

THE MUSIC BOX

a magazine of mechanical music

Volume 6



Number 6

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THE MUSIC BOX

a magazine of mechanical music

Journal of
The Musical Box Society of
Great Britain

Hon. Editor: Arthur W.J.G. Ord-Hume

Volume 6 Number 6

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The Musical Box Society of Great Britain,
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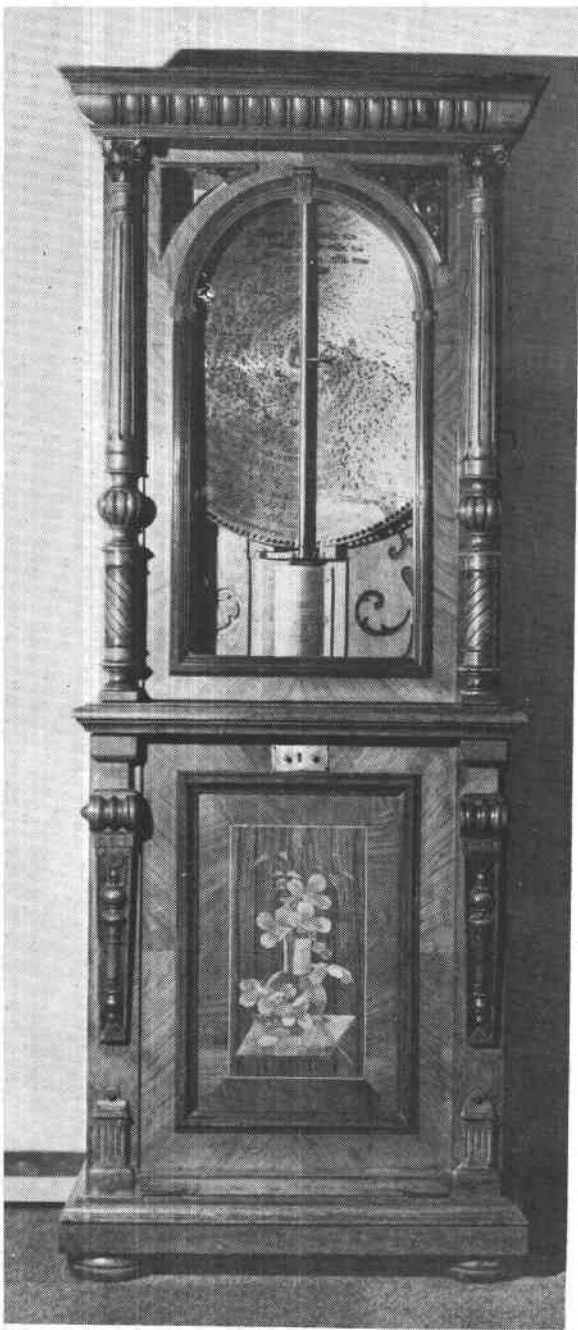
The Editor writes:

A YEAR or so back, I made a plea for more research work to be done within our Society to quest for the ineluctable musicological wealth to be found in the instruments of mechanical music. More and more the musicologists of Europe and America are beginning to realise what many of us have known for a decade or more – namely that our mechanical instruments can provide us with at least as much education as they may provide us entertainment. Those pleasant sounds produced by means mechanical contain the secret to much that, from a musical standpoint, exists nowhere else and is otherwise to all intents and purposes lost.

How successful was my plea is already apparent. We have suddenly polarised into two factions: those who collect and preserve, and repair and appreciate for all the reasons that go with collecting; and those who either extra to their love of collecting, or as a separate study, are delving deep into the mechanics of mechanical music.

Editorially, this is something of a double-edged sword. On the one part it extends the amount of material we must publish and calls for the inclusion of an increasing amount of technical data. On the other it means we have to diversify still more, including constructional data, physical data and, of course, music.

Frankly, I don't think any of this is a bad thing, and in truth it can do nothing but good for us as we move THE MUSIC BOX yet further into the realms of an ever more authoritative journal.



Upright Stella disc-playing musical box complete with matching base. The discs are 26ins. in diameter and the instrument is in the Nationaal Museum van Speeldoos tot Pierement in Utrecht.

As it is we now include a great deal of material on almost every aspect of mechanical music and it is greatly to the credit of our many Members in all parts of the world that this is so.

Let me emphasize one thing. The fact that we are moving into deeper waters must not alter the promises which I made on page 62 of this volume. We will still include regular material for the less experienced collector and will always welcome articles and photographs intended for this important section of our readers.

Pictures

This issue is largely devoted to pictorial matter and is somewhat smaller than usual in order to allow us to get an issue out for August—the traditional month of holidays—on schedule and so as to clear the decks for the bumper issue which follows. We are fortunate in having some very good pictorial material available and, almost without exception, these are pictures of rare or unusual boxes of quality. Feeling not a little unlike a silent cinema trailer, don't miss the next issue!

From the foregoing it is encouraging to see the great number of really fine pictures that are emerging from the collections of the world. Happily our article on photography and the musical box (page 359) has borne fruit, and the number of badly-taken, poorly composed colour Polaroid pictures has diminished and been replaced by fine, professional-quality black and white prints. For your further guidance, no picture should be smaller than postcard size, and should preferably be either 6 x 8 or 10 x 8 inches in size. Where mailing presents problems, or where printing is a problem, send the negatives which will be returned after use.

Coming soon

Member Brian Etches who has now established himself as a restorer and overhauler of musical boxes in Poole, Dorset, recently came across the first Symphonion tune catalogue which I have ever seen in my years of questing. We will be re-printing this as a Christmas bonus issue for Members accompanying Issue Number 8 of this present volume.

In response to many requests from Members on both sides of the Atlantic, we will be publishing in the next issue the musical notation for the pieces contained in the Charles Clay clock which came up for sale in London last year. The music, all little-known pieces by Handel, is entirely charming and interesting. The notation, reproduced in facsimile from the original manuscript book

of music which accompanied the clock, is preceded by an illustrated article describing this fine and valuable clock.

This will be the first time that this music has ever been published and will undoubtedly become a treasured 'first edition'.

ARTHUR W. J. G. ORD-HUME

MUSICAL CLOCK AUCTIONED

A RARE musical clock made by Christian Mollinger of Berlin was sold at Sotheby's furniture sale in London on June 21st 1974.

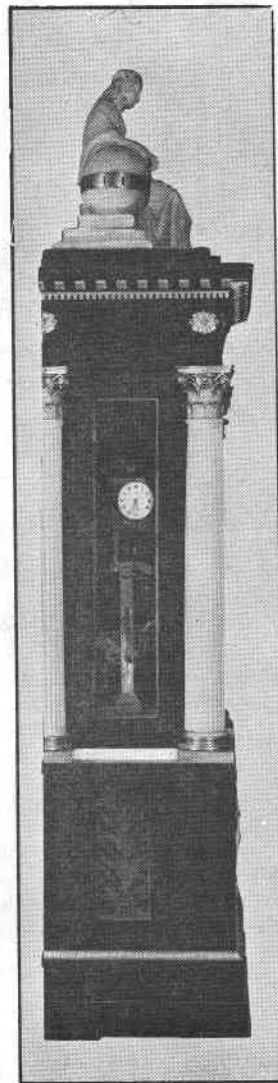
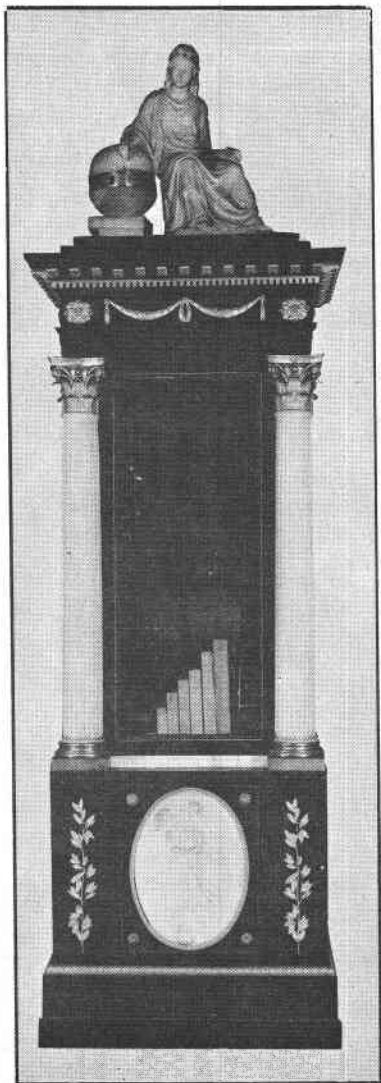
Mollinger lived between 1754 and 1826 and was one of the most important German makers. A complex astronomical clock with music is preserved in the Schloss Museum, Berlin and he published a description of a clock in the Akademie in Berlin which showed true and mean time in the year 1787. He also published a book on clock-making in Berlin in 1817.

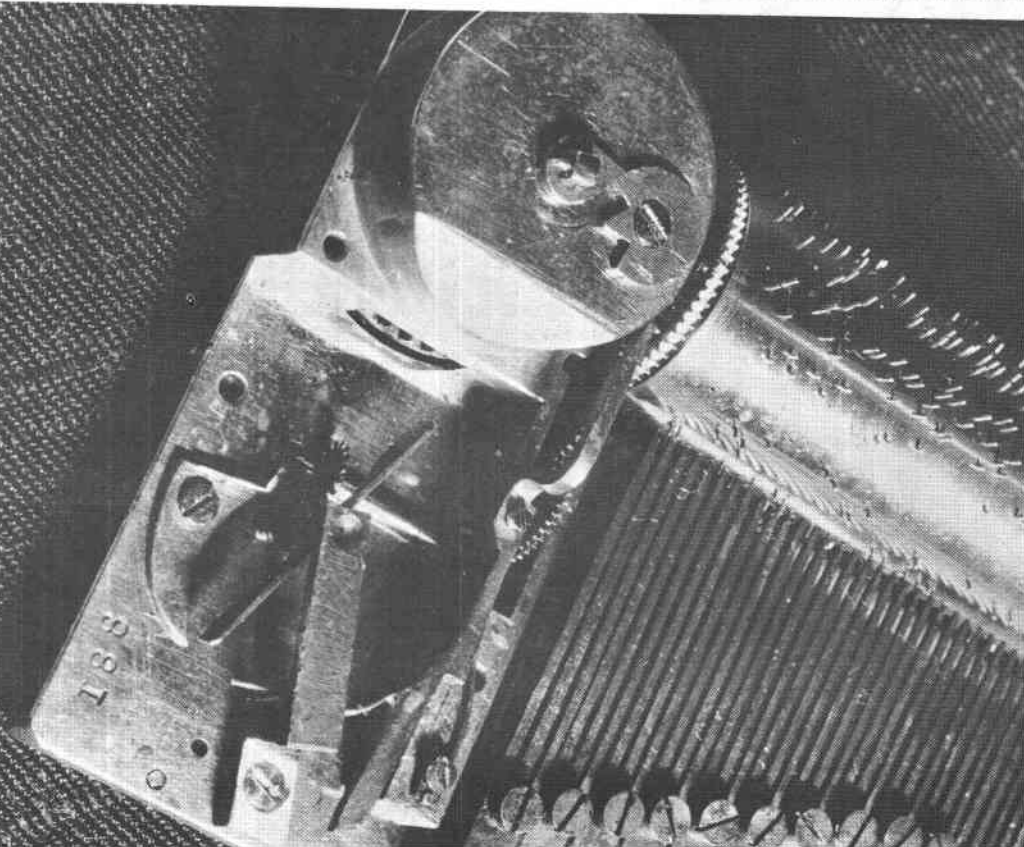
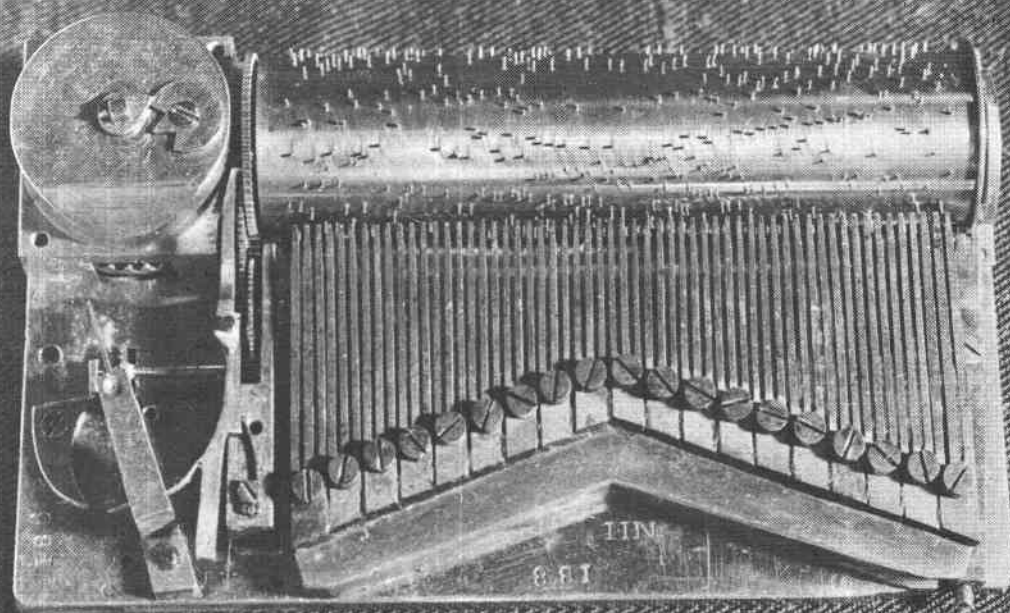
The piece sold at Sotheby's was in the form of a temple with a fluted marble column at each corner. The figure of Urania reclines on the top, her right arm resting on a globe fitted with a revolving hour indicator.

The organ is played from what Sotheby's described as "a massive cylinder". It appears to have at least 33 keys and, in keeping with German organ clocks of the period, has all wooden pipes. It is weight-operated and a separate clock with normal face is on the left side.

The piece stands 9ft 1in high, 2ft 9in wide and 1ft 11in deep. It is hoped to publish further details in due course.

Pictures by courtesy of Sotheby & Co.





A RARE EARLY MUSICAL BOX

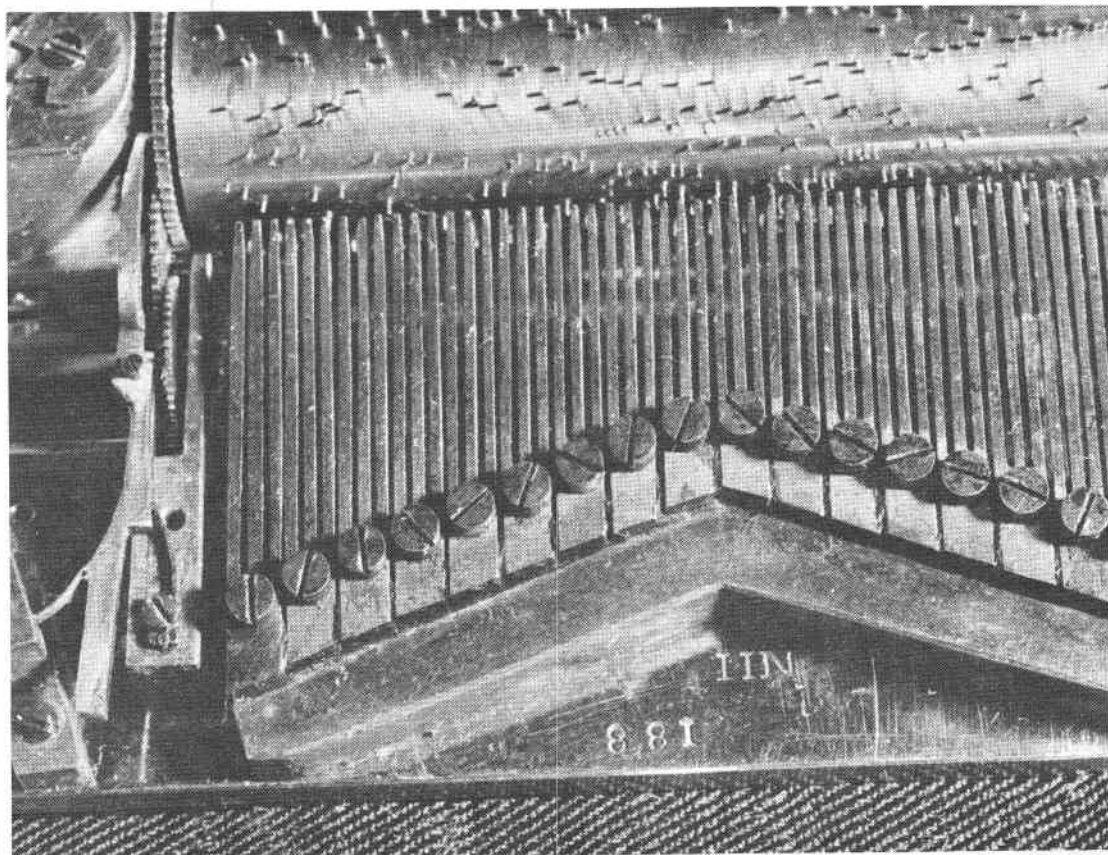
THE PICTURES on these pages illustrate an unusual early miniature snuff-box-type musical movement now in the collection of President Cyril de Verè Green.

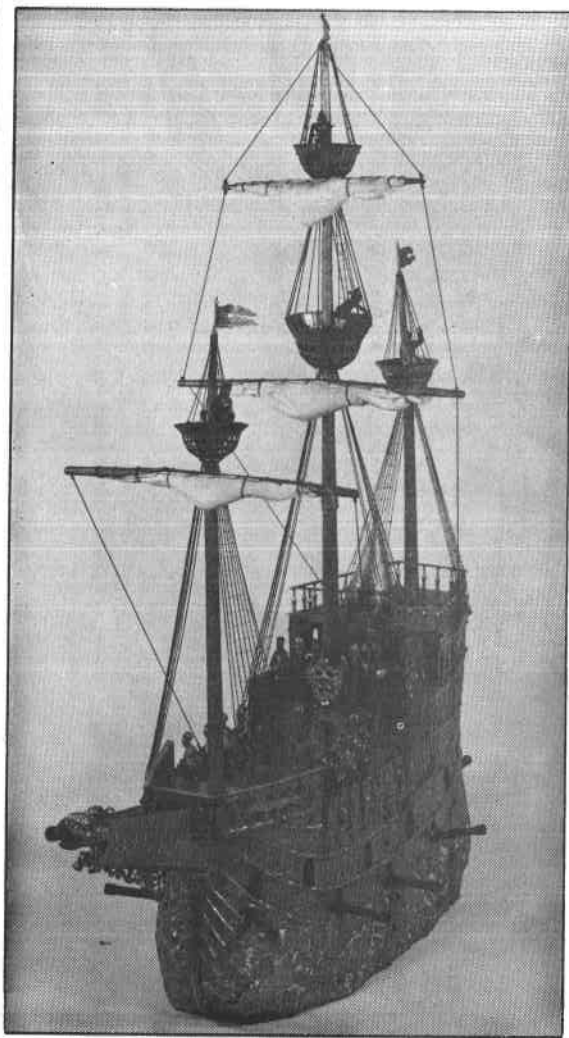
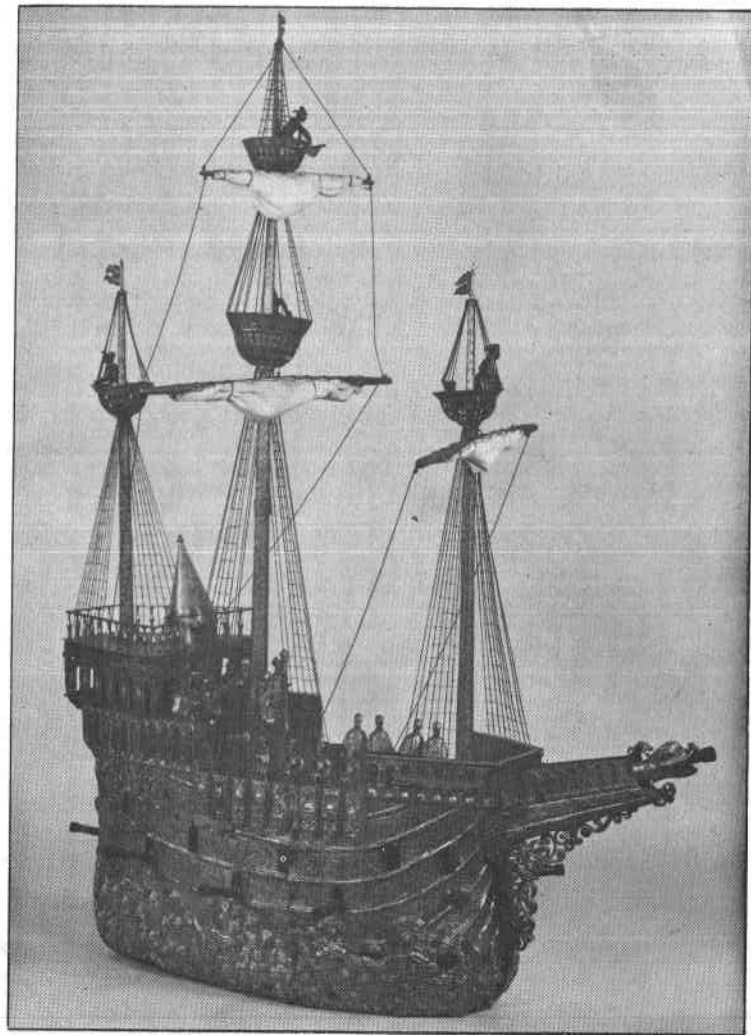
It bears a marked similarity to Plate 163 on page 178 of Chapuis' *Histoire de la Boite a Musique*, the movement shown in that illustration having the same unusual semi-crescent-shaped potence to the pinion wheel shaft driving the endless. In the Chapuis example, illustrated from the Baud Freres collection, the comb is in sections of

two teeth and Chapuis dates this as anterior to 1815.

Notice the simple dentated stopwork. The three screws securing the brass V-shaped comb-base are visible.

The number 188 appears in two places on the base and the letters IIN are the only visible marks of manufacturer's identity. The box, not seen here, is of imitation tortoiseshell and not of outstanding quality. It may not be original.





A RARE AUTOMATON

The British Museum Nef

by Arthur W.J.G. Ord-Hume

THE history of automata, particularly musical automata, holds a peculiar fascination for the serious student and historian. From the collector's point of view, these early works are so rare and now so very few and far between that the private acquisition of one is probably impossible.

The peak of perfection in these devices was achieved at a remarkably remote period, if we base our judgement on the general progress of automatic musical instruments. As early as the beginning of the seventeenth century, Augsburg had become the centre for this type of work and craftsmen such as the Bidermann family (father and son), Scholttheim, Langenbucher, Mathais Rungell and others were renowned beyond the limits of their native Germany for their skills in the making of outstanding musical automata. Pieces of this type was never cheap. These masters worked for royalty and nobility, and judging from what scant information survives, it is doubtful if we are considering a family of instruments exceeding in number two score. But their works were outstanding, incredibly ingenious, and created with a rare flair for sheer craft and skill. This article discusses just one piece by a maker as yet not positively identified. The piece is the nef which is in the British Museum in London and which has for so long baffled those who have tried to analyse its incomplete mechanism and discover just what music it played. In this article I set out to record the progress of the work begun by MBS Member Philip Coole, former Keeper of the Ilbert Collection at the B.M., who died so unexpectedly two years ago. Philip Coole and I spent many hours talking about this fascinating exhibit and it was largely through his patient, logical analysis of the pieces, backed by his profound knowledge of arts and sciences beyond just horology that this work has been brought to the state presented here. There is still so much to be done, and so much unknown, and this article is offered as a 'progress report', per-

haps to inspire further comment or research work at a later date.

The nef was intended as a table decoration. For those unfamiliar, a nef is a form of galleon and the B.M. specimen contains a timepiece, a mechanical organ and a number of mechanical figures. The ship itself moves as if on a heavy sea. The piece came to the B.M. in 1893 and, due to the number of components missing, it has proved extremely difficult to try to analyse the various movements. Most serious of all is that whilst the music barrel is present, the organ itself, comprising all tracker action, chest, bellows, reservoir and pipework, is completely missing.

The clock struck the hours and the quarters. A careful examination of the remains has suggested the following sequence of movements. Assuming the clock to show the time as six, the upper figure on the mainmast strikes the four quarters, whereupon the lower man strikes six. At the conclusion, of the striking, the ship begins to move forwards, pitching and rolling at the same time. This is achieved by a small wheeled carriage beneath the ship, two wheels of which are slowly driven forward whilst the body of the ship, attached to cranks on the rotating wheels axles by rods, is tilted in both planes about a varying focus. Meanwhile, the look-outs on the fore- and mizzen-masts move round, scanning the horizon. A fanfare is sounded and now the main group of figures, comprising four heralds, seven electors and the Emperor, begin moving on the deck. The four heralds and seven electors pass before the Emperor, turn to face him, bow, turn away and move on. The Emperor moves his hand (which probably originally held a sceptre,) and inclines his head.

The clockwork comprises two trains: that which moves the ship forwards also moves two figures on the forecastle and one on the port bow as well as three rocking figures on the main deck. The rocking train, which applies pitch and roll to the ship, also operates three levers whose purpose

has yet to be discovered.

The four heralds and the seven electors are mounted on a turntable which is half obscured by the forecastle. As the turntable revolves, two doors in the forecastle open and are held open by small pins protruding from the turntable. When the ship comes to rest, the cannon in the bowsprit fires (it is a 'wheel-lock' action). The train firing the cannon passes on to a second touch hole in its programme wheel which communicates with a tube leading to the interior. The purpose of this is as yet unknown.

In addition to the foregoing, there were originally the following movements which are now missing: The figures lining the deck either bowed or raised their arms, also there were two figures on the poop-deck by the doors. These movements were operated by the organ train. The train which moves the ship forward also operated two figures on the fore-castle and one on the port bow as well as three rocking figures on the main deck. The rocking train, which applies pitch and roll to the ship, also operates three levers whose purposes has yet to be discovered.

Before proceeding further, it is germane to our story to comment on the nef which survives in the Conservatoire des Arts et Metiers in Paris. This is similar in overall appearance but features several marked variations. There is a canopy over the main deck, a peaked roof on the poop, bow sprit, and a greater elevation of the Emperor. The clock in this one has been rebuilt since the war by M. Louis Bulla who received the clock in pieces. According to him, all the wheel-work was there but only the back-plate of the going train and the centre plate for the hour and quarter trains were saved. The pillars were also missing.

The large wheel for the organ was made at the Conservatoire together with the subsidiary plate and wheels. M. Bulla said that among the pieces left over after the reconstruction were five wheels with a square hole in the centre and irregular projections on the rim. These are obviously cam wheels and not, as M. Bulla at that time believed, the remains of the music barrel. This is unlikely due to their size – they are approximately $\frac{3}{4}$ in in diameter.

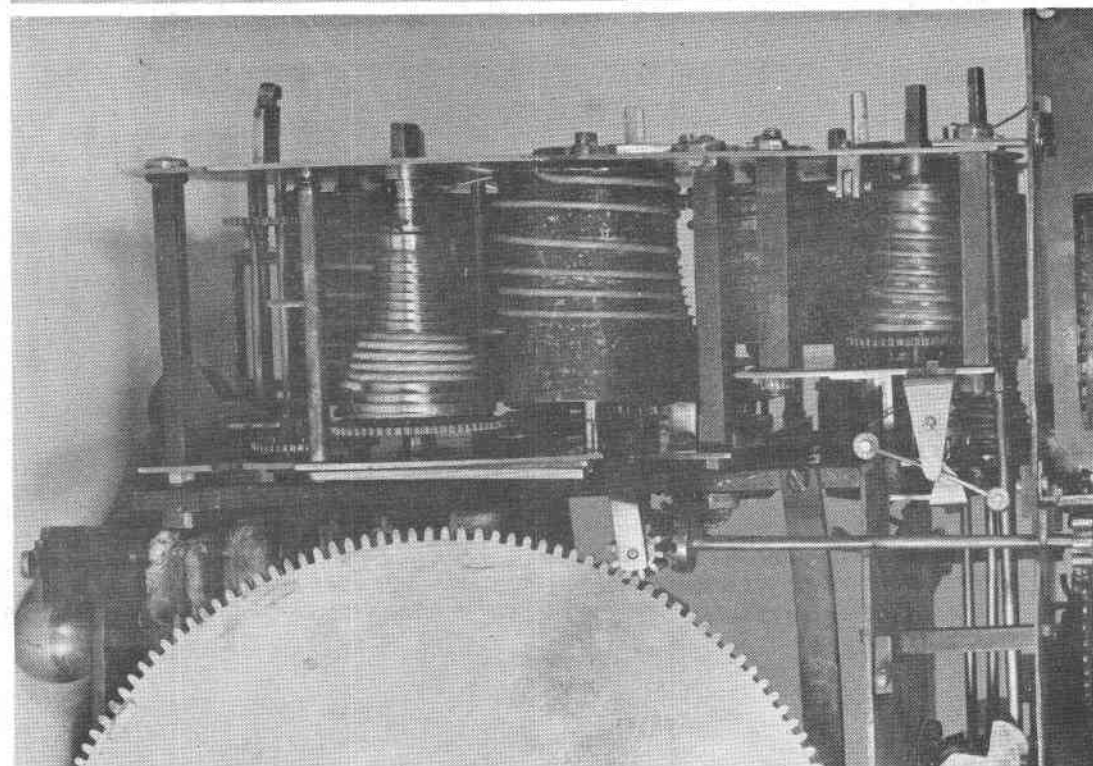
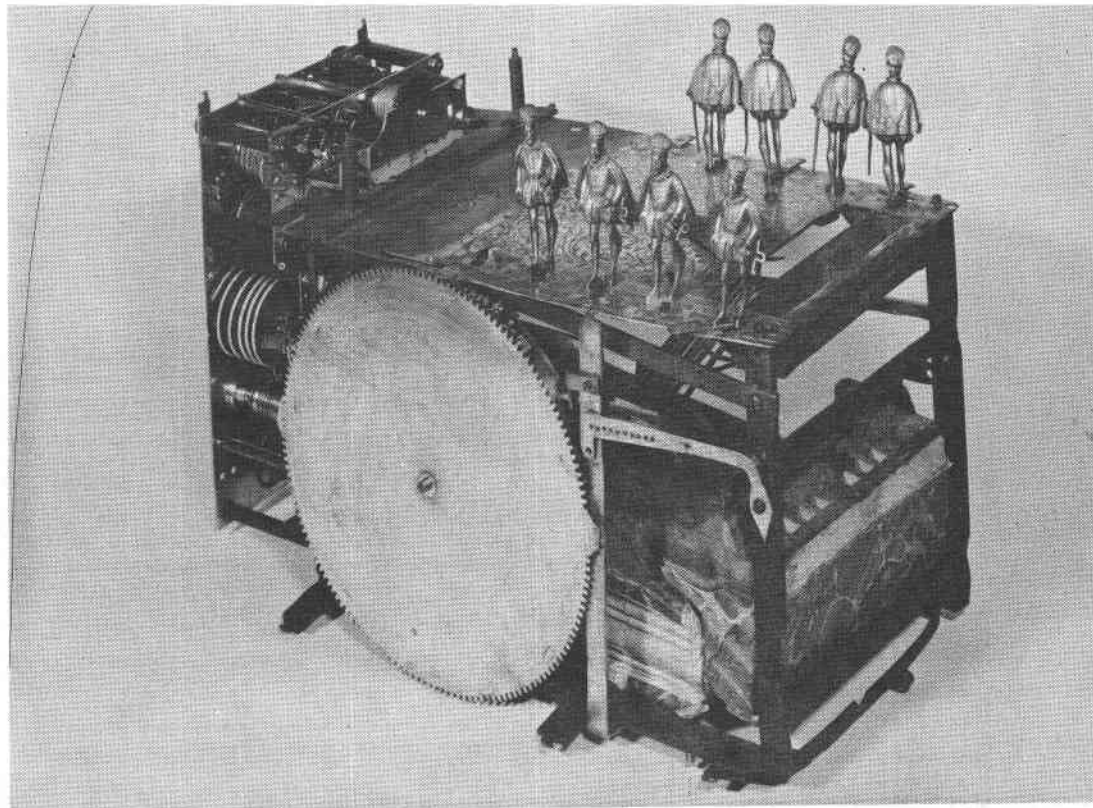
One of M. Bulla's photographs shows two figures which appear to be identical with the figures on the B.M. piece, which figures one assumes to be the original. The trumpeters on the Paris clock stand on two raised platforms. Although there are more figures (four distinct types plus a drummer), there are a lot of vacant holes in the

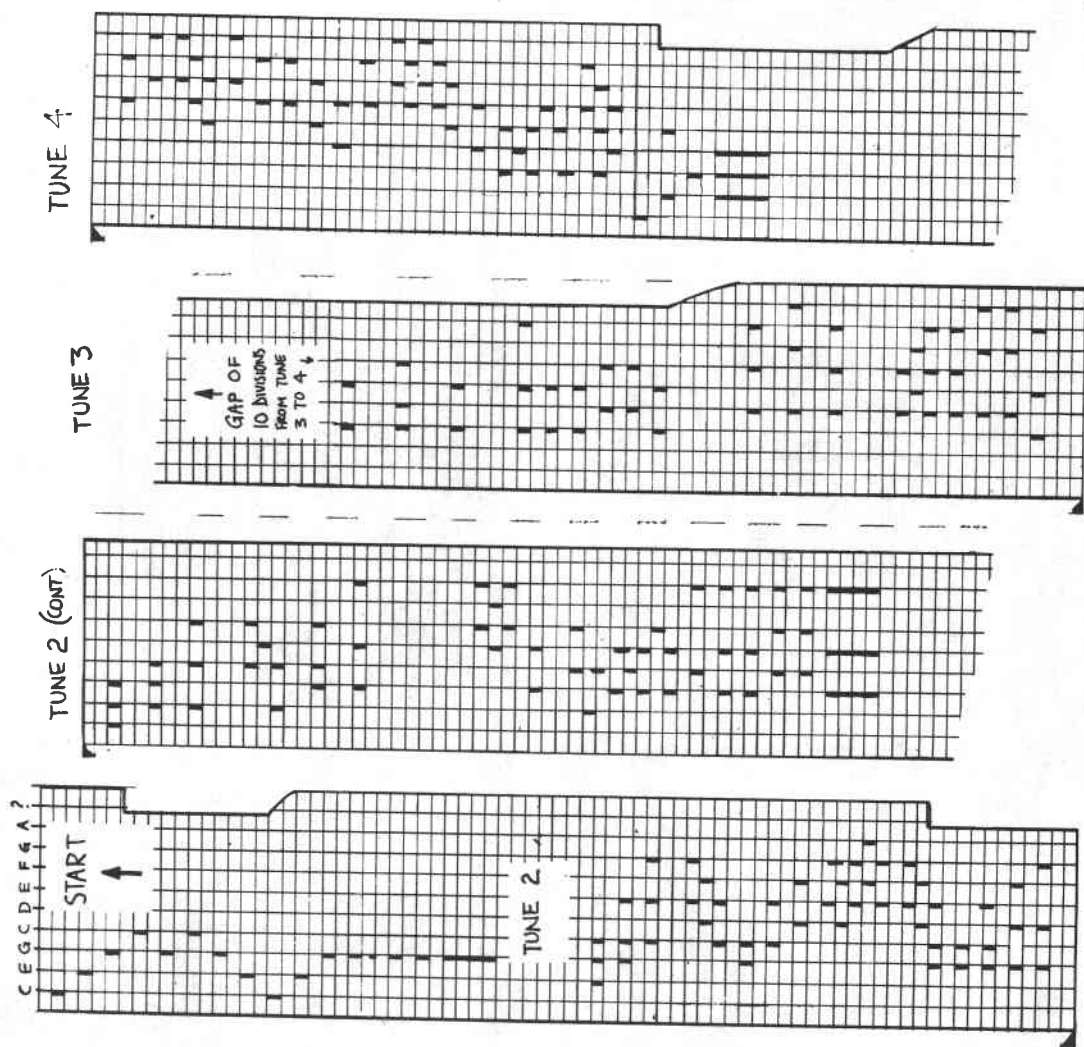
plates and some of the reconstructed linkages may not be correct.

To return to the British Museum nef, the next operation was to reconstruct the organ music. The organ, in keeping with contemporary masterpieces such as those of Schlottheim (*The Tower of Babylon*, destroyed in Dresden) and others was built at a time when the barrel, as a means of providing the musical programme for a piece of complex automata, was not necessarily the automatic choice. Pipe organs worked by pinned discs (such as the afore-mentioned *Tower of Babylon*), large-diameter, narrow wheels with peripheral pinning (Langenbucher's *Pomeranian Cabinet*, destroyed in Berlin in the last war) and sets of individually-mounted cam-like wheels (such as are described in the Cracow MS on mechanical organs) were considered in equal favour with the barrel, the actual system used for putting the musical programme into the organ being dictated by the shape of the finished automaton. Again, the *Tower of Babylon* is a good example where the programme disc operated in a horizontal plane, the bellows and the organ mounted above it. The concept of an organ in a box was to come later: originally the challenge was to take a design – and then build an organ to fit inside it, and the solutions known exhibit a fascinating degree of dexterity and imagination on the part of their creators.

The organ in the nef was operated by broad-rimmed wheel, 7.05 in in diameter. The musical programme was arranged in conventional pinning around the narrow rim. Unlike the barrel organs we are more familiar with, neither programme wheel (barrel) nor keyframe can be shifted, and so the barrel has to contain its entire programme of music in one revolution. An examination of the pinned barrel shows a similarity in layout to the chime barrel in the Vallin clock in the Ilbert Collection at the British Museum and this we know to play a fanfare at each quarter. Since neither pipes nor even any indication of their scale survives, the big problem was to try to reconstruct the music from the barrel.

The first step was to copy the pattern of the pins on to paper, preparing by this means both a graphical and tabular diagram of the musical sequences played. After this was done, it became apparent that only nine out of the ten pipes which presumably comprised the original organ were played. The tenth might thus be either a drone or could be operated by some mechanism as yet undiscovered. More will be said about this spectral tenth pipe further on.





The two pictures on page 386 show the nef as it survives today in the British Museum. The top picture on page 389 shows the mechanism within viewed from the same side as that shown in the lower picture on page 386. The toothed drive wheel for the music is 7.5 ins (19 cm). Attached to the inner face of this is the music drum, itself 7.05 ins (18 cm) in diameter and having a rim width, overall, of 0.7 ins (1.8 cm). This view also shows the surviving components of the keyframe and roller board as well as the bellows, the heel beam of the upper board serving also as the windchest for the pipework which is missing. The lower view on page 389 shows in detail the left hand end of the mechanism (at the stern of the ship), showing the fine and complex clockwork and the music-wheel drive pinion. On this page, above, is set out the arrangement of the musical pinning on the music drum. The actual drum surface has a developed length of approximately 22.15 ins and a width of 0.7 ins and the above diagram is drawn to neither scale nor proportion but conforms to a convenient notational diagrammatic proportion. Clearly shown in this development of the surface is the edge cutaway forming camlike sections, the purposes of which remains undetermined.

The gaps in the pinning of the music wheel indicated that, as in the Vallin carillon clock, the music was divided into four sections, one part for each of the four quarters. This therefore provided four terminal chords which were assumed to be straightforward major or minor chords.

A further study of the paper graph showed that the first four notes were used in conjunction in chords (i.e. they were played altogether) so it was further assumed that the interval between these must be greater than a tone, i.e. a minor third or a major second.

One of the terminal chords was taken at random and the top note, on the tabular diagram, was numbered 8. This was taken as the tonic, 9 as a tone above and downwards to 4 as in a normal major scale. A table was then made of the other chords on the music wheel and substituting was begun, all possible values for 1, 2 and 3 being written in and any coincidences being noted. The results of this phase were not encouraging, but a marked improvement was noticed if the interval between 7 and 8 was increased to a full tone.

This led to a new start being made, this time using one of the other terminal chords with a top note 4. The scale was then continued upwards to 9 whilst number 1 was taken as being an octave below and 3 and 4 being the third and fifth to make 1, 2, 3, 4 a major chord.

With this combination, most of the chords fell naturally into place except for a slight and possibly permissible dischord in the 'amen' chords.

Having reached this stage, it was now possible to translate the entire tabulation of the pin barrel into ordinary musical notation and, after some corrections for timing, these were played with not unpleasant results. This music is published for the first time in the accompanying figure.

We now come to the mystery of the tenth pipe. An examination of the tabular layout of the music wheel shows a series of cut-outs on the right-hand side, cutting away the wheel at the position of the number 10 key. It is extremely unlikely that, faced with having to fit a small organ into an extremely irregular and confined space, the maker would have added an extra pipe which played no part in the music. By corollary, it is unlikely that the maker would have provided a wheel of greater width than be needed and with a tenth-pipe position had that position not been required for some purpose.

We now have two alternatives to consider. Was there a tenth pipe at all? And, if there was, what was it for? We can divide the first question

yet further. If there wasn't a pipe, could some other function have been fitted in that position. As regards the second question, it obviously played no direct part in the music. Since the cut-outs in the wheel edge extend across the gap formed by the end of one fanfare and the start of another, were this note to be playing by some means as yet undiscovered, then when the mechanism stopped the sound would die away with rather unpleasant sounds as the wind in the bellows expired. And it would make a strange noise when the mechanism started up again for the next quarter.

The train which fires the cannon includes, as already remarked, a pipe leading somewhere into the interior. Was this to convey a puff of wind through the cannon at the moment the wheellock operated?

Dr. J.J.L. Haspels, Director-Conservator of the Nationaal Museum van Speeldoos tot Pierement in Utrecht told me his interesting theory that instead of wooden flue pipes, this organ may have been equipped with regals. Ingenious though this notion is, and notwithstanding the fact that the regal was, at the time this piece was constructed, in fashion, it would not be in keeping with the other contemporary Augsburg automata. On the grounds of logic, it is probably safer to assume this piece to have been similar in operation to its contemporaries rather than for us to consider the slim, yet possible chance that it was a different type altogether.

And so this is as far as work has been able to progress on this nef. In the absence of further research work and data, here the matter must lie for now. The original maker remains as much of a mystery as ever, although certain similarities lead one to draw one or two conclusions. But the music at least has been solved and this is a major step forward in unravelling the mystery of this galleon which rocked and fired cannon as its distinguished complement paraded amid a sea of, presumably, the finest table linen.

This fine piece was the one-time property of the Emperor Rudolph II (1552-1612) and bears indications of having come from the hand of Hans Schlottheim. Schlottheim worked in Augsburg and produced his "Tower of Babylon" masterpiece in 1602, 13 years after the magnificent "Bethlehem Crib". Both were lost during the 1939-45 war in the sacking of Dresden. Significantly, none of the early Augsburg pieces appear to have been pinned to play tunes as short or as simple as these.

TRANSCRIPTION of MUSIC PINNED ON RUDOLPH II's NEF



FIRST QUARTER TUNE

SECOND QUARTER TUNE



THIRD QUARTER TUNE

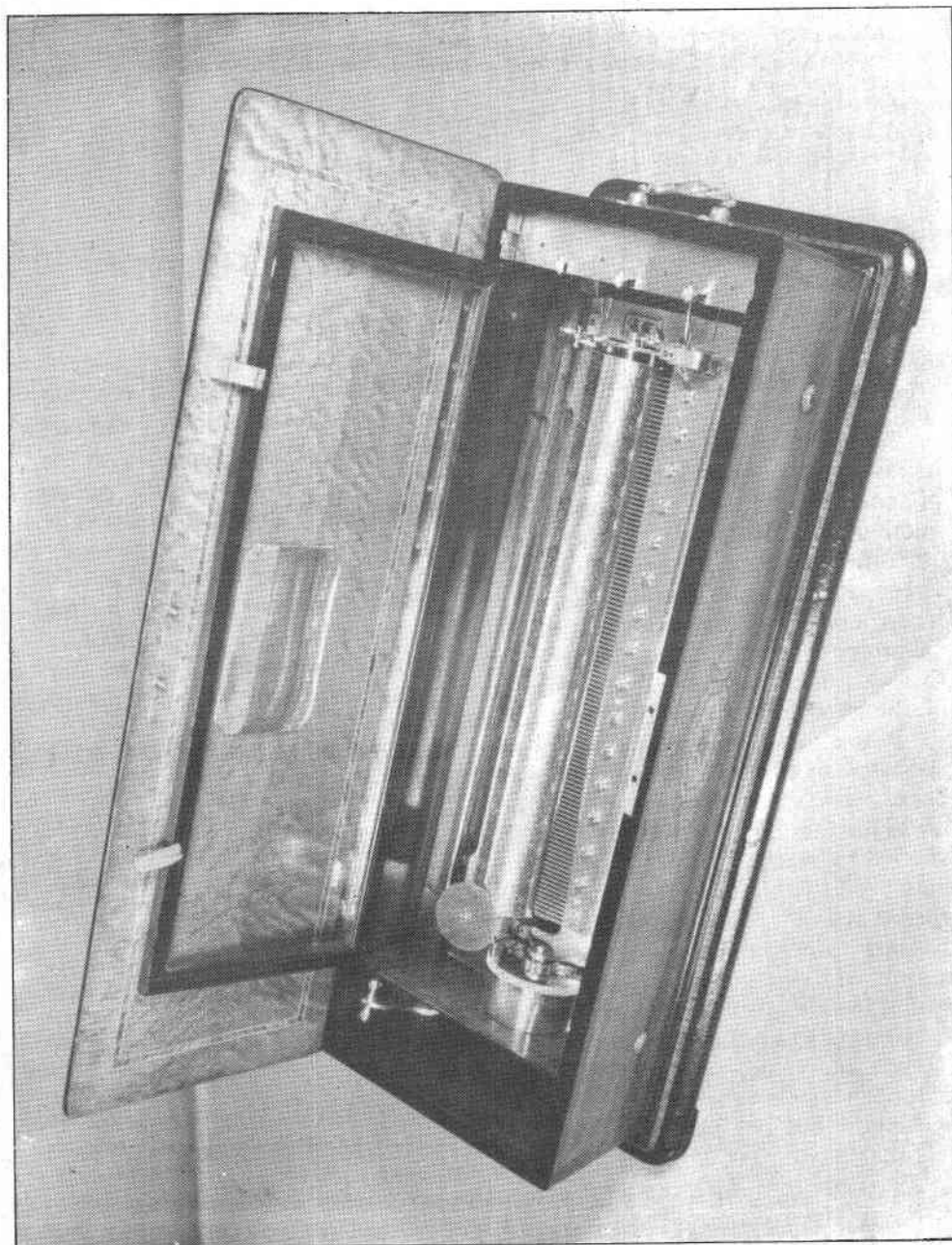


FOURTH QUARTER TUNE



A.W.J.G. ORD-HUME - 1969

From the music drum of the nef in the British Museum has been transcribed this notation for four tunes and, apparently, two fanfare introductions. The absence of any musical producing components, i.e. pipework, meant that the musical scale had to be solved from a careful examination of the pins on the drum and by repeated trials to determine the likely and acceptable intervals. This, then, is the first time this music has ever been printed. All the pictures illustrating this article are the copyright of The British Museum. My grateful thanks to Hugh Tait, deputy keeper of the Department of Medieval & Later Antiquities, his secretary Miss Kirston and Beresford Hutchinson for their enthusiastic co-operation in providing pictures at short notice.



From the collection of Keith Harding comes this Grand Format Nicole Freres cylinder music box number 45850 of c. 1880. It plays 12 airs on a cylinder 23ins. long by $3\frac{3}{4}$ ins. in diameter. Keith Harding exhibited this item at the Royal Society of Arts on October 25th, 1973.

The late Rev. Andrew Freeman was one of the first writers and researchers to draw attention to the great work of Alexander Cumming in the building of mechanical organs. Cumming's organ for the Earl of Bute, the full story of which is to be published next year in BARREL ORGAN by Arthur W.J.G. Ord-Hume, was remarkable in many ways. A copy of the rare book describing this organ which is referred to in this article, is preserved in the library of The Editor. The article here was first published in No. 95 of THE ORGAN, Volume XXIV, dated January, 1945, and it is reproduced with grateful acknowledgement to that publication and to the memory of its author.

The Earl of Bute's Machine Organ

By ANDREW FREEMAN

WHILST compiling the series of articles on Samuel Green that have recently appeared in these pages, I was struck by the fact that, although several writers have dealt at some length with the bellows of the organ, their accounts do not agree on certain historical points of considerable interest; moreover, where they do not contradict one another they are sometimes elusive.

Among the questions that cropped up, the chief were these. Why did Green use horizontal bellows for some of his small organs and not for his larger ones? Who invented this form: Samuel Green or Alexander Cumming? Was it Cumming or Flight who invented inverted folds? For this was, of course, one of the most important of events in the long history of the wind-producing department of the organ.

It was in the hope of settling some of these questions that I made a special visit to the Reading Room of the British Museum a few months back. The catalogue proclaimed the existence of an account of an organ made for the Earl of Bute by Mr. Cumming and published in 1812. This seemed to be the book I wanted, but on enquiry I found that it had been destroyed (with a number of other books on the organ in general) "by enemy action." But Mr. F. G. Rendall, of the Museum, thought that the Patents Office might have a copy, so he looked up the catalogue of that most useful institution. The result was that within half-an-hour I was seated in this other ancient haunt with the Cumming tract and a notebook to hand. It took but a few minutes to show that here was a "find" of both interest and value,—an opinion that subsequent study has confirmed. To print the whole of it would occupy too much space in these days of paper shortage; but I think all the salient information can be condensed into a reasonable compass.

The title (of which the first seven lines are printed in red) runs:—

A Sketch / of / the Properties / of / The MACHINE ORGAN / Invented,
Constructed and Made / by Mr. Cumming / for / the Earl of Bute / and / A
Catalogue of Music / on the various Barrels numbered one to sixty-four. /
London / Printed by E. and H. Hodson / Cross Street, Hatton Garden / 1812.

Although the Christian name is not given above, and although the tract is not mentioned amongst the works credited to him in *The Dictionary of National Biography*, I have no doubt that the writer was Alexander Cumming, F.R.S., who was (as his obituary notice says) "eminent for his genius and knowledge in the mechanical sciences."¹ Born in Edinburgh in 1733, Alexander was apprenticed to the watchmaking business, whether in Edinburgh or London I cannot say. For many years he had a successful business in Bond Street, where he was held in great repute for his theoretical and practical knowledge of the properties of wheels. He retired to Pentonville, where he continued his scientific studies and researches, was made a county magistrate, and died in his eighty-second year on March 8th, 1814.

Let us now turn to his own account of a really wonderful mechanical organ. The terminology is quaint at times, but the description of the various mechanisms used is so clear that the lack of diagrams is not felt.

"In the year 1752, several of the most distinguished artists in the metropolis were engaged in building, for the Earl of Bute, a Machine Organ, on which no expense was spared, and that was to have every improvement that art and ingenuity could bestow.

"To that organ there was made no fewer than sixty barrels, of large dimensions,² on which were set a selection of the choicest compositions of several of the first masters of the ages.

"When the organ was finished, it was put up at his Lordship's mansion at Luton Park, where it was seen and heard by many of the best judges of music, and allowed by all to excel anything of the kind that had been produced before it; and it was generally thought to be as compleat as any thing of that nature could be rendered.

"In the progress of building it, some difficulties occurred which had baffled all those who were concerned in that undertaking, or who were consulted regarding it; when Lord *Bute* happened to mention some of these difficulties to *Mr. Cumming*, he suggested such remedies as occurred to him; and in his communications with that nobleman on the subject of Machine Organs in general, proposed several means of improvement on the general system, totally different from any that had before occurred, or been suggested."

We are then told that several sketches were made and sent, but that these could not be used in the organ as already made, so the matter dropped for the time.

"About the year 1785, his Lordship proposed removing the Organ in question from Luton Park [in Bedfordshire] to High Cliff [near Christchurch, Hants], where he then chiefly resided for the benefit of the sea air.

"He had previously enquired 'whether an Organ on *Mr. Cumming's* principle could be adapted to the barrels already made for the Organ at

¹ *Gentleman's Magazine*, Volume 84 (i), page 414.

² Each 4ft. 6in. long, and 18in. in diameter.

Luton Park, and likewise to the new barrels, &c., on which each tune might be repeated at pleasure, separate and independently'; and being assured in the affirmative, he immediately resolved to have a new Organ built on *Mr. Cumming's* plan, and to remove only a part of the barrels from the Organ at Luton Park, so as to have organ music occasionally at each place: and although *Mr. Cumming* had retired from all business, he could not resist the application of the Earl of Bute to *superintend* the building of an Organ and its machinery, of which he had given the idea, and made the drawings, more than twenty years before; but such obstacles were thrown in his way by the organ builder whom he employed to build it,* that *Mr. Cumming* was ultimately under the necessity of building every part of the Organ, and making every part of the machinery belonging to it; and the whole was finished in 1787."

When the organ was finished the Earl of Bute wanted to have the drawings and a complete description made for publication, but Cumming excused himself on the grounds of ill-health and advancing years. One account was, however, written. This was at the request of the Russian Ambassador who sent it to the Empress of Russia, Catherine II. The result was a request from the imperial lady for a similar instrument to be made and sent to her. The project fell to the ground because Cumming could not undertake personally to superintend the erection of the instrument in the Russian Capital. Three reasons are then given as to why a second organ was really called for:—

"First ... The old Organ requires a power of six hundred weight to work it. The new organ is worked by a power of fifty-four pounds only. The old organ requires to be wound up every thirty or forty minutes, the music is interrupted each time, and a servant is necessarily admitted to wind it up. The new organ may be played for an unlimited time, without interruption of the music, or the attendance of any servant, except for changing the barrel, and then he is not admitted into the same room with the company."

Since the power required to work the new instrument is "something less than a thirteenth of that of the old Organ," the weight of the wheels, ropes and machinery in general could be of lighter substance, while the chances of disorder, the wear and tear and the cost of repair would all be correspondingly decreased. Moreover, the old organ required three separate weights to work it,—one for the barrel and two for the bellows. These two sets often ran down at different times, with the result that either the barrel went on rattling the keys to no purpose, or some haphazard chord was left droning, according to the mechanism, bellows or barrel which was still in action. In the new instrument there is but one weight for both barrel and bellows. Moreover, this one and only weight "can never come to the ground unless by some unlucky accident, there being a *secondary piece of mechanism* which

* The name is not given. The former organ had been built by Snetzler, who, if alive, would be about seventy-five at this time, and almost certainly in retirement.

acts spontaneously, and never fails to wind up the weight as often as necessary without interrupting the music, and by that means it may be continued without interruption for any length of time." What this secondary mechanism was is described later.

Second, all previous organs had suffered from defective wind.

"Many organ builders have observed that the blast of organ bellows was unequal, and some few had long observed that the blast became more and more dense as the bellows became lower and nearer empty; but the true cause of that irregularity was not discovered before the building of this new Organ.

"On trying the strength of the wind in the old Organ by an accurate *anemometer* it was found $\frac{1}{12}$ th stronger when the bellows were at their least elevation, and nearly empty, than when at their greatest elevation."

At this point, it should be explained that, as in nearly all organs of the period, the blowing apparatus consisted of two bellows,—an upper one called the reservoir and a lower one called the feeder; both were diagonal or wedge-shaped, and both had inward-folding ribs. What Alexander Cumming did was to add another rib to the reservoir, making this added rib fold outwards instead of inwards. By connecting the two sets of ribs by what is now called a counter-balance (by him called "a square frame"), the ribs were made to open or to close so that the outward and inward folds exactly cancelled the defective pressure for which each by itself would have been directly responsible. As Cumming says, "In the new Organ, there is not the least perceptible difference in the density of the strength of the wind, with the greatest and with the *least* elevation of the bellows, tried by the same *anemometer*." And since he was a man of honour and repute, his claim to have applied in this organ, for the first time, what are now called "inverted folds" to bellows reservoirs should be no longer a matter for dispute.⁴ This answers one of the questions in the second paragraph of this essay,—the inventor of inverted ribs was Alexander Cumming, and their first use was in this organ made by him for the Earl of Bute in 1787.

With regard to horizontal bellows the position is more curious. Dr. Hopkins says that Cumming "appears to have been the first to whom the idea occurred of making bellows on the *horizontal* principle. According to his own pamphlet, the principle was sketched out by him in 1762, and first carried into practice in the organ completed under his direction for the Earl of Bute in 1787."⁵ But if (as seems pretty certain) the above-named pamphlet is the one with which this article has been mainly con-

⁴ In a footnote on page 5 of his excellent book, *Organ Construction*, the late Dr. Hinton says: "The introduction of inverted ribs is generally ascribed to one Cummins or Commins, a clockmaker, but Flight was the first to work out the idea in a practical form." Dr. Hinton does not say which of the three generations of Flight worked the thing out; moreover, had he investigated the matter with his usual care, he would have discovered (1) that Cumming needed no outside help in putting his ideas into "a practical form," and (2) the correct way to spell the watchmaker's name.

⁵ H. and R., Part II, p. 14.

cerned, I have to confess to being quite unable to find any mention therein of horizontal bellows. If Cumming used that type he does not say so. Moreover, his inverted ribs would have worked quite as perfectly in the case of a diagonal reservoir as of a horizontal one. The only thing pointing to the probable use of horizontal bellows is Alexander's claim that "the new Organ has bellows capacity ten times that of the old Organ." This suggests that he may have obtained part of the extra capacity by their use. But if Dr. Hopkins had turned to page 36 of his colleague's introduction to their monumental effort, he would not have used the word "first" in this connection, for he would have recalled that horizontal bellows, there called bellows "à la lanterne" formed one of the illustrations given by Mersennus in his *Harmonie Universelle*, published in Paris in 1636. This illustration was reproduced by Dr. Rimbault: it shows two horizontal *feeders* placed above the pipes, and so arranged that as one rose the other fell, and they were coupled so that they moved in opposite directions. Since they exactly balanced each other the pressure of wind depended solely upon the blower whose job it was to pull downwards first one rope and then the other by which they are worked. There were six sets of inward-folding ribs to each feeder, *but no reservoir*. Certainly an early example of horizontal bellows (or *feeders*), but extremely defective.

Samuel Green used horizontal bellows (reservoirs) in the organs that he built for St. Thomas's, Ardwick (1787), and St. Peter's, Stockport (1788). If these had single-rib horizontal reservoirs it is obvious that though they would hold twice as much wind as their diagonal counterparts—a valuable saving of space in a small organ—the defective wind pressure referred to would be even more noticeable. This would probably explain why Green reverted to the diagonal type for his larger instruments. Unfortunately, we are not told whether Cumming had imparted to him the secret of the second (and inverted) pair of ribs. So far as Benjamin Flight is concerned, I am unable at present to discover that he himself ever made a definite claim to have introduced either horizontal bellows or inverted ribs.

Coming back to the Earl of Bute's organ, the following points should be noted: (1) The wheels worked slowly or fast according to the demands of the wind; (2) the organ could be played by means of a keyboard, in which event it could be blown either by foot or by the machinery; (3) the machinery ceased to work when the organist stopped playing, since there were no demands made upon the wind; and (4) the organ could not be overblown,—because of the controlling mechanism.

The means by which the motion of the barrel was regulated is fully explained, after which we are let into the secret of what could rightly be termed this non-stop organ,—very simple, but the work of a genius. "The weight which works the Organ is wound up by the descent of two buckets alternately filled with water, so managed that which ever bucket descends, it winds up the *weight* and elevates the empty bucket, nor does the winding up of the weight any how interrupt its effects in working the Organ."

"The composition of the organ" is not free from mystery, though some of the difficulties disappear if we may take it that for "treble" and "bass" we

should read "right" and "left." I suggest also that it is the open diapason which should be marked as a through stop rather than the bass sesquialtera. The organ "consists of the following Stops, some of which draw in halves, in order occasionally to strengthen the Bass or the Treble. It is of a brilliant sweet Tone, not loud :—

TREBLE	BASS
Stop Diap	O. Diap
Dulciana, through	Stop Diap
Violino, through	Flute, through
Principal	Prin
Sesqui	Sesqui, through
Cornet	Fifteenth, through
Trumpet	Trumpet

Some years later, when the organ was sold to the Earl of Shaftesbury, another "*principal* stop" was added, because "its situation then demanded an ornamental front."

The list of music marked on the sixty-four barrels (each of which was 4ft. 6in. long) occupies several pages. The composers represented were: Martinelli, G. Prioli, Corelli (four barrels), Vivaldi (seven barrels), Signor Porta, Brescianello, Pergolesi, Martinini, Geminiani, Perilla Canopiolo, &c. Handel was allotted no less than thirty-six barrels.

The Earl of Bute (who died in 1792) bequeathed the organ and the house at High Cliff, near Christchurch, to his son, Lieutenant-General Sir Charles Stuart, K.B. But High Cliff was in danger of encroachment by the sea, and as there was no room in Sir Charles's house at Whitehall, the organ was sold to the Earl of Shaftesbury, who had it removed to St. Giles's House, Wimborne St. Giles, Dorset, where the new stop and an ornamental front were added. Here the barrels were stored in the principal staircase, and a new staircase made; but the new stairs were so badly made that the old ones had to be put back to their proper use, whereupon the Earl of Shaftesbury prevailed on Cumming to buy back the organ. This he did, removing it to his place in Pentonville, where fifty years before he had constructed it. The ultimate fate of this remarkable instrument seems to be unknown.

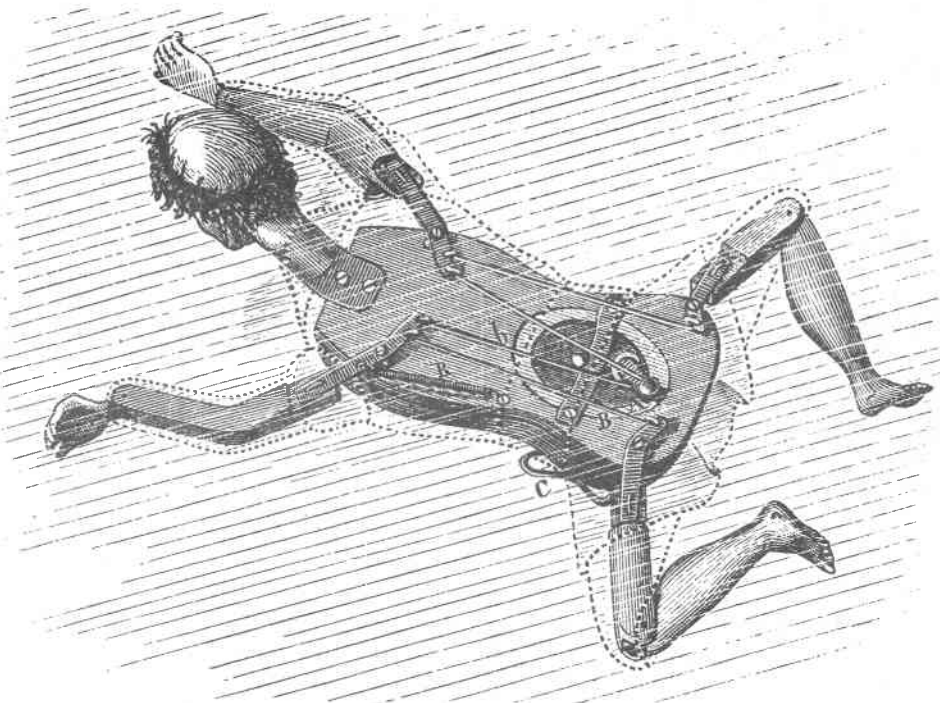
Cumming is known to have built at least one other organ,—for the Priory Church at Christchurch in 1788, obviously at the suggestion of the Earl of Bute, who spent much time at High Cliff, though it was the *gift* of Guiliam Brander. It contained the following stops,⁶ some of which are still in use in the present instrument :—

GREAT ORGAN	CHOIR ORGAN	SWELL ORGAN
GG (no GG sharp) to F(55)	GG (no GG sharp) to F (55)	tenor F to F (37)
Open diapason55	entirely "by communication"	Open diapason ...37
Stopped diapason ...55	from great	Stopped diapason ...37
Flute55	Open diapason	Principal37
Principal55	Stopped diapason	Trumpet37
Twelfth55	Principal	
Fifteenth55	Flute	
Sesquialtera ... 165		
Trumpet55		

⁶ Pearce's *Notes on English Organs*, page 80.

The cost of this organ was £400. As each of the four choir stops "draws in halves, with a connection that when either Treble or Bass is drawn it pulls out both," it looks as if Cumming had a bright idea which, for some reason or other, he did not carry out. That the four stops should first have been divided and then joined up certainly calls for explanation. Did he propose to add a barrel or two? And did the death of the Earl four years later cause the abandonment of the scheme? It seems a probable explanation of what is otherwise a mystery.'

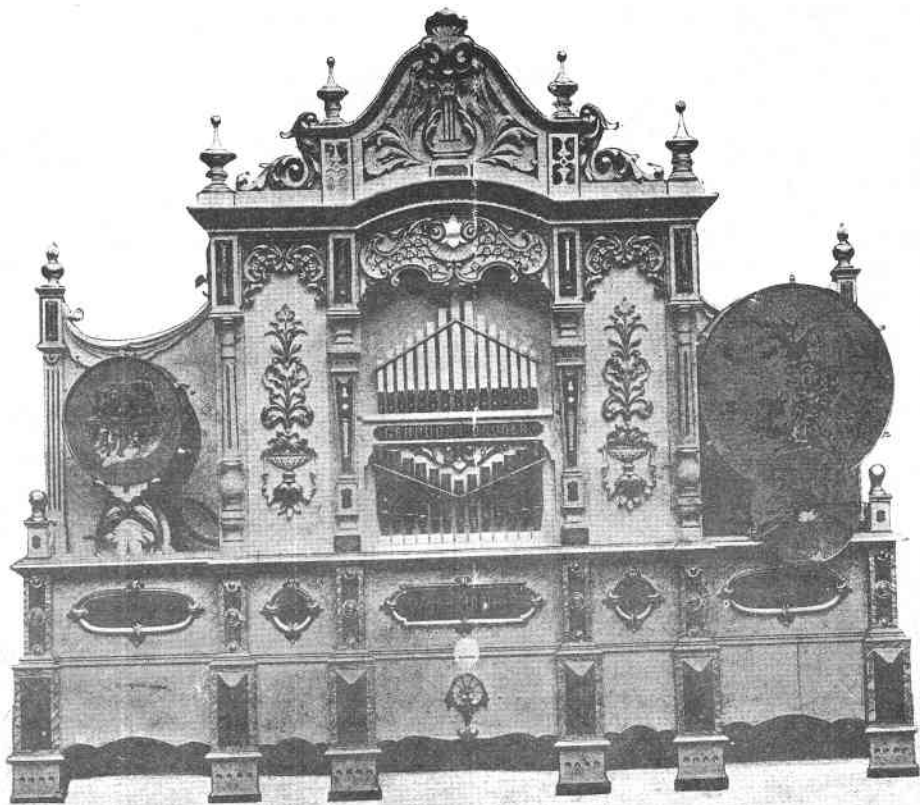
' Henry Willis rebuilt and enlarged the instrument in 1863, and Ginns Brothers added eleven more stops in 1890. Scraps of the 1788 case have been retained.



At the Paris Exposition held in June of 1878, one of the lesser highlights was Ondine, the clockwork swimming doll. Described as the latest in the great family of mechanical toys, the clockwork-powered doll was capable of swimming in water. As seen in this diagram, movement of the arms is controlled by a crank driver by a spring motor. Movement of the legs is achieved by connecting rods linking them to the arms.

Gebruder Bruder is a name which still conjures up awe in the minds of the lovers of the show-organ. On the subsequent pages we reproduce a catalogue of Bruder organs published around 1903-04. The cover of the catalogue has not survived in sufficient area to justify reproduction. From the collection of the Editor

Gebrüder Bruder, Waldkirch, Baden.



Symphonie-Konzert-Orgel.

Symphonie-Konzert- und Orchester-Orgeln

==== mittelst Notenblätter spielbar. =====

Unübertroffene Neuheit mit automatischen Registerschaltungen.

Eigenes System. Aeusserst präzises Spiel. Vorzügliche dauerhafte, stets bestimmt funktionierende Konstruktion. (Wenn für Tropenklima bestimmt, besondere Präparierung des Materials und eigene, allein bewährte Konstruktionsmethode, 5 % Aufschlag.)

Der grosse Vorzug unseres Systems für Noten-Orgeln besteht in erster Linie darin, daß infolge der rein pneumatischen Bauart der Instrumente die Musikstücke (Blätter aus leichtem Karton in Buchform gefaltet) beim Spielen weder mit Tasten, Hebeln oder sonst einem mechanischen Widerstand in Berührung kommen, **sondern sind dieselben keinerlei mechanischer Abnützung unterworfen und daher von unbeschränkter Dauer.**

Die Registerschaltungen geschehen auf automatischem Wege, so daß die verschiedenen Tonfarben wie Violin, Cello, Flöte, Klarinett, Horn, Trompete, Posaune, Bässe, Tutti etc., sowohl jede einzeln als auch in verschiedenen Zusammenstellungen, sowie im Gesamtspiel mit wunderbarem Effekt zur Geltung kommen.

Die Bedienung ist so einfach, daß das Einlegen der Musikstücke von jedem Kinde besorgt werden kann. Die Musikstücke können in beliebiger Länge ausgeführt werden.

Es können eine Anzahl derselben miteinander verbunden werden, so, daß die Orgel ununterbrochen in steter Abwechslung des Programms gespielt werden kann.

Sämtliche Instrumente sind mit selbsttätiger Abstellvorrichtung versehen.

Musikstücke können auf briefliche Bestellung stets nachgeschickt werden. Für tadelloses Passen derselben wird garantiert.

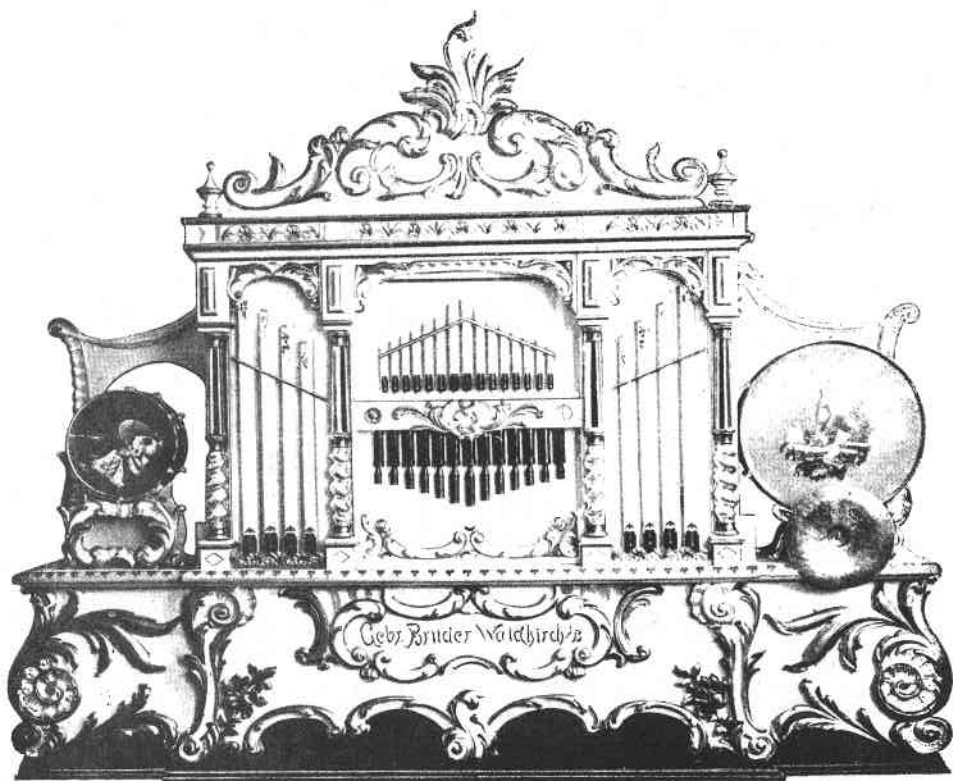
In eleganter Ausstattung und reicher Verzierung der Gehäuse bieten wir das Schönste und Neueste. Beistehende Abbildungen werden daher auch stets, ohne besonderen Auftrag ergänzt und der herrschenden Geschmacksrichtung angepaßt.

Mit Zeichnungen und billigsten Kostenberechnungen von besonders reichen Prachtfassaden gehen wir unseren geehrten Kunden prompt und kostenlos zur Hand.

Alle Instrumente sind möglichst vor direkter Sonnenhitze, sowie vor Feuchtigkeit oder Nässe zu schützen.



Gebrüder Bruder, Waldkirch, Baden.



Orchester-Orgel

Nr. 104—105.

Symphonie-Konzert.

		M.	S.
Nr. 100.	52 Tonstufen, Bass, Streichquartett, Flöte, Forte und Piano spielend. Besonders für feine, nicht zu geräuschvolle Tanz- und Konzertmusik geeignet	1200	—
	Musikstücke vom Repertoire per Meter	2	30
	Länge 120 cm, Höhe 153 cm, Tiefe 80 cm, Gewicht 150 kg.		
Nr. 100².	Mit grosser und kleiner Trommel nebst Becken in Nischen zum Aushängen	1700	—
	Musikstücke vom Repertoire per Meter	2	40
Nr. 107.	52 Tonstufen, Konzertorgel , Kontrabaß, Baß, Bombardon, Trompeten, Flöten, Spitzflöten, Violin (Geigenstimmen), Mixtur, Forte und Piano spielend, grosse und kleine Trommel mit Becken in Nischen zum Aushängen, schöne Fassade in hellen Farben, mit Spiegeleinlagen und reicher Vergoldung	1900	—
	Musikstücke vom Repertoire per Meter	2	40
	Länge 160 cm, Höhe 170 cm, Tiefe 90 cm, Gewicht 250 kg.		
Nr. 106.	59 Tonstufen. Gleiches Modell wie Nr. 107, mit entsprechend erweiterter Tonskala, ebenfalls mit vollständigem Schlagzeug und heller Fassade . .	2400	—
	Musikstücke vom Repertoire per Meter	3	—
	Länge 176 cm, Höhe 180 cm, Tiefe 110 cm, Gewicht 260 kg.		
Nr. 103.	67 Tonstufen. Gleiches Modell wie Nr. 106, mit erweiterter Tonskala und vermehrter Instrumentierung	3000	—
	Musikstücke vom Repertoire per Meter	3	40
	Länge 180 cm, Höhe 175 cm, Tiefe 110 cm, Gewicht 300 kg.		
Nr. 104.	80 Tonstufen. Orchester-Orgel , Forte und Piano spielend. Kontrabaß, Baß, Bombardon, Cello, Violinen, Flöte, Zauberflöte, Pikkolo, Mixtur, Baß-trompeten, Trompeten mit Beistimmen, Tuba, Horn, grosse und kleine Trommel mit Becken in zwei Seitennischen zum Aushängen	4000	—
	Musikstücke vom Repertoire per Meter	3	80
	Länge 190 cm, Höhe 180 cm, Tiefe 110 cm, Gewicht 350 kg.		
Nr. 105.	94 Tonstufen. Orchester-Orgel , Forte und Piano spielend. Instru-mentation wie Nr. 104, vollständig chromatisch ausgebaute Tonskala, reichste automatische funktionierende Registrierung	6000	—
	Musikstücke vom Repertoire per Meter	5	—
	Länge 230 cm, Höhe 200 cm, Tiefe 110 cm, Gewicht 450 kg.		

Die Nischen für die Trommeln verlängern die Fassaden um 130 cm.

Der Preis vorstehender Nummern versteht sich mit 100 Meter Musikstücke inbegriffen. Glockenspiel (Xylophon) kann an den Nummern 103, 104, 105 angebracht werden u. wird mit 400 Mk. besonders berechnet.



Gebrüder Bruder, Waldkirch, Baden.



Orchester-Orgel „Libellentanz“
gesetzlich geschützt.

Orchester-Orgel

„Libellentanz“

gesetzlich geschützt.

Mit Prachtfassade im modernen Stil, reichster künstlerischer Malerei
und Echtvergoldung in Matt und Glanz.

===== Drei beweglichen Figuren. =====

Grossartiger Musikeffekt.

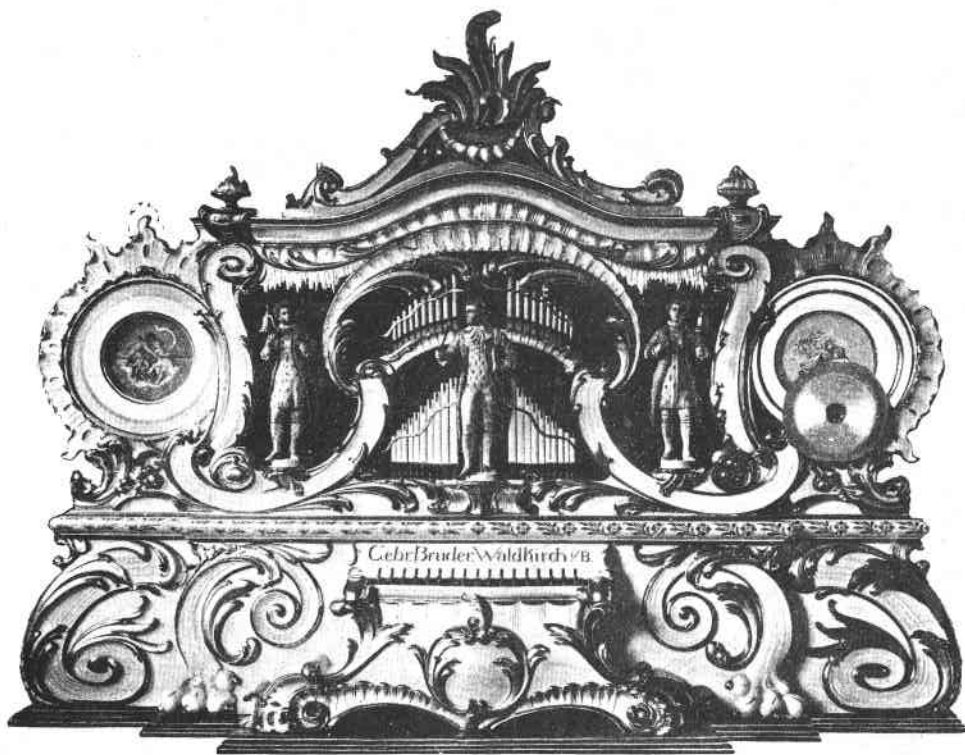
Sowohl für Schaustellungen als auch zu Tanzmusik geeignet.

Preis inkl. 100 Meter Musik:

	M.	§.
59 Tonstufen	3900	—
Musikstücke per Meter	3	—
67 Tonstufen	4500	—
Musikstücke per Meter	3	40
80 Tonstufen	5500	—
Musikstücke per Meter	3	80



Gebrüder Bruder, Waldkirch, Baden.



Orchester-Orgel „Pompadour“
gesetzlich geschützt.

Orchester-Orgel

„Pompadour“

gesetzlich geschützt.

Mit Prachtfassade im Barockstil, reichster künstlerischer Malerei
und Echtvergoldung in Matt und Glanz.

Drei beweglichen Figuren und Glockenspiel (Metallophon).

Reichhaltige Instrumentierung mit feinsten
Nuancierung der Musikeffekte.

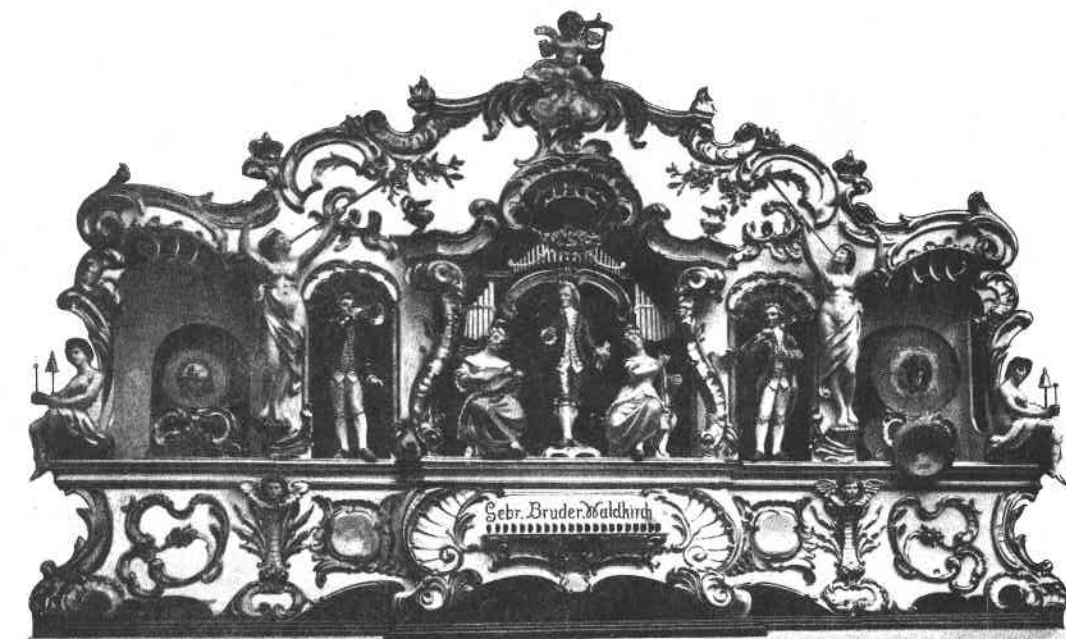
Sowohl für Schaustellungen als grössere Tanz-
bzw. Konzertlokale passend.

Preis inkl. 100 Meter Musikstücke:

	<i>M.</i>	<i>Δ.</i>
80 Tonstufen	6000	—
Musikstücke per Meter	3	80
94 Tonstufen	8000	—
Musikstücke per Meter	5	—



Gebrüder Bruder, Waldkirch, Baden.



Riesen-Orchester-Werk „Jubiläum“
gesetzlich geschützt.

Riesen-Orchester-Werk

„Jubiläum“

gesetzlich geschützt.

Mit Riesen-Prachtfassade, zirka 6 Meter lang, in reichstem Barockstil, künstlerischer Malerei und Echtvergoldung in Matt und Glanz.

10 Figuren, wovon 7 beweglich, Glockenspiel (Metallophon).

*Unübertroffenes Zugstück für erstklassige Schaustellungen,
grosse Konzert- und Tanzetablissemments.*

Reichhaltigste Registrierung in allen Tonschattierungen mit unerreichter Musikwirkung. Spielt auch die schwierigsten Kompositionen genau nach Partitur. Spezialität zur Wiedergabe pompöser klassischer Werke, Wagnermusik, sowie jeder Art moderner Konzert-, Marsch- und Tanzmusik.

94 Tonstufen, **Preis inkl. 100 Meter Musikstücke** 12000.—
Musikstücke per Meter 5.—





Walzenorgel.



Konzertorgel.

Walzen-Orgeln

für Karussells, Schaubuden usw.
in bekannter solidester Ausführung und feinsten Dekoration, hervorragend
kräftige, taktvolle Musik.

Sämtliche Orgeln sind mit Schwungrad versehen.

		M.	S.
Nr. 59.	42 Tasten, 4 Register Pfeifen, Spitzflöten, Zauberflöten, Trompeten und Bombardon. 9 Stücke spielend, Walze 64 Takt	750	—
	Extra-Walzen zu	100	—
	Länge 106 cm, Höhe 140 cm, Tiefe 70 cm, Gewicht 150 kg.		
Nr. 61.	47 Tasten, 4 Register Pfeifen, Spitzflöten, Zauberflöten, Trompeten, Bombardon. 9 Stücke spielend, Walze 64 Takt	900	—
	Extra-Walzen zu	130	—
	Länge 115 cm, Höhe 150 cm, Tiefe 70 cm, Gewicht 160 kg.		
Nr. 62.	50 Tasten, 4 Register Pfeifen, Spitzflöten, Zauberflöten, Trompeten und Bombardon. 9 Stücke spielend, Walze 64 Takt	1100	—
	Extra-Walzen zu	160	—
	Länge 120 cm, Höhe 160 cm, Tiefe 80 cm, Gewicht 200 kg.		
Nr. 26.	56 Tasten, 4 Register-Pfeifen, Spitzflöten, Zauberflöten, Trompeten und Bombardon. 9 Stücke spielend, Walze 64 Takt	1300	—
	Extra-Walzen zu	200	—
	Länge 125 cm, Höhe 165 cm, Tiefe 80 cm, Gewicht 220 kg.		
Nr. 64.	63 Tasten, 5 Register Pfeifen, Spitzflöten, Zauberflöten, Trompeten und Bombardon, 9 Stücke spielend. Walze 80 Takt	1600	—
	Extra-Walzen zu	240	—
	Länge 150 cm, Höhe 170 cm, Tiefe 85 cm, Gewicht 280 kg.		
Nr. 65.	70 Tasten, 5 Register Pfeifen, Spitzflöten, Zauberflöten, Trompeten mit Beistimmen, Bariton, Bombardon. 9 Stücke spielend, Walze 80 Takt .	2000	—
	Extra-Walzen zu	300	—
	Länge 164 cm, Höhe 175 cm, Tiefe 90 cm, Gewicht 350 kg.		

Konzert-Orgeln

Forte und Piano spielend, mit Geigenstimmen.

		M.	S.
Nr. 66.	52 Tasten, 2 Register Geigenstimmen, Baß- und Begleitregister, Mixtur dreifach, Trompeten und Bombardons. 9 Stücke spielend, Walze 64 Takt	1350	—
	Extra-Walzen zu	180	—
	Länge 128 cm, Höhe 164 cm, Tiefe 82 cm, Gewicht 225 kg.		
Nr. 67.	56 Tasten, 2 Register Geigenstimmen, Baß- und Begleitregister, Mixtur dreifach, Trompeten, Bombardon. 9 Stücke spielend, Walze 64 Takt .	1600	—
	Extra-Walzen à	200	—
	Länge 136 cm, Höhe 164 cm, Tiefe 82 cm, Gewicht 240 kg.		
Nr. 68.	64 Tasten, 3 Register Geigenstimmen, Baß- und Begleitregister, Mixtur vierfach, Flöten, Trompeten, Bombardon. 10 Stücke spielend, Walze 80 Takt	1900	—
	Extra-Walzen à	250	—
	Länge 145 cm, Höhe 170 cm, Tiefe 90 cm, Gewicht 260 kg.		
Nr. 69.	72 Tasten, 3 Register Geigenstimmen, Baß- und Begleitregister, Mixtur fünffach, Flöten, Trompeten mit Beistimmen, Bombardon. 10 Stücke spielend, Walze 80 Takt	2200	—
	Extra-Walzen à	300	—
	Länge 170 cm, Höhe 175 cm, Tiefe 90 cm, Gewicht 350 kg.		

Figuren, Schlagwerk, Drehsäulen etc. können an jedem Instrumente angebracht werden und werden besonders berechnet.

PAILLARD'S MUSICAL BOXES.



EXPLANATIONS FOR USING MUSICAL BOXES.

Take out carefully the pieces of cork placed at each end of the cylinder, and the pieces of cardboard placed between the teeth of the comb.

TO WIND UP, use Lever marked No. 1.

TO START, pull forward No. 2.

TO STOP AT THE END OF THE TUNE, push backwards No. 2.

TO CHANGE THE TUNE, push back No. 3.

TO REPEAT THE SAME TUNE, pull forward No. 3 while the tune you wish to have repeated is playing.

When not used the box must always be stopped AT THE END OF A TUNE, as otherwise the delicate dampers under the teeth of the comb will be damaged, and the music in consequence be marred by a squeaking and scratching noise. **STRICT ATTENTION IS CALLED TO THIS RULE.**

LOVER.

WARNING TO PERSONS ATTEMPTING TO REPAIR MUSICAL BOXES.

No one should attempt to repair musical boxes unless quite familiar with their construction.

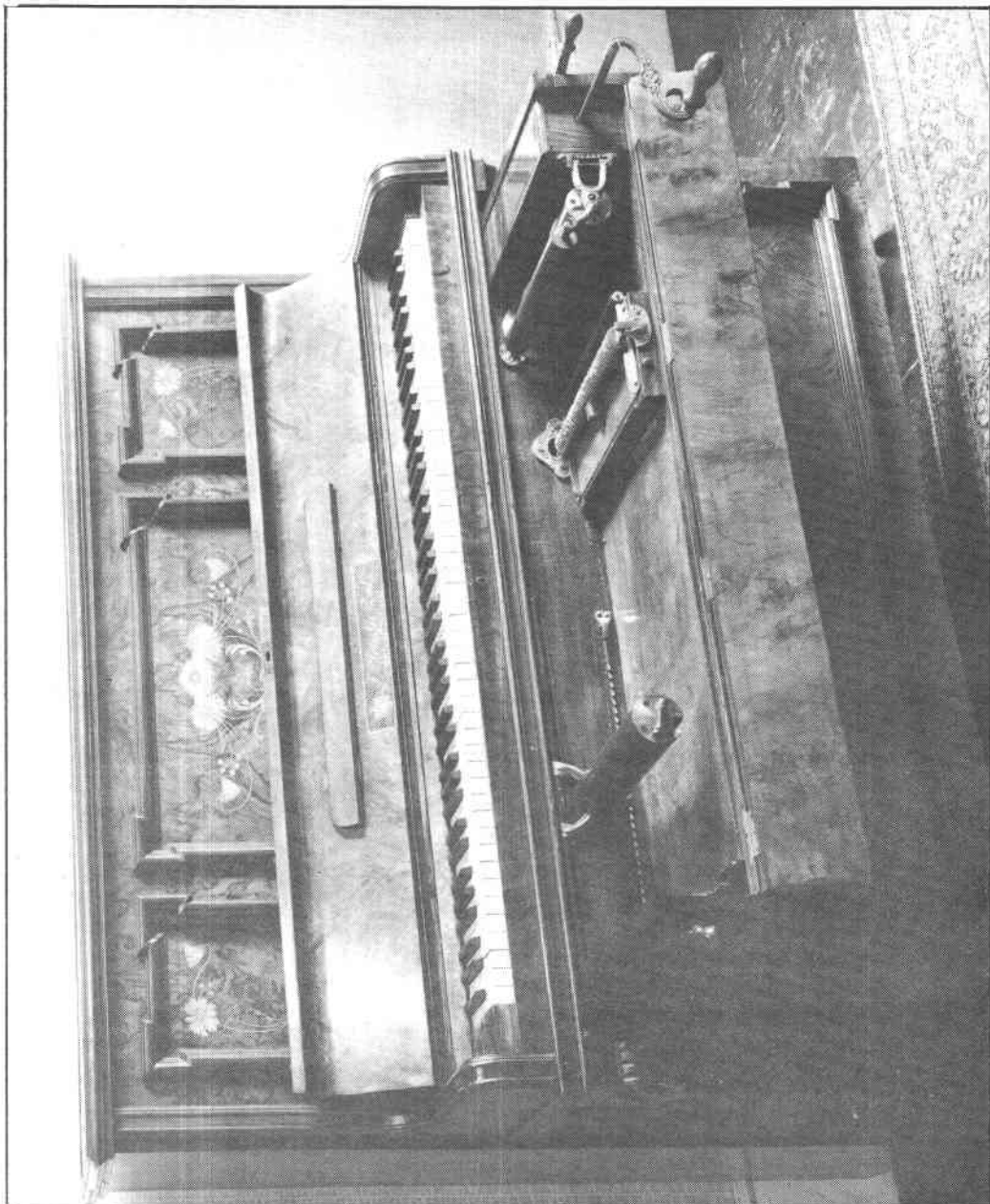
If the box requires oiling, apply a very little of the best watchmaker's oil only, to the thread of the fly-wheel screw and at the top of the same under the jewel.

Before taking a musical box apart, and specially before disconnecting the train from the cylinder-wheel, or even removing the fly-wheel, be sure that the spring is entirely unwound or run down, as otherwise the cylinder being suddenly released would fly off, thereby breaking or bending the pins on the same, besides breaking the teeth on the comb. In the latter case the instrument, if not a total wreck, can only be repaired at a great expense.

Should the musical box positively refuse to play, although wound up, release the spring by the clicks on the winding lever. If this operation is not well understood, it is safest to carefully remove the keyboard or comb before attempting any repairs.

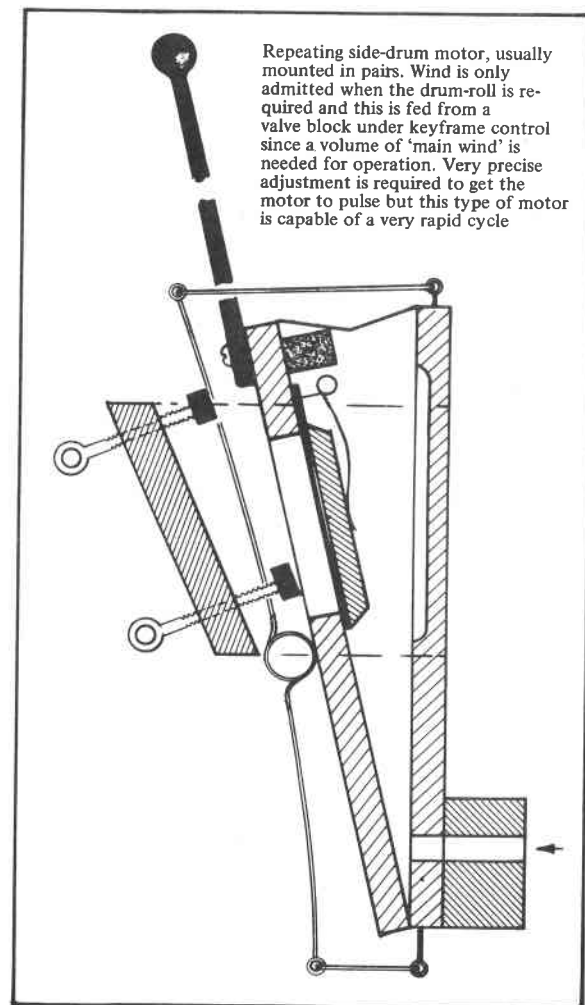
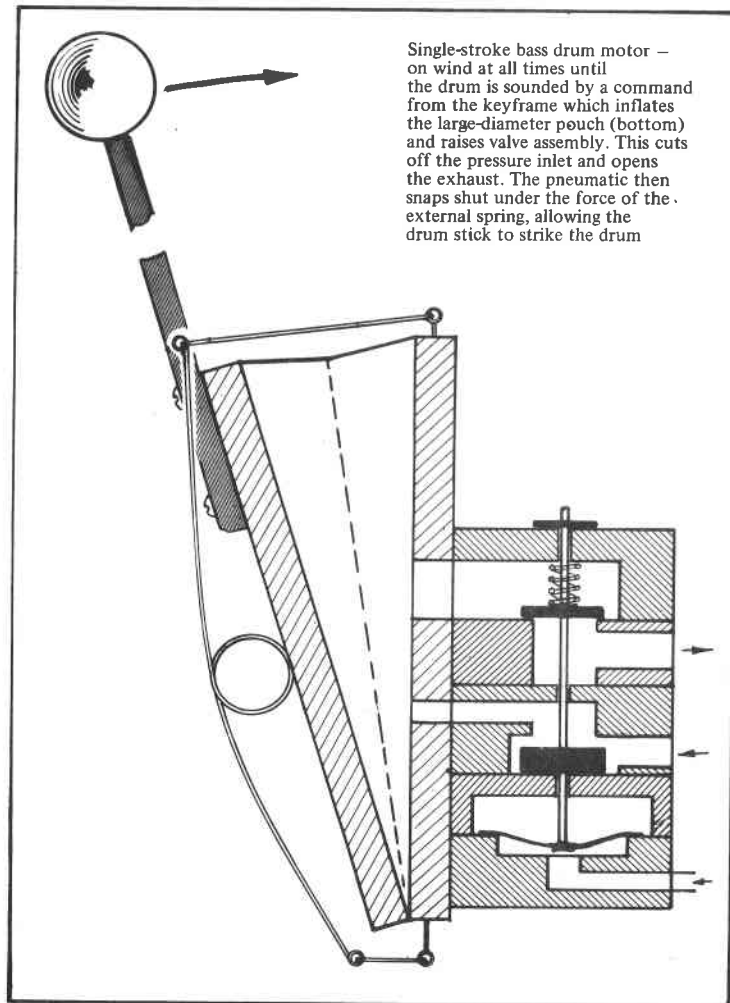
Entered at Stationers' Hall.

LOVER.



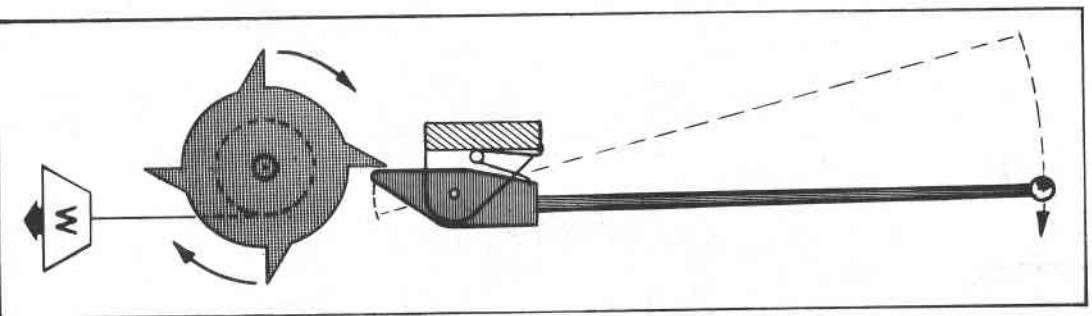
From the collection of The Rev. Jonathan R. White comes these three photographs of an early mechanical piano. The instrument is by F. Geissler of Zeitz, twenty miles south-south-west of Leipzig on the Elster river. Established in 1878, Geissler's address was Schutzenstrasse 13 and Posaer Str. 21. The player is hand-operated and is of the type produced by Hupfeld between about 1890 and the early years of the present century. It had a compass of 61-notes and used rolls of perforated thin cardboard working in conjunction with a mechanical keyframe.



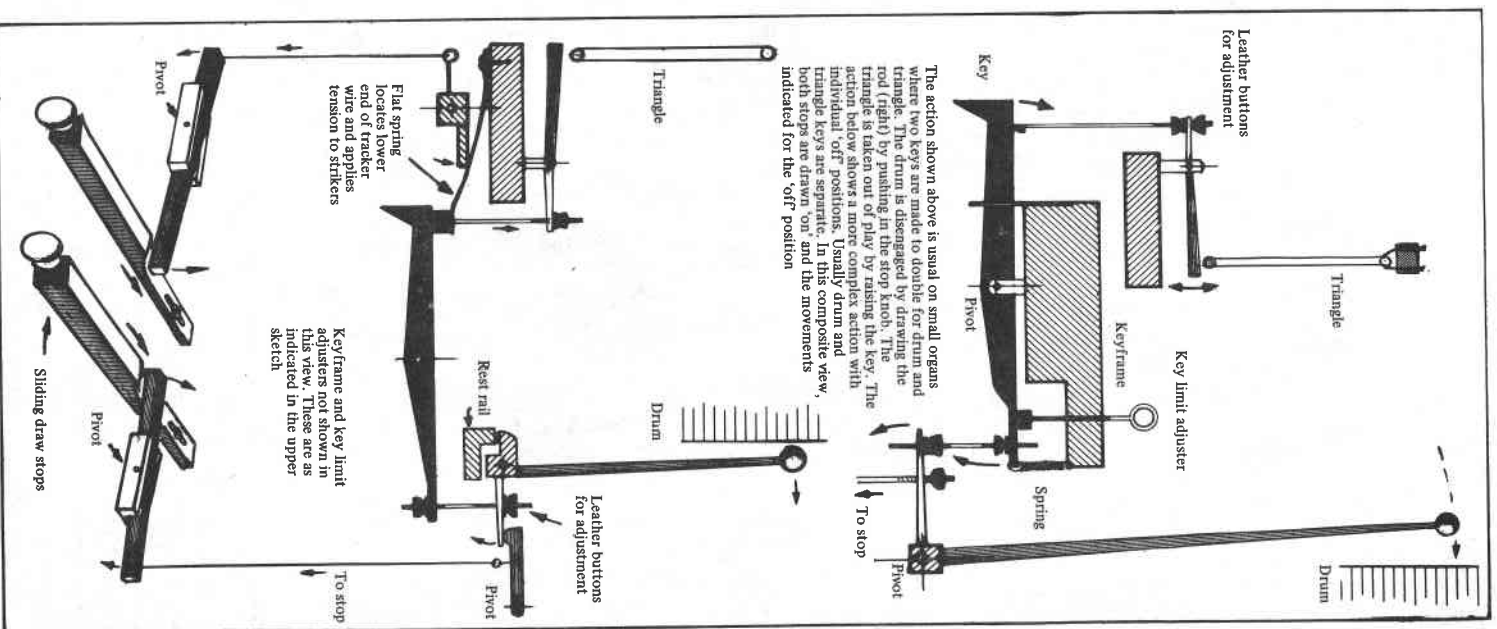


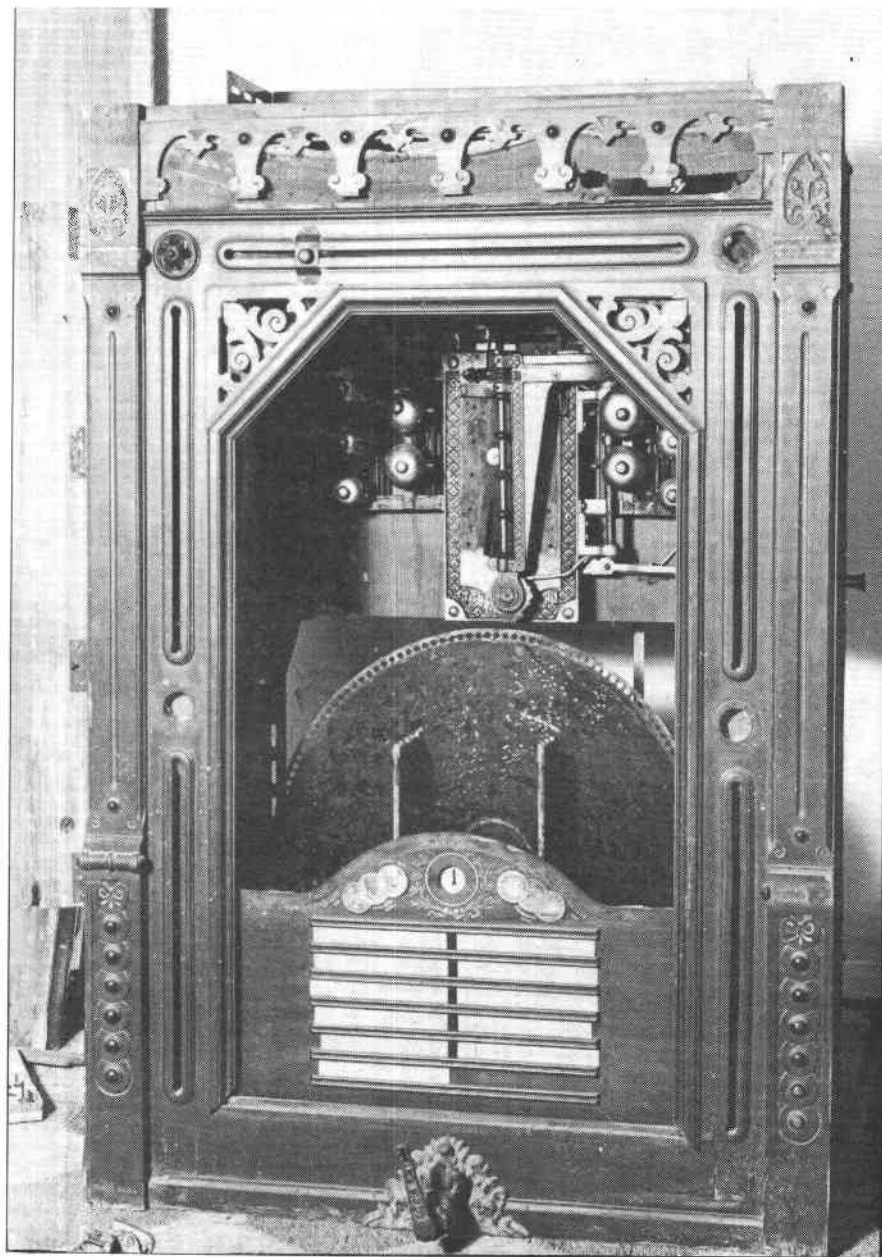
PICTORIALLY VIEWED

Here Arthur Ord-Hume looks at drum-beat mechanisms. Left: Two show-organ systems: single-beat on wind at all times and operated by a pulse of wind in the lower hole; and repeating motor, wound only when required. Below: Orchestration-type weight-operated drum beat. Right: Typical drum and triangle linkages from an English barrel organ.



The action shown above is usual on small organs where two keys are made to double for drum and triangle. The drum is disengaged by drawing the rod (right) by pushing in the stop knob. The triangle is taken out of play by raising the key. The action below shows a more complex action with individual 'off' positions. Usually drum and triangle keys are separate. In this composite view, both stops are drawn 'on' and the movements indicated for the 'off' position



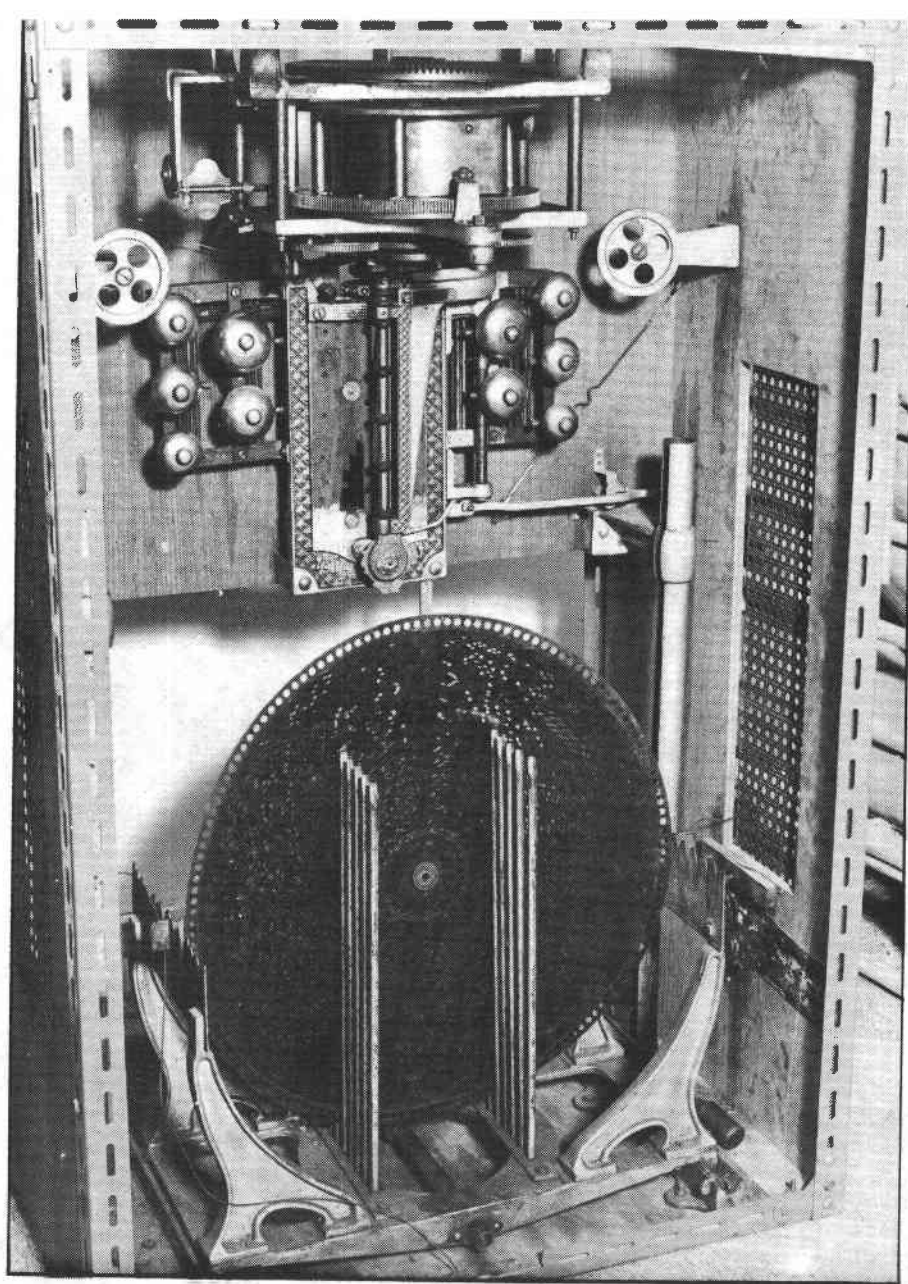


When, almost a decade ago, your Editor discovered the Lochmann patents for self-changing Symphonion musical boxes, and subsequently found an illustrated advertisement showing one (reproduced on page 413 of Volume 3 of *THE MUSIC BOX* and also on page 116 of the book *CLOCKWORK MUSIC*), he commented that so far no specimen had ever come to light.

Lochmann, along with other disc musical-box makers, devised a number of self-changing instruments. The only two which ever entered anything like large-scale production were the Polyphon and Regina models.

Now, a specimen of this undoubtedly very rare Symphonion self-changer has come to light.

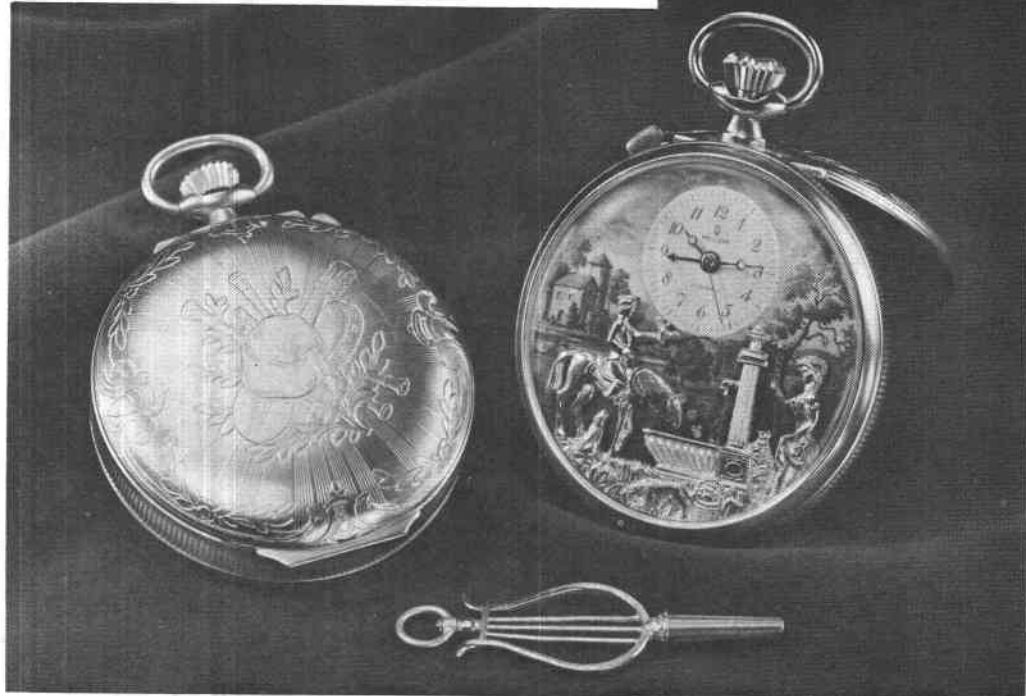
Identical to the style illustrated in the engraving referred to earlier, this specimen plays discs 2½" in diameter, has two-part combs with five teeth to play glockenspiels on each side, and is complete with 16 discs.



The box now belongs to Member John Owen in Hong Kong who sent the two accompanying pictures. The instrument is mechanically intact but the case has been destroyed. It seems that the box was originally found in Jakarta and sold for \$500. During shipping to Hong Kong, the case was extensively damaged, leaving only the front door intact. John Owen says that he acquired it for 'a lot less' than its previous \$500-tag. A temporary frame was constructed using slotted steel angle. This is seen in the pictures which also show the unusual inverted motor and comb mechanism.

Using the illustrations in **CLOCKWORK MUSIC**, John Owen plans to try to restore the instrument to complete perfection. We look forward to publishing further views as repairs progress.

A NEW AUTOMATON WATCH



AT last something entirely new! Well, yes and no . . . The latest product from the House of Reuge in Switzerland is a limited edition of newly-made reproductions of an early musical automaton watch from the collection of Mon. Guido Reuge.

This piece is a copy of a 19th century pocket watch and, says Reuge, represents an outstanding illustration of the way in which the fine arts can be combined with precision engineering.

The case is styled after Louis XVI and is available in three forms — 10-micron gold plated, sterling silver or 18-carat gold. Each watch is numbered.

The back of the case is decorated with a motif inspired by an engraving by Moreau, painter at the Court of Louis XVI and Marie-Antoinette, and the dial was designed by the famous master enameller Carlo Poluzzi of Geneva.

A hinged back to the case, attached to the middle portion of the case, can be opened to about 80 deg., whereupon it can be used as a support so that the watch can be used as a small alarm clock.

The retail price of the gold-plated model is £246; that of the solid silver one is £340. Those interested in the solid gold variant are advised to write for details. The agent for Reuge is our Member W.F. Crossland of Swisscross whose advertisement is carried on another page.

Bill Crossland also advises that he has recently acquired the UK agency for Szalasi rococo-style toys and musical novelties. Made in West Germany, these appear a most refreshing departure from the usual modern line of dolls-house furnishings.

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... And ...

What Great Pianists say of it.

The Pianola is an instrument which enables anyone to play the piano. Its sixty-five fingers perform the same function in piano playing as those of a human being—they strike the keys.

I. J. PADEREWSKI writes :

“ It is astounding to see this little device at work, executing the masterpieces of pianoforte literature with a dexterity, clearness, and velocity, which no player, however great, can approach.”

The Pianola provides the technique, but that is not all, for it allows full scope for imparting expression to the music played. The three levers by which this is done are called, respectively, the tempo, accent, and sustaining lever, and are simple of manipulation.

MAURICE MOSZKOWSKI writes :

“ Anyone hidden in a room near by who will hear the Pianola for the first time, will surely think that it is a great virtuoso that plays ; but after a while he will perceive his error, because your instrument never plays false notes.”

The perforated paper rolls, by means of which the Pianola is operated, bear various printed signs and an expression line, in order to guide the novice or those unacquainted with any particular composition.

HAROLD BAUER writes :

“ There is no doubt that even a person having no knowledge of music can obtain a very good approximate idea of the greatest pianoforte works by following carefully the marks of phrasing printed on the roll, while, on the other hand, it is astonishing how much expression and even individuality a musician acquainted with the instrument will be able to impart to his performances on this wonderful machine-pianist.”



The Pianola makes it possible for anyone to play even the most complex of works with artistic feeling, and the catalogues of rolls prepared for the instrument comprise over 7,000 different selections, including the music of all times and of all countries.



ERNST VON DOHNANYI writes :

"The Pianola is not merely a mechanical instrument. It gives free scope to the individual interpretation, producing every crescendo, from pianissimo to fortissimo, every accelerando and retardando, according to the taste of the player. I am fully convinced that, through these qualities and from the immense literature prepared, it is destined to answer a need in rendering piano literature accessible to those to whom music has heretofore been, for technical reasons, a closed book."

Of other famous pianists and musicians who have written eulogising the Pianola we may mention :

Moriz Rosenthal
Emil Sauer
Emil Paur
Luigi Mancinelli
V. de Pachmann
Jean de Reszké
Siegfried Wagner
Arthur Nikisch
Gustave Charpentier

C. Cui
David Bispham
L. Breitner
Emma Calvé
Teresa Carreno
Johanna Gadschi-Tauscher
Fanny Bloomfield Zeisler
Madame Janotha
&c., &c.

It is not without significance that the Pianola is the only instrument of the kind which has received the unqualified appreciation of so many virtuosi.

The following letter is typical.

JOSEF HOFMANN writes under date April 18, 1901 :

"I promised to write you my critical opinion of the Pianola after I had time and opportunity to thoroughly test it.

"I find that your instrument is designed for reproducing pianoforte literature, and offers facilities for expression that will enable an intelligent player to give a very close imitation of hand playing. I have been surprised to discover to what an extent one can, with a little practice, control the dynamic effects.

"The selection of the music you have published is excellent and very cleverly arranged for the Pianola.

"I think what has impressed me as much as anything is the ease with which the instrument is played. It is simplicity itself. To summarise briefly, *it is my opinion that in all the essentials of artistic piano playing, the Pianola is the best instrument of this type to reproduce the piano music.*"

You are invited to call and have the Pianola demonstrated to you. Catalogue F will be sent to anyone who asks for it.

The Orchestrelle Company, 225 REGENT ST., LONDON, W.

The Pianola is sold at no other address in London.
(Copyright.)

AGENTS IN ALL THE PRINCIPAL TOWNS.

Book Reviews

THE FAIRGROUND ORGAN by *Eric V. Cockayne*.
2nd Edition. David & Charles, Newton Abbott.
239 pp. 8½in by 5½in. illustrated. £3.75.

The splendid work of Member Eric Cockayne, formerly only known to the recondite readers of the Fair Organ Preservation Society's journal, *The Keyframe*, was allowed a welcome wider readership when this title first appeared in October 1970.

This new edition, on slightly thicker and inferior paper, is as might be expected more expensive than its precursor although an increase of only 60p cannot be thought excessive. The illustrations have not reproduced as clearly as in the original.

This is a valuable book for the show organ enthusiast. All the comments in our original review (page 567, Volume 4) still pertain. It would have been nice to have had the benefits of additional knowledge in recent years incorporated, also the bibliography up-dated.

The item on pages 422 and 423 comes from The Strand Magazine of May 1902 in the collection of The Editor.

Early means of mechanising the piano using perforated paper entailed the use of an external machine known as a piano-player which had to be pushed up to the keys. The notices below and on the facing page are all from The Strand Magazine as follows: Cecilian = May 1902; Pianotist (similar to the Hupfeld shown on pages 414 and 415) = May 1902; Angelus Orchestral (combining player with integral reed organ) = May 1902; Triumph = August 1900. From the collection of The Editor.

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Record Review

by Arthur Ord-Hume

MORE MUSIC FROM THE WEST CORNWALL MUSEUM OF MECHANICAL MUSIC. Volume 13 in Say-disc's 'Golden Age of Mechanical Music' series. SDLB 256 (Stereo).

The second disc to be issued of instruments from Member Douglas Berryman's West Cornwall Museum of Mechanical Music (with which Member Graham Webb is now also associated), this is devoted to the sounds of three electrically-driven, pneumatically-operated pianos – each a “piano-plus”. First there is the Weber Unika, then the Kuhl & Klatt Mandoline/Xylophone, and then the Weber Grandezza.

For those to whom these are just strange names, here is a new experience which hitherto has only been available to record collectors on American and Danish records. Douglas Berryman has restored each instrument to a high playing standard and they sound remarkably good.

The Grandezza features a single rank of violin-toned flue pipes and these do sound uncommonly like strings in places. The musical arrangement employs them as a solo voice and in concert and the effect is most pleasing.

The second Weber instrument, the Grandezza, has the added attraction of a xylophone and this type of piano is among the best of xylophone pianos certainly as regards the production of convincing sound. One track, *La Founternelle*, contains a fantastic solo for the instrument as well as some cadenzas which shine out as witness to the subtlety of the musical arrangers.

Established in 1899, Berlin's Kuhl & Klatt partnership produced some fine instruments and the one here is in good fettle. Sadly, it is playing far too fast – *Il Bacio* appears to recall a high-speed peck! Also on this one, the sound engineers have not maintained the delicate balance between piano and xylophone with the result that on two tracks in particular, the piano sounds as if it is in the next room. The later-period Kuhl & Klatts used pianos specially made by Hermann Forster in Leipzig, not just Forster piano actions as the sleeve notes declare.

This is one of the best recordings of these instruments to have appeared and what is more the music selected is varied and interesting.

CLASSIFIED ADVERTISEMENTS

WANTED

FOR SALE

I REQUIRE discs for my 8¼in. Symphonion, 121/8in. Regina, 8in. Monopol and 195/8in. Polyphon, and can offer various size discs for the following makes either in exchange or for sale: Symphonion, Polyphon, Gloria, Regina, Britannia, Stella, Harmonia, Monopol, Amorette, Ariston, Michael Miles, Rock Cottage, Mountfield, Sussex. Telephone 0580 880614.

BOOKS for sale. “The Technique & History of the Swiss Watch” by Eugene Jaquet and Alfred Chapuis. Published 1970, 272 pages, size 12.25 ins. by 9.5 ins. Many illustrations, much about some of the early musical box makers. Marvellous reference work. Brand new in dust-jacket. £5.50 including postage (it is a very heavy book). I have TWO copies ONLY. Write first and reserve. “Jens Olsen's Clock” by Otto Mortensen, published Copenhagen, 1957. Magnificently illustrated book (in English!) describing a remarkable astronomical clock inspired by the Strasbourg clock and which took a lifetime to build. New in dust jacket. £4.00 post free and again I have only TWO copies. Arthur Ord-Hume, 14, Elmwood Road, Chiswick, London, W.4.

URGENT VACANCY

Your Editor urgently seeks the services of an Honorary Advertisement Manager to assume full responsibility for obtaining advertisements, for liaising with advertisers about copy and for assisting in preparing advertisements to magazine needs. The job calls for a certain facility in correspondence, some telephoning, a reasonably average brain and the ability to use it. The advertisement manager does not have to reside in London area, although this would be helpful. No travelling is involved, nor is the task arduous. It would considerably ease the burden of your Editor if anyone who feels he or she would like to take on this work would volunteer fairly quickly. Write (or telephone) to the Editor (address and telephone number on page 381).

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Q. David Bowers

Claes O. Friberg

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We invite you to subscribe to the MMM "Review", a large illustrated magazine offering instruments for sale, articles, and other news of interest and importance. A sample copy is yours for 80 pence, or you can subscribe to our next six issues for four pounds. Your complete satisfaction is guaranteed. If you do not find this the most fascinating catalogue you have ever read then just let us know and we will refund your money – and you can keep the catalogue free of charge!

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OBITUARY

ERIC ROBINSON

Eric Robinson, musician, band-leader, conductor and television personality, died on July 23rd, 1974, at the age of 65. He had been unwell and in semi-retirement for several years.

Many Members will recall Eric Robinson's entertaining speech when he was guest speaker at our annual dinner on May 17, 1969 (see page 108, Volume 4, THE MUSIC BOX).

For the musical box world, Eric Robinson will best be remembered for his enthusiastic and enterprising collaboration with our Member David Nixon in several of his memorable *Music For You* and *Eric Robinson Presents* television programmes where he conducted the BBC's Television Orchestra in accompaniment to discs played on David Nixon's Polyphon. This was no mean feat and required considerable dexterity to conduct a large orchestra while at the same time allowing the Polyphon the kudos of being the solo instrument and leader.

In the year of his address to the Society, he was awarded an O.B.E. We extend our sympathy to Mrs. Florence Robinson (who drew our raffle that year) and to his family.

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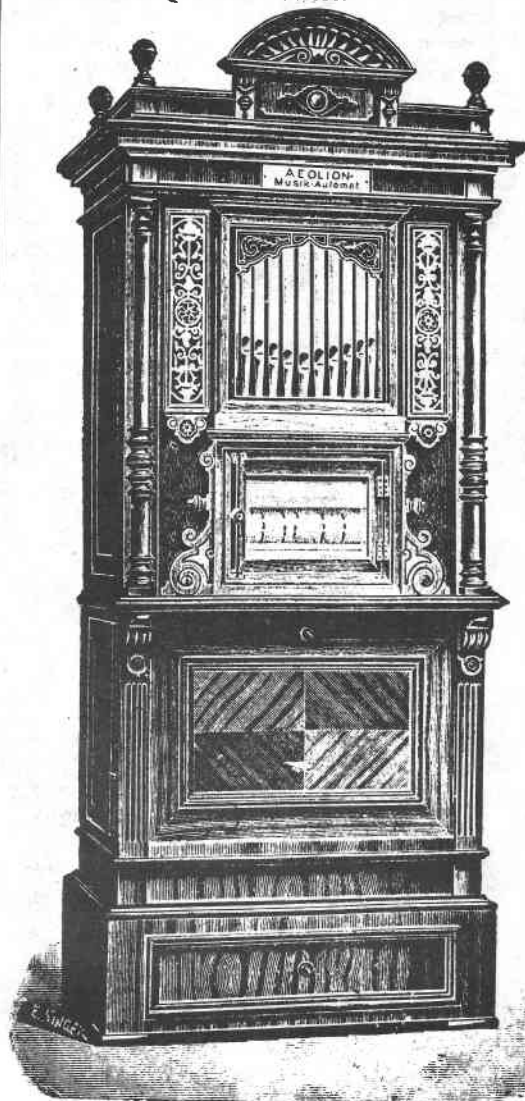
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AEOLION

Not a mis-spelling of the famed piano and Pianola maker, but the name given by Hupfeld to the attractive pneumatically-played, paper-roll-operated organ seen here. The Aeolion Flute Orchestrion stood about eight feet high, and played one hundred pipes. It was known as the Style 161. This instrument dates from around 1898-1905. The illustration is reproduced by courtesy of Member Q. David Bowers.



Letters to the Editor

Member K. G. Parrott of Rugby writes:

Has any member any suggestions as to the identity of maker (or agent) of a six-air cylinder Hymn Box? The tune sheet has a lyre, surmounted by a plain cross



and enclosed between two branches of leaves and berries, at the centre top. The border has a motif of leaves and at the top "Fabrique de Geneve". An open area in the bottom border contains the number of the box written in ink, and also stamped in blue the letters A.W. These are not in an oval as on Thirbouvill-Lamy boxes imported by A. Woog. The style of the letters is

A.W.

On the underside of the box, together with the box number is a symbol apparently stamped on in black ink.



On the great wheel is stamped a symbol (drawn several times actual size)



On the comb bed are numerous tuning marks, groups of teeth being identified by symbols



and



Are these typical where the bed is marked with other than just lines marking the groups of teeth tuned to the same note?

CASE CLUES

by H. A. V. Bulleid

AMONG uncommon features on a Baker Troll 16 inch cylinder musical box No. 15546 acquired last year were:—

1. Inner line of stringing on lid and front with quadrant corners. (usually plain rectangles)
2. Case lid with brass and mother-of-pearl decoration. (usually wood inlay or transfer)
3. Leather lifter for glass lid. (usually fabric)
4. Mechanism screwed to blocks in case. (usually bolted through front and back)

These aroused interest because all four occurred also in an 11 inch cylinder box No. 15079 already to hand which had no tune card nor other evidence of its manufacturer.

One could not take these four clues as conclusive proof that the cases were of the same make; and even if they were, one could not assume that therefore so were the mechanisms. But when given such good clues one has a duty to look for more, and here the further look was rewarded.

Very faintly, from much fingering, one could discern an embossed monogram on the leather lifter of the 11 inch box, and it was duly deciphered thus



Yes! This was the Baker Troll monogram, clearly and identically reproduced on the tune card of the 16 inch box, — though not embossed on the leather lifter of this box, possibly because it was sold after Troll left.

There are no details contradicting the probability of these cases and mechanisms coming from the same source, and further corroborative details are the matching serial numbers and that they have identical scutcheons for stop/play and change/repeat. And so, given the mechanism maker's monogram on a detail of the case, it seems fully reasonable to ascribe the mechanism to that maker.

IMPORTANT NOTICE TO ALL MEMBERS

Pressure of business has resulted in an enormous backlog of unanswered correspondence for which your Editor apologises. Furthermore, the planning of major items in the magazine is undertaken several issues ahead and for this reason some major contributions may not appear for several issues. It is stressed, however, that the sooner Members send in their contributions, the easier it becomes to complete the necessary forward planning.

Keith Harding

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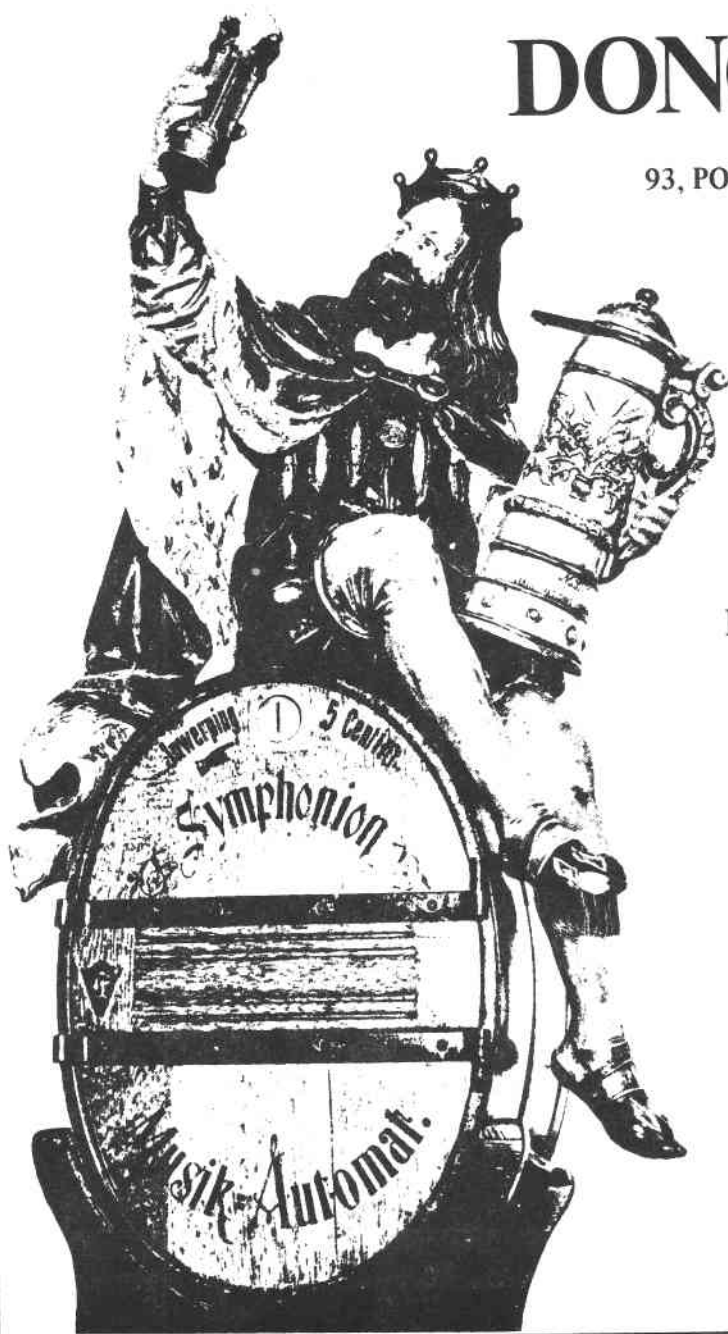
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