THE MUSIC BOX

JOURNAL OF

THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

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THE EDITOR WRITES:

With this issue we have published for the benefit of all lovers of mechanical musical instruments some 520 pages of which 192 appeared in 1965. We have reproduced two complete catalogues and a major extract of catalogue material, presented much 'new' material and spread a considerable amount of knowledge. This is quite an achievement to which all Members have contributed in order to bring to fruition this, your Journal. I was once told that it would be difficult, if not impossible, to sustain more than a few issues the size of our first issue - a mere sixteen pages! This we have together disproved - our last issue alone had 56 pages! There is much ground as yet still untouched in our quest to unravel and display the 'golden-age' of mechanical music. Among the subjects upon which I would like to receive contributions are (a) the introduction of drum, bells and zither to the cylinder box; (b) the history of the player piano; (c) the story of the fair organ, in particular the Dutch organ; (d) the history of the Orchestrion; (e) automata of various types. This is naturally but a few suggestions at random so, to those of you with knowledge at your fingertips, please try to help.

★ SOCIETY MEETING

Twice a year we all get together and the next Society meeting - our Third Annual General Meeting as well - will be on Saturday, May 7th. The

venue is as before - Berners Hotel, Berners Street London, W.1. In response to many requests, the meeting is to be a two-day affair, continuing on the Sunday morning with a workshop session. We think that this is a great opportunity to spread practical knowledge to not-so-experienced Members and a programme of events is being arranged. Full details will be circulated by our Secretary within a short while and not only do we hope to meet all of our Members there but we hope that as many as possible will be able to attend the Sunday.

★ THOSE LITTLE PEOPLE AGAIN

At our last meeting somebody said, disparagingly, something to the effect that, judging by my editorials, I must have some pretty rummy experiences and think some warped thoughts.

Accostomed to accepting the fact that true life is so much funnier, sadder, exciting and curious than the most ardent efforts of a budding fiction writer, my mind went back to an odd experience I had not so long ago. Gerry Planus had been telling me about the fairies in his garden - you know, the ones he keeps writing about. This coming from a fellow his size in the environment of a 20th century drawing room complete with slimline television set in the corner, didn't wash with me for one moment. Mad, I thought, and dismissed it from my mind without so much as a how's your father.

Some weeks later - about Christmas, I think, I was shuffling through the woods near my old home in Pinner in the county ministered by Squire Tallis and his Merry Band of Repinners. I was thinking of my early days as a mean, dirty little schoolboy and remembering the time when I caught a field-mouse to give to the girl of my heart as a token of love. She, being a fickle seven year-old, promptly left me for the dubious charms of a spotty lad who, it seemed, spent his life in perpetual occupation of a nearby railway bridge jotting down the numbers of passing locomotives in a grubby notebook. I pictured them going through life together in a tent on the bridge, their every hour being periodically flushed with clouds of black smoke, a growing stack of books of engine numbers by their sides. Such is the mind of an eight-year-old. However, back to the story.

I was shuffling through the leaves and looking up at the snow-laden clouds above when I heard the delicate tones of a Super Grande Format Overture Box playing 'Acis and Galatea'. Odd, I thought. Never heard that on a box before. A mile into the depths of the forest, too, where the light of day seldom penetrates save at the epogee - and here a musical box of unquestionable tone and quality. I altered course through the undergrowth in the direction from whence came the sound. A little clearing in a natural grotto of rhododendron bushes and silver birches opened before me. A sparkling silvern stream merrily sung its way down one side. And there, in the middle, large as life - well, as <u>small</u> as life, were the fairies. About that high and so wide, they were, and all bright and colourful and dancing round and round. There were dozens of them and piles of wonderful musical boxes all playing the same wonderful music in resounding unison. In the centre of the miniature melee, dressed in green and red velvet and with pointed pixie shoes, was Gerry Planus with a broad, cherubic smile on his face. The music was everywhere and the glade was lit with a glow of happiness and well-being. I sank to my knees and watched in awesome delight as the little fellows whirled and swirled faster and faster, sending the carpet of last summer's leaves into eddies behind them. And still Gerry sat there, smiling and making Vaticanian genuflections. And the music of a past age played - cadence and chord to the open skies.

Suddenly, quite suddenly, the whole scene began to fade away. The music hung momentarily on the air and then stopped. Gerry dissolved slowly, from the feet upwards, until just his grin remained - and then that, too, dissolved. The sparkling stream slowed and became muddy, and the musical boxes disappeared. A rogue zephyr of cold gently rustled the leaves and the first flakes of snow began to fall. There was now no sound on the winter's air save the distant mournful mating call of a love-sick diesel locomotive trumpeting to an unseen, unknown partner on icey steel tract. I felt my knees getting wet - I was kneeling in mud. I got to my feet, shook myself - and decided there and then never to tell a soul what I had seen. You're the first person I've ever confided in....

★ THE NEVARD COLLECTION

Winter was in full fettle the day I motored into Colchester - Bill and Betty Nevard's territory. Succinct directions (which were absolutely correct in every detail!) from a beer-sodden 'local' who was propping up a four-ale bar in town led me the few miles through the Essex town's winding environs to the Nevard homestead. Their fine modern home is jammed tight with musical boxes. In his eight or nine years of collecting, Bill has amassed a large selection of quality boxes of all types, shapes and sizes.

Suspicion that his job as a surveyor for a large brewery might have facilitated his collection were soon corroborated! A huge 17¼" Britannia

whose case is almost as big as that of a 24½" Polyphon, was rescued from timeless abandon having spent its working years in an Essex inn only to be wheedled out by Bill. Even so, a massive rebuild was necessary and the case has been magnificently restored to new condition.

Standing tall and clean and displaying a fine original patina, is his 'Raby' Polyphon, formerly forming part of the furnishings of the library of the Countess of Chesterfield. Its twin combs are fitted with zithers - the first I have seen on a 19⅞" model.

Other disc machines include a 14" and 17¼" Stella, 11¾" Imperial (this has a Britannia baseplate but the name and the Star Silver Depot address has been ground off), 24⅝" Lochmann Original with dulcimers, 27" table Regina, sundry Polyphon specimens and among these a 19⅞" Autochange Polyphon.

Cylinder boxes abound, table Nicoles a-plenty but two of great interest are worth special mention. First is a desk-style Nicole, richly inlaid and standing on deeply-incised barley-sugar legs and having six cylinders contained in a drawer on the top of which is a writing blotter surface. The serial number of the box is 45,773.

The second one is again a six-cylinder interchangable, this time a Bremond. The desk is very small, resembling a short square piano. Acquired from the famous A.J. Symons collection (mentioned in Clark), the box and its desk are extensively inlaid with brass strip and richly-coloured enamel. Among other tunes, it plays a continuous selection from Il Trovatore.

Another box from the Symons collection is a Bremond hymn box fitted with an ingenious third lever on the plinth to select tunes. All this does is to lift the change finger on the snail and it is not original.

". . . and playing 'Greensleeves' at 90 bars a minute."

Dwarfed by a huge Edwardian long-case clock which chimes, uncompromisingly enough, on vast chromium tubes at the slightest inclination are two very large Mojon Manger interchangable cylinder boxes and a table-mounted Cuendot. I have not seen one as big as this before by this maker and believe it may be a 'custom-built' example.

Great loving care and attention has obviously gone into the preservation of these boxes and, whilst the 19⅝" Poly (which had developed one of those embarrassing faults that only manifest themselves in demonstration) repeatedly changed, played and rechanged the 'Hymn Osterreich' until manually prevented from continueing, Betty Nevard showed me her <u>own</u> box - a 4-air David Lecoultre which turned out to have been a peace offering after an expensive musical box collecting jaunt by Bill.

As a parting shot, Bill revealed his broom cupboard - a highly inappropriate name for a cupboard that turned out to provide a good home for one hundred and forty odd 19⅞" discs and then led me to the 24½" Polyphon, banished in all its glory to the spare room!

It gave me something to think about during the drive home.....

★ THE END – DON'T TRY IT!

Seen that charming cartoon in the back of the Jacot repair manual? The one which shows a frightened wallah in a winged collar wondering why the dickens all the teeth and pins are flying off his box? Well, I thought I'd try it for a laugh. There was a very old scrap box I had, you see, and I wanted to see what really would happen. I put it on the table, wound it fully, and then reached across and snapped the endless with a pair of pliers. In a flash I realised why the Jacot character was a-wearing a bow tie. I had forgotten to tuck it into my shirt and now it was too late. For two hours I lay with my face firmly wedged in the box, gasping for breath, until the window-cleaner spotted me through his clean patch on the glass. Fortunately for me, he had been a Boy Scout and he had one of those penknives with a thing for taking horses hooves out of car radiators and, in a flash, I was free! The experiment? Disaster! It was such a nice tie, too.

★ FORWARD INTO THE PAST

My word, this Twentieth Century is marvellous to live in, isn't it! My paper says that plans for the London of the future include the abolition of buses and the introduction of a revolutionary systen comprising wheeled vehicles which will rush passengers along twin tracks in the centre of the road. Funny, though. I thought the Victorians had things like that which they called trams.

ARTHUR W. J. G. ORD-HUME

THE FRENCH ORMOLU MUSICAL CLOCK

by LIEUT. COL. JACKSON FRITZ

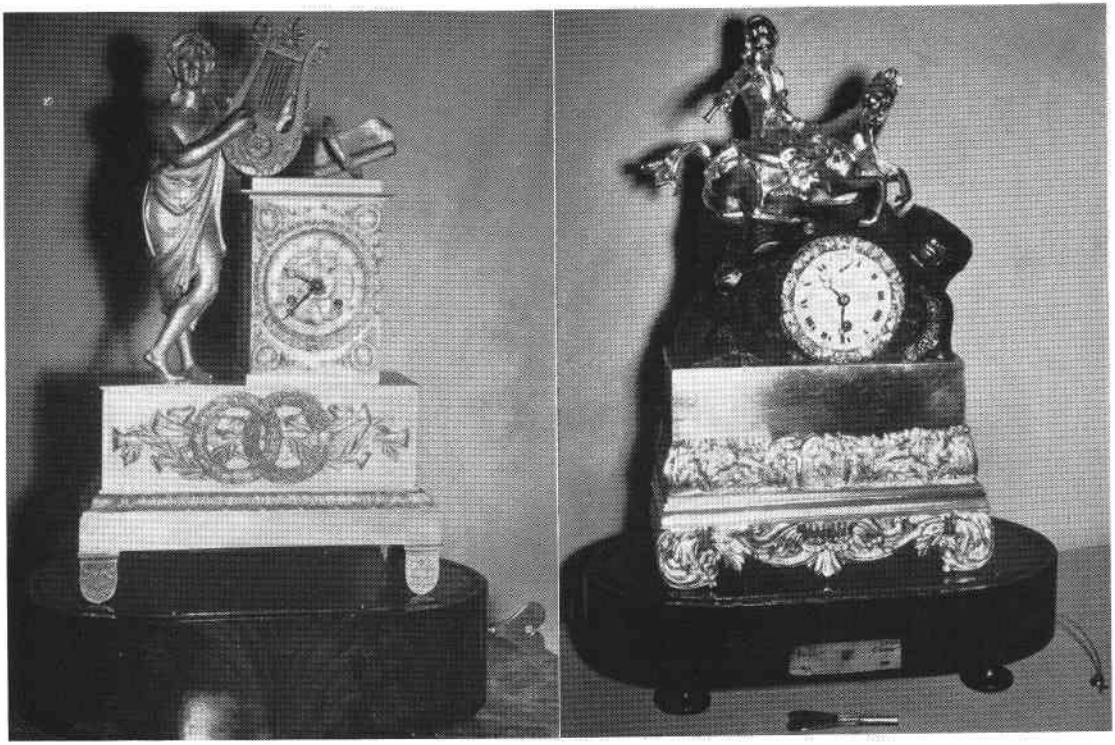
By 1820, an appetite for 'boxed' music was becoming instilled in the growing European middle class society and such capable makers as F. Alibert, Bordier, F. Nicole, R. Nicole and H. Capt were all striving to satisfy the demands of this new and lucrative market.

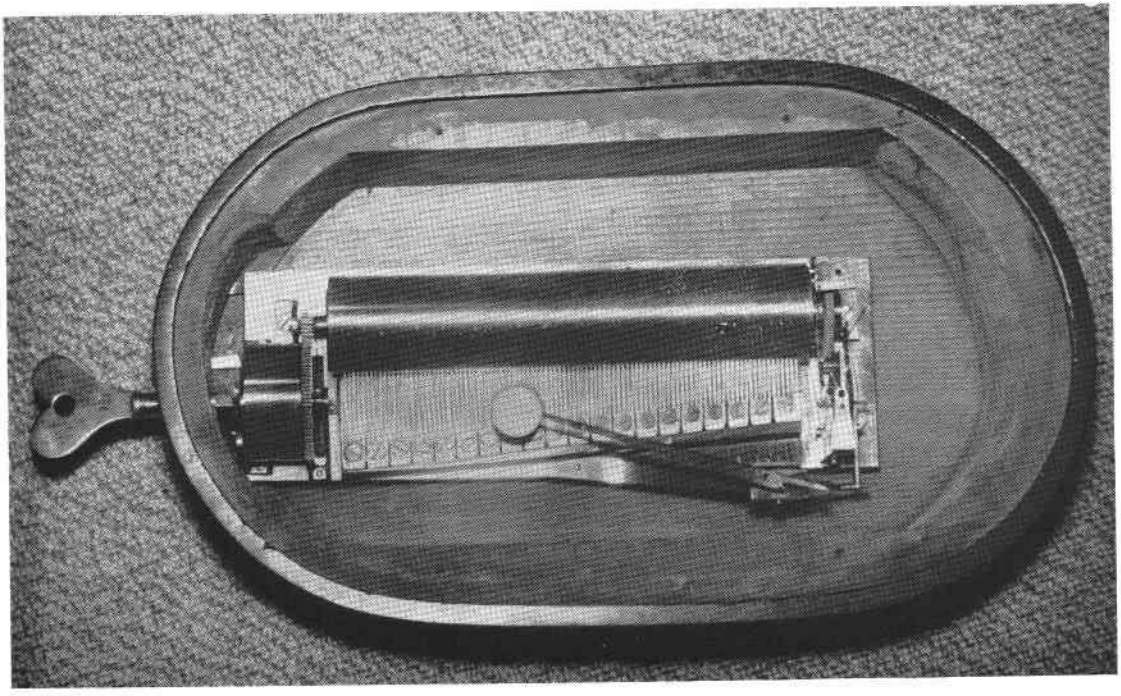
The small two-air cylinder movements with laminated combs were becoming strikingly similar in design, resulting in a product which could be turned out more cheaply and with substantially less effort. The greater bulk of these movements were being fitted into snuff-boxes, workbox and jewelry cases - much of this work being accomplished in Paris workshops.

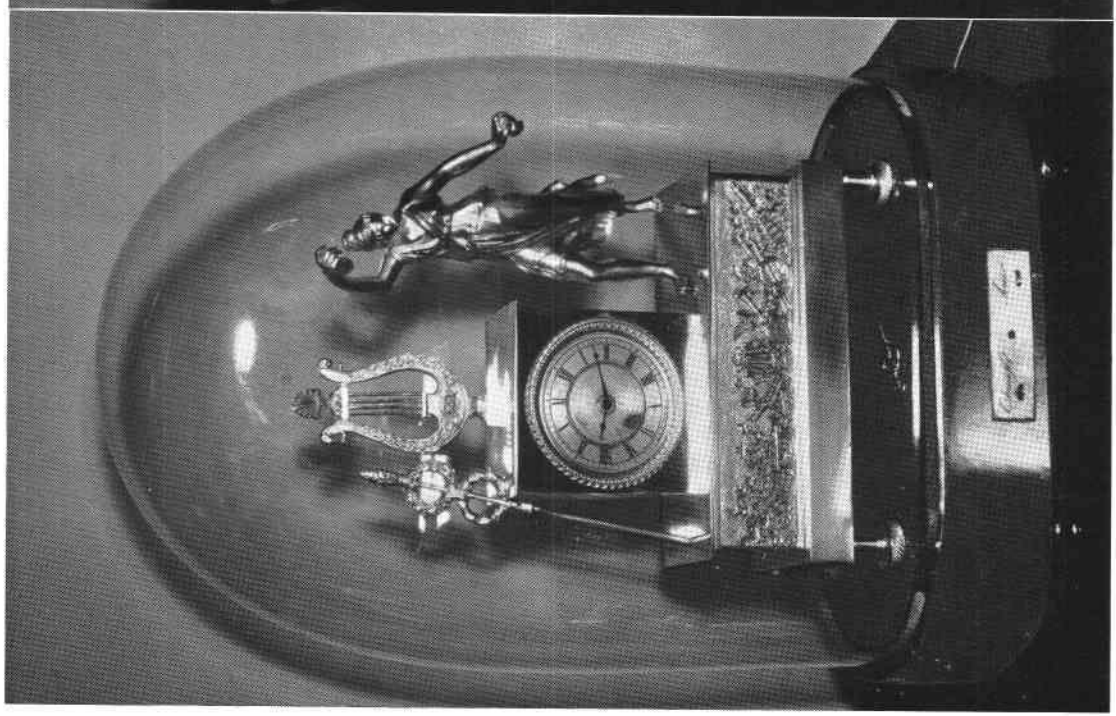
For many years before the advent of the musical box, the French had excelled in the manufacture of delicately ornate ormolu clocks which they made in many shapes and sizes. They were ornamented with figures or motifs of a classical or military character, were mounted on flat, oval wooden platforms and were covered with glass domes to protect them from corrosion and dust. By 1850, thousands of these handsome clocks had found their way into fashionable parlours throughout all Europe.

Perhaps Francois Alibert, who by 1820 was making both clocks and musical movements in Paris at 10, Rue J. J. Rousseau, was the first to conceive the brilliant idea of combining the two. To adapt one of the ormolu clocks to include music, it was but necessary to fabricate a hollow, oval wooden base into which a musical movement could easily be mounted. The clock could then be placed upon this 'music box' and the glass dome fitted neatly into a narrow groove encircling its top outer edge. Whether in fact Alibert should be given credit for this marriage is certainly a subject for further enquiry. However, his role as a producer of numerous clocks of this character has been firmly established. Others who became identified with this early musical box trend were Bordier and Henri Capt and in all probability examples of these clocks containing movements by F. and R. Nicole and D. Lecoultre have also recently come to light.

In the early days most of these clocks were constructed so that the music was operated independently from the clock (much as if the clock had reposed on an oversize snuff-box). Musical movements installed in the smaller clocks of this type were indeed identical to those employed in the snuff-boxes, sewing kits and jewelry cases of the period. However, the







undersides of these movements had to be fitted with extra long brass control levers in order to reach through the front centre of the larger cases into which they were installed. On the front of the case, the levers were almost always framed with a rectangular inlay of Mother o'Pearl into which were engraved over the levers the words 'Changer' and 'Jouer'.

The oval cases were veneered with the finest grains of matched rosewood or mahogany or in patterns of burr walnut or bird's eye maple, and they always stood on squat, round wooden feet. These larger cases helped to impart greater resonance to the music and to enhance materially the bass notes.

From the right end of the case was extended a gut or cotton cord and it was by pulling on this cord that the musical box was wound up. As the music played, the cord was slowly pulled back into the case. This was accomplished through an automatic winding of the string around the outer edge of a brass wheel under the bedplate which was attached directly to an extension of the spring arbor. Thus the unwinding of the spring wound the cord (and vice versa) and this same method of winding was later utilised in the French figure automata for over half a century.

Some of the larger clocks required correspondingly larger musical movements to match. These larger movements played four airs and were key-wound, the key being inserted into the right end of the case rather than into the left as was customarily the case on the early cartels of the period. To wind from the right it was but necessary to instal the movement in reverse position in the case. the cylinder being towards the front. Under the keyhole was mounted a brass plate, through which protruded the three control levers. The lever used to stop the music instantaneously was at the back and over it, in the brass, was engraved the word 'Silence'. Since these larger clocks were fitted with an attachment which actuated the music hourly or quarterly, the silence lever may have been of practical value in stopping the music quickly at times when it may have been an annoyance. However, in the case of the cartel, instructions to the owner most always advised that the instantaneous stop lever was for use only by the repairman in making adjustments to the music.

In the 'automatic' musical clocks, there were various ways of starting the music. In one arrangement, a metal rod, hanging down from the clock, passed through a hole in the musical box case and, when tripped by the mechanism, dropped upon a metal pallet poised over the musical movements. The pallet, in turn, on being depressed, lifted the brake and released the escapement by means of a counter-poised extension arm. As the music played, the rod was withdrawn upward by the clock and the pallet resumed its original position at the end of the tune.

From the beginning, these clocks must have been good sellers as the customer could indicate his choice in clock design and then select a base which contained the music which pleased him. The two units were then combined by the merchant to comprise the complete clock. At first the designs of the clocks were not necessarily tailored to compliment the musical component below, but gradual changes ultimately led to clocks which displayed figures in attitudes of the dance and of performance on musical instruments. Likewise, used in tabloid bas-relief across the front of the clocks were designs of musical horns, banjos, flutes, pipes, tambourines and, most frequent of all, that symbolic embodiment of all music - the lyre.

Although many examples of these interesting and beautiful clocks are to be met with today, unlike the automatons, very few seem to have survived with the glass domes intact. Obviously, in too many cases, the frequent and continuous removal and replacement of the domes to accomplish winding of the clock ultimately led to the careless slip. As in the case with the Author, some readers unquestionably at the present moment are proudly displaying among their collection, a domeless - and dusty - ormolu clock.....

ILLUSTRATIONS Page 197 (top) French Ormolu Clock with musical movement in base. Cylinder is $7\frac{7}{8}$" long, laminated comb in groups of 20 segments has 100 teeth. Movement is by Henri Capt, circa 1820. (top right) As above, two-air circa 1830, wound by cord. Comb in 18 sections. (bottom) Detail view of the Capt movement in first picture. Name stamped on comb base. Page 198 (top) 'Organ Grinder' clock, probably German, c. 1890. Plays one tune each hour automatically, figure turns crank handle. (bottom) French Ormolu Clock, c.1830, by Alibert. Musical movement by Bordier, $2\frac{1}{2}$" cylinder, 2-airs, 17 sections of 4 teeth in comb. Clock complete is $14\frac{1}{2}$" high x $9\frac{1}{8}$" x $5\frac{7}{8}$".

RECORD REVIEW

by A.O.H.

Before dealing with some new records, we must look first at a disc, already several years old, which is of unusual interest. The Blackpool Tower Orchestrion is the instrument featured on "ORCHESTRION ORGAN" (Decca LF.1310 Mono), a 10" LP. Probably the most famous - certainly the most well-known - of the breed of giant Imhof & Mukle orchestrions, this was built circa 1879 and was installed at Blackpool Tower Ballroom. About 1915 it was converted to a fully-pneumatic Wurlitzer action and now, in place of large barrels, it performs from perforated rolls.

Subsequently removed to Birmingham Museum and enthusiastically restored by the Curator and his staff, this fine instrument is frequently demonstrated to museum visitors. The record gives us six pieces from the extensive repertoire of the organ including a selection from "The Bohemian Girl" whose beautiful music is unheard today - even "I Dream't That I Dwelt in Marble Halls", once so popular in the repertoire of the family baritone, has faded. The unusual tone of the organ created by its spectacular reed resonators of polished brass is accompanied by a surprising characteristic. The organ plays consistently sharp in its solo upper registers. This is lamentably noticeable in "The Bohemian Girl". Also most pronounced in this selection is the orchestrion's characteristic of borrowing from itself. Whilst there are three full stops of pipes, the other three 'full' stops are partials and there are two mixture stops. Thus there has to be a certain amount of borrowing from other stops in particular on the tenor flute, for this is a short register. This is a unique record and is the only available disc of the once great family of giant barrel organs. It is thus even more to be regretted that it could not be in tune for the recording session. Recorded in the present environment of the instrument, there is a pleasant concert-hall depth to enhance the performance as does also the very slight mechanical noise. The excellent programme notes - a wealth of detailed technical information here for the fastidious organ lover - ends by saying that the organ has been tuned to British Standard 512 cycles middle C. Ironically enough, C is correct!

Holland, particularly Amsterdam, is the home of the Drehorgel or street barrel organ. These large and colourful instruments, "dripping with rococo decoration", are as much a part of the street scene as are the dafodils and windmills of the country as a whole. Decca's "Dutch Barrel Organ" (DFE 6406) is a delightful 45 r.p.m. disc which starts with the 'classic' "The Windmills Turning". The set up of the music is fine and one cannot but admire the superb pinning on the barrels of these unique instruments for, as distinct from the fair organ which plays the book-type music invented by Gavioli, the Drehorgel is a true barrel organ. Furthermore, unlike the English barrel organ, the Drehorgel also features reed stops which add an accordian-like Continental charm. This is real atmosphere music conjuring up not only the Dutch summer streets scene, but the zest for the gay, the carefree. Definitely a 'pop' hit and something very new for the mechanical music enthusiast. How nice, also, to find the programme notes intelligently compiled with a correct definition of the title!

On the "Ace of Clubs" label, Decca ACL 1124 (Mono) gives us a full 12" LP of the famous Hooghuys Carousel Becquart. "Mammoth Fair Organ" is real rounabout music, rumbustious, bright and cheerful. The programme of ten tunes (each side, by the way, starts with a splendid loco-type hoot) includes favourites by Strauss, Waldeufel, Soupe and the inevitable Sousa. The music has been specially arranged for the instrument by Mon. Schollaert whose efforts at transcribing music to the paper rolls bely not only a great musical skill, but an often whimsical appreciation of the compass and sheer ability of this ungainly roundabout organ with its fantastic gallimaufry of flues, reeds and percussion including a glockenspiel chorus. I still marvel at the incredible 'triple tongueing' staccato which this organ so effectively produces. Two of the tunes we have already heard on DFE 8594, the 45 r.p.m. 'sampler' but I particularly likes the delicate performance of Suppe's overture "The Beautiful Gallathea" from the more serious side of the programme. This disc is a delight and makes representative comparison with the "Mammoth Gavioli" disc, reviewed earlier.

Now having published three fairorgan discs having the word "Mammoth" as the first in the title, thus, one feels, creating confusion in the camp at all levels, Decca strikes again with "Mammoth Gavioli Fairground Favourites" (LK 4687 Mono). George Parmlee's great organ is by now well known. Obviously spurred with the success of the other two discs of this instrument, Decca's latest effort is essentially a "pop" disc, cramming eight tunes on one side and no less than fourteen - admittedly in three bands - on the other. We have "Knocked 'em in the Old Kent Road", "Down At the Old Bull and Bush" and the "Beer Barrel Polka". This record offers more palatable music to those who don't like Suppe and Balfe on the previous discs. Maybe this is a hark back to the true traditional fairorgan music, but I, for one, prefer the majestic sounds of the serious side to these fine machines.

Collecting GOLD & SILVER MEDALS

Why do people collect? A psychologist, in a recent wireless broadcast, alleged that it was an egotistical desire "to have a little part of the world under your thumb. We were not told whether he himself collected anything - other than a large fee for that succinctly worthless statement guaranteed to set every collector up in arms.

But why do we collect things? One reason is that to collect intrinsically valuable items is a form of investment. In no other form of investment open to the small man can he be so certain of a definite and often large interest over the years than by collecting wiself objects of a proven value which are certain to increase in value.

Recently a new media has been added to the list of worthwhile things to collect and this is one where a formidable investment potential is ensured at the outset. The items? Commemorative Medals. There are several organisations producing this variant of coin-collecting, but Slade, Hampton & Son Limited has adopted something of a unique approach to the market. Founded less than a year ago, the first issue struck was to commemorate Sir Winston Churchill and was the only one to show him as he was in 'Our Finest Hour'. Being also the only one to recall this historic event, its success was evidenced by an almost immediate sell-out.

By limiting the number struck and then destroying the dies or placing them in bond, an instant rarity value is created and these medals, some in silver but mostly in gold, cost as little as a few pounds and are sold on the understanding that if the issue is oversubscribed, all monies will be returned. Struck by one of the country's leading rare metal refiners, these medals represent both an attractive appearance and an investment.

Sustaining their policy of only issuing medals which are officially sponsored, exclusive or unique, Slade, Hampton has now struck a handsome Baden-Powell issue officially sponsored by the Scout Movement. Over 80% of the medals have been purchased by people who have either current or past associations with the Scout Movement and therefore it is safe to assume that few will ever come on the market. Because Slade, Hampton consider themselves not just manufacturers but also their customer's guarantee, arrangements have been made to display sets of medals at leading London jewellers. When orders are received as a result, customers will be approached to see if they choose to sell - at their own price, since no sets will be displayed until they are out of stock. In this way, Slade, Hampton (who advertise on pages 247 & 248 of "THE MUSIC BOX") believe that they are acting in the very best interest of their customers in not only creating, but also maintaining a market for their products.

CAPTIONS TO PICTURES IN THIS ISSUE

Member Graham Webb, whose disc-punching machine has hitherto been content to copy existing discs, is seen on Page 239 with his latest masterpiece of the back-room disc-puncher's art from "der Polyphonwerke, Portobello-strasse". The pop song "Take Five" hit tin-pan alley several years ago, its futuristic syncopation and down beat ensuring its positive ascension up that uncertain stairway to the stars called, euphemistically, "the charts". Now available as a 15½" Polyphon/Regina disc, it brings forth strange sounds which, whilst certainly exciting and new, make an odd comparison with "Home Sweet Home" and "The Belle of New York" performed on the same star-wheels and teeth.

Page 239 (lower). From the Planus collection at Blackheath comes this rare single-tooth movement with zig-zag comb. One-time base of a decorative clock (now lost), the comb comprises three sections of comb support, the first carrying 22 single teeth, the second and third having 21 teeth each. A large, primitive change snail is fitted to the movement and the number 122 is stamped in the centre front of the base. The motor features one very short central inside bridge. Also from the Planus collection is this unusual late forte-piano box made by Nicole Freres (p. 252). The box plays four airs and has a printed border tune sheet in blue, pink and yellow reading "Fabrique de Pieces a Musique Nicole Freres Geneva". "Nicole Freres" is not stamped on the bed-plate nor as such on the combs, but the initials "NF" are stamped on each comb. The number is confusing. 42623 appears stamped in the usual place and penned on the tune sheet but this is overstamped 42613 and altered likewise on the tune sheet. To add to confusion, a further number, in matching characters, appears in the top right corner - this time 42607! The front of the case bears a fine transfer saying "Alfred Hays, Manufacturer & Importer of Musical Instruments, 4, Royal Exchange Buildings & 82, Cornhill".

The picture which appeared on Page 186 showed Bruce Angrave's 22" self-changing Polyphon - the instrument used in the Decca gramophone records. The Aeolian advertisement on Page 124 was kindly loaned by Ron Bayford.

ALL HALF-TONE ILLUSTRATIONS BY COURTESY OF GILCHRIST BROTHERS (PHOTO ENGRAVERS) LIMITED, LEEDS 2.

LAST WORD

DEPRESSED note: During a recent rehearsal by one of the London symphony orchestras of an harmonically complex modern American work, the leader of the French horns deliberately played a semitone flat. No one, not even the conductor, noticed.

The Lecoultres

by DAVID TALLIS

I should like to offer my ideas as to the origins of manufacture of Lecoultre musical boxes and have tabulated these below. It must be added that many of the ideas are based upon only my own deductions and since, compared with most of our other Members, I have not been collecting long enough to have seen enough Lecoultre boxes to back up these theories, I welcome any critiscisms and corrections which more experienced Members may wish to put forward.

LECOULTRE MUSICAL BOXES There were four major sources of Lecoultre boxes:-

a) David Lecoultre, Brassus
b) Francois Lecoultre, Geneva
c) Lecoultre Freres, Brassus
d) Lecoultre Freres, Geneva

a) David Lecoultre, Brassus

Tune sheet — In the centre top a harp and lyre laid on an open music score from which garlands extend round the sheet on both sides, but not the bottom edge. Details of box 'Etouffoirs en acier' or 'Mandoline' printed below trade mark described above. Top left corner is written the number of the box in ink and the top right corner is printed the words 'D. Lecoultre et fils en Brassus Canton de Vaud, Suisse'.

Number — This is stamped on the top left hand corner of the bed-plate, the figures being small and neatly aligned

Comb — The ends of the teeth are square and those at the base end are sometimes hooked down at the tips. The comb is set on a steel base. Most combs are stamped 'D. LECOULTRE' and all combs are polished lengthwise. Most have the positioning dowels set at either end of the back edge of the comb base.

Resonators — Square ended.

Remarks — The tone of the boxes is usually fairly sharp and sometimes almost percussive.

Boxes — In earlier movements these are usually quite plain but later movements are contained in veneered cases of the common type

Examples — Four overtures. The tune sheet does not include the name or number otherwise the box is standard in all respects. The controls are through the end of the case which is plain.
8802, Eight Airs, completely standard.
9385, single comb, completely standard.
9585, Four-air mandoline, no name on comb, otherwise standard
10460, Eight Airs, completely standard.

Conclusions — David Lecoultre was working alone or with his son at Brassus until 1850 when, according to Clark, he was joined by his brother (possibly Francois) who came from Geneva.

(Above) David Lecoultre tune sheet. (An earlier type of sheet is shown in the photograph on page 209 showing the garlands extending in a loop. This box is marked Number 6). Tune sheet by courtesy of Cyril de Vere Green. (Below) C. Lecoultre, St. Croix. The corners of this sheet have been reconstructed. Tune sheet by courtesy of Bruce Angrave.

(Above) Lecoultre Freres, Geneva. This sheet is to be found printed in either black or blue. (Below) F. Lecoultre, Geneva. One of the several designs of tune sheet to be found. Tune sheets by courtesy of Cyril de Vere Green.

b) Francois Lecoultre et Cie, Geneva

Tune sheet i) A small tune sheet with a simple blue ornamental border with the number printed in the top edge in French. The movement number is written vertically up the left edge. See illust. p. 209.
ii) A black ornamental border, printed, with the number of airs printed in the top edge in French, on the left of which is a space for the box number and on the right of which is printed the letters 'FL' in old-style capitals. In the bottom edge is printed the initials 'B.B. & C.' and in the corners, "Rossini", "Aubert", "Weber" and "Herold". Examples on p. 204 & 206.

Number This is stamped on the top left hand corner of the bed-plate in small figures, neatly aligned as with maker D. Lecoultre.

Comb The tips of the teeth are short but not square. F. Lecoultre is sometimes stamped in the comb which is polished lengthways. In earlier boxes the comb is set on a steel base with brass fillet between it and the bed-plate. The teeth at the base end are sometimes hooked down.

Remarks Tone in the case of earlier boxes is usually bright but not sharp. Those boxes with tune sheet (i) are always very well set up and usually have a mellow tone. Control levers are sometimes turned up at the ends.

Boxes Usually fairly plain with tune sheet (i), but boxes made with tune sheet (ii) were finely made and decorated with a simple pattern of beautifully executed veneer, often extending to the veneering of the back of the box.

Examples 1225, Three overtures. No tune sheet. Comb marked 'F. Lecoultre et Falconnet'. Very bright tone.
3713, Six-air single comb piano-forte. No tune-sheet, comb unmarked, with hooked teeth at base end , set on brass base piece. Box decorated with brass, ivory and mother o'pearl.
12367, Four overtures. No comb name. "  " mark on bedplate.No tune sheet.
13019, Four-air. Tune sheet (i). Very bright tone.
13122, Four-air. Tune sheet (ii). Mellow tone.
13570, Five-air. Tune sheet (ii). No name on comb, "B.B. & C." on bed-plate.

Conclusions Francois Lecoultre worked at Geneva before joining David Lecoultre at Brassus in 1850 to become Lecoultre Freres. "Falconnet" might have been a craftsman who shared an early partnership. "B. B. & C." was most likely the firm Berens, Blumberg et Cie of Geneva who were not manufacturers but only a sales organisation.

c) Lecoultre Freres, Brassus

Tune sheet A blue ornamental border with the number of airs in the top of the border and the box number in the bottom.

Number Medium-sized punch at top left corner of bed-plate. The mark "  " is usually on the bed-plate between the motor mounts at the front.

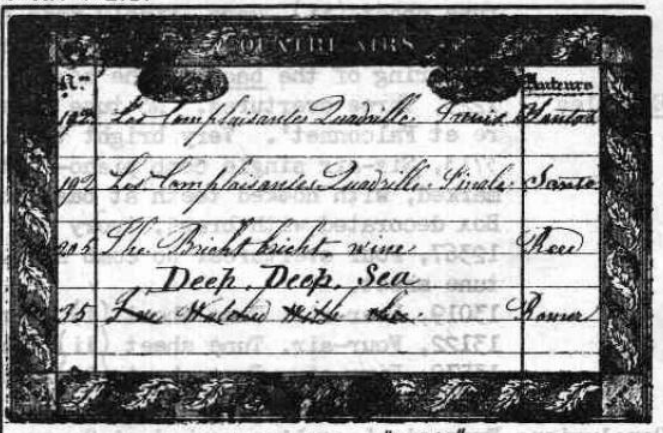
Comb — Always polished lengthwise. Sometimes stamped "LB".
Remarks — Fair quality boxes of medium, sharp tone.
Examples — 20254, 4-overtures, std. comb but not marked "LB"; 22268, 6-air, std; 30923, 6-air, std. except no "LB" on comb.
Conclusions — These boxes were made by a branch of the family, possibly Francois & David, until about 1860. Only key-wind boxes seen.

d) Lecoultre Freres, Geneva

Tune sheet — A large sheet printed in black or blue. Printed in the top is a space for the number, the number of airs in French and "LF". Either Lecoultre Freres, Geneva, or "B.B. & C." is printed in the bottom border. In the corners, clockwise from top left, appear "Rossini, Meyerbeer, Halevy, Mozard (sic). In the side borders are engravings of musical instruments. Example on p. 204.
Number — Stamped in the top left corner with a large punch.
Comb — Usually stamped LF Gve. Treble teeth cut very fine.
Remarks — Tone usually quite shrill. Bedplate is marked "[lyre]". All are lever wind boxes, the lever having a flat top bent towards the cylinder. Drive pin usually fits into a bridge mount and not straight into the end of the cylinder.
Examples — 33832 & 35435, both 8-air boxes, std; 38834, 10-air, standard.
Conclusions — These boxes were the first of the lever wind boxes to come from the factory in Geneva which made the bulk of the later and larger Lecoultre musical boxes.

also: C.Lecoultre, St.Croix

A key-wind box with this maker's name on the tune sheet has been seen (illustrated). Box plays 8 airs and number is 772. Three early small 4-air boxes have been seen all with controls through the ends of the cases. Combs polished lengthwise. It is believed by some collectors that these boxes were made by Lecoultre.



F. LECOULTRE 4" x 2½"

SUMMARY — The assumptions and deductions arrived at could be made use of to try to date Lecoultre boxes but before any attempt is made to do so it is hoped that more information will be forthcoming from Members to try to correct or confirm the foregoing. ●

NOTE Members wishing to help David Tallis in this interesting line of research should send to him details of any Lecoultres they know. David Tallis lives at 83, Moss Lane, Pinner, Middlesex. Basic details of the points mentioned herein are covered in the article in THE MUSIC BOX, Vol. 1, No. 7, page 20. ☆

W. K. HARDING writes

SUGGESTIONS FOR POLISHING CASES

A well cared for musical box should be a delight to the eye as well as to the ear and cleaning a case can be one of the most rewarding of the tasks which face the collector. Even if the case is structurally sound, the old French polish may have become somewhat opaque and removing it will often reveal unsuspected beauties. No one who has seen Mr. de Vere Green's fine collection can fail to have been impressed with what can be done.

The subject of restoration has been well covered in Issue No. 6, Volume 1, in an article prepared by Endless Screw (who is either a universal genius - or six people disguised as one!), and also by our Editor in Volume 2, page 108, but a few further suggestions might be helpful.

Stick shellac is sometimes used for filling in holes, particularly the gaps between ill-fitting pieces of veneer. It may be obtained from a clockmaker who uses it, incidentally, for attaching wheels to arbors. The method of applying it is to heat the blade of an old knife in the flame of a spirit lamp and with it melt off the corner of the stick and press it into the hole to be filled.

Only fine grades of sandpaper should be used on veneer and always used with the direction of the grain of the wood - never across it or it will produce scratches which are difficult to remove. To preserve the flat surface, the paper should be wrapped around a flat piece of wood or. better still, a cork rubber. A power tool should never be used. Finest grades of steel wool are recommended for the final rub down. The quality of the finished result is determined by the care taken in preparation. Where it is not necessary to remove old polish altogether, a rough patch may be rubbed down with very fine sandpaper lubricated with raw linseed oil. Always remember that the veneer is very thin and that if sanding is too vigorous, the wood underneath it will show through as a white scar.

Particular care is needed when sanding the corners of the lid. Beware, too, of an inlay which has become warped and raised at the edges. This must on no account be sanded as it is. It must first of all be removed altogether (see Volume 1, No. 6). the pieces soaked in water and dried flat under pressure, and then re-laid.

Wood dries out with age, becoming brittle, losing some of its freshness and, incidentally, becoming more attractive to worm. It is a good idea to rub raw linseed oil into the surface and let it soak in for a day or two. It will not interfere with the subsequent polishing but it does darken the wood. It also protects against cigarette burns.

The best and most durable polish is that based on beeswax as used by master cabinet-makers of the eighteenth century. It both feeds the wood and brings out its true beauty. The only advantage of French polish is its hard lustre and its speed of application, but it tends to become opaque with age, is easily scratched, is soluble in alcohol of even the worst vintage, goes white at the thought of water and melts at a low temperature.

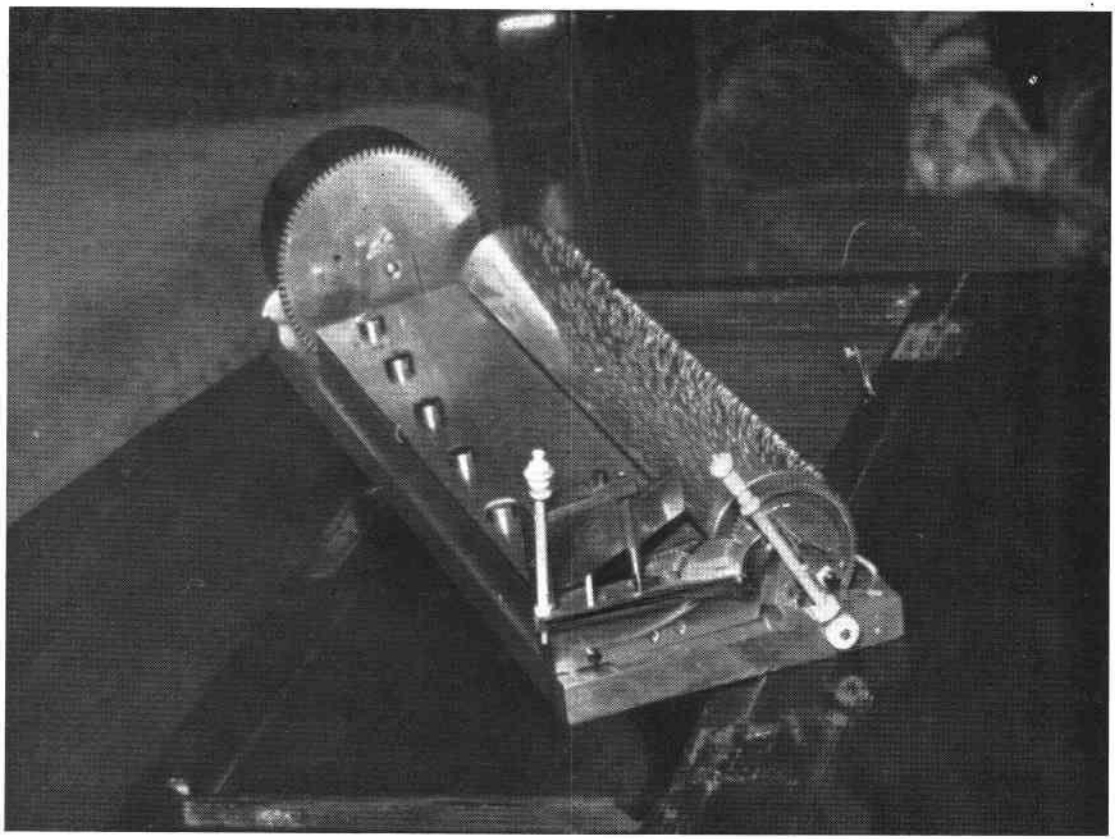
Sheraton has obligingly left us his recipe for a polishing wax. ".... take bees wax and a small quantity of turpentine in a clean earthen pan and set it over a fire till the wax unites with the turpentine, which it will do with constant stirring about; add to this a little red lead finely ground upon a stone, together with a small portion of fine Oxford ochre, to bring the whole to the colour of brisk mahogany. Lastly, when you take it off the fire, add a little copal varnish to it..." (Cabinet Dictionary, 1803).

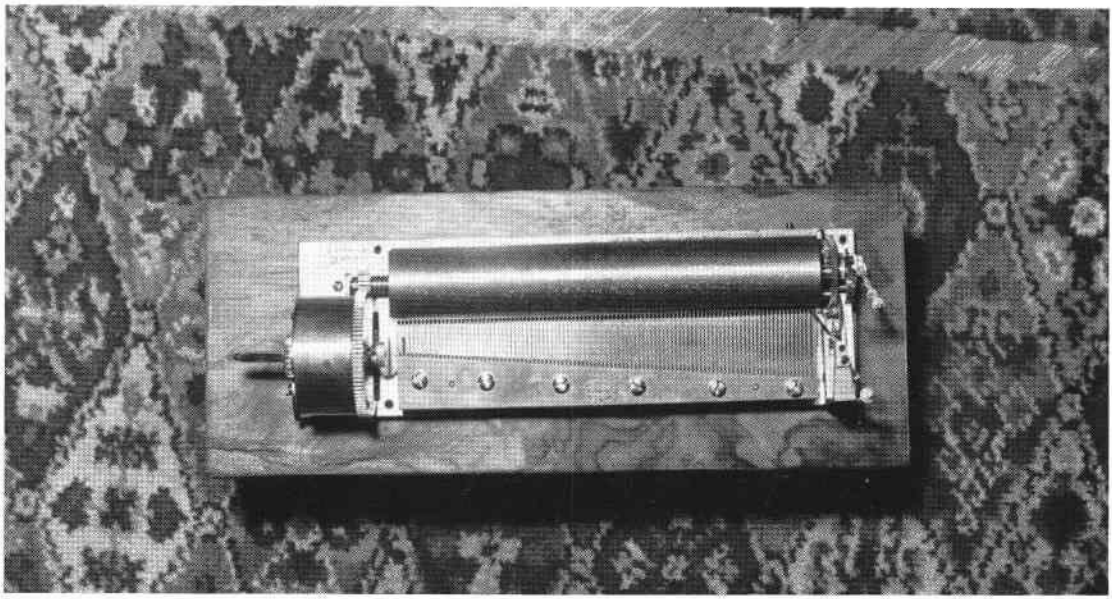
There is no short cut to good waxing. A good, home-made beeswax polish is better than anything which can be bought. It should be well worked in in the direction of the grain, once a day until perfection is achieved, removing any hard lumps which form using fine steel wool (Sheraton used brick dust). As with French polishing, the room temperature is critical - it should be about 65° F. and dry and free from draughts. Polish hard and you will find that the result justifies the effort. ●

ENDLESS SCREW comments: I am indebted to Mr. Harding for these erudite notes which are certainly of great value to the restorer. I am not an advocate of French polish - it is not up to the quality of a good waxed finish. Incidentally, I am but a solitary mortal,- not six!


HUIT AIRS.
2615
Beall my Covenant is peace
Here is health & Good Luck
Pretty Jane.
Over to the Charly
Ouverture Fra Diavolo
2me partie Fra Diavolo
Ouverture du Barbier
2e partie du Barbier N°3.
of 1011
F. LECOULTRE (STYLE I)


Quatre Ouvertures
1. Du Pré aux Clercs 4 Tons par Herold.
2 – Zampa, 4 Tons id
3. – Dame blanche, 4 Tons Boieldieu
4. – Italienne a Alger 4 Tons Rossini
G Lonard





F. RZEBITSCHEK
——*trade marks*

VERY LITTLE seems to have been recorded on the several makes of musical boxes which emanated from Czechoslovakia. One famous such maker was F. Rzebitschek of Prague. This one is not even mentioned in Clark, unless the entry for Gustav Rebicek may be taken as a mis-spelling. This is, incidentally, the phonetic spelling of Rzebitschek's name.

Boxes by this maker are of a very high class and are surprisingly small - usually with a six-inch cylinder - and always with a reversed comb having the base at the right and the treble at the left. The facing pictures are of a 4-air box whose exquisite movement is indicative of the highest quality workmanship. The case is of plain, waxed walnut or oak. The comb and bedplate are together stamped with the inscription "F. Rzebitschek, Fabrik in Prag". An interesting feature is that the base tooth has two points. As the cylinder moves in the conventional manner at the end of each tune, namely from right to left, this is necessary if the base note is to sound in both the first and last tune. Most makers elsewhere were content to allow several treble teeth in this position to produce the same note so it mattered not that one gradually moved off the cylinder as the cylinder progressively changed further down the tune list.

As the majority of these movements were intended, so it seems, for use in the bases of musical clocks, the stop-start crank is formed in the shape of a detent to be depressed by a clock mechanism. Likewise, the stop control is another detent engaging under the first. When used in ordinary musical boxes, the makers connected these detents with a fine cord having a porcelain knob on one end which protruded through the bottom of the case. The pictured example, from the Planus Collection, has ivory levers to the detents which are not original.

The makers name always appeared stamped in the centre of the comb and also at the top left-hand corner of the polished brass bedplate. Cylinder pins are decidedly longer than normally to be found and the endless fan is of large span turning slowly in a large cock. The change snail is often of the same diameter as the outside diameter of the pawl teeth, these being recessed into the root of the snail rather than protruding from it. Tone is clear, deep and resonant, the music is well set up. Tune sheets are in the form of a long narrow simple label stuck inside the lid and having a symmetrical blue border between rules. Lines are printed for the tunes to be handwritten. The words "Musik Nro!" are printed at the lower right edge for the programme number. The boxes are finished in red dragon's blood and, most distinctive, where an inner glass lid is provided, this is loose (i.e. not hinged) with the frame finely veneered with light veneer cross-banding. Movements are secured in the case by two screws through the front and back. Boxes usually play four airs but one three-air box has been seen featuring a six-point change-wheel with repeated three-position cam snail, the cylinder changing from tune number three back to tune number one as the fourth cam point is raised.

On Saturday, the 21st ult., at St. Martin's Hall, there was a private exhibition of the following new instruments—The "Orchestrion," the "Chordaulodion," "Symphonion," and "Trumpet Automaton," four self-acting instruments. There was also exhibited the "Harmonichord," which is played upon like the organ, with manuals and the pedals. Herr Kaufmann and his son, the inventors of the above instruments, are from Dresden, and for many years have been unremittingly occupied in perfecting their novel conceptions. Our artists have illustrated the "Orchestrion;" it is the most picturesque in appearance, and most complete in its action, of the five instruments. It will be seen from the Engraving it is a combination of the brass and wood instruments; for every one of those metallic and wooden tubes has an eloquent speaking voice. The front of the lower portion of the case being opened, discovers the percussion instruments, the kettle and military drums, and triangle. The Orchestrion was invented by Herr Kaufmann, jun. It was five years before he had completed this marvellous mechanical contrivance, as a substitute for a full military orchestra—the tones of flutes, flageolets, clarionets, cornets, bugles, trumpets, bassoons, horns, oboes, trombones, drums, &c., being most successfully imitated. There can be no mistake—all the instruments depicted in our Illustration actually emit sound, and are by no means decorative. How the maker has so ingeniously contrived that the cylinders move with such mathematical exactitude, and that the supply of wind (of course, varying for each tube) should be so precisely regulated, is scarcely to be conceived even by the thoroughly initiated in matters of mechanics and acoustics. For instance, it is almost miraculous to hear the light and shade of this invisible instrumentation, to mark the just gradations of crescendo, diminuendo, and sforzando, besides the usual fortes and pianos. We never heard anything so perfectly astounding as the *finale* of the "Don Giovanni:" shutting one's eyes, it seemed as if the famed vocal and orchestral forces of Costa were exclaiming at one time, with portentous effect, "Trema!" In the dance music, the three different times going on in the *finale* were observed with unerring precision, the mechanical agents doing what the living artists will rarely accomplish—keep together. Nothing could be finer than the Coronation March from Meyerbeer's "Prophete." Godfrey's Coldstream Band must look to their p aying, for the Orchestrion is a formidable rival.

Perhaps the most practical instrument for general purposes is the Harmonichord, deliciously soft and mellow in tone; it is in the form of an upright grand pianoforte, and it is stated that its action arises from the friction of a cylinder against wire strings. For small churches and chapels, and for a chamber organ, the Harmonichord is most desirable. Herr Kaufmann and Fraulein Kaufmann played on it in turn with delicacy and skill.

Farstenau's variations on themes from "Il Flauto Magico," of Mozart, on the Symphonion, was another triumph of mechanical skill, containing flutes, piccolo, clarionets, cymbals, and drums, with pianoforte accompaniment: the precision with which the chromatic scale, ascending and descending, is attained, would dismay a Richardson or a Remusat. The Chordaulodion comprises flute and string play.

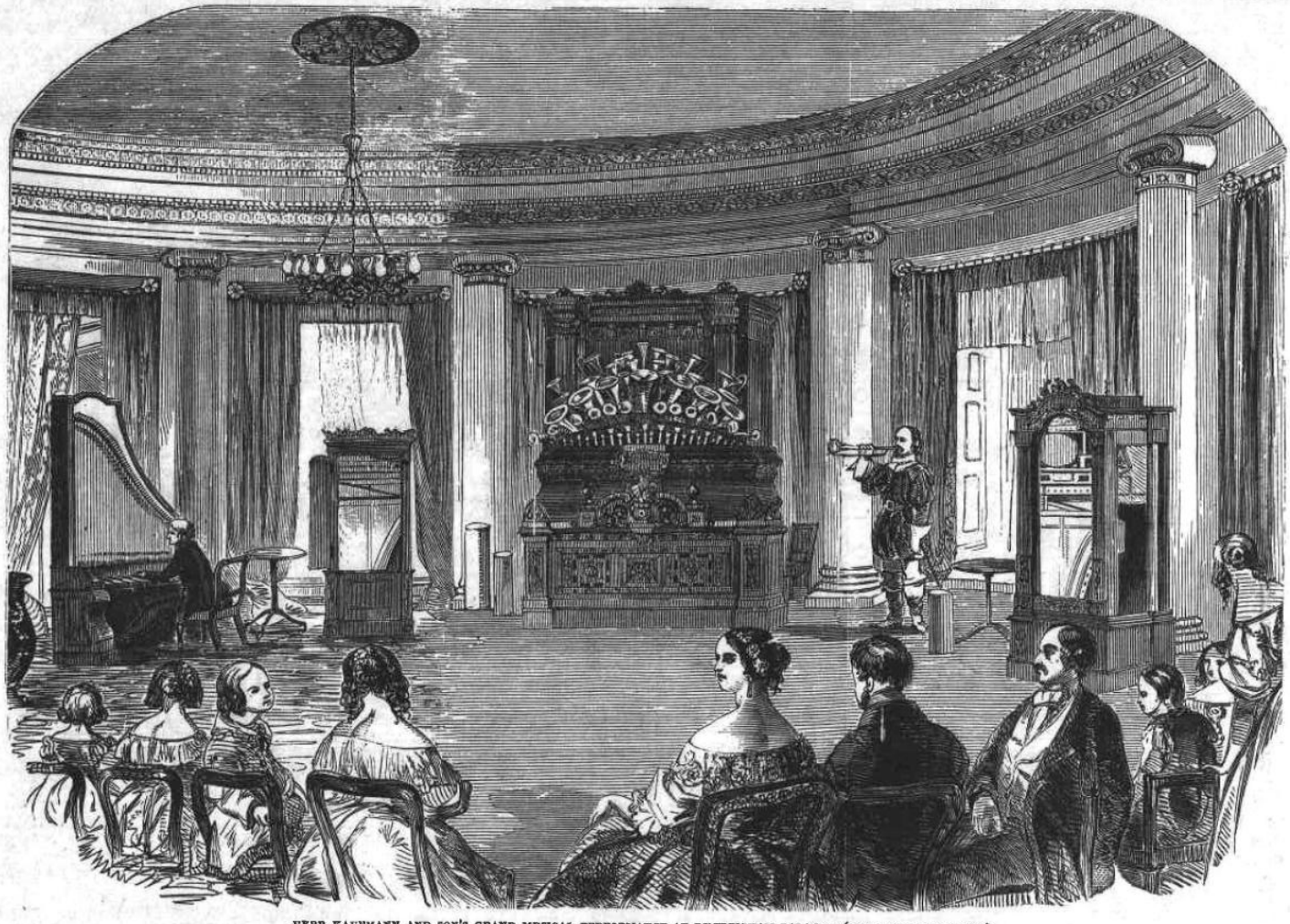
The Trumpet Automaton is a figure not unlike Mario in the "Puritani," with the instrument at its mouth. It was invented many years ago by Herr Kaufmann, and won the admiration of Carl Maria Von Weber. What is most remarkable and inconceivable in this extraordinary piece of mechanism, is, that it produces double sounds of equal strength and purity, and flourishes in octaves, tierces, quints, &c., are heard. Perhaps this acoustic curiosity may supply some key to Vivier's wondrous horn effects, certain notes accompanying particular chords. If this discovery should be established, that one instrument can do the same with equal perfection as two instruments, it may lead to something, as natural intonation may surely effect what a piece of machinery can do.

We have as yet referred specially to the execution of each instrument, but the greatest marvel was when the Harmonichord, played by Herr Kaufmann, and the four mechanical instruments, all were heard at one time in a fantasia on our national melodies. This is truly a miracle, for sometimes one instrument is heard as a solo, and the other relieves it at the exact stand; then two go together, and finally all the works are in movement, keeping exact time, and each one having its special duty to perform. The triumph of mechanical ingenuity can no further go, and the visit of Herr Kaufmann and his son to this country will no doubt be patronised largely. Their difficulties must have been enormous; first, in the just investigation of sound; and, secondly, in its application by mechanical means. To construct such instruments without models, for they are quite original, the maker must be a musician, a mechanic, a mathematician, and a philosopher.

The first public performance was on Tuesday, the 24th ult., the instruments having been exhibited on the 11th ult. at Buckingham Palace before her Majesty, Prince Albert, and the Royal family. On their way to this country, Herr Kaufmann and son gave concerts, with the greatest success, at Leipzic and Hamburg.

There was to have been a second concert at St. Martin's Hall, on the 27th ult., but her Majesty having been graciously pleased to command a second performance at Buckingham Palace, on the morning of that day, the entertainment was postponed to last Monday, a notice of which will be found under the head of "Music."

Our artists, in addition to the Orchestrion described above, have depicted the execution of the Self-acting Instruments before the Queen and Prince Albert, the King of the Belgians, and the Royal Family, on Friday. The Royal amateurs expressed their high gratification at the quality and ingenuity of the inventions, and complimented Herr Kaufmann and Son on their success.



HERR KAUFMANN AND SON'S GRAND MUSICAL PERFORMANCE AT BUCKINGHAM PALACE.—(SEE PRECEDING PAGE.)

THE ORCHESTRION.

THE "CAPITAL"
SELF-PLAYING MUSIC BOX

With Interchangeable Steel Tune Cylinders.

Manufactured and Patented by

F. G. OTTO & SONS,

44 to 50 Sherman Ave., Jersey City, N. J.

THE "CAPITAL" SELF-PLAYING MUSIC BOX

Patented in U. S. and Foreign Countries.

The "Capital" Music Box is constructed in the simplest manner and is very attractive, all parts being highly polished and nickel plated.

The entire mechanism is exposed to view, the action of the note projections on the star wheels, which in turn actuate the teeth of the Comb, can be seen, which makes this instrument very interesting to the eye, while the music produced is clear, and the volume of tone greater than in any Music Box manufactured. The governor used in these boxes is of the self-regulating class and insures a very steady and even speed.

The Note Cylinders are made of steel, are durable and easily placed on the holder provided for the same.

Any number of different tunes can be obtained embracing all standard and popular airs. New tunes are continually being added to the existing large variety.

PATENTED.

April 9, 1889. Nos. 401,187 and 401,188.
Dec. 17, 1889.
May 15, 1894.
June 12, 1894.
Jan. 8, 1895.

Style O.

Price with one tune $11.00
Extra tunes, each 0.20

Furnished in Mahogany or Oak Case, highly polished.
44 Teeth in Comb.
Size of Box 12½x7½x6½ inches high.
Each instrument packed in substantial box for shipping.

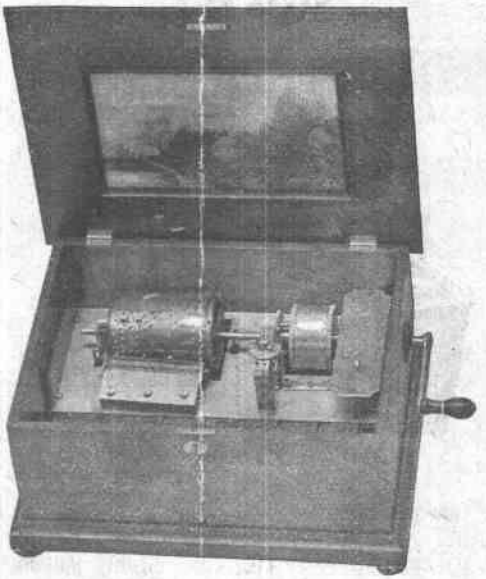
Style O, EXTRA.

Price with one tune $13.00

As TUNES are furnished with this Box without charge, they must be accepted as selected by the Manufacturer.

NO TUNES EXCHANGED.

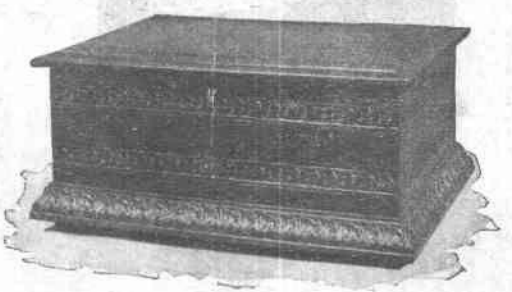
Style A.



Price with 8 tunes, Manufacturers' selection $15.00
Extra tunes, each 0 20

Furnished in Mahogany or Oak Case, highly polished.
44 Teeth in Comb.
Size of Case 14½x11½x7 inches high.
Each instrument packed in substantial box for shipping.

Style A, EXTRA.

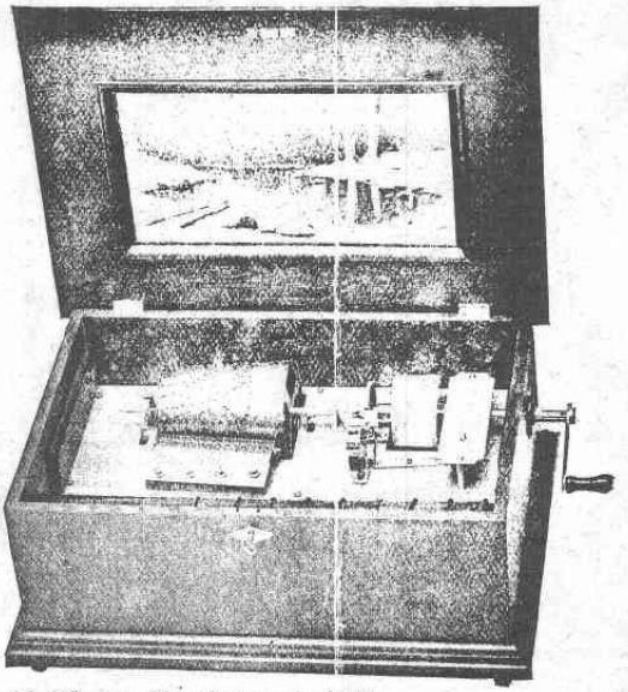


Price with 8 tunes, Manufacturers' selection $17.50

As TUNES are furnished with this Box without charge, they must be accepted as selected by the Manufacturer.

NO TUNES EXCHANGED.

Style B.



Price with 10 tunes, Manufacturers' selection..... $28.00
Extra tunes, each..... 0.30

Furnished in Mahogany or Oak Case, highly polished.
58 Teeth in Comb.
Size of Case 21x14x8½ inches high.
Each Instrument packed in substantial box ready for shipping.

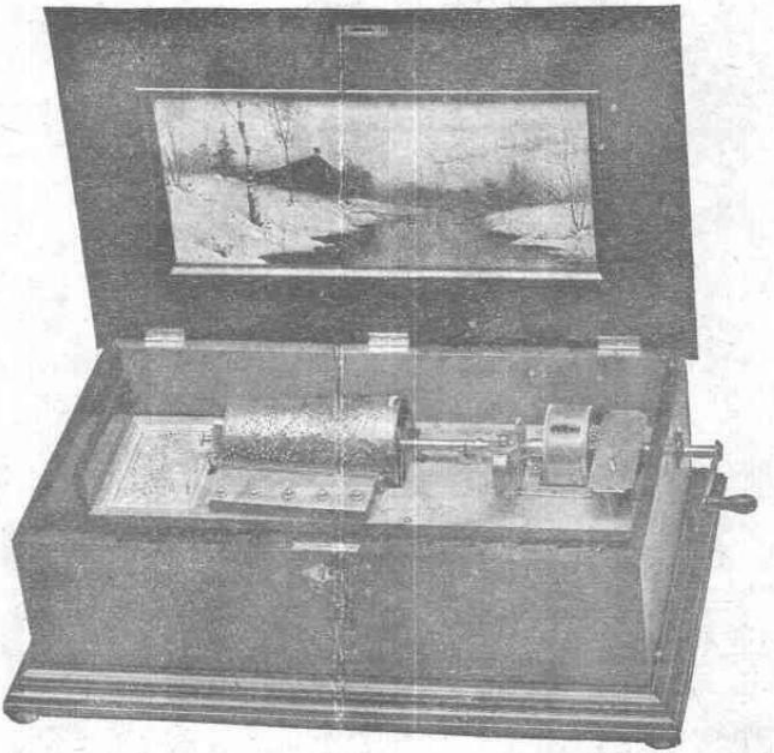
Style B, EXTRA.

Price with 10 tunes, Manufacturers' selection $32.00

As TUNES are furnished with this Box without charge, they must be accepted as selected by the Manufacturer.

NO TUNES EXCHANGED.

Style C.



Price with 12 tunes, Manufacturers' selection $40.00
Extra tunes, each 0.40

Furnished in Mahogany or Oak Case, highly polished.
81 Teeth in Comb.
Size of Case 26½x17x9½ inches high.
Each Instrument packed in substantial Box ready for shipping.

Style D.

Price $49.00
Extra tunes, each 0.40
When arranged to play 2 tunes for 1 penny..... ..... 52 00

Furnished in Mahogany or Oak Case, highly polished.
81 Teeth in Comb.
Size of Case 26½x17x9½ inches high.

Style D is the same as style C but has an Automatic Penny Attachment, which is of excellent construction and very reliable.

As TUNES are furnished with this Box without charge, they must be accepted as selected by the Manufacturer.

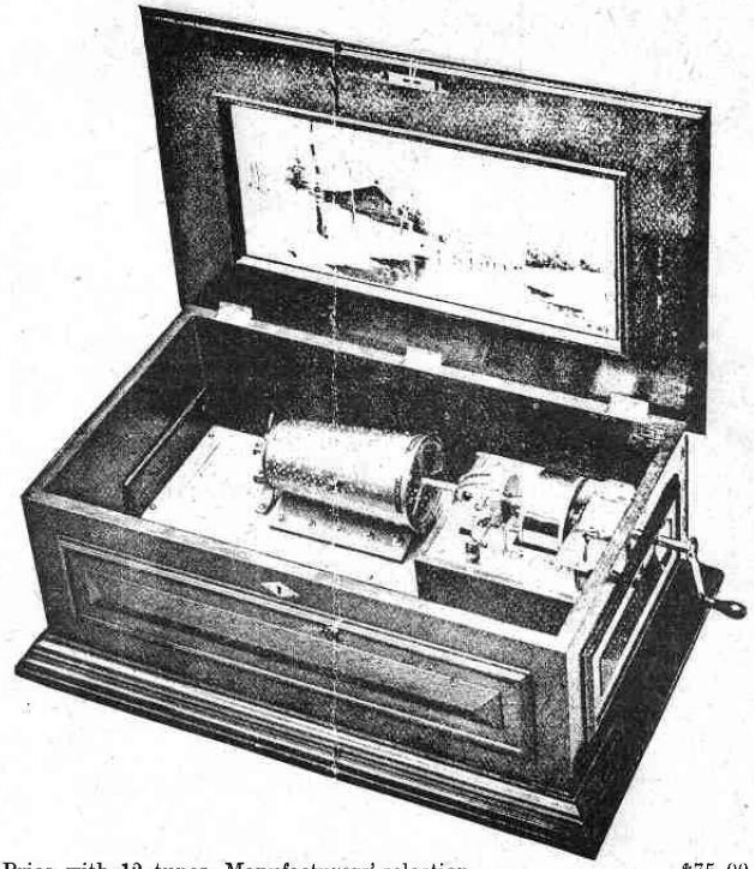
NO TUNES EXCHANGED.

Style E.

Price $52.00
Extra tunes, each 0.40

Is the same as style C with Nickel Attachment, so arranged that two tunes are played for one nickel.

Style F. "Duplex."



Price with 12 tunes, Manufacturers' selection $75.00
Extra tunes, each 0.40

Furnished in Mahogany or Oak Case, highly polished.
162 Teeth in Comb.
Size of Case 28x17x12 inches high.

This Instrument is so arranged that two Combs, each with 81 Teeth are operated by one set of Sprocket wheels.

The music this Instrument produces is as rich in tone and volume as that of any box existent.

As TUNES are furnished with this Box without charge, they must be accepted as selected by the Manufacturer.

NO TUNES EXCHANGED.

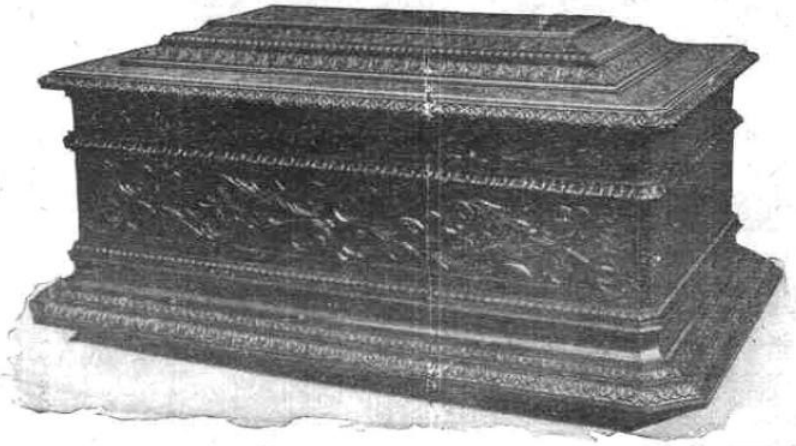
STYLE C. EXTRA.

Price with 12 tunes, Manufacturers' selection..... $45.00

STYLE F. EXTRA.

Price with 12 tunes, Manufacturers' selection..... $85.00

STYLE F. SUPERFINE.



Price with 12 tunes, Manufacturer's selection $100.00

Style G.

Price with 10 tunes, manufacturers' selection..... $37.00
Extra tunes, each..... 0.30

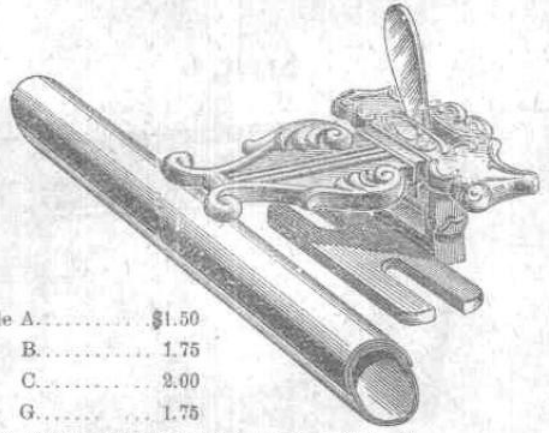
Furnished in Mahogany or Oak Case, highly polished.
58 Teeth in Comb.
Size of Case 21x14x8½ inches high.

This is the same as style B but has a Penny Attachment and is arranged to play two tunes for one cent. The Attachment is the same as in style D in principle and is very reliable.

As TUNES are furnished with this Box without charge, they must be accepted as selected by the Manufacturer.

NO TUNES EXCHANGED.

Capital Zither Attachment.



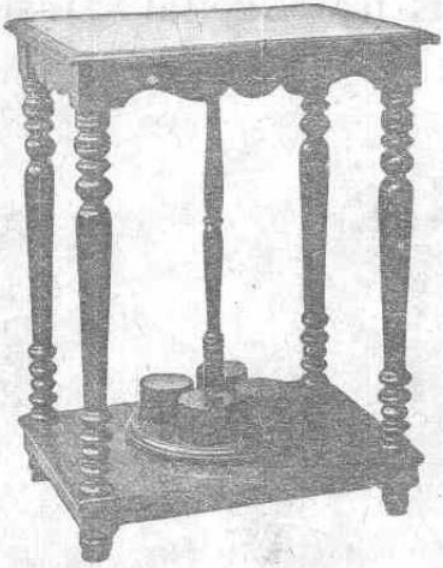
Price for Style A..... $1.50
" " B..... 1.75
" " C..... 2.00
" " G..... 1.75

No Zither Attachment furnished for Style F.

Style G with Table.

Style G with Table, including 10 Tunes, Manufacturers' selection, each, $50.00
Table for Style G, crated for shipping.....each, 11.00

Table for Style B.



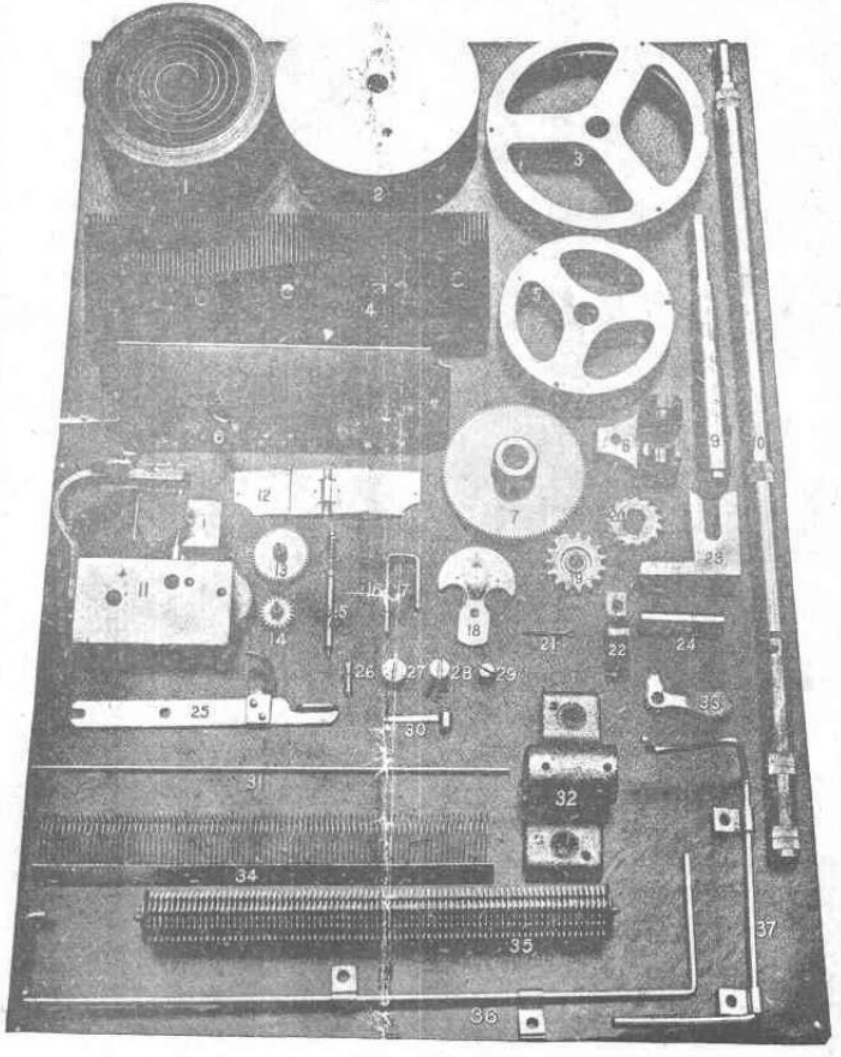
Crated for shipping, each $11.00

Table for Styles C, D, E and F.

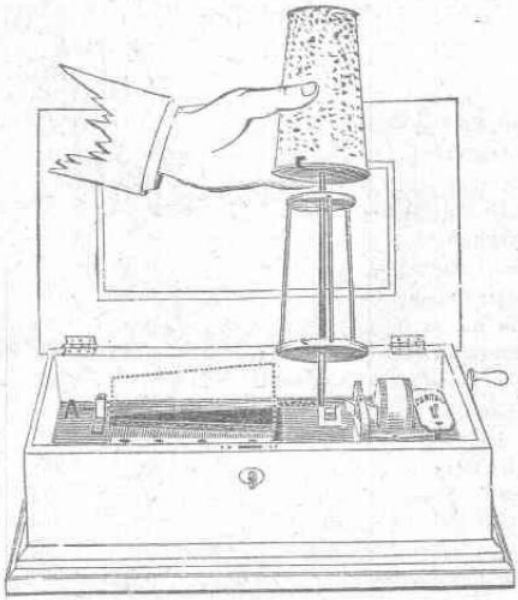
Crated for shipping, each $13.00

Parts for "Capital" Music Boxes,

STYLES A, B, C & F.



DIRECTIONS FOR CAPITAL SELF PLAYING MUSIC BOX.



To Wind, turn the crank at right hand side of box toward you.

To Start, push the lever on the plate at right hand side from you until it cannot be pushed farther.

To Repeat, leave the lever in the position of start.

To Stop, draw the lever toward you.

To Change the Tunes, take the shaft of note holder with two fingers at A (see cut) and raise to an upright position as shown, then turn the note cylinder slightly to the left and raise it from the note holder. Take another cylinder, replace it on the holder so the bayonet lock falls over the pin on the large end of note holder, turn slightly to the right so the pin will be in the slot of the bayonet lock, then lower the note holder to a horizontal position, as shown by dotted line in cut, when it will be ready to play.

If the note Cylinders be placed carefully and ordinary care taken the Music Box will remain in good working order for many years.

To Oil, the only part that will ever need oil is the Governor or fly wheel shaft. To oil this use watch makers' oil and apply at the lower end of shaft, at the worm or screw, and at upper end of shaft.

If the Music Box is received in extremely cold weather, allow it to stand in a heated room an hour before playing the same.

PRICES
FOR PARTS OF "CAPITAL" MUSIC BOXES,

STYLES A, B, C & F.

		A.	B.	C.	F.
		EACH.			
No. 1.	Main Spring	$1 00	$1 25	$1 50	$1 75
" 2.	Main Spring Barrel	1 00	1 25	1 50	1 50
" 3.	Large Note holder flange.	0 25	0 30	0 30	0 30
" 4.	Comb	3 50	5 50	7 00	8 00
" 5.	Small Note holder flange	0 25	0 30	0 30	0 30
" 6.	Start and Stop plate	0 50	0 50	0 50	0 50
" 7.	Main Gear wheel with hub	0 40	0 50	0 50	0 50
" 8.	Hinge bearing.	0 25	0 30	0 30	0 30
" 9.	Winding shaft.	0 50	0 60	0 60	0 60
" 10.	Hinged shaft.	0 50	0 60	0 75	0 75
" 11.	Train Complete with speed Regulator	2 60	2 60	2 60	2 60
" 12.	Fly fan.	0 10	0 10	0 10	0 10
" 13.	Second wheel of train.	0 25	0 25	0 25	0 25
" 14.	First wheel of train.	0 25	0 25	0 25	0 25
" 15.	Endless screw of train	0 60	0 60	0 60	0 60
" 16.	Spiral spring for sliding catch	0 05	0 05	0 05	0 05
" 17.	Sliding catch.	0 06	0 06	0 06	0 06
" 18	Speed regulating plate with screw.	0 25	0 25	0 25	0 25
" 19	Stop wheel	0 10	0 10	0 10	0 10
" 20.	Ratchet wheel.	0 10	0 10	0 10	0 10
" 21.	Split pin for holding ratchet wheel.	0 05	0 05	0 05	0 05
" 22.	Flat spring for safety wire	0 05	0 05	0 05	0 05
" 23.	Catch bearing	0 25	0 40	0 40	0 40
" 24.	Pillar support, for start and stop plate	0 05	0 05	0 05	0 05
" 25.	Stop-lever.	0 15	0 20	0 25	0 25
" 26.	Pin for turning stop wheel	0 05	0 05	0 05	0 05
" 27.	Screw for stop wheel	0 05	0 05	0 05	0 05
" 28.	Screw for Click.	0 05	0 05	0 05	0 05
" 29.	Screw for stop lever.	0 05	0 05	0 05	0 05
" 30.	Stop finger for fly fan	0 05	0 05	0 05	0 05
" 31.	Wire connecting note holder flanges.	0 05	0 05	0 05	0 05
" 32.	Bearing for winding shaft.	0 30	0 40	0 40	0 40
" 33.	Click.	0 15	0 15	0 15	0 15
" 34.	Set of dampers	0 50	0 60	0 75	0 75
" 35.	Wheel holder complete with star wheels.	0 75	1 00	1 20	1 50
" 36.	Operating wire for sliding catch.	0 15	0 15	0 20	——
" 37.	Safety wire	0 15	0 15	0 20	0 15

LIST OF TUNES

For Styles O & A,

"CAPITAL" MUSIC BOXES.

CYLINDER, 4¼x3⅜x2¼ inches. Price, each 20 Cts.

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1 Last Rose of Summer, (Martha) *Flotow*
2 Carmen—Polka..... *Bizet*
3 Wine, Woman and Song.... *Strauss*
4 Stephanie Gavotte..... *Czibulka*
5 Beggar Student, Mazurka *Millocker*
6 Roses from the South, Waltz *Strauss*
7 Austrian National Hymn ... *Haydn*
8 Monastery Bells.... *Lefébure-Wely*
9 Lohengrin, Bridal Chorus.. *Wagner*
10 Devil's March..... *Suppe*
11 Belleville Waltz ..... *Millocker*
12 Lorely..... *Silcher*
13 Bells of Corneville..... *Planquette*
14 Gypsy Baron, Waltz..... *Strauss*
15 Beggar Student, Waltz... *Millocker*
16 Boccaccio Waltz..... *Suppe*
17 Freischütz, Chorus..... *Weber*
18 See-Saw, Waltz ..... *Growe*
19 Spirits of Wine, Waltz..... *Wenzel*
20 Hail Columbia .....
21 Home, Sweet Home..... *Payne*
22 Annie Laurie.....
23 Red, White and Blue .....
24 Washington Post March..... *Sousa*
25 Quintette from Martha..... *Flotow*
26 I Adore the Power of Love *Bortnianski*
27 Dancing on the Pier..... *Christie*
28 The Owl and the Pussy Cat *Ingraham*
29 Daisy Bell..... *Dacre*
30 Estudiantina, Waltz.... *Waldteufel*
31 Liberty Bell, March ..... *Sousa*
32 High School Cadets, March.. *Sousa*
33 My Pearl's a Bowery Girl, Song *A. Mack*
34 The Darkies' Dream, Schottisch *G. Lansing*
35 Russian National Hymn ..... *Lvoff*
36 Awakening of the Lion, Caprice Galop..... *Kontski*
37 Grande Valse Brillante... *Schulhoff*
38 Spring Song..... *Mendelssohn*
39 Weber's Last Thoughts, Waltz *Reissiger*
40 Then You'll Remember Me. ..*Balfe*
41 Sweet Marie, Song. *Raymond Moore*
42 Carnival of Venice..... *Paganini*
43 Spin Spin, Song..... ... *Juengst*
44 Two Little Girls in Blue.... *Graham*
45 Narcissus, "Water Music".... *Nevin*
46 Trovatore, Miserere ..... *Verdi*
47 Fatinitza, March ..... *Suppe*
48 Sweetest story ever told, Song *Stults*
49 Somebody loves me, Song *Hattie Starr*
50 Sidewalks of New York, Song *Lawlor*
51 Maggie Mooney..... *Thornton*
52 Soho Galop..... *Godfrey*
53 Dainty Step, Caprice.. *Henry Lamb*
54 Stabat Mater. Cujus Animam *Rossini*
55 Swiftwater, Waltz..... *Alberti*
56 Prophet, Coronation March *Meyerbeer*
57 Robin Hood Polka..... *de Koven*
58 The Red Sarafan, Russian Air. ....
59 I love my Love in the Springtime *Englaender*
60 The Little Lost Child, Waltz song *Stern*
61 Say "Au Revoir" but not Good-Bye, Song..... *Kennedy*
62 Robert the Devil. Cavatina *Meyerbeer*
63 I don't want to play in your yard, Song..... *Petrie*
64 Faust, Flower Song..... *Gounod*
65 Love's old sweet song.....
66 Rigoletto, Quatuor..... *Verdi*
67 Love's Sorrow.....
68 Nightingale Song ..... *Zeller*
69 Jimmy on the Chute.....
70 's Mailüfterl, Pop. Song. .....
71 Push dem Clouds away..... *Gaunt*
72 Ting-a-Ling-Ting-Tay, Song.. *Dacre*
73 Freischütz, Prayer ..... *Weber*
74 Of Thee I'm thinking Margaret, Song..... *Meyer-Hellmund*
75 Auld Lang Syne. ... . *Crafton*
76 Magic Song..... ..*Meyer-Hellmund*
77 Secret Love, Gavotte..... *Resch*
78 Afterwards, Song..... *Mullen*
79 Robin Adair.....

80 Joe, Joe, my Josephine, Song *Bowert*
81 Gently Rest. ....*Rucken*
82 Oh! loving Heart, trust on, Song *Gottschalk*
83 Menuet a l'Antique ....*Paderewski*
84 Angels' Serenade, Song.....*Braga*
85 Katy Mahone ... .*Olcott*
86 Honeymoon March... .....*Rosey*
87 The Wild Rose, Song .....*Schubert*
88 Daughter of the Regiment, Rataplan .....*Donizetti*
89 Whose little Girl are you?.. *Rosey*
90 The Star of Home .....*Canthal*
91 Manhattan Beach March.....*Sousa*
92 Slumber Sweetly .....*Beaumont*
93 "Knowest Thou the Land," from Mignon .....*Thomas*
94 My beautiful Irish Maid, Song *Olcott*
95 Only one Girl in the World for Me, Song.....*Marion*
96 Isabella Waltz.... .....*Pflueger*
97 Sweethearts again ....*Graham*
98 How can I leave Thee .....*Cramer*
99 And the Band Played on, Song *Ward*
100 The Sunshine of Paradise Alley Song .. ..*Bratton*
101 My little Sweetheart May, Song *Spellan*
102 Marguerite, Song.....*White*
103 National League, Galop .... *Yanke*
104 Reverie..... ....*Schumann*
105 Old Black Joe .....*Foster*
106 Flower Song.....*Lange*
107 Poor Jonathan, Waltz...*Millocker*
108 Accidental Polka .*Von der Mehden*
109 Amorita Waltzes .....*Czibulka*
110 The Wishing Well.. *Waltern Pegg*
111 Invitation to the Dance.... *Weber*
112 Love's Springtime, Gavotte..*Holst*
113 King Cotton March..... *Sousa*
114 Cavalleria Rusticana, Intermezzo *Mascagni*
115 The Way Side Chapel.....*Wilson*
116 Les Sylphes, Waltz.....*Bachman*
117 Oh! Honey, My Honey.....*Caryll*
118 He Leadeth Me .....*Dykes*
119 Selection from "Pirates of Penzance".....*Sullivan*
120 Selection from "Pinafore" *Sullivan*
121 Rally 'Round the Flag Boys.....
122 Glory, Glory, Hallelujah.....
123 She may have seen better days *Thornton*
124 She is mine.....*Van Baar*
125 Nearer My God to Thee,
126 The Watch on the Rhine .*Wilhelm*
127 Baby Song from Wang...*Goodwin*
128 Lullaby, from Erminie, *Jakobowsky*

LIST OF TUNES

For Styles B and C.

"CAPITAL" MUSIC BOX.

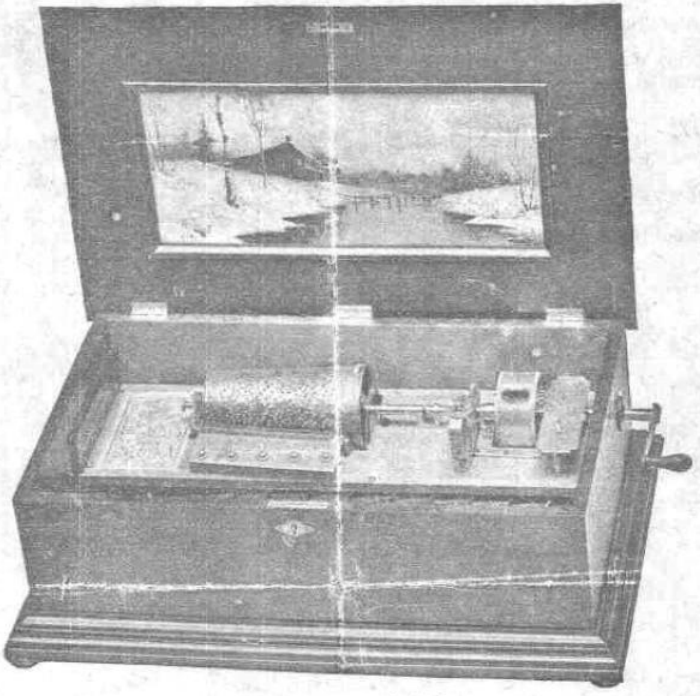
CYLINDER, 5½x4¼x3½ inches. Price, each 30 Cts.

501 Forsaken.....*Koschat*
502 Spirits of Wine, Waltz.....*Wenzel*
503 Song from the Tyrolean ... *Zeller*
504 La Paloma.....*Yradier*
505 Monastery-Bells....*Lefébure-Wely*
506 Air from Norma.....*Bellini*
507 Freischütz, Prayer.....*Weber*
508 Linden Tree.....*Schubert*
509 Fair Alice.....*Alberti*
510 Still Night, Holy Night...*Barnaby*
511 Last Rose of Summer, (Martha) *Flotow*
512 In the Gloaming.....*Harrison*
513 Air from Somnambula.....*Bellini*
514 Faust Waltz.....*Gounod*
515 Stephanie Gavotte.....*Czibulka*
516 Excelsior Mazurka..... ..*Marenco*
517 Flower Song.....*Lange*
518 Bells of Corneville.....*Planquette*
519 Waltz Rondo.....*Gumbert*
520 A Night in Venice.... *Strauss*
521 Marie and her Lamb.....
522 Morning Papers, Waltz....*Strauss*
523 Air Louis XIII.....*Ghys*
524 The Pretty Pole, Mazurka, *Milloecker*
525 Home, Sweet Home.....*Payne*
526 High School Cadets, March..*Sousa*
527 I love my Love in the Springtime, *Englaender*
528 When the Sweetheart you Love is true.....*Vemit*
529 My Pearl's a Bowery Girl, Song *A. Mack*
530 Habanera Carmen.....*Bizet*
531 Dancing on the Pier .....*Christie*
532 Maggie Mooney.....
533 Whether I Love You.....*Gumbert*
534 The Darkies' Dream, Schottisch, *G. Lansing*
535 Washington Post March ....*Sousa*
536 Blue Danube, Waltz.....*Strauss*
537 Artist's Life Waltz .....*Strauss*
538 Boccacio March .....*Suppe*
539 Russian National Hymn .....*Luoff*
540 Good-Night! Farewell, Song, *Kuecken*
541 Grande Valse Brillante .. *Schulhoff*
542 The Merry Miller, Song from "Rob Roy"..... *de Koven*
543 Serenade.....*Schubert*
544 Sweet Marie, Song, *Raymond Moore*
545 Prayer from "Moses".....*Rossini*
546 Then You'll Remember Me...*Balfe*
547 The Red Sarafan, Russian Air.....
548 Prophet, Coronation March, *Meyerbeer*
549 The Owl and the Pussy Cat, *Ingraham*
550 Daisy Bell..... .....*Dacre*
551 Spin Spin, Song.....*Juengst*
552 Trovatore. Miserere.....*Verdi*
553 Lohengrin, Prelude to 3d Act, *Wagner*
554 Narcissus, "Water Music"...*Nevin*
555 Awakening of the Lion, Caprice Galop.....*Kontski*
556 Dainty Step, Caprice. *Henry Lamb*
557 Two Little Girls in Blue...*Graham*
558 Stabat Mater. Cujus Animam, *Rossini*
559 Somebody loves me, Song, *Hattie Starr*
560 Huguenots, Song of the Page, *Meyerbeer*
561 The Little Lost Child, Waltz Song, *Stern*
562 The Piccanninies' Picnic, Schottisch.....*Tracey*
563 Old Folks at Home.....*Fairbank*
564 Cavalleria Rusticana, Intermezzo, *Mascagni*
565 Faust, Flower Song .....*Gounod*
566 Soho Galop.....*Godfrey*
567 Say "Au Revoir" but not Good-Bye Song.....*Kennedy*
568 Carnival of Venice.....*Pagannini*
569 Spring Song.....*Mendelssohn*
570 Angels' Serenade, Song.....*Braga*
571 Sidewalks of New York, Song *Lawlor*
572 Auld Lang Syne .....*Crafton*
573 Joe, Joe, my Josephine, Song, *Bowert*
574 Sylvia, Pizzicati .....*Delibes*
575 The Lost Chord, Song.....*Sullivan*
576 Pretty Rosie Kelly, Song....*Miller*
577 "Cissy's Wink".....*Harvey*

578 My beautiful Irish Maid, Song, *Olcott*
579 Sweethearts Again..... *Graham*
580 Appear Love at the Window, *Gregh*
581 Freischütz, Hunter Chorus.. *Weber*
582 Hoolah, Hoolah (Coochi Coochi Polka)..... *Ferry*
583 The Watch on the Rhine.. *Wilhelm*
584 Selection from Erminie, *Jakobowsky*
585 Polish Dance.....
586 Poor Jonathan, Waltz... *Milloecker*
587 Whose little Girl are you?... *Rosey*
588 Honeymoon March..... *Rosey*
589 I don't want to play in your Yard, Song..... *Petrie*
590 Enchantment, Schottisch *Neumann*
591 All the go..... *Northrup*
592 The Ship I love, Song.. *McGlennon*
593 Only one Girl in the World for me, Song..... *Marion*
594 The Sunshine of Paradise Alley, Song..... *Bratton*
595 Un Beso (A Kiss), Mazurka, *Arrillaga*
596 The Tyrolean and his Child, *Kucken*
597 Rigoletto, Quatuor..... *Verdi*
598 The Spanish Cavalier. *Hendrickson*
599 And the Band Played on, Song, *Ward*
600 Manhattan Beach March.... *Sousa*
601 I Would That My Love *Mendessohn*
602 King Cotton March..... *Sousa*
603 Bee Hive March..... *Schweinfest*
604 Adeste Fideles.....
605 Qui-Vive-Galop..... *Ganz*
606 The Sweetest Story ever told *Stults*
607 Christmas..... *Shelley*
608 Murmuring Zephyrs..... *Jensen*
609 Sylvia "Valse Lente"..... *Delibes*
610 L'Eclair, Romance..... *Meyerbeer*
611 Dinorah, Shadow Dance *Meyerbeer*
612 Mignon, Knowest Thou the Land *Thomas*
613 Old Black Joe ..... *Foster*
614 Oh! Honey, My Honey..... *Caryll*
615 Annie Laurie.....
616 Oxford Two-Step..... *Barker*
617 Tenderloin Two-Step..... *Harney*
618 Over the Waves Waltz..... *Rosas*
619 Rally 'Round the Flag Boys.....
620 Star Spangled Banner.....
621 Just Tell Them That You Saw Me..... *Dresser*
622 Little Alabama Coon. *Hattie Starr*
623 She May Have seen Better Days..... *Thornton*
624 Ben Bolt..... *Kneass*
625 Fatal Wedding..... *Gussie Davis*
626 Put Me off at Buffalo..... *Dillon*
627 Dixies' Land.....
628 Yankee Doodle.....
629 Sweet Little Rosey-Posey ... *Dacre*
630 Nearer My God to Thee.....
631 El Capitan, March..... *Sousa*

LIST OF TUNES
For Styles C, D, E and F.
"CAPITAL" MUSIC BOX.

CYLINDER, 7¼x4¼x3¼ inches.



Cut Represents Style C.

1001 Ye Merry Birds .....*Gumbert*
1002 Forsaken .....*Koschat*
1003 Praise the Lord.....
1004 Lohengrin, Bridal Chorus *Wagner*
1005 Cavalleria Rusticana, Intermezzo, *Mascagni*
1006 Don Cæsar, March.....*Dellinger*
1007 Spin Spin, Song.....*Juengst*
1008 Old Folks at Home .....*Fairbank*
1009 Martha Quintette. .....*Flotow*
1010 Skirt Dance.....*Lutz*
1011 Last Rose of Summer, (Martha) *Flotow*
1012 Morning Papers, Waltz .. *Strauss*
1013 Faust Waltz.... .....*Gounod*
1014 Eva, Waltz..... ....*Strauss*
1015 Mikado Waltz..... .....*Sullivan*
1016 Belleville Waltz. ..... *Millocker*
1017 Ak-Sar-Ben (Good Humor) March .....*Arnhold*
1018 Zig-Zag Polka.....*Faust*
1019 A Nest of Finches .....*Longey*
1020 Maggie Murphy's Home..*Braham*
1021 Home, Sweet Home.....*Payne*
1022 Star Spangled Banner.....
1023 Old Hundred. .....
1024 Artist's Life, Waltz.....*Strauss*
1025 Silver Fish, Fantasia Mazurka, *Ketterer*
1026 My Queen..... .....*Coote*
1027 Bells of Corneville.....*Planquette*
1028 Liberty Bell March.....*Sousa*
1029 The Owl and the Pussy Cat, *Ingraham*
1030 Estudiantina, Waltz.. *Waldteufel*
1031 Potpourri, Robin Hood..*de Koven*
1032 Les Sylphes, Waltz..... *Bachman*
1033 Our Orioles, March,..*R. M. Stults*
1034 Soldier's Glee, March.....*Holst*
1035 Love's Spring Time, Gavotte *Holst*
1036 Sweetest Story ever told, Song, *Stultz*
1037 Lohengrin, Prelude to 3d Act, *Wagner*
1038 Somebody loves me, Song, *Hattie Starr*
1039 Capital March ..... *Fr. Hoschke*
1040 Grande Valse Brillante..*Schulhoff*
1041 "Athalia", Priests' March, *Mendelssohn*
1042 Sweet Marie, Song *Raymond Moore*
1043 My Pearl's a Bowery Girl, Song *A. Mack*

1044 High School Cadets, March, *Sousa*
1045 The Red Sarafan, Russian Air....
1046 Prophet, Coronation March, *Meyerbeer*
1047 The Merry Miller, Song from "Rob Roy"..... *de Koven*
1048 Daisy Bell ..... *Dacre*
1049 Carnival of Venice..... *Paganini*
1050 Narcissus, "Water Music"..*Nevin*
1051 The Darkies' Dream, Schottisch, *G. Lansing*
1052 Magic Song ....*Meyer-Hellmund*
1053 Huguenots, Song of the Page, *Meyerbeer*
1054 Trovatore, Miserere..... *Verdi*
1055 It was not thus to be, Song *Nessler*
1056 Revel of the Brownies, Polka, *Stults*
1057 Stabat Mater, Cujus Animam, *Rossini*
1058 Under the Mistletoe, Waltz, *T. H. Rollinson*
1059 The Sidewalks of New York *Lawlor & Blake*
1060 Russian National Hymn ....*Lvoff*
1061 Soho Galop..... *Godfrey*
1062 The Piccaninnies' Picnic, Schottish .....*Tracey*
1063 Dainty Step, Caprice, *Henry Lamb*
1064 Boston Post March.. *G.L. Tracey*
1065 Awakening of the Lion, Caprice Galop.....*Kontski*
1066 Adeste Fidelis.....
1067 Ave Maria..... *Dano*
1068 Dancing on the Pier..... *Christie*
1069 Freischuetz, Prayer..... *Weber*
1070 Colored Four Hundred March, *J.W. Wheeler*
1071 Rigoletto, Quatuor..... *Verdi*
1072 "Love Me," Song. ..*Hans L. Line*
1073 Scintillation March..... *Rollinson*
1074 I don't want to play in your yard *Petrie*
1075 Ernani, Cavatina..... *Verdi*
1076 Ting-a-Ling-Ting-Tay, Song, *Dacre*
1077 "Nizetta," Waltz..... *Meachem*
1078 'a Mail(fter). Pop. Song.....
1079 "Oh! Promise me," Song *De Koven*
1080 Maggie Mooney..... *Thornton*
1081 The Wishing Well. .*Wattern Pegg*
1082 Two Little Girls in Blue.. *Graham*
1083 Dinorah, Shadow Song..*Meyerbeer*
1084 Blue Danube Waltz .....*Strauss*
1085 Mignon, "Knowest Thou the Land" *Thomas*
1086 Say "Au Revoir" but not Good-Bye..... ....*Kennedy*
1087 L'eclair, Romance.....
1088 Last Night.....*Kjerulf*
1089 Sweet Helen May, Song *Ruhlman*
1090 Oh! Honey! My Honey, Song, *Caryll*
1091 In Old Madrid.....*Trotére*
1092 Honeymoon March.....*Rosey*
1093 The little Piggie who roamed, Song.....*Roma*
1094 Christmas .....*Shelley*
1095 Katy Mahone.....*Olcott*
1096 Stay with me .....*Abt*
1097 Manhattan Beach March....*Sousa*
1098 Ben Bolt.....*Knaass*
1099 Marguerite.....*White*
1100 Annie Laurie.....
1101 I would that my love, Duett *Mendelsshon*
1102 Menuet a l'Antique... *Paderewski*
1103 The Palms.....*Faure*
1104 When the Swallows homeward fly *Abt*
1105 The Ship I love, Song. *McGlennon*
1106 Old Black Joe.....*Foster*
1107 Only one Girl in the World for me.....*Marion*
1108 And the Band Played on. Song. *Ward*
1109 The Marseilles Hymn.....*de l'Isle*
1110 King Cotton March.....*Sousa*
1111 Hoolah! Hoolah!, Midway dance *Ferry*
1112 Lead kindly Light.....*Bykes*
1113 Amorita Waltz.....*Czibulka*
1114 Thou art so near and yet so far *Reichardt*
1115 Habanera from Carmen ....*Bizet*
1116 Faust, Flower Song .....*Gounod*
1117 The Watch on the Rhine *Wilhelm*
1118 Lorena, Song.....*Webster*
1119 Angel's Serenade.....*Braga*
1120 The Spanish Cavalier *Hendrickson*
1121 The Lost Chord .....*Sullivan*
1122 The Sunshine of Paradise Alley *Britton*
1123 Invitation to the Dance *Weber*
1124 Appear Love at Thy Window *Gregh*
1125 Sylvia Pizzicati.....*Delibes*
1126 Gavotte in Grey ....*de Koven*
1127 Yankee Doodle.....
1128 Selection from Erminie *Jakobowsky*
1129 Selection from Pinafore. *Sullivan*
1130 Selection from "Pirates of Penzance" .....*Sullivan*
1131 Rally 'Round the Flag Boys.....
1132 Glory, Glory, Hallelujah .....
1133 Marching through Georgia.....
1134 The Tyrollean and his Child *Kucken*
1135 Just Tell Them that you Saw Me *Dresser*
1136 She May Have seen Better Days *Thornton*
1137 Listen to the Mocking Bird. *Grobe*
1138 The Wayside Chapel.....*Wilson*
1139 Grace Waltz.....*Bohm*
1140 Polish Dance .....*Sharwenka*
1141 Anchored.....*Watson*
1142 Auld Lang Syne.....*Crafton*
1143 Red, White and Blue .....
1144 Put Me Off at Buffalo. ... *Dillon*
1145 Little Alabama Coon *Hattie Starr*
1146 Some Day I'll Wander Back Again

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Water-blown Organs in the 17th Century

By Susi Jeans and Guy Oldham

AMONG the most ingenious and curious mechanical inventions described by writers in the 17th century were automatic organs which were blown by water. The two most important sources of information are Athanasius Kircher's *Musurgia Universalis*, Rome, 1650, and A. Schotto's *Magiae Universalis naturae et artis, Pars II, Acustica*, Würzburg, 1657. Both authors provide diagrammatic pictures: Kircher's drawing is reproduced in W. L. Sumner's *The Organ*, together with a translation of Kircher's description of the apparatus. The more detailed pictures of Schotto are reproduced here. In both Kircher's and Schotto's drawings the organs are entirely motivated by water, which not only supplies the wind to make the pipes speak, but also the power to drive a waterwheel, which in turn drives a cylinder or barrel. This is of course quite distinct from the hydraulis, which was hand blown and employed a hollow hemisphere inverted in water as a pressure stabilising reservoir.

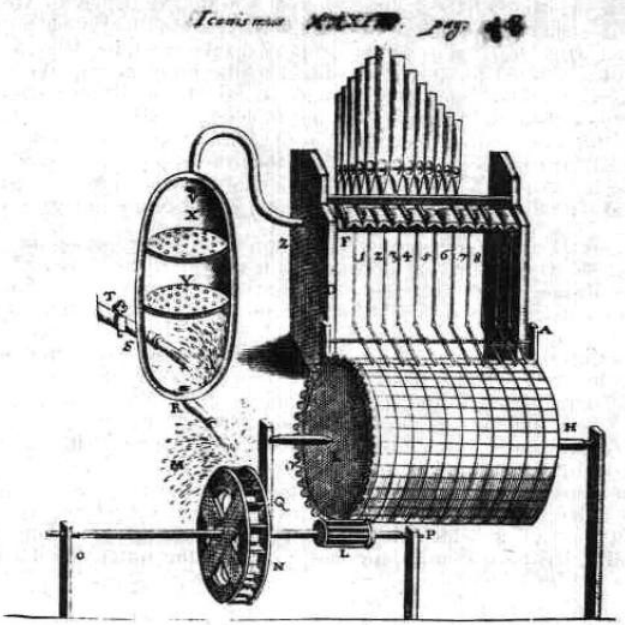
Kircher's own description of the apparatus does not help to understand its working, and it is generally assumed nowadays, that both Kircher's and Schotto's water organs could not have worked the way depicted without some further explanation.

A few years ago one of the writers showed Schotto's drawings to Mr. D. A. Flentrop, the well-known Dutch organ-builder, who suggested that it should be published in the Dutch organ journal, *Het Orgel*. The picture appeared there in June, 1954, was called a "puzzle" and a prize was offered for the best solution to the problem. In the July issue of the same journal a very plausible solution was supplied by Mr. B. R. van Dijk of Amersfoort, who pointed out that Schotto's picture was incomplete and showed only part of the apparatus, the rest of which worked on the principle of a filter pump, well known in laboratories. He also explained, with the help of a drawing, how the apparatus worked, and that it could be used only in hilly districts, where the water could descend from a considerable height. This device was also used to blow blast furnaces,[1] and is still in use today.

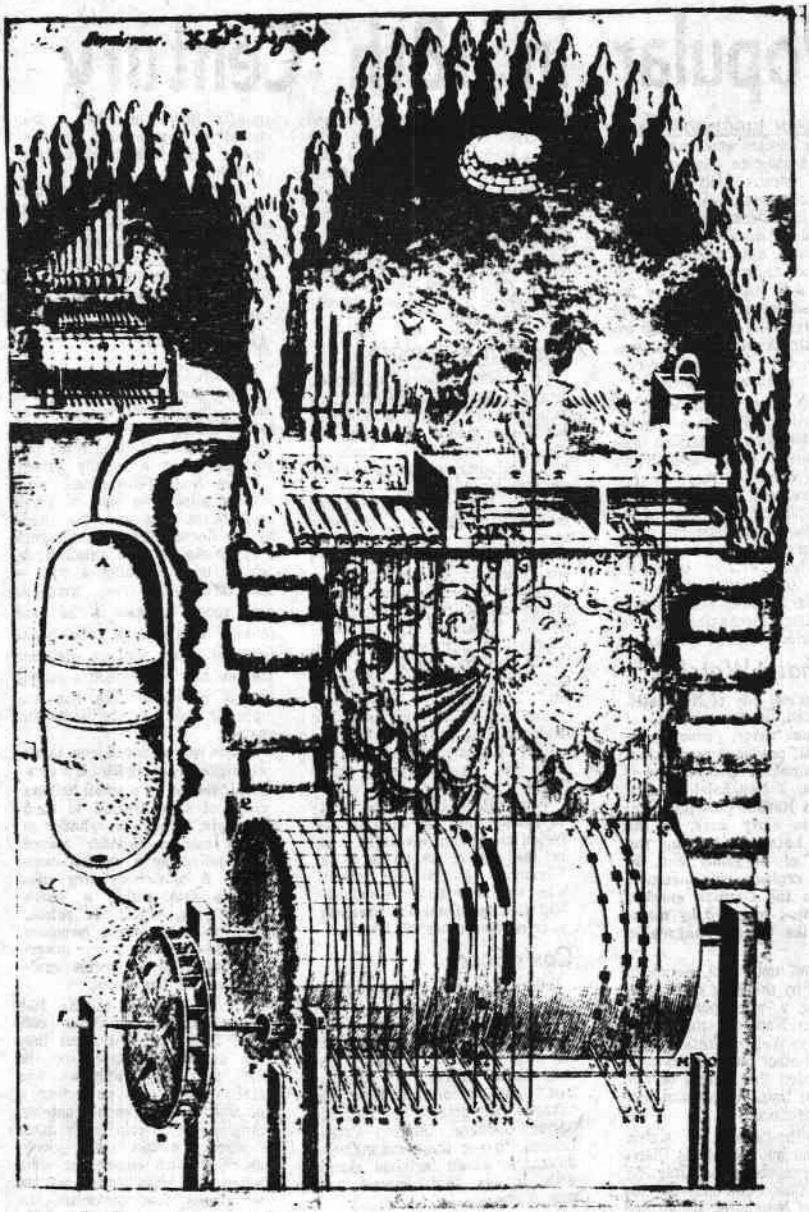
Schotto's organ and contemporary references[2-5] to water organs in grottos and vineyards in Italy and elsewhere, indicate the important clue that the "feeder" VXYR (*fig.* —) is a considerable distance below ground. As the water supply is presumably from a lake or stream at ground level, there would be available a substantial height or *head* of water in the tube AB sufficient to provide a rapid flow of water. If now a tube T is partially inserted into the top of the pipe at A, air will be sucked down with the water as in a simple laboratory filter pump. The froth of air and water separates in the feeder. The air rises through the sieve plates X and Y, which act as spray traps, and is then available to blow the pipes. The water falls to the bottom and leaves at R, where it falls on the waterwheel which drives the barrel mechanism. On opening the tap at B, water will accumulate at the bottom of the feeder and its level will rise until the pressure at R due to its own height plus the air pressure is sufficient to drive the water out at R as fast as it enters. Thus the water level is largely self-adjusting at an equilibrium level which depends on the setting of the tap and the rate at which the air is being consumed. A working model has been constructed and it has been found quite easy to adjust the water flow for steady conditions.

Although these organs were cylinder- or barrel-organs, both Kircher and Schotto showed keyboards as well, but these may have been merely additional means to enhance the "magic" aspect of these early automata in their romantic surroundings.

[1] Denis Diderot: *Encyclopaedia* (1751-1772).
[2] John Webster: *The Deuils Law-case* (1623).
[3] Francis Mortoft: *His Book* (1658-9).
[4] Thomas Powell, D.D.: *Humane Industry:/ OR, A / HISTORY / of most / Manual Arts*, (London, 1661, pp. 36-9, 109).
[5] James Grassineau: *A Musical Dictionary*. (London, 1740).



Detail of automatic mechanism.



Water Organ in Grotto.

Elaborate Music Boxes Popular in 18th Century

By SUSAN HIGGINSON NASH

Before clocks were made with hands to indicate passing hours, "Jacks" struck bells connected with clock mechanism to tell the time of day. Jacks were mechanical figures modeled after men whose public duty it was to strike bells and chimes to tell what hour it was. A Jack above the north transept of Wells Cathedral in Somersetshire, England, for example, struck the hours. It was installed, circa 1390, and for centuries it continued to perform.

Some of these Jacks were attractively-formed bronze figures of boys, although the earliest ones were made of wood. Usually, in the right hands of these figures, staffs were held. The arms moved mechanically rising and falling against gongs, thus attracting passing citizens, and when installed in churches perhaps suggesting the hour to attend service.

These large Jacks were followed by smaller mechanical figures used in clocks for residences.

Neuchatel Watches

The ancient city of Neuchatel, Switzerland, in the province of the same name, upon Lake Neuchatel, produced many skilled watchmakers and makers of automata. Neuchatel, once known as Hovum Castellum, belonged, in early days, to the Franks. Later, it became the kingdom of Burgundy and, in the 11th century, was incorporated into the German empire, when it was governed by members of the Orleans-Longueville family.

From 1707 until 1848, Neuchatel was ruled by the King of Prussia, except for a brief period, 1806-1814, when Napoleon made it a principality. Watchmakers of Neuchatel and other Swiss towns carefully guarded the secrets of how mechanical toys, figures and boxes were produced.

Among the ablest of watchmakers and automata was Pierre Jaquet Droz, born on July 28, 1721 at Chaux-de-Fond in the Province of Neuchatel. He studied at Bale, and endeavored, after leaving his studies there, to produce a clock that would have perpetual motion.

He made a clock with many mechanical devices and was sent with it to Madrid, in Spain, to present it to the King Ferdinand VI (1746-'59). He took with him also a number of mechanical curiosities which delighted the Spanish monarch.

One of these objects was clock to which was attached mechanical man, who moved about, a sheep that bleated, and a dog that barked when the man approached a basket that the dog was guarding.

London Automata

In London, Henri Maillardet, and Jean-David Maillardet made automata. They were also agents for Pierre Jaquet Droz and his son, Henri-Louis Droz, born, as was his father, at Chaux-de-Fond, on October 13, 1752.

Droz, the younger, studied mathematics in Nancy, but soon was producing watches and automata. The Drozes, father and son, produced the three famous automata now on view at the Musee d'Histoire at the Beaux Arts in Neuchatel. One of these figures that still moves so realistically is a young girl, The Musician, who plays upon a "clavecin." The other two figures are young men.—The Writer, and The Designer. One may still be seen moving his hands and writing, while the second young man draws.

Young Henri-Louis Droz went to London, but the climate affected his health adversely, and at the age of 39 he died on November 18, 1791. His father, who had also visited England, had died in Bienne the previous year on November 28, 1790.

Cox's Boxes

One of the best-known makers of automata in England, and who displayed mechanical figures, was James Cox, who, in 1772, offered for exhibition "several superb and magnificent pieces of mechanism." An admission fee was charged to enter the hall in Spring Gardens, Charing Cross, London, to see these magnificent automata, which included clocks with figures that danced and moved about.

James Cox made clocks of extreme elaborateness and ornamentation for export to China and to potentates in the Far East. One such clock, dated 1766, and signed by Cox, had four feet in the form of elephants that supported a box made of agate with scrolls, masks, and fruit in high relief of gold.

The box contained a carillon which played at each hour, and above it was a smaller box where dials indicated different phases of the moon. A small round white enamelled clock face, with hands, surmounted the gold boxes. The clock was 14½ inches in height.

Music Boxes

Perhaps the most charming and certainly the most popular of 18th and early 19th century automata were musical-boxes of various types. Boxes containing birds that whistled were especially prized.

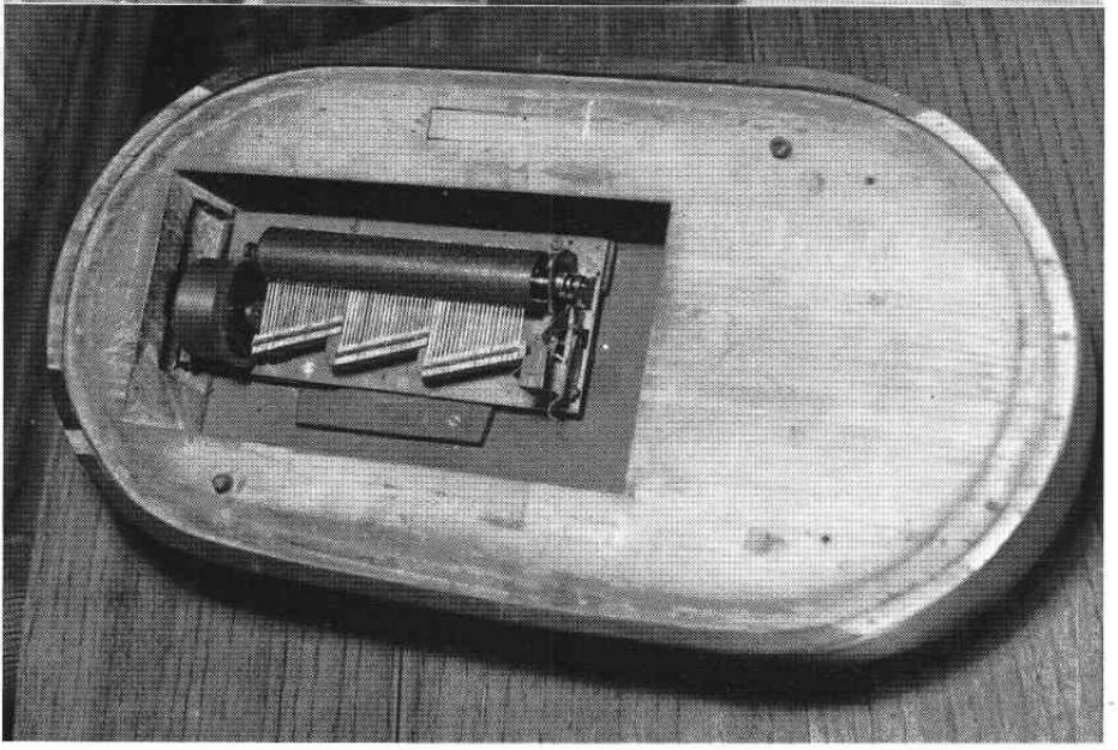
Three Singing-Bird Boxes were usually about the size of small snuff boxes. One such box made by the Rochat Freres, and signed F.R., contained two small birds, which, upon touching a part of the mechanism, rose from an oval recess beneath a lid, and moving tails, wings, and beaks fluttered about, singing. Between the two tiny birds stood a minute tree of diamonds. The box was made of gold and brilliant blue enamel.

Sound was produced from these exquisite Singing-Bird Boxes by air forced by a small bellows made of skin, treated to keep it supple, through a cylinder in which another cylinder moved as required by a moving cam-wheel. A movement very similar to that within a watch caused the wheel to rotate. Keys to wind these precious Singing-Bird Boxes were generally hidden in a secret compartment of the boxes.

With the coming of the 19th century, Singing-Bird Boxes continued their popularity, but they were no longer made, for the most part, by craftsman who might spend years perfecting a box and its mechanical contents.

Singing-Birds were finally made of common metals. Gold, jewels, and even much enamelling were omitted. Machines turned out the mechanisms that controlled the fluttering wings, quivering tails, and moving mandibles of the songsters; and the sound of singing no longer had the modulated tones of the 18th century birds made by the great Swiss master, Henri-Louis Droz, and his contemporaries.


TAKE
FIVE



HARP EOLIENNE

F. CONCHON

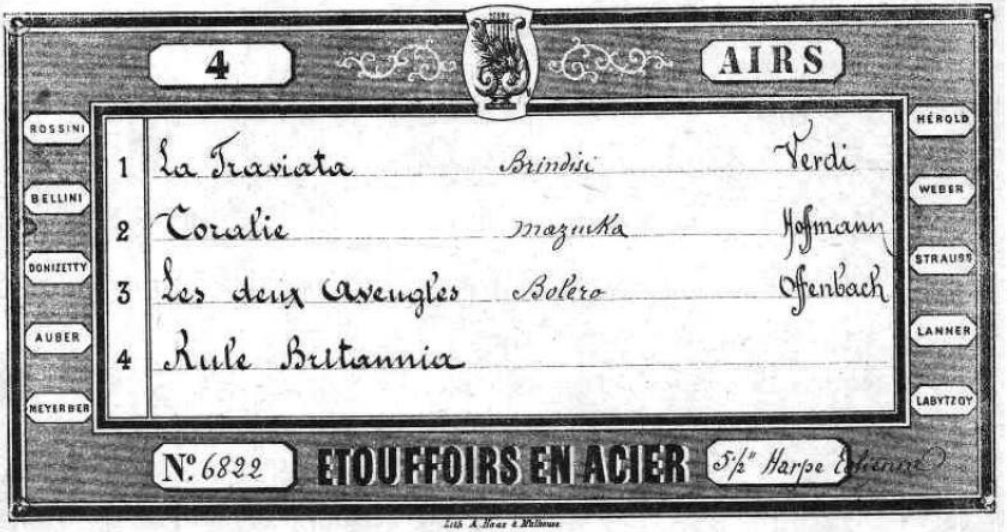
trade mark

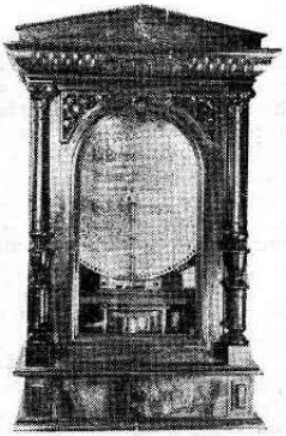
When the musical box had become well established during the latter part of the nineteenth century, many attempts were made to produce a musical box which, by virtue of some supposed advantage (today we would refer to such a feature as a 'gimmick') might be presented to the market - already being swamped with musical boxes - and meet with good sales. F. CONCHON of Geneva were thus far from unique in their endeavours to produce a different type of musical box. Already famed for their very good quality three and four comb boxes, they most likely traded on the popularity of the forte-piano box, well established at this time - c.1890. This style was expensive to produce but any box which played two or more combs, whether forte-piano or just manufactured that way out of convenience, looked good and sold well.

It was no doubt this line of thought which led to the production of the "Harp Eolienne". This box featured two combs as in a forte-piano but the shorter, lower comb comprised teeth of the same tonal strength and flexibility as the major comb but the teeth, note for note, were a little shorter and had no resonators. The novelty of the arrangement lay in the fact that the small comb was equipped with a little 'zither' attachment fitted beneath the comb, similar in style to that fitted to the smaller Symphonions. The control lever was not positive - in keeping with better-class zither attachments - in that the degree of pressure exerted by the paper tube of the zither on the teeth could be varied to suit the whim of the listener. According to Jaccard (quoted in Mosoriak), not many of these boxes were produced, so the public probably could not agree that the arrangement was worthwhile although the occasional chord and phrase performed on the muted teeth is interesting.

The F. CONCHON trade mark (right) appears on the cock of the box illustrated by courtesy of Graham Webb. The name CONCHON is always stamped on the forward face of the brass comb base under the base teeth. Tuning divisions on Conchon combs are clearly scribed and are numerically identified. The combs have deeply countersunk dowel pins and the bedplate is of finely-ribbed cast iron. The box shown here measures 14" long x 5" high x 7¼" deep. The main comb has 52 fine teeth, the smaller one having 22 teeth. The music on this box, number 6822, is pleasingly set up.

APPROXIMATELY 5/16" WIDE





Renovating a POLYPHON MUSIC BOX

It was falling to pieces—you would have said it was irrecoverable—ERNEST L. LEE decided to try his hand at repairing it

THIS is the recent history and a description of a large coin operated German made cabinet type "Polyphon" music box, which plays discs 19⅛in. in diameter. The box is dated 1897. It was found in a hen-run, where it was "stored" by its owner because he had no room for it in his cottage and thought it completely useless.

The cabinet had sadly degenerated; much of the veneer had fallen off and woodworm had taken full toll. The driving (clockwork) mechanism was rusted solid and many of the smaller brass parts had been eaten away by verdigris. The playing mechanism appeared to be almost beyond redemption.

While the instrument was not economically worth repairing, it seemed a pity to let it lapse into a complete loss if anything could be done with it. So I acquired it, loaded it into the car and took it home, much to my wife's displeasure.

Work was soon commenced and the mechanical parts were all removed from the cabinet, well dosed with penetrating oil and laid aside to soak.

FELL TO PIECES

The cabinet casing (measuring 40in. high, 27in. broad by 15in. deep) was then dismantled (an overstatement—it practically fell to pieces) and the worm-eaten parts detached, sketched and then burnt; these included the coin-containing drawer and most of the horizontal woodwork. The vertical side and back panels were in usable condition as was the cornice or ornamental moulding round the top. The cabinet was rebuilt and the necessary new wooden parts required were made of softwood—hardwood deadens the tone.

Before rebuilding the casing it was steeped in liquid woodworm-destroying compound for several weeks then scraped and reveneered where required. The original form of construction was slavishly followed. This is very necessary because the woodwork of the cabinets of these instruments acts as a sounding board, and the music-producing mechanism relies on this fact for much of its mellowness and volume. The entire top of the casing is a hollow soundbox, while the drawer space beneath also acts in a similar capacity.

SUPEREROGATION

A new triangular pediment was made because the somewhat florid type of ornamental top (sometimes containing a timepiece) usually associated with Polyphons, was missing, and a hand-carved replica with small turned pillars would have been a work of supererogation.

It is generally known that the pins on the revolving brass cylinders of ordinary music boxes pluck the tips of the tuned comb teeth in passing, but there is no immediate contact between the disc of a Polyphon and the comb teeth themselves.

The discs are usually made of sheet steel, about 0.015in. thick, and have lugs formed on one side of them, corresponding in function to the pins on cylinder machines. A central hole in each disc is a running fit on a spigot mounted on a solid (and very heavy) cast iron bed-plate, which is screwed to the back of the cabinet. The discs are driven by a gear wheel with conical teeth positioned to engage perforations pierced round the periphery of the disc. The parts mentioned can be seen in Figs. 2 and 3.

On the outer surface of the bed-plate are assembled the various music playing mechanisms and Fig. 1 shows the general arrangement, viewed in section, along the surfaces of the disc and bed-plate. This helps to show the way the music is played.

There are 118 star-wheels and 57 playing teeth on one comb and 61 on the other. The tuned teeth do not conform to a chromatic scale. Some are tuned to the same

pitch as their neighbours, others half a tone or so up or down. The deeper (bass) tuning is obtained by fitting lead resonators of graduated sizes to the underside of the large tuned teeth (see Fig. 1).

In addition to the parts mentioned and shown in the sketch, there are two sets or series of small but very important devices, one of which is situated between each two of the tuned teeth and also between the star-wheels. These are the dampers and they are made of spring brass.

It should be explained that, during the whole of the time the instrument is playing, all the tuned teeth are in a state of continual vibration. If a damper is not working, i.e., does not damp out the vibration at the appropriate moment, a most distressing buzzing noise will be set up. This is caused by the tip of an arm of a 9-toothed star-wheel coming into contact with the end of a tuned tooth which is still vibrating—the two points jar as they come together.

One missing damper can completely mar the music; if several are broken or displaced, then the "music" may scarcely be bearable.

The playing of a Polyphon should be clear, brilliant and free from all inharmonious sounds; if it is not, there is probably something the matter with the dampers.

TWO TYPES OF DAMPER

Polyphons have dampers of two types, differing in shape according to which side of the star-wheels they are fitted. Those fitted to one comb are more or less straight if viewed in front elevation, whereas those used on the other have a different profile (Figs. 5 and 6).

The original straight ones are made integral with a brake arm. The function of this arm is to press against the side of the star-wheel and prevent it from overrunning. The dampers are arranged in suitably spaced slots cut in brass fixing strips, into which they are soldered. The strip is screwed to the bed-plate. A row of dampers can be seen in Fig 4.

In stripping down the musical elements of a box, it is important to ensure that major alignments are not disturbed. Because they are dowelled, the playing combs can be removed without causing difficulty on reassembly. On no account should the long slotted standard, or bearing, carrying the shaft on which the star-wheels revolve be moved from its anchorage on the base plate it is not dowelled and does not align with but is offset from the central spigot on which the discs turn. It is also packed on washers by the manufacturers.

If this setting is once lost it is extremely difficult to find again. The star-wheels can be removed for cleaning by withdrawing the shaft; it is held by a single pin at the extreme end of the slotted standard. Before removing the damper fixing strips, mark their exact position on the bed-plate, and attach with wire to their respective screw holes any packing pieces (washers) found under the strips.

The first mechanical part to be overhauled was the playing mechanism, so the combs were removed and it was found that four of the lead resonators had become detached from the back of the bass teeth on one comb. They were retrieved from the bottom of the cabinet—which was very lucky! Of course, the combs were sadly rusted, but fortunately the deep rust did not extend much beyond the solid metal supporting the playing teeth, and they were not pitted too deeply.

Much careful work was entailed in removing the rust with emery cloth and all the rubbing was done from the backs of the combs towards the teeth—nothing looks worse than scratches running against the direction of the teeth. If metal is removed from the teeth themselves, they will not remain in tune, therefore pains were taken to interfere with them as little as possible. The points of the playing teeth of this instrument were not too badly worn; in fact, from all appearances, it had not had much use. The slight ledges round the indentations made by the star-wheels were carefully removed with an oil stone, and

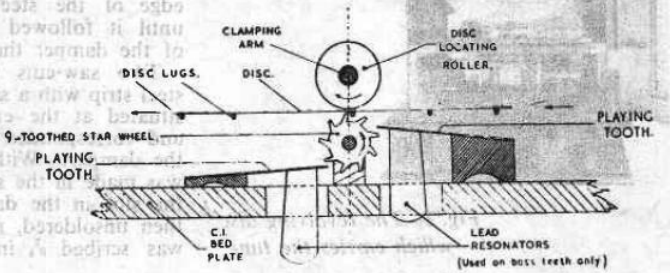


Fig. 1: The playing mechanism — dampers not shown

the spaces between the teeth cleaned with a visiting card.

The refitting of the resonators was accomplished fairly easily, because it was obvious (by their size) from which teeth they had fallen. The makers solder these weights to the teeth, but if this is attempted, one is pretty sure to unsolder adjacent resonators. For this reason, the parts to be refixed were thoroughly cleaned at the join, and Wood's metal used to "stick" them together instead of the more usual tinman's solder. Wood's metal melts at about 160°F., well below the boiling point of water; therefore a thin sliver of this metal was cut and laid with just a trace of Fluxite between the two surfaces to be repaired, and the two parts secured together with a small tool-maker's clamp. The clamp arm that rested on the tuned tooth was then gently heated until the Wood's metal was seen to run and then the blowpipe was turned off. This proved an effective way of making the repair, and the temper of the teeth was unimpaired.

Many of the dampers were decayed so badly as to be useless, therefore about 90 new ones had to be made. I cheated a little, because I found that the dampers that are integral with the brakes could be made of strip spring brass in two pieces —the damper and the brake (see Fig 5).

In any case a number of single brakes had to be made, as all these are on one side of the star-wheels; the dampers on the other side being without brake attachment. This means that there has to be an extra brake between each two of the straight dampers.

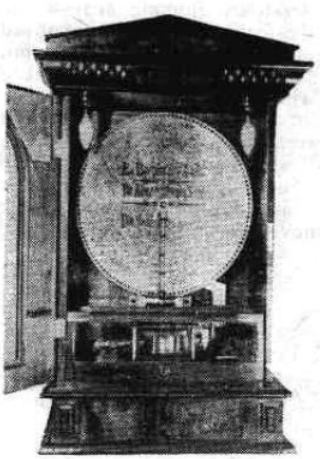


Fig. 2: The revolving disc which carries the tune

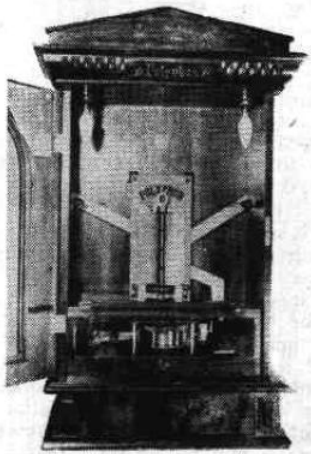


Fig. 3: The bed-plate and gear wheel

The separation of the dampers from the brakes made lining up and soldering them in position on the fixing strip a little more difficult, but the new dampers were simple to make. They were made of brass strip 1.25 mm. wide by 30 s.w.g. They were accurately cut off to length, their ends rounded and the curve put in at the correct position by means of a simple bending jig fixed in the vice. The brakes were of the same strip metal, also cut accurately to length and rounded off.

FIDDLING JOB

The other dampers were a fiddling job. A strip of bright mild steel, $\frac{1}{16}$in. thick by $\frac{1}{4}$in. wide, was cut to a length of about 3in. An old damper of the type shown in Fig. 6 was straightened (i.e. the curve was removed) and then it was soldered to the steel strip, near the centre and as close to the edge as possible without protruding beyond it. The tongue, which is divided from the main body of the damper by a slot, was disposed along the edge of the strip. With the damper so fixed to the strip, the latter was held in the vice and the steel carefully removed from the straight edge of the steel strip with needle files until it followed the contour of the side of the damper that was uppermost.

Two saw-cuts were then made in the steel strip with a small hacksaw—these were situated at the end of the filed contour, and corresponded exactly to the length of the damper. With a jeweller's saw, a slot was made in the steel strip, coinciding with the slot in the damper. The damper was then unsoldered, removed, and a deep line was scribed $\frac{2}{64}$ in from the edge of the

strip. The steel strip was cleaned up and case-hardened. This gave me a filing and sawing guide for one (the more difficult) edge or contour of the dampers. In addition, the damper length was standardised by the hacksaw cuts.

Being fortunate enough to obtain spring brass strip, 30 s.w.g. by $\frac{1}{8}$in. wide it was a simple matter to lay this along the scribed line, grip both the brass and the steel strip together in the vice, file the contour on the brass strip with needle files, cut the slot with the jeweller's saw and saw off the damper to length by using the small hacksaw in the saw-cuts referred to above. In order to make the last cuts, false jaws $\frac{1}{4}$in. long had been made to fit the vice. These were smooth and therefore did not injure the strips. Thus, I had dampers with a correct contour on one side only.

SCRIBED MARKS

To finish the other edge, it was not difficult to file out the $\frac{1}{8}$in. radius by hand (its position is not over-important) and to remove the surplus metal near the top of the damper. The positions where the dampers were to be filed were indicated by scribed marks on the false vice-jaws. The same bending jig as was utilised for the other type of damper was used to put in the $\frac{3}{32}$in. radius curve.

The next difficulty to be surmounted was to get the dampers soldered into the slots on the damper fixing strips and to keep them in line while so doing.

First, the ends of the original dampers were removed from the damper fixing strips —this was done by carefully cutting them out with the jeweller's saw. Heat might have disturbed the remaining original dampers which were required for lining up.

When all the slots were clear, the original

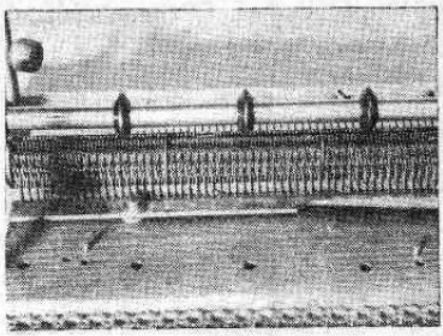


Fig. 4: A row of dampers mounted on the fixing strip

dampers left on the fixing strips were carefully bent into their correct forms and positions.

The straight dampers and brakes shown in Fig. 5 were tackled first. A length of brass strip was cut and filed up to form the temporary support shown in the sketch. This was laid in the space between the existing brakes and dampers that remained on the damper fixing strip and it extended the full length of the strip. The positioning of this is clear in the sketch. The next problem was to attach the brass strips forming the dampers and brakes to the temporary support, with their lower extremities resting in the slots in the damper fixing strip, ready for soldering in place. This was done by attaching them to the support with Seccotine.

BOILING WATER

When the gum had set, it was very easy to run a soldering iron along the fixing strip and solder the dampers and brakes in place. The whole was then placed in boiling water—this dissolved the Seccotine

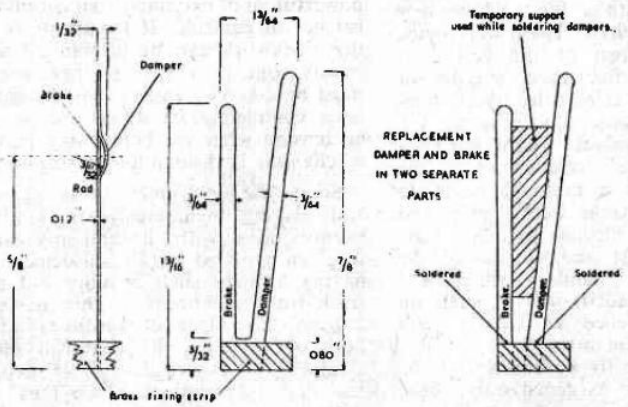


Fig. 5: A damper with brake

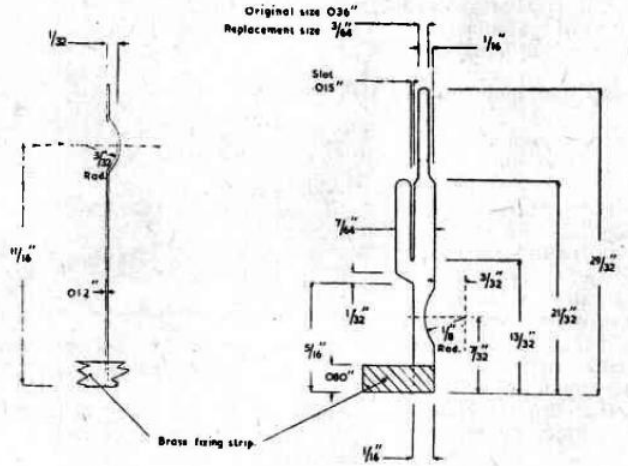


Fig. 6: A damper without a brake

at the same time removing all vestiges of the acid flux I used. The temporary support was, of course, removed.

The soldering of the other dampers was accomplished in much the same fashion. It was not possible to use quite the same type of temporary support as was used in the first instance, but a strip of steel (from an old pair of corsets) was found that fitted the slot in the dampers shown in Fig. 6. The process thereafter was the same as that used for the first lot of dampers, with the exception that the strip steel was used in the slot instead of the shaped brass strip.

THREE NEW STAR-WHEELS

The 9-pointed star-wheels were removed from their standard and smoothed on both surfaces with a dead smooth file. This removed the burrs. The arms were examined and where these were hooked or burred over, the rough edges were carefully touched up with a file. Three new star-wheels were required. These were made by case hardening two of the best star-wheels, and cutting five short lengths, or blanks, from an old steel rule, which happened to be the same thickness as the star-wheels. These blanks were softened and drilled to fit the shaft on which the star-wheels run, and a mandrel made to fit the holes. The blanks were then placed on the mandrel with the two hardened star-wheels placed against and outside of the first and last. The mandrel (which had previously been threaded) was screwed up lightly. The hardened star-wheels were adjusted so that their arms were in line. The mandrel was finally tightened and the blanks filed up to the hardened star-wheels, which acted as filing jigs.

When completed, the burrs were removed from the five new star-wheels and then used to replace the three discarded ones, plus the two that had been hardened. (I did not fancy using these again even if they were properly heat-treated and softened. The old German low carbon steel used in these instruments does not conform to modern standards and, once hardened, it does not seem to react favourably to softening but remains brittle though it can be filed easily.)

The music playing mechanism was then re-erected and a disc placed on it and turned by hand. It took some time and patience to get the dampers to work perfectly after a lot of adjustment.

The repair and reconditioning of the clockwork motor was a straightforward job and requires no description here. A warning should, however, be given regarding the springs in these motors—they are very powerful and extremely dangerous if they get out of control. If the spring is broken, the clockwork can be dismantled with impunity, but if it is not, then every care must be taken to ensure that the spring has been completely let down and is exerting no tension whatever before *any* part of the mechanism is dismantled or released.

Soon the instrument was reassembled and playing melodiously—there are some twenty discs with it—and my wife has forgiven my original misdemeanour in having brought such a filthy old piece of trash into the house. This music box is a handsome piece of furniture now, and both of us enjoy the beautiful old tunes it plays. If any reader would like further technical information, which I can supply, write to me, care of the Editor.

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RE-PINNING SWISS MUSICAL BOX CYLINDERS

RUTH BORNAND

The cylinder pins seem to create more curiosity among people not familiar with musical boxes than any other part of the mechanism and all sorts of questions are asked about how they got there and what makes them stay.

During the period of the manufacture of musical boxes in Switzerland during the 1800's the pinning of cylinders was considered the women's part of the work. It was usually done at home after the day's chores were finished and was what would today be called "piece work".

The most common system of marking the places for the pins or notes on the cylinder was on the general idea of marking the notes on the paper rolls used on the old player pianos. The marked paper was placed carefully on the blank cylinder and tiny holes drilled where the pins were to be placed. There was another, although less used, method of marking the notes on the flat metal before the cylinder was made but this was not considered to be as successful.

After the pins were inserted in the cylinder, the cylinder was cemented inside and the pins turned down on a lathe to the correct uniform height.

Some of the very early musical box cylinders were made without any cement filling. If restoring a mechanism of this kind, it is advisable to cement the cylinder as it greatly improves the tone quality. In a musical box that has not been played for many years, the cement in the cylinder has usually fallen to the bottom side and this produces a dead or hollow sound when the box is played. In this instance, it is necessary to re-cement the cylinder and this is done by rapidly turning it over heat, thus evenly re-distributing the cement.

Cylinders are re-pinned when damage has been sustained to the pins either through damage to the governor or spring causing the mechanism to 'run' thereby stripping off one or more of the tunes by bending and breaking so many of the pins that the music is lost. First, the cement is melted, removed and saved for re-use. The cylinder is then immersed in a bath of acid, carefully watched and turned and left long enough to have the acid eat out all the old and useless pins without damaging the cylinder itself. After being cleaned thoroughly, it is ready for the new pins which have first been matched up to the original ones for size.

The pins for the cylinders are made in notched lengths of special steel wire, five to six inches long, with forty to fifty pins to the stick. They measure from four to sixteen thousandths of an inch in diameter.

The process then follows the original manufacturer's procedure. The pins are inserted in the same holes, the cylinder re-cemented, and the pins turned down to the original length. This restores all of the original music to the cylinder. Repinning a cylinder is like saving the life of a musical box which would otherwise have to be discarded.

It may be of interest to know that from the time Mr. Bornand resumed his musical box work at the end of the war up to this writing we have re-pinned the cylinders of many musical boxes with cylinders ranging from four to twenty-two inches in length and up to five inches in diameter. The pins are still supplied to us by Camille Bornand of Neuchatel, Switzerland who still makes them on the original Bornand family pin lathe.

fair(y) land

☆ ☆ ☆

by Graham Webb

Have you ever dreamed of retiring young (say, 55) and having enough money and time to devote to your hobby of mechanical music? With, perhaps, an outdoor sport within easy reach - say fishing - to make an occasional quiet change from music? If you have - and who hasn't! - then like me you will feel wholesomely envious of a man who has done just this.

Mr. W. J. Barlow, owner of the 'Fair Organ Museum' lives in a sturdy bungalow just outside the Shropshire village of Cleobury Mortimer and there he has gathered together in a large shed in his garden no less than eight fair organs. Some are shown on the facing page.

When Ron Lee and I went to visit him, we were literally overwhelmed by the sight of a large timber building, seemingly bursting at the seams with these wonderful machines. Forcing our way in, we were immediately confronted by a huge 23 feet long and 16 feet high Gavioli "Troubadour" Organ, decorated in traditional fairground style complete with moving figures. Seeing our enthralment, Mr. Barlow kindly offered to demonstrate the sound.

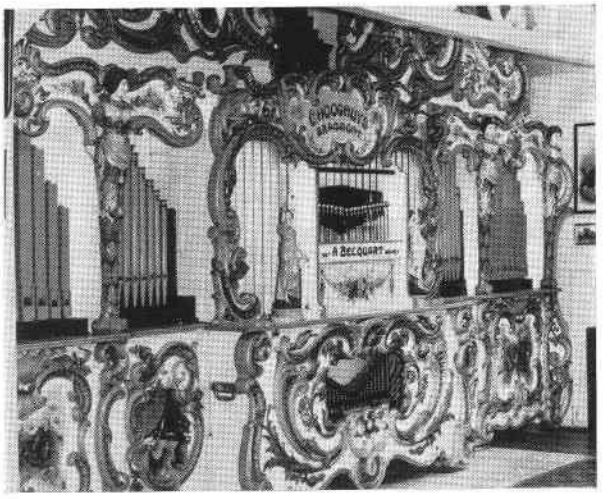
Prepared as we were by the size of the machine, the enormous amount of noise took us by surprise and it was some little while before our ears were atuned enough to appreciate the beauty of the most exhilerating, delightful sound one could possibly imagine.

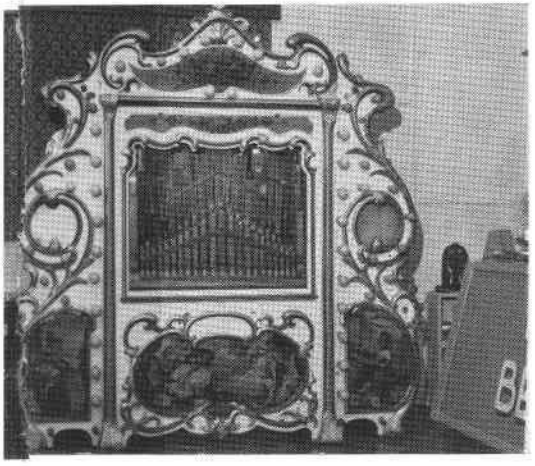
The afternoon passed swiftly, loudly and sweetly with music by each of the organs in turn to guide us through the maze of colour, hand carved figures, painted scenes and hundreds of lights, all nostalgically roisterous and magical.

So magical in fact was the afternoon that when sprightly Mr. Barlow (now 65) postured with his Barker's stick in front of a beautiful Hooghuys masterpiece and asked us to imagine the troups of dancing girls, we found it no more difficult than Gerry Planus found it to see the now-famous fairies.

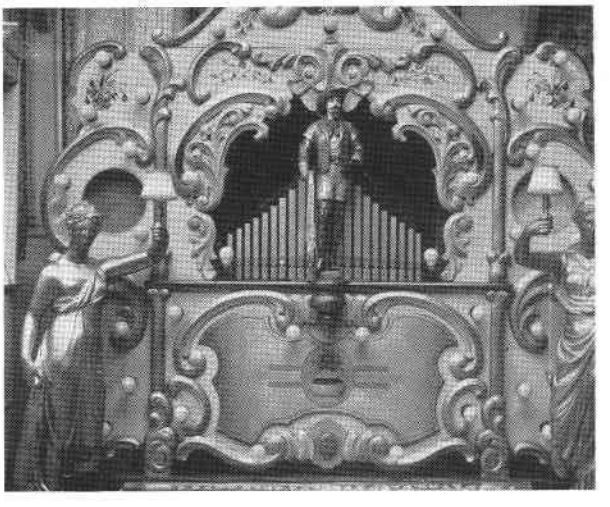
Exhausted but happy, we three returned to the house for tea like boys back fron sneaking under the tent wall. Even then all was not over and all through tea we were treated to one of Mr. Barlow's collection of organ recordings. This one (of a Dutch orchestrion) for majesty of sound must surely be without equal. We left Mr. Barlow and his sweet wife and went home with almost too much for us to remember and to savour.


TROUBADOUR

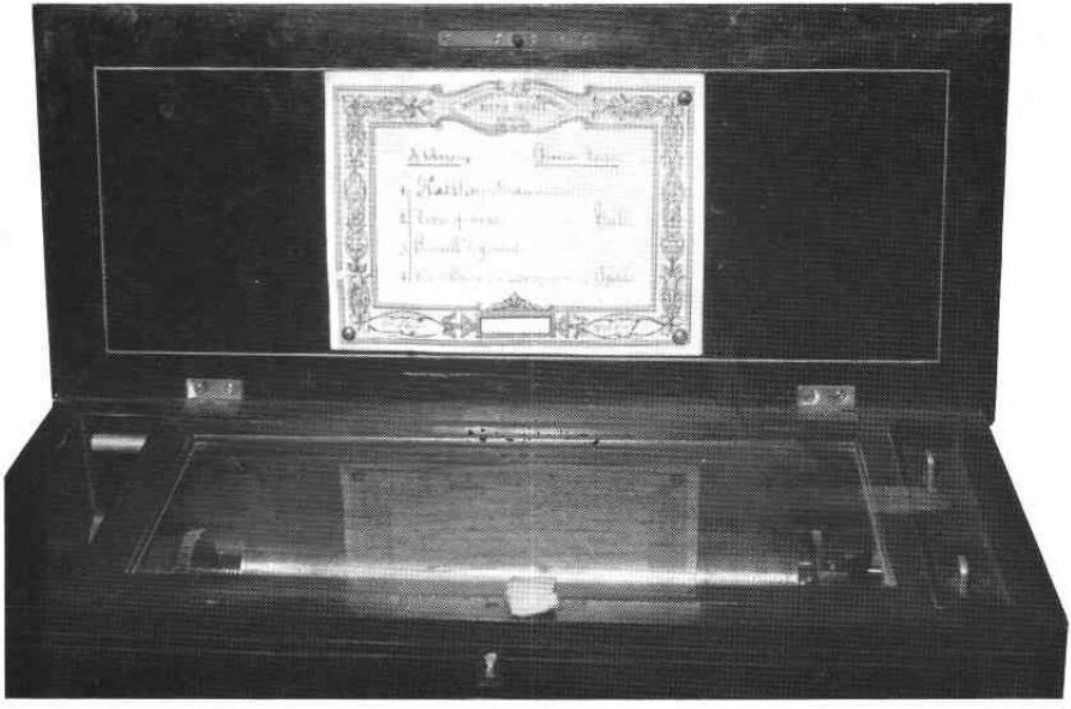

A BERGOUGNOUX




De Verenigde
Amsterdam




ALFRED HAYS



MUSICAL-BOX DEPOT, 32, Ludgate Street, near St. Paul's.—WALES and M'CULLOCH are direct importers of Nicole Frère's celebrated MUSICAL-BOXES, playing the best Popular Operatic and Sacred Music. Large sizes, four airs, £4; six, £5 5s.; eight, £8; twelve airs, £12 12s. Snuff-boxes, two tunes, 14s. 6d. and 18s.; three, 30s.; four tunes, 45s. Catalogue of tunes, &c., gratis, and post free on application.

Member David Tallis has loaned this interesting advertisement from "THE ILLUSTRATED NEWS" for December 20th, 1856

THE WONDERFUL
ORCHESTRAL ORGANETTE

(By Royal Letters Patent.)

A Four Guinea Organett: for only 35s.

THREE STOPS.

WE are the sole Proprietors in the United Kingdom for this New and Wonderful Instrument. Having for many years manufactured and sold enormous quantities of Automatic Reed Organs, Organettes, &c., it has ever been our aim to produce at a low Price an Organette capable of a VARIETY OF TONES, the Organettes heretofore placed before the Public having but a limited compass, and but one range of tone. While we have given universal satisfaction, we still have had as our motto, "Excelsior," and now can exclaim, "Eureka!" because, without increasing the price of the Orchestral Organette (our latest production) over other instruments in the market, we have succeeded in producing the very ACME OF MUSICAL INVENTION, an instrument with as much variety of tone as an organ costing £25. The illustration gives you but a faint idea of general make and finish, but every Orchestral Organette is supplied with 28 FULL-SIZED AMERICAN ORGAN REEDS, the same size and quality as those used in a cabinet organ. The reeds are placed in a novel manner (patented) over a double suction bellows and are controlled by THREE STOPS, as follows, viz., Flute, Expression, and Vox Humana. The music is produced by perforated sheets, which pass around the Organette in endless bands, enabling a tune to be played over and over again without stopping, furnishing the GRANDEST ORCHESTRAL EFFECTS, either in sacred, secular, dance, or vocal music, affording a rich, sonorous, and powerful accompaniment to the voice, requiring absolutely no skill in the performer, and THE RANGE OF MUSIC AND TONE IS PRACTICALLY UNLIMITED. By the manipulation of the stops, a tone as soft and sweet as a zephyr, or a loud, long, and swelling melody may be produced; trills and high falsetto, as well as reverberating bass, and all manner of pleasing combinations at the will of the performer.

COUPON.
REGULAR PRICE, £4 4s.
REDUCED PRICE, £1 15s.

GOOD UNTIL MARCH 25th, 1889, ONLY.
(Signed)
LOUIS H. HART and CO.

This Coupon entitles holder to ONE Orchestral Organette, at reduced price of £1 15s., provided the order is received not later than March 25th, 1889.
N.B.—Above time is extended for foreign customers

We wish to introduce one of these Orchestral Organettes in every town and village in the United Kingdom. We caution you against the many worthless automatic instruments being sold under various names. We are the SOLE PROPRIETORS OF THE ORCHESTRAL ORGANETTE (ne plus ultra), and you must order direct from us or through our authorised agents. Remember, the Orchestral Organette is NOT A TOY, but a LARGE and POWERFUL INSTRUMENT, built exactly on the principle of CHURCH ORGANS; they are made in the most substantial manner, highly polished, and decorated in gold. The reeds are the product of machinery costing thousands of pounds, and are so powerful they produce sufficient volume of music for the drawing-room, chapel, lodge, or ball-room. There is nothing about them to get out of order. They positively improve with age, producing richer and sweeter tones after having been used a few years. For HOME ENTERTAINMENTS THEY ARE UNSURPASSED. Bear in mind that each instrument has FOURTEEN MORE REEDS than any other Organette in the world, and they are ORGAN REEDS, and the special feature is THREE STOPS, a characteristic of no instrument except a costly organ. Our regular price for the Orchestral Organette is Four Guineas. Having just put it before the public, we will sell a limited number to the readers of this paper at £1 15s., UNTIL MARCH 25th, 1889, provided the attached Coupon is cut out and sent with order not later than that date, and we furthermore agree to REFUND THE MONEY and PAY CARRIAGE to anyone not entirely satisfied after receiving it. By the aid of the Stops—viz., Expression, Flute, and Vox Humana—there is not a piece of music which cannot be played with all the varying effects of an orchestra; a false note is an impossibility, and the most difficult operatic air is played with as much ease as the most simple hymn. In many homes will be found a Grand Piano or Organ, with not an inmate of the household, even the most expert player, who can interest company on either so well as a child of three years old can on the ORCHESTRAL ORGANETTE. Remember, any tune can be played with artistic effect by anyone, young or old. You can play DANCE, SACRED, OR SENTIMENTAL MUSIC with as much effect as that produced by a FIRST-CLASS FOUR-PIECE ORCHESTRA. Remember, our regular price is £4 4s., but, as we have found a well pleased customer our best advertising medium, have decided to sell a limited number, as an introduction to the readers of this paper, at £1 15s., provided the order is received not later than March 25th, 1889. We will give a large selection of MUSIC FREE with each Instrument. Send money and Coupon by Registered Letter, Crossed Cheque, or Money Order to

LOUIS H. HART AND CO., 126, Clerkenwell-road, London, E.C. (opposite Hatton-garden).

These advertisements are reproduced from THE ILLUSTRATED CARPENTER AND JOINER and are taken from various issues between 1888 and 1889

THE SEASON'S MUSICAL MARVEL.

THE ORCHESTRONE.

1s. 6d., Carriage Free; Two, 2s. 9d.

A Sample Instrument sent with Twenty Carefully Selected Paper Discs, which can be changed as often as desired.

The Orchestrone can be so Adjusted that the Melodies produced may be rich and deep as the Violoncello, plaintive as the Flute, as Melodious as the Clarionet. *Any Person* can play this Instrument *without Study or Tuition*, so no Home need now be dull where one's Favourite Melodies — either Sacred, Operatic, Dance, or Song — can follow each other as on the Orchestrone. Address, JOHN DEWHURST, Manufacturer, Ladypool-road, Birmingham.

ORGANETTE MUSIC

NEW LISTS, NEW TUNES. Largest Selection and Best Value. GREAT BARGAINS.

FEW ORGANETTES, VERY CHEAP.

Price Lists, &c., sent anywhere for Penny Stamp. Write at once. This may not appear again.

CRANE, Music Dealer, &c., Blackburn.

These three items are loaned by Member Mrs. Anita Brown

Post Bag

Ron Lee of 266, Munster Road, London, S.W.7, writes:

On page 51 (Vol.2, No.2) appeared an article on the mechanical zither. I have found one of these instruments in original condition and would like to provide a little additional information. To begin with, the machine is American, not German as Mr. Ord-Hume surmises. My model bears a label stuck inside the hole in the soundboard which reads 'PIANO-HARP No. 5 SPECIAL. This Instrument can be obtained through our Special Agents only. Sole Agents for the British Empire R. P. Barlow & Co., Main Office 10, James Street, Liverpool, Eng. Made in U.S.A.' There is also a transfer giving the following information 'Patented May 29th, 1894!

W. K. Harding of 93, Hornsey Road, London, N.7, writes:

May I say that "THE MUSIC BOX" is the best value of any magazine I have ever subscribed to and I only wish that the friend who introduced mt to the Society had done so a year earlier.

The recent article on Thibouville-Lamy states that bedplates were madeof of brass alloy. I have recently had one of these which I examined and noticed that the bedplate was defibitely ferrous - my magnet stuck to it whilst demonstrating the peculiar 'tarnished silver', brassy appearance.

Can any of our Members recommend a good method of polishing discs? I am experimenting with an electrolytic process which I will gladly demonstrate to anyone who cares to visit my workshop. This does, of course, remove whatever remains of the title. Also, can anyone tell me where to buy damper wire? If necessary, I am happy to import it and stock it for the benefit of other Members.

I was entertained by your article in Number 3, Volume 1, entitled 'Dirt - the Collectors Preservative'. I do not know if that is why so many people over-oil their boxes but oil gathers a surprising amount of dust with which it combines to form an excellent grinding paste and it is surely better to give a box in use as little oil as possible. We regularly overhaul long-case clocks and never put any oil at all on gear teeth which are self-polishing. We only use proper clock oil where necessary which is obtainable in Clerkenwell, since mineral oils dry up and may even corrode the metal.

Finally, since we are continually using back number of THE MUSIC BOX for reference, would it be possible to produce a periodic index to fit the binders?

Editors Comment Keith has a marvellous workshop and says we are all welcome to visit him and see his set-up. The Index for Volume 1 is published with this issue and covers Issues one to eight.

Frank S. Greenacre, 164, Lowestoft Road, Gorleston on Sea, Gt. Yarmouth, writes:

For a long time I have been experimenting with methods of re-titling musical box discs which have lost their original wording. In removing rust, usually the wording is ruined completely. Hand lettering with a paintbrush tends to look like hand lettering with a paintbrush unless you are an expert sign-writer. I have experimented lately with pressure-sensitive lettering such as Letraset or Blick. The former is sold in large sheets costing 7/6d and the latter in smaller handier sheets at 2/6d. Instructions for transferring the letters - a very simple operation - are with each sheet and I find that the lettering remains with no further treatment but a coat of synthetic resin clear spray lacquer will not only make the lettering permanent but will also guard against any further chances of the disc rusting.

Recently I visited a collector-friend who specialises in phonographs and he gave me two records which he has been saving for me for some length of time. One is a Klingsor record marked "Pressed in Wahren-Leipzig" and clearly shows the Polyphon emblem 1¼" high. The other is another Polyphon record reading "Pressed in Wahren". Judging from the type of music offered, I would date these about 1910 - catalogue numbers are very close and obviously from the same 'run'.

Evesham Journal & Four Shires Advertiser,

November 5, 1965

Obituary

Mr. John Ernest Thomas Clark, of Kings Lane, Broom, has died at Stratford Hospital, aged 82. Born in Bidford, his parents lived at Peckham, London, for a number of years. A former journalist and photographer, he also repaired musical boxes. Family mourners at the funeral at Bidford were his three nieces and his cousin.

Dorian Dinsmore, president of the Musical Box Society of Great Britain, writes: "There are probably few people in Broom, where John Clark lived, who knew he was an authority on musical boxes and the author of several books. The third edition of his volume, Musical Boxes—a history and appreciation, was published by George Allen & Unwin Ltd. in 1961. This and other books by Mr. Clark have been sold all over the world and are a wonderful reference on the history and preservation of these fascinating boxes. Having spent over 40 years of his life repairing and examining musical boxes, John Clark is held in great esteem by all collectors, most of whom possess one of his books.

"Although thousands of boxes must have passed through his hands and many a damaged box been carefully repaired, Mr. Clark was not a collector. Personally, I will always remember my visits to his house in Chestnut Grove, Malden, Surrey, where his front room always contained many boxes just repaired or awaiting his attention. Some had been sent so that he could give the owners some details of their history. He really enjoyed working on the boxes and noting any particulars, which he committed to memory to be included in his books. One would have thought that, after being in close touch with the manufacturers of musical boxes and their products for so long, he would have become tired of listening to their tunes. This was definitely not the case, and I can picture him very clearly, with his head cocked a little to one side, listening and humming tune after tune. He had a great memory for the names of these tunes, which was most helpful as many boxes had long since lost their tune titles, which normally are fixed under the lid."

Editor's Comment: This is the first really good solution that anybody has come up with for titling and I have had excellent results myself since Frank suggested it. Letraset is used widely in the preparation of THE MUSIC BOX, and it comes in a wide variety of styles and sizes of individual letters. Most large stationers or artists requisites shops stock it or can get it for you. Clear resin lacquer is sold under the name 'Fobel-Spray'.

LIST OF MEMBERS

201 Herbert G. Staight, F.B.H.I., 86, Suffolk Road, Cheltenham, Glos.
202 John Rodrigues, 13, Elm Grove, Wimbledon, London, S.W.19
203 Miss Betty Orman, 9, Mayfields, Wembley Park, Middlesex
204* James A. Jensen, 330, Quarry Lane, Haverford, Pennsylvania, U.S.A.
205 L. C. Delahunty, Springfield School, Scotland Lane, Horsforth, Near Leeds, Yorkshire
206 M. J. R. Gilbert, 8, Bramley Close, Earley, Reading, Berkshire
207 Michael Jon Foster, 3, Hereford Road, London, W.2
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213 James N. Hirsch, Snr., 9, Linden Place, Glenville, Connecticut, U.S.A
214 P. Middleweek, Fir Trees, Haytor, Newton Abbot, Devon
215* John H. Lawson, 1560 Rolling Hills Drive, Monterey Park, Calif. U.S.A.
216* J. Lippincott, Jr. 90, Oak Ridge Drive, Haddonfield, New Jersey, 08033, United States of America
217* R. E. Baker, 18815, Baseline Road, Azusa, California 91702, U.S.A.
218 Mrs. G. V. R. Nuttall, The Coach House, Oakland, Windermere
219 Charles W. Alflat, 71, Knowle Lane, Sheffield 11
220 Eric V. Cockayne, 102, Gurney Court Road, St. Albans, Hertfordshire

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10 R. Burnett, Riverhill Hotel, Oxton, Birkenhead, Cheshire
17 J. Levy, 38, Chelwood House, Gloucester Square, London, W.2
20 R. Mickleburgh, 1 - 7, Stokes Croft, Bristol 1
64 Miss B. Simes, 562, Oldham Road, Rochdale, Lancashire
90 A. C. Bailey, 29, Melville Court, Goldhawk Road, London, W.12
110 G. Foster, Lantyne House, 56, Lichfield Street, Christchurch 1, N.Z.
154 R.V.Huddlestone, 22, Elmfield, Station Road, Baildon, Shipley, Yorks

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Easter. 1965