

The Music Box

an international magazine of mechanical music

THE JOURNAL OF THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

Volume 7 Number 4 Christmas 1975

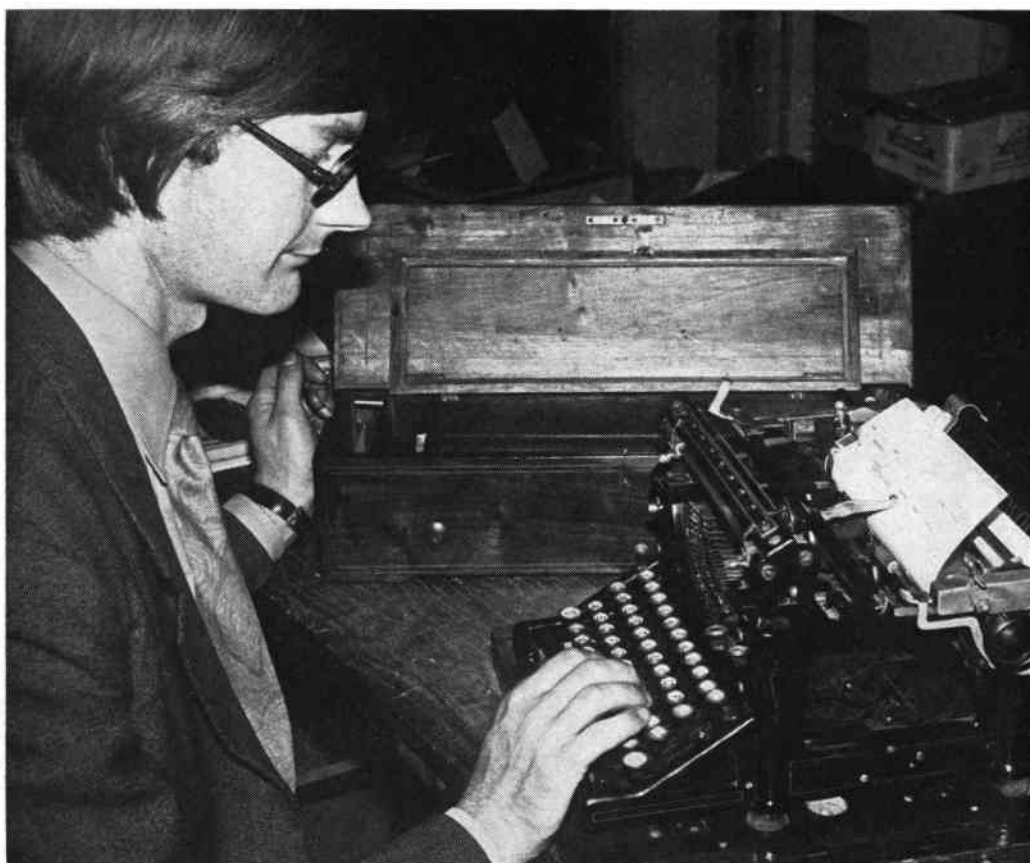




Christie's

South Kensington

85 Old Brompton Road, London, SW7 3JS Telephone 01-589 2422



MECHANICAL MUSIC SALES, organised by an enthusiast (Christopher Proudfoot, above) for enthusiasts.

Specialist advice for buyers and sellers.

Rapid payment (normally within 10 days of sale) for vendors, and no premium for buyers.

Entries now being accepted for next sale, planned for early March.

The Music Box

an international magazine of
mechanical music



THE JOURNAL OF THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

The Editor writes. . .

AFTER fifteen years of existence, The Musical Box Society of Great Britain has attained a world-wide membership comprising interests in the entire gamut of mechanical music and its instruments.

From those with a sincere love of these relics of yesteryear through to the restoration engineer and the analytical musicologist, the Society offers the opportunity to discuss and exchange views.

As an organisation with an international membership, though, there is ever the knowledge that the sphere of the collector, the restorer and the researcher who are centred in one place may be quite different from his colleagues in another part of the world.

It is partly for this reason that *The Music Box* is anxious to publish material from collectors, researchers and restorers not just from one part of the world, but from many areas. By this means, the interchange of information between members can benefit many of us very greatly.

And so it was with considerable interest that I learned from our member Claude Marchal of Paris, himself founder of the new Musée Marchal de la Musique Mécanique, that he is considering planning a world congress on mechanical music to take place possibly next year. The suggestion originated from no less a person than the Monarch of the Principality of Monaco who has expressed a wish to host such an event.

The opportunity to stage such a congress indicates first that we have sufficient members interested in attending or participating in such an event, and that the scope of our corporate work enables such a gathering to produce a benefit to those who may attend. Besides

Volume 7 Number 4 Christmas 1975

Contents	page
Duo-Art vs. Ampico by Gerald Stonehill	126
Aeoliana by Jack H Shaylor	129
Helicoidal Musical Boxes	130
How the Piano Won the War by Gerald Stonehill	131
Snuiff Box Waltz	134
J Ch Detmering	136
A Few Words About Auctions	137
The Musical Clock	138
Rzebitschek in Prag	140
Question & Answer by Keith Harding and Cliff Burnett	142
Resurrected by Keith Harding	143
Christmastimes Past	145
The Mechanics of the Gear Train by Ken Fritz	150
Swiss Musical Box Bulletin Launched	152
Winter Meeting Report and Society Affairs	156
Ormolu Cleaning by Gerry Planus	159
Chant du Rossignol	160
Piano Tuning Revolution ?	162
Book Review	164
Letters to the Editor	165
Record Reviews	166
List of Members	168
Classified Advertisements	168

Cover picture : This fine example of the 15½ in table Polyphon with disc drawer has been stolen from Keith Harding. Distinctive case figuring plus rare style will aid identification. Keep a look-out !

Hon Editor : Arthur W J G Ord-Hume
Editorial offices :

14 Elmwood Road, London, W.4
Telephone: (01-) 994 3292

Advertisement manager: Arthur Heap
Advertisement enquiries :

51 Station Road, Delamere, Nr
Northwich, Cheshire, CW8 2HZ
Telephone: (060-688) 2122

© Copyright 1975 by the publishers,
The Musical Box Society of Great
Britain, Bylands, Crockham Hill, Eden-
bridge, Kent (Hon Secretary: A R
Waylett).

THE MUSIC BOX is designed by
Arthur W J G Ord-Hume and published
four times a year by The Musical Box
Society of Great Britain.

our society, such a congress would involve our sister society in America, the MBSI, the Gessellschaft der Freunde Mechanischer Musikinstrumente EV in Germany, the Conservatoire Autonome des Boîtes à Musique in Geneva, the Fair Organ Preservation Society in England, the Kring van Draaiorgelvrienden in Holland, and the Player Piano Group in England as well as other interested bodies throughout the world.

That we have progressed to the position where such an event may become a reality marks another milestone in our quest for preservation and enjoyment of the musical box *et al.*

I have been greatly inspired recently by the thoughtful attitude of one man who, while not specifically interested in music-work, shares with us the enquiring mind of one fascinated by the skills of our forefathers. The story is a salutary one. This man was involved in the restoration of a large and derelict mill not 100 miles from London. While exploring rubbish-littered rooms, he came across four organ barrels covered in dust, dirt and bird-droppings. Aware of his own limitations and keenly appreciative of the fact that these mute survivors of a long-lost instrument might be of value to somebody, he took them home. The tattered remains of dirty tune-labels were close to revealing at least some secrets but he resisted the temptation to risk cleaning them in case he damaged them further.

Anxious to identify what they came from and equally keen to see them pass into preservation rather than continued deterioration, he sought my advice. Pro tem, they rest in my care now. Why do I recount all this? Because of the

continued on page 168

DUO-ART *vs.* AMPICO

IN THIS article, Gerald Stonehill replies to the comments made by G C Lomas on page 96. He concludes that the Ampico was the cheaper system and finds that no two examples of the hand-built Duo-Art were ever identical. Even so, and allowing that it is much more difficult to get a Duo-Art to play perfectly, this system is probably the more preferable. Although in principle a better engineered system, the Ampico could not be adapted to different sizes of piano

I HAVE read with interest the article by Mr Lomas concerning the controversy as to the relative merits of the Duo-Art and Ampico reproducing system. I should, therefore, like to enter the arena of battle, despite the defence which Mr Lomas puts up immediately, that an article on this subject by someone else will be biased "by the type of instrument owned by the writer". It is of course well known that my interest is concentrated on the Duo-Art, but this will not affect what I have to say, since I am also an admirer of many Ampico recordings.

What I would criticize in Mr Lomas's article is that his conclusions are based on a very limited view of the subject. I have also a slight advantage in this matter, since, when the Ampico Company ceased trading in this country, I purchased their library, which included internal memoranda and instructions to salesmen, on the subject of how to attack the Duo-

Art system and the Welte system of reproducing.

The interesting thing which emerges from the literature to which I refer is that the attack on Duo-Art concentrated on suggesting that Duo-Art was not capable of doing crescendi and decrescendi, which of course it could do, and which, Mr Lomas admits in his article "the Duo-Art can equally well perform". The second line of attack in Ampico literature is that the theme in Duo-Art is only one degree louder than the accompaniment. This of course was complete nonsense, and was only true of themodist rolls, not Duo-Art rolls, and then, only, assuming themodist rolls were played on a non-Duo-Art piano, with no temponamic control. Thus it becomes obvious that, at the material time of true competition, Ampico had very little to say about any true inferiority of the Duo-Art system.

Mr Lomas quite rightly does not

discuss the Model B Ampico. I say "quite rightly", but not for the reason which he mentions (which is because of its rarity in Britain), but for the rather better reason that only about 100 classical rolls were ever recorded for this system,* and the Model B Ampico is very inferior when it plays Model A rolls, which were not intended for it. Thus, the consideration of the quality of 100 rolls would not be a worthwhile operation against the two thousand classical rolls made for the Duo-Art system.

Duo-Art advantages

Coming back now to the comparison of the Ampico Model A and the Duo-Art, and remembering that almost nothing was recorded for either system since 1930, three very important prior considerations have to be taken into account. Firstly, the musical availability in the library of the Duo-Art system was very much greater than in the Ampico library. Therefore, more is to be gained musically by listening to the Duo-Art than to the Ampico. Secondly, the number of very great pianists available through Duo-Art is greater than through the Ampico system; and, thirdly, the quality of pianos through which the Duo-Art system can be heard is better than available via the Ampico route. Duo-Art was often available in the best pianos, by which I mean Steinway, and Ampico was seldom available in a first-quality piano, being attached in the main to a limited number of middle quality pianos and many cheap instruments.

It must also be realised that the Duo-Art system was built into pianos, and was therefore highly flexible. The range of pneumatic chests (called "stacks" in America) was great and for this reason, the system could operate grand pianos of any size. The Ampico system was a consistent system manufactured only to operate small size grand pianos (apart from those uprights to which it was fitted). The great selling point of the Ampico was that it was inexpensive and it was for this reason that it was normally fitted to inexpensive pianos.

Drawbacks

The flexibility of the Duo-Art system was not, however, without its drawbacks. I have, in fact, never come across two totally identical Duo-Art grand pianos.

* Ampico serial numbers 6833 up.



Steinway pedal-electric Duo-Art formerly the property of Princess Beatrice at Kensington Palace. Made in 1926, it is now in the British Piano Museum at Brentford, Middlesex. The foot pedals for non-electric use are housed in the compartment beneath the instrument when not in use.

Even in the Model 12 English Duo-Art pedal electric grand, some of the piano actions were Lange and some were Schwander. Differing piano actions caused differing results, and the components fitted beneath the sounding board were selected differently and arranged differently. Some had one type of modulator, some another, and each piano was put together individually with very slightly differing results and problems. If, therefore, you are going to judge the Duo-Art system, you must judge from a piano which is working perfectly, such as you would have heard in Aeolian Hall. Obviously there are disadvantages to the Duo-Art buyer, if he receives a piano that is not perfectly designed, but it is this very challenge which inspires Duo-Art collectors to bring their pianos up to top theoretical specification. When this is done, and only when this is done, one can be in a position to praise or condemn the perfect Duo-Art. Mr Lomas in his article refers to the inability of his Duo-Art piano to play quietly without missing notes, which he then generalises to "most Duo-Arts". It is, of course, true that the evenness of playing on the softest of passages is most important, but one of the most fundamental adjustments to control this aspect is the adjustment of the piano action itself, which tends to be neglected in Duo-Art pianos, due to the difficulty of access caused by the presence of the Duo-Art mechanisms above the keyboard. Since the Ampico mechanisms were below the keyboard, the piano tended to be kept in better adjustment.

Standard of editing

The next point which I wish to deal with is the subject of the "superb standard of editing applied to the large majority of Ampico rolls, as "the main reason for the superiority of the Ampico". I have already pointed out that the suggestion of badly calculated dynamics and incorrect contrast between theme and accompaniment is indicative of bad regulation of the Duo-Art system. The recording of Duo-Art rolls went through three stages. In the third stage, the musical director and the recording pianist were satisfied that, on the correctly working Duo-Art, the dynamics were correct. It is of course true that a vastly different standard of editing had to be applied to Ampico rolls, due to the analysis of music involved. In the Duo-Art system, the only dynamic consideration was at which of sixteen loudnesses

GOLD CAGED SINGING BIRD



An exquisite piece of miniaturisation is this 19cm (7½in) high bird cage and singing bird with separate tooth-type musicwork in the base (shown on page 51) plus a watch. Probably by Jaquet Droz & Leschot, it belongs to Richmond Mason. The cage is of gold filigree with chased blue enamels decorated with half pearls.

the piano had to play, and whether these should be selected by accompaniment or by theme. This analysis of music is quite simple and mistakes are easier to avoid. In the Ampico system the division of music was not just between the theme and accompaniment, but between left hand and right hand, each hand having to decide whether to select one of seven loudnesses or whether to employ a two-second or nine-second crescendo or decrescendo. No reproducing roll using such a complicated system of musical analysis could be other than enormously edited. It has been verified that only one Ampico roll fails to use the crescendo valve. However, a great number of pieces of music were certainly played where no crescendo was really used by the pianist. The conclusion to draw

from this is that in the recordings of great pianists, great care was taken, and the playing of great pianists on Ampico is quite magnificent. Where a pianist of lesser stature played badly, the editing room still produced a good roll. In the case of the Duo-Art, bad pianists played badly and good pianists played well. On Ampico, no-one played very badly.

Ampico's "singing tone"

Ampico made great publicity about the use of extended perforations to produce their "singing tone". Mr Lomas approves of this and praises it. Although the effect is musical, it must be open to criticism that the recording is suspect if the pianist did not actually do that, which he could only have done by using a sostenuto pedal. It is wrong to state that the Duo-Art sustaining pedal is not fast enough to cope with normal playing, since it is operated by a double cross valve and is enormously swift. It can be observed to full advantage in the playing of Josef Hofmann, who made extensive use of half-pedalling and flutter-pedalling. It is a good test of the Duo-Art sustaining pneumatic to check that it carries out that operation correctly. If extended note perforations are to be considered desirable, which I have queried, then let it be said that after the amalgamation of the Ampico and Duo-Art companies, some Duo-Art rolls appeared with this Ampico embellishment.

Mr Lomas mentions that the small regulating valve travel on the Ampico gives a more rapid attack, but the Ampico needed this, since all changes had to occur in one hand at one time. On the other hand the Duo-Art can make instantaneous changes in one hand by switching between theme and accompaniment signals, than which no change attack is faster. The Duo-Art uses this device to give the impression that one note in a chord is played louder than the other notes.

Duo-Art valve system

Mr Lomas suggests that the Duo-Art would be better, fitted with a double valve stack like the Ampico. Some collectors have attempted to do this, and have had to change back to a single valve system, since the double valve system does not cope correctly with Duo-Art rolls. The disadvantage of a double valve system is that there is twice as much to go wrong and twice as much difficulty

In Music Also,
Marvelous
Progress Has
Been Made

JUST as the flying machine waited for the development of the gas engine to make it practical, so the piano awaited the PIANOLA to make piano-playing available to everyone.

❧ The ❧



Weber Grand Pianola Piano

Today any untrained lover of music may purchase the most distinguished of modern pianofortes—the Weber Grand. Almost immediately upon coming into possession of this superb instrument he may play all of the masterpieces of music, *in a manner to win the applause of critical musicians.*

Into the Weber Grand Piano Has Been Built a New Model of the PIANOLA

Following the immense popular success of the *Upright PIANOLA PIANO* it was inevitable that the *Grand Piano* with its superiority of tone-quality and action, must eventually be changed to meet the universal demand for instruments that *everyone can play*. Coincident with the discovery of a way to adapt the PIANOLA to the Grand, has come a startling development in the PIANOLA itself:—

The Full Scale PIANOLA With Its Striking Improvements

The PIANOLA used in the Weber Grand PIANO plays the full-scale of the piano, or 88 notes. Thus the extreme notes of the piano—the deepest bass and highest treble may be utilized with telling effect.

As in earlier models of the PIANOLA, the METROSTYLE—without which musicians refuse to approve any Piano-player—is present to insure an artistic interpretation. The THEMODIST also, an exclusive device belonging to the PIANOLA, is likewise here to emphasize the dominating themes and give cantabile effects such as accomplished pianists produce.

Besides these indispensable features of the PIANOLA are two new devices that give an

Added Refinement to the PIANOLA'S Playing

These features are the *Graduated Accompaniment* and the *New Sustaining Pedal Device*.

The Graduated Accompaniment enables the performer to vary the volume of the accompaniment—to make it rise and fall with the flow of the melody. The Sustaining Pedal Device enables even those wholly devoid of musical skill, to use the piano's sustaining pedal in the manner of highly trained pianists.

Progress in public appreciation of music has in recent years been rapid. It is undoubted that the extensive popularity of the PIANOLA and PIANOLA Piano has contributed largely to this result. In developing the PIANOLA and in extending its use to include the Grand, the manufacturers of the Weber Grand PIANO have made an additional contribution to music-culture as momentous in its way as the invention of the PIANOLA itself.

THE AEOLIAN COMPANY, Aeolian Hall, 362 Fifth Ave., New York

This advertisement, loaned to the Editor by Paul N Ottenheimer of Thorofare, New Jersey, come from *Country Life in America* for November, 1909.

in achieving evenness of playing. The Duo-Art compensated for its single valve system by using larger bleed holes, as a conscious policy.

Another point mentioned is the absence of a lost motion device for the soft pedal on the Duo-Art as compared with the Ampico. This is not a valid criticism since American Duo-Art grands have the side-shift soft action. Where they are fitted with a half blow, accurate adjustment of the dampers and of the striker pneumatics makes the use of the lost motion device unnecessary. Mr Lomas mentions the use of a compensating power on the accompaniment accordion when the soft pedal was on in some late model pianos. This was a deviation by the assembly mechanics from reproducing piano theory, which only took place in this country, and which cannot be too strongly condemned. Where this was done, it should be immediately disconnected. The object of it was to compensate for lack of correct adjustment of the dampers.

Unreliability of test-roll

Further advice with which I would dissent is the suggestion that the accordion pneumatics are to be adjusted to make the piano perform correctly in accordance with the test roll. This can be guaranteed to make the piano work *incorrectly*. The test roll is not a reliable gauge of the piano's

performance, and correct adjustment of the accordions must never be sacrificed to please the test roll. The accordions must be perfectly correct and the fault, if there is one, will be found elsewhere. Failure of the Duo-Art when the soft pedal is on, can be corrected by normal pneumatic and mechanical adjustment procedures. The fact that it fails indicates a wrong adjustment.

Having said all the above, may I repeat what I said at the beginning, namely, that the Ampico plays the recordings of the best pianists extremely well. If it plays the recordings of lesser pianists too well, this may not be considered a disadvantage by some Ampico owners. The engineering principles employed in the Ampico were certainly superior to those used in the Duo-Art system, but were uniform and not adapted to different sizes of piano. It is much more difficult to make a Duo-Art work perfectly, but, when this has been achieved, the Duo-Art collector need make no apologies. The Duo-Art piano was a complete construction, where as the Ampico mechanism was a separate construction to be fitted to any small grand piano (ignoring the uprights in this argument). These are the facts which describe the differences between the systems. I believe that an explanation of the facts will allow readers to make their own assessment.

only gives opportunity to detect imperfections). But often one's technique falls short of aspirations, or to put it another way, one becomes sufficiently advanced only to realise short-comings in the musical results achieved. A "pianola" as defined above becomes one's salvation, providing as it does for perfect *fingerfähigkeit* — indeed one has unlimited power to one's elbow (or rather one's foot) !

The music rolls

Most music has been transferred to music rolls of the "standard" type where each note has a perforation of length in direct proportion to its time-signature duration value. These must be regarded as for a printed score, that is, a statement of notes with some indications for interpretation, needing the greatest possible musical variation of tempo, melody and volume by the player-pianist. Within the limits of the roll perforations (e.g. chords struck in strict unison), and with knowledge or even inspiration, a close approach to "perfect" playing can be attained.

This will not, however, be achieved immediately and practice and familiarity with the music as interpreted by other performers is essential; it is, in fact, often the case that when a classical composition has been played in a certain way for a time, interpretation is heard differing in detail or even in overall conception, these differences (possibly improvements) can be incorporated in the player-piano performance.

The Aeolian Company introduced a "reproducing action" (the Duo-Art) into its later models. The note perforations in the music roll were not cut in strict time but were made from rolls marked by the actual piano keys during a performance by a recording pianist. (Such "hand-played" rolls can, of course, be used on a pianola thus making it unnecessary for the roll speed to be continually varied, but much of the pleasure from control of the standard roll by the player is lost, the player tending to become little more than a human pump. But, it must be said for the less musical, the results are to say the least somewhat less mechanical.) Hand-played rolls are clearly designed to move over the tracker bar at constant speed, and with the addition of further marginal perforations to actuate devices for graduated strength of playing of the theme and accompaniment portions of the music, and the sustaining and soft pedals,

AEOLIANA

Jack H Shaylor reviews the piano products of the Aeolian Company and highlights their capabilities.

THE Aeolian Company first offered its Pianola as a piano-player, that is an attachment to a piano to enable it to be played by those unskilled or untrained in keyboard technique. It was in no way intended to produce "mechanical music", that is music wholly created by mechanical means such as in a musical box, barrel organ, etc., enjoyable though this may be to sympathetic listeners, but to enable musical people to enjoy "playing" the piano without the need (or ability) to develop the necessary technique.

To the writer, this is what "pianola" means and in fact excludes player-pianos played entirely mechanically (eg. "honky-tonk" pianos) without the inter-

pretation of an "artist", either by the operation of the foot-pedals and control levers of the "pianola" by a musically sensitive person, or as incorporated in music rolls specially prepared from a pianist's performance, for use on a reproducing piano such as the Duo-Art.

While the mechanisms of both are of great ingenuity and fascination to the mechanically minded, it is their musical potentialities which can perhaps give the most lasting enjoyment.

Making music is essentially a personal or even an individual matter. One learns (or attempts to learn) an instrument to provide satisfaction to oneself, with the hope of it being a pleasure to a listener (even if this, in reality,



Edwin Shaylor, youthful horn-player, turns a Duo-Art pianistic duet by H Bauer and O Gabrilowitsch into a trio, so illustrating a new use for the reproducing piano!

ment one can listen with much enjoyment to Duo-Art performances; these seem to vary slightly from time to time depending on atmospheric conditions and one's own receptivity, thus making each performance individual and not mechanically identical as might be thought.

As a particular example of the pianola and Duo-Art, these can also provide accompaniments for a soloist; special rolls are available, or can be specially cut (e.g. on a Leabjaran perforator). The illustration shows Schubert's Military March, No. 1, being played on the horn with piano-duet played by Bauer & Gabrilowitsch on the Duo-Art.

In these remarks, I have tried to present these two instruments as sources of music making (admittedly by mechanical means) in the home for the pleasure both for the aspiring personal performer and the critical listener.

remarkably pleasing performances can be reproduced entirely automatically. Many artists of great distinction recorded for the Duo-Art and vouched for the authenticity of the reproduction of a wide range of classical and popular music.

Particularly in England, the pianola and reproducing piano

were combined to form the *Pedal-Electric Duo-Art Pianola Piano* and in the opinion of the company (and the writer) forms the ideal instrument. The mechanism is somewhat complex, but we are considering the instrument as one for making music in the home for one's own pleasure. With a carefully and critically adjusted instru-

HELICOIDAL

An answer to playing a long piece of music

THE methods tried by makers to enable cylinder musical boxes to play tunes of much longer duration than could normally be accommodated in the time-span of one cylinder revolution were ingenious.

Three types can be defined. The best known was the *plerodiënique* or telescopic-cylinder mechanism where two cylinders were mounted on a common arbor with their end-of-tune positions radially displaced by some few degrees. This allowed the music on one cylinder to come to an end and, while the normal snail cam was shifting the cylinder, the other remained in play, its turn to shift coming after the first had come into play again.

Spiral pinning

The other two were in many ways similar, yet somewhat more complex. The *helical* mechanism had its cylinder pinned in precisely the same manner as an orchestrion organ barrel. Instead of revolution-by-revolution steps, the cylinder advanced continually on a smooth spiral cam so that the musical pinning could be continuously from end to end. At the end of the music (after six or eight revolutions), the cylinder would back away from the comb, slide to the start position, and then move towards the comb to play again. Cylinder arbor bearings were consequently mounted in special slid-

ing fixtures on the bedplate and moved by long, robust connecting rods and shafts.

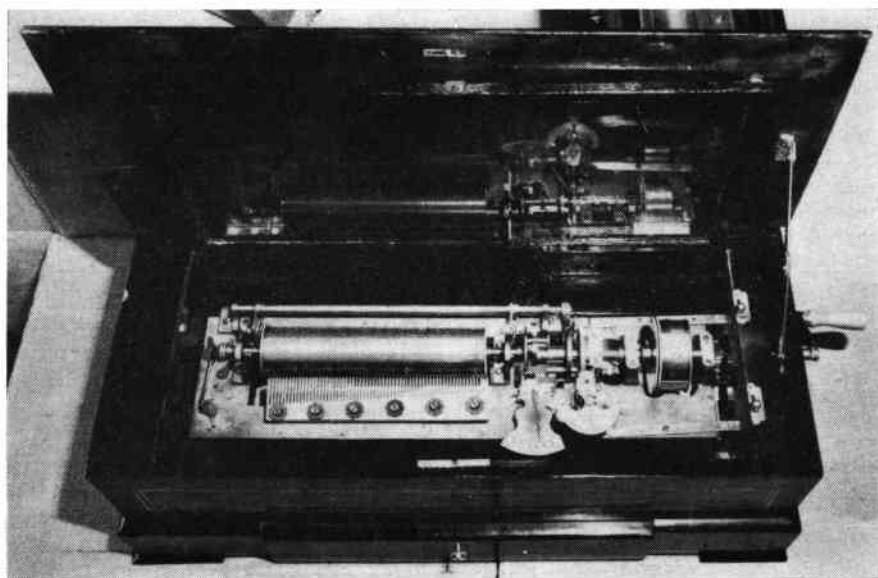
Semi-helical

The *semi-helical* was very similar, except that the smooth snail cam was replaced by an ordinary stepped snail and the pinning of the music continued over the changing operation. Requiring very careful workmanship to ensure comb/pin engagement throughout the lateral shift, this probably preceded the full helical mechanism. The inventor is

claimed to be L A Grosclaude and specimens of both types in the Guinness collection are by F Conchon (see Volume 6, page 306 *et seq*).

Simplicitas

The specimen seen here is from the Moltzer Museum, Bennekon, Holland, and has the name *Simplicitas* stamped on the governor and the Swiss patent number 12243. Can one of our Swiss members identify and date the patent?



HOW THE PIANO WON THE WAR

TODAY'S airline pilots spend much of their training and procedural instruction time in a flight simulator. The first synthetic trainer was made out of player piano parts by American Ed Link. Now for the very first time can be told the story of a British achievement which played an important part in winning the 1939-45 war. Gerald Stonehill describes the mechanism Gordon Iles made out of Duo-Art components which taught men to fly bombers. It was called the Silloth Trainer and was virtually an Aeolian product



IN FEBRUARY of 1963, I wrote to the Imperial War Museum in London asking them whether they were aware that World War Two had partly been won by the contribution made by the mechanical piano. They replied, advising that all papers on this subject had been destroyed at the Air Ministry and they themselves had no records on the subject. Many details of the project had been classified as secret and the manuals and photographs, when their useful life had concluded, were automatically destroyed as they, too, were either secret or restricted and had never been de-classified.

I wrote back to the Imperial

War Museum saying that I knew of one copy of the manual concerned which had escaped destruction, and I struck a bargain with them that I would lend it to them for photocopying on condition that they would give me a copy. They were a little hesitant to do this since, although officially non-existent, the manual was still "classified", but since the ultimatum was "no photocopy — no loan", they capitulated and confirmed in a letter of March 5, 1963, that they would let me have a "set of photostats, if we copied the manual". Although I duly lent them the manual for photocopying, I am still waiting for the photo-

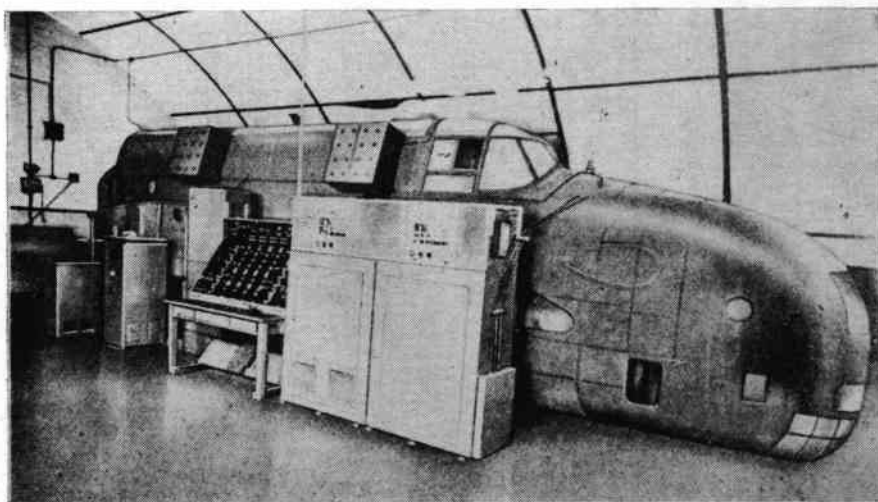
stats which were promised!

The manual dealt with the little-known Silloth Trainer, a strange combination of war-time bomber and Duo-Art piano.

The story goes back to 1935 when Mr G B Iles (perhaps the initials were no coincidence) learned to fly at the rather exclusive Cinque Ports Flying Club. Even then, flying was fairly expensive. He joined the recently-formed Civil Air Guard at Manston in Kent and became the second officer to be commissioned into the squadron. He could now fly without charge. A year before the outbreak of war, because of the shortage of flying officers, Gordon Iles was called up into the Royal Air Force.

By 1942 he held the rank of Squadron Leader and was chief flying instructor at Squires Gate, Blackpool. But sinister forces were at work and others, who must remain nameless, coveted his job.

In the political manoeuvring occasioned by this turn of events, friends of Gordon Iles at Coastal Command remembered that he was famous as an organ builder and as a pneumatic theoretician with the Aeolian Company involved with its pianola and the Duo-Art reproducing piano. They were already under pressure at Silloth in Cumberland where flying crews were being converted to fly the American Lockheed Hudson, entering service as a U-boat spotter. The training field at Silloth was littered with wrecked Hudsons and the crews were becoming demoralised. The problem was



Heading picture shows the still-classified manual for the Silloth Trainer Halifax resting against a Steinway Duo-Art. Above, concealing its pianistic connections, is the Trainer in its complete form. Reproduced from the old Air Ministry publication, the notes to this picture say that the Trainer was intended to be housed in a 30ft span Nissen hut. Cleanliness was stressed because of the delicate pneumatic action.

that the twin-engined aircraft had a nasty habit of swinging on take-off, usually slewing right off the runway and ending up in a heap.

Thus it was that Gordon Iles was invited to apply his enormous inventive skill and pneumatic experience to designing an aircraft trainer which could rescue Coastal Command from its dilemma. In 1942, a scheme was worked out for the construction of the device, to be known as the Silloth Trainer, for the relatively modest cost of around £40,000 (then about \$150,000). Work started at once on the prototype and by 1943 it had been accepted by the recently-established Synthetic Training Committee. Acceptance was followed by a grand opening ceremony attended by the Commanders-in-Chief Bomber Command, Coastal Command, Fighter Command (who in the end did not use it), and other interested parties.

It will be remembered, of course, that Ed Link of the Link Piano Company had in America produced the first successful pneumatic trainer for pilots. This is certainly better known today than the Silloth Trainer because it was never on the secret list. Paradoxically, the Link is remembered because it was, in one way, less specifically useful. The Link Trainer was a non-particular aircraft trainer which enabled the trainee pilot to operate controls which turned and banked the

mechanism in which he sat. However, a normal aircraft does not give this type of clear-cut sensation since a real aeroplane operates in a three-dimensional mode with each mode subjected to both inertia and acceleration.

The Silloth Trainer, on the other hand, was a crew procedure trainer specifically designed to be a "type trainer". Thus, since it was tailor-made for a particular type of plane, it knew the plane's secrets as regards performance, and it had a built-in obsolescence geared to the life-cycle of the aircraft which it set out to emulate. The Silloth Trainer concept appeared as the Fairey Swordfish (for the Navy), and versions for the bombers Wellington, Halifax and Lancaster, the Mosquito and the Dakota (for Transport Command), not to mention the Hudson which was responsible for starting the project.

"A pneumatic instrument"

The designer of the Silloth Trainer held it to be a fundamental truth that an aircraft is a "pneumatic instrument". As such, a true procedure trainer must have pneumatic feel. Gordon had seen Link Trainers taken apart and studied how they worked, and came to the conclusion that specific crews needed something more complete in the way of training. Today, there are complicated and costly flight simulators geared to one type of aircraft. Gordon Iles

was wise enough to foresee that need 33 years ago.

The Silloth Trainer used a system of bellows and manually-operated valves, four bellows to simulate the effect of tilting in different directions, and an air motor for the effect of rotation. The Silloth was therefore infinitely more complicated than the Link and had an enormous number of additional function mechanisms, each containing player piano valves and special regulators. Principles developed for swell-shutter control when Iles trained with the Compton Organ Company were also incorporated. In particular, the whiffle-tree principle was used to combine components to create a differential. Further pneumatic devices were deployed in order to simulate airspeeds and give correct pneumatic reactions to engine temperature and aircraft attitude by way of artificial horizon, etc.

This was by no means the whole story. Engine and aircraft noise were also simulated to create the total experience of flying the particular aircraft. The principle of the Hammond Organ was introduced to solve that one. Tone wheels and amplifiers were linked to match the sounds expected at differing engine revolutions to give the proper level and pitch of noise. The tone wheel was a rotor of triangular aspect — the shape of the Wankel engine—which ran against a pick-up in the form of a steel electro-magnetic wheel with alternative tracks and speed control again to simulate various engine conditions. This task was simplified by the fact that, at that time, it was feasible to economise by producing only two noise-packages to encompass the engines used in the aircraft concerned (basically radials and in-line).

In discarding the Link principles, Gordon Iles debunked the theory of moving the entire aircraft, because there is no feeling of falling when banking, and the correct sensation can be achieved by using a stationary fuselage with, in some cases, a feel of fore and aft movement only. The actual flying controls terminated in enormous bellows units, so that the pilot had the impression that he was working his controls against a slipstream that varied in force according to the speed he was flying, and with the correct sponginess of air itself, combined with further special control effects such as occur from engine failure and such like. The Link, on the other hand, with its moving fuselage, took on the correct attitudes, but did not give the pilot the correct sensation.



Gordon Iles as he is today. Using original Aeolian Company roll-perforators, he works at his Ramsgate, Kent, home making piano rolls under the Artona label. His company, Artona Music Rolls, has been in operation for many years as a latter-day cottage industry.

So successful was the Silloth Trainer that, apart from its use for cockpit drill and as a crew-procedure trainer, complete crews were put in it for fatigue tests, and to check the state of their reactions under conditions of full aircraft noise. This was useful both in itself and after training flights, in order to tabulate the crew's ability to tackle aircraft problems and their susceptibility to error under these conditions.

A secondary benefit, and one which gave Gordon Iles much personal satisfaction, was that it gave full employment to the pianola constructors of the Aeolian Company. The major production of components took place at Automatic Player Piano Actions Ltd, Southall, under the direction of the Aeolian Pianola and Duo-Art mechanics. The sound-effect components were made by The Rank Organization in Shepherd's Bush. The trainer itself was entirely the design of Gordon Iles, and the prototype was made by Iles and by Palmer (of APPA) personally. Thus, if you looked at the illustrations of the parts operating the Silloth Trainer, you would have seen gargantuan mechanisms instantly recognisable to anyone who has worked on a Duo-Art piano, the rotary blowers, the

accordion pneumatics, etc., etc., in never-ending combinations.

At the height of the Silloth fame, its inventor, in the noble tradition of absent-minded geniuses, was driving a service Hillman car, when he decided to pass a lorry, near the brow of a hill, while rushing from one airfield to another to check the problems arising at different installations. Just over the hill was, unfortunately, a cross-road, and an RAMC lorry was destined to meet Iles' drab blue car in an impact of the sort which is spectacularly destructive. Fortunately, Gordon was thrown clear, zooming out through the sunshine roof, describing a graceful arc over the offending lorry and touching down in the road the other side of the crossing. Fortunately also, the lorry was carrying a doctor, who was able to treat Gordon immediately. All the same, he spent a year in and out of hospital, and for a long time was in no condition to rush round air stations tightening leather nuts and adjusting springs.

Shortage of geniuses . . .

It now became painfully clear to the Air Ministry that not all of its staff were pneumatic and electronic geniuses. More experts must be trained, so Gordon was

put to lecture 30-40 people at a time at Lindholm near Doncaster for three months in 1944 in an attempt to correct this deficiency. It remains doubtful that any of his pupils could really have replaced the maestro himself. In the absence of a live-wire pneumatic industry, change was bound to come. The Silloth Trainer was in full use up to 1947, but the civil airlines had their own army of electronics experts and a change-over to electronic trainers was made in order to make use of the new-fangled, existing techniques and talents.

The nation did not, however, forget. In 1948 Gordon Iles received an inventor's award amounting to £100 for his contribution to winning the war. Certainly, at the time of the Silloth Trainer, the aircraft was in fact a pneumatic instrument, which needed a pneumatic solution to its problems. Today it is arguable that modern aircraft, with their computerised controls and jet engines have moved into the new age of electronics. It is necessary, however, that the Silloth story should be told, lest the secret of the mechanical piano at war remain locked for ever in the photographic archives of the Imperial War Museum.

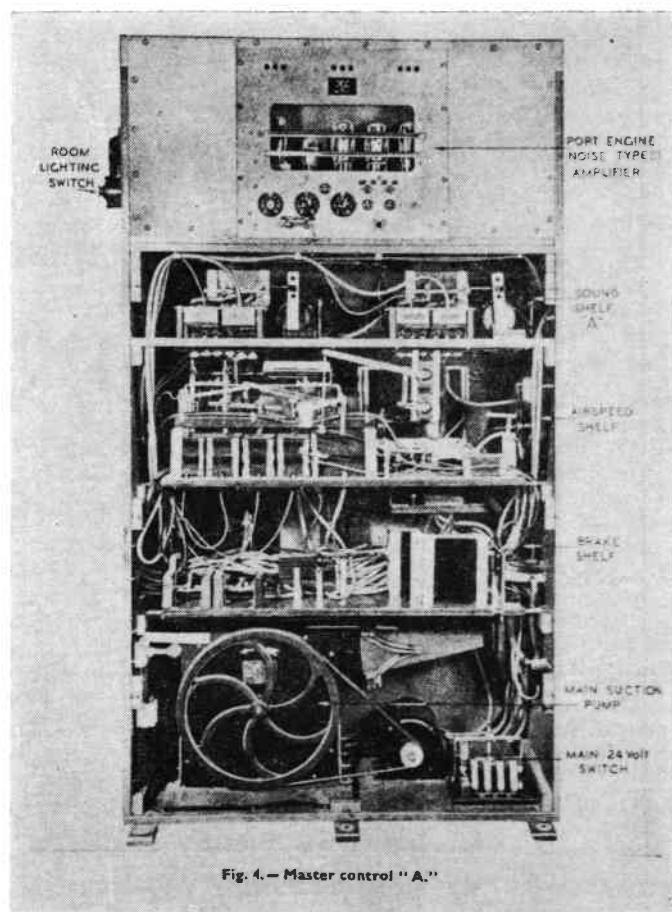


Fig. 4.—Master control "A."

Left: the master control unit displays masses of player piano components and is driven by the Duo-Art pump at the bottom. Sound shelf is a Hammond organ and above it is the sound amplifier. Below: control response motors with multiple stages.

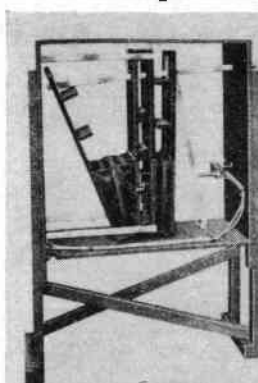


Fig. 11.—Feel of controls, aileron.

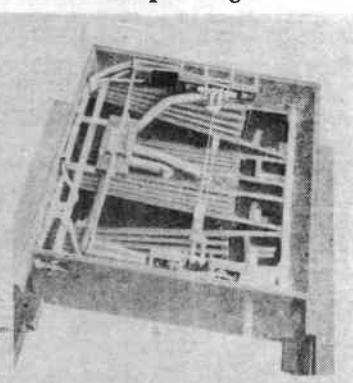


Fig. 12.—Feel of controls, rudder.

Feel of controls boxes, fig. 11 to 13

26. There are three of these boxes one each for the aileron, rudder, and elevator, the latter two being in one unit with the rudder box mounted above the elevator box. Each has large bellows mechanically connected to the primary flying controls in the airframe which provide varying loading on the controls with the simulated speed and attitude of flight.

27. In the rudder box there are additional pneumatic components to provide the effects of swing and slip, and in the aileron box there is an additional small bellows connected to the banking system (see chap. 12.)

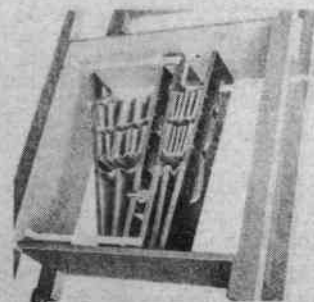


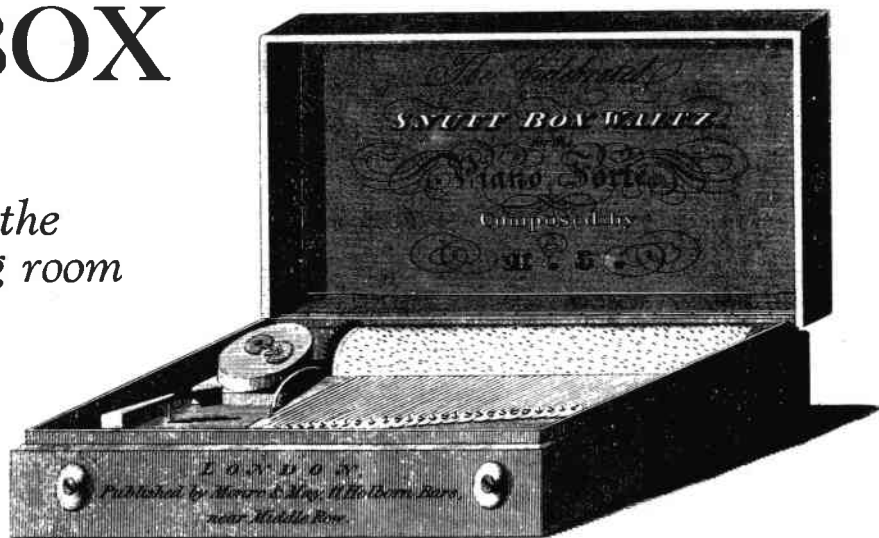
Fig. 13.—Feel of controls, elevator.

SNUFF BOX WALTZ

A musical relic from the pre-Victorian drawing room

RECENTLY, David Tallis came upon the cover of a piece of music called *The Snuff Box Waltz*. The striking thing about the cover was the fine quality engraving, reproduced here, which adorned its front. The tune was composed about 1830 by someone unknown other than by the initials MS. The first edition of Grove's Dictionary tells us that "the scale and arpeggio passages, played with much use of both pedals, produced something of the musical box effect upon the hearer, enhanced a few years later by the introduction in pianos of brass bridges and harmonic bars, which are to a certain extent subject to the acoustical conditions which affect the musical-box combs." The accompanying extract from the tune shows the kind of imitation that was possible.

Of the publishers, Monro & May, we know that John Monro began his sheet music publishing business in around 1810 or 1812 and formed his partnership with Harry May between 1823 and 1848. The likely date of this piece, which was entered at Stationers Hall along with all published music, is 1834. The engraving by J Hull of 70 Castle Street East, is both unusual and detailed for a period when



music covers usually went in for decorated graphics and floral designs rather than the representative, materialistic image. The original engraving is 6 $\frac{3}{8}$ in overall width.

The musical snuff box was known in France as *tabatière à musique* and this was the title which Anatol Liadov gave to one of his many attractive, brief piano pieces. Pianistic imitations of the musical box are not uncommon in the recent past although today, probably due to the fact that most people have no experience of the developed musical box, they are seldom heard. Popular once and frequently broadcast during the era of the 78 rpm gramophone record was a piece of pianistic ephemera called *The Musical Box* with which the names of Rawicz and Landauer, one-time duetists, were associated.



An extract from *The Snuff Box Waltz* from the library of the Editor.

ETHICS OF RESTORATION

More musical boxes are being spoiled today than at any other time in history. The Editor voices his concern.

HOW justifiable is the cleaning of a musical box? How successful the chances of repair. And what of the original should be allowed to remain or, more to the point, how much of the original is it right and proper to remove?

It may sound paradoxical, but restoration is in many ways another form of destruction. Restoration destroys original working and even if the ideal is achieved, which is to restore to as-new condition, something of the original is gone forever.

I am increasingly concerned at

the amount and degree of restoration carried out by enthusiasts who may be completely overlooking this fact.

Comb tuning warning

The ethics of restoration are simple. Ask yourself this question: Is the degree of restoration such that the original performance of the instrument will be altered beyond redemption?

One particular area which gives me the most concern is comb tuning wherein many restorers who just do not understand what they

are doing take it upon themselves to "tune" a comb. This is wrong, is completely against the whole meaning of restoration and is to be deprecated. New teeth in a comb need tuning. A comb which has been badly rusted may need tuning, and a re-leaded comb will need adjustments to the weight of each lead (not to the metal of the tooth itself). But the ad hoc retuning of a comb is wrong and completely unjustified. Altering the tuning of a comb may not be the aim of the novice restorer, yet certain of his repair processes may amount to the

same thing. Why not so long ago I was in the audience at a lecture given by a restorer who advocated not just grinding off the tips of disc box combs, but of grinding down the star-wheels and re-setting the comb!

Again although a sparkling mechanism may look good, I now do not favour the arbitrary total cleaning of a box which is in perfect working order. Dismantling and cleaning a mechanism is just another form of destruction. Valuable oxide films built up on wheelwork at the expense of wear are destroyed and the risk of damage in these circumstances is very high.

Leave well alone

Generally, if a musical box works well, you can only be creating trouble and more work for yourself if you choose to dismantle and clean it. Now cleaning is necessary as part of a major overhaul and dust and dirt probably clog the works to the point where cleaning is essential to proper running in some cases. But a playable box which works perfectly and which has earned the discoloration due to its age does not *have* to be cleaned. I have reached the point now where I will not buy a cleaned box unless I know who cleaned it and why. So many dubious musical box cleaners abound today — some actually leave abrasive metal polish in bearings and wheelwork — that prudence pays.

Case cleaning is a little more justified and a lot safer to undertake but once again you need to think carefully before starting work. Marks which may mean nothing to you could prove valuable clues to another person or to a subsequent owner, so you should not erase markings which you cannot comprehend. With an incomplete mechanism, for example, the now-missing parts may be found to have left witness marks on case or brasswork and these can prove invaluable clues to the expert.

The musical box collector is largely the product of our own age and he is more venturesome than ever before. He is tackling work which only a few years ago he would not have bothered to try on the grounds that musical boxes were cheap and it was just not worth while doing.

But now the rarity and scarcity of musical boxes has made owners far more aware of repair and restoration as a means to extending their collection and increasing its value.

It could be said that circumstances will prove, in later genera-

tions, this to have been the era when, in appreciating the value of musical boxes for the first time since they were new, more boxes were spoiled than at any time in their history.

Because of this I urge you not to tackle any repair or cleaning work unless you have fully weighed up the conditions in terms of necessity and of your own ability. Nobody will ever thank you for spoiling a musical box just because you thought you could do something which subsequently proved too late to be beyond your understanding.

And don't practise comb-tuning unless you are (a) a musician; (b) a musical expert who understands the differences between mean-tone and equal temperament, (c) a time-proven expert on musical boxes; (d) extremely intelligent and with good ears and a delicate hand; (e) very careful, and (f) have a conscience capable of guiding you.

After and before . . .

There are plenty of musical box enthusiasts and a few experts about. Talk over your work with them and get ideas from them. Learn not by your experience if possible, but by the experience of others. If in doubt about anything, **DON'T DO IT, DON'T EVEN ATTEMPT IT**, for if you end up damaging your musical box, there will be a throng of one-time musical box makers eyeing you from Heaven and they will cast down vast curses upon you and make you wish you had taken up stamp-collecting instead of musical boxes.

If all this sounds a bit like overstating the case, I venture to

suggest that you pause and think for a while. How many instruments do *you* know that played a little better before you serviced them than they do now?

Some measure of blame must be borne, I know, by those (myself included) who have in the past advocated wholesale repair and restoration work without, I now admit, offering sufficient warning of the pitfalls to be encountered by the unwary.

A sad example

Two months ago, a Society member brought to me a small Nicole Frères box which was obviously early and of high quality. It had formerly played quite sweetly in spite of having a handful of teeth missing. Entrusted to a well-known repairer, now deceased, he was horrified to receive the box and a large bill. The replaced teeth were visibly unmatched and did not play in tune. But even worse was the fact that for reasons too easy to explain, most of the other teeth were now dead. The box was finished. I hope that the perpetrator of this work is not entrusted to servicing the angels' harps otherwise Heaven will be a pretty discordant place for those of us who aspire to reside there in later years.

The unskilled will always leap headlong into committing themselves to do something beyond their wildest capabilities. It is the skilled man who knows when to turn a job down and say "I cannot or do not know how to repair that."

Lyraphon mystery



SOME years ago, while viewing the collection of Ruth Bornand in New York, your editor spotted this unusual disc-playing manivelle — the *Lyraphon*. It features a single comb and plays a disc 6½ in diameter. The handle for operating this springless musical box protrudes from the front and, as might be expected, the case is very shallow. The simple inside-lid decoration just says "Lyraphon No. 3 PATENT" but no reference is made as to which patent! One suspects that it must be of Teutonic origin.

Has any member any information on this and are there others in existence? Was there a Lyraphon 1 and 2?

J CH DETMERING

The story of a Hamburg distributor

FROM member Alan K Clark comes three pictures of two items in his collection which bear the mark *J Ch Detmering*. The first is a small musical box which, says Alan Clark, looks like a typical four-air Paillard. The serial number, however, is rather low — 430 — and the lower tuning lead on the comb carries this number plus the numbers 3 and 17. The picture, reproduced here, shows the lid of the box with the tune sheet and two shield-shaped metal medallions bearing the name of Detmering. This is shown in close up in the second picture. The scale is in millimetres/cm.



The third picture is of the movement of the second Detmering musical box. There is nothing extraordinary about the movement which is a straight-forward late two-air mechanism with right-hand bezel-type tune-changer from a lever regulated between cone screws (illustrated in detail on page 497 of Volume 6 of *The Music Box*). The serial number, stamped in small, irregularly-aligned numerals close to the cock, is 34638. Provision for variable spring tension on the stop-start lever, common on musical photograph movements, is provided by the usual system of retaining notches on the arm. Alan Clark asked for details of this firm.

The Hamburg business of J Ch Detmering was founded in 1858 for the wholesale distribution of musical instruments and their import/export. The business was begun at 21 Wexstrasse, Hamburg 3, but as the business expanded, further premises were secured at 59 Schauenburger Strasse. By the turn of the century, large warehouse facilities were also in use at 40 Hamburger Strasse in the Hamburg suburb of Barmbeck. At this time the business was being managed by Adolf Christoph Detmering, possibly a son of the founder.

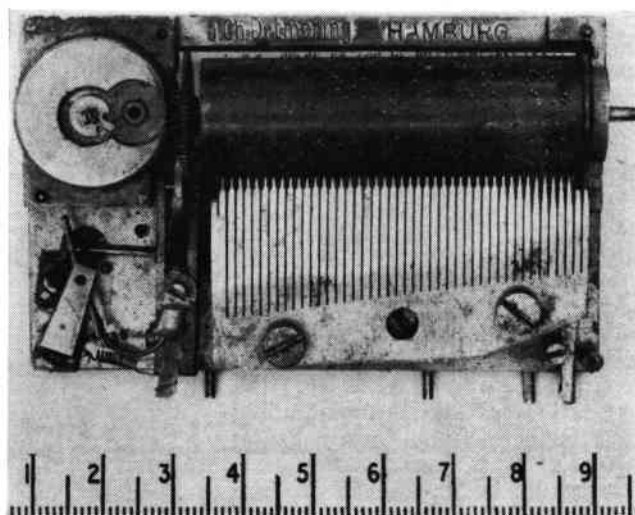
At this time, so important was the Detmering business that its management was nominated to serve on the Hamburg division of the Council of Judicial Administration for musical instruments and in fact was the principal of this division — the other division was pianos and this was led by J C H Snell.

The business survived the first war and continued to factor musical instruments of all sorts. The last entry in the Hamburg directories appeared as late as



June, 1940. The business was still at 21 Wexstrasse although, with the sub-division of the city areas, it was now in Hamburg 36. This part of Hamburg was devastated during the war and it appears that this episode marked *finis* to the business of Detmering.

It is unlikely that Detmering operated other than as importers and factors, but the possibility is that for musical novelties which they distributed, such as photograph albums, cigar dispensers, musical plates and so on, imported movements were stamped with their name.



A FEW WORDS ABOUT AUCTIONS

IN THE ERA before we all knew better, a musical box was a musical box and you didn't have to know whether it was made by Soit à Spiraux, wound by a key, a lever or a length of string. Auctioneers, accustomed to dealing with mangles, wardrobes and monstrous marble clocks dating way back to the 1890s, were not over generous with their catalogue descriptions.

Even Sotheby's and Christie's used to use lay terminology for want of better knowledge to describe these piffling pieces of low-value merchandise. A watch or good clock, on the other hand, would warrant a detailed description almost down to the name of the chap who swept up the floor of the workshop where the craftsman filed out the leaves of the pinions. The musical box, though, was denied any of this.

Since then, the tide of knowledge has engulfed us all and we have become experts in everything from cylinder wax to the chemical analysis of the dirt in the crevices of the lids of 29½in Polyphonions. In short, we have the ability to describe accurately and adequately.

Christie's and Sotheby's now each have musical box experts on

their staffs, demonstrating the correct attitude that if you are expected to sell something at auction, then you will benefit by describing it accurately. Our members Christopher Proudfoot and John Baddeley provide just that experience to the respective houses for which they work.

For those who need to know how to describe, there is now ample reference material available to be consulted. No more do we need to return to the dark ages of indeterminacy and semi-literacy in musicwork.

And so it came as a great surprise to receive an auction catalogue a few weeks ago concerning a large musical box sale in the South West of England which perpetrated just about all the things which we thought were behind us. We find that the catalogue has been mailed to all members in the UK in a bold attempt to ensure a large audience of collectors at a way-out-of-the-way venue. A fine, expensively-produced colour catalogue produced by a house which claims over two centuries of experience contains the most remarkable examples of non-description. Let us quote a few examples from this

masterpiece of musical box ephemera in the fervent hope that the word may spread that if members are being cajoled into travelling the country to attend a sale (or encouraged to bid by proxy) they expect a better description of items than this gives us.

Assuming that an *orchestrian* is West Country for *orchestration*, no description can be considered complete unless the number of keys and stops is included. Even the number of pipes would help. Other fine organs include one by "George Pike" who is claimed to be an apprentice of Charles Clay. Nothing is said of the music.

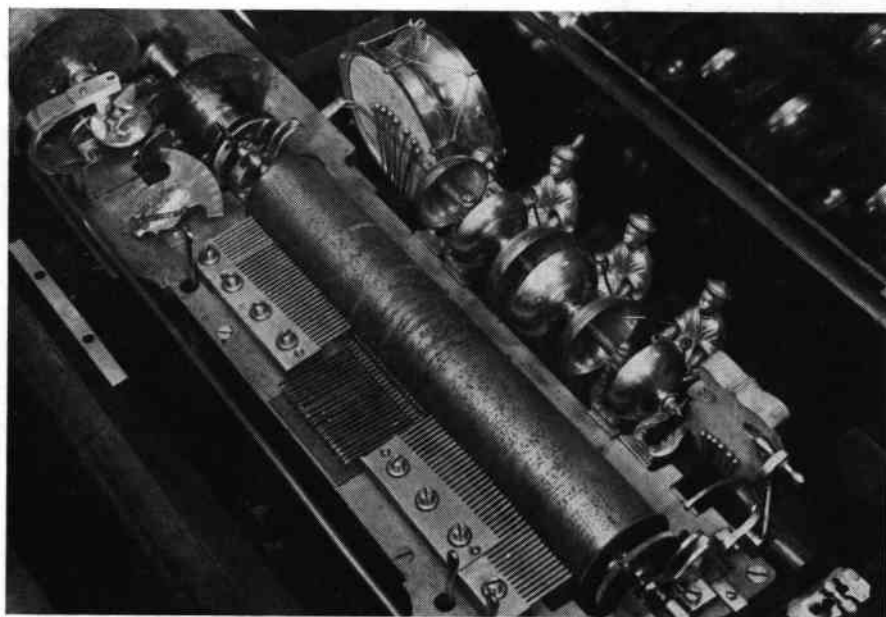
Musical boxes fare badly with descriptions such as "Nicole Freres key-wind Musical Box — 8 tunes" without so much as reference to any number. But the apparent discovery of a new maker is revealed by two lots both described as being by *Etouffoirs en Alier* (sic).

Without wishing to appear overly uncharitable or pompous, *The Music Box* feels that it would have been of infinite value if the auction house in question had seen fit to obtain the services of an expert to catalogue the musicwork in this sale. As it is, a large number of members have been antagonised by the receipt of this missive through the post. We hope that we do not experience a repeat of this.

While in a castigatory mood, several members have drawn attention to the practice of some auction houses to charge the *purchaser* a 10 per cent commission and this has already caused embarrassment to at least two members who have found themselves required to pay more than their accepted bids. Buyers' premiums are not new, and some Midlands auctioneers have operated this way for some while. Their recent introduction to the main rooms of the London houses has brought the matter to the attention of a wider public.

How auction houses conduct their businesses is largely their own affair, but it is important that you should study the conditions of sale at an auction room before attempting to bid. Failure to do so may cause problems and, if you are unable to complete the transaction, could cost you any deposit paid. It is argued that the prices obtained at houses where the buyers' premium operates could be lower than at a non-premium house. Certainly the arrival of the practice in London has caused much controversy. *Auspicious deterioris avi?*

Orchestre à Chinois



From the National Technical Museum in Prague comes this picture of an interchangeable-cylinder orchestral box with six bells struck by seated mandarins. A 22-note reed organ, 8-beater drum and 6-beater castanet form the accessories to this piece which is possibly by Paillard, c. 1880-90. This is a fine example of a quality box of the period.

THE MUSICAL CLOCK

THE addition of musicwork to timepieces goes back to at least the 14th century, the earliest reference yet found being in the Cracow horological manuscript of about 1380 (see *The Music Box*, Volume 3, page 200). The earliest systems made use of the bell; later on the organ was equally favoured. The dulcimer or harp came much later along with the tuned-steel tooth musicwork.

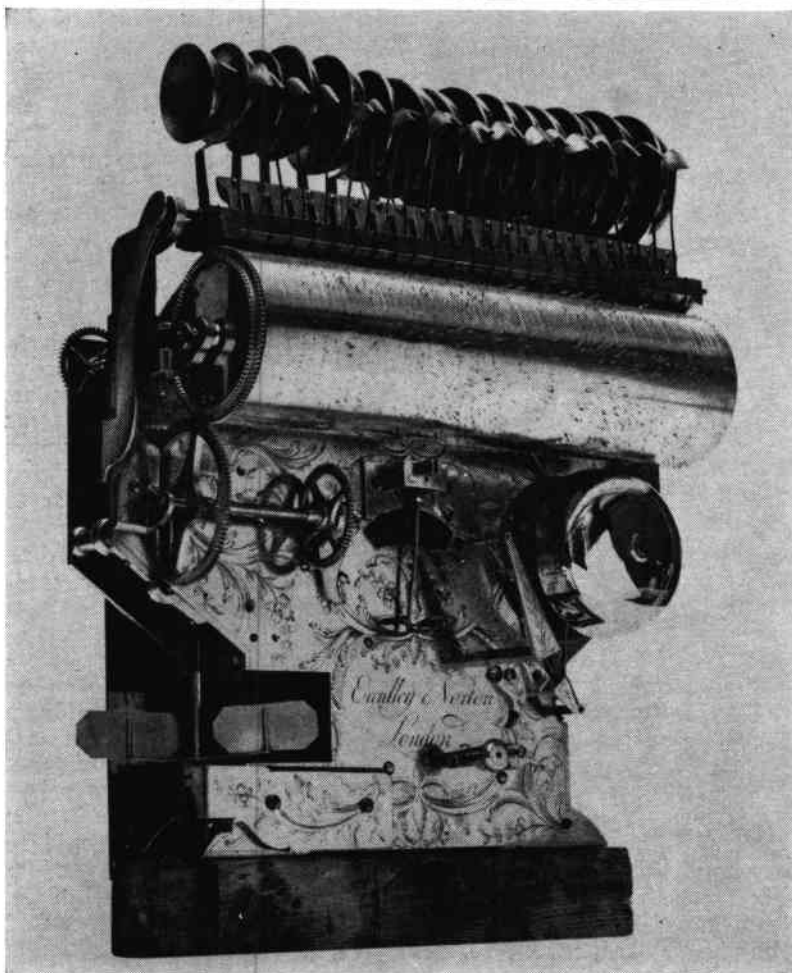
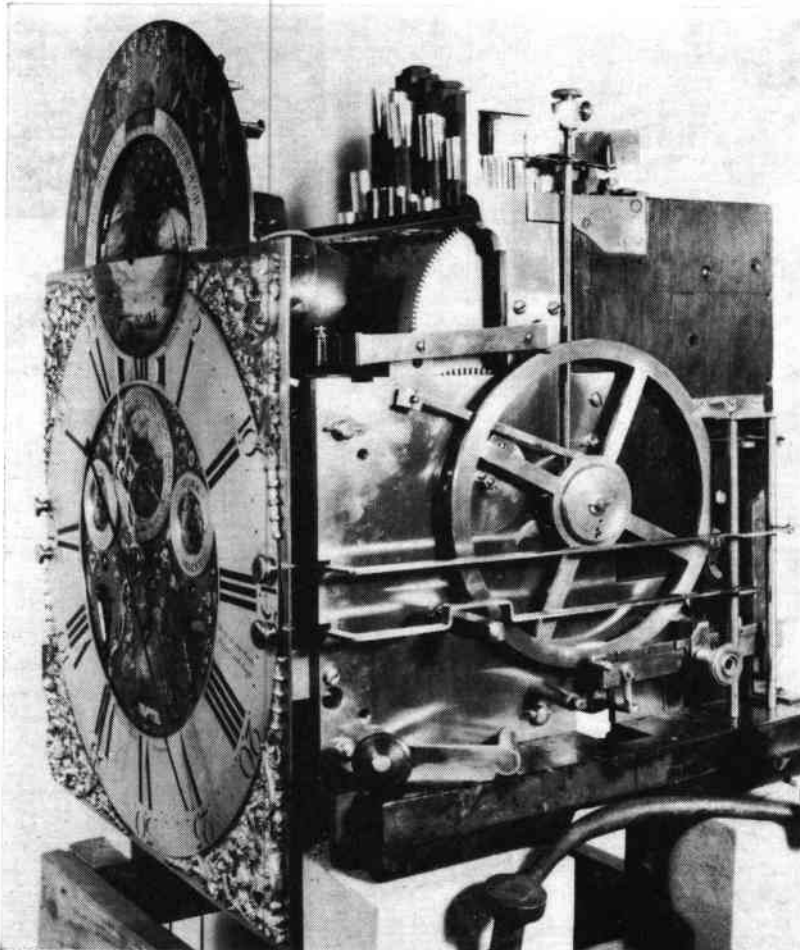
Cylinder-operated nested bells offered a greater degree of compactness than the generally bulky organ mechanisms. On these pages are illustrated specimens of each.

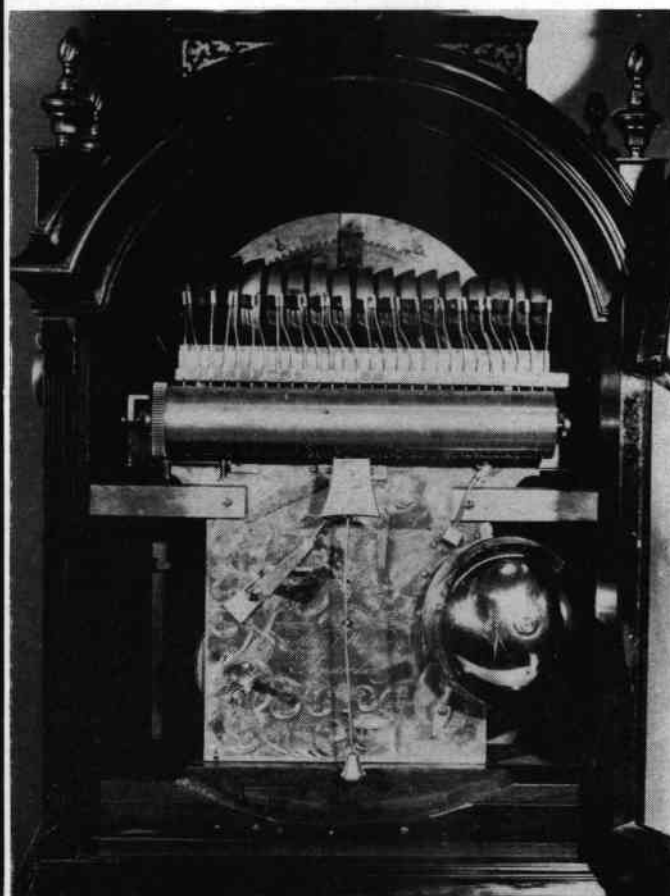
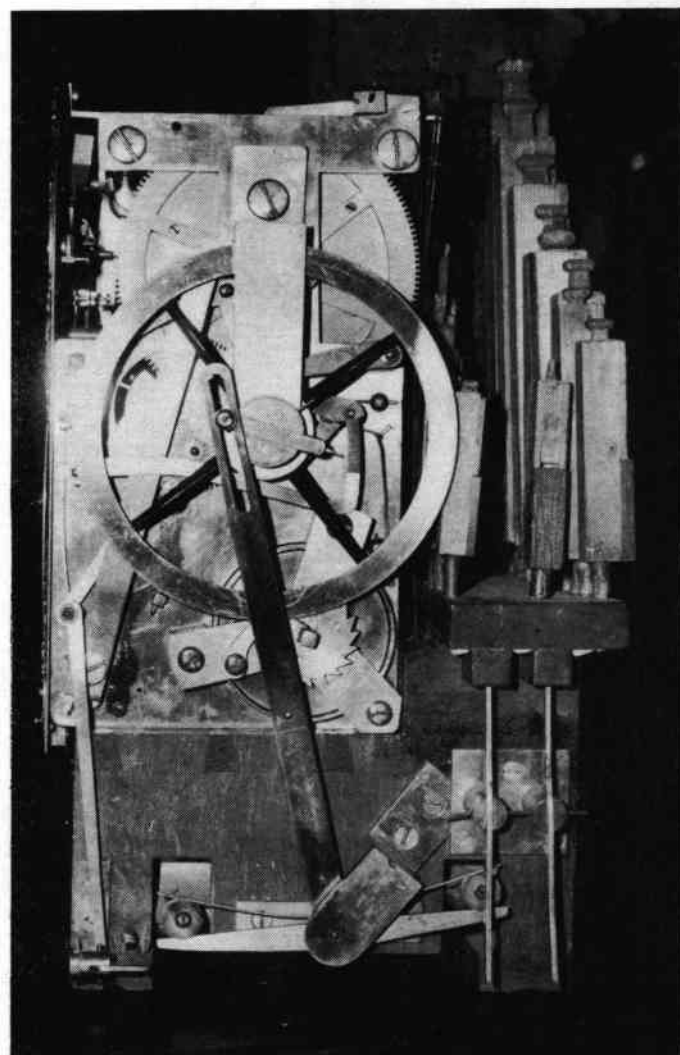
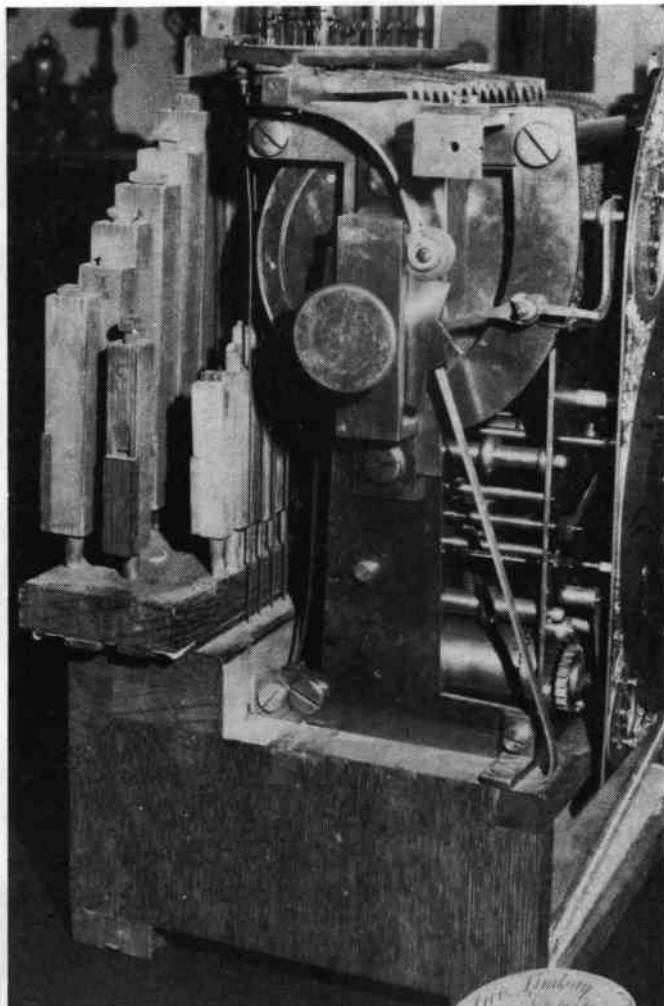
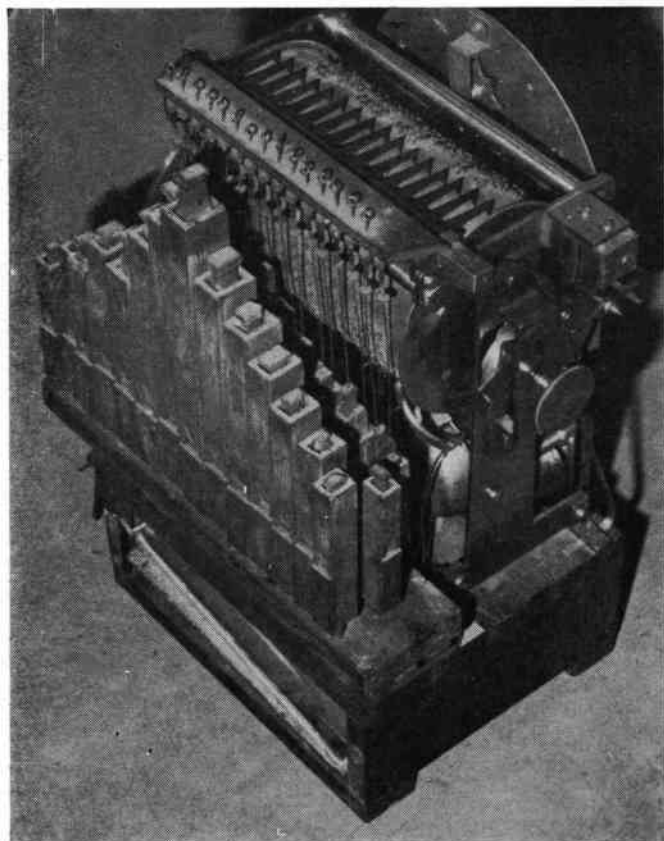
Top left is a particularly fine organ clock made by George Hewitt of Marlborough, England, featuring four stops (stopped diapason, principal, twelfth and fifteenth) and 19 notes. Four barrels each of 12 tunes originally accompanied this clock: three survive. The piece was restored four years ago by member Freddie Hill.

Below is a musical clock made between 1770 and 1794 in London by Eardley Norton. Twenty-four hammers play on 16 bells, some bell having two hammers to speed repetition. Restored by Keith Harding who had to make and tune new bells.

Facing page: The top two pictures and that on the lower left show details of an organ clock made about 1760 in London by George Lindsay. It has 16 notes and two stops which are changed automatically from the single barrel which plays eight tunes. This piece is in the Ilbert Collection, British Museum. Just visible at the bottom of the top right-hand picture is the upper portion of a plaque which was imposed upon the clock face. This reads: "Geo. Lindsay Watchmaker to His Majesty" (presumably George III). On the reverse side of the plaque is inscribed "Geo. Lindsay servant to the Prince of Wales".

Similar to the Eardley Norton clock and probably of similar date is the bell-playing musical clock, far right, lower picture. This is contained in a handsome ebonised case and has 17 bells struck by 28 hammers — the double hammers are clearly seen in the picture. The maker is Allin Walker of Amsterdam and the clock is on exhibition at the Nationaal Museum van Speelgoed tot Pierement in Utrecht.



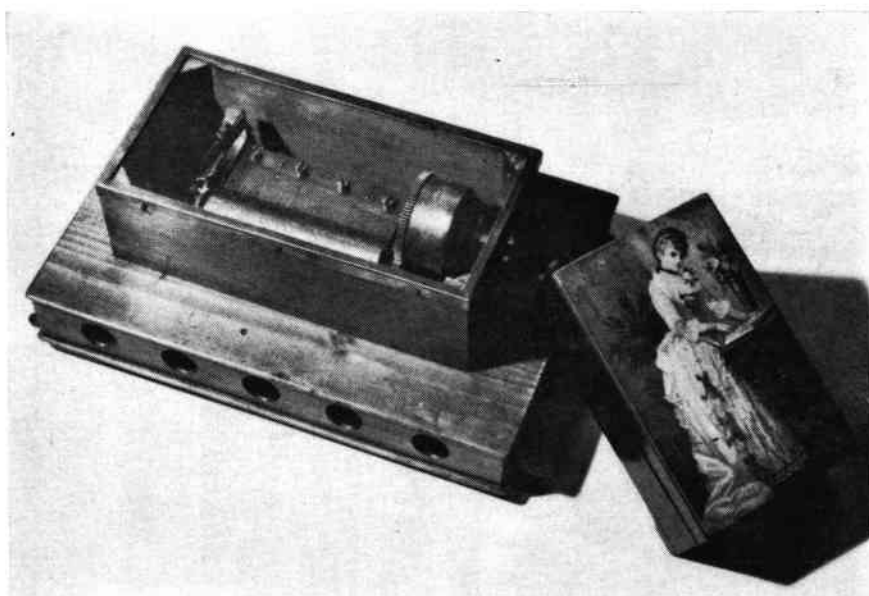
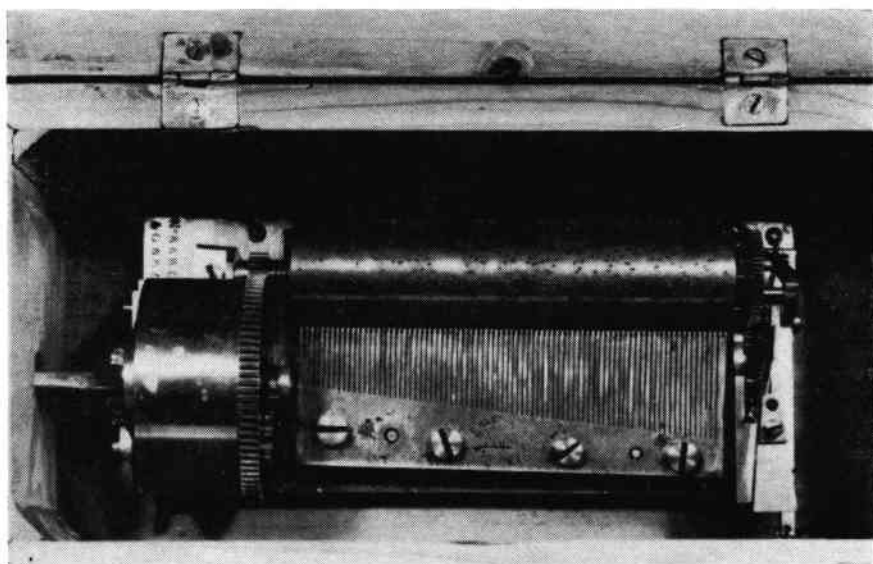


RZEBITSCHKEK IN PRAG

IT IS exactly seven years since *The Music Box* published its first article on Czech and Viennese makers of cylinder musical boxes. Since that time, many more examples of pieces from this quarter have come into the hands of collectors and a few more makers have been identified. Recently Richard Kahane showed *The Music Box* some new pictures of boxes in the National Technical Museum in Prague and this has inspired us to take a fresh look at the unusual characteristics of these makers, particularly the work of Rzebitschek

MUSICAL boxes emanating from Austria and Czechoslovakia all exhibit certain characteristics which are demonstrably different from those of instruments manufactured in other parts of Europe.

It is an indisputed fact that, even today, very little is known about these makers outside their own countries. Sadly, the political situations which reign in some of the areas of Central Europe make research virtually impossible. What is known, however, is that a number of Central European makers



have been identified and it appears that all marked their work with their names.

Best known is probably Rzebit-

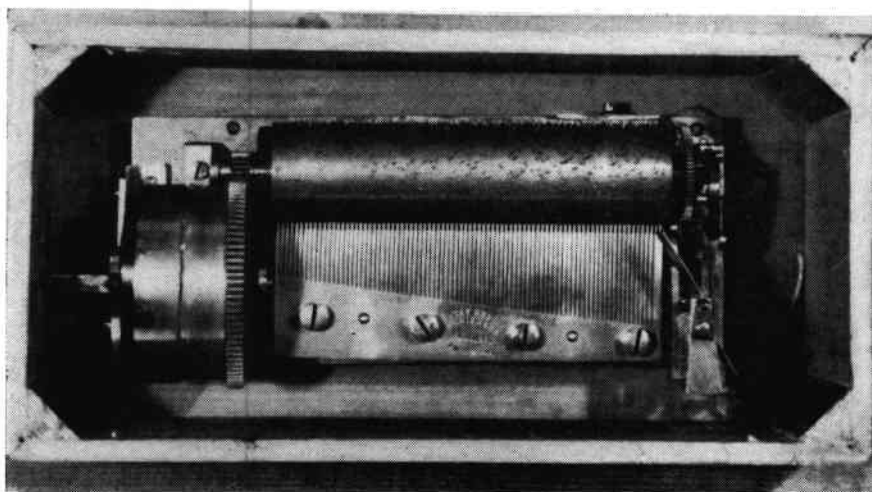
schek, divided between Frantisek and Gustav (who westernised the name to Rebicek). Then there is what appears to have been a partnership with one member of this family with the name of Willenbacher & Rzebitschek.

Another group was the product of the Olbrich name, one identified by the initial A (Anton?) and the other as Jon.

All named movements

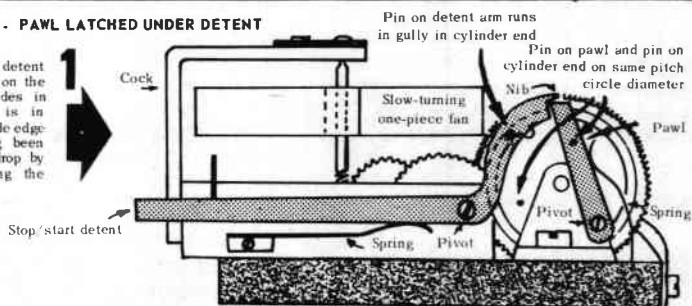
Other names are Slawik & Preiszler, A Bartel, Alois Malý and F Einsidl. Without exception, all specimens seen have been named and all feature these common characteristics.

Thanks to the efforts of Richard Kahane who is now in London after serving with the United States Embassy in Prague, we are



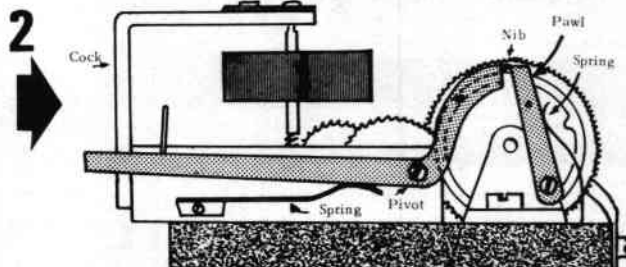
STARTING TO PLAY - PAWL LATCHED UNDER DETENT

In this position, the detent is held free and trail on the curved arm which rides in the cylinder gully is in contact with the outside edge of the gully having been lifted from the step drop by the action of pushing the detent arm down.



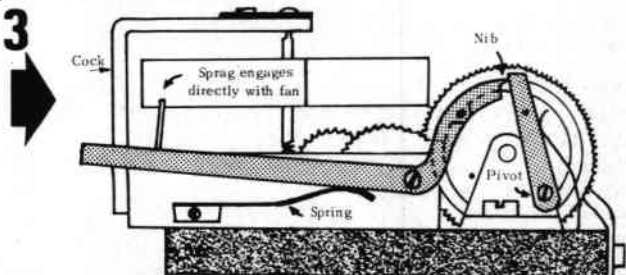
PLAYING BUT PAWL RELEASED BY PIN ON CYLINDER END

The cylinder end has a short peg protruding from it which has here come round and engaged with a matching peg protruding inwards from the inside face of the pawl, so moving the pawl out momentarily and releasing the detent. The trail on the curved arm now contacts the inner edge of the gully ready to move into the stop drop at the end of the tune.



STOPPED AT END OF TUNE, DETENT ARM TRAIL IN DROP

Here, the detent, quite free of the pawl, has stopped the mechanism, the trail on the curved arm having moved into the drop in the cylinder gully, allowing the long arm to raise and its sprag to engage with the fly.

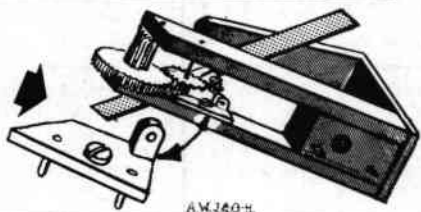


* * *

On some types of movement, such as the Jon Olbrich shown overleaf, the pawl has an extended arm at its back. Many of these movements were made for use in clocks, playing when the detent was depressed by a mechanism from the clock-work. When fitted into boxes, stop/start and repeat (holding the detent down) controls were simply lengths of cord which passed out of the case sides, usually with ivory knobs on the ends.

The lower bearing for the endless and its one-piece

rigid fan is permanently located in the correct position by a small bracket screwed and dowelled to one side of the inner gear train block. It is, therefore, immediately repositioned after dismantling for cleaning, thereby avoiding the lengthy adjustment sequence needed to re-set a Swiss escapement.



Vietnamese movements in the way that the very non-adjustability of the fan indicates that the makers knew precisely what they were about. The bottom bearing for the endless is equally rigid as if once positioned it was never to need adjustment again.

The stop/start mechanism is so different from the Swiss system that a verbal description is something of a challenge. The accompanying illustration shows how the system works and its characteristics can easily be seen by referring to the three stages shown.

Case style

Concerning the actual wooden cases of these instruments, all the original cases so far seen have demonstrated the style of construction seen in these pictures — a plain, thinwood box with mitred corner joints reinforced by a large corner triangular fillet. Clearly these makers attached less importance (or demonstrated poorer skills in this branch of manufacture) than their counterparts in Switzerland. Even the very early products of Lecoultrre and Nicole were always cased in a nicely-made box.

Musically speaking, all these pieces display the characteristic purity of sound and the excellence of musical arrangement which is indicative of the work of a quality manufacturer. Even the small movements — that shown in the centre picture on the facing page has 85 teeth in the comb — play exceedingly well and have both the sound and sonority of a much larger musical movement. Ambitious barrel-pining, arrangements which make maximum use of the resources of the comb and above all a very slow surface speed of the cylinder combine to allow performances of long and complex music while the proximity of the pins on some pieces makes one

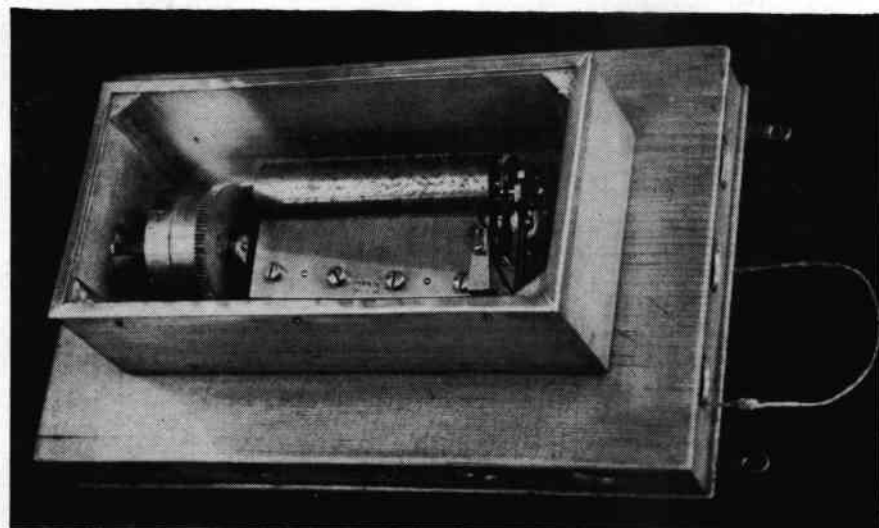
able to illustrate some of the specimens contained in the National Technical Museum, Prague. First on page 140 is a movement by F Rzebitschek. Beneath this is a general view of a musical box by Gustav Rebicek seen complete with its unusual acoustic base and separate painted lid. The movement of this is shown in close-up, lower left. A second specimen of this type of musical box is seen at the bottom of this page.

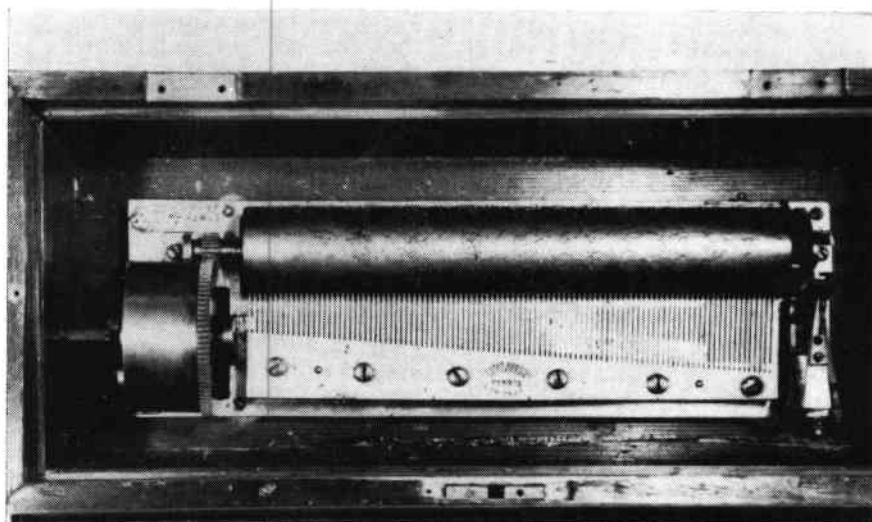
Characteristics

What can be learned from a study of these pictures? First is the prime characteristic which is probably known to all members — namely the fact that all these movements have the treble notes on the left, and the bass on the right. Next is the noticeably long and slender comb teeth with equally slender tips being plucked by cylinder pins which are thicker and protrude further from the cylinder surface than do those on

Swiss movements.

But quite unlike Swiss and French musical movements is the long-span fixed air brake. Whereas the Swiss fan was always adjustable on the endless, there is a sense of finesse, finality and precision about the Czech and





wonder at the skills needed in cylinder pinning. Invariably, the bottom note in the bass (far right) has two tips.

The overall impression of these musical movements is that their makers devoted far more attention to the features that mattered and were prepared to disregard those which were not critical to the musical performance. As mechanisms, they are better engineered than most Swiss-made boxes.

Left is a box dating from 1870-90 bearing the stamp of Gustav Rebicek. The long, somewhat coarse comb has 103 teeth and the piece is contained in a conventional type of wooden case with a lock.

QUESTION & ANSWER

by Keith Harding and Cliff Burnett

Q. What is the purpose of the circle of card sometimes found in spring barrels?

A. Most of us have had the experience of listening to a musical box which has an annoying vibration in the loud passages. The commonest cause is loose parts in the lock, though it can also be caused by a loose screw, possibly a case screw, or almost any part of the mechanism which is loose. In the case of keywinds it may be the control levers vibrating against the underneath of the bedplate, which is why they are usually bound with twine. However, we had a box recently in which the vibration was traced to the spring barrel; the coils of the spring were in contact with the end of the barrel, and the trouble was cured by inserting a piece of card. The original cards are worth looking at, as they are sometimes cut from old trade cards, and may be a clue as to the maker of the box or a subsequent repairer. After looking at them, they should be put back, as they form part of the history of the box.

Q. How do I repair the tortoise shell case of a snuff box?

A. First of all, it is not made from the shell of a tortoise but from the shell of a Hawksbill turtle, such as may sometimes be found hanging on the wall of a junk shop. The tortoiseshell comes off in plates if it is immersed in boiling water, and the plates may be softened and pressed flat, then sanded, polished and cut to size. Tortoise shell has the property of being self welding under the application of heat

QUESTIONS on the subject of musical boxes are conducted by Keith Harding and Cliff Burnett and should be sent to 93 Hornsey Road, London, N7 6DJ.

Questions on the subject of player and reproducing pianos are conducted by Gerald Stonehill and should be sent to 1 The Boltons, London, SW10.

and pressure (see *The Musical Box Workshop Manual*), but this may be difficult to achieve when handling a delicate box. An alternative

is to use a modern cyano acrylic adhesive, such as Cyanolit or Permabond, but these are dangerous to use unless you are extremely careful, and must on no account come into contact with the skin, or you may need a surgical operation to get your fingers apart! I am not joking, it has happened. In any case, work of this nature should not be attempted unless you are certain of a perfect result, and use of an insoluble adhesive offends against the "principle of reversability" which forms part of the code of ethics for restorers. We have read elsewhere of the use of an insoluble adhesive by an organ repairer which made it necessary for the next repairer to split the wood to get the organ apart.

Tony Sherrif writes:—

"I enclose a list of my Nicole boxes. I found it very difficult to read some of the titles, and only hope that you can correct any that I may have got wrong.

"Talking on the phone about lead tuning weights disintegrating, the information I have (3rd hand) comes from a museum curator, and the recipe they use is for cleaning lead statuettes. They say, boil in water, several changes, followed by immersion in a 10% solution of acetic acid . . ."

A. Thank you for your list of Nicole Freres tunecards, gamme numbers and serial numbers. These have now been incorporated into our records. Please encourage everyone you know who has a Nicole Freres to let us have details of it directly, as our records of this

CRITERION



Rare American disc machine is the Criterion. This 11½in model belongs to Hughes Ryder, New Jersey. See page 145.

maker are now producing some really exciting results, as well as enabling us to help collectors whose Nicole Freres boxes have lost their tunecards, and who can find the gamme number scratched on the end of the cylinder, on the base tuning lead and under the comb at the front of the brass comb base.

NEVER, under any circumstances allow acetic acid, commonly sold as vinegar, to come into contact with lead objects, as it is the industrial catalyst used for converting lead into white lead (lead carbonate), the very process we wish to avoid. We suspect it is the

organic acids in the case of table Polyphons which make lead degradation such a common feature, especially of the 15½" (39.8cm) disc size. Incidentally, it is strange that loss of leads does not make such Polyphons sound wildly out of tune, but merely thin in tone, so that the unsuspecting purchasers often pay such silly prices for them in salerooms. You can try brushing off the worst of the white powder with a brush and then varnish or lacquer the leads, but it would be ideal in most cases to replace the leads and retune; by ear please and not with a machine.

and members may be interested to know some of the things we did during the ten days we spent bringing the box back to a state of near perfection. The work took more than sixty hours, and was indeed a labour of love.

To say that there was no end shake on the spring arbor is an understatement; it was, in fact, so tightly gripped by the motor bridges that they were bent outwards! The cylinder arbor, on the other hand, had so much end shake that it would have been impossible to put the cylinder in register and keep it there without moving in the cylinder bridges. Faults such as these are unlikely to have been present when the instrument left the makers, and a common cause is that someone has removed packing from under one side of a bridge or put some where there was none before; this may even tilt the bridge so much that the pivot binds in its bearing. Only rarely is it necessary to alter the locating pins, and it should be borne in mind that to do so may also involve re-positioning the comb.

We also refinished the barrel, which had been horribly straight-grained with emery paper, and

RESURRECTED

Keith Harding describes two interesting boxes he recently restored

IT HAS been truly said that we cannot own a great work of art. It belongs to posterity, and if we are lucky we may buy the right to live with it for a period, which is both a privilege and a responsibility.

These two pictures, taken after overhaul, show a superb Nicole Freres "Grand Format" four overture keywind musical box, serial number 31021, gamme number 1396. The programme, also found on box number 32029 which belongs to another member, is as follows:—

1. Gazza Ladra—Rossini
2. Der Freischutz—Weber
3. Norma—Bellini
4. Les Huguenots—Meyerbeer

These were all the most popular operas written by their respective composers, the last in date being *Les Huguenots*, which was first performed in Paris in 1836 and in London in 1842. This fits in well with a probable date of manufacture for the box of c. 1850. The large cylinder measures 16.4 inches by 3.8 inches, giving a playing time of nearly three minutes, and the brilliant arrangement of the music makes full use of the possibilities presented by a comb of no fewer than two hundred and thirty teeth; quiet, gentle passages are contrasted with fast, exciting runs in which the whole orchestra seems to be playing at once.

It is only fitting that such an exquisite movement should be contained in an equally beautiful case, veneered in rosewood and marvellously inlaid in brass, mother of pearl and coloured enamel. The programme is engraved on a brass plate inside

the lid. The winding "key" is of the external ratchet type only supplied with the best boxes. If only we could know for whom such a box was first made!

Although the box had been cleaned before we received it, and sounded "good", it was clearly capable of sounding much better,



removed, cleaned and re-lubricated the mainspring (danger; handle with care). All the screws had the inevitable burr marks, caused because someone had used too small a screwdriver, and these had to be removed with a file and the screws polished in a lathe, using flat buffing sticks to avoid rounding the corners. Please note that all finishing is done by hand, and the only part on which it is safe to use the buffing wheel is a case washer. Above all, no abrasive of any kind is used on the comb.

The tips of the teeth were deeply grooved on one side due to the box having played out of register for a long time. This caused the teeth to fall off the pins unevenly, and introduced a sideways vector to their motion. As a result, they tended to vibrate in a sort of figure of eight instead of straight up and down, producing a deviation from the desirable sinusoidal wave form and thereby spoiling the tone. The cure was to hone the tips. This should only be attempted by someone with a great deal of experience, or much damage may result. In this case, the teeth were at least level about the horizontal plane, but the task was made very much harder by the fact that the sides of the cylinder had sagged and the ends of the pins were not in an absolutely straight line; there were bulges coinciding with the positions of the cylinder dividers. This had to be taken into consideration when honing the comb, although the bulges were not visible to the naked eye.

Complete re-dampering was necessary, as the existing dampers were the wrong shape and the wire was for the most part too light in weight for the teeth so that the dampers could not work properly. Of course it is no use dampering a comb unless the pins are straight, and straightening the pins in the usual way with a narrow bore tube took a whole day.

Incidentally, absolute perfection in dampering is the nearest thing to impossibility. The real expert is not someone who listens intently for damper squeaks, but someone who listens to the music.

Final adjustment of the comb is often spread over several days, since the human ear tires quickly. The most important thing is to get the timing right by listening to the chords and watching the teeth. Loudness is not necessarily consistent with quality of sound. In fact, the harder a tooth is plucked, the longer it takes to settle down into a sinusoidal motion and produce a pure tone. That Nicole

Freres themselves were aware of this is shown by their answers to customers asking for louder boxes. Greater loudness without sacrifice of quality could only have been achieved by improving the design of their cases, but the necessary research had to wait for the age of better understanding of acoustics. Perhaps one of our readers who is also a hi-fi enthusiast

would like to write an article on the design of acoustic cabinets, but that is another matter.

This wonderful musical box is now the proud possession of an oil man from Holland, who took it home in his own private plane. Perhaps it is not inappropriate that such a fine operatic instrument is now the property of a Flying Dutchman.



THE two pictures above show the restored transfer-printed lid and the insides of a rare Paillard *sublime harmonie* drum and six bells musical box. The bells are surmounted with enamelled flowers and struck with good quality enamelled beaters resembling insects. There is a tune indicator and the box is fitted with two zithers, one on each musical comb. The cylinder is thirteen inches long with the standard diameter of 2.3 inches.

When it first came in, we almost turned the job down, but for the rarity and probable quality of the box. There were thirteen teeth

broken and twenty-two tips missing, the cylinder needed repinning, and of course governor work was needed.

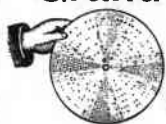
The really interesting thing about this box was that when we had it playing again, we found that the apparently original set of bells were hopelessly out of tune with the combs, in other words, they were the wrong set of bells. We feel that this was an original factory mistake not spotted during inspection, nor, it seems, by subsequent purchasers. This is not the first time that we have found

continued on page 166

CHRISTMASTIMES PAST . . .

MECHANICAL musical instruments have probably always been high up on the list of available and acceptable items to serve as Christmas gifts—although today they are probably far too expensive. On this and the following three pages, we take a nostalgic journey back through the years and, through the medium of old advertisements, see what the spirit of Christmas may once have inspired us to buy. The period is from 1882 to 1923 and all the notices come from the collection of Paul N Ottenheimer of New Jersey

Grand Orchestral Music Boxes.



Playing any number of the most popular airs by means of

CHANCEABLE STEEL DISK.

It is the greatest and most durable musical novelty of this century. Six sizes, \$20 to \$200.00 Catalogue **FREE**.

FRED. H. SANDER, IMPORTER,

146 FRANKLIN ST., BOSTON, MASS.

Above: Fred Sander, Boston importer, preferred to highlight the disc rather than the box itself back in 1891. Right: From 1897 comes this ad for the Criterion, F G Otto's successor to the Capital In New York, M J Paillard was agent for this box, introduced late in the previous year. Below: The earliest notice seen for McTammany's Tournaphone organette, this dates from 1882.



"The above cut represents a new musical instrument which must attract the attention of the world. Its construction and operation are so simple that a child can comprehend and play it, and yet the critical and ingenious artist cannot but admire its novelty, its musical effects and beauty."

Its name is derived from the French "*tourner*," to turn, and the Greek "*phōnē*," a sound—hence the suggestive and euphonious word "Tournaphone."

It is NOT A "Music Box," with ever-repeating monotonous tunes, nor is it one of the numerous progeny of the "Organette;" but it is a complete, full-voiced, delightful musical instrument that will render any piece of music just as it was written, and with such expression, rhythm and power as the performer may wish.

In itself it is a "THING OF BEAUTY," and an ornament to the parlors of the wealthy, and a comfort and luxury in the homes of the millions.

It brings to every family, and puts in the ears and hearts of the present and coming generations, the great music of all time, as well as the popular compositions of the day.

The company manufacturing these instruments has a **LARGE FACTORY IN WORCESTER, MASS.**, with a **NEW YORK WAREROOM AT NO. 7 WEST 14th STREET.** Ample guaranty of its standing will be gladly furnished when asked for.

The Price of a Single Tournaphone with One Piece of Music is \$20.00. Special inducements and prices will be given to clubs or persons remitting for five or more instruments.

Any young man, with proper enterprise, can reap a Fortune in introducing this wonderful instrument, for it will sell itself wherever shown.

Nothing approaching it in perfection, power, and sweetness of tone was ever before seen.

IT IS FULLY WARRANTED in all respects, and will be found to surpass all we say of it.

A Catalogue of Music, with all desired information, will be sent upon application.

Address all correspondence to the

TOURNAPHONE MUSIC COMPANY, Worcester, Mass.

CRITERION

AMERICAN MUSIC BOX

Pronounced by Musical and Mechanical Experts,
"THE WORLD'S BEST MUSIC BOX."
 With an Unlimited Supply of Music at Trifling Cost.

Combines all desirable improvements of instruments of this kind, and besides, possesses many original and valuable features. Suits the solemnity of the hour of prayer and the mirth of the ballroom.

Mechanically, it is faultless. Musically, the highest achievement of its kind. In appearance, an ornament anywhere.

An unselfish companion that caters to your every mood untiringly. It is never out of tune, and being simple and strong in construction, is not apt to be troublesome. The music is obtained from highly tempered steel combs, and each melody is stamped on metal tune disks, which are practically indestructible. Our arrangements of music are as near perfection as the greatest skill and unlimited experience can make them in mechanical instruments.

Free Catalogue.
M. J. Paillard & Co.,
 680 Broadway,
 New York.

ESTABLISHED
 NEW YORK
 1850
 SWITZERLAND
 1814

FOR YOUR CHRISTMAS PRESENT—A

Stella Music Box

The Music Box Par Excellence for the Home

WE state, without fear of contradiction, that never in the history of music-box manufacture has there been a production which for sweetness, harmony, and volume of tone can be compared with our Stella Grand.

We won't ask you to take our word for the wondrous charms of this magnificent instrument. All we ask is that you avail yourself of an opportunity to hear it; we will be satisfied to accept your judgment.

In justice to yourself, you should not purchase a music box without first listening to the Stella. It can be found on sale in every city of importance throughout the country. Where we have no agent will send on approval on receipt of satisfactory references or guarantee. Drop us a line and we will tell you where you can hear it. It plays with feeling, as if the notes were struck by a master hand, and with a precision and accuracy which is simply wonderful.

All the Stella Music Boxes play any tune and any number of tunes, and are the only music boxes using smooth steel tune sheets.

NO PINS
OR
PROJECTIONS
TO
BREAK OFF



NO HOME
IS COMPLETE
WITHOUT IT

UNRIVALLED
IN TONE
QUALITIES

WHAT OUR
CUSTOMERS SAY

"If I could not procure another, nothing could induce me to part with my Stella Music Box."

JACOT MUSIC BOX CO.

59 UNION SQUARE, NEW YORK



No. 80. Oak or Mahogany finish case, with large spring motor, two duplex combs and a moderator to give the desired tempo, dimensions 18 inches long by 17 wide and 11½ high. Price including twelve steel tune sheets, 9½ inches in diameter **\$33.00**

No. 126. Oak or Mahogany finish case, with large spring motor, two duplex combs, and a moderator to give the desired tempo, dimensions 24 inches long by 9½ wide and 12 high. Price including twelve steel tune sheets, 14 inches in diameter **\$60.00**



No. 168. Stella Grand in oak or Mahogany case, with large spring motor, two duplex combs, and a moderator to give the desired tempo, dimensions 29 inches long by 22 wide and 13 high. The case has a drawer that will hold one hundred tune sheets. Price including twelve steel tune sheets, 17½ inches in diameter **\$100.00**



No. 268. Stella Grand in combination cabinet, Mahogany or Golden Oak, Stella Grand movement in a handsome and artistic cabinet combining the box and stand. The lower part is subdivided by a number of vertical partitions for greater convenience in storing the tune sheets. Its dimensions are height 36 inches, width 30, and depth 22. Price including twelve 17½ inch steel tune sheets. **\$125.00**

WHERE WE HAVE NO AGENTS WE WILL SEND
FOR EXAMINATION
Write for Full Catalogue and List of Tunes

MIRA MUSIC

The Sweetest & Most Pleasingly Mellow Music
Ever Produced by a Self-Playing Instrument



We are anxious to prove this to you by letting you hear Mira Music in your own home on free trial.

You will love Mira Music because it is refined music, beautifully rich in tone and variety of musical expression. Its sweet mellowness and peculiarly sympathetic quality give to Mira Music a charm that will afford you genuine enjoyment year in and year out.

**Try MIRA MUSIC
In Your Home For
Ten Days—FREE**

Let us send you a Mira on approval to be returned at our expense if you decide not to keep it. No deposit is required.

Mira Music affords an almost endless variety of popular and classical selections, hymns, sacred music and the old-time melodies. Indestructible, steel tune discs, for nearly

all popular and classic music cost only 20 cents to 75 cents each.

The Mira is Sold on Easy Terms

Prices are from \$25 to \$250, and payments of \$1 to \$2.50 a week make it very easy for you to buy a Mira. You take no risk—your satisfaction is guaranteed by the free trial. Send for Catalog "L" and Free trial coupon. You incur no obligation whatever.

JACOT MUSIC CO. 292 FIFTH AVE. 39 UNION SQUARE
NEW YORK

For **\$2.00** Down—To Literary Digest Readers
Only **\$2.00**—A Beautiful **MUSIC BOX**

Even if you cannot play a single musical instrument; even if others about you cannot play, you can always, at any time that suits your pleasure, enjoy an unlimited variety of the sweetest music from this wonderful Music Box and

AT A COST OF ONLY 25 CENTS PER DAY TO DIGEST READERS.

In order to place this superb instrument within easy reach of LITERARY DIGEST readers, we make the remarkable offer of this \$98 Music Box for only \$100, payable \$2 with coupon below, and the balance in instalments of \$8 per month.



ANTIQUE OAK CASE

Ideal Sublime Harmonie

We offer to LITERARY DIGEST readers for the next few weeks a limited number of Ideal Sublime Harmonie Interchangeable cylinder music boxes, playing 24 tunes, with four cylinders with six tunes each in a handsomely finished Oak or Mahogany cabinet 30 inches long by 15 wide and 11 high, with drawer to hold three cylinders. This instrument is self-acting, being operated by means of two powerful springs, giving a range of twenty minutes with one winding. Each cylinder plays six tunes in rotation, and each tune can be made to repeat at will; the tempo can be regulated by means of a lever. Additional cylinders of six tunes each can be had at any time from our regular stock lists, or made to order with any tunes desired.

The Ideal Music Boxes are remarkably fine, being the best and most durable made.

The tone of the Ideal Sublime Harmonie is of great depth and volume, as this instrument has two combs or keyboards, while the execution of the music is remarkably brilliant, owing to the large number of pins in the cylinders. These instruments are not liable to get out of order, and we guarantee them for one year, but with ordinary care they will last a lifetime.

We will ship this Music Box by freight or express on trial for ten days; if not satisfactory or as represented, it can be returned at our expense. Delivered f. o. b. New York.

**JACOT MUSIC
BOX COMPANY,**
39 Union Square, NEW YORK.

Sign and send us the following coupon

JACOT MUSIC BOX CO.,
39 Union Square, New York.

GENTLEMEN: I enclose \$2.00, in return for which please send me, f. o. b. New York, an Ideal Sublime Harmonie Music Box and four cylinders (24 tunes), as advertised in THE LITERARY DIGEST of October 26th. I agree to pay the balance (\$98.00) in monthly installments of eight dollars (\$8.00) each.

Name.....
Address.....

Charles Henry Jacot founded the Jacot Music Box Company in New York in the 1880s and became the principal distributor for Mermod's musical boxes, both disc and cylinder. Above is a 1909 advertisement for the Mira—the original is printed in colour—which describes its music in glowing terms. Right: Back in 1900, Jacot was advertising the three-cylinder Ideal Sublime Harmonie interchangeable as a Christmas gift to be had on easy terms. Below: The Orchestron Harmonette, no doubt a popular present in 1883. Below right: After the Criterion, F G Otto made and marketed the Olympia in 1898.

THE ORCHESTRION HARMONETTE.



The most wonderful Musical Instrument in the world. It combines both music and musician. Novel in construction; elegant in design and decoration; powerful and melodious in effect; more notes and plays better than \$9 Organettes. It plays any tune—dance, popular, or sacred—and a little child can operate it. A short strip of perforated paper represents the tune. Place the paper in the instrument, and turn the handle, when it will play the tune perfectly. It contains many patented improvements, and is the most perfect

musical instrument in the market. **Price of Music, only 4 cents per foot.** Music can be sent by mail at any time. This is the most beautiful and acceptable present that can be made to any one. It will furnish music for any occasion, and any one can play it. **Price, \$5. Special price to those wishing to act as our Agents, only \$5.** Sent by express on receipt of price. Address, MASSACHUSETTS ORGAN CO., the great headquarters for all MUSICAL INSTRUMENTS, ORGANINAS, ORGANETTES, ARISTONS, TOURNAPHONES, CLARIONAS, etc. Get our Catalogue and prices before buying elsewhere. 57 Washington Street, Boston, Mass.

The OLYMPIA SELF-MUSIC PLAYING BOX

Send for Handsome Illustrated Catalogue of Music Boxes at all prices, and list of tunes.

Insist on an **OLYMPIA**
There is no "Just as Good"



This shows Style IV—highly polished mahogany or oak case—22x30x10 inches high. 77 tunes in comb. Price, including One Tune-Disk, Extra Tunes, 60 cents each.

\$45
Sent on receipt of price, by

is the latest and most improved of all the Music Boxes with interchangeable Tune-Disks.

The Piano the richness attained by the Olympia unless played by six or eight hands, and then the players must be experts—for Olympia disks are as much superior to all others in their correct and expressive rendering as the Olympia Music Box itself is superior to every other make in tone and simplicity of construction.

This Wonderful you'll realize at once; the Richness of Tone durability you'll appreciate years from now, after inferior makes would have been worn out and useless. It doesn't have to be coaxed to play; any child can give the winding crank a few turns—enough for a dozen tunes—so minutes without re-winding. Disks are easily changed—they're practically indestructible.

Over 500 Tunes are ready now, and the latest music is constantly being added.

Charming Home Entertainments may be arranged without notice if an Olympia is in the parlor—Dancing, singing, instrumental renderings—Hymns and Church Music, too.

F. G. OTTO & SONS, 44 Sherman Ave., Jersey City, N. J.
or from Dealers in Musical Instruments.

Q · R · S

TRADE MARK
REGISTERED



THREE THINGS for CHRISTMAS

A PLAYER PIANO—A ROLL CABINET
And a Selection of Q·R·S PLAYER ROLLS

There are many good makes of player pianos on the market. Why do you suppose that 100 per cent of player piano manufacturers recommend Q·R·S PLAYER ROLLS? Because they know that no matter how fine their instrument, it can never produce any better music than is in the roll, and they know that

Q·R·S PLAYER ROLLS ARE BETTER

The CAPITAL Self-Playing Music Box

Plays any number of tunes
Standard and popular airs

Size A, 15x12x7 inches, 44 teeth in comb, with 8 tunes, \$15.00

Size B, 21x14x9 inches, 58 teeth in comb, with 10 tunes, \$28.00

Size C, 26x17x10 inches, 81 teeth in comb, with 12 tunes, \$40.00

Style F, 28x17x12 inches, 162 teeth in comb, with 12 tunes, \$75.00

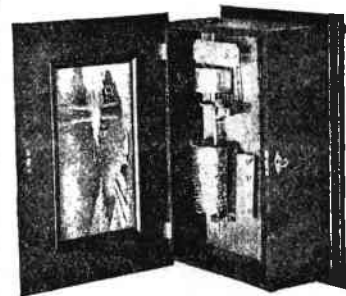
Extra tunes, 20c., 30c. and 40c.

Sent on receipt of price or C.O.D. by

F. G. OTTO & SONS, 44 to 50 Sherman Ave., Jersey City, N. J.

Send for illustrated price-list.

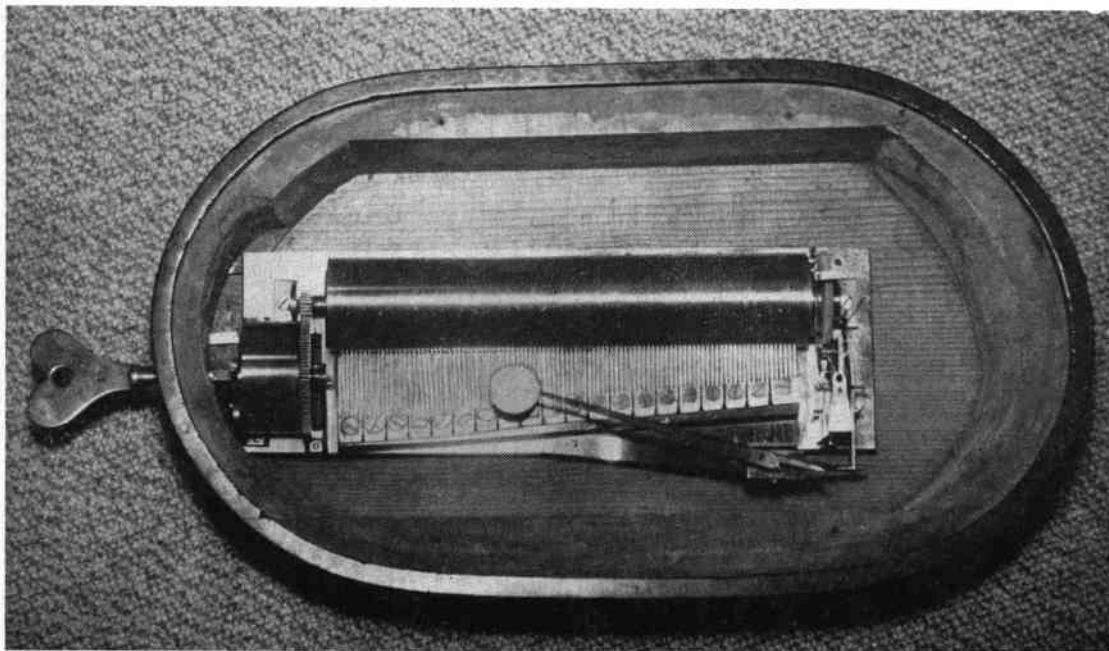
Please mention McClure's when you write to advertisers.



Or can be bought from any dealer in musical merchandise.

F G Otto is mainly remembered for the "cuff" box named Capital, advertised above in 1896. Left: Piano rolls by Q.R.S. were — and still are — ideal low-cost gifts in 1923. Nobody, not even the company itself, knows what Q.R.S. means.

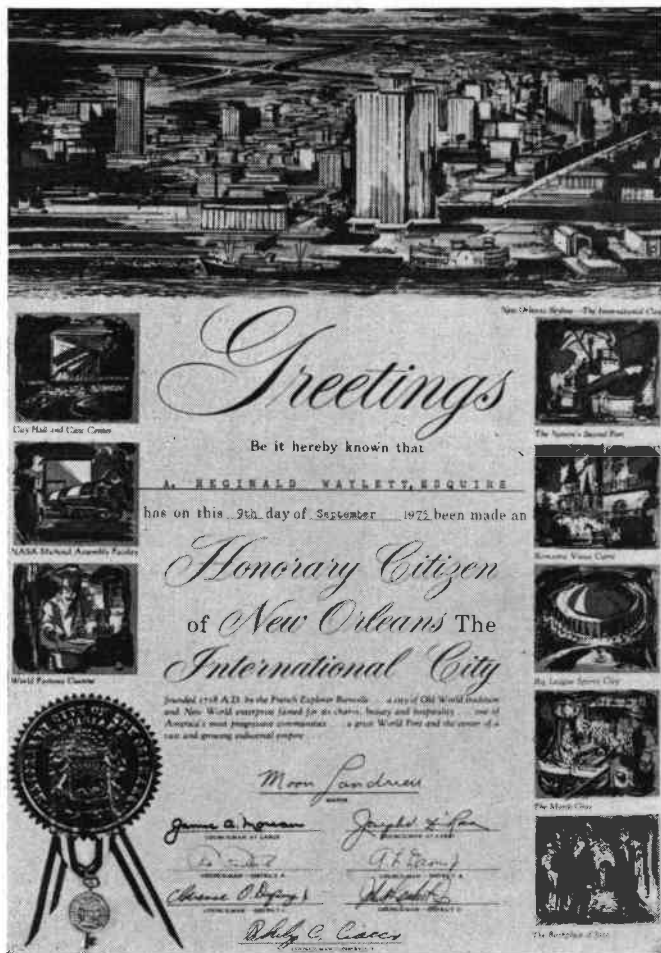
A hundred years before Q.R.S. promoted piano rolls for Christmas, you might have chosen to present somebody with a French ormolu clock which could play music from a musical movement in the base. Seen here (right) is the movement from such a clock which is in the Jackson Fritz collection. Made around 1820 by Henri Capt, who stamped his name on the comb base, the cylinder is $7\frac{1}{8}$ inches long and the 20-segment sectional comb has a total of 100 teeth. The movement is set in motion by a rod from the clock which presses the spoonlike detent above the comb.



EUTERPEPHON



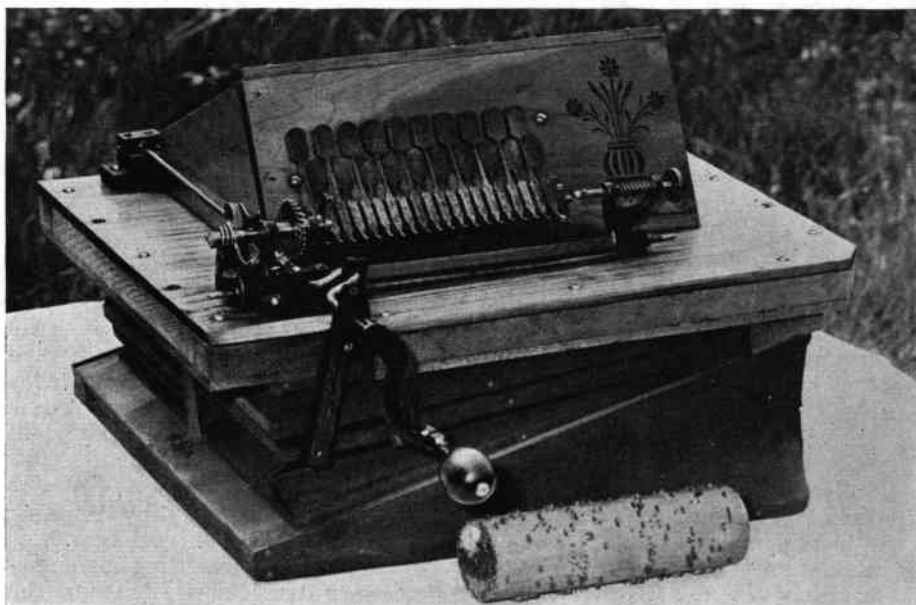
Member Q David Bowers recently sent in these pictures of yet another hitherto unrecorded disc musical box—the Euterpephon. This is the only specimen to have been discovered and appears to be not just a new brand name, but a completely new make of disc machine. The box, which has a single comb and a plain bedplate, appears to play a disc of about 30 cm diameter, but, according to David Bowers, plays quite well with an 11in Polyphon disc. The picture inside the lid shows the robed muse Euterpe blowing two trumpets, one facing to the left and the other to the right. The box is handle-wound from the right side with the stop/start knob operating from the left.



When Secretary Reg Waylett attended the meeting of our sister organisation, the MBSI, at New Orleans during September, his presence was honoured by the mayor who awarded him Honorary Citizenship of the city. Reg Waylett was presented with the coloured brevet reproduced above.

GEM ORGANETTE

A miniature barrel reed organ



THE Gem Roller Organ plays on reeds but, instead of the planar system of programming (i.e. via a punched disc or strip of material), it operates like a barrel organ from a rotating wooden cylinder into the surface of which the music is pinned. Unlike the barrel organ, though, long notes are represented by a row of closely-spaced single pins—there are no bridges.

Manufactured by the Auto-phone Company, Ithaca, New York, the Gem came in two sizes. One played 20 notes from a 6½in barrel, the other 32 notes on a 15in one. Later models were known as the Concert Roller Organ and the large one was the Grand Roller Organ. Seen here, though, is a very early model operating on pressure via open bellowswork.



Technical Topics

THE MECHANICS OF THE GEAR TRAIN

by Ken Fritz

WHAT causes noise, excessive wear, vibration, irregular running and sluggishness in the running of a musical box? How can one estimate friction and try to reduce its effects? How does one design a new wheel for the gear train which will avoid the pitfall of an even ratio? And what about pivot proportions? In this, the concluding article on gear train and governor, Ken Fritz provides practical answers to these questions

BEFORE setting up the gear train, there are several points to which serious consideration must be given.

1. First we must have some idea of the "rubbing" of the teeth in all the gears and relate this to some figure in terms of friction. This is termed the *coefficient of friction*.
2. Next we must allow for the oxide film effect and make suitable allowances for it.
3. We must also know the coefficient of friction in the pivots and at the same time know the ideal pivot diameter for a given gear size.
4. We must know the coefficient of friction in the worm or 2nd wheel and the endless and end-stone.
5. We must know something of the amount of energy from the mainspring and the force it emits as it is transferred through the train and the effect of the total terminal inertia at the governor end upon this force.
6. We must have some value for the co-efficient of friction for the cylinder size to compensate for the drag of the pins on the cylinder as they are drawn through contact with the comb teeth.
7. We must calculate the force required to move the cylinder in order to design a source of power adequate to run the machine for a prescribed time.

Now none of this is an easy task and in theory I can take you through many pages of serious calculations. While this would prove our point, it would, I feel, be an unnecessary complication. The endeavour of this paper is to present information in an easily

understandable form and so I will state an empirical answer to these questions as follows:

Point 1 = .015; 2 = variable as explained later; 3 = .25; 4 = 5.5; 6 = 1.2; 7 = 12.5. The answer to 5 needs calculation.

I will try to relate simply (a) the design of the gear train; (b) tooth loads; (c) friction and wear; (d) lubrication — where and why; (e) fine-pitch gears.

Designing the spur gear train

It is an old axiom in the engineering world to stick to standards in design for cutting tools, assembly, test, etc. But what do you do when the gears were cut from home-made cutters completely individual to themselves?

We are not attempting to design for a modern musical box and as we are not concerned with national or international standards. What we are trying to do is to understand better the musical box as it was manufactured way back in the past.

Ratio

The ratio is more important than readily meets the eye. Wear and lubrication are hidden facts, especially the lubrication. Gear trains are not lubricated by conventional means — Mother Nature does it for us! Where brass and steel work together, an oxide will form between them when exposed to the air. This film of oxide coats the working and wearing surface and actually acts as a form of lubrication for the mating surfaces. When the resistance load is light, as in the musical box, this type of lubrication is more than adequate. As proof of this, examine your

oldest musical box and check the mating gears and pinions of wear and consider the number of years they have been running!

Returning to the question, how does the ratio of a gear and pinion effect the wear and lubrication of these parts? Should the ratio of gear teeth in the pinion and gear be an equal number such as 10 in the pinion and 100 in the gear? If this happens, then one tooth in the pinion will contact every tenth tooth in the gear and this means that lubrication is not evenly spread. Furthermore, if there be an imperfection in one tooth in the pinion, wear in the gear will not take place evenly, and the life of the gear will be appreciably shortened.

In the case where the ratio is not even, one land (tooth) in the pinion will eventually engage every tooth in the gear. It stands to reason that with this condition present, lubrication will be evenly dispersed and wear will be evenly distributed. In total, odd number ratios will always create maximum life by minimum wear in mating gears.

You will find that the total ratio between brass gears and steel pinions in the musical box will always be odd.

Contrary to good contemporary engineering practice, the early designers used a simple method of laying out their gear trains. They simply scribed the pitch circle diameter of the gears and "pitched" them to suit. The cutting of the tooth was generally by trial and error until everything fitted into the layout. Soon it was learned that certain diameters suited a particular pitch for the

number of teeth he desired, i.e. 2:155in was correct for a number 80 pitch and 156 teeth. With a 12-leaf (12-tooth) pinion, he had a 13:1 ratio, the 13 being the odd number we look for as desirable though not always possible.

Gear Noise

Quite often we detect noisy gears and even after cutting a new gear, the noise may remain.

The musical box gear train is of the resistive system in which the governor supplies the bulk of resistance or load to the gears. The

spur gear is adapted to the musical box. These are the two main reasons for noise — the spur gear and the load.

In the musical box there are only two causes for gear noise. Load and wear are one. Excessive load in the governor caused by an ill-fitting 2nd wheel and endless, a scored endstone, worn pivot holes, etc., all contribute to more friction and more resistance. This can cause great noise.

The second reason is not easily noticeable even to the trained eye. The first wheel in the governor

acts as an idler. The idler gear tends to smooth out the roughness in the gear train. The best result is obtained when the teeth of the idler are even to the pinion and great wheel. The great wheel ratio is odd and when the 1st wheel is even, the idler effect is to cancel noise by the phenomenon of being out of phase with the rest of the train by half a pitch. The pinion gear will (or should) have an equal number of teeth in each and naturally the total number of teeth should be an equal number — the ratio does not have to be even.

At some time this wheel and pinion could have been replaced incorrectly. This fault has been the greatest noise-maker of them all. The pivot holes should be a proper fit: loose pivots in the first wheel make noise in the spur gear train.

Pivot proportions

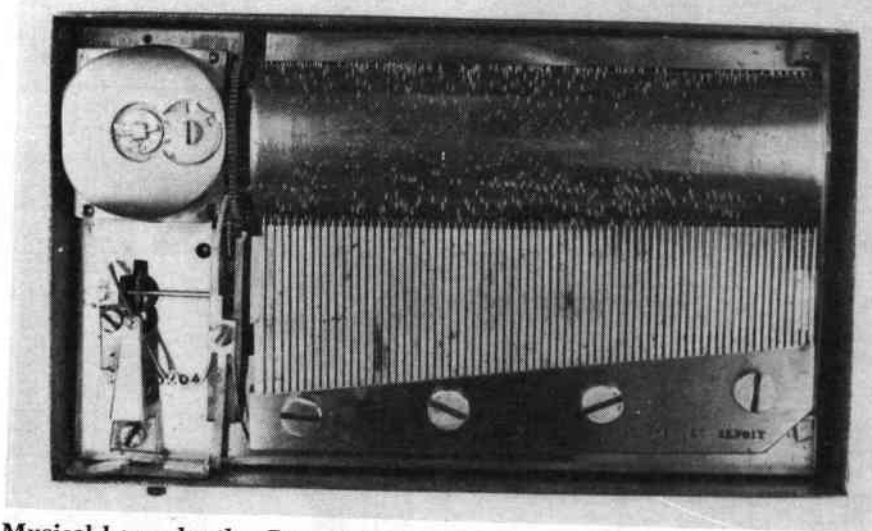
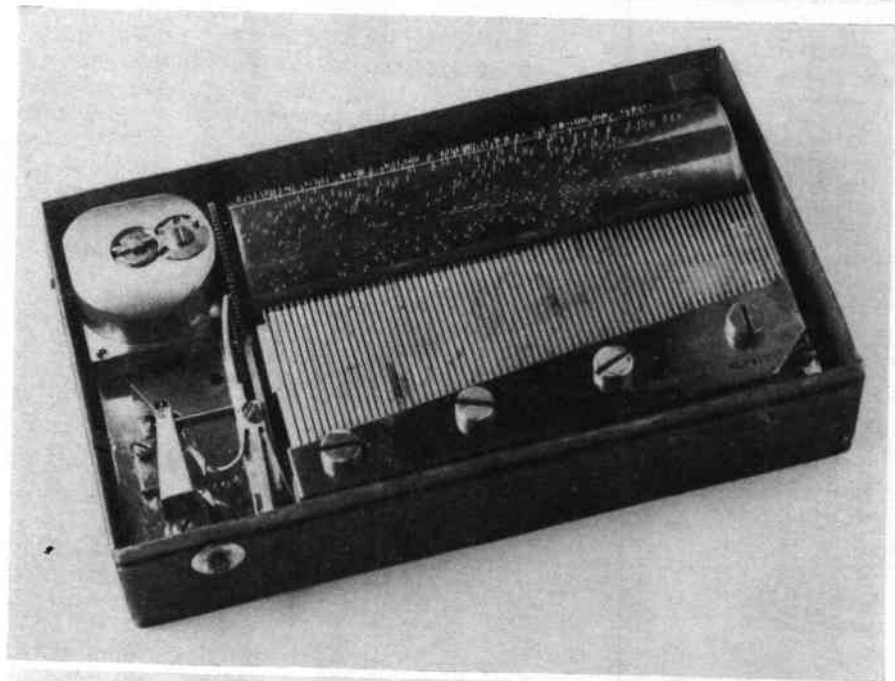
We were speaking of resistance and load and how we must calculate for them in the design of the required driving power. In the total resistance framework is the friction of the pivots, lubrication, slippage or rubbing of the gear teeth creating friction as they mesh, and the weight of the gears on the pivots.

The friction of the gear tooth meshing against its mating pinion, the sliding effect between the brass gear and the steel pinion reflects a proportionate weight factor upon the pivot. This means that the pivot supports more than the actual weight of the mass and must admit of considerable radial loads incurred by the force of its driving gear and the resistance of its mating pinion. The faster a wheel turns or the higher the velocity of the spinning gear, the greater the proportionate increase in pivot side load and hence friction. It is for this reason that a marginally-designed pivot breaks on the second wheel during a run. If a box has had a run and the repairer finds this pinion with broken pivots, he should calculate the load and increase the pivot diameter to the correct dimension.

The first wheel, in its role as an idler gear, directly transmits the energy of velocity-friction-weight from the great wheel to the small second wheel.

I stated earlier that I would try to make this simple and not delve deeply into involved mathematical calculations. I am not going to present constants for these weight/friction factors. I am simply going to give a rule-of-thumb calculation that is within five per cent of any of the complicated approaches.

Martinet et Benoit



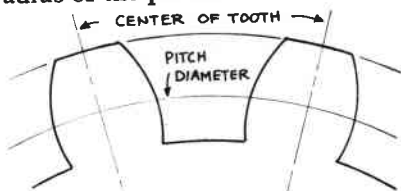
Musical boxes by the Geneva makers Martinet et Benoit are not common. This fine specimen belongs to David E Newland. The name is stamped on the 73-tooth comb and the number 3204 is stamped on the bedplate. It plays three tunes — the overture *Oberon*, *Home, Sweet Home* (with mandolin pinning on the last 13 teeth) and an unknown tune. The case is a plain, undecorated tin box. Benoit is also known as a maker of singing birds.

The rule, for maximum pivot radius is:

$$\frac{Cp \pi}{4}$$

Multiply this by 2 to get the diameter.

This simply means that the circular pitch of the gear tooth multiplied by 3.14159 and the product divided by 4 gives you the radius of the pivot.



Circular pitch (pitch circle diameter) is the distance from one tooth center to its next tooth center at the point where the pitch diameters intersect. Let's say that the dimension is .05in, then:

$$3.14159 \times .05 = .1570795.$$

$$\text{Divide by } 4 = .0392698.$$

We only need three significant figures, so we end up with .039 and

raise the diameter to $.040 \times 2 = .080$ in.

For the minimum pivot size, take two-thirds of .080 which is .054in.

The result we have obtained here is more suited to the musical box and is within the safety limits, so this is the one we use.

Please note that this method does not operate for calculating the endless screw pivot. For this we must use a different method. The rule here is two-thirds the diameter of the thickest part of the endless. This dimension is usually taken at the point where the stop tail is pressed on. For a .100in diameter endless, the pivot would be .067in maximum.

The minimum pivot dimension is two-fifths of the endless diameter which in this case would be .040in.

The happy medium would thus be somewhere about half-way between the two which in this example works out at .050in.

The length of the pivot in the endless is extremely important

because of frequency oscillations mechanically induced from the driving force and imbalance from the windbrake.

The pivot length cannot be more than $2\frac{1}{2}$ times its diameter. For safety it should be very slightly less. In the case of the preferred example shown above, the pivot length would be:

$$.050 \times 2.5 = .125 \text{ less } 10\% \text{ safety margin} = .112\text{in.}$$

Now let's consider the governor that just won't quite run free at the higher velocities but seems to do well in a slow sort of way.

The endless and second wheel seem to fit to perfection; the adjustment on the lower bridge is exactly right (set with the endless running); the endstone has no pits in its surface; the upper endless pivot is evenly rounded with no flat top; the pivot holes are not worn. In spite of all this, the endless just will not run to its required speed even when the windbrake is closed right up to its smallest allowable adjustment.

The remedy could very well be

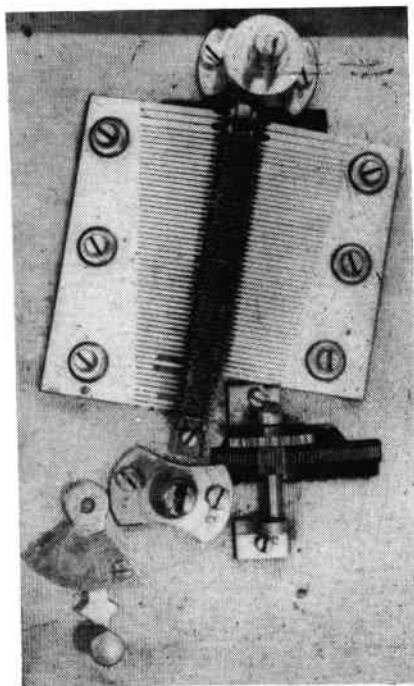
Swiss MB bulletin launched

New French language publication

THE first number of the Bulletin published in Geneva by the Conservatoire Autonome des Boîtes à Musique appeared during the autumn.

Edited by our member J A Horn-gacher, the aims and objects of the Conservatoire are set out on the first page. The Bulletin is aimed solely at French-speaking enthusiasts for the musical box.

Produced in A5 landscape format and lithographed from typescript, the publication is illustrated with nine real photographs, two in colour, spiral-bound with the 34 pages. Two of these pictures are reproduced here with acknowledgement and are taken from a detailed study of two little-known Swiss-made disc musical boxes, the *Polymnia* and the *Gloria*. The former is identified as being the subject of Swiss patent number 26589 dated September 3, 1902, and issued to Jean Billon-Haller who was part of the Societe Anonyme des Fabriques Reunies de Boîtes à Musique which also produced the *Gloria*. Sadly, in quoting reference sources, the Bulletin has failed to illuminate that much of the data subsequently re-published elsewhere originally appeared in *The Music Box*. This also applies to other material

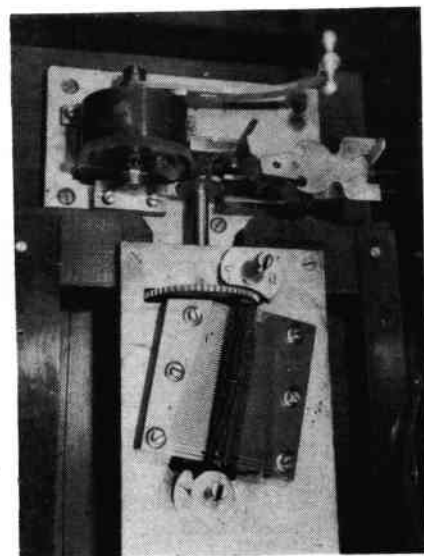


quoted elsewhere in M Horn-gacher's text.

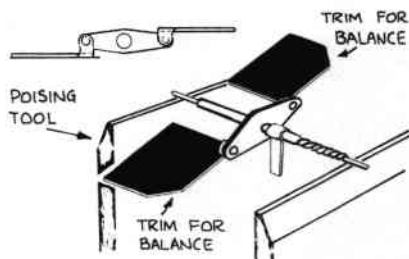
For the French-reading musical box enthusiast, the Bulletin offers much in the way of Swiss-orientated research and opinion on musicwork. We wish it well and trust that the standard set with the premier edition may be maintained.

Details of subscription to the Bulletin of the CABAM can be obtained from M Blyelle-Horn-gacher, 11 Boulevard du Pont d'Avre, CH 1205, Geneva, Switzerland.

Left: Angled duplex combs of the *Gloria* and, below, the similar characteristic of the *Polymnia*. Both are table machines, so the pictures are looking down into the boxes. Both come from the first issue of the CABAM Bulletin.



to remove the endless, open the windbrake to its widest adjustment and balance it on a poising tool.



When one side is heavy and repeatedly settles to the lowest position, file small amounts of metal off the fan tip as shown in the sketch. This must be done carefully, evenly and squarely. Continue this balancing operation until the endless rotates freely on the poising tool and will rest at whatever position you put it without turning.

This simple operation should be a "must" for every job you do as its rewards save many anxious moments in trying to reason out improper endless performances.

To return to gear teeth. This whole matter is of the utmost importance. Too often one sees gears with sections removed and new teeth crudely formed and soldered in. If you stop to consider all the elements of operation through the gear train you will wonder why anyone could approach so hazardous a task with such an obvious degree of blindness.

Working on a musical box without knowledge of the entire reason for its mechanical operation is rather like a surgeon tackling heart surgery without any idea of what the heart is all about!

Perhaps the thing will run after a fashion following a hasty botched job, but how does it sound? Friction, our worst enemy, hides under many guises and we must eliminate as much friction as possible along with resistance and vibration. The early makers of these fine machines designed for 85 to 90 per cent efficiency and when you consider that friction consumes about 12 per cent of the efficiency loss (go back to the start of this article and see where it all goes), you have just got to treat it with care, respect and skill. I cannot overstress the importance of friction elimination. Many musical boxes seem to play quite well but after having gone over them for friction problems, even without tackling anything else, they sound so much better.

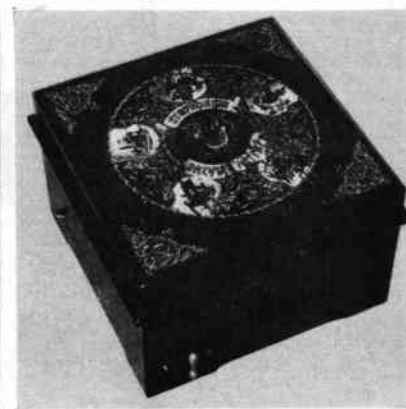
The ogive gear

There are only four profiles in this group of the cycloidal ogive

SMALL-SIZED SYMPHONION

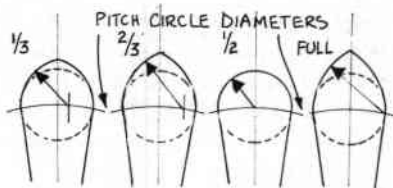


The smallest of the spring-driven Symphonions produced at the start of the disc musical box era had a diagonal bedplate. This one, playing an 8½in diameter disc, is in the Moltzer Museum, Bennekom, Holland. The ornate lid design is a varnish transfer (decal) and the box is lever-wound.



tooth form. They are the $\frac{1}{3}$, $\frac{1}{2}$, $\frac{2}{3}$ and full ogive.

The $\frac{1}{3}$ and $\frac{2}{3}$ ogive simply mean the arc of the tooth developed by the radius struck from $\frac{1}{3}$ the thickness of the tooth as measured across the pitch diameter, or $\frac{2}{3}$ the thickness. The sketch shows this clearly.



The early gear form differed from the gear to the profile of the pinion teeth. It stands to reason that the smaller the pinion and the fewer the number of teeth in the

pinion, the deeper the gear tooth must penetrate. More teeth in the pinion means smaller teeth in the gear and less penetration is required. Which is the most desirable?

The area above the pitch diameter of the tooth is called the *addenda* or "add on" to the pitch diameter. The area below the pitch diameter is called the *dedenda* or "subtracted from" part of the pitch diameter. Early engineering data of gearing forms for driving trains and driven trains holds just as true today. This states that the profile of the gear teeth in driving trains is much more critical than the profile of the pinion being driven.

The musical box gear is termed as a driving train. The gears in fine instruments, watches and clocks are driving trains. However, you cannot put the musical box train in the same category as most driving trains because of the much greater resistance of the governor. And this is the problem.

As the resistance of the train increases and regardless of the power source, the more critical the profile of the addenda becomes. The ratio of power and resistance becomes a prime factor for which there are no constants and, in effect, no simple way to solve the problem.

The solution was by trial and error on the part of the old craftsmen, and for us it lies in attention to detail in the repair department.

The full ogive was found to be best suited for 6 and 8 toothed pinions and the $\frac{2}{3}$ for 10 and 12 toothed pinions. If you will, we will substitute the proper term leaf for pinion tooth.

There is another small problem that presents itself here and this is the ideal thickness of a gear for a particular gear pitch for minimum friction effect. The ideal thickness is $\frac{1}{2}$ the circular pitch dimension but more often you will find it to be a 1:1 ratio. This increases the friction of the train somewhat but it also renders the operation appreciably smoother because of the constant gear contact in the driving mode.

Now comes the big problem termed "the turning error". As the gear tooth turns, it contacts the pinion leaf about 15 deg before the pitch point and loses contact at about 45 deg below the pitch point. At this 45 deg negative pitch point, the pinion will fall backwards until the next tooth of the gear engages the pinion. It is this turning error that produces such drastic wear in

A beautiful present for Christmas !

WELTE

AUTOGRAMME BERÜHMTER MEISTER DER TONKUNST



Prof. Eugen d'Albert playing the Welte-Mignon



FREIBURG i. Baden, June 24. 1913.

How astonishing and deeply affecting it is to hear one's own playing, recorded years before, rendered with the utmost perfection by the Welte-Mignon.

The reputation which the Welte-Mignon pianos enjoy, of being the best instruments of the kind, rests on the unshakable foundation of this faithful reproduction of individual play; and it is a source of pleasure and artistic satisfaction to me to have confided to the Welte-Mignon to day an extensive and varied programme which will transmit my art to posterity.

Eugen d'Albert.

Here we offer to all members of the Musical Box Society and particularly to Welte fans one of the nicest books to be published concerning the Welte. More than 70 pianists who recorded for the Welte reproducing piano wrote about the "Welte-Mignon" system. Each autographed letter is translated into two other languages so that every one may be read in English, French or German. Beautifully produced with gold-blocked cover. Approximately 100 pages, 35 × 25cm. Regular bookshop price is £16.50, but MBS members can secure a copy of this prestigious production for just £12.50. **WARNING:** Only 500 copies have been printed, so order while stocks last. Also offered is our facsimile reprint of the Instruction Manual for the "red" Welte reproducing piano system.



25 pages in German only. Well illustrated, 30 × 22cm. Send £2.00.

At last you can buy a beautiful catalogue of hand organs, street organs and orchestral organs made by Wilhelm Bruder Sohne. Fine facsimile edition, 18 pages, 30 × 22cm, in four languages —English, German, Spanish and Italian. Send £2.00.



**Drehorgeln
und pneumatische
Orchesterorgeln**

- Barrel-organs and pneumatic
orchestral organs
- Organos de manubrio y órganos
orquestales pneumáticos
- Órgãos de manivella e órgãos
orquestres pneumáticos



Große Orchester-Orgel

mit elektrischer Tastatur und pneumatischer
und Chordorgel-Orchestration

Alle Instrumente sind handverleitet. Die Orgel ist in der Lage, die
komplettsten Orgelwerke zu spielen und zu spielen, indem sie die Orgel
eigenen, elektrischen Steuerung und Chordorgel-Orchestration

SPECIAL-ANSTRICH ORGELN

Chordorgel in der Orgel-Orchestration, Chordorgel in der Orgel-Orchestration

WERNER BAUS

Director of the Mechanisches Musik Museum, 3501 Fuldatal 2,

Hopfenbergweg 32, Germany

Telephone : (0561) 811412/812951

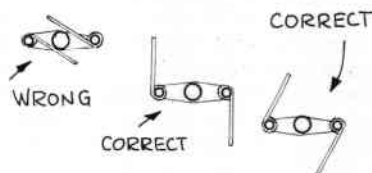
the pinions, and there is nothing we can do about it, short of replacing the worn parts.

The point I am making is this: imperfect profile in the gear tooth at these sections of the gear where replacement has been made initiate a cycle of events. First there is the wear factor of the even or odd ratio between gear and pinion mentioned earlier, then there is induced vibration, increased friction in mesh, obliteration of the oxide film lubrication, and quick, drastic wear in the pinion. On top of this there is the effects of added friction and velocity load upon the pinion pivot and the extra wear along with possible breakage. All this can result from only one or two teeth improperly replaced in the gear.

Summary

If a musical box is noisy and squeaky in the gear train and governor, the first think to do is to check the gears and their teeth profiles for excessive wear or irregular-shaped replacement teeth. Also you must examine pinions, that may have worn oval shape, and pivot holes which may be worn.

Examination should also include the balance of the endless with the windbrake and stop tail intact. And, of course, all worn parts should be attended to.



Before doing any of this, do not forget to remove the comb.

Another point to watch for is pin alignment as bent pins offer increased resistance at the most critical point. Sometimes, the correction of bent pins can alone solve the problem of slow-running boxes when everything else appears normal.

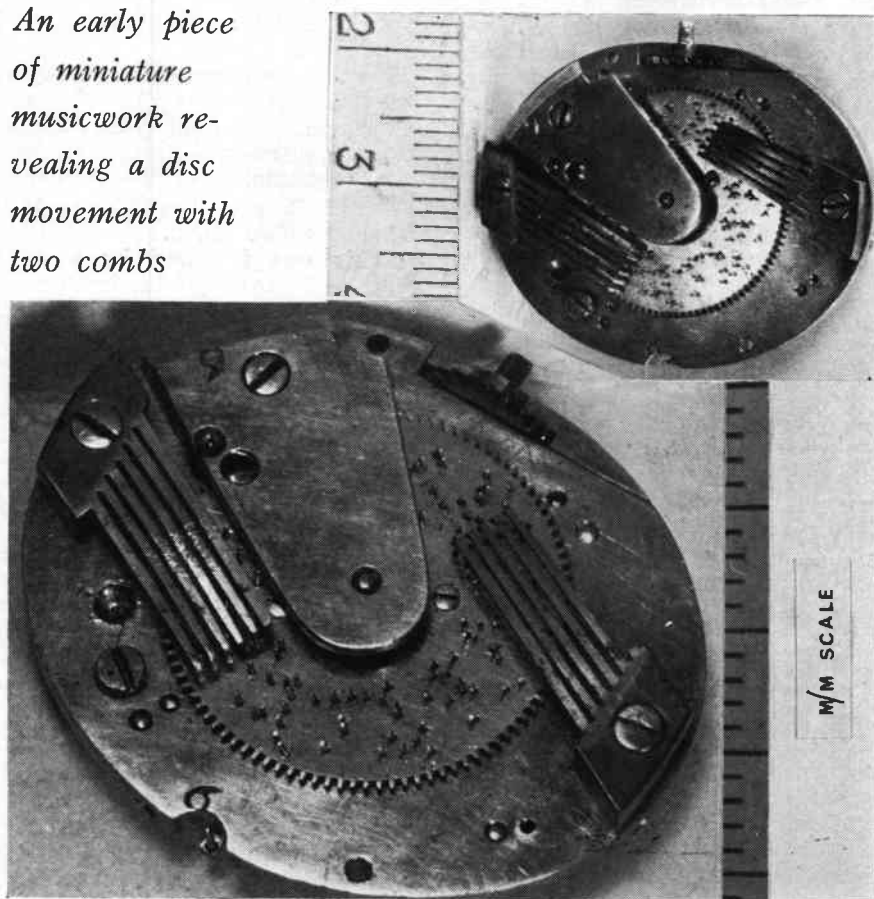
Pay particular attention to the governor alignment. The angle of the screw as it addresses the second wheel, the angle of the governor body to the great wheel, and the depth of the great wheel teeth to the first wheel pinion. You may have an ill-fitting governor due to the previous attention of unskilled hands.

Notice the overlap of the cylinder pins to the tip of the comb teeth. This should be equal from one end of the cylinder to the other and no more than half the width of the tip.

Of course, you should check

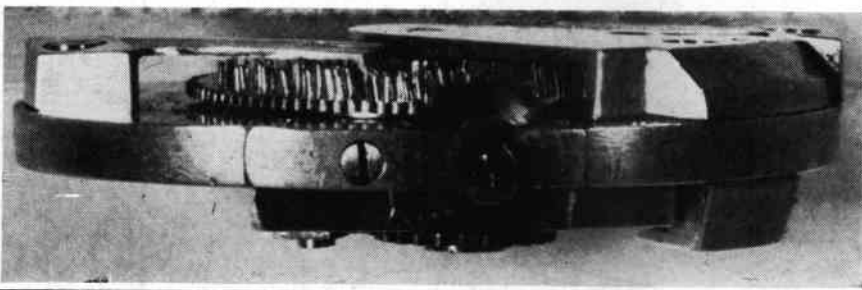
PLATFORM + COMBS

*An early piece
of miniature
musicwork re-
vealing a disc
movement with
two combs*



This tiny musical movement, pictured against a scale, represents a *sur plateau* layout playing in conjunction with two small one-piece combs, both of six teeth (one tooth is broken). This format is illustrated in Chapuis' *Histoire de la Boite à Musique* (Fig. 158) where it is suggested as dating from c.1810. Although the pins appear somewhat crude (see edge-on view below), the developments demon-

strated by this specimen would appear to indicate an appreciably later date. Simpler to make than the normal single-toothed, radially-orientated *sur plateau* mechanism, no reliable date can be attributed to the piece but it would now seem better placed at a later epoch. Seen in the context of the comments on page 51 concerning *sur plateau* styles, this could be as late as the mid-19th century.



that the mainspring is not gummed up — that will certainly cause your box to run slow !

The endless should be examined for wear ridges in the bottom of the screw where initial contact is made with the worm wheel, and the pivots checked for form and fit.

Check the windbrake for align-

ment of the fan. Most of these are improperly set in the attempt to speed up the box when the main fault was in the gear train. Usually when the windbrake is set incorrectly, it is a tip-off that there are serious problems elsewhere.

Check any oil sinks and, where the edge are rounded, sharpen them with an oil sink burnishing tool.

Winter Meeting Report

THE Autumn Meeting of the Musical Box Society of Great Britain was held on Saturday, October 18, 1975, at The Kensington Close Hotel, London, W8. Some 96 members and guests attended the meeting which began at 10.30 in the morning with a repeat (by request) of T Bowman's talk "Making Organ Book Music."

Aided by a tape-recorder, a slide projector and an overhead projector, Mr Bowman set out the requirements for arranging music for fair organ and then illustrated in a singularly effective way the methods he used. With the music playing on the tape-recorder, he passed the actual book of music beneath the overhead projector to illustrate the precise melody, accompaniment, counter-melody and bass plus percussion perforations.

This was followed by the Rev. Jonathan White whose talk, "From one beginner to another", highlighted his approach to collecting which centred on exchanging one piece for another and so not retaining an item for too long. His theme was the need to circulate instruments so that a wider circle of enthusiasts might benefit from them.

Following the luncheon interval, Claude Marchal from Paris gave an illustrated talk on his newly-formed museum in France and the formation of the new French-speak-

ing association of "friends of mechanical music."

Jocelyn Walker then spoke to the accompaniment of tapes and slides on "Wall to Wall Musical Boxes", demonstrating just how many examples of musical box craftsmanship can be inserted into a co-operative home.

This was followed by a brief slide and tape introduction to the West Cornwall Museum of Mechanical Music presented by the Editor as a prelude to the meeting we are to hold at the museum on March 13-14 of next year.

A number of members exhibited musical boxes and the usual sales tables were busy. One interesting demonstration taking place during the day was of a new tuning aid, the Diotuner, discussed elsewhere in this issue.

In the absence of President Cyril de Vere Green, who was that day en route for New York, the meeting was chaired by Vice-President Chris Thompson—his first official duty since assuming office on the retirement of David Tallis at the Annual General Meeting.

Change of Treasurer

PRESSURE of business forces Keith Harding to retire as Hon Treasurer at the end of this year. We thank him for his services during the past two years.

The duties of Hon Treasurer will now be divided between Secre-

tary Reg Waylett, who will be responsible for the handling of subscriptions and other receipts as well as expenditure, and Stephen Cockburn who will assume responsibility for accounts and budget control.

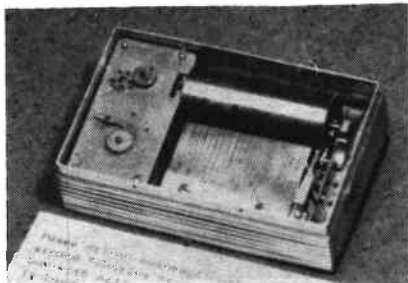
Directory of Members

A NEW edition of the Directory of Members is being prepared for publication with the Easter edition of the current volume.

The Directory, a valuable adjunct to all members, will be in matching format and size to *The Music Box* and will provide the names and addresses of members at home and abroad, as well as a country-by-country listing which will include all members to date.

The Directory, published every two years, is a source of continual reference to everybody and, as before, it will carry a certain amount of advertising space. All who would be interested in advertising in the new Directory are urged to contact the Advertisement Manager, Arthur Heap, as soon as possible to reserve space. His address will be found in the centre column of page 125.

MINIATURE BOX BY BRUGUIER



On page 120, Howard Fitch referred to his small silver musical box with fusee-driven movement and single-piece comb. This most unusual and interesting item, which bears the number 338 and the signature of Charles Bruguiier, has a London hall-mark of 1816 and an 1879 repair mark by V Billiet, 52 Great Marlborough Street. Teeth and tuning weights are cut from one solid piece of steel and the bass teeth are on the right.

Annual subscriptions to rise in January

ANNUAL subscriptions rise to £5.00 as from January 1, 1976. Members in the United States and Canada will pay \$12.50.

At the Annual General Meeting in June, it was voted that the Committee should have vested in it the authority to discuss and evaluate the whole question of subscriptions and to decide whether or not to raise them.

A meeting of the Committee, held at the home of President Cyril de Vere Green on October 8, decided that by the first half of next year, the Society would be forced to draw on reserves in order to meet its running commitments. Rising costs, in particular tele-

phone and postage, have eroded the strong position which the Society had at the end of last year and, in spite of an influx of new members, the rapid rate of inflation had hit hard at our cash flow.

The decision was therefore taken that membership dues would rise on January 1, 1976, to £5.00 for UK members, and \$12.50 for Canadian and US members. Because of the enormous rise in overseas postage and airmail rates, those members in the United States and Canada who wished to receive their journals by airmail would now be asked to pay an extra \$12.50, making a total of \$25.00 per year. The entrance fee of £1.00 (\$2.50) remains unaltered.

WANTED

GOOD TREBLE HALF (Top 37 Teeth) OF UPPER COMB FOR A STELLA 17½"

Will be pleased to consider the purchase of an entire scrap machine provided a treble half comb is there, or just the half comb. (Double comb machine, combs identical).

Please state non-haggle price

George Worswick

108 STATION ROAD,
BARDNEY, LINCOLN

Telephone : 052-63-352

* *

Any Assistance Most Welcome

Information also sought about 'fan disc' or 'pinned disc' movements, also 'rigid notation' movements. This is for research with a view to publication. If you possess or know of any such movements, would you kindly communicate with me?

Many thanks.

THE PERFECT

CHRISTMAS PRESENT

Send postage for FREE up to date lists of Books on Mechanical Music (7 pages), Records of Mechanical Music (3 pages) or Books on General Horology (5 pages)

or

Why not subscribe to our House Magazine cum Catalogue, "The Clock and Musical Box Collector", subscription just two pounds (£2) or five dollars (\$5) direct from:—

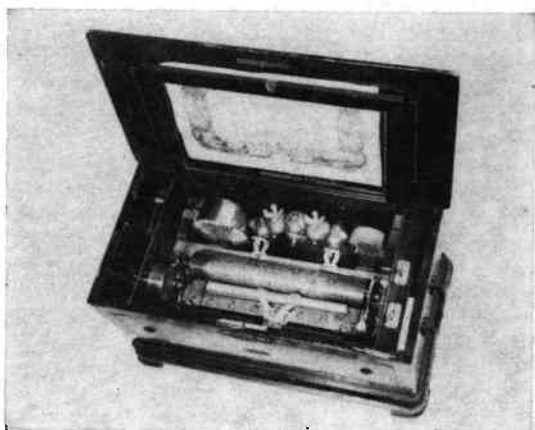
KEITH HARDING,

93 Hornsey Road,

London N7 6DJ



King & Chasemore at the Pulborough Salerooms



A 19th Century Swiss musical box sold for £500

Specialist Sales devoted to Musical Boxes, Polyphons, Phonographs, Clocks, Watches, Scientific Instruments, etc., held every nine weeks.

Illustrated Catalogues 60p (70p by post) from King & Chasemore, Fine Art Dept., Pulborough, Sussex (tel : Pulborough 2081).

Established 1840

NO BUYERS COMMISSION

FOR SALE

SETS OF PIN SETTING DEPTH PUNCHES as described by Keith Harding on how to repin cylinders.

Set of 4 punches post paid 15 dollars per set.

TOOL FOR STRAIGHTENING CYLINDER PINS

(much better than hypodermic needle)

6.50 dollars post paid.

TOOL FOR ADJUSTING DAMPERS

on most disc musical boxes.

6.50 dollars post paid.

LARGE SELECTION OF PARTS for a 27" AUTOMATIC REGINA

Combs, dampers, spring motors, etc.

WANTED

9½" diameter STELLA DISCS and discs for a GLORIA music box.

RICHARD E. BAKER

696 Ramona Avenue, Sierra Madre, CA 91024,
U.S.A.

Tel. (213) 355-0593

Mekanisk Musik Museum

Vesterbrogade 150 / Copenhagen / Denmark

Dozens of Polyphons! Dozens — that's right, dozens — of Symphonions! Dozens (we're not kidding!) of Kalliopes! Plus dozens of other disc music boxes as well. You have your choice of these and hundreds of other automatic musical instruments available right now from the Mekanisk Musik Museum in Copenhagen. Over the years we have been important suppliers to members of the Musical Box Society of Great Britain. If you are a dealer, it will pay you to get acquainted with the world's largest wholesale stock of instruments. Where else in the world can you buy 100 or 200 music boxes at a time! Or, more realistically, if you are seeking a few boxes or a couple dozen boxes, we can help you out with these as well. Our prices are wholesale — with lots of room to make an attractive profit.

If you are a collector, you will appreciate the savings you can make by purchasing here. We invite you — collector or dealer — to subscribe to the "MMM Review", a large illustrated magazine which is published approximately each eight or nine months. A copy of our recent "MMM Review" No. 5 featuring the Geneva Collection is yours for \$2.00 (80 pence), or you can subscribe to our next six issues for \$10 (4 pounds). Our "MMM Review" No. 6, which will feature a fantastic selection of instruments in all categories, is scheduled for completion and publication late in 1975 or early in 1976. Your complete satisfaction is guaranteed with our catalogs. If you do not find them to be the most interesting you have ever read, then just let us know and we will refund your money — and you can keep the catalog free of charge! Nearly all really active MBSGB members are on our mailing list — so if our list does not include you, you are really missing what we consider to be the very best buys in the business! By the way, each issue contains some interesting articles as well — recent issues featuring such illustrious authors in our field as Arthur W. J. G. Ord-Hume, Graham Webb, and Harvey Roehl.

Right now we have available in stock for immediate sale f.o.b. Copenhagen (with easy shipping arrangements to Great Britain) approximately 500 automatic musical instruments of all kinds — disc music boxes, cylinder music boxes, organettes, reproducing pianos, orchestrions, fairground organs, and so on. If your travel plans include Denmark, be sure to pay us a visit! It is best to let Claes Friberg know in advance you are coming for our for-sale items are located in several warehouses around Copenhagen. However, no advance notice is required to visit our permanent museum display of instruments. The museum is open daily except Monday and Tuesday.

Are you an active collector or dealer? Then, whatever your requirements are we are sure you can find the right item at the right price at the Mekanisk Musik Museum! And you will like the way that Claes O. Friberg and Q. David Bowers, directors of the Mekanisk Musik Museum, do business. Over the years it has been our pleasure to have help build some of the very finest collections around the world — not to mention supplying large dealers' stocks in America, Europe, and elsewhere. We look forward to hearing from YOU!



Ormolu cleaning

Gerry Planus writes from White Plains, New York, criticising the advice published on page 60 concerning the cleaning of ormolu and warns that it can cause damage

ORMOLU is bronze or brass which has been mercurially gilded. It is easily cleaned by taking the parts to pieces, immersing them in warm soapy water, leaving them to stand so that the soap can work on the dirt. After about half an hour, remove from the water and scrub with a *very soft brush*, paying attention to the cracks, corners and piercings. The smoother parts will come clean as you concentrate on the intricate bits. Repeat the process again and then dry—I use a hair-dryer to get a hot blast of air which warms the item completely. Make sure that any iron screws and threaded parts are thoroughly dry. Place a drop of oil or grease on the iron parts to stop any rust forming and to help when replacing the nuts which normally hold the parts together.

Electro-plated gilding is usually found on later (after 1870) musical box handles and decorative bits, and it is normally easy to check whether you have real mercurial gilding or electro-plate. Mercurial gilding normally did not extend further than the edges, so that the back of the item is not gilt and retains its natural dull bronze or brass finish. Mercurial gilding also has that lovely yellow buttery look which electro-plating does not usually have though I have seen some good electro-plating but not much.

Thin coating

Electro-plated items are immersed and therefore the plating covers the whole surface, back and front, as the stopping process used in mercurial gilding (in order to save gold) was not considered necessary as the thickness of gold was so much thinner and the overall effect could be controlled. Because of this, the layer of gold deposited was microscopically thin and it became necessary to finish off by lacquering the items so that this thin layer was not rubbed off in handling the item.

If metal polish is used on these items (as advised in Novice's Corner on page 60) the lacquer and the layer of gold will most certainly be removed. It will be harder to remove mercurial gilding but that will also come off with the enthusiastic rubbing practised by someone wanting to see his items

come up nice and shiny. The general rule is to keep all abrasives (and this includes polishes) away from any type of gilding.

If the item is so bad that it has to be re-gilded, my general advice is mercurial gilding, failing which wash it so that all dirt is removed and when the gold has been removed, just brush some clear lacquer on the bare parts to stop the metal tarnishing. *Do not have it re-gilded* by electro-plating since parts so treated will have an entirely different look and you will spoil the value of the item.

Electro-plating

If your article is electro-plated and its condition is bad, by all means go ahead and have it plated again, but as there are many different colours of gold in electro-plating, you will have to tell the plater which colour you want it to be—and also be sure to let him know how long you want the item left in the solution which controls the thickness of gold laid on the item. It should be borne in mind that nowadays in the plating process, the layer of gold put on your item may be as little as one-millionth of an inch, and a heavy

coat of lacquer is sprayed on to protect it. See therefore that your gilder puts a decent layer on so that if you dust the item with a light cloth, it will not rub that millionth of an inch off.

Finally, can I ask if anybody has any practical experience of mercurial gilding, or has a complete description of the process in current English? I would be pleased to hear from them as I have acquired a magnificent musical and automaton clock made for the usual oriental emperor which some twit has electro-plated. Naturally, I want to get it back to its original mercurial gilded condition.

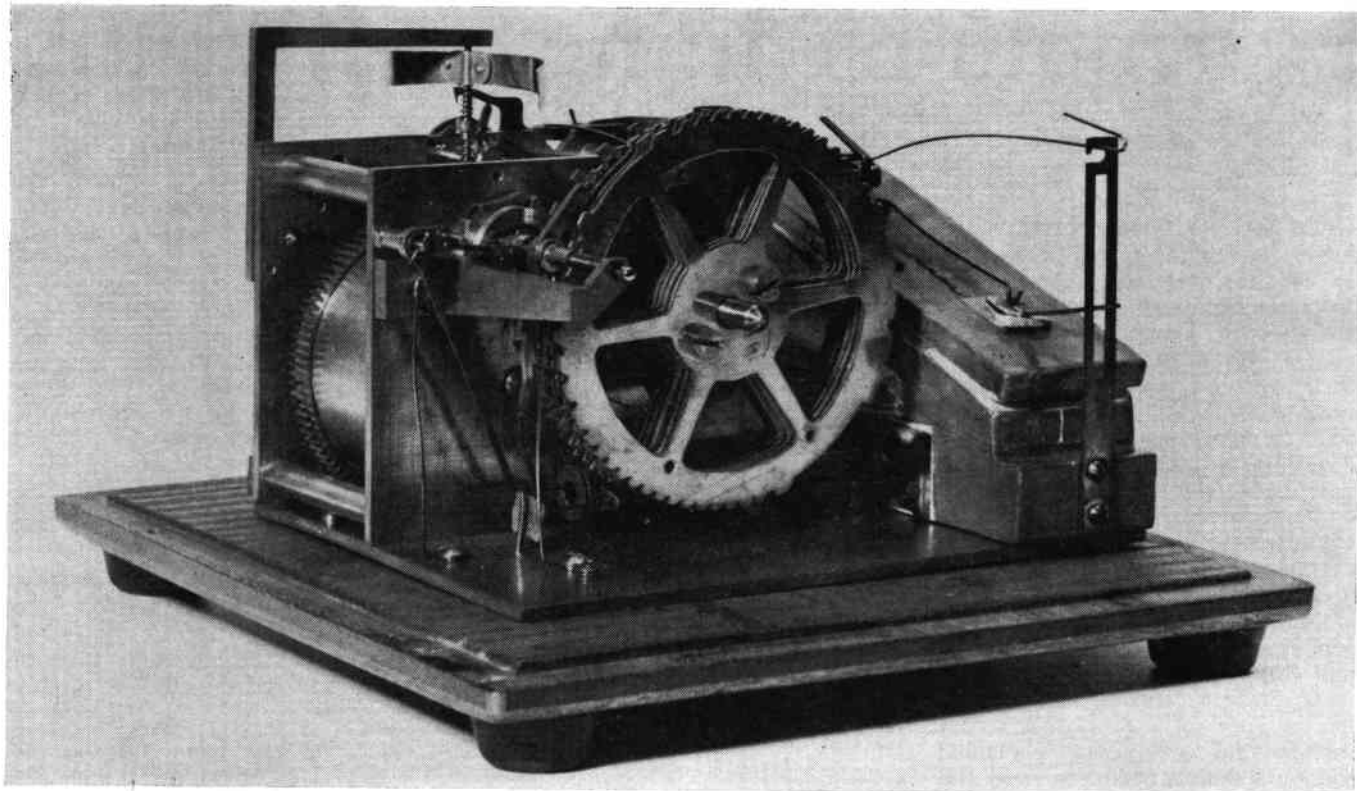
I understand that mercurial gilding is a dangerous process, and therefore I don't want to end up any madder than I am already, which is what used to happen to the hatters when they used mercury in their manufacture of hats. Any help would be highly appreciated.

Workable descriptions of the mercurial gilding process can be found in, among other works, Beeton's Dictionary of Science, Art & Literature, Volume 1, (c. 1890); Cyclopaedia of Useful Arts, by Charles Tomlinson, Volume 1, 1854; and the Encyclopaedia Britannica, Volume 10, ninth edition. The handling of mercury and the inhalation of its vapours when heated is most injurious to the health and, more important, its effects are permanent. Our original item on page 60 should not have referred to ormolu, but to spel'er. Even so, warm soapy water and brushing is undoubtedly a safer method to adopt. Editor.

Disco..

This fine specimen of a Size 0 Fortuna made by J H Zimmermann of Leipzig is to be seen in Utrecht's Nationaal Museum van Speeldoos tot Pierement. It plays discs 47.5cm in diameter. The disc? It's *The Blue Danube*! The case is most ornately finished and, characteristic of both Adler and Fortuna, the motor is covered with a glazed panel.





CHANT DU ROSSIGNOL

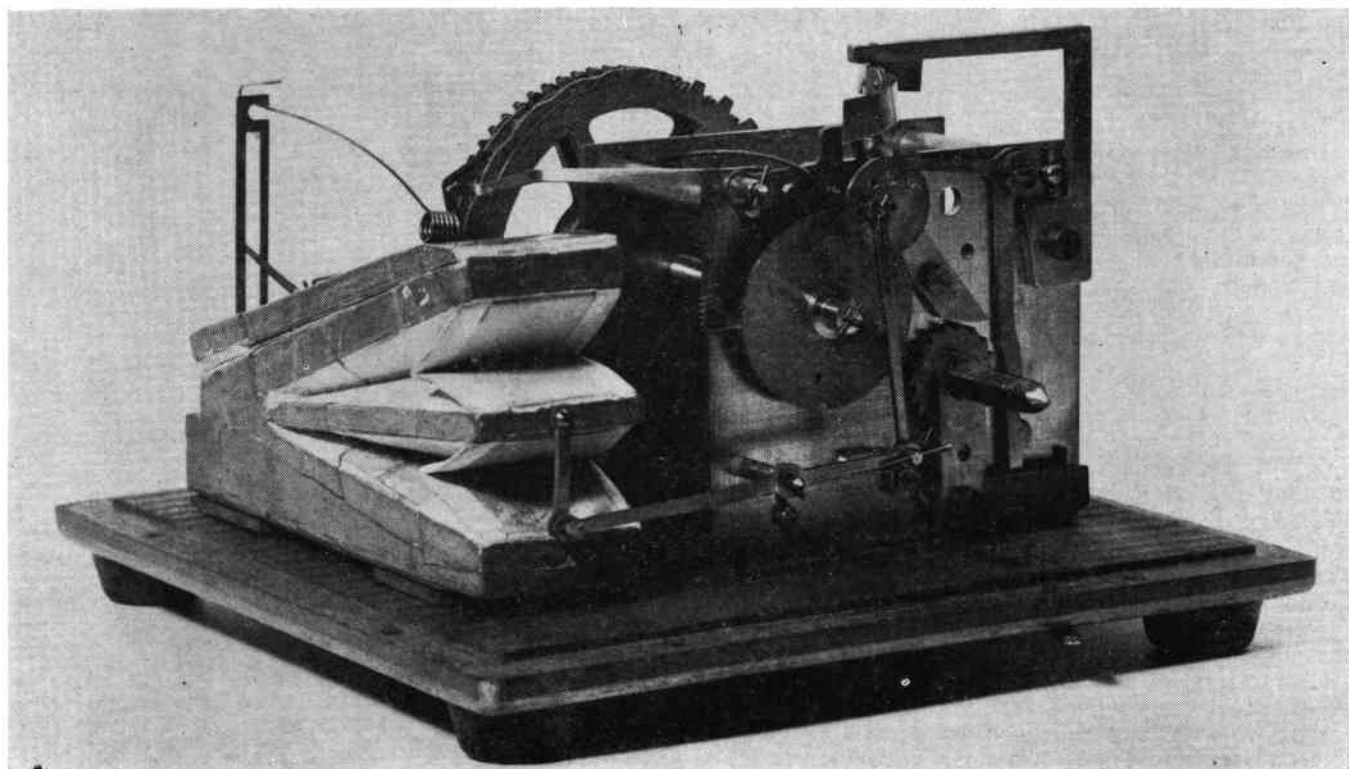
ON pages 106 and 107 are featured a miniature singing bird mechanism of the type capable of being carried in the vest pocket. Another type of singing bird is the caged variety shown on page 127 whose music-work was shown on page 51.

Another type of singing bird is represented here—the *chant du*

rossignol or nightingale song. This variety is quite different from the other types in that (a) it has no visible representation of the bird; (b) it is housed normally in a plain wooden case; and (c) it is large enough to admit of certain refinements denied the other sorts.

One feature of the *chant du*

rossignol which is characteristic of the type is the two-position song control. First there is the ability to have continuous song, the song-cams being indexed sequentially and continually until the clock-work spring runs down. The second position is a delay sequence which allows the mechanism to



JACK DONOVAN

93, PORTOBELLO ROAD,

LONDON, W.11.

Telephone

01 - 727 - 1485

Specialist in
Mechanical Music
Automata
Singing Birds
Music Boxes
Polyphons
Juvenalia
Unusual Clocks
Phonographs
Gramophones
&c



sing for a predetermined phrasing of the song whereupon the mechanisms comes to a halt with the bellows reservoir filled with wind. As the bellows gradually collapses through the gradual seepage of air, a detent is freed and another phrase is sung and the process repeated. When in good condition, the period of delay can be in excess of 45 seconds.

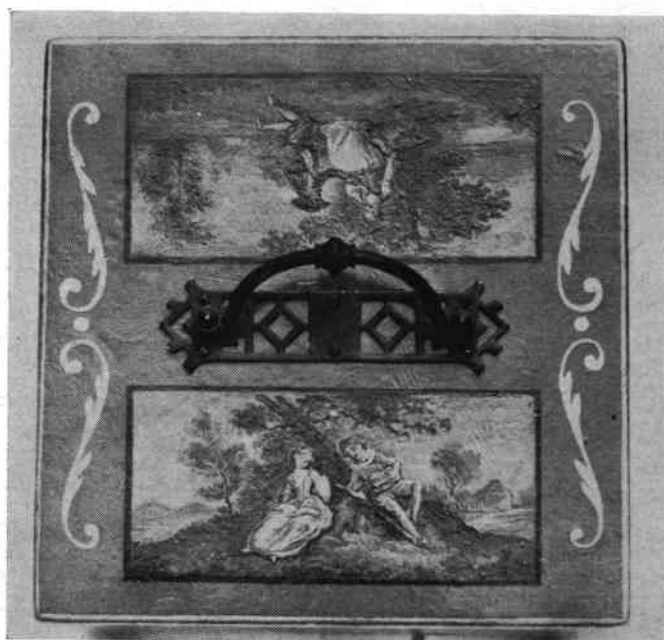
The specimen illustrated here recently passed through the hands of Keith Harding and is altogether a rather special model. Said to have been commissioned by Queen Victoria as a present for Princess Beatrice probably sometime around 1890. It was sold at the sale of Princess Beatrice's effects held at Kensington Palace in the 1950s.

The piece is contained in a

painted wooden case finished in red lacquer with bucolic paintings in panels on all sides. These lack the subtlety of Gamble yet those on the top (a pair) are almost Watteauesque in their subjects.

In the top picture on page 160 the whistle can be seen lying behind the cam wheels at the bottom. The maker is unknown, but it is almost certainly French.

Facing page, top : Song cams and whistle. The vertical guide on the bellows serves to restrain the reservoir spring and to trip the spill valve. Lower : French feeder-type bellows and adjustable linkage. Left : the top of the lacquered wooden case. Below : one of the four similarly-decorated sides.



TUNING pianos properly is a job for the craftsman tuner. It is said to take seven years to learn how to tune a concert grand and the tuner in past eras was considered a respected necessity if you had a piano in the home and wanted it to sound reasonable.

However, in recent years fewer and fewer youngsters are entering the profession with the result that tuners today are both rare and expensive, no doubt accurately working on the assumption that, like doctors and accountants, they know demonstrably more than you about their subject and you can afford to wait and pay. One cannot blame them for although a few years back piano sales were declining, they have revived and now there is more work than the limited number of men can cope with.

Those of us with player pianos reproducing pianos, piano-orchestrons, barrel pianos and suchlike know only too well how shattering our treasures can sound when slightly out of sorts temperamentally and so *The Music Box* was particularly interested to meet at the October meeting in London an instrument called the Diotuner and its inventor, electronics expert Anthony Marshall.

Mr Marshall's claims for his tiny box appeared rather extravagant, particularly when we found that it sells for £138 including tax which is about one third of the price of anything similar on the market. We gladly took advantage of the opportunity to borrow one for some practical trials and were frankly surprised to find out in practice that it lives up to its claimed characteristics, one of which was tantamount to saying you could be stone deaf and still do a perfect job!

The Diotuner is a small metal box measuring 6½in x 4½in x 4½in (165 x 114 x 114 mm) and has a built-in carrying handle-cum-stand. It has no external wires or leads and is completely portable and self-contained. One 9volt battery is housed in a hinged compartment in the back secured by thumbscrews, and a built-in microphone is provided. Inside the box is a high-gain amplifier and a master oscillator which has an adjustment of ± 50 cents.



Piano tuning revolution?

The output is selected by a seven-position octave knob and a 12-position individual note knob so giving the 84 notes of the average piano in equal temperament to a claimed accuracy of better than one cent. The actual circuitry of the Diotuner was designed by computer which optimised the entire frequency range to a high degree of accuracy.

A display formed by seven light-emitting diodes (LEDs—the same as in pocket calculators) arranged in a figure 8 indicates the frequency of sound fed in through the microphone. When the frequency of sound picked up by the mike is exactly the same as the frequency selected from the simple master controls, the LED display should remain stationary with only one or two bars illuminated. If the sound is sharp (ie a higher frequency), the LED bars will illuminate sequentially in an anti-clockwise direction, giving the impression of rotation. A flat sound gives clockwise rotation.

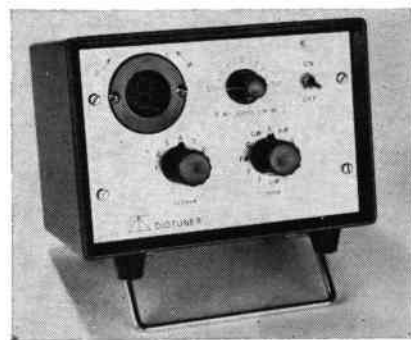
In use in our case to re-tune a long-detuned Weber grand, the instrument was set on the piano, the pitch indicator set to zero (concert pitch), the octave selector set to number four, and the note selector set to C to tune middle C. Using normal tuner's rubber or felt wedges to block off two of the three strings, striking the key produced a pretty solid display and it was hard to tell which way it was rotating. In this case, the tuning hammer was used to flatten the note drastically, then to bring it up until the display visibly slowed down to show that in fact it was rotating: further careful movement of the tuning hammer finally brought the display to a halt and the note was then checked with a tuning fork, the fork first indicating that the string was right, then, by placing the fork near the Diotuner, the Diotuner was proved right. The other two strings were then tuned individually in the same manner and then tried together and found OK.

Next the note selector was set to C#. Having established the first note on the keyboard, C, it was quite easy to "fix" C# and then bring it up on the display with the tuning hammer.

With the whole of the centre octave in perfect tune—the hardest part of piano-tuning—one would normally proceed in unisons, thirds and fifths up and down the keyboard. Not so with the Diotuner which doesn't even demand that you know one note from another. By changing the octave selector the next octave was done and so on.

A feature of the instrument is its ability to tune either to the fundamental or to its harmonic and this means that if you find it difficult to tune the bottom octave with the octave selector set to "1", then you can proceed just as accurately with it set at "2" or for some notes even "3". Likewise, the top notes can be "stretched" if required by using the ability to show inharmonic partials.

One important characteristic is that because the Diotuner microphone can pick up stray frequencies and harmonics from sympathetic vibrations, an accurate reading requires all other strings to be damped other than the one actually being tuned. Good, solid



wedges are also a necessity to ensure that blocked-off strings really are muted.

Again, if you are not accustomed to tuning a piano, it is easy to miss the moment when the display becomes stationary (particularly with the critical upper notes) if you are ham-fisted with the hammer. All movements must, of course, be very gentle and this applies whether you are tuning by fork, by ear or by Diotuner.

As a piano-tuning aid, after one hour's use, we felt quite at home with it and went on to experiment with a barrel organ. Here the Diotuner was even easier to use, partly, one supposes, because one is only dealing with one sound source per note compared with the piano's three. Wishing to tune a quarter-tone down, this was easily achieved by moving the pitch master control 50 cents anti-clockwise whereupon all the note positions were automatically lowered a quarter of a tone. To lower by half a tone on equal temperament one just had to read B for C, A# for B and so on. Three-quarters of a tone can be achieved by using this facility plus the master pitch control. At the same time, any intermediate position is readily obtained so that, for example, a piano could be tuned to match up an old French clarinet for duet work, or you could tune an organ to the London Philharmonic Society pitch of A = 452.5, or American 439.

Experiments were then carried out to see if the Diotuner might be used to indicate the pitch of new teeth put into a musical box comb. Here at once the problem of sympathetic resonance reared its head and this was easily cured by damping all the teeth except the fundamental and the new tooth using plasticene or putty. Some musical boxes teeth are rich in partials and it needs practice and experience to determine the fundamental, matched by using the note selector and the pitch control. Once this note is found, the Diotuner will then remain set for indicating when the new tooth is properly in tune. We do feel, however, that the Diotuner should not automatically form part of the aids of the comb-tuner since if he cannot hear when a tooth is right, he cannot match the timbre of the tooth either.

In short, then, this is a remarkably flexible little instrument which, with practice and experience, will suggest additional uses than those for which it is intended. It is, of course, silent in operation.

In conclusion it might be added that this is no brainchild of an electronics firm: its inventor originally designed it for his own personal use since he could not find a piano tuner for his Pleyel grand. All enquiries should be sent to Anthony Marshall, 3 Doughty Street, London, WC1N 2PH, telephone 01-405 9966.

TUNE ANY INSTRUMENT— ACCURATELY

The **Diotuner** generates seven octaves in equal temperament (84 notes) with an accuracy better than 1/100th of a semitone. The overall pitch level is fully adjustable. Multi-segment rotating solid-state display changes speed and direction — becoming stationary when exact tuning is achieved.

- compact — $6\frac{1}{2} \times 4\frac{1}{2} \times 4\frac{1}{2}$ in. (165 × 110 × 110 mm.)
- battery-operated; one small 9V battery lasts 80 hours.
- inharmonic partials displayed for octave stretching.
- self-contained, sensitive instrument gives good response to all musical instruments.

Diotuner complete £138.50, excluding carriage.

Alternative model available for **mean-tone** tuning.

**Anthony Marshall, 3 Doughty Street,
London WC1. Tel: 01-405 9966**

Best Values on Music Boxes & Nickelodeons

Visit our fabulous showroom with hundreds of old-time music makers for sale — at prices which will delight collector and dealer alike. Shipments constantly arriving from Europe and around the USA. You can see, hear, and enjoy music boxes, nickelodeons, orchestrions, circus organs and many others. You've never seen anything like it! Open Wed.-Sat. 9-12, 1-4. Or send for **FREE** price list describing hundreds of instruments for sale.

Also available: "Encyclopedia of Automatic Musical Instruments," by Q. David Bowers. 1008 pages! Thousands of illustrations! Weight: 7 pounds. A fantastic treasure trove of information. A **MUST** for every serious enthusiast. \$32.00 US funds postpaid. Satisfaction guaranteed.

See us for the **BEST VALUES** on automatic musical instruments. Complete worldwide shipping facilities. Write or visit today.

Terry Hathaway

1717A STANFORD,
SANTA MONICA,
CAL. 90404 USA
Tel. (213) 828-2886



JOHN COWDEROY ANTIQUES

42 SOUTH STREET, EASTBOURNE

Tel.: (0323) 20058

Partners :

J. H. COWDEROY
R. COWDEROY
D. J. COWDEROY

EASTBOURNE'S MOST INTERESTING ANTIQUE AND COLLECTORS SHOP INVITES YOU TO INSPECT
WITHOUT OBLIGATION :— ANTIQUE CLOCKS

**WE ARE THE MUSICAL
BOX CENTRE OF THE
SOUTH**

MUSICAL BOXES
POLYPHONS

PHONOGRAPHS
FURNITURE

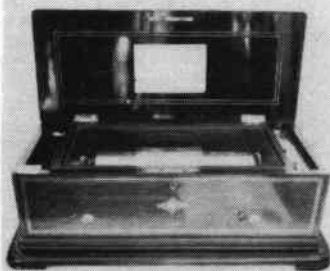
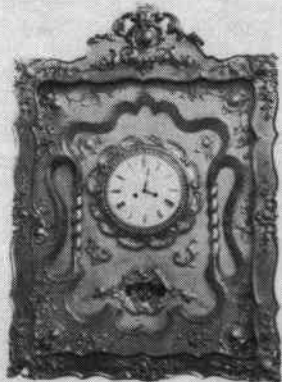
PORCELAIN
BRASS

SILVER
GOLD, etc.

ALL OUR MACHINES ARE
RESTORED AND PUT INTO
FULL WORKING ORDER
FOR YOUR PLEASURE AND
INVESTMENT

Free estimates given for repairs
and restorations to musical boxes
and clocks by our specialist craftsmen

Discs supplied



Tips from the Experts

IF THE bottom of the case of your cylinder musical box is split—and they frequently are—then this will affect the tone. The bottom acts as a sounding board and for this reason is usually of pine. Over the years this dries out and contracts, usually cracking down the middle.

You cannot, in most cases, remove this board, so if you try to close up the crack by clamping, you will distort and damage the case sides.

Remove the musicwork, turn the box upside down and cut some tapered strips of soft wood such as plain pine or deal. Carefully glue the sides of the split and the packing strips you have prepared and force them firmly into the splits. Support the underside of the split

wood (inside the box) and gently hammer the wedges in. Don't overdo this or you will push out he sides of the case.

When the glue is thoroughly dry, remove surplus wood and glue on both sides using a very sharp chisel. If the job is properly done, the repair should be almost invisible. You will find that your musical box, when put back together, will sound louder and clearer.

Incidentally, if the wood is not split, it may still have shrunk so that it is loose in its grooves in the sides and ends of the case. This will have the same effect as a split and can be a cause of rattling. Secret here is to shape and fit some small wooden wedges between bottom and sides in their grooves. Do NOT glue these in but tap them in securely with a hammer.

ners in fan-collecting as a hobby, here is a book which will inspire great encouragement and prove a delight to read.

From the attractive dust-cover to the final page, the high standard of printing and illustrations serves to complement the detailed knowledge which Mrs de Vere Green has set down in her book and certainly will add to the reader's enjoyment.

How sensible, too, that the author deemed it right to include some paragraphs dealing with the cleaning and repair of these fragile *objets d'art*—perhaps this may encourage further interest in this barely existent but much-needed service.

L ROSS COLLINS, Master :
Worshipful Company of Fanmakers

* *Bertha de Vere Green, member number five of the Musical Box Society of Great Britain and the charming wife of our President, Cyril de Vere Green, has for many years collected fans and those of us who have been privileged to be entertained at 11 Devonshire Place will appreciate the beauty and fascination of these items. Bertha has spent a considerable while compiling her superb book. The Tatler referred to it as "an encyclopaedia" and suggested that it was the most comprehensive work on the subject available. Our congratulations to Bertha for a fine effort. Editor.*

Book Reviews

A COLLECTOR'S GUIDE TO FANS OVER THE AGES. *Bertha de Vere Green,* Frederick Muller Ltd, London, 332pp, 6½ins (171mm) by 9½ins (247mm), illustrated (40 full colour; 64 black and white; 68 drawings in text), £21.50 until 31/12/75, then £25.00.*

What a delight to discover on your bookseller's shelf *A Collec-*

tor's Guide to Fans over the Ages! Those people interested in things of beauty will indeed want to possess it.

To the serious collector of fans, this edition will not only serve as a reference book but the world-wide "unfolding of the fan" over a period of approximately 3,000 years presents a history rich in detailed information.

To those who are as yet begin-

**We have a large quantity
of Reuge 2/28 movements
surplus to requirements
and at £3.00 including
postage and packing they
are a bargain**

Swisscross Limited.

109, Norwood High Street.,

London. SE27 9JF.

Tel: 01-761-0428

A Collector's Guide to

FANS

OVER THE AGES

BERTHA de VERE GREEN

The historical development of the fan is so comprehensively described in this book that both scholar and collector alike will be able to recognize and appraise individual fans.

Various methods of manufacture and national styles are differentiated and there is detailed advice on the cleaning, restoration and display of these delicate *objets d'art*.

Fans Over the Ages is the most complete modern study of the subject and is illustrated with colour and monochrome photographs plus numerous line drawings.

£21.50 until 31/12/75, £25.00 thereafter

Further details are available from the publisher

MULLER

Victoria Works, Edgware Road London NW2 6LE

NORFOLK POLYPHON CENTRE

NORMAN VINCE

**WOOD FARM, BAWDESWELL
EAST DEREHAM, NORFOLK**

On B1145 one mile east of A1067 junction in Bawdeswell Village

TELEPHONE BAWDESWELL 230

WE SPECIALISE IN :

DISC MACHINES

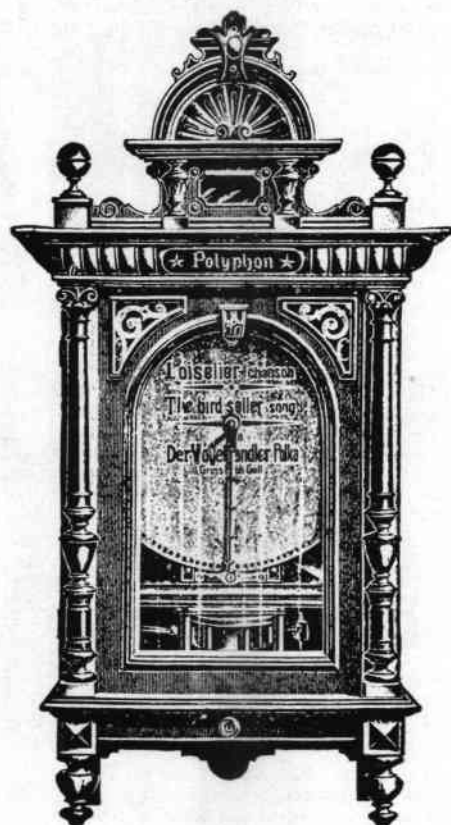
QUALITY CYLINDER BOXES

ORCHESTRIONS, ORGANS, ETC.,

AND FINE CLOCKS.

We can make copies of discs,
any size or make, to order.

**MECHANICAL MUSIC BOUGHT,
SOLD, OR EXCHANGED**



Letters to the Editor

Ray Brown writes from Leamington Spa, Warwickshire :

I WAS most interested to read the article on red flannel dampers on page 65 of this volume of *THE MUSIC BOX*.

Not only were these dampers fitted to small table model disc musical boxes, but also to early upright models.

I have a 15½in upright Polyphon with such dampers. It is Style No. 53 as illustrated on page 154 of the *Encyclopedia of Automatic Instruments*, but differs in that it has a wooden lyre and not a brass one, which I believe was a later refinement. The bedplate and

combs are set horizontally.

Unfortunately, I cannot describe the penny-in-the-slot mechanism as it was removed by the previous owner many years ago.

However, I am anxious to restore the instrument to its original condition and design and wondered if, by any remote chance, any member has a spare penny-in-the-slot mechanism for sale or a diagram from which a new mechanism appropriate to my instrument could be constructed.

Alfred Thompson writes from Harrogate, Yorkshire :

YOU may be interested in this picture of a pair of combs from a 15½in Poly-

phon. The upper comb is in tune with no sign of decay in the lead weights and no indication suggesting that it has been releaded, while the lower comb has only stumps of the lead weights remaining. How can one comb have been so destroyed without the other being affected, or alternatively who did a clever, undetectable releading job on one comb only ? It is quite a puzzle.

Richard Kahane writes from London :

DISC boxes which play two tunes from a single disc whose position is shifted are rare, but not unknown. Does any member possess a box with discs whose two tunes are found on *opposite* sides of the disc, however ?

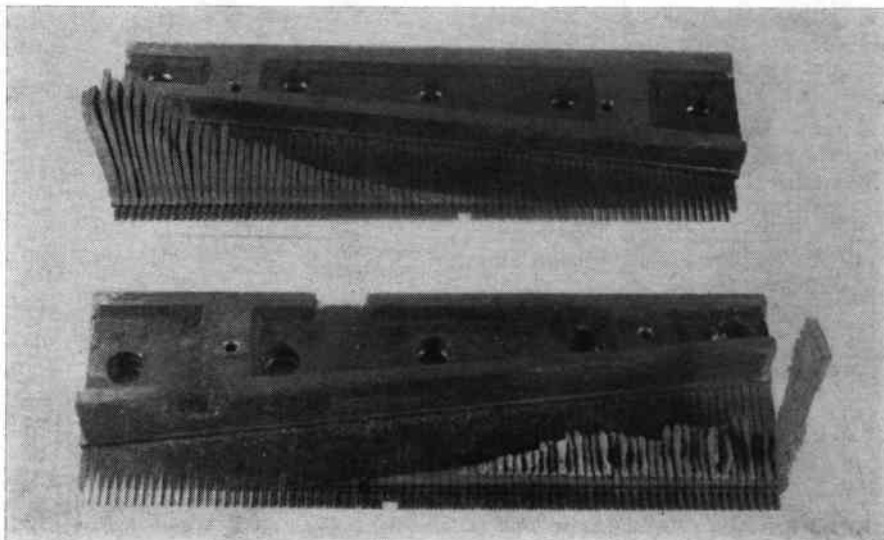
E L Doctorow's novel, *Ragtime*, currently a best-seller in the United States and highly praised for its accurate portrayal of turn-of-the-century America, contains the following description of such a disc box allegedly owned by the mother of the famous magician, Harry Houdini :

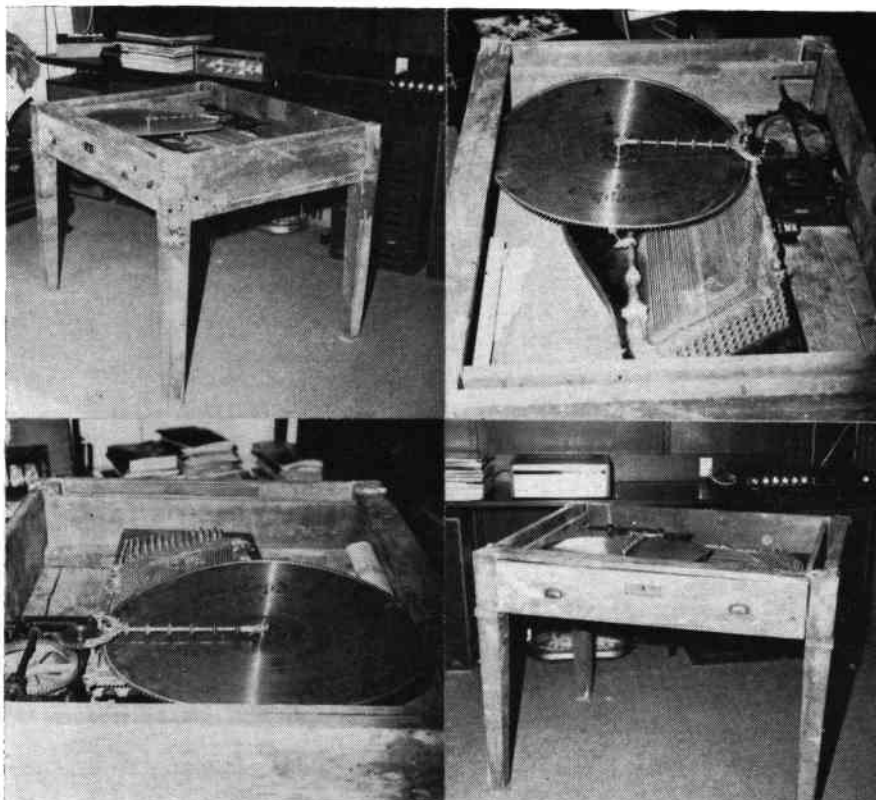
"One of her prized possessions had been an oak music box with a glass window in its lid so that one could see the large tined disc in rotation. There were several discs to choose from, but her favorite had been the one that played *Gaudeamus Igitur* on one side and *Columbia the Gem of the Ocean* on the other. Houdini cranked up the music box and played these tunes every evening".

A rarity or a bit of literary license?

Claes O Friberg writes from the Mekanisk Musik Museum in Copenhagen :

I ENCLOSE photographs of an interesting model of a Chordephon *Der Musik-*





alische Stammtisch which plays 20in discs on 60 strings (reference page 358 of *Encyclopedia of Automatic Musical Instruments*).

As far as I know this is the only known model. I hope you will find the photographs interesting.

Record Reviews

THERE are two records I have listened to this time—one a new issue, the other now quite old but one we have not so far reviewed.

Rediffusion's new Gold Star series gives us *The Magic of the Street Organ (Gold Star 15-35 Stereo)*. One of the best known of the Amsterdam street organs is Henk Mohlmann's *De Klok*. Originally built by Mortier in 1927, it was first owned by Wed S Mohlmann-Warnies. Rebuilt by Carl Frei and then owned continually by the Mohlmann family, *De Klok* takes its name from a large brass pipe which formerly hung on the

continued from page 144

a mistake on a bell box by this maker. For instance, we have found examples of boxes with cylinders pinned for six bells but with only five linkages, the sixth bell being a dummy.

On this occasion, we removed the bottom bell, moved all the remaining five bells down to play on a lower tooth, and supplied a new top bell. We then tuned the bells to match the combs. We have now presented the delighted owner with a truly beautiful musical box which is now probably playing in tune for the first time since it was made.

left side of the organ. This was struck by a large wooden mallet to supplement the percussion. *De Klok* is a much-travelled instrument: it toured America in 1964 under the sponsorship of the Philips electrical company of Eindhoven, and has made other sundry trips in Europe.

This new disc gives us 17 tracks of this fine organ playing some of its best-loved tunes such as *De Jeep van Jansen*, *De Postkoets* and *Bij die Molen in Volendam*. The original recording, according to the sleeve notes, was made in June 1966. Even so, the quality is very good and it is worth adding to the ever-growing collection of Dutch street organ records.

When Decca introduced its "The World of . . ." series, it was predictable that sooner or later they would get round to *The World of Mechanical Music (SPA 145)* which, as a record, is now four years old. Its age is important, for it helps us to forgive the extraordinary number of mistakes on the sleeve notes. Perhaps it also marks the very last example of the use of comic, but inaccurate, names for instruments such as "autoglocken-polyphon". I once heard this name used in a quiz programme, so it must be killed off before it enters the dictionary!

Featuring among others instru-

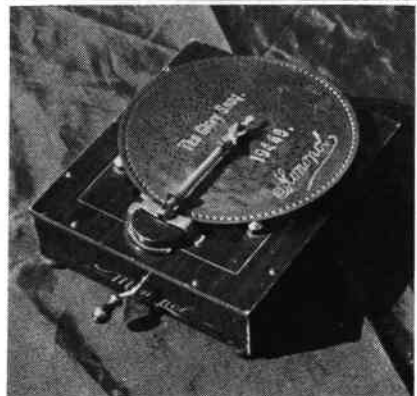
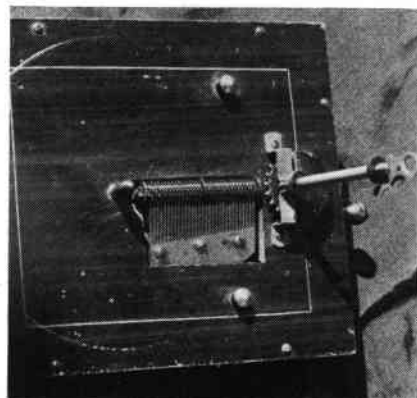
ments from the collection of Bruce Angrave (although it does not say so), it begins with two unidentified tunes from a Belgian cafe piano (which is not Bruce's). Musical boxes follow with a popular melange starting with the overture *Semiramide* and ending with *Nearer My God to Thee*. Imhof & Mukle is represented by a light programme from the barrel organ illustrated on page 111, and a barrel piano. Next we hear a Bremond organ box and an early musical snuff box.

Side Two begins with the Regina and Polyphon disc boxes after which a 24-key Bevington barrel organ, poorly played and only slightly better tuned, gives us the *100th Psalm* and *Wareham*. A Steck pianola follows with some Chopin and then a Nicole overture box (with serial number!) leads a comb-plucking conclusion.

As a low-priced disc of mechanical "pops", this is a nice one to give a friend. When first published it was a very good representative of the pleasures of mechanical music. But a lot has happened in the intervening four years.

A O-H

MONOPOL MANIVELLE



Hand-cranked disc boxes like the Lyrathon on page 135 and the Monopol above are scarce today since they were intended as but toys. This Monopol, Style 300, plays a 7½in disc and has 30 teeth. See also page 553 of Volume 4.



*A Hearty
Scottish
Welcome...*

TO ALL VISITORS
FROM HOME OR ABROAD

To the

"KRAZY HOUSE"

MEN'S & BOY'S RETAIL CLOTHING STORE
GLASGOW CROSS, GLASGOW, SCOTLAND.

Tel.- 041 • 552 • 5354

OPEN SEVEN DAYS A WEEK
SUNDAYS FROM 10 a.m. TILL 6 p.m.

THE MOST ECCENTRIC STORE
IN SCOTLAND - ONE OF THE "SIGHTS"
MUSIC • DISCO • "GO-GO" GIRLS ON STAGE
MUSICAL INSTRUMENTS • THE LARGEST
COLLECTION OF MECHANICAL MUSIC
IN SCOTLAND ...

STEAM TRAINS • MODEL ENGINEERING •
MODEL SOLDIERS • DIORAMAS • COLLECTION
OF DOLLS • 'KRAZY' MIRRORS ETC. ETC.
YOU NAME IT - WE HAVE IT - AT THE 'KRAZY HOUSE'
LOOK US UP SOMETIME!

Member Alex Duman

LIST OF MEMBERS

- 984 David Feldman, c/o Monte Carlo Services, 2 rue des Iris, Monte Carlo, Principality of Monaco.
- 985 Clive J Drummond, 70 Dandabong Avenue, Carlingford 2118, New South Wales, Australia
- 986 A Walsh, The Antique Clock Shop & Antiques, 22 Frederick Street, Rockdale 2216, Sydney, Australia
- 987 V J Warner, Villa Suecia, London Road, West Malling, Kent ME19 5AD
- 988 Alan W Wyatt, "The Willows", 102 High Street, Landbeach, Cambridge
- 989 Robert Broeder, 84 Oakwood Crescent, Greenford, Middlesex
- 990 W E Cleaver, 50 Rushdene Avenue, East Barnet, Hertfordshire
- 991 Richard Welsby, 5 Rue Duvergier, Paris 19, France
- 992 John V Lloyd, 51 Chippewa Avenue, Mitcham 3132, Victoria, Australia
- 993 D R Tuckman, Moon Cottage, 42 Claygate Lane, Hinchley Wood, Surrey
- 994 Paul Hillenbrand, 6231 Sulzbach, Sodenerstrasse 27, West Germany
- 995 Darwin Paul Isaac, 4718 Austin Drive, San Diego, California 92115, USA
- 996 Alan S Douglas, Box 225, Pocasset, Massachusetts 02559, USA
- 997 Louis C Reyna, 3367 West Woodlawn, San Antonio, Texas 78228, USA
- 998 Robert McConnell, 3926 Walnut Avenue, Long Beach, California 90807, USA
- 999 R Gymnaies, 2688 Dorking Place, Santa Barbara, California 93105, USA
- 1000 Mrs Judith R Ord-Hume, 14 Elmwood Road, Chiswick, London, W4
- 1001 Mr & Mrs Joe Spander, RR2, 6103 Alkire Road, Galloway, Ohio 43119, USA
- 1002 Mr & Mrs R Steeves, 8 Ministerial Circle, Bedford, New Hampshire 03102, USA
- 1003 Mr & Mrs W R Kavouras, 383 Bensley Avenue, Calumet City, Illinois 60409, USA
- 1004 Mr & Mrs W J Lally, 42 Siwanoy Lane, New Canaan, Connecticut 06840, USA
- 1005 Mr & Mrs Harlan M Wolff, Route 1, Box 718, Hadlock, Washington 98339, USA
- 1006 David L Junchen, 743 McHenry Avenue, Woodstock, Illinois 60098, USA
- 1007 John W Mehling, 2031 Cumberland Road, Lansing, Michigan 48906, USA
- 1008 J F Sporer, Box 284, Bloomsbury, New Jersey 08804, USA
- 1009 Donald W Page, 2345 Snead Court, Titusville, Florida 32780, USA
- 1010 Mr & Mrs W Matheson, 1818 East Fourth Street, Duluth, Minnesota 55812, USA
- 1011 Lana W Norcross, 15038 Dickens Street, Sherman Oaks, California 91403, USA
- 1012 Mr & Mrs Samuel E Kurtz, 3120 Eisenbrown Road, Reading, Pennsylvania 19605, USA
- 1013 James O Knudtson, 709 S E Jackson Street, P O Box 250, Roseburg, Oregon 97470, USA
- 1014 Harry Watkins, 2168 Greene Street, Augusta, Georgia 30904, USA
- 1015 Mr & Mrs Robert W Meyer, P O Box 31, Menomonee Falls, Wisconsin 53051, USA
- 1016 Michael P Daggett, 2200 Winterthur Court, Penthouse 2, Reston, Virginia 22091, USA
- 1017 Mr & Mrs W Molnar, 1386 Park Row, Cleveland, Ohio, 44107, USA
- 1018 Joseph T Wood, 127 West Main Street, Williamson, New York 14589, USA
- 1019 Mr & Mrs M A Mangum, P O Box 362, Blackfoot, Idaho 83221, USA
- 1020 Mr & Mrs Robert H Martin, 1022 Tellem Drive, Pacific Palisades, California 90272, USA

CHANGE OF ADDRESS

- 94 R C Uvedale Corbett, Exton House, Exton, Hampshire SO3 1NT
- 273 P McCrossan, The Stone, Vicarage Road, Hailsham, East Sussex, BN27 1BN
- 385 Michael Shears, Laburnum Cottage, 9 Bridge Road, Chertsey, Surrey
- 500 Mrs Christine White, 147 The Avenue, West Wickham, Kent
- 540 G C Howard, Field House, Toadsmoor, Nr Brimscombe, Stroud, Gloucestershire
- 647 Mr & Mrs David R Young, 210 Glen Ellyn Way, Rochester, New York 14618, USA
- 726 H Dodgson, The Corner House, Charing, Kent, TN27 0HU
- 896 A Smith, 40 Second Avenue, Frinton-on-Sea, Essex

Classified Advertisements

Members: 3p per word (bold type 5p per word).
Non-members: 6p per word (bold type 10p per word).
Groups of figures or letters up to six characters count as one word.

FOR SALE

CYLINDER REPINNING SERVICE.
A J Colley, Belle Vue Antiques, Kent Road, Congressbury, Nr Bristol. Tel: Yatton 832220.

POLYPHON. Coin operated. 11 Discs 19½". Musical movement and case require overhall £475. Musical box. 8 tunes. 13" cylinder. Nice condition £225. Stella Discs 17½". Zinc. 2" to 3" edge damage at start. Offers. Austin, Hemming Cottage, Old Brampton, Chesterfield.

I HAVE acquired the entire programme of a PVF interchangeable-cylinder box. Six cylinder 7½ins long with arbor and handle at each end, playing a total of 36 tunes. All in a velvet-lined wooden case with lock and loose tune-sheet listing all titles. Somewhere is a movement without cylinders! The tunesheet states "Style 711" and the cylinder numbers are 13, 55, 56, 60, 67 and (68) 79. Comb should have 57 teeth. Further details from Arthur Ord-Hume, 14 Elmwood Road, London, W4.

A FULLY ILLUSTRATED CATALOGUE of cylindrical music box parts is available. 40 pages of interest if you are involved in the maintenance of your musical boxes. The catalogue ranges from the endless to butterflies. We make a charge of £1.00 for the catalogue which is refunded against orders. Please forward your remittance to: CRAGG, 7 GOLDSOWN ROAD, ENFIELD, MIDDLESEX, EN3 7QY.

WANTED

WANTED. 14½" Adler or Fortuna discs. Will exchange for Polyphon and Symphonion discs. Mehling, 2031 Cumberland Road, Lansing, Michigan 48906, USA.

WANTED. HOHNER PLAYER ACCORDION WITH FOOT PUMP AND ROLLS. C. Lawyer, 502 Briar Lane, Chambersburg, Pennsylvania 17201, USA.

SNUFF BOX case to hold musical movement size 2½" × 2¼" × ¾". Movement circa 1850. Arthur Heap, 51 Station Road, Delamere, Northwich, Cheshire.

EMPTY 15½" table model Polyphon case wanted. Must be in good condition. My "penny-in-the-slot" cabinet offered in exchange if required. M J Miles, Rock Cottage, Mountfield, Sussex. Tel: Robertsbridge 880614.

continued from page 125
disciplines which it illustrates and because it offers an object-lesson to us all as to how to go about preservation. Preservation must always come first: restoration is a later, separate stage. The attitude of Terence Crowley goes to show that we should all be keenly aware that one over-enthusiastic, hurried and inadvisedly-planned act can

destroy evidence forever. The barrels? They come from a large Viennese flute-playing clock and one of them plays a piece from Faust.

In conclusion, I would like to place on record the fact that Member Number 1,000 was enrolled during September. An indication of the growth of our Society across the years and a reminder that our

first President was John E T Clark with membership number one. My own number is four, a detail which will become significant when I explain that our thousandth member is my wife, Judith, without who's unbridled co-operation for so long as a non-member, little would have been possible, least of all my continuance of this Journal.

ARTHUR W J G ORD-HUME

Sotheby's Belgravia

19 Motcomb Street, London SW1X 8LB Telephone: 01-235 4311 Telex: London 24454 Telegrams: Gavel, London

Sales by auction of Mechanical Music include

Cylinder and disc musical boxes, barrel organs, player pianos,
phonographs, gramophones and related material.

Advance information on all forthcoming Mechanical Music sales is ensured by
taking out an annual subscription to our fully illustrated catalogues (including lists of
prices realised) at the following rates:

U.K.£3.00
Europe£3.50
U.S.A.\$11.50

Subscribe by completing the form below and return it with your
remittance

To: Sotheby Parke Bernet & Co., Subscription Department, 36 Dover Street,
London W1X 3RB

Please enter my subscription for one year (4 issues) for catalogues and price lists in
Category 69, Musical Boxes and other Collectors' Items

Name _____ (BLOCK CAPITALS)

Address _____ (BLOCK CAPITALS)

Country _____ Telephone Number _____

Date: _____ Signed: _____

Please make cheques payable to Sotheby Parke Bernet & Co.

I enclose remittance of _____

I have instructed my bankers to remit _____

My Bank is _____

Address _____

Keith Harding

KEITH HARDING and CLIFF BURNETT

CLOCKS AND MUSICAL BOXES

The Best Boxes

The Best Condition

The Best Prices

The Best



93 Hornsey Road, London N7 6DJ

Telephone : (01-) 607 6181
607 2672