

# THE MUSIC BOX

JOURNAL OF



THE MUSICAL BOX SOCIETY OF GREAT BRITAIN

Vol. 2. No. 8. Christmas, 1966



## THE EDITOR WRITES:

It is not hard to contrive plaudits for this time of the year - nor is it original. Christmas is traditionally something to look forward to, to enjoy and to eschew togetherness. For the child, a time of presents, brightness - and singing. For others, a time of hard preparation - with a year in which to recover. For commerce, a time to apply the 'hard sell' and assoc-

iate their product with the irresistible force of Christmas and the sometimes insane urge to spend. Without wishing to delve into the deeper and serious meanings of Christmas to the individual, or to analyse the themes of popular Christmas cards and their irrelevant motifs, let us take a cool, practical look at the festive season. It is a time of the year when you can expect to be kept awake at night by a group of carollers extolling the fact that it is a 'silent night'. A time when we forget work and can relax in a round of balancing on steps to put up tinsel and falling into the Yule logs stacked by the fireplace. The time to slow right down to a mad rush of parties, over-eating, over-drinking and fervent wishes that it was all over. A time to realise suddenly and embarrassingly that you forgot that card for somebody. A time to spruce up and go to church - and pretend you go every Sunday. Everybody wishes everybody else a Happy Christmas - and knowing that they'll be as glad as you are when it's over. But, because I am not really a Scrooge, I join our President, Secretary and Committee in wishing you all a jolly Christmas and a satisfying New Year.

## ★ CURE FOR REED ACHE

Some weeks ago, I was enjoying a roll of music on the Orchestrelle belonging to someone we all know who is a famed dental surgeon. Suddenly there was a discord. The *off* in the 8' horn stop had gone flat. Was it dirt? A cracked reed? In moments, the front was off the instrument and the swell shutters removed. How to draw the reed was the problem, for I had no tools with me, and the puller thoughtfully provided by the builders when the instrument was new had long since found itself in some past repairer's tool kit.

Our dental surgeon reached into his cabinet packed with tooth-devastators and came out with a splendid thing with a hook on one end and a flat handle at the other. It worked a treat, drew out the reed and facilitated all sorts of necessary adjustments. With the front back on the organ, music was resumed and all was well.

The following day, my office telephone rang. It was the nurse from the surgery. "Where", she asked, "is the euphrasne serapetraculum?" (well, it sounded like that to me and I'm no dentist). It dawned on me that the thing I had used might be the weapon in question. No, I couldn't remember where it was. She was laying up for a big operation in which some chap was going to have his reeds drawn and, without the proper instrument, it looked as though the pliers would have to be pressed into service.

What happened to the poor patient I am not too sure, but he was despatched adequately by use of other apparatus. It was not until several days later that I chanced once more to be footing it through a piece of music on the self-same Orchestrelle and, through some reason or other, I had cause to peer inside. There, all bright and shiny, there was my new-found reed-puller replete with all its dental glory, just where I had left it and forgotten it. Moral: Never be careless with tools. Lesson: All Orchestrelle owners are recommended to have a euphrasne serapetraculum in their tool kits.

My offer to our friend's nurse to exchange my somewhat rusty reed-puller for the nice polished one fell on stoney ground.....

## ★ PATENT APPLIED FOR

The introduction of a feature on British Patents, which began on Page 351, seems to have been well received by Members. Nobody has ever made a study or collation of the many patents concerning mechanical musical instruments which were registered in Great Britain, and this should provide a source of valuable reference material. It is in-

tended to publish as many pages as space permits in each issue and, ultimately, we may reprint the details as a separate booklet.

## ★ EAST ANGLIAN PERSONALITIES

With the passing of Canon Noel Boston, recorded on Page 367, it is interesting to note that he was in many ways similar to another gifted cleric in East Anglia - the late Canon A. O. Wintle. He lived at Lawshall near Bury St. Edmunds in Suffolk and after the first war during the agricultural depression, he founded the East Anglian Automatic Piano Company to provide work for many men home from the war. Barrel pianos were restored, their barrels repinned with modern tunes and instruments hired out to charitable organisations. Due to his efforts, many barrel pianos have survived which might otherwise have been destroyed. Wintle always removed the original maker's name from those instruments which he worked on and his barrels were always stamped before re-pinning with a blue commercial-style rubber stamp. Canon Wintle died in 1959 and his unusual enterprise came to an end. There are tales of the destruction of the various piano parts which remained.

## ★ THE NEW MUSIC BOX

When THE MUSIC BOX first came into being, it was essentially tailored to an almost non-existent budget. Its format was dictated entirely by the need to produce it as cheaply as possible. Due to this, it has spent the first four years of its life looking somewhat like the school magazine of Dotheboy's Ha'l.

It is thus understandable that consideration has been given to the improvement of the Journal as funds permitted. For very little extra produc-



tion cost, the Journal is to appear in new format starting with the next issue, Volume 3 Issue No.1 Easter, 1967. Page size remains, of course, the same, but a complete change of cover design will be the first obvious feature. Instead of having the text on the cover as at present all the editorial pages will be separate.

The first issue of Vol. 3 will, in addition to the new appearance, establish a different page layout and style, and be printed on a better type of paper - all features which your Editor believes that you will appreciate. The Editorial policy remains unchanged and it is planned to carry on with the reproduction of as much interesting original material, tune sheets, old advertisement items and tune lists, as they come to hand from you, the Member.

*Sir, if it had not been for the art of printing,  
we should now have no learning at all.*

SAMUEL JOHNSON

### ★ INDEX

The Index to Volume 2 is being prepared and will be published early in the New Year, together with the new Directory of Members.

### ★ PLANS FOR SWISS TRIP

Those who attended the meeting on November 12th will know that tentative arrangements are in hand to try to organise a week-end trip to Switzerland next summer. The idea is to fix an 'all in' visit starting very early in the morning from London and returning very late the next night, to include meals and hotel accommodation. Such an opportunity as this affording the chance to see the birth-place of the musical box and to examine the treasures contained in Baud Freres museum is certainly something nobody should miss. In due course, Mr. de Vere Green will be sending details

and if we can get a minimum number together, then this exciting visit is 'on'!

### ★ VIVE LA DIFFÉRENCE!

Since the days of Alexandre Debain and his Antiphonel harpsichord player, the French and English have sought to get closer to one another. It was tried - the tough way - by Napoleon, but then people began to think of bridges, tunnels. Even the application of the pneumatic tube (big enough to hold a man) of the type used in those old drapery and department stores for whooshing the bill and the cash about the place was thought of by the eminent visionary Ord-Hume. But at last is there a chance that we have resolved the situation? Can we look forward to a mid-channel ceremony to reinforce the entente cordiale when Harold Wilson and General De Gaulle cut the tape to open the escalator linking the ten-mile English Channel Tunnel with the ten-mile French Channel Bridge. Or as the Yorkshire Post announced recently:

#### CHANNEL TUNNED BY '1974'

The man-in-the-street should be able to travel to France via the Channel Tunnel by 1784, at a five per cent. cheaper rate than at present. Mr. Len d'Erlanger, chairman of the Channel Tunnel Co. said yesterday.

### ★ BLAH! BLAH!

To be published early in the summer of 1967 is a new book on musical boxes, their history, the types of boxes and how to collect and repair them plus a comprehensive list of trade marks and makers. The book is to have plenty of illustrations and I hope it will be interesting. I wrote it.

ARTHUR W. J. G. ORD-HUME

## I M H O F & M U K L E, EUTERPEON ROOMS, 547, OXFORD STREET, LONDON, W.C.

To repeat the Tune, push No. 1 to the left.  
To change the Tune, push No. 1 to the right.

To commence playing, push No. 2 to the right.  
To stop playing at the end of tune, push No. 2 to the left.

No. 3 is intended for repairing purposes only.  
Never remove the box without being partly wound up and stopped at the end of the tune.

①  
1      2      3  
—      —      —



N. 4574

Opera

**PAGLIACCI**

Vesti la giubba

**LEONCAVALLO**

M 7,65



Tip. O. Minarelli Bologna

AN  
ITALIAN  
BOOK  
MUSIC  
PIANO

By The Editor

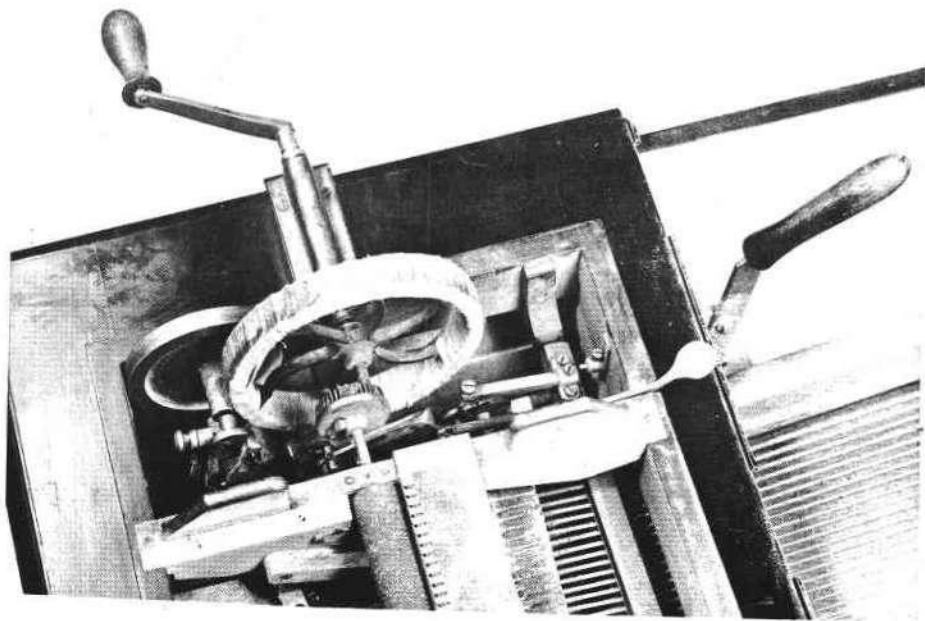
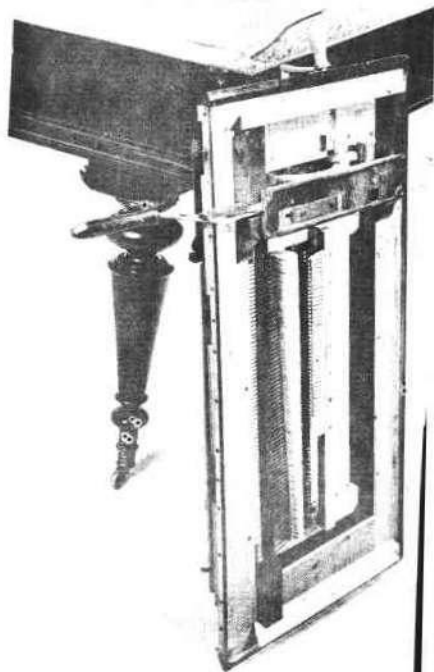
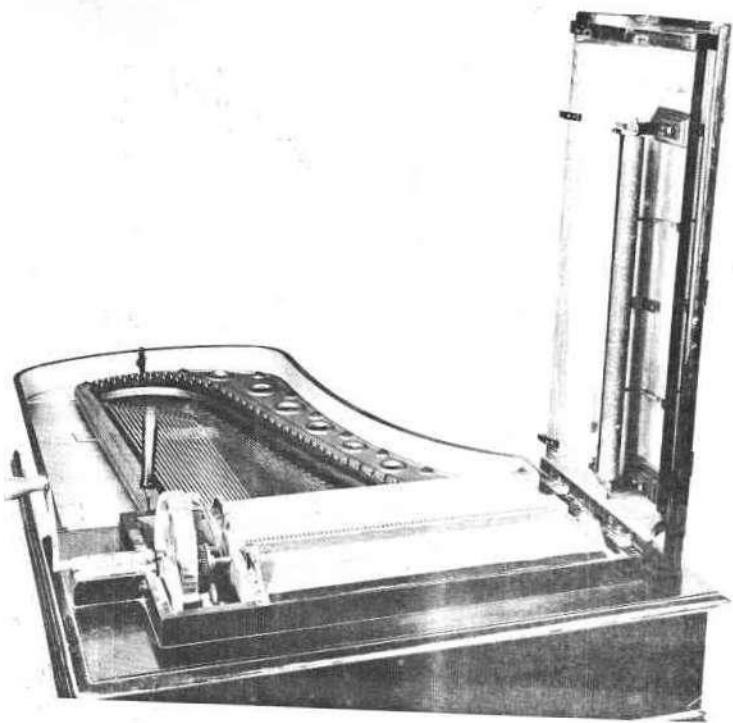
**A**N IMPORTANT - and interesting - link in the history of the mechanical piano-forte is represented in the recent discovery by Member Graham Webb, of a mechanical grand piano of Italian origin which operates on the Jacquard card system.

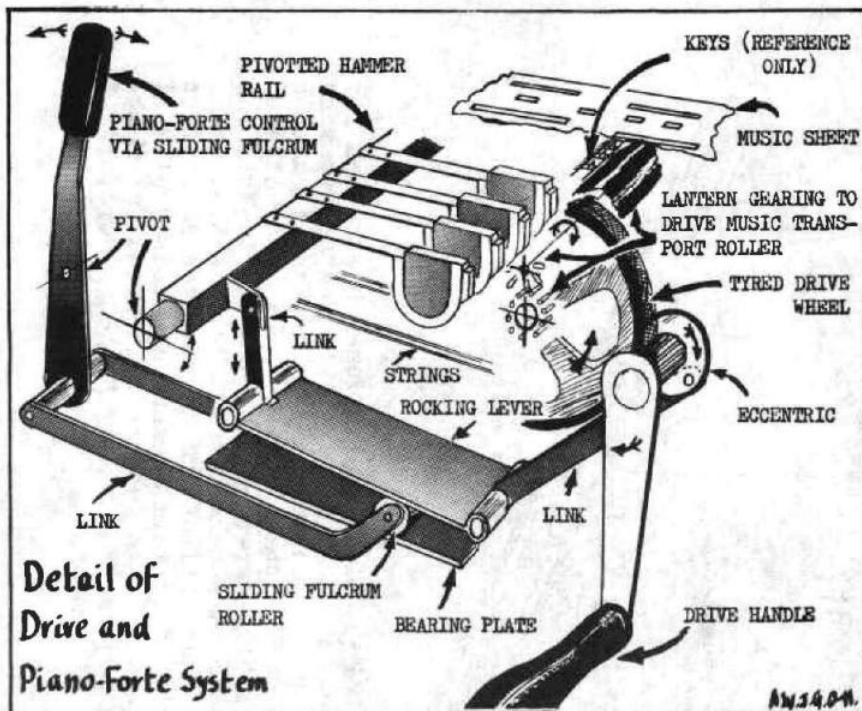
We have seen, through the pages of THE MUSIC BOX, the development of the mechanical piano. Starting with the barrel-operated instruments of the Hicks family, and, later, Distin and Taylor, which were intended for the street musicians (with variants for domestic use), the mechanical piano developed into the street pianos of Tomasso, Pasquale, Chiappa, Pesaresi, Spinelli, and others. These barrel pianos also had a slightly more sophisticated brother, clockwork driven, for indoor











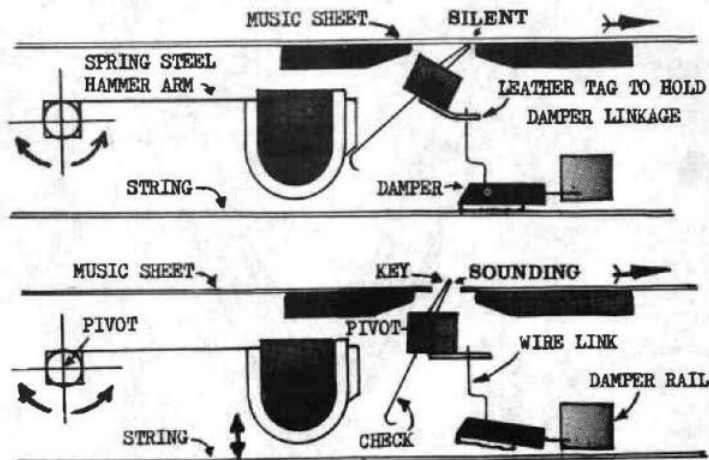
Detail of  
Drive and  
Piano-Forte System

use in public places. By the turn of the century, Chiappa and others were making pianos which played folded books of music stamped from strips of cardboard in place of the cumbersome barrel. All these instruments, however, were in the form of upright pianos and most had a fairly small compass - 40 to 50 notes.

The grand piano was not so popular as a vehicle for mechanisation and it was not until the advent of the pneumatic player action that this form of the instrument came to be developed.

An exception was the "Orpheus" disc-playing piano which was little more than a mechanical novelty. It was of grand layout but played only 24 notes (see p.129).

The discovery of a 73-note grand piano made by Giovanni Racca of Bologna, Italy, is thus of great interest. Not only do we have in this instrument perhaps the only example of a pre-pneumatic grand piano, but the instrument plays from book-music of the Gevilli/Jacquard style. This specimen, found in almost perfect condition by Member Graham Webb, is complete with a large repertoire of operatic and lighter classical music, all of which is beautifully arranged. An examination of patents shows that the system of continuously-beating hammers used was patented in England by G. Racca and W. Seward on April 17th, 1886. Although somewhat smaller than a baby grand, it is an impressive instrument and has an iron frame strung from wrest pins set in a massive wooden cross member. There is no keyboard and the player mechanism is self-contained, forming the top of the front of the piano, and may be detached for tuning. All but the lower two octaves are bi-chords. An examination of the sketch (above) will show the system



of operation. The hand-turned drive-wheel rotates a mangle-type pressure roller assembly for the transport of the music across the playing surface and keys, and continuously rocks the hammer bar. This latter extends the full playing width and carries all 73 hammers on very thin spring steel arms. The hammers are substantially formed of felt-covered wood. The rocking motion to the hammer bar is conveyed through an ingenious system of links and a lever which rocks over an adjustable fulcrum roller. This gives a greater or lesser arc of rotation to the hammer bar and thus varies the force at which the hammers strike the strings. This "piano-forte" system is regulated by a lever protruding at the left side of the top, behind the

[Continued on Page 421]



**CREDITS:** Above is a reproduction of one of the rare diamond-shaped tune-sheets used for a while by B. A. Bremond of Geneva. These are seldom found and are even scarcer to find in good condition due to the delicacy of their shape. On Page 377 is a classic example of George Bendon's characteristic tune sheet showing his trade mark. The instructional sheet on Page 391 was found inside a Nicole Freres "two-per-turn" box and all these three items are by courtesy of Member Graham Webb. The Speaking Picture Book, Page 378, comes from the collection of Member Keith Harding. The handbill of the Apollonicon concert on Page 387 is from the editor's collection. An article on this mechanical instrument will appear in the next issue. The Regina instructions on Page 393 are by courtesy of Member Jim Hirsch, and the Polyphon tune list on Page 405 is from Member Neale of Hertford. A notice by J. M. Draper on Page 420 is by courtesy of Member Tom Potter of Westmorland.



= Harpe Eolienne Zither. =

- |   |                               |   |                              |
|---|-------------------------------|---|------------------------------|
| 1 | Guillaume Tell Brière         | 5 | Rigoletto la donna           |
| 2 | Freyshütz Chœur des chasseurs | 6 | Fatinitza Marshe             |
| 3 | Don Pasqual Rondeau           | 7 | Cloches de Cornesville Valse |
| 4 | Les joyeuses commères de Sion | 8 | La Muette di Sottici         |



THE  
SPEAKING  
**P**ICTURE **B**OOK

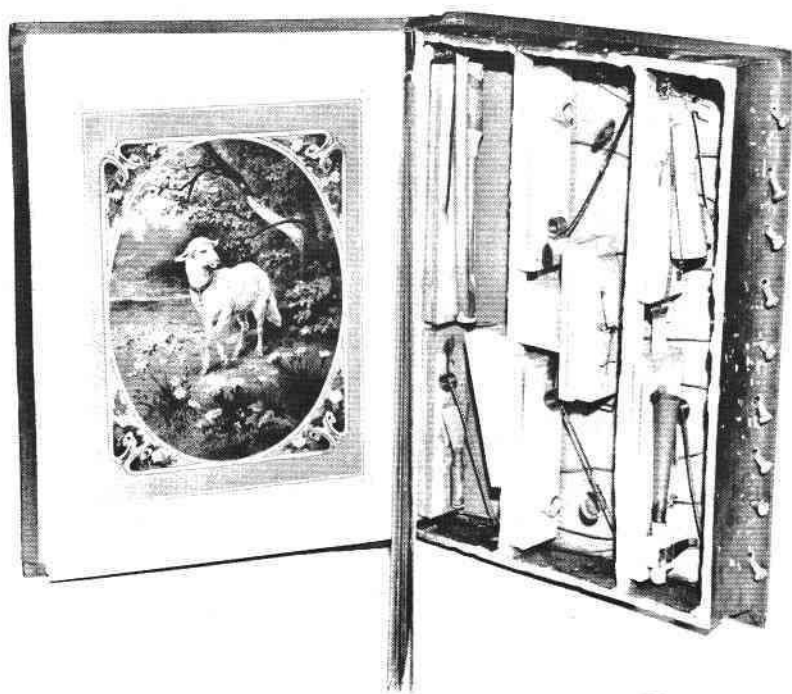
REPRODUCING THE VOICES OF  
THE COCK, THE DONKEY, THE LAMB, THE BIRDS,  
THE COW, THE CUCKOO,  
THE GOAT, AND THE BABY.

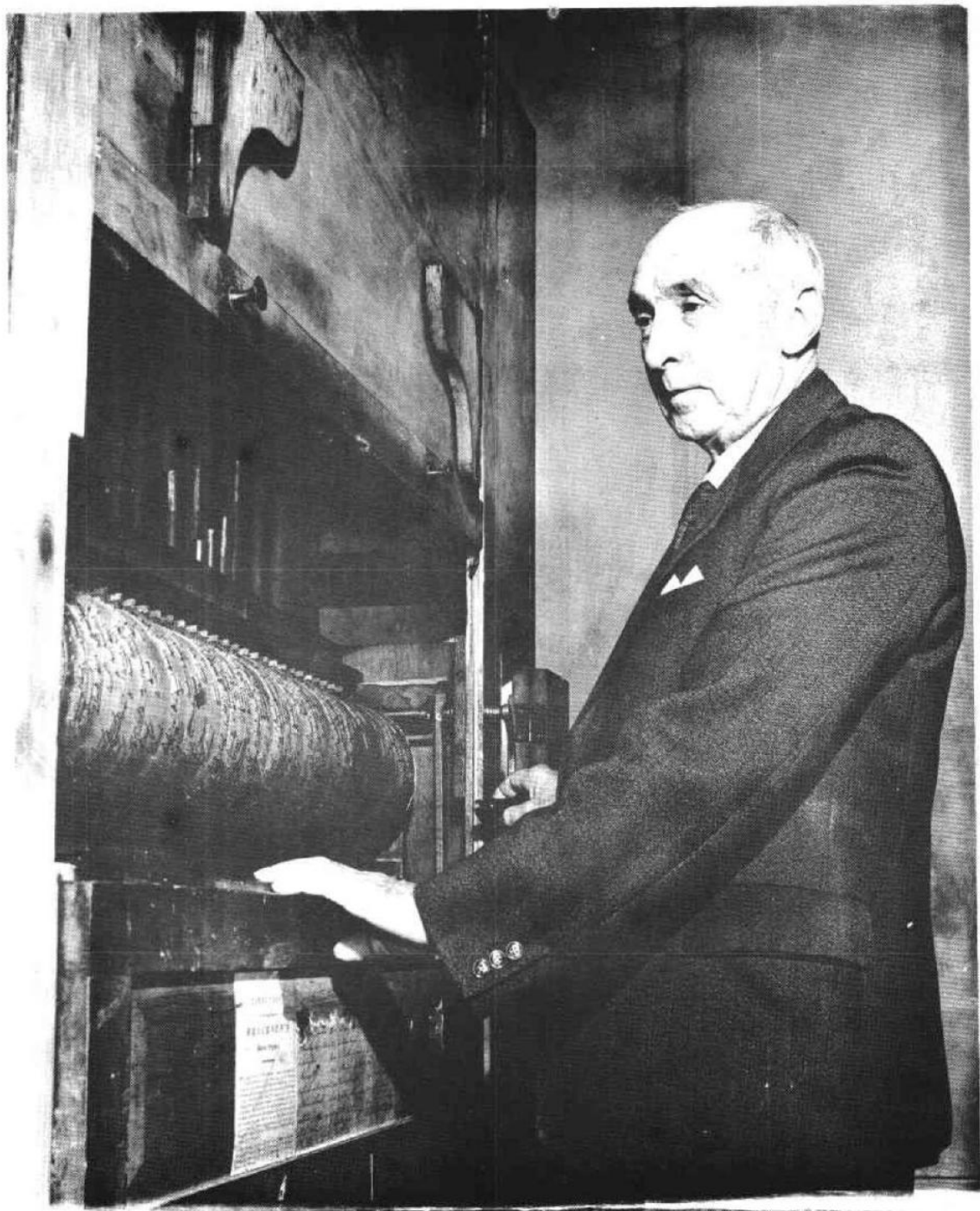
With 8 Coloured Illustrations.



LONDON:  
H. GREVEL & CO.,  
33, KING STREET, COVENT GARDEN, W. C.

(Printed in Germany).





# History Repeating Itself?

## TAPED MUSIC MAY REPLACE RURAL ORGANS

The difficulties facing the Church of Scotland in finding suitably qualified organists, especially in rural parishes, were discussed at a conference in Edinburgh yesterday on the use of recorded music in the Kirk.

The conference, the first of its kind, was organised by the Rural Panel of the Home Board and attended by ministers and elders from Fife and South-East Scotland.

The delegates had the chance to find out for themselves the effectiveness of taped music.

They sang the 145th Psalm to the tune of "Duke Street," and, although they fell slightly behind in the opening verse, they caught up in all the other verses.

### A TRAVESTY

The Rev. Dr A. W. Sawyer, vice-convenor of the Committee on Public Worship and Aids to Devotion, who presided, pointed out that recorded music led the singing and did not accompany it.

"In many rural parishes the organ is a travesty of a musical instrument," he said. "To go into a church and hear a ghastly instrument played in a ghastly way is a soul-searing experience."

It is hoped to hold similar conferences in Glasgow and Aberdeen.

THE NEWS ITEM, shown left, is from the "Glasgow Herald" dated 6th October, 1966. Of interest is the fact that it may well have applied to the same story over one hundred and seventy years ago!

It was for the self-same reasons that the barrel organ for use in church was conceived, gaining such popularity.

The Rev. Dr. Sawyer, who is quoted in the news clipping seems to agree with the underlying thoughts of the famous Dr. Burney who, in his lengthy treatise on the barrel organ in

"Rees Cyclopaedia", published about 1805, states that "the recent improvements of some English artists have rendered the barrel capable of producing an effect equal to the fingers of the first-rate performers". Even in 1795, the poet Mason, one-time Precentor of York Cathedral, put on record that he preferred "the mechanical assistance of a Cylindrical or Barrel Organ to the fingers of the best parochial Organist".

Now, it seems, the same circumstances are once more to oust the live organ - this time, though, to replace it with a loudspeaker and a tape-recorder.

**C**hurch barrel organs, once fairly common, are now very few and far between. Of those that remain, one at least is in regular use and this is the organ at King Charles the Martyr's church in Shelland, Suffolk. The barrel organ was built by Bryceson and installed about 1830. It has three barrels each playing twelve hymns and has six stops

Illustrated (left) is the rear of the organ, showing the barrel and mechanism in the hands of Mr. Sidney Armstrong who has been in charge of the instrument for over 30 years. Before that, his father was 'organist' for over fifty years - and thus the Armstrongs have been the masters of the Shelland hymns and the organ for approaching a century. The organ was rebuilt and fully restored some six or seven years ago and now performs perfectly. As with all church instruments of this type, they were made "back to front", so that the decorative facade with imitation pipes faced the congregation, and the performer with his crank handle and stops was out of sight.

(Picture by courtesy of KEYSTONE)

## Autumn Meeting of the Society

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The Autumn meeting of the Musical Box Society was held at the Great Western Royal Hotel, Paddington, London, on Saturday, 12th November, 1966. Some one hundred Members and their guests attended the one-day event which began with coffee and biscuits at 10.30 in the morning.

It was generally felt that this new venue for our gathering was indeed a worthwhile choice and the large room we used afforded ample space for seating as well as providing adequate table space for display boxes.

The morning session was devoted to a talk by Dr. Robert Burnett on the factors and characteristics which govern the quality of a box. His excellent talk was illustrated by a number of boxes from his collection ranging from the large F.Conchon organ or flutina box (pictured on page 328) down to small snuff boxes. One box he demonstrated to his enthralled audience was a particularly well set-up forte-piano by Nicole Freres and others included Mandoline, Piccolo and Sublime Harmonie. The use of the amplification system in the room proved ideal and, for once, everybody could hear the boxes in comfort.

After the luncheon recess, President Bob Burnett welcomed our only American Member in attendance this time - our very good friend from New Jersey - Hughes Ryder. In the course of a subsequent address, Hughes revealed that his decision to come over was truly a last-minute affair. Having told his wife that he would like some Scottish smoked salmon for dinner, and having been told that it was impossible to obtain in that part of the States, he announced he would nip over and get some. Since his excursion ticket was for a minimum of fourteen days, we detected a slight apprehension in his manner when we asked how Francis Ryder would react to his lengthy (and expensive) shopping spree.

President Burnett read an address from Howard Fitch, President of the Musical Box Society International of America, and also a letter from Mrs. Ruth Bornand who we all had the pleasure of meeting at our May gathering.

Hughes Ryder then delivered a short talk illustrated with slides on the Perfection disc musical box made in New Jersey, United States. His pictures showed clearly the most unusual and highly impractical damper arrangement contrived by making each star-wheel of this instrument as a lamination of two thin pieces of steel with felt between.

The final event of the afternoon was a "Brains Trust" organised by Editor Arthur Ord-Hume. Members of the panel of experts were Dr. Burnett (Northampton), Peter Ward (Cambridge), Hughes Ryder (New Jersey) and Graham Webb (London). Taking questions of mechanical musical subjects sent in by Members, together with those from the body of the meeting, a lively discussion followed and the subjects ranged from squeaking dampers to maker identification, how to re-fill a cylinder with cement to identifying tunes on boxes brought to the table.

The remainder of the afternoon was spent in examining the boxes brought for sale and display. These ranged from the mechanism of a 9ft. tall Black Forest twin-barrel organ clock with an exquisitely-painted picture front (belonging to Member Mike Twomey) to the Nicole Freres box which was the subject of Member Tony Sherriff's story on page



329. Graham Webb of the Executive Committee displayed a most interesting barrel organ featuring a revolving stage with dancing figures and musicians (similar to those illustrated in Plate 121 of Buchner, Page 73 of Maingot and Page 136 of Chapuis' "Automata"), and also a Black Forest Trumpeter Clock. Member Keith Harding showed a very large Nicole Freres 4-overture box (No. 27801) with engraved tune sheet and ratchet winding handle. These were but a few of the many fine boxes which Members brought along.

In a concluding address, Secretary Cyril de Vere Green announced that tentative negotiations were in hand to organise a visit to St. Croix, Neuchatel and the famous Baud Freres Museum next summer. Originally planned as a very full one-day trip, it was decided on a show of hands that it would be better to try to arrange a week-end in Switzerland to allow more time to examine the items of great interest to us all. As soon as estimates are finalised, Members will be advised and asked whether or not they wish to come on such a trip.

Thus came to an end another successful and enjoyable meeting.



## Exhibition in Paris

by B. HORNGACHER (trans. by Mrs. Jane de Vere Green)

**I**n its function of exchanging French and Czech culture, the Museum Conservatoire des Arts et Metiers de Paris has received for display a collection of musical instruments from Prague. Alongside these are exhibited some examples from French museums and collections. This collection is called Musical Boxes of Prague which is surprising since this title only covers half the pieces shown. The title, however, has the merit of being concise. One must realise that, until the middle of the last century, the term musical box was applied to any portable musical instrument because the commonly called comb boxes used to be called 'Musical boxes of Geneva' - not in honour of the inventor, who had already been forgotten, but because Geneva was the first centre of production and commercial distribution of this 19th century novelty. I have even found a French piece of about 1850 of which the tune sheet says 'Music from Geneva' and J. Thibouville! The development of this industry in France, in and near St. Croix, then in Prague, fixed the term 'musical box' solely on instruments with steel teeth, of which the definition is more complex. In this exhibition, boxes from Prague occupy one big room in a well-lit, modern presentation. The walls are decorated with enlargements of old documents depicting some of the concepts of the 18th century.

Two charming girls display the pieces and make them play hourly. Unfortunately, their briefing has been mediocre - errors, anachronisms, so-called technical explanations filled with incorrect and nonsensical expressions. One could argue that this is not intended to be a lecture but is simply to display the tremendous variety in the strange world of mechanical music of the last century, to identify the pieces shown (and these do not claim to represent all types), and finally to interest and amuse the public. Even so, backed by the catalogue and correct verbal descriptions, these objectives could have been better achieved. In fact, the catalogue is rather lacking in text, providing neither characteristics nor peculiarities of the pieces however interesting and rare they may be. Nevertheless, the catalogue contains a number of excellent photographs.

The majority of pieces are Swiss, French and German. However, there are two boxes from Prague which form the nucleus of the theme of the display - and they are not even mentioned in the catalogue! Luckily, I managed to get permission to photograph them (see Page 423). The first is a large box of light wood in an unusual style having large base with openings to create reverberations, and inclining sides rather like a washtub. Placed end to end are two movements each of two airs, signed Willenbacher & Rzfbitchek on one, and Rzfbitchek in Prag on the other.

I have noted that it is possible to find similar pieces with other names, which leads me to think that Rzfbitchek sold his work to other workshops to complete (often of inferior quality such as Olbrich) under the name of retailers. If anyone owns boxes by this maker (Rzfbitchek or Olbrich) I would like to have the name, serial number and the names of the tunes played, if known. We know of the following in chronological order: Willenbacher & Rzfbitchek in Prag; Rzfbitchek in Prag; Rebicek Musikwerke Fabric in Prag (written in a curve); A. Olbrich in Wien. One notices the variations in the spelling of Rebicek which are phonetic adaptations of the Czech pronunciation, perhaps indicating a certain export market.

The comb musical box with cylinder is represented by five pieces (three pictures, one time-piece on a pedestal, one beer tankard). It is a pity not to be able to see the movement of the clock which could easily be an early Lecoultre. One of the pictures is wound by pulling a cord and must therefore have a small movement. The others, key-wound, could well conceal interesting movements. If the beer tankard and the crystal cup do not contain any special movements, these two objects are in themselves of good quality - unusual in this type of thing. On the other hand, a photo album and jewel box are of a recognised type, beautifully preserved. From the present aspect, a little snuff box, reminding one of the work of St. Croix, has the peculiarity of playing six Czech airs with a very unusual tunesheet of which I have the translation. Another item has a simple tune-indicator, an attractive dial with drum and bells, engine turned in very bright bronze with 6 bees, no identification mark and an unusual tune sheet, probably remade at the time of the transformation most likely when it arrived in Prague. This box, typical of St. Croix, has been fitted with a coin slot adaptation and is in good condition.

Lastly we come to a large orchestral box with celestial voices, a drum, bells struck by Chinese figurines, castanets - but no zither! This is more amusing than musical. It also has the following mechanical peculiarities - interchangeable cylinders, double winding mechanism (spring barrels) not only to give length of play but also to reduce the speed ratio of the governor. The governor can be regulated during play and there is a tune indicator. The box is ratchet wound. This is a fine example of the most expensive machine available at the end of the last century.

Polyphons. This type of disc machine is well represented. There are five examples of the small Symphonion, and an example of the second type of self-changing Polyphon wherein the barrel-type of spring is replaced by a winding thread, which stretches the full length of the plate. More spacious mounting is the advantage of this type of mounting as well as being less cumbersome, and less expensive. The disc size is 13 $\frac{1}{2}$ ".

Chiming clocks in the exhibition are not truly musical in the proper sense as they are more like xylophones but with metal plates hit by hammers. Other percussion instruments include an example of the Chorodephon which is fairly rare. There is also a bastringue grand with mechanical tremulo. Of peculiar attractiveness is an oddment, probably Czech, in the form of a chiming clock with pendulum and glass bells.

There was also an adjoining exhibition comprising the rare and interesting pieces of Dr. Tagger which is going to re-open in a French provincial town and will finish the season at the Commercial fortnight of Besancon in the French Jura, not far from St. Croix in the Swiss Jura.

In conclusion I have taken several notes and I can provide other details to collectors who may like to compare their pieces with those exhibited. The catalogue of the exhibition, detailed above, is sold at £1 including postage and is available on application to M. Blyelle, 5, Rue Bonaparte, Paris VI.

Editor's Comment: Mr. Horngacher has presented for the Society archives a copy of the catalogue referred to above. It is a remarkable production of about 48 pages printed on fine art paper and containing a large number of excellent photographs, many of instruments never before depicted. Whilst, as Mr. Horngacher says, the text and captions leave much to be desired, the general content of this production largely compensates for this otherwise serious defect. The discerning collector will find this a worthwhile adjunct to his reference library.

# WHO IS IT WHO HAS



NICOLES, BREMONDS, DAWKINS, P.V.F's,  
 THIBOUVILLES, BILLON-HALLERS (well, one!)  
 LANGDORFS, BRUGER & STRAUBS, POLYPHONS,  
 SYMPHONIONS, KALLOPES, BRITANNIAS,  
 IMPERIALS, THORENS, LOCHMANN'S, STELLAS -  
 and a host of other

# MUSICAL BOXES

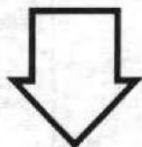
CHEAP BOXES, EXPENSIVE BOXES, INTER-  
 CHANGEABLES WITH AND WITHOUT TABLES,  
 OVERTURE BOXES, ORGAN BOXES, SNUFF  
 BOXES, BARREL ORGANS, PLAYER ORGANS,  
 STREET PIANOS, TIN BOXES, WOODEN BOXES  
 some with special musical wood-worm),  
 ORGANETTES, and a load of others,  
 in fact, almost all types



# FOR SALE?



BUY HIM  
 A  
 MUSICAL  
 BOX!



## Graham Webb

THE MUSICAL BOX SPECIALIST SHOP

93, Portobello Road, London, W.11. TELEPHONE : PARK 1485

Nearest Tube NOTTING HILL GATE

# British Patents

## for Automatic Musical Instruments

## PART TWO

Year	Date	Pat. N <sup>o</sup>	Patentee	Brief Description
1816	14 May	4030	William Simmonds	Barrel Organ with interchangeable notes on the barrels
1847	7 Oct	11886	Alexander Bain	A mode of playing wind instruments by a perforated paper surface.
1848	5 Aug	12229	Duncan Mackenzie	Improvements on the Jacquard machine for playing wind instruments.
"	2 Nov	12307	Charles Dawson	A device for playing wind instruments using movable tube or sliding plate perforated with holes. Also may be used with pianos/organs.
1849	16 Jan	12421	William Martin	Self-acting piano, organ or seraphone playing on Jacquard loom principle.
1852	15 Jul	14222	John Henry Gauntlet	Self-acting apparatus for keyboard or barrel pianos or barrel organs using electro-magnetic connections.
1853	15 Oct	2385	Antoine Corvi	Improvements to stationary and portable organs with keys and cylinder. Barrel organ with flutes, hautboy, flageolet, triangle, castenet, with piano-forte arrangement.
1854	16 Jun	1313	Frederick John Julyan	Improved type of musical pipe on Aeolian Harp principle.
"	8 Aug	1738	Antoine Corvi	Mechanical orchestra including mechanical violin played by barrel organ type of barrel.
1855	11 Jul	1545	John Henry Johnson (a communication)	A mechanical device for playing chords or harmonies on a keyboard instrument by depressing one key.
1856	3 Jan	22	John Henry Johnson (Francois Guichene)	Improvements to a mechanical device to facilitate the playing of a keyboard instrument by creating from one key the ability to produce chords.
"	14 May	1133	Hiram Groves	Method of pinning tunes to barrels of organs &c and for copying same.
"	21 May	1199	Robert Pemberton	"Sufficient pipes are provided for a barrel organ that all the tones and semitones in the chromatic scale may be played. The barrel organ has double-acting bellows"
"	31 Jul	1609	William Edward Newton	Steam whistles played from a pinned barrel.
1858	26 Apr.	917	Wright Jones	Mechanical carillon mechanism,
"	23 Oct	2369	Rudolph Bodmer (Charles Thévenot)	A musical box playing one or more tunes is provided with a stretched caoutchouc or like sheet covered with glazed paper, the sheet being vibrated so as to cause a number of puppets lightly supported on it, to dance.

On SATURDAY, May 12th, 1832,

The following Selection of Music

Will be performed

BY MR. PURKIS,

ON THE

# APOLLONICON,

A Grand Musical Instrument,

Invented and Constructed by

Messrs. FLIGHT AND ROBSON, ORGAN-BUILDERS,\*

101, ST. MARTIN'S-LANE;

Under the immediate Patronage of His Majesty.

Commencing at 2 o'Clock—ADMITTANCE 1s.

The **Mechanical Powers** of the Instrument will commence the Performance with **Mozart's OVERTURE to FIGARO**, and conclude with **Weber's Celebrated Overture to Der FRIESCHUTZ**.

**PART I.**

SYMPHONY.....*Haydn.*  
 AIR—'Dovo sono,'...*Figaro*, .....*Mozart.*  
 DIVERTIMENTO—*from Preciosa*, .....*Purkis.*  
 SONG—'On yonder rock reclining,' .....*Auber.*  
 GRAND MARCH—(MS).....*Winter.*

**PART II.**

OVERTURE—*Le Seigneur du Village*.....*Boieldieu.*  
 POLACCA—'The horn of Chase,'.....*T. Phillips.*  
 GLEE—'When the wind blows,' .....*Bishop.*  
 BALLAD—'The banks of Allan Water,' .....  
 FINALE—'Huntsmen's Chorus'—*Der Frieschutz*.....*Weber.*

**MR. Purkis' Performances** will be continued every Saturday DURING THE SEASON, commencing at Two o'clock.

The **MECHANICAL POWERS** of the APOLLONICON are exhibited DAILY, from 1 till 4, PERFORMING

**Mozart's Overture to Figaro, & Weber's celebrated Overture to Der Frieschutz;**

In the execution of which, it has been honored with the approbation of the most eminent Mechanical and Musical Men of the Age, and is allowed to possess a grandeur and variety of effect, with a precision and delicacy of expression, superior to any other Instrument in Europe.—The Music arranged for and set on the Cylinders by the late Mr. JAMES FLIGHT, Jun.

\* **Organs suitable for Churches, Chapels and Music Rooms,** are completed of various prices and descriptions.



# MUSICAL MECHANISM

## THE RECONSTRUCTION OF AN OLD POLYPHON

By "Aeolus"

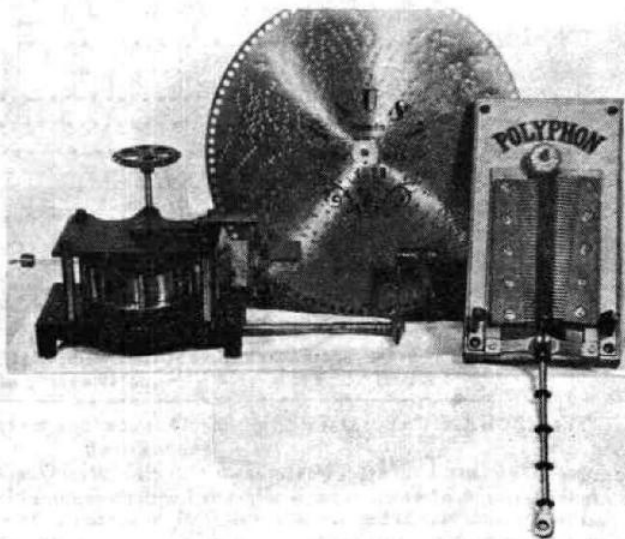
**T**HE music-playing sub-assembly was removed from the cabinet and laid on the bench. Then the combs were carefully removed, the central spigot taken off and the star wheels dismantled by drawing out the shaft on which they revolve. The shaft is held in place by one  $\frac{1}{8}$  in. pin. Here arose the first small snag. It was felt necessary to keep the star wheels in their correct order (a niggling job, with so many to be looked over and touched up) because of a difference in wear as between those at the bass end and those at the treble end of the scale. This difference is due to the fact that the bass tuned teeth are much stiffer and heavier than the treble ones. Some of the star wheels had been "bashed" and had lost one or more of their teeth (these totalled 8) and some were bent. It was proposed to copy good star wheels and thus produce replacements for the broken ones and to straighten the bent ones. Of 16 bent star wheels, only 7 were salvaged, leaving 17 to be replaced. Having no suitable equipment for machining such profiles, the new ones had to be made in a filing jig—in three batches of seven, thus leaving 4 surplus. The method adopted was as follows. Steel blanks were turned up on the lathe to full outer diameter and correct thickness and were bored to fit the shaft. Bored because the shaft is an odd—probably a millimetre—size. The exact outer diameter of a 9-pointed star wheel in new condition was not ascertainable, therefore blanks were made a few thou. larger in o.d. than the worn star wheels. All burrs were removed and precautions taken to see that the blanks were dead flat. They cannot work unless they are. A headed and threaded mandrel was turned in M.S., the mandrel stem being a good fit in the bore of the blanks, see Fig. 2. Two of the best star wheels were selected and case-hardened. One of these was threaded on to the mandrel until it rested against the head (which is smaller than the root diameter of the

star wheel teeth), then 7 blanks were threaded on, and finally, the other hardened star wheel. A specially made washer was put on, and a nut (smaller than the tooth root diameter) was screwed on to the threaded portion of the mandrel, and the nut tightened with the fingers. The extended body of the mandrel was set up on a vee-block on a surface plate, and the teeth of the two hardened star wheels brought into accurate radial relation with each other by means of a scribing block. The nut was tightened, and the relation re-checked. When correct, the head of the mandrel was held in a vice (with copper clamps) and the necessary profiles filed up on the blanks, using the hardened edges of the star wheels to guide the file. Needle files of correct shape were needed to finish the job. The first batch was spoiled by trying to make the lot at one "go," and a new start had to be made, but on 7 being tried, and when the knack was

acquired, there was no difficulty. The tips of the teeth on the new wheels were slightly rounded off to imitate the wear on the old ones, because had they been left sharp and therefore longer, they would have plucked the tuned teeth more fiercely than the old ones. This rounding off was done against the star wheels next to which the new ones were to operate because the amount of wear differs with location, as stated earlier. Of course, two of the extra star wheels were used to supersede the two hardened ones, and the other two replaced two old ones which did not conform to the average wear on these components.

Both jockeys had flats worn on them, so new ones were made in several different outer diameters, the variations being of the order of 0.005 in. between each pair. The reason for this was that there was no way of finding out the exact diameter required, owing to wear, and it was felt that it might be well to have various sizes to assist in final adjustments; and so it proved.

To keep the star wheels and jockeys in position and alignment, a brass block is slotted at regular intervals, and they run in these slots, see Photograph No. 5. As the star wheels and jockeys must be unrestricted (save by the brakes previously mentioned) some of these slots which had been partially closed by former file treatment were opened



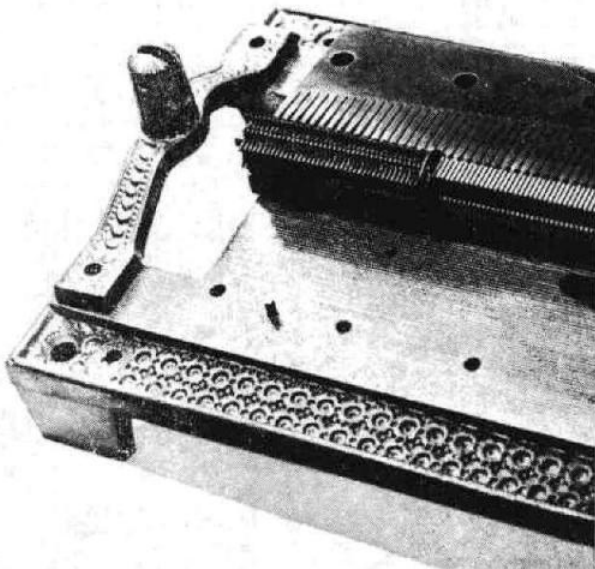
Photograph No. 4. The clockwork movement, a playing disc and the music playing sub-assembly

(Continued from Page 359  
of THE MUSIC BOX)

and squared up with the blade of a screwdriver which had its edges rounded off for the purpose. A little truing with a dead smooth file was also necessary. The block, and therefore the star wheels, are adjustable by means of packing.

The tips of the tuned teeth were next taken in hand. These were distinctly worn and depressions showed where the star wheels had plucked them. It was desired to remove the high spots thus left proud because it would have been impossible to adjust the star wheels to touch the tips of the comb in exactly the same place as previously after the several adjustable components had once been disturbed. To accomplish this correction, the right hand comb, which is plucked "upwards" was firmly screwed face downwards, at the end edge of the bench, with the tips of the teeth overhanging. The wear on the extreme tips was levelled with a well oiled Arkansas stone. The bottom surface of the teeth is not square with the top, but is cut at an oblique angle; this surface showed grooves worn by the star wheel teeth, so it was also rubbed down with the Arkansas stone held as nearly as possible at the correct angle. The other comb (that plucked "downwards") had to be treated rather differently, as in this case, the star wheel teeth impinge on the upper surfaces of the tuned teeth, cutting grooves along them, as well as indenting the tips. The tips were therefore rested on a straight-edge, with the solid part of the comb well supported (face upwards) and the tips stoned off at right-angles. Then the stone was used to smooth off the top surfaces of the teeth. Care was used to maintain the stone at an angle which would not extend its cutting beyond the wear marks left by the star wheels.

By these means, the tuned teeth were rendered no shorter than their effective length, as worn down by use over the years, because, when the stoning was finished, there was witness on each tooth, that is, one could just see, very faintly, on the tips of the teeth, the marks of the depressions left by the star wheels. To overcome the shortening of the tuned teeth, the combs, when reset, were replaced several thousandths of an inch nearer to the star wheels than formerly. In parenthesis, it may be said that even this slight



Photograph No. 5. Part of baseplate of music playing sub-assembly, with one playing comb in position, showing some of the star wheels, a jockey pulley and the slotted brass block for supporting them

lightening of the tuned teeth by the removal of metal, must raise and slightly alter the pitch of the notes given out by them. All that can be said about this is that the alteration must be so "even" over the whole gamut of the 76 tuned teeth that there is no noticeable effect.

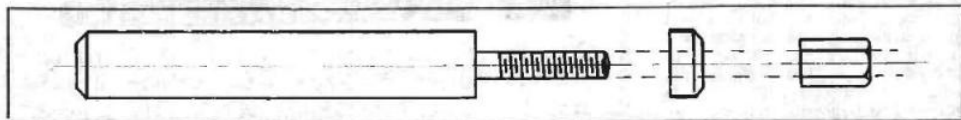
The dislodged resonators were then tackled. The problem was to re-solder five on one comb and two on the other, without dislodging any of the remainder. As stated before, resonators are made of lead, comb teeth of cast steel and the photographs show that the teeth are close together. If sufficient heat were to have been applied to sweat on the detached ones with ordinary solder,

there would have been likelihood of unsweating more than were replaced, to say nothing of, perhaps, destroying the temper of the tuned teeth. I therefore cast round for something less liable to lead me into trouble. Wood's metal was tried in place of solder. Rather to my surprise, it worked. Wood's metal is a lead-like substance made of tin, lead and bismuth. It has a melting point between 151 and 162 deg. F., well below the boiling point of water. Using a smear of liquid flux (as used for solder) and with this metal, replacing the resonators was easy. The surfaces to be "soldered" were gently but thoroughly cleaned with a light

Right: Photograph No. 6. A few of the dampers and brakes



Below: Fig. 2. Mandrel for star wheel filing jig, in steel



brass wire brush only, the teeth of the combs alone were fluxed. The two parts were placed together with a tiny piece of Wood's metal (beaten flat) between them. They were then heated by "flashing" them with a small blue gas flame and afterwards kept hot by holding a red-hot soldering iron near them. As soon as the Wood's metal melted, the two parts were adjusted by hand against a support resting on the next adjacent resonator, and held until cool. Of course, an old glove is required! As an experiment, this method was tried out on a discarded, useless comb before any attempt was made to repair those under discussion. In the second trial—the first was unsatisfactory—using exactly the means described above, a joint was made so good that when the resonator was purposely broken off, the lead of the resonator broke in a fresh place, not at the joint. By the way, a thin paper card inserted between a resonator refixed with Wood's metal and the next one to be treated afforded sufficient heat insulation to prevent undoing previous work.

Surprisingly, on this particular machine, the tuned teeth themselves were intact—none was broken. It is possible, in some cases, to repair broken teeth.

The next job on the combs was to try to get them back to some semblance of brightness. Removing rust from a comb is a long operation; possibly, fine emery-paper or cloth could have been used, but on the teeth, so severe a remedy was feared lest they should be put out of tune; this can be done all too easily. Worn (fine) glass and sand-paper were indeed used on the solid back part of the comb which supports the teeth, keeping the movement of the paper in one direction only. For the rest, and also to finish the uncut part of the comb, the end of a cork, dabbed in fine emery paste was used, finishing off with another cork dipped in pumice. The abrasives were washed off in "thinners" for cellulose paint. Then a meagre amount of liquid metal polish was applied. It was found that the smaller the quantity of polish used the better, because, if the rag were saturated, a white residuum settled between the comb teeth and it is difficult to clean this out of corners. The steel combs responded to plenty of rubbing. When the surfaces were good enough, a final rub given with a rag damped in "3-in-1" oil completed the job. Some pits caused by the rust did not wholly respond to treatment, but considering the first state of the parts, the

result was quite good—better than expectations.

After refixing the resonators and cleaning the combs, it was wondered if the tuning had suffered, so, while listening, the combs were tested by plucking the tips of the tuned teeth with a finger-nail. This was rather unsatisfactory at first, for it seemed that some notes were duplicated on teeth which had not been interfered with, other than by cleaning and stoning the tips. This was probably an illusion due to an unpractised hand and ear. However, two teeth were found with refitted resonators which were definitely out of tune as between the teeth immediately above and below them. Work was commenced to get these two sets of three teeth into direct relation, so far as ear would serve. This was done by gently paring away the lead of the resonator on the tooth that was pitched at too low a tone until it sounded midway between the notes of its two adjacent teeth. In the other case, Wood's metal was added to the resonator to make too high a note just a little too deep, then this metal was pared down to make the tooth sound correctly against its two neighbours. It was soon found that a small steel plectrum was an improvement on a finger-nail; it is less liable to wear. My wife lent me her ears in the later stages. She listened while I plucked and pared. Now the results from the finished instrument leave little to be desired, so far as tuning is concerned. This dictum is not mine but has been expressed by those better qualified to judge than I.

Where dampers were missing, there was no other recourse but to make some more. Where they

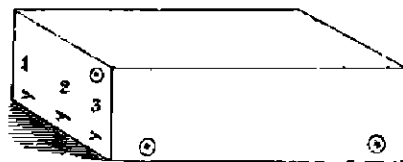
were distorted, they were carefully straightened to their original formation *in situ*; a few broke in the process. Replacements were slowly cut, drilled, sawn and fiddled out of spring brass of the correct gauge, "fiddled" being the operative word! For patterns, existing examples of both types were removed from their fixings and flattened. Photograph No. 6 shows dampers (and brakes) as fitted to the right-hand comb. About a score of new ones were made. The original method of fitting was followed, and is by means of solder to supporting strips of brass, about  $\frac{1}{2}$  in. wide, reducing to  $\frac{1}{4}$  in. by  $\frac{1}{4}$  in. thick, running the full length of the combs. They are anchored to the bed plate of the music-playing part of the machine by one cheese headed screw at, or near, each end, and are adjustable within reasonable limits. The strips are positioned one on each side of the star wheels. Packing, in the form of washers, is used by the makers for raising or lowering the supporting strips. Dampers must contact the star wheels at the correct height, otherwise they will not work properly. The method of making the necessary adjustments was by trial and error, until a setting was achieved by which all 76 worked against the tips of the tuned teeth, after the manner of a series of contact breakers as used (solo) on many types of single-cylinder i.c. engines.

The restoration of the playing discs was a long job and cannot be recounted here. Suffice it to say that most of them were redeemed from rusty near-scrap to the general appearance shown in Photographs Nos. 1 and 4.

(Continued on Page 413)



This interesting agent's label was found on the tune sheet of a box owned by our Secretary, Cyril de Vere Green, who kindly loaned it for reproduction.



LARGE SIZES.

## INSTRUCTIONS RESPECTING MUSICAL BOXES.

1879

TO WIND UP, TURN THE KEY TO THE RIGHT.

**TWO TUNES.—SMALL SIZE.** Left-hand stud, when pushed to the right, starts the music, and when put back again, the music stops at the end of the tune.

Right-hand stud changes the tune, and is moved either right or left, as the case may be, but not until the music has been stopped at the end of the tune.

**THREE OR FOUR TUNES.—SMALL.** Stud in front when pushed to right, starts music, when put back again, stops music at the end of the tune.

Stud at side, when pushed back (*i.e.* to the left) causes the tunes to play in succession when moved towards the front, the tune is repeated.

### LARGE SIZES.—*Vide drawing above.*

No. 1.—This Stop, when pulled to the right, causes each air to change in succession; and if pushed back causes the air to be repeated without changing.

No. 2.—Being pulled to the right, sets the music playing; and when pushed back stops it at the end of the air.

No. 3.—Being pulled to the front, stops the music instantly. It is intended for the workman's use, and it is advisable not to use it, as if the music is stopped by it, and left long in that way, it is liable to sustain injury by so doing.

Three Pamphlets are published by A. B. SAVORY & SONS, as guides to their Establishment, in Cornhill. The first refers to Silver Plate, Electro and Sheffield Plate; it is illustrated by wood engravings, and contains the weights and prices of the various articles required in family use. The second is on the construction of Clocks and Watches, and contains engravings of Jewellery, with prices. The third contains lists of Alms and prices of Musical Boxes, of Swiss Manufacture; all these may be had on application, or will be sent by post gratis; and although an immediate purchase may not be contemplated, MESSRS. S. will be much gratified by a visit to their Show Rooms, and they trust their goods will repay inspection as works of Art.

A. B. SAVORY & SONS, GOLDSMITHS & WATCHMAKERS,

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# PRACTICAL INSTRUCTIONS

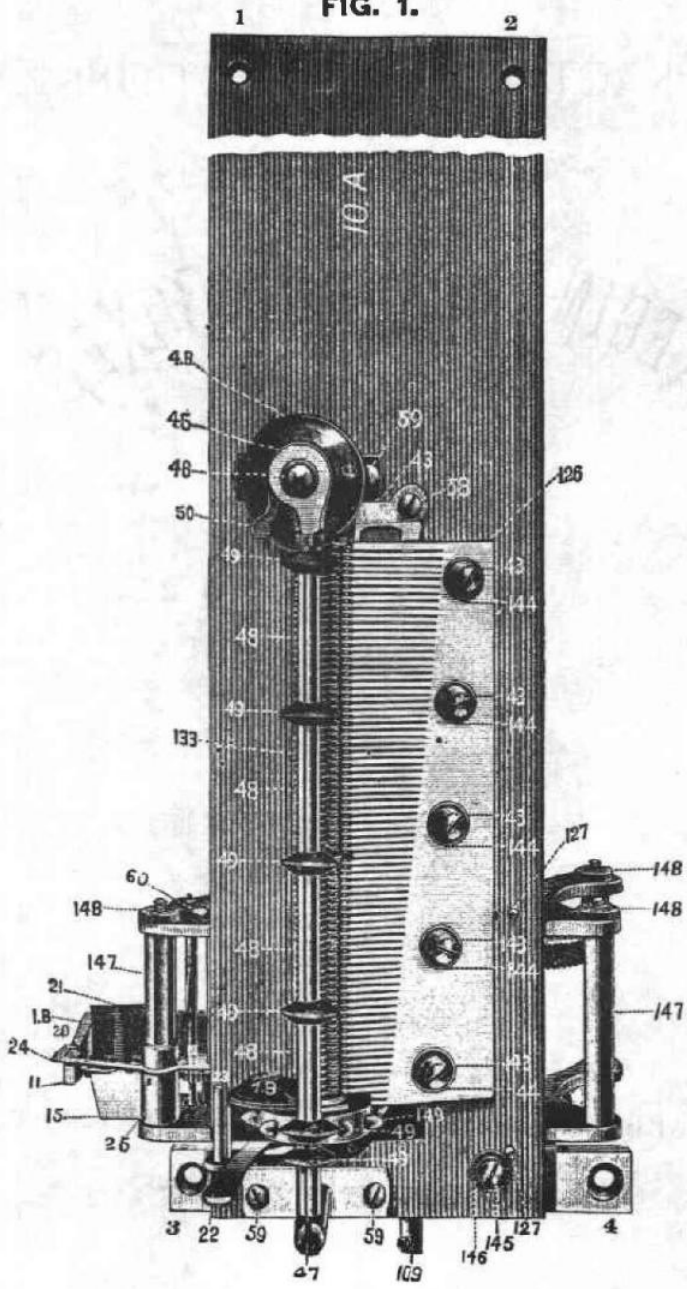
For Operating, Oiling and Repairing the

## REGINA MUSIC BOXES



**The First and Only Music Box  
with Interchangeable Metallic Tune Sheets  
Manufactured in the United States.**

FIG. 1.



## INSTRUCTIONS FOR OPERATING THE "REGINA" MUSIC BOXES.

---

The Instruments are shipped with the Spring unwound or run down, and should be wound up before using. This is done by means of an accompanying crank, adapted to be connected with an arbor or keypost, situated in the large size instruments outside and in the medium and small sizes inside of the box.

If the instrument is received in cold weather, it should remain several hours in a warm room before being wound, as the sudden change of temperature may break the teeth of the comb or snap the spring.

### HOW TO ADJUST THE TUNE-SHEET. Fig. 1.

Press upon the catch 50, Fig. 1, which secures the head of the holding-lever 45 to the centre-post 46, and turn the holding-lever back upon its hinge. Place the tune-sheet in position with its smooth side up and the centre-post 46 projecting through the hole in the centre of the tune-sheet.

Then press the tune-sheet down gently as far as it will go, care having first been taken that the word "Beginning" will be directly under the holding-lever 48 and 49.

The holding-lever is then pressed down upon the tune-sheet and locked in such position by the catch 50 engaging the centre-post, when the instrument is ready for use.

To start the instrument in operation, push forward the lever 22, and draw it back to its original position, when the music will stop at the end of the tune. If it is desired to continue the same tune, the lever 22 shall be pushed forward and allowed to remain in that position, when the tune will be repeated until the lever is again drawn back.

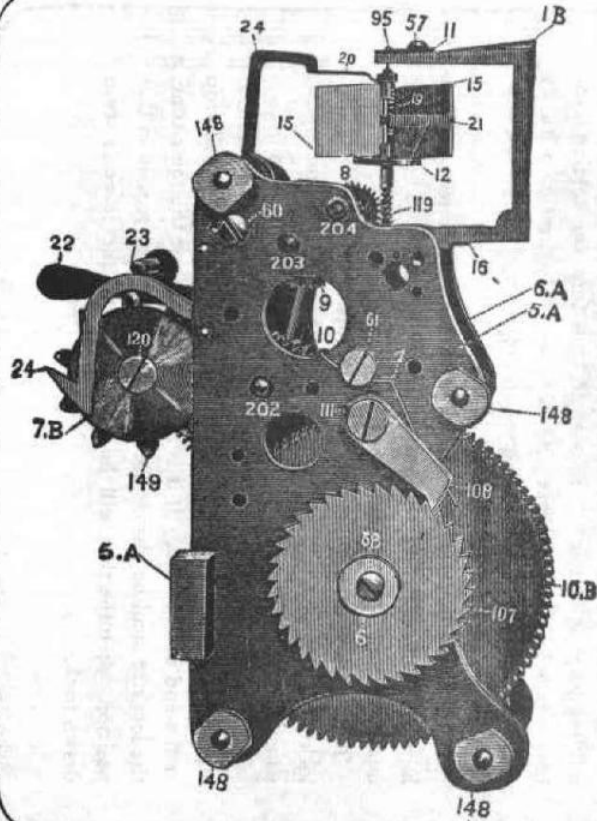


FIG. 3.

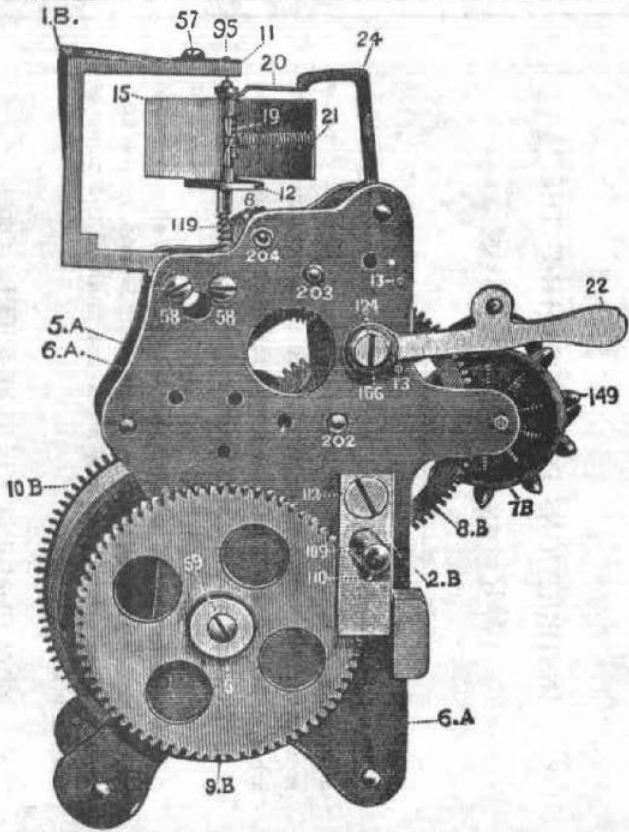


FIG. 2.

To prevent damage to the comb or the projections on the tune sheet, it is absolutely necessary that the tune sheets should not be removed before the end of a tune is reached.

When not used, the box should, for the same reason, be stopped at the end of a tune, and the cover closed, to prevent dust from settling in the movement.

#### HOW TO OIL THE "REGINA."

Any kind of machinery, no matter how well constructed, needs occasional oiling, and although the "Regina" requires it less frequently than other music boxes, partly because of the fact that its movement is better protected, eventually it becomes necessary, and the necessity will be apparent when the instrument begins to run slow. In that case unscrew the board on each side of the bed plate and apply with a tooth-pick or small wire a drop of oil to the worm 119, (Fig. 2 and 3).

Should this not have the desired effect, then remove the four screws, 1, 2, 3 and 4, (Fig. 1), which fasten the instrument in place in the box.

Then take the instrument out carefully and lay it on two blocks or boxes, so as to conveniently gain access to the underside thereof, and put a drop of oil on the following parts. (See Fig. 2 and 3).

*First.*—The worm (119) on the shaft on which the fly or governor is mounted.

*Second.*—In the small oil-hole leading to the outer pivot of the fly or governor shaft. (11, Fig. 2).

*Third.*—To the opposite end of the governor shaft near the worm, (very important).

*Fourth.*—To the pivot holes or bearing of the shaft of the gear wheels on each side of the movement, 202, 203 and 204.

*Fifth.*—On the winding post (109, Fig 2). Should the worm 119 and wheel 8, which gears therewith need cleaning, it can be accomplished with a soft tooth-brush dipped in benzine, after which the parts should be properly lubricated, as above described.

When this is accomplished, the instrument should be replaced in the box exactly in its original position, but before fastening it with the screws, the crank should be adjusted to the winding post to prevent a deviation thereof.

As a general rule, a few drops of oil occasionally, say once every three months, would keep the instrument in good running order, and if lubricated in time, will prevent the wearing of the parts mentioned above. It is of importance that the proper kind of oil be employed. The ordinary watch and clock oil has not enough body for this purpose, and we therefore carry a specially prepared oil which can be procured by our patrons for 25 cents a bottle.

The foregoing instructions can be carried out without unscrewing any part of the instrument. We especially caution against so doing without the assistance of a skilled person.

#### REPAIRS.

In case any part of the movement has been damaged, a competent watchmaker or jeweler should be called upon to make the necessary repairs. If, however, no jeweler or other person competent to make the repairs be at hand, it will be preferable to express the movement (Fig. 2), or the whole instrument (Fig. 1) to our agent.

To remove the movement from the bed plate, proceed as follows :

*First*, unscrew lever, (22, Fig. 2).

*Second*, remove the screw on top at the bed-plate, (145, Fig. 1).

*Third*, remove the screw below the bed plate, (5 A, Fig. 3).

Then disengage the bed-plate from the movement with great care, so as to leave washers which may be found between the two in their position. These washers should be well preserved and preferably tied, or otherwise attached to the holes to which they belong, since it is of the greatest importance that they be replaced in their original position again.

The movement (Fig. 2) can be packed and properly secured with paper or excelsior, in a small box, so that it will not become displaced or broken in transportation.

The whole movement (Fig. 1) can be shipped in suitable case having supports inside on which to fasten it similar as it was in the music-box.

This is especially recommended, if movements are to be shipped from a considerable distance, as it would save express charges and not expose the music-box to injury in transportation.

If the movement to be returned belongs to a No 14 Automaton, the money-shovel and lever may be removed in order to use a smaller packing case.

Before the governor or any other part of the movement is removed, ascertain whether the main-spring is down. If it is, the main-spring barrel 10 B, Fig. 3, will be found loose, if not, it will bind rigidly with the other gear wheels. Whenever proper oiling, as directed above, does not give the desired result, it is advisable to examine the governor. The governor and its mounting comprises the angle piece (1 B), the worm-shaft 119 with governor-fans mounted thereon, a jewel mounting 11-57, jewel 95, and adjustable pivot plate 16.

To dismount the governor, remove screws 58, then with handle of a screw-driver, knock carefully against the base of the angle-piece I B, until disengaged. Then loosen the adjustable pivot plate 16, and take out the worm-shaft with the governor-fan mounted thereon.

The pivot plate 16 can be adjusted in a direction transverse to the governor shaft for the purpose of bringing the worm 119 thereof into proper position with relation to its gears. If a mark does not exist showing the original position of this adjustable plate 16, it would be well to make one before removing it. Examine the jewel to discover whether or not it has been worn by the pivot of the governor shaft. If it has become worn, remove and replace it. The pivot of the governor shaft should, on its head, be round, smooth and well polished. On this condition, as well as on a perfect polished jewel, depends largely a uniform running of the movement.

In certain cases where the governor has been allowed to run a long time without oil, the gear-wheel 8, which meshes with the worm of the governor shaft, may be worn on the edges and a new one required.



Examine sprocket wheel (7 B, 149), and observe whether or not it runs easy; if not, put a drop of oil on the screw forming its shaft. An oil hole is provided for the purpose.

If a main-spring is broken, our advise is to return the drum, with the broken spring and the arbor left in it, to our agent, who will replace it at the smallest possible cost.



FIG. 4.

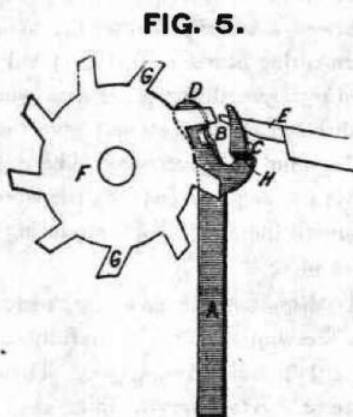


FIG. 5.

#### THE DAMPER.

The Damper (A) is crotch shaped (as illustrated in Fig. 5), and the broad arm (D) thereof is provided with a cam (B), which is adapted to project into the space between the spurs (G) of the star-wheel (F), which is to operate that particular damper. The tension of the spring of the body portion of the damper (A) is exerted toward the star-wheel, which is to operate it so that each spur of such star-wheel will, in its rotation, come in contact with the cam (B) of the damper and force the same to one side. Projecting from the same face of the damper as the cam (B) is the arm (C) of the crotch, which forms the damping finger proper. This finger projects up between the tooth (E) of the comb, which is to dampen and the next adjacent tooth. The damper is normally out of contact with the tooth which it is to dampen, but is forced against the side thereof and dampens it when a spur on the star-

wheel (F) comes in contact with the cam (B) on the damper, and just before the spur vibrates the tooth of the comb which it is to operate.

Thus, it will be seen, that a very slight movement is had on the part of the damper, and should it be observed that one or more do not dampen properly, it will be necessary to test them separately, until the defective dampers are found, when a careful observance of their action may prove that the damping-fingers (C) have been slightly bent by some accident or careless handling, and that a bending back thereof into position is all that is necessary. For this purpose it is desirable that some such tool as is illustrated in (Fig. 4) should be employed. It will be observed that one end has the form of a screw-driver, while the opposite end is provided with a groove, which should be of about the thickness of the metal of the damper. One end of this tool can be used to turn the star-wheels, while the purpose of the grooved end is to straighten the damping-finger (C), should it by any accident become bent out of its normal or vertical position.

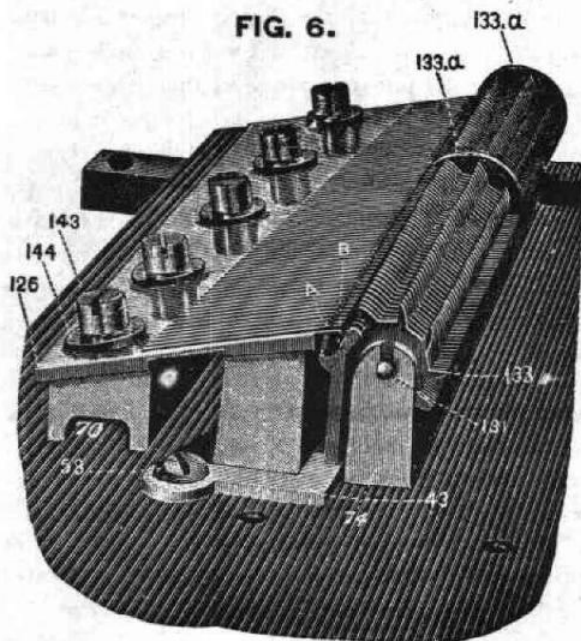
As the slightest displacement of the damping-finger is sufficient to impair the usefulness of the damper, it will be understood that the operation of regulating it is a delicate one, and therefore the operator should proceed with care; it being borne in mind that the damping-finger should be vertical and perfectly straight, since, if it is bowed the slightest amount, the damping will be rendered ineffective.

For this reason care should be observed that the damping-finger (C) be bent only at the curve (H) where it connects with the body portion. This can be done by gently pressing down the two tongues of the comb, between which the damping-finger protrudes. (Fig. 6 A.)

In order to know to which side the defective damping-finger (C) is to be bent, it should be tested; that is to say, the star-wheel should be rotated a tooth at a time at intervals of about two seconds.

If a whizzing sound is noticed, the damper is too far away from the tongue it is to dampen. If the tongue does not vibrate or has a dead sound, the damper is in too close a position to it.

The damper holder, (43 and 58, Fig. 6) star-wheel standard (74, Fig. 6), or centre-post (46 and 59, Fig. 1), should never be unscrewed or disturbed from their position unless absolutely necessary, as when these parts have to be replaced by new ones.



#### COMB AND STAR WHEELS.

If the comb needs repairing, it can be removed, but great care should be exercised in its removal.

After the screws of the comb have been carefully removed, there may still be some resistance to the removal of the comb, on account of the pins fastened to the bed-plate and fitting tightly in holes in the brass base of the comb, which are intended to assure the comb being placed in exact position intended for it.

Should difficulty be found in removing the music-comb after the screws have been removed, wedge a screw driver in at one end between the bed-plate and the foot of the comb, (Fig. 6, 70), so as to slightly lift it.

**In case of breakage of a tooth of the comb it is advisable that no attempt be made to repair it, because such a repair necessitates the employment of great skill. By forwarding the comb to the agent any such repair will be made at a small cost and with such satisfaction as could not be otherwise obtained.**

Before replacing the comb, care should be observed that all the star-wheels are aligned, as indicated in Fig. 6, and in such a position that the cams of the dampers between the spurs of the star-wheels, as illustrated in Fig. 5, so as to bring the teeth of the comb out of contact with the dampers. Then insert the points of the comb between dampers, so that the first damper comes between the first and second tooth, (Fig. 6a), and be careful that the points of the tongues centre with the spurs of the star wheels. If the adjustment is to be made without the guiding pins mentioned before, begin by fastening the comb with two screws, so that the tongues thereof will be only slightly engaged by the spurs of the star-wheels, then advance the comb, by lightly hammering on the heel thereof, until the first base tongue of the comb can be raised by a spur of the star-wheel about one-sixteenth of an inch, before it is released and vibrated, and the last treble about one-third the distance of the base tongue.

Exceeding this proportion, the tongues are liable to break.

However, judgment must be used, and the distance given above to which to raise the tongues of the comb is merely given as a guide.

After the comb has been properly adjusted, the screws should be fastened tight.

#### **OBSTRUCTION OF STAR-WHEELS.**

**Should it be noticed that the tune-sheet, instead of turning with an easy and steady motion, jerks or stops altogether, although the movement is in good running order, it may be concluded that one of the star-wheels is obstructed. The tune-**

sheet should then be taken out at once to prevent damage, and the box not be allowed to play until the cause of the obstruction is removed.

First examine the instrument to discover whether or not any of the tune-sheet projections have become broken and fallen between the wheels if so, remove them. If difficulty is still found in the operation, then every wheel should be tested separately until the obstructed wheel is discovered. This can be accomplished by turning each star-wheel until it has made a complete revolution, with any such tool as is represented in Fig. 4. If the cause of the obstruction is not visible, try a small drop of oil on the groove of the obstructed star-wheel or wheels, which will release it if the obstruction is on the shaft. If, by using reasonable force, and rotating the star-wheel in both directions, it will not yield, then it is probable that one of the spurs (133, Fig. 6) has been bent, and is thereby prevented from rotating in the groove of the standard which supports the star-wheels. If it is a single-comb instrument, the star-wheel can be turned backward by slightly raising the tongue to let the spur of the star-wheel pass, when the defective spur can be brought into such position that it can be straightened with a pair of small plyers. If it is a double comb instrument, it would be necessary to remove the front comb, as otherwise the bent spur, after having once passed beneath the combs, could not be reached.

It sometimes occurs that a spur on one or more of the star-wheels becomes slightly bent, so that while it will pass through the groove of the standard in which it rotates, there will be frictional contact between the bent spur and the sides of the groove. This should be remedied, and the bent spur or spurs straightened, until the wheel moves easily on its supports, otherwise it may cause injury to other parts of the instrument, as well as destroy the efficiency of that particular part.

There is provided on the center-post a brass supporting disc, (4 B, Fig. 1), for supporting the tune-sheet. This disc is provided with a set screw which engages with the centre-post to allow of an adjustment of the disc, the rim of which should be on a level with the uppermost portion of the support-washers, (133 a) on the shaft of the star-wheels.

# LIST OF TUNES



Arranged for the

## Polyphon Musical Box

Nos. 41 & 41B.

"The Kleberg," "The Geneva."

DISC.  $3\frac{1}{2}$  INCHES IN DIAMETER.

In ordering Tunes, mention only the corresponding numbers.  
It is needless to mention the Titles.

TUNE LIST—Nos. 41 & 41b.

No.	TITLE.	COMPOSER.
1	God Save the Queen ... ..	
2	Austrian National Hymn ... ..	Haydn
3	Lorely ... ..	Silcher
4	Wiener Blut Waltz ... ..	Strauss
5	Tales of the Vienna Wood, Waltz ... ..	Strauss
6	Du und Du, Waltz ... Die Fledermaus	Strauss
7	Kiss Waltz ... ..	Arditi
8	The Last Rose of Summer ... ..	Flotow
9	Ove re ...The Merry Wives of Windsor	Nicolai
10	Gadeaumus igitur ... Students' Song	
11	Herzliebchen mein unterm Rebendach, ... .. Waltz	Conradi
12	Still ruht der See, Lied... ..	Pfeil
13	Les Cloches du monastère ... Nocturne	Léfebvre Wély
14	My Queen Waltz... ..	Coote
15	Flower Polka ... ..	Ziehrer
16	Blue Danube Waltz ... ..	Strauss
17	Maritana Waltz ... .. Don Cesar	Dellinger
18	The Poacher Galop ... ..	Faust
19	Violetta Polka ... ..	Strauss
20	La Tyrolienne ... .. Parisian Life	Offenbach
21	Cadets' March ... ..	Metra
22	Windsor Schottische ... ..	Juliano
23	Waltz ... .. Faust	Gounod
24	First Dream of Love ... Polka Mazurka	Dellinger
25	The Beautiful Polish Girl ... The Beggar ... .. Student	Millöcker
26	Devil's March ... ..	Suppé
27	Stephanie Gavotte ... ..	Czibulka
28	The Merry Copper Smith ... ..	Peter
29	Bridesmaid's Chorus ... Lohengrin	Wagner
30	The Blue Bells of Scotland ... ..	
31	The Carnival of Venice... ..	Paganini
32	Polka... .. Carmen	Bizet
33	The Mandolinata ... Spanish Song	Paladilhe
34	Marseillaise ... ..	De l' Isle
35	Les Cloches de Corneville ... ..Waltz	Metra
36	Overture ... .. Guillaume Tell	Rossini
37	Rosen aus dem Süden ... ..Waltz	Strauss
38	Weingeister ... ..Waltz	Wenzel
39	Waltz ... .. La Mascotte	Metra
40	Immer fidel ... .. Polka	Faust
41	Waltz ... .. Boccaccio	Strauss
42	Die vier Jahreszeiten ... ..Waltz	Leroux
43	The Silver Lake ... .. Schottische	Keller
44	Les écrevisses ... .. Polka	Desormes
45	Gute nacht, du mein herziges kind... Polka	Abt
46	The Band is Coming ... ..March	Schild
47	Hoch Habsburg ... ..March	Kral
48	Dream Waltz ... The Field Preacher	Millöcker
49	The Wave Waltz ... ..	Metra
50	Waltz ... .. Donna Juanita	Strauss
51	The Love Letter ... .. Polka	Ziehrer
52	Polka ... .. Le petit duc	Arban
53	Coronation March ... The Prophet	Meyerbeer
54	On the Sea Shore ... Polka Mazurka	Buot
55	Irma Waltz ... The Grand Mogol	Fetras
56	Die schone Bertha ... ..March	Ascher
57	Die alte Tante ... ..March	Peuschel
58	Au bord de la mer ... .. Mazurka	Durrant
59	Waves of the Danube ... .. Waltz	Ivanovoci
60	Boulangers March... ..	Desormes



TUNE LIST—Nos. 41 & 41B.

No.	TITLE	COMPOSER.
61	Woman's Heart ... .. Polka Mazurka	Strauss
62	Still Night, Holy Night, Christmas Hymn	
63	Wein, Weib und Gesang ... .. Waltz	Strauss
64	Secret Love ... .. Gavotte	Resch
65	Air ... .. Rigoletto	Verdi
66	Waltz... .. The Merry War	Strauss
67	Waltz... .. Die Jungfrau von Belleville	Millocker
68	Jo vous en pris ! ... .. Polka	Strauss
69	Kornblumen ... .. German Song	Stephens
70	O, du himmelblauer See ... ..	Millocker
71	Ach so fromm ... .. Martha	Flotow
72	Jagerin schlaun im Sinn ... .. Martha	Flotow
73	Al nostri monti ... .. Il Trovatore	Verdi
74	Miserere, Ah ! che la morte ... .. Il Trovatore	Verdi
75	Hunter's Chorus ... .. Der Freyschütz	Weber
76	Aria ... .. Der Freyschütz	Weber
77	Flower Song ... .. Faust	Gounod
78	Serenade ... .. Boccaccio	Suppé
79	March ... .. Boccaccio	Suppé
80	Treasure Waltz ... .. Der Zigeunerbaron	Strauss
81	Hussars' Polka ... .. Der Zigeunerbaron	Strauss
82	Husarenritt ... .. Salonstück	Spindler
83	Waltz Rondo ... ..	Gumbert
84	See Saw Waltz ... ..	Crowe
85	Radetzky March ... ..	Strauss
86	Torgauer March ... ..	
87	Hohenfriedberger ... .. March	
88	Entry into Paris, German Military March...	
89	I Adore the Power of Love ... .. Prayer	Bortnianski
90	Air de Louis XIII. ... .. Gavotte	Ghys
91	Serenade ... ..	Haydn
92	The Jolly Student... .. March	Fahrbach
93	Dandy March ... ..	Wagner
94	When the Swallows ... ..	Stern
95	How Sweet... .. Waltz	Forster
96	The Fair Adelaide ... .. Waltz	Manusch
97	The Mother-in-Law ... .. March	Simon
98	Si des yeux soient bleuss ... .. Waltz	Forster
99	Wein, bleibt Wein March ... ..	Schrammel
100	Stettiner Kreuz ... .. Polka	Schlichting
101	Tyrolienne... .. Daughter of the Regiment	Donizetti
102	In einem kühlen Grunde ... ..	Gluck
103	Ach Mädchen nur einen Blick ... ..	
104	Sweethearts Waltz ... ..	d'Albert
105	Prinz Eugen ... .. German Song	
106	See the Conquering Hero Comes ... .. Joshua	Handel
107	Wenn die Hoffnung nicht war ... ..	
108	So leb denn wohl, du stilles Haus ... ..	
109	Du du liegst mir im Herzen ... ..	
110	Du liebes Aug, du lieber Stern ... ..	Richardt
111	Zieht im Herbst die Lerche fort ... ..	Heiser
112	Wenn die Schwalben heimwärts ziehen ... ..	Abt
113	Home, Sweet Home ... ..	
114	Cut and Thrust ... .. The Prince's Jester	Müller
115	Laura Waltz ... .. The Beggar Student	Millocker
116	Theresa Waltz ... ..	Faust
117	The First Kiss ... .. Waltz	Lamothé
118	Polka ... .. The Trumpet of the Regiment	Ascher
119	The Red, White, and Blue ... ..	Belveil
120	Overture ... .. La Muette de Portici	Auber
121	Pas redouble ... .. La Favorite	Donizetti
122	The Fir Tree ... .. Christmas Song	

TUNE LIST—Nos. 41 & 41B.

No.	TITLE.	COMPOSER.
123	The Midgets ... Characteristic Piece	Eilenberg
124	Tezeltina ... The Vice Admiral	Millocker
125	March ... Don Cesar	Dellinger
126	Carlotta Waltz ... Gasparonne	Millöcker
127	The Cassocks Ride ... Galop	Millöcker
128	A Summer Evening ... Waltz	Waldteufel
129	Austrian Swallows ... Waltz	Strauss
130	Singer's Joy ... Polka	Strauss
131	The Ambassador ... Waltz	
132	Gasparonne ... March	Millöcker
133	The Fire Brigade ... Galop	Härtel
134	Excelsior Mazurka ...	Marenco
135	Behüt dich Gott ...	
	Der Trompeter von Säkkingen	Nessler
136	Morgenblätter ... Waltz	Strauss
137	The Fortune Teller Der Zigeunerbaron	Strauss
138	The Volunteer Corps ... March	Millöcker
139	March ... The Merry War	Strauss
140	Sweet Violet ... Mazurka	Eilenberg
141	Champagne Galop ...	Lumbye
142	Polka ... Madame Angot	Lecocq
143	Quintetto ... Martha	Flotow
144	Song of the Styx ... Orphée aux Enfers	Offenbach
145	O sanctissima ... Christmas Hymn	
146	Sarastro's Air ... Die Zauberflöte	Mozart
147	The Little Chatter Box ... Mazurka	Bohr
148	The Armourer ... Song	Lortzing
149	Duet ... Die Zauberflöte	Mozart
150	The Solitary Rose ... Song	Hermes
151	Rhineand Dance ...	Teich
152	Caballero di Gracia Waltz, La gran via	Valverde
153	Eliseo Madrilenos Schottische,	"
154	Chorus & Mazurka of the Marineritas "	"
155	Polka de la Galles "	"
156	Jeta de los Platas "	"
157	Pasa Calle Cadiz	"
158	Polka de los Ingleses y Damiseles "	"
159	Pass Doble "	"
160	Lobe den Herrn ... Hymn	Neander
161	Ach bleib mit Deiner Gnade ... Hymn	Fink
162	Vagabonds March ...	Zeller
163	Polka Mazurka ...	Ziehrer
164	Réseda Mazurka ...	Pinto
165	Tyrolienne ... Guillaume Tell	Rossini
166	Szbyanka ... Servian Air	
167	Jagodinka ...	"
168	Nova Wlahyna ...	"
169	Seljancica ...	"
170	Zajecarka ...	"
172	Kamarinskaja ... Russian Air	
173	Hej gimbolom gombolow Hungarian Air	
174	Hunyadi Laszlo indulo	
175	Szoke kis lany csett, csett	For Pista
176	Trgowacho-kolo ...	
177	Waltz ... Der Zigeunerbaron	Strauss
178	Long, Long Ago ...	
179	Waltz ... Mikado	Sullivan
180	The Guards ... Waltz	Godfrey
181	O'le! El Estudiante ... Spanish Air	Lucena
182	Hymne, de Riego ...	"
183	El Barberillo de Lavapia ...	Barbien
184	Jota Zaragozana ...	"

TUNE LIST—Nos. 41 & 41B.

No.	TITLE.	COMPOSER.
185	Rosa of Marie ... .. Spanish Air,	
186	La Jota, Aragonesa ... .. "	
187	Ecos de Cuba ... .. "	
188	Krakowiak ... .. Polish Air	
189	Mazur Chlopickiego ... .. "	
190	Russian Quadrille (in six parts) ... ..	
191	Russian Air ... ..	
192	" ... ..	
193	" ... ..	
194	" ... ..	
195	" ... ..	
196	Moonlight Waltz ... .. Zamara	
197	Rose Waltz ... .. Der Vagabond	Zeller
198	Soldiers' Song ... .. La Dame Blanche	Boldieu
199	Slumber Song ... ..	Brenner
200	Annen Polka ... ..	Strauss
201	Trumpet March ... .. Aida	Verdi
202	On Yonder Rock ... .. Fra Diavolo	Auber
203	Ta-ra-ra Boom de ay ... .. March	
204	Aa Ma Belle Cecilie Polka ... .. Roumanian	Palin
205	Venistorial March ... .. Roumanian	Patin
226	Feuilles d'Automne ... .. Roumanian	
207	Battuta ... .. Roumanian	
208	Ca la breaza ... .. Roumanian	
209	Stambool ... .. Javanish	
210	Stambool ... .. Javanish	
211	Aermawatoempa ... .. Javanish	
212	Krontjoong ... .. Javanish	
213	Poltjoong koeroos ... .. Javanish	
214	Sanglae ... .. Javanish	
215	Sanglae ... .. Javanish	
216	Budapestan szokdea ... .. Hungarian	
217	Il a malom ... .. Hungarian	
218	Sötéthe ... .. Hungarian	
219	Iszom boet, esrom sort ... .. Hungarian	
220	Daisy Bell Waltz... ..	Kaps
221	The Band Struck up ... ..	Castling
222	Dresdina ... .. Waltz	Malmburg
223	Mary and Her Lamb ... ..	Castlung
224	Impudence Schottische... ..	Macey
224	After the Ball Waltz ... ..	Kiefcet
226	A Country Wedding ... .. Barn Dance	Gautier
227	Geneva ... .. Graceful Dance	Gautier
228	Wot cher! Waltz ... ..	West
230	Vienna Girls' Band ... .. March	Lincke
231	Mein Schlesierland ... ..	Wittman
232	Vienna fiacres' song ... ..	Pick
233	Zu Augsburg im gold'nen Stern ... ..	
234	Country Fête Waltz ... ..	
235	Love's Dream, after the Ball ... .. Interlude	Czibulka
236	Sports March ... ..	Kuneth
237	O, Dear Marguerite ... .. Serenade	Kuhn
238	Lauda Sion ... .. Hymn	
239	Merry Men of Hanover... .. Palka Mazurka	
240	Sons of Austria ... .. March	Gistler
241	Lion du Bal... ..	Gillet
242	Bower Waltz ... ..	Strauss
243	Die Luft vom Wiener Wald ... .. Waltz	Schenk
244	Dancing Song ... .. Hansel & Gretel	Humperdinck
245	Valse... .. Hansel & Gretel	Humperdinck
246	Springtime... .. Song	Kreipl
247	Auf der Alm ... .. Tyrolese Song	

TUNE LIST—Nos. 41 & 41B.

No.	TITLE.	COMPOSER.
248	Der Tyroler und sein Kind Tyrolese Song	Nesmuller
249	Forest Devotion ... ..	Abt
250	Einsam bin ich nicht alleine ... Preciosa	Weber
251	Grand Entry March ... ..Tannhauser	Wagner
252	Miserere ah! che la morte ...Il Trovatore	Verdi
253	Santa Lucia ... .. Neapolitan Song	
254	Schier dreissig Jahre bist du alt ... ..	Eleanor
255	Wenn ich ein Vögelin Wår ... ..	
256	The Dandy Queen ... ..	Linck
257	Lingaling Polka ... ..	Oéde
258	At Supper ... .. Song	Chatau
260	Conversation Waltz ... ..	Maxtadt
261	King Charle's March ... ..	Unrath
262	On the Marvellous Rhine ... ..Waltz	Forster
263	Prudent Peggy ... ..Waltz	Strauss
264	Vienna March ... ..	Muller
265	Strolling Round the Town ... ..	Castling
266	The Rowdy Dowdy Boys ... ..	McGlenn
267	'E dunno, where 'e are ... ..	Esplett
268	Two Little Girls in Blue ... ..	Graham
269	Private Tommy Atkins... ..	Potter
270	Down the Road ... ..	Gilbert
271	Go Bang ... ..Waltz	Kiefert
272	La Didily-Idiyy Umty-Umti-ay ... ..	
273	All in a Row ... ..	
274	Looking for a Coon Like Me ... ..	
275	Oh Maria, if You Love me ... ..	
276	When Your Pride has had a Tumble ... ..	
277	Sunshine Above ... ..	
279	Sprites by Night... .. Dance	Fredericks
280	Monte Carlo ... .. March	Kaps
281	An old Sweet Greeting ... ..	Gautier
282	Twiggy Voo? ... ..	
283	One of the Boys ... ..	Deane
284	All Have a Drink With Me ... ..	Vernon
285	Marguerite of Monte Carlo ... ..	Carr
286	I'll Take You Home Again, Kathleen ... ..	Nestendorf
287	Oh! What Times They Must Have Been ... ..	Tabrar
288	Sarah! A Donkey-Cart Built for Two ... ..	Bedford
289	Half-past Nine ... ..	Le Brunn
290	Washington Post March ... ..	Souza
291	Pas de Quatre ... ..Skirt Dance	Lutz
292	The Liberty Bell... ..	Souza
293	Sweet Marie ... ..	Moore
294	Dixies Land ... ..	Emmett
295	The Little Lost Child ... ..	Stern
296	The Darkie's Dream ... ..	Lausing
297	Maggie Mooney ... ..	Shariton
298	My Old Kentucky Home ... ..	Foster
299	Push Dem Clouds Away ... ..	Gaunt
300	Russian Air ... ..	
301	Russian Air ... ..	
302	Russian Air ... ..	
303	Russian Air ... ..	
305	When the Summer Comes Again ... ..	Beaford
306	The Ship I Love ... ..	McGlennon
307	The Village Blacksmith ... ..	Weiss
308	The Song that Reached My Heart ... ..	Jordan
309	Christmas Song ... ..	Schulz
310	Herzklopfen Polka ... ..	Kremser
311	Cumel ... ..	Pospisila
312	Der Zinnhusar ... .. Song	

TUNE LIST—Nos. 41 & 41B.

No.	TITLE.	COMPOSER.
313	Danish Workmen ... .. March	
315	Lumpus und Pumpus ... .. March	Millocker
316	Under the Double Eagle ... .. March	Wagner
317	The British Patrol ... ..	
318	Jessas na ! ... .. Vienna March	Lorenz
319	Leuger March ... ..	Nerradt
320	Brücker Lager ... .. March	Kral
321	Zu Warschau Schwuren ... ..	
322	Anka Polka ... ..	
323	Zeitungs Polka ... ..	
324	Vienna Song ... ..	Lorenz
325	No Star in Heaven Shines for Me ... ..	Peter
326	Hochdeutsch und Wienerisch Vienna Song	Schmitter
327	My Darling... ..Waltz	
328	Norsk Waltz ... ..	Wurch
329	Rhineland Dance... ..	
330	Brazilian National Anthem ... ..	
331	Dinka Waltz ... ..	Jespersen
332	Bjorneborganes March ... ..	
333	Svanebays Polka ... ..	Jespersen
334	Du Gamla ... .. Danish Song	
335	The White Pink ... ..	Peter
336	Dorothy Dean ... ..	Dacre
337	Tableau Vivants ... ..	
338	For the Sake of the Little Ones at Home...	Tabrar
339	The Golden Hair was Hanging Down Her ... .. Back	
340	Oh that Gorgonzola ... ..	Champion
341	Salute My Bicycle ... ..	Le Brunn
842	Austrian March... ..	
343	Dutch National Hymn ... ..	
344	Say Au Revoir, but not Good-bye ... ..	Kennedy
345	Brown of Colorado ... ..	Monckton
346	It Never Troubles Me ... ..	Leighton
347	Cyclist's March ... ..	Holler
349	Bienenhaus March ... ..	Schneider
350	Feinsliebchen ... .. Polka Mazurka	
351	So ne ganze kleine Frau ... ..	Aletter
352	The Honeymoon March ... ..	Robey
354	At Trinity Church, I Met My Doom ... ..	
355	We Live but Once upon this Earth ... ..	
356	Macgregor's Gathering ... ..	
357	Afton Water ... ..	
558	Cyclist's March ... ..	Quentin
359	Nase Marjana ... ..	Vodecka
361	Nejisa ki balam az ajtot ... ..	
362	Mi koze hozzaga ... ..	
363	Gimbelern Gombolom Galambom ... ..	Lajos
364	Edes ayam csaj az a keresem ... ..	
365	Vzdyt jsme jen jednon na svete ... ..	Gyula
366	Souseaska and Visovic ... ..	Nozjcka
367	Batalion ... ..	"
368	Szulzan—Keringo ... ..	
369	Host's March ... ..	Gyorgy
371	Bez Tech zen ... ..	
572	Bazika mladost to je piec radost ... ..	Choate
373	Pochod ceskocb turistis ... ..	Pospis
374	Casine Czaadas ... ..	"
375	Where is My Boy To-night ... ..	
376	Safe in the Arms of Jesus ... ..	Doane
377	Scatter Seeds of Kindness ... ..	Vail
378	Sweet Bye and Bye ... ..	Webs

TUNE LIST—Nos. 41 & 41B.

No.	TITLE.	COMPOSER.
379	We shall meet bye and bye ... ..	Main
380	Pass me not ... ..	Doane
381	Onward Christian Soldiers ... ..	Sullivan
382	Rock of Ages ... ..	Hastings
383	Hark the Herald Angels Sing ... ..	
384	Sun of my Soul ... ..	Ritter
385	Nearer my God to Thee ... ..	Mason
386	Lead Kindly Light ... ..	Dyer
387	Waltz ... .. The Grand Mogul	Metra
388	La Mascheutta ... .. Italian Air	
389	No steme tormentar ... .. Italian Air	
390	Spinn Spinn ... .. Swedish Air	Jungst
391	Verlassen Verlassen ... .. Corinthian Song	Koschzt
392	Soldiers of the Queen ... ..	
396	Jack's the Boy ... .. The Geisha	S. Jones
397	The Amorous Goldfish ... .. "	"
398	If you will come to tea ... .. "	"
399	The Jewel of Asia ... .. "	"
400	March of the Men of Harlech ... ..	
401	March pour Avenement au Trone ... ..	
402	Khedival Hymn ... ..	
403	Marchesur la Naissance ... ..	
404	Die drei Hochzeiten ... ..	Kutschera
405	Schutzen Polka ... Die Zaubertrompete	
406	Weisst du Mutterel was i träumt hab... ..	Kutschera
407	Wenn die Blatter leise rauschen ... ..	
408	The Rat Catcher ... ..	Engeharat
417	Die Lindenwirthin ... ..	Abt
419	A Geisha's Life ... .. Geisha	S. Jones
420	Mora ... ..	Adams
421	There'll come a time some day... ..	

NEW MUSIC IN PREPARATION.

When ordering Tunes kindly mark a few extra numbers, as some may be out of stock.

# MUSICAL MECHANISM

## THE RECONSTRUCTION OF AN OLD POLYPHON

By "Aeolus"

THE clockwork mechanism had sustained a broken mainspring, and the main brass gear wheel was found to have been badly botched, in that two groups of five teeth had been repaired [sic] by screwing one short No. 4 B.A. steel screw into about the centre of each gap, and filling up the interstices with soft solder. Thereafter, it appeared that the teeth of the gears had been forced together to mould or shape the solder to gear tooth form. Of course, the solder was not "man" enough to support a stress such as is exerted by the mainspring, so the inevitable happened; the small pinion jammed in the solder which built up before it, distorting some of its leaves, or teeth, and stopping all movement either way. In addition to the above, the pivots of the "endless screw" were bent, the endstone was badly pitted, its securing finger plate was bent and, also, the female part of the stopwork was missing.

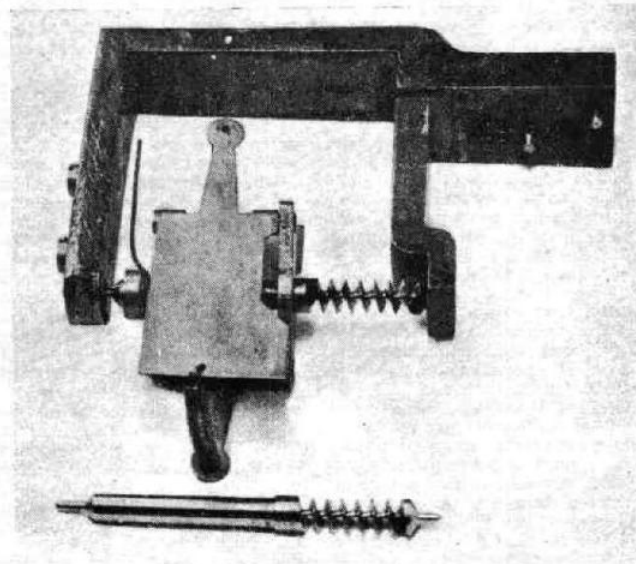
**Warning!** In case any unsuspecting reader should have cause to repair the clockwork of a music box of large size, it is necessary to sound a grave warning at this point. The main-springs are dangerous, in fact, they can be lethal if they get out of control. Their power, if suddenly released, is phenomenal, and precautions must be taken to stop them from "taking charge." When a mainspring is broken, the clockwork may be dismantled with impunity (but *not* the mainspring from its barrel or cage). If it is not broken, there is danger in unscrewing any part of the movement until there is definite verification that the spring has been fully "let down."

The pivots of the "endless screw" obstinately refused to be straightened; finally, they broke off. Blanks for new ones of B.M. steel were easy to turn, but cutting the worm thread presented several problems. Among others, there being no "run-out" at either end of it (see Photograph No. 7) and the core of the thread being extremely small in diameter, there was no possibility of doing the work by single point tool screw-cutting methods. The pitch of the worm is 10 t.p.i. and the only way to cut one with the equipment at hand was by rotary cutters. Of these, quite a number

were made in various sizes and forms, but the worm-thread is so deep and of such odd shape that the success in spoiling blanks soon exceeded enthusiasm for making them. Various ways of supporting the component were tried, and, of course, light cuts were taken, but no satisfactory results were achieved, so Clerkenwell was searched for some form of cutting tool that might accomplish the job. A set of small burrs or rotary files were found that looked like doing the trick by slowly "chewing" or "carving" out the metal to something pretty close to the depth and contour required.

A blank was set up in a jeweller's 8 mm. collet, close to the nose of the mandrel of the lathe. The change wheels were arranged for cutting 10 t.p.i. and the belt drive of the headstock was removed. An 8 in. metal disc was fitted to the rear end of the lathe mandrel in order to move or inch it round by hand. A drive from the lathe motor (by flexible shaft) was rigged up so that the burrs were rotated in a simple milling head, clamped to the slide rest, by which latter they could be

fed into the work. Care was taken to see that all back-lash was fully taken up each time the tool was presented to the blank; this was especially necessary owing to the number of passes that had to be made. The revolving burr was fed in 0.003 in. at the beginning of a cut, the mandrel (and thus, the blank) was slowly turned as regularly as possible by hand, until the end of the helix was reached, when the tool was withdrawn. Subsequent cuts were taken in the same way and the increments of feed on the burrs regulated by the index on the cross slide. This sequence was continued until the worm threads were deep enough. The form of the worm was then improved by using burrs with heads of various types at various angles until the job was not visibly "out." The surface, as left by the burrs, was hopeless for the purpose required because "endless screws" must be burnished to a brightness approaching the look of plating. The worm wheel contacts only the three central threads of the "endless screw," so these were touched up with a worn fish-back needle file, which removed some of the worst of the roughness. A fine slip stone was cut as nearly as possible to the thread form and the roughness still further reduced. During both these processes, the work was rotated against a solid support with one hand, while the tools were manipulated with the other.



Photograph No. 7. Above: The "endless screw," "fly" and C.I. frame for Polyphon music-box, found in Farrington Road. Below: The home-made "endless screw"

(Continued from Page 390)

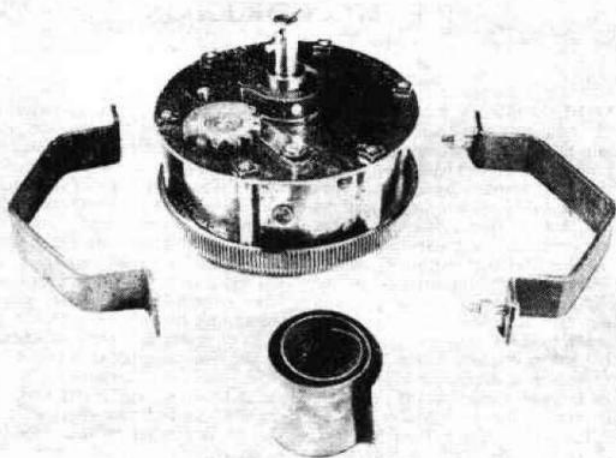


The work-piece was replaced in the lathe and run under power at slow speed. With it was meshed a replica of the worm wheel, made of brass (this had been cut with a specially made milling cutter, by means described in articles on gear cutting in these pages) and mounted on a spindle carried in bearings clamped in the toolpost. This spindle could be retarded by the fingers. After protecting the slides of the lathe, flour emery and thin oil were fed on to the two revolving parts and they were lapped, or rather ground together until they fitted. This brought the surface of the "endless screw" to a finish suitable for burnishing with a hand burnisher made for the job. This completed the "endless screw."

The broken mainspring and its associated assembly were inspected, and as the mainspring's full expansive force was exerted on the six posts between the main brass gear wheel and the mainspring cover, the latter could not be removed without the posts bursting or bending outwards, thus making it impossible to replace the cover, which is held by nuts on the threaded ends of the posts. See Photograph No. 8. Two clamping straps were therefore made to go round the outside of the mainspring and posts. These, with the broken end of the spring arc also shown in Photograph No. 8. The straps were pulled up with 2 B.A. high tensile bolts and nuts, and where they bit the posts, they were hammered with a copper faced hammer to jar the mainspring to a small enough diameter to release the tension between the posts and the cover. After much careful tightening of the strap bolts, and judicious persuasion with the hammer, the cover was released and removed without damaging the threads on the posts. The mainspring was then opened up for inspection, the central shaft withdrawn and the broken piece removed.

The method used to rectify the mainspring did, admittedly, cause a certain amount of set or twist to appear at the inner end of it, but this was better than removing it altogether from its cage and having to make a heavy spring re-winding jig to get it back into place. Complete removal might also have entailed damage to the main brass gear wheel, which is not too robust.

Two pieces of  $\frac{1}{8}$  in. by 2 in. steel strip were each drilled to fit on the threaded ends of three of the posts, and positioned to overlap the mainspring to within two or three coils of its inside diameter. Two tool-maker's clamps were securely fixed



Photograph No. 8. Mainspring in cage showing stop-work. Right and left: Two clamping straps for holding mainspring while cover of cage was removed. Below: The broken piece of mainspring

on the parts of the mainspring not covered by the two strips, to guard still further against "flying." The mainspring cover nuts were tightened on the two strips, thus making all secure.

The middle three or four coils were pulled out of the cage until clear of the strips, where they, of their own volition, sprang upwards and outwards, but only sufficiently to prevent them from going back and to permit a gas blow-pipe to be used on the end of the mainspring to soften about two coils of it. The word "pulled" above, is an understatement; considerable leverage had to be used. When soft, the extreme end of the spring was squared, and a new hole (copied from the broken end) was made to accommodate the hook. This was an ordinary drilling and filing operation, hindered and made aggravating by the awkwardness of the position of the end of the mainspring and its natural lack of stability, to say nothing of the need for treating it warily. The end of it was afterwards forced back into its normal position, with a sigh of relief. Owing to having been strained outwards, the mainspring now protruded about 1 in. above the cover level. This was partially corrected by removing the  $\frac{1}{8}$  in. by 2 in. retaining strips and the clamps, and inserting wedges under the undistorted coils, i.e., between them and the spokes of the main brass gear wheel (no easy matter) and pushing the upwardly bent coils downwards. This reduced the "out-

of-flat" misalignment of the mainspring to between  $\frac{1}{8}$  in. and  $\frac{1}{4}$  in. This was considered good enough because only light pressure with the fingers was sufficient to press the centre coils into their proper position. The soft coils were bent so that the hole would definitely engage with the hook, and the spring assembly was put together. When the nuts securing the mainspring cover were tightened—and not till then—the two outside clamping straps were removed.

Limitations of space compel the omission of descriptions of repairs to the main brass gear wheel, the endstone and sundry other renovations. Having no idea of the shape of or number of teeth on the lost stop-work, an enquiry was sent to the author of the best book on music boxes that I know. In response, a new one was presented to me. Suitable acknowledgments will be made to the kindly donor later.

After the clockwork movement was repaired and re-assembled, there was some (expected) difficulty in getting the "endless screw" to run freely and correctly in relation to the worm wheel. Makers of music boxes did not, as a rule, set worm wheels to run centrally and in true alignment with "endless screws." In the case of the Polyphon, it is set a little above centre. The setting is critical and took time to find. Adjustment was made the more difficult because mesh depth had to be exact, and the worm wheel at the required offset. In other

words, two adjustments had to be attained simultaneously, and one did not know if either was correct until both were right. Had the two components been new and accurate, the setting might not have been so tricky. After the dual setting was found, the pivot friction reduced and the endstone properly set, there was no more trouble.

#### **Delicate Adjustments**

The re-erection and adjustment of the music playing part of the instrument was the most delicate task in the reconstruction. First, the combs were fixed in position with the dowels in the original holes. The end positions of the combs were marked with a scriber on the base-plate. The combs were then removed and the dowels extracted. They were replaced without dowels, and each was moved up towards the centre of the machine by 0.012 in. at the bass end and 0.007 in. at the treble. To do this, steel blocks had been clamped to the base touching the two outside corners of each of the combs at the first setting, and at the second, between the blocks and the combs, feelers were used to measure and verify the new positions. When satisfactory, the combs were securely fixed, the base turned over, and the dowel holes were opened in both plate and combs, and reamed to a size just sufficient to bring them into true circumferential relation. New dowels were then fitted. This movement of the combs was a correction for the amount of metal worn and removed from the tips of the tuned teeth, plus part of the wear (guessed) on the tips of the star wheels. There was no subsequent alteration to the dowels. Further adjustment up to a few thousandths of an inch (plus or minus) was obtained by packing with steel shim, either at the back or the front of the comb seating. The figures given (0.012 in. and 0.007 in.) may only be valid for this particular machine. On any other, they might have to be varied to suit the wear that had taken place.

With the combs again removed, the star wheels and jockeys were replaced in correct sequence in their mountings (see Photograph No. 5) and the shaft pushed home and re-pinned after seeing that the star wheels were all free. They were, of course, oiled.

The overhauled sets of dampers were set up in position and adjusted so that a brake exerted pressure on one side of each of the star wheels, and so that the damper arms moved backwards and forwards as the teeth of the star wheels came against them

—as previously described. This and getting the curved part of all the dampers to just the right height was a lengthy business, but, gradually, as the job was better understood and known and little measuring aids devised, it became easier.

When all the dampers were set up and were, to all appearances, in order, all the star wheels were turned to a position in which they would hold the dampers away from the tuned teeth of the combs. If not set in this way, the tips of the tuned teeth will push against the dampers while the combs are being fitted, and if the teeth stand the strain, the dampers will not. As it was, when the right-hand comb was tried in position, the tips of the tuned teeth (or some of them) rested on the tops of the brakes, thus indicating that the brakes (and, hence, the dampers) were too far from the centre of the star wheels. So the dampers had to be reset again, to my short-lived chagrin. After a few more attempts, the whole of the dampers worked and each individual tooth received full damping effect from its damper.

Having got the musical part of the "works" into reasonable order mechanically, the lining up of the spigot that goes through the centre of the playing disc was attempted. This is not made simpler for a tyro by the fact that it is off-set about  $\frac{1}{8}$  in. to the left of the star wheel axis, as can be seen in Photograph No. 4. Remembering that I possessed no knowledge of this when the reconstruction was commenced, I do not wonder why it took so long to attain a reasonable musical standard. In order to examine the working of the disc lugs against the tips of the star wheel teeth, a useless disc was cut radially, and the problem studied in the light of what could be seen by moving the disc backwards and forwards slowly, by hand. Although the action of the lugs on the teeth of the star wheels can be seen through the slots of the discs (with strong illumination shining from beneath), this was found to be of little value until the spigot was close to its proper position.

With the aid of the cut disc and a deal of trial, the spigot was, at length, brought to an effective position on the horizontal plane. The vertical plane was not so difficult to locate accurately. If the spigot is too high (or low) the lugs on the disc will be raised (or lowered) and thus will not meet the star wheel teeth fully and squarely, and will tend to strain them in passing. If the error is greater, the lugs may play one tooth higher (or lower)

than the correct one. This, naturally, will be carried on throughout the whole scale. In the initial experiments in obtaining the correct vertical position, the cut disc was a great help. All final adjustments in spigot alignment were done by peering through the slots in the best disc available. When all was correct, the spigot was dowelled. After this, a disc was mounted on the spigot and the clamp arm was tried in place. This showed that the lugs were pressed too far into mesh with the star wheels, and also that larger jockey pulleys would be required on the star wheel shaft. It proved possible to withdraw the shaft without the star wheels getting out of position or disturbing former settings. The other spare jockeys of various larger sizes were tried until a pair was found that was right, and then the central shaft was replaced and re-pinned. The pressure exerted by the six rollers mounted on the clamp arm on the disc, though not critical, had to be such as to hold the latter up to its job, but not enough to prevent the easy working of the finger-operated spring clip in the banjo. This adjustment was obtained by packing the central spigot with shim—this does not affect the dowels—and the bracket holding the lower end of the clamp arm.

With the music-playing part of the mechanism on the bench, and with a reconditioned disc mounted upon it, a tune could now be played by turning the disc by hand. The results thus obtained were not good musically, it being impossible to turn the disc evenly; the resistance of the lugs on the star wheel teeth caused the disc to move in jerks. It was good enough to show that there was nothing radically wrong with the complete sub-assembly, which was therefore set up in the cabinet. A few more adjustments were made to bring the semi-spherical studs on the driving "gear" wheel into the centre of the holes round the edge of the playing discs, and the job was finished in all essentials. There remained the fitting of keys to the locks, adjusting the penny-in-the-slot device and sundry other small renovations. But the machine played well, and there was nothing further that could be done to improve on this, at least, not by me. The pleasure the instrument now gives in fulfilling its prime function, that is, dispensing music of high quality, adds rich reward to the happy workshop hours spent in getting it into playing condition. These hours were spread over about a year and

(Continued on Page 427)

# SANZA

## THE VITAL KEY

**MUSICAL BOX** = An automatic musical instrument wherein the music is represented by pins or projections on a cylinder, or on a disc or similar arrangement, and which is sounded by plucking tuned steel tongues or teeth arranged to produce a musical scale.



GIVEN THAT THE ABOVE be the definition of a musical box and accepted that the musical box as such plays upon tuned steel tongues, we know with reasonable certainty that the first use of the tuned metal reed or comb tooth emanated from the Vallee de Joux, Switzerland, and that it was most likely the work of Antoine Favre which resulted in its being applied to the musical box.

The metal tooth, however, is another story. Its 'invention' cannot be so precisely adduced. Indeed, it may, for all we know, be of ancient rather than just an antique origin or derivation.

The Africans have for some centuries employed a musical instrument known as a sanza, variously spelled "zanza" or "sansa". It is today known as a wooden board with a form of bridge across which are fixed strips of metal which are held down on to it with wire staples or, in earlier examples, by thongs. Playing the instrument consists of plucking the teeth with the fingers. Variants are seen today which are mounted in hollowed-out wooden bowls, gourds and other devices, all of which serve to enhance the volume by resonance.

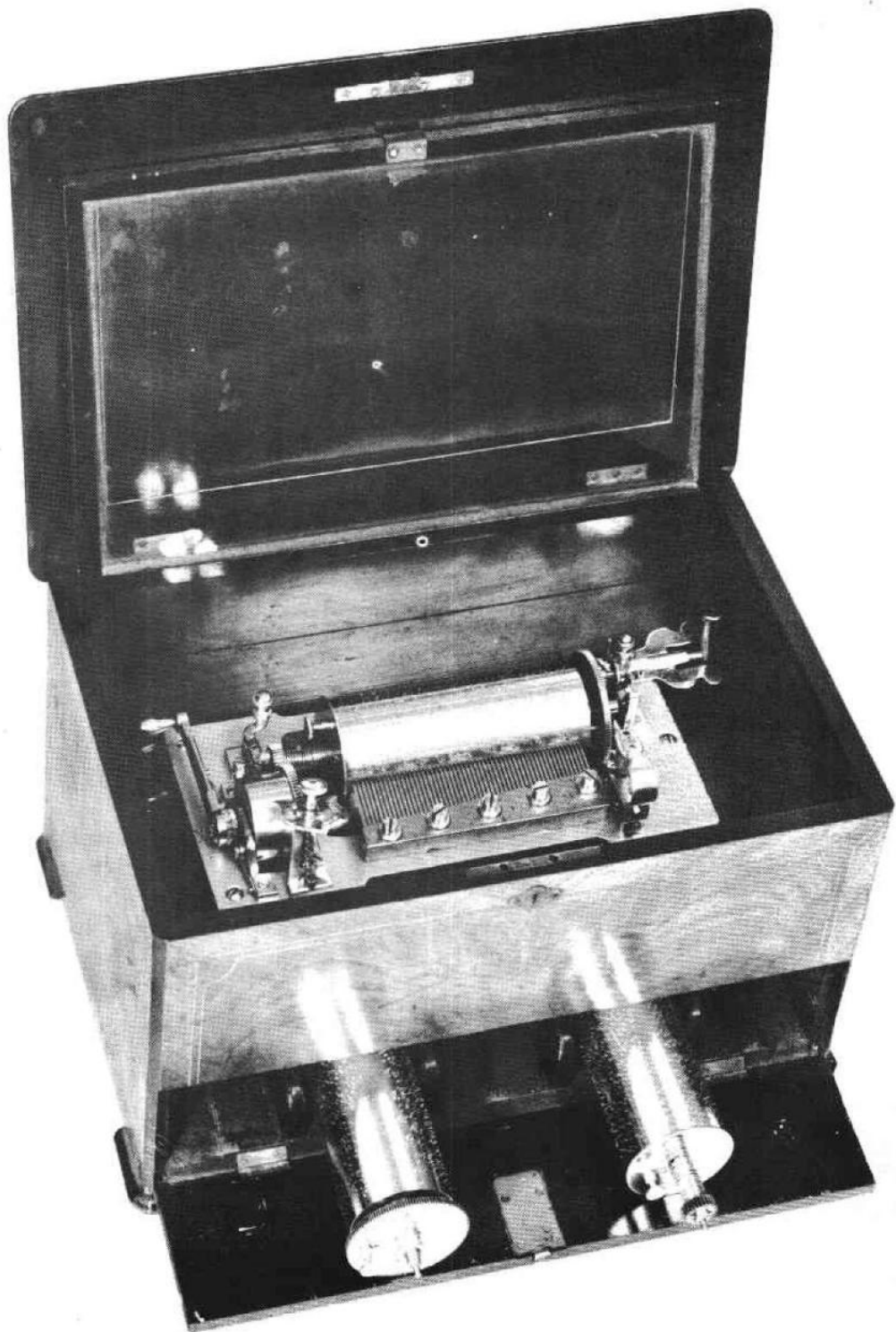
Such an instrument, in simple form, is seen in the accompanying illustration of a sanza from the author's collection. It is seen here full size and is held in both hands, teeth towards the body. Plucking the teeth with both thumbs produces 'music' and the iron beads on the staple at the top rattle. It is ironical that whilst we fill musical box locks with vaseline, re-putty glass lids and wedge cases to remove rattles, the Africans actually encouraged it!

Before the knowledge to produce iron strips for teeth, it is easy to imagine the use of wooden strips in their place - indeed examples have survived to this day of sanzans made in this manner. The wooden reed is appreciated today by the school-boy who wedges his ruler under his desk-flap and twangs it. The more inches that protrude, the lower the note; the fewer the inches, the higher the note.

How far back, then can one trace the vibrating plucked reed? Certainly the Chinese were sophisticated enough 2,000 years ago to have known about this. In fact one of the oldest known Chinese instruments is the Cheng or beating reed panpipes which form an instrument of greater complexity than the sanza. We have evidence enough to postulate a development that the vibrating plucked reed is probably as old as music itself. All Antoine Favre did was to find a way of plucking it mechanically.



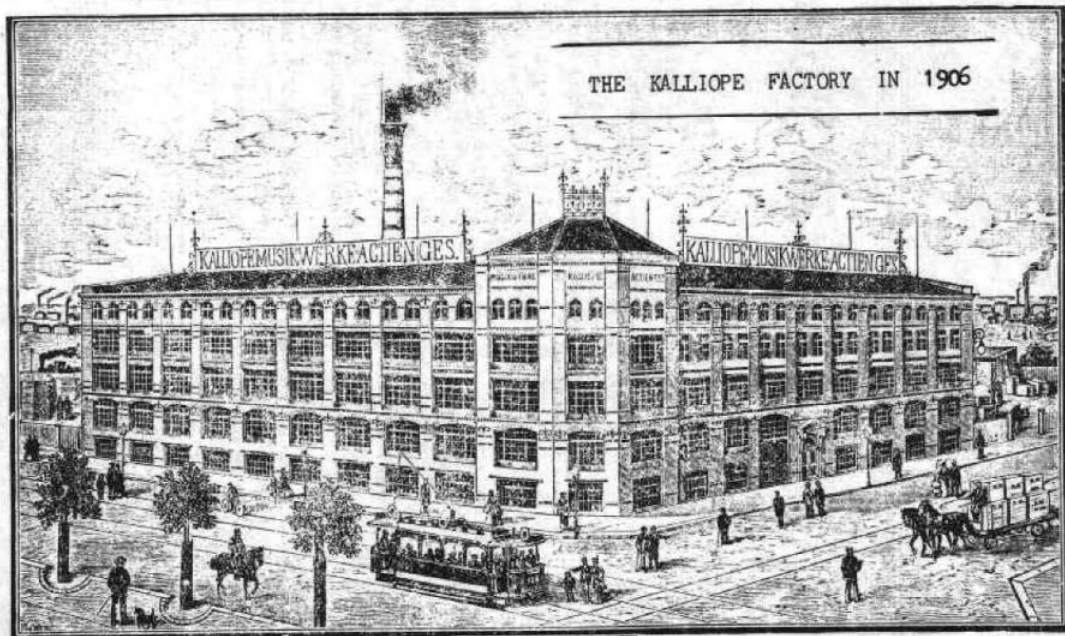




← THE ILLUSTRATION (left) shows an interchangeable cylinder musical box made by Jean Billon-Haller in Geneva. This maker, whose work is seldom found, patented during 1891 a large number of "improvements" to musical boxes which were of dubious merit. One patent, covered in this country on June 26th, 1891 (Brit. Pat. 10,906) concerns the stop/start check mechanism, incorporated on the box depicted. This consists of a worm screw which engages with the spring barrel gear. To stop the box, the worm is 'over-depted' in this wheel, so locking the teeth, and leaving the normal gear train at the other end which carries no stop facility. The cylinder is thus removed leaving the gear train free. The danger appears to lie in the possible inability of the enormous power of the spring to be restrained on an endless screw jammed into the gearing.

The box shown here has five of its original six cylinders and these are carried in the sliding drawer beneath the mechanism. Billon-Haller's trade mark is a butterfly's wings with the initials "J.B." inside. This is commonly but erroneously associated with Joseph Bornand. This music box is from Member Graham Webb's collection.

SHOWN BELOW is an engraving of the Leipzig factory of Kalliope, makers of a range of disc musical boxes and, later, phonographs and records. The negative of this picture has been kindly loaned by the Secretary of the City of London Phonograph Society, Mr. Ernest Bayly.





SPECIAL OFFER good up  
to JULY 31st, 1898.

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SPECIAL OFFER cancelled  
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# TUNING THAT COMB

by DAVID TALLIS

When tuning the comb of a musical box, it is necessary to make the end of the tooth lighter in order to raise the pitch; or to thin the back of the tooth in the centre to lower the pitch. Although the amount of metal needed to be removed is minimal, metal does have to be pared away and this may be done by the careful use of watchmaker's files. However, it is a tedious and risky business and one in which a slip could mean a broken tooth. It would be much better if the job could be done very quickly and without the need to flex or otherwise bend the tooth in order to work on it.

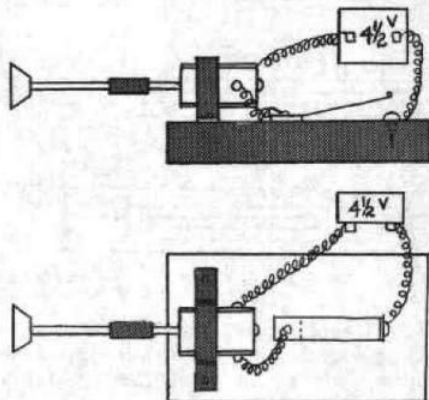
A convenient method is to use a small and fine grinding wheel, running at high speed. This method is used by the Author, and a diagram of the arrangement is shown here.

The grinding wheel is about  $\frac{1}{2}$ " in diameter and is attached to a  $1\frac{1}{2}$ " shaft. The wheel is made of fairly fine material and can be obtained from stockists of watchmaker's materials who may be found in Clerkenwell, London. Alternatively, perhaps your favourite dental surgeon could suggest an alternative source of supply. The motor is the mid-sized one in a range which has recently appeared here from Japan, and which can be obtained from all good model shops, since it is designed for use in model boats. You should buy the one which sells for about 5/-. The press-switch can be made from strips of brass and the battery is any  $4\frac{1}{2}$  volt one which has screw terminals.

The grinding wheel is fixed to the motor by joining the two shafts with a length of stout brass tubing, soldered to both. The motor and switch are screwed to a piece of  $\frac{1}{2}$ " board of a convenient size, so that the whole unit can be held in the hand. The terminals are wired to the battery and the joined shafts tested for trueness. It is most important that the wheel runs true for if there is any wandering it might well damage the comb tooth when the wheel is applied to it.

Your grinder is now ready for use. It will take metal from the appropriate parts of the tooth appreciably more quickly than a file could. One word of warning: put the comb on a flat surface when working as, if the teeth are free to vibrate, the rapidly rotating wheel will probably cause them to vibrate when it is applied to them. This could well result in broken teeth.

In order to repair broken teeth, and tune the new ones, go back to Page 23 of this Volume....



## ITALIAN BOOK MUSIC PIANO - cont. from p. 375

player mechanism. An additional damper bar extends over the lower octaves and is controllable using a lever. The books of music are  $18.3/16$ " wide in  $6.5/16$ " wide sections. The music speed is 7 ft/min.

Each hammer has on its forward edge a felt pad. Each key is mounted on an individual pivoted block fitted on a common axis beneath the playing desk across which the music is transported. Each block has under it a thin metal strip which is crook-shaped and is so arranged that, when the key is pressed down in the silent position, it engages with the felt pad on the hammer and although the hammer bar is reciprocating, it restrains the hammer head from moving on its sprung arm. As soon as a slot in the music permits a key to lift, the respective check falls away and lets the hammer beat upon the string. A separate damper for each string is also connected to the key block as illustrated.

The trade mark is shown on P.372 which is the label off an actual music book. The circular label (bottom right) was made to be stuck over the emblem at the top left of the title label, one pre-figures when Racca changed from barrel-playing pianos to book-playing instruments.

Arthur H. Coombs writes on:

## Polyphon Tuning Scales

The following are the correct scales for the two smallest-sized Polyphon disc musical boxes. Others will follow as and when possible. It must be understood that the notes given do not necessarily mean that the actual pitch of the comb will be the same, but the sequence is correct, so that there should be no difficulty in replacing a tooth of the correct note, or replacing lead resonators or tuning others which might be wrong.

The scale for the 9<sup>3</sup>/<sub>8</sub>" disc size will be published in the next issue.

## Repinned Cylinders

I have recently had to re-fit into their boxes two re-pinned cylinders and in each case these have produced, when played, sundry nasty clicking noises. Because I know that this can and does happen, I hope that the following will be of value to other Members who may find themselves in a similar predicament.

When cylinders were first pinned, sometimes mistakes occurred in the pricking or drilling of the pin-holes for the notes. When this happened, the workman usually scratched a little dagger-mark against the wrong pin and then broke it off. Sometimes, however, they omitted to mark the wrong notes. This is what happened in the case of the two I have had. Baud Freres of course did not have any indication as to which pins were not supposed to be there, and so pinned every hole. In some cases, two pins for the same note are so close on following each other that the comb tooth simply falls off the first straight on to the second and makes a loud click. The remedy is to listen and watch very closely and having decided which pin is correct, either to break off the other, or to withdraw it with a small pair of closely-fitting pliers.

In each case of the two I have had, all the mistakes appeared to have been on one particular tune, the others being perfectly satisfactory. Care must be taken to be quite sure which of the pins is wrong and it does not follow that it is the second one because the tooth happens to fall on that one causing the click. It could quite possible be the first which is the offender.

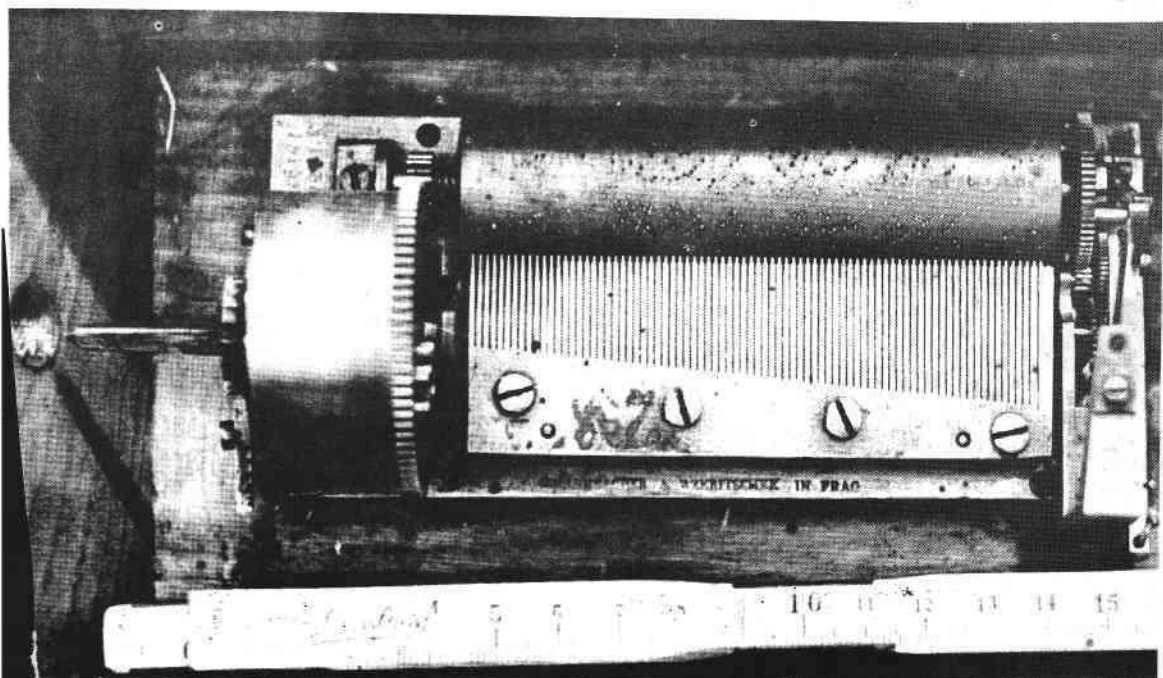
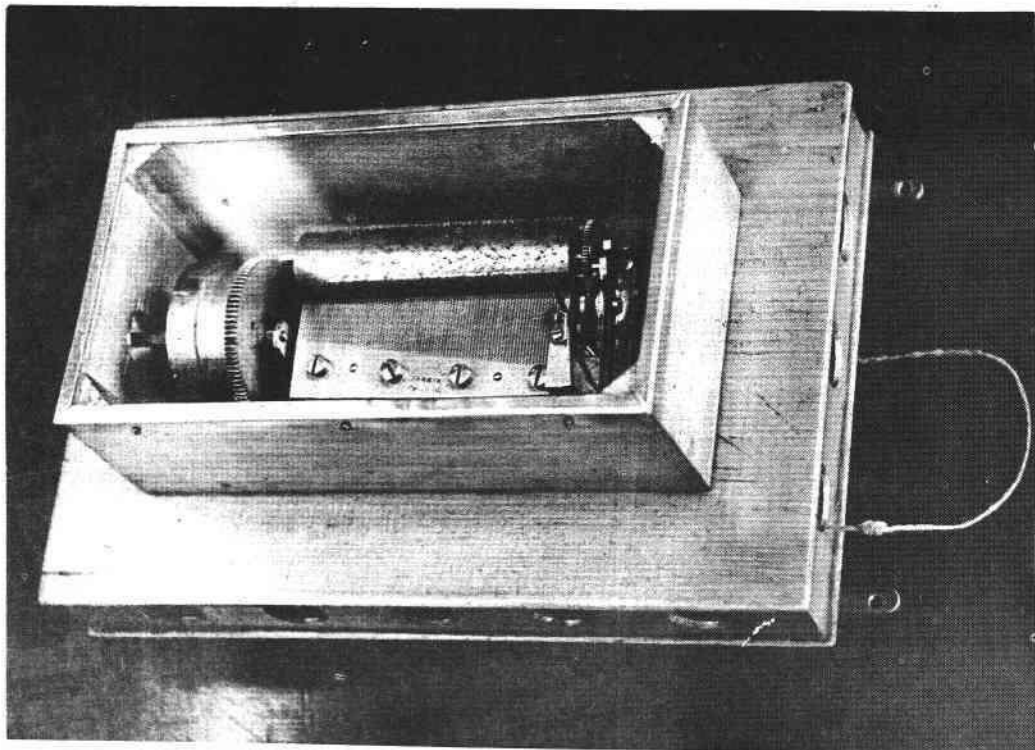
## Committee Change

Due to extreme pressure of work, Member Bruce Angrave has been forced to resign from his position on the Executive Committee of the Society. We all offer him our thanks and appreciation for all he has done whilst in office. Your Committee has co-opted Member Bill Nevard of Colchester to serve on the Committee in his place.

### CAPTIONS:

The illustrations on Page 423 (facing) refer to the article by Mr. Horngacher on Page 383. On Page 424 is an interesting late-model interchangeable cylinder box made by Mojon Manger. The initials "M.M. & C." are crudely stamped in seriffed capitals on the cock. Although the box is of large dimensions, the actual cylinders are little more than six inches long.

(Courtesy of Member Graham Webb)





Mrs. Jeanette Nichols, 50, Richmond Road, New Costessey, Norwich tells us:

The time is ten past eight on this lovely Sunday morning and once again I find myself alone with my thoughts as my husband has just gone off on another of his 'adventures' to buy a musical box. He has assured me that it is well worth the trip and is a "collectors piece" and that it will look beautiful standing by the window in our bedroom. Mind you, I've only got about eight of these beautiful instruments in my bedroom at the present moment but we can always make room for "just one more".

It was some years ago when my husband brought home our first musical box. As I am only 33 years old now and was even younger then, I had never even heard of them, let alone seen one, and to me it looked like a load of junk. I thought that this little phase my husband was going through would soon pass as he was very keen on television repairs at that time of day. Our television only had to flicker and no matter what we were watching, the set would be whipped from the table on to the floor and out would come valves, condensers, screwdrivers - the lot! Now it is a different story. I can honestly say that in the last six months I must have walked miles backwards and forwards to my television set, twiddling all the knobs and trying in vain to get the picture back. Why? Well, I'll tell you. Because my husband is in his den, re-pinning, re-dampering, re-polishing and replaying his particular musical box of the moment and, believe you me, he has some moments!

## LETTERS TO THE EDITOR

There was a time when I thought a damper was something to make the fire get up, and pins were something you used for dress-making. How ignorant I was!

When another edition of THE MUSIC BOX is due, he is like a cat on hot bricks! He can't wait to get his hands on it. Being a keen reader myself, I like to retire with my library books, but I find I keep reading the same line over and over again as all I hear is "Just listen to this, Jean", or "Just look at this, Jean; what a beauty!", so my book finishes up under the bed and there I am trying to read past my husband's arm until eventually I drop off to sleep. What my husband does not know is that I read every edition myself when I am alone and get a great deal of pleasure in his organ box which I play on "changing beds day". I must admit that in the past two years I have grown to love them myself. "Ave Maria" on the Polyphon never fails to bring tears to my eyes and send prickles down my spine, and his hymn box always has a knack of making me feel good and loving even to my cat which will insist on lying on the table.

Yes, my husband's hobby has really changed our lives. We have made friends we knew existed before and my local grocer's sales of tea and sugar must have doubled because I never know when or who is going to knock on the door. But I love all of it. Incidentally, my husband knows nothing of this letter and if one of these days you found space enough to print this in one of your editions, I would be very pleased, if only to see his dear old face light up, because then he would know that musical boxes are not just his hobby, but "ours".

Editor's Comment: I am delighted to publish this letter, Jean, for I am sure that it echoes the sentiments of many "musical box wives". I was, however, a little hurt to see that THE MUSIC BOX sends you to sleep. Perhaps we should contrive explodable pages or something. Would that help? It must have been a good box for your husband to abandon you at 8.10 on a Sunday morning! Now he'll have to start taking you on his "adventures" in the world of automatophones.....

Mrs. Gilchrist, "Beaulieu House", Queens Road, Cowes, Isle of Wight writes:

Will you please include in the next Journal under LETTERS TO THE EDITOR the small notice I enclose on a separate sheet. (below)

I want Members to be quite clear that the illustrated pages of the future are not being purchased from Gilchrist Brothers and certainly not at £13.

I regret that the statement has been made that I have resigned leaving out the true facts that my resignation was from the Committee.

I am gratified, however, that by correspondence and personal contact Members have been in touch with me. I have therefore in some cases been able to correct misleading statements made.

"Gilchrist Brothers Ltd., Photo-engravers, are not in any way responsible for the illustrated pages now produced in the Journal of the Musical Box Society of Great Britain".

Editor's Comment: I am sorry if the impression was given that Mrs. Gilchrist had resigned from the Society. Along with Frank Greenacre and Dorian Dinsmore who have also resigned from the rigours of Committee service, Mrs. Gilchrist remains, I am happy to say, a Member. I also believed I had made it clear that the arrangement by which our photo-pages had been supplied free of charge by Gilchrist Brothers had terminated, and that our illustrations were to be produced by the same offset litho process as the remainder of the Journal and by the same litho operators - Data Sift Limited. I apologise for any confusion caused.

Gerry Planus of Antiques Mechanical, 567, Old Kent Road, London, S.E.1 also takes me to task:

I have seen a few Members lately who are too frightened to write to you. They think you might say "You do the bloody job, Mate!" (the editor's job). They want to say: (a) one Member says you cut his letter too much which he spent two days concocting (he won't write any more); (b) Another Member says can't we go back to a larger print; (c) Another Member says same as (b); (c) Member says doesn't he (the Editor) do a marvellous job; (d) Member says "I don't know how he does it!" (I think he was referring to the Magazine).

Members (b) and (c) and me join in chorus: "For he's a Jolly Good Fellow".

Editor's Comment: It is often very difficult to use every contribution exactly as it is prepared and an Editor's job is to balance every contribution (including his own!) to make up the whole. Some work may need 'tidying up', other may be too long and be to be cut without detracting from its merits. Again, work which has a bearing on some item in the same issue may prove beneficial by slight re-writing. By all means, where you want to write, please do. And also let me hear and investigate complaints direct for I am a peaceable character and will not bite. It is impossible to analyse and justify generalisations without specific cases and Gerry is claiming diplomatic immunity! On the subject of small type, I am the first to agree. It is in an endeavour to avoid this that the format and make-up of THE MUSIC BOX is to be altered with the next issue as outlined on Page 370. As for items (c) and (d), I am always hoping someone will be brave enough to come forward and take on the job - and do it much better.

THE TUNE SHEET depicted on Page 355 has been identified. Whilst examining records in quest of information for my new book on musical boxes, I came across the owners of the triangle trade mark. The firm was Bruger & Straub (sometimes 'Brugger') whose address was 79, High Holborn, London and also Geneva. (Editor).



Gerry Planus writes again, this time from 6, Vanbrugh Fields, Blackheath, London S.E.3:

Whilst reading the most erudite article by Col. Jackson Fritz on "Home, Sweet Home" (page 261), I noticed that he mentions an "Extra Grand Musical Box" by Nicole Freres playing "Home, Sweet Home" with variations by Thalberg Part 1 and 2.

I believe that the box concerned is one in my collection. Its programme consists of "Home, Sweet Home" and variations for two revolutions, and "Carnival of Venice" and variations for two revolutions. For the technically-minded, the specification of the box is as follows:

Nicole Freres No. 39185. 193 teeth. Cylinder measures 12" x 3". Box is key-wound, but unfortunately the original key is lost as is of such a size (No. 28) that I have to use a spanner to wind it up. If any Member has a spare Size 28 key, perhaps he would contact me. I hasten to add that this box is NOT for sale....

THIS TRADE CARD (right) was found inside the wind chest of a street barrel organ by A. Corvi, Rue d'Alique 14, St. Antoine, Paris. The instrument dates from about 1880 and features "Harmoni Flutes Invention de Mr. Gav-ioli Brevete". The card is that of Cocchi, well-known maker and repairer of street organs. Pencilled on is the date 15th October 1936.

*Repaired by*  
**John Cocchi & Son,**  
 Manufacturers of  
*Mechanical Organs & Pianos.*  
 Terms: STRICTLY CASH,  
 15<sup>th</sup> Oct 1936  
 2. CHILDS MEWS' DIRLETON PLACE,  
 WEST HAM, E.15

## MUSICAL MECHANISM

(Continued from Page 415)

the usual period of continuous work being only about half an hour to an hour at a time.

This Polyphon Music Box was made in Leipzig, Germany. Production ceased in 1914.

Were the attractiveness of large music boxes to be better known and understood, a Guild of Music Box Restorers might come into being for the exchange of information and spare parts, because, as remarked earlier, there are plenty of broken ones available. Many of these are well within the scope of skilled model engineers, so far as repairs are concerned. No one succeeding in renovating a "dead"

music box and turning it into a beautiful musical instrument could possibly regret the time so expended.

Shortly after completing the above notes, I chanced to be in Farringdon Road, London, with a mind far removed from music boxes. While wandering along, at one of the stalls, my eye rested on a box of junk, some of which I thought I recognised. It proved to be parts of a Polyphon. These included an "endless screw," complete with its c.i. bracket (see Photograph No. 7). I bought the lot. The "endless screw" was polished, burnished and fitted in place of the one I had "carved" out. It ran as soon as it was fitted,

without any resetting, which, I think, showed that there was not too much the matter with the said "carving." This exchange was only made because it was thought the steel in the genuine article might be better for its purpose (it has to stand a heavy strain) than the steel in mine.

I am greatly indebted to Mr. J. E. T. Clark, author of "Musical Boxes, A History and an Appreciation," for the amount of information conveyed in his book and for his very kind gift of a female stopwork. I would also like to thank Mr. J. Ramsay for the photographs he supplied, and the trouble he went to in taking them.



LIST OF MEMBERS

- 262 T. P. Camerer Cuss, 56, New Oxford Street, London, W.C.1  
 263 Alun Jones, 65, Holymoor, Holymoorside, Chesterfield, Derbyshire  
 264 Ronald Spoor, 28, Engleheart Road, Catford, London, S.E.6  
 265\* Richard R. Goodwin, 33, Wildrose Crescent, Thornhill, Ontario, Can.  
 266\* Edwin Pugsley, Leete's Island, Guilford, Connecticut, U.S.A.  
 267 Anthony Wheeler, "Nashdon", 76, Kingsweston Ave., Shirehampton,  
 Bristol  
 268\* Dr. John Tagger, 23, Rue Fortuny, Paris, France  
 269\* Rod Cornelius, 234, Musselburgh Rise, Dunedin, New Zealand  
 270\* F.H.Ellenberger, 2475, So. Ocean Boulevard, Delray Beach, Florida,  
 33444, United States of America  
 271\* Peter Schifferli, Rosenbuhlstrasse 37, 8044 Zurich, Switzerland  
 272 Josephine Wadmore, 70, London Road, Tunbridge Wells, Kent  
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 274 Rev. Johnathan R. White, St.Peter's Vicarage Flat, Swinton, Man-  
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 sey, Channel Islands  
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 125 K. Cook, 51, The Harebreaks, Watford, Herts  
 128 Keith Thompson, "Highweek", The Grange, Buckingham Road, Bletchley,  
 Buckinghamshire  
 129 Hugh Monnington Miles, 39, Rednal Road, Kings Norton, Birmingham 30.

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