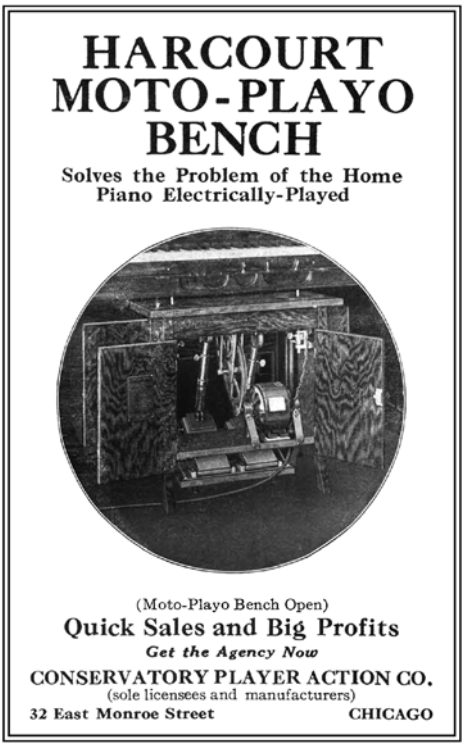
If unable to call, send for catalog E.

The Aeolian Co.,
18 W. 23d St., N. Y.
500 Fulton St., Brooklyn.

The Pianola being placed in position to play upright piano. The Pianola does not injure the piano in any way. Its felt-covered fingers rest upon the piano keys and strike the notes in the proper relation one to another as indicated on the music-sheet. Estimate for yourself the profit and pleasure the Pianola would bring you in a SINGLE year.

Aeolian Company advertisement mentioning 'latest rag-time hits'

technology. The approach to ragtime, often envisaged as an entertainment music probably for dancing, and nearly always heard either as banjo solo or band arrangements in contemporary sound recordings, was frequently to use orchestral or band scores as a basis, or arrange in this style. With the low expectations of the pianolist which justly characterised much music roll production, a two-hand ragtime piano score in an unadorned state in music roll form became a major rarity – ironically, despite the much-attested technical difficulty of the music for a pianist as it stood. (It will meanwhile be noted that Joplin's *Silver Swan Rag* of around 1914, unknown in original sheet music form, survived until 1971 only as an eighty-eight note piano roll arranged in exactly this 'orchestral' style).[19] Come the advent of the hand-played music roll, the resultant 'two-handed' performance was liable to sound rather bare against the library of highly coloured arrangements which had preceded it. Even with the possibility of hand played rolls with rubato and pedal effects, player piano owners who could not rise even to treadling stolidly through a roll could destroy the instrument's capacity for any expressive subtlety by fitting it with an automated suction unit or other impeller such as the bizarre 'Moto-Playo' combined music stool and electric treadling device.[20] It should thus scarcely surprise us that rubato and rhythmic subtleties of original rag performances were not finally seen as vital of retention in the popular roll: the material became an entertainment to 'switch on', not music to make. It is easy to forget that until the 1970's revival, ragtime was widely seen as an expressively one-dimensional precursor of jazz, and Joplin's name, beyond aficionados, was known in relation to *Maple Leaf Rag* – a 'jazz standard'.



The Moto-Playo bench

We should understand Joplin's Connorized rolls against this background; an attempt to 'pep up' a recorded performance without the obvious augmentations of the style of music roll making which had preceded it. The Joplin of the Uni-Record *Maple Leaf* roll is too much hampered by his

decline and evident technical difficulties in the roll to provide anything but the most blurred 'portrait' of a playing style for his music, or his intentions for the piece. The Joplin of the Connorized rolls in a sense probably never existed. His health difficulties at the time, and the implications of the Aeolian *Maple Leaf* roll regarding his fluency, make the rather virtuosic treatments of ornamentation and texture of this group decidedly implausible. It might also be noted that other contemporary Connorized ragtime rolls played by William Arlington and William Axtmann (very likely the same person, and a staff pianist for the company) contain exactly the same kinds of left hand semiquaver octave work, octave amplifications and transpositions, embellishments and 'fills' of the Joplin numbers. Whatever Joplin actually played therefore is submerged by the gloss of the Connorized house editing techniques. This does not destroy the rolls' musical value, except perhaps as a literal record of Joplin's style; but this was likely already sabotaged and obscured by his failing health by the spring of 1916.

We might also note the evolution of ragtime and popular music piano style during this period. One of the most striking developments here is in left hand treatments. Robert Hampton's *Cataract Rag* (John Stark, 1914) is a revelation; the regular basses of *Maple Leaf Rag* or *Sunflower Slow Drag*, Joplin publications with the same house fifteen years before, are a delicate and formal lacework compared to the muscularity and variety of Hampton's style. (Charley Thompson commented that in performance the piece – notated for Hampton, a non-reader, by Artie Matthews – was even more complex than the score, painting an intimidating portrait of Hampton's capabilities at the time). What is so striking is the way that the piece anticipates the textures and techniques of Jelly Roll Morton, whose star was just then rising into view, and how the full basses, 'fills' and 'walking bass' textures echo the ornamentations found in the Connorized rolls played by Joplin and Axtmann/Arlington. In other words, if we can (and should) detect some echoes of Joplin, however fragmentary, in some of the details of the rolls, we should also sense more strongly not just an editor's arbitrary touching-up, but a snapshot of the emerging pianism of their time. We might also reflect that the inventive popular rolls of the 1920s by Blake, Johnson and others, built on this editing philosophy while refining the means – an outlook which has lasted to the present day in popular music roll creation.

The final irony may be that in lending his name to a New York piano roll company, Joplin succeeded not in perpetuating his own playing style, but, inadvertently, providing a palimpsest for the popular style of the day, so much at odds with his own. Although his music is not devoid of instrumental virtuosity, it is not an explicit feature of his sensibility. His style has survived most securely in his compositions themselves; their lyricism, invention and variety are the clearest signposts, to a sensitive player, of what is necessary. His

rolls do, when understood in context, add an occasional insight to this; to all appearances, Joplin did play with rubato, and close adherence to details of the score which often escape notice in performance – hardly surprising in a folk-born classicist who dreamed of a body of concert music born of the meeting of two cultures he loved equally.

Notes

1 Scott Joplin died in the Manhattan State Hospital on 1 April, 1917. His death certificate lists cause of death as 'dementia paralytica - cerebral form', duration eighteen months, with syphilis a contributory factor. Symptoms include tremors, speech slurring and defects, motor disco-ordination and sharp mood swings, and destructive behaviour. It is not difficult to reconcile this with Eubie Blake's description of Joplin at their meeting (see notes 4 and 5 below), other reports of his last months, or his Aeolian roll. It was a wretched end which echoed that of many black entertainers of the day whose work was confined to the half-light of the 'sporting life' districts of the United States. Another poignant example was Louis Chauvin, the brilliant black virtuoso dead before thirty and responsible for much unpublished ragtime including the first half of *Heliotrope Bouquet* - completed posthumously by Joplin, his friend and associate, and published in 1907.

2 Benjamin, R., liner notes to *Treemonisha*, New World Records CD80720-2, 2011.

3 Scott Joplin's piano roll recordings:

Uni-Record Melody			
202705	Joplin	Maple Leaf Rag	June 1916
Connorized			
10265	Joplin	Maple Leaf Rag	April 1916
10266	Joplin	Magnetic Rag	April 1916
10277	Joplin	Weeping Willow	May 1916
10278	Joplin/Scott Hayden	Something Doing	May 1916
10304	Handy	Ole Miss Rag	June 1916
10319	Joplin	Pleasant Moments	July 1916

The last item was lost until the rediscovery of a copy by New Zealand collector Robert Perry in 2006, who generously made scans available to the collecting community.

4 Blake offered various dates between 1911 and 1915 for this meeting in different interviews; Edward Berlin, Joplin's biographer, has suggested the latter as the most likely.
Berlin, E., *King of Ragtime – Scott Joplin and His Era*, OUP 1994, p 236.

5 Cited from Rose, *A., Eubie Blake*, Schirmer, New York, pp 149-50.

6 In the opinion of Arthur Marshall, Joplin's friend and co-composer, Joplin played slowly 'but exceedingly good'. Charlie Thompson, one of the great St Louis performer-composers, is cited by Berlin (ibid) as 'disdainful' of Joplin's piano playing. Joe Jordan, ragtime composer and pianist, observed that Joplin played only his own music, but well, more or less as written – although adding in another interview that his playing was like that of a 'stationary Indian'. Joseph Lamb, ragtime composer commented in the 1950s that '...his playing was smooth and decidedly effortless at any time...' Sam Patterson, black vaudevillian and entertainer, a friend of Joplin who helped with copying parts for *Treemonisha*, felt that Joplin 'never played well', while attesting to the general respect for him as a composer.

W.A. Corey, editor of the *American Musician and Art Journal*, a national circulation paper, wrote (1911):
'It takes Scott Joplin to play ragtime on the piano. There are ragtime players, but when it comes to playing in a musicianly way, Joplin is there with the goods every time ... Joplin is a wonder in his way.'

The division here seems significant. For professional performers who valued or prioritised showmanship, Joplin's playing was inadequate – Artie Matthews, rag and vaudeville composer and occasional editor/ collaborator with publisher John Stark, described how in 'cutting contests' pianists delighted in outplaying Joplin in his own music. Yet Corey speaks of him as 'musicianly' and Joplin played both for dancing and as a solo performer. Berlin, E., *op. cit.*, pp 102-4, and Montgomery, M., sleeve note to Scott Joplin – 1916, LP Biograph BLP 1006Q, 1971.

7 A recording perforator was patented for the Aeolian Company as early as 1899 by G. Howlett Davis: that year, the Liszt pupil Emil Sauer recorded three items on it. But a more comprehensive employment of the technology lay in the future; the first Metro-Art hand played rolls were advertised in 1912.

8 Aeolian cited this in trade advertising of the day, and James P. Johnson left an account of his experience at Aeolian in 1916:
'I was getting around and known in the theatrical music field. One day I got a message to go see Mr Fay* at the Aeolian Company. He wanted someone to cut ragtime piano rolls. Now, I had never cut a roll before. In fact, no Negro had ever cut his own compositions before**. Mr Fay at Aeolian set me down at a piano and I played a rag. Until he played it back at me I didn't know I had cut a roll. Later Russel Robinson, a white pianist, taught me how to run the piano roll cutter. From 1916 on, I cut one or two rolls a month of my own pieces at Aeolian. I wrote rags in every key of the scale. Every one of them had to be written out perfectly

because the manuscript of each was used for correcting the rolls, if any note wasn't punched right.'
(Davin, T.: Conversations with James P. Johnson, *Jazz Review,* various issues 1959-60, reprinted in Hasse, J.E., *Ragtime: Its History, Composers and Music*, Macmillan, London, 1985).

Although it is not explicit that the playback was immediate, this is the passage's implication; in practice, this was not encouraged. Although notes and sustaining pedal were perforated during the performance, a good deal of finishing work (elimination and correction of wrong and 'brushed' notes, editing back the sustaining pedal and adjusting related 'caught' notes for the response of the pneumatic unit) was necessary, as part of the process of creation of a stencil for the production roll perforators. A promotional film (ironically silent) for the Duo-Art reproducing piano made in London around 1920 features Vladimir de Pachmann delightedly autographing a roll apparently 'fresh off the perf'. The reality was not so simple.

*William D. Fay was a member of the travelling staff of the Universal Music Company, dedicated to music roll production – and was promoted in 1916, while also retaining his former responsibilities, to take charge of role publishing. Universal was a wholly owned subsidiary of the Aeolian Co.

**It might be noted that QRS had already recorded 'Blind' Boone in a number of selections including his own *Rag Medley* No. 2 by this time.

9 It is known that popular dance rolls produced by the Aeolian and American Piano Companies for their respective reproducing piano systems were also 'quantised', that is, arranged to a formula of a given number of punch rows (increments) per beat/bar, in order to secure completely even rhythm. C.F. Stoddard of Ampico seems to have gone to considerable lengths, even developing a dedicated stencil machine, to secure this end.

10 A number of unissued and finished or in-process reproducing rolls survive in the collection of the International Piano Archive (IPA) at Maryland, part of the University of Maryland. Eubie Blake and Billy Mayerl are among those who apparently recorded only single items for Duo-Art (Blake also for Ampico), although it might be noted that Blake was very active on the Mel-O-Dee popular label, an Aeolian subsidiary. While it seems unlikely that artists would be invited to a session to record only a single item – and some surviving documentary materials list imposing recording programmes for contracted pianists' sessions – it is the case that some classical artists are also represented by only one known roll recording. In the case of Joplin, it is very possible that beyond *Maple Leaf Rag*, a good seller nationally known, there was little other material

as commercially attractive; it is also possible that if the Uni-Record roll does reflect Joplin's pianistic condition at the time, other recordings may have been abandoned as unviable or requiring too much work to be made otherwise. Naturally, all of this remains speculative without material evidence: and at this late date, time is not on the side of new discovery.

11 The Connorized Co. made two releases to the music trade and music roll dealers at the time:
New York, 23 March 1916: 'Connorized ... has engaged the services of Scott Joplin, the well-known colored composer, who is said to be one of the best players of ragtime in the country ...'
New York, 30 March 1916: 'Connorized ... is now sending out the first records which they have secured from Scott Joplin, who is regarded as one of the finest ragtime players in this country ... Mr Joplin is considered one of the greatest exponents of ragtime ... and can play this syncopated music as only members of the negro race can. He is one of the first of the negro pianists to introduce ragtime, and his compositions are among the best ragtime melodies in this country.'
Montgomery, M., *op. cit.*

12 Arthur Marshall on Joplin, in conversation with Trebor J. Tichenor: 'That was his style.' Montgomery, M., *op. cit.*

13 Change of rotation here refers to wrist and hand movements when playing octave patterns. A famous change of rotation occurs in the trio of Chopin's Polonaise, op. 53, where the left hand octave patterns change from E-D#-C#-B to Eb-D-C-Bb, giving clockwise and anti-clockwise movements for the wrist and hand. In the present case, examples found in Joplin's rolls are Ab-C-A-C-Bb (*Maple Leaf Rag*, second strain, bars 25-6), B-A-G#-B-A-B-C (*Weeping Willow*, transition to second strain, bar 17), C-C#-D-D#-E-G-F (*Something Doing*, recap to first strain, bar 21), C-B-Bb-C-A-G#-G-F#-F (ibid, first strain, bar 13), C-C#-D-F-Eb-G-E-G-F (ibid, final strain, bar 85).

14 A number of instances of revised, dubious or incorrect music roll tempo indications have come to light; some Aeolian examples (pertaining to Duo-Art rolls) are:

Chopin: Etude, op. 25, no. 9, (Paderewski) - Duo-Art 6097, tempo 90
Tempo 80 gives a performance speed closer to the nearly contemporary Victor disc.

Verdi-Liszt: *Rigoletto* Paraphrase (Cherkassky) - Duo-Art 7130, tempo 90
The surviving pattern roll at IPA (ibid) shows tempi 80 and 85 crossed out with 90 as the final figure; the performance is not credible at the higher speed.

Chopin: Nocturne, op. 55, no. 2, (Cortot) - Duo-Art 7397, tempo 90
Tempo 60 gives a more credible speed, closer to that of the 1948 HMV disc recording, while also rather more resembling the late production style of lower paper speeds.

Chopin: Prelude, op. 28, no. 24, (Busoni) - Duo-Art 040 and D69 (part)
The first issue, 040, gives the plausible indication of tempo 90; the later Audiographic revision increases this to tempo 110, which renders it no longer credible.

It has also emerged that some of the Welte-Mignon T-100 rolls, long supposed to play at one universal speed calibrated during initial testing and set-up, were actually produced to at least two different playback speeds. The rolls do not always contain any markings to this effect.

15 It is necessarily a subjective impression, and the technical flaws in Joplin's playing remain, but this writer's recollections of thirty years ago attempting to edit a competently played but coarsely recorded roll of *Maple Leaf Rag* (tempo 70) are evoked by playing the Uni-Record roll at the lower speed. It might be illuminating to attempt to reconstruct this roll from a reliable scan of an original by removing Themodist row displacements, and re-perforating it using a playback speed high enough to correct to a finer rhythmic resolution.

16 The Scott Joplin Music Publishing Co. is known to have been in operation from at least October 1913, when Lottie Stokes, Joplin's common law wife, was signed into co-ownership of it. The 'revised excerpt' Prelude to Act III of *Treemonisha* (1913) and *Magnetic Rag* carried its imprimatur. Berlin, E., *op. cit.*, pp 223-5 and 233-5.

17 Lamb on Joplin: Montgomery, M., *op. cit.*

18 *Ole Miss Blues* by W.C. Handy, played by James P. Johnson, QRS 1834, released February 1922.

19 The *Silver Swan Rag* was discovered among piano roll acquisitions by US collector Albert Huerta in 1971, lacking its original label and box; subsequently the discovery of another intact copy provided the following information:

> Master Record 88 note [roll no.] 1239
> The Silver Swan Rag Scott Joplin
> National Music Roll Co.
> St Johnsonville, N.Y.
> New York and Chicago

The piece was previously known from an original catalogue listing of QRS 31533 dating from 1914-5; a copy of this, too, later surfaced. An identical musical arrangement was used for both rolls. The piece was transcribed to score from the roll by Donna McCluer and Richard Zimmerman,

edited and revised by William Bolcom and Vera Brodsky Lawrence, and first published in this form in Scott Joplin, *Collected Works* Vol I: Piano, ed Brodsky, Lawrence V., New York Public Library, 1971.

20 Harcourt Moto-Playo Bench: original advertisement reprinted in *Player Piano Treasury*, ed Roehl, H., Vestal Press, NY, USA.

Sources

1. Bibliography
Berlin, E., *King of Ragtime – Scott Joplin and His Era,* OUP 1994.
Hasse, J.E., *Ragtime: Its History, Composers and Music*, Macmillan, London, 1985.
Benjamin, R., liner notes to *Treemonisha,* New World Records CD80720-2, 2011.
Montgomery, M., sleevenote to *Scott Joplin – 1916*, LP Biograph BLP 1006Q, 1971.

2. Scores
Since the 1970s there have been a number of reprints of ragtime titles. In relation to the pieces referred to above, the most immediately helpful are:

Scott Joplin, *The Complete Works for Piano*, ed. Brodsky, Lawrence V., Alfred Publishing.
(current re-issue of Scott Joplin, *Collected Works,* Volume I, ibid, out of print).
Scott Joplin, *Complete Piano Rags*, ed. Jasen, D., Dover.
Scott Joplin, *Complete Piano Rags*, introduction by Morath, M., Schirmer.
Classic Piano Rags, ed. Blesh, R., Dover (out of print).
Fifty Classic Piano Rags, ed. Blesh, R., Dover.
None of the above volumes contains W.C. Handy's *Ole Miss Rag*. I am indebted to Marc-André Hamelin for providing a copy of this score.

3. Piano Rolls
Versions of the five then extant Connorized/Joplin rolls featured in the QRS catalogue from the late 1970's, though it should be noted that QRS 9725 was a 'swung' (ie, 12/8) arrangement of the Connorized *Maple Leaf Rag* dating from the Lawrence Cook era; only in the QRS 'centenary' series of reissues produced by Bob Berkman in 1999 was this roll restored by a new mastering to its correct rhythm. The other four showed various transfer effects and defects: a number of smaller details were varied, omitted or 'corrected' while *Weeping Willow* was transposed down by a tone.

BluesTone, the specialist re-cut label run by Rob DeLand, issued quality re-cuts of the six then extant Joplin rolls: at the time of writing production has recommenced after a break. Finally, *Pleasant Moments,* rediscovered in 2006 as described above, was re-cut in a limited run by Bob Billings, USA, thanks to the generosity of New Zealand collector, Robert Perry, who acquired the original.

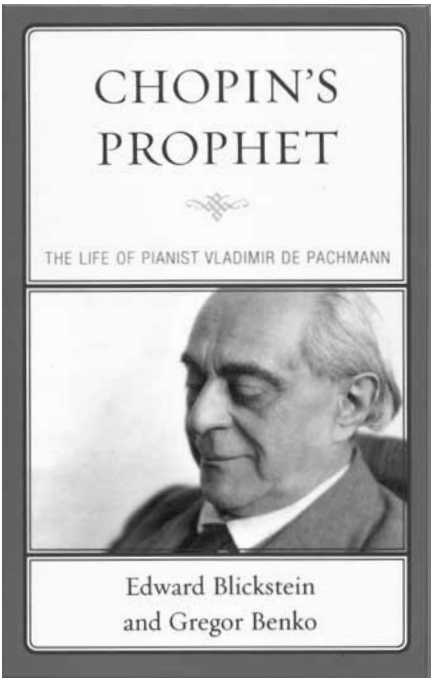
4. Sound Recordings
   A sound recording of all of the rolls referred to in this article has been attempted only once, on Biograph LP BLP 1006Q, released in 1971. It contained the six then extant Joplin rolls with a B side of rags by Bowman, Hampton, Scott and others from contemporary Connorized rolls played by William Arlington and William Axtmann and has not, as such, been reissued as a CD. Three of these sound recordings of Joplin's Connorized rolls (*Maple Leaf Rag, Something Doing* and *Weeping Willow*) later appeared, with a number of other (Biograph) piano roll transfers and vintage sound recordings by other performers including Ossman, van Epps, Arndt and Moskovitz, in *Scott Joplin and the Kings of Ragtime*, Retro R2CD 40-13. The same three rolls in digital recordings of later playbacks appeared as part of *The Greatest Ragtime of the Century*, Biograph BCD 103.

   YouTube is a potential resource, although many execrable instruments and playbacks are offered. The playback of the roll of *Pleasant Moments* by Worn Axles is indeed a pleasant interlude among them.

In the writing of this article I have been indebted to Bob Berkman, Rob DeLand, Denis Hall, Marc-André Hamelin, Jan Hoare, Rex Lawson and Sue Walsh for copies of, or access to, rare materials, technical guidance and information, and friendship and counsel.

Review:

Chopin's Prophet - The Life of Pianist Vladimir de Pachmann.
Edward Blickstein and Gregor Benko, Scarecrow Press, 2013.
Denis Hall



At last! A thoroughly researched, sympathetic yet well balanced biography of that most fascinating of the 19th century piano virtuosi, Vladimir de Pachmann. Edward Blickstein writes that he was introduced to Pachmann by his teacher, George Halprin, in 1950, and in the intervening years has, after initially being intrigued, came to love and admire Pachmann's playing, and has had time to acquire a long term appreciation of its strengths and weaknesses.

The material which Blickstein has managed to unearth is astounding, going right back to Pachmann's earliest days in mid 19th-century Russia, through his often demanding tours in both Europe and America, to his final years in the 1920s. The fact that Pachmann on stage was rather more than just a pianist meant that he was always good 'copy', both to reporters and critics. Blickstein seems to have included just about all the material he could lay hands on, to great effect, enabling the reader to form a very fair impression of the pianist, and particularly his qualities as a Chopin player, on which his reputation largely rests. One tended to think that Pachmann only became, one might say, mentally unbalanced in later years, yet it seems that he could behave quite outrageously throughout his whole life. But it was when he sat down at the piano that his extraordinary gift of producing the most wonderful effects took over, and his audiences were drawn under his spell. For many, this was enough. For others, there was something missing - perhaps the intellectual depth needed to do justice to larger compositions. A recital which he gave in Manchester in 1925, when he was 77, was reviewed by The Manchester Guardian music critic, Samuel Langford. Langford was as perceptive a judge as I have encountered, and his review details one superlative after another - but with the proviso that 'Pachmann has always been unquestionably among

the greatest pianists in the world; yet hardly among the world's greatest interpreters of music.' This sums up Pachmann's genius as succinctly as anyone could wish.

Blickstein and Benko have, between them, produced a biography which draws as sympathetic a picture as even Pachmann himself would have appreciated. Without the benefit of adequate sound recordings, one can still sense what it was that audiences flocked to listen to and enjoy, even when Pachmann was a quaint and senile shadow of the person he had once been.

Blickstein wisely does not make judgement as to whether Pachmann was fully aware of the antics he indulged in at his concerts. Did he perpetrate them as a means of increasing his popularity with his loyal audiences, or were they an aspect of his eccentricity, probably a form of autism? Was he genuinely unaware of what he was doing? In any event, it was with his playing, where he developed an extreme delicacy of touch, that he was able to woo his public with the most beautiful sounds from his piano which, for much of his later career, was a Baldwin.

Pachmann's concert career started around 1870, at the time when the piano as we know it today was more or less fully developed. The days of the fortepiano were over, and Erard's grand action, together with the iron frame and overstringing, produced an instrument on which Pachmann could develop his famed pianissimo touch. In his early days, his repertoire was quite large, and included such works as the Schumann Fantasy and the Liszt Sonata, although one composer whose music he failed with was Beethoven. As time went on, his programmes tended towards a series of smaller pieces, giving him greater opportunity to talk to his audiences before, after, and even during each piece! His tours took in the New World, Europe and Britain. He was particularly fond of the English!

In the days before flying, it is hard to contemplate the amount of travel artists such as Pachmann undertook, and it is hardly surprising that the stress of living for long periods in hotel rooms and on trains must have been thoroughly exhausting. Pachmann's drive to have a big public career seems to have sustained him right into his very old age. By the 1920s, when several generations of younger pianists, playing in styles completely foreign to nineteenth century artists, were in vogue, one would have thought that Pachmann's days would be over. Yet, in spite of - or actually because of - his antics and clowning on stage, he continued to play and be admired by many serious and discriminating musicians and critics.

Pachmann, it seems, was not really interested in the playing of his fellow pianists. There was, however, one exception - Leopold Godowsky, and strangely, the admiration was reciprocated. Listening to the recordings of the two pianists today, one can hardly conceive that Godowsky, the master of the most elaborate piano writing, would have had time for the clown, Pachmann.

I think it must have been the fact that both pianists held the production of a beautiful sound from the piano to be their ultimate goal, to the subordination of just about every other characteristic of technique. Sadly, both artists lived at a time before recording could do justice to the subtleties of their art. We are, however, fortunate in having just a glimpse of what audiences must have wondered at. Godowsky recorded two Schubert song transcriptions for Brunswick in 1926 (50133 - CD reissue Marston 53008-2), and these must rank as being among the most perfect demonstrations of tone colouring anywhere. Pachmann's 1927 recording for HMV of Chopin's Nocturne Op 72/1 (DB1106 - CD reissue Marston 54003-2), while quite different, nonetheless does show that even at that late stage in his career, he could still give an absolutely magical performance.

Pachmann made a large number of gramophone records, and also three sets of reproducing piano rolls. Fortunately we are able to hear all the discs in good transfers in a boxed set recently issued by Marston (54003-2). Edward Blickstein has written commentaries to go with the CDs, and these are largely the same as in the book under review. His opinion is that the earliest recordings, from 1907, are musically the best, with a gradual deterioration over the years, in which a falling off of technique, combined with Pachmann's eccentricities intruding more, can be observed as the recording quality slowly improved. But there are still the exceptions by way of the old magic being apparent. It seems that Pachmann's Baldwin piano was used in the few electrical recordings, but its tone quality did not suit the rather primitive microphone which HMV used, thus denying us the opportunity of savouring the beautiful tone quality for which he was renowned - apart from the one side mentioned above.

Pachmann made three series of piano rolls - the first for Welte-Mignon in Germany in 1906, which therefore pre-date his earliest discs, the second for Duo-Art around 1920, and the third, again for Welte, but in America, in the mid 1920s. Of these, the Duo-Arts are not successful, but both the Welte series contain important performances, and can be reproduced convincingly, given a first-class piano. It is a great pity that the authors write off all the rolls in just a short paragraph. Benko has at times been enthusiastic about reproducing rolls. Perhaps something has happened to make him change his mind. I have no way of knowing Blickstein's experience of reproducing pianos, although he does include two roll recordings in the Marston box. It is ironic that it is the photograph of Pachmann in the London studios of the Aeolian Company, recording his Duo-Art rolls, which Marston has chosen for the front of his CD box of disc records!

Pachmann was an extraordinary character. He could only have had such a long and successful career in more open-minded and less Urtext-conscious times. For quite some years, he has not been taken seriously by present day

musicians - that is if they had actually even heard of him! At the time when performing practice, i.e., an interest and study into styles of playing of earlier generations, is becoming fashionable, it is fortunate that this excellent biography has been published, and the gramophone records reissued. Pachmann's playing may not fit our ideas of interpretative style, but it may not be a bad thing to encourage students and academics to reconsider their previously held convictions.

Contributors

Francis Bowdery became interested in player and reproducing pianos while still at school. He has researched and re-scored historic compositions for both types of instrument, and prepared new music rolls of a number of these, ranging from Stravinsky to Ligeti, for both concerts and recordings. His parallel interest in historic piano recordings and performance style embraces both piano roll and gramophone recordings, and greatly influences his work as a musical instrument restorer.

Denis Hall has been interested in recordings of pianists since his schooldays, when he could buy new 78 rpm records of his keyboard heroes. He first became aware of reproducing pianos in the early 1960s, and bought his first Duo-Art in 1965. These days he spends much of his time in retirement maintaining his own reproducing pianos in a condition which he hopes does justice to the virtuosi of 100 years ago who entrusted their art to the piano roll medium.

Rex Lawson is a concert pianolist who has been involved in research and music making with these instruments since 1974. He has travelled with his pianola to the USA, Canada and many European countries, transporting it by plane, ship, car and even, in 1986, by gondola in Venice. He has made a special study of music written for the pianola, by the hundred or so composers who have been interested in its possibilities during the course of the twentieth century. World premieres in which he has played include *Nancarrow Concerto* for Pianola by Paul Usher (2004), *Airplane Cantata* for chorus and pianola by Gabriel Jackson (2011) and Stravinsky's *Les Noces* in the newly completed 1919 version (2013).