

The Music Box

an international magazine of mechanical music

THE JOURNAL OF THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

Volume 7 Number 3 Autumn 1975

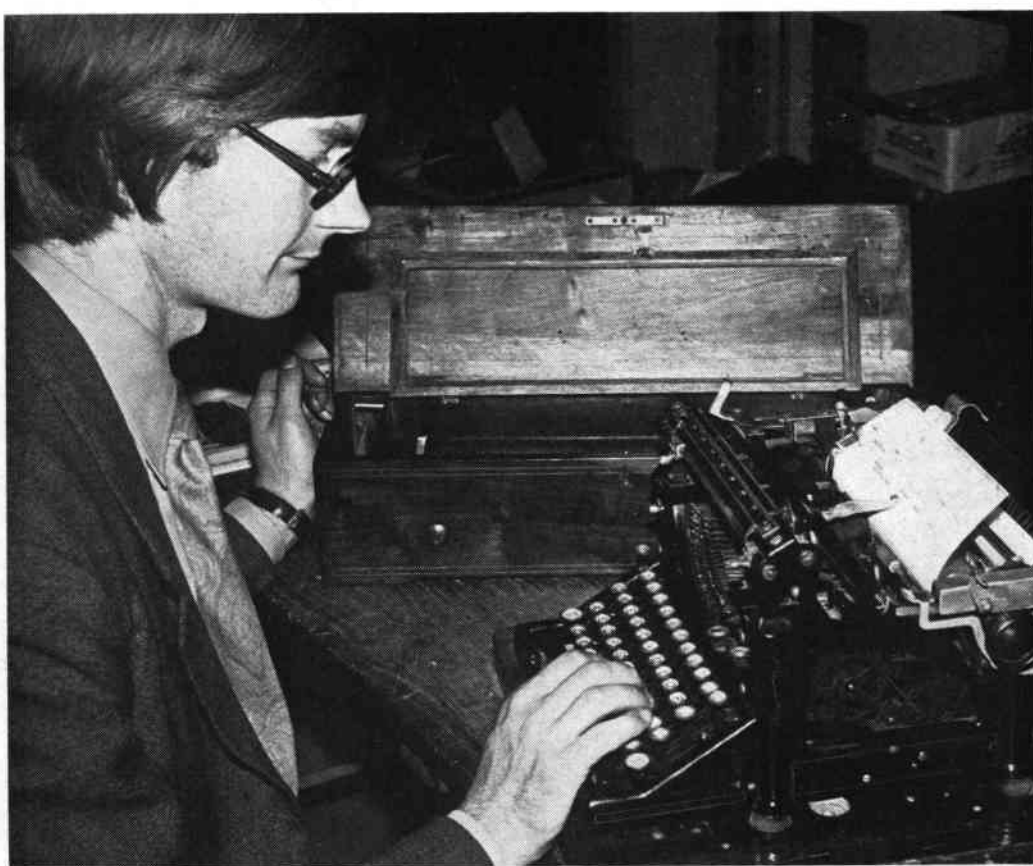




Christie's

South Kensington

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Our specialist in Mechanical Music, CHRISTOPHER PROUDFOOT, cataloguing a Nicole Frères musical box for the next auction, in November (the typewriter is not for sale !).

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AND RECORDS.

The Music Box

an international magazine of
mechanical music



THE JOURNAL OF THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

The Editor writes...

PRESERVATION should be one of the very corner-stones of our activities, yet I believe that in some cases our enthusiasm coupled with shakey technological understanding is responsible for something which is tantamount to the opposite of our averred goal.

The survival of instruments today is largely due to the inherent degradability of the components and materials from which they are constructed. The ability to dismantle and remove component parts is completely dependent on the provision for such dismantling being retained at any rebuild. The natural deterioration of leather and glue, or their relatively easy removal for repair, are characteristics not to be gainsaid. Plastics and synthetic resins may make for a better immediate job, but the chances are that any subsequent restorative work will be made that much more difficult if not impossible through their use. I have in mind a late eighteenth century street organ which came to me some years ago and which was so thoroughly glued up with rock-hard synthetic adhesive that wood had to be split in order to remove the component parts.

Too often we are tempted to modify such and such an instrument to take such and such a standard roll, thereby destroying the originality of the instrument. It is this thoroughly selfish modernisation which I find most distasteful.

One point, though, ought to be made and that is that tonal and gamut reworking is by no means a new thing. It was regular practice at the turn of the century to convert barrel organs to books and, later, to paper music. This work was often done in regular organ

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Cover picture: Nicole Freres forte-piano 2-per-turn number 28618, gamme number 1055. Dark green tunecard, 9.3in cylinder. Box measures 17.5in x 8.3in x 6in and lid bears inlay of basket of trailing flowers centre, corner scrolls of inlay and edge stringing. From the Fortnum & Mason collection.

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repair shops and, in several notable cases, by the original makers of the organ themselves. One readily-available specimen of this contemporary re-working is the Blackpool Tower orchestration by Imhof & Mukle, now preserved in the Birmingham City Museum and Art Gallery. Here, a Welte paper roll system has replaced keyframe and barrel and the result, although allowing a wider musical scope, is in this instance tonally far from satisfactory, with the organ rank-borrowing as it attempts key modulations and harmonic variations for which it was never intended.

Aside from that and other poor tonal specimens of conversion, it can successfully be argued that the survival of many of these instruments also depended on their ability to move, musically speaking, with the times. Flexible musical programmes to meet eclectic trends were of far greater value than a preserved organ in original condition with a barrel pinned with out-dated music.

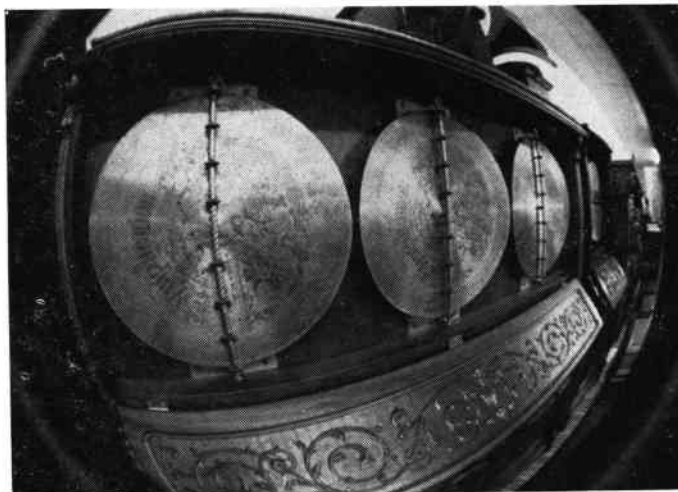
If one needs an instance of successful modernisation, then one has only to look at the Dutch street organs, almost all of which have been so altered throughout their lives that their original tonality is lost. That this is a pity is but of academic interest since they are now supreme examples (in most cases) of a thoroughly happy marriage of the best pipework (regardless of maker) and the best musical arrangements. As a test of this, a visit to the Nationaal Museum van Speeldoos tot Piement in Utrecht will reveal a Waldkirch-built Gavioli which plays a selection of music from the show *Hair* with such orchestral perfection that one feels organ and music must have been contemporary. Here, though, the organ is

continued on page 118

IMPERIAL SYMPHONION

by Q David Bowers

UNLIKE Polyphon, whose American offshoot grew to become a major producer and innovator of musical boxes, when Symphonion opened its New Jersey factory it never quite reached the big-time sales. There was no shortage of ideas, though, and the instruments it produced were as acceptable a mixture of German design and American styling as were the products of Regina. Indeed, some remarkable machines were made which bore the proud name Imperial Symphonion such as the giant triple, right. Today they are a rare breed, even in America, and the company history is sketchy. Q David Bowers relates



SYMPHONION is a name which is familiar to all music box collectors. Indeed, the Symphonion is the granddaddy of all music boxes, having been first marketed in 1885 or 1886. During the ensuing years the Symphonionfabrik ("Symphonion factory") in Gohlis, a district of Leipzig, Germany, grew to be one of the greatest names in the field. By 1900 there were

several dozen manufacturers of disc music boxes, with the lion's share of the business going to the "big three"—Polyphon, Symphonion, and Regina—probably here listed in order of descending size.

Although the Symphonionfabrik remained in business through the 1920's, by 1910 the golden years were over. At that time the firm had been in business nearly 25 years and had produced a wonderful array of automatic musical instruments.

The Symphonion music boxes made in Germany are remarkable for their diversity. Disc sizes ranged from 11.5 centimeters (4½ inches) to the mammoth 76 centimeter (30 inches) format. Nearly two dozen disc sizes in all were made—which must have contributed to a fantastic inventory problem!

The music boxes themselves were likewise varied. Perhaps the most famous to collectors today is the "Eroica," or three-disc Symphonion which plays three music discs, each measuring 14 inches in diameter, at the same time on 300 separate tuned teeth arranged on six combs! The remarkable "Eroica" was produced in several

formats including upright cabinet models and two beautiful types of hall clocks.

Less well known but nonetheless fascinating are the automatic disc changing devices made by the company. One of these, the style 120Z, stores 25 discs (each measuring 14 inches in diameter) in a special rack, plays them one at a time, and ejects them on the table or floor via a slot in the back of the cabinet. What a racket this must have made during the disc changing process! To my knowledge no specimens of this particular style are known to collectors today. Intriguing as well are the large upright disc changers, the most immense of which uses a 54 centimeter (21¼ inch) disc and plays 120 musical notes plus 10 saucer bells. This instrument is in a large gingerbread-style case and features a tune selecting mechanism on the front. Specimens are known of most different styles of upright Symphonion changers, but all are very rare.

Spectacularly impressive in its day must have been the Symphonion Duplex Orchestra, style number 98, which stood 270 centimeters high and which played two 30-inch discs simultaneously!

THE Imperial Symphonion

THE FIRST
PERFECT
MUSIC
BOX



IT HAS REVOLUTIONIZING IMPROVEMENTS NOT COMBINED IN ANY OTHER INSTRUMENT

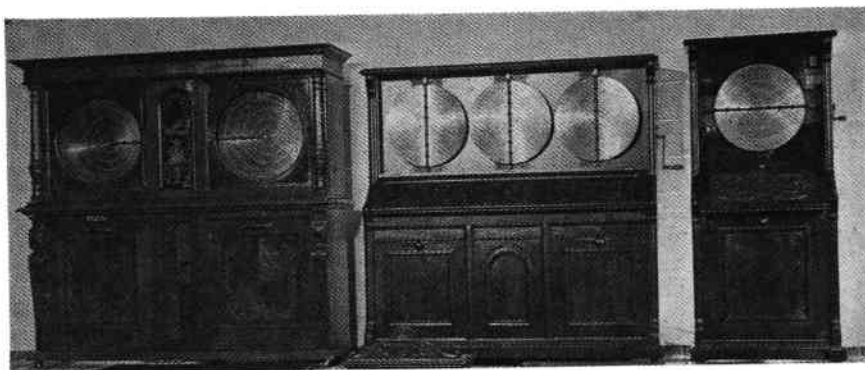
It plays "a thousand and one" tunes from interchangeable, unbreakable steel sheets, the list embracing all popular standard and classical selections, with frequent additions.

A CONSTANT PLEASURE TO YOUR HOUSEHOLD AND YOUR FRIENDS

The Symphonion is the product of expert workmanship applied to the finest materials. Instruments cost from \$9 up, and the music from 12 cents a sheet up. On receipt of a postal we will send our complete catalogue and introduce you to our nearest representative.

SYMPHONION MFG. CO., Dept. C,
110-14 West 32d St., New York

Above: Typical of Symphonion Manufacturing Company advertising of the period is this notice which dates from 1899. The "revolutionizing improvements" should be noted! Right: Member Walt Bellm of Sarasota, Florida, who is President of the MBSI, owns these three rare models, from left, a Lochmann twin with 24½ins discs; Imperial Symphonion in "piano-style" case with 3 × 17½ins discs; Imperial single in same style case.



Actually, this was not a music box at all but was a disc-operated orchestrion with 52 piano notes (two strings per note), 36 metal organ pipes, 10 orchestra bells, large drum, small drum, cymbal, and triangle.

Likewise curious are such items as the tiny Symphonion Musical Savings Bank, a series of small instruments with moving scenes and dioramas (one of which features "swinging cats" — almost sounding as if it had been named by a hip commentator in our own time!), the Gambrinus model which features the mythical Flemish "beer king" who reputedly invented the frothy stuff, a number of vending machines with musical attachments, arcade devices with dioramas, and a series of electrically operated instruments.

Import tariffs

During the 1890's the market for music boxes grew rapidly in America. Various vendors offered for sale cylinder music boxes made in St Croix, Switzerland (the products of Mermod Freres were particularly popular in this regard), music boxes from Geneva, disc instruments from Germany, and so on. In 1892-1893 an increase in the American tariff for certain types of imported musical instruments plus the growing American market led overseas manufacturers to consider opening American subsidiaries. Following this train of thought, the gigantic Polyphon Musikwerke of Leipzig financed and set up the Regina Music Box Company in Rahway, New Jersey. A full fledged firm was established — complete with facilities for



The large three-storey (plus cupola) factory of the Symphonion Manufacturing Company, maker of Imperial Symphonion music boxes in Bradley Beach, near Asbury Park, New Jersey. This building is still standing today and is used to manufacture various toys and novelties. The photograph shown here probably dates from 1897 - 1899.

manufacturing discs, making the various mechanisms, and so on. Regina flourished, and during the following two decades nearly 100,000 music boxes were produced under the Regina label. In addition a number of instruments were sold which featured Polyphon mechanisms imported from Germany. An article on Regina appears on pages 2 and 54 of the present volume.

At the time Polyphon was the largest German manufacturer of music boxes (with Symphonion being second). At one time over 1,000 people were employed at the

Polyphon factory in Wahren, a suburb of Leipzig.

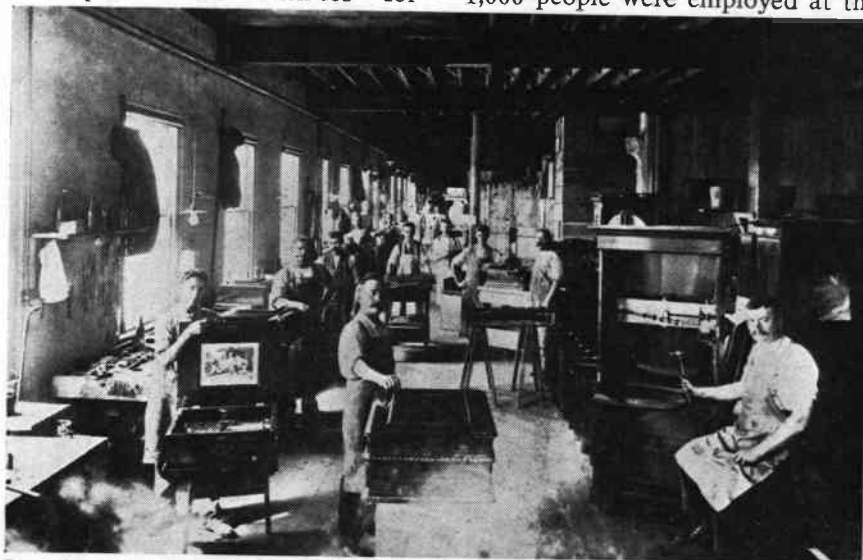
Not to be outdone by Polyphon, the Symphonionfabrik also decided to establish an American branch. Today the business activities of Polyphon and its American branch, Regina, are quite well documented. It would be nice to say the same for Symphonion's American branch and the procedures used to set it up, but unfortunately such documentation, if indeed it exists, has not found its way into the hands of collectors. Perhaps this article will elicit further information!

Imperial sets up

It is known that manufacturing facilities were set up in Bradley Beach, New Jersey. The large brick building which housed the firm is typical of an American factory of the era. The product, in this case IMPERIAL SYMPHONION MUSIC BOXES, was boldly lettered along one wall of the brick establishment. On the front was proclaimed: THE SYMPHONION MANUFACTURING CO.

Within the confines of this three-storey edifice were facilities for assembling music boxes and producing discs. To differentiate the American instruments from their German counterparts, the appellation "Imperial" was added in front of the Symphonion name, producing "Imperial Symphonion."

To market the output of the Imperial Symphonion factory, sales offices were established at 18 East 24th Street in New York City and



Interior view of the Symphonion factory in America. On view are a number of table models and upright instruments. This picture was obviously "posed". Note that the instrument in the left foreground features on the underside of the lid a scene of cupids at play with musical instruments. This same lithograph was also used on German-made Symphonion instruments.



The three-disc Symphonion Eroica remains one of the most sought-after disc-playing musical boxes in the world today. Introduced in London at Christmas, 1895, by Henry Klein, it cost a princely 65 guineas (£68.25). The example seen here, pictured from the collection of Member Ruth Bornand in New York, has an American-built case and is quite different from the Leipzig style of cabinet which featured a disc-storage space in the bottom which, in some models, hinged forward as a proper disc-bin. The clock was not a feature of Leipzig-built examples.

authors' possession notes that discs were manufactured there until shortly before 1900, and that sales in later years were made from the massive unsold inventory on hand after that date.

The largest product to bear the imprimatur of Imperial Symphonion is the instrument known as the Imperial Symphonion Orchestrion—a music box with tuned combs, 12 saucer bells, and which uses a 27½ inch diameter disc. The instrument is virtually identical to the German-made Symphonion Orchestrion style number 118G1. The only major difference between the two is that the German instruments are driven by a series of dimples impressed into the edge of a disc (a not-too-satisfactory arrangement which often resulted in disc slippage) whereas the American discs are driven by a toothed wheel which engages slots in the discs. So that Imperial Symphonion discs made in America could be played on German made similar instruments, the American made discs have both dimples and slots alternately along the rim.

Triple giant

A very curious Imperial Symphonion is the three disc model which uses style number 106 discs measuring 17½ inches in diameter. Unlike the German made "Eroica" which uses smaller (14 inches in diameter) discs arranged in upright format and one above the other,

showrooms in Union Square (a headquarters for music box display rooms at the time—for several other vendors were located there at well). An 1898 Symphonion advertisement noted: "The new American-made Symphonion is the first and only music box made with patented indestructible steel discs. It has patented flywheel,

speed regulator, side dampers, double comb arrangement, and its parts are interchangeable. It requires but one winding to play 30 minutes, and is recognized among the leading dealers to be the standard 'up to date' music box. The Symphonion received the highest awards at Chicago, 1893, and Antwerp, 1894. Prices ranging from \$4.00 to \$300.00. Catalog containing thousands of tunes to select from. For sale by our prominent dealers."

The displays at the world's Columbian Exposition (Chicago 1893) and Antwerp were of the German made Symphonion music boxes, so the preceding advertisement is slightly misleading. Indeed, it is doubtful if much "manufacturing" was done by the Symphonion Manufacturing Company in America.

Imported mechanisms

A look at extant examples of Imperial Symphonions reveals that in many instances the mechanisms were imported from Germany and simply fitted into American-made cases. It is not known whether or not the cases were made by Symphonion itself or whether they were produced by an outside contractor. The similarity between certain cases used by Imperial Symphonion and other New Jersey manufacturers, especially Regina and F G Otto & Son, leads the author to believe that an outside contractor may have been responsible for at least some of them. It is fairly certain, however, that discs were actually manufactured in the New Jersey facility. An original factory letter in the

Beautiful Music.



THE SYMPHONION AND THE POLYPHONE MUSIC BOXES.

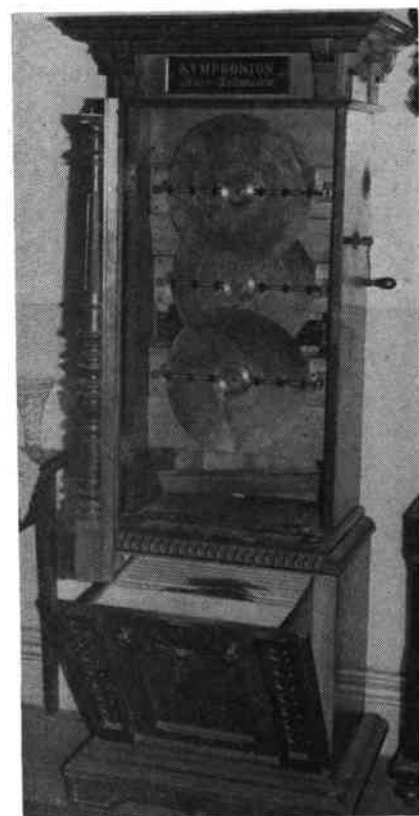
The old fashioned cylinder music box, with, probably, six set tunes (no more, no less) is now a thing of the past.

Look at the above cut! See the perforated disk? Every disk means a new tune. You can buy a thousand disks and so have a thousand tunes, or you can have five disks and five tunes. They are inexpensive after you have the box. You can have religious music or dance music. You have your choice from a thousand kinds, as shown in our catalogue.

The latest tunes put on disks as soon as they come out.

IT'S THE GREATEST MUSICAL INVENTION OF THE AGE.
New designs in cases. Send for new catalogue.
FRED. B. SANDER, Sole Importer,
146 Franklin Street, Boston, Mass.

This advertisement, dating from 1892, shows that among the early importers of Leipzig-made disc musical boxes, the Boston company Fred B Sander was one. Gautschi of Philadelphia was another—see page 90. Far right: Leipzig-built Eroica in the collection of The Editor. Compare this cabinet with that at the top of the page.





Above, left and right : The Imperial Symphonion with its three 17½ins discs. The ornate, carved front of this, the so-called piano-style case, is made in two halves and is hinged so that it folds downwards to reveal the playing mechanisms. Two large disc-storage bins are provided and the discs are made in sets of three rather like the sets which were especially made for the Eroica. Alternatively, three copies of the same disc could be played at once. Left : A fine specimen of an American-cased blonde-wood cabinet 11½ins disc twin Symphonion. This specimen is one of two — the other being a Leipzig-made walnut-type cased specimen — in the museum operated by Walt Bellm in Florida. The Imperial is also in his collection. Pictures by The Editor.



Below : View of the disc storage facility in the Symphonion factory at Asbury Park. The shape of the ceiling (not included in this reproduction) indicates that this must have been located in the top floor of the building.

the American instrument uses three discs again upright but this time arranged side by side. Just two specimens of this impressive instrument are known to the author. As is the case with the German made "Eroica," the American Imperial Symphonion features slightly different arrangements on each of the three discs — the result being a "stereo" effect when the unit is heard while standing near the front.

The Symphonion Manufacturing Company ceased operation in America in the early 1900's. In my *Encyclopedia of Automatic Musical Instruments* I noted that a trade magazine article of 1902 mentioned that the firm had branches in Leipzig, Germany, and



The Instruments and Discs bear the Trade mark Symphonion with a lyre.



BEWARE OF IMITATIONS!

The New American Made **SYMPHONION** is the first and only Music Box manufactured with patented indestructible steel discs. It has patented flywheel, speed regulator, side dampers, double comb arrangement, and its parts are interchangeable. It requires but one winding to play 30 minutes, and is recognized among the leading dealers to be the standard "up to date" Music Box. The Symphonion received the highest awards at Chicago, 1893, and Antwerp, 1894. Prices ranging from \$4.00 to \$300.00. Catalogue containing thousands of tunes to select from. For sale by all prominent dealers.

The Symphonion Mfg. Co.,
Dept. A. 18 E. 14th Street New York.

ORPHEA MUSIC BOXES

Are the sweetest, most complete, tone-sustaining, durable, and perfect Musical Boxes made, and any number of tunes can be obtained for them. Delightful family, wedding, anniversary, and holiday gift. Buy direct of the makers, the oldest, most reliable, and responsible firm. Inspection invited. No Music Box can be guaranteed to wear well without **Gautschi's** patented Safety Tune Change and Parachute. **Manufacturers Headquarters** for Gem and Concert Roller Organs; also **Symphonions and Polyphones** at Lowest Prices. Factory Established 1824.

**OLD MUSIC BOXES CAREFULLY
REPAIRED AND IMPROVED.**

GAUTSCHI & SONS, { 1030 CHESTNUT ST.
PHILADELPHIA.

Left: From the magazine *Cosmopolitan* for November 1897 comes this notice referring to "the New American Made Symphonion". Two months earlier, the notice (right) appeared from the address of Gratz in New York. The advertisement, lower left, goes back to 1892 and shows that Gautschi of Philadelphia was then importing from Leipzig. All original ads in this article loaned to The Editor by Dr Paul Ottenheimer, Thorofare, New Jersey.

in St Croix, Switzerland. No other reference to the St Croix branch has ever been found, and at present it is totally unexplained. It is known, however, that certain marketers of the Imperial Symphonion in America also sold Stella music boxes and other products of Mermod Freres of St Croix — so perhaps there was some inter-connection here. However, the author is not aware that any instruments made in St Croix were actually sold in America under the "Symphonion" label.

Scarce today

Today examples of the American made Imperial Symphonion instruments are fairly scarce in collections. Original production (or "assembly" may be a more accurate word, as noted earlier) in New Jersey must have been rather limited. We know that Regina made approximately 100,000 disc type music boxes from 1894-1921 (the original factory records are in the author's possession). Based upon the number of Imperial Sym-

"I heard the Music ringing and it made me feel so good"



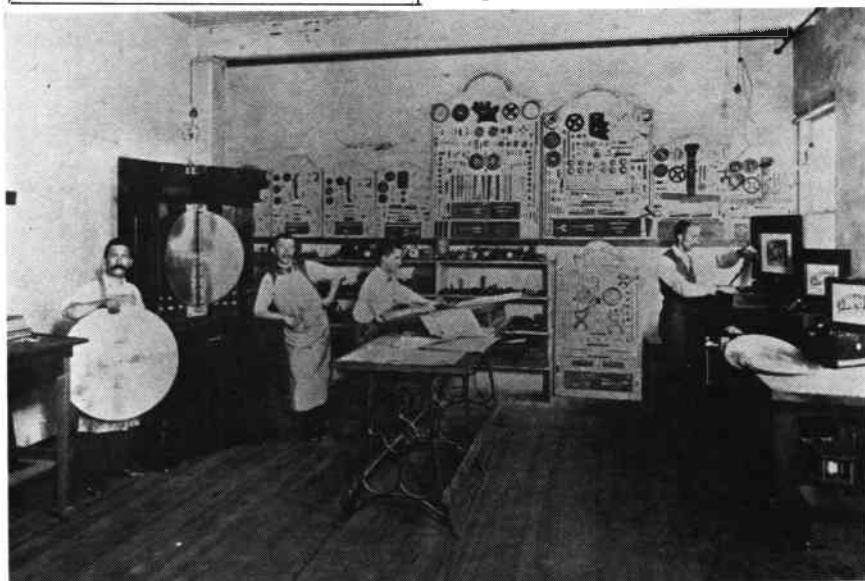
The Symphonion Music Boxes are the most useful instruments of their kind. They have the sweetest tone of any, and their durability is fully warranted. Will run for 30 minutes with one winding. We have nearly 5,000 tunes to choose from. Prices to suit everybody from \$4 to \$100. Descriptive catalogue, complete in every detail, for the asking.

SYMPHONION MFG. CO.,
WM. R. GRATZ & CO., SOLE AGENTS,
16 E. 14th St., New York.

phonion music boxes surviving today it is the author's estimate that perhaps 5,000 to 10,000 of the latter make were sold — and even this figure may be on the high side.

Regina was a fantastic success in the American market. Polyphon sent to America some of its best talent to set up the Regina firm and backed it up with ample financing arrangements. Certainly the market existed in America for Symphonion to do likewise. But it didn't. Why? Perhaps someday we will know the full story.

Special thanks are given by the author to Ms Elisabeth Watson and Mr Murtoth Guinness for the previously unpublished Imperial Symphonion factory illustrations used in connection with this article. Additional material added, as credited, by The Editor.



One of the New Jersey Symphonion assembly rooms. Left is the largest style the company made. The Imperial Symphonion Orchestra had two tuned steel combs, 12 saucer bells and played a 27½ins disc. Cases were in mahogany and oak. This was the largest diameter musical box of any kind assembled in America — outranking the 27ins Regina. The back wall features plaques on which are mounted the components of nine different styles of movement.

Tips from the Experts

Sealing

A USEFUL item for player piano work which will often eliminate messy operations with glue, is the self-adhesive binding tape which can be purchased from most haberdashery and hardware stores. It is available in several widths and colours with a protective covering which you remove for application. Besides presenting an attractive finish, it is airtight and particularly time saving where a board of bleeds or gauze screens need sealing off after inspection. It will adhere firmly with a minimum of pressure and presents no problem to remove. This self-adhesive tape is also excellent for binding the broken backs of music volumes or other books, mending record covers if they have split, roll boxes, etc.

P M THACKARY (PPG)

BHA's IMPERIAL

AFTER the story of the Imperial Symphonion, it should not be forgotten that there was another musical box—a disc one at that—which bore this name. Far from being Teutonic in origin and fostered in America, this one sprang up in the land of the cylinder musical box—Switzerland.

At least two famed makers of musical boxes in that country were Britons who emigrated. One was George Baker. The other was Barnett Henry Abrahams whose business was founded in St Croix in 1857 and subsequently carried on by his sons as Les Fils de Barnett H Abrahams at Rue des Arts 3.

As a musical box maker, he was prolific and his trademark, the initials BHA and an eight-pointed multi-faceted star with a lion facing left with his front feet resting on a terrestrial globe, is well-known amongst collectors today. Cylinder musical boxes were made under the name Victoria (indicating BHA's British background and, more importantly, recognising that the British Isles at that time represented a major marketplace for Swiss musical boxes.

Soon after the turn of the century, when the effects of the developing popularity of the disc musical box were being felt in Switzerland, BHA introduced its own Swiss disc musical box—the Imperial. Although these were basically cheaper than German instruments, the larger models had an extremely fine if strident tone and all were loud without being in any way harsh.

The Imperial seems likely to have been made for the German market in direct competition with the Leipzig industry. For the UK market, though, the identical



24.

BARNETT SAMUEL & SONS, LTD., LONDON.		119
THE IMPERIAL,		
AN INTERCHANGEABLE MUSICAL BOX WITH STEEL DISCS.		
The construction is simple and at the same time most durable.		
QUOTATIONS ARE INCLUSIVE OF SIX TUNES.		
No.		£ s. d.
1	Walnut case, polished, with fancy border, handles each side. Size, 16½ x 11 x 7½ inches. 41 large steel tongues. Size of steel disc, 8½ inches diameter	each 2 14 0
	Extra discs	per doz. 0 8 0
2	Walnut case, polished, with Rosewood border, metal handles each side. Size, 24½ x 15 x 9½ inches. 56 large steel tongues. Size of steel disc, 11½ inches diameter	each 6 5 0
	Extra discs	per doz. 0 18 0
3	Handsomely carved ornamental Walnut case, relieved in black. Size, 29 x 19½ x 16 inches. 112 duplex steel tongues. Size of steel disc, 11½ inches diameter	each 9 10 0
	Extra discs	per doz. 0 18 0
CABINET SHAPE IMPERIALS,		
WITH TWO FOLDING DOORS AND CLOCK TOP.		
9	Polished fancy case in Walnut, with Rosewood border, fretted panel over door. Size, 27 x 17 x 10 inches. Double comb, 82 steel tongues. Size of steel disc, 9 inches diameter	each 4 10 0
	Extra discs	per doz. 0 8 0
12	Polished fancy case in Walnut, with Rosewood border, fretted panel over door. Size, 30½ x 19 x 10 inches. 56 large steel tongues. Size of steel disc, 11½ inches diameter	each 7 5 0
	Extra discs	per doz. 0 18 0
AUTOMATIC IMPERIALS.		
22	Walnut polished case, double back to produce greater volume of sound, made to stand or hang. 110 steel tongues. Size of steel discs, 17½ inches diameter	each 20 0 0
	Extra discs	each 0 2 6
24	Walnut, richly carved, handsome and effective case, with fluted pillars, double sounding board, made to stand or hang. 140 steel tongues. Size of disc, 17½ inches diameter	each 24 10 0
	Extra discs	each 0 4 0
Since illustrating No. 24, the design of Case has been somewhat altered.		

ALL NUMBERS MARKED * ARE ILLUSTRATED; see opposite page.

instrument was marketed under the name Britannia and the sole distributors were the Star Silver Depot in London. The bedplate casting, invariably painted silver, had the name "Britannia" cast into it along with the Star company's name. Imperials just had the name cast in.

Recently, your Editor purchased a trade catalogue issued by the London firm of Barnett Samuel and Sons in August, 1905. This contained the accompanying illustration (a chromo-lithograph) of an early style of case design for the Imperial. Besides illustrating a style hitherto unrecorded (the catalogue text, left, acknowledges that the design was subsequently altered), it reveals that Imperials were indeed sold in England and by this major musical instrument wholesaler. Observe that four sizes are listed—8½ins, 9ins, 11½ins and 17½ins. As the Britannia, the last-mentioned had an acoustically-designed cabinet with a soundboard separate from the back.

Barnett Samuel was established in 1832, operated at 32 and 34 Worship Street, Finsbury, London, EC, and had a piano factory at 127 - 235 Shepperton Road. The company ceased trading only a few years ago. One cannot help pondering the possibility of a relationship between two companies each having in their titles so unusual a name as "Barnett".

THE NEW POLYPHON SUPPLY COMPANY

THE YEAR started with a fire which razed four Central London acres and included some of the worst blizzards of the century. In May, Gladstone died and was buried in Westminster Abbey. It was also the year that two young men from Saxony set up a London musical box business which was to become the biggest of the era—and the last. They even bought up bankrupt Nicole Freres. THE MUSIC BOX recently met the descendants of that company and uncovered a fascinating story—



BACK in 1898, if you wanted to travel, you needed no passport or other travel documents—you just put on your hat and went. For 19-year-old Arthur Ficker, the family business of cotton millers at Zschopau just outside Dresden in Saxony held little charm. Besides, he was more interested in commerce and the possibilities afforded by the new German musical box industry. Among his wealthy bachelor uncles he secured promises of cash to help him set up in business; his father, Hermann Ficker, also promised to see his son right. A letter of introduction to the manager of the Polyphon Supply Company in London was also forthcoming, and so off he set for England.



The Polyphon Supply Company had enjoyed a somewhat chequered history. The first London distributors had been the Polyphon & Regina Company established by Nicole Freres at 21 Ely Place in 1896. At this time, Nicole Freres was already a London-owned company, having been taken over by Charles Eugene Brun who joined it originally as manager in October, 1881.

Problems and confusion

The subsequent formation of the Polyphon Supply Company endeavoured to take a large share of the mushrooming disc musical box business away from the Nicole company's offshoot. Manager was a young German named Curt Herzog. Although Ficker had never met Herzog before, Herzog also came from Zschopau close to the Czech border. In fact his father was the village schoolmaster. Four years Ficker's senior, Herzog had already been in London several years trying his best to run the Polyphon Supply Company which was largely financed by businessmen from Saxony.

The first address for the PSC (until 1898) was 3 Bishopsgate Street Without, London EC, but then it moved into the same building as Henry Klein & Co.

The story is more than usually

complicated, for Henry Klein was the biggest wholesaler (trade distributor) of Polyphons in London and as such his company was sole consignee for the Leipzig agents H Peters & Co. Peter's founded in 1887 at Theaterplatz 1, Leipzig, was one of several principal shippers of Polyphons to England. Klein's business was at 84 Oxford Street.

When the Polyphon Supply Company moved into rooms at Klein's Oxford Street address to serve the retail trade and to rent instruments to public houses and amusement arcades, it was obvious that confusion would soon arise. Indeed the righteous Klein was forced to insert a notice in the trade papers to the effect that his



New Polyphon Supply Company founders pictured after the golden jubilee luncheon of Lugton & Co in November, 1951. Left: Arthur Ficker, born March 4th, 1879; died December 14th, 1966. Right: Curt Herzog, born September 23rd, 1875; died August 21st, 1956.



Newman Street in 1906. Four upright pianos and a small grand fill the centre. Left to right: the edge of a large disc box. Then comes a Symphoniola piano-orchestration. Next is a 15½in self-changing Regina (flat-fronted case) with two galleries stacked on top. The Polyphon Concerto has the *Honeymoon March* disc in place. A tuning hammer stands inside. The 24½in Polyphon has *Sweet and Low* on its spindle and a Symphonion *Falstaff* automaton on top of it. Next is a Polyphon clock with a 19½in movement, and a 15½in Geisha with non-standard, large-diameter clock-face. On the table, right, stands a 24½in table Polyphon in folding-top case and three 11in models

trade was quite separate from that of the PSC. These notices are to be found in *The Music Box*, Volume 5, page 322. The PSC obtained its instruments from another famous Leipzig distributor, Hugo Popper & Co, founded in 1891 at Reichsstrasse 33/35, but also bought, probably unwisely, from Peters via Klein.

The Polyphon Supply Company was a strangely-organised operation. Perhaps the word "organised" is to place too finer point on its management for there was a lot of personal pocket-filling going on and the business, although obviously doing good trade, was not making money — for the shareholders at any rate. Herzog was fighting a losing battle with his own supervisors.

It was with this unbusinesslike situation with its undertones of animosity from Klein and the trade that Arthur Ficker found himself. The two men from the far-off Saxony village decided that they should try to do something about

it. They surveyed the Polyphon Supply Company as it tottered on the brink of dissolution brought about by the greed of its top operators. Herzog and Ficker discovered that most of the shareholders in the company were friends and it was soon agreed that the old company should be disbanded, the shares sold at par and the two Saxonians given the chance to try to reorganise the business back into a state of profitability.

New company formed

Arthur Ficker took up 7362 shares in the new venture, and Herzog 1000. Ficker's father in Dresden took up 375, and various other relations back home added their contribution. A fresh company was registered — the New Polyphon Supply Company — at 1, 2 and 3 Newman Street, Oxford Circus. Number 1 was later to be hived off. Other shareholders in the business were G Reicheldt (Hermann Ficker's father-in-law), May Ficker (Arthur Ficker's wife),

Anna Marie Herzog (Curt Herzog's wife) and other family members and industrialists mostly from the Dresden area.

The whole musical box business was now in its closing phase and, as so often happens at this period in the history of an industry, there were some massive changes and expansions to take place before the final crunch. Nicole Freres had made its disastrous venture into the gramophone record business (*The Music Box*, Volume 5, pages 338 *et seq*) and, as a result, found itself bankrupt. In October 1906, the NPSC acquired all that was left of the once-famous Ely Place musical box company. Earlier that year, Henry Klein had retired from business. At that time he was operating at 142 Wardour Street and his assets, too, were gobbled up by the NPSC. On the company letterheads it now proclaimed "Incorporating Henry Klein & Co, late of Wardour Street; Nicole Freres, late of Ely Place." And, just to add some



Another room at Newman Street with large disc boxes down the left side, gambling machines at the back and phonographs right. Numerous Columbia posters and one advertising Edison Gold-Moulded Records at 1/6d each line the walls. A central table carries Reginas from 27in folding-top table, 20½in Sublima down to the moulded-case 11in Style 19 in front. But the sight of two long shelves packed with gleaming 15½in discs selling at half-a-crown a time makes today's collector's heart beat faster. . . .

reflected respectability by way of age, a line was added which said "Established 1815".

Business thrived for the two Germans. They covered large areas of the country on bicycles collecting the coppers from their hired-out Polyphons. The persons who rented machines were allowed 20 per cent of the takings. One day, Curt Herzog was cycling through a wood near Salisbury Plain when he was set upon by a Victorian mugger. He fought off his would-be attacker, laying him out cold with a swipe round the head with his bag of pennies!

Little by little over a period of years they made new deals with public houses and, in certain cases, sold them instruments. The business became very profitable. Its secretary was an able accountant by the name of Sidney H Dixon.

Prior to 1914, they met and were joined by a man named Louis Sterling of Clerkenwell Road. Louis (later Sir Louis) Sterling was to become a legend in his own lifetime. Born in a New York slum in 1877, he started as a newsboy,

came to Britain in a cattle boat with just £6 in his pocket, once spent a night in London's Vine Street police station because he was penniless, and later headed up the giant gramophone company which bore his name. Sterling began his career in gramophones by joining His Master's Voice as an office boy, was closely involved in the Columbia organisation and became chairman of Electrical & Musical Industries until he resigned in 1939. He died in 1958. But as far as Herzog and Ficker were concerned, their meeting and subsequent friendship with Louis Sterling was to prove extremely fortuitous.

Interned as aliens

Meanwhile, war had broken out. To begin with, Ficker and Herzog were not worried. Their business was well away from matters of a hostile nature. In any case, they were now well established in England. However, the Trading with the Enemy Act of 1914 and its Amendment (1916) were inescapable. German-owned companies

were to be sequestered, their Teutonic operators to be interned as aliens for the duration. In due course, the long arm of the law stretched out, Ficker and Herzog were arrested and the NPSC sold under the Alien Properties Act. The two men were interned in, of all places, London's Alexandra Palace which had been hastily converted as a war-time detention centre. By a strange coincidence, they were imprisoned in the tower which later became the building from which the BBC transmitted all its television programmes until the 1950s. Ficker became elected spokesman for the Germans in his section. Herzog was later transferred to Holland on an exchange basis for British prisoners of war.

With the NPSC sold off, a new name came to the fore — Robert Willis. It was he who reformed the business as the British Polyphon Company at the 2 and 3 Newman Street premises, with a branch at 27 Jamaica Street, Glasgow. His son, Gordon, later joined the management team.

When the war was over and

Ficker was released, he was content to remain in England where he subsequently married a Staffordshire girl and settled in London. Herzog also returned to England and both men successfully applied for British nationality in the 'twenties. They were now disassociated from the business they had so profitably resurrected in the pre-war years.

British Polyphon entered the gramophone business and, in 1927, changed its name to Dulcetito Polyphon Ltd, becoming a public company. Robert Willis was again managing director. With the trademark of a parrot, the company, factored gramophones (including its own-brand Dulcetito), wireless, radio accessories and gramophone records, emphasising the "Poly" part of the name.

The early 1930s saw the dismal trading conditions of the slump and the company entered difficulties first in 1933, recovered and then, in 1935, collapsed in one of the more spectacular bankruptcies to characterise a period in which so many gram companies, including Itonia and the Metropole Record Co, folded.

Lugton and Louis Sterling

Now we must consider the second half of the story and go across to London's East End where Lugton & Co was established.

William Lugton began business as an engraver in Glasgow back in 1860. Business prospered and he opened branches in Birmingham and London but as the result of disagreement between the father in Scotland and his son in London, each became a separate entity. That in London secured a contract in the 1890s for the manufacture of stencils for the General Post Office when the first parcel post was introduced. Machinery installed for the making of these later proved adaptable to the production of cycle parts and by 1901 when Lugtons became a limited company, it was described as manufacturers and distributors of cycle, motor and aeroplane parts.

The first British-built aeroplane to fly included wheels, spokes and other parts supplied by Lugtons and, in later years, the company was to produce parts for the Comet airliner and even Concorde has some Lugton technology in it. But that is away ahead of the story.

William Lugtons' son in London was offered the chance to buy some phonograph cylinders — they were packed in barrels at that time — he bought a number of barrels-full.

STOCK OF MUSICAL BOXES



SPECIAL OPPORTUNITY.

A Stock of Musical Boxes acquired from the Official Liquidator of

Messrs. Nicole Freres (late of Ely Place), to be sold at greatly **Reduced Prices.**

A splendid money making chance for Pushing Dealers.

About 201 of the Well Known Penny-in-Slot Polyphons No.104

Equal in every respect to new. To be cleared. Some of these are already advantageously placed in Licensed Houses.



NEW POLYPHON SUPPLY CO.
2, Newman Street, London, W. (Ltd.)

In October, 1906, the New Polyphon Supply Company advertised the musical box stock of Nicole Freres from the Official Liquidator. This

THE LATEST AUTOMATIC MUSICAL BOX.

NOVELTY.

The Sirion.

PATENT.

SUPERSEDING ALL OTHERS.

Two Airs in place of one. Full Revolution of the Disc for each Air.

SOLE AGENTS:

THE NEW POLYPHON SUPPLY CO. (LIM.)

137, Oxford Street, London, W.

was just three years after Nicole Frere's entry into making gramophone records. The NPSC said it had "acquired the goodwill and stock" of the business.

Left: Earlier, in January of 1899, the NPSC published this notice concerning the two-tunes-per-disc Sirion.

When he sorted them out, he found to his dismay that there was only one title per barrel and he realised he either had to go into the record business in a big way, or get out of it quickly. He chose the first course and became factor for Edison Bell (which went bankrupt in January, 1933) and the Columbia Company with which Louis Sterling was closely involved.

Subsequently, Lugtons began making the Maxitone gramophone and its own-brand records under the Bandmaster label. But being in the East End, Lugtons was not an important wholesaler and, as the 1920s advanced, the company was played out. The firm was on the way down. Louis Sterling remembered Ficker and Herzog, then vegetating in the country, and went to see them. He told them that he was connected with this small out-of-the-way wholesaler of gramophones and that he thought it would be a good idea if the two now-naturalised Britons from Saxony would take it over. They responded by buying majority shareholdings in the company and becoming joint managing directors. Business prospered once more in the experienced hands of Curt Herzog and Arthur Ficker.

In 1909, Lugtons had been at 150 Old Street. The business now moved to larger premises at 133-135 Old Street. A major fire forced them to move to 203 Old

Street where the company expanded in the 'thirties. When Dulcetito Polyphon collapsed Gordon Willis (son of Robert Willis) gave Herzog and Ficker a framed, coloured lithograph which had originally hung on the wall of the New Polyphon Supply Company's office at Newman Street and which had passed into the hands of the British Polyphon Company and hence to Dulcetito Polyphon. To Willis (who later joined the Collaro gramophone company) this memento was of no value. To Ficker and Herzog, though, it was an instant connection with their youthful days in business with Polyphons. That picture still survives: it heads up this article on page 92.

Blown to pieces

In 1940, with England again at war with Germany, Lugtons received a direct hit and the building was blown to pieces by a bomb. A new home was found in Tottenham Court Road and Lugtons continued there until last October when it moved to a spacious new warehouse at Hornsey, North London. Today the business is in radio and electrical goods wholesaling with a large proportion of the business still involving the distribution of gramophone records. Close by rises the green slopes of Muswell Hill. And on top is the

continued on page 124

DUO-ART *vs.* AMPICO

G C Lomas discusses which system he believes is better

SINCE the 1912 to 1915 period when the Duo-Art and Ampico systems were conceived, the controversy has continued: which is the better system? Over the time-span of manufacture of the instruments, the controversy was aired in the form of advertising and salesmanship whereby the disadvantages and defects of the other manufacturer's system were used without scruples as an aid to selling.

In present times, the controversy continues among enthusiasts many of whom have devoted much time and effort in restoring their instruments to mint condition.

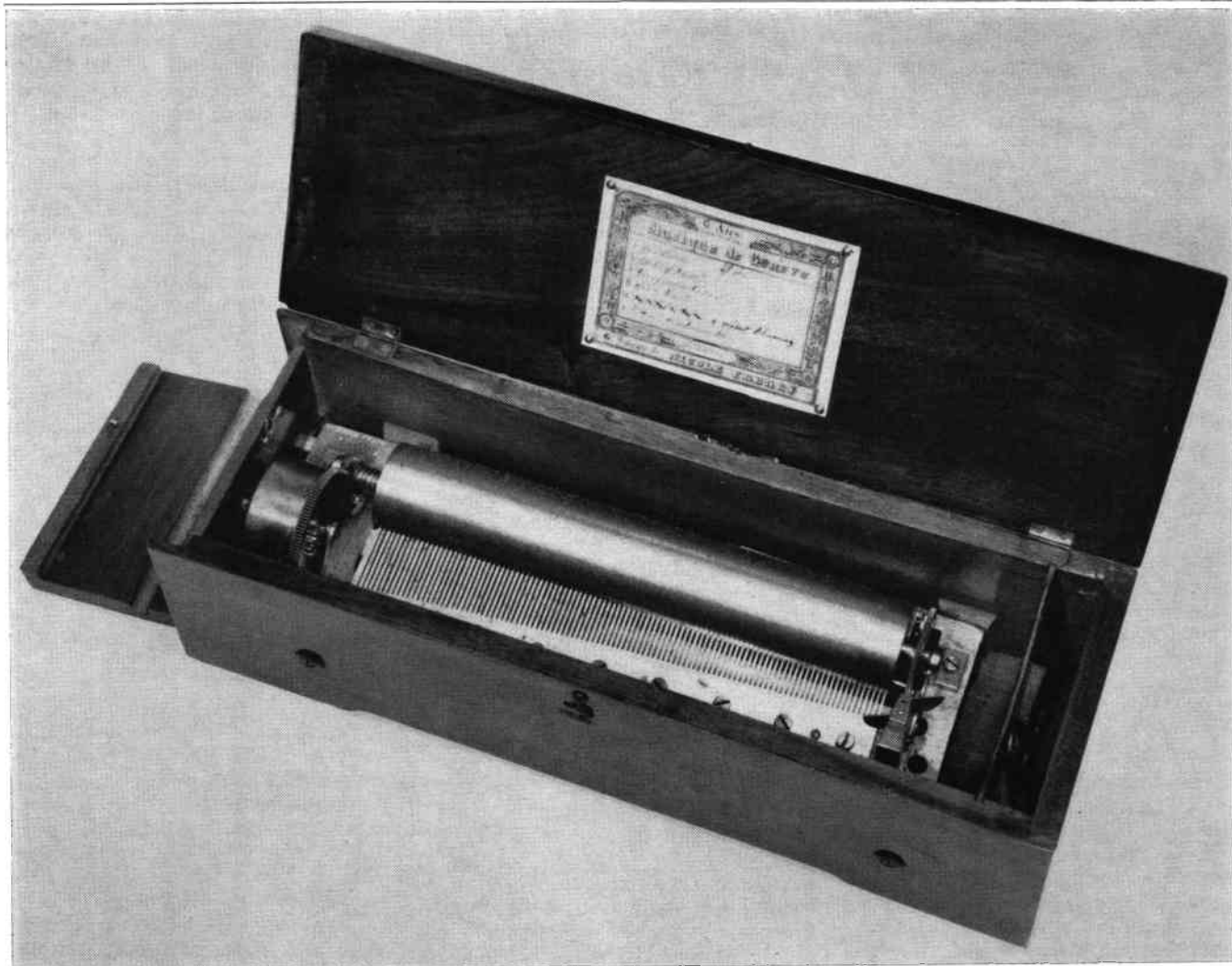
The purpose of this article is once more to try and put the record straight as to which system

most perfectly reproduces the artist's playing and why. Previous articles written on this subject have tended to be biased by the type of instrument owned by the writer and as the writer of the current article owns an example of each instrument and has done considerable restoration work on both systems there is no axe to grind.

For the purpose of this comparison, the Model A Ampico manufactured between 1923-29 and the Duo-Art manufactured in the same period have been used as it is felt these cover a high proportion of the instruments manufactured or sold in Britain. As the Model B Ampico is so rare in Britain, it will not be compared in this article.

For the reasons laid out below it is the firm and conclusive opinion of the writer after many years of regular listening to both systems in a wide range of various quality pianos that the Ampico is the better instrument for faithful reproduction of artists' recordings on reproducing rolls. It is however very unsatisfactory for playing ordinary themodized rolls and on this point the Duo-Art scores, especially with the Pedal/Electric Model.

The superb standard of editing applied to the large majority of Ampico rolls is the main reason for the superiority of the Ampico as on this point the Duo-Art falls down very badly — calculated dynamics resulting in either miss-



As the key-wound musical box developed towards the lever-wound musicwork of the post-1860 period, changes began to take place in the design and layout of the components. From the style shown on page 98, the first move was to provide a false left end to the case and a hinged flap to conceal the operating controls and winding keyhole. At the same time, a thin wooden divider was slotted into the right-hand end of the case to provide a narrow compartment into which the key could be placed when not in use. Dating from about 1842, this six-air Nicole Freres box is numbered 22545 and comes from the collection of President Cyril de Vere Green.

ing notes, the playing being too loud, or incorrect contrast between theme notes and accompaniment notes. Had the standard of roll-editing been up to the Ampico standard, then the Duo-Art reproduction would have been far better. Whilst the Duo-Art system of theme and accompaniment being controlled by separate valves should be capable of better contrast than the Ampico where both are controlled through the same valve, this does not work out in practise due to reasons mentioned in the previous paragraph.

Regulator valve travel

The total regulating valve travel on the Ampico is 3/16in compared with 15/16in on the Duo-Art and this gives the Ampico more rapid attack and immediate return to quiet playing than the Duo-Art is capable of giving.

Good *crescendo* and *decrescendo* effects which are so vital to good reproduction are excellently performed on the Ampico but can equally well be performed on the Duo-Art provided the roll-editing is accurate and the setting of the accordions is correct.

Probably the most important part in any reproducing piano is the pneumatic stack and the superb Amphion double valve action used in most Ampicos is of the highest order giving excellent repetition and quiet playing without missing notes. Later Ampico stacks were fitted with lost-motion pneumatics to keep the striking pneumatics in close contact with the piano when the soft pedal was applied and this further improved the ability of the Ampico to play extremely quietly without missing notes. It is difficult to understand why this feature was not used on all Duo-Arts and Ampicos as the very early Welte Keyless pianos all had a lost-motion device. The single valve pneumatic stack fitted to Duo-Arts which was manufactured in various forms with different size pneumatics and valves can only be considered an average quality stack. Had the Duo-Art been fitted with a similar quality stack as the Ampico, the performance would have been better and the ability to play quietly without missing notes would have been improved. This is a criticism which can be applied to most Duo-Arts.

One of the most difficult functions to achieve on any reproducing piano is accurate sustaining pedal reproduction of the artist's pedal effects. Ampico made exten-

sive use of extending note perforations to sustain notes which could not be achieved with the pneumatic pedal device. Good editing of sustaining notes in conjunction with a rapid acting pneumatic pedal is another feature which gives the Ampico such a high standard of reproduction. The Duo-Art relies far more on the pneumatic loud pedal for sustained notes and due to many of these devices not being fast enough, the fidelity of playing can be impaired.

The minimum intensity on the Ampico is adjusted by the bass and treble crescendo pneumatic spring for the bass and treble sections of the stack. When the minimum intensity has been set to about 6in on the water gauge, the instrument, if well restored, will perform well without missing on the most delicate or repetitive playing and should not require any further adjustment for several years. Adjusting screws are provided on the Duo-Art for regulating the position of the accompaniment and theme knife valves to set the minimum intensity to the instructions provided on the Duo-Art test roll. Further adjustments can be made to the gaps on the accordion pneumatics to make the instrument perform the capacity chord test in accordance with the test roll. The Duo-Art tends to require more frequent adjustment than the Ampico, especially when the accordions have been recovered with animal skin which has a tendency to stretch in this application.

When set up accurately to the

test roll the Duo-Art can perform very well on many of the very delicate and quietly played piano compositions but most Duo-Art owners are aware what can happen on some of the rapidly-played four-handed dance rolls when the soft pedal is on and the intensity is low. It is usually necessary to compromise on the minimum intensity setting to avoid skipping of notes on this type of roll which results in other rolls being too loud. This was a problem recognised by the Aeolian Company and some later models had the second stage of the accompaniment accordion connected to a pallet valve on the soft pedal so that the minimum intensity when the soft pedal was applied could not go below two. Whilst some minor improvement was made by this feature, it also had the effect of distorting the dynamic accompaniment range at lower intensities.

Superiority

The high standard of engineering designs and inventiveness applied to the development of the Ampico resulted in a superior instrument in most respects. Whilst many readers may not agree with this, a firm conclusion can only be reached when both systems can be compared in similar instruments in a suitable hall and before an audience to pass judgement.

With the level of activity taking place at the Purcell Room in recent years, and rumours of reproducing systems being built into concert size grand pianos, this event may not be far away.

SPEED CONTROL

Gerald Stonehill looks at the problems

THE problems of speed control on foot-operated and electric-operated player pianos are somewhat different. This is due to the fact that the pneumatic speed governor incorporates a knife-valve equaliser. Such an equaliser can, at one extremity bring the roll to a standstill. On foot blowing a light spring is essential in order to react quickly to a change in pressure under foot, whereas too light a spring on electric operation can cause "bottoming out" on the equaliser.

The Pedal-Electric Duo-Art (PEDA) incorporates both operations, and the contradiction is dealt with by the introduction of a supplementary mechanism in the form of a spill-valve equaliser. This

prevents pressure from building up to the point where the light foot-spring bottoms out. The disadvantage is that the available maximum power is severely reduced, resulting, in the UK, in the lack of the use of a crash-valve (since PEDA expression boxes were even fitted to all-electric pianos). In the USA, the pedal electric Duo-Art was almost unknown, and when ordered was fitted with an English expression box, minus crash valve.

The adjustment of the Aeolian speed governor is effected by three operations. Initially one must, of course, be certain that the shutter-valve-operated rewind port is closed when the pneumatic is open, with leather nuts slightly

apart to prevent tilting of the rewind slide. The first adjustment, then, is on the main slide valve, so that, at speed zero and at speed 80 the scratch marks are just entering the governor box. These marks are filed on when the box is made, in order to locate the correct position for the speed progression on the time scale. The leather nuts on this slide are then screwed tight. Next the spring is tightened until speed 70 gives one minute on the test roll 7 feet. The third adjustment is on the bottoming out screw, more important for electric operation. This has to be screwed towards the centre of the pneumatic until it starts to affect speeds 50 and 60, which it must not be permitted to do.

Speed check

Finally, the time scale must be checked, which means test-running 7 ft of test roll at speed 60—70 seconds, speed 100—42 seconds, 50—84 seconds, 80—52.5 seconds, 90—46.66 seconds, and so on. The Aeolian Company kindly marked $3\frac{1}{2}$ ft also to enable a quick check at half-time. It often happens that this check reveals

that the spring does not possess the standard theoretical characteristics. In this case, one either has to print a new time scale for oneself, or adjust the slide valve in or out, until, by a new position of the spring tension ring, the scale falls into correct position.

Test conditions

All the foregoing is, of course, useless under high-suction conditions, unless the test roll is run under average friction braking (for electric operation). Duo-Arts are time set in the "Duo-Art" off position, but in the American pianos this presumed minimum loudness set, whilst on the English, with its suppressing levers, maximum loudness occurs. Electric speed setting must be set with average loudness, i.e., average friction brake on the paper. This is achieved by making a jig to jam the intensity levers into an average loudness setting, about power 6 on the Duo-Art scale. Otherwise the roll will not run at the intended average speed. Meanwhile, too the tension spring on the delivery roll brake must be at the minimum, but constant, setting to

prevent ciphering.

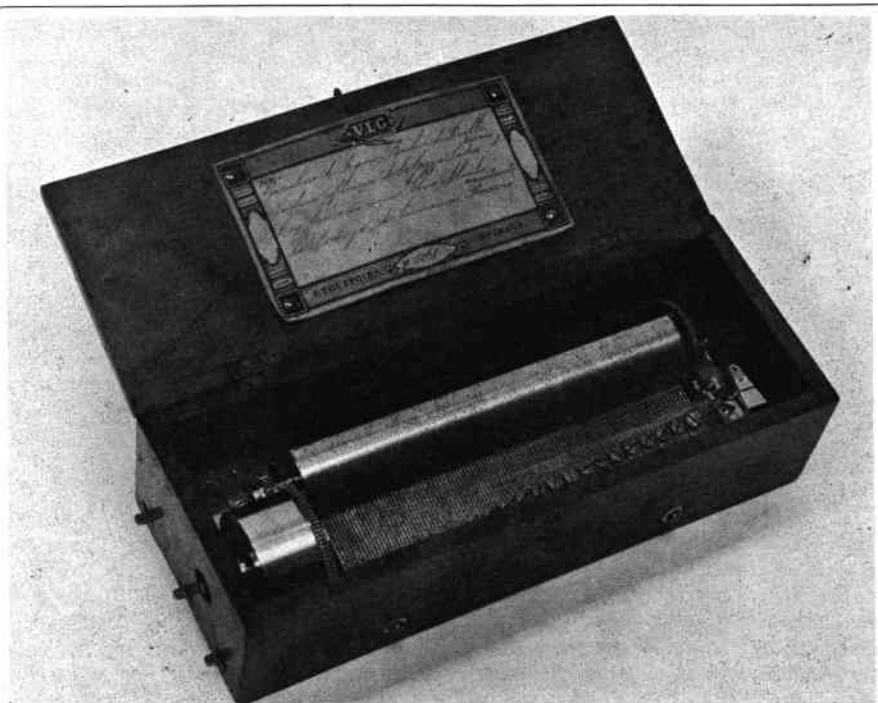
Under these conditions an accurate speed can be achieved. It must be remembered that actual master rolls had to be speeded up and slowed down in places, before transfer to the stencil to allow for the varying friction drag on the final roll. Recent comments on the master rolls, made by uninformed critics, assumed that these tempo changes were made to improve the pianist's playing, whereas they were made to preserve it, in the knowledge that actual roll tempo is not constant in practice.

Electric roll-drive

On late American Duo-Arts and Ampicos, electric roll drive was introduced, on the make-and-break contact-breaker system. If this introduced perfect speed control into roll drive, it could in fact re-introduce certain slight errors. In fact, John Farmer, in his joint Ampico A and B experiments, has found greater reliability in the air-drive! So he tells me. Therefore, since the majority of reproducing rolls was edited with air-motors in mind, there is something to be said for preserving the system for which the rolls were intended.

Certain defects can cause speed-ups or slow-downs during electric play. Speed-ups are more common, being caused by an unnatural increase in the diameter of the take-up spool, usually because of roll-swing or paper distortion, or by use of too strong a spring, or by a very long roll or badly glued apron. English-made rolls seem more prone to this fault, being made of different paper, with aprons, and sometimes having been stored loosely wound in a damp atmosphere. Slow-downs are caused by use of an incorrect spring, mis-setting of the bottoming-out screw, unnatural friction, or by mismatched ladder-chain and sprockets (leaving aside the regulation of the air-motor itself, which is another subject).

What is astonishing is that a slight mistake in timing is almost always instantly recognisable, in classical music, by a musically-aware person. If the speed sounds wrong, it probably is wrong, and the whole process must be checked thoroughly until it both is right and sounds right. This cannot be said of popular music (with words), which was habitually marked with a fast tempo for dancing and 20 less for singing. This type of music can validly be played at a tempo to suit the mood of the occasion—as it still is.

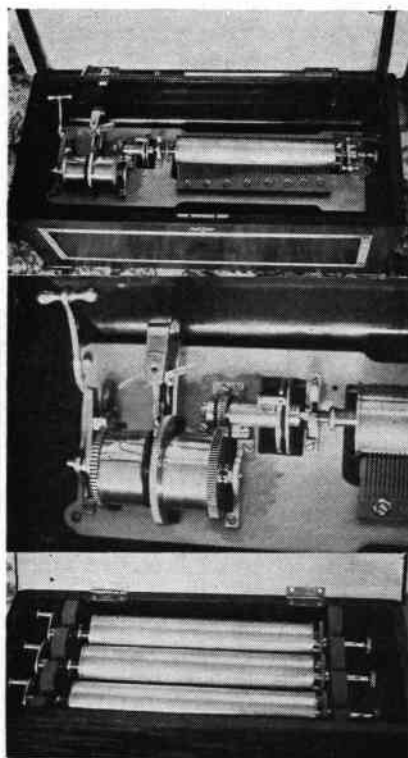


This four-tune key-winder with its comb in groups of five could date from the period 1822-1830. Its tune-sheet with the initials V.L.G. offers no clue to its attribution. Of extreme interest is the fact that it plays an aria from the lost opera *Elisa e Claudio* by Giuseppe Mercadante (1795-1870) first performed at Milan in 1821. The other airs are also operatic by Rossini—from the *Barber of Seville* (1816), *La Gazzra Ladra* (1817) and *Semiramis*. Here the mystery arises, since the opera *Semiramide* was premiered in Venice in 1823. This tune-sheet is written in French and *Semiramide* naturally appears as *Semiramis*. However, the opera remained virtually unknown in France until it opened as *Semiramis* in Paris in 1860. Is the box an anachronism? More likely not, but that this early Swiss box had a custom-made programme. Picture via Keith Harding.

ABOUT fifteen years ago at an auction in Christchurch, I was attracted by the wreck of an interchangeable cylinder box. I bought this for 50/- and happily trundled home my prize, a blackened corroded heap of bits in a box which someone had varnished black, and with a broken glass inner lid.

A minute examination rather deflated me when I totted up what had to be done. All three of the eleven-inch cylinders were sloshing around amongst the other bits and pieces in the bottom of the box. I leave to your imagination the condition of the pins. The list of necessary repairs included: great wheel completely stripped of teeth, endless broken, escape wheel unserviceable, driving pins torn out of all three cylinders and completely missing on two of them (fortunately the one present served as a model for the other two which I made), one tooth broken on the comb and one tip broken (not one damper wire was in place). On top of this there was the general rust and verdigris, etc., etc., to be cleaned up.

Before I could begin any work it was necessary to get someone to make a new great wheel or at least turn off the old teeth, sweat on a brass ring and cut the new teeth on it, and have a new endless made with its own escape wheel. The day before we left for England in 1971 my wife suggested that I take the parts to England and this I did. I'm sure that the heaviest part of my luggage was the barrel



*George Foster
tells the story*

of his interchangeable cylinder box

sub-assembly and the governor works.

At the Annual General Meeting of the Musical Box Society that May, I met up with Keith Harding and he agreed to do the necessary repairs and, if possible, have the work done by the time we were to return home. A few days before we left for New Zealand I went along to Hornsey Road and sure enough the job was done and beautifully finished. It really was a splendid job as it proved now that the whole job has been completed. As soon after our return as possible I got on to this box and at last had it going on the test chassis that I had made for this operation. Like all collectors my excitement comes when after the work has been done the tunes are heard for the first time. The airs are all very acceptable but out of the eighteen melodies on the three cylinders I could identify only four.

Unidentifiable

After carefully removing the varnish and dirt from the box, it was found that a transfer design was still present on the front and lid. I left this in situ, going over the box after masking the design, with two shades of French polish to make the wood graining. I then had to make a similar matching box for the two extra cylinders but since the three were numbered, 2, 3 and 4, I decided to leave a space just in case the No. 1 ever turned up. The details of the box are: controls extended to the right hand side and protruding out from the side of the box. Great wheel drives the escape mechanism between the two barrels, winding gear and click on the left hand barrel, and cylinder driving wheel on the right hand barrel, an arrangement which I have never seen on any other box. Unfortunately no signature anywhere around the mechanism. Two combs with 51 and 26 teeth respectively. Movement No. 61625 casting No 18, base resonator gamme number GC/3943/R (or perhaps B).

Cylinder

"No 2 42299, 64 GX 4143 . ."

"No 3 42299, GX 4143 . . ."

"No 4 42299, 69 GX 4143"

I do not think that the box is

A STRANGE REUNION

original for three reasons. 1. This mechanism would have had an inlaid box and not one with transfers. 2. All the hinges, lock and control furniture are nailed and not screwed. 3. There was no quarter round beading at the ends of the movement; I have added this since. This premise rather nullifies what may have been an interesting early box with controls extending through the right hand side. If this had originally been mounted on a matching table, then it seems likely the original table and drawer were used for other purposes.

Since I started writing this story, I have had a very pleasant surprise! A friend found a cylinder from an interchangeable music box about seven years ago. It could not have been from my box as this cylinder was left behind in a shed after the owner had returned to England with the original box and balance of cylinders—or so the story went. I made further enquiries and—you guessed it—it was No 1 and for the purist the stamped and scratched numbers on the cylinder were: "No 1, 42299, GX4143,4". For whatever it may mean the numbers are identical on each cylinder except an extra "64 plus 2 dots" on No 2, "3 dots" on No 3, "69" only on No 4, and "4" only on the Number One. Of the six airs on No 1 I can identify only two of them.

Novice's Corner

A SERVICING which will improve Duo-Art performance is to remove the expression box and pull off the bottom cloth of the two large pneumatics in order to re-graphite the knife valves with powdered graphite. Rubbing in first with a drop of methylated spirits will make the graphite adhere better and give a better finish. Over the years the knife valves tend to stiffen in movement and this treatment ensures that they will act without restriction and often produces a noticeable difference on rolls which previously lacked expression.

P M THACKARY (PPG)

MUSICAL BOXES ACROSS THE WORLD

IN this survey, the Editor considers the parts played in the development of the musical box industry by various countries outside Switzerland. He finds that the French and Swiss makers concentrated in a small border area and assesses the reasons why America became far more important than Britain in the closing years of comb-playing mechanical musicwork.

Eastern Central Europe

TWO centres of musical box manufacture are immediately identifiable in this area of eastern central Europe. The first was Prague in Bohemia. Next comes Vienna in Lower Austria. A probable third centre is worth considering as well—Budapest in Hungary.

Prague appears to have been a very early centre of musicwork and, as suggested on page 53, it is possible that some of the very earliest musicwork emanated from Prague and also Vienna. Certainly by the early part of the nineteenth century Prague was the home of a

number of musical box makers who produced the style of movement for fitting into clocks and automata which is so characteristic of the area—fundamentally with the comb reversed, i.e., treble teeth to the left of the cylinder.

Vienna also produced musical boxes of the self-same type, in fact the Prague and Vienna products are often virtually indistinguishable.

Budapest is included in this list as the result of careful surmise, for although so far no Budapest musical box makers have been traced, musical automaton-makers abounded and a number of musical box agents practised. In consideration of Budapest's position in the

Hungarian trade plus the fact that it later had a thriving gramophone industry, it would be difficult to consider the city as not having contributed to the musical box scene although much of its output might never have reached Western eyes or ears.

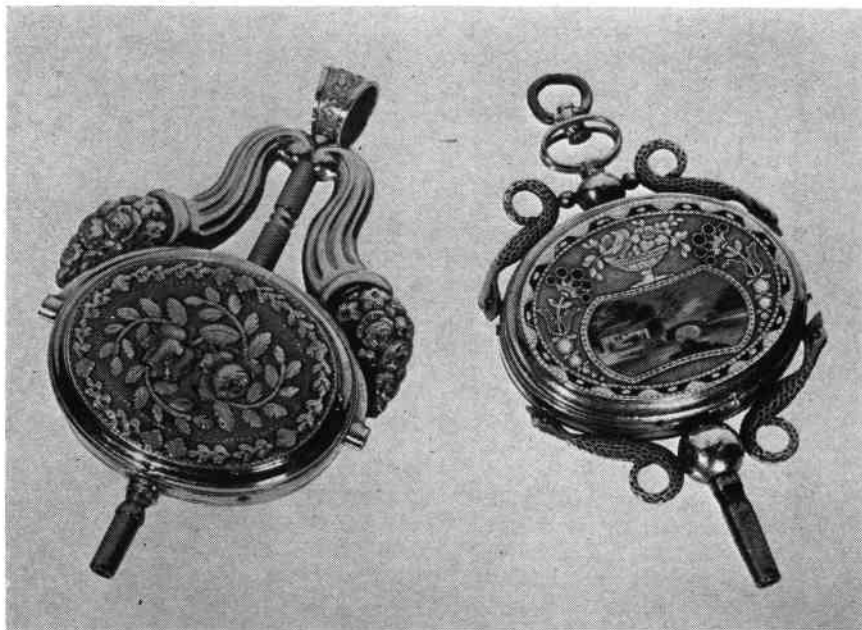
One would expect the Budapest musicwork to follow the style of the Viennese/Prague movements and it would be interesting to try to trace examples of this presently hypothetical craft locale.

France and two epochs

THE musical box industry in France is thought to have been of some considerable importance at two distinct stages in the history of musicwork. First there is the strong probability that French clockmakers were responsible for some of the very earliest uses of the tuned steel comb. This is discussed on page 53. Certainly Breguet seems to have been making early cylinder musicwork around the end of the 18th century. Paris as a centre of clock-making was nowhere near as important as London, yet here some early and as yet undefined contribution to the history of the musical box appears to have been made.

Paris produced its own handful of important makers such as Alibert, Bontems and Bordier, the last two being mainly makers of singing birds. Much of the main part of France's musical box industry lay very close to Switzerland in that area adjacent to the French Jura. Besançon, formerly in Franche Compté, then Doubs, bred fine clockmakers and makers of musicwork. The area is famous for at least one great family of musical box makers, L'Epee. The founder of the industry was born just across the Swiss border in Neuchâtel Canton and finally settled in St Suzanne three kilometers south-west of Montbéliard where he set up a production which became known throughout the world. A large proportion of his output was sold under the name of Thibouville-Lamy of Paris. Paris was the location of another reputed maker, Andre Soualle, who produced at St Denis, 7 miles north

Musical keys from the past . . .



Really miniature musicwork is demonstrated by these two musical watch keys formerly in the C W Bruce collection (the "Seeby" of John Clark's book). Both in gold and enamel, that on the left features a medallion 1 1/4 ins wide by 1 in high with embossed ornament in two shades of gold with a cornucopia motif above. One tune is played. Right: the medallion is the same size but is elaborately embossed with two panels in painted enamels. One side shows a lake with a bridge; the other a vase of flowers. Four snakes surround the medallion and again one tune is played.

of the city centre.

France's contribution, as regards volume, was fairly extensive and was centred on L'Epee.

German Empire

GERMANY was something of a late starter in the musical box business. Several early makers were producing quality work in the mid-nineteenth century, but no evidence of a concerted industry can be found prior to about 1870 when Ehrlich began making organettes following soon afterwards by Lochmann.

It was the disc musical box, invented by Ellis Parr in London and Paul Lochmann in Leipzig and produced in the latter city, that really put the Fatherland on to the path to becoming one of the world's major musical box producers. Although not many cylinder machines were built, from 1886 onwards vast numbers of disc machines were turned out from factories in Leipzig, then also in Berlin and later Thuringia and Saxony. German technologists perfected the disc musical box and later took their knowledge, craft and experience to America where in a veritable riptide of creativity, New Jersey and Leipzig became the most important centres of disc boxes in the world.

Germany's trade and industry was effectively killed off by the start of the 1914-18 War and in the irony of things, in its attempt to dwarf the Swiss musical box industry it succeeded, only to be overthrown by events which it was not strong enough to resist. Switzerland, the neutral, quietly continued in the making of modern mechanisms.

In the early 1970s, the disc-box was put back into production by Studio Oyen near Cologne, the instrument chosen being the Kalliope named, for commercial reasons, Symphonion. This was described on pages 440 *et seq* of Volume 6.

It should not be forgotten that Augsburg was the centre of mechanical musical instruments as early as the start of the seventeenth century. Here clockwork spinets, mechanical organs and complex automata were being produced by a handful of craftsmen whose work remains without equal. This craftwork was almost completely extinct by the end of the eighteenth century. The same could be said of Dresden. Mechanical music also featured in clocks made in the small area of Schwarzwald, Baden, bounded by Freiburg, Waldkirch, Triberg, Furtwangen, Vöhrenbach, Villingen and Neustadt. This



The first Aeolian 58-note player reed organs worked on suction like a player piano and were called the Aeolian Grand. Later pressure models were called Orchestrelles but around 1900 all instruments took the name Orchestrelle. This suction instrument, with the name Orchestrelle on the fallboard, is styled similar to the Francis 1st model, has excellently-balanced voices and makes a fine recital instrument. From the collection of The Editor.

industry was set up around the mid-eighteenth century and flourished into the great orchestration era still supreme at the start of the present century.

British Isles

THE musical box was never the subject of a serious production business in the United Kingdom. While several Britons patented "improvements", few if any of which contributed anything to the subject, and devious schemes for incorporating musical boxes into other articles (such as musical boxes in desks, pianos, closets, etc.), original musical box construction was not extant. Admittedly the organette was produced successfully and in large quantities in the last two decades of the 19th century, but there was little else.

Exceptions centred on the importance accorded on a European scale to London as a centre of the watch and clockmaking industry and as a centre of quality gold and silver craftsmanship. A large number of Swiss-produced musical movements were sent over to London for finishing and incorporating in London-made presentation precious metal cases

—this explains the presence of a London hallmark on so many of the very early Swiss pieces. Later, movements for Swiss cylinder musical boxes were sent to London for mounting in locally-made cases.

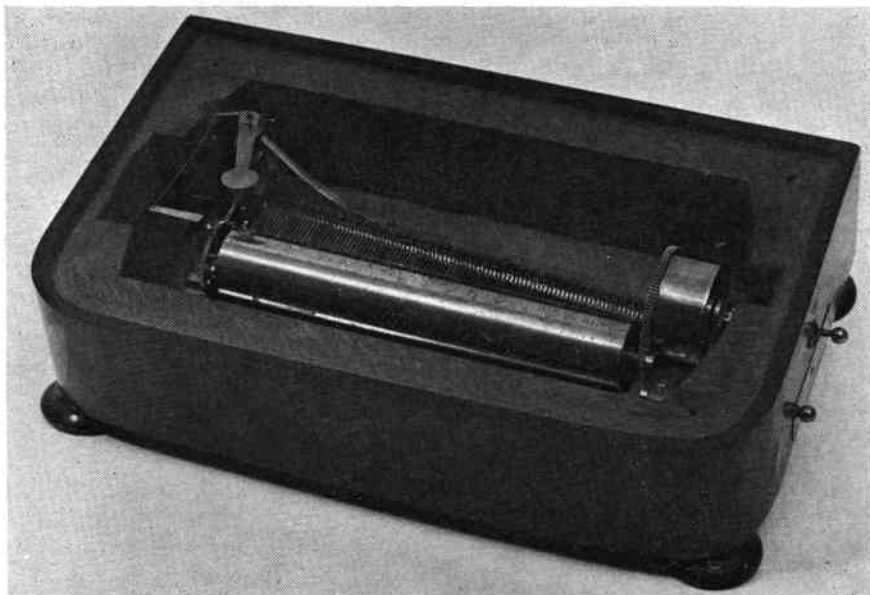
Although no complete production was undertaken, cylinder pinning was carried on in London and several highly-skilled repairers had the capability of producing "one-off" or custom-built pieces.

In the days of famed automaton makers such as Jaquet-Droz, Mailardet and Leschot, pieces incorporating music work were built in London. While this usually involved Swiss-made work, often considerable reconstruction was undertaken to suit the work being created.

Contemporary with this, these same workers (Swiss craftsmen who worked for a time in the metropolis) undertook the development of the mechanical singing bird, producing the definitive form seen today wherein a single, variable-pitch pipe is used (see page 106).

All these works, admittedly of immense importance to the musical box, were undertaken by European craftsmen in London and as such

Musical clock base



The early part of the nineteenth century was characterised by the clock which played music every hour from a musical movement concealed in the base. Unlike flute-playing and carillon clocks, the timepiece was separate from the musicwork, the instruction to play coming from a detent via a cord or, occasionally, a rod. This piece bears no maker's name, but the spring is marked *Paris 1814* and the numerals 507 are stamped into the bedplate. The cylinder is 7½ in long, the comb is in 42 groups of two with the treble on the left. Stopwork is Viennese and the endless top bearing is a steel plate instead of a jewel. Picture via Keith Harding.

it could hardly be described as an industry.

England can lay a measure of claim to having invented the disc-playing musical box, for it was Ellis Parr, a London musical instrument dealer and inventor, who designed the first practical model and who subsequently united his talent with that of Paul Lochmann in Leipzig (the real inventor, one feels) to produce the Symphonion—the world's first disc-box.

Only one musical box appears to have ever been produced in England and that was far from London in the Salford district of Manchester. Here, Carl Roepke, about whom little is known other than that he was a central European immigrant, built the strange book-playing box which bears his name. Similar to Richter's Rudolstadt-built *Libellion* (one wonders if there was a connection?), the *Roepke* was a most interesting and tonally satisfying product which suffered from the same problem as all the early cardboard-playing machines—the lack of durability of the music sheets where they were called upon to perform mechanical functions*. How many of these boxes, several sizes and styles of which have been located, remains unknown. Unlike America's large

musical box industry, Britain probably contributed very little to the development of the musical box in her own territory.

United States

IT MAY seem strange that the British Isles should have engendered very little in the direction of a musical box industry while America evolved its own thriving business in the making of musical boxes. The reasons are, though, not terribly hard to find. The United Kingdom was far too close to the European centres of mechanical music to make the establishment of an indigenous industry an economic proposition. With the United States, however, there existed two extremely valid reasons why a home-grown musical box industry should have flourished. First was the obvious one—the geographical location relative to Europe which made ordering and delivery a lengthy process. Then there were the extremely high duties levied on imported musical boxes. A third reason was the recognition that the United States was potentially a thriving and lucrative market.

The American industry began first as an offshoot of the Swiss industry with the setting-up of a

Paillard agency in New York and the removal to America of some Swiss technicians including Charles Henry Jacot, Louis Jaccard, Emile Cuendet, Joseph Bornand and others. Then the German industry also sent talent across the Atlantic, most notably Gustav Brachhausen and Paul Riessner followed later by Octave Felicien Chaillet.

Although it was undoubtedly the influence of foreign knowledge and technology upon which the American musical box industry was founded, it was American artisans and, largely, American cash which jointly funded one of the most surprisingly prolific eras of musical box development. A late starter in the musical box industry, America was the setting for the production of some truly outstanding musical items. Apart from possessing a sufficiently wealthy market to encourage Swiss craftsmen to construct some of the very largest cylinder musical boxes ever made solely for America, it also produced what many collectors throughout the world believe to be one of the best if not the best disc musical boxes of all time—the Regina. Furthermore, America produced an unusual variant of the disc machine which demonstrated some sound engineering and creative thinking in the *Capital*, a musical box which played hollow, tapered and truncated metal cones which earned it the soubriquet of the "cuff" box.

Initially, musical boxes made in America, both cylinder and disc, were almost indistinguishable from those made at European source—indeed it seems that components were being shipped across to America from Europe for some while (in the case of Mermod, Roger Vreeland, writing in the *MBSI Bulletin*, has found evidence of this practice as late as 1911)—little by little American ingenuity and local style took over. From earliest times, and certainly with disc boxes, cases were of American wood to American design. Then gradually came the development of

*Footnote: In the *Roepke* as with the *Libellion*, the key-operated fair or show organ, and the Ariston organette, the cardboard is used to operate sprung metal keys which are allowed to lift where there is a hole in the card. The music sheet card is therefore subjected to wear through the resistance of the mechanical levers being moved. Paper, on the other hand, and cardboard when used on pneumatic action instruments, serves only as a sliding valve across a series of openings rather like a mouth-organ. The only attrition to which the paper is subjected in use is due to friction across the member containing the openings.

THE LIPSIA



WHO made the strange disc musical box bearing the name Lipsia? Standing 100cm high, 63cm wide and 33cm deep, this undoubted rarity plays a 45cm disc. The nymph in the painting on the door carries a shield bearing the initials W & R. Could this be Winkelmann & Reinhold of Hamburg. Or could it be Weber & Rossberg Nachfolger of Zittau?

Lipsia is the Latinised name for Leipsig but this does not automatically indicate the piece was made in that city. Just as *musique de Geneve* did not even imply a Swiss-made musical box, the allegorical reference to Leipzig could relate to that city's reputation as being the cradle of the disc box. The piece may not even be German! What is known is that the Leipzig exporters Ernst Holzweissig Nachfolger described their business as "manufacture of all kinds of musical boxes and musical articles" in 1909 and listed in their advertisements *Lipsia* and *Hymnophon gramophones and Lipsia* "case-hardened" cylinders. In 1903, Etzold & Popitz were factoring "Lipsia Karoussels".

The Lipsia is in the Mekanisk Musik Museum, Copenhagen.



American-bred designs and the most outstanding of these, aside from the *Capital*, were the later products of the Symphonion factory in New Jersey (see page 86). Other disc boxes, such as the *Criterion* and *Perfection*, were solely American in origin.

For the wealthy American, Paillard in New York constructed some outstanding large interchangeable-cylinder machines which exhibited the highest-quality engineering and technology united within handsome cabinetwork. These were not production items, although the components may have been standardised, and each was probably a unique specimen.

Because of its timing, America's musical box industry was something of a swansong for the musical box as a whole. But if the musical box came in with uncertain origins, it went out with New Jersey assuredly ranking in equal importance to Berlin and Leipzig.

Summary

FROM this survey, I have excluded

reference to the present-day musical box industry with the exception of the reference to the new Symphonion. Since the major part of the modern musical box industry centres in Switzerland, this is intentional. A certain proportion of modern work also comes from Japan, but Japan's contribution to the classic musical box was, to the best of my knowledge, nil.

If one interprets the foregoing information, it emerges that the musical box industry of the world extended (a) across Europe in two diagonal bands running North-East to South-West from Leipzig to Geneva, and Leipzig through Dresden and Prague to Vienna and probably on to Budapest; and (b) in a narrow arc embracing New York City, Jersey City, Rahway and Ashbury Park in the United States. By comparison, the transatlantic industry was very small and concentrated in a narrow, localised band, yet it was demonstrably an enterprising and prolific one.

WANTED

Is there a Member who would care to volunteer to operate the Back Numbers department of THE MUSIC BOX? Most of the journals and other publications published by the Musical Box Society of Great Britain over the past thirteen years are still available and are at present administered by Secretary Reg Waylett. However, he is running out of storage space and needs HELP! If anyone has a LARGE room to spare and would like to take charge of this task and look after the despatch of orders, then please contact the Secretary, A R Waylett, Bylands, Crockham Hill, Edenbridge, Kent. London area residence, though advantageous, is not essential.

HELP !

FROM MAINSRING TO GOVERNOR

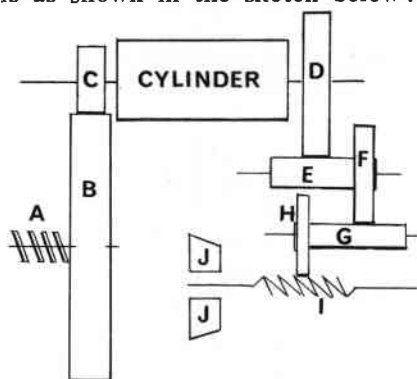
by Ken Fritz

THE design of the power train of a musical box starts neither with spring nor with endless, but with the cylinder itself, for this has to turn at a precise speed. All else is designed with this in mind. Ken Fritz describes the power ratios, friction losses and other factors which go to make up a musical box, and also advises on the mechanics of spring power and length



I SHALL begin by quickly summarising mainspring design from the standpoint of energy as it is conveyed through the gears to the governor. I will show how this energy is controlled to the specification of the box. Time periods—the optimum length of time between the shortest playing musical notes—will be touched on, but the whole acoustical relationship of bedplate and comb will not be considered here.

The general power train layout is as shown in the sketch below:



- A = mainspring
- B = barrel gear
- C = great wheel pinion
- D = great wheel
- E = 1st wheel pinion
- F = 1st wheel
- G = 2nd wheel pinion
- H = 2nd wheel or worm gear (driving the endless)
- I = endless screw
- J = windbrake

We cannot begin any serious discussion until certain facts are presented. First, the mainspring. In this case let us consider it to be $1\frac{1}{2}$ in \times .028 in and about 12 feet long and when in its spring barrel it represents 22 coils or turns.

Referring back to the first

sketch, there are several ratios. These are:

$$\left. \begin{array}{l} B : C \\ D : E \\ F : G \end{array} \right\} \text{power ratios}$$

$$H : I \text{ velocity ratio}$$

and the velocity ratio equation $JI = \text{number of teeth required in H also the damper or braking ratio}$

The ratios are universal and vary only minutely from box to box. If we look at raw design in the ratios from end to end, you will find that although one or two ratios will differ, the end result from B through to I will not change: it cannot, for it must be within the adjustment range of the windbrake and this does not allow much latitude in gearing.

These established ratios, then, are:

$$B : C = 3.727 : 1$$

$$D : E = 8.6 : 1$$

$$F : G = 5 : 1$$

$$H : I = \frac{p}{n} \text{ (n) where}$$

$p = \text{endless pitch}$
 $n = \text{number of teeth in second wheel}$

A quick illustration of ratio H : I is:

$$p = 28 \text{ (means 28 threads per inch)}$$

$$n = 23 \text{ (means teeth in the second wheel)}$$

$$\text{then } \frac{28}{23} = 1.2 \text{ (turns of the endless per each tooth on second wheel)}$$

$$\text{and } 1.2 \times 23 = 28 \text{ when all significant figures are considered}$$

$$\therefore H : I = 28 : 1$$

Having established the import-

ance and identities of the various prime ratios, let's go back and start at the beginning. It might appear that we should begin at the mainspring, but this is not so. The beginning is the cylinder itself and its apparently insignificant little time periods. Here, though, our only consideration is the total periods in time plus the stop-time. We need to know exactly how much time the cylinder requires for one complete revolution.

This answer can only be determined after the tempo and required time of one tune is calculated. The reason why endless screws are different in pitch and also why windbrakes differ in surface area is because the tempo and time problem is different by just a few seconds between one machine and the next.

The "rate"

When we speak of the "rate" of a music box we mean the time required to revolve the cylinder one complete turn. Going back 30 years, it was common to hear the terms "four-rate", "six-rate", "eight-rate" and so on. The expressions "four-tune", "six-tune" and so on, were uncommon.

The craftsmen of that time considered all music boxes in terms of time because that was their whole approach to working with them. The craftsman of today rarely considers the real importance of time and the part it must play in all the mechanical functions of the music box.

When you recall that the mainspring barrel revolves eight times for eight tunes for 1,000 time periods and that the endless turns 2,650 times, the time in the endless

becomes very important. This means that the endless turns about $2\frac{1}{2}$ times for each time period and that, you will rightly deduce, is critical.

The effect of one tooth

What would happen, all else being equal, if one tooth were to be eliminated from the great wheel—or any gear for that matter? It would result in a slightly smaller diameter, a different ratio and, more drastically, a large change in the rate of the mechanism.

Before looking at the governor, we ought to know what is going into it before we can calculate the desired response, so let's move on to the second point of consideration—the mainspring.

First, though, we should have some idea of the losses through friction in the gear train as it applies to mainspring design. Without laborious mathematical analysis of the train of gears we can approximate quite accurately the total losses of the music box. This is done by assigning a value to the coefficient of friction as it affects the various mechanical parts of the music box as follows:

Second wheel to the endless = .25

For each spur gear end pinion = .15 (three in the simple cylinder box)

Endless pivot to endstone = .12
Cylinder pins to comb teeth = .25

This produces a total of 1.07 units of friction. Working out approximate percentage losses on a 10 : 1 ratio for the 10in cylinder; 11 : 1 for an 11in cylinder; 4 : 1 for the 4in cylinder, our losses are calculated thusly:

$11 \times 1.07 = 11.77\%$ (for the 11in cylinder)

Friction and the mainspring

Now should the ideal mainspring be calculated as being 12 feet in uncoiled length for a given number of turns effective to the winding crank (we will say seven, allowing one turn beyond the upper and lower stops of the Geneva stopwork), we calculate the length in inches of the centre turn of the effective area of the coiled spring. Let's allocate 1.5in diameter for this coil.

$1.5 \times 3.14159 = 4.712385$
and if we take 12% of this we have
 $4.712385 + .5654862 = 5.278$

DEJECTION DA CAPO



Once again from the Claude Marchal collection comes a fine study of the street musician. This colour-wash postcard entitled *The Optimist—Somewhere the Sun is Shining*, shows a street piano trying to earn pennies for its two dejected attendants in a downpour so real you can just about feel the rain!

Where we had seven turns at 4.712385 for a total length of 32.987in, we now have seven turns at 5.278in for a total length of 36.946in representing the stretched-out length of the effective turns. Now our extra percentage must also be added to the thickness of the spring stock. It doesn't sound like much, but .020 thickness calculates to .023, using the next highest number in the decimal.

In effect, what we have done is to increase the driving power by increasing the strength. We have also overcome marginal friction stoppages in the train by increasing the "rate of delivery" of the mainspring in the added length. This will not show up in the effective coils of the spring dimensionally, but it will be apparent in the length of the spring on either side of the effective coils.

As you may have guessed, six inches in the length of the spring is very important just as is .003in in the thickness.

So armed with our calculation for friction in the back of our minds, we can do a theoretical mainspring design.

It is known that the barrel will rotate once for every complete coil

of the mainspring. When all the coils are counted, a simple formula is used to give the number of turns the arbor must revolve to wind the spring tight:

$$T_t = \left(\frac{M_t}{\pi} \right) 2 + 1$$

where T_t = total number of crank turns to wind tight

where M_t = total coils of spring in barrel

where $\pi = 3.1416$

The minimum arbor diameter must be at least 12 times the thickness of the mainspring, giving:

.028in spring = .336in diameter arbor

By raising the size to .375in, less strain would be placed upon the fully-wound spring and this would be more desirable for increased spring life.

The most effective area of the wound spring for power transmission and optimum spring life is roughly the middle two-thirds of the spring. This is the real reason why Geneva stopwork was placed on the spring barrel. The actual formula for effective spring power transmission is:

$$\left(\frac{M_t}{\pi} \right) - 2$$

where $M_t = 22$
giving

22

— — 22 = 12 effective turns

π

∴ should 16 turns be required to wind a 22-coil spring, the effective turns are centred:

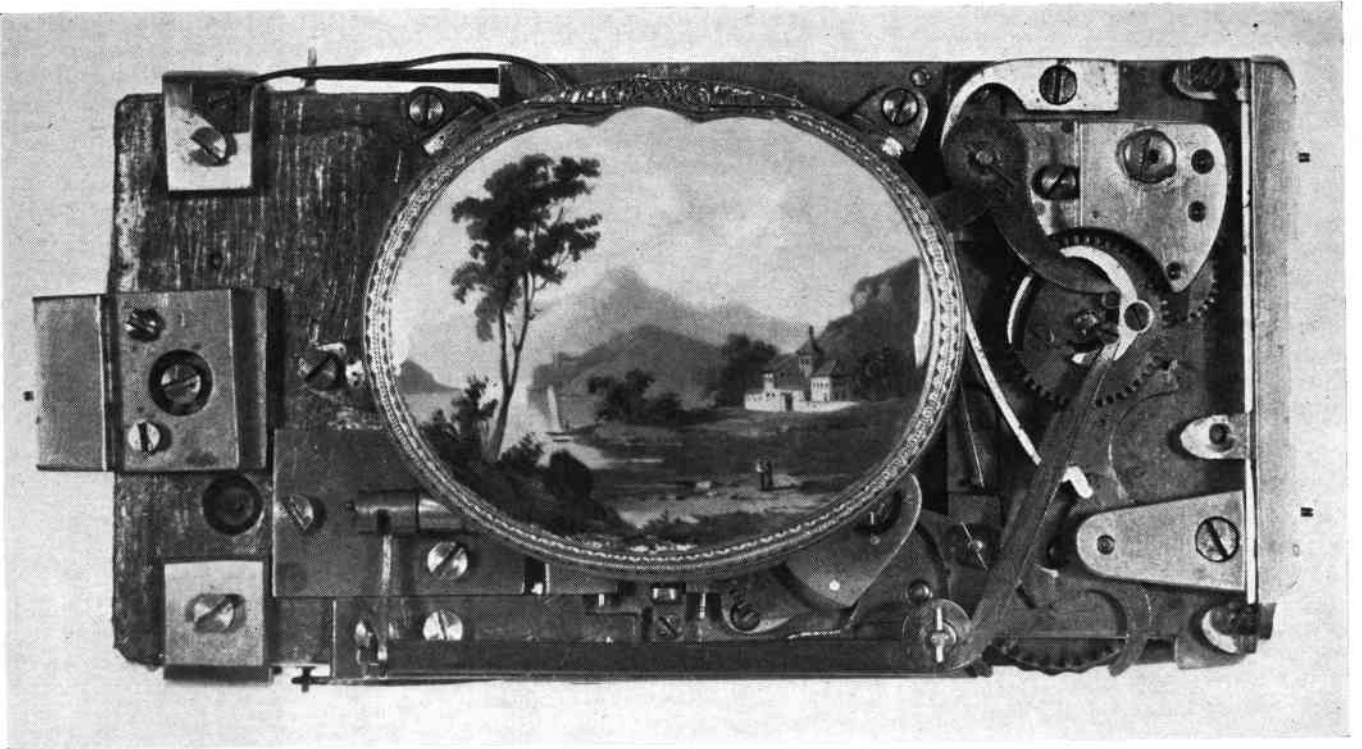
$16 - 12 = 4 + 2 = 2$ turns each side

The Geneva stopwork is set for a run down or lower notch of two turns and the upper notch is the 12th turn of the barrel. As you can easily see, the effective winding is both theoretically and practically centred. Or is it?

Well, this is not altogether true in the actual spring situation because the center windings of the mainspring are shorter in length than the outer winding. For this reason, I would use a 3 : 1 centering ratio with one turn on the lower notch and three turns on the upper notch.

Imagine the barrel to be 2in inside diameter and the arbor is .500in. The length of the outer winding would be 6.283in long and the three inside windings would be

continued on page 109



SINGING BIRD

AMONG the earliest of all automata is the singing bird. The mechanical representation of the movements and song of the bird goes back something like two thousand years. Interesting and ingenious though these early mechanisms undoubtedly were, it was not until comparatively recent times that anything approaching realistic birdsong has been capable of synthesization. The singing birds on Dallam's organ for the Sultan of Turkey in the time of Elizabeth the First can hardly have produced an authentic bird song.

Until the end of the eighteenth century, mechanical singing birds either produced their songs by warbling through a single pitch-pipe, one end of which was immersed in water (this is the so-called *nightingale*, also a one-time feature of organs), or by a miniature pipe organ with a rank of small, narrow-cut, open-foot-voiced high-pitched organ pipes or whistles. A *glissando* on this would pass, if the listener was not too fussy, for the sound of a bird of indeterminate species. The main shortcoming was that birdsong, beautiful and tuneful as it almost always is, follows not the rigid doctrines of scale with its pre-set intervals, naturals or sharps. Real birds demonstrate an almost mischievous delight in making melody out of what, when transcribed on paper in regular notation, would

appear as a jumble of discord. Many would-be composers have sought success by the Sisyphean toil of sitting with pencil and paper to transcribe the song of the skylark.

Practical invention

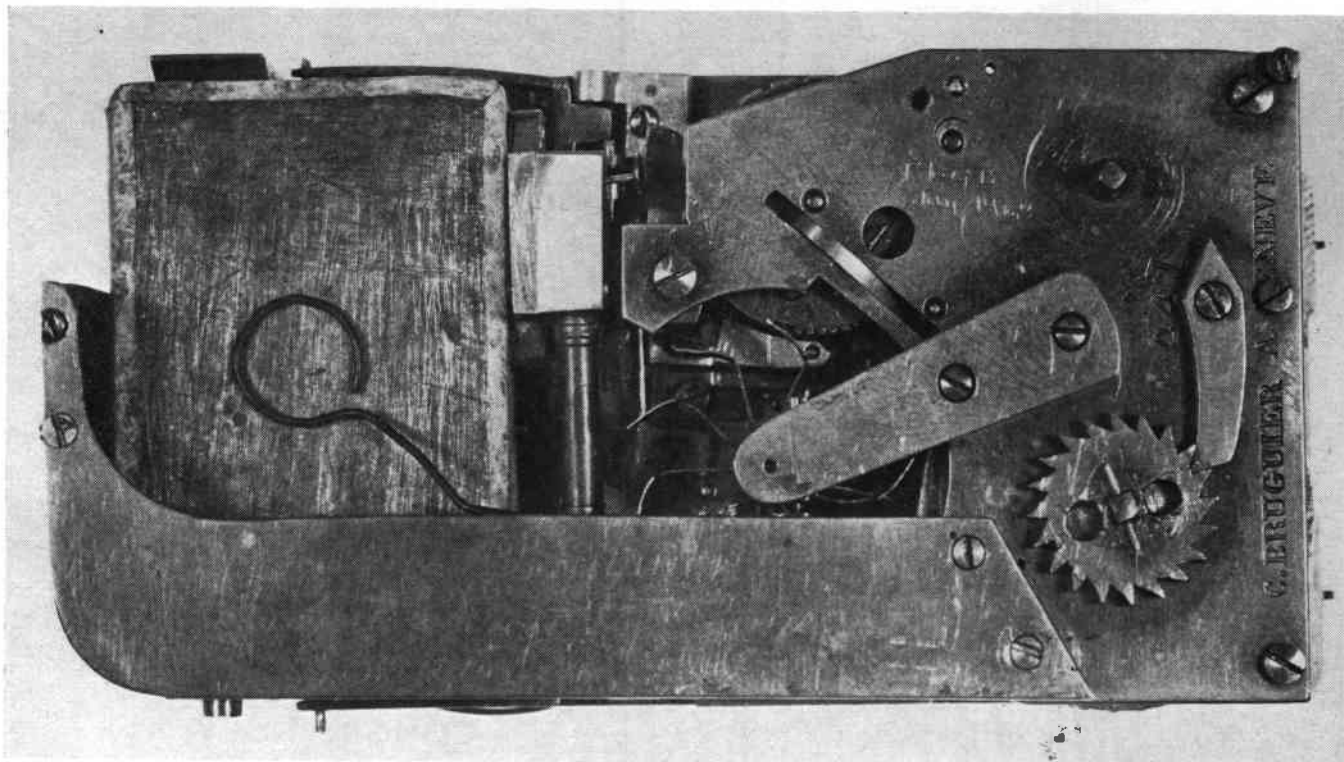
Henri Maillardet, who worked for Jaquet Droz and Leschot in London, was allegedly the first to wise-up to the situation. If birdsong was to be produced mechanically so that it sounded like real bird-song, he reasoned, then something akin to the bird's mouth had to be produced—and a bird didn't have a gullet-full of organ pipes: It had only one. Maillardet reproduced his ideal bird's mouth using a small pipe fitted with a close-fitting plunger which could be slid up and down, so altering the pitch of the sound produced when the pipe was blown. Three inter-related mechanisms were necessary to make this possible—a system of accurately positioning the plunger in the pipe for a given note, a system of

regulating the on-off control of the wind so that the pipe would sound or not sound during the slide as might be required, and a means of blowing the pipe by tiny bellows.

Maillardet made his mechanism which was subsequently improved upon by others, including Jean Frederick Leschot with whom he worked in London.

Very many clock and watch-makers subsequently made singing bird mechanisms—Baillie lists no fewer than 25—and some of these mechanisms were truly outstanding exhibitions of the highest-quality workmanship. Multiple-





cam systems selected by a snail change as on a musical box allowed surprisingly accurate representations of recognisable bird-song and these cams made possible the familiar phrase repetition and "second strain" melody which is a feature of the real thing.

Perfection

Among the numerous quality makers was Charles Abram Bruguier of Geneva. Born in 1788, he lived until 1862 and throughout the peak of his working life he produced some exquisite singing birds. Baillie credits him with the improvement of the singing bird mechanism and says that he produced them in large numbers. The first to undertake something

akin to mass-production, he succeeded in producing bird song which, in the eyes of many collectors, is probably the peak of impersonation. The use of four sets of song cam-wheels, three of which were allowed two playing revolutions at different stages in the song, meant that Bruguier birds sang for a longer time than others and also could sing a much more elaborate song.

Wooden bellows

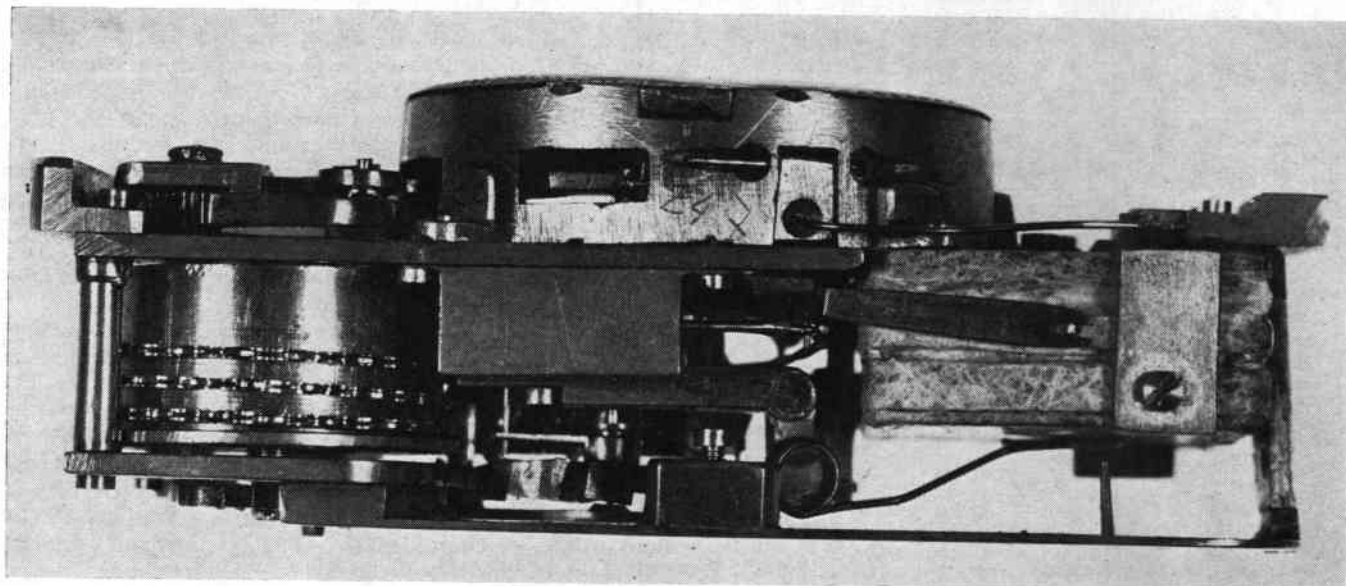
Illustrated on these two pages is an unusually fine specimen from the collection of President Cyril de Vere Green. Shown much larger than life at top left, above and below, this mechanism is in a richly-enamelled gilt case which

measures 95mm long, 60mm wide and just 30mm deep.

A characteristic visible in these pictures is the wooden bellows. Some makers used circular-section, pill-box-like bellows with brass ends and, usually, a narrow brass ring to keep the thin bellows skin in shape. An advantage of wooden bellows is that they make the renewal of the skin a slightly easier operation.

Dismantling a singing bird mechanism is, as these pictures clearly demonstrate, a highly involved process and if for no other reason should not be attempted by other than the most skilled of repairers.

A further picture of this outstanding piece appears at the bottom of page 110.



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ORMOLU REGENCY PAVILION



Back in more gentle times, the creation of fine works of art which had little or no practical or utilitarian purpose occupied those men whose work time has come to acknowledge as that of craftsmen.

Mechanisms incorporating rare metals, precious stones and great ingenuity often represented the bringing together of the craft of several artisans such as the goldsmith, the enameller and the watchmaker.

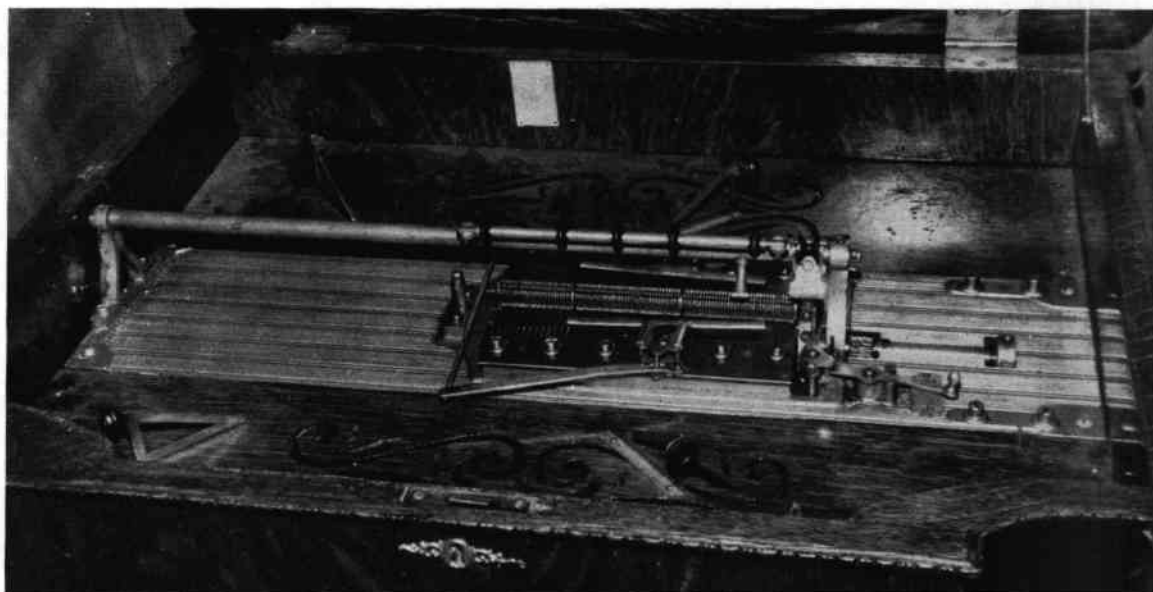
Seen here is a quite exquisite specimen of this era which demonstrates that great beauty can be created without the use of valuable materials. Just as James Cox often used decorated plates of black steel in his automaton clocks, this pavilion stands upon a casket of embossed black metal containing a silk-lined drawer. Upon taking out the drawer, the musical movement is revealed. This bears the signature M Bordier and the number 1251. It plays two tunes, one of which is a melody popular today as *There's a hole in my bucket, dear Mother*.

The dancing figures are all cast in ormolu as is the pavilion, the decoration and the feet upon which the base stands. These dancers waltz around and reverse while the centre platform revolves.

The date suggested is around 1810 but the decorative motifs used are from varied periods, i.e., Tudor rose, Egyptian, winged lions, flambeaux, acanthus leaves. Bordier is said to have been working in Geneva between 1815 and 1830 as a maker of small musical movements.

The pavilion stands 5½ins high, has a width of 3½ins and the figures are one inch high. The whole stands on a base 5½ins wide and 3½ins high and the piece is in outstanding, original condition. It was formerly in the collection of the late C W Bruce.

M I R A



THE business of Mermod Freres was founded in 1816 at St Croix, Switzerland, and was initially involved purely as watchmakers. However, by the time of the 1851 Great Exhibition in London, the brothers Gustave Alfred, Louis (Phillipe and Leon Marcel Mermod were showing high-quality musical boxes. They later invented the *Parachute Safety Check* for cylinder boxes.

To meet the competition afforded by the Leipzig disc musical box industry, Mermod entered into production with a disc box designed and patented in 1885 by André Junod. Unlike the German boxes, this played tunesheets without projections and the discs were therefore far more durable and easier to handle and store.

From the Stella was devised a conventional-disc machine which played tunesheets with projections but otherwise closely resembled the Stella. This was the Mira and it featured the same transverse rotating disc-pressure bar, style of mechanism and even cabinet. The combs were set Polyphon fashion as distinct from the Stella which had one comb arranged pointing upwards beneath the sprung starwheels.

The Mira was made at least until 1909 and, for the Chicago distributors Lyon & Healy, was called the Empress.

Did Mira come from the Latin *mirabilis*, meaning wonderful, astonishing, or from the Italian *mira* meaning aim or target?

continued from page 105

5.240in. This, as a centred spring, is more realistic. What I've done here is to take the long way round to illustrate that the fixed centering ratio is 3 : 1.

The next major question is how many turns must the barrel make for one tune to be played and, in the case of an eight-rate box, for all eight tunes.

It is obviously preferable to be able to play all the tunes on one winding with a little extra power to spare at the end. Let's examine the power train ratios for one turn and for eight turns, in this case ignoring time. We find that:

B = 1 turn
C = 3.727 turns
F = 32.05 turns
H = 160.26 turns
I = 4487.3 turns + 2.5 = 1794 time periods

Here is where time comes into consideration. Suppose that there are an average of 475 time periods for each tune and the cylinder is 1.875in in diameter. We must determine the circumference or physical length of the tune playing time at the tips of the cylinder pins, *not* at the cylinder surface. And we must also calculate the stop or non-playing time.

Therefore, the length of the pins is almost always .040in long, and

$1.875 + (.040 \times 2) = 1.955$ in diameter

From this, we have
 $(1.955) \pi = 6.142$
which is the total diameter-length of a tune.

Subtracting stop time of approximately .250in we arrive at 5.892in of actual playing length time.

One tune requires 475 time periods and our pin layout chart which we would use if we were engaged in actually pinning the cylinder (to be covered in a future paper) would indicate .0825 seconds for each time period. Then:
 $(475) \cdot 0.0825 = 39.2$ seconds for tune playing time.

Now 5.892in developed length is

Musical Clock fetches £19,000

SOMETHING of an auction record was established at Sotheby's in London on July 19 when this London-made musical clock doubled its estimate and was knocked down for £19,000.

Formerly in the collection of Sir John Prestige, this piece stands just 19ins high and is in a gilt metal case with a 7½in dial signed William Webster, Exchange Alley, London. Webster was apprenticed to Thomas Tompion and became one of his journeymen. Free of the 'Clockmakers' Company in 1720, he was Warden in 1734 and died in the same year.

Six tunes are played on a carillon of bells. These include *O Nymphs of Race*, *A Paspead*, and *Bright Aurelia*. The three-train movement plays the selected tune at every hour from a small diameter pinned cylinder mounted across the top of the backplate and with a verge escapement and bob pendulum, the movement repeating the selected tune and the hours from cords at the right and left respectively.

The mercurial gilding and the engraving of the unusual arabesque designs which ornament the sides of the case are both of the highest quality. Gilt metal cases in English clockmaking of the classic period are extremely rare.

The piece was bought by the London dealer, How of Edinburgh.



required to play for 39.2 seconds and the stop time equals .250in,

$$\therefore \frac{5.892}{3.92} = .150 \text{ seconds/time}$$

period at the tip end of the pins in developed distance. The .0825 was calculated at the cylinder surface and at that point was only a trial figure in time.

The result of the above, 0.150, is

the distance in inches which the ends of the pins travel in one second. It would seem that about 1.7 seconds is required for the stop time. Let's proceed and find out. $39.2 + 1.7 = 40.9$ seconds total cylinder revolving time.

The complete cylinder in time periods, neglecting stop time, would require about 500 periods, and $500 \times .0825 = 41.2$ seconds

and that is close enough to proceed with, even though it is desirable to have 45-50 seconds on the smaller 6in cylinder movements, and even more on the larger cylinders, say 75-90 seconds.

I = 1794 time periods when the barrel makes one complete revolution. We only want 500 time periods for I, then:

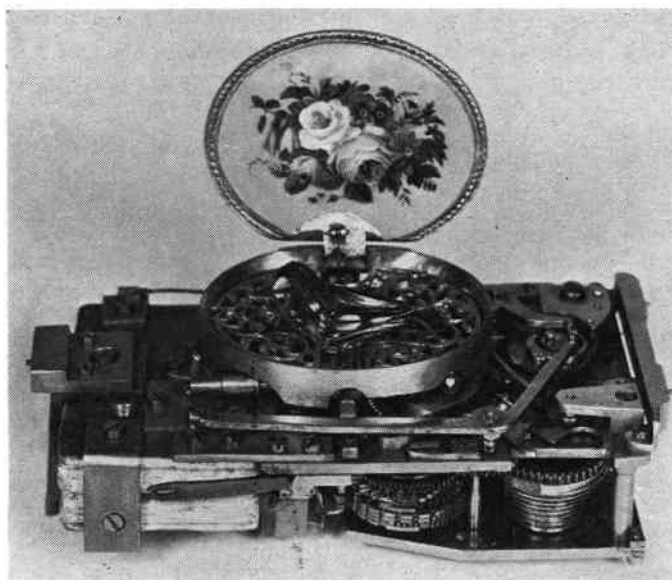
$$1794 \div 500 = 3.6$$

and this means that we are 3.6 times too much in time periods.

If we suppose that the main-spring barrel gear has 82 teeth, then:

$82 \div 3.6 = 22.7$ gear teeth for one turn of the cylinder. For eight turns of the cylinder, 472 teeth are required to mesh from the barrel gear. Thus the barrel is required to turn 2.25 times for eight tunes. That means we have over-designed the barrel size and number of coils for the mainspring—it should turn about 2/3 of the number of tunes or five times. The requirement obviously calls for a heavier main-spring.

In part two of this paper, I shall describe the train system—how the gear train is set up and the energy it must absorb.



The Bruguier singing bird depicted on pages 106 and 107 is seen here without its case. Along the front at the lower part of the picture can be seen, from left to right, the wooden bellows, the birdsong cams and the fusee winding system. The bird is seen in its singing position with the lid open.

IMHOF & MUKLE ORGAN

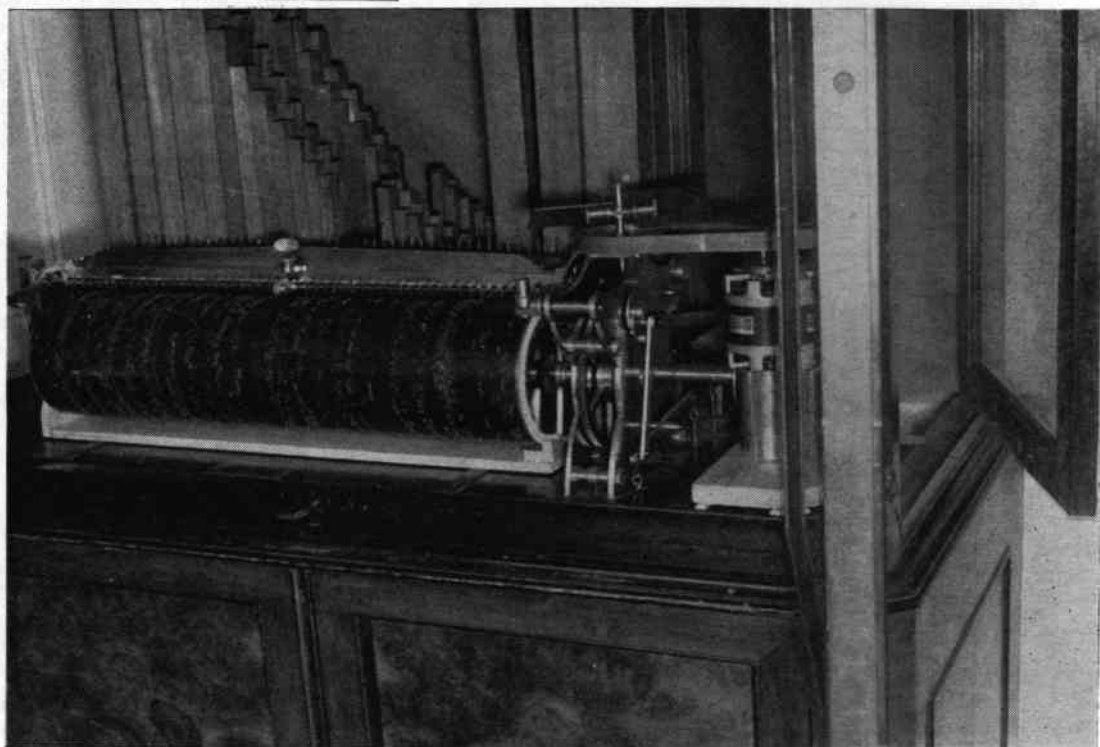


THIS fine clockwork barrel organ comes from the collection of Member Bruce Angrave. It was made by the partnership of Imhof & Mukle in about 1870. Daniel Imhof was apprenticed to a Neukirch clock-maker and then began in or about 1848 making flute-playing clocks. When political unrest and subsequent revolution forced him to leave his homeland, Daniel Imhof came to London and brought with him the craft of Black Forest clockmaking right into the heart of the West End. He also sold instruments he imported from the Schwarzwald at his address, the Euterpeon Rooms, 547 Oxford Street.

In 1874, he returned to Vöhrenbach and, with Joseph Mukle, established a factory which soon became one of the most important mechanical organ producers in the Black Forest.

The London branch of the business, managed by Geoffrey Imhof, was now at 110 New Oxford Street. Barrel organs were made ranging in size from the small street organ through to the large dancehall instrument and one famous model is the Blackpool Tower orchestrion built in 1879 and now in the Museum of Science & Arts, Birmingham. A very large orchestrion was built for the Jockey Club in New York — and became the centre of a prosecution by the American customs authorities because it had been undervalued. The instrument seen here is provided with two 4ft stops of all-wood pipework. There are 46 keys plus four used for stop-changing, this being accomplished via special pins in the barrel as described on page 522 of Volume 6. There is a total of 85 pipes, the front rank being voiced louder than the rear and the ten lowest pipes being shared by both ranks. The compass is a fully chromatic scale of $4\frac{1}{2}$ octaves. The 28in long barrels each make eight revolutions for one tune and play for about five minutes. Originally, power came from a 300lb (136kg) driving weight, but this has been replaced by a detachable, free-standing electric motor driving the organ from the endless screw. The original mechanism is preserved intact.

In the picture above, the glass-fronted doors have been opened to reveal the mechanism. The cupid is not original! Each barrel is 28ins long and 6 $\frac{7}{8}$ ins in diameter. A mainly classical repertoire is represented on the barrels.



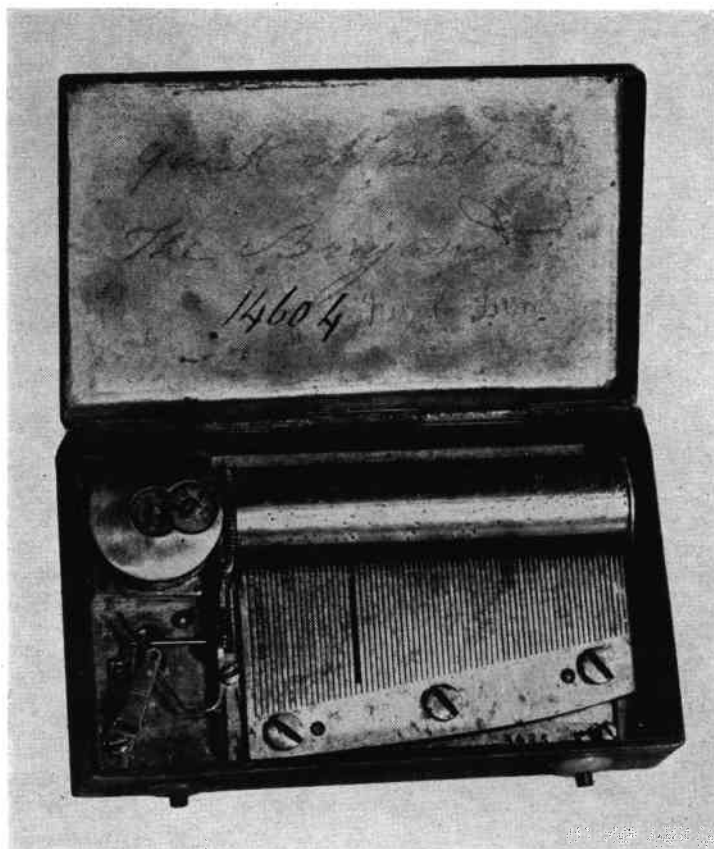
SMALL-SIZED MUSICAL MOVEMENTS

THE small-sized cylinder musical box goes back to the earliest days of the conventional musical box. All makers appear to have produced models which we variously (and sometimes erroneously) call "snuff boxes" or miniature movements. Not surprisingly, then, there is a great variety of these to be found and they range in quality from the outstanding to the mass-produced mundanities of the between-wars musical photograph album musicwork.

Many of these little boxes are termed snuff-boxes, although here it must be said that there is scant evidence that they were ever used for snuff since they are (a) heavy and (b) demonstrably capable of holding a quite extraordinary volume of snuff. Certainly they were made for the pocket rather than the living room, and the cover of translucent horn over the musicwork prevented either loose contents or fingers from marking *finis* to the musical capabilities of the little box.

Small musical movements can be separated into three main categories. First there was the quality movement intended to be wholly portable. Then there was the small-sized musical box where portability was incidental. Finally there was the small movement used to augment some other artifact such as the musicwork in a snapshot album, the movement in a Christmas tree stand, musical chair, beer stein or cigar-dispenser.

All three classes were capable of yet further division. The quality movement, for example, could be contained in a wood box (such as the



fine Laurencekirk boxes shown on page 4 of Volume 5), a gold or silver box, or a tin box, either plain or printed, or a tortoiseshell box, one of composition, embossed or plain, and so on. Now the small-sized musical box crossed a number of these categories, and the quality small movement was sometimes found in the third class, that is as an accessory to something else, usually a musical picture, clock, or other piece of early automata.

The two boxes shown here are both part of the Lidell collection, now preserved in its entirety and on exhibition in the Museum of Science and Arts, Birmingham. Top of the page, with one of its slender teeth absent, is a quality movement signed Nicole Freres and bearing two numbers, 14604 and 3425. Two tunes are played and the cylinder is shifted manually by sliding the right-hand button on the front of the box. This directly moves the cylinder by means of a yoke engaging in the protruding rim of the cylinder at the right-hand end.

The lower picture shows a much later three-air movement built into a wooden jewel case whose false bottom is removed for the picture. The maker is unknown but the comb bears the numeral "3" stamped into it. Tune-changing is by snail on the great wheel activated by a finger pivoted behind the motor barrel and worked by a sliding button on the left end of the case.





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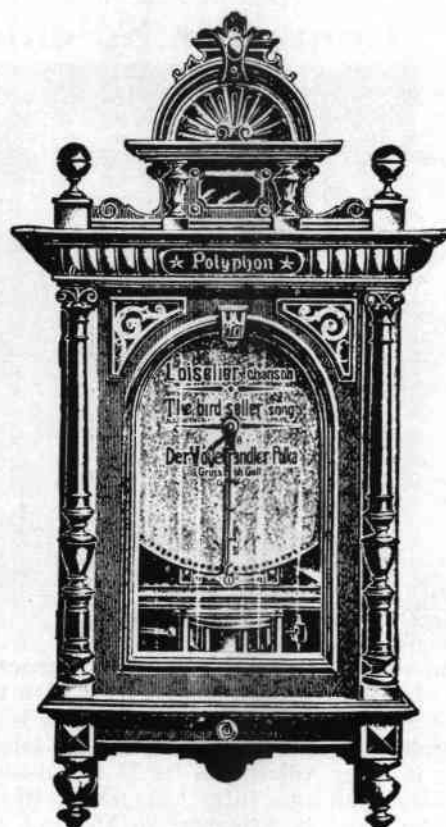
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Book Reviews

DAS WELTE-MIGNON REPRODUKTIONS-KLAVIER. *Facsimile edition published by Werner Baus, Mechanisches Musik Museum, Fulda, Germany, 25pp, 8½ins (220mm) by 11ins (300mm), illustrated, paper covers, £2.00.*

It may be hard to believe, but reproducing pianos were around long before Aeolian's made their Duo-Arts and years before the first Model A Ampico re-enacted its first artist. The Welte-Mignon was perfected in Germany as early as 1904 and became the earliest and by far the best known of a series of limited-production German reproducing pianos which included Hupfeld's Dea. The Welte-Mignon, with its wide roll of red paper and its intriguing system of locking expression pneumatics set a standard upon which later instruments of the reproducing type were based.

Member Werner Baus has now republished as a facsimile the original descriptive manual for the instrument. Undated, but probably from around 1906, this describes the action and includes some excellent diagrams of the pneumatic expression system as well as photographs of installations. The text is in German but, thanks to clear drawings, it is

easily followed by the non-German-speaking reader. Standard of reproduction is excellent and the paper is high-quality. A "must" for the repro-piano buff.

WELTE AUTOGRAMME BERÜHMTER MEISTER DER TONKUNST. *Facsimile edition published by Werner Baus (see above), approx 100 pp, 9½ins (250mm) by 13½ins (250mm), illustrated, gold-printed green cloth hardbound, £12.50.*

Many years ago, I acquired an original of this piece of rare Welte ephemera and this reproduction is, I can vouch, as near a perfect copy as one could wish. It comprises the hand-written testimonials of the many artist(s) who recorded for the Welte-Mignon. Each testimonial is translated into two other languages, the original being printed in the native hand of the pianist. This means that each is available in English, French and German.

Every page is headed with a picture, either a portrait of the pianist or, more interestingly, a view of the pianist actually in the recording studio playing the "secret" Welte recording piano. Some who recorded for the Welte Philharmonic reproducing pipe organ are also included along with pictures of the equally-secret

recording organ. Recurring celebrities who appear in the pictures are Emil Welte himself and Karl Bockisch.

Among the plaudits included is one from Fanny Davies who, in 1913, wrote: "It was quite a long time before I agreed to even listen to the Welte-Mignon Records, as I have such a horror of anything mechanical applied to music". Naturally, she became converted and the story ends like all good tales should.

Reading through this book, much of the charisma which surrounds not just the Welte-Mignon but the era itself comes through in the words of the artists. The new edition makes one concession to better the original production. When first published, it must have been rather annoying to have every page interleaved with thin tissue on which the translations were printed. Werner Baus has done credit to the original by rectifying this fault.

An expensive book but again something which is a prestigious production deserving of your best bookshelf.

DREHORGELN UND PNEUMATISCHE ORCHESTER-ORGELN (Barrel Organs and Pneumatic Orchestral Organs). *Catalogue of organs by Wilhelm Bruder Söhne, Waldkirch. Facsimile edition published by Werner Baus (see above), approx 30 pp, 11ins (300mm) by 8½ins (220mm) oblong, illustrated, paper covers, £2.00.*

Wilhelm Bruder's organs are popular amongst collectors for their characteristic tonality. Here, dating from the early part of this century, is another finely-executed facsimile from Member Werner Baus.

One must admire Wilhelm Bruder for being enterprising enough to court his markets with forethought, for this sales catalogue is printed in *four* languages and all in equal-sized type! With a choice of English, German, Italian and Spanish, it becomes interesting to discover that *Organ o Poderoso para tocar con hojas de música perforadas* is nothing more than "Powerful Organ for perforated Music-sheets".

In describing its products as substitutes for the barrel organ, Bruder's catalogue details and illustrates organs fitted with keyframes for book music, and tracker-bars for paper roll music. With the real instruments now beyond the pockets of most of us, booklets like this remain the next best thing. A O-H

Leipziger Spieldosen terzatt



From the collection of Member Werner Baus in Germany comes this trio of Leipzig-made disc machines. On the left is a 5½in Kalliope which plays one comb with 26 teeth. Centre is a 5½in Symphonion which plays a comb with 40 teeth. The discs are edge-driven via serrations. On the right is a 7in Adler with its 33 broad-toothed comb. The discs for this are Size B and are interchangeable with the Fortuna. Recent investigation by Hendrik Strengers in Holland shows that the Adler was first produced in 1896 by E Malke and F H Oberländer, later Schlobach, Malke & Oberländer, who took over Bruno Rückert's Orphenion factory. Zimmermann appears to have taken control early in 1900.

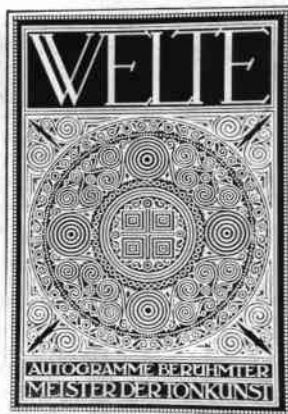
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UNIKON

PRIOR to the introduction of the roll-operated pneumatic action, musical boxes and organettes suffered from one serious limitation. Whether cylinder or disc, the length of the tune could be no more than the length of time taken for the programme to make one revolution.

With the cylinder musical box, several ingenious attempts were made to exceed this mechanical restriction, the two best known being Jeanrenaud's *helicoidal* (where the cylinder was actually pinned in a spiral like an orchestrion barrel) and the *plerodienique* or telescopic mechanism where two cylinders on one axis each had their change positions in a different radial location so that one cylinder would still be playing while the other was silent and shifting.

For the disc musical box, things were just as complicated. Some organettes could play annular rings instead of discs and these could be of several different diameters, but still these were hardly the ideal. Lochmann in Leipzig along with Ehrlich experimented with discs cut into segments and arranged like a fan, and the complete replacement of the disc by a spiral or helix of metal which could spiral slowly from the top of the mechanism to the bottom via the usual comb and star-wheel mechanism. The fabrication of such a system posed immense problems.

The solution was to arrange the music as an endless band, or as a folded stack of sections. This, better known as the book-system (from the resemblance of the folded stack to a thick book) or Jacquard system, later became the means of replacing the barrel on organs and to this day forms an important means of programming mechanical instruments of that type.

In the years to follow, comb-playing musical boxes



operated by perforated cardboard music were produced in limited numbers in Germany and in England — the *Libellion* of Richter being the best known, while the Manchester, England, maker Roepke appears to have produced an indeterminate (but probably small) number.

The earliest example of this musical box mutation appears to have been that devised by Andre Junod and Emile L Cuendet in the early 1890s. Junod left his home at Auberson, Switzerland, to emigrate to Jersey City, USA. Cuendet, also a Swiss, came to Brooklyn at about the same time.

The instrument which they devised was called the *Unikon*, a little instrument with a 41-tooth comb. Tunes of any length could be played on the Unikon and the one recorded surviving example, in the collection of Ralph Moss, has in addition to a number of endless bands one book of music over 12 feet in length which plays Lumbye's *Dream Picture Fantasy*. The highest number on any band is 116 and they are made of thin zinc covered with printed paper. Because of the inflexibility of the zinc, the endless bands were made in two pieces joined at their ends by hemp to form a hinge. The strip pressed down 41 spring-loaded brass keys just as Stella or Harmonia discs hold down sprung star-wheels.

Jaccard wrote, concerning the instrument, that it had :
 "... a steel ribbon used in place of the disc. This experiment was short-lived and few, if any, of the pieces reached the market. Emile Cuendet and Andre Junod were the originators of this device."

The Unikon measures 9½in square, 6½in high and the music strip is 4.5/16in wide. The frail substance of the strips dictates that, like the Orphenion and similar zinc-disc instruments which have elemental projections, durability is not one of its stronger points.



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continued from page 85

tonally original and the music was cut two years ago. The lesson is that modernisation has centred on the skills of the musical arranger.

The real kernal of the problem is to identify the cut-off point beyond which the projected alteration will destroy the intended organ characteristics. Whereas a skilled man today may transform a previously altered organ with diminished capabilities back into a shining Euterpe, in the hands of the well-meaning enthusiast the only result can be further degradation of the instrument. There are to my personal knowledge several Dutchmen to whom I would entrust the complete tonal revamping of an instrument. By the same token, there are some collectors who should be deprived of their instruments before they inflict their torrid tastes on them.

An argument which I put forward in my forthcoming book, *Barrel Organ* (to be published next Spring by Barnes Books in the US and Allen & Unwin in Britain) is that the early barrel organ builders had more than just their soundboards screwed on a-right. Unless the person who delegates unto himself the right to meddle

with a craftsman's work can aspire to the same level of expertise as the originator, then he will commend himself to the true collector and restorer by leaving well alone.

Again there are aspects of musical box overhaul which I personally find disturbing. For example, I no longer believe that it is imperative for an instrument to be dismantled and cleaned just for the sake of having a bright, polished mechanism. If the thing works, needs no repairs and sounds adequate, then stripping for cleaning is of cosmetic value only. Since such cleaning will destroy important oxide films which have over the years gradually been built up on moving parts, cleaning can accelerate the attrition of the mechanism. This process is, of course, infinitely worsened by the carelessness of some workers who leave metal polish in bearings.

The *ad hoc* re-machining of parts as part of an overhaul such as grinding amounts off comb teeth, trimming star wheels and suchlike, is being practised on a widening scale and is to me a criminal progression to the systematic destruction of the tone and operation of a musical box.

As for the tyro who must connect his player piano to play

honky-tonk music with drum and bells to boot, then by all means let him have his way. There are plenty of cheap, worthless player pianos about for which his work may not be responsible for the destruction of a fine instrument.

Because I do not want to appear to be advocating the crushing of those who aspire to make noise, might I suggest that there is plenty of scope for the manufacture of a brand new instrument by those who would dabble with valves and pouches. The various player piano sundries houses advertise some very tantalizing goodies which, with plenty of room for individuality, ingenuity and originality, could go together to form the basis of a new generation of mechanical organs or pianos.

To summarize, then, the message is simple. Please do not modify an instrument without extremely good reason. Just because it is owned by you does not give you the right to deprive posterity of hearing it the way it was meant to perform. And if you must fiddle, then be a real inventor—make your own instrument. In the long run, you will gain much more kudos, whichever course you adopt.

ARTHUR W J G ORD-HUME

Record Reviews

FIRST in our review this time comes a really superb disc from Saydisc in which the blend of hitherto unrecorded instruments, generally excellent recording and a well-chosen repertoire makes listening a pleasure indeed.

Volume 14 in the *Golden Age of Mechanical Music* series is **Poppers Happy Jazz Band & The Ruth Fairorgan (SDLB 263 stereo)**. The tone of A Ruth & Sohn's organs is so distinctive as to be capable of instant recognition by the show-organ buff. If Bruder used a secret formula for producing his metal reeds, then Adolf and Andreas Ruth must have employed similar subterfuge in creating theirs. The organ plays a fine selection of well-chosen and balanced music, along with two unknown pieces to challenge the listener. One side of this record, which is of instruments in the West Cornwall Museum of Mechanical Music run by Member Douglas Berryman, is devoted to the organ, the other to the piano-orchestration called by its maker, Hugo Popper of Leipzig, "Happy Jazz Band". Again a well-selected programme of foot-tapping music played by an instrument I do not think has been heard on disc before. In one or two tracks the piano sounds too soft, but not enough to spoil the enjoyment. The sleeve notes include two unfortunate spelling mistakes and, for some strange reason, a single, uncaptioned picture printed upside down!

Music from another museum, this time Copenhagen's Mekanisk Musik Museum, makes up our other two discs. **The Many Faces of Ragtime (MMM Records, LP.201 stereo)** is mainly devoted to the talents of a young Danish pianist, Steen Christensen, who plays his Steinway through a series of rags, some by himself, others by classic rag writers. He displays undoubted talent and I particularly liked his rendition of Joseph Lamb's *Bohemia Rag*. Unaccountably, his performance of Joplin's *The Entertainer* must rank as the longest on record. Admittedly the composer said that ragtime should be played slowly and Joshua Rifkin set a standard by which we all unconsciously measure newcomers, but Christensen's 5min 46secs is ridiculous! Rifkin takes 4min 48secs.

But the feature of the record are three tracks on side 2 which represent an unusual duet between Christensen's ten fingers and Claes

Friberg's feet on a player piano. Specially-cut rolls are used to provide an accompaniment to rags by Edwards, Fats Waller and Jelly Roll Morton. Apart from the latter where the co-ordination of fingers and feet provide a strange sort of big-hall stereo, the result is quite unusual and interesting. But what, I ask, did Christensen do to his piano to produce such exotic sounds from it in Joplin's *Palm Leaf Rag*? Almost like a harpsichord's vellum stop, it sounds for all the world like a Wurlitzer Harp.

Ragtime Cabaret (MMM Records LP.203 stereo) features a total of 19 melodies on a vast Pianella orchestrion built by J D Philipps

of Frankfurt-am-Main in 1914. The instrument, the largest ever built and known in America as the Wurlitzer PianOrchestra Style 34A, was delivered new to a Dutch cafe where it played through the years until the 1930s when it was overtaken by the march of amplified music. Rescued by Member Terry Hathaway in 1969 and lovingly restored to perfection, it gave its first recital for many decades in far-off Southern California in September 1973. Thoroughly informative sleeve notes and a good average-quality American-pressed disc (rather a lot of emphasis on the treble) makes this a worthwhile addition to the record collection. A O-H

Tips from the Experts

THE efficient working of valves in a player piano is of paramount importance. In the Aeolian Company instruments the valve, with its two faces, is fitted in the upper board, and the pouch in the lower board. This holds good both for the stack and also valves on such accessories as the pedals and valve boxes.

To overhaul the valve, separate the two boards, taking care not to damage the joints between the boards. First take the upper board. Unscrew the upper facing, noting which way round it is fixed. There will be a paper gasket between the board and the metal seating. If this is damaged, it will have to be replaced. Next unscrew the wooden disc from the bottom of the valve, and withdraw the valve itself. Check the condition of the leather facings. Brush them carefully to make sure they have not deteriorated. This will show by the leather flaking off. Provided they are still sound, rub french chalk into the leather. A good way to do this is to find a very flat smooth surface with a small hole drilled through it. A piece of steel or similar metal would be ideal. Sprinkle french chalk on the smooth surface, put the valve stem through the hole, and twist the valve back and forward. One can then exert some pressure on the surface, which will soon come up like new. One can brush the leather with a stiff brush, but there is always the danger of tearing the leather. Next clean the metal valve seats. The surfaces which make the air-tight joint must be absolutely clean. Metal polish is a good way to clean these. The valve may then be put back in the board, the top metal seating screwed back, and the wooden disc

screwed back.

Next take the lower board and examine the pouch. Push a tube on the nipple and inflate the pouch. See that it is quite soft and moves easily. Blow quite hard to see if the pouch has become porous. If so, it can be made good in the following way. Suck up the tube, thus deflating the pouch. While doing this, paint the pouch with a very thin coat of rubber solution. This will ensure that the rubber solution soaks right into the leather. It is necessary to take care when doing this, since one is sucking in rubber solution fumes, which are rather unpleasant. Only a few pouches at a time! If the pouches have to be renewed, use only the very finest leather. Make sure the depth of the "dishing" in the pouch is the same in the new pouch as the old.

Next fix the upper and lower boards together. Before covering up the inspection hole in the front, look at the position of the wooden disc at the bottom of the valve in relation to the pouch. Press down the top of the valve stem. Then, with a very small pointed article — a darning needle will do — carefully turn the wooden disc on its thread, and adjust the valve until the disc does not quite touch the pouch. If you are very careful, you can turn down the disc until you hear it rubbing on the leather. Then turn it back a fraction of a turn so that it is clear.

Check that the bleed hole is clear. Try to do this by blowing. If it is not practical, use a very fine pin to push through the hole. It is most important not to enlarge the hole, or the quiet playing of the piano will be impaired.

Finally, glue a piece of rubber cloth over the "inspection" hole in the front of the valve.

DENIS HALL

Letters to the Editor

Member Howard Fitch, editor of the *Bulletin of The Musical Box Society International*, writes two letter from Summit, New Jersey :

CONGRATULATIONS are certainly in order on the "new look" of your Journal. Volume 7, Number 1 is outstanding both in appearance and content, and long hours of careful planning must have gone into its format . . . Regarding your article "Who invented the Musical Box", congratulations on a fine piece of research and some brilliant deductions. I would agree with your premise that musical movements with tuned teeth must have antedated Favre's invention by many years, as I too have been troubled by the apparently rapid advancement and spread of the art in an industry noted for its trade secrets and lack of communication. You may recall my small silver box with fusee-driven movement and single-piece comb. The hall marks are those of 1816, and there is every reason to believe that box and movement are contemporary, yet it is almost impossible to visualize the development of this technical and musical perfection in the short period of 20 years from some crude beginning in 1796. I would be a little wary of dating early musical movements on the basis of accompanying clocks unless they are integral parts of the clock movement as in the case of the two Breguet examples that you cite. Clocks were something of a luxury and not lightly discarded in the 18th century, and there would be a temptation to use an existing (and earlier) clock movement in making up a musical clock.

Let's hope that your work will inspire someone to dig from the records in Paris, Prague and Vienna further evidence of the beginnings of the industry in those cities.

Member L C Thompson writes :

GEORGE WORSWICK tells me that you would like to see pictures of the musical box which I have by the unlisted maker, Scriber à Geneve.

So far as I can see, there are no unusual features although I have not yet had time to dismantle it. It plays well and the tunes are skilfully set up. I would be interested to learn if any other member can unearth any information regarding this maker.

I have been unable to trace any reference to this maker. The style of box and tune-sheet is familiar to me, however. I wonder if it is a repairer's mark? Editor.

Member James J Doheny writes from Brookfield, Illinois :

WHEN I opened the recently-arrived issue of *The Music Box*, about the only remark I could make is one which is currently used by our teenagers : "Oh — Wow!" When I finished reading it, I could only repeat the remark, doubled. In English English, it is "Smashing" — really terrific.

Recalling the flak which you received when the change in format was announced, I want to balance it with compliments on the size, layout, and other mechanical details. It's a most impressive publication, with excellent layout. And so you won't feel this is all puffery, I could even add my sole, very trivial, negative comment. I never liked calling the issues "Spring", "Summer", etc., as "Winter" is always too long!

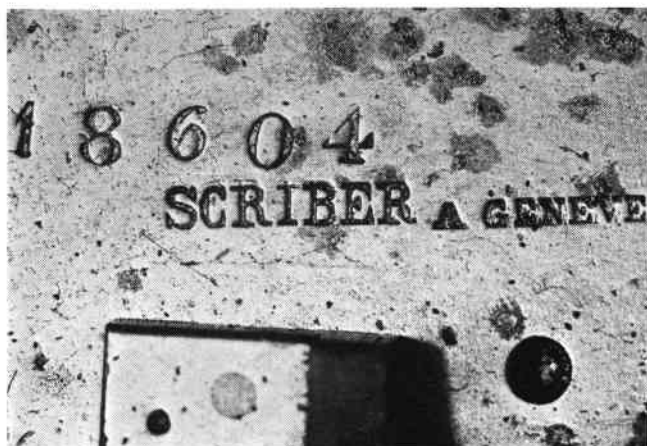
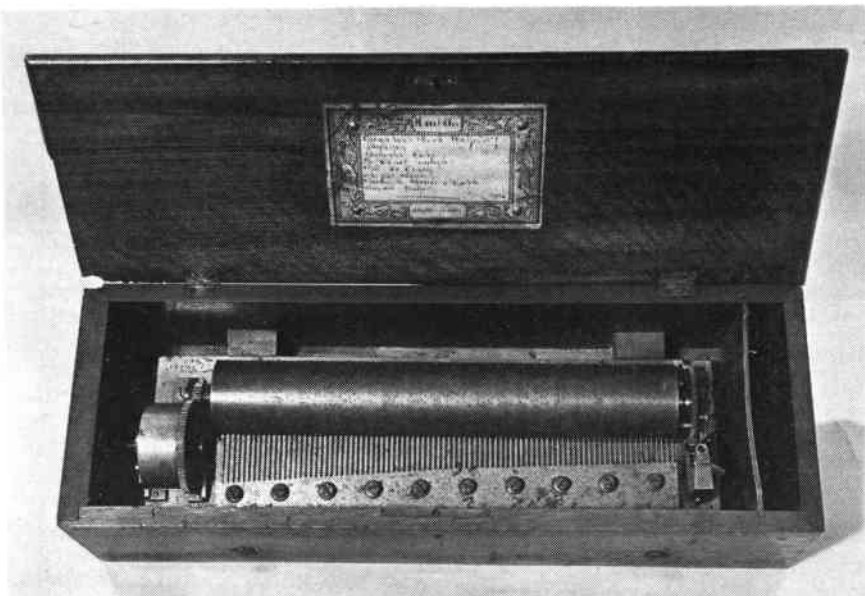
Anyway, I liked it, and hope you can keep it up.

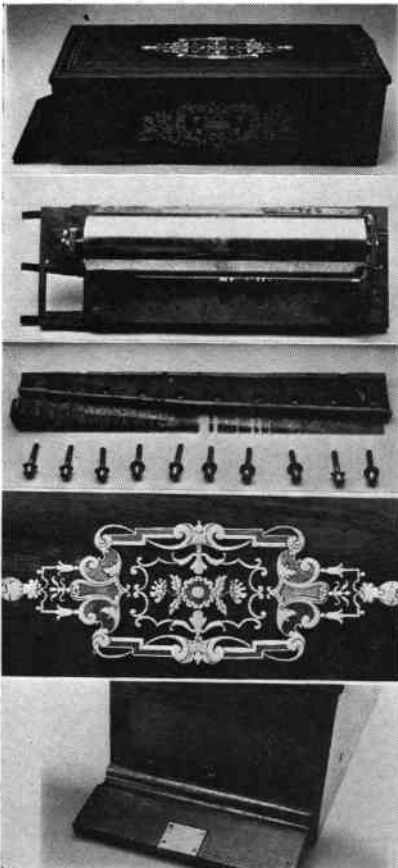
Member Thomas A Wade writes from Glendale, Ohio :

CONGRATULATIONS on a very fine journal. I didn't know such a pool of knowledge existed on music boxes. I became interested in music boxes many years ago when I was a child. Then in the late 1940's and early 1950's when I was a student at Bowman's School of Watchmaking, I bought several cylinder music boxes, all of which were and are in bad shape. I searched everywhere for information on repairing and could find none. Futilely, I

tried to contact someone in Switzerland through correspondence for books with information that I needed, all to no avail. This was about the time Roy Mosoriak's book came out. I had written to Glen Heckert and received a very lengthy letter back, but I had so many unanswered questions I became discouraged and put my boxes aside for a later time.

One of the boxes is an early key-wind. This is the one I need the most information on. The case is 21" long by 8½" wide and 6½" high, no inner glass. It has a drop-down flap on one end and there is a partition divider in the other which I assume is for the key. It has a very elaborate rosewood inlay on the top and front. The brass bed plate has 7929 stamped into the upper left corner. Under the comb, very lightly scratched in script, is a signature which looks like H. Mattes or Mattis and the date 1880. The cylinder is 3½" in diameter and 13" long. The tune change wheel has six teeth with three steps being repeated with three more the same height, indicating it plays just three tunes, perhaps overtures. The comb itself is extremely fine with 240 teeth, twenty of which are broken off. The barrel that came with it matches the main drive gear, but the center distance between the barrel and the main drive gear is shorter than it should be (this is indicated by setting the barrel in the cutout in the bed plate and visually checking teeth engagement), which means I will have to make a new barrel





and its supports as they are not right either.

I visited Dr Bryon Merrick to see if any of his music boxes were similar so

I could get an idea on exactly what the parts look like, but he didn't have any quite like mine. As the pictures indicate, my end flap has a lock on it and it is much shorter in height than any of his, indicating mine might be a Mouline Aisé. As I have never seen one of these boxes, I would not know it. I would greatly appreciate any information you could supply me.

A saleroom correspondent writes from Buckingham :

I THOUGHT that you might be interested in details of what must surely be something of a record for the price reached by an English chamber barrel organ in a provincial sale.

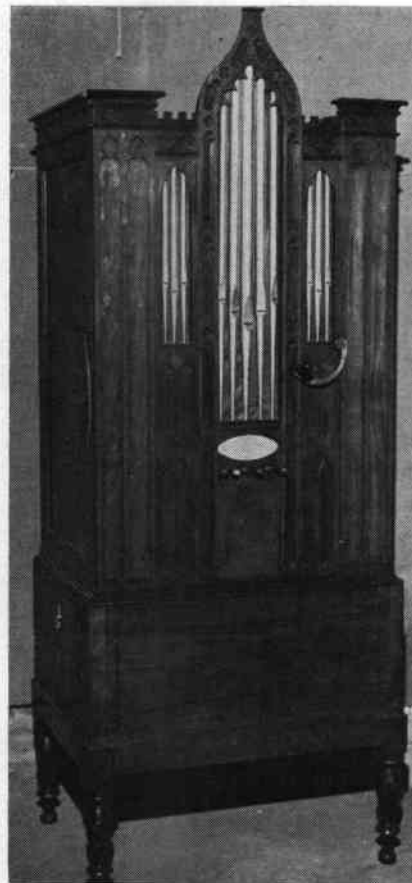
The instrument (pictured right) was sold by auctioneers W S Johnson & Co on July 17 for the enormous sum of £1,500.

The organ, which was about the usual size of a typical English-made instrument, was made by a hitherto unlisted maker, William Woodward of Birmingham, and I understand that this dates the organ as being around 1820. Three barrels were with the organ each playing 10 tunes and the organ had 240 wood and metal pipes plus drum and triangle.

Saleroom prices reached something of a low towards the end of last year but since then have been creeping back up again. Even demonstrably cheap and nasty bell-boxes with broken teeth seem to fetch high sums today!

The Woodward organ was in a very handsome case of a style not normally associated with church and chamber barrel organs and certainly quite unlike the conventional design of London-made instruments. A much larger

Wilkinson organ with six barrels was sold in a London auction recently for 750 gns.



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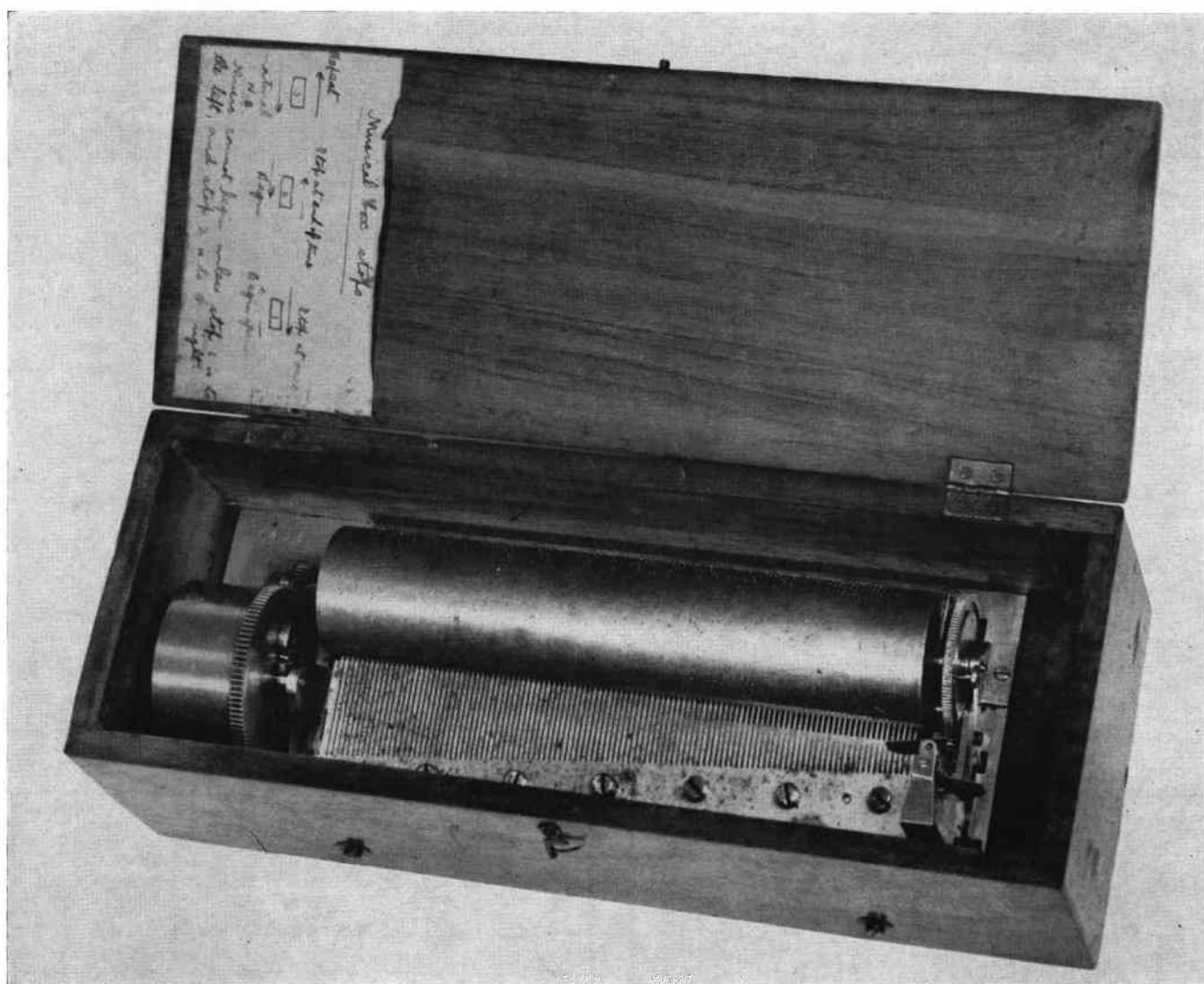
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EARLY KEY-WINDER



THERE are many details concerning musical boxes which contribute towards their dating, the identification of the maker, and the quality of the piece. Winding, and the method of winding, is the most obvious of these clues.

In the closing years of the cylinder musical box, almost all boxes were wound using a ratchet lever arranged inside the case along with all controls such as stop/start, change/repeat, and any tune selectors or indicator as might be fitted. Some of Paillard's boxes were wound by a gramophone-type winding handle which was detachable and was inserted through an opening in the end of the case. And the cheap, robust box built by Cuendet-Develay, Fils et Cie in 1891 (the famed one with "Undestroyable Dampers") was wound by a large capstan-like wheel.

Before lever winding, all boxes were wound by keys. The change-over period has always been stated

as about 1860, but key-wound mechanisms have been found which must date from as late as 1866, and lever-wind movements have been seen which probably pre-date 1860 by up to five years.

Other winding systems

During this change-over period, other systems of winding were tried. One was a detachable winder which looked like a small wooden-handled right-angled socket spanner. This really is just what it was. It fitted on to the square-sectioned winding arbor of the spring just as an ordinary key, but by pumping it backwards and forwards, it operated like the subsequent lever.

Another variety of lever/handle wind was introduced by Capt in his large quality boxes. We might term this "sewing-machine-winding" since the handle was hinged so that it could fold over itself and fit flush into a recess provided. The handle was fitted to a vertical shaft

with bevel gears to the spring arbor and was turned in a horizontal plane. Paillard also used a similar system for some of their very large, custom-made interchangeable.

The early key-winders, however, represent for many the most attractive period of musical box manufacture. Plain fruitwood cases, simple lid hinged (in some just a pair of staples and a loop of wire) and a thumb catch rather than a lock, conceal a mechanism which fills the box almost completely. Soft, mellow tone and well-arranged music single the key-winder out as a collectors' item.

The one seen here is a four-air specimen by Lecoultré and bears the number 1429. The inner motor bridge is cut short level with the comb and the escapement displays typically fine work. There are no comb-screw washers, and the case screws are cheese-headed with small plain washers.

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continued from page 95

dark outline formed by the ageing bulk of Alexandra Palace with its now-redundant TV mast on the tower where two men from Zschopau spent the First World War years.

Arthur Ficker lived to see the post-war success of his business and died in December, 1966. So did Curt Herzog who died in 1956. Their two sons, still hold the Lugtons reigns, Walter Ficker as managing director, and Charles Herzog as chairman, now partially retired. Hanging on the wall in

the entrance hall right now is that historic picture of the jovial character listening to a phonograph—a picture probably seen by Charles Brun of Nicole Freres, Henry Klein of long-term Polyphon fame, and many an original purchaser of a Polyphon, Regina or Symphonista. Truly hi-fi, 'nineties style! And if you are privileged to enter Walter Ficker's office, you'll find a cylinder phonograph on a shelf.

This history of a famed organisation would not have been able to have been compiled had it not been for the enthusiastic help

received from Walter Ficker, Charles Herzog and Chris Pickard who is the deputy managing director and, at 67, is the self-proclaimed youngster in the Lugtons management team. He's only been with the company since 1932 . . . The pictures of the New Polyphon Supply Company's Newman Street showroom are from the Lugtons archives. Both pictures survived two major fires and the bombing and were blackened by soot and smoke until cleaned for reproduction (for the first time ever) on these pages. History only just survived!

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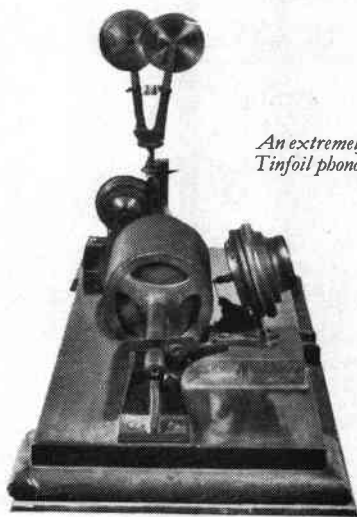
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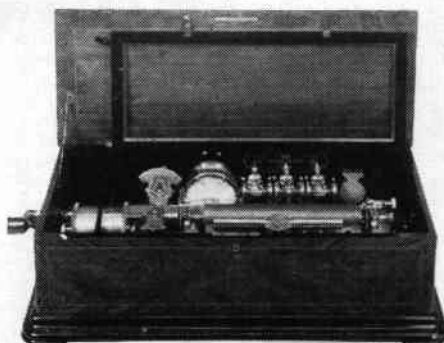
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