AMICA International

Automatic Musical Instrument Collectors' Association

AMICA Bulletin Articles

THE CHORALCELO

By C. W. Jenkins
(August 2002)

[A substantial treatise was published in the Aug/Sept 2008 AMICA Bulletin on this instrument. The article you are now reading is only to give you a flavor of what the AMICA article contains. The

following is an encapsulation of the original, assembled by Keith Bigger - Ed.]

The Choralcelo color plates | **A Choralcelo in Denver, Colorado**
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Click HERE to *hear* a short recording of the Choralcelo - This abbreviated melody line of "I'm Called Little Buttercup" (*H.M.S. Pinafore by Gilbert & Sullivan*) is extracted from a badly scratched original 78rpm glass master live 1942 recording, hand played by Regene Farrington, wife of Wilber Farrington, President of The Choralcelo Co., recorded in the Choralcelo Studio in New York City. When a restored, operating Choralcelo is found, a better quality music sample will be provided.

My wife and I became interested in the Choralcelo forty years ago when we discovered one in an antique shop. A single manual in a highly figured mahogany case, it was intriguing because of the magnets behind the strings, the electric dampers and sliding contacts, the interesting- looking components in the base, and the high quality of the elaborate hand carving. Later, through a friend, we found that the widow, Regene Farrington, of the president of the **company**, Wilber Farrington, was living not too far from us, at Cape Cod. It was she who filled us in on the background of the company and eventually helped to locate a complete installation. I was to learn that our own instrument lacked the key component which it required to produce magnetic tone, the interruptor mechanism. Regene Farrington, nee Regene Wyler, had been trained as a Choralcelist in the early days of the company.

Several articles have appeared on the instrument at different times, but as they derived from speculation, second-hand comment, and guesswork, much that has been published has been erroneous. The name, Choralcelo, which means "Celestial Choir", is pronounced CHORAL-seh-low, to rhyme with "SHALL-slow". It was developed by Melvin Severy and George Sinclair, circa 1900-1916 or so. There were about one hundred of them manufactured. They were expensive, the two-manual ones probably in the $250,000 range in today's money, and they were installed in wealthy homes, theatres, hospitals, churches, department stores...there was even one on a yacht.

After about 1916 or so, the **company** existed for a time in Chicago, and then finally in Port Chester. There was a demonstration studio in New York City as late as the forties. The Farrington's believed there was more to the Choralcelo than just a new instrument. Its hearers spoke of the wonderfully lyrical quality of the music, and mentioned refreshing and renewing of the spirits. Wilber Farrington thus felt there was a higher purpose than just commercialization for the instrument, to the extent of investing his own money in the effort. He did not want to mass produce it and cheapen what was now of the highest quality achievable.

In the two-manual Choralcelos, there was the console itself, and then three or four auxiliary units which were connected via cables and could be placed anywhere desired. There was a motor-

generator set, and the heart of the Choralcelo, the interruptor mechanism, which was run by an electric motor of average size. In one version it had nine cylinders geared to rotate at fixed speeds, and each had eight tracks upon which rode sterling silver brushes. The cylinders were brass and sections of porcelain were inlaid in the tracks to make and break the current as they passed under the brushes. There was also a disc version of the interruptor, in which twelve brass discs of five inch width were rotated at the desired speed. Each disc had six tracks about 5/16" wide. There were also typically two cabinets containing the remote relays from the key contacts, and the roller switches operated from the console stop tabs. These items would be placed in the basement usually. They were not overly large and could be housed in the space of a good sized closet.

Following are **color plates** taken this year of various auxiliary units of the Choralcelo which can be drawn on to add their own distinctive tone quality to that furnished by the piano strings in the instrument's console.

The auxiliary bar units, which produced the sound, could be placed in the living space where the console was, either being housed in harmonizing cabinetry or concealed in grillwork, and would take up the space of a good- sized closet. Or they could be situated in the basement along with the other components and speak through grillwork in the floor. Everything could be customized by the Choralcelo Company as desired. The closest competitor would have been the pipe organ, which was larger, and while the modern electronic organ is much smaller and virtually self-contained, that did not come until much later.

The auxiliary units characteristic of the Choralcelos had either rosewood or aluminium bars of graduated sizes to achieve the various notes, and they had resonators placed to amplify the tones. Usually they were cardboard tubes painted black, or they also used square wooden ones which looked like graduated organ pipes but of course were not. The bars had a small iron armature affixed to respond to the magnets. A few Steel units were made, and glass was also tried. There was one type of unit which had ribbon steel sounding strips...this was called the "orchestral" unit. A particularly interesting bass unit had heavy iron bar components with massive lead weights attached, and five soundboards arranged zig-zag fashion, with soundposts in between. This produced 32 bass notes, and Mrs. Farrington said that it sounded like a "battery of bass viols". Chimes could also be furnished, or a xylophone or glockenspiel if desired. In large buildings remote string units could be furnished for added power. These had detachable keyboards.

There is variation from one installation to the next and it is sobering to think of the vast amount of drafting, experimentation, and machining required to produce such a complete instrument from scratch... and this while not even knowing at the outset just what might be the possibilities waiting to be discovered...they might be endless. The company is reported to have invested sixty million dollars, in today's value, in the vast amount of experimentation and development that took place.

An interesting article written by Edith Borroff appeared in the "College Music Symposium" of 1982. She is the daughter of another of the young women hired to learn to play the Choralcelo, Marie Bergerson. Following are excerpts:

"Correspondence first documented the existence of three installations in the state of New York. One was in a hotel lobby in New York City, evidently a temporary installation for promotional

purposes. This instrument had a glass unit which was described as "ethereal." Another person who heard this instrument said that there was "a miraculous sound about it that has never been duplicated." (My mother had also given a recital at Wanamaker's Department Store in New York.)

The second was at Mount St. Mary's, evidently a retreat house, near Niagara Falls. The instrument was in the chapel, and a photograph of the console reveals nothing. A booklet states that the Choralcelo was installed "with full appreciation of the remarkably soothing effect of music on the mind and nerves" and an appreciation of the choralcelo's unique qualities. "The choralcelo at Mount St. Mary's consists of a master instrument and eight subsidiary instruments or 'echoes,' as they are called, placed in various parts of the building, thus at will flooding with celestial harmony the entire structure or any selected part of it."

The third was installed at the Mohonk Mountain Lodge in New Paltz in 1919 and was used in concerts there for close to forty years. (It was sold in 1962 or 1963.) It did not have a glass unit. Rachel Orcutt, a Massachusetts girl and a student of Esther Norse Green (in turn a student of Edward MacDowell) in Boston, had been introduced to the instrument in the Boston showroom, and had become skilled in performance on it. She gave concerts in Boston, and in 1919 was hired to play the instrument at the Lodge; she married into the family of the owners and has been there ever since. Now Rachel Smiley, she welcomed me cordially, showed me the ballroom in which the instrument had been installed, and advanced my knowledge of the spread of the instrument. She told me that she gave concerts not only in Boston, but in Chicago (at more than one location, including Marshall Field's department store), Geneva (Illinois), Oyster Bay (Wisconsin), Grand Rapids (Michigan) and at the Belmont Hotel in New York City. Mrs. Smiley did not know what happened to the instrument which had been at the Mohonk Mountain Lodge."

Mr. Reblitz has been most cordia1, most helpful, and has put me in touch with the owner of the instrument, also providing the photographs which accompany this article. My debt to him is great.

"Two small rooms of the basement are given over to auxiliary units, relays, generators, and other equipment. Lighting conditions were poor and my knowledge of electrical devices minimal. I shall not attempt to describe the units but will show four of them. Figure 3 shows a unit of metal bars (probably aluminium); these are ranked by pitch and have resonating tubes (some of which have been removed). Figure 4 shows a wood unit; figure 5, another metal unit, possibly steel. Figure 6 shows the double bass unit with two piano sound boards connected by soundposts, figure 7. Figure 8 shows a wood unit. There was also a rack where an additional unit had been, but the components were gone. It may have been the elusive glass unit, since it is probable that the sounding elements were hung from it in a manner unlike the positioning of the elements of the other units. This choralcelo was the project. of a wealthy man who had a part.icular love for the instrument, and in building a beautiful home in the Denver area had the ballroom and adjoining area - an entire wing, to be exact - designed specifically to house and display the instrument to best advantage. The console is set into the one interior wall of the ballroom, and is of wood matching the paneling of' the room. Figure 1 shows it without the matching bench. Figure 2 is much clearer and reveals the two manuals very clearly; the upper manual is of 61 organ keys, the lower is a piano keyboard, and the pedalboard is standard. The specifications are given on page

54. No identification is visible when the instrument is closed, but under the keyboard in discreet lettering is the legend "Choralcela, Boston USA." But the tone generator crate bears the label "from Choralcelo Company of America, 561 East Illinois St, Chicago, Ill." Figure 2 also shows the decorative panel above the keyboard removed, with part of the piano action visible behind. Mr. Reblitz adds that "there is supposedly an 88-note roll player built into the console which was moved and then paneled over, but 1 haven't seen it."

Toe Studs:	Manual II Octave Coupler 16'	Manual II
	Manual II Octave Coupler 4'	Manual I
	Total-Coupler	Sforzando
	Soft Piano	Piano Solo
	Pedal	
Stop Tabs:	Ped Diapason 16'	II Sub-Octave 16'
	Ped Man I Coupler	II Fundamental 8'
	Ped Man II Coupler	II Octave 4'
	Ped Octave Coupler 8'	Octave Quint 2 2/3
		Super Octave 2'
	II Gedeckt 8'	II Solo 16'
	II Viole D'Orchestra 8'	Blank (yellow)
	II Violine 4'	Blank (red)
	II Flugel Horn 8'	I Instrument No. - 1
	II Gemshorn 4'	I Instrument No. - 2
	II Clarinet 8'	I Diapason Bass 8'
	II Cornopean 8'	I Fundamental 8'
	II Vox Humana 8'	I Octave 4'
	II Octave Coupler 16'	I Chimes

II Octave Coupler 4'	II to I Manual Coupler 8'
II Tremolo	II to I Manual Coupler 4'
Blank (red)	I Claribel Flute 8'
II Chimes	I Diapason 8'
II Echo	I Dulciana 8'
II Diapason Bass 8'	I Dulcet 4'
II Instrument No. - 1	I Violoncello 8'
I Instrument No. - 2	I Wald Horn 8'
Blank (yellow)	I Cor de Nuit 4'
	I Saxophone 8'
	I Major Reed 8'

In addition to the units were a great many relays and many disconnected cables. Figure 9 shows one of the relay panels (of provenance unknown to me). Figure 10 shows pedal relay switches. How complete is the equipment I have no way of knowing, but it is extensive and may be fairly complete.

Finally, through another correspondent I was led to a surviving Choralcelo in Massachusetts, in the Boston area. I have received a letter detailing the installation as follows:

> *"The Choralcelo I have been devoting my attention to has a two-manual console in an inlaid walnut cabinet, with hand-carving. It has a piano and organ on the lower 88-key manual, and organ alone on the upper 61-note manual. It has the redesigned system of wiring the company developed later on. The piano strings in the console can be played with the hammers, with hammers and magnets, or with the magnets alone, which derive sustained tone from the strings. It has a matching bench and full pedalboard, In addition, it has a music roll playing mechanism for the Choralcelo rolls the company produced, of which I have a few. Other units include wood bars, aluminium bars, steel bars, chimes, multiple soundboard double bass, steel bass, remote string, ribbon steel or so-called "orchestral", and an early version of an oboe unit which was supplanted when the new system of wiring was inaugurated and the tone quality could be achieved by adding appropriate overtones. I actually have two complete two-manual installations, and a single-manual instrument as well."*

Mr. Reblitz has given some explanation of the principle behind the Choralcelo instrument.

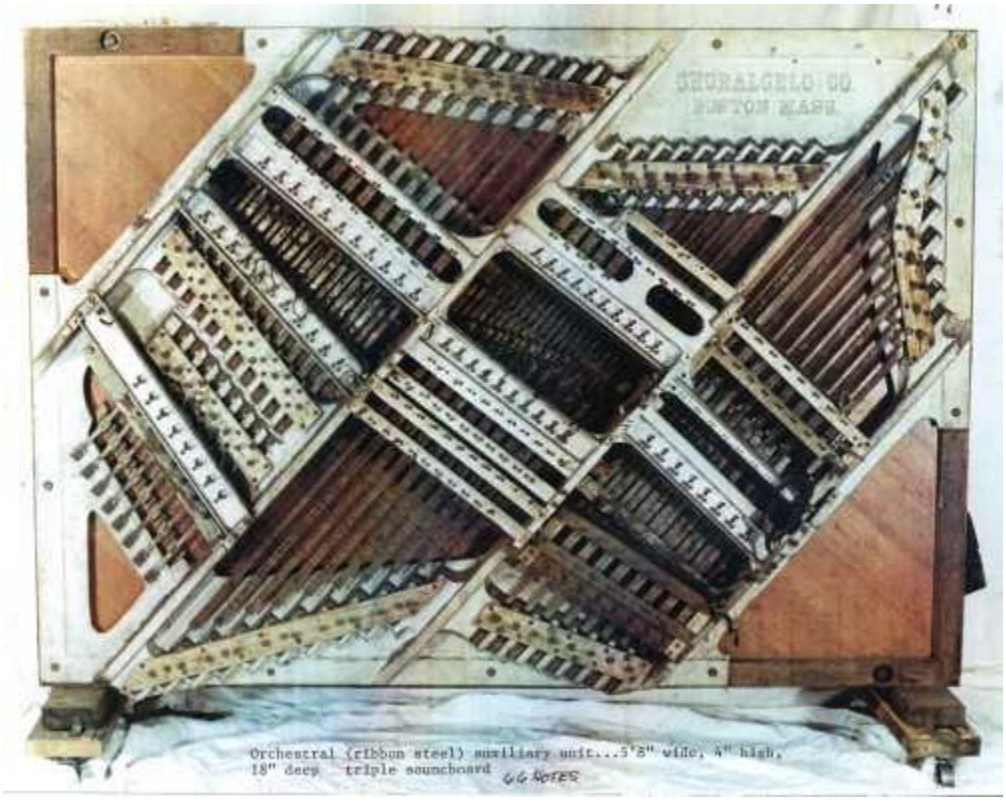
"The Choralcelo relay is similar to an ordinary unified pipe organ relay, but with the addition of the "interruptor" - it could also be called a "pulse generator" or "frequency generator".

Each stop switch on the organ actuates a relay having 61 contacts (for the 61 organ keys) or 32 contacts (for the 32 pedals). This connects the keyboard or pedal board to a particular tone generator, with one electromagnet for each note. In series in the same circuit is the interruptor, with a frequency generating disc appropriate for each key and tone generating magnet, If the 'flute' stop is turned on, and A above middle C is played, the circuit made by depressing 'A' is routed through an interruptor disc having 440 make-and-break segments per second; from there, the 440 hz signal is routed through the 'flute' switch on the relay to a tone generator supposedly capable of sounding like a flute, in which an electromagnet turns on off 440 times per sec., exciting a bar, plate or string into the same frequency vibration. It's a simple concept but one which is hard to execute because of the amounts of current required to do all that vibrating of the tone generating components."

The owner of the instrument has also been most kind and cooperative, generously affording me an afternoon to visit and examine the components during the CMS-AMS-SMT meetings in November of 1980. He also answered the questions which my limited technical competence allowed me to ask.

The Choralcelo color plates

Remote string auxiliary unit - 5' 4" high, 5' 8" wide, 15" deep.



Orchestral (ribbon steel) auxiliary unit - triple soundboard
5' 8" wide, 4' high, 18" deep.

Double bass auxiliary unit, 32 notes, 5 soundboards
5' 9" wide, 4' high, 28" deep.

Wood auxiliary unit, rosewood bars - 52" high, 49" wide, 24" deep.

OBOE AUXILIARY UNIT...5½' high, 5' wide,
2' deep

Oboe auxiliary unit - 6' 6" high, 5' wide, 2' deep.

Aluminum auxiliary unit - 6' high, 4' wide, 13" deep.

Chimes - 6' 9" high, 38" wide, 22" deep.

A Choralcelo in Denver, Colorado

Note: The following black and white pictures were kindly provided by Art Reblitz who found and photographed a Choralcelo in Denver, Colorado, USA, in the early 70's.

Fig. 1. The console of the Denver instrument, built permanently into the panelling, with Art Reblitz, who discovered the instrument.

Fig. 2. Close-up view of the console.

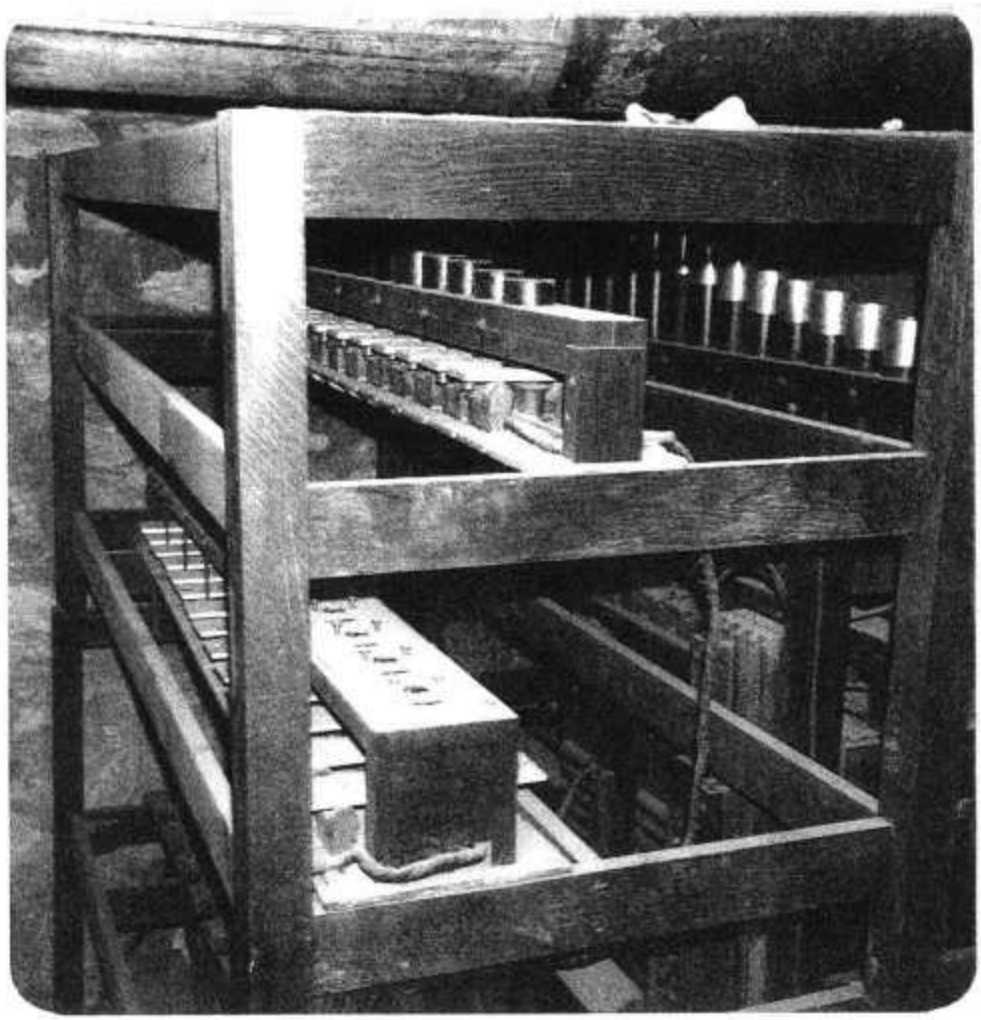


Fig. 3. Auxiliary unit..left hand, #1

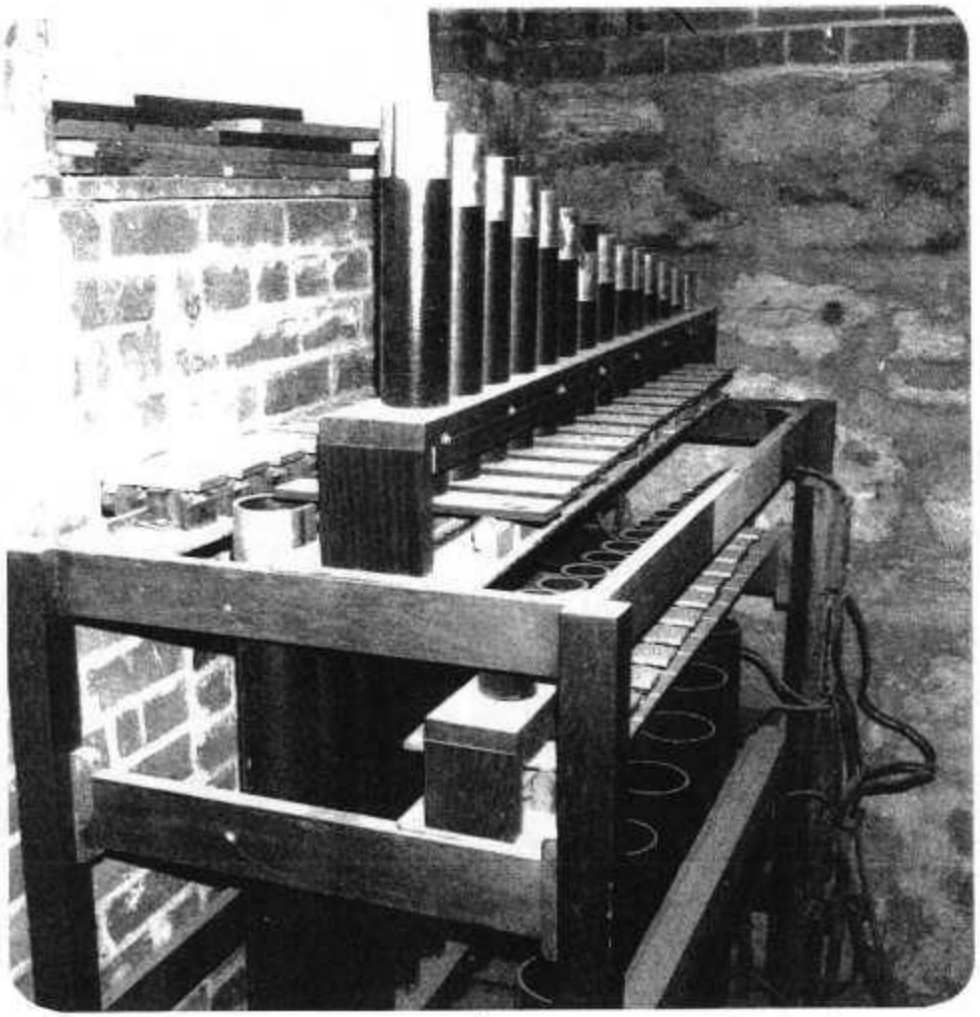


Fig. 4. Auxiliary unit, rosewood bars..right hand, upper

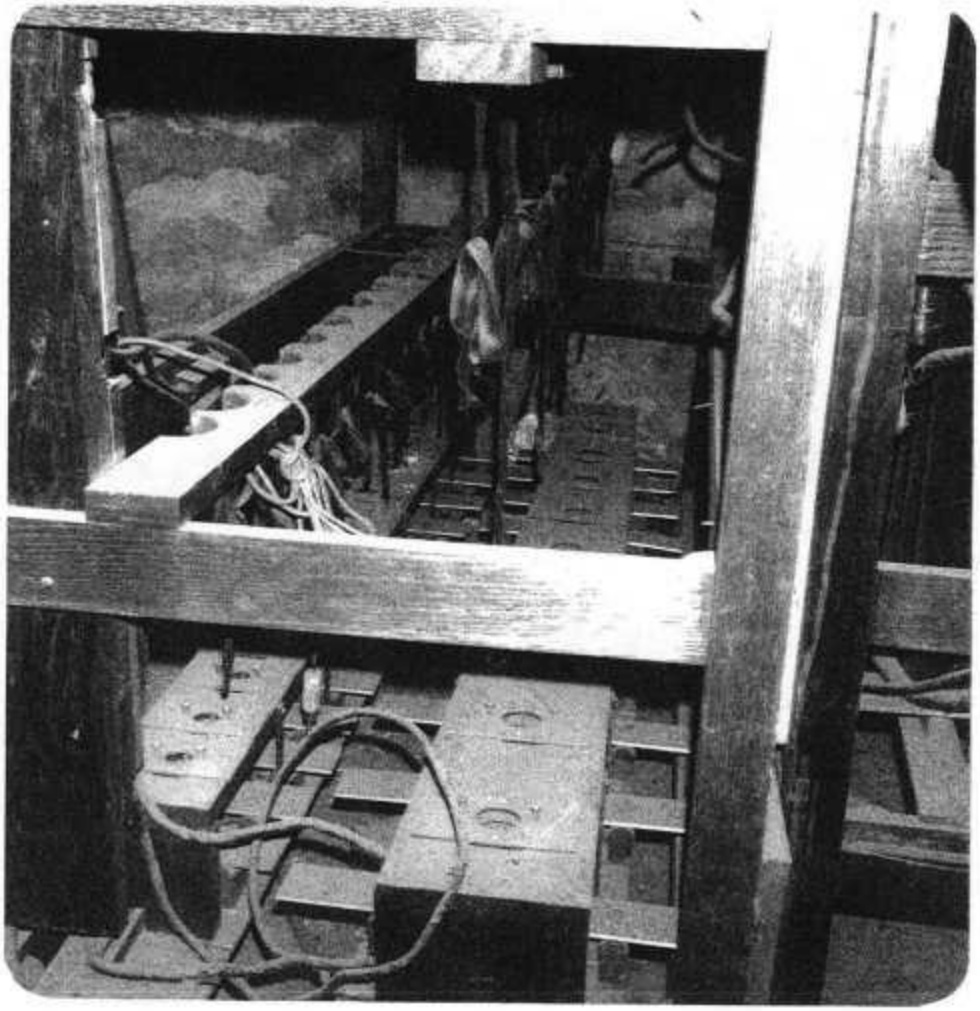


Fig. 5, auxiliary unit, left hand, # 1. lower Aluminum

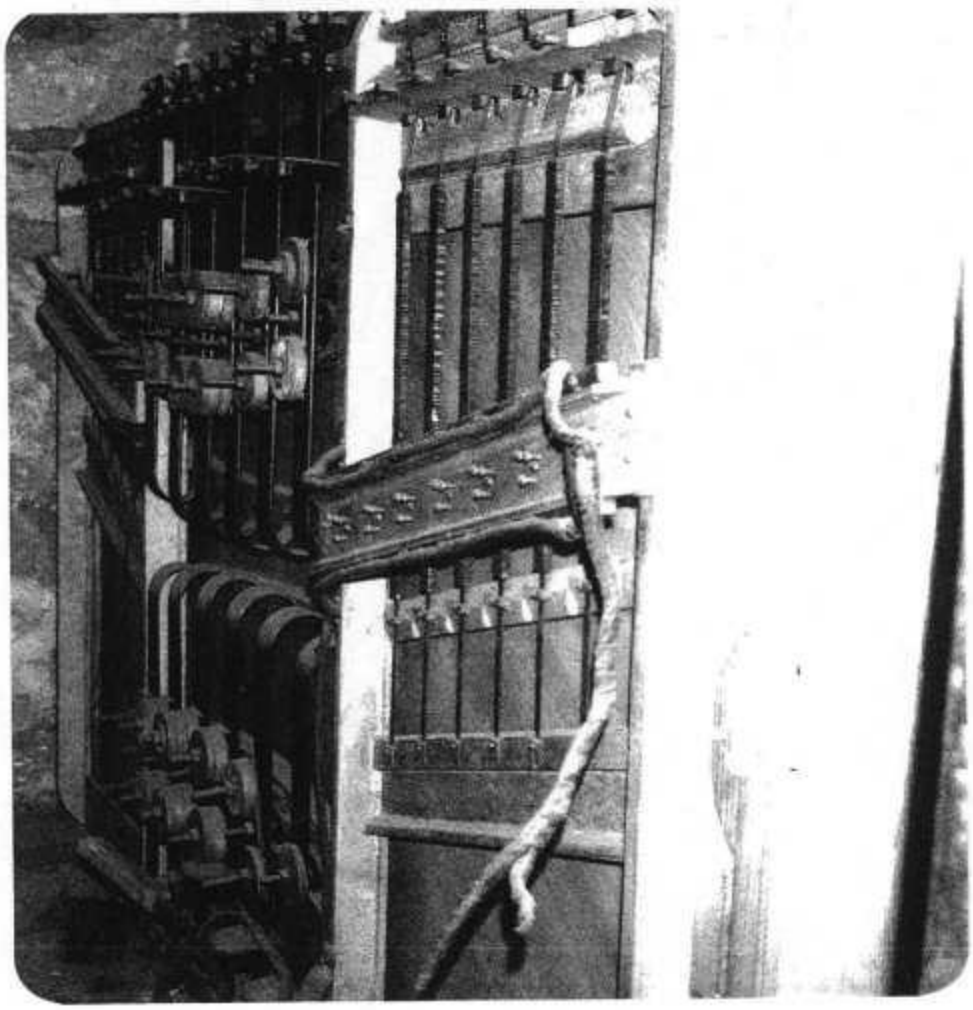


Fig. 6. Double bass unit.

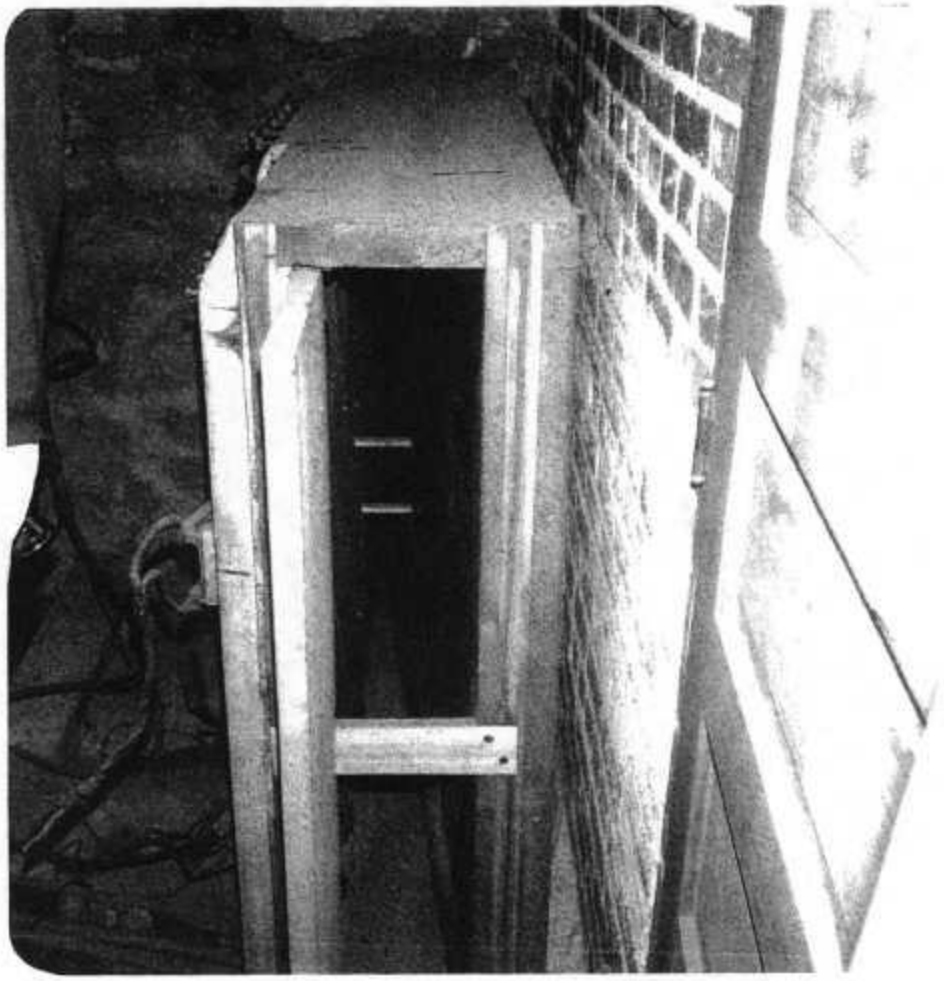


Fig. 7. End of double bass unit, showing soundposts connecting the two soundboards.

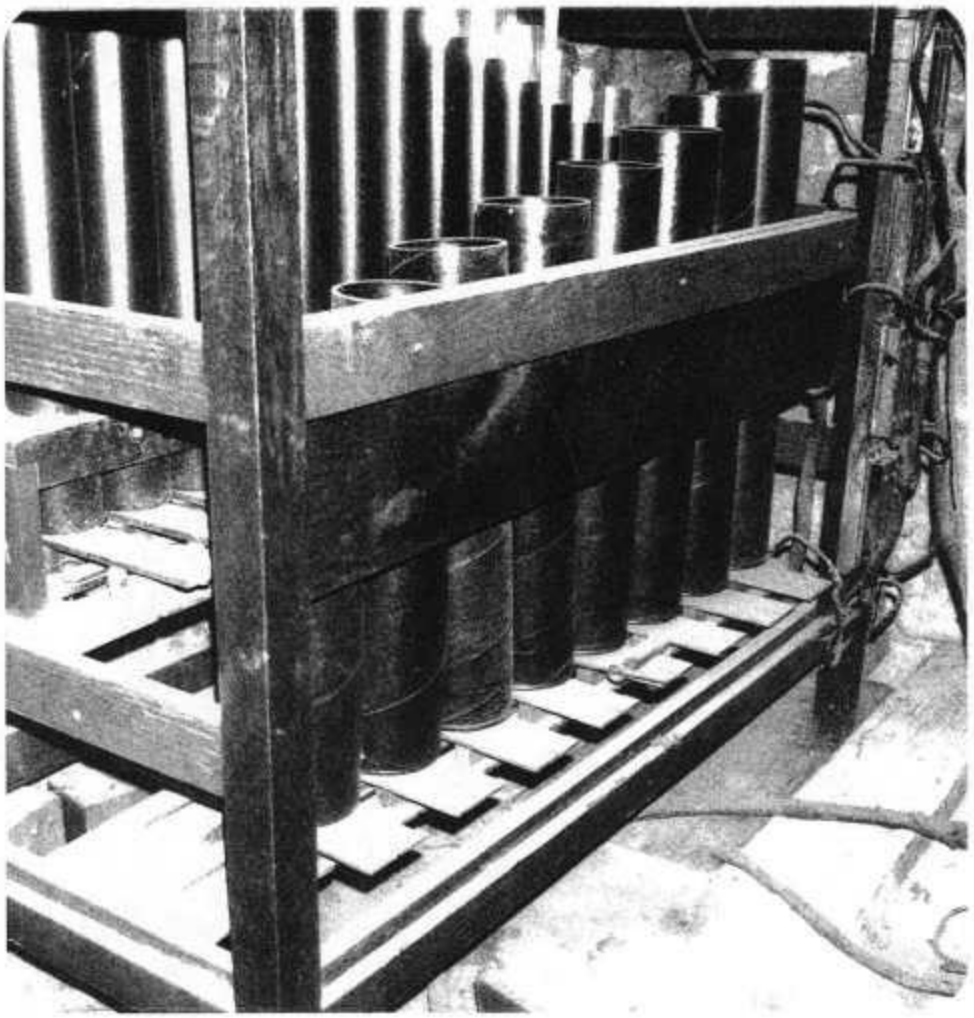


Fig. 8. Auxiliary unit, aluminum. Right hand, lower

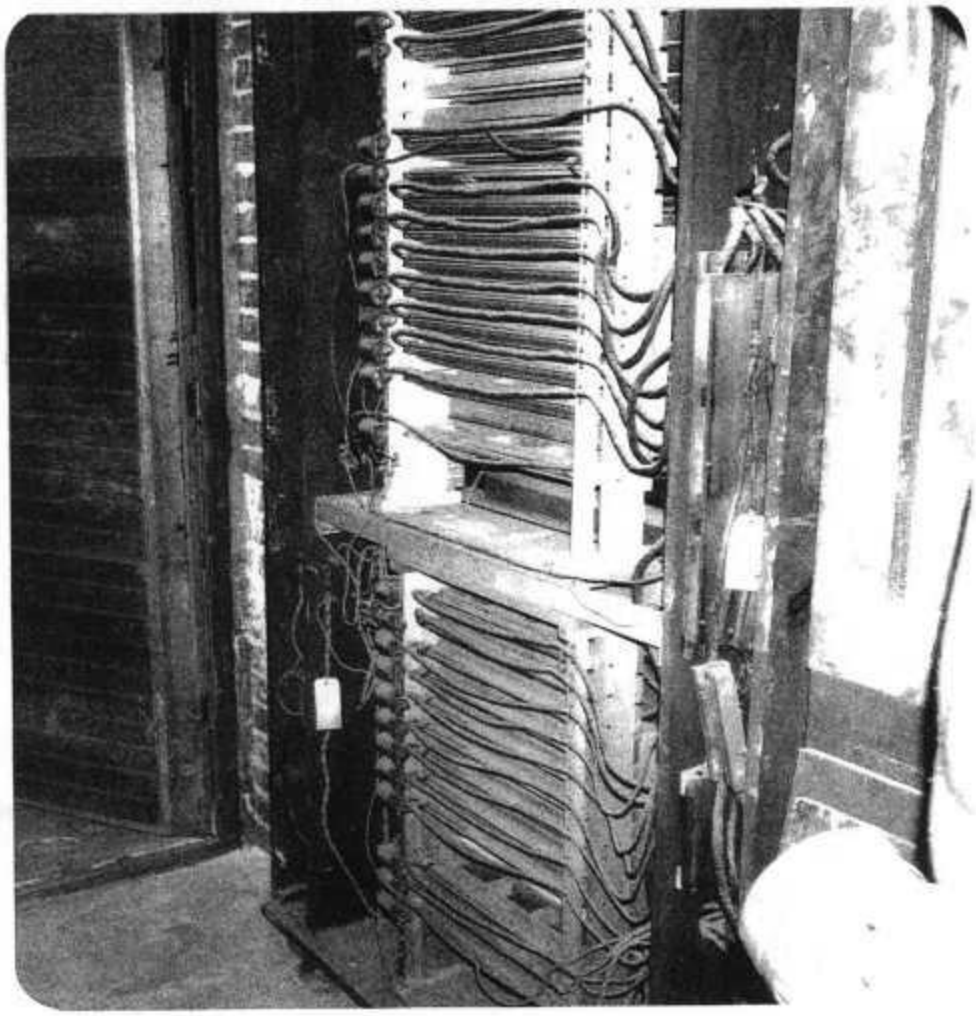


Fig. 9. Roller switches operating the stops from the tabs at the console.

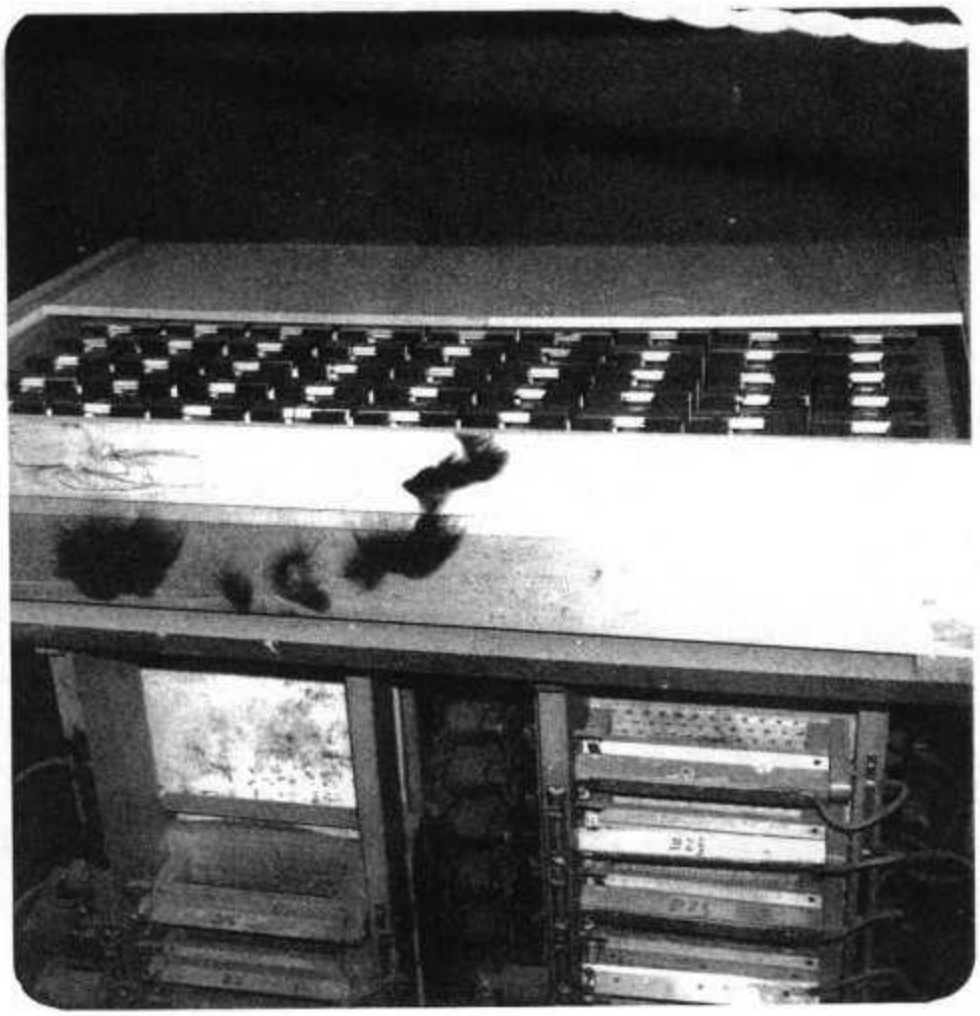


Fig. 10. (upper shelf) Remote relays operating from the contacts at the keys.

Fig. 11. New interruptor mechanism, never uncrated. Note the heavy electromagnetic flywheel just showing at the top.

Fig. 12. Parts of the old interruptor mechanism.

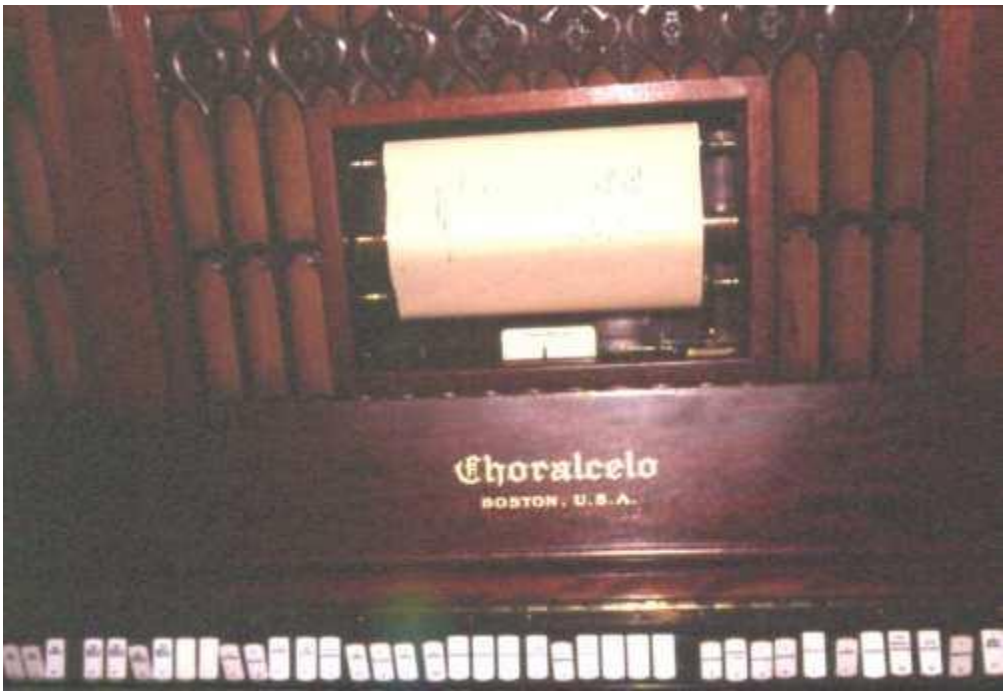
A Choralcelo in Elkhart, Indiana

Note: The following pictures were kindly provided by Keith Bigger who found and photographed a Choralcelo in the **Ruthmere** mansion in Elkhart, Indiana, USA, in June 2002.

Main entrance to **Ruthmere** mansion in Elkhart, Indiana.

The Choralcelo in its main room setting.

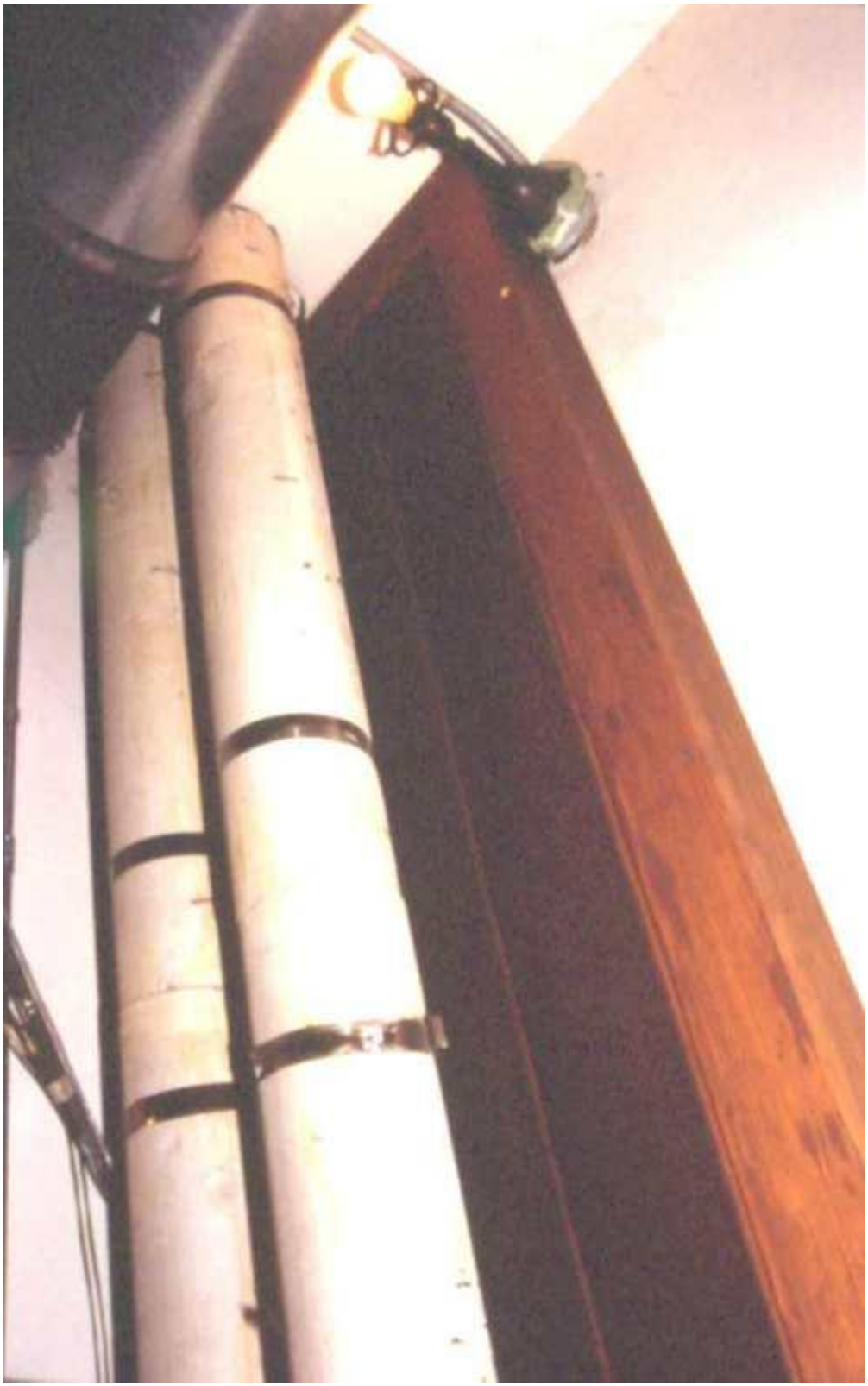
The Choralcelo console.



The Choralcelo with its roll mechanism.

The organ chamber, formerly housing Choralcelo remote components, now housing a Hillgren Lane pipe organ with additions.

Another view of the organ chamber.



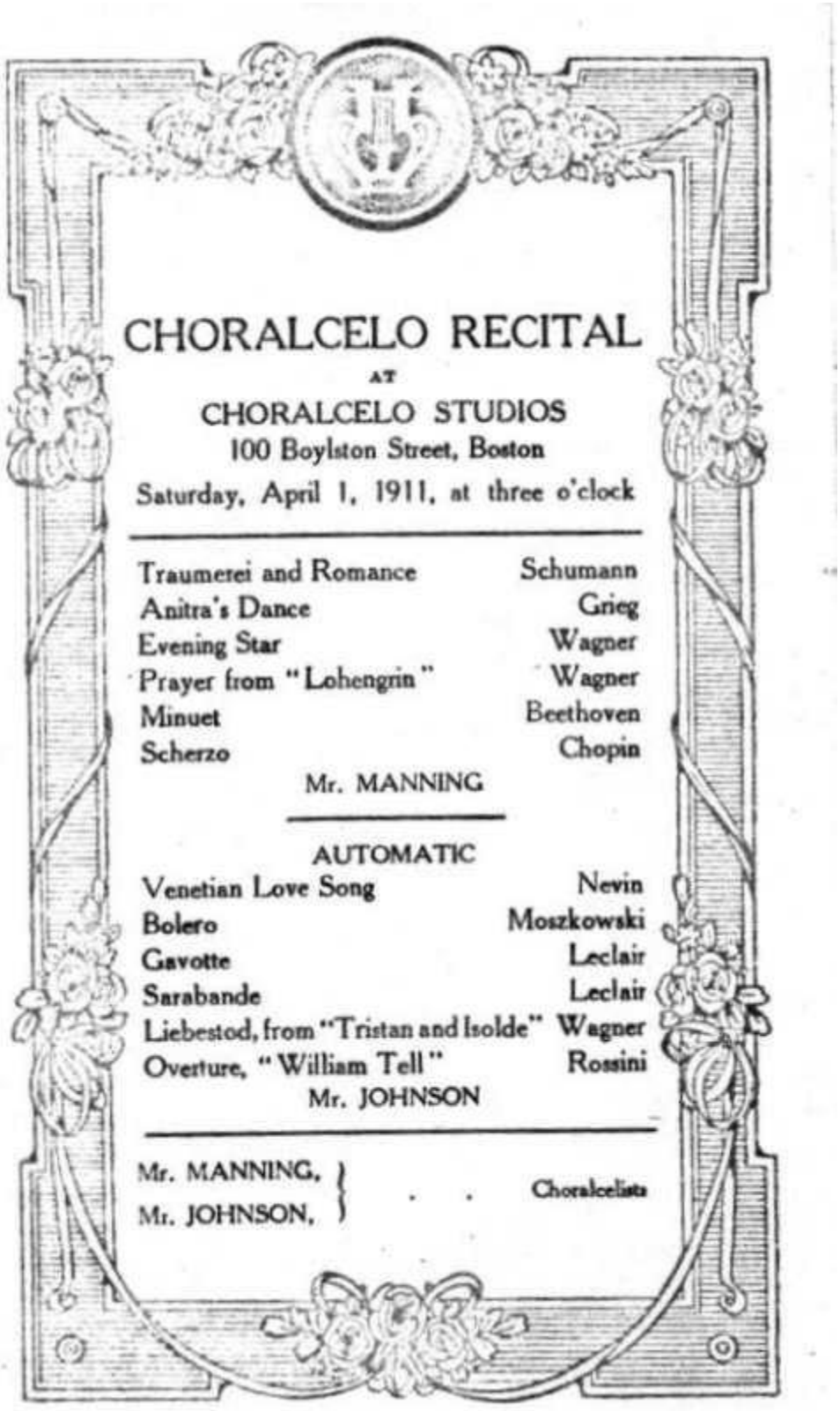
One of several sets of swell shades in chamber ceiling.

Tone opening into library. Similar set of grates at opposite side of room.

Choralcelo Recital Programs

Note: The following documents are from the Wade Jenkins collection.

The Choralcelo in Recital



CHORALCELO RECITAL

AT

CHORALCELO STUDIOS

100 Boylston Street, Boston

Saturday, April 1, 1911, at three o'clock

Traumerei and Romance	Schumann
Anitra's Dance	Grieg
Evening Star	Wagner
Prayer from "Lohengrin"	Wagner
Minuet	Beethoven
Scherzo	Chopin

Mr. MANNING

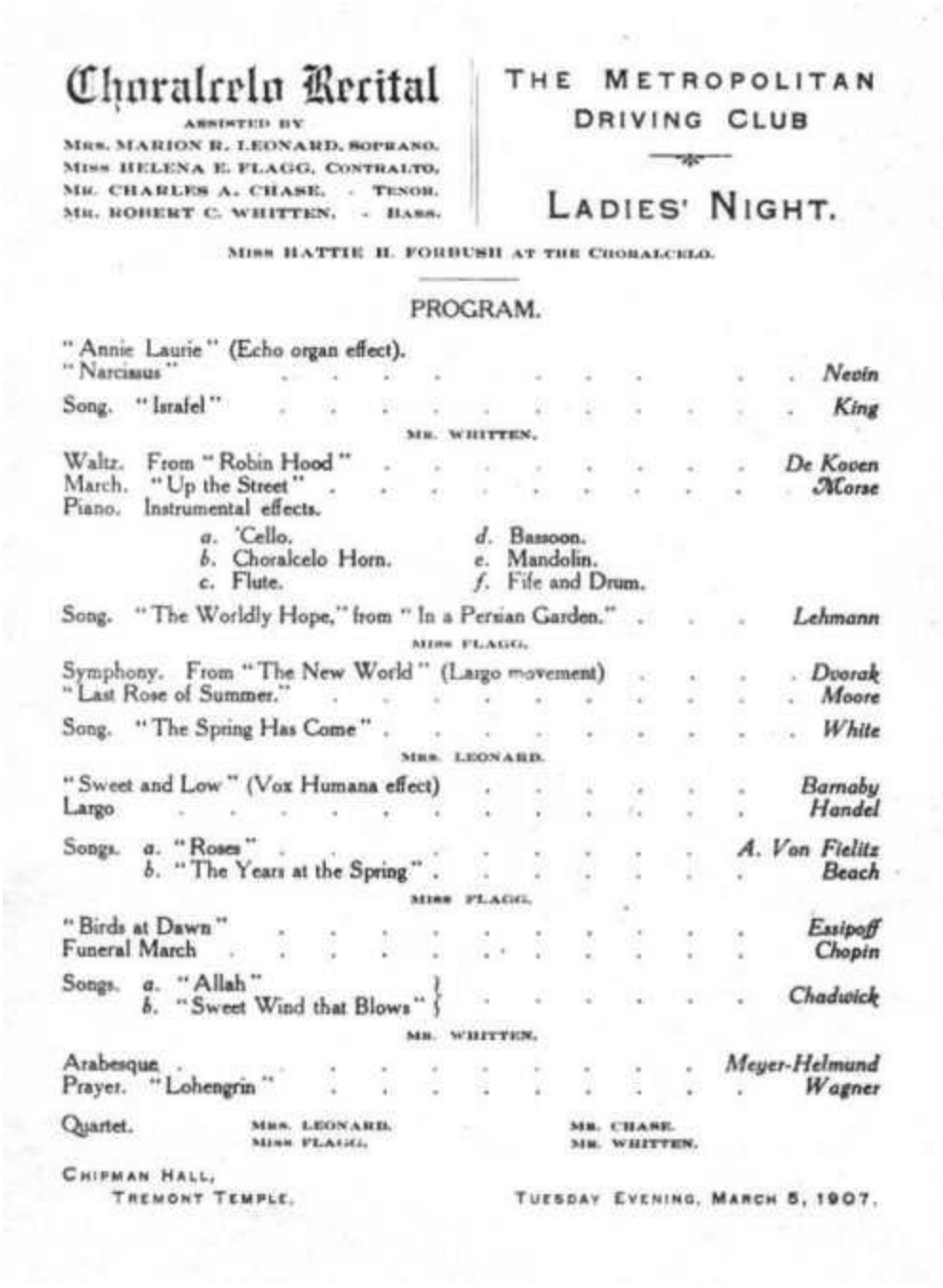
AUTOMATIC

Venetian Love Song	Nevin
Bolero	Moszkowski
Gavotte	Leclair
Sarabande	Leclair
Liebestod, from "Tristan and Isolde"	Wagner
Overture, "William Tell"	Rossini

Mr. JOHNSON

Mr. MANNING, }
Mr. JOHNSON, } . . . Choralcelists

Choralcelo Studios, Boston, MA, 1 April 1911.



Choralcelo Recital

ASSISTED BY

Mrs. MARION R. LEONARD, Soprano.
Miss HELENA E. FLAGG, Contralto.
Mr. CHARLES A. CHASE, - Tenor.
Mr. ROBERT C. WHITTEN, - Bass.

THE METROPOLITAN DRIVING CLUB

LADIES' NIGHT.

Miss HATTIE B. FORBUSH AT THE CHORALCELO.

PROGRAM.

"Annie Laurie" (Echo organ effect).
"Narcissus" . . . . . *Nevin*

Song. "Israfel" . . . . . *King*

Mr. WHITTEN.

Waltz. From "Robin Hood" . . . . . *De Koven*
March. "Up the Street" . . . . . *Morse*
Piano. Instrumental effects.

a. 'Cello.
b. Choralcelo Horn.
c. Flute.
d. Bassoon.
e. Mandolin.
f. Fife and Drum.

Song. "The Worldly Hope," from "In a Persian Garden." . . . *Lehmann*

Miss FLAGG.

Symphony. From "The New World" (Largo movement) . . . . *Dvorak*
"Last Rose of Summer." . . . . . *Moore*

Song. "The Spring Has Come" . . . . . *White*

Mrs. LEONARD.

"Sweet and Low" (Vox Humana effect) . . . . . *Barnaby*
Largo . . . . . *Handel*

Songs. *a*. "Roses" . . . . . *A. Von Fielitz*
b. "The Years at the Spring" . . . . . *Beach*

Miss FLAGG.

"Birds at Dawn" . . . . . *Essipoff*
Funeral March . . . . . *Chopin*

Songs. *a*. "Allah" } . . . . . *Chadwick*
b. "Sweet Wind that Blows" }

Mr. WHITTEN.

Arabesque . . . . . *Meyer-Helmund*
Prayer. "Lohengrin" . . . . . *Wagner*

Quartet. Mrs. LEONARD. Miss FLAGG. Mr. CHASE. Mr. WHITTEN.

CHIPMAN HALL,
TREMONT TEMPLE.

TUESDAY EVENING, MARCH 5, 1907.

Ladies Night, Metropolitan Driving Club, Boston, MA, 5 March 1907.

Dedication Recital

Lake Mohonk Mountain House

Saturday Evening, September 25th, 1915

Presentation of

The Choralcelo

An appreciation to Mr. and Mrs. Daniel Smiley from guests who have attended the Lake Mohonk Conferences on "International Arbitration" and of "Friends of the Indian and other Dependent Peoples."

Miss Martha E. Pettit
Mr. Kenneth Shaw Usher } Choralcelists
Mrs. Jesse S. Ames, Pianist
Mrs. Margaret Graham Smith, Soprano
Mr. Martin Richardson, Tenor

The Choralcelo

(Celestial Choir)

MODERN composers have wandered far from the beaten paths in search of a more subtle tone language than music has yet employed. But is it not possible, after all, that there is something prophetic in the striving of these men and in the direction in which they have been looking for a neccssary revitalization of musical art?

All this is but an interesting speculation, yet it receives a most interesting and suggestive confirmation in the wholly new field of tone effects opened by the invention of the Choralcelo.

Vibration without contact, involving perfect freedom of the vibrating mass—nothing less than that is its wonderful accomplishment. Thus, the Choralcelo gives all the natural overtones and harmonics, rich, full, pure and perfect, and opens to the musician possibilities of expression and emotional power hitherto undreamed of.

The tone, in its full purity, is of a strangely celestial quality. It permeates the air, and appears to surround the hearer, as though the very air had awakened into song.

One of the great triumphs of the Choralcelo is that this new musical language is understood with equal readiness by the trained musician and the untrained layman, for it is no other than the native language of the heart, and it speaks alike to all. It speaks a new and purer language.

Certain it is that the Choralcelo will prove to be one of the great, beneficent gifts of inventive genius to mankind, enlarging musical art, adding new delight to life, healing our overstrained nerves, and realizing something of that poet's imagination when,

> . . *"the night shall be filled with music,*
> *And the cares that infest the day,*
> *Shall fold their tents like the Arabs,*
> *And as silently steal away."*

From *The New England Magazine*

Program

1. (a) Caprice Viennois . . . . . Kreisler
   (b) Liebesfreud . . . . . Kreisler
   Miss Pettit
2. (a) Communion in G Major . . . Batiste
   (b) La Cinquantine . . . . Gabriel-Marie
   Mr. Usher
3. Aria from "Tosca," "Recondita-Armonia" Puccini
   Mr. Richardson
4. Hymn St. Cecelia . . . . . Gounod
   Mrs. Ames and Mr. Usher
5. Ave Maria . . . . . Bach-Gounod
   Mrs. Smith, Mrs. Ames, Mr. Usher
6. (a) Valse Lente from "Sylvia" . . . Delibes
   (b) Scherzo . . . . . Mendelssohn
   Miss Pettit
7. (a) Prelude to "Parsifal" . . . . Wagner
   (b) Pilgrims' Chorus from "Tannhauser" Wagner
   Mr. Usher
8. Invocation . . . . . Ganne
   Mrs. Ames and Mr. Usher
9. Berceuse from "Jocelyn" . . . . Godard
   Mr. Richardson
10. (a) Barcarolle . . . . . Tschaikowsky
    (b) Arabesques on Strauss Waltz Schulz-Evler
    Miss Pettit
11. "The Little Gray Dove" . . . . . Saar
    Mrs. Smith
12. (a) Largo . . . . . Handel
    (b) "The Swan" . . . . . Saint Saens
    (c) "Evening Bells" and "Cradle Song" Marfarlane
    Mr. Usher

Committee

Horatio C. King
James M. Taylor
Hamilton Holt
Edward P. Bates
Frank J. Linsley

Lake Mohonk Mountain House, New Paltz, New York, 25 September 1915.

Choralelo Program

Intermezzo ..... *Mascagni*

Pilgrims Chorus ..... *Wagner*

Serenade ..... *Schubert*

Gavotte ..... *Thomas*

Sextette ..... *Donnizetti*

A Day in Venice
"Dawn"
"Gondoliers"
"Venetian Love Song"
"Good Night" ..... *Nevin*

Waltz, "Spring Beautiful Spring" ..... *Linche*

Introduction, 3rd Act, Lohengrin .... *Wagner*

Berceuse ..... *Godard*

Barcoralle ..... *Offenbach*

Selections from Faust ..... *Gounod*

Choralelist, Mr. Walter E. Young

MAY 9, 1910

Hotel Somerset, Boston, MA, 9 May 1910.

Timeline for the Choralcelo

(Historical precedents to 1900)

3rd century BC — **Hydraulos** - Invented by Ktesibios (or Ctesibius), a Greek engineer, to solve the age-old question, "How can a person play more than one instrument at a time?" He created an air chamber in a tub of water that was filled by a hand pump. The pressure was regulated by the weight of water. Mechanical levers or switches would send the air to different pipes. Of course, the modern pipe organ was basically the same concept. By the 15th Century CE organs had grown to be the first additive synthesizers, using multiple pipes for each note, adding harmonic complexity as well as volume.

1400s — **The "hurdy-gurdy"** - This is similar to an organ grinder in concept. By rotating the handle, wheels are set in motion and rub against different strings to create a melody. Other strings resonate to create a drone. Could this instrument be considered the first strap-on synthesizer with built in sequencer?

1641 — **Pascaline** - At the age of 21, Blaise Pascal developed a calculating machine very similar to designs found (in 1997) in old manuscripts from Leonardo Da Vinci. Although these adding machines made no music, they are pre-cursors to the modern computer and, thus, digital synthesizers.

1644 — **The Nouvelle Invention de Lever** - This was a hydraulic engine which produced musical sounds.

1759 — **Clavecin Electrique** - The "electric harpsichord" invented by Jean-Baptiste de Laborde and built (in 1761) by Abbe Delaborde in Paris, France. Via a short harpsichord-like keyboard, clappers, charged with static electricity, were activated to ring bells.

1761 — **Panharmonicon** - This was a mechanical keyboard instrument that automated the playing of flutes, clarinets, trumpets, violins, cellos, drums, cymbals, triangle, and other instruments (guns?). It was invented by Johann Maelzel who, at some point, convinced Ludwig Van Beethoven to compose for it. Beethoven wrote "Wellington's Victory" for it and started to write the battle symphony "The Battle of Victoria" for the Panharmonicon, but quarrels between him and Maelzel later changed his mind. Although the Panharmonicon was mechanical and not electrical, the spirit of the invention lives on in today's sampling instruments.

1796 — **The Music Box** - Watchmaker A. Favre invented this early instrument in Geneva.

1832 — **Telegraph** - Samuel Morse invented the telegraph which allowed rhythmic pulses to be broadcasted great distances. Unfortunately, to our knowledge, these

rhythmic pulses were not musical in nature, but restricted to the Morse Code, also developed by Samuel Morse.

1833-34 **The Difference Engine** - Invented by Charles Babbage, a British scientist, this machine futhered the eventual development of the modern computer.

1859 David E. Hughes invented a typewriting telegraph utilizing a piano-like keyboard to activate the mechanism.

1867 **Electromechanical Piano** - Developed by Hipps (first name unknown) who was a director of the telegraph factory in Neuchatel, Switzerland. The keyboard activated electromagnets that activated dynamos (small electric generators) which produced sound. Dynamos where later to be used in Thaddeus Cahill's Dynamophone (also known as the Telharmonium).

1876 **Telephone** - Alexander Graham Bell invents a way to transmit the voice over a telegraph wire.

Electroharmonic or Electromusical Telegraph - Elisha Gray (also an inventor of a telephone, but beaten to the patent office by Bell) invented this simple keyboard with oscillators for each key. That's right, oscillators. Mr. Gray found that he could create a self-vibrating electromagnetic circuit, basically a single frequency oscillator. He could transmit music over a telephone line. Later he built a simple speaker to make the sounds audible without a telephone line. This instrument transmitted musical tones over wires. Not to be done out by Gray, Alexander Bell developed a similar instrument he called the "Electric Harp."

1877 **Phonograph** - Invented by Thomas Edison, this early device used a diaphragm with an attached needle to record sound on a wax cylinder. The cylinders didn't last very long but Edison thought this device could be used for businesses. This invention, the same concept as Edison but using either a cylindrical system or a disc system, was simultaneously developed and patented by Emile Berliner.

1877 **Loudspeaker** - Ernst Wermer of Siemens, Germany patented it first on Dec. 14, 1877, but Sir Oliver Lodge of the UK patented it on April 27, 1978 in the UK. However, music had yet to be converted into electrical signals in order to be played on these speakers.

1883 **Bell Laboratories** - This laboratory (at American Bell Telephone Company first called the Electrical and Patent Department and later, in 1884, refered to as the Mechanical Department) was established by Alexander Graham Bell, who financed it with his own money. This lab was later to contribute significantly to recording and transmitting sound. Research here also led to the development of the GDS/Synergy instruments.

1887 **Player Piano** - Invented in the US, this instrument could record a performance on a paper roll. This roll could be copied and manufactured and distributed to

people with player pianos to reproduce the performance, much like MIDI files are traded today.

1888-1909 **Choralcelo** ("Heavenly Voices") - This instrument was developed by Melvin Severy and his brother-in-law, George B. Sinclair, in Arlington Heights, Massachusetts, USA from 1888 to 1909 when it was debuted in Boston, Massachusetts.

The Choralcello was manufactured by the Choralcelo Manufacturing Co. It was sold as an expensive home organ for social music recitals. The company was taken over by Farrington C. Donahue and A. Hoffman. As far as we know, at least 6 were sold.

Much like the Telharmonium, the Choralcelo used an electro-acoustic system to generate organ sounds. However the Choralcelo went a step further and also had piano-like strings that were either struck with piano-type hammers or vibrated electromagnetically.

The Choralcelo had two keyboards, an upper 64-note keyboard played the tone wheels and activated electromagnets to vibrate the strings, having organ style, with stops to control the timbre by passing the sound through cardboard, hardwood, softwood, glass, steel resonators. and the lower 88-note keyboard played the strings like a piano.

The Choralcelo optionally incorporated into the instrument a player-piano styled paper roll device for automatic playing of performances. The entire instrument tended to be very large, consuming up to an area the size of "two basements" with only the keyboards and speakers publicly visible.

1897 **Telharmonium or Dynamophone** - Thadeus Cahill applied for and was granted patent number 580,035 entitled *Art of and Apparatus for Generating and Distributing Music Electronically*. His idea was to create an electric machine on which music could be played and distributed through the phone lines to businesses, hotels and private homes. He would do this by using dynamos which produces an alternating current, a sine wave (in this case the dynamo is also called an "alternator"). He did this with electromagnets and very large tone wheels. In 1898 Cahill began working on his machine in Washington D.C. (see 1901)

1898 **Telegraphone** - This, the first magnetic recording machine was patented by Valdemar Poulson. The theory behind this machine was worked out theoretically by Oberlin Smith of the UK in 1888. Poulson's machine recorded by passing a thin wire across an electromagnet. Each minute section of the wire would retain its electromagnetic charge, thus recording the sound. Sound could be both recorded and played back. Unfortunately, because the machine's output wasn't very loud and there was no way to amplify the signal, the Telegraphone was not much of a success.

1898 **Stereo Phonograph** - developed by Edison.

1899 **Singing Arc** - This was arguably the first fully electronic instrument. It was developed by William Duddell from the technology used in the carbon arc lamp,

an electric precursor to the light bulb used in England and throughout Europe. The problem with the carbon arc lamp was that it made a lot of noise, from a low hum to an annoying high pitched whistle. Mr. Duddell, an English physicist was commissioned to investigate the sound that these lamps made. He found that the more electricity was applied to the lamp, the higher the resulting pitch. To demonstrate this phenomenon, he hooked up a keyboard to the lamp and called it the Singing Arc. The Singing Arc could be heard without the benefit of an amplifier or speaker. At a lecture to the London Institute of Electrical Engineers, the keyboard was hooked up to the building's arc lamps and it was found that no only did they all sing but those in the other buildings on the same circuit sang also. Although this demonstrated a method of transmitting music over a distance, it was never developed further. Duddell never even applied for a patent for his machine. However he did tour the country and show off his Singing Arc, which never became more than a novelty.

An interesting side story to all this: A few years earlier, in 1887, a Dutch inventor discovered that a sound waves could be used to modulate the intensity of a flame produced by gas under pressure (a manometric flame).

Edith Borroff Article 1982

College Music Symposium Proceedings

Spring 1982, Vol 22, No. 1

The Choralcelo:

One Uniquely American Instrument

By Edith Borroff

State University of New York at Binghamton

Some time ago an article appeared in this journal setting forth what I knew about an instrument called the Choralcelo (chor-AL-sel-lo), on which my mother had given concerts for several years after the first World War. It was a keyboard instrument that incorporated a piano but was more like an organ, with several sounding units – aluminium, iron, steel, hardwood, softwood, and in some cases glass, activated by sympathetic vibration through the placement of magnets near (but not on) the sounding bodies and activating the magnets electrically. Each unit could be activated independently, in any combination. The choralcelo is listed by Marcuse only on a list of "electrophonic pianos," but I knew it to have been more than that.

It was my hope that the article would lead to additional information regarding the instrument, so that I could present more substantial proof of its existence and perhaps even find existing components. This article comprises a report on the results of the first, which has done its work. I have found two surviving instruments (one of them in part playable) and I have examined one of them; and although I have not heard one, I now believe that reconstruction is possible.

Correspondence first documented the existence of three installations in the state of New York. One was in a hotel lobby in New York City, evidently a temporary installation for promotional purposes. This instrument had a glass unit which was described as "ethereal." Another person who heard this instrument said that there was "a miraculous sound about it that has never been duplicated." (My mother had also given a recital at Wanamaker's Department Store in New York.)

The second was at Mount St. Mary's, evidently a retreat house, near Niagara Falls. The instrument was in the chapel, and a photograph of the console reveals nothing. A booklet states that the Choralcelo was installed "with full appreciation of the remarkably soothing effect of music on the mind and nerves" and an appreciation of the choralcelo's unique qualities. "The choralcelo at Mount St. Mary's consists of a master instrument and eight subsidiary instruments or 'echoes,' as they are called, placed in various parts of the building, thus at will flooding with celestial harmony the entire structure or any selected part of it."

The third was installed at the Mohonk Mountain Lodge in New Paltz in 1919 and was used in concerts there for close to forty years. (It was sold in 1962 or 1963.) It did not have a glass unit. Rachel Orcutt, a Massachusetts girl and a student of Esther Norse Green (in turn a student of Edward MacDowell) in Boston, had been introduced to the instrument in the Boston showroom, and had become skilled in performance on it. She gave concerts in Boston, and in 1919 was hired to play the instrument at the Lodge; she married into the family of the owners and has been there ever since. Now Rachel Smiley, she welcomed me cordially, showed me the ballroom in which the instrument had been installed, and advanced my knowledge of the spread of the instrument. She told me that she gave concerts not only in Boston, but in Chicago (at more than one location, including Marshall Field's department store), Geneva (Illinois), Oyster Bay (Wisconsin), Grand Rapids

(Michigan) and at the Belmont Hotel in New York City. Mrs. Smiley did not know what happened to the instrument which had been at the Mohonk Mountain Lodge.

A fourth instrument can be shown to have been installed on a yacht. A photograph of the main cabin shows the console against the port bulkhead at the aft end; the caption states that the auxiliary units are placed across the forward bulkhead.

The fifth instrument is the one in which my hopes reside. A correspondent sent me to a piano restorer in Colorado Springs, Mr. Art Reblitz, who examined a choralcelo in the Denver area. Mr. Reblitz has been most cordial, most helpful, and has put me in touch with the owner of the instrument, also providing the photographs which accompany this article; my debt to him is great.

The owner of the instrument has also been most kind and cooperative, generously affording me an afternoon to visit and examine the components during the CMS-AMS-SMT meetings in November of 1980. He also answered the questions which my limited technical competence allowed me to ask.

This choralcelo was the project of a wealthy man who had a particular love for the instrument, and in building a beautiful home in the Denver area had the ballroom and adjoining area – an entire wing, to be exact – designed specifically to house and display the instrument to best advantage. The console is set into the one interior wall of the ballroom, and is of wood matching the paneling of the room. Figure 1 shows it without the matching bench. Figure 2 is much clearer and reveals the two manuals very clearly; the upper manual is of 61 organ keys, the louver is a piano keyboard, and the pedalboard is standard. The specifications are given on page 54. No identification is visible when the instrument is closed, but under the keyboard in discreet lettering is the legend "Choralcelo, Boston USA." But the tone generator crate bears the label "from Choralcelo Company of America, 561 East Illinois St., Chicago, Ill." Figure 2 also shows the decorative panel above the keyboard removed, with part of the piano action visible behind. Mr. Reblitz adds that "there is supposedly an 88-note roll player built into the console which was moved and then paneled over, but I haven't seen it."

The piano mechanism is of a grand piano upended, behind the console. Thus the console is also a piano unit. The piano can still be played; it can also be turned off. But in the functioning instrument, the piano strings could also be played through magnets (or with both magnets and hammers). Nothing electrical is currently connected in the Denver instrument.

Two rooms of the basement are given over to auxiliary units, relays, generators, and other gear. Lighting conditions were poor and my knowledge of electrical devices minimal. I shall not attempt to describe the units but will show four of them. Figure 3 shows a unit of metal bars (probably aluminium); these are ranked by pitch and have resonating tubes (some of which have been removed). Figure 4 shows a wood unit, possibly mahogany. Figure 5 shows another metal unit, possibly steel. Figure 6 shows the bass unit of iron buggy springs, attached to two piano sounding boards about eight feet apart (Figure 7), with two sound posts. Figure 8 shows a softwood unit. There was also a rack where an additional unit had been, but the components were gone. It may have been the elusive glass unit, since it is probable that the sounding elements were hung from it in a manner unlike the positioning of the elements in the other units.

In addition to the units were a great many relays and many disconnected wirings. Figure 9 shows one of the relay panels (of provenance unknown to me). Figure 10 shows pedal relay switches. How complete is the gear I have no way of knowing, but it is extensive and may be fairly complete.

The original pulse generator unit is gone, but of vital importance is the stand-by equipment ordered by the original builder, and as Mr. Reblitz put it, it is "sitting in a crate in the basement.... ; Also during subsequent remodelings of the house, most of the cables to the tone generators were cut; so that the instrument. needs a lot of repair work before anyone will hear one peep out of it.'" Nonetheless, the cables are there.

Hope for reconstruction of this instrument resides in the presence of the ear, in the still-crated pulse generator unit, and most importantly in the fact that the mansion housing the instrument has recently been declared a "historic building" and is in the process of restoration. The owner is eager to have the instrument rebuilt, and will – I know – be cooperative with anyone with serious intent to accomplish it.

Finally, through another correspondent I was led to a surviving choralcelo in Massachusetts, in the Boston area. I have not had time to visit the installation, but I have spoken with the owner by telephone and ascertained that this is the instrument from the Mohonk Mountain Lodge, and that the aluminium unit is in working order. And I have received a letter detailing the installation as follows:

"My own instrument has a two-manual console in walnut, inlaid and with hand carved ornaments. It has a piano and organ on the lower manual and organ alone on the upper – it is the improved system Choralcelo developed just at the end of their brief span of existence. The strings are in the console and can be played with the hammers alone, hammers plus magnets, or magnets alone. It has a matching bench and full pedal board. In addition, it has a. music roll playing mechanism for Choralcelo rolls of which I have a few. At one time this installation included xylophone [evidently wood bars] and glockenspiel [probably steel] but these have been removed.

Other units include rosewood bars, steel bars, aluminium bars, chimes, multiple sounding board bass, bar bass, and remote strings. I also have an experimental oboe unit that was discontinued when they originated a way of deriving reed tone by building up harmonic development in the revised wiring system. My own interruptor mechanism is of the disc type, which was another Choralcelo trial, and is a double one on one frame. Some of the larger installations had to use two separate interruptions and this was a means of avoiding that complication. There is also a large motor-generator mechanism for providing the 30 V, D.C. necessary and two large cabinets containing the various electrical controls, quality controls, rollers, rheostats, etc.

We have four instruments in all, one a smaller version with only one keyboard and no additional units. Most of the interruptor mechanisms were of the cylinder variety. These were nine cylinders geared to revolve at different speeds. Each cylinder had eight tracks providing interrupted current for eight notes; thus the highest and lowest notes of the piano keyboard did not have magnets for choralcelo tone. The drums were brass with sections of porcelain set in to provide the make 8c break action in the flow of current to the silver brushes which rode on them."

The Massachusetts owner thus may be equally knowledgeable about structure; he would prove helpful in a reconstruction of the Denver instrument. Of this mechanism, Mr. Reblitz adds:

"The Choralcelo relay is similar to an ordinary unified pipe organ relay, but with the addition of the "interruptor" – it could also be called a "pulse generator" or "frequency generator."

Each stop switch on the organ actuates a relay having 61 contacts (for the 61 organ keys) or 52 contacts (for the 32 pedals). This connects the keyboard or pedal board to a particular tone generator, with one electromagnet for each note. In series in the same circuit is the interruptor, with a frequency generating disc appropriate for each key and tone generating magnet. If the 'flute' stop is turned on, and A above middle C is played, the circuit made by depressing 'A' is routed through an interruptor disc having 440 make-and-break segments per second; from there, the 440 hz signal is routed through the 'flute' switch on the relay to a tone generator supposedly capable of sounding like a flute, in which an electromagnet turns on & off 440 times per sec., exciting a bar, plate or string into the same frequency vibration. It's a simple concept but one which is hard to execute because of the amounts of current required to do all that vibrating of the tone generating components. [The Massachusetts owner] told me that the contacts in the interruptor had to be adjusted frequently as they wore down – probably by a combination of friction and sparking."

It is doubtless this mechanism which lies in the crate in the Denver mansion's basement. A photograph of the top of the crate (Figure 11) shows the discs. And in another basement area, where there is still considerable gear, there remains a stack of old interruptor contact blocks (Figure 12).

The final help may not be inconsiderable: the various components bear patent numbers (46 patent numbers are legible in the Denver installation), so the original drawings would be available for scrutiny.

The choralcelo becomes more and more fascinating as the search continues. Surely with components at hand, the promise of help from two knowledgeable men, and the lure of unheard sounds, there breathes someone who will be piqued by challenge and opportunity, and seek funding from some agency or foundation to underwrite the reconstruction of the Denver area choralcelo. For this instrument was genuinely unique and genuinely American, and it would be a great shame if it were to be heard no more.

Specifications

Toe Studs:	Manual II Octave Coupler 16'	Manual II
	Manual II Octave Coupler 4'	Manual I
	Total-Coupler	Sforzando
	Soft Piano	Piano Solo
	Pedal	
Stop Tabs:	Ped Diapason 16'	II Sub-Octave 16'
	Ped Man I Coupler	II Fundamental 8'
	Ped Man II Coupler	II Octave 4'
	Ped Octave Coupler 8'	Octave Quint 2 2/3
		Super Octave 2'
	II Gedeckt 8'	II Solo 16'
	II Viole D'Orchestra 8'	Blank (yellow)
	II Violine 4'	Blank (red)
	II Flugel Horn 8'	I Instrument No. - 1
	II Gemshorn 4'	I Instrument No. - 2
	II Clarinet 8'	I Diapason Bass 8'
	II Cornopean 8'	I Fundamental 8'
	II Vox Humana 8'	I Octave 4'
	II Octave Coupler 16'	I Chimes
	II Octave Coupler 4'	II to I Manual Coupler 8'

II Tremolo

Blank (red)

II Chimes

II Echo

II Diapason Bass 8'

II Instrument No. - 1

I Instrument No. - 2

Blank (yellow)

II to I Manual Coupler 4'

I Claribel Flute 8'

I Diapason 8'

I Dulciana 8'

I Dulcet 4'

I Violoncello 8'

I Wald Horn 8'

I Cor de Nuit 4'

I Saxophone 8'

I Major Reed 8'

Article from the Electrical Experimenter. March 1916

Note: The pictures (Figures) at the bottom of this article are "simulations" from other existing photographs. The original article, from which the following was transcribed, was an extremely poor multi-generation photocopy. If and when an original copy of this article appears, better quality pictures will then be provided.

The Electrical Experimenter
March 1916

The Choralcelo, a Wonderful Electric Piano

This Marvelous Electrically Operated and Controlled Musical Instrument is More Than a Piano - It Produces Sustained Notes of the Lowest and Highest Register, Over a Range Heretofore Unattainable, and, Moreover, is Played Like a Regular Piano

In India, far away, as the popular song goes, the natives are content to regale themselves musically with plaintiff notes given forth by a goat skin stretched over the end of a hollowed log, upon which the musician beats a tune with the flat of his hand.

The music of the caveman was the wind is sighing through the trees, accompanied by the rustle of the leaves. Even they wanted to express themselves in a harmonious manner, hence the drum, the horn and other crude instruments of musical expression.

Then we may possibly expect some marked advances in our musical culture and education since the advent of the "Choralcelo," despite the prophecies of those who take a pessimistic view of life in general.

The piano becomes a tongue-tied infant beside the latest masterpiece of the musician's art. At times its notes thunder forth and seem to shake the very earth itself, and then again they may be subdued to an elusive softness like unto the faint notes of a distant church choir.

But what is it? How is it accomplished? What is the result of many years of untiring labor on the part of several of the cleverest men of the world? What is it upon which a fortune that would ransom a king has been spent? The Choralcelo!

The Choralcelo, the most wonderful musical instrument ever thought out by the human mind, is like nothing else the world of music has ever known. This masterpiece reproduces any piece of music in any form of instrument, from a string to a flute; not only does it reproduce them, but the notes emitted by it are sustained, pure and sweet, which is entirely different from the ones produced by the instruments that are in present use.

Practically all the musical instruments, previous to the invention of the Choralcelo, carry into the tone which they produce certain impurities which arise from the manner in which they are caused to vibrate. The violin interrupts the free vibration of the string by the grating rub of the bow. The piano adds the noise that results from the blow of the hammer on the string - while the organ mingles the *breathiness* of its air current with the pure vibrations of the column of air in the pipe. In like manner all instruments employing extraneous contacts to start the vibration destroy the purity of the note produced. And as they seek to amplify the tone they have produced they increase the intrusion and false sounds. The soft pedal of the piano, the swell-box of the organ, the mute of the violin, are just so many outrages on the purity of the tone.

The Choralcelo, by the very means which it employs in producing the tones, is freed from all obstructions. Vibration without contact, involving *perfect freedom of vibration*, and thus the Choralcelo gives all the natural overtones and harmonics; rich - full - pure and perfect, thus opening to the musician wonderful possibilities of expression and emotional power of which he possibly never dreamed.

The manner in which this result is accomplished is one of wonder. It is the subtle pull of the electro-magnet which now achieves pure tone production. These electro-magnets are caused to act directly upon the strings of the instrument.

The most delicate graduation of tone power can be produced by the mere variation of the strength of an electric current, and not by *smothering* devices which the present form of instrument employs. The tone, therefore, retains all its original purity through all vibrations and intensity, something that has been impossible heretofore.

We will next inspect the mechanism employed to perform these wonders. It may be stated that the vibrating elements are caused to oscillate by means of a pulsating electric current sent through an electro-magnet acting on the vibrating membrane.

The machine which beaks up continually the electric current into a series of waves is really the "heart" of the Choralcelo. The operating device consists essentially of a series of metal discs having a certain number of insulating segments inserted into their peripheries. These discs are arranged to revolve at a fixed speed. Silver-tipped brushes are so placed that they will bear upon the revolving discs. It will thus be seen that in order to produce the fundamental periodicity of any given "string", it is only necessary to rotate a disc containing a certain number of segments at the correct speed.

A large number of combinations are possible through the manipulation of a few keys, which correspond to the stops of an organ, and such a keyboard is clearly shown at Fig. 1. This resembles a piano, and it really is one, with additional keys and pedals. The pedals are used to vary the strength of the current sent through the electro-magnets.

A tremolo effect is given by means of a slow speed interrupter giving a pulsating current at a few revolutions per second. The instrument which produces this effect is depicted on the right of Fig. 2, while the one towards the left reproduces tones representing a flute. The regulation piano tone is produced with the usual percussion hammers, which may be thrown into or out of action by the pressure of a key. The staccato notes of the piano may be struck upon strings already vibrating with the pulsating current. Thus sustained notes of a higher pitch are produced upon the string.

A piano which employs both the electro-magnets and hammers is clearly shown on the left of Fig. 3. Note the large number of wires which are employed for connecting the various for connecting the various magnet coils. It is an engineering feat in itself to even make and wire the various circuits.

Marvelously sweet tones are produced by vibrating pieces of brass, wood and aluminum. In fact, any resonant body susceptible to vibration may be made to emit tones. In order to cause these bodies to vibrate, it is necessary to place within them a small piece of iron, so that the electro-magnets may attract them. Instruments that are operated by this method are depicted in Fig. 3. The one toward the right is an instrument that imitates a flute. The electro-magnets are placed underneath the tubes, which are made out of wood and act as resonating chambers. The magnets are caused to act on iron discs mounted at the lower end of the tube. Another style of flute instrument is illustrated in Fig. 4. This employs a different variety of tubes, ranging from a very high tone to a very low one. The smaller pipes give the latter tone, while the larger ones the former.

The instrument shown in the center of Fig. 3 illustrates a brass chime. The tones are produced by hammers, each of the tubes being supplied by one. These are operated by electro-magnets, as perceived in the upper bracket of the stand. These are also connected to the same keyboard.

The very deep tones of an organ are produced by vibrating diaphragms placed beneath metal horns. A pair of electro-magnets are held a minute distance away from the diaphragm and serve to vibrate the latter when the pulsating current is applied. The volume of the tones is powerful and is very pleasant although it is very low. By increasing the power in the electro-magnets, the strength of the tones is so much increased that it is almost impossible to imagine the effect.

"Echo" combinations may also be installed without limit wherever their effect may be most beautiful at any distance from the master instrument. Thus the greatest cathedral may be filled with a glory of sound. The tower may be used to flood the surrounding country with the same divine melody. It may also be carried to the quiet cloister and to the private room. An instrument played in one place may repeat its music elsewhere.

The Choralcelo was developed and its wonderful basic principle discovered by Melvin L. Severy of Arlington, Mass., and George B. Sinclair. These savants have been working for twelve years to bring this musical instrument up to the perfection which it has reached today. One cannot predict its possibilities or limits as it is really still in its early stages of development.

We are indebted to Wilber E. Farrington of the Choralcelo Co., for our illustrations.

Fig 1. - Appearance of the Choralcelo, Showing Keyboard

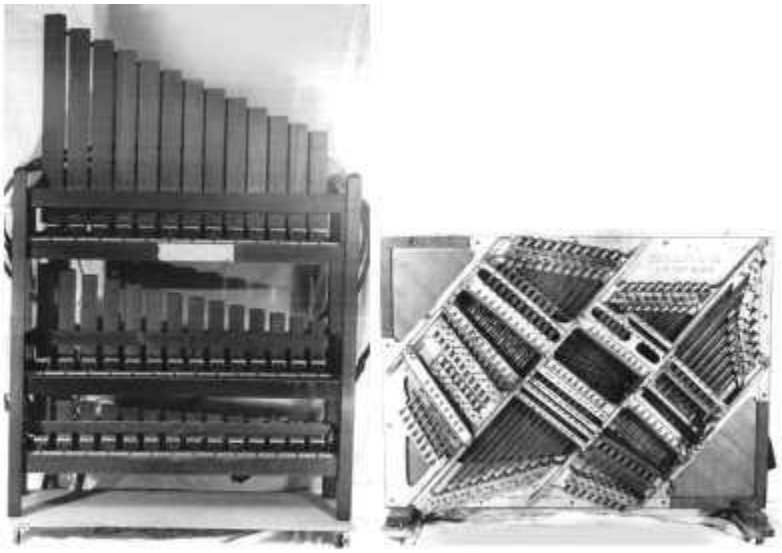


Fig 2. - Instruments for Producing Special Music

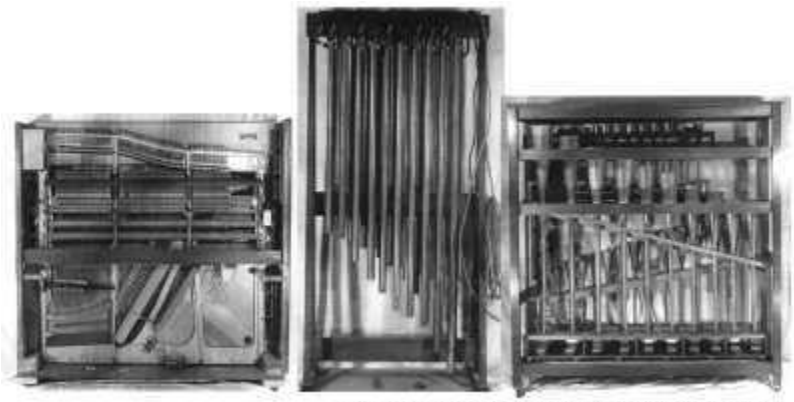


Fig 3 - Various "Chime" and "Flute" Attachments

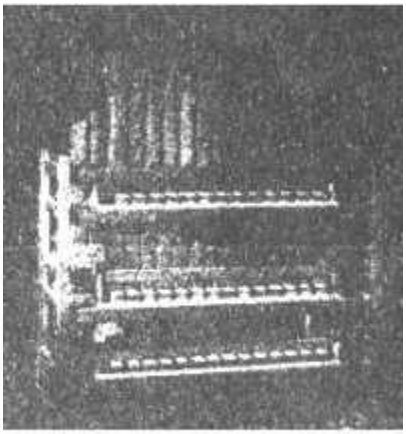


Fig 4. - "Flute" Auxiliary Apparatus having great range.

Choralcelo Promotions (1)

Choralcelo Promotions

Holland House & Church of St. Aidens

HOLLAND HOUSE

5TH AVENUE AND 30TH STREET

NEW YORK CITY

THE MANAGEMENT BEGS TO ANNOUNCE TO ITS PATRONS THAT IT HAS JUST INSTALLED IN THE LOUNGING ROOM ON THE FIRST FLOOR, A "CHORALCELO", WITH ECHO ATTACHMENT, THE MOST REMARKABLE MUSICAL DISCOVERY OF THE PRESENT DAY.

THE HOLLAND HOUSE BEING THE FIRST HOTEL IN NEW YORK CITY TO POSSESS ONE OF THESE INSTRUMENTS, A SERIES OF DAILY RECITALS WILL BE GIVEN, COMMENCING DECEMBER 12, 1911, DURING THE HOURS OF 4 P.M. TO 5.30 P.M., WHEN AFTERNOON TEA WILL BE SERVED, AND 8 TO 10 P.M., COFFEE AND LIQUEURS, ETC.

ON SUNDAY EVENINGS A SPECIAL CONCERT, WITH ORCHESTRA AND SOLOIST, WILL BE GIVEN, COMMENCING AT 8 O'CLOCK.

Holland House, New York City

Church of St. Aidan

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CORNER OF QUEEN ST. EAST AND SILVER BIRCH AVE.
BALMY BEACH

STAFF

Rector—E. A. McINTYRE, M.A., B.D., 15 Cedar Ave.
Parish Missionary—W. A. EARP, B.A., Kangra, India.
Hon. Lay Reader—G. M. RITCHIE, ESQ., M.A., 38 Leuty Ave.

WARDENS

Rector's Warden—F. M. BAKER, ESQ., 44 Balsam Ave.
People's Warden—J. A. H. BURT, ESQ., 115 Balsam Ave.

2nd SUNDAY AFTER TRINITY—June 21st, 1914

Services To-Day

8 a.m.—Holy Communion

11 a.m.—Morning Prayer and Sermon

HYMNS . . . . . 387, 410 (III.), 656, 636 (I.)
ANTHEM . . . . . Hear us, Oh Lord . . . . . HANDEL
SERMON (Beaches Lodge, A.F. & A.M.) . . . . . THE RECTOR

7 p.m.—Evening Prayer and Sermon

HYMNS . . . . . 482, 457, 494 (II.), 18
ANTHEM . . . . . There is a Blessed Home . . . . . MARKS
SERMON . . . . . THE RECTOR
VESPER—First Stanza of Hymn 399 . . . . . Tune "Abend"

ORGAN SELECTIONS

MR. KENNETH SHAW USHER, OF BOSTON, MASS.

Morning Offertory

INVOCATION . . . . . DUBOIS

Evening Recital after Benediction

ANDANTE CANTABILE . . . . . WIDOR
REVERIE . . . . . LEMARE
MARCH . . . . . MERKEL
ABENDLIED . . . . . JACKSON

Other Services

WEDNESDAY—St. John Baptist (June 24).

HOLY COMMUNION at 7.30 a.m.

SUNDAY NEXT

HOLY COMMUNION at 8, 11 a.m., and Evening.
EARLY SERVICE—Observance of St. Peter, Apostle and Martyr (June 29), and Monthly Corporate Communion of A.Y.P.A. and S.S.
DOMINION DAY PATRIOTIC SERVICES.
RECITAL after Evening Prayer.

Notice

The New Organ — Of course, there are various expressions of opinion, but they are but differing expressions of one opinion; and that of pleasure and satisfaction. Many who came in doubt departed convinced, and all who came expectant went away with a smile.

The recitals given so generously and acceptably by Mr. Usher this past week have illustrated the wide possibilities and the unique tone quality of the Choralcelo. We are convinced that we have a recital instrument that is a distinct contribution to the musical equipment of our city. But, beyond that, none who united with us in Divine worship last Sunday will ever forget the inspiration of the magnificent congregational singing, impelled by the remarkable leading of our new instrument under the master hand of our guest from Boston. Did you ever hear such singing in this or any other church — except at to-day's services?

Choralcelo means "celestial choir"; the whole congregation is a celestial choir when it surrounds us all with its wonderful strains. We are not boasting, but we are and ought to be very happy and thankful.

The handsome and dignified appearance of the organ woodwork, both in the chancel and baptistry, has provoked universal comments of approval and praise.

Altogether, we feel these days that if any "St. Aidanite" is not enthusiastically proud of his parish, he — well, perhaps he just needs a summer holiday.

Church of St. Aidan, Toronto

Choralcelo Promotions (2)

Choralcelo Promotions

Choralcelo Installations

THE CHORALCELO

(Celestial Choir)

THE discovery of the Choralcelo principle of tone production was but the taming to music's sway of a force as old as Nature herself.

For the first time was tone produced, as in the human voice, by pure vibration without the blow of hammer, the scrape of bow, or the force of rushing wind.

Those accepted devices are but crude means of causing vibration, when compared to the perfectly controlled, living vibration by which the Choralcelo draws pure tone from string, or wood or bar of steel.

No instrument is as flexible to install as the Choralcelo, for its units are connected to the manual only by electric wires. Units can be concealed in unused spaces behind panelling or below the floor. Or they can be cased to harmonize with the room and placed as furniture.

Installations of the Choralcelo have been adapted to produce varied effects, and to meet so many architectural limitations that the picturing of a few present installations will serve to suggest still other arrangements, that can be made ideal for homes of every type.

CHORALCELO GALLERIES

17 EAST FORTIETH STREET

NEW YORK

THE RESIDENCE OF HENRY L. BRITTAIN, ESQ.
GREENWICH, CONNECTICUT

One of the largest Choralcelo installations is being built for this beautiful home. Units in the cupola will serve as an echo in the house, and their tones can be controlled to float softly or majestically over the entire estate and the surrounding country.

THE HOME OF ROBERT V. V. SEWELL, ESQ., OYSTER BAY, LONG ISLAND

The Choralcelo is installed in both the house and the gardens

RECENT CHORALCELO PATRONS

	Architect	*Interior Decorator*
Mrs. Georgia Timken Fry, Rodin Studios, New York City	Cass Gilbert	
E. D. Anderson, Esq., Hotel Des Artistes, New York City	Stuart Travis	
John F. Braun, Esq., Merion, Pa.	Day & Klauder	
J. E. Aldred, Esq., Locust Valley, N. Y.	Bertram C. Goodhue	Irving & Casson
Arthur H. Marks, Esq. (Yacht "Aramis"), Akron, Ohio		H. F. Huber
J. E. Liggett, Esq., Port Washington, L. I.	Tracy & Swartout	H. F. Huber
H. L. Brittain, Esq., Greenwich, Conn.	James C. Greene	
William Sloane, Esq., Norfolk, Va.		W. & J. Sloane
Judge H. D. Rummel, Esq., Charleston, W. Va.		W. & J. Sloane
B. R. Deming, Esq., 2485 Fairmount Blvd., Cleveland, O.	Howell & Thomas	
Edward A. Deeds, Esq., Dayton, O.	Schenck & Williams	
J. Harrington Walker, Esq., Walkerville, Ont.	Albert Kahn	
P. A. Myers, Esq., Ashland, Ohio	Vernon Redding	H. F. Huber
W. H. Foster, Esq., Elkhart, Ind.	E. H. Turnock	Tobey Furn. Co.
Berne H. Hopkins, Esq., Colorado Springs, Colo.	MacLaren & Thomas	
C. S. Church, Cleveland, O.	Fred'k W. Striebinger	
Hough Avenue Congregational Church, Cleveland, O.	Hubbell & Benes	
Tioga Theatre, Philadelphia, Pa.		
Henry Miller Theatre, New York City	Paul R. Allen	
America Theatre, Denver, Colo.	H. C. Ingalls	

THE CHORALCELETTE represents the smallest type of the Choralcelo. It consists of a complete scale of metal bars and is so designed as to permit of its being easily attached to any piano, either upright or grand, as well as a pipe-organ. It is not only available for hand playing but in cases where it is attached to automatic instruments it responds perfectly to music rolls, adding its charming tones to those previously existing.

The Choralcelette is equipped with the means of building up composite tones of the ideal character of the flute, clarinet, oboe, horn, diapason, together with its own simple tones, sub-octave, super-octave, etc. The response is instantaneous—volume and tone quality are under the absolute control of the player.

In attaching this instrument to piano or organ the original instrument meets with no interference. The equipment permits of the playing of the piano alone or the Choralcelo alone and of the joining of the two instruments into one as desired.

The Choralcelette meets the desire for sustained tones, as of the organ, where space would not permit of the installation of any of the larger types of the Choralcelo.

From a scientific and educational standpoint the Choralcelette is bound to prove invaluable in the home and school, especially in the case where an opportunity is offered to train children by this means to the true standard of tone purity. Small churches with neither space nor funds will welcome this type as an addition to their present instrument, offering them highly inspirational music at moderate cost.

Directors of the Choralcelo Company

Directors of the Choralcelo Company

President

WILBER E. FARRINGTON, — *Boston.*
President Farrington Manufacturing Company.

Vice-President

JAMES SPEARS, — *Canton, N. Y.*
President St. Lawrence County National Bank.

Second Vice-President

HENRY C. DELANO, — *Boston.*
Formerly Cobb-Bates & Yerxa Company.

Treasurer

HARRY J. FARRINGTON, — *Boston.*
Treasurer and General Manager Farrington Manufacturing Company.

Secretary

GEORGE E. HILLS, — *Boston.*
Attorney; Secretary and Director Farrington Manufacturing Company.

WILLIAM F. AIKEN, — *Greenfield, Mass.*
Treasurer Greenfield Savings Bank.

ERNEST D. ANDERSON, — *New York.*
Engineer.

ARTHUR J. BALDWIN, — *New York.*
Griggs-Baldwin & Baldwin, Attorneys.

WILLIAM L. BARRELL, — *Boston.*
President and Treasurer Lawrence Duck Mills.

E. K. BEDDALL, — *New York.*
President E. K. Beddall & Company, Inc., Insurance Experts.

LORENZO BENEDICT, — *New York.*
President Worcester Salt Company;
Director Merchants Exchange Bank;
Director Remington Typewriter Company.

WILLIAM J. BOARDMAN, — *Boston.*
Director George Batten Company, Advertising, New York.

GEORGE H. COREY, — *Boston.*
Director and Cashier Peoples National Bank.

GEORGE I. FISKE, — *Boston.*
Electrical Engineer.

GEORGIA TIMKEN FRY, — *New York.*
Capitalist.

RALPH B. GRIFFIN, — *Franklin, N. H.*
President G. W. Griffin Company;
Treasurer Valdez Creek Placer Mining Company, Alaska.

MITCHELL KENNERLY, — *New York.*
President Anderson Art Galleries;
Publisher and Editor "The Forum."

HON. WILLIAM S. KYLE, — *Plymouth, Mass.*
Ex-State Senator; Bradford-Kyle Company.

CHARLES MATLACK, — *Boston.*
Treasurer Massachusetts Title Insurance Company;
Trustee Title Guarantee & Trust Company, New York.

FREDERICK L. MILLIKEN, — *Boston.*
F. L. Milliken & Company, Bankers and Brokers.

HORACE J. PHIPPS, — *Boston.*
Horace J. Phipps & Company.

WILLIAM E. PUTNAM, JR., — *Boston.*
Putnam & Cox, Architects.

DAVID SHAW, — *Boston.*
Lee-Higginson & Company.

FRANKLIN H. WARNER, — *New York.*
Treasurer Warner Chemical Company;
Treasurer Monarch Chemical Company.

CHARLES S. WATERHOUSE, — *New York.*
Waterhouse-Resher Company, Wholesale Woolens.

Choralcelo Promotions (3)

Choralcelo Promotions

Choralcelo Installations (2)

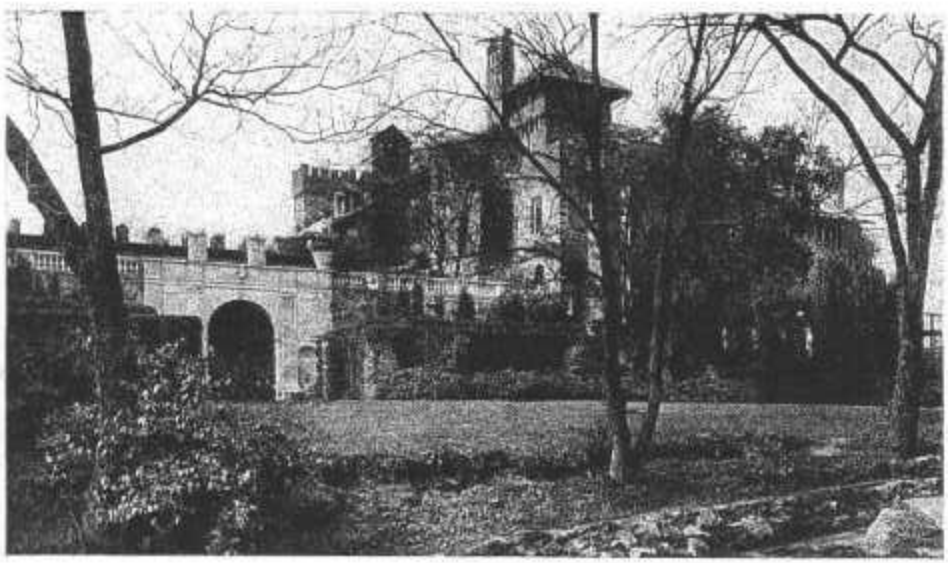
CHORALCELO GALLERIES, INC.
17 EAST FORTIETH STREET
NEW YORK

INSTALLING
THE CHORALCELO
(CELESTIAL CHOIR)

INSTALLING
THE CHORALCELO
(CELESTIAL CHOIR)

Briefly describing a few of the unlimited possibilities for installation, which Choralcelo construction make available.

CHORALCELO GALLERIES, INC.
17 EAST FORTIETH STREET
NEW YORK



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GREENWICH, CONNECTICUT

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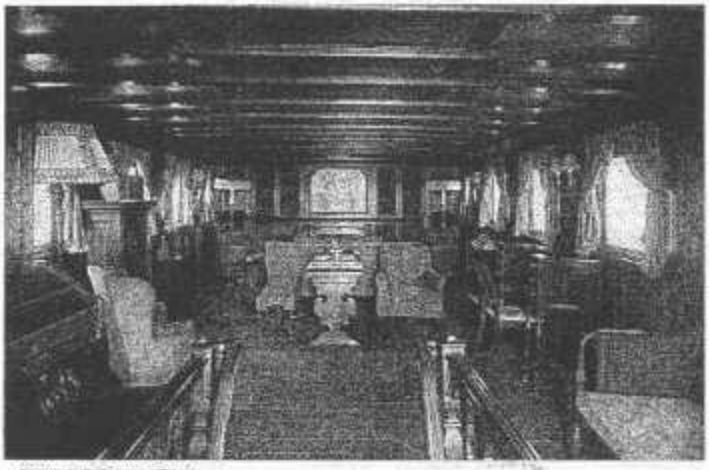
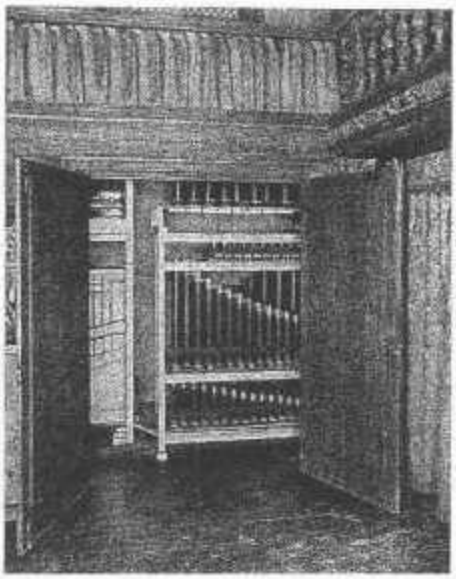


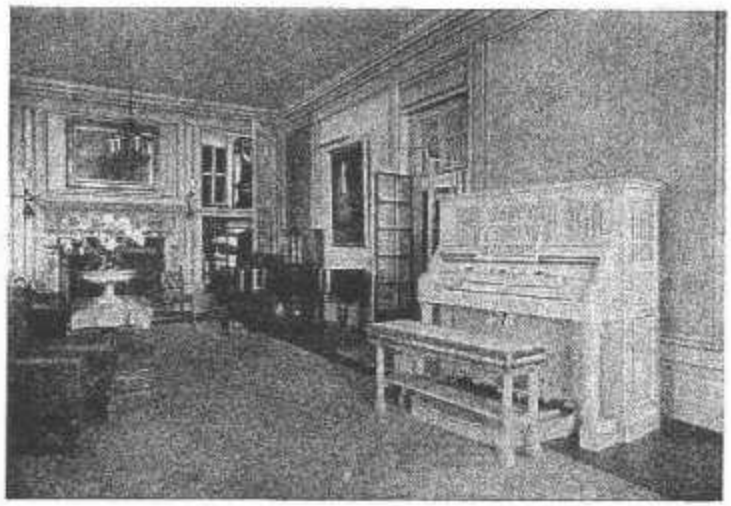
"THE ARAMIS"
YACHT OF ARTHUR H. MARKS, ESQ.

The Choralcelo manual-unit occupies the space at the extreme left, and the auxiliary units are placed across the end of the cabin, occupying a depth of only twenty-two inches.

Besides its advantages in beauty and variety of tone, the Choralcelo is the only instrument that can be placed in such limited space.

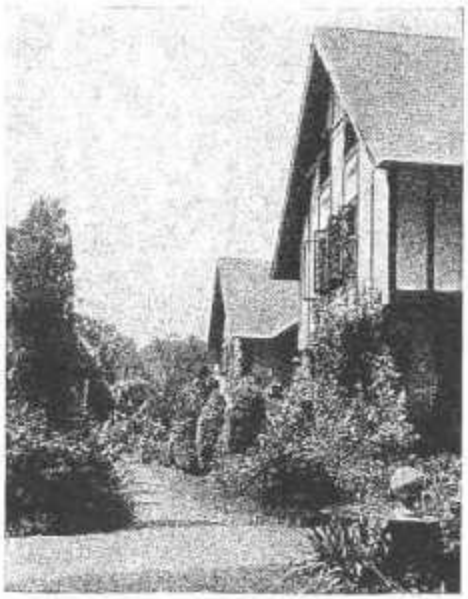


Two of the units at close view; screened by the paneling in the illustration on preceding page.



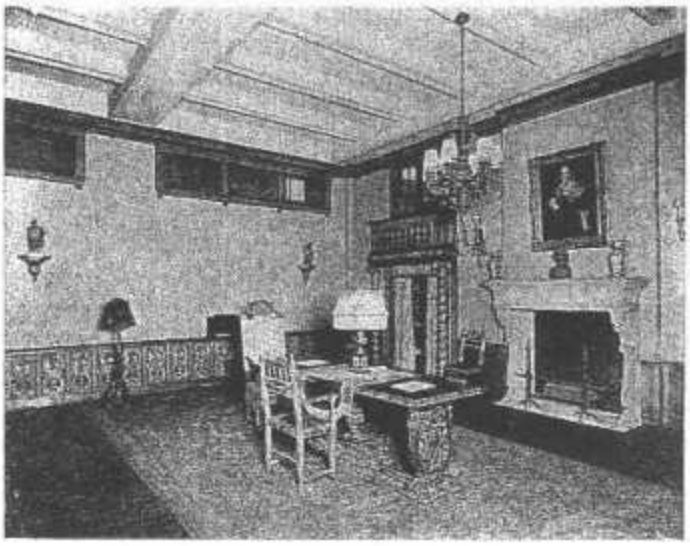
THE RESIDENCE OF JOHN F. BRAUN, ESQ.
AT MERION, PA.

The Auxiliary units have here been placed in a closet at the extreme end of the room, the tones finding outlet through grill work in the door.



THE HOME OF ROBERT V. V. SEWELL, ESQ., OYSTER BAY, LONG ISLAND

The Choralcelo is installed in both the house and the gardens.



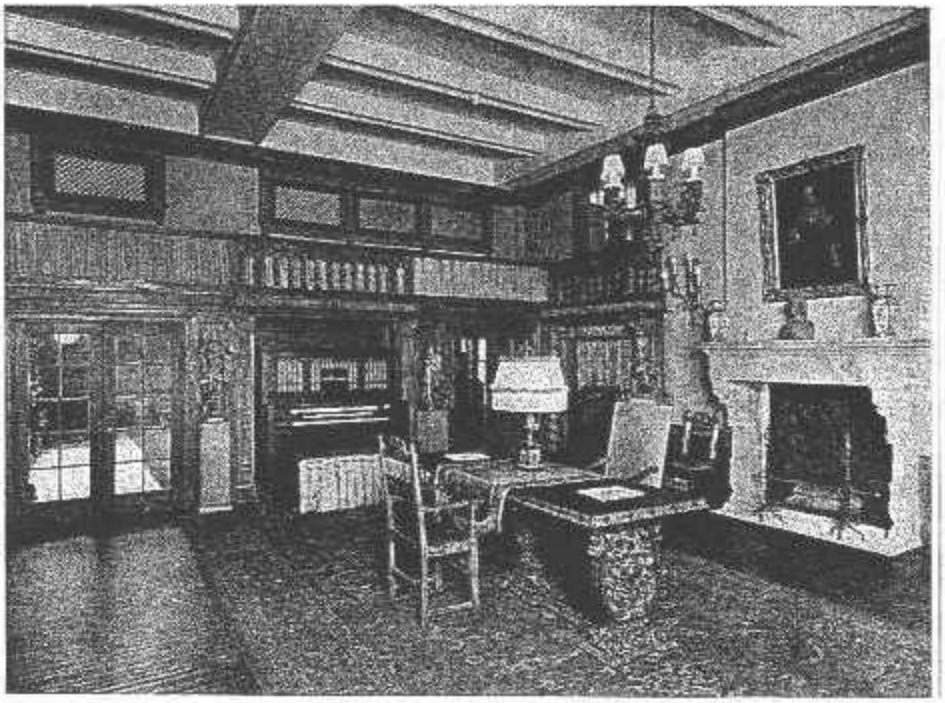
BEFORE INSTALLING THE CHORALCELO

The facing end of the room suggests itself for the best placing of a musical instrument. The accomplishment of full orchestral effects would here be impossible except for the Choralcelo.

THE CHORALCELO—IN BRIEF

In appearance the main instrument resembles a large upright piano, there being two types, one-manual and two-manual, with the regular keyboard, pedals, swells and stops for control of tone mixture; it has a regular piano action which can be used independently or in conjunction with the Choralcelo tone.

Co-ordinated with it may be smaller instruments containing sets of sonorous bodies, such as steel, aluminum, or wooden bars. The whole group, or parts of it, is played from the keyboard of the main instrument—either by hand or with music rolls. No pipes or wind are used.



THE CHORALCELO INSTALLATION COMPLETED

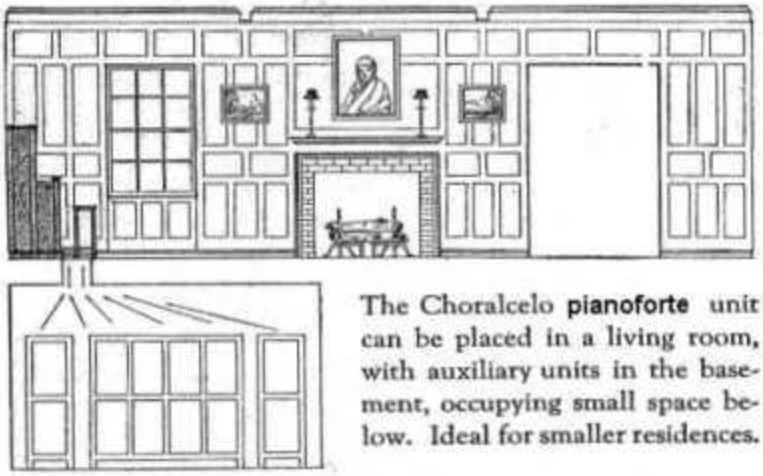
The manual-unit in the center of wall space and the harmonized paneling add to the beauty of the room and conceals five Choralcelo units, providing unlimited combinations of tone effect.

ITS POSSIBILITIES

The possibilities of synthetic tone development is practically unlimited. Tempo, volume and tone qualities are in absolute control of the player.

The Choralcelo can as readily idealize the separate instruments of the orchestra individually, or blended, in one beautiful composite. So flexible is the instrument that it offers full opportunity for rendering all classes of music to suit all occasions, from light dance to the great classics.

It realizes the dream of musicians, and brings into useable form the theories made famous by Von Helmholtz, the great physicist.



The Choralcelo **pianoforte** unit can be placed in a living room, with auxiliary units in the basement, occupying small space below. Ideal for smaller residences.

In a similar room, units can be placed in harmonious cabinet casings, the music blended from all parts of the room at once, or taken up by individual units in a solo. The decorative use or the concealment of the Choralcelo is entirely a matter of preference upon the part of the purchaser.

This small booklet can show only a few of the possibilities for installation. It is beyond human ability to describe the tone produced through the Choralcelo principle.

We therefore invite you to hear the instrument at our studios.

CHORALCELO GALLERIES, INC.