JOURNAL OF
THE
MUSICAL BOX
SOCIETY OF
GREAT BRITAIN

THE MUSIC BOX

a magazine of mechanical music

Vol. 5 No. 2

Keith Harding Antiques

W. K. Harding and C. A. Burnett

MUSICAL BOX SPECIALISTS

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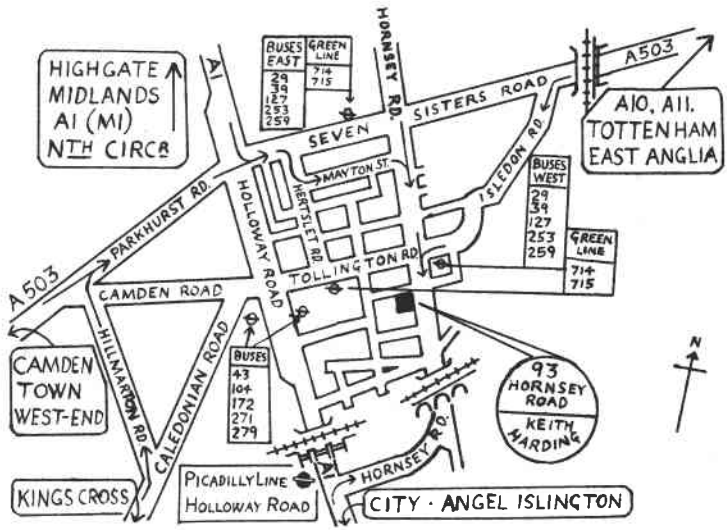

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THE MUSIC BOX

THE JOURNAL OF THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

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CONTENTS

Hon. Editor: Arthur W. J. G. Ord-Hume
Editorial Correspondence to:
14, Elmwood Road,
Chiswick, London, W.4, England
Published by:
The Musical Box Society of Great Britain,
Bylands, Crockham Hill, Edenbridge, Kent,
England

The Editor writes:

WITH THE COMPLETION of this issue, I shall be relinquishing the office of Honourary Editor and with it the duties of production of THE MUSIC BOX. This work will now be undertaken by the new Editor, Graham Webb.

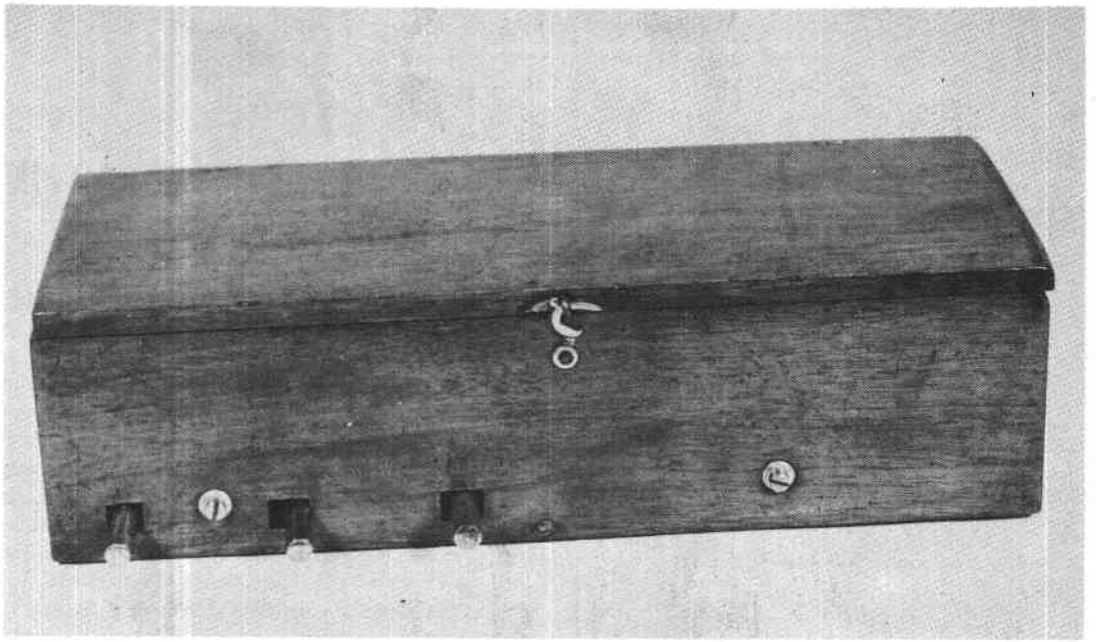
It is worth while, for a moment, to look back at the past issues of our Journal to see what we have achieved. In my first Editorial (Volume 1, Number 1) I stated my wish "to provide every Member with a publication which he will desire to preserve for repeated reference". At the time of our *editio princeps* we were twenty members strong and magazine production was achieved using a flat-bed duplicator of late Paillard dynasty. Since those days, we have published the astonishing total of exactly 2,000 pages of text and illustrations. A considerable amount of fresh research is included within these pages, information which has later appeared elsewhere in print. Together as a Society we have progressed considerably and, in modern parlance, have moved a long way up the learning curve. Through THE MUSIC BOX and the various text books which its existence has produced, the interested person has available to him a fund of knowledge which has never before been available.

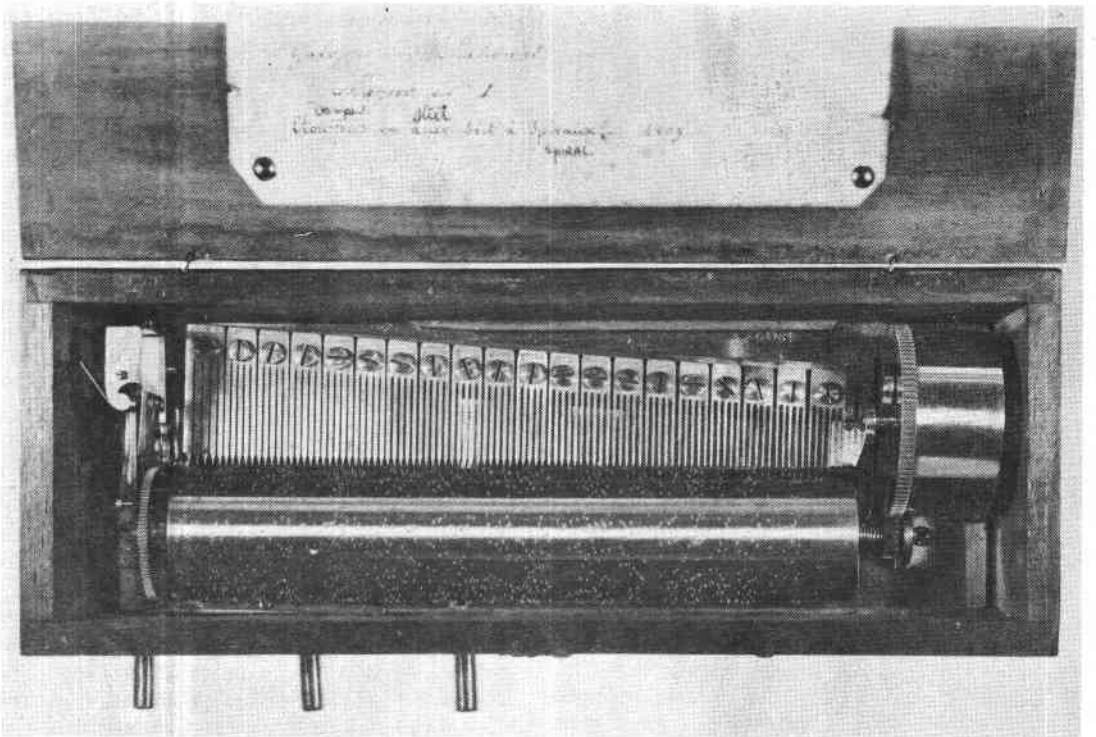
There are still those individuals who are collectors but who remain outside the Society. For them, collecting is the positive entity and they see no benefit to joining forces with like individuals. They have a point. But for the person who is fundamentally a collector, yet has the mind to enquire about his collection and to enrich the background to his pieces, then the facilities of communal knowledge afforded by a Society such as ours come into their own.

Even so, one still hears voluble nonsense from self-esteemed experts who pronounce publicly on our subject and one reads in responsible publications balderdash written for the assimilation of the public at large. It is to the credit of our Society that we are consulted more and more on technical details by those musical box tyros who choose or who are chosen to let forth on mechanical music.

For my part, retirement from Society affairs will enable me to continue my studies into mechanical music and, I hope, to offer to my successor for publication further work of an original nature. I have enjoyed holding my office for so long and to those Members, lamentably few in number, who have helped with comments and material to publish, I offer my thanks. *Audi alteram partem! Amat victoria curam* . . . .

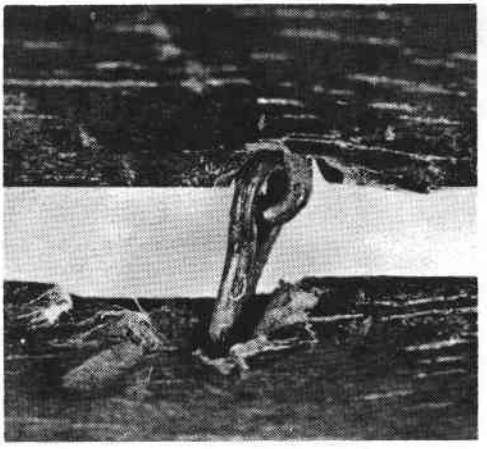
ARTHUR W.J.G. ORD-HUME



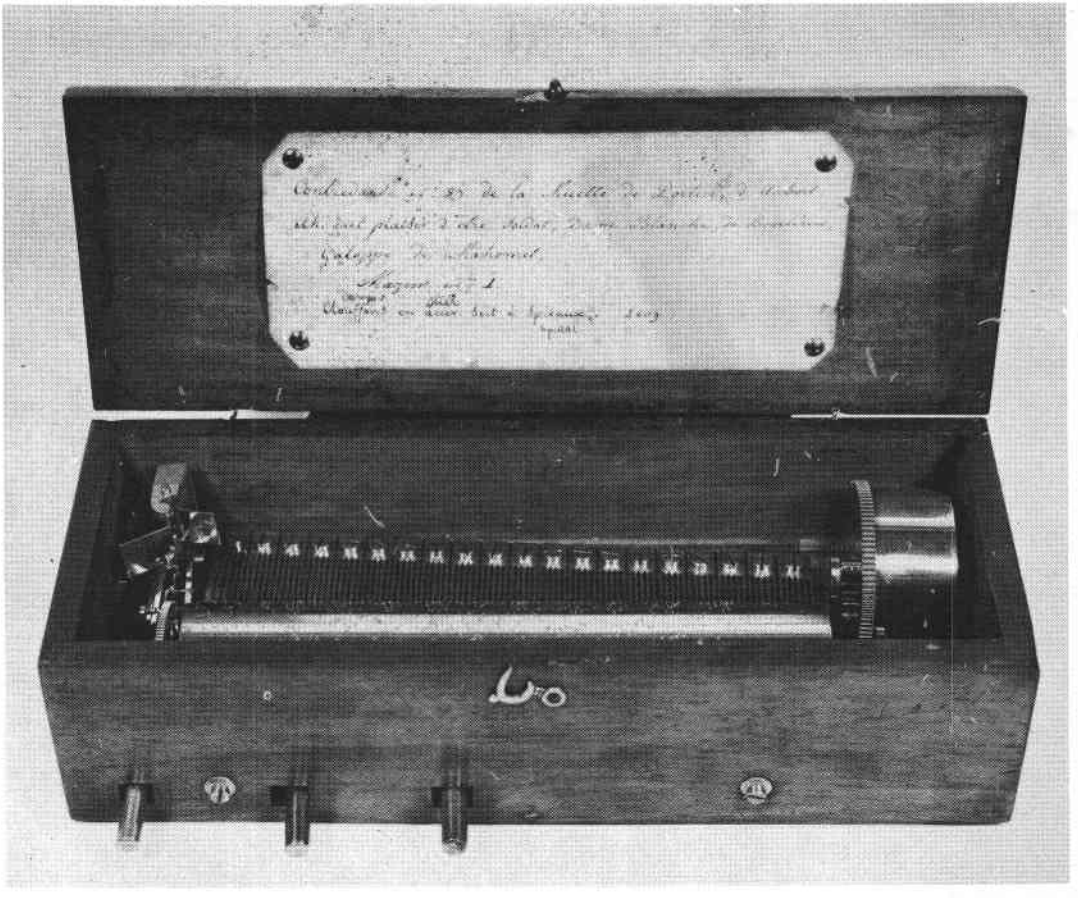


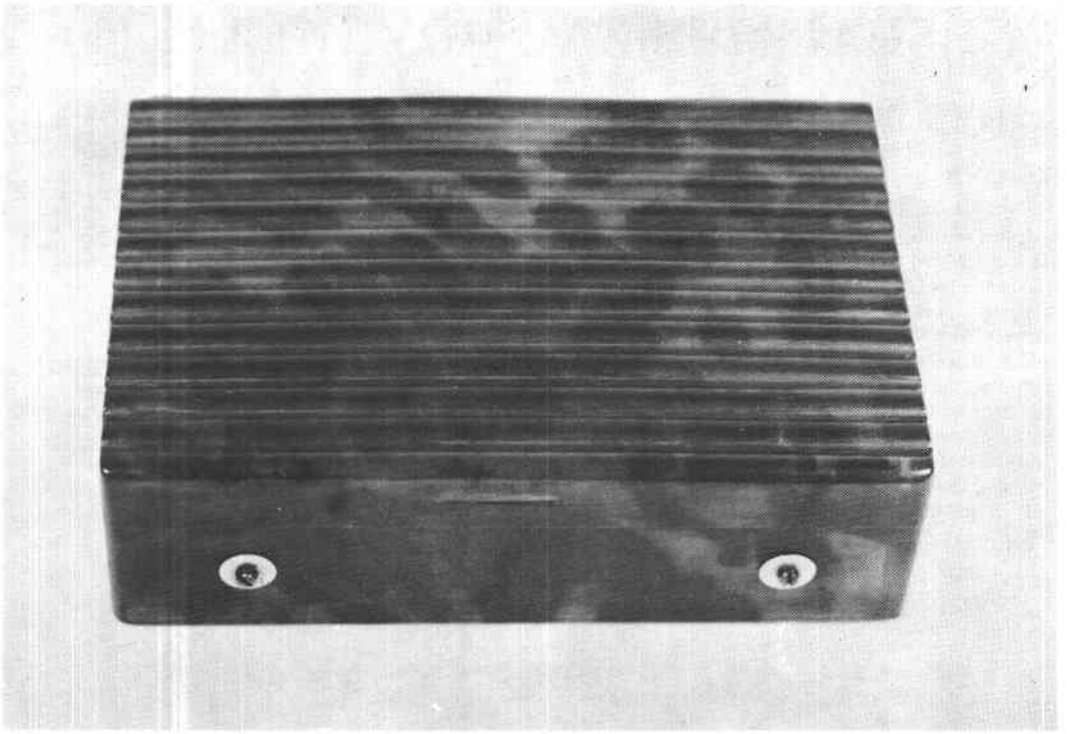
UNUSUAL MUSICAL MOVEMENTS (1)

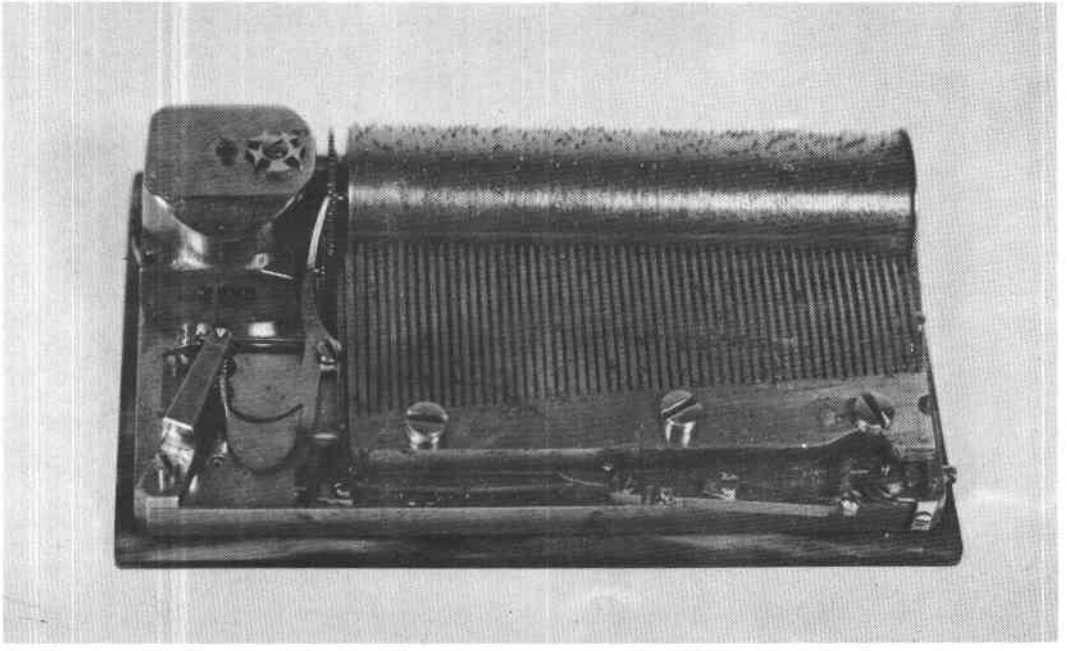
Early Lecoultre musical box



From Dr. Cyril de Vere Green's collection come these pictures of two rather remarkable musical movements. That illustrated on this page is of a very early cylinder box made by Lecoultre. The name is stamped into the bedplate under the comb. The three control levers project from the front of the plain wooden case into which the movement is mounted with the motor at the right and the cylinder at the front. The sectional comb has the bass teeth at the governor end. Inset right is one of the elementary case hinges comprising a wire hasp and staple driven into the corners of the timber at an angle of 45 degrees. The piece was probably made c.1815 and has been fully restored to perfect condition.



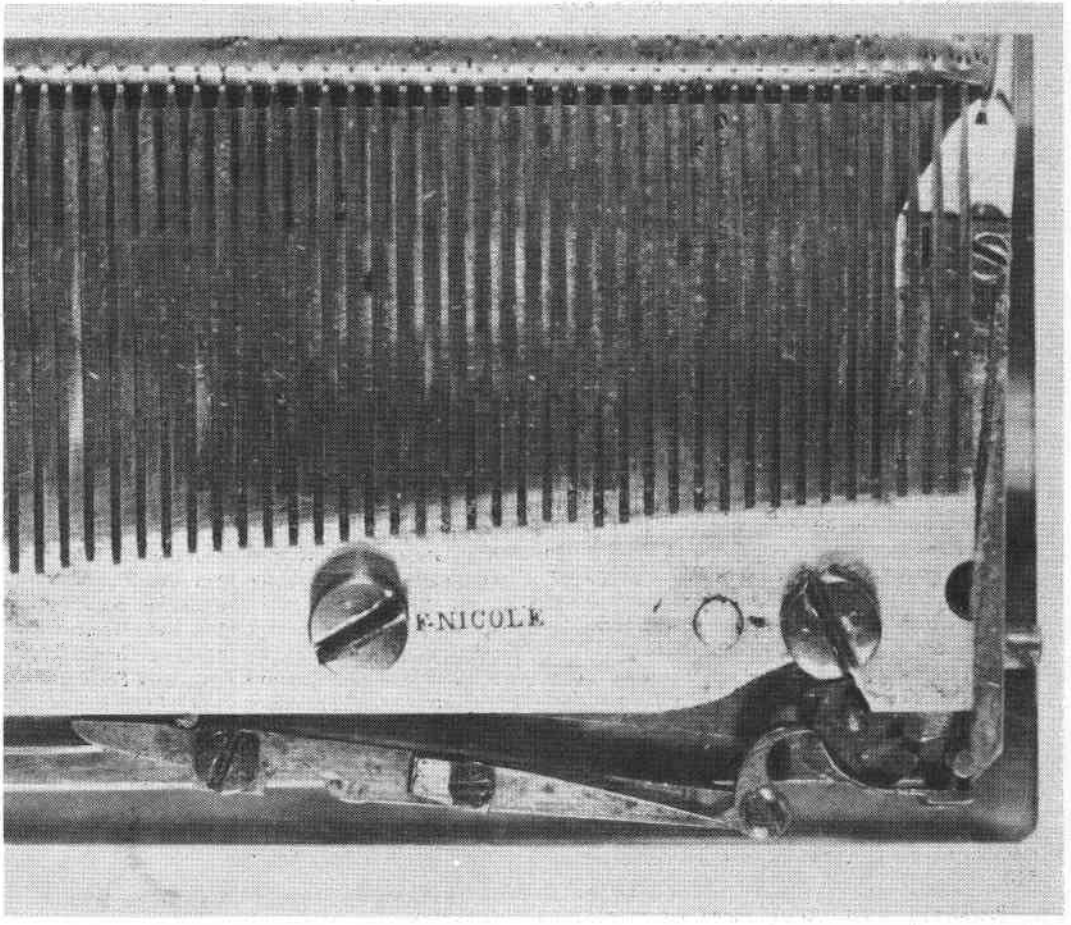




UNUSUAL MUSICAL MOVEMENTS (2)

Three-air snuff-box with base-mounted snail change

Second unusual musical movement is this three-air tortoiseshell snuff-box. The tunes played include a rather embellished version of "God Save the King" and two as yet unidentified tunes. Of particular interest in this movement is the change mechanism. As can be seen in the picture below, the normal component parts of a change mechanism are present, but they are placed in an entirely unconventional manner. The snail is situated on the bedplate in front of the comb back and has six points which engage in a sprung pawl mounted on an arm extending along the front edge of the bedplate. Movement of the snail (which rotates in 60 degree increments) presents a different radius on a cam wheel to a pivoted lever which passes up the right hand side of the bedplate and terminates in the usual cleft end between which fits the protruding rim or bezel of the cylinder. The system thus incorporates the terminal part of an ordinary two-position snuff-box tune-changer with the sophistication of a snail-change. Only one other example of this form of mechanism has been seen and that was fitted in a musical photograph album. The movement, of undoubtedly fine quality, is by F. Nicole and it may probably date from 1860-1880.



The Summer meeting of the Musical Box Society of Great Britain was held on Saturday and Sunday, May 22nd and 23rd 1971 at the Great Western Royal Hotel, Paddington, London. The event, which included the Annual General Meeting, was attended by a thirty-strong delegation from the Musical Box Society International of the United States.

Attendance at this Meeting, including our overseas guests, topped 175 and because of the numbers which your Committee expected, it was wisely decided to modify the arrangement of our usual two rooms so that the exhibition of boxes plus those for sale were displayed in the smaller room and the main conference room was given over entirely to seating accommodation.

SOCIETY MEETING

By 10.30 in the morning, it became apparent that this time your Society was out to break all earlier records. A very large display of boxes, many of them of unusual and superb quality, graced the green beige tables and our registration table, gamely staffed by Mrs. Tallis, Mrs. Waylett and Mrs. Shankland with periodic help from others, was the focal point of a seemingly never ending melee of members and guests.

The morning lecture was given by Member Graham Webb on the development of the cylinder musical box. His talk, illustrated with drawings, described the progression from the *carillon* clock and watch to the invention of the tuned steel comb, attributed to Antoine Favre in 1798. His talk was warmly received by the audience.

The luncheon interval was shared between eating, talking and examining the boxes on show and there was some brisk exchanging of boxes for sale between members. Among the many interesting boxes for sale was a twin-disc Symphonion; a single-comb forte-piano box playing three overtures plus a waltz and made by Lecoultre & Granger of Geneva with an engraved brass tune sheet; a three-air Nicole Freres overture box; and an example of a box never before seen at our exhibitions – a *Plerodienique* with twin cylinders telescoping one to the other.

Immediately after lunch came the Annual General Meeting. Secretary Reg Waylett read the minutes of the last A.G.M. and also those of the Winter meeting, held in London last November. In his subsequent report, Reg Waylett stated that in spite of the loss of two months mail due ot the postal strike in the UK, our membership continued to increase and now stood at 510.

President Bob Burnett welcomed our visitors from the United States who, as well as including our old familiar friends Hughes and Francis Ryder and Howard and Helen Fitch, comprised a number of our many other American members. He also recorded the fact that Mr. and Mrs. Hoschek were with us from Austria but, without shadow of doubt, the two members who had travelled the greatest distance to be with us were Mr. and Mrs. Foster from New Zealand.

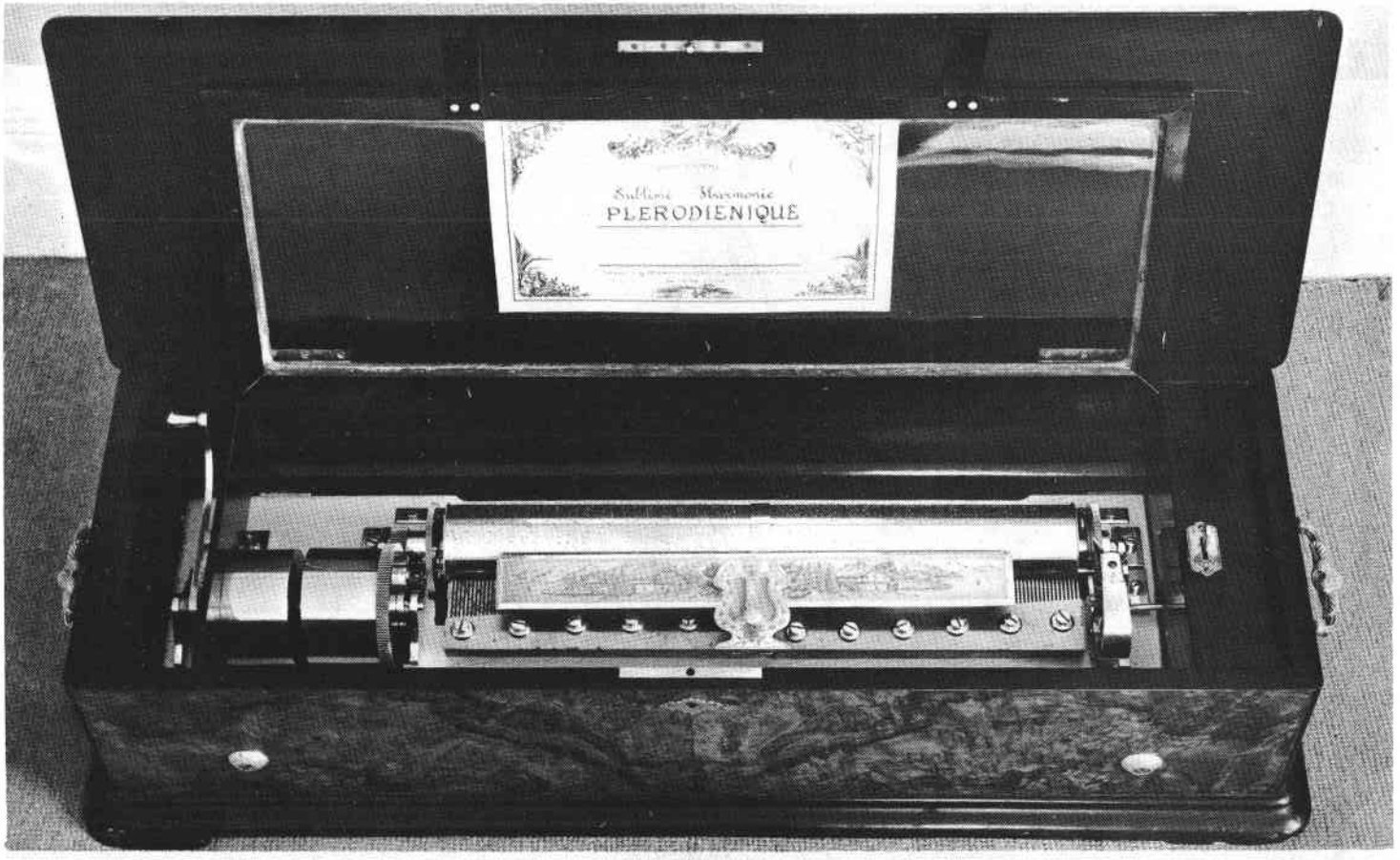
Treasure David Shankland announced that our financial position, another aspect of the Society which suffered a setback from the protracted postal dispute, was now better than before.

Editor Arthur Ord-Hume outlined his plans for the forthcoming affairs of THE MUSIC BOX and stated that the Index for Volume 4 was in preparation along with a new Membership Application form. Additionally, work was to start soon on a new Directory of Members. He went on to say that for the past two years he had been murmuring at meetings that he was unable to continue in office as Editor for much longer and now felt that the time had come to hand over. He stated that he would be responsible for the next issue of the magazine (Volume 5 Number 2 – this issue) after which time Member Graham Webb had offered to take over as Editor. Accordingly, he would join with Mr. Ord-Hume on the production of the two subsequent issues (Volume 5 Numbers 3 and 4) holding the office of Assistant Editor. Mr. Ord-Hume highlighted the fact that the actual writing and preparation of the magazine was not in itself a tremendous task, but the physical production of the publication, which he had undertaken single-handed for over eight years, had now reached unacceptable proportions. His aim would be to ensure that the office of Editor would not be handed over until his successor had attained the necessary proficiency in the mechanics of magazine production whereupon he would step down and Mr. Webb would assume total responsibility as titular editor.

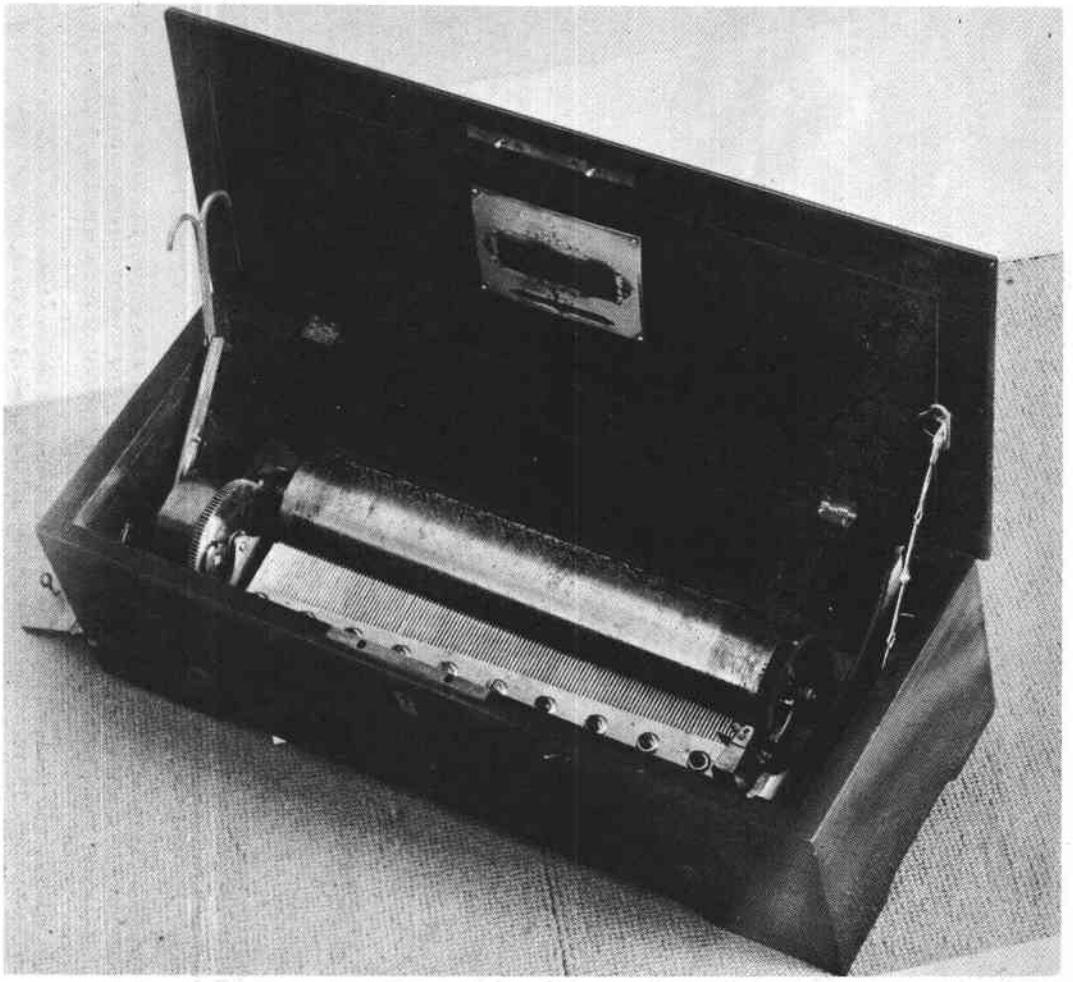
The next stage of the proceedings was the election of officers. The existing Committee retiring, the single nomination for the position of President, Dr. Cyril de Vere Green, was confirmed unanimously. Two nominations had been submitted for Vice-President, those of Mr. Arthur Ord-Hume and Mr. David Tallis. At this point, a Member stood up and suggested that, rather than have to vote for these two nominations, could we not have two Vice-Presidents. Secretary Reg Waylett conferred briefly with Bob Burnett and an immediate decision was taken that the two nominations would both automatically be elected as Vice-Presidents. Member Graham Webb was then elected as Editor, Treasurer David Shankland was re-elected and the one nomination for Committee Member, that of Member Keith Harding, was approved.

The new Committee, as elected at the Annual General Meeting, stood as:

President: Dr. Cyril de Vere Green

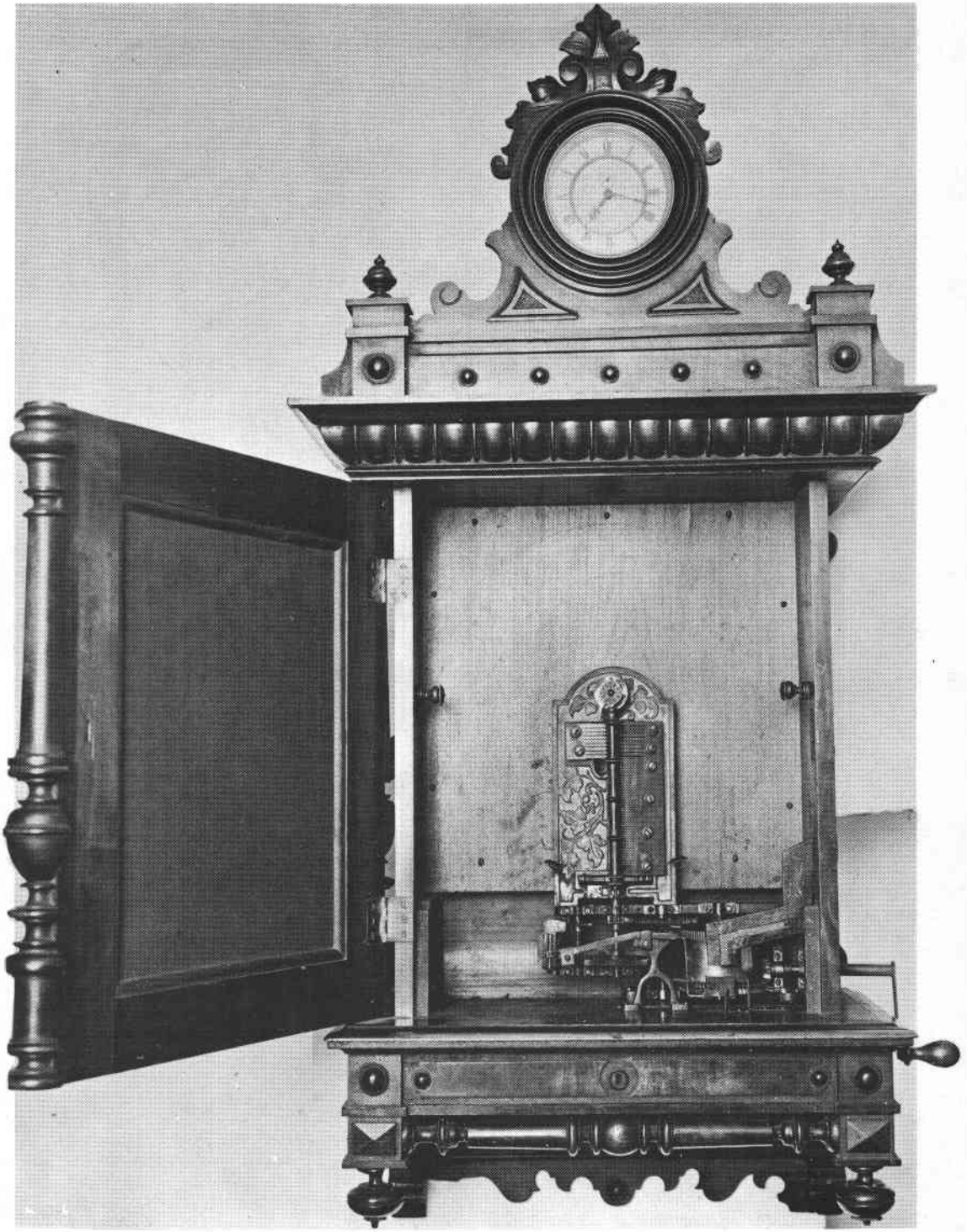


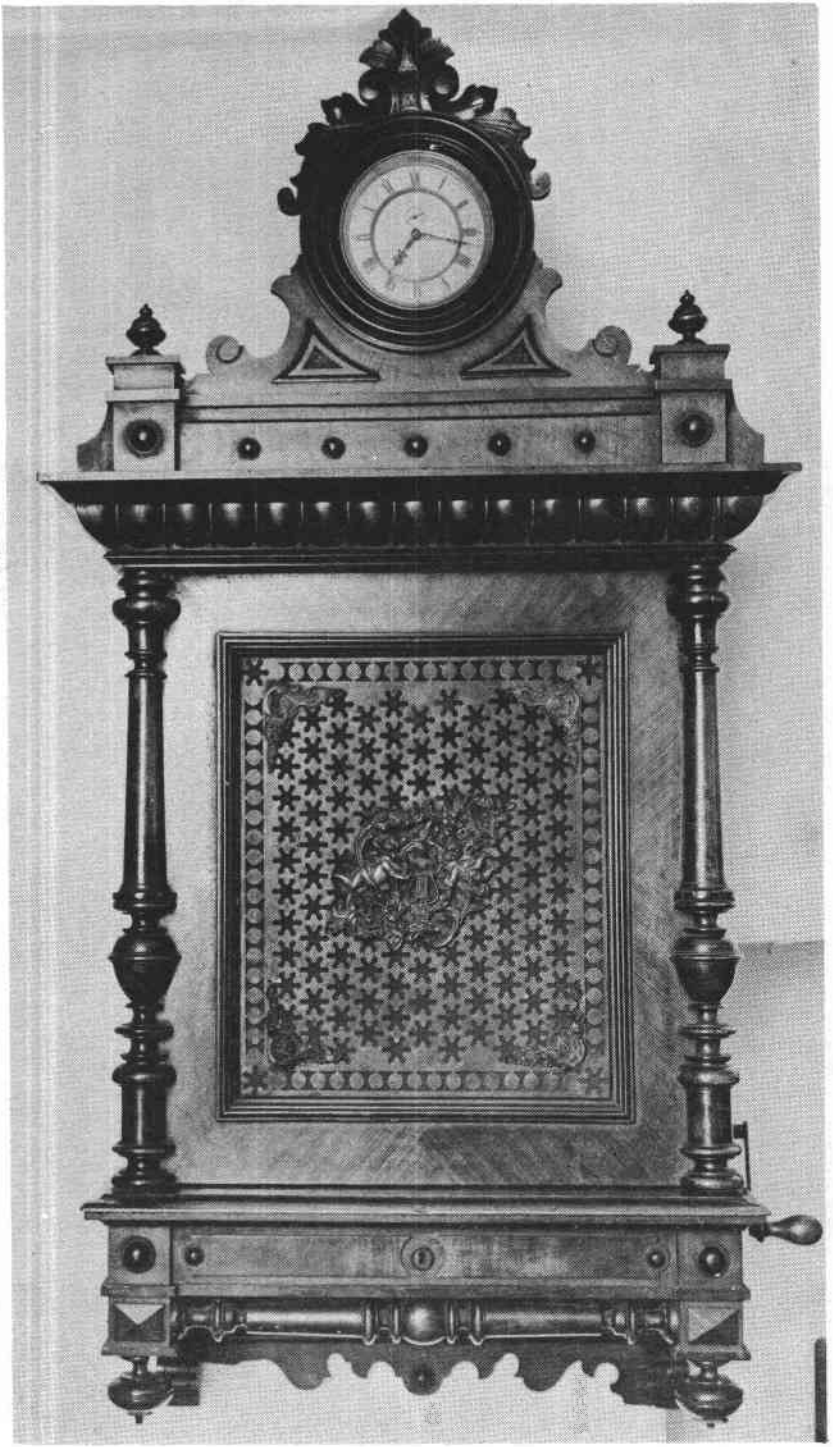
Member C.R. Thompson's Plerodienique manufactured by G. Mermod and Bornand ("Successeurs d'Albert Jeanrenaud, Ste. Croix, Suisse"). The box, recently overhauled by Keith Harding, measures 32 inches long, 12 inches wide and 8 inched deep, and is of fine, figured walnut veneer. Fully extended, the two cylinders are 16¾ inches long. The two combs each have 75 teeth and, when the cylinders are not in lateral motion, the mechanism plays as a normal *Sublime Harmonie* movement. The zither attachment has a finely-engraved lakeside scene on its upper surface. The controls are only a start and stop lever, the box playing the six revolutions without a break. There are in fact two tunes, each of which plays for three revolutions and there is a slight pause between the two. The tune sheet is not original and the names of the tunes, two waltzes, are not at present identified.

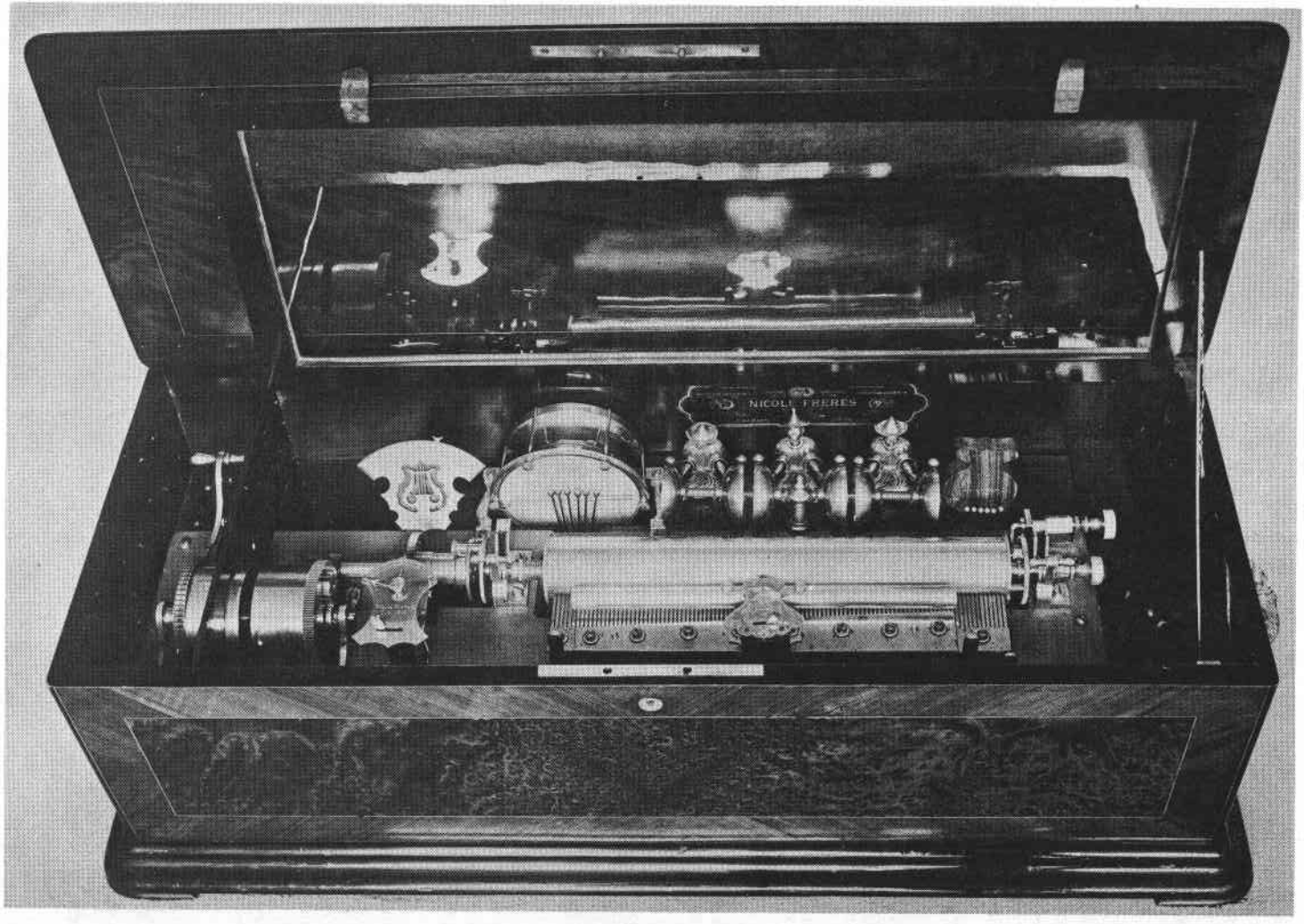


This unusually fine single-comb pianoforte overture box was shown by Member C.R. Thompson. The case measures 21½ inches long, 8¼ inches wide and 6½ inches deep and the most unusual feature of the mechanism is the winding handle which is a very early ratchet type and marks the start of the transition from key-wind to lever wind. Another noteworthy feature is the fan which has two weights on either side of the wings. The tune sheet is engraved in brass and reads "MUSIQUE EXPRESSIVE. 1. Cavatine de Linda de Chamounix; 2. Ouverture du Barbier de Seville (en 2 Parties); 3. L'Echo de la Symphonie Waltz; 4. Ouverture d'Oberon (en 2 Parties). LECOULTRE AND GRANGER a GENEVE". It plays on six revolutions, two of the overtures being on two revolution each and produces a fine pianoforte effect on short and long pins. The box has three control levers on the left hand side which are enclosed by an end flap which drops from halfway down the left case end.

Right: Also on show at the Summer Meeting from the C.R. Thompson collection was this unusual Monopol. The case is 36 inches high plus the extensive clock pediment which adds a further 17¼ inches to the height. The width is 25½ inches and the depth 14½ inches. The door, seen closed on the following page, comprised silk-backed fretwork with ormolu mounts. The discs are 17.1/8 inch in diameter and have rectangular drive holes. The three combs comprise 60 teeth on the main one, 9 on the treble comb and 9 further bass teeth on the left hand side.







A fine example of a good-quality drum and bell box made by Nicole Freres and also from the C.R. Thompson collection.

Vice-President:	Arthur Ord-Hume
	David Tallis
Secretary:	Reg Waylett
Treasurer:	David Shankland
Editor:	Graham Webb
Committee Member:	Keith Harding

The business of the A.G.M. being concluded, the afternoon continued with a repeat of Member Dick Baines' novel lecture and slide show on Christie's Old Organ. High Victorian melodrama and pathos left hardly a dry eye in the house and the authentic atmosphere created by the period magic lantern was enhanced by the sounds of Dick's melodious Getto barrel piano.

After the tea interval, our new President and Society Founder, Cyril de Vere Green, presented a programme entitled "Moments with Musical Movements" in which he cleverly coupled tape-recordings, colour slides and cine film to provide an insight into some of the items in his extensive collection. This was followed by a showing of an American film kindly brought over by our US visitors on computers and musical boxes, showing the definite link between the programmed music on the disc of a Regina to the punched paper forming a piano roll and, by simple extension, a computer programme.

The meeting then dispersed to prepare for dinner, but not before the raffle was drawn. The item for raffle was a small musical snuffbox and the winning ticket turned out to be held by Member Graham Webb who sportingly agreed to be disallowed. A second draw produced a win for Mrs. Reg Waylett.

Ninety-six people sat down for dinner and the meal and the company both turned out to be excellent. Member Bruce Angrave then addressed the diners and in a most amusing speech in which he confessed that his many large musical boxes were forcing him to move to a larger, more expensive house, he welcomed the guests. The toast was responded by Mr. Harvey Roehl of the American Society.

The programme for the Sunday began with a film produced by the British Broadcasting Corporation and featuring the restoration of an overture musical box by Keith Harding. This proved to be an extremely interesting item and comprised a 'rush' copy kindly made available by the BBC. It had taken a number of months to shoot and showed the stages in converting a battered and badly damaged box to renewed serviceability. The actual box was also on show and was closely examined by Members after the film.

At our last Summer Meeting, Colyn Gates, a friend of Member Graham Webbs, presented an extremely interesting demonstration of musical box case finishing. This was repeated in an extended form as the second and major item in our Sunday morning programme. Mr. Gates, a craftsman, first demonstrated the cleaning of dirt and old varnish from a box using a mixture of raw linseed oil and white spirit. He went on to show how small holes and pieces of missing veneer could be replaced using Brummer stopping and worm holes concealed by periodic treatment with a mixture of shoe polish and Alabastine filler.

Although the numbers were undoubtedly swelled by the presence of our American friends, attendance at this meeting far and away exceeded anything we have ever had before and the Sunday morning meeting was larger than many of our previous Saturday events. The meeting was wound up at 12.45 p.m.

A letter from Mr. Arthur Ord-Hume

Shortly after the meeting, a letter was sent to both our President and Secretary from Mr. Ord-Hume in which he stated that he believed the affairs of the Annual General Meeting, specifically concerning the election of two Vice-Presidents, had been conducted irregularly and pointing out that any change in the Constitution of the Society had to be given prior notification to the Members before discussion and voting at a meeting to consider such changes. This had not been done and, no doubt with the best intentions, the meeting had allowed itself to act contrary to its Constitution. Therefore Mr. Ord-Hume urged that his election as joint Vice-President should be considered null and void until such time as the suggested alteration to the Constitution could be circulated to all Members and a vote taken at a meeting.

Secretary Reg Waylett then proposed to hold an Extraordinary General Meeting at our Winter meeting in order to discuss this. Subsequently, however, Mr. Ord-Hume again wrote to both President and Secretary stating that in the circumstances he felt it preferable that, on completion of his duties as Editor to the Society Journal, he should retire from the Committee and not offer himself for any fresh election.

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MUSICAL-BOX REPOSITORY, 32, Ludgate-street (opposite Everington's), London.—WALES and M'CULLOCH are direct importers of Nicole Frère's celebrated MUSICAL-BOXES, playing, with unrivalled brilliancy of tone, the best Popular, Operatic, and Sacred Music. Large sizes, four airs, £4; six, £6 6s.; eight, £8; twelve airs, £12 12s. Snuff-boxes, two tunes, 14s. 6d. and 18s.; three, 30s.; four tunes, 42s. Catalogue of tunes, &c., gratis, and post-free, on application.

MUSICAL BOX DÉPOTS, 22, Ludgate-hill, and 56, Cheapside.—Most extensive variety in London. Popular, operatic, and sacred music. Large sizes, ordinary make, four airs, £2 2s.; six, £2 12s.; and eight airs, £3 3s.; ditto, by Nicole Frères, £1 per air; superb instruments, from £4 to £260. Choicest music and newest accompaniments.—Catalogues of tunes and prices gratis on application to WALES and McCULLOCH, as above.

1851 (top): June 1855 (centre): 1881 (bottom)

THE END OF AN ERA

It is interesting to note that originally the word PHONOGRAPH had an entirely different meaning to that which later came to be associated with it. In its original interpretation, it was often used to describe the Melograph – a machine proposed to be attached to pianofortes and other keyed instruments so that any music played upon the instrument might be written down in some way upon a plain sheet of paper. Such an instrument was invented by a Mr. Fenby on June 13th, 1863 – the date of his Patent. The motive power was described as "electro-magnetism". Similar machines were projected by Creed in 1847, J.F. Unger in 1774 and by a Mr. Carreyre in 1827. Its association with the telephone and wireless telegraphy was, in its burgeoning years, unmistakable. And when, in March of 1878, Professor Tyndall showed the first phonograph to be seen in the British Isles at the Royal Institution, it was so widely acclaimed that at the end of the lecture, the crowd around the machine was not dispersed until nearly eleven o'clock when, as a very broad hint that it was time to go, the management turned out the gas in the theatre. Did the instrument really kill the musical box? Or was it just a natural extension of contemporary technology? Certainly Thomas Alva Edison's famed talking dolls which could speak about 30 words from a concealed phonograph within them and which were first seen at the Savoy Hotel London on July 25th 1890 marked a new generation of automata. In this article, Arthur W.J.G. Ord-Hume takes a musical-box historian's view of the gramophone.

It is generally accepted that the end of the era of the musical box was heralded by the arrival on the market of the gramophone or phonograph as it was originally called. Whilst there is little doubt that it did precipitate the end of the age by bringing into the home that sound which captivated Man's imagination – his own voice – the assumption that had the gramophone not been invented, the mechanical musical instrument would have survived indefinitely is not justified.

Times were changing and the rush to manufacture and sell "talking machines" throughout the world did, it is true, make the musical box a thing of the past. However, standards were changing, people were changing and the catalyst of war was at hand. At the end of the Great War, the ability to make noise in a multitude of ways was upon us and the voice of the musical box was swamped by that of the player piano, the dance organ and the nickelodeon. In its own right, the gramophone and, later, wireless, were part and parcel of the twentieth century.

But the gramophone was mechanical music after a fashion, although its main claim to success was the fact that it was a clockwork *voice*. It very nearly did not amount to anything more than a toy, for its was thus that Edison first saw his invention.

There exists some confusion as to whom it was first made a device for reproducing sound. One Professor Luca de Samuele Cagnazzi who taught at the University of Naples during the early years of the last century is said to have exhibited an ingenious apparatus for the reproduction of sound before a science congress held in Florence in 1844. Be that as it may, Sir David Brewster, F.R.S. (born 1781; died 1861) wrote in his "Letters on Natural Magic" that in his opinion a singing and talking machine would be numbered amongst the conquests of science before the end of that

century. He was discussing the apparatus contrived by Baron Wolfgang Kempelin, the Hungarian mechanician (born 1734; died 1804) and the more recent researches of Felix Savart, the French student of the theory of sound who was born in 1791, upon the mechanism of the human voice.

As Henry Seymour points out in his work "The Reproduction of Sound", it was not difficult for a man of scientific insight to hazard so certain a prediction, because the large array of scientific knowledge already at hand only needed some sort of ordered classification and synthetic deduction to render such a proposition more than mere hypothetical conjecture.

We have already looked into the question of talking statues and the more than likely explanation that these were cleverly-engineered hoaxes.* There is, however, an interesting account of a "pre-history" device related by the Irish government official, Sir Robert Hart (born 1835; died 1911) who spent many years in China. He stated that the Chinese books cover almost every conceivable subject and that nearly half a century before the first phonograph reached Pekin, the Governor, Kwang Tung, personally told him that an ancient book dating back 2,000 years before relates how, one thousand years earlier still, a certain Chinese prince sent messages to a brother prince by speaking them into a curiously-shaped box. The recipient, on opening the box, heard with his own ears the actual words and the voice of the sender.

The Imperial Academy of Sciences at St. Petersburg offered a prize to anybody who could analyse the nature of vowel sounds and this inspired the German physicist, Christian Gottlieb Kratzenstein (born 1723; died 1795) to devise a machine by the operation of which it was demonstrated that the vowel sounds could be properly pronounced by mechanical agencies when air was passed through a reed into cavities or resonating chambers of various specific forms and sizes. This invention was superseded by that of Kempelin who applied the principle of the vibrating reed to a single cavity made to represent the human mouth. By the use of his hand, he was able to manipulate the shape of the artificial mouth so as to utter the vowel sounds successively. He was later to develop this into a mechanism comprising levers, tubes and bellows so as to enable a complete sentence to be articulated distinctly.

In 1860, Herr Faber devised an even more remarkable device which was an elaborate instrument whose vocal abilities were produced by means of air in tubes, flexible rubber lips and tongue and operated by an ingenious mechanism concealed in the trunk and operated by a keyboard. Demonstrated at the Egyptian Hall in London before a completely non-appreciative public, the model produced its vowels and consonants with considerable accuracy, whilst a vibrating ivory reed was mounted in the throat to simulate vocal chords. The size and shape of the oral cavity could be modified instantly by a lever device. To produce the rolling of the letter *r*, a tiny windmill was fitted into the throat whilst the rubber tongue and lips expressed the consonants.

These devices were contrivances designed to produce speech and as such were possessed of the same powers of original sound as the musical box, only they had no pre-recorded programme to utter. A newer school of experimentalists now turned to the more profitable and commercially attractive proposition of sound reproduction. What had to be learned here was not how to shape a sound with rubber lips to produce a perfect vowel, but to analyse the sound and see just what processes were involved in its production.

The father of modern acoustics was the German physicist, Ernst Floreus Friedrich Chladni (born 1756; died 1827). Earlier, Georg Christoph Lichtenberg (born 1742; died 1799) experimented with scattering electrified iron powder over an electrified resin cake,

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It has always been assumed that Polyphon in Leipzig made the Klingsor gramophone. It was, in fact, produced c.1909 by Krebs & Klenk of Hanau. The confusion no doubt arose because the Polyphon supply house in London was also the distributor of the Klingsor. This advert comes from a 1909 directory.

the arrangement of the powder revealing the electric condition of the surface. This inspired Chladni with the idea of rendering sonorous vibrations visible by means of sand scattered on to the surface of a vibrating steel plate. By the latter part of the 18th century, he had discovered the principles of motion which govern sounds of the harmonious series, rendering visible their nodal signs.

The next significant step was the invention of the Phonautograph by M. Leon Scott in 1856. This was probably the first attempt in recent times to record speech through the action of a vibrating diaphragm. Scott used a roller affixed to a spindle, one end of which was extended and equipped with a screw thread. As the roller was turned by a small handle, the screw (which passed through one of the supporting standards) caused it to be moved laterally. The surface of the roller was covered with a sheet of paper the surface of which was prepared with lamp-black. A Plaster of Paris sound-focussing chamber terminating in a parchment diaphragm to which was fixed by sealing wax a short hog's bristle.

This was maintained in contact with the surface of the revolving drum, removing particles of lamp-black and so leaving a distinct mark. As a means of permanently recording the effects of sound, Scott's machine succeeded. But it offered no system whereby the recorded roller could be processed back into sound.

A Mr. Fenby took out the first patent for an instrument which he called a phonograph in 1863 and which recorded sound electrically and was capable of subsequent reproduction. Edison's invention, also called the phonograph but operating on an entirely different system, was patented in 1878. A controversy as to whether Edison or the Frenchman, Charles Cros, was the true inventor of the instrument subsequently arose. Cros deposited a description of his instrument with the French Academy of Sciences in April, 1877, earlier than Edison's earliest patent. However, the matter has never been adequately cleared up.

Edison stumbled upon his invention by accident. He was experimenting with a machine intended to repeat Morse characters recorded on paper by indentations which transferred their messages to another circuit automatically when he detected a humming noise of a musically rythmic character which followed the rapid movement of the impressed paper. He had come back to the elementary teachings of Robert Hook who, in 1681, demonstrated the making of musical sounds with the help of teeth in brass wheels – equal-sized teeth made musical sounds whilst unequal teeth made vocal sounds. Savart and many others were later to exhibit the same principle in various ways.

Edison's Phonograph was very similar in many ways to Scott's Phonautograph except that Edison's roller was spirally grooved and covered with tin foil. A steel point was attached to the centre of the diaphragm and the whole was adjusted so that when the drum was evenly revolved by means of the crank provided, it shifted laterally. The recording, when made, became an inherent part of the machine since the tinfoil, pressed into the spiral groove of the drum, was now impressed with a series of minute indentations on the "hill-and-dale" principle. When once more the steel point was placed at the start of the groove and the drum rotated, the point imparted rapid motion via the indentations to the diaphragm, so re-converting them into the original sounds.

Edison was unable to see any commercial possibilities in his instrument and so for some years it remained purely as a scientific movelty. Then two other inventors, Graham Bell and Tainter, devised a method of recording using a cylindrical wax blank which could be removed from the machine after recording. This was cut using a sapphire stylus and produced superior results. In 1887, Emile Berliner took out patents for his instrument which recorded on flat discs, initially of prepared zinc, instead of bulky cylinders. The talking machine was born.

Pathé Freres in Paris perfected the method of pressing records in a shellac composition. As with the mass-produced musical boxes of a few decades earlier, the talking machine had to be part of everyone's home and they were made in all shapes and sizes at prices ranging from a few shillings to many pounds.

Just as musical boxes had appeared in novelties, so did the talking machine. As early as 1893, Lioret of Paris devised mechanical dolls which contained a small phonograph with reproducer. The recording was pressed in celluloid from a steel pattern and was cylindrical in form. Talking novelties were popular in the years to come and I well remember a dreadful blue-painted cigarette box which my father had. When the catch for the lid was slid back, the lid would open slowly accompanied by the grinding whirr of machinery and an obsequious voice would be heard saying "Would you care for a cigarette?" – no doubt to the consternation of the visitor hell-bent on surrupticiously filling his cigarette case at my father's expense. Lamentably, over the years, the two-inch record within wore out. Thoughtfully provided with an identical track on the opposite side, reversal of the disc was eventually followed by the wearing out of that side, too. Not, I might add, because my family were heavy smokers, but because to my childish sense of appreciation, it was highly amusing and ought to be heard at every opportunity. The cigarettes within yellowed after repeated exposure to sunlight. Ultimately, my requests were granted and I was allowed to dismantle it. At this point in time, the disc was entreating the box-opener "Aaahjjouakkakimmenn?", so one could say that its life was expired. It certainly never worked again

Continued on page 114

Bygone London Life

Pictures from a Vanished Past

BY

G. L. APPERSON, I.S.O.

AUTHOR OF "AN IDLER'S CALENDAR"

WITH MANY ILLUSTRATIONS

LONDON
ELLIOT STOCK
62 PATERNOSTER ROW, E.C.
1903

Old London Museums

JAMES COX'S MUSEUM

IN the second act of Sheridan's "Rivals" Sir Anthony Absolute, enraged at his son's disinclination to promise immediate and unconditional compliance with his wishes, exclaims: "Zounds! sirrah! the lady shall be as ugly as I choose: she shall have a hump on each shoulder; she shall be as crooked as the crescent; her one eye shall roll like the bull's in Cox's Museum; she shall have a skin like a mummy, and the beard of a Jew—she shall be all this, sirrah! Yet I will make you ogle her all day, and sit up all night to write sonnets on her beauty." The allusion to the bull in Cox's Museum has probably puzzled more than one reader, though at the time of the play's first performance, in 1775, it was perfectly intelligible to every Londoner.

For a short period—1773 to 1775—James Cox's Museum was one of the most noteworthy shows to be seen in London. Cox himself was a most ingenious mechanician, a silversmith and watchmaker, whose place of business was at 103 Shoe Lane, Fleet Street. When the victories of Clive in India, and the success of the same great soldier-statesman in purifying and settling the government of the East India Company's dominions, made it likely that many parts of the interior of India would be made accessible to British commercial enterprise, Cox determined to take advantage of the new openings for trade, and constructed a number of elaborate toys and ornamental contrivances of the most cunning and intricate mechanism, and of the richest materials, which he hoped to sell at a handsome profit to the Indian princes and rajahs. The ravages of Hyder Ali in the Carnatic, a terrible famine in Bengal, and other disturbing events—wars and rumours of wars—prevented this plan from being carried out, and Cox found his ingenious pieces of mechanism left on his hands, practically unsaleable, for Europe afforded no market for costly baubles of this kind. Some of Cox's productions, however, must have reached the Far East, for on the occasion of the plundering of the Summer Palace at Pekin in 1860 several articles of jewellery and curious mechanical contrivances were found bearing the name and address: "James Cox, Jeweller, 103, Shoe Lane, London." But these were probably of less value and of less interest than the wonderful articles which he had prepared for India.

In order to recoup himself for the enormous outlay

which he had incurred, the ingenious silversmith opened an exhibition in Spring Gardens, which was at once known as Cox's Museum. Mr F. G. Stephens some years ago pointed out, incidentally, in a paper on Spring Gardens,* the exact site of the room where the show was held. "The Great Room in Spring Gardens, otherwise called 'Wigley's Auction Rooms,'" says Mr Stephens—in which from 1761 to 1772 the Society of Artists of Great Britain held their annual exhibitions of pictures—"stood at the south-west corner of Spring Gardens, and on one's right hand on passing from that street (which was never a thoroughfare for vehicles) into the Park, to enter which you had to go between two tall iron bars, with a kind of frieze over your head connecting the iron bars, of which there were three in all." Close to this barred opening, on the right, was a shop extending "the width of the pavement, which was wider there than elsewhere, from the front of the auction rooms proper." The entrance to the rooms was approached by three steps. "A blank wall of brick without any windows faced the street, and when you stood on the south side thereof a sort of lantern of glass, raised upon the roof, visible above the parapet, suggested to observers of intelligence that it lighted a large and lofty room on the first floor of the building, to which, if the street door happened to be open, it was not hard to guess a then visible staircase gave access from the hall. Just below the stone coping of the parapet of the cheerless façade of brick, and immediately above the door, was a large board, on which in full Roman capitals . . . one might read, WIGLEY'S ROOMS." In the great room surmounted by the glass lantern, standing on the site now occupied by the offices of the London County Council, were exhibited the contrivances of Mr James Cox.

* *Notes and Queries*, 8th series, vol. ix. pp. 49-51.

The circumstances under which these beautiful and costly toys were shown were somewhat curious and unusual. In 1773 Cox obtained an Act of Parliament—it received the royal assent on 21st June—which enabled him to dispose of his collection by way of a lottery. The preamble to the Act sets forth the circumstances of the sale, and remarks that "the painter, the goldsmith, the jeweller, the lapidary, the sculptor, the watchmaker—in short, all the liberal arts have found employment in and worthily co-operated" in producing these mechanical curiosities. The grammar of the preamble is not above suspicion—a painter is hardly an art—but its statements are not exaggerated; for Nollekens the sculptor and Zoffany the painter were both employed by Cox in making designs for his contrivances.

The whole collection was valued at £197,500, and the lottery consisted of 120,000 tickets at one guinea each. The chief prizes were: two of £5,000 each, two of £3,000, twelve of £1,500, eighteen of £750, fifty-two of £450, and one hundred of £300. The two first drawn tickets carried prizes of £100 each, and the two last drawn were worth £750 each. The drawing began in the Guildhall on 1st May 1775, and soon afterwards the collection was dispersed.

The articles drawn for and exhibited in the museum were fifty-six in number. Full details of each piece may be found in the "Descriptive Inventory of the several exquisite and magnificent Pieces of Mechanism and Jewellery, comprised in the Schedule annexed to an Act of Parliament, made in the Thirteenth Year of His present Majesty, George the Third; for enabling Mr James Cox, of the City of London, Jeweller, to dispose of his Museum by way of Lottery. Growing Arts adorn Empire." Several copies of this "Inventory" are in the library of the British Museum. It was sold for

sixpence, or was given gratis to those who bought lottery tickets, with models of the pair of ear-rings which was figured in the frontispiece. This pair of diamond ear-rings, said to have been intended for the Empress of Russia, was valued at £10,000. In the "Inventory" they are placed with the third article shown—a bust of the Empress, modelled by Nollekens.

The "Inventory," after a recital of the preamble to the Act, has a long preface by Mr Cox, followed by a detailed scheme of the lottery and a description of the fifty-six objects exhibited and to be drawn for. The descriptions are very elaborate, and it would be impossible to reproduce them here. The first two entries represent a horse and tent—the latter probably a howdah—made of gold and jewellery, with two vases of flowers. The tent was lined with mirrors, and the whole was supported on a gilt table, with rhinoceroses, containing musical bells, flower-pots, and bouquets in pearls and precious stones, a mechanical clock, and other adornments. Among the articles are several musical chimes with mechanical movements; richly caparisoned bulls; goats with housings of pearls; gilded and jewelled vases supported by silver turtles; rhinoceroses standing on rocks of gold stone, supporting onyx and gold cabinets; elephants and silver temples; cages of mechanical singing-birds; and other things of the kind, all ablaze with silver and gold and precious stones.

No. 39 is a palm-tree made of copper, covered first with silver, "then with a transparent verdure like the finest enamel, through which the very veins and fibres of the leaves may be seen," and decorated with dates, insects, and flowers of jewel-work. The next in the list is a temple of agate, with triumphal chariots moving on a rich gallery, supported by palm-trees. No. 46 is called "The Chronoscope," and is described at great length. The writer of the "Inventory" adds: "In the year 1769 the fellow to this stupendous piece was sent on board the *Triton* Indiaman to Canton, and now adorns the palace of the Emperor of China." In this chronoscope a great weight of gold and near 100,000 stones, including diamonds, rubies, emeralds, and pearls, are stated to have been used. No. 50 is a throne, 32 feet in circumference, with six steps in circular form, the whole "gilt like solid gold." Beneath and behind the throne a band of mechanical music — kettledrums, trumpets. etc. — performed "God save the King!" Magnificent vases of jewelled flowers, musical clocks, a pyramid of fountains 15 feet high, more bulls and goats, a silver swan as large as life, and the like complete the list.

The silver swan as large as life, which could move its neck very gracefully in every direction, has had a curious history. When Cox's collection was dispersed it passed with some other articles into the possession of a man named Weekes, who for some years kept a show, called "Weekes' Mechanical Museum," in either Tichborne or Coventry Street, Leicester Square. The son of this exhibitor, Charles Weekes, died so recently as 1864, and at the sale of his effects, on 26th May in that year, the remains of a number of automaton figures and fragments of various pieces of mechanism — broken, rust-corroded, and very dirty—were knocked down for small sums. The silver swan does not appear to have been included in this sale, but is said to have been lying for many years in the cellars of the Bank of England, until at last it was acquired by a gentleman, who sent it to the Paris Exhibition of 1867. When that exhibition closed it is further said to have been bought for the amusement of the late Prince Imperial, then a young child. It would be difficult to verify these statements, and the only thing now certain is that the

silver swan can be seen at the present day in the middle of the picture gallery at the Bowes Museum, which stands on the outskirts of the town of Barnard Castle, in Yorkshire.

In thus finding a permanent home the swan has been more fortunate than the rest of its early companions in Spring Gardens, few or none of which can now be traced. Some, as was stated above, passed into the possession of another exhibitor named Weekes, and their remains were probably among the rubbish cleared out at the sale in 1864. At least one article became the property of a showman named William Bullock, who travelled the country with a museum of curiosities. In "A Companion to Bullock's Museum, containing a Description of upwards of Three Hundred Curiosities," which was printed at Sheffield, 1799, there is this entry: "A superb Piece of Mechanism, originally a part of Cox's Museum, composed of gold and Jewelry, and containing a variety of curious movements and figures. In the bottom is a Cascade of Artificial Water with constant motion. This piece was sold by Mr Cox for £500." Particulars as to the fate of the other things shown in Spring Gardens are lacking.

During the two years in which Cox's Museum was open to the public only a few persons were admitted at a time, at a charge of 10s. 6d. per head. There was some grumbling at the charge. Hugh Kelly, the playwright, wrote a poem of twenty-three stanzas, entitled, "On hearing some Objections to the high Price of Admission to see Mr Cox's Museum," in which he reproved people for being willing to lavish money on masquerades, opera-singers, and so on, while

> "When Golconda's whole mines in one wonderful blaze
> At a British enchanter's command,
> Start warm into life, as enraptured we gaze,
> And are birds, beasts, or men in his hand;
> "We then shake our heads—'Half-a-guinea's too high,'
> And against it we gravely determine;
> Yet the very next minute our half-guineas fly
> For one tweedle-dum-dee from the Sirmen."

Notwithstanding the high charge the show was a distinct success. There are many allusions to it in the literature of the time in addition to those already mentioned. In the "New Foundling Hospital for Wit" (vol. ii. p. 42, ed. 1784) there is "An Epistle to Dr Shebbeare," by Malcolm Macgregor, a pseudonym for William Mason, the friend of Gray, in which are these lines:

> "So, when great Cox, at his mechanic call,
> Bids orient pearls from golden dragons fall,
> Each little dragonet, with brazen grin,
> Gapes for the precious prize, and gulps it in.
> Yet when we peep behind the magic scene,
> One master-wheel directs the whole machine;
> The self-same pearls, in nice gradation, all,
> Around one common centre, rise and fall."

Horace Walpole, in a letter to Mason, dated 4th August 1777, calls these verses "the immortal lines on Cox's Museum."

In 1774 a curious pamphlet was published, entitled, "The Divine Predictions of Daniell and St John demonstrated in a Symbolical Theological Dissertation on Cox's Museum." It had notes and other apparatus, and was dedicated to the Bishop of Gloucester. The authorship was anonymous. Passages from the book of Daniel and the Revelation, and descriptions of items in the museum, were printed in parallel columns. The intention appears to have been satirical, but the satire is obscure and of no interest whatever. The pamphlet, however, testifies to the widespread interest excited by Cox's show. In 1772 it was visited by the Rev. John

Newton, the friend of Cowper, and a man by no means given to the seeing of sights. In the seventh of the "Letters to a Nobleman," in his "Cardiphonia," he says: "When I was lately at Mr Cox's museum, while I was fixing my attention upon some curious movements, imagining that I saw the whole of the artist's design, the person who showed it touched a little spring, and suddenly a thousand new and unexpected motions took place, and the whole piece seemed animated from the top to the bottom." The good man then proceeds, *more suo*, to moralise on what he had seen. He again alludes to this visit in the first of "Five Letters to Miss D——," in the same work.

Miss Fanny Burney, in "Evelina," which was published in 1778, makes her heroine, with Sir Clement Willoughby and Madame Duval, pay a visit to Spring Gardens. As they examine the wonderful pieces of mechanism a discussion arises as to their utility, and the man in charge is interrogated on the point. "Why, sir, as to that, sir," replies the somewhat puzzled attendant, "the ingenuity of the mechanism—the beauty of the workmanship—the—undoubtedly, sir, any person of taste may easily discern the utility of such extraordinary performances." "Why, then, sir," says Sir Clement Willoughby, "your person of taste must be either a coxcomb or a Frenchman, though, for the matter of that, 'tis the same thing." Then a mechanical pineapple opened, a nest of mechanical birds began to sing, and the argument dropped.

The principal mechanic at Cox's Museum, whom Miss Burney may perhaps have intended to indicate as the man in charge in this dialogue, was Joseph Merlin, who opened later a museum of his own, which forms the subject of the next chapter.

6. MERLIN'S MECHANICAL MUSEUM

John Joseph Merlin was born in September 1735 at St Peter's, in the town of Huy, on the river Meuse, between Namur and Liège.* Little or nothing is known of his earlier years. From the age of nineteen to twenty-five he resided in Paris, whence he came to London in the suite of the Spanish Ambassador Extraordinary, the Count de Fluenti, to his house in Soho Square in May 1760. Kirby, in the sketch of Merlin's life in his "Wonderful Museum," says that shortly after his arrival in London in 1760 he became first a principal mechanic at Cox's Museum; but as the latter was not opened till 1773 the statement is clearly erroneous. Between 1773 and 1775 he served for a short time in Cox's collection, and on leaving it, settled in Little Queen Anne Street, Marylebone.

Merlin soon became well known as a maker of engines, mathematical instruments, watches, clocks, and mechanical inventions of various kinds. He patented a new kind of roasting-screen and also an invention for combining the pianoforte and the harpsichord in one instrument. After some years in Little Queen Anne Street he moved to 11 Princes Street, Hanover Square, where, about 1783, he opened his museum. Merlin seems to have been a kindly and amiable as well as a very clever, if somewhat eccentric man. He is said to have been open-handed, especially to artists and workmen of ingenuity who applied to him for work or assistance.

His combined cleverness and eccentricity he showed in several curious ways. He was fond of going to the masquerades, which were so much the fashion towards the end of the eighteenth century, as the Goddess of

* *Gentleman's Magazine*, May 1803, vol. lxxiii. part i. p. 485.

Continued on page 109

PATENTS FOR INVENTIONS

ABRIDGMENTS OF SPECIFICATIONS

CLASS 88 (i)

MUSICAL INSTRUMENTS, AUTOMATIC

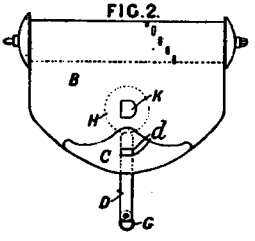
PERIOD—A.D. 1909-15

A.D. 1911.

31. Maxfield, H. Jan. 2.

Tune-sheets.—Relates to a device for securing the loose end of a tune-sheet when wound upon its spool. The tune-sheet B is provided with a strengthening-piece C of imitation leather or other material. Two slits *d*, *d* are cut in the piece C, and a tab D is threaded through the slits and secured by adhesive. The tab D carries the usual ring G, which is adapted to be hooked to the take-up roller. A circular piece H of tough material, which is secured to the back of the tune-sheet, is provided with a tongue K which projects through a slit. When the tune-sheet is completely rolled up, the tab D is wound round it and secured by inserting

FIG. 2.



the tab beneath the tongue K. The tongue K may be secured to the tune-sheet at both ends, forming a loop through which the tab D is threaded. According to the Provisional Specification, when a cloth end piece is attached to a tune-sheet, its edge is arranged obliquely across the sheet, to prevent the formation of a ridge across the roll. The tongue for securing the tab may be formed by punching the end-piece of the tune-sheet, or the end piece, tongue and tab, which is provided with an eyelet, may be formed out of one piece of parchment, manila paper, or cloth.

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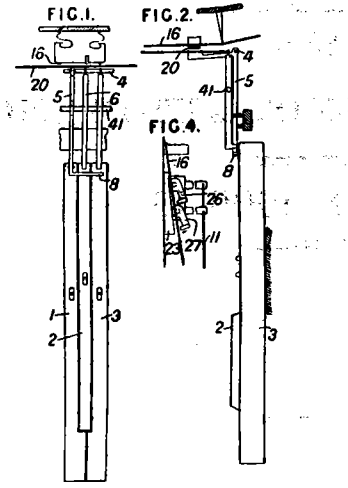
409. Hennig, E. A. P. Jan. 24, 1910, [*Convention date*].



Stringed instruments.—A mechanically-operated stringed instrument played by means of a bow, is provided with less than the usual number of strings in order to reduce the tension on the sound-board. Stopping-devices are provided so that several notes may be sounded by each string. The instrument is either operated by a keyboard or automatically controlled by means of a tune-sheet. In the instrument shown in Figs. 1 and 2, the string 16 can produce three notes by the operation of the keys 1, 2, 3, respectively. The operation of the key 1 causes the bell-crank lever 5 to rotate on its pivot 4 and press the bow 20 against the string 16. The bell-crank lever 5 may carry a roller for operating the bow. When the key 2 is depressed, the lever 5 is similarly operated through its extension 8, and a lever 6 is also rotated about its pivot 41. The lever 6 is connected to a stopping-device 26 by a link 11, and so causes it to rotate against the action of a spring and to press the string against the plate 23, which may be provided with frets. The stopping-device 27 and bow 20 are similarly operated by the key 3. In instruments in which the strings are moved towards the bow, sector-shaped stopping-devices are provided which move in the opposite direction to the strings. The strings in the treble may be tuned to smaller intervals than the strings in the bass.

The Specification as open to inspection under Section 91 (3) (*a*) refers to the use of elastic levers or connexions, so that the bow can be brought into operation after the movements of the stopping-lever have been completed, and also to the provision of dampers for the strings. Lateral extensions may be provided on the levers 6 instead of upon the lever 5. This subject-matter does not appear in the Specification as accepted.

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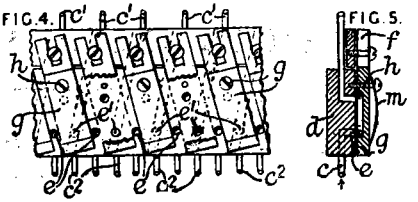
545. Heilbrunn, Söhne, K., and **Pape, W.** Jan. 9.



Tracker-bars.—A tracker-bar is provided with two or more rows of ducts for tune-sheets of different compasses, and a number of valves are provided for the purpose of connecting any one row to a series of ducts leading to the action. When two rows of ducts are provided in the tracker-bar, one row is connected by pipes c^2 to channels e^1 in a bar d, the other row by similar pipes to channels e in the bar d, the channels e and e^1, being arranged alternately in the manner shown. Pipes c^1 lead from the bar d to the action, and valves g, which are pivoted on screws h, are adapted to be operated by a slide f to connect one or the other row of tracker-ducts to the pipes c^1. Springs m are provided to hold the valves g down on their seatings, and a lever is used for shifting the slide f.

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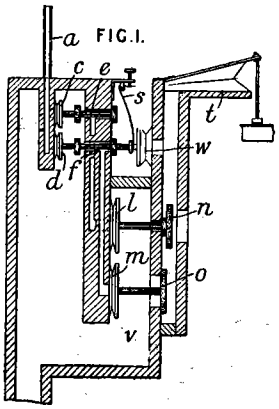
590. Grimsdale, W. H. Jan. 9.

Actions; expression, controlling.—Relates to pneumatic actions of the kind described in Specification 1767/10, in which several valves are provided for each striking-pneumatic, and the loudness of the notes sounded is determined by the width of the tune-sheet apertures. According to the present invention, both primary and secondary valves are employed. The primary valves e, f are controlled by pneumatics c, d, which are connected to the tracker-bar by a pipe a. The valve f is normally held in the position shown by a spring s of adjustable tension, and is also connected to a pneumatic w,

which assists it to open when the pneumatic *t* has been connected to the exhaust-chest *v*. The valves *e*, *f* connect the pneumatics *l*, *m* either to atmosphere or to the chest *v*, so operating valves *n*, *o* controlling ports of different



areas between the striking pneumatic *t* and the chest *v*. The time-interval that elapses between the operation of the valves *e*, *f*, and therefore of the valves *n*, *o*, varies according to the quantity of air admitted by the tune-sheet to the pipe *a*. The suction acting upon the pneumatic *t* and the loudness of the note therefore vary according to the width of the tune-sheet aperture. The valve *n* is adapted to close the atmospheric connexion of the pneumatic *t*. The pressure of the spring *s* on the valve *f* may be removed by the operation of the striking-pneumatic. In a modification, one of the primary valves is of conical shape so that the size of the connexion of the secondary pneumatic to atmospheric varies with the lift of the valve. The atmospheric connexion controlled by this valve may be normally closed by the other primary valve. In a further modification three primary and three secondary valves are provided, two of the primary valves being normally held closed by springs of different tentions. A device may be provided to ensure the closing of the third primary valve.

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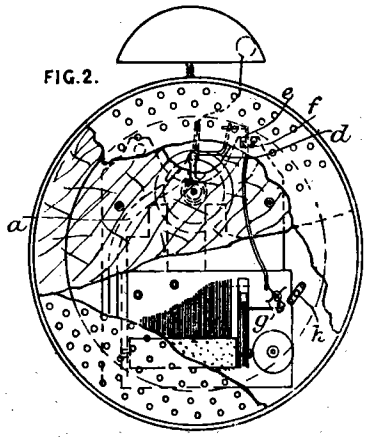
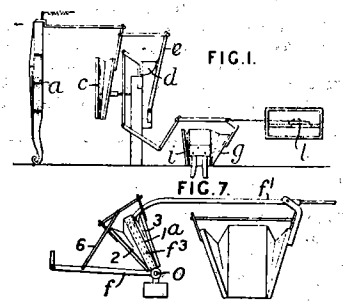
808. Goldberg, I. Jan. 11.

Combined with alarm clocks. — In an alarm clock, a musical box is provided in addition to the ordinary bell, so that the alarm may be sounded by the bell alone, or by the musical box alone, or by both together. A leaf spring *a*, which releases the alarm-bell at the set time in the usual manner, has an arm *d* which passes to the rear of the clock-work and is connected to a bell-crank lever *e*, pivoted at *f*. The lower end of this lever normally engages a fly *g* on a spindle of the musical instrument, but is moved to free the fly simultaneously with the release of the bell-hammer spindle. The musical box may be put out of action by means of a lever *k*, and the alarm-hammer may be prevented from operating, by means of the usual blocking-lever (not



shown). The back of the clock casing is preferably perforated in order that the music may be better heard.

1906. Hennig, G. K., and **Hupfeld Akt.-Ges., L.** Jan. 25.



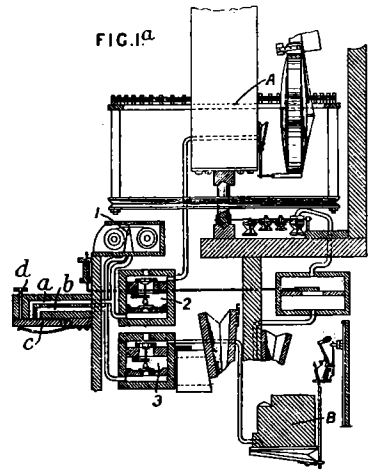
Stringed instruments; expression, controlling. —In an automatic stringed instrument played by bowing, means are provided for simultaneously varying the speed of the bow and the movements of the string-carriers towards the bow. A device may also be provided for varying the movements of the string-carriers without altering the speed of the bow. The motor driving the bow is controlled by a throttle valve *l*. The coupled bellows *g*, *i*, are connected by linkage to the throttle valve *l* and cam *d*. The violin *a* is moved towards the bow by a bellows *c*. This movement is controlled by the cam *d*, which determines the movement

of the link *e*. When the tune-sheet opens the tracker-duct of the bellows *g*, the bellows expands and partially closes the throttle valve *l*. The cam *d* is simultaneously rotated, so that the movement of the violin *a* towards the bow, on the collapse of the bellows *c*, is decreased. The valve *l* and cam *d* are returned to their initial positions when the bellows *i* expands. The amplitude of the movement of the coupled bellows *g*, *i* may be controlled by means such as those described in Specification 9055/08. The adjustment of the cam *d* and valve *l* may be effected manually. A wedge may be substituted for the cam *d* or the arm by which the cam is carried may be pivotally mounted. In the modification shown in Fig. 7, auxiliary coupled bellows 2, 3 are provided to rotate the cam *d* without operating the throttle valve *l*. The link f^1 is connected to the arm f^3, which is fixed to the spindle *o* and the centre-board 1^a of the bellows 2, 3. A pin on the spindle *o* engages a slot in the boss of the lever *f*. A movement of the bellows *i*, *g* rocks the spindle *o* and bellows 2, 3, so shifting the throttle valve *l* and rotating the cam *d*. A movement of the bellows 2, 3 rotates the cam *d* through the links 6, *f* without shifting the throttle valve *l*. This movement may be effected manually. Specification 22,392/07 is also referred to.

1987. Hennig, G. K., and **Hupfeld Akt.-Ges., L.** Jan. 26.

Pianofortes without keyboards; stringed instruments; tracker-bars; tune-sheets.—Relates to a device for tuning automatic stringed musical instruments. Fig. 1^a illustrates the invention as applied to an automatic violin A combined with an automatic piano B. The valve *c* normally closes ducts *a*, *b* connected to the tubes leading from the tracker-bar 1 to the primary valves 2, 3, of the automatic violin and piano respectively. The valve *c* is opened by depressing the push *d*, and wind passes through the ducts *a*, *b* to operate the valves 2, 3

FIG. 1^a.



and sound notes on both instruments. In the example described the violin is tuned to the piano, but pitch pipes, reeds, or other standard notes may be employed. The tune-sheet may be provided with additional holes at the commencement or end of a tune to sound notes on the two instruments simultaneously for tuning purposes. The valve *c* may be operated by an electro-magnet controlled by a contact device. In modifications, separate valves, which are either independently controlled or arranged to be operated in succession by one push, are provided for the ducts *a*, *b*.

2167. Trist, A. E. Jan. 27.

Tune-sheets; actions.—A tune-sheet for playing simultaneously several pianos or several manuals of an organ comprises two or more insulated conducting-layers *b*, *e*, Fig. 1, with note slots *l*, *j*, Fig. 3, which expose one or other layer. In addition, there may be through slots *u* controlling pneumatic actions for a third instrument. The tracker-brush *o*, Fig. 3, for each note is multipled to the actions *r*, *s* of the different instruments, and the common

FIG. 1.

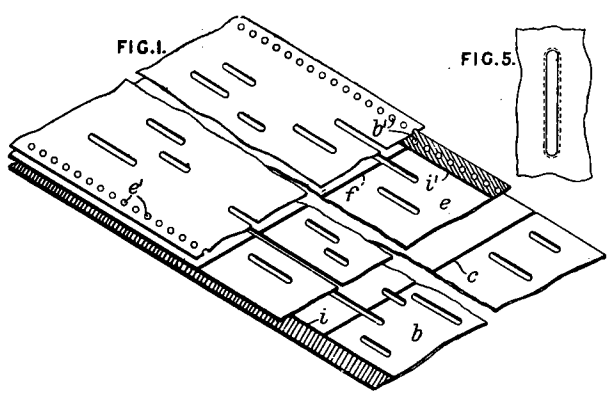
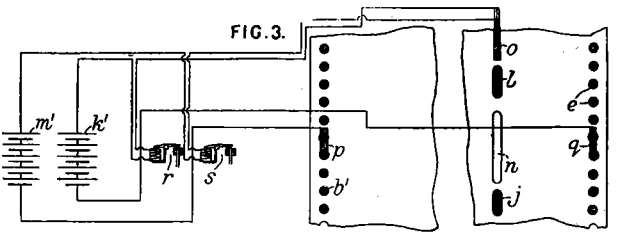


FIG. 5.

returns from the batteries m^1, k^1 are connected to brushes p, q, which bear on the layers b, e through marginal apertures b^1, e^1. To ensure continuous connexion, the brushes p, q have sufficient span to bear on two apertures at a time. To diminish leakage and prevent short-circuiting by marginal tears, the layers b, e are sectionalized by air-gaps c, f, i, i^1 which may be produced by fusion by means of an electric stylus. Burrs in the conducting-layers round the note-slot edges are burnt out by passing the double layers of conducting and insulating material under a brush in a high-voltage circuit, the other terminal of which is connected by marginal brushes to the conducting-layers. This sets back the edges of the conducting-sheets round the slots as shown in Fig. 5.

FIG. 3.



3248. Kastner, M. M., and **Katz, C.** Feb. 8.

Player-pianos; actions.—In an automatic horizontal piano, the striking-pneumatics t are arranged beneath the iron frame and wrest-plank x, and are of less height than the valve-chest z, which is arranged in front of the wrest-plank. The valve-chest z contains the usual primary valves p and secondary valves s. The striking-pneumatics t operate the wippens b, which are adapted to rock levers g carrying the checks i. Extensions on the levers g operate the dampers h. Fig. 2 shows a method of securing a pneumatic action in position within a piano. Levers 2 provided with hooks 5 are pivoted on the wind-chest 3, and are adapted to engage pins 6 on members 7 secured to the piano-checks. The wind-chest rests upon a stop 8 and abuts against the members 7. Dowels on the members 7 engage recesses in the wind-chest 3.

FIG. 1.

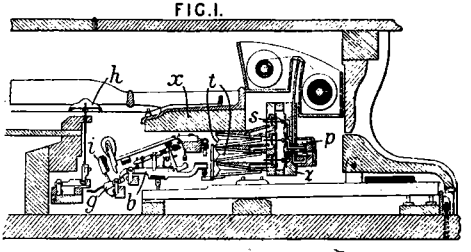
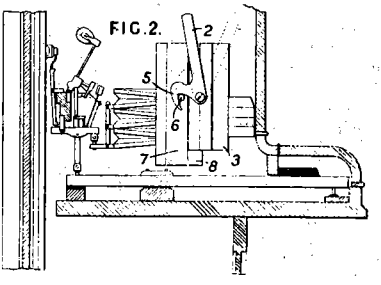


FIG. 2.



4283. Volk, M. Feb. 20.

Music spools and rollers; winding-mechanism.—A guide having spring-pressed flanges is provided for the tune-sheet, and the delivery roll is mounted in a frame which can move rectilinearly in the direction of the length of the roll. Special arrangements or constructions of the guides for the frame, the brake or the delivery roll, and the clutch, permit this movement to take place without undue friction. The take-up roll is unprovided with flanges, or the flanges are at such a distance apart that the tune-sheet does not touch them. The guide d is mounted near the tracker-bar c and comprises a rotatable roller, which can be adjusted longitudinally against the action of a spring d^4 by rotating a screw d^2. The flanges h of the roller d are carried by tubes i adapted to slide on the roller. Pins j^1 engaging the tubes i are connected by a spring j which tends to pull the flanges h towards each other until the tubes i abut against shoulders i^1 on the roller d. A fixed guide which is not of roller shape may be used. A crank-shaped frame f^1, f^2 carries the delivery roller b, and is mounted on friction-wheels g, or upon ball-tracks or levers, so that the roller b can move freely in the longitudinal direction. The spindle driving the roll b carries a disk l, and a brake m carried by the

arm f^2 of the frame bears upon the disk l. Both the disk l and brake m therefore participate in the movement of the frame. The clutch which is operated for rewinding the tune-sheet is shown in Figs. 4 and 5, and comprises a member n^1 carrying a roller n^2 and fitting between members n^3 on the disk l.

FIG. 1.

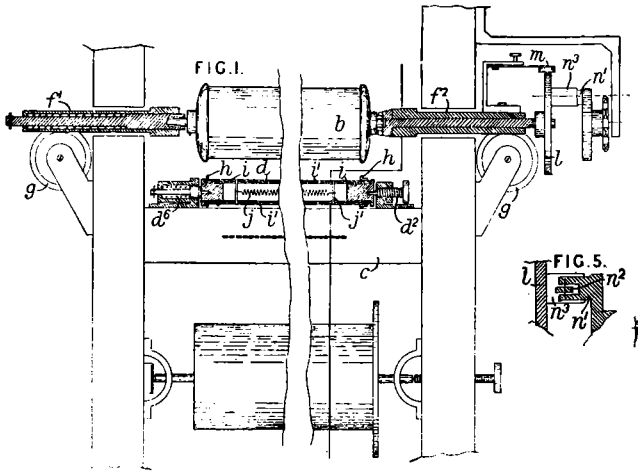
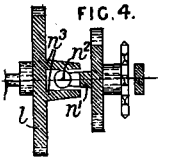


FIG. 5.

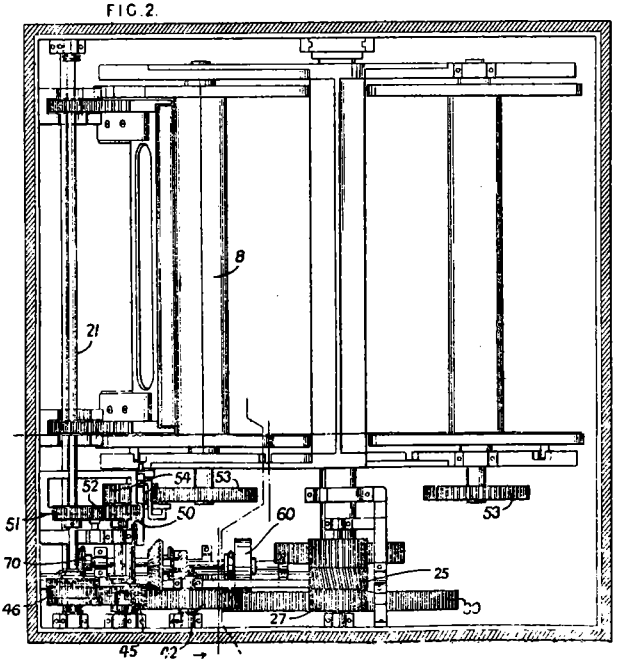
FIG. 4.



5839. Dreher, P. J. March 8.

Music spools and rollers; tempo-regulating means; tune-sheets; winding-mechanism. — In an automatic musical instrument, a long endless tune-sheet is employed which is adapted to be gripped at different parts by winding-rollers of special construction. The rollers are mounted in a frame which is rotatable in order to bring different sections of the tune-sheet into operation. Means are provided for preventing an increase of tempo owing to the increase in the effective diameter of the take-up roller. The instrument may be adapted to be started by the insertion of a coin. As shown in Fig. 16, the rollers 8 are carried by a frame 9 which is mounted on trunnions 10. Before commencing to play a series of tunes, a double thickness of the tune-sheet A is wound upon the front roller 8, the loop *a* being held by the

FIG. 2.



spring-pressed jaw 8^a of the roller. From the front roller 8, the tune-sheet passes over the guide 6 and tracker-bar 5, round the slides 158, 159 to the rear roller 8, whence it passes to the front roller 8. A loop *a* of the tune-sheet is held by the jaw 8^a of the rear roller, the looping-blade 15 being normally in the raised position, as shown by dotted lines in Fig. 1. During the playing operation, the tune-sheet A is wound on to the rear roller 8, its upper half passing over the tracker-bar 5 and causing notes to be sounded in the usual manner. When the tune-sheet has been completely transferred from the front roller to the rear roller, the loop *a* is disengaged from the front roller, so that the

FIG. 16.

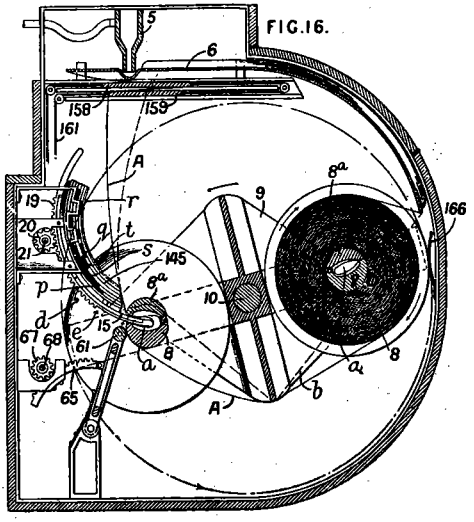


FIG. 1.

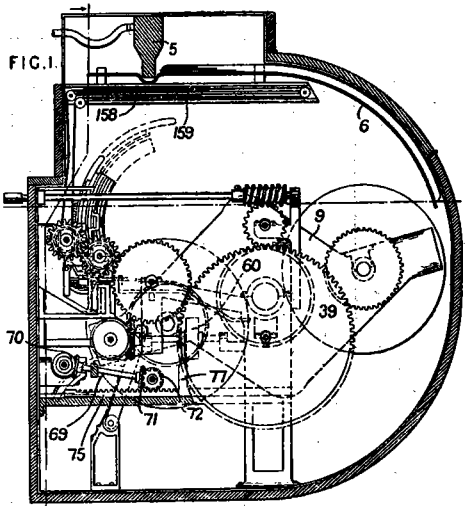
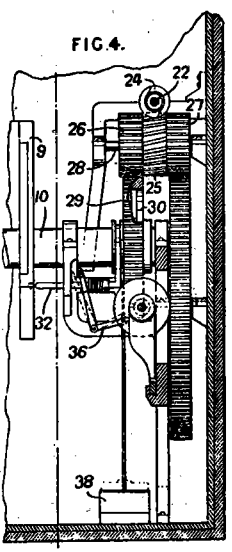
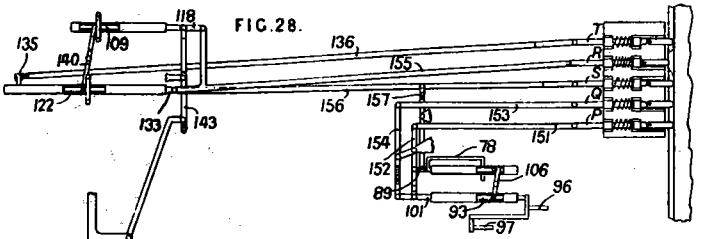


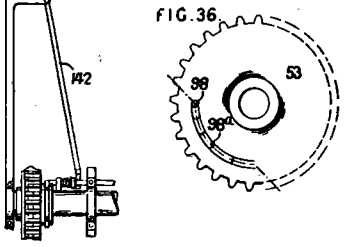
FIG. 4.

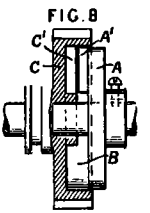


tune-sheet assumes the position shown by the dotted line *b*, Fig. 16. At the same time, a tune-sheet aperture causes the collapse of a bellows 38, Fig. 4, so that the bell-crank 36 disengages a spring-pressed pin 32 from a recess in the frame 9, and slides a loose spur-wheel 29 along its spindle 10 until it engages a clutch member 30 fast on the spindle. The spindle 22, which is driven by a suitable motor, carries a worm 24 driving a worm-wheel 25 on a spindle 28 carrying spur-wheels 26, 27. The spur-wheels 26, 29 being now in gear, the spindle 10, together with the frame 9, are rotated through an angle of 180 degrees. The pin 32 then engages another recess in the frame 9. The positions of the rollers 8 are thus reversed, the tune sheet passing freely over the guide during the operation. The bell-crank 36 also operates levers 142, 143, causing a detent to disengage a tooth on a spring-pressed bar 109, which slides

a spur-wheel 46, Fig. 2, into engagement with its clutch-member. The spindle 21 is then driven from the shaft 22 through the worm and worm-wheel 24, 25 and spur-wheels 27, 39, 42, 45, 46, so feeding the looping-blade 15 downwardly by means of the pinions 20 and racks 19. The part 145, which is attached to the blade 15, is provided with a number of grooves, in each of which a cam is arranged for operating a plunger. The heads of the plungers are





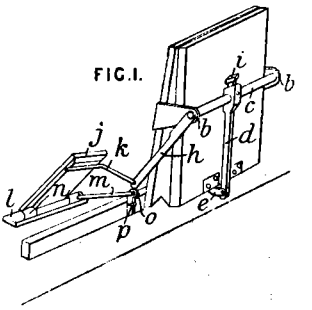


pivotally mounted, so that they can rotate idly or be operated by the cams according to the direction of movement of the blade. When the looping-blade 15 has moved from the point *d* to the point *e*, Fig. 16, the cam *p* on the part 145 engages the plunger P, Fig. 28, causing it to move outwardly. The movement is communicated through the rod 151 and lever 152 to a bar 89, which causes a spring acting upon the rod 78 to be compressed, and also to a rod 101, which effects the release of a catch engaging a tooth on the bar 93. The bar 101 is then moved by spring-action until a pin 96 enters the path of an extension of the jaw 8^a of the empty roller 8, while a pin 97 is moved into position to engage a recess 98 in a wheel 53. As shown in Fig. 36, the path 98^a to the recess 98 is stepped in order to prevent too abrupt a movement of the pin 97. When the extension of the jaw 8^a engages the pin 96, the jaw is opened, and at the same time the pin 97 locks the wheel and roller 8 against rotation. The movement of the bar 101 is communicated through a lever 106 to the rod 78, which slides the pinion 54 along its spindle to declutch it. When the blade 15 has entered the jaws of the roller 8, the cam *q* operates its plunger Q. The movement is transmitted through the rod 153 and lever 154 to return the bar 93 and pins 96, 97 to their initial positions, although the gear 54 still remains declutched from its spindle. When the blade 15 has completed its downward movement, the cam *r* engages the plunger R, the movement of which is transmitted through the rod 155 to the bars 118 and 133. The pressure of a spring is thus removed from the bar 109, and a catch disengages a tooth on the bar 122, which thereupon slides a pinion 45 by spring action and clutches it to its shaft. At the same time, the pinion 46 is declutched by the action of the lever 140, the spring pressure on the bar 109 having been previously removed in the manner described. The shaft 21 is now driven in the opposite direction through the spur-wheels 39, 42, 45, 50, 52, 51, so that the blade 15 moves upwards to its normal position. During the upward movement of the blade, the cam *s* operates its plunger S, and the movement is transmitted by the rod 156 and lever 157 to release a tooth on the bar 78 from a detent which normally engages it. The bar 78 shifts the pinion 54 into engagement with its clutch by spring action, so that the spur-wheel 53 and roller 8 are driven through the friction-wheel 60 and intermediate gearing. The movement of the plunger S also compresses a spring which normally acts upon the bar 122. When the blade 15 has completed its upward movement, the cam *t* has engaged the plunger T, the movement of which is transmitted through the rod 136 to a lever 135. The lever 135 operates a detent to release the bar 122, causing the gear 45 to be declutched by spring action. In order that there shall be sufficient slack in the tune-sheet when it is engaged with the roller 8, the tune-sheet passes between slides 158, 159, which are capable of horizontal movement. The slides 158, 159 are connected by a cord 161, which passes over a pulley on the spindle 21, so that, as the blade 15 moves downwardly, the guides 158, 159 move towards each other into the position shown in Fig. 16, thus unwinding some of the tune-sheet from the front roll 8. Upon the up-stroke of the blade 15, the parts 158, 159 return to their normal position, leaving a certain amount of slack in

the tune-sheet. A spring 166 acts as a brake upon the front roller. As the tune-sheet A is wound upon the rear roller 8, the roller 61, Fig. 16, moves outwardly. This movement is transmitted by curved racks 65, pinions 67 on the shaft 68, and bevel wheels 70, 71 on the shaft 69, to a pinion 72, Fig. 1, which shifts a rack 75 to the right. The rack is connected by an extension 77 to a friction wheel 60, which is thus moved towards the axis of its driving-disk 39 for the purpose of reducing the speed of the wheel 60 and roller 8 to compensate for the increase in the effective diameter of the roller. When the tune-sheet has been transferred from the front to the rear roller, the frame 9 is again rotated through 180 degrees and the other operations are repeated, the apparatus being then adapted to play the tunes on the other half of the tune-sheet. An example of the clutches employed throughout the apparatus is shown in Fig. 8, and comprises a disk A, which is fast on its spindle and is adapted to enter a recess B in the corresponding spur-wheel C. A projection A^1 is provided on the disk A which engages a similar projection C^1 in the recess B.

6530. Kastner, M. M., and **Schlottki, P.** March 15.

Player-pianos; treadle devices.—The slope of the treadles when at rest can be adjusted without altering the lengths of the connecting-rods or the position of the treadle support. The treadle supports *m* are connected to members *o* hinged at *p* to the bottom-rail, as shown in Fig. 1, which illustrates one treadle and the bellows it operates. The treadle *j* is hinged at *n*, *n* to the bar *l*, and operates a crank *h* on a spindle *c* through a link *k*. The spindle *c* is mounted in brackets *b*, *b* on the fixed board of the bellows. An arm *d* is secured to the spindle *c* by a set-screw *i*, and is connected by a link *e* to a bracket fixed at the middle of the lower side of the bellows-moving board. Two or more arms *d* may be provided. By loosening the set-screw *i* and adjusting the arm *h*, the slope of the treadle *j* may be adjusted. The crank *h* instead of the arm *d* may be adjustable on the spindle *c*. The treadles are adapted to be



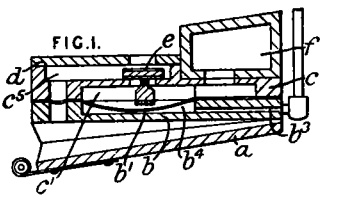
folded up in the usual manner, the parts *o* being hinged at *p* for this purpose.

6964. Grimsdale, W. H. March 20.

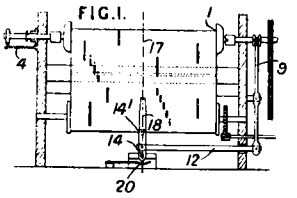
Tracker-bars are formed out of strips of metal, ebonite, or other material having the usual rectangular apertures *c* connecting with transverse grooves. The walls *d* of the grooves are bent so as to form rows of openings in staggered relation, as shown in Fig. 4, which illustrates the underside of a tracker-bar. The tracker-bar thus formed is placed on a leather washer arranged upon a seating provided with tubes leading to the action. In the manufacture of a tracker-bar, the transverse grooves are formed by rotating cutters, the apertures *c* are pierced, and the walls of the grooves are bent by a suitable die. The lower face of the tracker-bar is then planed. Alternatively, the tracker-bar may be cast in its finished form or with parallel transverse grooves. In the latter case the walls are afterwards bent in the manner described. Specification 1767/10 is referred to.

7311. Wood, W. D. March 23.

Actions.—In a pneumatic-action unit built up of four sections or layers *a*, *b*, *c*, *d*, the section *c*, carrying the valve *e* has a recess c^1 on its lower side in communication with the wind trunk *f*. The section *c* has a recess c^5 in its upper side. Alternatively, the recess c^5 may be formed in the section *d*, which is made thicker for this purpose. The recess b^4 in the section *b* is covered by the diaphragm b^1, so that, when air is admitted to the recess b^4 through the channel b^3, the diaphragm b^1 operates the valve *e* in the usual manner.

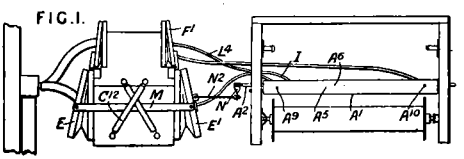


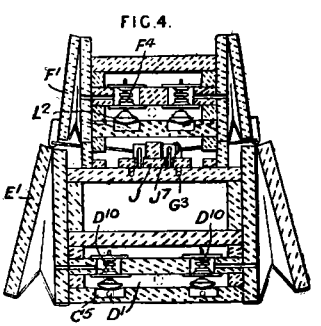
7421. Kelly, G. B. Oct. 31, 1910, [*Convention date*].



Winding-mechanism; tune-sheets. — A device for guiding the tune-sheet comprises a hand-controlled lever, which is adapted to shift the delivery-roll laterally and co-operates with a line on the tune-sheet to indicate correct alinement. The line 17 on the tune-sheet normally registers with the lever 18, which is pivoted at 14. If the tune-sheet deviates from its proper course, the operator moves the lever 18 towards the line 17. The movement is transmitted through the link 12 and lever 9 to the spool 1, which is moved laterally against the action of the spring 4. The operator is enabled to tell when the tune-sheet is in the desired alinement by the correct playing of the notes. The spring 20, against which the end of the lever 18 bears, is so shaped that the lever 18 returns to the normal position when released. The top of the lever 18 is hinged at 14' so that it can be folded down.

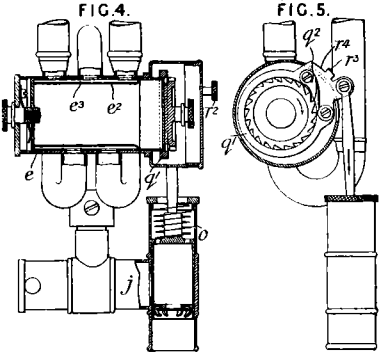
7430. Bull, F. W. March 24.

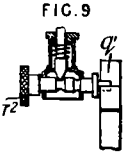




Tracker-bars; winding-mechanism.—Relates to a device for automatically adjusting the tracker-bar in order to maintain the tracker-ducts in register with the tune-sheet apertures. The tracker-bar is provided with two additional ducts A^8, A^{10}, one at each end, and a number of ducts A^6 arranged parallel to, but in staggered relation with, the usual ducts A^5. Assuming that the tune-sheet moves to the right so that the duct A^9 is uncovered, air is admitted through a tube L^4 to a chamber L^2, so operating a valve F^4 which connects a bellows F^1 to exhaust. The bellows F^1 collapses and operates a slide-valve J, causing the port J^7 to register with a duct G^3. A connexion is thus made from the tracker-ducts A^6 through the tube I, port J^7, duct G^3, and tube C^{12} to a chamber C^5. As the ducts A^6 are open to atmosphere owing to the tune-sheet having moved laterally, the valve D^{10} is operated and the bellows E^1 is connected to the exhaust-chest D^1 and therefore collapses. The motion is transmitted through the link M to the bellows E, which therefore expands, and also through the link N^2 and pivoted lever N, to a rod A^2 attached to the sliding tracker-bar A^1. The tracker-bar is thus moved until its ducts again register with the tune-sheet apertures. If the tune-sheet moves to the left so that the tracker-duct A^{10} is opened, the pneumatic E causes the tracker-bar to move in the opposite direction.

8509. Teste, E. Dec. 1, 1910, [*Convention date*]. [*Addition to* 24,255/08.]

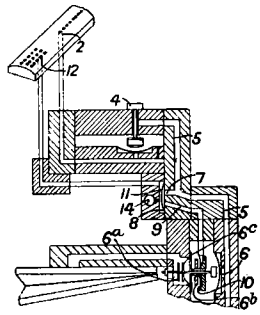




Wind instruments. — Relates to improvements in the multiple-note horn described in the parent Specification, and consists in (1) providing the air-distributor tube *e* with an internal concentric sleeve e^2 so as to form an annular chamber e^3 from which the air passes directly to the reeds, (2) actuating the distributor by a spring-pressed pawl q^2 carried by a collar q^1 adapted to rotate on the distributor when the air bulb is pressed but adapted to rotate the distributor when moving under the action of the spring *o*, and (3) providing

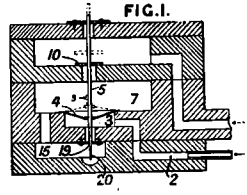
the controlling-device shown in Fig. 9, by which, when the pin r^2 is made to engage the slot r^3 in the collar q^1, the horn emits a continuous uniform sound, and, when it is made to engage the part r^4, the horn is prevented from sounding. The cylinder j may contain the arrangement described in Specification 25,863/08, [*Class* 13, Bells &c.], for producing tremolo sounds.

8723. Kastner, M. M., and **Katz, C.** April 7.



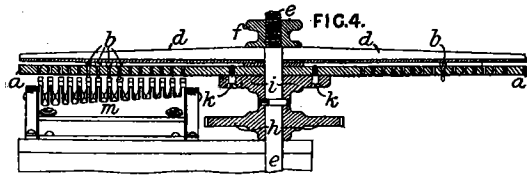
Actions; expression, controlling.—In a piano-player, each primary valve admits air to two ducts leading to a secondary valve and an accentuating-device respectively. The tune-sheet controls means for closing the duct leading to the accentuating-device. When a tune-sheet aperture registers with a duct 2, the primary valve 4 is operated to admit air to the duct 5. The diaphragm 6 therefore operates the secondary valve 6^a. The chamber 8 is connected to an exhaust-chamber 14, so that if the corresponding tracker-duct 12 is closed, the atmospheric pressure expands the diaphragm 11 and air passes through the ducts 7, 9 to inflate the diaphragm 10. The control-valve 6^b is therefore held against the plate 6^c, so that the striking-pneumatic is only connected to exhaust through a small hole in the plate 6^c, and a subdued note is sounded. If a duct 2 and the corresponding duct 12 are simultaneously opened by the tune-sheet, the diaphragm 11 closes the communication between the ducts 7, 9. As the diaphragm 10 is deflated, the control valve 6^b moves away from the plate 6^c and opens a large connexion to exhaust, so causing the note to be accentuated. Specification 12,761/10 is referred to.

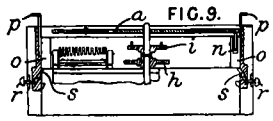
11,210. Schwertner, J. May 9.



Actions.—In a pneumatic action for automatic musical instruments, organs, &c., tapered rods are reciprocated in the bleed-holes to prevent them from becoming choked with dust. The valve 10 is operated through the diaphragm 4 by air admitted to the chamber 3, through the duct 2. The valve-stem 5 is provided with a tapered extension 20, which passes through a bleed-hole 19 connecting the chamber 3 with the chamber 15, which is connected to the exhaust-chest 7. When the diaphragm 4 is inflated and deflated, the extension 20 reciprocates in the bleed-hole 19, and pushes out dust or other foreign matter. The movement of the diaphragm 4 is sufficient to lift the part 20 out of the bleed-hole. Owing to the taper of the extension 20, the effective area of the bleed-hole 19 is increased when the diaphragm 4 is inflated, so that the deflation of the diaphragm is effected quickly. The extension 20 also acts a guide for the valve-stem. A modification which operates by pressure is described.

11,617. Graf, H. May 13, 1910, [*Convention date*].

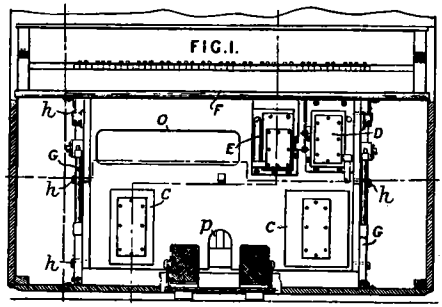


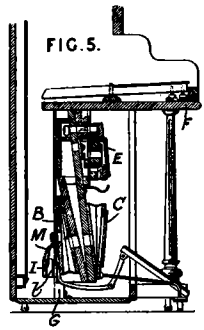


Musical boxes with plucked teeth; tune-disks.—A tune-disk for musical boxes is provided with removable pins, which may be arranged in accordance with the tune it is desired to play. Charts showing the arrangement of the pins for particular tunes may be provided. The tune-disk may be raised or lowered in the musical box to facilitate the rearrangement of the pins.

The tune-disk *a*, which is made of brass, iron, or aluminium, is provided with a number of radial rows of holes into which pins *b* are fitted. The pins are secured in position by a plate *d*, covered with india-rubber, and a nut *f* screwing on to the spindle *e*, which is driven through a spur-wheel *h*. The spur-wheel *h* is provided with a boss *i*, to which the tune-disk is secured by screws *k* or pins. The musical measures and note-names are marked on the disk. The pins *b* rotate toothed wheels and sound the tongues of the comb *m* in the usual manner, when the tune-disk is rotated. The tune-disk *a* rests near its periphery on friction wheels *n* on a frame *o*, which may be raised or lowered by handles *p*. The frame *o* is held in its upper position by spring catches *s* to facilitate the rearrangement of the pins *b*. The spring catches may be released by pressing buttons *r*.

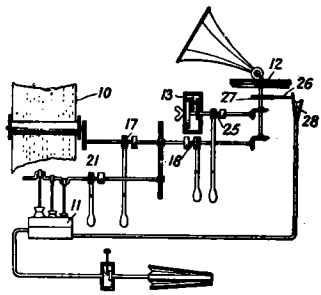
11,989. Marks, E. C. R., [*Chase & Baker Co.*]. May 18.





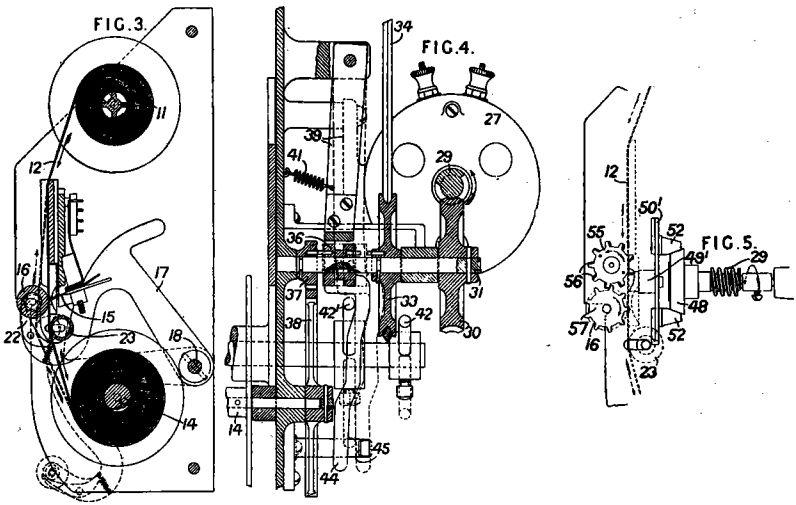
Player-pianos; piano-players. — In an automatic piano, piano-player, or the like, the wind-chest structure carrying the pumping and equalizing bellows B, C and the motor and expression governors D, E is detachably fixed by pins *h* between uprights G, which extend from the bottom of the casing to the under side of the key-bed F. A rail I, Fig. 5, with padded stops *l*, limits the motion of the pumping-bellows and takes the pressure of the bellows-spring M. An opening *p* gives access to these springs from the front. In the case of pianos, the strings on one side are accessible through an opening O.

13,396. Lake, H. W., [*Aeolian Co.*]. June 3.



Combined with phonographs &c.; winding-mechanism.—Separate motors 11, 13 are provided for driving an automatic musical instrument 10 and phonograph 12, which are connected by gearing. By means of a series of clutches 21, 17, 18, and 25, either motor may be put out of operation. Thus, to drive both the phonograph and the musical instrument from the pneumatic motor 11, the clutch 25 is opened and the other clutches are closed. To drive the phonograph alone by its spring motor 13, the clutch 25 is closed and the clutch 18 opened. To drive both the phonograph and musical instrument by the motor 13, the clutch 21 is opened and the other clutches are closed. The phonograph may be put out of operation while the motor 13 continues to drive the musical instrument. By opening the clutches 17, 25 and closing clutches 21, 18, the phonograph only may be driven by the motor 11. By opening the clutch 18 and closing the clutches 21, 17, the musical instrument only may be driven by the motor 11. By closing all the clutches, both the phonograph and musical instrument may be driven by both motors. By opening the clutch 17, the phonograph only may be driven by both motors, and by closing all the clutches and putting the phonograph out of operation, the musical instrument may be driven by both motors. A brake 26 co-operating with a disk 27 is controlled by a pneumatic 28, which communicates with the motor 11 by means of a pipe, and is controlled by the variations in the suction acting upon the motor.

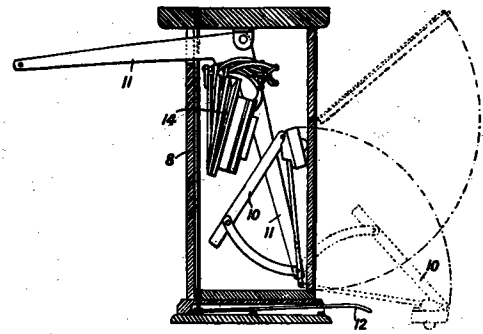
13,508. Boult, A. J., [*Mills, H. S.*]. June 6.



Tracker-bars; winding-mechanism.—To maintain a constant tune-sheet velocity, the circuit of the electromotor driving the winding-mechanism is completed through two spur-wheels in gear with one another. One of the spur-wheels is driven by the motor through a friction clutch operating similarly to a centrifugal governor. The other spur-wheel is driven by a roller in contact with the tune-sheet. This roller co-operates with metallic fingers to form a tracker device, and is mounted on pivoted arms. During the rewinding movement, the device for controlling the tune-sheet velocity is rendered ineffective, the contact-roller is moved to an inoperative position, and the tune-sheet is moved away from the metallic fingers. As shown in Fig. 4, the motor 27 drives a shaft 31 through a worm 29 and worm-wheel 30. A pinion 37, which is clutched to the shaft 31 by a clutch 36 during the winding movement, drives the take-up roll 14 through a spur-wheel 38. The shaft of the worm 29 carries a friction wheel 48, which normally engages cones 52 carried by curved resilient arms 50^1 mounted on a shaft 49^1. The shaft 49^1 drives through a worm and worm-wheel a shaft carrying a spur-wheel 55 and a toothed disk 56 of insulating-material. The teeth of the disk 56 overlap the teeth of the spur-wheel at one side, as shown in Fig. 5. The spur-wheel 55 and a disk 56 gear with a spur-wheel 57, which is driven by a roller 16 in frictional contact with the tune-sheet 12. The electric circuit of the motor 27 is completed through the spur-wheels 55, 57. If the speed of the motor 27 becomes excessive, the cones 52 move out of contact with the disk 48 by centrifugal force, causing the spur-wheel 55 and toothed disk 56 momentarily to lag behind the spur-wheel 57. The teeth of the spur-wheels 55, 57 therefore move out of contact, and the motor circuit is broken. The speed at which this effect is produced may be varied by adjusting the shaft 49^1 longitudinally by means of a screw device. The roller 16, acting in conjunction with the metallic fingers 15, serves as a tracker device, and is held in position upon arms 17 by means of spring-pressed levers 22. The arms 17 are normally held in the position shown by a spring, and are mounted upon a spindle 18, which carries arms 42, 42^1. During the winding movement, the arm 42 engages a pin on the pulley 33 and prevents it from rotating. The band 34, which passes over a pulley for driving the delivery-roll 11, therefore acts as a brake upon the delivery-roll during the winding movement. To re-wind the tune-sheet, the arms 17 and contact-roller 16 are moved to the position shown in dotted lines in Fig. 3, so breaking the motor circuit. The rotation of the spindle 18 causes the rod 42 to engage an extension 44 of the clutch-shifting lever 39, which is then rotated against the action of a spring 41. The clutch member 36 clutches the pulley 33 to the spindle 31, and at the same time the spur-wheel 37 is declutched. Subsequently the extension 44 engages a spring 45 and completes the circuit of the motor 27, so that the delivery roll is driven by the pulley 33 and band 34. The downward movement of the arms 17 to effect the re-winding of the tune-sheet causes the roller 23 to be pressed outwards to move the tune sheet 12 away from the fingers 15. Specification 10,618/05 is referred to.

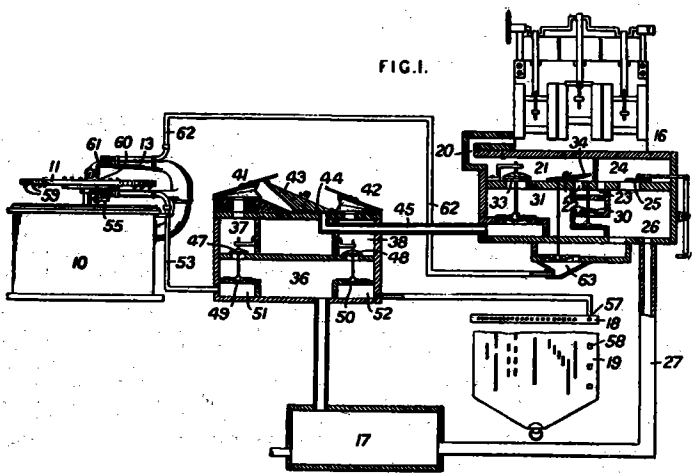
13,820. Kastner, M. M., and Katz, C. *Feb. 8.*

Player-pianos; treadle devices; winding-mechanism.—In an automatic horizontal piano, the lyre 8, which is in the form of a box or cabinet, is adapted to contain the winding-motor 14 and also the treadle mechanism. The treadles 10 are shown by dotted lines in position to operate the bellows through large bell-crank levers 11. The lyre is provided with one or more hinged or sliding doors to admit the treadles, as they are folded up to the position shown by full lines. The usual piano pedals 12 are also provided.



14,431. Crooks, J. W. June 17.

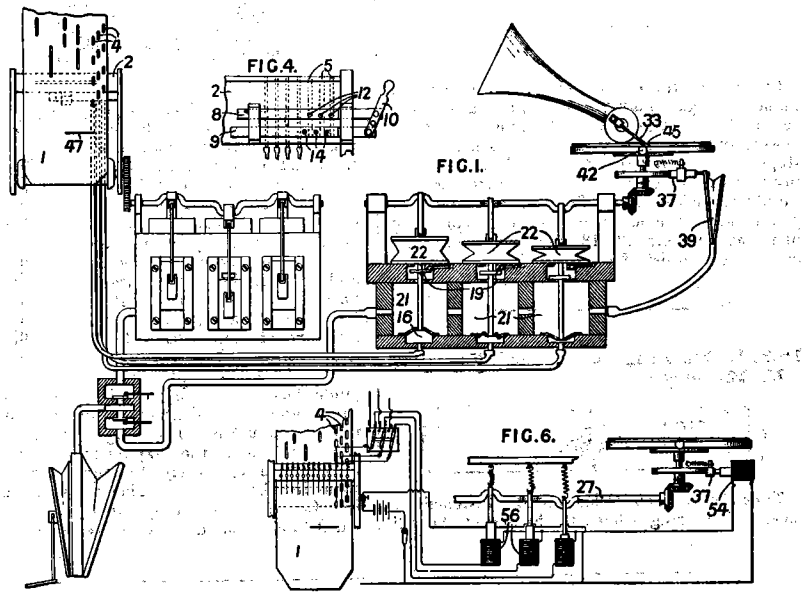
FIG. 1.



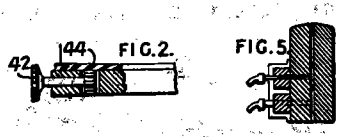
Combined with phonographs; winding-mechanism.—A gramophone or like instrument is synchronized with an automatic piano at predetermined intervals only, by pneumatic means. The gramophone 10 and the automatic piano 16 have each separate motors, the latter motor being operated as usual by suction to a main exhaust chamber 17 by way of a pipe 20, chamber 21, valve 22, pipe 23, chamber 24, speed-controlling valve 25, chamber 26, and pipe 27. At intervals on the gramophone record 11, or on a disk or the like moving with the record, are placed pins 59, 60 adapted to open valves 55, 61, whereby the piano is quickened or slowed in speed until once again synchronism is obtained. When a pin 59 engages with and opens the valve 55, atmospheric air is vented along a pipe 53 into a chamber 51, raising a valve 47, 49, which connects the chambers 36, 37, thereby exhausting the air from the chamber 37 and allowing atmospheric pressure to depress the bellows 41 and open a valve 44 controlled by a rocker 43. Immediately air is vented along a pipe 45, raising a valve 33 connecting the chambers 21, 31, and also raising a valve 30 connecting the chambers 31, 26, thus allowing additional air to be drawn through the motor 16, which therefore speeds up. When in synchronism, one hole 58 in the tune-sheet 19 passes over a hole 57 in the tracker board 18, thus venting air into a chamber 52, lifting a valve 48, 50, which permits the exhausting of a chamber 38, whereupon atmospheric pressure depresses a bellows 42 and closes the rocker 43 over the valve 44, permitting the motor to revolve at normal speed. The tune-sheet 19 normally lags behind the gramophone so that the accompaniment is behind the melody of the

gramophone and is brought into synchronism therewith at the beginning of each phrase. If a retardation of accompaniment is required, due to a pause in the melody, then one of the pins 60 vents air through a pipe 62 into a chamber 63, lifting a valve which closes the main air supply valve 34. If the branch valve 30 is open at the same time, this will also be closed, thus momentarily stopping the piano motor 16. A series of pins 60 would produce a long stop. The valves 55, 61 are carried by the tone-arm 13 or an arm moving similarly with the tone-arm. In a modification using a phonograph, the pins 59, 60 are placed inside and outside of an extension of the record cylinder.

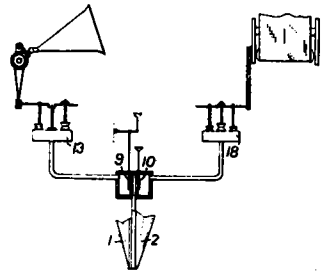
14,622. Lake, W. E., [*Aeolian Co.*]. June 20.



Combined with phonographs &c. — The tune-sheet of an automatic piano or organ controls the pneumatic or electric driving-motor of a phonograph, so that the two instruments run synchronously. In the arrangement shown in Fig. 1, the valves 19 of a phonograph suction-motor are actuated by pneumatics 16 in exhaust chambers 21, the pneumatics 16 being connected to the three lowest ducts of the tracker-bar 2 of the piano &c. Staggered slots 4 are cut in the tune-sheet 1 in alinement with these ducts, so that the motor-bellows 22 are exhausted in rotation. As long as there is exhaust in the chambers 21, a bellows 39 holds a brake 37 out of action. The tune-sheet has a mark 47 to indicate the correct starting-position, and the phonograph record is correspondingly set by a thumb-wheel 42 until the needle 33 rests in a starting-notch 45. The thumb-wheel may operate a circular rack 44, Fig. 2, formed in the underside of the record disk, or may advance the record disk by the frictional action of a star-wheel. The tracker-bar 2 is fitted with a manual valve, consisting of bars 8, 9, Figs. 4 and 5, movable in opposite directions by a handle 10 to bring either of two sets of lateral ducts 12, 14 into connexion with the three end ducts 5. By this means, the ducts 5 can be connected to the corresponding note-operating actions, the pneumatics 16 being cut out. In the modification shown in Fig. 6, an electric motor, consisting of three solenoids 56 acting in rotation on a cranked shaft 27, is controlled from the slots 4 in the tune-sheet 1. A solenoid 54 controls the brake 37.



14,627. Lake, W. E., [*Aeolian Co.*]. June 20.

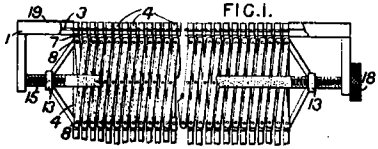


Combined with phonographs. — A mechanical piano or organ player and a phonograph are actuated by motors having a common source of power, and means are provided for starting and stopping and varying the speed of the two instruments independently by controlling the supply of motive fluid. The common source of power may be exhaust bellows 1, 2 operating pneumatic motors 13, 18, and the regulating-means may consist of valves 9, 10.

15,364. Rawling, A. J., and **Kastner, M. M.** July 1.

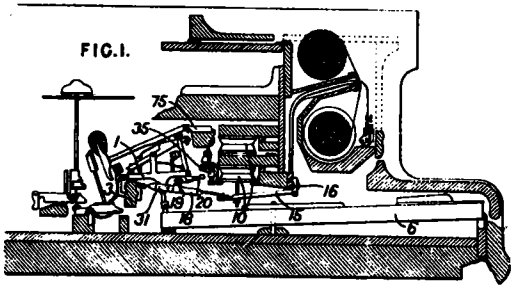
Tune-sheets when rolled up are fastened by means of the ring *d* fixed to the end of the roll and attached to, or integral with, a clip *e* of any form which grips the end of the cord *f* wound round the roll.

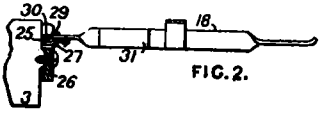
15,750. Lake, W. E., [*Meahl, P. J.*]. July 6.



Tracker-bars. — The pneumatic ducts over which the tune-sheet moves are mounted in a slot in the tracker-bar, and means are provided for moving them nearer together or further apart to compensate for changes in the condition of the tune-sheet, and to enable the same tracker-bar to be used with tune-sheets having different numbers of note-holes. The duct-tubes 4, Fig. 4, have wings 5 which take into guide-slots 3 in the halves of a slotted tracker-bar 1, and are held at both ends by clips 7 on the pivot-pins 8 of a lazy-tongs mechanism. The end members of the lazy-tongs are pinned to nuts 13 on oppositely threaded parts of an adjusting-shaft 15, rotatable by a milled head 18. Covers 19 of cloth, rubber, &c. are provided to close the ducts that are not in use.

15,764. Lake, W. E., [*Aeolian Co.*]. July 6.

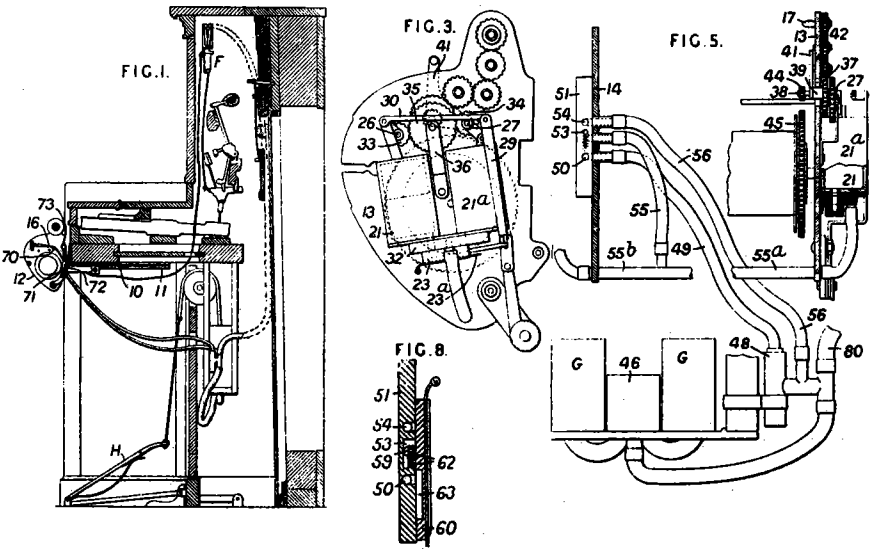




Player-pianos; actions.—The tracker-bar and music rolls are mounted in front of the wrest-plank, and the playing-actions are between the wrest-plank and the keys and rearwards of the front edge of the wrest-plank. The striking-pneumatics 10 actuate the hammer mechanism through levers 15, pivoted on a rail 16, and levers 18 pivoted removably on the ordinary

action rail 3. The levers 18 are of metal strip bent so as to be vertical in the middle and horizontal at the two ends. The part 31 is cranked out to give room for the toe-portion of the action-support 1 on which the key 6 acts. Just forward of this, a padded block 19 on the lever 18 engages a capstan-screw 20 on the support 1. The rear end of the lever 18 has a groove 30, Fig. 2, to take on to a pivot-pin 25 free to turn in a U-block 26. The lever 18 is detachably clamped to the pivot-pin 25 by a clamping-plate 27 drawn up by a screw 29. The motion of the lever 18 is limited by a stop 35 carried from the hammer rail 75.

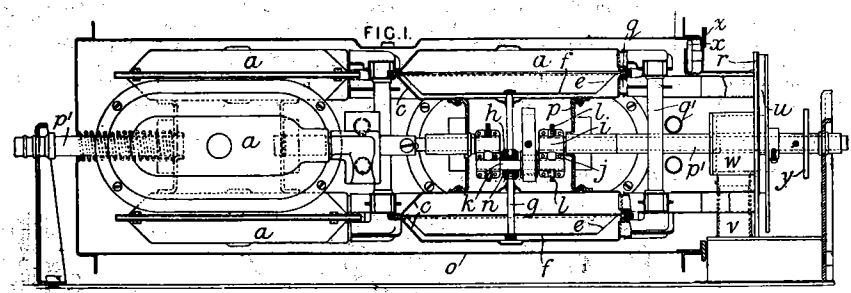
16,063. Lake, H. W., [*Stokes & Smith Co.*]. July 11.



Player-pianos; treadle-devices; winding-mechanism.—In a player-piano, the tracker-box carries the pneumatic motor for winding and re-winding the tune-sheet, and is adapted to be folded under the key-bed. The seating of the throttle-valve controlling the motor is of special construction. The tracker-box 12 is pivoted at 71 to a plate 10 adapted to slide in guides 11 fixed to the underside of the key-bottom. A catch 72 may engage the plate 10 for holding the tracker-box 12 upright when in the operative position. A lever 73 is provided for disengaging the catch 72. The flexible tracker-pipes 16 extend over a rod 70 on the tracker-box. Two cylinders, such as 21, 21^a, of the pressure or suction motor are mounted upon each of the end plates 13, 14 of the tracker-box. Two double-throw crank-shafts 26, 27 are journaled in the end plates 13, 14, and each crank-shaft is in connexion with a piston corresponding to one of the cylinders on each end plate. The motor-valves 23 are operated by oscillating members 29, which are connected by links 30 to the crank-pins. Springs 23^a press the valves 23 against their seatings 32. The crank-shafts 26, 27 carry spur-wheels 33, 34 in gear with an idle-wheel 35 rotatably mounted upon a bracket 36 fixed to the plate 13. A lever 41 is pivotally mounted on the shaft 27 and carries a bearing 39 for a shaft 38 having spur-wheels 44, 37 mounted upon it. The wheel 37 is continuously in gear with a spur-wheel on the spindle 27, and in the position shown it also gears with one member of a train of wheels 42 driving the spindle 17 of the delivery roll. To re-wind the tune-sheet, the lever 41 is rocked until the spur-wheels 44, 45 are in gear. Casings on the end plates 13, 14 enclose the motor cylinders and other mechanism. The pumps G exhaust an equalizer 46, which is connected by a pipe 80 to the pneumatic action F, and by pipes 56, 49 to ports 54, 50 in the valve seating 51. A reducing-valve 48 is arranged between the port 50 and the equalizer 46. The port 53 is connected by pipes 55, 55^a, 55^b to the motor, and, as shown in Fig. 8, is partially closed by a plate 59 provided with perforations 62. The plate 59 is not quite flush with the surface of the valve seating 51. The tempo valve 60 is provided with a recess 63 adapted to connect either the ports 50, 53 or the ports 53, 54 to run the motor at full speed. The valve 60 is operated by a lever on the tracker-box. A treadle mechanism H is shown in Fig. 1.

16,407. Atkinson, C. W. July 17.

FIG. 1.



Music spools &c.; winding-mechanism.—In a piano-playing mechanism, a vacuum motor having double-acting pneumatics is arranged inside one of the winding rolls. Each pneumatic *a* comprises two dished metal plates *c* having a diaphragm *e* clamped between them. A metal plate *f* is secured to each diaphragm *e*. The plates *f* of the opposite pneumatics *a* are connected together by a rod *g* having a slotted cross-head *h* at its centre. Rotatable rollers *n* on the crank-pins *k* fit within the slots of the cross-heads. The webs *j* of the crank-shaft *i* comprise pairs of stamped plates riveted together and fastened rigidly to the shaft and crank-pins by screws *l*. The pneumatics *a* are mounted upon a frame *p* carrying bearings p^1, and are connected by trunks *q* to a ported valve seating *r*. The upper and lower chambers of the pneumatics *a* are respectively connected together by trunks q^1, so that two ports in the seating *r* suffice for the two pneumatics *a*. Any suitable number of pairs of pneumatics *a* may be provided, but at least two pairs are connected to each crank-pin. A rotary valve *u*, which is adapted to cover half the ports in the seating *r*, is mounted on the shaft *i* in such a manner that the suction presses it against the seating *r*, which is connected through the trunk *v* and box *w* to exhaust. The roller *o* is mounted at one end upon friction rollers *x* and at the other end upon the bearing p^1 of the shaft *i*. The roller *o* carries a toothed wheel *z*, which is driven through gearing by the sprocket-wheel *y* on the shaft *i* during the winding movement. To re-wind the tune-sheet, the delivery roll may be driven from the shaft *i*.

17,140. Trist, A. R. July 26.

FIG. 2.

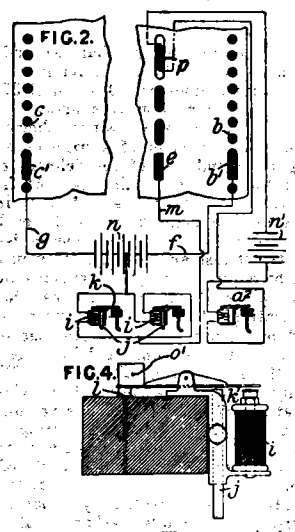
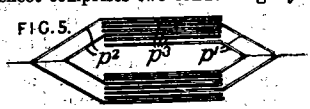


FIG. 4.

Actions; tune-sheets.—Three musical instruments, or the three manuals of an organ, are operated by electro-pneumatic or electric means controlled by a single tune-sheet, which is of the kind described in Specification 2167/11. The tune-sheet comprises two conducting-layers *b*, *c*,

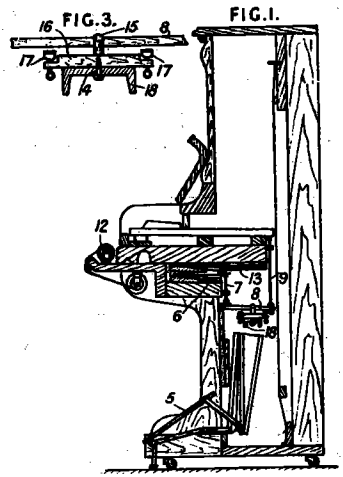
FIG. 5.



which are connected to a battery *n* by wires *f*, *g* and brushes b^1, c^1. Insulating layers are placed between the layers *b*, *c* and upon both faces of the tune-sheet. A single note-controlling brush *e* is shown, which is adapted to contact with one of the conducting-layers *b*, *c* or the tracker-bar. If the brush *e* contacts with the layer *b*, a current passes from the battery *n* through the wire *f*, brush b^1, layer *b*, brush *e*, wire *m*, and electro-magnets *i*, back to the battery. Permanent magnets *j* are arranged near the electro-magnets. The current passes through the electro magnets in opposite directions. The field of one of the permanent magnets *j* is therefore neutralized while the field of the other is strengthened, so that one of the armatures *k* is attracted and the corresponding valve *l* is opened against the action of the weight o^1. Air is then admitted to a duct, and a note of one manual or musical instrument is sounded. The armature *k* may

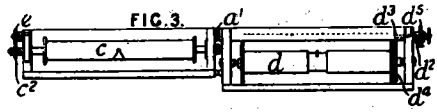
operate directly upon the note-producing device. If the brush *e* contacts with the layer *c*, current passes through the electro-magnets *i* in the opposite direction, and another valve *l* is operated to sound a note of another manual or musical instrument. Permanently energized electro-magnets may be substituted for the permanent magnets *j*. If the aperture is punched right through the tune-sheet, the brush *e* connects together a number of insulated metal strips *p* in the tracker-bar, so causing current to flow from a battery n^1 through an electro-magnetic device a^2 to sound a note of the third manual or musical instrument. Alternatively, the aperture may admit air to a pneumatic device for sounding a note. The tracker-bar comprises an insulating bar having transverse grooves, which are filled by bundles of contact strips p^1, p^2 separated by insulation p^3. A bundle is shown in Fig. 5 in an expanded condition. Alternatively, the tracker-bar may be made of conducting-material and connected to the battery n^1.

17,644. Day, E. F. Aug. 3. *No Patent granted* (*Sealing fee not paid*).



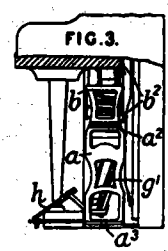
Player-pianos; winding-mechanism; treadle devices.—The action chest and tracker frame are mounted as a single retractible unit under the keyboard. Fig. 1 shows the parts in playing position. After removing the music-roll 12 and unlatching the front of the tracker frame, the mechanism can be lowered and pushed back on guideways 13 and latched again in a concealed position. The striking-pneumatics 6 act upwards on the rear ends of the keys through rods 7, 9 and levers 8, mounted adjustably on an iron cross-rail 18. The supports 16, which carry stops 17 and fulcra 15 for the levers 8, are fixed at any required position and angle by screws passing through a slot 14 in the iron rail 18. This enables the action to be fitted to any piano. The treadles 5 fold back into the casing.

18,404. Lyon, C. E. Aug. 15.



Player-pianos; winding-mechanism. — The tracker-box is made in two parts, one carrying the take-up roll and the tracker-bar, the other carrying the delivery roll. One of these parts may be fixed above the hammers of a piano having an over-damper action. The other part may be readily mounted in its proper position relatively to the first part. The two parts of one vertical side of the tracker-box are hinged at a^1. The other vertical side is provided with a fastening-device for holding the upper and lower parts of the tracker-box together with the delivery roller *c* in vertical alinement with the take-up roller *d*. The shaft d^2 is driven through a chain and sprocket-wheels or otherwise from the motor, and drives the roller *d* through the spur-wheels d^3, d^4, or the roller *c* through the spur-wheels d^5, *e*, c^2 or otherwise. When in the operative position, the upper part of the tracker-box projects through the top of the piano. When the parts are in the position shown in Fig. 3, their upper surfaces are flush with the piano-top. The piano casing is provided with a hinged flap, which is opened to expose the take-up roller. If the two parts of the tracker-box are not hinged together, a receptacle or guide is provided in the piano case to receive the detached part.

18,405. Lyon, C. E., and Towner, A. D. Aug. 15.



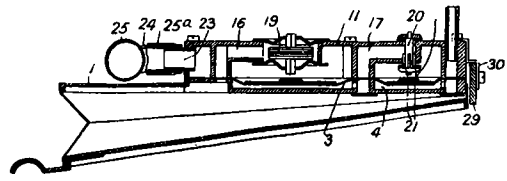
Player-pianos; treadles.—A player attachment for pianos, which is adapted to be fitted beneath the key-bed and inside the piano casing, comprises a frame carrying the whole of the top or striking action, including the connexions from the pneumatics to the keys, and also the bottom or feeding action. The frame may also carry the piano expression pedals and their trundles. The motor may be mounted near the tracker-box, which is constructed and arranged as described in Specification 18,404/11. Alternatively, the motor may be carried by the frame. Fig. 3 is a cross-section of the lower

part of a piano having the attachment fitted to it. The cast iron or wooden frame comprises uprights a, joined by a board a^3 carrying the pedals and their trundles. Extensions of the uprights a are bolted to the piano. The uprights a may be jointed at a^2, and carry the striking action b, control boxes, wind-trunk, reservoirs, and bellows g^1, which are operated by treadles h. The striking pneumatics actuate the keys through rods b^2.

19,649. Maxfield, J. Sept. 4.

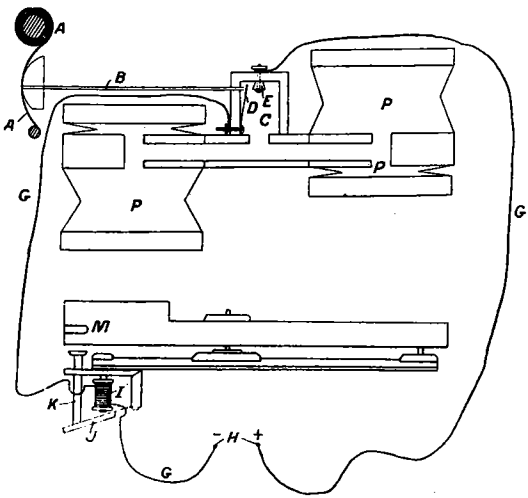
Player - pianos; actions; blowing and exhausting air.—In a pneumatic action, the valve - boxes including the valve-seatings and connecting-channels are formed of metal, vulcanite, or other material that can be moulded or cast. The action is supported by a fixed or pivotally-mounted framework of tubes, connected through spigot-and-socket joints to the exhaust chamber. Metal tubes on the valve-boxes fit into metal tubes on the exhaust-pipe, the junctions being covered by rubber tubing. Referring to Fig. 1, the metal or wood fixed plate 1 of the striking-pneumatic is provided with recesses 3, 4 covered by a strip of leather. Rubber cloth may be used for the flexible part of the striking-pneumatic. A metal or vulcanite casing 11 containing primary and secondary valves 20, 19, is secured by screws to the plate 1, in such a manner that the pipes 16, 17 communicate with passages in the fixed plate 1 of the striking-pneumatic and also with either the atmosphere or the interior of the casing 11 according to the positions of the valves. The pipes 16, 17 may be formed separately and attached to the casing 11. The stem 20 of the primary valve is provided with ribs 21. The casing 11 is connected to exhaust by an extension 23 fitting a pipe 24 on the tube 25, the joint being covered by flexible tubing 25^a. The striking-pneumatics are arranged in three tiers so that three tubes such as 25 are provided, which are carried by vertical tubes connected to exhaust through spigot-and-socket joints. The actions are also connected by lugs 30 and screws to transverse bars 29 carried by suitable end plates. Similar lugs may be provided to connect the actions together in pairs. The striking-pneumatics act upon projections carrying adjustable screws on the stickers of the piano action.

FIG. 1.

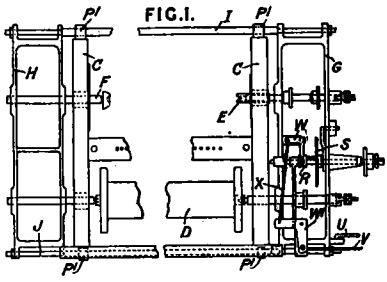


20,464. Silvin, P. M. Sept. 15.

Player-pianos; actions.—In an electro-pneumatic action, the contact - members are directly operated by the air admitted to the tracker-ducts. The pipes B leading from the tracker-bar to the exhaust-chest C are normally closed by resilient members D. When air is admitted to a pipe B by the tune-sheet A, a member D is forced into contact with a terminal E. The circuit of a battery H is thus completed through an electro-magnet I and leads G. The electro-magnet I attracts its armature J, causing the striker K to operate a key M and sound a note. Wind is exhausted from the chest C by the bellows P.

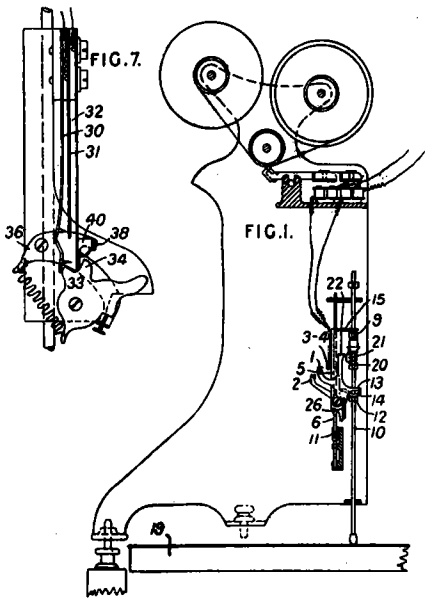


20,909. Lake, W. E., [*Farrand Co.*]. Sept. 21.



Transposing - means; winding - mechanism.—To permit transposition, the spindles E, F of the delivery roll, the spindles of the take-up roll D and the winding and rewinding mechanism are mounted in a frame comprising cast metal members G, H connected by rods I, J, which slide in guides P^1 on the tracker-box C. A link U is provided for adjusting the frames G, H to effect transposition. To rewind the tune-sheet, the sprocket S is clutched to its spindle by means of a clutch R, which is operated through a link V, bell-crank W^1, link X, and bell-crank W.

21,594. Nyström, C. W. Sept. 30.

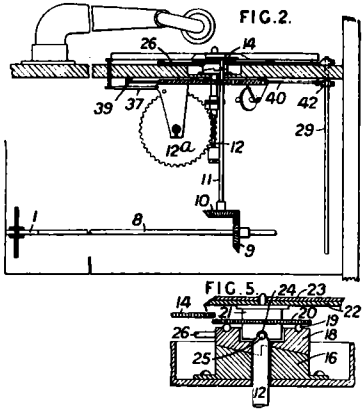


Tune-sheets. — Relates to apparatus of the kind described in Specification 7949/09 for making tune-sheets &c., in which each note is represented by two or more grooves and in which the distances between the initial positions of these grooves is determined by the loudness of note recorded. The invention consists in an arrangement whereby the pair of contacts, that first enters into action upon the corresponding key of the musical instrument being depressed is opened when the second pair of contacts is closed. The pairs of contacts consist or pivoted members 1, 2 and contact plates 3, 4, all being mounted on a frame 5 carried by a spindle 6. The frame 5 is provided with an angular plate 15 which, under the action of a spring 11, is adapted to bear on a boss 9 on the key spindle 10. The members 1, 2 are provided with arms 13, 14 which, under the action of springs 26 bear on a boss 12 of the spindle 10. The spindles 6 are suitably locked in their normal position, and when the spindle 10 is lowered consequent on the depression of a key lever 19, the members 1, 2 swing towards their respective contact plates, the plate 1 first making contact and actuating the first cutting-tool. At the moment of the second contact, the first contact is broken by the engagement with a bevelled arm 22 on the member 1 of a conical boss 20 on the key spindle 10. The boss 20 is supported on the spindle 10 by a weak spring 21 which allows the spindle 10 to rise almost to its highest position before the boss 20 disengages itself from the arm 22. In a modification, each pair of contact members consists of contact springs 30, 32 and 30, 31, respectively. When a key is depressed, the member 1 swings down as before with the key spindle, and owing to the particular shape of the projections 33, 34 of the member 1, the contact springs 30, 32 are allowed to close. Further movement of the member 1 allows the contacts 30, 31 to close and removes a projection 38 on a pivoted arm 36 from engagement with a projection 40 on the spring 32, thereby allowing this spring through its own resiliency to break contact with the spring 30. A modification is described in which the outer springs 30, 32 are replaced by double springs, the whole working substantially as in the prior modification. In a further modification employing the latter system of contact springs, the parts are so arranged that the opening of the first contact members takes place as soon as the member 1 moves upwards on the release of the key.

22,528. Lake, W. E., [*Aeolian Co.*]. Oct. 12.

Combined with phonographs &c.—In a combined player-piano and phonograph, the phonograph can be declutched from its own motor and driven by the motor of the player-piano. Means are provided for simultaneously stopping the phonograph motor. The phonograph is arranged inside the casing of the player-piano, the motor of which drives a spindle 1 through a chain and sprocket-wheels. The spindle 1 drives

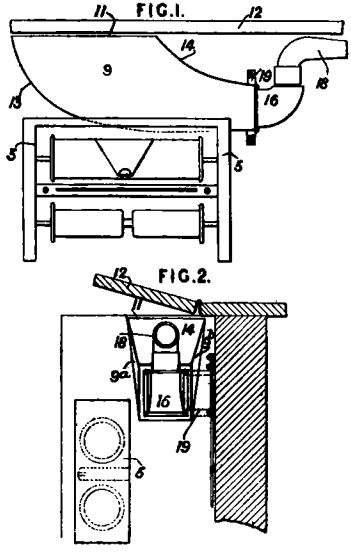
the player-piano winding-rolls and also a spindle 8 carrying a bevel-wheel 9. The bevel-wheel 9 gears with a bevel-wheel 10 on a vertical spindle 11, which carries a spur-wheel 14. The worm-



wheel 12^a of the phonograph motor gears with a worm on a spindle 12 carrying pins 25. The pins 25 normally engage recesses 24 on a loose sleeve 21 carrying a spur-wheel 20. The sleeve 21 carries the table 22 and record 23. The spur-wheel 20 rests upon antifriction bearings 19 on a rotatable toothed boss 18, which engages a fixed toothed boss 16. With the parts in the position shown in Fig. 5, the phonograph is driven by its own motor, but on operation of a handle arranged on the lock-rail, a movement is transmitted through a system of levers and links and a vertical spindle 29 to the arm 26 on the boss 18. The boss 18 is thus rotated and is raised by the cam action of the teeth, so raising the sleeve 21 until the pins 25 are disengaged from the recesses 24 and the spur-wheel 20 gears with the spur-wheel 14. The phonograph is then declutched from its own motor and driven from the motor of the player-piano through the vertical spindle 11. At the same time the brake or stop-lever 37 of the phonograph motor is actuated through a pivoted lever 39, rod 40 and the arm 42 on the spindle 29. A notch is formed in the piano string-plate above the turning-pins to accommodate the table 22.

22,542. Lake, W. E., [*Aeolian Co.*]. Oct. 12.

Combined with phonographs &c.—In a player-piano combined with a phonograph, the phonograph trumpet 9 is situated entirely within and near the top of the casing of the player-piano. The horn 9 comprises two flat sides 9^a, 9^b inclined towards each other, and two curved and tapering sides 13, 14. The sound-arm 18 swivels upon the tapered elbow 16, which is attached to the horn 9. The aperture 11 of the horn is rectangular and beneath the hinged cover 12 of the casing. The horn is mounted in a bracket 19 behind the box 5 containing the



winding-rolls and tracker-bar. In a modification, the aperture of the horn is vertical and above the box 5.

22,549. Lake, W. E., [*Aeolian Co.*]. Oct. 12. *Drawings to Specification.*

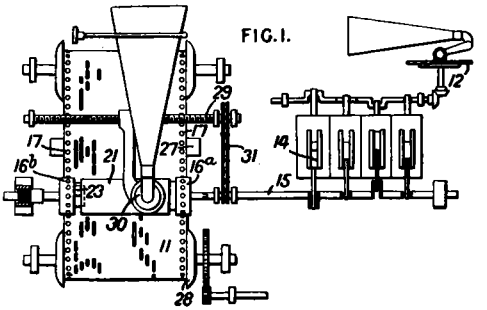
Combined with phonographs &c. — A talking-machine when used in combination with an automatic musical instrument such as a piano-player has the record provided with an index mark at the beginning of the leading-in groove so that the music sheet of the piano-player &c. can be adjusted to commence at the required time.

23,220. Lake, H. W., [*Aeolian Co.*]. Oct. 20.

Combined with phonographs &c.; winding-mechanism.—The tune-sheet of a piano-player or similar instrument drives positively or frictionally a shaft which actuates or controls a phonograph or other record. The piano-player and phonograph are thus played in synchronism. In Fig. 1, the toothed wheels 16^a, 16^b engage with holes 17 in the tune-sheet 11, which moves over the tracker-bar 27 and is wound on to the roller 28. The wheel 16^a is mounted upon a roller which carries a phono-

graph record 21. The roller is provided with a recess to receive a member 23 on the wheel 16^b, and also with a clutch extension to engage a shaft 15. The wheel 16^b can be moved outwardly against spring-action to permit the roller and record 21 to be removed. The shaft 15 is provided with cranks for operating the valves 14 of a pneumatic motor driving the record 12 of a gramophone. A screw 29 is driven by a chain 31 and sprocket-wheels from the shaft 15 for traversing the sound-box 30 of the phonograph. Suitable indications on the tune-sheet and records enable the operator to start them in synchronism. The wheels 16^a, 16^b keep the tune-sheet apertures in alinement with the tracker-ducts.

FIG. 1.



23,337. Royston, E. R., [*Simplex Player Action Co.*]. Oct. 23.

Tracker-bars are provided with ducts, each of which has a dimension longitudinally of the tracker-bar approximately equal to the shortest distance between the two ducts on opposite sides of it. The ducts are thus formed for the purpose of increasing their effective widths when the tune-sheet deviates from its proper course. The ducts A^1 are arranged in two rows, and are of trapezoidal or semicircular form, as shown in Figs. 1 or 4. In the form shown in Fig. 1, the width of a duct A^1 at its narrowest part is not less than the width of a tune-sheet aperture B^1. The divisions A^3 between the ducts are inclined with respect to the line of travel of the tune-sheet and are of the usual width.

FIG. 1.

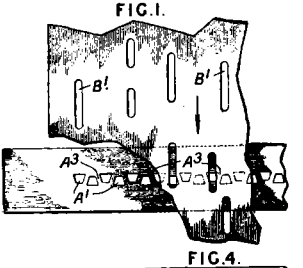
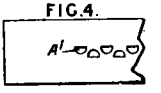


FIG. 4.



23,728. Atkinson, C. W. Oct. 26. [*Cognate Application*, 27,738/11.]

FIG. 5.

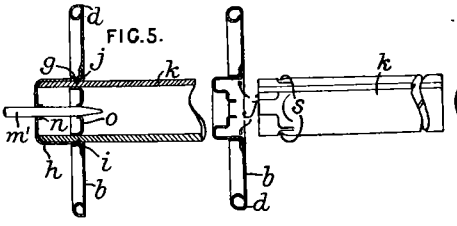
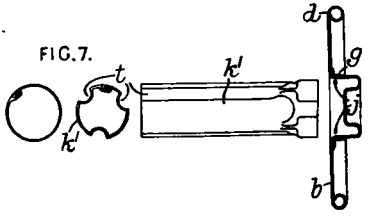
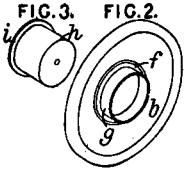


FIG. 7.



Music spools &c.—A tune-sheet spool is provided with a beaded metal flange having a central annular portion which is adapted to fit over a hollow, flanged boss into which the spool fits. Alternatively, the annular portion and boss both fit over the end of the spool and butt against each other. The spool may be connected to the boss by a bayonet-joint, and one half of the spool may slide within the other half. As shown in Figs. 2, 3, and 5, the flange-disk *b* is rolled over near its periphery in such a manner as to conceal the edge of the disk and form a rectangular corner *d*. A depression *f* having an annular extension *g* is formed near the centre of the flange. A boss *h* fits into the extension *g* with its flange *i* in the depression *f*, and the cardboard or metal spool *k* fits into the boss *h*. Depressions *j* are formed in the

FIG. 3. FIG. 2.



annular extension g, boss h, and roller k to hold them together. The edges n of the central hole in the boss h may be turned inwards to hold the spool support m^1. A flanged disk o may also be provided within the spool k to hold the support m^1. In a modification, the boss h fits over the end of the spool k and butts against the flange extension g. The support m^1 is riveted to the boss h. Wings may be provided on the support to engage the driving-means and also keyways formed in the stamping h. In the modification shown in Fig. 7, the spool is made in two telescoping parts k, k^1. The diameter of the part k^1 is reduced by forming depressions t in it so that it fits within the part k. Projections j on the flange b are adapted to engage recesses s in the spool sections, thus forming bayonet-joints. The parts are permanently fixed together by a locking-pin, cement, or rusting-compound.

23,773. Rowley, J. Oct. 27.

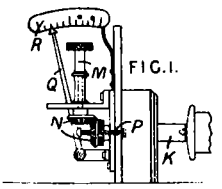
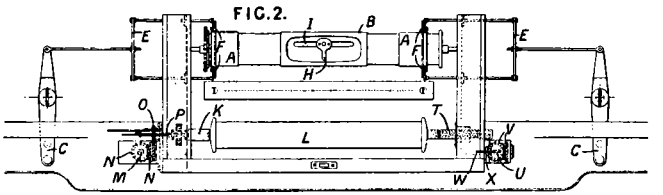


FIG. 1.

FIG. 2.



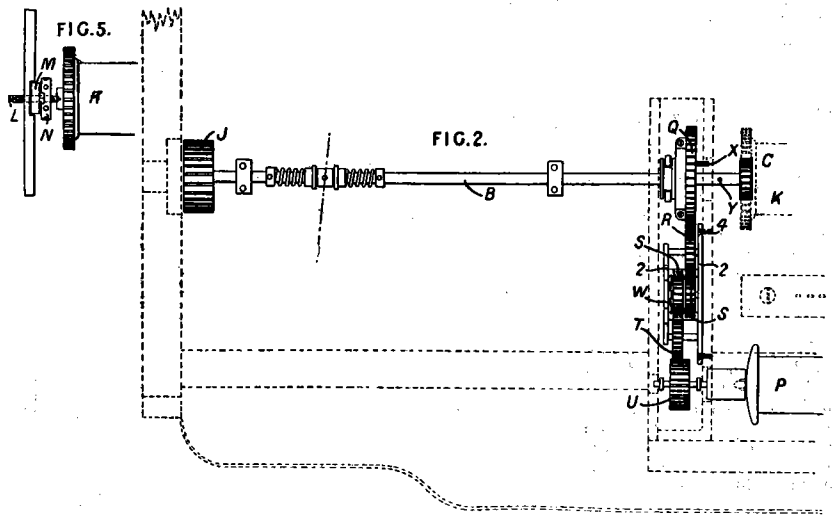
Music rollers; transposing-means; winding-mechanism.—Relates to modifications of the invention described in Specification 356/05, in which means are provided for simultaneously adjusting the music spool and take-up roll, and an indicator is provided for showing the correct position of the music spool. According to the present invention, the music spool only is adjusted for transposing purposes, and a modified form of indicator is employed. Levers are provided for independently adjusting the two flanges of the take-up roll, which is provided with an adjustable hook for the tune-sheet. To adjust the flanges A of the take-up roll B, levers C are provided, which are connected to stirrups E having extensions F engaging the two flanges A. The tune-sheet hook H is slidable in a slot I, and is held in any desired position by a spring-pressed tooth engaging one of a series of notches. The vertical spindle M is adapted to rotate a spur-wheel O through bevel and spur gearing N. A rod P screws into the boss of the spur-wheel O and presses the driving-clutch K of the music spool L inwardly. The rod P is prevented from rotating by a key, so that rotation of the spindle M causes the spool L to be adjusted longitudinally. The pointer Q is pressed by a spring against the end of the rod P and moves over the scale R during this adjustment. The sliding member T of the other support can be adjusted through the nut X and screw W by rotating the spindle U. Several interchangeable clutches K of differing lengths may be provided. A thimble may be fitted over the centre of the spring plunger for spools requiring a cylindrical instead of a conical bearing.

23,774. Rowley, J. Oct. 27.

Winding-mechanism.—A slidable shaft is driven through a train of spur-wheels by the motor, and is adapted to drive either the take-up roll or the delivery roll through spur gearing. The intermediate wheels of the train driving the music spool are removable, and a frictional driving-device is provided between two of these wheels. The pivots of the take-up roll can be adjusted either vertically or horizontally. The shaft B, which is driven from the motor through a train of spur-gearing including the wheel J is adapted to drive either the take-up roll K through a pinion C, or the music spool P through a train of spur-wheels Q, R, S, T, U. The wheels S are pressed together by an interchangeable four-bladed spring W, and a boss on one of the wheels S fits into a conical recess on the other, thus providing a frictional drive. The frame 2 carrying the spur-wheels R, S, T is secured in position by screws 4 and can be removed. Tubes may be provided for lubricating the wheel spindles. To rewind the tune-sheet, the shaft B is shifted longitudinally until the pinion C ceases to gear with the spur-wheel driving the take-up roll K. The pin Y engages the pin X on the spur-wheel Q, which is loose on the shaft B, so that the spool P is driven through the spur-wheels Q, R, S, T, U. Pointed screws L, Fig. 5, which are mounted on slides M and are adjustable longitudinally by nuts N, engage centres in the roll K. Specification 24,799/97 is referred to.

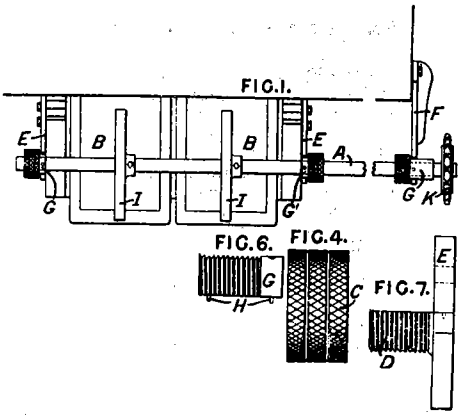
(For Figures see next page.)

23,774.



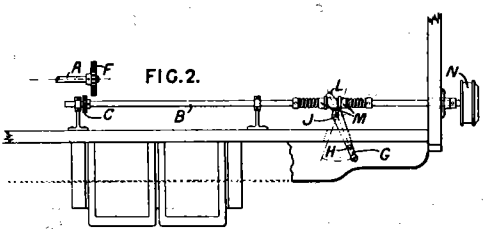
23,775. Rowley, J. Oct. 27.

Blowing and exhausting air; treadle devices.—The treadles of a piano-player may be operated by a removably-mounted shaft driven by a motor. The shaft A is driven through the sprocket-wheel K from an electric or pneumatic motor, and carries cams I for operating the treadles B. The cams I bear against rollers or plates on the treadles B. The bearings for the shaft are mounted on brackets E, F, and may be readily dismantled for the removal of the shaft. Each bearing is made in two parts, as shown in Figs. 6 and 7, the upper part being provided with dowels H which fit into recesses in the lower part D. A nut C is then screwed on to the bearing. The treadles B and cams I may be enclosed in a casing.



23,776. Rowley, J. Oct. 27.

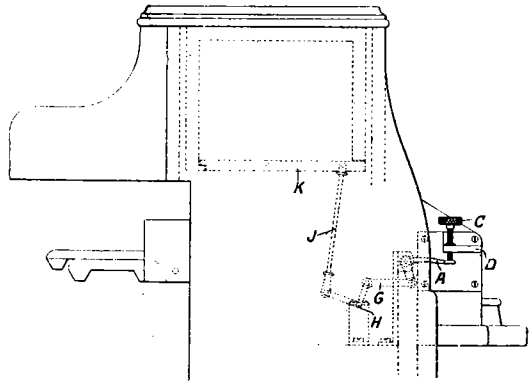
Winding-mechanism.—Two motors are provided, one for the winding movement, the other for rewinding the tune-sheet without operating the treadles. The usual motor shaft A is adapted to be in gear with either the take-up roll or the delivery roll for winding or rewinding. To rewind the tune-sheet, the shaft B is shifted longitudinally by a lever G until the spur-wheels F, C are in gear. The shaft B is driven



through a pulley N from an electric motor, or from a compressed-air or vacuum engine. The lever G is mounted upon a vertical spindle J carrying a fork L engaging spring-pressed collars M slidably mounted on the shaft B. A screw H is provided for locking the lever G in position.

23,777. Rowley, J. *April 26, 1912.*

Piano-players; wind instruments.—In an organ combined with a piano-player, the swell-shutter is adjusted by a screw-device mounted adjacent to the control-board of the player. A screw C is mounted in a bracket D on the tracker-box, and is connected by a bell-crank A, link G, cranked spindle H, and link J to the swell-shutter K. According to the direction of rotation of the screw C, the swell-shutter K is opened or closed to vary the loudness of the sound produced by the organ.



23,778. Rowley, J. Oct. 27.

Piano-players; percussive instruments.—A musical instrument with sonorous forks A is combined with a piano-player E provided with means for putting the instrument A out of operation. The piano-player E is provided with two sets of strikers O, M, both of which may be operated by lifters N. The strikers M operate keys C in order to sound the forks B. To render the strikers M inoperative, the notches I in the rods F are disengaged from catches J. The springs H then force the rods F inwards. The rods F are pivoted to a notched bar K, which therefore moves away from the links L, permitting them to move by spring action until their extensions are disengaged from the lifters N.

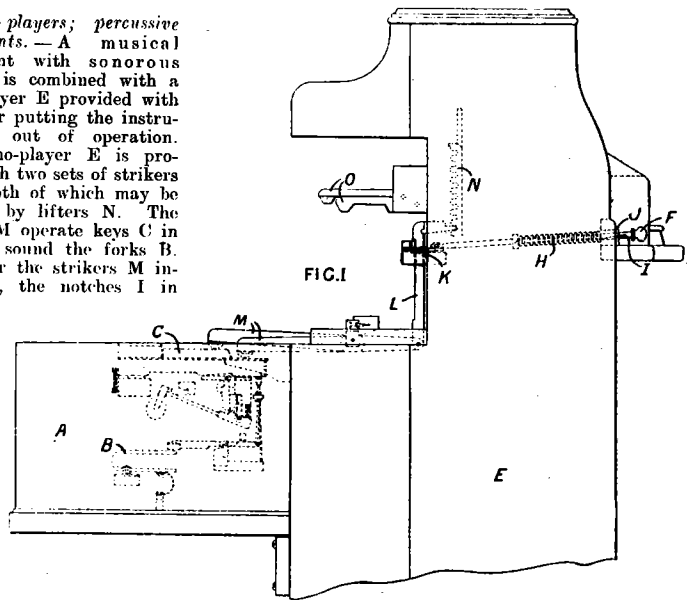


FIG. 1

24,007. Lake, H. W., [*Æolian Co.*]. Oct. 30.

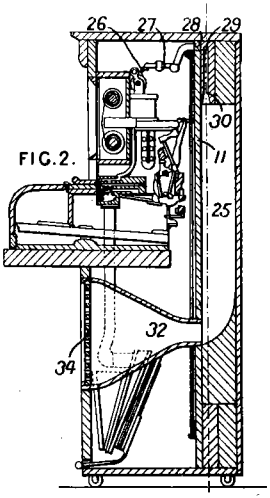


FIG. 2.

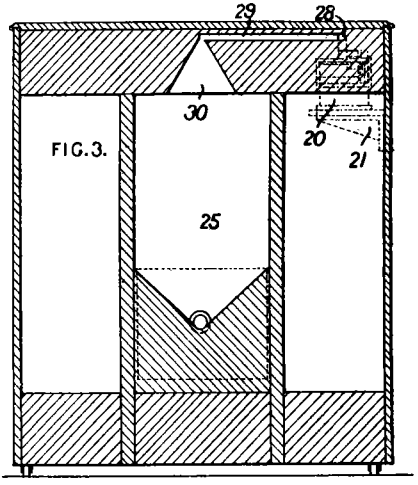
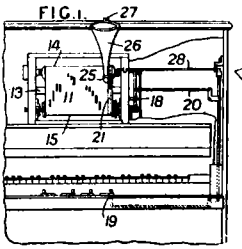


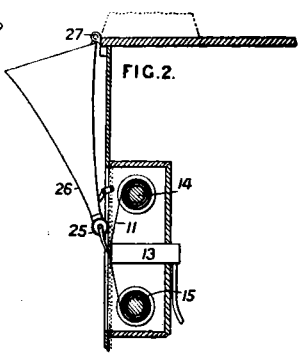
FIG. 3.

Combined with phonographs.—A phonograph is combined with an automatic or other musical instrument, and the vibrations produced by the two instruments are directed into a common chamber connected by a horn to the external atmosphere. As shown in Figs. 2 and 3, a phonograph or the like 20 is supported upon a bracket 21 inside the casing of a player-piano or piano, and the phonograph sound-box 26 is connected by a tube 27 and passages 28, 29, 30 to a chamber 25 behind the piano sound-board 11. A trumpet 32, having lattice-work 34 or a screen over its mouth, leads from the chamber 25. Doors are provided in the upper part of the piano casing for the insertion and removal of the phonograph records. A harp, zither, or other instrument, either automatically operated or not, may be similarly combined with a phonograph.

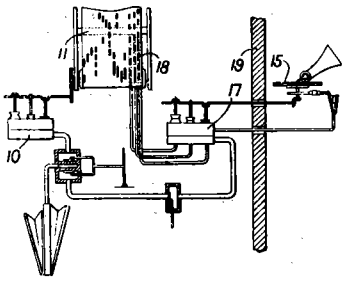
24,120. Lake, H. W., [*Æolian Co.*]. Oct. 31.

Combined with phonographs; winding-mechanism; tune-sheets.—A combined automatic musical instrument and phonograph is controlled by a tune-sheet carrying a phonograph record, means being provided for lifting the phonograph stylus from the record and simultaneously operating the rewinding-mechanism. The phonograph record 21 is formed upon the tune-sheet 11, which is adapted to be wound from the delivery-roll 14 over the tracker bar 13 to the take-up roll 15. The phonograph reproducer 25 is mounted upon the horn 26, which is hinged at 27 to the top of the player-piano. When the rewind lever 19 is actuated, the clutch lever 18 is operated through the link 20 in the usual manner. Simultaneously a spindle 28 is rotated and lifts the reproducer 25 from the record 21. The record 21 may be formed on the paper or celluloid tune-sheet, or on a strip of india-rubber attached thereto.



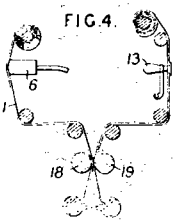


24,121. Lake, H. W., [*Aeolian Co.*]. Oct. 31.



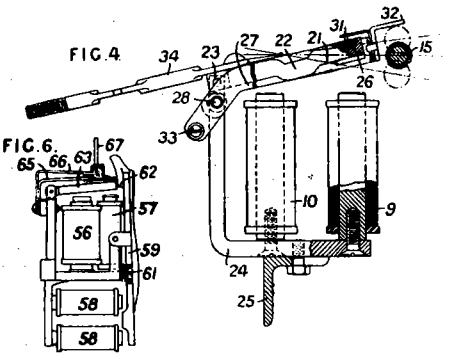
Combined with phonographs; tune-sheets.—Relates to a method of producing a tune-sheet and a record to be played simultaneously by an automatic musical instrument and a sound-reproducing machine respectively. The tune-sheet apertures 18 control the valves of a pneumatic motor 17 for driving the phonograph, as described in Specification 14,622/11. To make the record, the motor 10 of a recording-piano or player-piano is started, and the song or instrumental music is recorded upon the record 15. The piano or player-piano is played meanwhile, but is separated from the phonograph by a partition 19, so that the piano music is not recorded. Alternatively, the sounds produced by the piano are damped. The tune thus recorded on the record 15 is then reproduced, the piano or player-piano being simultaneously played upon with its recording-mechanism in operation, so that the tune-sheet 11 is perforated in the desired manner. The tune-sheet and phonograph-record may be formed upon a single sheet.

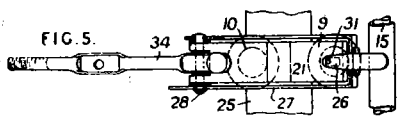
24,135. Lake, H. W., [*Aeolian Co.*]. Oct. 31.

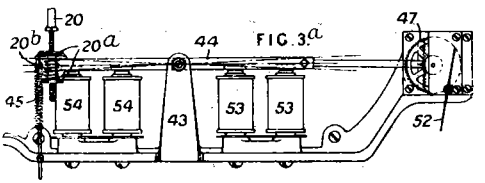


Combined with phonographs; tune-sheets.—Combined records for phonographs and piano-players or the like are obtained by accompanying the performance of the phonograph upon an instrument fitted with a roll-perforating device and then attaching to the roll a negative phonograph record to serve as a master for the preparation of combined records. The phonograph record may be made upon the material of the sheet, which may be of celluloid, or upon an attached marginal strip. Fig. 4 is a diagram of apparatus employed for duplicating the records. The master-record is passed over a tracker-bar 6, which operates the perforator 13, thus duplicating the note-sheet, while the phonograph record is duplicated by pressure-rolls 18, 19 from the negative record on the master 1.

24,372. Boult, A. J., [*Mills, H. S.*]. Nov. 2.



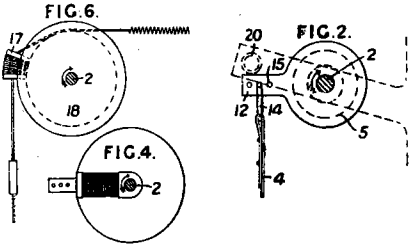




Pianofortes without keyboards; actions; expression, controlling; winding-mechanism.—In an electro-magnetic player-piano, which is particularly adapted for accompanying an automatic violin, two electro-magnets, connected in parallel and having coils of different resistance, are provided for each note. The attraction of an armature, which is common to the electro-magnets and comprises two relatively-movable parts, causes the circuit of the low-resistance coil to be broken at a time determined by the position of a bar controlled through electro-magnetic means from the tune-sheet. The loudness of the notes can thus be controlled, electrical energy is economized, and sparking at the tracker-bar is reduced. Means are also provided for operating the dampers by a similar electro-magnetic device, and for locking them

in position until released by another electro-magnet. The piano actions are arranged in two sets one above the other, alternate strings being sounded by the hammers of the same set of actions. The player actions are also arranged in two sets, each comprising two rows of magnets. The armatures of the magnets 9, 10 have extensions 34 provided with adjustable weights and also with buttons for operating the piano stickers either directly or through vertical rods. Adjustable uprights are screwed on to the extensions 34 and secured in position by nuts. The magnets 9, 10 for a single note are mounted upon a bracket 24 carried by a beam 25. The coil of the magnet 9 is of low resistance and is connected to a terminal 33 on a yoke 27, which is pivoted at 28 to the bracket 24 and insulated therefrom. The other end of the coil is connected to a brass strip mounted on an insulating base which forms one side of a rectangular conduit containing the various wires. The coil 10 is connected to the brass strip and the iron framework. The armature 21 is pivotally mounted at 23 on the bracket 24 and is normally inside the yoke 27, so that the circuit of the magnet 9 is completed through platinum contacts 31, 26 on the yoke 27 and armature 21 respectively. A rubber-covered bar 15, which can be raised and lowered by electro-magnetic means controlled by the tune-sheet, is adapted to co-operate with an extension 32 carried by the yoke 27. The armature 21 is bent near its centre, as shown at 22, to increase the tractive force of the magnets. In operation, if the circuits of the magnets 9, 10 are completed by a brush making contact with a roller, the armature 21 and yoke 27 are simultaneously attracted. The extension 32 of the yoke 27 then engages the bar 15 so that the motion of the yoke is stopped. The movement of the armature 21 continues, however, so that the contacts 26, 31 separate and the circuit of the magnet 9 is broken at a stage determined by the position of the bar 15. The loudness of the note sounded therefore depends upon the position of this bar. Several independently-controlled bars 15 may be provided. The bars 15 for two sets of actions are mounted upon pivoted arms which are coupled together and are operated through the rod 20 by the device shown in Fig. 3[a]. The lever 44 is mounted upon a bracket 43 and carries the armatures of the electro-magnets 53, 54. A spring 45 normally holds the lever 44 in the horizontal position, and its connexion with the rod 20 can be adjusted by nuts 20[a], against one of which it is pressed by a spring 20[b]. By the energization of the magnets, the lever 44 is tilted in one direction or the other, so raising or lowering the bar 15. The lever 44 carries a rack 47 which drives a fan 52 for preventing abrupt movements. The device for operating the damper-rod 67 is shown in Fig. 6, and comprises high and low resistance magnets 57, 56 connected in parallel. The attraction of the armature 63 breaks the circuit of the magnet 56 which is normally completed through the contact-arm 66. A stop 65 limits the downward movement of the arm 66. A catch 62 holds the armature 63 depressed until the magnets 58 are energized. The armature 59 is then attracted against the action of a spring 61 to release the armature 63, which thereupon rises to its normal position owing to the action of the springs acting on the dampers. The tune-sheet is driven by an electromotor, the circuit of which may be closed or opened by energizing electro-magnets controlled by push-buttons. At the completion of a tune, the motor circuit is opened by the energization of an electro-magnet, controlled by the tune-sheet.

24,857. Allsopp, C. E. Nov. 8.



Player-pianos; actions, electric. The hammer actions of a player-piano are actuated from a constantly running shaft 2 by electro-magnetic grip devices acting through tape connexions 4. The grip devices may consist of short cylindrical magnets 5, Fig. 2, loose on the shaft 2 but adapted to lock themselves, when energized, to disk armatures fixed on the shaft. A bar 20 limits the movement. Straight radial magnets may be used, as shown in Fig. 4. In a third device, shown in Fig. 6, a magnet 17 rides in a groove of a constantly running pulley-armature 18, to which it locks itself when energized. The tape 4, Fig. 2, is attached to the arm 12 of the magnet casing by a wire eye 14, which is passed through one of a number of holes 15.

25,347. Atkinson, C. W. Nov. 14. *Drawings to Specification.*

Player-pianos; actions. — The pneumatic action described in Specification 6503/10 is mounted on a bracket under the key-bed and inside the casing of an ordinary upright piano. The note-operating pneumatics are vertically arranged and actuate the keys through bell-crank levers, pivoted on the bracket, and pusher-rods. Adjustable nuts are provided on the ends of the pusher-rods, which may pass through holes in the key-bed. The tracker-bar and motor are arranged behind the top front board, the pumping-device behind the bottom front board. The pipes from the tracker-bar and the connexion to the pumping device lead to a perforated plate, which bears against another plate from which pipes lead to the action.

25,348. Atkinson, C. W. Nov. 14.

Piano-players.—The pneumatic action described in Specification 6503/10 is applied to a piano-player, suitable mechanism being provided for operating the piano-keys. In Fig. 2, the action *a* is arranged at a lower level than the keys *h*, and an extension *i* of the casing carries a support *j*, provided with pivoted strikers g^1. Rods *k* connect the levers *g*, which are operated by the pneumatics *d*, and the strikers g^1. The wind-truck *c* is arranged near the keyboard. In a modification, the action is inverted and the levers *g* operate the keys. Alternatively, the striking pneumatics may be arranged vertically and operate the keys through bell-crank levers.

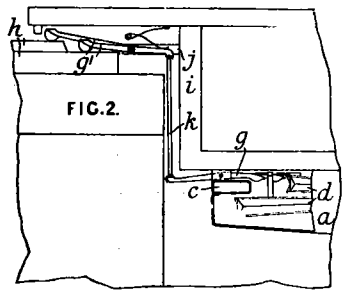


FIG.2.

25,751. Kershaw, W. J. *May 20, 1912.*

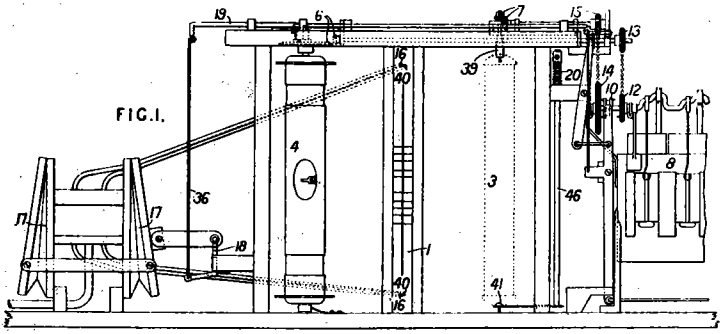
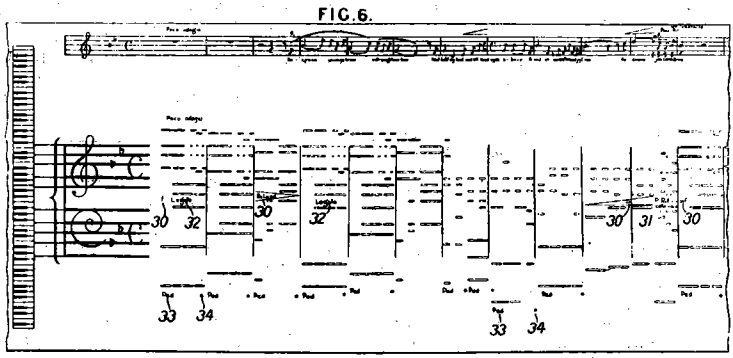


FIG.1.

FIG.6.

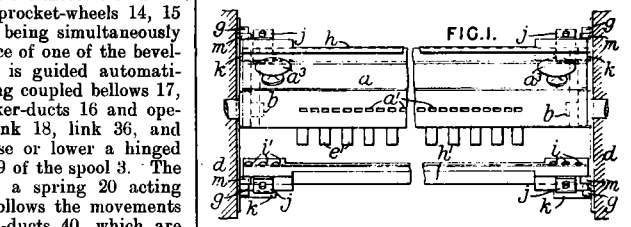


Tracker-bars; tune-sheets; winding-mechanism; expression, controlling.—A tune-sheet marked with notes, words and other musical symbols is wound horizontally from right to left across a vertical tracker-bar having a stave or other devices marked upon it, or associated with it. The lines and spaces on the tracker-bar or note indicator may indicate the black and white notes respectively. Part of the tune-sheet may be marked with representations of a keyboard and a staff adapted to register with the markings on the tracker-bar. A device for automatically guiding the tune-sheet of the kind described in Specification 3310/09, and mechanism for winding and rewinding the tune-sheet, are also described. The tune-sheet

is wound from the music-spool 3 over the tracker-bar 1 to the take-up roll 4, which is driven by the motor 8 through the sprocket-wheels 12, 13, and a horizontal shaft and the bevel-gear 6. To rewind the tune-sheet, the clutch 10 is shifted to cause the motor 8 to drive the spool 3 through the sprocket-wheels 14, 15 and bevel-gear 7, a brake being simultaneously applied to the upper surface of one of the bevel-wheels 6. The tune-sheet is guided automatically by a device comprising coupled bellows 17, controlled by special tracker-ducts 16 and operating through a bell-crank 18, link 36, and cranked spindle 19 to raise or lower a hinged bracket carrying a pivot 39 of the spool 3. The pivot 41 is controlled by a spring 20 acting through the rod 46 and follows the movements of the pivot 39. Tracker-ducts 40, which are permanently connected to exhaust, prevent the tune-sheet from curling at the edges. The tracker-bar 1 is slightly inclined away from the performer, and may be marked with a stave comprising transverse black or coloured lines on a white surface. The lines are visible through the tune-sheet and coincide with the tracker-ducts controlling notes corresponding to the lines of the stave. The tracker-bar may be marked with leger-lines, which are less conspicuous than the lines of the stave, and also with a representation of a keyboard. The keyboard representation may be marked on an inclined plate which is hinged or removably secured flush with the surface of the tracker-bar. In a modification, a stave and keyboard diagram are marked upon a celluloid or glass screen hinged in front of the tracker bar and near one end thereof. The stave and keyboard diagram may be marked on separate screens. The tracker-bar or screen may be marked with a line indicating the limits of the control of the bass and treble expression levers. As shown in Fig. 6, the tune-sheet is marked with transverse lines representing bars, expression signs 30, 31, 33, 34, tempo indications 32, a stave bearing the time and key signatures and a diagram of a keyboard connected by guide-lines to the stave. The music and words of a solo may be printed on the upper part of the tune-sheet.

25,790. Crowley, J. H. Nov. 18.

Tracker-bars with two sets of ducts for tune-sheets of different compasses, both sets being permanently connected to the action, are so constructed that the operative position is the same for each set of ducts. The set of ducts which is temporarily inoperative does not lie in the path of the tune-sheet. Means are provided for closing the outer ends of the inoperative ducts. The tracker-bar a is journaled at b, b in the walls of the tracker-box d. The ends of the tracker-bar are provided with extensions a^4 engaging rods p carrying springs o and washers s. The rods p pass



through holes q in members r which are fixed to the tracker-box. By rotating the tracker-bar a by the handles a^3, either of the sets of ducts a^1 or a^2 can be moved to the operative position, the springs o preventing the tracker-bar from remaining in any intermediate position. In order to close the set of ducts that is not in operation, bars h, h^1, mounted upon pivots g and lined with resilient material i, i^1, are provided. The bars h, h^1 have spring extensions j co-operating with stops k. Stops m, n are provided for limiting the movements of the bars.

26,541. Seaton, W. S. Nov. 27. *Drawings to Specification.*

Tune-sheets. — Perforated tune-sheets are ruled with the stave-lines described in Specification 13,641/94, and the notes are marked at the ends with their scale-degrees and their names according to the usual notation, the musical interval between neighbouring notes being also marked. The number of a note may be used instead of the name, the notes of an octave being numbered from 1 to 12, and the interval may be indicated by the number of semitones between the notes.

27,911. Janssens, L. Dec. 12, 1910. [*Convention date*]. *Drawings to Specification.*

Combined with kinematographs; winding-mechanism; tune-sheets.—In order to avoid the necessity for a highly skilled pianist at each kinematograph display, an automatic piano is operated synchronously with the kinematograph, the tune-sheets being prepared by a composer improvising a suitable accompaniment on a recording-piano at a preliminary display. The kinematograph and automatic piano are driven by two similar motors controlled by a single switch, a regulating-rheostat which accelerates one motor while retarding the other being used to correct any slight loss of synchronism, marks at corresponding points on the film and music rolls being used if required to show when correction is necessary.

The Specification as open to inspection under Section 91 (3) (*a*) describes also two arrangements in which the two devices are driven from a single motor through friction clutches, the amount of slip in which can be varied to correct losses of synchronism, either by direct mechanical action or, in the case of electro-magnetic clutches, by means of a differential rheostat, and, further, states that the marks may be rendered visible outside the hall by differently coloured lights. This subject-matter does not appear in the Specification as accepted.

Continued from page 71

Fortune, moving in a wheel of his own invention and construction. Sometimes he appeared as Cupid or as Vulcan, forging his own bolts. Merlin was one of the earliest inventors of roller-skates; but the public of his day did not care for the novelty. He went one evening to one of Mrs Cornelys' notorious masquerades at Carlisle House, Soho Square, with a pair of his wheeled skates and a violin under his arm. Presently he fastened on the skates, and, with fiddle in hand began gliding, over the polished floor. Gradually he accelerated the pace, and bec[illegible]nosure of every eye. But pride soon had a [illegible]nable to check his speed, he dashe[illegible] valuable mirror, with the result that [illegible]s smashed, the violin broken to pieces, and [illegible] wounded rather severely. This did not make for the popularity of roller-skating. Merlin also went to masquerades as a quack-doctor, making the tour of the rooms in the self-wheeled chair which was named after him, and which will be described presently.

In Hyde Park he was often a conspicuous figure, driving himself in what he called his "unrivalled mechanical chariot"—a vehicle of which there is a plate in Kirby's "Wonderful Museum." It bore a dial which registered the distance travelled, and abounded in ingenious contrivances. Even the whip was mechanical. It was attached by a spring to a cord, which was worked at the will of the occupant of the chariot.

The ingenious Merlin died in May 1803, and was buried at Paddington. The obituary notice in the *Gentleman's Magazine* describes him as "Rose's engine-maker and mathematical instrument and watch and clockmaker in general." Before he died he requested that as soon as he was dead his favourite horse, which he had been accustomed to drive in his "mechanical chariot," should be immediately shot, the animal being

thirty years old. This was done as he had wished. A year after Merlin's death, in May 1804, his museum in Princes Street was advertised to be sold by auction in one lot; but it was kept open for some years longer, not closing finally until about midsummer 1808.

It is now time to speak of the contents of this museum. Our authority is a very little book — resembling in appearance and shape one of those tiny chap-books which were the delight of book-starved children a hundred years ago—which is probably very scarce. The copy in the library of the British Museum is bound up with sundry like-sized children's books and pamphlets, and has the following title-page:—"Morning and Evening Amusements at Merlin's Mechanical Museum, No. 11 Princes Street, Hanover Square. Admission, every Day during the whole Year (Sundays excepted) from Eleven till Three o'Clock, at Half-a-Crown; And in the Evening from Seven till Nine o'Clock, at Three Shillings. Ladies and Gentlemen who honour Mr Merlin with their Company may be accommodated with Tea and Coffee at One Shilling each." Neither place of publication nor date is given. Considering that the catalogue which follows this announcement contains only thirty-two entries, the prices of admission may be considered fairly high.

People in those days were not so satiated with shows as their descendants now are, and an exhibition which would now attract little attention was then regarded as no small thing. The Rev. William MacRitchie, a Scottish minister, whose "Diary" was printed in the *Antiquary* some few years ago, went to see the museum on 1st August 1795, and made the following note of his visit:—"Go to see *Merlin's Museum*, a most wonderful display of human ingenuity. A vast variety of most curious movements, depending upon electrical and magnetical principles. The mechanical powers exhibited

here in the greatest perfection." * Mr MacRitchie was fairly lavish with his superlatives over an exhibition of thirty-two more or less ingenious pieces of mechanism.

Every article shown was Merlin's own work. The first three items in the list are a "perpetual motion representing a curious clock," a mechanical garden, and the "Quartetto Music-cabinet." Then comes the famous "*Morpheus* and Gouty Chair." This was, perhaps, the first of the many invalid chairs which have since been invented for the comfort and relief of crippled sufferers, although one wonders whether the "wheele-chaire for ease and motion" which Lord Aubigny showed to Mr Evelyn on 11th January 1662, was an earlier example of the same kind. Like similar chairs of later date, Merlin's invention had double tyres to its two front wheels, and could be propelled by the occupant turning the outer tyre with the hand. It is described as "intended for the infirm to wheel themselves from room to room, with the greatest ease. . . . It has a cradle, on which the legs may be placed in different positions, and also a small table to read and write at, or take refreshments off. The back . . . is made to fall down at pleasure, so as to form a Bed or Couch." This was probably the most useful and practical, and certainly became the most widely known of Merlin's inventions. The name lasted long after the death of the original maker. A Merlin chair is mentioned by the Rev. Edward Smedley in a letter dated 4th May 1835, printed in his "Poems, with a Selection from his Correspondence," 1837, p. 429. It had been sent to him as a present by a friend. He describes it as "A Merlin (or some improvement thereon) chair, with many appendages and fashions of transformation, of which I have still to learn the use. Mary, who has made an excursion with it already round the hall, speaks with delight of its facility of management."

* *Antiquary*, September 1896, vol. xxxii. p. 272.

Sir David Brewster, speaking of a hand-worked car, said to have been constructed by Sir Isaac Newton while still a schoolboy, says:* "The mechanical carriage which Sir Isaac is said to have invented was a four-wheeled vehicle, and was moved with a handle or winch wrought by the person who sat in it. We can find no distinct information respecting its construction or use, but it must have resembled a Merlin's chair, which is fitted only to move on the smooth surface of a floor, and not to overcome the inequalities of a common road."

The articles in the museum numbered 5 to 8 are—"The Hydraulic Vase," "The Review of Beauties," "The Library Table," and "The Hygeian Chair." The last was a rocking-chair.

No. 9 is Sanctorius's Balance, "which will give the weight and stature of any person who stands on it"—which reads like an anticipation of the automatic machines now to be found at every railway station. Sanctorius, it may be remembered, was a professor of medicine at the university of Padua at the beginning of the seventeenth century. His balance was made with a seat, in which he placed himself after his meals, for the purpose of making observations connected with a series of curious experiments on insensible perspiration. Next to the Balance comes "An Air-Gun," followed by "The Tea-Table," which is said to be an invention which "enables a lady to fill a dozen tea-cups without using her hands." One would like to have had further particulars of this curious table, which many ladies nowadays would find an invaluable afternoon assistant.

* "Memoirs of the Life, Writings, and Discoveries of Sir Isaac Newton," 1855, vol. i. p. 10.

Nos. 12, 13, and 14 are "The Circus of Cupid," "A Cruising Frigate," and "The Temple of Flora." No. 15 is a "Model of Merlin's Cave." This was a long-cherished idea of the ingenious mechanician. He proposed to erect at Paddington a building of strange construction for the housing of his museum. It was to be 100 feet in length, 50 in width, and 48 in height. There were to be three circular ballrooms, 40 feet by 20, with "a grand Orchestra to imitate the Band at the Abbey; and two alcoves for the reception of a pair of Automaton figures as large as life; with a variety of other mechanical curiosities calculated to entertain the imagination and improve the mind." This strange plan was never carried into effect.

To the "Model" succeed a juggler, a machine for the blind to play at cards; a gambling-machine — suggestive of a modern *pari-mutuel* — a mechanical organ, which seems to have been of the familiar barrel type; a "Stone-Eater"; a fire-screen; and a "Valetudinarian Bedstead." The last was an adjustable couch suitable for an invalid—the forerunner of many of its kind. Next to the bedstead comes the "Hygeian Air-pump," which "draws foul air out of Ships, Hospitals, Bedclothes, etc. and supplies them with that which is fresh, warm, or possesses a medicinal virtue." This, again, was an anticipation of more modern sanitary appliances. Nos. 24 to 27 are an aërial cavalcade, an artificial bat, a vocal harp, and a patent "Pianoforte Harpsichord with Trumpets and Kettledrums"—a fearsome instrument, suggestive of the "musical" machine attached nowadays to steam round-abouts. No. 28 is a "Grand Band of Music." This is followed by two "Escarpolettes," which were simply mechanical swings, and the list ends with another instrument of torture—a barrel harpsichord.

The tiny guide-book, or catalogue, concludes with some rhymes sent by a grateful user of the famous chair, with a refrain in praise of Master Merlin and his invention. The first and the last verses are as follows:

"You who on Fortune's rough highway,
Which all are doom'd to whirl in,
For gouty feet would take a seat,
Apply to Master Merlin.
. . . . . .
To facts so felt, toes, ancles, knees,
Their conscious suffrage hurl in;
And truth encores from thousand pores,
O bravo! Master Merlin!"

Fashionable Promenade,

MORNING AND EVENING

AT THE

PANHARMONICON

Exhibition of Music

BY MECHANICAL POWER;

Equally GRAND *as a full* ORCHESTRA *or* PARADE BAND,

INVENTED BY

Mr. GURK from VIENNA,

NOW EXHIBITING

At the ROYAL GREAT ROOMS, SPRING GARDENS,

Charing Cross.

THIS PANHARMONICON consists of TWO HUNDRED INSTRUMENTS; viz. french horns, trumpets, kettle drums, oboes, clarinets, bassoons, cymbals, triangles, great drum, bells, and german flutes; performing the most select Pieces of Military Music, composed by MOZART, HAYDN, KROMMER, &c. Admission from One till Four 1s. 6d. and from Seven till Ten 2s.

N. B. The whole of the Music is performed in each hour, concluding with God Save the King.

An Engraving of the Panharmonicon may be had at the Room, price 6d.

The Instruments will during the present Week, perform in each hour

1. *Overture of Clemenza di Tito* ..... MOZART.
2. *Allegretto of the Military Symphony by* ..... HAYDN.
3. *Hunting Piece*, with an Imitation of a Thunderstorm purposely composed for the Panharmonicon .... FR. STARKE
4. *Rondo*, composed for the Instrument, by ..... ANDR. ROMBERG
5. *Three Marches*, viz. 1st. March of the Vienna Volunteers; 2d. March of Vienna Grenadiers, with Drum Solo; 3d. Cavalry March with a Trio; the whole as performed on the Vienna Parade ..... FR. STARKE
6. *National Waltzes of Vienna* ..... PECHATSCHEK.
7. *Rule Britannia*
   Prince Regent's favourite March, by ..... LOGIER.
   Duke of Gloucester's Volunteer quick Step, composed and arranged for the Panharmonicon, by ..... PURKIS
8. *God Save the King*, with Variations ..... LOGIER.

N. B. The Music is just published for the Piano Forte.

Topping, Printer, Playhouse-yard, Blackfriars, London.

Fashionable Promenade,

MORNING AND EVENING,

AT THE

PANHARMONICON

Exhibition of Music

BY MECHANICAL POWER;

Equally GRAND *as a full* ORCHESTRA *or* PARADE BAND,

INVENTED BY

Mr. GURK from VIENNA,

NOW EXHIBITING

At the ROYAL GREAT ROOMS, SPRING GARDENS,

Charing Cross.

THIS PANHARMONICON consists of Two Hundred and Ten Musical Instruments; viz. french horns, trumpets, kettle drums, oboes, clarinets, bassoons, cymbals, triangles, great drum, bells, and german flutes; performing the most select Pieces of Military Music, composed by MOZART, HAYDN, KRAMMER, &c. —From One o'clock until Four, and from Seven till Ten.— Admission 1s. 6d.

N. B. The whole of the Music is performed in each hour, concluding with God Save the King, or Rule Britannia.

Private Parties may command admission from Four o'clock until Six, PAYING DOUBLE PRICE.

A coloured Engraving of the Panharmonicon may be had at the Room, price 6d.

The Instruments will during the present Week, perform in each hour

1. *Rule Britannia*
   Prince Regent's favourite March, by ..... LOGIER.
   Duke of Gloucester's Volunteer quick Step, composed and arranged for the Panharmonicon, by ..... PURKIS.
2. Overture of Lodoiska, by ..... KREUTZER.
3. *Allegretto of the Military Symphony by* ..... HAYDN.
4. Three Airs from the Zauberflute, by ..... MOZART.
5. March with Trumpet Solo, by ..... FR. STARKE.
   March with Trio, by ..... FR. KRAMMER.
6. German Waltzes, by ..... PECHATSCHEK.
7. Marquis Wellington's March: 1st. British Grenadiers; 2d, Grand March; 3d. Victory, closing with Bells, purposely composed for the Panharmonicon, by ..... H. CLASING.
8. *God Save the King*, with Variations ..... LOGIER.

Topping, Printer, Playhouse-yard, Blackfriars, London.

More from the C.R. Thompson collection, these items were seen at the Summer Meeting and comprise a twin-disc Symphonion and two albums for storing discs for the instrument. The albums, made of stiff card, each hold a dozen discs and the discs are retained by small metal clips.

Continued from page 71

after my attentions (I was about seven years old) although to this day I have most of the pieces.

Significantly, the early instruments were known as talking machines (*sprechmaschine* in German; *machine parlante* in French). Their ability as reproducers of music, admittedly very inferior, was in no way seen to be as important as their ability to reproduce that most elusive sound of all – that of the human voice. To hear the voice of a great statesman, famous entertainer or beloved artiste and to be able to preserve their individual sounds was the one characteristic of the phonograph which appealed to the imagination and which instantly placed it in a class of its own.

It has been said that selling phonographs was the first big deal the early American advertising agents ever had. That they succeeded there is no doubt; that nobody needed the musical box is fact.

From the collection of Member Mrs. C.H. Currie, U.S.A. The advertisement appeared in April 1894.

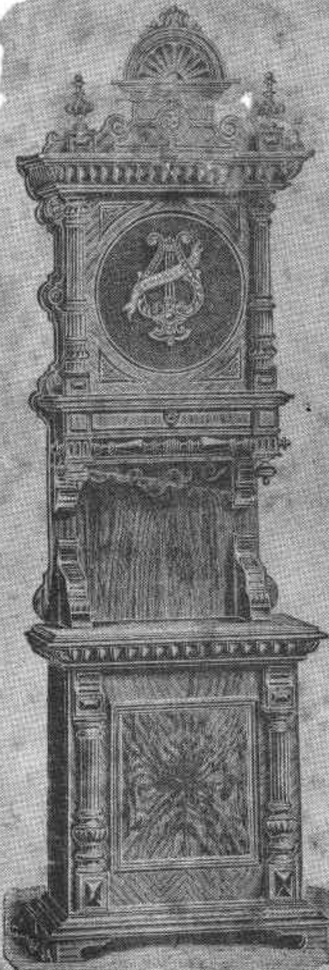
FROM A PUDDLE SOMEWHERE IN THE MIDLANDS.....

Some years before the start of the first World War, our first President, the late John Clark, was bicyling along a road somewhere in the Birmingham area. It had, he recalled, been raining. As he reached a hill, he dismounted to walk with his cycle to the top when his eye was caught by a tattered piece of sodden folded paper floating in the gutter. He picked this up and found that it was the remains of a page from a catalogue illustrating Symphonion musical boxes. Even as a young man, "Clarkey" was captivated by musical boxes and so this fragile piece was rescued from its ignominious end and preserved in the Clark collection.

One day in 1963 when I paid one of my memorable visits to John Clark's tiny and rather spartan flat in Middleton Street, London, I asked if he had any original material that he might be prepared to lend me for reproduction in THE MUSIC BOX. Clarkey thought for a moment, then fumbled through some papers in his bureau – and produced this little treasure from the past, incredibly fragile, badly stained and somewhat shredded. He told me the story and urged me not just to borrow it but, if I wanted to, I could keep it. As a little reminder of the man who started us all going, here on the facing and subsequent page is that dirty scrap of paper rescued from a gutter nearly sixty years ago.

[A]utomatic Symphonions

(CONTINUED.)

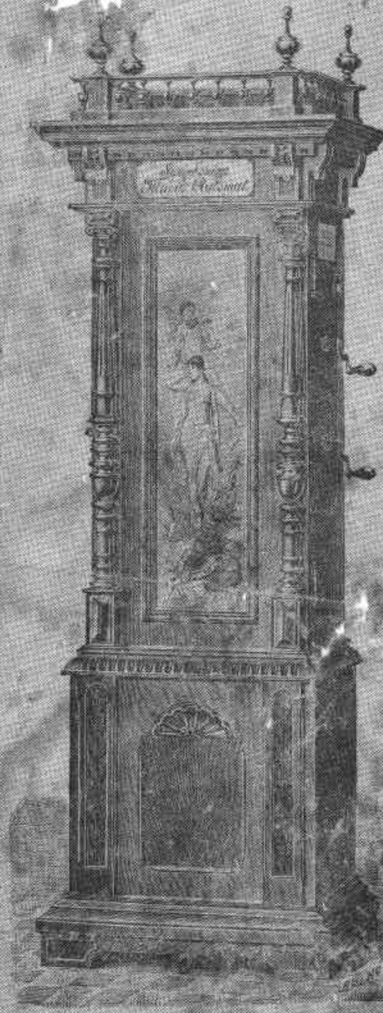


(PENNY IN THE SLOT.)

— A —

Financial
- Success -
Wherever
- Tried. -

Your
inspection
cordially
invited
before
purchasing



No. 33 S. THE "METEOR." Small size.
" 39 S. " " Large "

[illegible]

No. 33 S complete, with six tunes, £10 15s. 0d. [illegible]
" 39 S " " " £12 15s. 0d. [illegible]

No. 38. THE "EROICA."

Size: Height [illegible]

The [illegible] tongues in all. Complete, [illegible] £28 15s. 0d.

Extra tunes, [illegible] Each tune comprises three discs.

All prices quoted [illegible] case and packing free.

SYMPHONION [illegible] and 70, Pershore Street, BIRMINGHAM.

Automatic Symphonions (Penny in the Slot).

THESE celebrated Instruments have already been in practical use for some time, and have become very popular in refreshment houses, &c. They can be easily placed for the use and amusement of the customers, and are of great profit to the buyer, and have always proved a financial success wherever tried, as the money takes in a very short time covers the original cost.

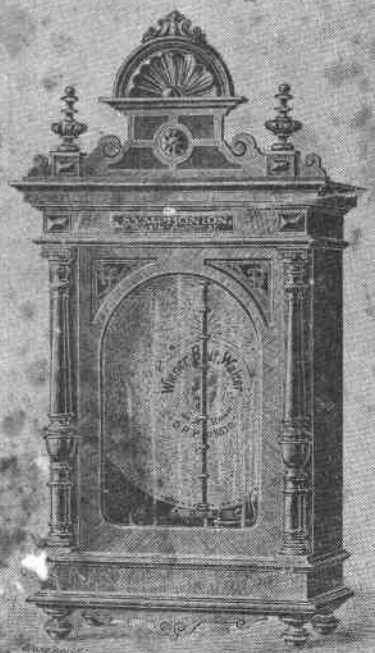
The patent mechanism is very simple and small, and any attempt to start the music without inserting a piece of coin will prove fruitless; also the changing of the tunes in any of the Instruments can be performed by anyone in a few seconds.

PROFITABLE ATTRACTION AT BAZAARS.

Specially adapted for use in Public Bars. - - - - -

- - A Good Selection of these Instruments always in Stock.

List of Tunes for any Box supplied on application. Post Free.



No. 105. THE "SAVINGS BANK."

Size: Height, 17½in.; width, 14½in.; depth, 7½in.

Smart, solid walnut case, with brass ornaments. The construction of this instrument is made in such a way that by dropping a coin (of a certain size or weight) in the slot, the music starts. The saving of one, two, or more pennies, or even shillings, will reward the child by hearing a piece of music.

Complete, with six tunes, **48/-** Extra tunes, 7d. each.

No. 106. THE "MASCAGNI."

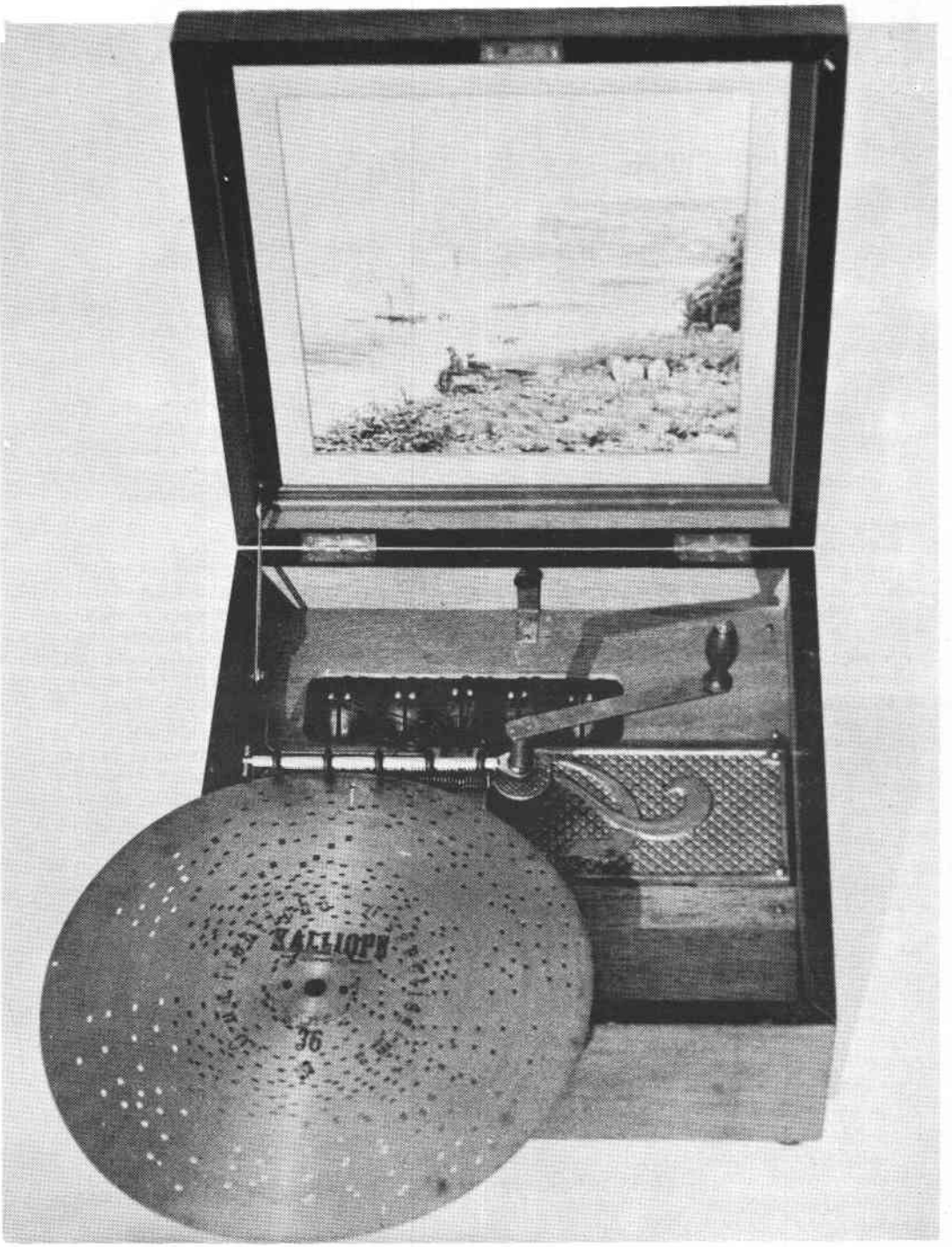
Size: Height, 50in.; width, 22in.; depth, 14½in.

Highly finished walnut case. This Instrument is only just introduced, and is a fine specimen of workmanship. It is fitted with two large combs of 106 reeds, which produce a magnificent tone. Diameter of tune, 10in.

Complete, with 6 tunes, **£11 6s. Od.**

Extra tunes, 2/6 each.

All prices are quoted [illegible] on delivery.



On page 15 we reproduced Mr. C.W. Cramp's Kalliope catalogue. Here is a picture of the instrument with which he acquired the document. The Kalliope, writes Arthur Ord-Hume, was invented in 1898 and was produced by Kalliope Musikwerke A.-G of Leipzig until about 1910.

EUROPEAN TOUR

by Reg Waylett

Thirty of our friends from the Musical Box Society International embarked on their three week European Tour on Monday the 17th May when they departed from New York and flew to London Airport arriving about 10 p.m. President Bob Burnett was at the Airport to receive and greet them on behalf of our Society.

On the Tuesday they had a coach trip to Cambridge for a brief survey of the town. They were then entertained by our member Peter Ward for tea at his charming home at Grantchester where they had the opportunity to view his wonderful collection of musical snuff boxes and other musical automaton on display. The party was very grateful to Mr. & Mrs. Peter Ward for their hospitality. The following day, Wednesday, the group again went by coach to Colchester to be met by another of our members Bill Nevard who arranged a civic reception, thence a visit to Colchester Castle after which they were entertained to tea in the home of Mr. & Mrs. W. Nevard and a display of his collection. Here again our friends were enthralled with what they saw.

On Thursday 20th May they visited the British Museum to view the Ilbert Collection by courtesy of Mr. Beresford Hutchinson who demonstrated the musical items. After this the party went to Victoria & Albert Museum to view the Cushing Collection. In the afternoon they visited the Science Museum to see musical watches and early phonographs. They then returned to the Victoria & Albert Museum to be met by our Editor Arthur Ord-Hume, who had arranged a special treat – a demonstration and lecture by him on Tippoo's Tiger – an Ord-Hume restoration. The facilities for this were provided by Mr. Lowry of the Indian Section of the Museum.

The following day, the party paid visits to the British Piano Museum where our member Frank Holland, was the host. After lunch visits were then made to the Portobello Road, and a visit to Graham Webb's shop, and thence to Keith Harding's workshop in Hornsey Road, N.7. Our friends were very grateful to Mr. Webb and Mr. Harding for their hospitality and the displays provided. In the evening the party were entertained by our new President and his wife, Mr. & Mrs. C. de Vere Green at their home in Devonshire Place, W.1. where Cyril exhibited his large collection of musical boxes and other treasures to our visitors.

On the Saturday and Sunday morning of the 21st and 22nd of May the Party joined us both days for our Summer meeting at The Great Western Royal Hotel, Paddington, W.1. The report of this meeting appears as a separate item in this journal.

On the Sunday afternoon the party went to the St. Albans Organ Museum to be greeted by Charles Hart who showed them the many fair ground organs at the Museum. On their return to London the coach driver suggested to the party that they might care to visit a typical English 'Pub' on a Sunday evening. This was somewhere in the Tooting area where I gather our friends were rather amazed at the stage show they saw and enjoyed eating 'Hot Dogs' and 'Pies'.

It was on the Monday morning that I had the pleasure of joining the party for their tour of the Continent. I must say I went with a certain of trepidation – the sole supporter from our own Society. This was mainly because of the English postal strike which stopped all communications across the Atlantic, and when finally our Committee actually knew the trip was on, several of our interested members could not join the tour at such short notice. I only just managed to arrive on time in the centre of London by 9.30 a.m. on that Monday – the previous evening having been spent clearing up the affairs of our own Society after a most successful weekend meeting at Paddington.

Any fears I had of feeling "odd man out" were completely dispelled by the time we all arrived at London Airport – I knew I was in for a once-in-a-lifetime treat with most enjoyable and sociable company. Just as we were about to board the plane for Amsterdam, I was met quite by accident by the Chief of Security Police at London Airport, who wanted to know why I was travelling labelled as an American Musical Box Society member. What was I up to now? What was hidden in my case! This incident rather amused the Americans, for the Chief of Security was a very dear friend of mine!

Whilst in the air to Amsterdam, I thought I would look at the proposed itinery on our arrival and found that five minutes after landing we were leaving Amsterdam by coach for our first item of interest, having managed to have lunch as well!! I had heard that our American visitors to Europe do embark on jet-propelled tours, and realised that my fate was now sealed! One hour after landing at the Airport we were at Mr. G. Perlee's workshop in the Westerstraat where he makes and restores many of the famous Amsterdam street organs. The Group were very well received by Mr. Perlee and I must say I was rather taken aback by all the beautiful street organs I saw. Mr. Perlee played each and every one separately for us. They were obviously the joy and pride of his life. I left this factory a little deafened but most impressed. We were then taken to our hotel which was unfortunately five miles from the town centre. A quick change and we were off to dinner at Amsterdam's well known Five Flies Restaurant.

Earlier next morning we visited Holland's Miniature Town – Madurodom – a very interesting model town. In the afternoon we returned to Amsterdam for a tour of the city by water-bus, a quick visit to the flea market and a few minutes for shopping. We then went to the Hotel Stuttenburgh, Monnickendam, at the Zuyder Zee for dinner. The owner of this hotel was reputed to have the largest collection of music boxes in Europe!! We did not argue! He would not let us photograph any of his collection. He did, however, have many rare mechanical musical pieces, including a rare Auto Piano. C. 1850 and a mechanical piano player "Phonola" which plays a 145 year old piano.

The next morning we were off early again (8 a.m.) to Utrecht for a visit to the Musee National de la Boite a Musique a l'Orgue Monumental. Unfortunately, this museum was in the process of being rehoused in larger premises and was not in its full glory. The director nevertheless conducted us around the museum in its half-completed condition amidst the builders and carpenters, and showed us the many street and fairground organs already working including the "Tingel Tangel" (cafe cylinder piano). We then went to Bennekom to member F. Moltzer's music box museum. I recognised several pieces here as being for sale at our London meeting in 1970 – now in a very apt setting. Mr. Moltzer too had some very rare pieces including an unknown type of disc box "Amabile" with bells, about which I hope our members will be able to enlighten him.* He had a very good collection of musical boxes – of great interest to me, as up to now our tour was all fairground, cafe and street organs. How refined and dignified these musical boxes seemed to me! We all lunched at a very fine hotel opposite this museum – the food was excellent. We then departed for Belgium, a fair trip. I must say how much I was impressed by all the new motorways constructed and still being constructed in Belgium and Holland. On arrival in Brussels we were shown the remains of the famous World Fair of 1958 and the Royal Palace, plus the usual trip made by all tourists to see the "Little Boy of Brussels".

Next day we went to Bruges to see the famous carillon (unfortunately we could not wait to hear this playing) then to Gentbrugge for lunch and to visit O. Grymonprez & Son at their workshop. They specialise in automatic band and dance hall organs (Ledeberg & Belevone). They also had a well restored Mortier Organ. It was then decided to visit Mr. Prinsen's organ book manufacturing workship near Antwerp, but en route we were invited to visit the home of one of Mr. Grymonprez's friends. This we did and what a beautiful home this was. All the party were taken aback by the beautiful furniture and music boxes (mainly Imperator disc) and organ boxes in this old gentleman's home. He informed us that as he was now getting rather old he had disposed of much of his collection. However, the one or two pieces he would have sold the party were so expensive that even the Americans were put off buying! After this impromptu stop we eventually arrived near Antwerp at Mr. Prinsen's home where he has a large modern building in his garden to produce music rolls for the different types of organs. This was very much a family business. Mr. Prinsen had invented most of the many machines used in the different processes. One can well imagine the accuracy needed in producing a "book of music" for a complicated fair ground organ. This visit was well worth our time. Mr. Prinsen then suggested we visited a local dance hall where there was installed a fully automatic electronic dance organ "De Cap". Apparently there used to be about 600 of these dance hall/bar/restuarants in Belgium but there are only about 20 now surviving. The halls, which can only be found in Belgium, are part of the Belgian families way of life.

On the following morning we left Brussels at 8.30 for Zurich in Switzerland. Unfortunately our plane was delayed and we eventually arrived at Lucerne for lunch at the well known Stadkeller Restaurant, rather late in pouring rain. However, we were well received at the restaurant and due to pressure of time, but after an excellent lunch, made direct to Neuchatel – a long coach ride. I think the whole party were glad to get to bed that night.

**The instrument referred to is the Amabile, invented by Armin Liebmann. Liebmann and Richard Pfotenhauer established themselves in business in 1889 as ARMIN LIEBMANN at Neue Str. 14, Gera (Reuss), in Germany, where they made accordeons and other musical instruments. The Amabile disc-playing reed organ was first marketed in either 1906 or 1907. It arrived on the market at such a comparatively late date that only a few are thought to have been made and they can be considered something of a rarity. The discs, characterised by oblong peripheral drive holes, do not have 'projections" as such, but operate with organette-type concentric indentations. (Arthur W.J.G. Ord-Hume)*

The following day May 20th, the party went by coach to La Chaux-de-Fonds, to visit the Musee d'Horologerie, (a private viewing). This was a very fine museum and contained many treasures, mainly clocks and watches, but also singing bird boxes and singing birds in cages. Mr. Jean Reuge met us at this museum and we were all introduced to him.

After lunch in the town, where we were accompanied by Mr. J. Reuge and his charming wife, we then made a trip to the beautiful Chateau des Monts to see the collection d'horlogerie de la ville du Locle. (A private viewing). This Chateau up in the mountains stood in wonderful grounds and used to be a stately home. It is beautifully furnished with Chippendale and Louis furniture and is well worth a visit by any of our members whilst in Switzerland. It houses the Sandoz and Chapuis displays of Horology, contains many wonderful paintings and an armoury and a small cinema where we were shown a colour film. There were also some exquisite singing birds in cages and countless items of interest to watch and clock enthusiasts.

The following day our program had to be altered as our American friends, earlier in the year, overlooked the fact that this was the Spring Bank Holiday weekend. So for a change in the itinery it was decided by most of the party to take a morning trip by steamer on Lake Neuchatel. It was a lovely day and this trip on the Lake with the "Bank Holiday locals" entertaining us with their singing, dancing and music was most enjoyable. The boat got us back to our hotel near the harbour for lunch. After we had dined we visited, by arrangement, the Musee des Beaux-Arts in Neuchatel, where a private viewing of the world-famous Jaquet-Droz automatons are housed. As these automatons are such mechanical masterpieces, I will offer a few words on their history. Their inventor was Pierre Jaquet-Droz (1721-1790) born in Switzerland at La Chaux-de-Fonds. After acquiring some knowledge of clock-making, he left to study theology at Basle University and then to Neuchatel. He was strongly inclined to mathematics and particularly interested in applied mechanics and horology. He passionately approached the problems which were to lead him into becoming the foremost skilled mechanician of his country and one of the greatest of his age.

His pet hobby was picturesque mechanics and artificial reproduction of living things – a subject very much in fashion about 1750. By 1747 the work of Piere Jaquet-Droz was already known and admired by people of note. In 1758 he took several of his already famous masterpieces to Spain to the King's Court. His piece called "Shepherds Clock" was one of the most complicated and original clocks thought of, can still be admired in one of the palaces in Madrid.

He then worked hard with the aid of his son and one of his talented apprentices, Jean Leschot, in creating the three masterpieces in the Neuchatel Museum.

SPECIAL NOTICE

The annual subscription rates to the Musical Box Society of Great Britain are as follows:

Annual fee, due on January 1st	£3.00
Overseas subscription (U.S.)	$8.00
" " (Canada)	$8.25

Would overseas members please send either an International Money Order or a Certified Sterling Cheque for £3, or cash.

Please send your subscription to the Treasurer:
David Shankland, Esq., F.C.A., A.T.I.I.,
"Breezeways",
29, Insole Gardens,
Cardiff,
Glamorgan,
South Wales.

A number of Members have received several reminders but their subscriptions have not been renewed. Unless payment is received from them, their names will be removed automatically from the membership listing and this will be their last issue of THE MUSIC BOX.

They were first shown in 1774 in Switzerland together with a complicated pastoral scene with many animated characters known as "The Grotto". This automat on has unfortunately been lost, but there remains in Neuchatel the Mechanical Puppets known as the "Scribe", the "Draughtsman", and the "Lady Musician".

The "Scribe" is not much larger than a doll and is seated on a Louis XV. stool and desk. He can write any desired text in forty different languages and having not more then forty letters. As he writes, his eyes follow the writing and he repeatedly dips his quill into the ink bottle. He has an extremely complex mechanism housed inside a child-size body. Apart from writing, the mechanism also controls movement of the arms, elbows, and wrists.

The "Draughtsman" closely resembles his brother, the "Scribe". He is a small graceful child who can draw quite fantastic pictures. He even blows the dust off his drawing paper!

The "Lady Musician" is quite different from her "brothers". She is much bigger and quite a pretty young girl and was made about the same time as the other two automatons. She plays a sort of organ containing a set of pipes. It was once believed that the instrument was a clavecin, but we were told that early records mention an "organised clavecin" which means an organ in the shape of a clavecin. She really does play her instrument, contrary to modern puppets, whose fingers only follow the keys while the instrument does the playing. This Musician is further proof of Jaquet Droz's genius. The Professor in charge of these three puppets (I just cannot remember his name)

gave us a wonderful working demonstration and I was fortunate enough to obtain a speciman of the writing by the "Scribe" and a drawing by the "Draughtsman".

We were off again very early the next day, Monday 31st May, for Geneva. We arrived about noon and we were invited to the home of our member Mr. Horngacher. As over 30 of us could not cram into his flat at once the party was divided into three – each party having two hours at the flat. This gave us all a first chance to visit the shops and for the "girls" to get their "hair-set". I was amazed at Mr. Horngachers collection. He appears to mainly collect the "movements" of boxes and destroying the cases!! You can imagine how some of us felt – due respect of course to Mr. Horngacher. He did however, have many perfect boxes. He had no idea how many boxes and movements he had and I can quite understand why, after this visit. Some of the musical movements were indeed quite unusual and would appeal to our more technically minded members. I am sure Mr. Horngacher would be delighted to show any of our members his collection if they can spare a few hours in Geneva. The following day we were off again very early to visit St. Croix and the Reuge factory – a place where our American friends intended to spend several thousand dollars! We arrived there at 10.30 a.m. and again split into three groups. One group to visit the home of Monsieur and Madam Reuge, another group to inspect the factory and the other the opportunity to visit the Reuge showrooms and buy the many wonderful things produced in the factory. I was on the first trip to the Reuge home and what treasures we were shown! Madam Reuge conducted us round her home. It was beautiful and she was a most charming host to us. One room in her home must have had 200/300 automatons on show. There were magnificent music boxes in good restored condition, many musical snuff boxes. We were all very envious of this wonderful collection. There were two automatons here that I remember so well: (a) the pantry boy swatting the flies that attempted to settle on the jam jars in his pantry. He always missed, of course, and (b) the little girl who was fishing. The fish were swimming around in the pond and when she dropped her line into the water the fish immediately attampted to take the bait – but whenever she tried "hooking"

them out of the pond, they darted away from her hook, in a flash. It was about lunch-time now and Mr. Jean Reuge (jnr) and his wife, whom we had met at La Chaux-de-Fonds the previous Saturday, joined us for a wonderful lunch at the Grand Hotel nearby, where group photographs were taken afterwards. We all wished our tour organizer had arranged a couple of nights at this hotel up in the mountains – so different from the busy town at Geneva.

After lunch my group visited the Reuge factory – rather a quick tour due to pressure of time, but most interesting. Reuge certainly make some lovely musical movements and I know they did good business with the Americans on singing birds in cages at 630 dollars a time and musical snuff boxes at 450 dollars. It was about 5.0 p.m. when we all finally collected our souvenirs, and our guide was now getting a little upset with our timetable. It was decided to phone Geneva and cancel our dinner as we still had Baud Freres Museum and workship to visit.

This was a few miles out of the village and we were two hours late, but still very well received. This private museum is also worth a visit. It is quite speacious and all exhibits most carefully restored. Of course, we had to hear most of them. There were fine old musical boxes, gramophones, many wonderful automatons, player pianos, violin playing machines, organs of several types, (mainly cafe) automatic jazz bends and a one-man street band. All in all a very interest private museum. We also visited the Baud Freres workshop, and saw that Mr. Baud appears to have up to eight years work on hand! We also found a barn in his grounds full of fairground organs. It was now quite late in the evening and our tour guide was getting a bit fed up with us! We had over two hours journey to do to return to

ADDRESSOGRAPH MACHINE DONATED

The Society would like to offer its sincere thanks to Mr. Arthur Heap, Member Number 449, who has very kindly donated an Addressograph machine and four boxes of metal stencils. This machine, which is saving our Secretary considerable time, has been used for the last two communications to Members and has alleviated delays in addressing envelopes by hand.

Geneva. We were a most inconsiderate lot etc. etc., and the driver of our coach was now breaking the Swiss law by being employed for over twelve hours already. You can imagine the breathtaking journey down the mountains. We all hung on for dear life!

Next day several of the party decided to have a "day off". This was my tenth day, and they (the Americans) had not stopped touring for 17/18 days with their week in England. Consequently, our party was now down to about a dozen when we visited the Rolex headquarters in Geneva. What an immaculate place this was. We were well received and shown a film of watchmaking and conducted on a tour of their private horological museum. We were also presented with a useful memento of our visit. We then visited another private museum – the Music du Bastringue – not very large, but most fascinating. There were several phonographs, including a hot-air one, several large disc boxes, organs and pianolas. Here we also saw one man street band – our host was playing an accordian, drums, symbols etc., but all were working from a perforated paper roll inside the accordian. After lunch we had the afternoon free for sightseeing of the town and shopping.

Early on June 3rd we left by air for Paris. After lunch, the party decided to have the rest of the day free for shopping and sightseeing of the town. It was a very warm day and Paris seemed to be full of tourists of every nationality. We were now together for the last day of our tour. The weather was glorious. The party spent the morning touring the city and I found this most instructive. Our guide was very conversant with the town.

We then visited the home of Mr. Tagger to see his collection of automata. Mr. Tagger had his collection very well displayed in a large room with rows of seats – in fact almost like a small theatre. I shall always remember how immaculate he looked in a white suit. He certainly has some very fine pieces – all automata and apparantly no musical boxes or organs. After leaving Mr. Tagger's house we made a further tour of a different part of Paris, prior to our departure for a farewell dinner at the Paris restaurant "La Reine Padauque". Most of the party made a short speech after dinner and all suddenly realized this was the end of a very good tour.

As this was the first tour organized by the American Society, great credit must go to the organizers. It is not easy to arrange visits 2,000/3,000 miles from your home base. Should a further tour ever be arranged, the maximum number taking part should be restricted to about the size of this party, that is thirty people. Many of the places we visited could only accomodate 10 or so visitors at a time, and I also suggest that part of every day should be free for private sightseeing. My grateful thanks to Mr. & Mrs. Howard Fitch (who incidentally managed to enrol me in the American Society) and to Mr. & Mrs. Harvey Roehl – these four did so much behind the scenes daily to make the tour the great success it was. Unfortunately our hosts at one or two places we visited were opposed to us taking photographs, perhaps understandable but a little disappointing for we visitors. I do hope I have the pleasure of meeting our American friends again: together we made up such a jolly party!

Classified Advertisements

Advertising rates for Members are 3d per word (Bold type 6d per word). Box numbers are not permitted. Display and semi-display rates are available on request.

FOR SALE

For Sale. Complete player action out of an upright piano. Comprises 88-note action by Higel, all supplementals, plus lower actionwork. In very good condition but will need overhaul. £11. Also for sale, Duo-Art action (pedal) complete. All cloths need renewing. Partially dismantled but otherwise complete as removed from Weber upright. £12. Carriage extra. Ord-Hume, 14, Elmwood Road, London, W.4.

WANTED

Member collector requires: (1) Singing bird in cage; (2) Organ box; (3) Organette with dolls; (4) 8¼-inch Polyphon discs. Norman Brown, 42, Dumgoyne Drive, Bearsden, Glasgow, Scotland. Tel: 041-942-6671.

Wanted. Card or metal 13¼-inch square tune-sheets for "Herophon" organette. Any condition. R. Booty, 3, Foxborough Chase, Stock, Ingatestone, Essex, CM4 9RA.

Urgently required. Metal or card music bands 4.7/8-inch wide suitable for Kalliston organette. Ray Williams, 62, Kingswood Road, Kingswinford, Staffordshire. Tel: 77918

Black Forest automata clock, also whistling man automaton. Sell or exchange musical items. Ray Williams, 62, Kingswood Road, Kingswinford, Staffordshire. Tel: 77918.

Always wanted. Hand-painted mechanical magic lantern slides, especially those with handles. Dick Baines, 32, Fletcher Road, London, W.4.

Wanted urgently. Spare time repairer of musical boxes. British Antique Exporters, Black Lion Street, Brighton. Tel: Brighton 28844.

Wanted. Cylinder musical boxes of all descriptions, Polyphons, &c. for export to the United States of America. British Antique Exporters, Black Lion Street, Brighton, Sussex. Tel: Brighton 28844.

Wanted. "The Piano-Forte – Its History up to the time of the Great Exhibition 1851" by Rosemond E. Harding, published 1933. Also early catalogues of musical boxes, tunes, piano rolls, &c. If you won't sell, then may I borrow? Ord-Hume, 14, Elmwood Road, London, W.4.

Wanted – 21¼" Symphonion Discs – 10 Bell model. 17 1/8" Monopol Discs Rectangular drive holes – 13 5/8" Symphonion or Monopol Discs. If you can spare a few of any of the above, contact C.R. Thompson, 34 Park Place, Cheltenham, Tel: 52568.

Wanted. 9½-inch discs for table model Symphonion. Motor for 17¾-inch Stella in any condition. Neale, York House, Warren Park Road, Hertford, Hertfordshire.

Wanted. 6½ inch diameter Polyphon discs. Smith, Saddington Hall, Leicestershire.

Wanted. Piano rolls, 88-note, Hupfeld Animatic, Welte-Mignon, Ampico and Duo-Art labels ONLY. Also 116-note music rolls for Aerolian pipe organ (green box, yellow label). Spooled music (not endless bands) for Calestina organette also required. Has anyone got a SCRAP Ariston organette for sale? Ord-Hume, 14, Elmwood Road, London, W.4.

LETTERS TO THE EDITOR

Frank Metzger of New Rochelle, U.S.A., writes:

Not too long ago, I was lucky enough to be able to purchase a bird box which was made by Jacques Bruguier and which, since it is one of this earlier boxes, was signed by hand rather than by a stamp such as that used by his brother Charles. Interestingly enough, beneath the signature was the following: "14, Cendrier, Geneve". I found this particularly interesting, and I am writing this letter, because in re-reading some old issues of the Music Box, I came across an article on Nicole by C. de Vere Green (Volume 4 No. 4, Christmas, 1969). In this article, Mr. Green points out that: "In 1822 the two brothers lived together at 130, rue des Etuves. Sometime before 1832 they had moved to 118, rue de Cendrier and for some long time lived at this address. More than likely they had their workshop at this address, for in those days nearly everyone lived at the place of their business, and the Geneva archives bear this fact." Thus, it appears that the Rue de Cendrier may indeed have been a street on which the artisans of the day concerned with music boxes as well as with automata of various kinds congregated.

I would be very interested in hearing whether any other readers have any additional light to shed on this subject.

1880 (top): 1885 (below).

Book Reviews

MUSICAL BOXES by David Tallis, Frederick Muller, London, £3.00. 143 pp, 8½ins x 6⅝ins, illustrated.

A book is published for two reasons – to inform and to create interest. The subject of musical boxes is not a large one; at best it is a diversion of mechanics, horology and music which has developed into a unique art form.

The first book on the subject was that of John Clark (not Clarke as the author of "Musical Boxes" supposes), which proved the sole work of any authority in Britain. Ord-Hume studied his subject and so updated the state of the art. Webb specialised in the pin roller type of movement. So any fresh look at this somewhat mellifluous subject must either go on and extend our knowledge in some new and important way, or must appear as a popular layman's guide to musical boxes.

Unfortunately this book justly fulfils neither requirement within any worthwhile measure of success. The present reviewer was left with the pervading feeling that the author had experienced grave difficulty in choosing whether to write for a popular readership or for the learned. As a technical book, there is a deal of mechanical description, but no explanatory diagrams. The presence of some excellent photographs, including several in full colour and mostly without locative credit, does little to compensate for this. How better does the description of the cylinder musical box come over in the books mentioned above which use a few simple sketches and keyed text. One picture, somebody said, is worth a thousand words and from this one could say that one rough sketch is worth probably the same amount. In calling this book "Musical Boxes", it may come as unsettling to the reader when he finds a street organ portrayed upon the dust wrapper.

Alas! Mr. David Tallis, who has been a collector (according to the Musical Box Society) since 1964, is also a little uncertain of the history of the instruments he obviously loves so much. There are many glaring errors which a publisher's reader should have had the opportunity to check upon. And one of several misspellings is a reference to the Salzburg Stier organ (which he translates as the Salzburg Bull) whose music "is announced with a mighty cord". I wonder where the author found his 66-note player pianos – and to state that "all you have to do with a pianola is work the pedals" belies a marked musical insensitivity. The author described an instrument which he calls a "Violino Virtuoso" which, because of the attribution to the Mills Novelty Company, one must assume to be the Violano Virtuoso, but his description as to its workings (which he states to have been pneumatic) are almost as whimsical as his later reference to a "stripped endless screw", something which I have never seen in almost half a century of association with musical mechanisms.

To list further the mistakes in this otherwise well-produced little book is no doubt pointless but suffice to say that the author persists in making rash assumptions such as the one that just because he has only ever seen two Komets, it is unlikely that many more exist. I can list at least seven which I know in England alone! It is not so much the many technical innacuracies (such as describing the serinette as about six inches square) which are the abiding fault with this new book. It is the persistant errors, the mis-spelling of names (Brackhausen, Willembacher, Bresancon, Slawik & Preizier, Meyland, &c), the ill-conceived statements ("a thin parchment known as zephyr skin", crediting Imhof & Muckle with the invention of the orchestrion, stating that all Kalliope disc boxes wind from the centre, and listing Pinchbeck Junior as having worked with his father until, by simple arithmetic, six years after his death) which jeopardise the credibility of this work. Wurlitzer, for example, did not build the Encore Banjo – it was Peerless.

The book ends with a glossary of more important makers which, aside from faults already mentioned, is mostly abbreviated from Clark, Ord-Hume and Webb. A useful elementary glossary is included along with a bibliography which mis-spells the names of two authors and transposes the title of one book. It would indeed be nice to recommend this to the serious collector but the present reviewer believes that, other from the rawest neophyte and the casual reader, better books are on the bookshop shelves.

F. BUCKLEY

THE DISC MUSICAL BOX HANDBOOK by Graham Webb, Faber & Faber, London. £3.50. 323 pp. 8¾ ins x 5¾ ins, illustrated.

The author is probably the largest dealer in instruments of automatic music in London. In the ten years since he began handling musical boxes he has studiously applied himself to their repair and overhaul. His contact with collectors in every corner of Europe has enabled him to acquire a fund of knowledge and to perfect the processes of repair and restoration on the musical boxes he sells.

This new book, a companion volume to his earlier *Cylinder Musical Box Handbook,* shows how successful he has been in preserving these instruments and how adeptly he is able to pass on his information for the benefit of others. Thirty-five very good and well-chosen photographs enhance this book, along with numerous clear line illustrations which are the work of Philip Weston.

Mr. Webb recounts briefly the history and development of the disc-playing instrument with a fair degree of accuracy although he is as incorrect in assuming that Leipzig remained the centre of the industry as he is in stating that Symphonion made most of the disc-play-

ing clocks. The relationship between Unghans and Paul Lochmann, which led to Symphonion-marked and Unghans-marked disc interchangeability is missed as is the fact the Polyphon is credited with having made at least three times as many large, regular-sized disc-playing clocks as Symphonion, the majority of which were for the home market and the USSR. The author does not discuss the marketing of the instruments in Europe, skates briefly over disc interchangeability and does not mention self-changers other than Polyphon, Symphonion and Regina. He offers a short history of bells in musical boxes which is a little confused. One of Paul Lochmann's avowed ideals when he opened up his new facotry in Zuelenroda was that he would never use bells in a musical box again, having caught a patent infringement charge over that very point between Symphonion and Polyphon – one of the many legal tussles the two giants had. For this reason, Lochmann used nothing but glockenspiels. This important distinction is missed by Webb who states that Lochmann used "tuned metal bells".

These, though, are minor points and there is still to be written a definitive history of the subject. This book more than meets the measure *pro tem.* It is on the overhaul and repair side that the collector will find the greatest merits.

The steps in dismantling, cleaning, repairing and overhauling are clearly set out, although the printer has not given of his best in terms of layout (vide the inconsistencies of style between pages 60 and 66). Some of the terminology is also inconsistent: in one part we read of "the height wheel" and further on it is referred to as "the centre plate". And in polishing case screws and washers he refers to burnishing which his method certainly does not do. Burnishing consists of consolidating the surface of a metal by rubbing another, harder metal against it.

The reason for the star-wheel guard on upright Polyphons is to avoid damage to the wheels and to the disc whilst it is being put into place – this is not mentioned. The setting of the pressure bar in relation to the disc and the guide wheels, one of the most important of all tasks in overhaul, is also missed. On most disc instruments of the upright design it is impossible to replace the comb mechanism without removal of the pressure bar bracket first.

There are some interesting postulations on the quality of sound produced by different comb steels and here is a subject which some contributor to the Society Journal might care to expand upon. The present reviewer was amused to note that one of the tools necessary for the replacement of comb teeth was – a piano! A most useful feature of the book is a section giving the tuning scales of the more popular disc musical box combs. It should be noted, however, that pitch has altered over the years – in 1900, A was fixed at 435 cycles: today it is 440 and, by comparison, during the 18th century it was 415 cycles. Although the variation between the true scale of an 1889 Symphonion (according to the original tuner's scale book) and the piano today is less than a semi-tone, this is something to remember. Also it is known that at least two makes of German disc box as late as 1895 were tuned to *unequal temperament.*

A novel way is described for replacing resonators on a comb using separators made of "feeler strip" which I interpret to be shimstock. One remembers watching the editor, Arthur Ord-Hume, replacing resonators on a large Monopol comb and recounting that he separated the new from the old with strips of sandpaper because, he said, it would not conduct the heat to the neighbouring lead weight.

One third of all the text in this book is given over to a comprehensive listing of Polyphon tunes, no doubt a blessing to the owner of a Polyphon who is bursting with curiosity, but of little value to the owner of any other type of disc machine. A list of disc musical boxes and a list of some of the makers and agents is included as is a sparse index.

This type of book, though directed principally at one type of box and mainly at one make, is of value to the serious collector because, although it may not tell him precisely how to go about tackling his specific instrument, gives him sufficient information to set him thinking how to apply the one to the other. The author is a talented mechanic; he has in the main recorded his skills admirably. What better recommendation can there be?

F. BUCKLEY

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