

## From the Editors' Desk

As I write this the first volume of our journal comes to an end. Where has the time gone? This first volume has been notable for some very varied and erudite contributions and, as editors, we thank all contributors wholeheartedly for their efforts. Thanks to you we have an abundance of material to choose from and we really appreciate this happy position (which by the way does not mean that the rest of you can just sit back! You each will have something unique to contribute – please write it up and send it to us). In looking over the eight publications what also strikes me is the outstanding quality of the front covers and inside illustrations. Thanks to Chris Fynes we have clear and beautiful pictures – he really provides the star quality we all aim for. We are a very fortunate association to have such talent at our disposal.

This issue appears to have become the Aeolian issue. The Company was a past master at promoting its business by shrewd 'take-overs' of useful partners/rivals, so it is not perhaps inappropriate to allow it a 'take-over' of this issue!

In their letter to the Editors, Richard Kerridge and Keith Hilson lament the lack of interest in mechanical music currently among the public. Many of us were fortunate enough to have our interest piqued when on holiday in Cornwall. The West Cornwall Museum of Mechanical Music was a most delightful and informative place to visit and many people, including ourselves, were dismayed when it closed. Douglas Berryman is an extremely knowledgeable and experienced collector and we thank him for his input on the subject of Orchestrelles.

In Fig 9 of Juliet Fynes' recollections of the Aeolian site at Hayes there is a picture of the last remaining building.

We wondered what its current use is - it appears it is now a Grade 2 listed building, sadly run down and with only one business tenant in a small part of it, but there is a possibility of it becoming luxury apartments in the future. If so, perhaps one of the new occupants might just want one of Aeolian's instruments, for old times' sake? Juliet also mentions Alan Blumlein as the inventor of stereo recording. Years ago Alan had a record shop in Petersfield. We were doing some recording in the parish church when he happened across us and noticed we were using his crossed microphone stereo technique, which seemed to amuse him greatly.

We are delighted to welcome Fred the Head back again. We are hoping that he will show us his innards in detail at some point, so that we need not re-invent the wheel, or camshaft, as it were. Technical drawings would be a great help please!

As we go to press, we have just received the latest of Q David Bowers' massive tomes - the Encyclopedia of Disc Music Boxes. We turned immediately to the section on E Paillard & Cie in Chapter 24. Unfortunately Bowers did not have the opportunity to consult Paul Bellamy's important work on the subject, so we have no mention of Caroline Paillard & Cie and M J Paillard of New York was apparently unrelated to the St Croix family. It is, however, a most impressive volume and an important addition and we hope to review it in the next issue.

At last the long winter would appear to have given place to Spring, so thank you to all our contributors to this issue, and we hope to see as many members and instruments as possible at the AGM on a sunny day in June.

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## Chairman's Report

We are now on our 8<sup>th</sup> journal, enough to fill a binder. I have some second hand ones at £3 + P&P. Please give me a call if you are interested.

We are slowly expanding our membership but need you, as members, to give it a push. I was talking to Judy Caletti, the American MBSI President, and we are both looking at ways to attract more members. We seem to have lost a generation, and our children are more interested in the value of our collections than the sounds they produce. Our grandchildren, however, seem to have our excitement, commitment and thirst for knowledge about the collections we have. You, as members, have got our Association where it is today and I thank you all for that. Remember, friends can always try us out, and the only thing we need is to see that they enjoy it and want to return. I think we have the right mix of content in our periodical, but please tell us if we are wrong.

On a sad note we have lost three friends in the mechanical music world. Mick Doswell, of the Rye Treasury Museum, who died after a short illness, will be remembered by the Chanctonbury Ring group as an avid collector of mechanical music, fairground ephemera and porcelain. Siegfried Wendel, the owner of the Rudesheim Museum in Germany, died in October 2016. His museum is known throughout the world by most people travelling up the Rhine. Having started his first museum in 1969, he moved to Rudesheim in 1975 to an old winery where the museum is still situated. The workshop is run by his son Jens, who makes singing birds in cages and small bird boxes. The third member was Olin Tillotson of Canada, about whom our Vice-Chairman will write further in the journal.

Our next meeting will be the A.G.M. and Organ Grind, which will be held at the Old School in Sussex, on Sunday 4<sup>th</sup> June. If you have any questions please send them in and if you wish to bring an organ, organette or barrel piano, please let me know. We look forward to seeing (and hearing) you and friends here.

Ted Brown

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### From the Deputy-Chairman

Most UK members will not have heard of Olin Tillotson who passed away on February 10<sup>th</sup> 2017. Olin was a member of standing in the Musical Box Society International (MBSI). His main interest was in early musical boxes. He loved the music they played, tried to identify tunes when a tune sheet was missing and studied the history of the people who made them.

He helped me in my research for my two books, *The Nicole Factor in Mechanical Music* and *The Music Makers of Switzerland*, by sharing some of that knowledge with me. He invited me to his home just across the US border into Canada just after the MBSI Seattle meeting in 2006. I shall always be indebted to his generosity of spirit and the help he gave me.

I believe he spent some early years in England working for Dolmetsch, a noted maker of recorders, who promoted the use of the instrument to encourage youngsters and school children in a 'hands on' approach to the study and appreciation of music.

PB.

## Meeting report

### Herophons and Musical Box maker HL MG?

Both these items aroused considerable interest at our AMBC meeting, 26<sup>th</sup> Feb. 2017 at the Old School. AMBC does not have a mission statement but if it did there could be no better example than that of the British Broadcasting Corporation (BBC): 'To enrich people's lives with programmes and services that inform educate and entertain.' That would be a fair assessment of the potentially oversubscribed meeting at the Old School. Seasonal afflictions resulting in last minute cancellations meant that there was just sufficient accommodation. Fig. 1 shows some of the more familiar faces with new member Suwan Rogers on the right.

The main theme (programme) of the day was a continuation of our study of the organette, the various makers, types, sizes and, of course, the music, plus contributions of other items by members. The Herophon aroused particular interest. Fig. 2 shows the instrument with its decorative lithograph that sits below a square aperture in which a square disc sits. The aperture retains the musical programme, which consists of a punched card that remains stationary whilst the playing mechanism rotates. This is completely opposite to other disc-playing organettes. Note the short legs on the case that makes it difficult to operate the hand-crank, which is too long and obstructs the table. Thus, the case has to overhang a table but the maker did supply an optional stand. (*Of course, and you were supposed to buy it! – ed*)

The discs are nominally 13 inches square, Fig 3, with logos in each corner and the names of the tunes in the centre together with patent numbers in various countries such as America, England, France, Austria, Germany. Under the French patent (the term is Brevet) are the letters S.G.D.G. These stand for *Sans Garantie Du Gouvernement*, which means that the government did not guarantee the performance of the patent. The first German patent was 1883. Subsequent improvements to the mechanism gave rise to more patents.

The instrument has 24 brass reeds, the case has a large flap to allow for 'soft' and 'loud' play, (classed as a *Forte & Piano* model) that is rather ineffective in operation because of the way the mechanism rotates. Stamped on the bottom of the case is a date for 18<sup>th</sup> August 1888. The discs have metal strips clamped on each of the four edges with punch marks struck at the ends. The pressure bar is detachable and stamped with the number 3, the significance of which is uncertain. What has been confirmed is that each Herophon pressure bar (the bar that holds the rotating mechanism hard against the stationary disc) is unique to the instrument and not interchangeable

with models of the same size.

There were eight different Herophon models. They differ from most other organettes because the discs are square and stationary while the operating mechanism rotates. They are pressure-operated instruments with brass reeds but steel reeds were an optional extra on some models. A pair of bellows pump air into the pressure chamber, also fitted with a bellows that inflates against the action of a spring. The handle that operates the bellows also rotates the pressure bar and reed-operating assembly, which sits on a leather gasket to minimise loss of air pressure as the assembly rotates.

The history of this company has been differently described in works such as those by Ord-Hume and Q. David Bowers, but is now known to have been made by Ch. (Charles) F. Pietschmann & Sohne of Berlin. This was a company making non-self-playing musical instruments as long ago as 1835. By 1896 the company was known as Berlin Musical Instruments Manufacturing. Pietschmann went bankrupt and Heinrich Hermann acquired the company, which he subsequently sold in March 1904 to Euphonika Musikwerke, of Leipzig, Germany.

As with many instrument makers, patent infringement and litigation were rife. This applied to a court action between the maker of the Ariston, Paul Ehrlich, and Pietschmann. Ariston won and the Herophons were thereafter sold under licence by the Leipzig Musical Instrument Manufacturing Co. Thus it seems that some sort of manufacturing accommodation occurred allowing the models to continue to be made and sold.

The exact nature of the patent infringement is not known except to say that the rotating Ariston discs were the same diameter and scale as the sides of the Herophon discs. There are eight different models and three different sizes of discs. Also, there were two basic sets of reeds, 18 and 24 but for some models the reeds were configured in pairs to give, for example, *voix celeste* and *contra bass*.

During the demonstration discs were passed around the audience for inspection and one member noticed something not seen before, Fig 4. It had the logo for Charles Ullmann in two corners, comprising a griffin holding a shield inscribed Ch. U. He was thought to be a German speaking Swiss. Charles and his brother Jaques lived in Paris and set up business in 1881 as musical instrument dealers at Faubourg Poissonière 11. Each of the two other corners, Fig 5, have the Herophon logo with a reference to an un-numbered French patent plus Ch. U on one side and P&S on the other, the latter standing for Pietschmann & Sohne. The fact that the cards were printed including the logos indicates that Ullmann was acting as a *bona fide*

*Mechanical Music World*



agent. Other discs did not have any reference to Ulmann so presumably were sold in other ways.

(Ed: Our Herophon, a top-of-the-range Excelsior IV (Fig. 7) with 24 steel reed notes and extra bass, comes with discs that are slightly different. The corners are marked Herophon and 'Fabrik Marke', but no reference to the French patent, PS or Ch.U anywhere. On the majority, two of the corners have the Herophon mark and two have just the Fabrik Marke and a curved blank area perhaps for an agent to place his name (Fig. 8). Three have medallions for Emperor Napoleon III's 'Exposition Universelle de 1855', at which Herophon could not possibly have exhibited but Pietschmann & Sohne could have, and one for the Internationale Koloniale en Uitvoerverhandel Tentoonstelling (Dutch Colonial and Export Exhibition) held in Amsterdam in 1883, where they could well have done. See Figs 9 and 10. The obverse is marked for King Willem III of the Netherlands. A few of our discs are stamped by a Viennese music publisher/agent 'V Kratochwill's Filiale, Wien XVIII, Währing-Weinhauserstr. 18', whose stamp is much too large to fit in the curved area provided.)

The other item that roused interest was a beautiful snuff-box complete with its curved inner translucent cover, Fig. 6. It was slightly unusual by having a composition body with elaborate decoration to the lid. The cover had a fine inlaid plaque of turtle shell (called tortoiseshell) surrounded by an elaborate gold frame with gold inlaid border. The maker would have been unknown and that may remain the case except for the letters stamped on the surface of the smooth brass bedplate, barely visible to the naked eye because of the inner cover. The letters were HL MG, the stem of the H forming the upright of the L. It is now thought that HL is for Henri-Joseph Lecoultre and that the letters MG were for a Golay, possibly his mother.

(Ed: As with all our articles, we ask members who have similar instruments to contact us with whatever extra information they can provide. It is one way that members can collaborate and it helps to expand our knowledge of The Music Makers).



Fig. 7 - Excelsior Herophon



Fig 9. Exposition Universelle 1855 medallion

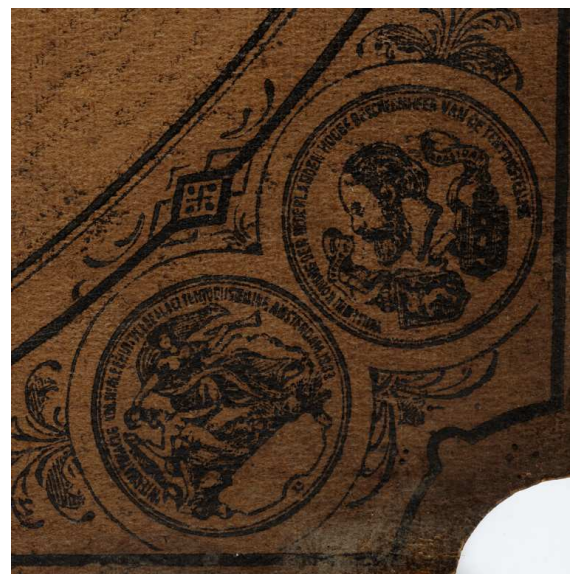


Fig 10. Dutch Colonial and Export Exhibition 1883

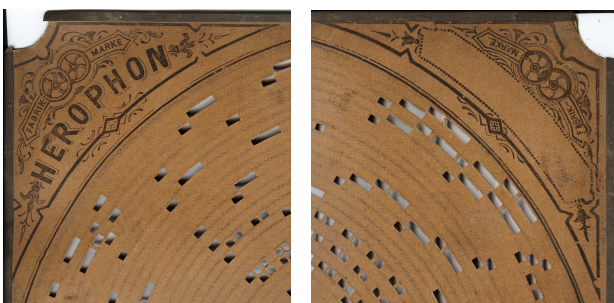


Fig 8. Disc corners

## A musical box signed Alder

by Jean-Marc Lebout.

First published in 'Musiques Mécaniques Vivantes' MMV 92 Autumn 2014

(Translation by Paul Bellamy)

The story about musical box makers is expanded by the discovery of a name that has not previously been reported in literature on this subject. It was discovered in a Brussels antique shop.

In isolation, the construction of this cartel musical box is not exceptional except for the name stamped on the comb. When discovered, it was so dirty that the name, in well-defined letters, was difficult to read. It was the first piece of concrete evidence to be revealed after lightly cleaning the comb, as seen using a good magnifying glass. The name ALDER, in capital letters, was clearly visible. I searched my memory but could not recall anyone of this name. Without hesitation, I negotiated a price and bought it.

Studying the standard works of Ord-Hume, Jean-Claude Piguët, Ruud Maes, etc, confirmed my first thoughts that there were no previous references. It is therefore truly a rarity. The revelation began thanks to my Swiss friend, Jean-Marc Cerutti. He had knowledge of a document in the Geneva archives dedicated exclusively to musical boxes.

This background by Pierre Germain, a Belgian, who had spent his entire career in the CERN project in Geneva, was intended for a book that never saw the light of day. The inventory contained a folder entitled 'Alder'. Jean-Marc Cerutti obtained a copy that comprised only three small sheets of paper. They were a legal document for 1876 and two publicity inserts, plus annotated comments written by Pierre. What could be learnt from them?

Ferdinand Alder was born in Küssnacht, a Canton of Zurich, about 1827. He was the son of Gaspard Alder and Anne Fierz. He was married in Geneva on the 25th April 1854 to Cléphanie Isler. They had two sons.

Fig. 1 illustrates the official letter prepared under the Act of 1876. It is the registration of a Geneva commercial tribunal for the act of dissolution of the Company formed by Ferdinand Alder, mechanic, and David Rivenc Paquet, spring maker. Rivenc is named as the liquidator of the said activity. The registration states that the assets were freed but that the dues of each party were to be made the object of a later settlement. Fig. 1a shows the actual signatures as 'Ferd. Alder, Rivenc David' in elaborate script. Fig. 1b shows Rivenc's name at the start of the text slightly differently and unexplained as M (Monsieur) David Rivenc Paquet. A pencilled note by Piguët, by way of comment is 'David = (jeu, ?) d'ami ?' This seems to indicate the possibility of a family relationship with Ami Rivenc.

Fig. 2 shows the first of two dated adverts, which quote an Honourable Mention at the L'Exposition Universelle (Universal Exhibition), Paris, in 1878. It also mentions participation in the earlier Paris Exhibition of 1863 and the Vienna Exhibition of 1873, as well as two others in

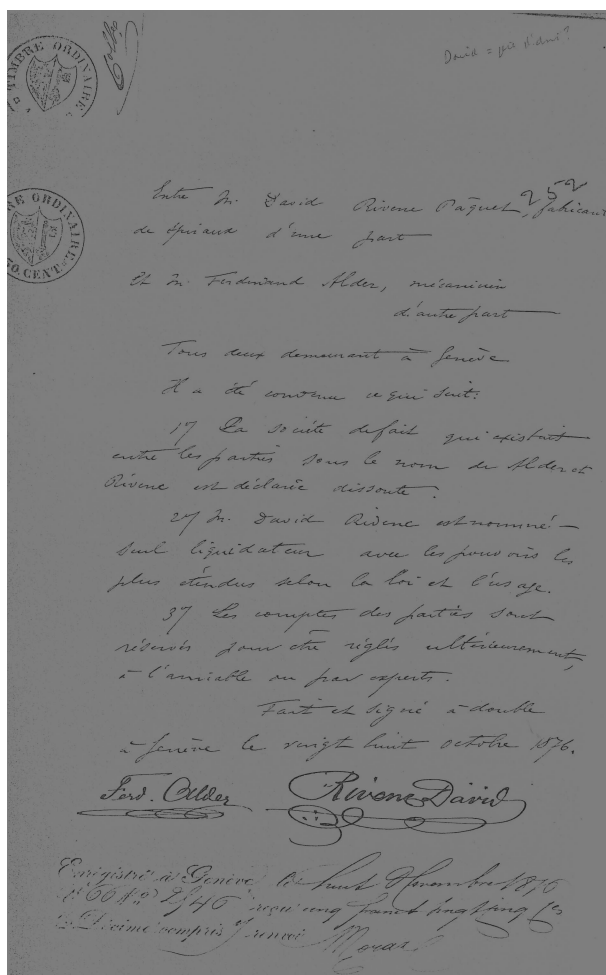


Fig. 1: Letter of dissolution between Ferdinand Alder and David Rivenc.

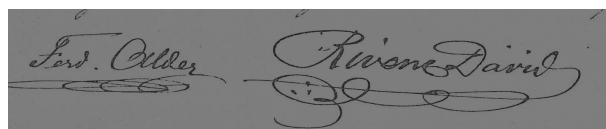


Fig. 1a: Close up of the signatures to the letter, Fig. 1.

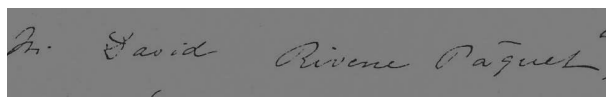


Fig. 1b: Close up of the name of Rivenc referred to in the letter, Fig. 1.

Switzerland. All these awards won prizes. Ferdinand Alder presents himself as a mechanic, a horological machine and tool maker, a jeweller and a maker of musical boxes. It is difficult to imagine such a precise and diverse description of activities.

Fig. 3 shows the second of the two adverts. It appeared in the Swiss Horological Society Journal in July 1892. It shows that his work at this date is in part realised by the help of his sons. He in fact mentions the foundation date of his business as 1854, the date of his marriage and, without doubt, when he set up business in Geneva.

In the *Feuille officielle suisse du commerce* (FOSC, the official Swiss Commercial Paper) of 16<sup>th</sup> April 1891, Ferdinand Alder is mentioned as the head of the *Maison Ferdinand Alder*, trading as a mechanic with workshops at 3 rue de la Pépinière. The location is very near to the station in the upper part of Geneva. Note also that the two adverts curiously do not mention addresses.

**Description of the movement**

In accordance with a classification proposed by Etienne Blyelle, the cartel movement was made in the third quarter of the musical box making era. Details of the musical box are as follows:

- Cast iron bedplate with three integral legs. Lever wound spring motor mounted on the left and fitted by screws from underneath the bedplate. Governor on the right. Stop/start and tune change levers mounted in a small compartment on the right. There is no instant stop lever (mostly associated with pre-1860 key-wind movements). The bedplate is stamped with the letters IPR\*.
- Brass cylinder 28cm (11 inches) long, 7cm (2¾ inches) diameter.
- Single-piece comb with 104 teeth located by two visible dowels and 9 screws with washers.
- Case in painted faux-wood finish (scumble), 19x20x13cms. The lid is finished with fine marquetry inlay of bird birds and has triple boxwood stringing, a sign of quality.
- Glass interior lid with lifter.
- Serial number 1135 stamped at the back left side of the bedplate and repeated in ink written on the underside of the case.

\*\* Note: IPR was recorded in The Music Makers of Switzerland, page 234. Jean-Marc has provided further examples of his mark that may lead to more information being published in a later Issue of Mechanical Music World.

EXPOSITION DE PARIS 1867 Médaille de Bronze	EXPOSITION UNIVERSELLE DE PARIS 1878 Mention honorable	EXPOSITION DE VIENNE 1873 Médaille de 1 <sup>re</sup> Classe
Grande médaille d'argent 1876 Participation au prix DE LA RIVE		Médaille d'argent 1 <sup>re</sup> Classe 1875 de la SOCIÉTÉ DES ARTS DE GENÈVE
Brevets d'invention	<b>Ferd. ALDER</b>	Brevets d'invention
MACHINES & OUTILS EN TOUS GENRES	MÉCANICIEN GENÈVE	MACHINES & OUTILS EN TOUS GENRES
Outils pour l'horlogerie, la bijouterie et les pièces à musique. — Machines à mouvement automatique, à diviser en lignes droites et circulaires, à tailler, fraiser, raboter, mortaiser, graver, sculpter, adoucir et moëser. — Limeuses. — Presses. — Laminiers en tous genres. — Balanciers-découpoirs. — Tours pour filer. — Tours pour tourner ovale et d'amateurs. — Machine automatique pour retailer les meules de moulin. — Taillage des fraises et engrenages en toutes formes et grandeurs. — Instruments de précision à mesurer les épaisseurs, etc. Petits moteurs à vapeur de tous systèmes.		

Fig. 2: An advert for Alder.

18 JOURNAL SUISSE D'HORLOGERIE -- JUILLET 1892	
MÉCANICIENS-CONSTRUCTEURS 791 <b>F. ALDER &amp; SES FILS</b> Maison fondée en 1854 GENÈVE Maison fondée en 1854 Outils pour l'horlogerie, la bijouterie, les pièces à musique. Machines à mouvement automatique pour toutes industries. Balanciers et tours à filer. Taillage en toutes formes et grandeurs. Instruments de précision. — Récompensés aux Expositions.	FABRIQUE D'HORLOGERIE <b>LOUIS GOERIN</b> CHAUX-DE-FONDS (Suisse) COMMISSION. EXPORTATIC
FABRIQUE DE VERRES DE MONTRES en tous genres Ancienne Maison LATOIX & BASTARD <b>J. BASTARD &amp; REDARD</b> 21, QUAI DES BERGUES, 21 A GENÈVE 007	FABRIQUE de PAILLONS OR, ARGENT, PLA pour décorer l'émail EXPORTATION EXPORTATI <b>S. DALPHIN</b> 11, r. Chantepeulet - GENÈVE - r. Chantepe PAILLONS ÉMALLÉS Imitation pierres BREVET EN FRANCE BREVET EN (S. G. D. G.) (N. 14)
Ressorts-Timbres garantis très sonores <b>J. ALBERT FIGUET</b> LOCLE (Suisse) Ressorts-timbres depuis 7 lignes. Embottages soignés, simples et compliqués en tous genres et qualités. Tirages simples, à ressort et incrustés. Grande variété de mise à l'heure intérieures et extérieures. Spécialité d'embottages chronographe au pendant savonnelette. Poussettes ovales et carrées interchangeables. Secrets couronnes, etc Procédés mécaniques 764	MÉDAILLE D'ARGENT Paris 1890. - Exposition internationale. - Paris FABRIQUE D'HORLOGERIE GARA <b>RODOLPHE HEGER</b> CHAUX-DE-FONDS (Suisse) MONTRES OR, ARGENT, MÉ en tous genres et toutes grandeurs Spéc. de pièces fantaisie émail, peinture, jeu Pièces compliq., Répétitions, Chronographe Bulletin d'observatoire
SPIRAUX TREMPÉS & ANTIMAGNÉTIQUE <b>G. SANDOZ</b> 42, MONTBRILLANT - GENÈVE - MONTBRILLANT, 42	
Spiraux trempés, plats, cylindriques et sphériques pour horlogerie de précision Seul fabricant des spiraux antimagnétiques « MANGOUR », métal breveté de l'Usir Dégrossissage d'or de Genève. — Sur 42 chronomètres munis de spiraux acier trempé, et plus concours chronométrique de Genève de 1889, 40 pièces, parmi lesquelles les trois premiers prix été réglées avec des spiraux G. Sandoz. Deux chronomètres seuls, n'ayant obtenu que des mentions, étaient munis de spiraux trempés d'autres fabricants.	
<b>L. MARILLIER-DENZLER</b> NEUVEVILLE (Suisse) Fabrique de montres à seconde au centre et quantième, calibres riches, brevetés.	Mention honorable, Exposition univ. Paris <b>ALF. GROSJEAN</b> 3, Charrière, 3, CHAUX-DE-FOND FABRIQUE DE MONTRES À REMONTÉ de tous genres et pour tous pays

Fig. 3: An advert for Alder in the Swiss Horological Society Journal, 1892

**Tunes:** There is no tune sheet for the twelve airs at two-per-turn.

**Commentary:** I date the movement between 1860 and 1870, the dates for the tunes accord with this period. Although the cylinder diameter is standard for one-tune-per turn, having two-per-turn gives the customer more choice at modest cost. In fact, Nicole Frères also made a number of two-per-turn musical boxes during this time with similar diameter (8cm) cylinders. Each Alder air lasts 50 seconds whereas Nicole airs last 60 seconds. The musical arrangements are in good order but no research has been done to identify them. The comb plays well and the sound is good with the lid open or closed.

Etienne Blyelle once said, if I recollect correctly: *If I see something only once in fifty years it must be an exceptionally rare instrument.* I still haven't had such an experience as a collector! I decided to question the Seewen Museum\*, which is reputed to have a vast collection of rare cartels. I also contacted Arthur Cunliffe in England who has compiled over many years a register of about 10,000 musical boxes. Alder is



Fig. 4: The fine decoration of the lid of the Alder musical box

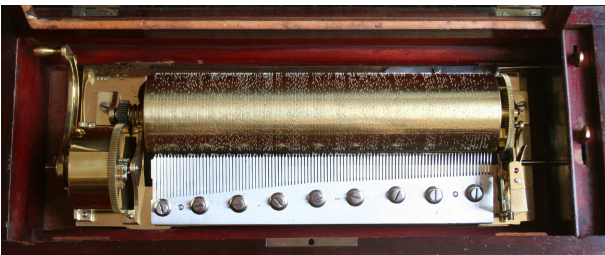


Fig. 5: A view of the movement.

not recorded by either of them.

\*Note: *Das Museum für Musikautomaten*, A very fine museum in Seewen, located the Northwest Confederation of Switzerland.

The serial number 1135 suggests that not many were produced. The numbers are very likely to be just over one thousand. I can reasonably assert that that his production sales were not a great commercial success and that Alder did not pursue this line of production for very long.

Did he make this production alone or in association with someone? The Act of Dissolution at the beginning of this article did not specifically state musical box activity. The question remains unanswered for the moment.



Fig. 6a: A close-up view of the name ALDER stamped on the comb.

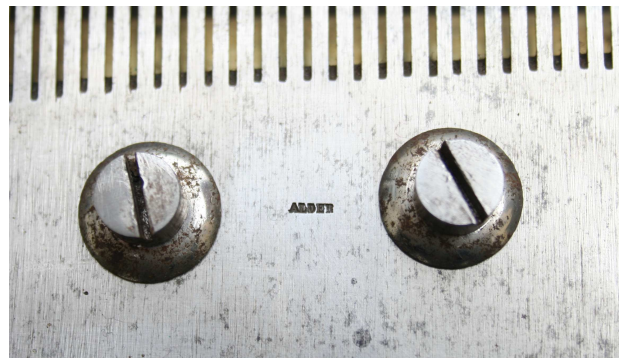


Fig. 6: A view of the comb.

Fig. 4 illustrates the nice decoration on the lid of the box. It comprises two birds, possibly symbolising romance.

Fig. 5 shows the movement. It is a tight fit in the case that is precisely the same dimensions as the bedplate. It is not very easy to operate the control levers. Whereas key-wind movements had tighter fitting cases, because the winding key and controls took up less space, lever-wind examples have to be larger.

Fig. 6 shows the name of the maker, ALDER, clearly stamped on the comb. Fig 6a is an enlarged version.

*Postscript: A name or a symbol stamped on a comb implies some authenticity because it must be applied before the comb is hardened, otherwise the comb would damage the punch. In effect, when the comb is hardened, it is more brittle and resists the impact of the punch. If the names and serial numbers stamped on brass bedplates by makers such as Nicole Frères, Ducommun-Girod, Henri Méttert, etc, are those of makers there are other such marks that must be considered as being applied by those acting as agents, such as Malignon, Alliez et Berguer, etc. Unfortunately, I have seen stamps added in modern times deliberately to deceive the uninformed buyer.*



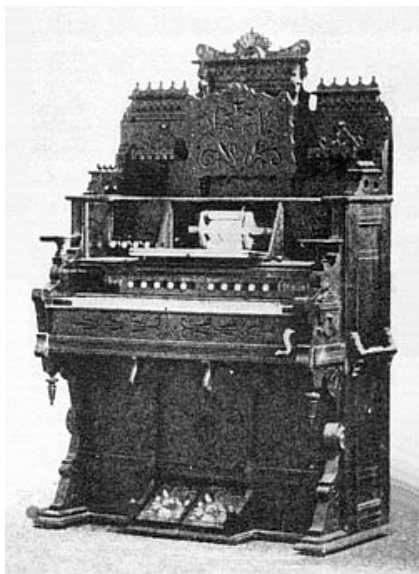
## The Aeolian Orchestrelle – the Home Orchestra

by the Editors

As Orchestrelle owners we never cease to be amazed at the variety of sounds at our command. The selection of reed banks can create an astonishingly different interpretation of the music on the roll – indeed, it is quite difficult to play a piece twice to sound the same without making detailed notes on the registration.

The Orchestrelle had evolved from the humble (by comparison) organette. These little instruments had sold well but as they became more established their restricted musical range became more apparent. The simple scale of fourteen or so notes was only enough for the simplest of tunes, shared as they had to be between the melody and a few lower and non-consecutive notes in the bass region for accompaniment. Even the largest of them still left the musically inclined wishing for more, and the race was on to produce a roll-operated organ with a greater range of notes which could also be a piece of furniture in its own right.

John McTammany claimed to be the first to have realised a roll-playing American organ. He used an organ made by the Taber Organ Co of Worcester, Massachusetts, and the roll mechanism was very simple. In Picture 1 a small crank handle can be seen to the right of and just below the keyboard for turning the roll as one would with an organette, and you had to pedal it and select the stops as well! In 1883 the Mechanical Orguinette Company purchased the Aeolian Organ Company. By 1885 they offered an instrument that was exhibited at the International Inventions Exhibition in London, and this included a wind motor which used suction to turn the roll, so no longer was the crank handle required. The American reed organ in its most basic form used just a single set of free



Picture 1. McTammany roll-playing organ

reeds mounted on a flat pan in much the same configuration as the European harmonium. Consequently, its range of sounds was rather limited.

The invention that was to change this situation was created by James Baillie-Hamilton, a Scottish inventor, who had been experimenting with methods of changing the sound of free reeds by mounting them in different shaped tone chambers. First patented in 1884, the Hamilton-Vocalion reed organ was conceived as a cheaper replacement for the church pipe organ and its amazing, for then, range of sounds enabled it to mimic the sounds of other musical instruments. It was first introduced to the public in 1886. Though successful musically, Baillie-Hamilton was not a great business man, and the cost of producing the Vocalion exceeded its selling price. In 1890 he sold his business to Mason & Risch, who quickly simplified the design and reduced the manufacturing costs. In 1893 a patent was granted to Morris S Wright of Worcester, Massachusetts, on behalf of Mason & Risch, for the design of tone chambers to modify the sound of reeds and a later patent covered the concept of mounting the tone chambers in separate horizontal banks that could be used in combination to provide an instrument with a wider range of tonal characteristics.



Picture 2. Orchestrelle Model W

The Aeolian Company had also been experimenting with larger types of organette. In July 1887 they had acquired the stock and patents of the Automatic Music Paper Company of Boston, Massachusetts, becoming the Aeolian Organ and Music Company based in Meriden, Connecticut. A new factory was built and for the first time both instruments and music rolls were produced on the same site. The new player organs became musically respectable and the Aeolian Company became the leading manufacturer of them in the 1890-1930 period. They had branches in most European countries but only established

*Mechanical Music World*

a second manufactory in Hayes, Middlesex, England, which quickly became self-sufficient (see separate article in this journal). In 1892 the parent Company purchased the patents of the Munroe Organ Reed Company. They produced a 46-note fully chromatic reed organ named the Syreno which consisted of a single pan of reeds. A slightly larger foot-pedalled version, the Tonsyreno, had an additional rank of unisons to enhance the sound. At about the same time Aeolian's were marketing a new 46-note player organ with a keyboard called the Princess. Around 1891 the Aeolian Company negotiated with Mason & Risch to produce a new instrument exclusively for them branded the Aeolian Grand.

The Aeolian Grand was one of the first instruments to break away from the reed organ sound. It used a new 58-note scale with rolls having six perforations to the inch and a roll width of 10 1/8". The holes were about 1/8" width and there was no means of tracking adjustment. These rolls could be used on any of the later Orchestrelle instruments using the 58-note scale. Douglas Berryman observed that, based on the number of surviving examples, the Grand must have sold well, being small enough to fit the average home and yet large enough to give a good account of itself. From the Grand was developed the Orchestrelle in 1896. This differed from the Grand and the Princess in that it was pressure operated rather than using vacuum, which gave it a more powerful tone, which was much admired by American purchasers! By 1897 the Company was advertising in New York both the Princess (\$75) and the new Orchestrelle (\$1350)<sup>1</sup>. The Aeolian Company had acquired Mason and Risch in 1903 and thus also acquired the M S Wright patents.



Picture 3. An Orchestrelle Model W in a typical location

Over the years the Orchestrelle was developed and enlarged. It appeared in a number of different styles and configurations, ranging from the Model O (4 reed banks) through the Model V (5 reed banks, and probably the most popular model) up to Model Y (9 reed



Picture 4. Aeolian Solo Orchestrelle Model F



Picture 5. The Editors' pipe organ in its original location in Bayham Abbey, Sussex

banks)<sup>2</sup>. The Model W shown on the front cover and in Picture 2 has 6 reed banks and a pretty walnut case. It was made in 1904.



Picture 6. The Bayham Abbey organ's bass rank across the hall in a separate cabinet

However, that was not the end of the story. Shortly after 1900 the Company introduced another new version – the Solo Orchestrelle. Effectively this was two organs in one, with two manuals and two tracker bars in one – making 116 notes. To keep the rolls a reasonable size the same width was maintained (10 1/8”) but the two sets of tracker holes were offset by about 1/16” and the holes made much smaller, so that one roll could control both manuals. This gave true two-manual performance, so that different stop combinations could be set for each manual. The special 116-note rolls offered advice on stop combinations during its progress across the tracker bar. Solo Orchestrelles occurred in several sizes – Model XW (six reed banks) to Model F (11 reed banks) which cost more than three times the price of a Model V. For the super-rich, for whom an Orchestrelle was not nearly impressive enough, Aeolians went on to produce roll operated pipe organs, firstly using the same 116 note rolls that the Solo Ochestrelle used, but later with automatic stop changes as well - the Aeolian Duo-Art Pipe Organ.

In 1897, the first Orchestrelles priced at \$1350 were only for the wealthy. They were about the same price as one of the new luxury cars at the time. Pipe organs ran up to twenty times that much!

1. Ord-Hume, A W J G, *Automatic Organs*, Schiffer, 2007 pages 318-319
2. For a list of Aeolian organ models see McElhone, K, *Aeolian Specifications*, The Music Box, Vol. 16, No. 7 Autumn 1994 P. 192

## Hayes – The British Home of the Orchestrelle

by Juliet Fynes

**A GREAT COMPANY**  
with  
**World-wide Connections**

NO business house established in London has more extensive international connections than that which manufactures and sells the famous 'Pianola' Piano.

Its business extends beyond the furthest boundaries of the Empire, its factories are firmly founded in both the Old and New Worlds, its branches and agencies form a close network over the entire globe. In every one of the Allied countries the 'Pianola' Piano holds first place. Amongst its patrons it numbers the heads of the Royal Houses of England, Russia and Belgium, and the leading members of the French Government. It has branches or distributing houses in the capitals and chief towns of each of the Allied nations, and all of these establishments have sent their quota of fighting men to swell the ranks of the Allied armies.

**The 'PIANOLA' PIANO**  
is the premier piano-playing instrument in each of the Allied Countries—and throughout the world.

OF the various models of this famous instrument none is more famous than the Weber, built in the Orchestrelle Company's factory at Hayes, Middlesex. Despite its name, not a single model of this piano is or ever has been made in Germany. It is a piano of American origin, which possessed such outstanding qualities that the manufacturers of the 'Pianola' acquired it in order to manufacture it in their own factory in England.

The other pianos combined with the 'Pianola' are the famous Steck, made in both the European and American factories of this Company, and the Farrand, a piano which we can guarantee to be wholly English.

Special models of these instruments are now on view, and in each case prices and terms have been made specially favourable to meet present conditions.

Send the enclosed post-card for  
**SPECIAL WAR TERMS**

**THE ORCHESTRELLE CO.**  
AEOLIAN HALL  
135-6-7 New Bond Street :: London, W.  
FACTORY: HAYES, MIDDLESEX.

I have long known that St Croix and Geneva were centres of the manufacture of cylinder musical boxes, and Leipzig of disc boxes, but had no idea that my home town had been of importance in the history of mechanical music.

It was with great pleasure and some surprise, when browsing the artwork in Ted's canteen, I came across a poster (Fig 1) for the Orchestrelle Company, with a picture in one corner of their factory in Hayes, Middlesex, the undistinguished suburb where I spent my schooldays.

Our road ran alongside the Great Western Railway Line (Fig 2). As a child I liked to stand in the garden and wave to the engine drivers (steam engines of course) and they, and many of the passengers, would wave back. It was less fun for my mother when, once again, she had to bring in the sheets from the line to wash off the smuts from the engines.

I was always well aware of that other Hayes institution, "His Masters Voice" record factory, as it was on the opposite side of the railway at the bottom of our garden. "His Masters Voice" was the record label (with the famous image of the dog "Nipper" looking quizzically



*Fig 2 GWR railway line at Hayes*

into the horn of an early gramophone) of the Gramophone Company, founded in 1897. By 1929 the site covered more than 58 acres. In 1931 the company merged with the Columbia Graphophone Company to form Electrical and Musical Industries Ltd. The vast EMI complex of factories, offices and laboratories ran the entire length of our road (Fig 3).

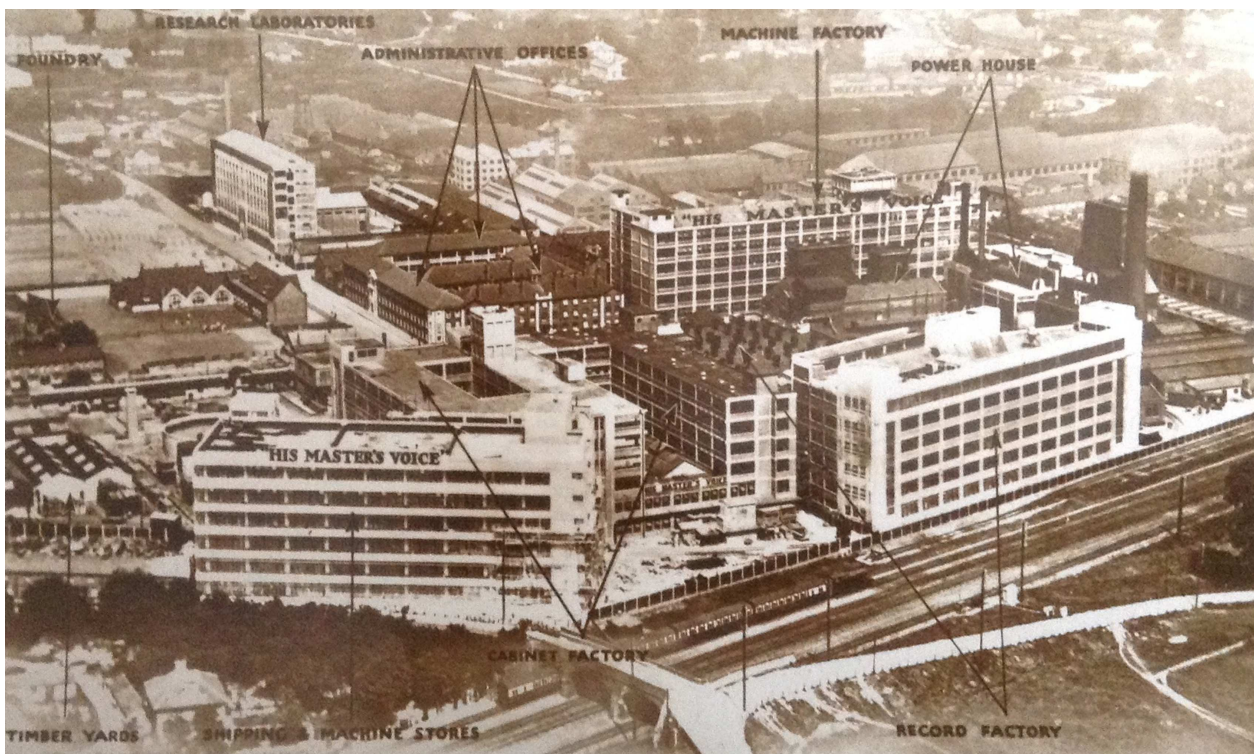
EMI did so much more than produce musical recordings. They developed various domestic appliances, radar equipment, microwave devices, CT scanners and also guided missiles. This last actually took place in their Feltham factory where my father worked and where he secured summer holiday placements for me during my university vacations. I had to sign "The Official Secrets Act", making me feel very

important!

It was also at Hayes that the first commercially available UK computer was developed in 1958. I remember being taken to see this behemoth. It occupied a large air-conditioned room and was watched over by white-coated attendants. Strange to think that it was probably less powerful than the tiny devices that nowadays slip into the pocket.

The advances in the technology of recording music never quite managed to kill off the appeal of vinyl records and lately there has been an upsurge in interest. At the height of their popularity in the early 1950s, the workforce at Hayes numbered 14,000. Production was moved elsewhere in the late 1970s and the buildings reverted to other uses.

Hayes and Harlington Station, from which I caught the train to my grammar school two stops up the line, was at one end of our road. As a further digression I have just discovered that this was the site of the first film with a stereo soundtrack. The electrical engineer, Alan Dower Blumlein, joined the research department of Columbia Graphophone Company in 1929 and in 1932 he had the sudden inspiration that led to the development of 'binaural recordings', now known as stereophonic sound. The first film using this technique was shot from a window in the EMI offices of a steam train passing through Hayes station (Fig4). Blumlein has just received a posthumous Grammy Award for Technical Merit.



*Fig 3 EMI Factories*



*Fig 4 Scene from the first film with Blumlein stereophonic sound*

Something else I didn't know at the time was that my daily commute took me past the old Orchestrelle Co. factory (Fig 5).



*Fig 5 The Orchestrelle Company's works*

The Aeolian Company in the USA was the leading manufacturer of player organs in the world. They set up a wholly owned subsidiary called the Orchestrelle Company in 1899, registered in Garwood, New Jersey, and trading in the UK, the British Empire and other countries. The parent company tended to name its subsidiaries after the main instrument it was building at the time, and the name Orchestrelle was presumably chosen because this development of the Aeolian roll-operated reed organ looked like being the company's main activity. The name "Orchestrelle" was chosen to indicate to the prospective customer that they were buying a small orchestra. The stops representing different instruments, and other controls, were at the discretion of the player, effectively making him conductor of his own orchestra.

George Steck was a German who emigrated to the USA and set up his own piano company in New York in 1854. Aeolian bought the company in 1904, and manufactured Steck pianos in the US. Quite soon afterwards it purchased the piano firm of Ernst Munck in Gotha, Germany, and began manufacturing European Steck pi-



*Fig 6 View of the Orchestrelle works in a Weber piano advertisement*

anos there. In the early 1920s that factory was bought by Ludwig Hupfeld of Leipzig, and Aeolian transferred its European Steck manufacture to Hayes.

The first part of the Orchestrelle building, which still remains, was put up in 1909, and extended to its current length in 1912. It was initially used for the construction of Weber pianos (Fig 6), and the installation of Pianola actions, which were at that stage imported from America, into Steck pianos from Gotha. A separate building was soon established for the manufacture of music rolls (Fig 7, the building to the left of the chimney). Also in 1920 they established a pressing plant for records under the "Vocalion" label. The site was greatly expanded, with buildings for the manufacture of Pianola actions, as well as Steck pianos and various other brands, including reed organ and pipe organ departments.



*Fig 7 The Orchestrelle Co's music roll department*

With the outbreak of WW1 presumably production ceased or was scaled back, as part of the workforce in Hayes was involved with the construction of wings for de Havilland DH9 bombers. Nevertheless they still had stock to sell. The Orchestrelle Company, Aeolian Hall, New Bond Street advertised "Special War Terms", urging that 'This is the time when you would derive incalculable benefit from the purchase of a "Pianola" piano. It would bring hope and cheer and mental distraction into your home during the dark days through which we are now passing'.



*Fig 8 Demolition of the Orchestrelle works in 1976*

During its peak year of 1925, the Aeolian company manufactured more than 192,000 instruments. But the reign of the reproducing pianos and organs was to be short-lived. After the Wall Street Crash of 1929, which coincided with the advent of “talkies” and the wider availability of electric phonographs, the piano-roll business declined. Production appears to have ceased at the Hayes factory some time before WW11.

After the war some of the buildings were used by, among others, Kraft Foods and Wall’s, manufactures of sausages, meat pies and ice cream. These are the names I remember seeing from the train window in my 1950s schooldays. Most of the buildings were demolished in 1976 (Fig 8). The main part of the building was bought by Benny Lowenthal and renamed The Benlow Works (Fig 9).



*Fig 9 The last remaining building, seen at the right in Fig 8*

## **Letter to the Editors**

*from Richard Kerridge and Keith Hilson, Basingstoke, Hampshire.*

There seems to be a lack of public interest in mechanical music. We put this down to young people being mesmerised by computers. Unfortunately, street organs are not computers and in our experience, if it is not a computer, the youth are not interested, and even if an organ is run by micro chip, it is still an old fashioned “uncool” instrument to young people.

We remember our childhood when barrel organs and street organs were still on the streets, and we find our audience are more inclined to be of our age group. We have encountered derogatory remarks, which many of you may have done, about not being “cool” whereas the older generation give us nothing but praise, as we found last year when we were in Arundel Music Festival, a rather upmarket town and event.

We are trying to do our bit to keep street organs in the limelight. We appeared on Angel Radio (which unfortunately only covers the Havant/Portsmouth area) in November and December 2016 in four quarter hour programmes on barrel pianos, and how we became interested in them in Portobello Road as children, plus a further two programmes with “pipes and reeds” – street pipe organs and reed organs. You can hear Angel Radio on line.

These programmes were done purely to try to promote our type of mechanical music and were done free of charge and not for any gain on our part. We were previously refused coverage by the local BBC, whose excuse was that they had lost our correspondence.

We feel that this is the direction to take to promote our type of music, after all, you only have to tune your radio on to any local station or the BBC to hear what we would call “muzak” – rarely do you hear beautiful melodies which are capable of being played on our instruments.

Angel Radio have informed us that they intend to repeat the programmes in the evenings which should attract more listeners than the original broadcasts which were at mid-day on a week day. We hope to inform World's Fair when the programmes are to be repeated, hoping that they will put the details in “What’s On”.

## **Introducing the 2017 Steinway Spirio - The Ultimate Reproducing Piano**

*It perfectly reproduces the dynamics of the performer...*

It was claimed for the Duo-Art, the Ampico and by many other reproducing piano makers, and they all do it pretty well! The new Spirio does it perfectly, we are told.

Most player pianos of course reproduce human performances solely by recording the key strike. Steinway's system uses a far more sophisticated system. Hardware and software embedded into the piano measure the

velocity of the hammer hitting the string in 1,020 increments, taking stock of the the hammer's location and speed 800 times a second. The pedal motion is similarly documented at 200 times per second. This data creates a vastly more accurate picture of what the pianist was doing at any given time, meaning the piano's built-in songs capture dynamics, repeating notes and the subtleties of the transition, say, from staccato to legato. A software-controlled solenoid (electro-magnetic) system is installed underneath the piano and activates the notes - shades of the Tel-Electric!

Steinway has been developing the technology for the Spirio since it bought a company called Live Performance several years ago. Founded by engineer Wayne Stahnke, Live Performance is considered to be in the forefront of technology for automatically playing the piano

The first version of the Spirio was introduced in 2015 and is intended to introduce the idea of a



high-fidelity player piano to consumers. It's interesting to think about where the technology could go next. Tapping your iPad to pull up a Chopin Nocturne is great, but imagine if you could listen to any number of artists playing a piece in real time. You could settle in for a concert in your living room. Artists could play duets with themselves. Grandkids' recitals could be transmitted to

other pianos across the country (oh dear, is that an advantage?), or preserved for later enjoyment. In every case, it could drag the self-playing piano well out of the dusty old saloon. There is already a huge Spirio catalogue of more than 1400 pieces arranged and recorded for it by many of the finest of the current piano virtuosos, most of whom endorse it enthusiastically.

Well, we have heard it all before, but you can visit Steinway's web site at

<https://www.steinway.com/spirio>

or see the instrument in action on YouTube, or apply for a brochure.

Don't be put off by the starting price of US\$110,000. It is only money, and think of the advantages and enjoyment you would get from it!

## Restoring a Sectional Comb Movement

Described by the auctioneer as a 'Dear little musical box', this being a slight exaggeration of the truth, as 'musical' it was definitely not. True, it would certainly play all the right notes, but not necessarily in the right order!!

This description refers to an early four air, five-toothed-sectional comb movement with a total of a hundred and one teeth, the uppermost segment having six teeth. The serial number 2247 is marked on the front of the bedplate, but there are no marks to identify the maker.

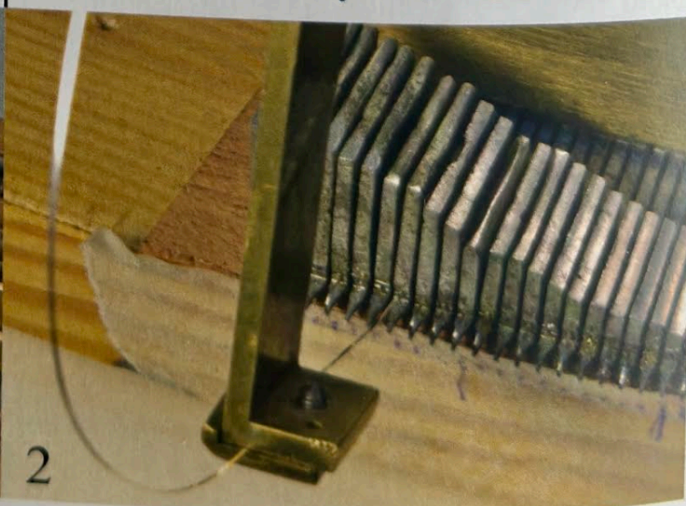
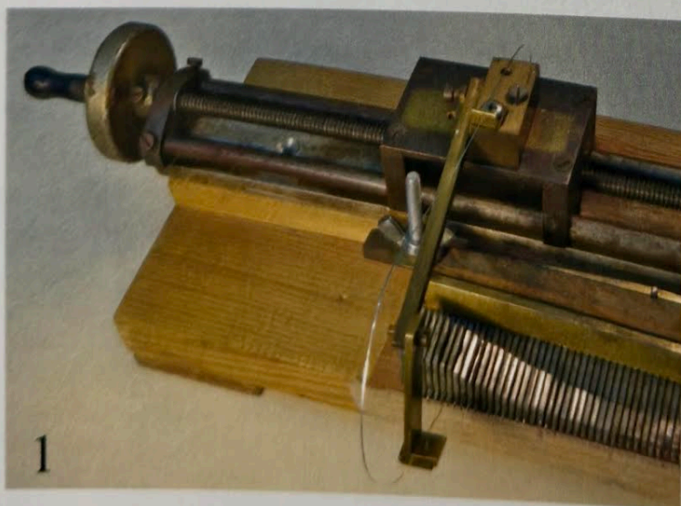
Although I am far from a professional restorer, this box appealed to me as an interesting project to put right and to share those experiences with others.

Before I could start work sorting out the tunes, it was necessary to clean the governor and reset the depth of the worm to allow it to work easily at the correct speed.

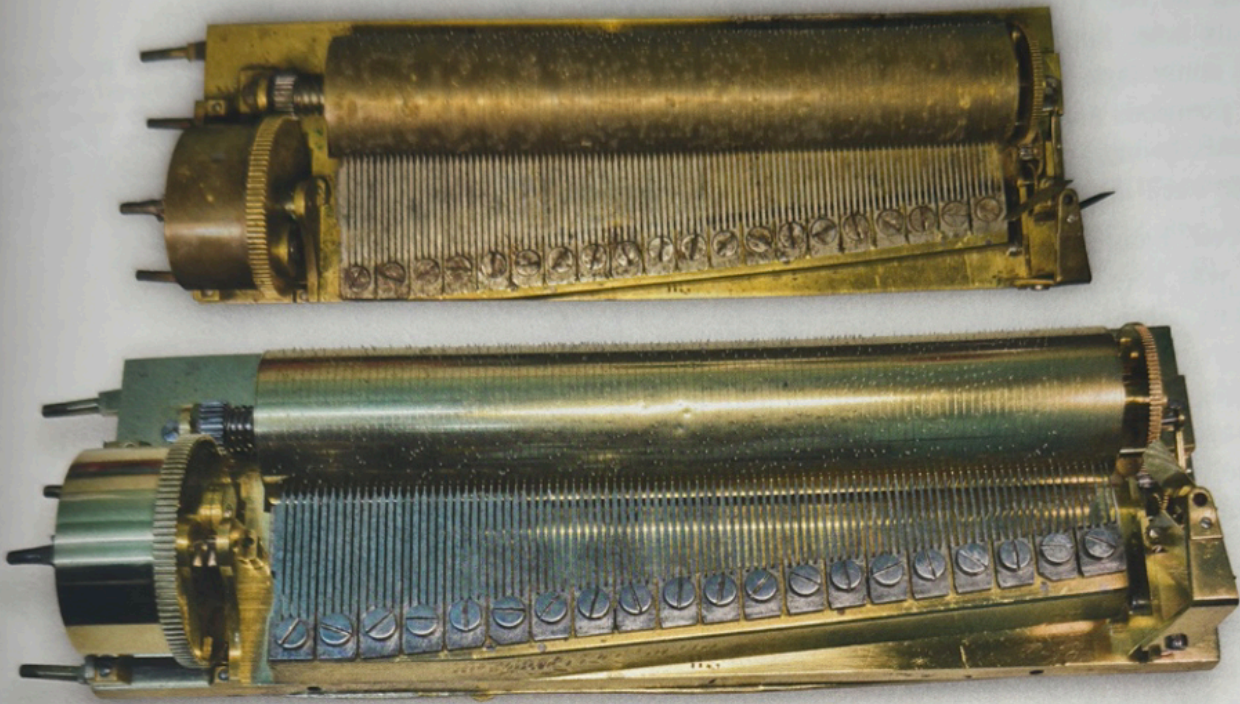
I knew the comb was out of register, so I initially tried shimming the snail position laterally a bit this way and that to see if I could get a recognisable tune out of it, but rapidly came to the conclusion I was wasting my time. Not that this was easy to test anyway as there was no registration screw. Closer attention revealed that the segments were all misaligned with each other and were pointing in different directions, some playing one tune, others another and some in between. How it got into this state was difficult to imagine, particularly as when I attempted to undo any of the screws holding the

segments, none would actually budge. It was clear someone else in the past had attempted the same process as the heads of the screws were heavily burred. I eventually discovered it was possible to rotate the segments slightly by tapping their roots with a small screwdriver. This allowed me to realign the tips with the peripheral lines on the cylinder. It now played recognisable music, if somewhat hesitantly! This, I quickly realised, was down to the fact that there were varying slopes on the tips of the notes of each segment. Someone in the past must have actually honed the comb when the segments had been out of register! There were also awful signs on the leading edge of the thick brass comb base where it had been repeatedly bashed to alter the distance to the cylinder. After honing the comb yet again, it sounded much better. Having suffered this terrible distress over the years, it was predictable that the dampers would be in very poor shape. In fact, most of them were missing.

I was not looking forward to this job, as there was no obvious way of holding the comb in the damper jig, which is what I normally do. Unlike a single piece comb there were no screw holes going through the comb to hold it down. I had to clamp the comb with a bit of wood going over the top and also make spacers to rest the teeth on to allow room for the heads of the screws to fit underneath (fig 1). We all have our own methods of doing things and you may have noticed my articulated mechanical arm to hold the damper wire steady. This I find most useful







These pictures show the movement before and after cleaning and its fine mahogany veneered case just 11.6 inches wide. The period blue paper covering the inside of the case is most unusual, the pin holes show the original size of the tunesheet and its remnant shows part of the original border. There is a glass sheet which slides in over the top of the movement with a brass stud on the right to hold it secure.



giving me two free hands to tap the damper pin into its hole. Similarly, I also find it is useful to stick some tape under the teeth tips to identify their positions and to stick any remaining pins on a similarly marked tape sticky side up, so they can go back into their original holes.

However, before reaching this stage it was apparent I was going to have some problems. As can be seen, there are a fair number of missing dampers. Unfortunately, in this case it was not possible to pull most the pins out as they had been tapped in flush to the surface. The holes themselves were only 0.4mm diameter, but to get the pins out necessitated using a 0.3mm drill to allow enough space around the vestige of the old damper, before finally drilling the rest out with the 0.4mm drill. The holes I have drilled out can be seen in the close up (fig 2), by the brass residue left on the tooth tips. Making the new pins was a nightmare and required many attempts, a bit like Bruce and the Spider. They are only 1.4mm long, 0.4mm at the thick end tapering to a point. This is like the extreme tip of a thin needle. The damper wire of old was a thinner width than that available nowadays, so it was necessary to make sure they sat centrally over the tooth tips.

The accompanying pictures show the movement both before and after cleaning. It has a most unusual mahogany case only 11.6 inches wide. The movement is accessed from the base of the box on which it normally resides, trapped by side pieces of wood on the inside of the case, it is not screwed in. The inside is covered with thin blue paper, contemporary to the period. The levers which protrude from the left-hand side of the case have screw threads; these must have held screw-on terminals at one time to set them off. There are the remains of a torn tune sheet stuck to the lid. The only readable word still showing is 'Lodoyska', the name of one of two Operas produced in 1793, which seems to be referring to the first of its four tunes. They all sound familiar to me, but still need to be identified.

**From 'Amateur Work', 1885:**

*'In a recent address Mr Alexander Siemens said that it is popular superstition that inventors are heaven made, and that they can produce useful novelties to order in any branch of manufacture where a want exists, if only their attention is drawn to it. "The history of the invention of the steam engine", he added, "is a well-known illustration of the point I wish to emphasize. According to the popular version, Watt, a small boy, saw the lid of a tea-kettle move up and down, when water was boiling, and this suggested to him the construction of a steam engine. As a matter of fact, Watt made himself acquainted with what had been done before (a point altogether ignored in the popular version), and had to work very hard before he brought his invention to a successful issue. His example is typical of the true method of progress and we may generally say that in order to approach a problem with the most certain prospect of success it is necessary:*

- 1. To define, as accurately as possible, the want that exists, or the particular object that is to be attained.*
- 2. To be well acquainted with the scientific principles which come into play.*
- 3. To know how the want is met, or the object attained in practical life.*
- 4. To find out what proposals have been made by others in the same or in a similar case.*

*A careful attention to these requirements will prevent much disappointment and waste of energy, as will be obvious to all of you without further explanation".*

## A.J.Weir Musical Box Restoration

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## YesterYear

### A link with the past



*Fig 1 The Aeolian plant at Hayes*

#### ***The Anglo-French Music Co. Ltd.***

Few may have heard of this company that was set up in the midst of the First World War, 1916, by two directors of the Aeolian Company. The aim was to record certain set pieces of music for the Associated Board of the Royal Schools of Music, a leading UK musical Examination Board. The Company chose composers and academics who prepared interpretations of the set musical examination pieces as examples of performance considered to be an ideal standard for examination.

The first recordings were made by the well-known concert pianist Desirée MacEwen. The publishing venture was successful and by 1923 five more pianists were deployed including York Bowen (1884-1961). Although he was highly talented, being a conductor, organist, violinist and horn player, his mostly romantic works got little recognition in his lifetime.

The Aeolian Company Ltd was American, producing pianos and other musical instruments. The Aeolian Vocalion label began recordings in the United States in 1918 and records under this label were issued in the UK from December 1920. It was then sold in January 1925 to a new company, the Vocalion Gramophone Company Ltd. Records were produced by the Marconi electrical process in 1926 under the Vocalion label but only until 1927. Famous pianists were by then signing-up to other companies such as Columbia and HMV. However, in 1921, the Anglo French Music Company succeeded in getting the services of Claudio Arrau, who produced his first recording with the Company. By 1923 there was the French pianist Jeanne Marie Darré (1905-1999) and British pianist Herbert Fryer. In 1926 Vocalion produced a

disc by Vassily Sapellnikoff who performed Tchaikovsky's Piano Concerto No. 1 conducted by the composer.

Fig. 1 shows The Aeolian Company Ltd, the British subsidiary at Hayes, Middlesex, of the Aeolian Weber Piano and Pianola Company of New York. The site was purchased in 1908 from farmer Ernest Shackell. When the picture was taken the surrounding fields can be seen in the background as the site became highly industrialised, no doubt because of the proximity of the Grand Union Canal\* and the adjacent railway. The building had four stories with semi-circular (Diocletian) windows on the top floor. The large building on the left of the chimney was intended for building pianos and the building on the right of the chimney housed the Universal Music Company located on the floor below the top floor with its semi-circular windows. The UMC was a subsidiary that manufactured perforated music rolls for the Company's Pianolas and Player Pianos.

Darré was a classical pianist specialising in lyrical interpretations of Chopin, Liszt and Saint-Saëns. Fryer (1877-1957) was a touring performer who travelled all over Europe, Australia, South Africa, the Far East, Canada and the USA. He was an examiner and teacher for the Associated Board of the Royal Schools of Music. From 1914-1917 he taught at the Institute of Musical Art, New York, returning to the UK in 1917.

Before WW1 most sheet music was published on the Continent. By 1918 this changed dramatically and British publishers such as Novello & Co., Stainer & Bell came to the fore. The Oxford University Press (OUP) then started to expand under the direction of Humphrey Milford. As his workload increased he sought out a young man called Hubert Foss (1899-1953) to concentrate on sheet music production. Thus, in 1923, Foss established the OUP Music Department at Amen Corner, 36 Soho Square, London.

Foss went on to establish links with other publishers, one being the Anglo French Music Co. Ltd. at 95/96 Wimpole Street, London. He effectively acquired and expanded their music catalogue. Later, agency connections were established with the University of Wales, Brochmanns & Van Poppel (Holland, 1931), Carl Fischer Incorporated (USA), the Canadian Music Company, Editions Music Esching (France) and Fredericht Hofmeister (Germany, Austria).

The illustration, Fig. 2, shows the cover of Nursery Rhymes of London Town by Eleanor Farjeon (1881-1965). She was a writer of childrens' books and plays,

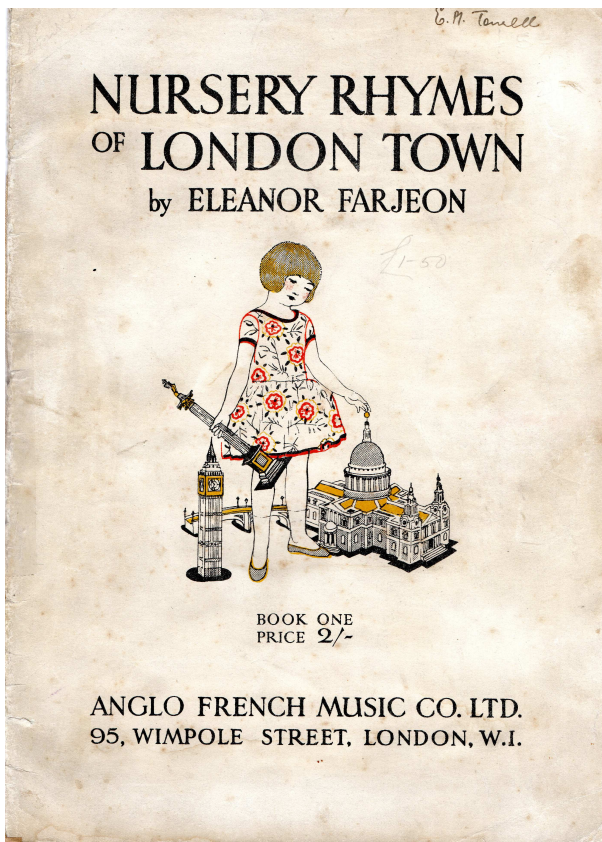


Fig 2 Nursery Rhymes of London Town

poetry, history, biography and satire. One of her illustrators was Edward Ardizzone. The illustration may have been by him. It shows the little girl dominating scenes of London such as Saint Paul's Cathedral, Nelson's Column, London Bridge and Elizabeth Tower, so named to celebrate the Diamond Jubilee of Queen Elizabeth II in 2012! Before that it was known to some as the 'Clock Tower' but we shall defy these changes and still call it Big Ben after its Great Bell.\*\* Fig. 3 shows the tunes of Book 1 (there were two books) with the footnote that they were agents of the OUP. The printer was Henderson & Spalding Ltd.

*\*The Grand Union Canal was neither superseded nor made obsolete when the UK railway network started to compete with the movement of goods and materials. Whilst both systems of transport were the arteries of international and Empire trade, the canal system continued to be developed well into the 1920s. It is no wonder that the farms and fields of Hayes attracted industrial development and overseas interest such as the Aeolian Company. Grand Junction Canal and the Regent's Canal amalgamated, along with a series of small canals to form the Grand Union. Its present form came into being as late as January 1929 and was further extended in 1932. At 286 miles it was the longest canal system in the UK, connecting the Indus-*

*trial centres of Birmingham to the international docks of London.*

*\*\*See Juliet Fynes article in Issue 7 of Mechanical Music World.*

*As a postscript to this story of YesterYear, Big Ben is not the original 16 ton giant, cast in 1856 at Stockton-on-Tees, that had the name Sir Benjamin Hall inscribed on it (and possibly why it was called Big Ben). No, that one cracked beyond repair when being tested. It was recast in 1858 at the famous nearby Whitechapel Bell Foundry, weighing less at 13.5 tons. 17.5 feet tall and 9 feet diameter, it too suffered a crack after only two months in use. It remained silent for two years before the crack was stopped from spreading by cutting out a square of metal. The bell was turned 45 degrees and a smaller hammer used instead as well as tuned at a slightly lower pitch. It remains in use today with that piece removed but another monster of 16¾ tons hangs nearby at Saint Paul's Cathedral, cast in 1881.*

*Sadly, Britain's oldest bell foundry is set to close on 17<sup>th</sup> May 2017. The current owner, Alan Hughes, is the last of a line of bell founders that goes back as far as 1440. The Whitechapel foundry was established in 1570 and at its present site for 250 years.*

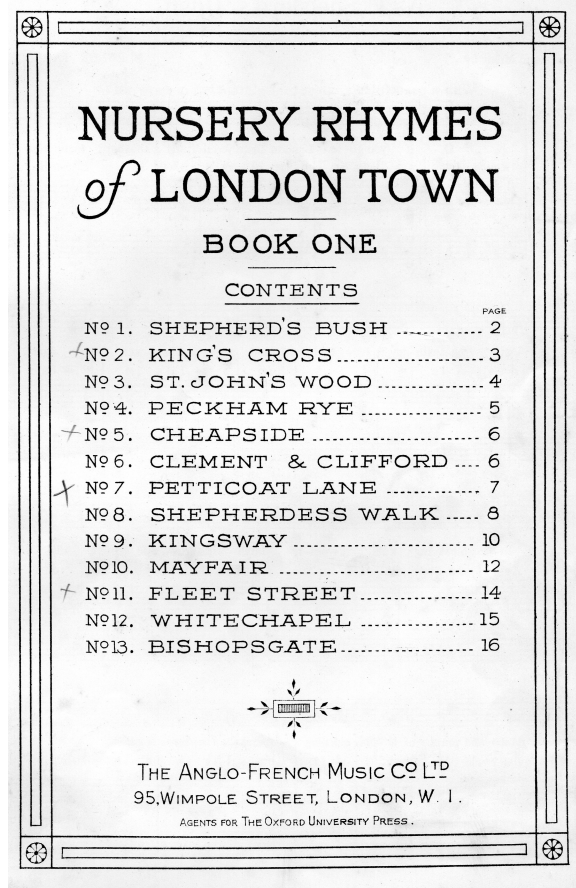


Fig 3 Tunes in Book 1 of Nursery Rhymes

## How to make an automaton, Part 1

The late Lyn Wright had an interest in automata. He kept a large portfolio of photographs of the items he restored, too many to describe here but many of which will appear in later issues of Mechanical Music World and its book publications. His family were kind enough to give AMBC access to his records and free use of all his material. The early items in the portfolio date to about 1977 and some refer to Mrs. Betty Cadbury.

The late Betty Cadbury was a leading authority on bygone toys (juvenilia) with a vast collection. She was the wife of Christopher Cadbury, a director of the famous British chocolate confectioner. In 1976 she wrote the book *Plaything Past*. She had a special interest in automata of all types, especially mechanical figures. Lyn's portfolio of his restoration work includes a clockwork car, a musical automaton necessaire, a Negro fruit seller, a conjurer and much more. Most of her collection is now on display at Sudbury Hall in Derbyshire, England.

Lyn wanted to demonstrate to others how most automata work. He concentrated on a model of a head, which we introduced as Fred the Head in Issue 1 of Mechanical Music World. He also made two other models. One demonstrated the workings of an arm and hand. The other shows how the smoker works but this will be the subject of a later issue. Before we describe the items shown in the following illustrations, let Fred tell you *his* story first:

Hello folks, my name is Fred.  
Known to most as Fred the Head.  
To get ahead one needs a hat  
and one can't really argue that!  
You see, I am an empty head  
but pull the strings and from the dead  
I come to life, a tale to tell,  
not dead at all but live and well!

Before I start I must disclaim  
I had no choice about my name.  
T'was Lyn who made me up from scrap  
who thought the name would be quite apt.  
So now for manners' sake I must  
my hat remove. Then, I trust,  
some bits and pieces you will see  
of other parts that make up me!

So here's my arm, its quite detached  
But Lyn made sure that it would match  
the other parts of me in time.  
Of course, I thought that was just fine.  
But time passed on and so did he.  
His story now is left to me.

So, although I've lost my master, Lyn  
I'll tell the story instead of him:

Lyn Wright, he was a clever man  
Of automata, a massive fan  
and thus he chose to demonstrate  
how in past times one could make  
many things fantastical  
and so he made *me* his model.

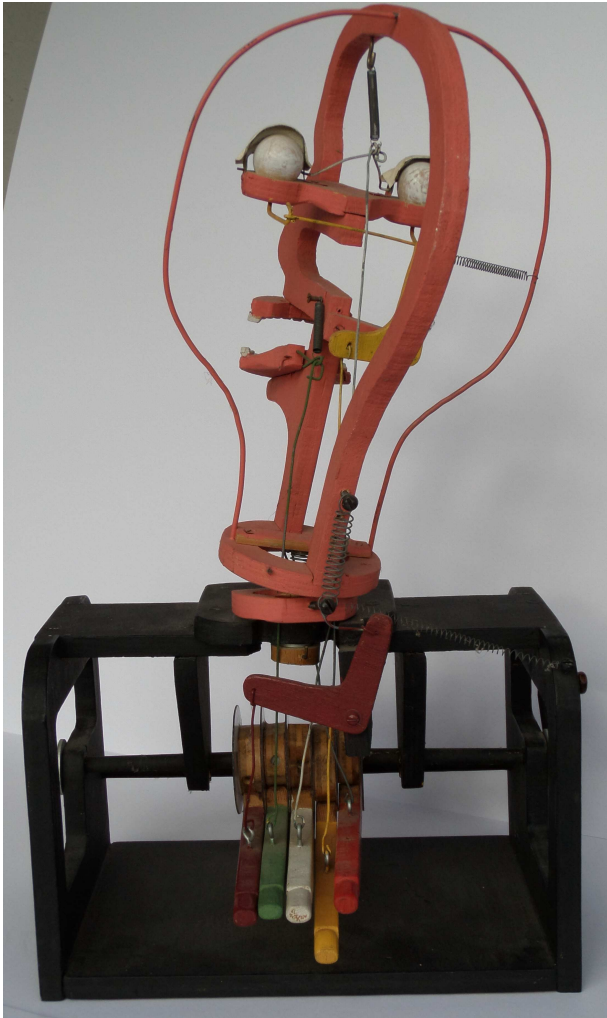
There were elephants and great big ships\*  
and writers that could write real scripts.  
Clowns that climbed up ladders high.  
Smokers puffing fumes to sky.  
Ancient neffs\* I can recall  
that played to wonderment of all.

Monkeys, conjurers, dancers, clowns  
and pretty girls, with long swept gowns,  
that keyboards played or with pens wrote  
whilst under skirts the links, remote,  
made arms and fingers move to smite  
keyboard notes, all black and white.

A child would laugh when, with such grace,  
as one blew bubbles in that child's face.  
The monkeys played their monkey tricks,  
moved three hats and smacked their lips  
as wires below a table top  
lifted hats and objects swapped.

As one in three hats rise and fall  
An object moves amongst them all.  
First it's there for all to see  
Then disappears in mystery  
to reappear from underneath  
another hat. What disbelief!  
Down hat goes onto cloth green.  
The next one lifts. Is this a dream?  
The object is revealed once more.

The *thing's still there!* Such wonder, awe.



*Fig 1 The basic head mechanism*

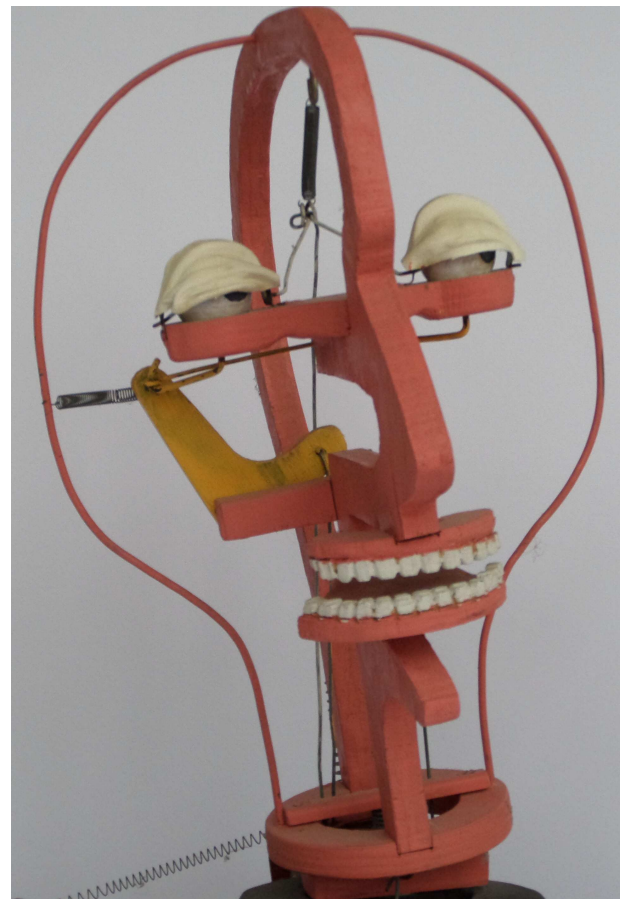
Fig. 1 shows the head mounted on the control mechanism. The horizontal shaft carries a set of cams. A crank handle rotates the shaft (observed but to the left). There is one cam per lever. Lyn painted each lever and its associated linkage a different colour so that the workings of each part of the mechanism was clear to see. Starting from the left they are brown, green, white, yellow, red. Wires connect the three central levers to parts of the mechanism. The green lever operates the lower jaw, the white one raises and lowers the eyelids and the yellow one swivels the eyes from side-to-side. The head is mounted on a base that is hinged to a platform that can be rotated. The brown lever rotates the head via a crank and the red lever tips the hinged base to rock the head back and forth.

Although quite crude in construction, Lyn was only interested in showing young and old how easy it is to create a simple but realistic mechanism. Each lever can also be operated separately without the need to rotate the camshaft. Thus, starting with the brown lever, it connects via the brown crank to the turntable. Depress-

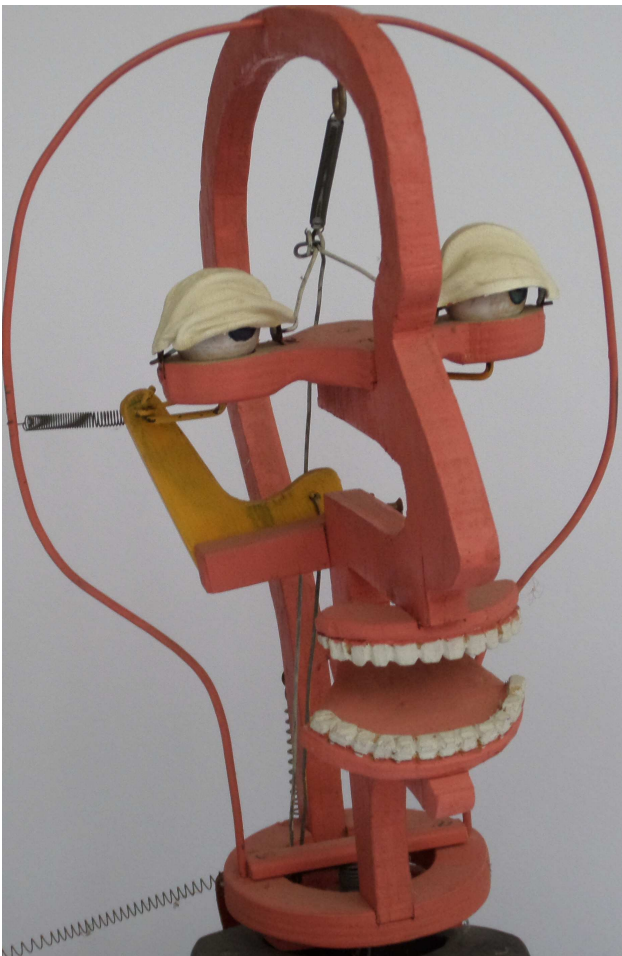
ing the lever turns the head from side-to-side against the action of a coiled spring. The red lever rocks the head back and forth, again against the action of a coil spring. Similarly, the green lever raises and lowers the pivoted lower jaw; the white lever lowers and raises the eyelids; the white lever swivels the eyeballs.

Having demonstrated each of these simple mechanisms, one is ready to operate the set of cams via the crank handle. The cams are shaped and fixed to the shaft so that all parts operated in a set sequence. The cam profiles are chosen to perform as many operations in one revolution as desired. Cams can be shaped to carry out quite complex movement. Simple operations might need a single-lobed cam that operates only once per revolution. If connected, say, to the jaw, it will open and close once for each rotation of the camshaft. If, however a double-sided cam was used, it would operate twice and the jaw would move twice as quick. Three lobes would give three rapid operations, and so on.

The cam profile can also be shaped to perform intermediate motions. If it was for the jaw, the profile could be shaped to partly open and close the jaw as if ‘smacking’ the lips and then to open fully and close as if yawning. Despite the head’s simple mechanism, the cams could be made to operate other features such as to raise



*Fig 2 Head construction*



*Fig 3 Jaw opening*

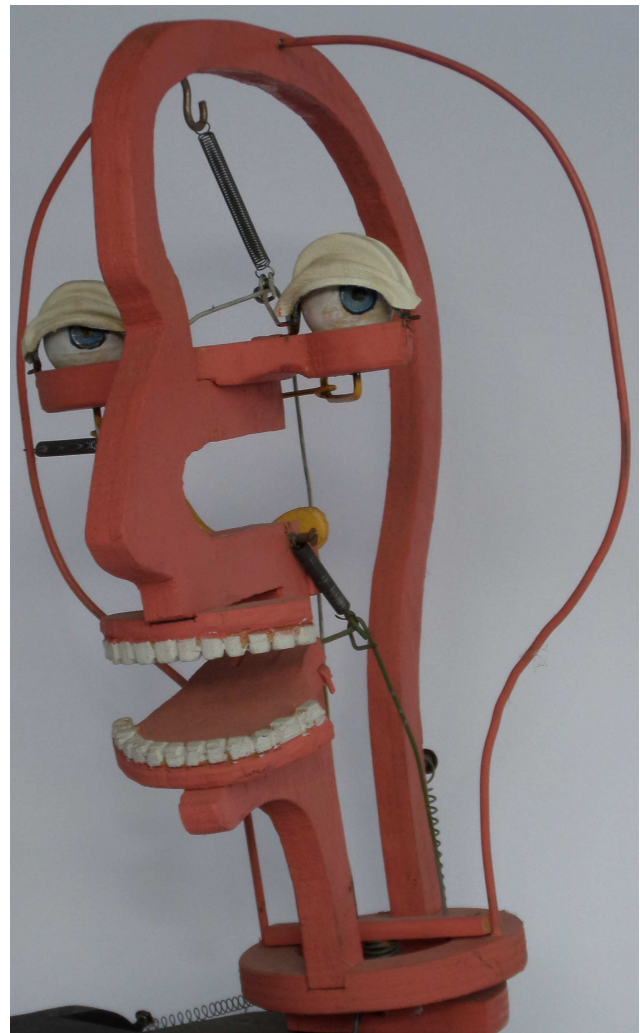
eyebrows, flap ears, even to 'doff' (raise) a hat. The options are almost limitless. The skilled craftsmen of the past created spring-motor-operated automata that could actually write, draw, play a small reed organ or the keyboard of a piano. Most of these were sophisticated designs using thin brass cams and followers but the principles were the same.

Having demonstrated the action of each lever, turning the crank operates the whole range of movements of the head. The jaw opens and closes, eyes move from left to right, eyelids close and open and the head can turn from side to side. All these motions appear to operate independently but all are planned to a fixed sequence by the cams.

Fig. 2 shows the basic construction of the head. It consists of a simple wooden central frame mounted on a circular base hinged to a square platform. Note the integral bar that limits the downward movement of the lower jaw, the horizontal bar on which the eyes are mounted and the horizontal spur that carries the pivoted crank that operates the side-to-side motion of the eyes. The profile of the head is a wire frame. The operating wires, each driven by a cam, work against coiled springs.

Fig. 3 shows that, whilst the eyes and eyelids have not moved (because their cams are circular for part of their profile), the lower jaw cam is shaped to open the mouth and the head is inclined slightly forward. Fig. 4 is the same part of the motion but from another angle. However, Fig. 5 shows that the head is beginning to rise (tilting backwards) and the jaw is now closing but the eyes remain the same.

Fig 6 shows Fred with his hat on again. Note how the



*Fig 4 As Fig 3 but from the side*

eyes have moved to look forward, the eyelids are opening but also note the position of the head. It is now turning left and the jaw is opening. The combined rotation and tilt of the head is emphasised when wearing the top hat.

It is time to look at Fred's arm, Fig 7 described in his story above as being quite detached. In fact the cams would be mounted on the same shaft as the head. It can be seen that three cams can make the arm rise and lower (white lever), bend at the elbow, red lever) and turn the wrist (yellow lever). These three motions are colour coded yellow, red, and white. The yellow lever rotates a



Fig 5

small pivoted disc, which pulls a cranked lever to rotate the 'hand' in the shape of a hook. The red lever rotates a crank mounted concentric with the disc that raises and lowers the arm at the elbow. The white lever acts in a similar manner but this time raises the entire assembly.

Finally, Figs. 8a to 8g show how a complicated cam profile acts to oscillate a simple pivoted lever as the cam rotates. This time the lever has a projecting



Fig 7

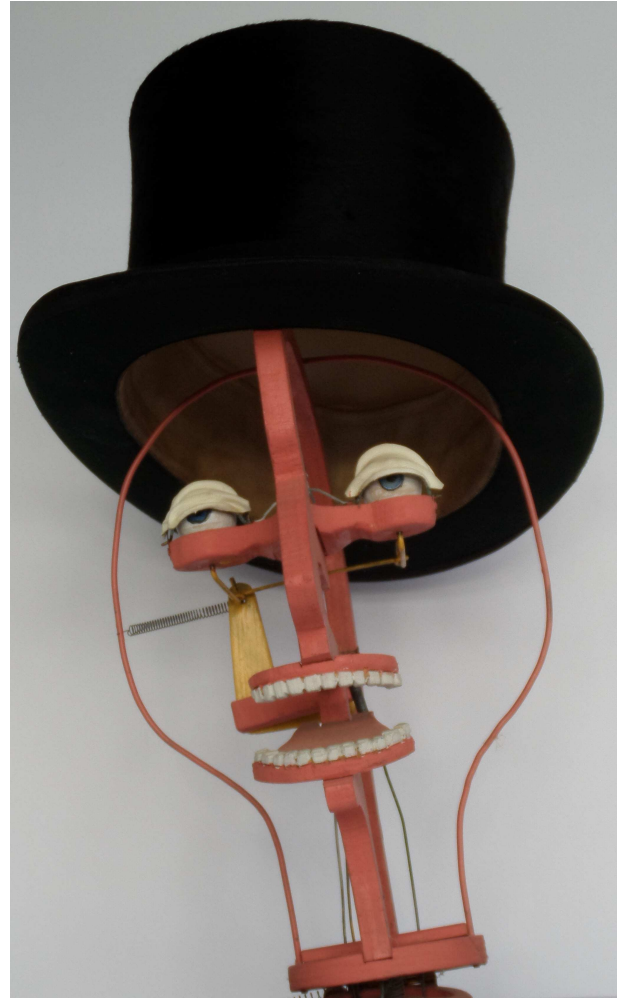
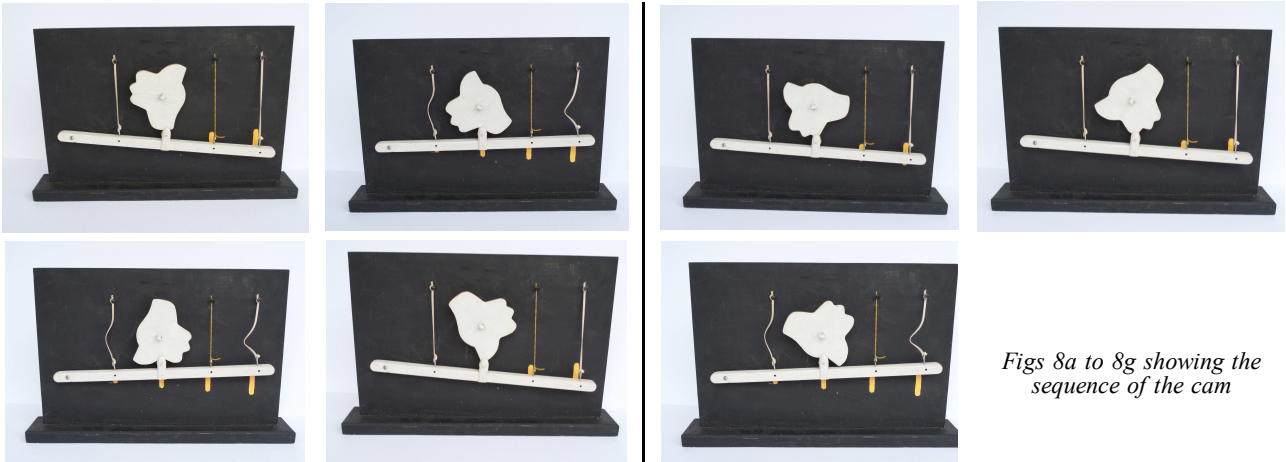


Fig 6

wooden peg that is in contact with the cam. Sometimes a small roller can be mounted on the peg to give a smoother, frictionless action. The lever can have as many links as desired, each performing a different function. Links do not always need to be made of wire and sometimes a thin cord may be used. The amplitude of movement at the end of a link depends on the distance of the link from its pivot. The pivot can be at the end or anywhere along the length of the lever. If somewhere in between, a link to the left of the pivoted arm works in opposite motion to a link on the right. This can be used to create a push-pull effect.

With these simple explanations in mind, the amateur or professional automata maker can start to design and make an automaton of choice. Sufficient to state at this stage that the entire crank mechanism for head, arms and any other desired motion will be contained in a box forming the base of the model. The model itself can be adapted from a toy such as a 'teddy bear' or made from scratch. The head will need a shell. These can be made of *papier maché*. More of this will be explained in Part 2 (in a future issue).





Figs 8a to 8g showing the sequence of the cam

Note\*: A neff is a model galleon made centuries ago as an elaborate table centre. Some were automated and even played music on a hidden reed organ with moving bandsmen figures. A spring motor operated the mechanism. The motor could be adapted to do a variety of other motions as well as playing music and operating the bandsmen. One famous Neff had a clockwork delay mechanism that, after starting to play with the ship stationary, would then cause it to move along the centre of a long table, swaying as if on waves. The length of travel was so designed that the ship stopped before the end of the table as the band stopped playing. The guests, thinking that the demonstration was over, would then be shocked by what happened next, especially the person at the end of the table facing the prow of the ship. A prow-mounted cannon would fire. The poor individual may have died of fright but, of course, the cannon was not loaded with a ball. Hardly allowed today under modern health and safety rules!

### AMBC Meeting Dates

Please contact the host to ensure a place is reserved and for needs to be catered for. Include any guests you may be thinking of bringing. Also please advise if a booking has to be cancelled so that places can be offered to others.

**Sunday 4th June:** Chanctonbury Ring at The Old School, Bucks Green, Guildford Road, Horsham RH12 3JP. 10.30 refreshments, AGM 11 a.m., to be followed by lunch (bring your own sandwiches, puddings and drinks provided). Organ afternoon, bring an instrument if you can.

**Sunday 10th September:** Chanctonbury Ring, as above.

**Saturday 25th November:** Chanctonbury Ring Christmas Meeting.

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M J Paillard advertisement from circa 1890.

## Musical Box Music & Composers Part 2

Continuing with H A V Bulleid's\* series of short introductions to composers popular on musical boxes, we start this part with the letter C.

### Cellier

Alfred Cellier (1844-1891) was an English organist, conductor, and composer. His operetta successes included:

Nell Gwynne	1876
Dorothy	1886
Doris	1889

Dorothy was very successful and its tunes are fairly common on cylinder. Both the title and the libretto of Nell Gwynne were used by Planquette in 1884.

### Czibulka

Alphons Czibulka (1842-1894) was a Hungarian conductor and composer whose later work included arrangements of Sullivan operettas for production in Germany. He is noted for:

Stephanie Gavotte	1886
Love's Dream After The Ball	1890
Myosotis Waltz	1890
An dich! Waltz-Serenade	1892

### Dacre (and Dean)

Prominent among the writers and composers of popular songs at the turn of the 19th century was a music publisher named Frank Dean. He wrote the words and music of about 140 songs between 1884 and 1915. You hardly ever see his name on a tune sheet because he used the pseudonym Harry Dacre, and you do not often see Dacre on a tune sheet because his most popular numbers did not come until well into the 1890s. Naturally, several are to be heard on disc and I think most of the following will turn up on cylinder boxes - *Daisy* frequently.

Playmates	1890
Katie Connor	1890
Daisy Bell	1892
Donkey Ride Polka	1896
Clickity Clackity Click	1897
I'll be your Sweetheart	1899

### De Koven

Famous American composers include Reginald De Koven (1859-1920). He spent ten years in Europe studying and singing in light opera with Suppé and others. He

returned to the USA in 1882 armed with a degree from Oxford University. After a spell as music critic and composer he found fame with a series of 27 popular operettas and some songs. In 1902, he founded and conducted the Philharmonic Orchestra of Washington, DC. Most of his work is rather late for cylinder boxes, but his great success, *Robin Hood*, often appears as do some of his other early works:

The Begum	1887
Don Quixote	1889
Robin Hood	1890
The Fencing Master	1892
The, Algerian	1893
Rob Roy	1894
The Tzigane	1895
The Mandarin	1896
The Paris Doll	1897

### Delibes

Léo Delibes (1836-1891) came from a musical background and entered the Paris Conservatoire in 1847. He started composing one-act operettas in 1856, some playing at Offenbach's theatre, the Bouffes-Parisiens. Later as chorus master at the Théâtre-Lyrique he arranged the vocal scores of Gounod's *Faust* and of operas by Bizet and Berlioz. In 1864, he became chorus master at the Paris Opera (before the Phantom) and he collaborated with L. Minkus on a ballet for which he composed the waltz *Naila*. His first major success was the ballet *Coppelia*, and all the critics said that in melody, harmony, and orchestration he had that graceful, light-handed touch welcomed by musicians and nonmusicians alike. His works to be heard on musical boxes include:

La Source, Naila	1866
Coppelia	1870
Sylvia	1876
Jean de Nivelles	1880
Lakme	1883

By the late 1870s there was a tendency towards noisier tunes, and I have heard the slow waltz from *Sylvia* altered to end on noisy chords instead of its delicate fading away at the last note of an ascending scale. Perhaps this seemed a bit tame to an arranger who had just done the grand march from *Aida*.

**Ganne**

Louis Ganne (1862-1923) was a French composer who studied at the Paris Conservatoire and later enjoyed a long spell as musical director at the Casino, Monte Carlo. He is noted for:

La Czarina mazurka	1884
La Tzigane mazurka	1885
Marche Lorraine	1887
Le Pere la Victoire	1888

This last tune turned up, uncredited, as *Father Victory* on Paillard Serial No. 84796, tune sheet shown on The Music Box Vol.14, page 109.

**Genée**

It was very unusual for a successful writer of librettos (for Strauss, Suppé, and Millöcker) to succeed also as a composer, and a conductor, but such was the career of Richard Genée (1823-1895). He studied music in Berlin, was Kapellmeister in many cities including Riga, Cologne, and Prague, and was conductor at the Theatre an der Wien, Vienna, from 1868 until he retired in 1878. Of his many operettas and part songs the only ones likely to be seen on tune sheets are the part song *Italienischer Salat* (*Italian Salad*, send up of old style opera) and two operettas:

Der Seekadett (Naval Cadet)	1876
Nanon, Landlady of the Golden Lamb	1877

**Godfrey**

The name Godfrey on a tune sheet is almost certain to refer to Dan Godfrey (1831-1903) though his younger brother Charles was also a successful composer and arranger. Their father, also Charles, was Bandmaster of the Coldstream Guards.

Best remembered of Dan Godfrey's numerous works are *The Guards Waltz* (1862) and *The British Grenadiers*. Other waltzes include *Hilda* (1862), *Beauty of Gold*, and the four *Mabels* - *Mable No. 1* was composed in 1863 and the other three presumably soon after though one cannot be certain, and tune sheets often deprive these Mabels of their relevant numbers.

**Jones**

Sidney Jones (London, 1861-1946), the son of a bandmaster, turned to composing after some years with his father as clarinettist and conductor. His first song success was *Linger Longer Loo* (1893) and he also composed twelve comic operas including:

A Gaiety Girl	1893
An Artist's Model	1895
The Geisha	1896
A Greek Slave	1898
San Toy	1899

Many of these are on disc, but on cylinder only the vastly popular *Geisha* is often heard.

**Koenig**

In 1844 Koenig, the cornet soloist in Jullien's famous orchestra, composed the *Post Horn Galop*. He based the tune on the posting calls used to announce the arrival of the mail. It comes over astonishingly well from the 115 teeth of eight-inch, four-air Langdorff Serial No. 13013 - and with more powerful bass support from the 98 teeth of 18½", twelve-air, Nicole Serial No. 31897. I am sorry it is not more often heard on cylinder musical boxes. Koenig also composed four *Bird of Paradise Waltzes*, 1843-1845, and his *Jenny Lind* waltz, 1847.

\* *Cylinder Musical Box Technology*, Almar Press, New York, 1994

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- To establish formal links and working relationships with other national and international organisations in the field of mechanical music.
- To encourage research and publication of articles and books on the subject.
- To reach out to the public and foster a wider interest in mechanical music.

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Contact P. Bellamy or Ted Brown for P&P details: bellamypaul@btinternet.com or 01403823533.

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**\*Musical Box Tune Sheets** (The Tune Sheet Book) and three supplements, by HAV Bulleid. This A5 book and its supplements illustrate 400 tune sheets with dating charts for 15 makers. Contact E. Brown for details. They are in mint condition, purchased by Mr. Brown at the time he edited and compiled the book for Bulleid.

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