THE MUSIC BOX

a magazine of mechanical music

Volume 6 **Number 4**

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Journal of
The Musical Box Society of
Great Britain

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

Volume 6 Number 4

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The Editor writes:

THE LAST issue of The Music Box turned out to be the biggest we have ever produced – a massive 84-pager. Even so, it must come as both a surprise and a reassurance to say that almost as much had to be left out of that bumper issue as went in to it. Thanks to the arrival of some last-minute items of importance, several important articles had to be dropped.

This is indeed a happy situation to be in as it does mean that at last we have contributions coming in from you, the Members, which are of great value. I hear that several Members are working on research projects for the benefit of the Society and this, too, is heartening.

The new Directory of Members has proved to be something of a financial surprise to us. Under the expert editorship of Richard Baines, we succeeded in selling a considerable amount of advertising space within the publication. This has considerably relieved the financial burden of directory production and has allowed funds to be retained for magazine expansion.

For my own membership, I believe that the Society funds should be used for the organisation of meetings (where these cannot be completely self-supporting through admission fees) and for the production of the Journal and whatever material of interest to us all should come along. Directory, then, is something we should not have to raid the coffers for! We have always had to in the past: this time things are happily

different.

Austerity

Nineteen-seventy-four has arrived bringing with it a degree of austerity unknown since the 'fifties and earlier. Not just England, but the whole world is experiencing a Man-made recession. Thanks to progress, that leering Gorgon's head in our midst, we have, on the one hand, poisoned our environment on a world-wide scale, and on the other we have generated an almost total dependence on oil and its by-products. Take away oil and we are in the anomalous position of having atomic energy at one end of the scale and the horse at the other with precious little between, least of all steam, that saving grace of the last century, that ubiquitous progenitive of the Industrial Revolution.

The rise of the industrial steam engine was one of the phenomena of the eighteen-hundreds. Still largely an untamed monster whose precociousness was but improperly understood, steam boiler explosions were claiming lives and mutilating workers almost to the dawn of the present century. But steam brought with it, by Victorian standards, almost unlimited power and the mechanising of so many processes which had hitherto been handcrafted. Wood and iron were still the be all and end all of construction and steam-driven machinery made the working of both immensely easier. When, in the 1880's, steam could be used to drive electric generators, the yellowing gas lamp was gradually replaced by the incandescent filament lamp.

From the oil engine there came the petrol engine and the insidious onslaught of progress declared the steam engine redunant.

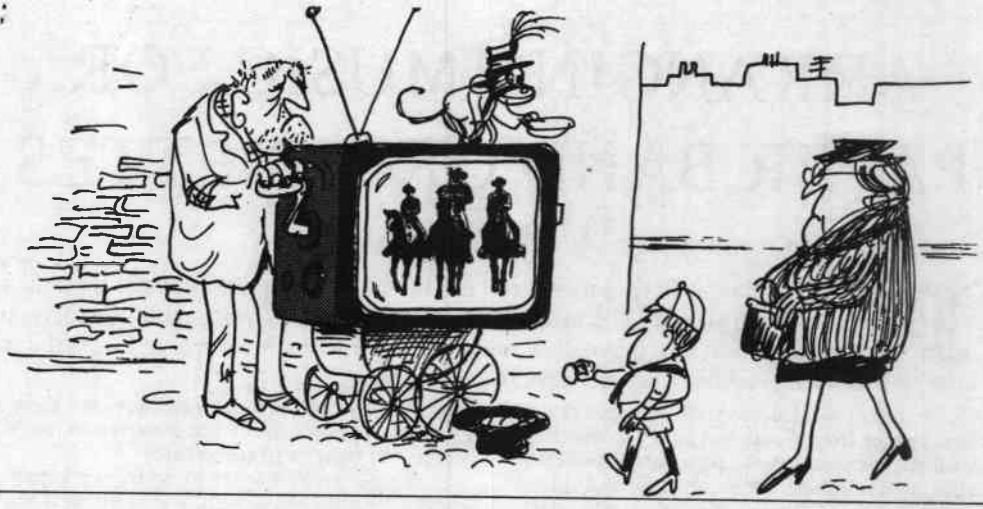
What has all this to do with mechanical music? Not much, I suppose, except that I have just been looking at one of those rare and treasured faded photographs of a fair-organ factory showing the overhead shafting, curly-spoked pulley-wheels and a veritable factory inspector's nightmare of unguarded belts thrashing about. You see, the musical box, orchestrion organ and organette were all products of the steam age and the steam engine played an important if unseen part in their manufacture.

Who knows — we could see a rebirth of all these things. Trams and trolley-cars don't pollute, steam would encourage the re-opening of more coal-mines and hi-fi might once again become associated with the name of a Geisha girl.

A tiny world

The laws of probability (or is it improbability?) produce all sorts of statistical parameters which are either logical or illogical depending on how you choose to view them. I'm sure that we've all experienced things which defy statistical odds. You know the sort of thing: you are travelling on a train on the other side of the world and suddenly find you are sitting next to the chap you were at school with.

Well, something akin to that happened back in November. Elsewhere in this issue is a description of a most interesting machine



organ manufactured in London by Flight & Robson, the eminent organ builders, in or about 1823. This came up for sale at Sotheby's on St. Cecelia's Day. The man in charge of the musical instrument section at the world-famous auction house is Graham Wells. He was dictating the catalogue items to his secretary for the preparation of the catalogue and when he came to this particular Lot, his young lady perked up and said that the instrument was built by one of her husband's forefathers. Her name is Christobel Flight.

The upshoot is that I have met her husband, Mr. Howard Flight, and we have found that our respective knowledge of the Flight family is largely complementary. I am now preparing for the Journal an article on this famous family whose many ramifications will, I am sure, come as a surprise to many if not all.

Ourselves in 1974

I am sorry to have to return to the world crisis situation, but a few things do need to be said. To begin with, the Christmas issue of The Music Box was late due to my own illness aided and abetted by the problems of operation without petrol and parcel post, not to mention trains.

Undoubtedly, things can be expected to get worse this winter as the enforced three-day working week, industrial action on various sides and everything else takes its toll. The paper manufacturers, for example, have warned as far back as December that there would have to be a thirty per cent cut in output within months. And the reduced electricity voltage and supply means that certain processes cannot be used.

However, The Music Box has a good stock of paper, a fine back-up production team (these are the unsung heroes who work IBM machines, ink the presses and collate the printed pages). The upshoot is that we will continue to do our best and, in fact, I plan to produce consistently large magazines within our magazine budget and to publish some fine and valuable material for the benefit of you, the Members. All that, in spite of the ember days of '74.

In publishing details of its crisis economies, the Government has not banned the use of pedal-operated player pianos, Aeolian Orchestrelles, Polyphons and other musical boxes of the cylinder and disc type, nor has any restriction been placed on the use of organettes, musical snuff-boxes and mechanical singing birds.

ARTHUR W.J.G. ORD-HUME

ARRANGING MUSIC FOR PAPER BAND ORGANETTES

by David M. Heeley

FOR some time I have pursued the hobby of arranging and cutting music for my Seraphone Organette. The method I use will work on any organette that plays paper (or card) bands; disc organettes are rather more difficult to arrange for, as the length of the slot varies depending on the distance from the centre.

The materials needed are: roll of paper (I use 'Icefresh' paper from Boots, but am experimenting with other types such as the paper used for brass-rubbing) a thin oblong metal (or cardboard) plate the exact width of the paper band, pencil, craft knife, small chisel the width of the slots and a ruler.

The first thing to do is to cut the paper into strips the exact width of the original music; this is important, as if the band is too narrow it may move sideways causing wrong notes to sound, if too wide it will probably buckle and may jam. It is not necessary to cut the whole length of the roll at once, but make sure that your band is amply long enough for the proposed tune, as if you have to join a piece on to it, it may cause trouble passing over the tracker bar of the organette.

Next, take a rubbing of the tracker bar, by putting a strip of the paper between the rollers, and making sure that it is exactly in line. Attach the rubbing to the metal plate, and punch holes through the plate corresponding to the position of the slots in the tracker bar. I punch holes at the bass end of the slots; the slot is then cut out of the paper on the treble side of the note, thus making sure that it is central to the hole in the tracker bar.

Write down the scale of the organette, (some have the scale stamped on the protruding end of the reed, with others you may have to sound each note and work out the intervals between them). You will find that the scale is not chromatic, there are widely spaced notes in the bass (chosen to suit the key in which the organette plays) while the treble end which plays the melody will have most notes apart from one or two sharps. Copy out the scale another twelve times, raising it a semitone each time (see my letter in Volume 6 No 2 of the Music Box) and you will have every key the instrument will play in. It will, of course, still be actually playing in the original key, but there will not be the problems of transposition to face every time you want to arrange a tune.

Having decided what to arrange, compare the scales with the music until one is found that gives the most complete rendering of melody and bass possible (it is more important to have most of the bass notes, as one can always slightly rearrange the melody but if half of the bass is missing it is far more obvious to the listener). Attach a copy of the scale you intend to use to your marking plate just above the punched holes; if naturals are written in black and sharps in red, it makes it very quick and easy to see which note is which.

Determine how long the slots need to be for the music to play at the correct speed. If you have some of the original bands they will be helpful in giving an approximate idea, if not, it may be a question of trial and error. If the slots are too short, the music will be too fast and some notes will not have time to sound; if too long music will be slow and the handle will have to be turned very fast to play at a reasonable speed. If there are, for example two minims to the bar, and you decide that the correct length for a minim is ½ inch, crotchets will then be ¼ inch long, quavers 1/8 inch etc.

Leaving several inches at the beginning, mark faintly on to the paper strip in pencil the barlines. If you decide that the correct length for a minim is ½ inch, and there are two minims to the bar, the barlines will then be 1 inch apart. Place the marking plate on to the paper by the first barline, and mark dots through the holes for the notes of the first chord. Then with the ruler draw lines from the barline the length you have decided will be right for those notes. If the same note is repeated immediately, the first one will have to be cut short, otherwise the note will sound continuously

(and the paper will be weakened if it is a very long slot). Mark on the paper the notes for the second chord, and draw those lines. The last chord in the first bar should terminate at the second barline, whereupon the whole process is repeated until the whole tune is arranged.

The next job is to cut out the slots; the method I use is as follows: I cut the ends of the slots with a small homemade chisel, with the end ground to the exact width the slots are to be. As the lines on the paper are at the bass end of the notes, the chisel is placed towards the treble end. Then slit the paper between the two chisel cuts; I find a ruler makes sure that the craft knife does not wander off line, and apart from marking the strip with the title at the beginning (it sounds odd played backwards), and gluing the ends together, the band is ready to play on the organette.

HENRI PHALIBOIS, MUSICAL AUTOMATA MAKER

by Arthur W.J.G. Ord-Hume

VAST numbers of musical automata were produced by people whose names are long since forgotten. Usually, these people bought in the musical movements from specialist makers and fitted them into their products. Musical chairs, plates, cigar dispensers, necessaires and liquer frames came within this catagory.

One such maker was the Parisian, Henri Phalibois who flourished from about 1905 until the outbreak of the first World War. On page 202 of Volume 3 of THE MUSIC BOX was published an illustration of a musical toilet-roll dispenser. The tune sheet from that strange adjunct MM to 'the smallest room' is reproduced here and it shows the Phalibois trade mark. A central circular panel is inscribed with the letters HP, surmounted by knotted ribbon and to each side are medallions containing to the left the portrait of a young girl, and to the right a young man. This particular label has printed along the bottom (not quite visible in the picture) 'Made in France'.

Another specimen, found on a musical chair, is printed in gold, black and red on white and does not have the medallions. This particular one is marked 'Modele Depose' along the bottom.

Phalibois worked at 22 rue Charlot in Paris and, according to trades directory entries, described himself as a 'manufacturer of automata, singing birds, and a maker of moving figures (puppets?)!' As well as handling mechanical musicwork, he advertised as a maker of musical and automaton novelties.

His output must have been extensive for there are many novelties still to be found bearing his label. Perhaps some collector owning a piece by this maker will lend me the actual tune-sheet so that it can be reproduced properly in THE MUSIC BOX. I have had several of these pieces through my hands during the past twenty years but the maker remained unknown to me until some while ago when I was doing some research into Parisian makers of musical novelties.

Some years ago, Keith Harding told me he had seen an automaton containing a 2-tune cylinder musical movement in the base. The name on the back on the automaton's base was J. Phalibois. Based on nothing but circumstantial evidence, this could have been a relative.

OUR FEATHERED FRIEND

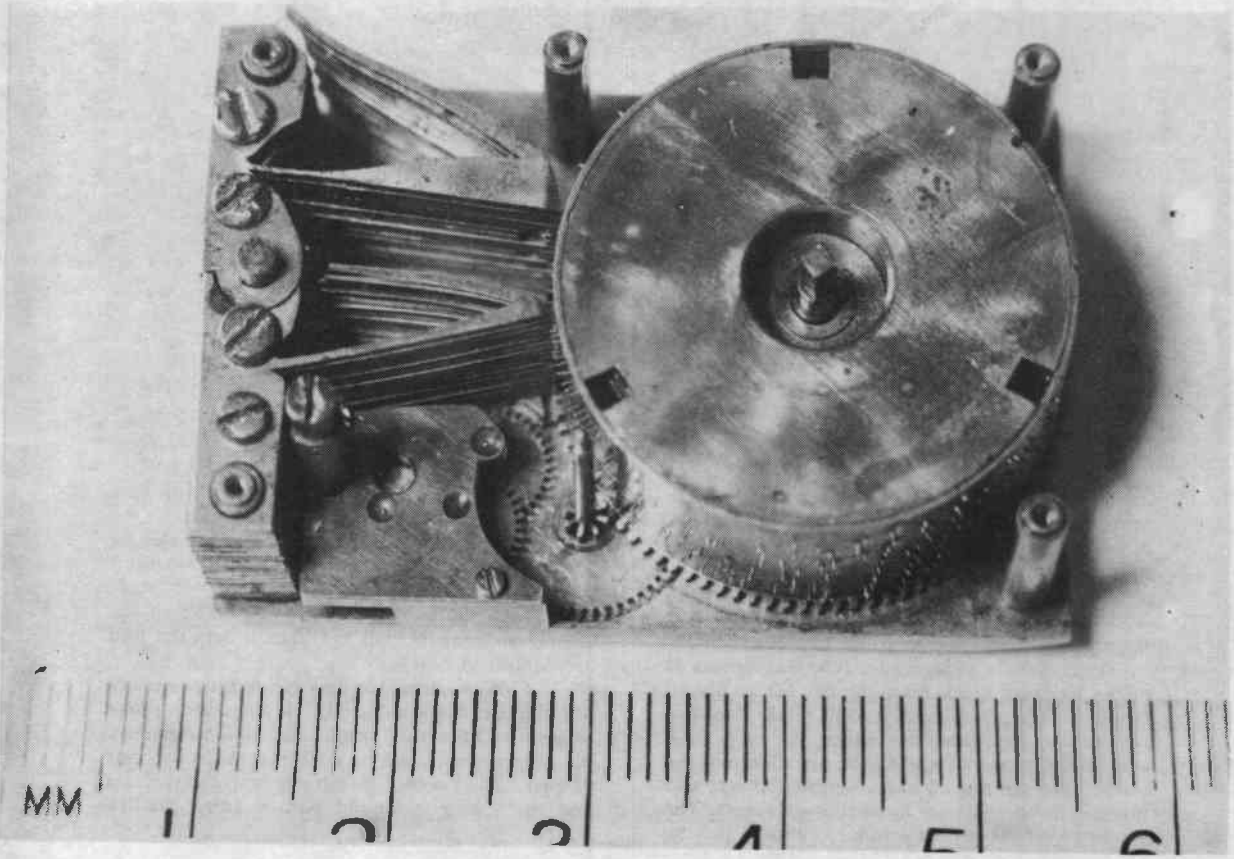
by Richmond Mason

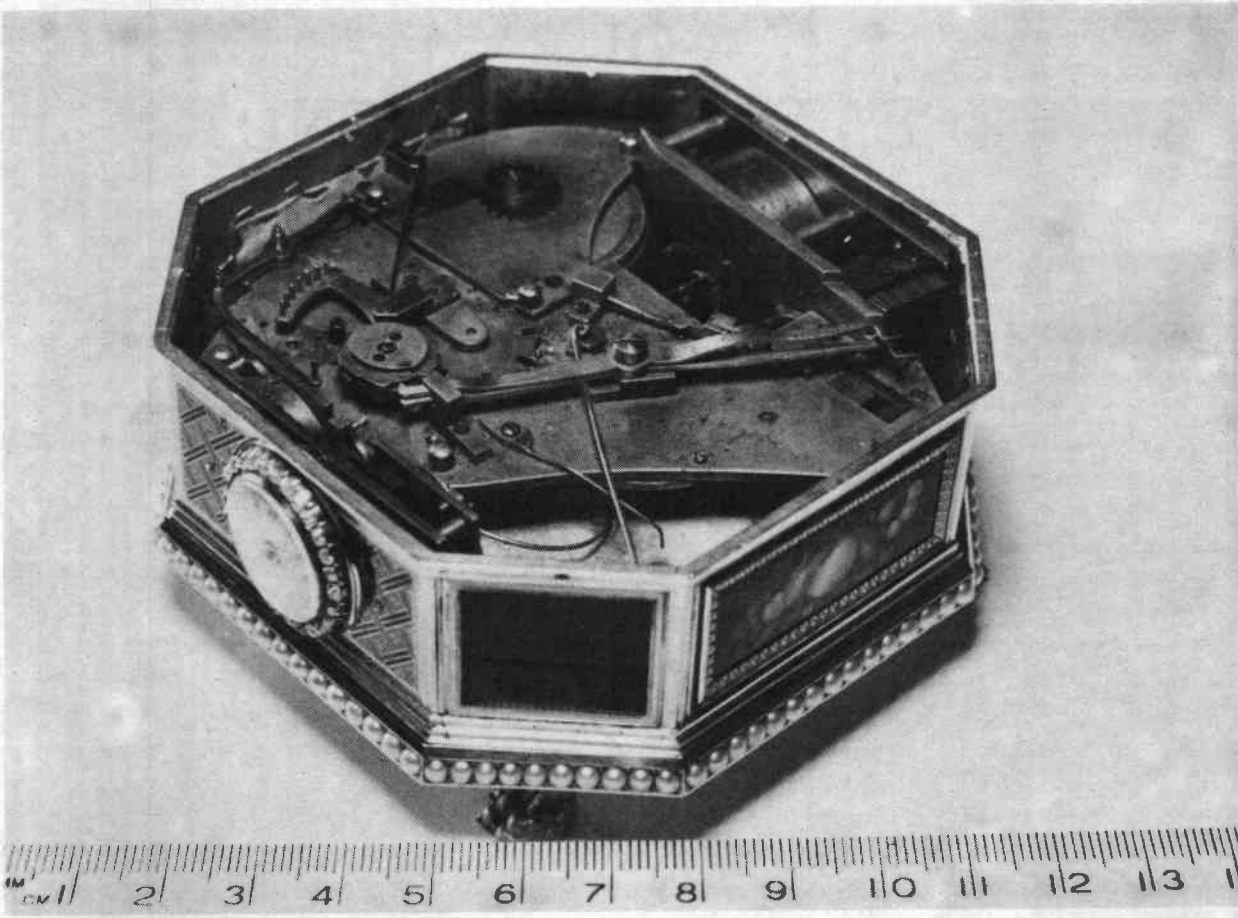
AT 8 o'clock one evening, some time ago, I had a phone call from a dealer friend. He had that day received a miniature singing bird, would I like to go and have a look at it!

My first thoughts were – 'Oh it's probably a modern one! However, being a keen collector my wife and I jumped in the car and set off with that pre-vue excitement.

Upon arrival we were invited in. There standing on a table was a small leather case with a strap over the top. I was asked, 'Have a look and see what you think!' From the case I could see that it was of very good quality, when I opened it I couldn't believe my eyes. I had only seen such beauty in books and museums.

Next was the price. It was expensive. Was it extravagent buying such a small object for such a





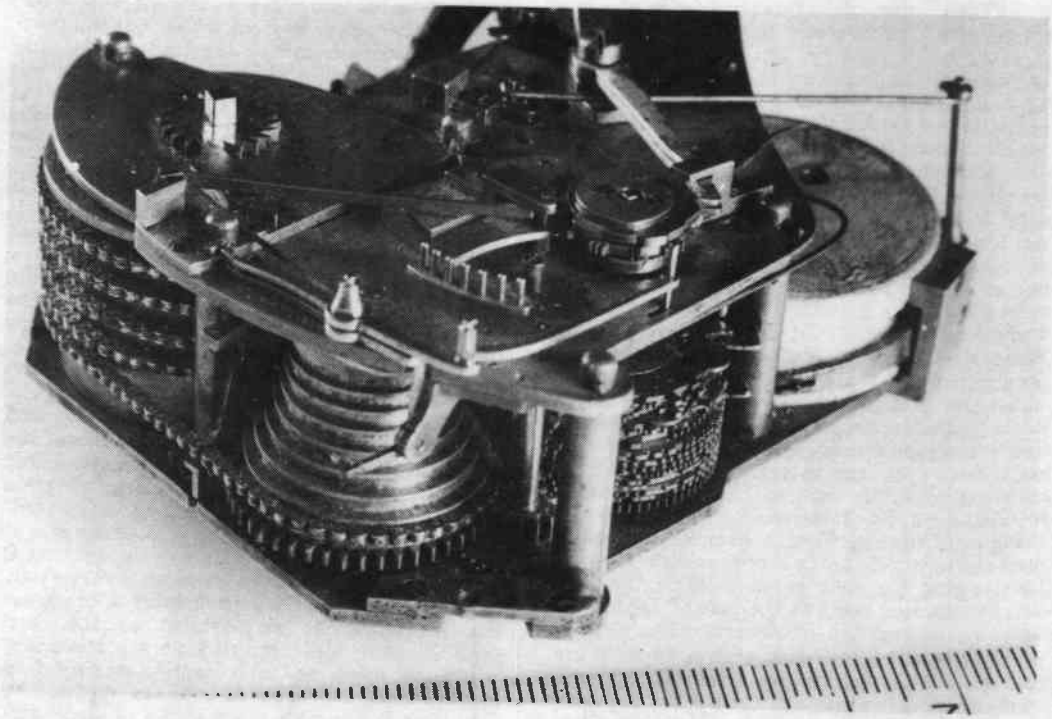
lot of 'brass'. After a coffee and ten minutes gaze at it, I convinced myself it was a good investment. A price was agreed and we drove home with our new addition.

The small bird cage is 19 cm (7½ ins) high, containing a watch and musical box as well as a singing bird.

The musical box playing one tune is independent of the bird song mechanism, the two can be played together or separately. It has 32 teeth placed in two rows, one behind the other, the teeth have been made separately and placed one on top of the other. They are shaped like a scythe – it was said this improved the tone in small movements. The winding spring is inside the pinned cylinder and the power is let down through a gear train with bare pinion.

The watch mechanism extends along the length of the front panel and has a Virgule frictional rest escapement. This type of escapement was made only for a short time in the last quarter of the eighteenth century. On the hour it sets the bird mechanism in motion.

The bird is dressed in dark green, turquoise and red plumage but is not gaudy. He sings quite a long song with all the usual singing bird box movements, his song is controlled by sixteen cams in two sets of eight. The bellows are circular with metal plates and the spring is wound with a fusee winding barrel.



lock.

I have read in the book Automata by Chapuis and Droz that two firms specialized in these miniature bird cage clocks, one Jaquet Droz & Leschot of La Chause – de Fonds where they continued to make clocks long after they had set up business in Geneva.

Secondly Josue Robert which was succeeded by Robert & Courvoisier then by Courvoisier and Co., and finally by Courvoisier Freres.

The cage is richly made of partly filigree gold and chased blue enamels decorated with half pearls. The watch face is surrounded by brilliants, two enamel paintings are of fruit and one of flowers are on each side panel. There are no makers mark on any part of the mechanism or cage.

It has a red leather carrying case made in two parts the base being separate from the rest, and a strap over the case top, the inside is trimmed with silk. J. Bramah, 124 Piccadilly, is stamped on the

A Curiosity.

An electrical engineer of Basle, named Holstein, is stated to have invented a "musical automobile." The invention, which is based on the principles of an organ, consists of a number of tubes, of different sizes and widths, through which air is caused to pass by the motion of the car to which it is attached. The greater the speed, it is claimed, the louder are the notes. The inventor, who admits that his apparatus is not yet perfect, hopes to be able to reproduce any tune by regulating the speed of the automobile. It will be most entertaining to meet one of these vehicles on our roads; presumably the speed limit will be exceeded to a running accompaniment of "'T' is the policeman who with india-rubber shoe, &c.," whilst a breakdown on the road will be signalised and the attendant distress mitigated (or otherwise) by a doleful rendering of "We won't go home till morning," played in a minor key, and deriving a certain novelty of expression from sundry misfires in the engine cylinder. I am inclined to the opinion that there is sufficient music (*sic*) in the automobile as at present constituted without the addition of a barrel organ attachment.

JUNE 23. 1905. **Electricity.**

THE ORGUINETTE

SEVERAL methods of automatically playing musical instruments have been recently patented in this country, but probably the best of these will be found in the invention of Mr. M. J. Matthews. That gentleman illustrates and describes several forms, and appends to his specification no fewer than twenty claims. The invention relates to instruments on which tunes are played by means of perforated or embossed paper bands, and the form shown in our illustration is termed an orguinette. In this arrangement the reeds are placed in tubes or cells in one, two, or more rows, and are fitted with valves carried by levers to which springs are applied, tending to open the valves. The valve levers have projections over which the tune band passes, the unperforated parts keeping the valves closed, whilst the perforations allow the levers to be raised by their springs, so as to open the valves. The bellows are arranged to act by suction so as not to force open the valves. The tune band is stretched on rollers upon a frame which is removable from the instrument to facilitate the changing of the tune band. In another arrangement the reed cells are in a box which is movable for changing the tune band, this band passing between the reed box and the part of the instrument comprising the windchest. The top of the windchest is made with orifices opposite the reed cell orifices, and is pressed by springs and by the air pressure inside it against the reedbox, so as to insure that the tune band will not allow air to pass excepting through the tune perforations. In this arrangement there is substituted for the bellows a mouthpiece by which the performer may blow air into the instrument. In a third arrangement the instrument resembles in appearance an ancient watchman's rattle, the performer holding the instrument by a handle, and swinging it round so as to make it rotate on the handle. This rotation makes an endless tune band pass round a part of the handle which acts as a roller and round another roller, and the band also passes over the orifices of a number of reed cells. The rotation also through cranks or eccentrics works bellows fitted inside the instrument; these bellows being arranged to act by suction, which insures the tune band keeping close upon the reed cell orifices. In a fourth arrangement the tune band is embossed so as to present projections corresponding to the notes of the tune instead of perforations. The embossed projections act on the valve levers, which levers are in this case centered between the valves and the parts acted on. The reed cells and levers may be arranged in various ways, but compactness and convenience is obtained by forming them in a box with inclined sides, the orifices and valves being alternately on the opposite inclined sides, with the levers from both sides inclined up to the same central line, where they are all acted on by the tune band.

In the various arrangements the tune band is moved by turning one of the rollers by which it is stretched, or by being passed between two nipping rollers, one of which is turned by a handle, and the same movement is made to act on the bellows by cranks or eccentrics. In the illustration Figs. 1, 2, and 3 represent various views of one arrangement of the orguinette. Fig. 1 is a sectional elevation of one of the sides of the improved instrument, showing the reed board, chamber cap, pressure cap, and bellows; Fig. 2 is an elevation of one side of the instrument representing the manner in which the bellows are operated; Fig. 3 is an elevation of one of its ends with the music band removed. The air reservoir is placed on the under side of the platform W, and the feeders or bellows C are mounted on the lower board of the reservoir. This is a simple and compact form of construction involving the employment of the least possible space, and requiring no supplementary windchest, such as is ordinarily employed in reed instruments. The feeders are operated by the crank D through the medium of the three-armed lever E, toggles and the wire projections F, shown in Figs. 1, 2, and 3. As the bellows and the tune band are both operated by the same handle, it is necessary that some provision be made to prevent the jerking that would be consequent upon a continuous turning of the handle when the reservoir is exhausted. This is secured by the wire projections F. The tubeboard is constructed similar to that of a keyboard cabinet organ, the main difference being that the tubes are not directly opposite each other, but are arranged and located so that the tubes of one row are opposite the partitions between the tubes of the other row. The reeds are inserted in these tubes in alternate succession, each consecutive reed in the scale being in a different row. The object of this arrangement is to bring the push points B of the valves H as close together as is practicable, so that there may be used a narrower tune band than would be necessary for the same number of reeds if they were all located in one row. The mouths of the tubes

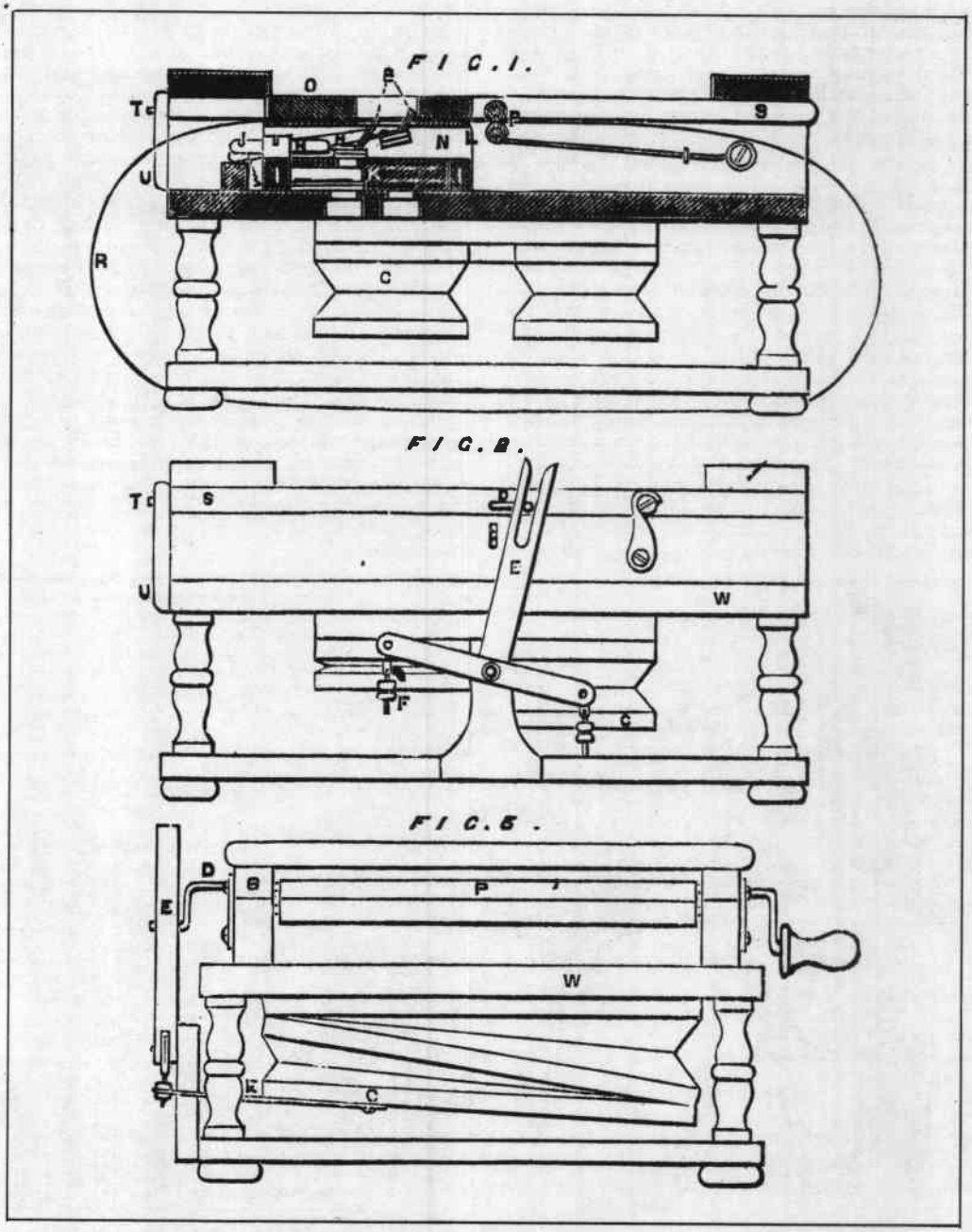


FIG. 1.
O
B
T
S
P
J
H
N
L
U
K
R
C
FIG. 2.
T
S
D
E
U
W
F
C
FIG. 5.
D
B
P
E
W
K
C

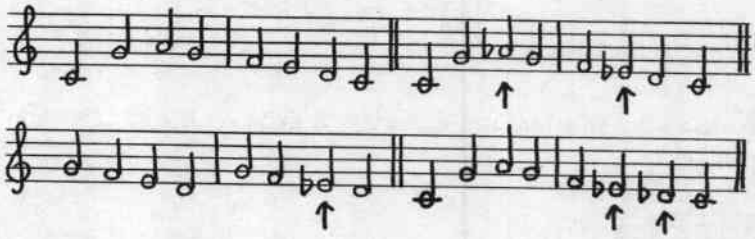
are closed by the strips I, and a hole is made through the tubes directly over the reeds. These holes are controlled by the valves H. The springs J tend to keep the valves H away from their seat. Screwed or otherwise affixed to the top of the tubeboard K is a chamber cap, L. The valves are all mounted within the chamber N. Through the top of the chamber cap L are a series of holes corresponding to the push points B of the valves H. There is also a series of holes through the pressure cap O corresponding to the series of holes through the chamber cap L. The pressure cap O is held down by a spring of sufficient strength to resist the force of the springs J. The perforated sheet is inserted between the pressure cap O and the chamber cap L and between the friction rollers P, so that when the handle is turned the rollers draw the perforated sheet R along and over the push points B of the valves H, and thus hold them closely to their seats excepting at intervals provided for by the perforations. The exhaust power of the bellows combined with the perforated sheet keeps the valves on their seats. The springs J are little more than strong enough to resist the wind force exerted on the valves H, so that the friction of the push points on the perforated sheet is very slight. The two ends of the perforated sheet R are joined together so as to form a continuous or endless band, passing over the chamber cap L around each end and between the feet of the instrument. Provision for facilitating the mounting and removal of the perforated band R is made in the movable guide-rails S. In one end of each guide-rail S is a stud T, which passes into a hole in the holder U. The other end of each guide-rail is held down by a hook (Fig. 2), and both are held together by cross rails so that the whole forms an easily handled frame. Between the platform W, upon which the main parts of the instrument are mounted, and the base board are pillars, so that the bellows and action which operates them are exposed to view. The device is capable of considerable modification, as will be seen, but its principle will be readily understood. In the arrangement illustrated the tune band is in an endless form, and is therefore suitable for short tunes or parts of tunes only; for longer tunes the bands are unwound off one barrel and wound upon another whilst being passed through the instrument.

Early illustrations of book-playing pianos are rare. This one, showing a Giovanni Racca Piano Melodico, is reproduced from the catalogue of the Museo di Strumenti Musicali Meccanici which is the collection of Marino Marini in Ravenna, Italy.

THOSE WRONG NOTES

by Robin Timms

IN HIS popular *Variations on a Nursery Tune* the Hungarian composer Dohnanyi includes one variation which suggests the playing of a musical box. In it the tune, *Twinkle, twinkle, little star,* appears as follows:



Example 1

Five glaring wrong notes! Could the composer be alluding to the musical box's reputation for throwing in the occasional wrong note?

No doubt we could all make our own catalogue of wrong notes. For example, I have a disc of *The Bells of Aberdovey* which plays

Example 2
Polyphon disc 2476

I also have a disc of *Rule, Britannia* which plays

Example 3
Polyphon disc 2457

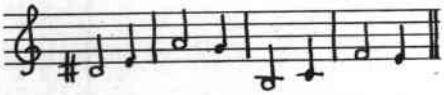
I should be interested to know if these mistakes are common to other copies of the discs, or whether mine are exceptions. Does anyone else have these discs?

But in this article, I am concerned not with accidental deviations, but with *deliberate* wrong notes. Why, you may well ask, should any music arranger deliberately alter a tune? It is in order not to be defeated by the restricted melodic range of his instrument.

Let us examine some cases of deliberate wrong notes and find out a) why the tune has been altered, and b) how the music arranger has ingeniously side-stepped an apparent *impasse.* Where possible musical examples are given in C major for ease of reference. The arrangements discussed are from 11" Polyphon discs.

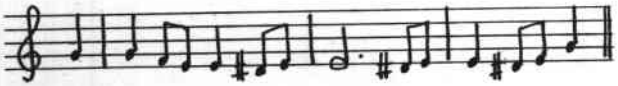
As there is one note of the chromatic scale, the sharpened supertonic (D sharp in the key of

C), which does not appear anywhere on the comb, we shall consider first what happens when this note is needed in the melody. It is, in fact, the very first note of the Strauss waltz *Morning Papers:*



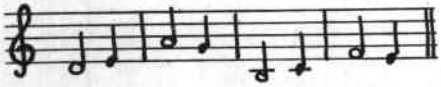
Example 4

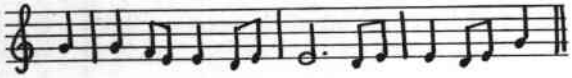
Sousa also makes good use of it in *Stars and Stripes for ever:*



Example 5

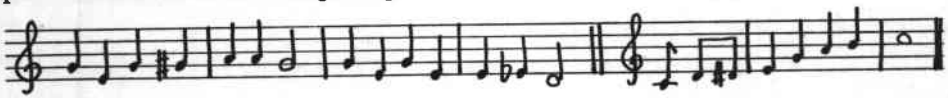
In these typical cases the disc arranger substitutes the next best thing – a D natural – without too much detriment to the tune:





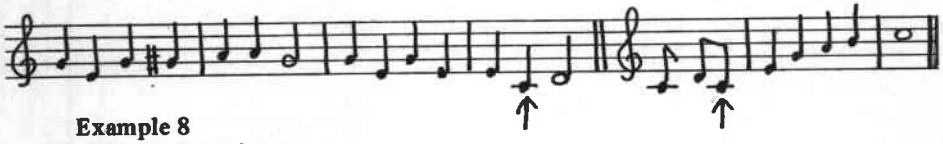
Example 6
Polyphon disc 2014
Polyphon disc 2798

This would be a less satisfactory solution where the D sharp (or E flat) is next to a D natural: having two identical notes adjacent would interrupt the flow of the melody. This problem arises at both the beginning and the end of *The Blind Boy:*



Example 7

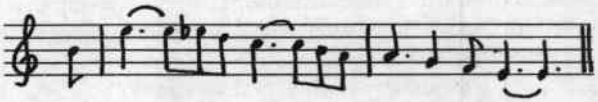
Here the melodic movement is maintained by substituting another nearby note of the scale:



Example 8
Polyphon disc 2575

Those with sensitive ears might consider that the music arranger, by cutting out a few chromaticisms, has actually improved this appalling melody!

A similar solution appears at the climax of *Queen of the Earth* where the melody reads



Example 9

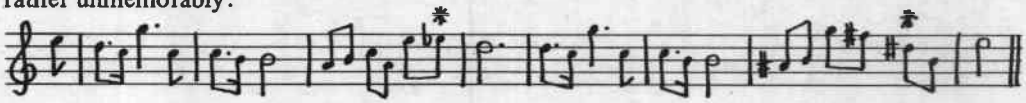
Here again the chromatic note is replaced by a convenient nearby note of the scale:

Example 10
Polyphon disc 2481

You may notice that the flowers on auntie's hat are not quivering as much as they usually do at the climax of this song: the removal of the chromatic falling semitone has robbed the tune of some of its emotional appeal. The restricted range of the musical comb has a most chastening effect on sentimental Victorian songs both melodically and harmonically.

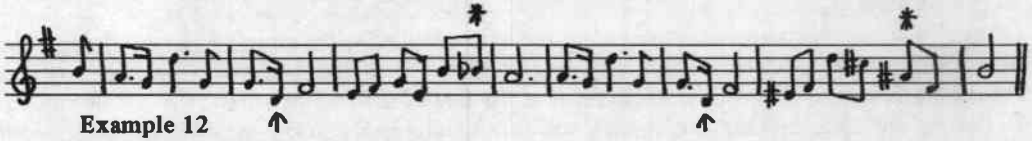
We have so far considered two ways of coping with the missing note: the substitution of the natural note of the scale, or of a quite different note which nevertheless makes some musical sense in the context.

A yet more ingenious solution is afforded by *When the Summer comes again* which begins, rather unmemorably:



Example 11

The missing note is required several times during the course of the tune which would lose something of its character without it. Here the music arranger has resorted to the unusual and unexpected expedient of transposing the music into the key of the dominant:



Example 12
Polyphon disc 2340

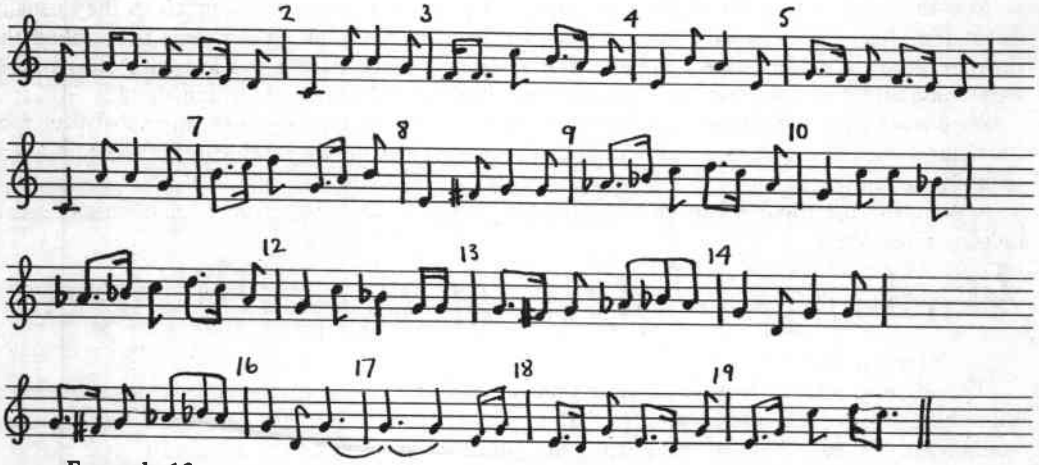
The 11" Polyphon can with some difficulty play in this key: it is occasionally used for slow music such as hymns, rarely for anything else. But in this key, all the required notes are available, although to get them it is often necessary to jump about from one octave to another. In the key of C the asterisked notes E flat/D sharp would not be available; but in the key of the dominant these become B flat and A sharp which are possible and, fortunately, the missing note has not reappeared anywhere else in the tune.

Let us now consider other causes of melodic deviation. One is provided in our last example. The notes with arrows beneath should be F sharps not Ds. (Compare example 11.) It is a case of two notes the same being required in rapid succession, and there being only one tooth for this note. One note has to be omitted, played in a lower octave, or replaced by an alternative note. It all happens so quickly that the ear tends to think it has heard what it *should have* heard rather than what it actually has heard! I would go so far as to say that an important part

of the music arranger's art is to create an aural illusion – to seduce the ear into believing that it has heard the right notes when it has in fact heard the wrong ones! A paradox indeed, the elucidation of which would merit a separate article.

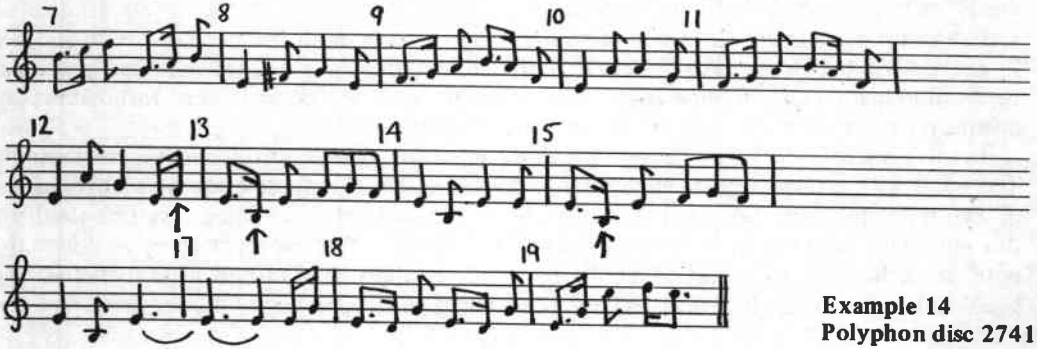
In the present article however we shall consider just two other types of melodic deviation with one example of each.

The first concerns the problem of a melody which modulates widely. *The Butterfly*, a charming and delicate number from *San Toy*, is a case in point. After eight bars of predictable melodic writing Sidney Jones, perhaps to avoid monotony, indulges in an unexpected and steep modulation. Nine bars pass before the main key is firmly re-established: the mediant (G) of the implied secondary key (E flat) becomes the dominant of, and leads back into the main key (C major).



Example 13

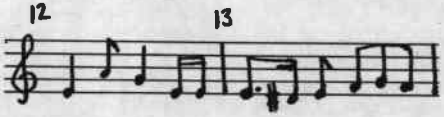
Although all the notes in this example are available on the musical comb, though not necessarily in the most convenient place, it is quite out of the question to provide harmony for even a fragment of melody which hints at the key of E flat. For a start, there is not a single E flat on the comb. What bright idea will our indefatigable music arranger come up with? The first eight bars present no problems, but from the end of bar 8 up to bar 17 he transposes the melody down a minor third so that in fact it stays in the main key.



Example 14
Polyphon disc 2741

This section now ends on a long E instead of G and leads as naturally on to the next section at the correct pitch, as in the original score.

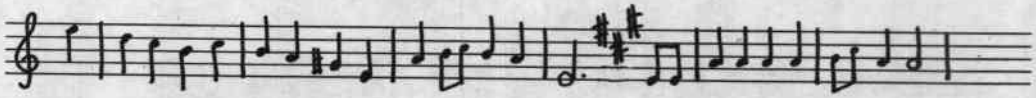
In this transposed section bars 12 & 13, to follow the original as closely as possible, should read



Example 15

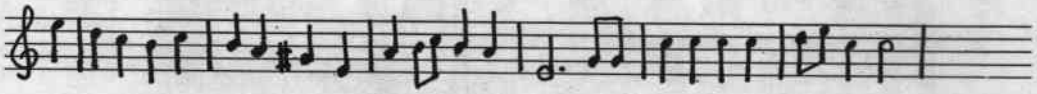
Arrows in *ex. 14* indicate notes which are doubly wrong in a whole section which is strictly incorrect. At the end of bar 12 there should be two adjacent semiquaver Es instead of E F. The alteration is because there are only two teeth tuned to this E, and one of them is needed at the very beginning of the following bar. At the arrow in bar 13 we should have D sharp, not C. By transposing this section the arranger has ironically brought into the tune the very note which he is quite unable to produce!

Our final example concerns a tune which starts in the minor and ends in the major. This is by no means uncommon. An example is *The boy guessed right* from *A Runaway Girl* by Lionel Monckton. If we write the first part of the tune in A minor, we require, at the chrous, a switch to A major. Here is the join:



Example 16

Few musical boxes could manage such a modulation; certainly not our Polyphon. But although we cannot modulate from A minor to the *tonic* major (A major), we can modulate to the *relative* major (C major). At the join, therefore, we jump up a minor third, and few who hear will be any the wiser!



Example 17
Regina disc 6291

These examples show that the original music arrangers were not deterred by problematical tunes; but by a high degree of ingenuity and musical intelligence made their instruments play, or appear to play, the tunes on which they chose to bestow their skill.

This article comes from the Strand Magazine, Volume 19, 1900, and was given to the Editor by Member George Speaight.

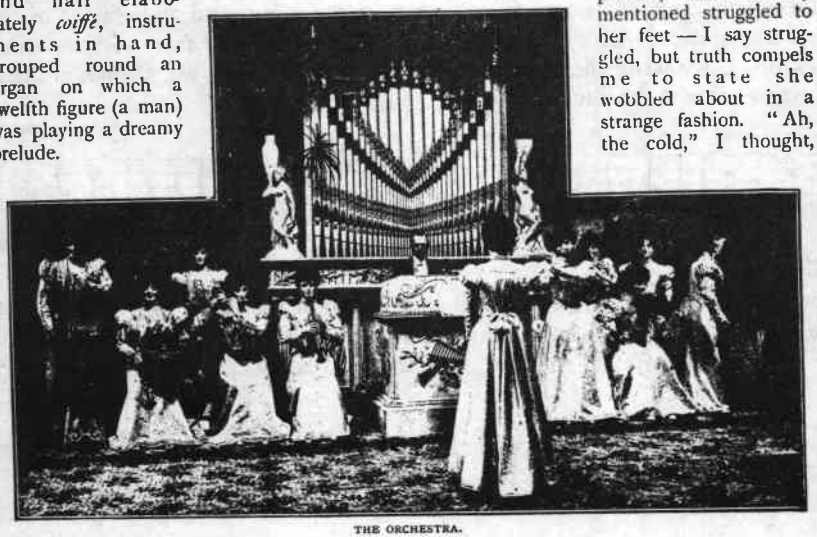
A Musical Curiosity; or, An Automaton Orchestra.

By M. Dinorben Griffith.

(Illustrated from Photographs specially taken by George Newnes, Limited.)

IT was a foggy morning — no need to specify any particular morning, for every morning was foggy then — when in a lift I ascended to the top floor of a lofty building situated — well, within the four-mile radius of Charing Cross.

The blood-curdling sounds of half-a-dozen stringed instruments being tuned at once guided me to my destination. I entered a large room, where I found an orchestra of eleven ladies, in full evening dress of white satin, with pearl and diamond ornaments, and hair elaborately *coiffé*, instruments in hand, grouped round an organ on which a twelfth figure (a man) was playing a dreamy prelude.



THE ORCHESTRA.

Eleven pairs of eyes—blue, grey, brown, and hazel—were fixed on me as I nervously covered the space between the door and the one chair in front of the owners of the eyes. I tried to summon up courage to stare the starers out of countenance, and to pick out the pretty ones. They were all pretty, but naturally one has predilections for lovely, demure-looking, golden-haired blondes, or stately brunettes with dark tresses, or for sparkling beauties, wickedly bewitching, with Titian-hued hair. Samples of each type were before me. I hesitated and was lost, and, to save making an invidious selection, fell in love with the whole eleven.

The prelude ended with a loud chord. The lady seated straight before me jumped up, bowed smilingly, then unceremoniously turned her back to me and lifted up her *bâton*. To my great chagrin the ten pairs of eyes were then fixed on her, and the concert began with the "American Patrol." It was given with wonderful precision and brilliancy. The conductress again faced me, bowed, and sat down.

A voice from the organ announced that "Miss Blow would give a solo on the piccolo," and the lady mentioned struggled to her feet — I say struggled, but truth compels me to state she wobbled about in a strange fashion. "Ah, the cold," I thought, "or perhaps she has breakfasted, not wisely, but too well." I smiled sympathetically at her, but was frozen by a stony glare, after which I sat shamedly listening to one of the finest solos I ever heard played, and felt bound to confess that whatever had affected the limbs had left the head and fingers in first-class condition, so I named the complaint chilblains and tight shoes.

The orchestra then played "Pastimes on the Mississippi," which gave scope to the talent of the metalophone player, who acquitted herself with wonderful skill.

DR. BRUCE MILLER AND THE CONDUCTRESS.

I clapped vigorously to express my delight and also to warm my hands, and then with some diffidence and downcast eyes threaded my way among the ladies until I reached the organist.

"Dr. Bruce Miller, is it not?" I asked.

"So. What do think of my orchestra? We are *en route* for the Paris Exhibition, you know. It's a first-rate show to travel with. You bet there are never any rows in my company, and no single member has ever grumbled or struck for higher salary. That's good enough, isn't it? And all women, too —stranger still, eh?

"To bring this orchestra up to its present state of perfection," added Dr. Miller, "has taken ten years of my life, and I am still going on improving it. I shall very shortly dispense with the organ altogether, and have a piano with a harp attachment."

I had just realized that the eleven ladies were ruled by one mind and one brain, and those belonged to the man who was their creator and manager.

I had been listening to a musical curiosity —an automaton orchestra, but so cleverly manipulated and so artistically built, that at a distance and under artificial light they would deceive anyone.

The construction of automata has been a craze among mechanicians from time immemorial. The priests of Memphis kept up the prestige of their sacred city and its religious rites through their mechanical skill in this special line. Four hundred years B.C. there was the famous wooden flying pigeon of Sarentum, and centuries later came the historic eagle which flew before the Emperor Maximilian when he entered Nuremberg. Probably the best known of these automata was Kempelen's famous chess-player, which for many years puzzled Europe. It was hardly deserving of the name of automaton, for a man was cleverly concealed inside the figure. The Swiss excel in constructing automatic singing and flying birds, but their productions can hardly be termed more than clever toys.

Mechanism has now attained such perfection that a mother can present her daughter with a doll which will walk, sing hymns, nursery rhymes, or lullabies in the mother's own voice. So cleverly are animals imitated, that even an experienced old tabby cat was grievously deceived. Seeing a mouse leisurely meandering round the room, she swallowed it. Alas, it was only a toy mouse, and whenever that cat moved there was a rumble of machinery inside her. She was a living alarm clock, avoided by all her kind, and the laughing-stock of mice. History records that she died mad.

Most automata are constructed on the winding-up principle; the orchestra men-

THE CLARIONET PLAYER.

tioned is manipulated in a much more intricate but more natural manner.

Doctor Bruce Miller, its inventor, is a Chicago physician, who in his early youth was a musical enthusiast. He devoted his whole energies to the study of this branch of art, and also to the practical constructive part, with such an absorbing interest and devotion that his brain threatened to give way. His father forbade any further pursuit of his hobby, and insisted on his entering the College of Physicians and Surgeons as a student. He graduated, and successfully followed his profession for three years, although his heart was not in his work. Gradually he returned to his first love, music, not as a student or performer, but as an inventor.

THE FLUTE-PLAYER.

His first attempt at automata construction was eight grotesque figures that sang and played their own accompaniments. The second was the present Pneumatic Orchestra of eleven life-size figures, which cost the Doctor ten years of constant labour, and before it had reached its present state of perfection over £3,000 had been expended in experimenting.

The operating instrument is a console, and Dr. Miller, seated before the finger-boards, foot-pedals, stops, etc., directs all the movements of the figures. The instruments played are violin, clarionet, piccolo, flute, trombone, metalophone, bass viol, cymbals, triangle, bass and snare drum. Every figure, as it was completed, was connected with the console by pneumatic tubings.

The figures are made of *papier-maché*, as wax did not look natural, and the inventor himself constructed every one, painted the faces, and completed the mechanism which moves the heads, arms, and eyes of the figures. Some idea of the magnitude of the work may be gathered from the fact that over a mile and a half of rubber tubing is used, in addition to brass and tin tubes, 3,000 bellows, and 6,500 valves.

"The instruments," said Dr. Miller, in reply to a question, "cost about £150, but it costs ten times as much to make those instruments play."

The marvellous part of this automaton or Pneumatic Orchestra is, that the figures move, the eyes turn, the fingers are flexible, and actually play the right notes on flute, piccolo, or clarionet. They stand up and sit down, and play solos with an accuracy and light and shade which have hitherto been impossible except to a living soloist.

Naturally the excellence of the programme depends upon the talent of the operator and his musical repertoire and skill. If he is a genius, then his musicians are immediately filled with the divine afflatus also. This is literally true, for the operator has only to open the proper valves, and the figures do the rest.

THE PERFORMER ON THE KETTLE-DRUM.

The leader of such an orchestra has to be a thorough musician himself; he must know the whole orchestration of a piece, and commit every one to memory, for to manipulate correctly the tubes connecting each and every figure requires long, arduous, and constant practice.

The orchestra occupies a space of 25ft. in length, is 12ft. wide, 12½ft. in height, and weighs 3,500lb.

The Doctor, seated at the console with his

THE VIOLINIST, AS SHE REALLY IS.

THE 'CELLO AND ITS PLAYER.

orchestra round him, begins the overture, at the conclusion of which the conductress starts leading the band. At will the musician at the organ can bring a soloist to her feet, who faultlessly plays her piece, bows, and sits down again. The marvel of it all is that the inventor, among his multitudinous tubes, can recollect what tubes move any particular figure, for tubes surround him, in hanks, in bunches, until the floor round him is covered and seems to teem with snakes, which they resemble.

As the whole manipulation is performed by one man, and he an accomplished musician, there is no difficulty in getting the proper expression into the music,

THE HAND OF THE 'CELLOIST.

which is an impossibility in a mere wound-up automaton.

The metalophone player, Dr. Miller informed me, was the most complicated. The figure contains fifty bellows, and seventy-five more are required in connections before the soloist can play her part thoroughly.

Questioned as to the motive-power, Dr. Miller pointed to twelve tanks containing about 600lb. of water. "You see," he said, "this is better than lead for weight. I can empty the tanks for transport, and that means something, as I paid for fifteen tons of luggage by measurement coming over from America."

"Will not your invention injure professional players?"

"Not at all, when I have

THE CONDUCTRESS.

brought my orchestra to the highest state of perfection possible; the musician-operator will still be necessary, and the excellence of the orchestra will depend upon his ability."

In addition to the finger-board Dr. Miller operates on twenty-six pedals with his feet; a harmonica, by a contrivance of wires, is fixed conveniently to his mouth, and this again is connected with the figures by tubes; every tube in the harmonica produces two notes by the simple process of blowing and suction. The Doctor is the champion harmonica player of the United States, hence without seeming difficulty he is able to accomplish a musical feat that would be impossible to anyone else.

A glance at the mechanism of the figures and the interior of the instruments, with their connecting tubes—as given in our illustrations—will show how difficult is the task of the operator.

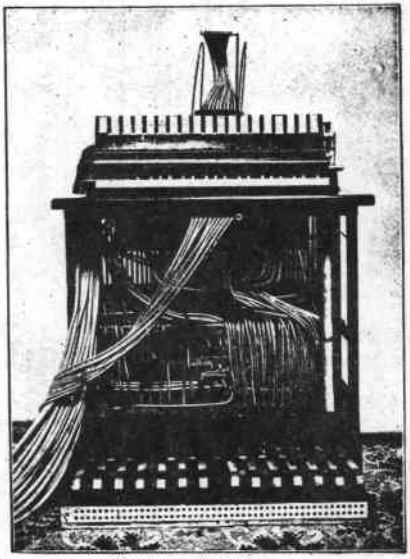
To remember the order of the tubes, to play with hands, feet, and mouth, to regulate the movement of the figures, and to give the necessary expression to the music seems to be a task beyond the power of one man to accomplish, but to Dr. Miller it is a labour of love, and one he performs with the greatest ease.

It was a transformation scene when the pretty ladies were ruthlessly robbed of their wigs and garments to show their interior mechanism. Through a trap-door at the back of the head, and another larger one in the body, I saw the minute bellows, with their double action, the marvellous springs, and the thousand and one devices that converted the *papier-maché* doll into an accomplished soloist. The orchestra is certain to be an attractive and much-patronized feature of the Paris Exhibition.

"The ladies are all to have new dresses for that occasion," said the Doctor. "I am busy designing a novel costume for them."

"Why not have them in Jap dress?" I suggested.

"That would not be a bad idea," was the reply. "I am now adding a piano of concert



THE BACK OF THE ORGAN.

size, with harp and mandoline attachments, which will be operated from my finger-board in connection with the figures. This will add greatly to the volume of the orchestra and produce a number of new effects. I shall have this completed by the 1st of March, from which date we start a series of performances in London."

UNCONSIDERED TRIFLES

Being a random selection of odd, unrelated items from the past collected and conducted by The Editor.

Occasionally, amongst collectors and dealers today, one hears talk of a strange appliance called a 'polyphone'. Allegedly a mechanical musical instrument, your Editor has searched untiringly over the years to find any evidence of the existence of such a thing. At last it has been found! The Polyphone was a two-horned phonograph advertised as 'Guaranteed as loud and natural as human voice. Twice as loud as any other talking machine.' This machine, advertised in the *Scientific American* around the turn of the century, was sold by The Talking Machine Co., 107, Madison Street, Chicago.

Symphonium, the most common mis-spelling of the machine which was the joint effort of Ellis Parr and Paul Lochmann, was in fact the name which Wheatstone gave to his first mouth organ.

Unlike a piano in which the normal action is for a limited number of notes to be sounded at one time, leaving all the others damped, the teeth of a musical box comb are all free to vibrate in sympathy with any tooth or group of teeth which are sounded. This gives greater resonance and tone to the sound of the larger musical boxes.

Musical Opinion, September 1904: 'Signor Allessandro Bertinelli has invented a mechanism which will play four instruments at once, – a mechanical quartet party. He has called his invention a 'monimophone', and threatens to come to London with it'.

In 1900, P. & C. Rossi & Spinelli were trading as street piano makers at 49 Warner Street, London.

In April 1904, *Musical Opinion* announced: 'The Perforated Music Co. 64 Gt. Eastern Street, E.C., have put down a plant for making music for all players. Thousands of selections are now ready, and the list is being added to daily. The principals claim to possess the only complete plant in Europe for the making of perforated music rolls'.

Leipzig means 'city of the lime trees'. This is why so many of the cases of musical boxes from that part of the world have cases of carved or veneered limewood.

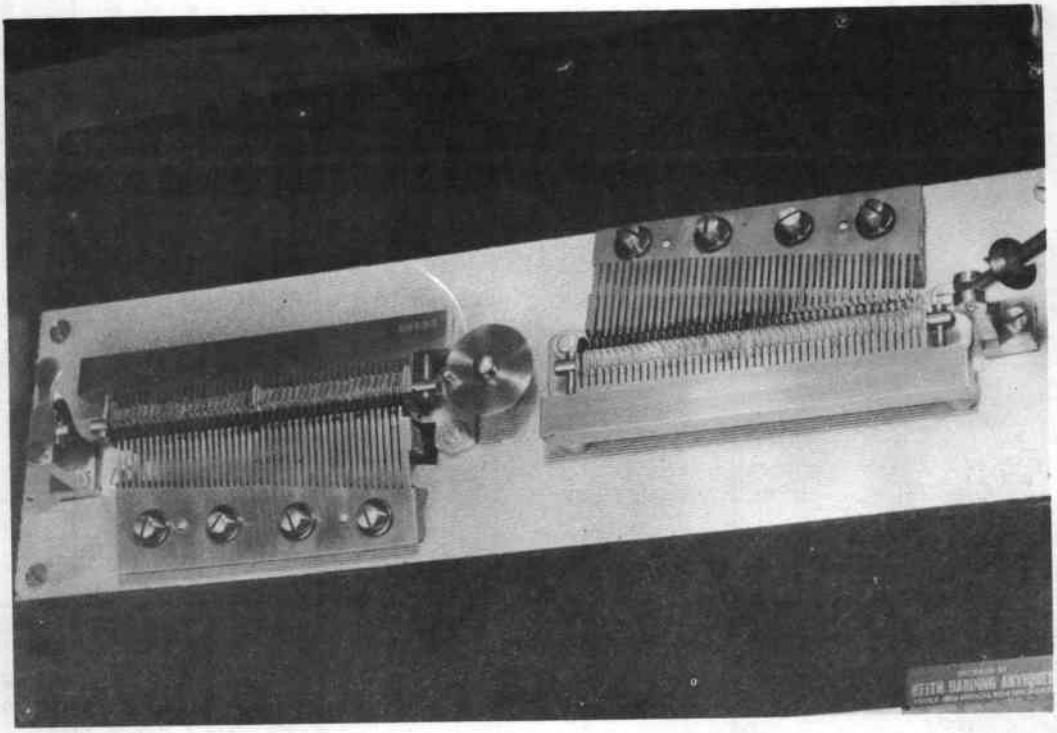
The earliest musical box case lid hinges were just simple wire hooks and staples pressed into the wood. The catch-hook means of locking was used until quite late in musical box development, proper locks not coming into general use until about 1840.

Although the name of Gavioli is known to us solely in the field of fair organs and it can be said that the Gavioli family, particularly the brothers Claude and Anselme, the Gavioli name is also connected with horology. All the Gavioli family papers are preserved in the Nationaal Museum van Speeldos tot Pierement in Utrecht and these include many designs and several patents for clock escapements. The most famous and practical of all the Gavioli escapements is preserved in the museum and is still in perfect working order. It was designed to be almost frictionless in operation.

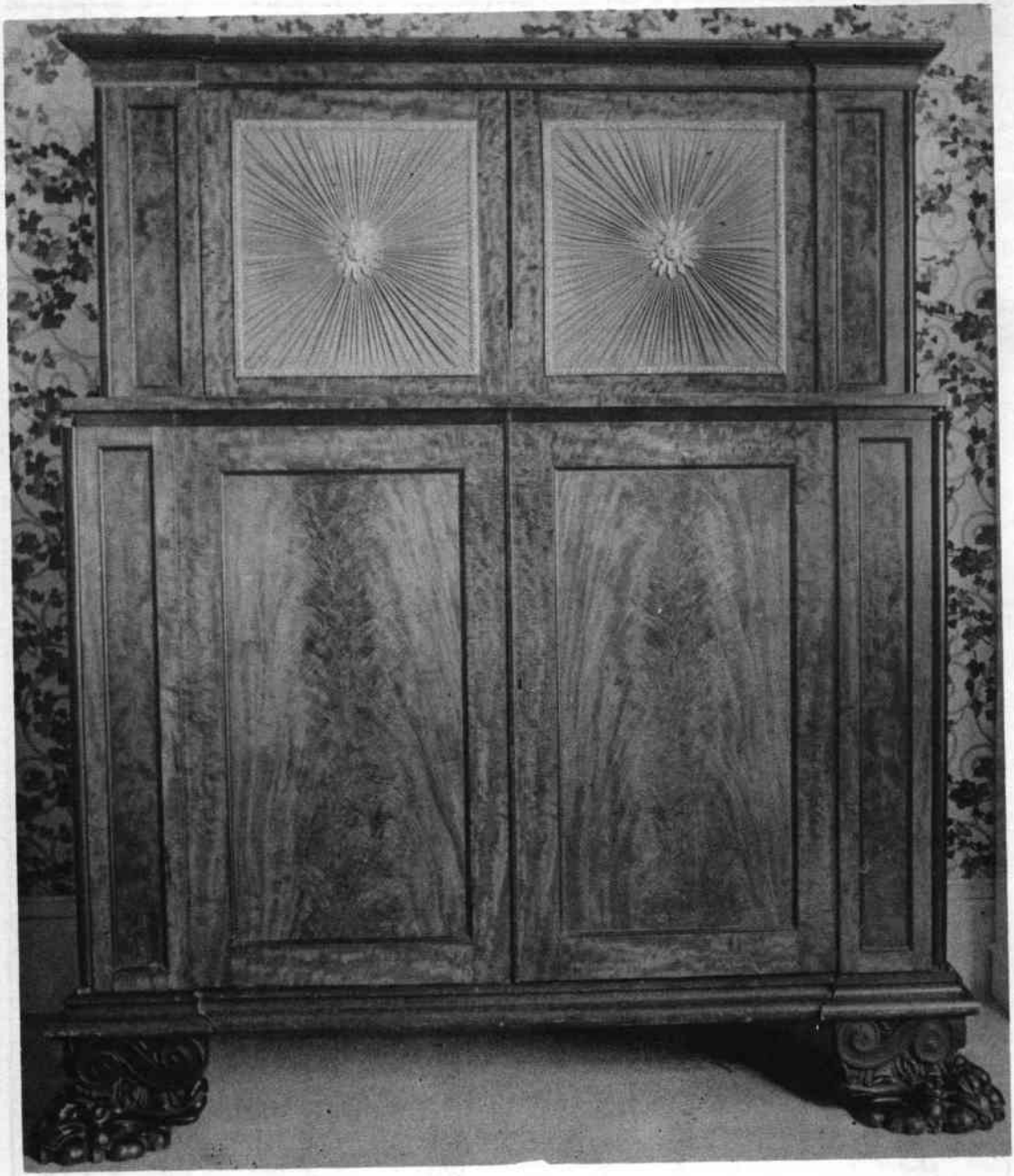
SOCIETY MEETING

The Summer Meeting of the Musical Box Society of Great Britain, which will include the Annual General Meeting, will take place at the Kensington Close Hotel, Wrights Lane, London, W.8, on Saturday June 8th and Sunday morning, June 9th. The programme for the meeting will be circulated by the Secretary early in May.

The Society will also be holding its first-ever Dinner Dance on the night of Saturday, June 8th. Member Alex Duman of Glasgow has kindly donated a generous sum to make this possible and the event is expected to prove extremely popular. Nearest Tube station to the hotel is Kensington High Street (Piccadilly and Circle/District lines).



The mechanism of the 117/8in. Symphonion in the Fortnum & Mason collection. This is an early model and the picture shows clearly the adjusting screws at each end of both star-wheel blocks which can be adjusted to bring the star-wheels closer to the comb or to move them back. Misadjustment of these, even by only a slight amount, can completely ruin the operation of the mechanism since the precise alignment of the star-wheels relative to the disc projections is vital if the proper timing of the notes is to emerge. On the facing page is an advertisement dating from 1905 which shows an ornate grand piano being played by a matching piano player. This Chase & Baker advertisement would not be legal today since while the plain-cased player cost £52 as advised, the regency one actually depicted was considerably more expensive. Had the Trade Descriptions Act ruled 69 years ago, Chase & Baker could have found themselves in hot water . . . .



A MACHINE ORGAN

A RARE and unusually handsome machine organ featured in Sotheby's sale of valuable musical instruments held in London on November 22nd, 1973.

It is seldom that machine organs turn up, partly because the majority were built without cases to fit existing alcoves in stately homes, and partly because over the years they have suffered destruction, rebuilding as finger organs, or have been rebuilt at cupboards.

So it was with extreme delight that your Editor examined this fine piece, shown on the facing page and in detail on the two subsequent pages. Made by Flight and Robson and probably manufactured after 1826 and before 1832, the instrument has been most commendably modified to be blown electrically, the whole installation being so arranged that it can be removed and the original clockwork blowing linkages re-connected.

On the next page the blower switch can be seen at the bottom left, the blower being contained in the boxes supported in the top of the case and feeding via flexible metal trunking into the front of the windchest. The existing weighted bellows reservoir is still used.

The huge fusee-wound clockwork motor (the driving handle is seen overleaf in front of the chest) at present turn only the barrel, but the feeder linkages are still present. Surprisingly, the four drawstop knobs are only accessible by opening the lower doors of the case. In the view overleaf they can be seen in a central row above the bellows and below the handle.

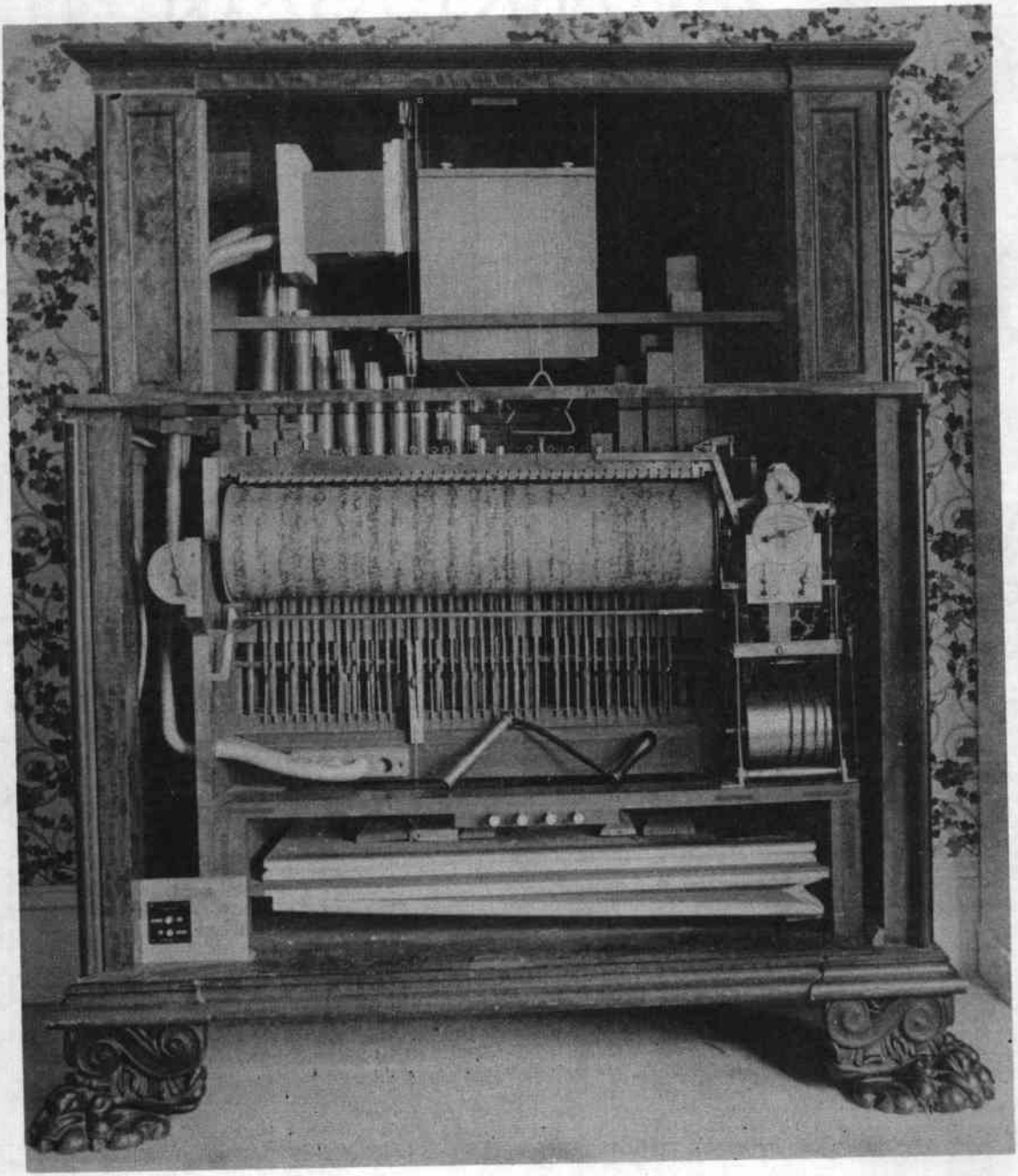
Further details are provided in the catalogue description, reproduced, along with the pictures, by courtesy of Messrs. Sotheby & Co. The instrument changed hands for £2,500.

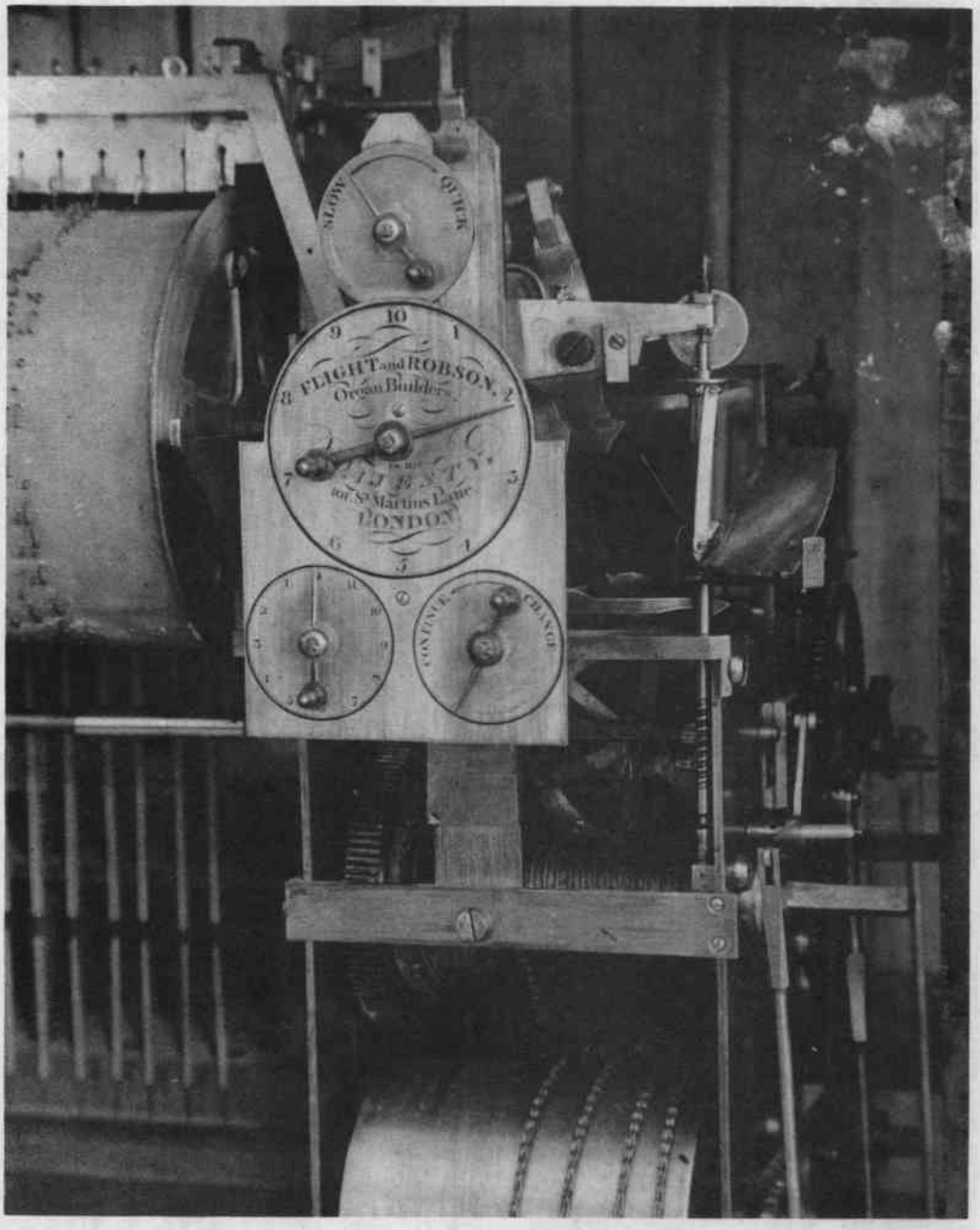
The Property of Mrs. Graham Greene

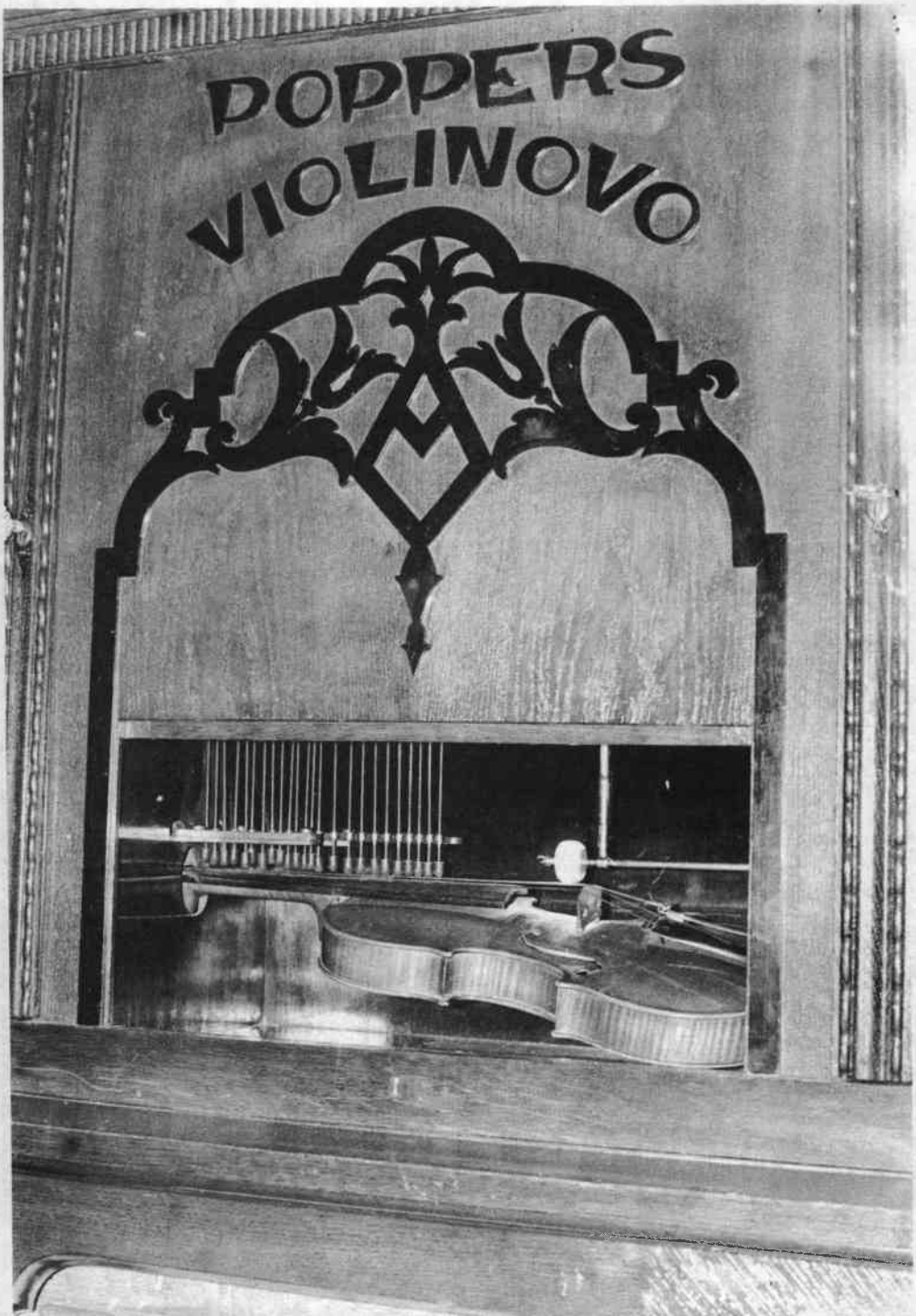
39 A VERY FINE AND INTERESTING MECHANICAL BARREL ORGAN *by Flight and Robson, London, inscribed on the control panel Flight and Robson, Organ Builders to His Majesty,* 101 *St. Martins Lane, London,* the cabinet of handsomely figured mahogany, the lower section with two panelled doors, the upper section with two sunray pleated silk panels centred by gilt metal female masks on sunbursts, raised on four heavily carved lion's feet, the organ with four hand stops controlling flute; 'stopt' diapason, open diapason and triangle, the bellows and barrels driven by a clockwork mechanism with four heavy watch springs contained in two brass drums operating through brass gearing with a vane-governor, the front of the mechanism with four dial controls governing speed, tune selection, tune change and tune stop selection, the whole organ and mechanism supported by a solid mahogany frame, original iron and brass crank handle, *height* 6*ft.* 5*in.* (195.6*cm.*), *width* 5*ft.* 2¼*in.* (158.1*cm.*), *depth* 2*ft.* 8*in.* (76.2*cm.*), accompanied by thirty-three barrels each in separate wooden cases, *early* 19*th Century*, fitted with electric blower (34)

*** Formerly in the Collection of Commander Philip Hart, R.N.

The barrels which accompany the organ are pinned with a wide variety of tunes, such as operatic overture and airs including the overture from Mozart's 'Marriage of Figaro', also popular songs, dances and hymns from the period. Eight of the barrels play one tune only, the rest from two to the maximum of ten tunes. The Barrels themselves are just under 3*ft. long* (91.4*cm.*) *and* 8½*in.* (21.6*cm.*) *in diameter*. The organ has a compass of forty notes.




SLOW
QUICK
FLIGHT and ROBSON,
Organ Builders,
101, St Martins Lane
LONDON
CONTINUE
CHANGE


POPPERS
VIOLINOVO

A RARE VIOLIN PLAYER

OF all the mechanical players of the violin, one is extremely rare. This, made by Popper in Leipzig, is the Violinova. When Q. David Bowers was compiling his Encyclopaedia of Automatic Musical Instruments, he failed to find an example. Now at last, one has come to light and been fully restored thanks to the labours of one of our German members, Werner Baus, who runs the Mechanisches Musik Museum at Kassel/Fuldatal.

Werner Baus, seen in the picture on page 277, met an old instrument maker from Kassel named Heinrich Herrholz, now 71 years of age, who had been the representative of Hupfeld, Weber and Losche. Mr. Herrholz remembered that in 1930 a local innkeeper had bought a player piano with a violin at an exhibition by Popper at the Spring Fair in Leipzig. He also remembered that he had seen the instrument since the war.

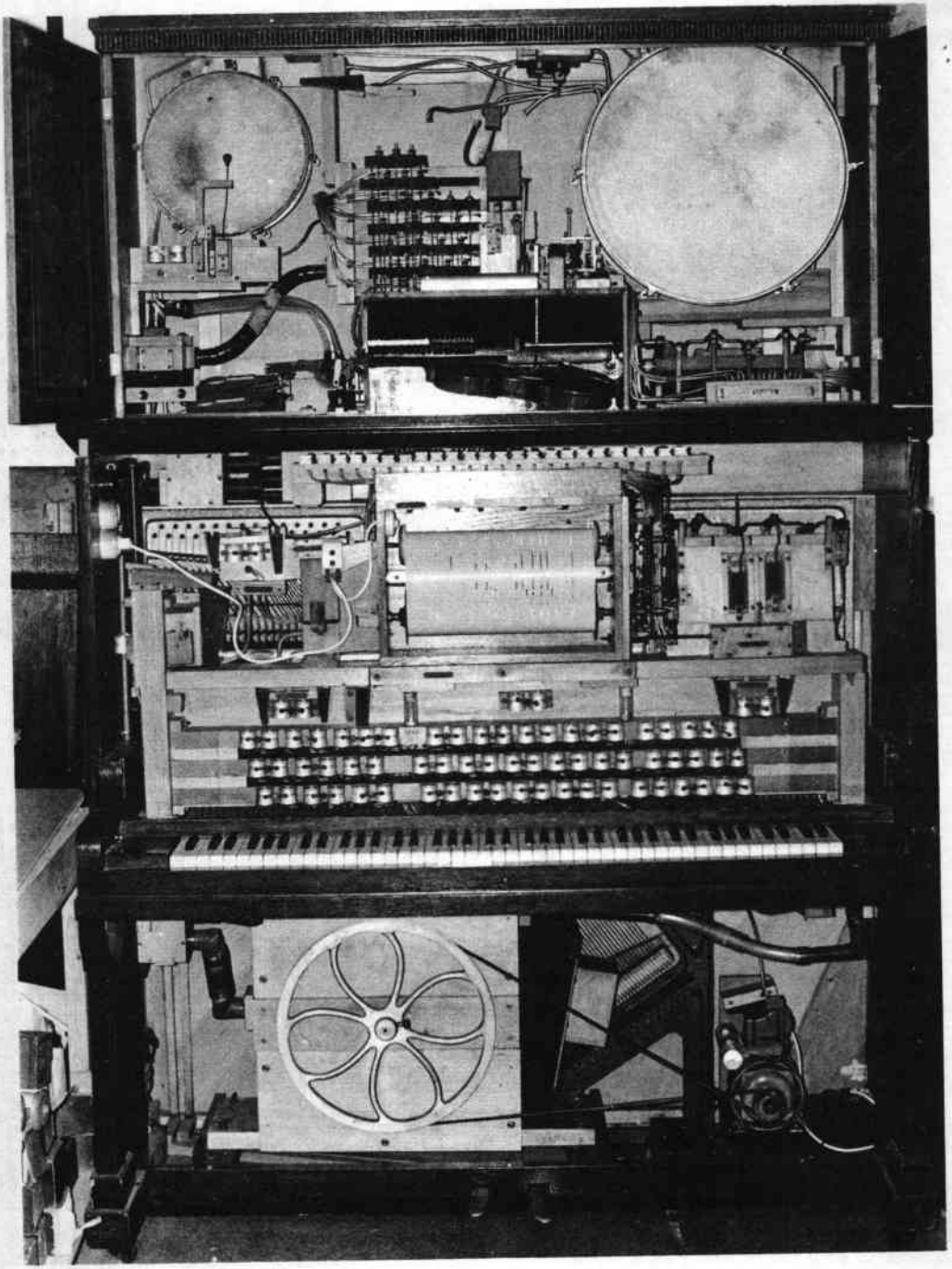
A search was made, the house was found and so was the piano – just in the nick of time, for the place was actually in the process of being sold and the contents destroyed. The piano, though, still stood in the corner of the dancehall. The upper compartment where once the violin and mechanism had lived, was empty! Enquiries revealed that a brother of the now-deceased innkeeper had taken them away and put them in his attic 30 years earlier. A visit to this man's house revealed almost all the missing pieces (except Chinese blocks and a few screws). However, the extreme changes of temperature in his attic had completely ruined everything.

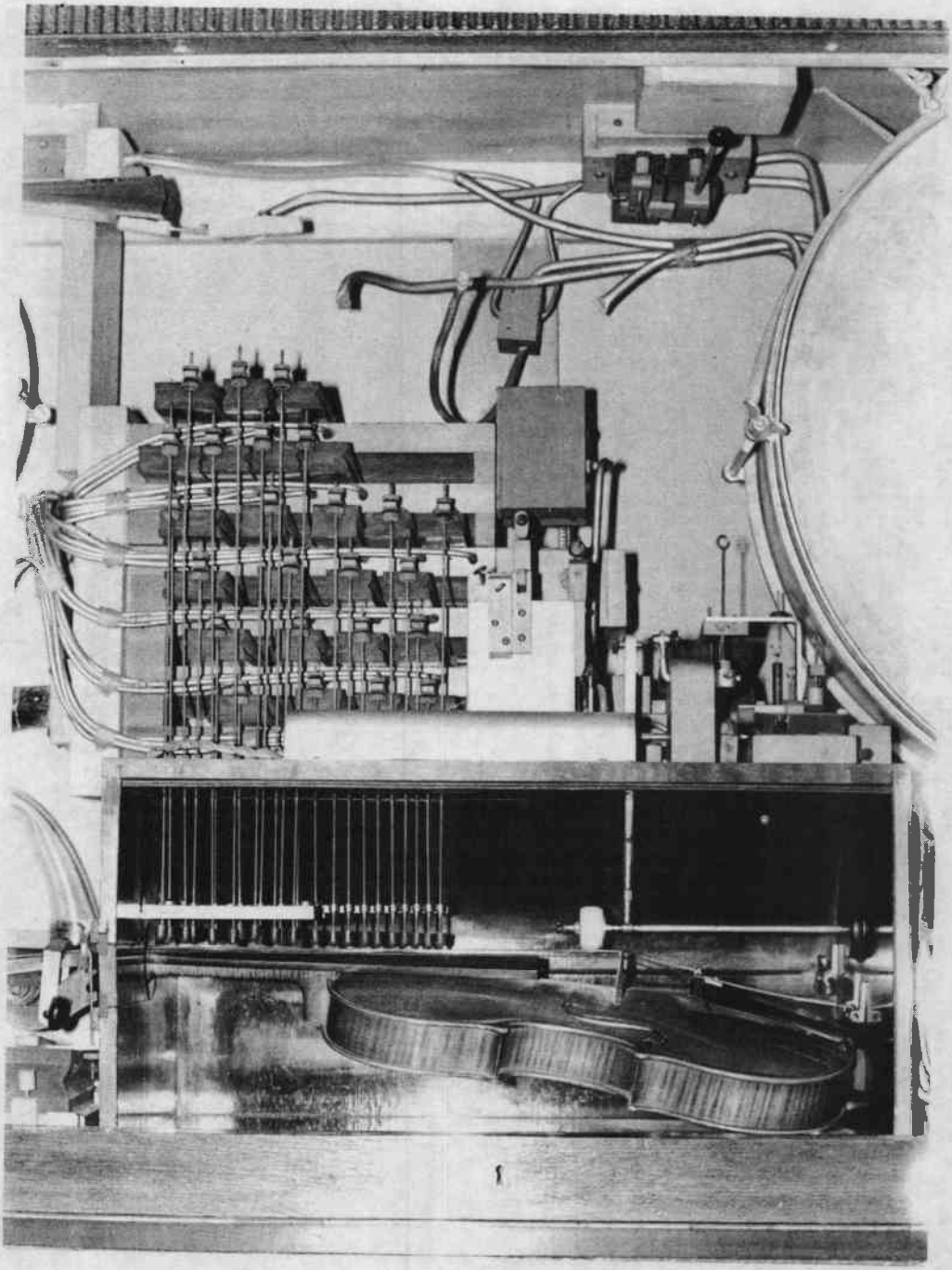
Eight hundred man-hours later, Mr. Herrholz and Werner Baus restored the Popper to playing condition. The replacement of the violin bow wheels posed a great problem since the "plastic" had disintegrated. An analysis of what was left was undertaken by the German chemical companies, BASF and Farbwerke Hochst as a result of which new ones were successfully made.

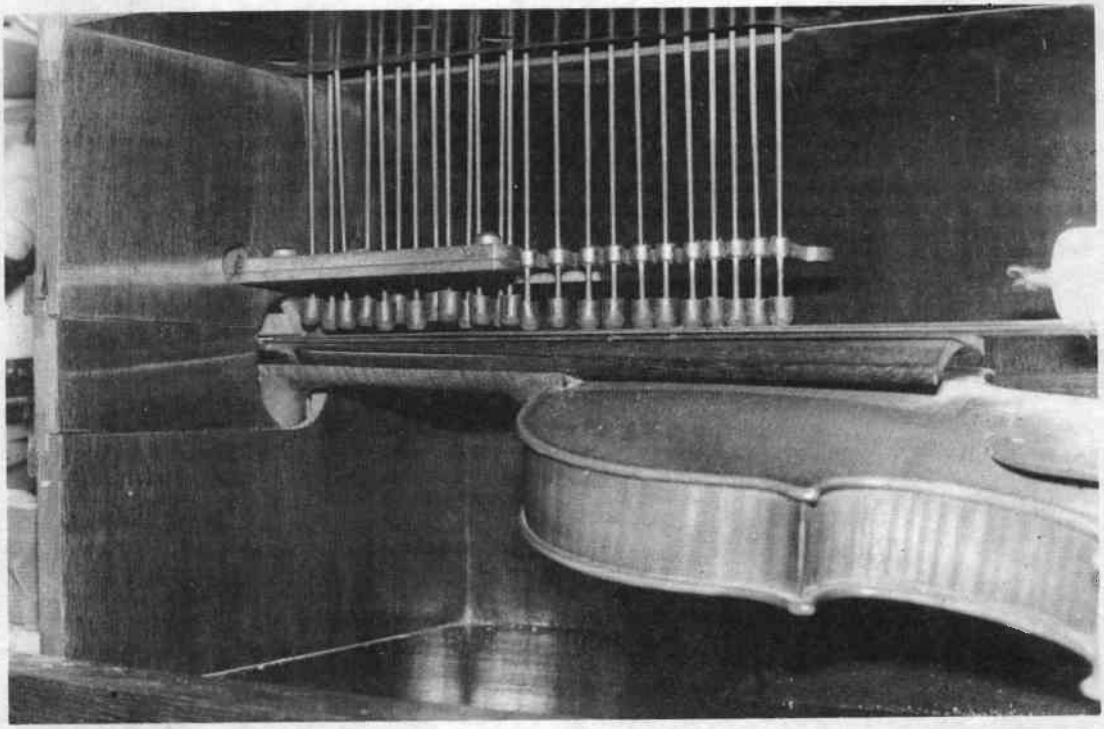
A film of this amazing machine in operation has been made and Werner Baus has promised to bring it over to one of our Meetings one day.

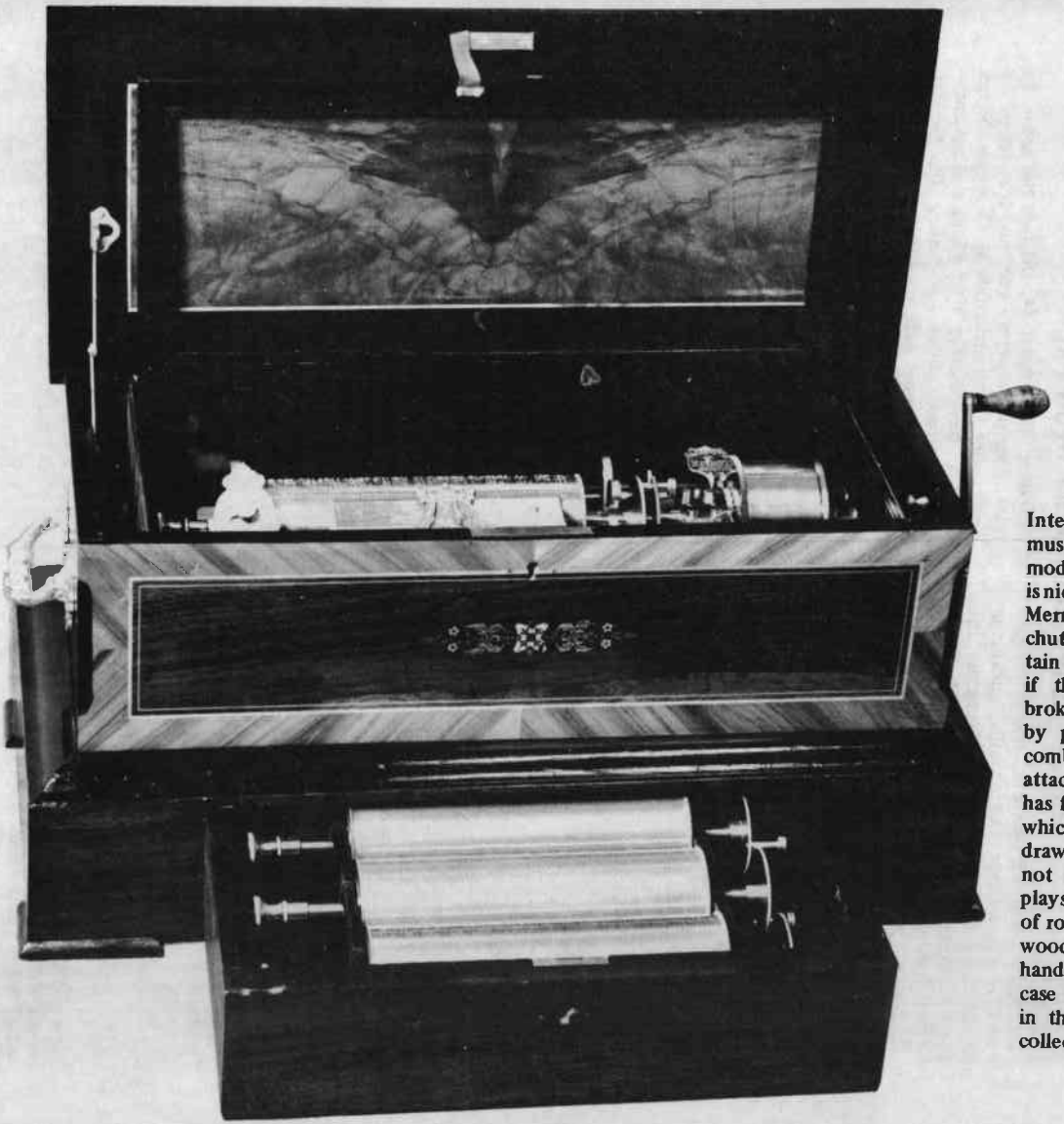
The drum roll plays *piano* and *forte* and the violin strings are tensioned during playing by two pneumatic motors, and allowed to slacken when not in use. The violin itself is in a red mahogany frame which is indirectly lit during play. The 24 "fingers" are operated by a bank of pneumatics – only two strings are fingered.

The complex mechanism of this instrument is shown in the pictures on this and the following three pages.









Interchangeable cylinder musical box made by Mermod Freres. The movement is nickel-plated and features Mermod's patented 'parachute' safety check to contain the power of the spring if the endless should be broken or disengaged, thereby preventing a run. The comb is fitted with a zither attachment and the box has four cylinders, three of which are contained in the drawer at the base when not in use. Each cylinder plays six tunes. The case is of rosewood banded in kingwood and inlaid. Ormolu handles are fitted to the case ends. This fine piece is in the Fortnum & Mason collection.

WEBER ORCHESTRIONS A HISTORY

Continued from page 150

by Q. David Bowers

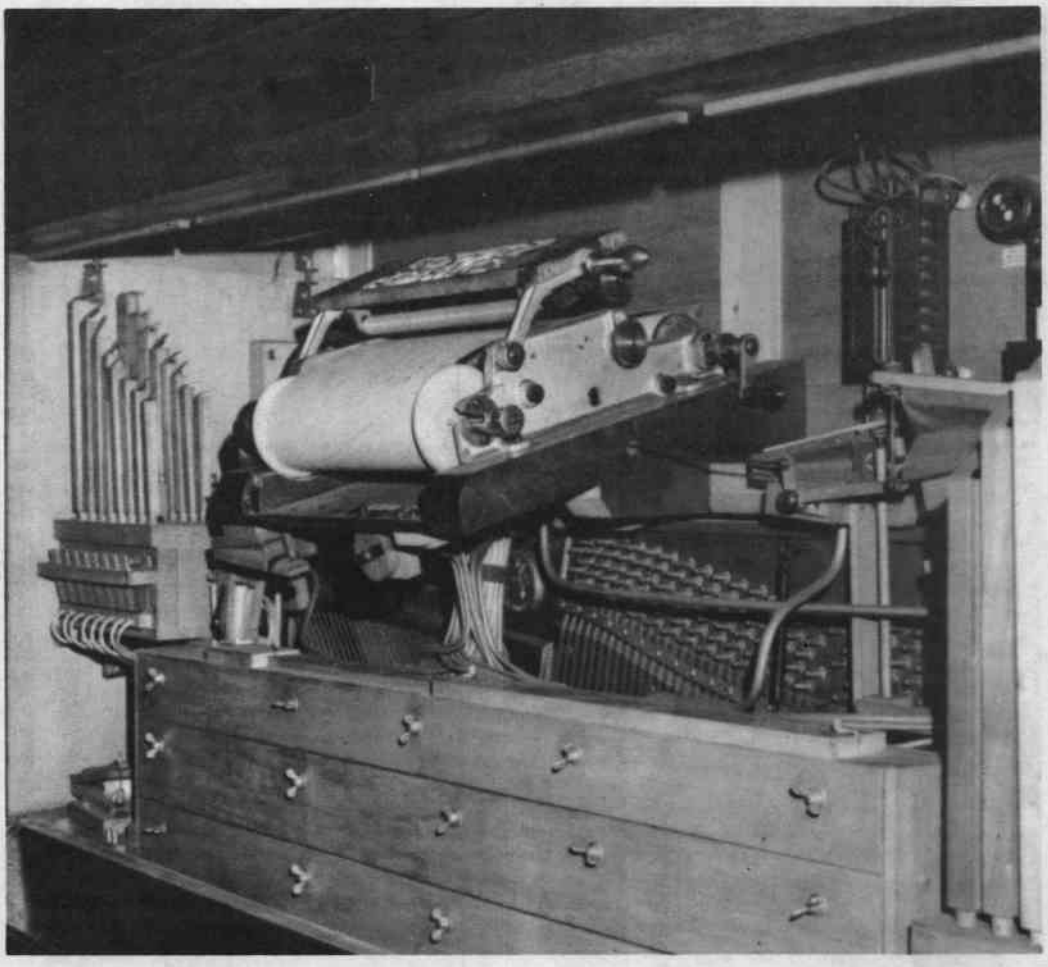
Part 2 – Early History of the Weber Firm

During my visit in Heidelberg, Otto Weber gave me an 1918 announcement of his father's death; an announcement which contained a capsule life history of August Weber. As nearly all of the information contained therein is new to collectors and historians I give herewith an English translation of it, with the original German style preserved:

'Once more the pitiless scythe of death has rent a painful void into the ranks of our fellow tradesmen. On August 14, 1918, at the age of 57 years, August Weber, director and founder of the Waldkircher Orchestrionfabrik Gebruder Weber G.m.b.H., passed away after a long and patiently-endured illness. With his passing the German musical instrument industry loses one of its most capable craftsman, who combined an inordinate mastery of his skill with an open, honest character.

'August Weber was born the third son of the

View of the inside of the workshops of Charriere & Company showing four instruments: a Welte reproducing piano, Hupfeld Violina Orchestra (violin player with pipes and percussion effects added), Weber Styria, and a Popper Violin Piano.



View of the upper part of the Weber Unika showing the roll mechanism and other features.

carpenter Anton Weber on August 22, 1861, in Waldkirch (located in the Black Forest district of Germany). After finishing his secondary schooling he took an apprenticeship with the orchestrion builder Wellenberger in Vohrenbach, and at the same time he studied music with the state music teacher Frendrich, who like Wellenberger has long since passed away.

'In the year 1883 Herr Weber established a factory in his home town which enjoys great esteem in Germany and abroad to this day. In the early years Mr. Weber led the factory single-handedly. Later, however, he took on his brother Hermann Weber, a mechanic, as a partner, after which the firm was Gebruder Weber (Weber Brothers). His brother left the business after a short time, and thereafter Herr Weber remained the sole proprietor until the year 1906 at which time the firm became a G.m.b.H. (corporation), which he headed as director until his passing.

'Through indefatigable effort undergirded with great skill in the art of musical tonality and tech-

The interior of the Weber Grandezza

The Maesto (above) is enjoyed today as collectors at a South California meeting listen to a concert on the author's Weber Maesto orchestrion. Below: Niels Viggo Bentzon, noted Danish composer (left) talks with Fritz Hartz in front of a Weber Otero in Copenhagen's Mekanisk Musik Museum.

nology, he succeeded in building a reputation of renown from a very modest beginning. Especially in the art of musical arrangement and character, his skill remained unsurpassed, a fact which is acknowledged today by the most celebrated among his fellow craftsmen and competitors. Not only was his beloved Violin-Piano born of his inventive genius but he was also the incontestable master in the art of building such instruments. Among all of his excellent imitators and competitors none could come close to achieving the refinement of his tonal characteristics and evenness of his musical scales from the highest to the lowest notes, which distinguished the mechanisms of Weber Violin-Pianos,

'He was also the unparalleled master of orchestion building; so much so that it is an inestimable pleasure to listen to his artistically perfected music today. Death has prematurely eclipsed his creative power – yet his creations will live on after him, as will the spirit of his unique undertaking.

'With the passing of this brave man his family loses its loyal head, and the co-workers of his extensive business mourn the loss of their genial leader whom they loved and admired. Despite the great demands of his business. Mr. Weber found time to devote to the needs of the community of Waldkirch, and his fellow citizens placed their confidence in him for many years by voting him to the town council. As a board member of the music school, where he was admired as a warm friend and benefactor, he set out to discover and develop young talent for the musical instrument industry of his town. He helped many students to further their education and to improve their position in life. As a longstanding leader of the music and song society and as a benefactor of the city orchestra to which he lent his musical talent for many years, he contributed to the flowering of musical life to the town of his birth. Although death has released him deom incurable illness, his passing is painful for all those around him. The war brought him much sorrow and worry, but his innate optimism and cheerful nature lifted its sadness for those who were close to him. May he rest in peace.'

The preceding gives an interesting sketch of the beginnings of the Weber firm, the founding date is uncertain. Some literature gives 1880 as the date. The Weber letterhead used in later years mentions the date 1883, as does the preceding article, so perhaps this is the date accepted as the official founding. To find discrepancies in the dates of establishment of various musical instrument builders is not a bit unusual. The same situation occurs in Welte advertising, for example. Sometimes the

earliest date of apprenticeship at which the first instrument was built (even if it was not built for commercial reasons) is given. Other times the formal date of the establishment of a factory is given. In any event the Weber firm produced only a limited number of instruments during the late 19th century. These were barrel-operated. A small early Weber orchestrion survives today in a guest house in the town of Zell in the Black Forest. The owners sell a color postcard featuring the instrument. The musical mechanism is activated by a standard tin wooden cylinder. Near the top of the orchestrion is a miniature ballroom scene with tiny automaton dancing figures.

Sometime around the turn of the century Weber began producing orchestrions played with folding cardboard music books. A very large and impressive example of this general style is afforded by an orchestrion which is on view today at 'The Eagle', a guest house located north of Waldkirch, Germany. Until it was moved there a few years ago, it was an attraction at the Guesthouse of the Sun in Bleibach, Germany. I visited it in Bleibach several times, and in April of this year I saw it again in its new home north of Waldkirch. At the top of the instrument are several automaton figures of musicians – a typical German band with each performer dressed in a military uniform.

Exterior view of the Weber Grandezza

Weber Violin-Pianos

During the 1900–1914 years, years which might be characterized as the 'golden era of orchestrions', Weber built several dozen different models and case designs, of orchestrions and related instruments. All Weber products were designated as 'orchestrions', and unlike the competition Weber apparently never built a 'plain' electric piano.

(For purposes of future clarification I might mention that piano – not an orchestrion – using Popper & Company rolls but bearing the Weber name exists in a collection in Germany. I asked Otto Weber about this particular instrument, and he said that the Weber firm never had any relationship with Popper and that such an instrument could have been made by one of the several Weber distributors who also handled Popper instruments – by combining parts of Popper and Weber pianos to create a hybrid).

Around this time a great effort was made to perfect instruments which could imitate the playing of the violin. Perhaps the most outstanding entry in this regard was the famous Hupfeld Phonoliszt-Violina, one of the most remarkable instruments the world has ever seen. The Hupfeld instrument, as readers of this journal know, featured three violins (with one playing string on each violin) played by a rotating horsehair bow. Another successful instrument incorporating a real violin was the Mills Violano-Virtuoso, made in Chicago, U.S.A. Several other instruments featuring real violins were produced by Popper, Dienst, and others, but only the Phonoliszt-Violina and the Violano-Virtuoso achieved extensive sales.

An easier way to imitate the violin was through the medium of violin-tuned organ pipes. The violin pipe, a distinctive style usually employing a brass 'harmonic brake', is a standard component of many different types of early electric pianos and orchestrions. Often in describing instruments containing violin pipes the orchestrions were said to contain 'violins' – with the implication being that the violins were real (rather than imitative).

While most types of violin pipes were voiced only approximately, Weber took great pains to voice its violin pipes precisely so as to closely sound like the 'string tone' of a real violin. The Weber violin-

pipe instrument was known as the 'Violano', a name which was probably later copied by the Mills Novelty Company. Weber apparently became sensitive about Mills' use of the name and noted that the Violano term was copyrighted. This didn't do much good, however, for Mills went right on using it!

The Weber Violano was described in glowing terms in an early catalog devoted especially to this instrument. We quote:

'As everyone knows, the player piano has reached a state of perfected development sufficient to render music in any home fit to meet the taste of every music lover. Whether it be the critical student, the learned artist, or the interested listener, player pianos with the best music rolls reveal to each and all a distinctive knowledge and pleasure in hearing the music of all the great virtuosi.

'The average player is also easily outclassed in technique by the self-playing instrument. Therefore with these acknowledged lines of success it should not seem astonishing to know that the next attempt of the self-playing instrument will be an approach upon the violin, and as the initial product in this direction we offer the 'Violano'. The mission of this wonderful instrument is to take the place of the present-day type of player pianos, and it is decidedly the instrument to grace the homes where refinement and artistic taste prevails.

'The Violano is an entirely new creation, both in its construction and by measure of its success. The Violano consists primarily of a high class upright piano of wonderful tone and exceptional beauty. The case extends upwards about three feet higher than usual for the accommodation of the violin pipes and apparatus. The upper part contains a series of pipes which are blown by the same bellows set as supplies power to the piano player mechanism. Electricity is used for power, and a noiseless, smooth-running motor has been installed. The music for the piano is on the same roll for that as the violin, and the piano part is, in all instances, the reproduction of the playing of artists. As regards the mechanism of the Violano the usual thump and the labored and square-cut phrasing, which one is accustomed to associate with the electric piano-player, is happily eliminated.

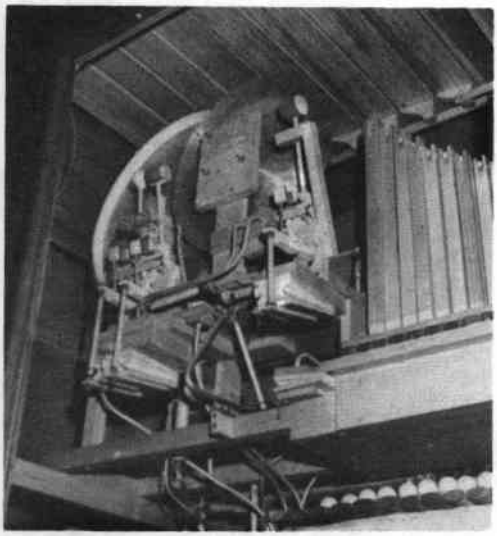
'Genuine violin pipes are rare. The voicing of the violin pipes is a wonderful accomplishment and what appears today in the Violano is really the result of attempts covering a period of over 200 years duration. Weber Brothers of Waldkirch are the only individuals who have met with REAL SUCCESS, and it is this feature, perfected

Exterior view of a Weber Otero at the MMM in Copenhagen.

and completed, that makes the Violano the wonder of wonders in reproducing violin music.

'The most remarkable feature of the Violano is found in the extraordinary close imitation of the violin tone quality. The particular tonal shading of the violin is imitated with marvelous fidelity. All the possibilities of the actual violin is played by the virtuosi are here produced. The singing legato tones, the peculiar pizzicato effects, the portamento slides of the finger boards, the intricate double stopping are positively artistic. Natural and artificial harmonies, utmost facility in runs, skips, and, in fact, all nuances on the actual violin are here accurately reproduced. One authority, after having heard Mendelssohn's Violin Concerto, a work which is eminently sympathetic with the characteristic qualities of the violin, and one which, moreover, is sufficently delicate in the construction of the piano, expressed, the result in the words 'Without any unthinking enthusiasm it is simply amazing'.

"The most important feature about the Violano for you to consider as a violin imitation through



View of the percussion section of a Weber Maesto orchestrion.

pipes is that the Violano has been itself imitated. There are today makers who are offering you pianos with or without violin attachment. In the commonest and cheapest instrument they propose giving you violin pipes. When you consider that violin pipes have been achieved by only one concern in the world, Weber Brothers, and at the expense of thousands of dollars, you ought to readily understand how futile it would be to have the real article everywhere. Heretofore it was a conceded fact among organ builders that the satisfactory violin pipes were as yet an unsolved problem in complete organ building.

"The imitators of the Violano are not confined to this country (America – where this particular Weber catalog was produced by Ernst Bocker. New York agent for the Weber firm). In Europe there are several who all fall as short of the real and difficult violin pipes, as do those of this country. What these makers offer you are no more violin pipes than a pencil is a log. Abroad, Weber Brothers, the maker of the Violano, are the acknowledged leaders and only makers of the violin pipes . . ."

The above Weber catalog description reprinted in excerpt (as the original takes up quite a bit more space and essentially says the same thing over and over again) shows how the Violano was originally sold. Somewhat similar adjectives and appeals were used to sell competing violin-pipe instruments, the Paganini sold by Wurlitzer and Philipps (and manufactured by Philipps in Frankfurt, Germany) being an outstanding example. The fact remains, however, that today Weber violin pipes are indeed considered to be of exceptional tonal quality – so we can perhaps realize the truth of the Weber claims more clearly than could people who originally read the literature.

The Weber Violano was made in several different case designs. Terminology was not absolutely consistent over the years, and the same instrument was offered from time to time as the "Salon Piano with Violin". Sales of this instrument were great, and many specimens found their way into restaurants, private homes, and other places in America, England, and in continental Europe.

Previous to our visit with Otto Weber we thought that the Violano was primarily if not entirely produced in the years prior to World War I. We learned from Mr. Weber, however, that the Violano was continued in production, although only in limited numbers, right through the late 1920's. The Violano was a very large and expensive instrument (one German collector wrote us recently that he paid 14,000 German marks for his new in 1925). Later the Violano was superceded in large part by the Weber Unika, an immensely successful instrument of the 1920's which featured an expression piano in combination with one rank of 28 violin pipes. As a technical note we might mention here that the Weber Violano instruments of the pre-World War I era used a very wide roll. Weber Violanos of the 1920's used a more compact roll, although the "Violano" name remains the same in both instances. Still a third type of roll is used by the Weber Unika.

A new discovery resulting from my visit with Otto Weber was the knowledge that Weber built a theatre photoplayer. Sold as Weber's Kino-Violano, this instrument was advertised as a 'electro-pneumatic artistically-played piano with solo violin in specially-built cabinet for theatres. The instrument replaces two premier artists: A pianist and a violinist.'

To make it suitably low in height for use in orchestra pits below the movie screen, the Kino-Violano consists of a central piano unit with the violin pipes and attendant mechanisms housed in two cabinets, one to each side. The instrument has a duplex roll system so that music can be played continually. To my knowledge this is the only instance of a multiple roll system on a Weber instrument. Music is provided by Violano rolls of the

later (narrower) specification. Dimensions of the cabinet are 360 by 165 by 85 centimeters.

Apparently other Weber instruments were built for theatres. In 1972 Claes Friberg and I purchased the contents of a theatre located near Wuppertal, Germany. The owner sold to us a lovely example of a Model A Hupfeld Phonoliszt-Violina. Also acquired was the bottom part (the top part had been long since destroyed) of a second Phonoliszt-Violina once used in the theatre. Upon being asked about other music used in the theatre the owner of the Hupfeld instruments, a genial lady of advanced years, produced a torn scrap of a Weber roll of unknown type. 'We used to play rolls like this on a large organ we had in the theatre,' she said.

Upon later inspection the roll turned out to be of the Solea orchestrion type. So, there is a possibility that Weber once made some type of an orchestrated photoplayer or other theatre instrument which used Solea orchestrion rolls. Unfortunately a more precise description of the instrument was not available.

Early Weber Orchestrions

During the dozen years prior to the advent of World War I in 1914, Weber produced many different orchestrions. Popular models included the Styria, Erato, Otero, Euterpa, Venezia, and Solea. Granddaddy of all Weber orchestrions was the mammoth Elite.

Unlike most other orchestrion builders, Weber did not make 'general purpose' rolls. Rather, Weber designed its orchestrion rolls to closely fit the type of instrument on which they were used. Thus rolls are only interchangeable to a limited extent. The reason for this is obvious to the orchestrion collector today: A 'general purpose roll' cut, for example, to play the effects of piano, mandolin, violin pipes, flute pipes, xylophone, and several different types of drums would have much of its orchestration wasted if it were simply used on a piano with mandolin and one set of pipes. Such a roll used on a simple instrument would sound 'thin'.

The Weber course was the more difficult one, and few other manufacturers followed it. As an example, Wurlitzer used its basic orchestrion roll, designated as the 'Automatic Player Piano' roll, on such diverse instruments as a simple piano with mandolin attachment and also a full orchestrion with piano, mandolin, two ranks of pipes, and percussion! As might be expected, few collectors marvel over the musical ability of such rolls today. On the other hand Weber rolls were designed to closely fit the instrument, as noted. This had the advantage that the music roll arranger could mentally visualize all of the different orchestral components of the orchestrion and bring each one into play – much as the conductor of an orchestra can call upon different players in turn.

Weber instruments of the earlier years (before World War I) are built on an all-pressure system. Even the piano stack, normally operated by a vacuum in most competing makes, is operated by pressure bellows. In such instruments the tracker bar was often placed perpendicular to the front of the instrument – running from front to back, much as the key frame of a fair ground organ. (In later Weber orchestrions the tracker bar is placed parallel with the front – as in a regular player piano.)

Case designs of early Weber orchestrions are quite ornate for the most part. Some particularly lavish designs have dozens of beveled mirror facets. Others have beautifully animated scenes made by projecting silhouettes against large oil paintings on the front of the case.

The largest early Weber style was the Elite. This mammoth orchestrion was made in several case design variations. The standard styles are pictured at the bottom of page 628 of my *Encyclopedia of Automatic Musical Instruments.* The early case features a three-part motion picture scene on the front. The early Elite is pressure-

Catalog illustration of early Elite orchestrion style. Five of these were shipped at the same time to an order from Russia in 1914.

operated. The quantity manufactured of these is not known, but outstanding in the memory of Gustav Bruder was a single order for 5 of these instruments shipped at once in 1914 to Russia. It would be a marvelous find if one or more of these would come to light again in the future, for no surviving Elite models in any style are known today.

For the reader interested in technical details we might mention that three distinct major types of Elites were made (this information was originally from Gustav Bruder and was verified by Otto Weber): (1) The early style, with pressure-operated mechanisms, made in several case design variations – the style pictured at the lower left of page 628 of the *Encyclopedia of Automatic Musical Instruments.* (2) A transitional or intermediate style described by Gustav Bruder as: 'At the beginning of the 1920's one Weber Elite was delivered to Brussels, Belgium. It played with the old disposition (tracker bar layout) but with improved performance possibilities'. This unit apparently used the old roll style and the tracker layout but incorporated the combination vacuum and pressure systems common to all later Weber instruments. This means that it would have played with a faster repeating action than would have the earlier instruments. (3) The later style described by Gustav Bruder as: 'In 1927 and in 1928 two more were built, each with very sophisticated improvements. Their marvelous mechanisms gave them unlimited expression effects and register combinations . . . These late Elites not only had swell shutters over the main orchestrion case but also had on the inside five or six more expression chambers, each with its own swell mechanism to increase or decrease the appropriate solo voice as called for. These instruments were made for use in the largest rooms'. Gustav Bruder went on to say that one of these was shipped to Brussels, Belgium and the other to Amsterdam, Holland. The late style is illustrated at the right hand bottom of page 628 of the *Encyclopedia of Automatic Musical Instruments.*

Among early Weber orchestrions the Elite was the largest style, as noted. It was made only in limited quantities. Runner-up in size was the Solea. These latter instruments were made in many different case designs, most of which had moving picture scenes on the front.

An interesting example of an early Weber Solea orchestrion (made with the all-pressure system) survives today in the Cafe Fribourgois, in Bulle, Switzerland. According to the former owner (the establishment recently changed hands), the unit was ordered from the Weber factory in 1914. It is built in a very short but extremely wide cabinet – such construction being necessitated by a low ceiling in the restaurant. The unit consists of a central section flanked by two cabinet-like components, each of which has a large illuminated scene.

During the 1900-1914 years Weber instruments were sold all over the world. Sales were made through specific agents and also through general piano and music stores who ordered instruments as they required them. Beautifully illustrated catalogs were prepared in English, French, German, and Spanish.

The total number of orchestrions produced by Gebr. Weber is not known, but serial numbers tend to indicate that close to 3,000 were made from 1880 (or 1883) to 1931. Production was heaviest from about 1900-1914 and again from 1920-1927. During these busy times production was probably on the order of several hundred instruments per year.

Late Weber Orchestrions

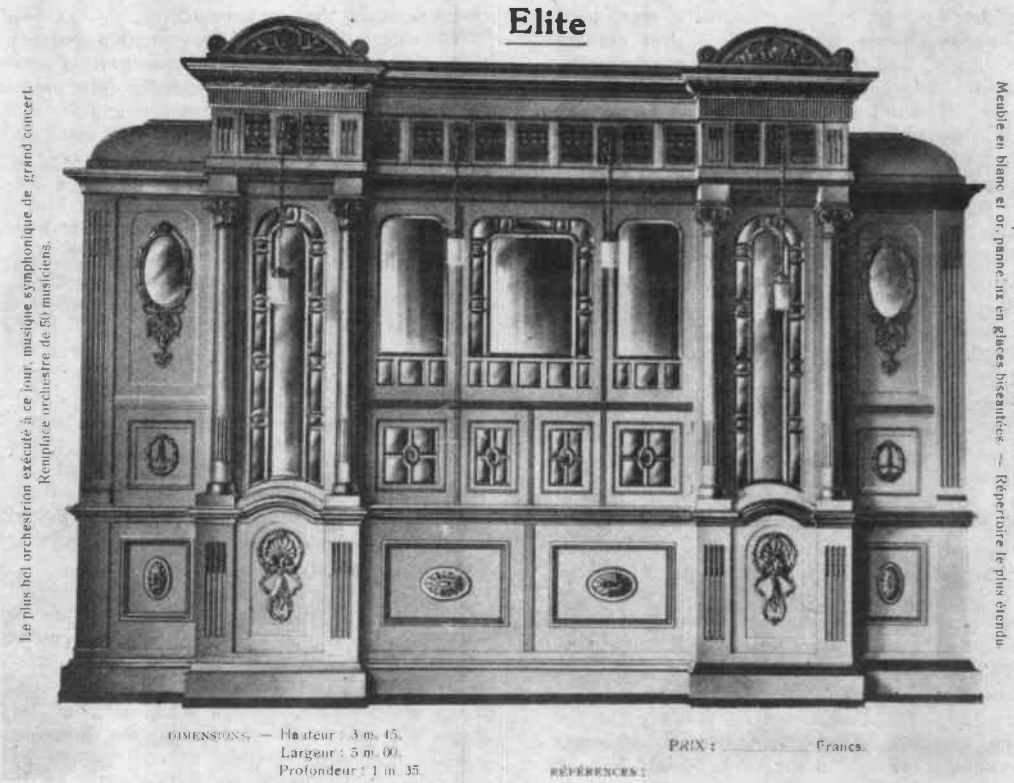
After World War I two important events happened to Weber: Gustav Bruder was employed to arrange music rolls of exceptionally artistic character, and the Weber pneumatic mechanisms were redesigned to a combination vacuum and pressure system which permitted an incredibly fast rate of repetition.

In the *Encyclopedia of Automatic Musical Instruments* I related some of Gustav Bruder's biography (cf. p. 824):

'Born in 1890, Gustav Bruder carried on the family tradition of music as soon as he was old enough to study the subject. In his own words:

'I first came to the Gebr. Bruder organ factory as an apprentice in May 1908. I already had taken four years of school at the 6-year Waldkirch Realschule with good results. I attended the nearby Waldkirch Musik School until I was 15 years old, obliged to acquire basic knowledge of music theory and piano playing. I later expanded this knowledge through diligent concert-going in nearby Freiburg and by playing in chamber music ensembles with good friends.

'During my apprenticeship in the organ factory of Gebr. Bruder (1908-1911) I was primarily engaged in practical organ building. However, I also often had the opportunity to help do voicing with the co-partners of the firm who were responsible



Catalog illustration of the late-style Weber Elite orchestrion. It appears that only two of these were ever built.

for tuning and voicing; and I also collected useful experience with this work. In actuality I learned the marking and arranging of cylinders and cardboard music for organs by listening when completed organs were regulated nearby and, in the process, when music arrangements were played through. I had to install my first self-marked barrel organ cylinder by myself. There were no music rolls for organs yet at the time (barrel and book organs were the types being made). Music rolls were first introduced (on fairground organs) in the early 1920's by Gebr. Bruder. Of course, during my apprenticeship I occasionally had the chance to complete music arrangements for organs of various sizes.

'At the termination of my apprenticeship I first helped my old father with the production of barrel organs in his small factory for two years, and by the summer of 1913 I was first employed as a music-plotter and arranger by the Weber orchestrion factory'.

In the book I went on to say that Gustav Bruder and a co-worker, Otto Kern, went on to arrange some of the most sophisticated arrangements ever produced for automatic musical instruments. These were used on Weber orchestrions in the 1920's. In the late 1920's when Weber Maesto and Elite orchestrions were designed, Gustav Bruder played an important part.

An idea of Gustav Bruder's care and patience may be gained from his description of arranging a Maesto orchestrion roll: 'In order to arrange and perfect the Maesto roll with four songs I spent an average of three weeks. When the notes were on paper, only half the work was done; then the entering of the complex register changes required an equal amount of time'.

Weber orchestrions of earlier years used Forster and Feurich pianos, In the 1920's Feurich pianos,

considered to be of concert quality, were used exclusively. Weber instruments of this era are exceedingly well built using top quality components. In fact, Terry Hathaway once remarked to me: 'I don't see how Weber could remain competitive and stay in business. They seemed to do everything the best way rather than the cheapest or most commercially feasible way'.

After World War I the market for electric pianos and orchestrions made in Germany fell sharply. Weber instruments, once distributed on a world-wide basis, were restricted to sales mainly in Germany, Holland, Belgium, and Switzerland. The main outlet, and the one which accounted for more than half of Weber's total production during the 1920's, was G.I. Gerard of Brussels, Belgium. An close connection between the Gerard and Weber firms was made when Otto Weber married a Gerard daughter.

Gerard promoted Weber products very extensively by means of catalogs and advertisements in Belgium. A Weber catalog of circa 1926 offered the following instruments for sale:

The Unika, perhaps the most popular of all Weber instruments of this era, featured an electric piano in combination with a mandolin attachment and 28 violin pipes. As noted earlier in this article, the Unika largely took the place of the earlier Violano, although Violanos were still produced in the 1920's. The Unika used its own type of roll which would fit on no other instrument. Arrangements were made with the violin as solo and the piano as accompaniment. Unika music is very well arranged, and a perfectly restored instrument is a real treat to hear today. Several dozen instruments are in the hands of collectors and museums.

The Grandezza featured a piano with mandolin and xylophone. The xylophone is of the repeating (as opposed to single stroke) type. The Grandezza was the second most popular Weber instrument of the 1920's in terms of sales. It uses its own distinctive type of roll which fits on the Grandezza and no other instrument.

The Weber Brabo featured a piano with 28 violin pipes, mandolin attachment, and xylophone. The instrument uses a Brabo roll designed especially for it. As is true of other Weber instruments of the 1920's, many of these rolls feature outstanding musical arrangements by Gustav Bruder.

The Weber Violano of the 1920's closely approximates in appearance the style used before World War I. However the pneumatic systems are redesigned (to accommodate the vacuum and pressure rather than all pressure), and the roll used is narrower than on the earlier style.

The Styria orchestrion was another popular instrument of the 1920's. Instrumentation consisted of a piano, 28 violin pipes, 28 flute pipes, castanets, mandolin attachment, xylophone, and drums. Some Styria instruments had just one rank of pipes (violins). The Styria uses the same type of roll played on the Otero orchestrion (see following).

The Weber Otero was the most popular keyboardless-type Weber orchestrion of the 1920's. There were several case design variations made, styles which differed from each other by having a cloth panel or mirrored section at the top front, cloth or mirrored insets on the doors, and so on. Instrumentation consists of piano, 28 violin pipes, 28 flute pipes, bass drum, snare drum, cymbal, castanets, triangle, mandolin attachment, and xylophone. As is the case with the other Weber instruments of the 1920's already described, the Otero can feature any of the extra instruments (a single rank of pipes, xylophone, etc.) as a solo instrument. Rolls are arranged to take maximum advantage of this possibility.

The Weber Maesto orchestrion was the largest standard style of the 1920's. Instrumentation consists of a piano, mandolin attachment, violin pipes, flute pipes, saxophone pipes, jazz trumpet pipes, clarinet pipes, xylophone, bass drum, snare drum, wood block, cymbal, castanets, and triangle. The percussion effects in some instances are equipped with multiple beaters for musical versatility. Gustav Bruder wrote to me that 'in the years from 1924 through 1929 probably 70 Weber Maesto instruments were built. Most of them went to Brussels (Gerard), and some were exported (to overseas destinations), I believe.' It is not certain when the first Weber Maesto orchestrions were marketed. Eugene DeRoy, who did quite a bit of research on Weber instruments on my behalf during the 1960's, said that they were first sold in 1925 or 1926. It was Otto Weber's thought that approximately 60-70 Maestos were built, a figure which agrees with Mr. DeRoy's findings and with Gustav Bruder's statement – so the figure is probably accurate.

Of the 60 or 70 Maestos originally built, I can definitely trace the whereabouts of 6 specimens today: examples in the collections of Dr. George and Susie Coade (Carlsbad, California), J. B. Nethercutt (Sylmar, California),Terry Hathaway (Santa Fe Springs, California), the Mekanisk Musik Museum (Copenhagen, Denmark), the Baud Brothers (L'Auberson, Switzerland), and the example

in my own collection. With the exception of the Baud example, all of the known Weber Maestos were originally sold through Gerard of Brussels. The Baud Brothers instrument was sold by Charriere & Company of Bulle, Switzerland. During the 1920's Charriere was the second largest distributor for Weber instruments, coming after Gerard in terms of total quantities sold. Charriere maintained large and elegant showrooms in which automatic instruments made by Weber, Popper, Hupfeld, and Welte were displayed in magnificent surroundings.

The previously-mentioned Weber catalog omitted several other styles which were sold during the 1920's. These include:

The Weber Solea orchestrion of the 1920's was a redesigned version of the earlier style. It operated with fast repeating action and was essentially similar to the Maesto except that it lacked the saxophone and jazz trumpet pipes (which in total consists of 28 pipes – this is actually a split rank), and a few percussion and expression effects. The Solea uses the same type of roll employed on the Maesto. Solea orchestrions were manufactured through the late 1920's. A 1926 photographic album containing pictures taken of the premises of Charriere & Company shows two late-style Soleas on display for sale there at that time. The quantity of late-styled Soleas manufactured is not known today, but apparently it was much less than the figure for the Maesto. We would estimate that fewer than 2 dozen were made. Only two examples of the late-style are known to me today: the specimen in the collection of Steve Lanick (Pittsburgh, Pennsylvania) and the example in the collection of Bellm's Cars & Music of Yesterday Museum in Sarasota, Florida (the specimen formerly owned by Larry Givens). In addition there is the early-style Solea owned by the Cafe Fribourgois noted earlier.

The redesigned Weber Elite of the late 1920's was made to the extent of just two specimens. In my April 7, 1973 visit Otto Weber verified Gustav Bruder's earlier statement that just two of these very late instruments were made – and that one was shipped to Brussels and the other was sent to Amsterdam. He noted ruefully that the example sent to Amsterdam was never paid for, as the distributor there went bankrupt before his account taken care of!

The late Weber Elite must have been a fantastic instrument. The tracker bar contained 140 holes, of which 190 were devoted to musical notes, and 50 (!) were devoted to registers and expression effects. An article in *Zeitschrift für Instrumentenbau* reveals that in 1929 the Suddeutscher Rund-

Picture taken by the author of a portion of the Weber orchestrion factory in the early 1960's. Since then, the old WEBER-ORCHESTRION sign on the end has been painted over and the building somewhat remodelled.

funk (South German Radio) produced a program on Friday evenings featuring concerts on the Weber orchestrion! I questioned Otto Weber about this during my visit, and he seemed startled to know that I had learned of such an obscure situation! However he was not able to shed any light on how these broadcasts were made. The Suddeutscher Rundfunk was located in Freiburg, Germany, about 12 kilometers from the Weber factory in Waldkirch. Mr. Weber did not remember whether a direct line connection was made from Waldkirch to Freiburg for the broadcast or whether phonograph records or other transcriptions were made of the Elite and then sent out over the air. It would be a remarkable find if some of these original recordings, if such were ever made, would come to light today. I have never seen an Elite roll and know of no existing instrument. Eugene DeRoy, who probably was more conversant with the European orchestrion industry than any other individual in recent decades, had never seen or heard of one of these instruments either, nor had he ever seen an Elite music roll. Otto Weber did furnish me with a copy of the tracker scale for the late-style Elite, so if MBSGB readers are interested I can give further details of his in a future issue.

Additional Comments

The last vital years of the Weber business were 1928 and 1929. The firm lingered on in 1930, and finally closed its doors in 1931. By that time nearly every other manufacturer of electric pianos and orchestrions around the world had gone out of business. The economic depression combined with such popular innovations as the radio and the electric phonograph made the expensive pneumatic instruments of Weber and its competitors things of the past.

Shortly afterwards the Weber assets were sold at auction – 'for a fraction of their true value', according to Otto Weber. Discouraged by the economic situation and to escape the general discontented atmosphere of Waldkirch (where unemployment was especially high as the town was nearly completely dependent upon the manufacture of automatic musical instruments, and the organ makers there nearly all went out of business), Otto Weber moved to Heidelberg – where he lived until his death earlier this year. Otto Kern, who helped Gustav Bruder arrange music rolls for Weber orchestrions during the 1920's, died in 1942.

Gustav Bruder remained in the business of arranging music. During the 1930's, 1940's, and 1950's he arranged music rolls and cardboard music books for orchestrions and organs (mainly) on special order. Upon his retirement in the early 1960's his remaining master rolls and musical arrangements were acquired by Carl Frei, who maintains an organ building and repair business in Waldkirch today. Gustav Bruder was proud of his contributions to the Weber firm – both as a designer of the Weber mechanisms and as arranger of their music rolls. He was very pleased to learn of my interest in his past work, and during the late 1960's he wrote me many letters in response to my seemingly endless questions about this. Art Reblitz, an American collector and music roll arranger, also wrote to Gustav Bruder during this time and was rewarded by many interesting and historically important replies. Following an illness, Gustav Bruder died in the summer of 1971.

After the Weber firm went out of business in the 1930's the customer requirements for music rolls were serviced by the Symphonia Music Roll Company, owned by Eugene DeRoy of Antwerp, Belgium. Mr. DeRoy produced rolls for various Weber instruments up through the 1960's, when he retired. The 'Symphonia' Weber rolls are interesting to listen to for they feature many modern tunes, however the arrangements are 'standard' and were the same types used by Mr. DeRoy for orchestrions of other makers – the only difference being that special control holes were added to accommodate the various Weber expression effects. As a result the superb artistry of Gustav Bruder is not continued in the later Symphonia series.

Art Reblitz, the previously-mentioned collector and arranger of music rolls, bas been inspired by listening to the Maesto and other earlier Weber instruments, so he presently is at work making some new music rolls for the Maesto.

How short is life and how fickle is the memory of man. For many years the marvelous instruments of Gebr. Weber – once acclaimed worldwide – were forgotten. Now they are again being appreciated, this time by collectors. It is especially satisfying to me to know that the two main persons once connected with the firm, Gustav Bruder and Otto Weber, lived long enough to see that the 'glories of the past' were being acclaimed once again.

Credit is due to the following people for help in various ways with this article: Gustav Bruder, Eugene DeRoy, Claes O. Friberg, Leonard Grymonprez, Gretchen A. Schneider, Dr. Ellen Weber, Otto Weber, Mrs. Otto Weber, and Dr. Cathy Wechsler.

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From Member Keith Harding comes this illustration of a fine example of the early-style 15½in. Polyphon with drawer in the base for extra discs. This style entered production about 1895. The two combs together comprise 156 teeth.

AUTOMATA

by John Nevil Maskelyne

Continued from page 203

IV.

I HAVE purposely reserved to this part of my papers upon Automata the famous chess-player, as it opened up a new era in the art—viz., the production of apparently intelligent androids. This figure, which for a long time baffled the curious and created intense excitement throughout Europe, was the ingenious invention of Baron Wolffgang de Kempelen, of Presburg, Hungary, Aulic Counsellor of the Royal Chamber, and constructed by him about the year 1769. De Kempelen was an ingenious man, who had made working models of improvements on Arkwright's cotton-mill, and Boulton and Watt's steam-engine; and it is said that, incited by the success of Vaucanson's flute-player, he attempted to rival that elaborate piece of mechanism. How he did so we shall see. Another story is that, being present at the court of Maria Theresa during some experiments in magnetism by one Pelletier, a Frenchman, De Kempelen declared, in the hearing of the empress, that he could make a figure more surprising in its mechanical operations than any of the wonders they had then witnessed; and the curiosity of this true daughter of Eve being excited, she exacted a promise from the baron, in pursuance of which he constructed his chess-player within six months. One other story—much more romantic, yet probable enough—of the idea leading De Kempelen to his famous android I reserve until the figure itself has been described. It was of life-size, in Turkish costume, sitting upon a chair fixed behind an enclosed table, or cabinet, three and a half feet long, two feet deep, and two and a half feet high. On the top of this was a chess-board eighteen inches square, and overlooking the board sat the figure, its right hand resting on the table, and the left, somewhat raised, holding a pipe, which was removed before the commencement of a game, the "automaton" then using this hand to move the pieces. The whole structure ran on four wheels, and could so be moved from one part of the room to another, and during such times the rich dress was thrown over the head of the figure, when its body could be seen to be filled with mechanism. There was likewise a door in the thigh, and here another similar arrangement of cylinders, wheels, and pulleys was exposed. When the machine was stationary the costume was drawn down to its original position on the figure, and the door of one of the two compartments in the table opened, a candle being held within to facilitate its examination by the spectators. When the scrutiny was completed the door was locked, and a second compartment submitted to inspection. These cupboards were of unequal size—that on the figure's left hand taking up about two-thirds of the whole space, and being apparently much more free from machinery than the small cupboard.

In our illustration the doors of the compartments are both shown open at the same time for the sake of convenience; as also is the drawer below, containing the chess-men, and a cushion to place under the arm of the figure during play. The small box standing by the side of the machine was frequently consulted by the baron or his assistants, and was said to contain the secret of the chess-player's movements. A winding-up ceremony having been gone through, the chess-player commenced by taking a knight from its original square, by its proper moves, quickly and

DE KEMPELEN'S AUTOMATON CHESS-PLAYER.

without error, over the other sixty-three squares of the board. In play it took white and first move; its head and arm slowly turned towards the piece to be moved or taken, and its hand opened, the fingers conveying the piece to the square selected, or, if necessary, removing it from the board. When the opponent's queen was in danger the figure nodded twice, and it shook its head three times when checking the king. If play was long delayed, it tapped its chest in seeming impatience, and went through similar movements if its antagonist placed a piece upon a wrong square during the course of the game; in the latter case setting the false move right by moving the piece to the position it had occupied upon the board previously. The figure then took

the move itself, if there was advantage in so doing, as justified by the laws of the game.

Kempelen stated that the machine was a *bagatelle*, which was not without merit in point of mechanism, but that the effects of it appeared so marvellous only from the boldness of the conception, and the fortunate choice of the methods adopted for promoting the illusion.* Notwithstanding this, he made large sums of money by its exhibition in Presburg, Vienna, Paris, and London, at which latter place the chess-player was on view for about a year, commencing in 1783, at No. 8, Saville Row, Burlington Gardens. In a pamphlet, published by Stockdale in 1784, and attributed to Philip Thicknesse, F.R.S., the father of Lord Audley, we read: "Both figure and counter are railed off, and only one man attends withinside, and he is supposed to be the only person with whom the stranger actually plays, by causing the arm and the hand of the automaton to move the chess-men by some incomprehensible and invisible powers, according to the preceding move of the stranger who plays against the automaton; and that every spectator should think so, he always places himself close to the right elbow of the automaton previous to its move, then puts his left hand into his coat-pocket, and, by an awkward kind of motion, induces most people to believe that he has a magnet in his pocket, by which he can direct the movement of the Turk's arm at pleasure."

Many guesses were hazarded as to the means of accomplishing the movements, but they remained an unsolvable mystery for many years, notwithstanding several peculiarities of the figure, duly noted: such as one door being locked before another was opened, and the interior compartments being shown one after the other in unvarying succession; also that the winding-up ceremony was repeated, not at regular intervals of time, or after a certain number of moves, but whenever it seemed to strike the exhibitor that such an effect might well be introduced. In 1785 a French writer came very near the truth by declaring that there was a dwarf concealed within the machine, the noise of the winding allowing him to change from one position to another as the doors were opened and closed. The apparatus was really large enough for a full-grown man to creep into; and it is now an acknowledged fact that two, at least, of the workers of the figure were men with their full complement of limbs, and of the usual size. The exact means employed for hiding the worker (who, when the machine was first submitted to an audience, lay concealed in the cupboards) were hanging frames of collapsable machinery, behind which the man crouched; and by his shifting his position as the various doors were opened, the spectators were effectually deceived. The scrutiny being concluded, the man rose into the figure, and moved its hand and arm with the greatest ease.

The halcyon days of the "automaton" were its earliest, when worked by one Worouski, a cripple, who had lost his legs by a cannon-ball, and not been —like the Irish soldier in the song—rewarded with a pair of wooden ones in return. The chess-player, indeed, is said to have been constructed for the specific purpose of assisting this outlawed Pole to escape from Russia. In 1769 a revolt had broken out in a Russo-Polish regiment at Riga, in which Worouski, an officer, took part. The insurgents were defeated, and Worouski, minus his legs from the causes cited above, lay concealed in the house of a Dr. Osloff, who had succoured and tended him after the fight. In three months, at the house of this benevolent man, De Kempelen is said to have completed the work he took in hand, never anticipating the extraordinary success in store for his ingenuity. Dr. Osloff, who up to this period was not in the secret, first played with the automaton on the 18th day of October, 1769. The game being over, and the worthy doctor beaten, he exclaimed, "Well! if I were not certain Worouski is at this moment in bed, I should believe I had been playing with him. His head alone is capable of inventing such a check-mate. And, besides," said he, addressing De Kempelen, "can you tell me why your automaton plays with the left hand, just like Worouski?" Upon this the baron, satisfied that his mutilated friend would escape detection during their passage from the country, smiled as he told the secret of the Polish officer's prison-house to the warm-hearted doctor. Robert-Houdin had this story from the lips of M. Hessler, Dr. Osloff's nephew.

De Kempelen started with his automaton in a packing-case, Worouski occupying the most uncomfortable "officers' quarters" within the figure. De Kempelen at various points upon the road exhibited his chess-player, and its fame travelled far and wide, so that by the time he reached Vitebsk, on the road to the Prussian frontier, the Empress Catherine II had heard of the wonderful novelty, and commanded the baron to appear before her with it. With a heavy heart De Kempelen repaired into the enemy's camp, nor could Worouski have been without some misgivings, thinking of the scant "quarter" he would receive if his disguise were discovered. Arrived at the palace, the packing-case was conveyed to the library, and when the figure was rolled out the empress entered to play a game with it. During the course of this she made a false move, when the chess-player instantly swept all the pieces off the board. Notwithstanding this summary mode of ending the game, her Majesty was mightily pleased with the performance, and desirous of buying the figure; failing in this, the empress, anxious for a peep on the sly into this most difficult of all chess-problems, desired the dazed exhibitor to lend her the automaton for a few days, and take a holiday himself; and, the czarina's will being law, De Kempelen had to submit with as good a grace as possible. The dilemma was a serious one; on the one hand, detection of his trick and implication in the escape of a traitor; on the other, the suffocation or starvation of his imprisoned colleague.

Having seen De Kempelen safely out of the palace, the empress returned to the library, and, like another Fatima, opened the doors in the figure

* "C'est une bagatelle, qui n'est pas sans mérite du côte duc mechanisme: mais les effets n'en paroissent si merveilleux que par la hardiesse de l'idée, et par l'heureux choix des moyens employés pour faire illusion."

and the box—the "blue chamber" she panted to explore—but, to her chagrin, found nothing beyond the usual wheels, etc., and could not by any exhortation induce the machinery to move. The fact is the operator within had taken a step downwards (a way they have *not* got in the army), from being a major had become a left-tenant, to use a very aged Joe-Millerism, quitting the trunk of the figure for the chest, or packing-case, in which it had been brought to the palace, where her Majesty never thought of looking for the secret. Finding the figure could not be made to play, the empress recalled De Kempelen upon the day followng his dismissal, and he returned in time to save his *confrère* from the extreme pangs of hunger, and to reinstate him within the chess-player.

Escaping at length from Russia, with Worouski as safe and sound as the cannon-ball had left him, De Kempelen's mission was accomplished, and the chess-player laid aside. The baron, indeed, is said to have taken the machine to pieces, but to have rehabilitated it in compliance with the wish of the Emperor Joseph II, before whom it was next exhibited at Vienna. Its great success there induced De Kempelen to carry it to other cities, and eventually through Europe. The chess-player was "the rage" at Paris in 1783, and in the latter part of the same, and early in the following, year it was exhibited at Saville Row, London, as before mentioned. At one time, by special invitation of Frederick the Great, De Kempelen took the automaton to Berlin, and he is said to have sold the secret to that most inquisitive of monarchs. In 1803 De Kempelen died, having previously disposed of the chess-player to M. Anthon, who carried it over the whole of Europe, netting large sums by its exhibition. When Napoleon Bonaparte was in possession of Berlin in 1806, he played with the automaton, and attempted to deceive it by false moves, but the wary figure invariably swept the board upon these occasions. Here the secret was again sold, as was the buyer, Eugene Beauharnais purchasing the valuable information for 30,000 francs!

On M. Anthon's death M. Maelzel, the inventor of the "metronome" (time measurer), bought it, and brought the figure again to England, exhibiting it at Spring Gardens, in 1819, and in St. James's Street in 1820. Worouski was not now the worker of the automaton, M. Mouret having taken his place, and it was noticed that its play had deteriorated. Mouret has given a version of the mystery in M. de Tournay's "Palamede." In this he asserts that he had a wax taper within the figure, and the shifting of the pieces upon the board was made known to him by the movement of metal knobs (there being one under every square) which were attracted by magnets concealed in each of the chess-men. M. Mouret was romancing; the metal knobs were to add to the mystery, not assist the operator, who had a much more simple plan of viewing the chess-board by peeping through a hole in the vest of the figure. During Mouret's illness, a little old man named Alexandre, a very good player, was engaged by Maelzel to work the figure, and a Mr. Lewis was at one time the inside passenger.

Maelzel took the chess-player to America about the year 1833, and, after making a *tour* of the States, died on his return passage from New York. The figure then passed into the hands of M. Cronier, a mechanician of Belleville, France; and Robert-Houdin saw it at his house in 1844. Subsequently the chess-player made a return visit to America, where an amusing incident is said to have occurred in connection with it. Being taken to a small town for exhibition, the figure proved so great an attraction as to deprive a conjurer, located in the place at the time, of his wonted crowded audiences. Things went from bad to worse, and the beggarly array of empty benches became at last so wearisome, that one night the magician betook himself to the rival performance, after dismissing his own scanty audience. Here he found all going brilliantly before a large and excited assemblage, and, piqued beyond measure, he resolved to spoil the sport. Accordingly he called out "Fire!" and there was the inevitable stampede caused by that dreadful word. Then the conjurer had the gratification of witnessing the strange effect of the automaton heaving with some internal convulsion as the worker within struggled to escape. But the angry man missed his mark after all, for no one else noticed the upheaval, nor, had they done so, would any have had the curiosity, under the circumstances, to pause and inquire into the phenomenon.

At length the chess-player, becoming the property of Dr. John K. Mitchell, a physician of Philadelphia, U.S.A., was deposited in the Chinese Museum of that city, and—last scene of all, and ending of the eventful history of De Kempelen's handiwork—it underwent cremation at the destruction of the building by fire in 1858. Thus what had been a burning question for nearly a century, with as much mystery attaching to it as the veiled prophet, was appropriately settled, and, like many another marvel, "ended in smoke."

Some years back I commenced constructing an automatic chess-player of such small proportions as entirely to upset the idea of its even containing a child withinside; a figure, indeed, not weighing more than twelve or fourteen pounds, and as perfectly insulated and isolated upon a glass column as is Psycho. This project was laid aside for other, and, to the public, more attractive work. The fact is, chess—skilful and beautiful game as it is—cannot be made of a very engrossing character to a general audience, so I prepared other figures with endowments more popular and pleasing, before completing that for chess. I have not, therefore, abandoned the idea.

V.

HAVING now nearly completed a survey of all automatic myths or substantial triumphs, and brought the subject to our own time, little more remains than that I should mention my own automatons. My principal achievements in this line are now before the public, and many full descriptions of them have appeared in the chief publications of the country. It will be unnecessary for me to do more than quote one or two of these critiques, and say a

few words respecting the scientific theories set up respecting my figures, and the attempts at imitating Psycho.

The first automaton I produced was the above-named whist-player, of which the great authority, "Cavendish," writing in "The Field" newspaper, says: "In order to convince ourselves that there was no deception, we requested Mr. Maskelyne to admit us to a private audience with Psycho, and to allow us to bring two personal friends to play with the figure. To this he readily assented, and it is quite certain, therefore, that the figure can play hands accidentally dealt, without any prior knowledge of them. Having thoroughly examined the glass isolator, which resembles a transparent chimney-pot, on which the box and figure are placed, we cut for partners, and it was our good fortune to be Psycho's partner. We personally shuffled and dealt the cards. We handed Psycho's cards to Mr. Maskelyne, who placed them one by one into a quadrant before the figure, and the play then commenced."

W. Pole, F.R.S., Mus. Doc. Oxon, in an excellent article entitled "Whist-playing by Machinery," says: "A table is prepared on the stage, three persons from the audience are invited to play, and Psycho makes the fourth. After cutting for partners, the deal takes place, and Psycho's cards are taken up by Mr. Maskelyne, and placed upright, one by one, in a frame forming the arc of a circle in front of the figure, the faces of the cards being turned towards him, and away from the other players. When it is Psycho's turn to play, the right hand passes with a horizontal circular motion over the frame till it arrives at the right card; he then takes this card between his thumb and fingers, and, by a new vertical movement of the hand and arm, he extracts it from its place, lifts it high in the air, and exposes it to the view of the audience, after which, the arm descending again, the card is taken away from the fingers by Mr. Maskelyne, and thrown on the table to be gathered into the trick. . . . It will be well at once to dissipate any notions about confederacy, packed cards, and so on. There is conclusive evidence that the play is perfectly *bond fide*. Any person may join in it, the process is precisely of the usual character, and it is certain that Psycho's hand is played under the same circumstances as that of any player at a club or at a domestic fireside."

Dr. Pole also gives a hand "offering some interest," which he witnessed, and declares that "Psycho's play was evidently dictated by judgment and principle." He concludes, "Standing beside this little wooden doll, apparently isolated from any human agency, and seeing it not only imitate human motions, but exert human intelligence and skill, the effect seemed weird and uncanny, and I could hardly wonder at the spiritualists, who seriously conjecture that Psycho may be one of the manifestations comprised in their own psychological creed."

As will be noticed from these descriptions, Psycho is pretty well open to inspection. The little fellow is only twenty-two inches high, but to prevent suspicion of a child being concealed therein, I invariably invite any number of persons to examine the figure and the box upon which it sits (fig. 1), both of which I have offered to fumigate with chlorine gas. Having thus disposed of human agency, I proceeded to demolish scientific theories—electrical, pneumatic, and other—by isolating the android upon a clear glass cylinder placed upon a wooden tripod (both open to scrutiny), and I have covered the stage with floorcloth. Curiosity belongs to every age, and to all ages; young and old vie with each other in pursuit of what has so far proved a "Will o' the Wisp"—viz., Psycho's "secret and intelligent force." None have yet discovered the mild-looking Hindoo's motive-power, though gentlemen have brought magnets upon the stage, and I have submitted the automaton to such and many other tests. I have felt constrained to decline some, though, on Psycho's behalf, such as the hydropathic treatment suggested by one wag, to deluge the figure's interior with cold water. Even Sir Wilfrid Lawson would shudder at such treatment of inoffensive machinery, and Psycho, good-tempered as he is, would certainly turn "rusty" if such an application were attempted.

The little whist-player has paid the penalty of popularity in having several very indifferent attempts at imitation linked with his name, and those who have never seen Psycho may undervalue him if they

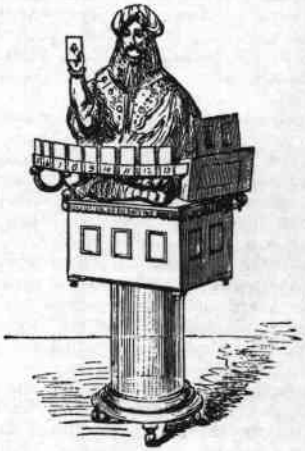


Fig. 1.

take for granted that some of the devices exhibited in the country as his near relations have any family likeness, even, to the original. Some of the imitations to which I refer have a child concealed in the box beneath the figure. It will astonish those who have never tried the experiment, into what small space a child can be packed. Here, of course, the same scrutiny cannot be submitted to as in Psycho's case, whose box, chest, and trunk are open to all and sundry—the mechanic, the anatomist, and the custom-house officer—as only his secret is hidden from observation. The imitator may pass a stick through the box to prove there is no one within; just as the Indian juggler thrusts a sword into a basket where a lad lies secured, both stick and sword passing between the limbs. At Gloucester the negligent exhibitor of

a pseudo Psycho allowed one of the doors in the box to come open, revealing the poor little fellow's horror-stricken face; but the merriment of the audience was great at this untoward incident. Some imitators let you look into an empty box and empty figure, and after you have left the stage the machine is placed upon a table, out of which a child will creep into the figure. This is accomplished by the aid of what is known as a "bellows table," a conjurer's device, where beneath the false top is an expanding leathern cavity. In this the boy lies concealed, and when he leaves it, springs press the leather "bellows" close under the upper part of the table. The cloth up to this time covering the front of the table, the expanded "bellows" may now be removed, leaving it a charmingly innocent-looking article of furniture. There is yet another way where the exhibitor may allow you to look into, and apparently see through, the box where the child lies curled up; this is managed on the principle of an optical illusion I have described in a former part of the "Leisure Hour."

Many persons would say, "Suppose there is a child in the box, how could a lad play a good hand at whist?" The fact is, the boy would not do anything beyond obeying a private signal from the exhibitor, only turning the arm of the figure round the quadrant until he got the sign to stop; then he would raise the card from its place and play it. Just in the same way does the learned pig, Toby, pick out "the biggest rogue in the company" at the behest of his master.*

Perhaps I should mention that whist is not Psycho's only accomplishment; in addition, he rapidly works out sums proposed by the audience in a way sufficient to have gladdened the heart of a Babbage; and (as even an automaton in his time plays many parts) he has shown remarkable "clairvoyant" powers in the imitation of handwriting he had never seen, or in picking a card from the pack after the card had been privately marked and the card shuffled. He also indicated, by striking upon a bell, the suit, rank, or number of spots upon cards held by persons in the assembly. Besides this (when the "Spelling Bee" epidemic was at its height) Psycho would spell any word chosen by the audience.

After over four years of public life Psycho is still as popular as ever; but I contemplate certain alterations, which I trust may be considered improvements, in his mechanism, by which his dusky face shall give expression to the varied feelings that might animate a mortal under like circumstances, at the good or bad fortune of himself and partner. In relation to my statement as to a chess-player, in the March Part of the "Leisure Hour," I also intend adding mechanism enabling the android to play chess or draughts.

My next incursion into the realm of the automatons was in the construction of Zoe (fig. 2), an android devoted to sketching and writing.

Fig. 2.

I have explained the principle of several drawing automatons already; Zoe does not partake of the character of any of these, as they could go through prearranged motions only, whereas Zoe is quite unlimited in her capacity for rapidly giving us the "counterfeit presentment" of all celebrated personages. Zoe is carried amongst the audience and nursed by them; the pedestal upon which she sits is examined and afterwards insulated from the stage by a sheet of thick glass placed beneath its feet. Then, crayon in hand, the Grecian maid proceeds to limn the features of any well-known persons the audience choose by show of hands. Zoe also assists Psycho in his calculations, marking down the totals of the sums he works out with great accuracy. Though completed and produced subsequently to Psycho, my drawing automaton is really his senior in point of conception. Some ten or eleven years back I had the ideas but found my theory difficult to put in practice. Happily, in this figure I have succeeded in baffling my friends the imitators, as there is not room enough in Zoe's body to conceal anything beyond the mouse or bird—both theories suggested, one in jest, the other in earnest—supposed to set the works in motion.

My latest additions to automata are in *Fanfare* and *Labial*, mechanical musicians, who have received valued commendations from many sources. Our old friend "Mr. Punch" writes very pleasantly of Fanfare: "Mr. Maskelyne has already produced a mechanical whist-player, who can beat most members of the Arlington, and a mechanical draughtsman, who could give points to 'Ape' or 'Spy.' He has now gone several wheels further, and produces a mechanical musician. Therefore, the latest rival—or shall we not rather say, companion, of Psycho and Zoe? for it is to be hoped that mechanical artists are not jealous of each other—is, we are informed, the first auto-

* Hood made the porker's lament,—

"O! why are pigs made scholars of?
It baffles my discerning.
What griskins, fry, and chitterlings
Can have to do with learning."

maton that has ever blown its own trumpet, another distinction of the mechanical from the human artist. But has Mr. Maskelyne duly weighed the consequence of introducing this seductive practice into the automatic world? If all his automata take to blowing their own trumpets he will soon find himself more and more in the predicament of miserable managers of human performers." "Punch" hits the right nail on the head when he states that Fanfare is the first of the automatic race who has blown his own trumpet. Other mechanical players have been made, and with admirable results, but the figures never really *blew* through the instrument; the sound was produced within the body from a contrivance similar to the trumpet stop of an organ, a very weak imitation of the robust note of the trumpet. Fanfare is entirely different in that he presses his fingers upon the valves and the music proceeds from the instrument, and any one can test that the sound issues therefrom. Fanfare is seated in a chair in the conventional "tail-coat" of modern society. Like my other automatons, Fanfare (fig. 3) is submitted to inspection and

Fig. 3.

handed round for scrutiny, and one can ascertain by the lightness of the figure that not even the smallest representative of humanity could be in hiding inside.

There was one theory broached in connection with Fanfare, viz., that I had some electrical arrangement which would (possibly on the principle of the telephone) convey the sounds to the instrument held by the automaton; so, to dispel this idea, my next musician, instead of being seated upon a chair, was placed on a cushion supported by a solid glass column (fig. 4). This android I named Labial, and entrusted to his manipulation a small euphonium. As to his playing I may give the opinion of Mr. A. J. Phasey, the greatest living performer upon the instrument, and solo-euphonium to her Majesty the Queen, culled from an exhaustive communication to the "Musical World" upon Labial. Mr. Phasey writes:—

"Labial's observance of light and shade (so necessary to a good performance on the euphonium when used as a solo instrument) filled me with wonder—in fact I was spellbound. The lip action, in my opinion,

Fig. 4.

is as perfect as with a human being, and in his strict attention to the nuances he was very far superior to many professional artists. The impression made upon me at the termination of his admirable performance was a mixture of delight and depression—the latter from fearing lest, at some future time, living performers in orchestras may be displaced in favour of automata. Upon my first visit I was under the impression that the performer could not be an automaton, but possibly a clever illusion. I accordingly paid a second visit, and sat close to the stage to notice whether the fingering was correct or not. I found, to my astonishment, that the passages were not only correctly fingered, but that 'Labial' introduced slurs and appogiaturas equally as well as any professor of the instrument, and I have no reason to doubt the fact that it is a mechanical arrangement."

To both my musical automatons a supply of air is furnished by a large bellows worked upon the stage; the mechanism in each case is entirely contained within the bodies of the figures. I look forward to constructing an entire automatic orchestra for my patrons at the Egyptian Hall, and to that end I have already in view the production of another android musician, whom I shall name Euterpe, after the goddess of wind instruments. This figure will, accordingly, be habited as a lady, the instrument she will favour being the slide-trombone.

Queries for the Question & Answer feature should be sent direct to Keith Harding and Cliff Burnett at 93, Hornsey Road, London, N.7.

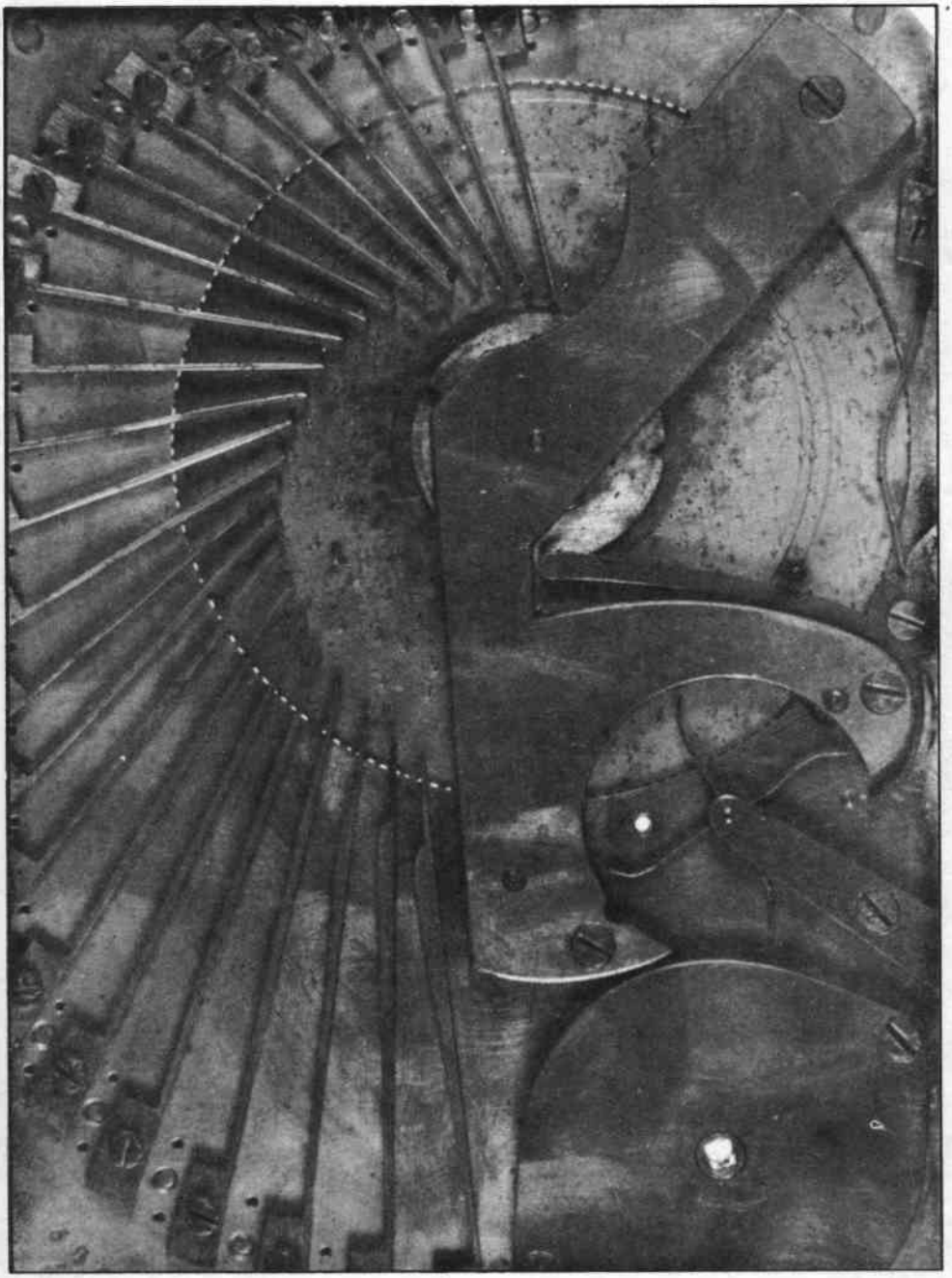
QUESTION AND ANSWER

by Keith Harding and Cliff Burnett

How can one remove dents from the cylinder?

If the cylinder has dents in it it has probably been dropped at some time. You do not say if you are talking about an interchangeable cylinder box. It may well mean that the cylinder also wants repinning, in which case the problem can be tackled after the pins are removed and when it is all ready for repinning. In any case it will probably be necessary to remove the cement before removing the dent, as it will have to be knocked out from inside. To do this we use a snarling tool, an item familiar to silversmiths. This is a springy rod of metal with a right angle at each end. One end fits into a hole in an anvil, and the other ends in a round knob. It is possible to make a tool on this principle to be held in the vice. The cylinder is placed over the knob end with the knob against the dent on the inside. It is the snarling tool, not the cylinder, which is struck with a hammer, and when it springs back it will strike the dent. Great care is necessary to make sure that the dent is removed without distorting the cylinder. The cylinder itself must not be struck as this will stretch the metal. Afterwards, if a complete repin is not indicated, the damaged area of pins can be replaced by normal pinning methods.

A scene in the Mechanisches Musik Museum at Kassel/Fuldatel founded by Member Werner Baus, standing at the centre back. The museum was opened on June 24th, 1972 and has more than 100 items. Here a number of the museum helpers pose in the workshop.



PIGUET ET MEYLAN SNUFF BOX

IN the collection of our President, Cyril de Vere Green, is an unusual and fine specimen of the musicwork of Piguet et Meylan who worked in Geneva between 1811 and 1828. Isaac Daniel Piguet was a maker of outstanding complex watches and, between 1802 and 1811 he was in partnership with Henri Daniel Capt. In 1811 he went into partnership with Philippe Samuel Meylan who came to Geneva from Brassus. To Meylan goes the credit for making the first musical watch to play tuned steel teeth from a pinned disc. He died in 1829.

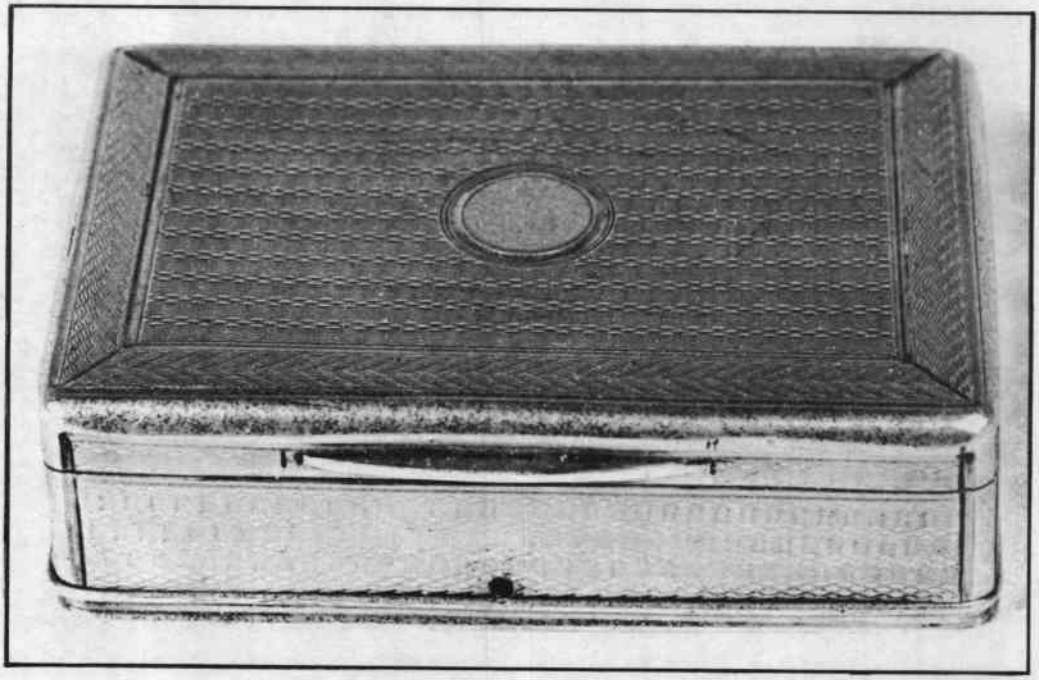
The bow shown below, and whose mechanism is pictured on the facing and subsequent pages, is of silver-gilt, hall-marked 1815, and with the maker's initials DH/TB arranged in two lines in a square. The box measures 7.6 cms by 5.4 cms by 2.3 cms. The bedplate or platform is 7.4 cms by 5.3 cms.

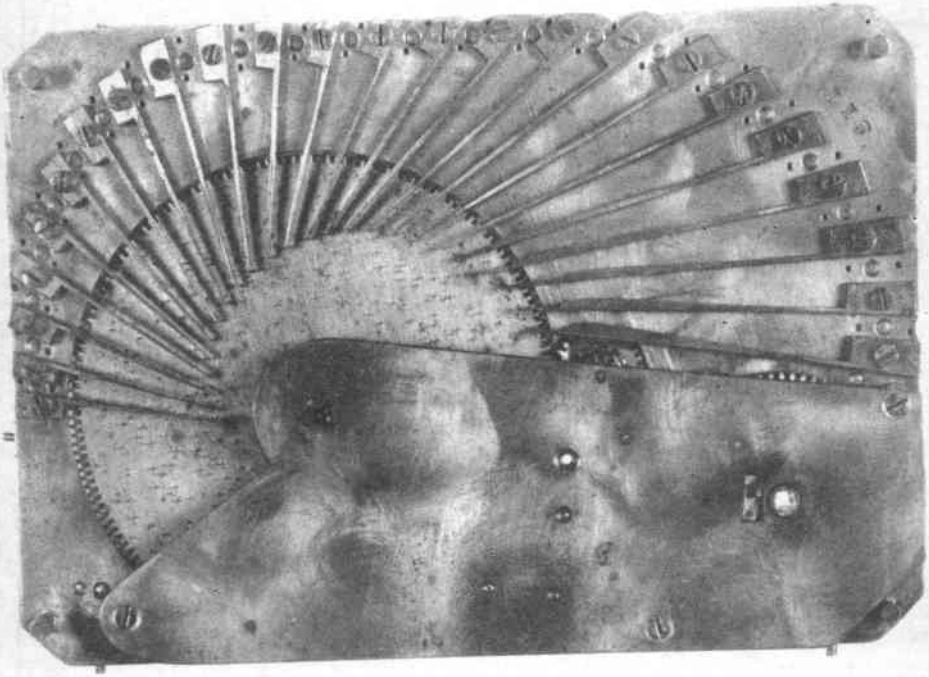
The musical disc is 40mm in diameter and plays 23 teeth on one side, 24 on the other. Characteristic of Piguet et Meylan work is the four-bladed fan with slightly curled ends. The spring barrel is recessed for winding with a male-ended key.

Two tunes are played on one revolution of the disc and the stop slots in the disc are not 180° apart, thus one tune plays longer than the other. The initials P.M. are stamped on the bedplate as are also two serial numbers 211 and 375.

An interesting comparison can be made between these pictures and those representing Figs. 161 and 162 on page 177 of *Histoire de la Boite a Musique* by Alfred Chapuis (1955).

The accompanying pictures have been taken specially for THE MUSIC BOX by Dr. Cyril de Vere Green.





SOCIETY MEETING REPORT

A PROVINCIAL meeting of the Musical Box Society of Great Britain was held at Manchester, Lancashire, on Saturday, March 9th, 1974. Organised by Member, the Rev. Jonathan White, the event took place at the Buile Hill Park Restaurant, Salford.

Situated three miles outside the city centre along the Eccles Old Road, Buile Hill Park contains a fine Georgian mansion which is at present being renovated as part of Salford's growing Museum of Science. Beside this stately pile, in the spacious, comfortable restaurant, the Rev. White had certainly laboured hard to make this quite one of the most successful of all our regional meetings.

The programme began at 10.00 with registration and the demonstration of Members' musical boxes. This was followed by the usual but ever-welcome coffee and biscuits. The first talk of the day was presented by John Warburton who, aided by Mrs. Ann Warburton, spoke on the subject of mechanical music on gramophone records. His talk was illustrated with extracts from some of the large number of records now available, and a duplicated listing of available discs was distributed.

The second talk was given by John Knott of Salford Museum on the remarkable Roepke musical box. This is only the second example of the Roepke ever to have been found (the first was illustrated and described in Volume 4, pages 2 onwards) and is a table model book-playing comb instrument. The additional interest in Salford Museum's Roepke is that it was made locally, Roepke having built his musical boxes in the town of Salford. John Knott told how the instru-

Small Orchestral-type musical box on display.

Arthur Ord-Hume, the Rev. Jonathan White (meeting organiser) and Reg Waylett admiring Reg's snuff box.

John Knott (left) of Salford Museum with his son, Brian, displaying the Museum's Salford-made Roepke musical box with Brian's home-made music book.

Part of the display of Members' boxes including a centre-wind Monopol.

ment had been found, less music, in derelict state, how he had carefully returned it to working order and then how his son, Brian Knott, had skilfully arranged and punched two books of music for it. One of these, *Greensleeves,* was played and a thrill ran through the audience as the silvery tones of this very rare instrument sounded again after many decades of silence. John Knott has promised an article for THE MUSIC BOX on this instrument in which he will tell of his interesting discoveries on the movements of Roepke in Salford.

Jack Tempest then spoke on Musical Miscellanea, a talk illustrated with slides. Then followed luncheon after which Walter Williams spoke on the Reproducing Piano and showed some of the many different types of piano roll which have been made over the years.

The final session was devoted to a display by our Treasurer, Keith Harding, and several of his workmen demonstrating how to dismantle and clean a musical box under the leadership of Cliff Burnett.

Some 60 to 70 Members and their guests attended including our President, Cyril de Vere Green and Bertha, our Secretary, Reg Waylett, and Editor Arthur Ord-Hume from London, and Alexander Duman from Glasgow.

Compared to previous displays, musical boxes on show were fewer than usual, but they included a number of interesting pieces, quite the best of which was undoubtedly the Roepke which, for many present, represented their first-ever sight of a book-playing, lever-plucking comb musical box.

The meeting concluded at 5.00 p.m. with a vote of thanks and appreciation to the Rev. Jonathan White without whose hard work this first Manchester meeting would not have been possible.

FIRST SOCIETY AUCTION

Pictures by A.K. Ames.

Expertly organised by Member George Worswick of Bardney in Lincoln, the first auction to be held under the auspices of the Musical Box Society of Great Britain took place at the Eastgate Hotel in Lincoln on Sunday November 18, 1973. There were 30 lots in all which realised approximately £822.00. Of this sum, £79.08 was contributed to Society funds. The pictures above, taken by Member A.K. Ames of Wilmslow, show some of the auction items. George Worswick is staging a second auction on April 28th, details of which have already been circulated.

OBITUARY

It is with deep regret that we have to record the death of our oldest Society Member, Charles W. Alflat of Sheffield. A sincere supporter of the aims and objects of the Society, Charles Alflat will be remembered for his enthusiastic attendance at our London meetings in recent years in spite of his advancing years and the distance he had to travel to attend. As reported on page 169, he donated the proceeds of the sale of some of his surplus items to Society funds at our last Summer Meeting. We all are proud to have known him. He was 89 years of age.

CLASSIFIED ADVERTISEMENTS

THE MUSICAL BOX SOCIETY OF GREAT BRITAIN cannot hold itself responsible for any article, or the skill of any person, advertised in this journal.

WANTED

Wanted. Complete governor mechanism for L'Epee bell-and-drum box, or a scrap box. Any help or advice would be much appreciated. Ray Brown, 7, Kingshurst, Radford Semele, Leamington Spa, Warwickshire. Telephone: Leamington Spa 29465.

Wanted, 19.5/8" Polyphon discs. I have some duplicates of this size disc. Would anyone like to obtain some fresh tunes by doing exchanges? Michael Miles, 'Rock Cottage', Mountfield, Sussex. Telephone: Robertsbridge 880614.

Wanted. Sheet music, piano rolls, early phonograph and gramophone recordings of music by, or arranged by J. Ord-Hume. Arthur Ord-Hume, c/o THE MUSIC BOX, 14, Elmwood Road, Chiswick, London, W.4.

Wanted. Nicole Freres key-wind with original tune-sheet. Also musical oil paintings. Rose Flaherty, 10 Orchard Street, Glen Head, New York, 11545, United States of America.

Learn how to pin your own organ barrels, punch your own cardboard music and cut your own piano rolls from musical scores. Complete illustrated layouts for two pieces of music — you don't even need to know how to read a note of music for these. THE MECHANICS OF MECHANICAL MUSIC, £4.00 post free from the author, Arthur Ord-Hume, 14, Elmwood Road, London, W.4.

FOR SALE

For sale. One copy only each of the following books. 'Automata' by Chapuis. New. £25. 'The Curious History of Music Boxes' by Mosoriak. New. £18. 'Musical Boxes' by John E.T. Clark. New. £10. 'How to Use a Player Piano' by Harry Ellingham, 1922. Clean copy. £6.50. 'Human Robots in Myth and Science', by John Cohen, 1966. (good chapter on automata). Clean copy. £3. 'Organ Building for Amateurs' by Mark Wicks, 1887. Very nice copy with tooled, coloured cloth binding. Scarce. £12. Please note: only one copy of each book is available. Send no money, but enquire if unsold with SAE. First come, first served! Arthur Ord-Hume, 14, Elmwood Road, Chiswick, London, W.4. Telephone: 01-994 3292 (6.30–9.30 p.m. ONLY)

Book Reviews

AU TEMPS DES BOITES A MUSIQUE by Daniel Bonhôte, 176 pp, Editions Mondo, Lausanne, Switzerland (available via Keith Harding Antiques–price on application). Illustrated.

Subtitled 'des origines aux orgues de fete foraine', this book was prepared with the collaboration of Fredy Baud and is produced for distribution in Switzerland as a 'gift' for voucher-shopping – a sort of trading-stamp prize.

Aimed essentially at a popular market, Bonhôte's book is at once commendable for its simply outstanding pictures, more than half of which are in colour. These are the work of Fernand Rausser who has made use of almost all the artistic tricks of his craft to produce some really beautiful and evocative shots. His pictures throw a new dimension on mechanical music and automata in that, for perhaps the first time, the sterile frozen image is given implied movement through clever use of extended exposures. The effect on the Hupfeld Phonolizst (page 167) is strange for it appears to have a high-speed music roll in place, and the high-velocity cylinder of the musical box on pages 46-47 may shock those whose worst dreams concern having a run. The effect on the automata, however, and particularly on the girl playing the zither (page 81) is outstanding.

In addition to movement, the photographer has made wide use of mirrors to achieve interesting 'both sides at once' views. Rausser's fine camera work brands him as a master: what a pity the printers impressed one whole-page detail shot (on page 163) upside down.

This is a lavishly-produced book of the type we can no longer print economically in Britain or, I fear, in the US. The pictures are its chief merit and each of these is of an outstanding specimen, either a rare type of box or piece of automata (a flute-playing automaton clock, or a full reed-organ cylinder musical box), or an outstanding piece of craftsmanship (the musical fobs, singing bird vinaigrette, early musical watches) or an unusual piece in seldom-seen perfect condition.

Sadly the text does not really live up to the promise of the sub-title. It dwells mostly on the achievements of the Vallee de Joux as if Geneva, Leipzig, Berlin and New York never existed as anything to do with mechanical musical instruments.

As a book to inspire interest in the subject, Bonhôte has succeeded with a book that is delightfully Swiss (or should one say Franco-Swiss?). The locale of the burgeoning musical box industry is captured both in words and pictures and the overall gain is the evocation of the atmosphere of an era in which we are all deeply interested, but may never adequately recall.

The book concludes with brief details and descriptions of types of musical boxes. This is aimed at a non-technical readership. Owners of this fine book should not overlook the technical captions to the illustrations sandwiched between the two parts on pages 126 to 129. A bonus to the book is a 7in. gramophone record tucked in the back. This provides the sound of many of the illustrated pieces. Recording quality is, though, nowhere near as good as one would like and some of the instruments (all are in the Baud Museum) must have been recorded on those 'off' days which many instruments have: they are out of tune.

My criticisms of this book should not detract, you from obtaining it – it really is well worth having. But don't expect to learn more from it that you are yourself able to glean from its outstanding pictures. A. O-H.

Footnote: Member J.A. Horngacher has been sufficiently impressed by this book to undertake at his own expense the production of a little booklet in which he sets out to correct where necessary and to augment where warranted the historical matter contained in Bonhôte's work. This 35-page booklet, complete with real photographs as illustrations, is intended for the French-reading serious student who wished to gain the most from the Bonhôte book. Details of this book, called *Critique Methodique*, are available from Member Horngacher in Geneva.

PLAYER PIANO TREASURY by Harvey Roehl, Vestal Press New York. Available from Keith Harding Antiques Illustrated.

It is 12 years since the old 'landscape'-shaped PPT was published and it soon established itself as a classic collection, justly earning its sub-title 'the scrapbook history of the mechanical piano in America as told in stories and pictures, trade journal articles and advertising'.

The first edition set severe production problems when it was found that special book-binding plant was needed to handle the long and narrow book. Now the second edition appears in regular 4to format and, in addition to displaying all of

the original material in a much better and larger form, has had its content increased by some 25 per cent.

Among the fresh material to be found here is an illustrated tour of the QRS music roll manufactury, illustrated descriptions of many of the larger collections in the US, England and on the continent, and much data only recently uncovered on the history of player pianos, piano players, nickelodeons, theatre-players. The original eight chapters have become nine and the one originally known as 'The Violin Players' has been re-styled 'Fiddle Boxes' which shows the spirit which led Sir Christopher Wren to refer to the organ for his new St. Paul's Cathedral as 'that box of whistles' lives on!

There is much newly-written material and freshly-gathered original ephemera which all goes together to make this a more fascinating collage than its precursor. It is safer to call it a fresh book altogether. A useful bibliography and a good index bring this volume to a close. What is remarkable is that the price remains unchanged from the first edition. Not to be missed if you call yourself an enthusiast. A. O-H.

THE WRITING MACHINE by Michael A. Adler, George Allen & Unwin, London, illustrated, £8.95.

FROM my talks with other collectors of things mechanical, it has become apparent that musical boxes, automata and phonographs often go together. And rather more often that I care to recall, an interest in automata and phonographs develops into a love of old typewriters.

Strange to say, the typewriter upon which the modern author slaves away his working day, is one of those ubiquitous things which we just accept as being there – something so mundane as to be incapable of possessing an interesting history. It took Lawrence Wright to reveal that even something so unmentionable as the lavatory possessed a truly fascinating history.

There have been several attempts in the past to chronicle the development of the writing machine and Michael Adler has now produced the best by far. In a formidable 381 pages he unravels the history of the more unusual machines – machines for typing music, writing down music from pianos (melography), typewriters with piano keyboards, the model perfected and marketed by none other than J.N. Maskelyne (whose articles on Automata are continued in this issue of THE MUSIC BOX), the strange *Phonograph Typewriter* which typed from, so its inventor hoped, the spoken voice, and the *Glossograph* part of which its German inventor intended to be held in the mouth. Thomas Edison's typewriter is described as is the unusual departure made by The Gramophone Co whose famed dog very nearly made his name by peering into a typewriter!

The author includes a chapter on the writing automata of Jaquet-Droz and includes details on several rare instruments of this type. But he skates on thin ice when he suggests that the writing automaton in the Franklin Institute, Philadelphia, may be a Jaquet-Droz which 'programmed' to pen 'Written by the Automaton of Maillardet'.

On the history of the typewriter, Creed (whose work in melography is familiar to the music historian), is mistakenly called Cred and there is the amusing statement concerning Unger that he 'accidentally invented the felt pen'! Perhaps this is a touch of Mr. Adler's own medicine for he comments with occasionally unnecessary venom on the writings of his predecessors and has uncharitable remarks to make about some American institutions from which he had vainly sought assistance.

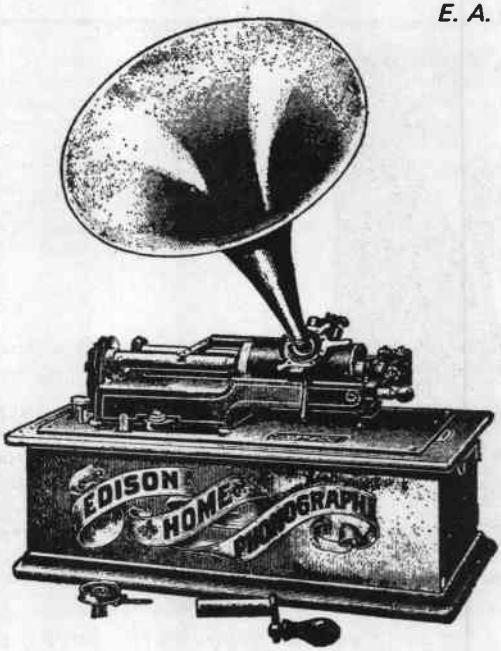
But if nit-picking be the vogue, then may I add that Mr. Adler has omitted any mention of the *Siecle*, a circular index typewriter marketed in the autumn of 1902 for 10/6d by the Variety Company of Dalston, London. This had the refinement of a platen board and paper alignment clamps. And the Simplex machine was on sale from its Birmingham makers a year earlier (also 1902) than he states.

These remarks, though, should not detract from the merits of this extremely interesting book. For the musical-box-orientated reader, the description and illustration of the *Polygraph* will probably be of greatest interest. Designed by Paul Reissner of *Polyphon* and *Triola* fame, it was produced by the Polyphonmusikwerke, Leipzig, in two models. The first had a two-bank semi-circular keyboard rather like Bruce Angrave's *Hammond Ideal*, but later models had a straight 3-row keyboard. Production halted in 1909 but as late as 1919 an attempt was made to re-introduce the machine. This was short-lived.

Mr. Adler has obviously poured commendable knowledge and effort into this work and has uncovered some remarkable things. For example, the golfball typeface and proportional spacing were invented a century before IBM chose to claim these refinements as their own. Progin perfected

Musique Automatique

E. A. GILBERT



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Musique Automatique

proportional spacing in far-off 1833!

Several mechanical musical instrument makers went in for inventing typewriters, among them M.A. Wier whose *Pneumatic* typewriter, patented in 1891, was undoubtedly inspired by his early notions of piano-players, a subject which consumed his patent activities in subsequent years.

I have always thought of typewriters as a strange form of fringe-automata. I rather think that my beliefs may be right. This is an expensive book and requires concentration to get to grips with (the author's system of references and bibliographic indexing is a little strange) but it is a fascinating presentation. Who knows! As musical automata become more and more outrageously expensive, perhaps many more of us will turn to this almost equally rewarding interest.

Editor Arthur Ord-Hume, right, being received by Klaus Schütz governing mayor of West Berlin at the famous Schoneberg Town Hall during his recent visit to Berlin in quest of information for yet another book.

LYNDESAY G. LANGWILL

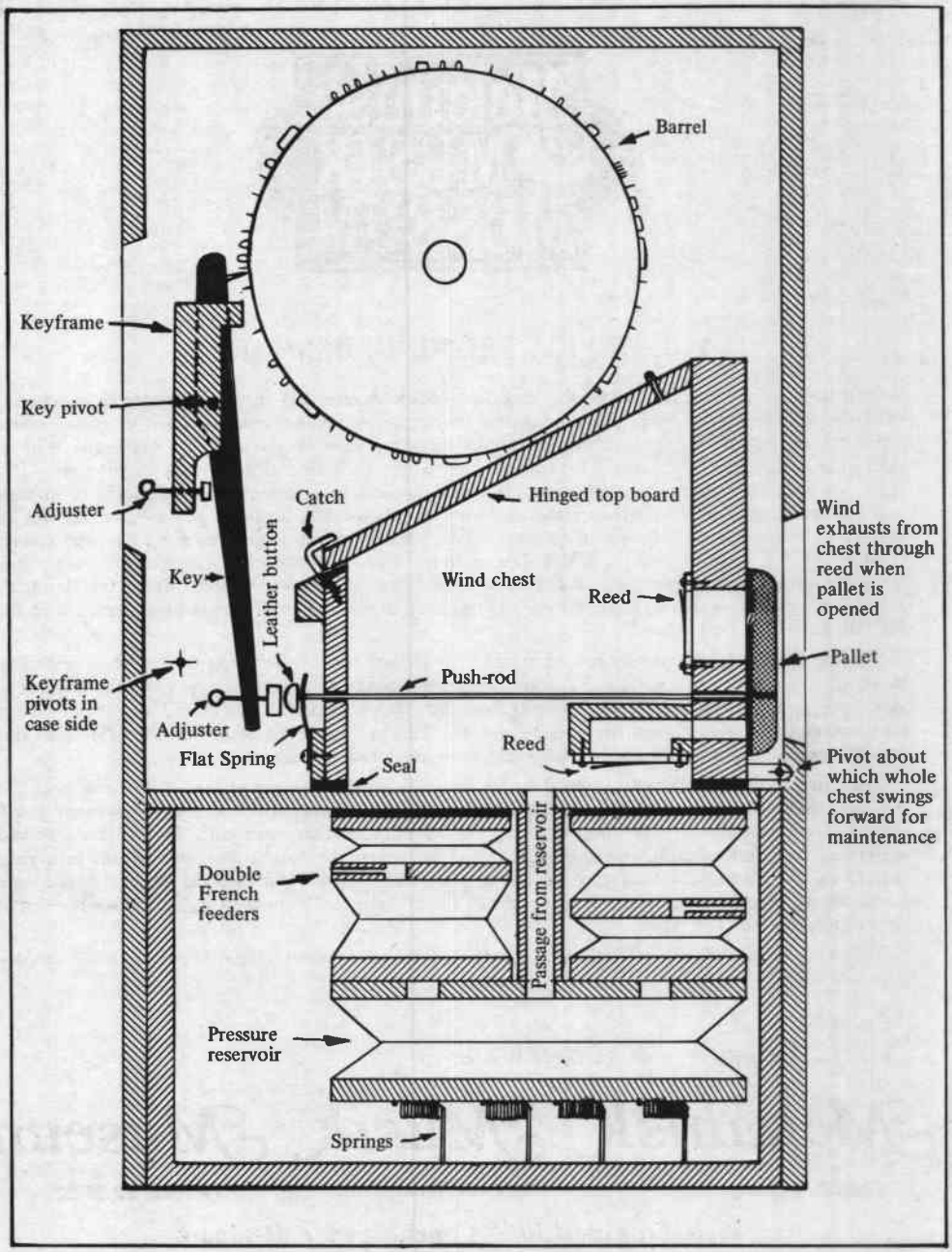
Having celebrated his 77th birthday on January 19th this year, Lyndesay Langwill of 19, Melville Street, Edinburgh 3, Scotland, has regrettably decided that he must retire from the Musical Box Society of Great Britain in order to concentrate on another edition of his authoratitive work on the makers of wind instruments. Accordingly he has for disposal a number of books on mechanical music and also many back numbers of THE MUSIC BOX. Send him a stamped addressed envelope for details.

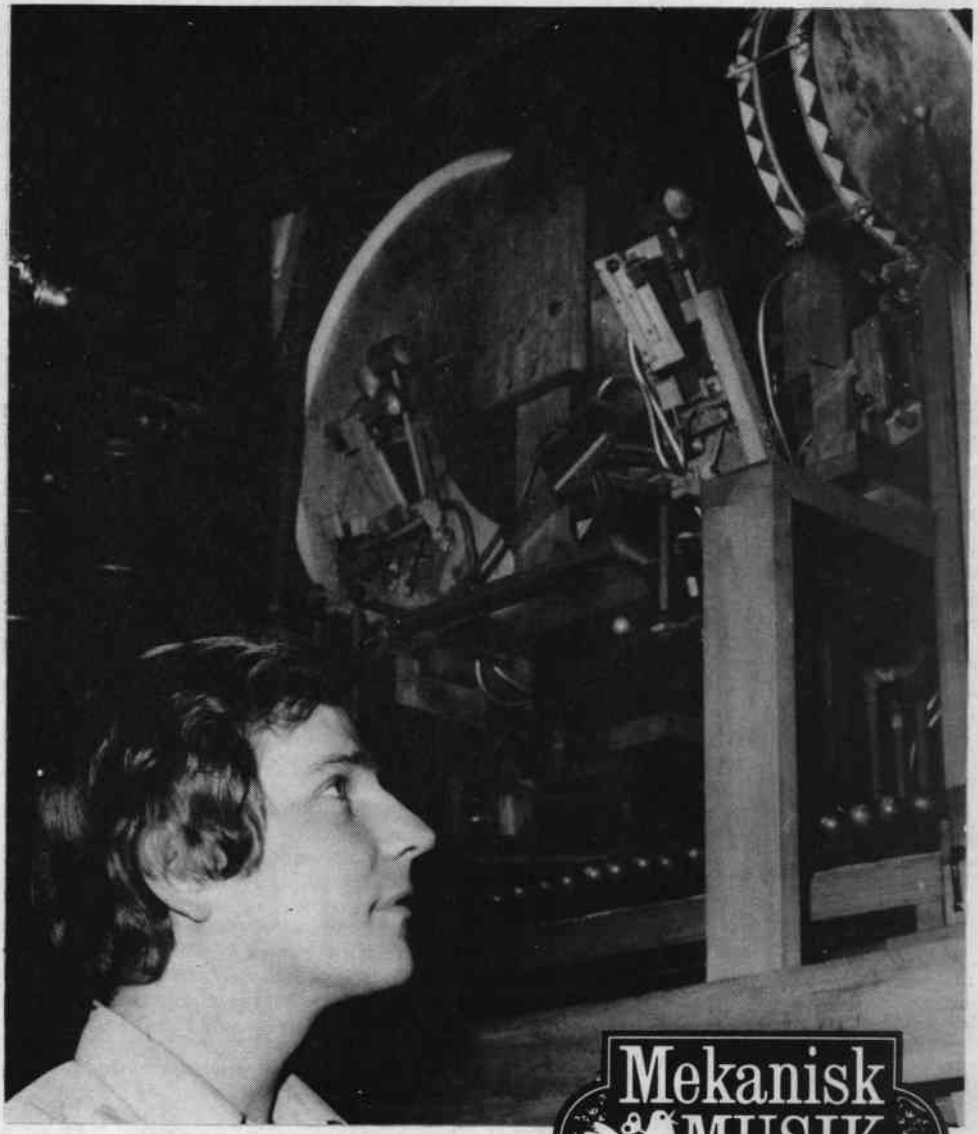
FRANK GREENACRE

Older members will be sorry to hear that one of our Founder Members, Frank Greenacre, is in poor health. Frank, who was our first Treasurer and who lives at Gorleston-on-Sea, Great Yarmouth in Norfolk, succumbed to a debilitating infection some two years ago and as a result has been forced to retire from his work. There appears but limited chance of a full recovery. We offer Frank our sincere best wishes and hope that it may not be too long before he and Glenys are able to make the journey to one of our Society meetings.

PICTORIALLY VIEWED

This time Arthur Ord-Hume examines the workings of the typical German-style portable street harmonium or reed barrel organ which has a vertical key-frame. The drawing shows how, when barrel and keyframe are moved clear, the top of the chest can be opened for examination, or the whole reed pan can be swung forward for maintenance. Double reeds are usually used for bass notes.


Barrel
Keyframe
Key pivot
Adjuster
Catch
Hinged top board
Wind exhausts from chest through reed when pallet is opened
Key
Leather button
Wind chest
Reed
Pallet
Keyframe pivots in case side
Push-rod
Adjuster
Flat Spring
Seal
Reed
Pivot about which whole chest swings forward for maintenance
Double French feeders
Passage from reservoir
Pressure reservoir
Springs



Claes O. Friberg and the Weber "Maesto" orchestrion on view at the MMM.

Mekanisk MUSIK MUSEUM

AN ODD CYLINDER

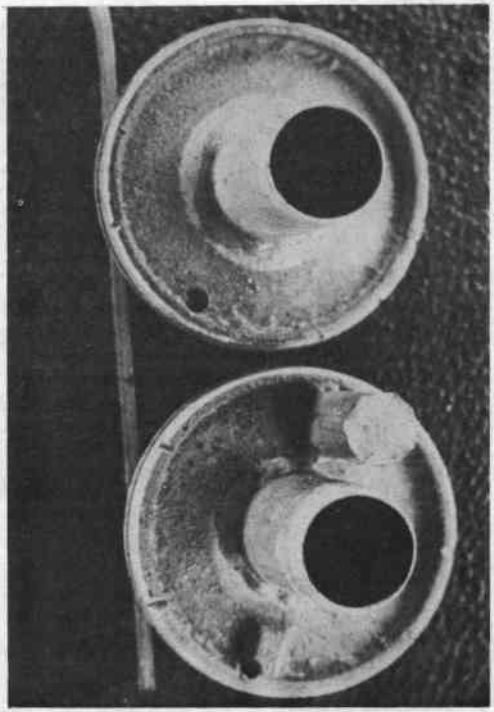
by G. Worswick

Maker: P.V.F. a air, zither, tune indicator. No. 9145. Cylinder: 2 1/8" x 13", mandolin pinning for about 9".

Odd fact: The internal construction was thought unusual enough to be shown at the Sheffield meeting, where it was displayed. I received no comments, but it was a busy meeting. The unusual fact is that the end caps have been made to accommodate a thin-wall brass tube, and sealed at the driving peg slot. The photograph shows the details, and I believe the construction to be original. If one assumes this, (or even if one doesn't), one is tempted to ask WHY?

The method of assembly after pinning would be to stand the cylinder, with driving end-cap fitted, on end either in a warm container, or pre-heated. The tube would be inserted and held central at the free end. The hot mix would be poured in slowly to allow trapped air to escape past the internal dividers. The top, or free end-caps would be fitted and the cylinder allowed to cool from the bottom. When probably half the height was solidified, the top cap would be carefully removed and more mix poured in to fill the last couple of inches of cylinder. The cap would now be re-fitted, the surplus mix coming out of the vent hole, and the whole allowed to cool.

The process has two advantages. One is that the hot spin process is un-necessary. Another is that much more mix can be poured into such a construction than usual. Finally, if the cylinder were to be heated, the mix would stay in place and not fall onto the spindle or detach itself from the cylinder walls.



The disadvantages are that it is more costly in mechanical contruction, and use of mix.

Back to the original question: WHY? My guess is that the box could have been intended for a hot climate where the mix would certainly have dropped off, and rather than find a higher melting point mix, the normal mix was used with slight modifications to the mechanics.

If you have a better solution, do let me know. **It is one of the few boxes I actually own!**

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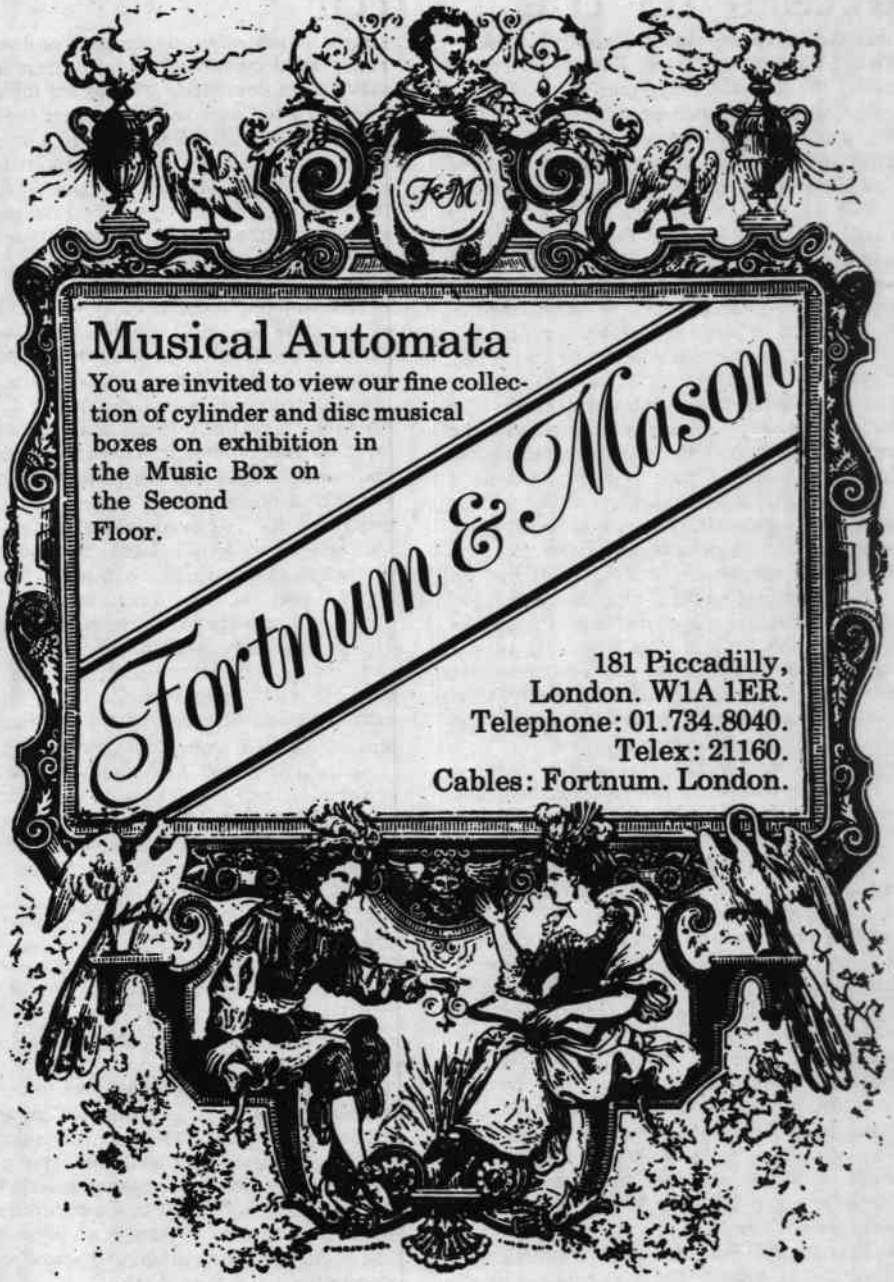
GULDMAN & CO., 7, Sugar Lane, MANCHESTER.

From the Strand Magazine *of October 1900 comes this interesting advertisement of electrically-played instruments from Guldman & Co. The instruments are Hupfeld products, that on the left being a Style 71 electric piano with roll-player under the keyboard. The Electric Orchestrion is the Model 1. This item, along with other unattributed items in this issue, comes from the collection of The Editor.*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Letters to the Editor

Member Grace Thompson of Harrogate writes:–

When I was reading George Foster's interesting article on the Emerald Polyphon, Vol 6. No 2, I was puzzled by his comment that it couldn't be wound while it was playing. It teased at my mind for about an hour before the penny dropped (excuse the pun) and I realised that my own polyphon with bells did exactly the same thing; mine too has the helical spring. Perhaps I may be excused for my brain's somewhat tardy reaction, as I bought the box in December 1967 and although I knew it was a helical spring, my knowledge of musical boxes then was considerably less than it is today. I didn't realise that it was so unusual in a table model.

Mine is a smaller box, disc size 14¼". The combs have 54 teeth on each compared with the Emerald's 60 teeth and the star wheels pluck the corresponding teeth of both combs at the same time (Sublime Harmony, another unusual feature I fancy). I imagine Mr. Foster's machine plays alternating teeth – one star wheel per tooth – which would account for the fact that his has only 12 more tuned teeth in total than mine, although it is a much bigger machine. His has 18 bells where mine has 12. The remainder of the layout on my polyphon looks very similar to that of the Emerald, photographed on page 77. One other common denominator is the touch of 'maladie du plomb' as mine was similarly affected!

My case is exactly like that of the standard 15½" Polyphon with the floral inlay on the centre of the lid, but the customary picture of cherubs under the lid has a black strip across the bottom, proudly announcing in letters of gold, Concertinas, Zithern, Musikwerke, von Herman Ritter, Chemnitz, Bernsbachstrasse 8.

I bought my Polyphon with only one disc and this I have never forgotten. Three days before I bought it, Jack Donovan, now at 93 Portobello Road asked me if I had any use for 40 Polyphon discs which somebody had offered to him and he did not require. I assumed rather rashly, and so did Jack, that they were 15½" discs. They were in good condition, excellent in fact, but as I had quite a number of these did not buy them. Six days later I was telling Graham Webb then of 93 Portobello Road, of my new 'find'. In his usual quiet helpful voice he said, 'Would you like to buy some discs m'dear?'

'I didn't know you had any' said I mightily im-

'Well I hadn't' he replied 'But it so happens that I bought 40 yesterday.' There was a profound silence as my mind crashed all its gears, then an accusing shriek from yours truly, 'Those are the ones I was offered'. They were indeed; smarter than either of us or the original owner, he had known exactly what they were although the discs were completely innocent of any identifying marks. So they had travelled from London to Harrogate and back to London; twenty of them made the journey back to Harrogate somewhat enhanced in value en route. Thus do we live and learn.

The Autophone described by yourself on page 99 of the same magazine was also of interest to me, particularly as you said that they were virtually unknown in this country. I bought one of these, unseen, earlier this year. Described to me over the telephone it was new to me and sounded interestingly different. When it arrived I thought it quite enchanting. This particular Autophone is made of a richly coloured wood which appears to be mahogany and is played as you say, by squeezing the bellows with one hand. It tended to play somewhat spasmodically, but with more practise on my part, became much smoother, emitting quite a rich organ sound for so small an instrument. The round black label on the front says, The Autophone H.B. Horton's Patent Oct 30th '77 Dec 3rd 1878. Ichi Ban. 22 Geary Street, San Francisco, Cal. Sole Agents for the Pacific Coast.

Member James J. Doheny of Chicago, writes:–

The article and accompanying list of titles of cobs for the Roller Organ in the recent Volume 6, Number 2, of THE MUSIC BOX were most helpful. I have a few cobs which are not on the list, and if anyone is compiling a full one:

754 O, Salutaris [Sacred hymn]
1216 Leaf by leaf the Roses Fall
and two only partly legible
1084 Bomba– March 526 May——ous

Best wishes for a continuation of such an excellent magazine.

Member W.G. Oldham of El Cerrito, California, writes:–

One of the useful contributions to devotees of mechanical music is the disc list compiled by Arthur Coombs and published in Graham Webb's 'The Disc Musical Box Handbook'. Is any member compiling lists for other manufacturers boxes? I am particularly interested in music for the 'Eroica' 3-disc Symphonion. If there is no present effort I shall begin the compilation, and would appreciate information about these discs.

Member R.P. Atkinson of Kendal writes:–

The enclosed Tune Card (No 63, from Mr. Lubbock) is a replica of one on a box of the writer's, which has defied identification for ten years, despite having been seen by a number of knowledgeable members over the period.

By a strange coincidence, this tune card was illustrated in the Winter, 1972/73 Journal of THE MUSICAL BOX INTERNATIONAL, the caption asking if anyone could identify it.

The mystery was solved this Spring, and the maker is:–

S. TROLL FILS, GENEVE.

How this was done, is as follows; A friend brought a box along, with a quite different tune card. It was part 'operatic', and contained, amongst other tunes, Les Huguenots: Chew des Baigneuses– Meyerbeer. We were immediately struck by the arrangement of the Air, being the same as on my own box. We timed both boxes with a stopwatch, including the delay occuring after the fly was released, and adjusted the escapement wings, and amount of 'wind', so that both ran at the same rate.

We then played both boxes synchronised, and there, sort of 'Sublime Harmony', every note, and set-up, exactly the same! On the cock of the visiting box there was stamped, in a neat elipse the words, S. TROLL FILS – GENEVE.

My friend, later pointed out the fact that the writing – Script, was the same on both box's Tune Cards. The serial Nos. stamped on the top of the Lever Winds, differed by over a thousand, my box being 2192, the Tune Card showing 2191, and '8 Airs', each side the central 'Angel'. The box is plain pine, brush varnished, plain lid, secured in front by 'Hooks and Eyes', you would scarcely give it a second glance in a Collection; the cylinder, 13" long, and 2 1/8" diam, is brilliantly set-up, the Airs being brought out by playing 2 comb teeth together, with the counter melody. COMB 95 teeth, 9 screws. Cast Iron Baseplate secured by screws, washers, back and front. THE TUNES ARE AS FOLLOWS:–

LA SONNAMBULA Car Tu non sai.
LUCREZIA BORGIA Ll segretto.
LES HUGUENOTS Chew des Baigneuses.
LA TRAVIATA Brindisi Libiamo.
LA GRANDE DUCHESSE Quadrille No. 4.
DON PASQUALE Seranade– Come Gentil.
LUCIA di LAMMERMOOR. Fra poco a me ricevere.
Ll TROVATORE Dto. LIVRA contende lL guibile.

Some of the above titles may not be correct, the tune card is very faded. On the inside of the black stained box, on the removable control lever assembly, are the remains of a Dealers Gilt Transfer, 2½" diam, the letters LI being all that is left, apart from part of the Gilt Border. I suggest this could be LIVERPOOL. The above Opera Titles would date the box about 1870, (LA GRANDE DUCHESSE, 1867). I hope the foregoing will enable Members who were in doubt of the identity of their boxes with these Tune Cards, and no other means of recognition, to identify them.

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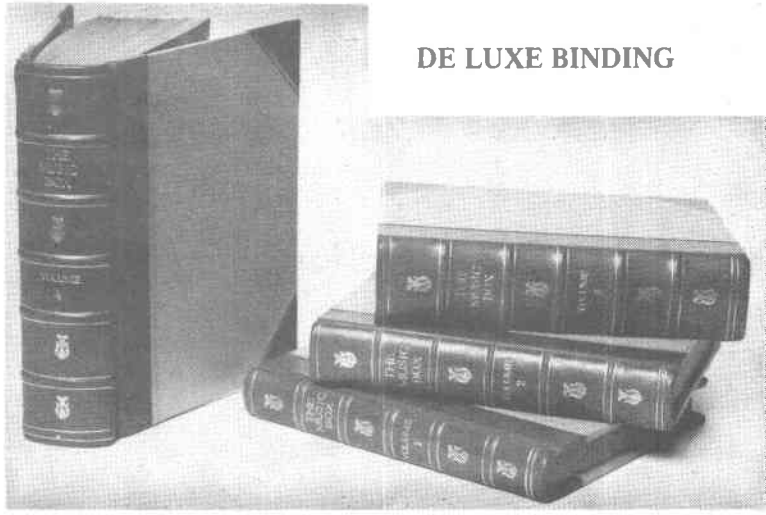

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