usual place. He was allowed five minutes for each picture. Following the interpretation of each drawing the organist played the appropriate number from Mr. Shure's work, while the congregation sat in meditative mood."

Here then was music an organist wrote which carried real interest to a minister and enabled him in turn to carry a real message to a congregation. And upon this idea Mr. Shure, backed by the Jerusalem engagement, has built his program as herewith presented. Readers will note by referring to Mr. Potter's review that most of these compositions have been published by, and all can be obtained through, J. Fischer & Bro.

It will be obvious that the Scriptural quotations could be greatly enlarged, or entirely changed, as also that the program could be carried further and quite extensive readings be substituted, the organ music serving as a background for the readings.

—COVER PLATE—

By courtesy of Mr. Shure it is our pleasure to present as our Cover Plate the unusual photograph taken by Mr. C. O. Buckingham, Washington, D. C., showing Mr. Shure at his Pilcher console in Mount Vernon Place Methodist Church, in Washington.

The Worcester Auditorium Organ

WORCESTER, MASS.
MEMORIAL AUDITORIUM
W. W. Kimball Co.

Opened, Sept. 26, 1933.
Dedicated, Nov. 6, 1933.
Recitalist, Palmer Christian.
V-89. R-108. S-137. B-39. P-6926.

PEDAL: V-11. R-14. S-41.

UNEXPRESSIVE

32 Bourdon
Violone
16 DIAPASON-1 32ow 15½x18½
DIAPASON-3 9½ 32m
BOURDON 68sw32′ 10¼x12¼
VIOLONE 56ow32′ 7¼x8¼
Gemshorn (G)
10 2/3 Bourdon
8 OCTAVE-1 37 44m
Bourdon
Violone
Gemshorn (G)
5 1/3 QUINT 48 32m
4 Octave-1
Bourdon
V MIXTURE 128m 15-17-19-22
Scales: 52, 62, 63, 64.
2 Bombarde
16 BOMBARDE 13″ 68mr32′
8 Bombarde
4 Bombarde

EXPRESSIVE

16 DIAPASON-2 44w 12½x14½
Dulciana (C)
Rohrfloete (S)
Contra-Geigen (S)
Contrabass (G)
8 Diapason-2
Dulciana (C)
OPEN FLUTE 44ow 5¾x7½
Rohrfloete (S)
Geigen (S)
4 Open Flute
Geigen (S)
16 TROMBONE 10″ 56mr
Tromba (G)
Trumpet (S)
Bassoon (C)
10 2/3 Tromba (G)
8 Trombone
Tromba (G)
4 Trombone
8 Chimes (L)

Derivation of all borrows is indicated on the stop-knobs. Diapason and Open Flute are in the Great chamber, Trombone is in the Solo.

GREAT: V-25. R-34. S-29.

UNEXPRESSIVE

32 Gemshorn tc
16 DIAPASON 61m* CCC 8½″; CC 42.
Gemshorn
8 DIAPASON-1 38 61m
DIAPASON-2 40 61m*
DIAPASON-3 43 61m*
HARM. FLUTE 5¼ 61m*
GEMSHORN 45 ½t 73m 16′
5 1/3 QUINT 50 61t
4 OCTAVE-1 54 61t
HARM. FLUTE 3¼ 61t
3 1/5 TENTH 73 61t
2 2/3 TWELFTH 64 61t
2 FIFTEENTH 68 61t
V PLEIN JEU 5-b 305t 15-19-22-26-29
Scales: 68, 79, 80, 91, 92.
8 TRUMPET 4½ 61mr

EXPRESSIVE

16 CONTRABASS 73ow 8¼x10¼
8 DIAPASON-4 45 61m
BOURDON 61sw 5½x6⅝
VIOLA 51-55 61m
Contrabass
4 OCTAVE-2 56 61m
FL. OUVERTE 61owm 2⅝x3⅝
2 SUPER-OCTAVE 70 61m
VI HARMONICS 6-b 366t 12-15-17-19-21-22
Scales: 64, 65, 75, 76, 81, 77.
16 TROMBA 5¼ 61mr
8 TROMBA 5½ 61mr
4 TROMBA 3½ 61mr
8 Chimes (L)
Tremulant

The Diapason build-up is based on the scale of Diapason-2.

SWELL: V-24. R-29. S-29.

16 CONTRA-GEIGEN 38 73m
Rohrfloete
8 DIAPASON-1 41-44 73m
DIAPASON-2 46 73m*
CLARABELLA 6x7 73ow
ROHRFLOETE 97wm16′* 7½x8¾
Chimneys; arched mouths.
SP. FLOETE ⅓t 47 73m
FL. CELESTE ½t 47 61m
GAMBA 58 73m
V. D'ORCHESTRE 66 73m.*
SALICIONAL 55 73m*
VOIX CELESTE 55 73m*
4 OCTAVE 57 73t
FL. TRIANGULAIRE 73wm
Wood and pure tin
Rohrfloete
VIOLINA 67 73t
2 2/3 NASARD 58 61t
2 FIFTEENTH 72 61m
Rohrfloete
1 3/5 Tierce 78 61m
V FOURNITURE 4-b 305t 15-19-22-26-29
Scales: 69, 80, 81, 92, 92.
16 TRUMPET 6 73mr
8 CORNOPEAN 5¼ 73mr
FR. TRUMPET 4¾ 73mr
OBOE 3⅛ 73mr
VOX HUMANA 2r 146mr 2″ and 1¾″
4 CLARION 3¼ 73mr
8 Harp (C)
4 Harp-Celesta (C)
Tremulant Vox
Tremulant

*322 of these 389 pipes are tin.

CHOIR: V-20. R-22. S-26.

16 Dulciana
8 ENG. DIAPASON 44 73m*
V. DIAPASON 48 73m
DULCIANA 43 97m16′*
UNDA MARIS 54 73m*
CON. FLUTE h 73w 4⅞x5½
COR DE NUIT 52 73sm
VIOLA 55-59 73m
4 PRINCIPAL 59 73m
Dulciana
FL. TRAVERSO 73wm 2¾x3½
2 2/3 NASARD 68 61t
2 PICCOLO 2¼ 61t
Dulciana

1 3/5 TIERCE 75 61t
1 1/3 LARIGOT 78 61t
1 1/7 SEPTIEME 82 61t
1 Dulciana
III MIXTURE 3-b 183m
15-19-22
Scales: 70, 81, 82.
16 BASSOON 4 73mr
8 TROMPETTE 4¼ 73mr
ENGLISH HORN 4¾ 73mr
CLARINET 2 73mr
4 CLARION 3⅛ 73mr
8 HARP 61mb
4 Harp-Celesta
Tremulant
*195 of the 243 pipes are tin.
SOLO: V-9. R-9. S-12.
UNEXPRESSIVE
8 TUBA MAGNA 73mr*
EXPRESSIVE
8 ORCH. FLUTE 73ow 7¾x8¾
VIOLONCELLO 54 73m
V. CELESTE 54 73m
4 CONCERT FLUTE 73wm 3½x4⅛
8 TUBA MIRAB. 6½ 73mr
FRENCH HORN 6½ 73mr
ORCH. OBOE 2½ 73mr
4 TUBA CLARION 4¾ 73mr
8 Harp (C)
CHIMES 25b
4 Harp-Celesta (C)
Tremulant
*For later installation.

The organ is divided into two sections, left and right of the stage. Pedal and Great are left, the unenclosed sections below the expressive. Right of the stage the Swell Organ is in central position with the Choir below and the Solo above it.

"Wind-pressures range from 5" to 20". In general the Diapason chorus is on 5", reeds are on 7½" and 10", the Solo Organ flues are on 10" and the Tuba on 20". Pedal flues work on 6" and reeds on 20"."

COUPLERS 53:

Ped.: G-8-4. S-8-4. C-8-4. L-8-4.
Gt.: G-16-8-4. S-16-8-4. C-16-8-4. L-16-8-4.
Sw.: S-16-8-4. L-16-8-4.
Ch.: Gu. Ge. S-16-8-4. C-16-8-4. L-16-8-4.
So.: G. S-8-4. L-16-8-4.

One-section couplers are in the form of stop-knobs, located with the stops of their respective divisions.

Gu.—Great unexpressive section.
Ge.—Great expressive section.

ACCESSORIES

Crescendos 5: G. S. C. L. Reg.

Crescendo Arranger: Kimball's patented device enabling the organist to attach any set of shutters to any shoe.

Crescendo Coupler: All shutters to master shoe.

Crescendo Selectives 6: Enabling the organist to use any one of six different register-crescendo arrangements. The control exists in the form of a sliding knob, the top one in Kimball's patented Crescendo-Aranger board; this knob moves into six notches, and each notch brings on to the register-crescendo shoe a different set of contacts so that six entirely different crescendos are possible. Obviously no two can be used simultaneously.

Combons, Capture System, 58: P-8. G-10. S-10. C-10. L-8. Tutti-12.
Combination Lock.

Manual combons control one-section couplers.

Pedal combons may be operated by Great, Swell, and Choir combons of like number, by means of rocking-tablet onoroffs in the right key-cheeks.

Two-section couplers may be operated by manual and Pedal combons by means of a rocking-tablet onoroff in the right Solo keycheek.

Reversibles:
G-P. S-P. C-P. L-P.
S-G. C-G. L-G.
16′ manual stops and couplers and 32′ Pedal stops off.
All shutters to master shoe.

CONTENT

V—VOICE: An entity of tone under one indivisible control, one or more ranks of pipes.
R—RANK: A set of pipes.
S—STOP: Console mechanism controlling Voices, Borrows, extensions, duplexings, etc.
B—BORROW: A second use of any Rank of pipes, whether by extension, duplexing, or unification.
P—PIPE: Pipe-work only, Percussion not included.

DIVISIONS

A—Accompaniment
B—Bombarde
C—Choir
E—Echo
F—Fanfare
G—Great
H—Harmonic
I—Celestial
L—SoLo
N—StrING
O—Orchestral
P—Pedal
R—GregoRian
S—Swell
T—Trombone
U—Unit Augmentation

VARIOUS

b—bars
c—cylinders
cc—cres. chamber
dh—double harmonic
dl—double languid
f—flat
fr—free reed
h—harmonic
hw—high wind
lw—low wind
m—metal
om—open metal
ow—open wood
r—reeds
rs—repeat stroke
2r—two rank, etc.
s—sharp
sb—stopped bass
sm—stopped metal
ss—single stroke
sw—stopped wood
t—tin
tc—tenor C
th—triple harm.
uex—unexpressive
v—very
w—wood
wm—wood and metal
wr—wood reed
"—wind pressure
'—pitch of lowest pipe in the rank

SCALE EXAMPLES

40x40—Dimension of wood pipe.
14"—Diameter of metal pipe.
41—Scale number.
42b—Based on No. 42 Scale.
46-42—Scale 46 at bass end, flared back to Scale 42 at treble end.
2/3c—Coned to lose 2/3rd of diameter.
2/9f—Flatting 2/9th of circumfrence.
½t—Tapered to ½ diameter.
5-b—5 breaks (in a Mixture).
The relative dynamic strengths are indicated by the usual series ppp to fff.

Full-organ ensemble.
Mezzo-forte ensemble.

The register-crescendo and the two ensembles automatically silence all Tremulants and percussion.

The reader will note that the 16′ manual stops reversible does not move the stop-knobs, else it would be a cancel and not a reversible.

Cancels:
Tremulants. Couplers.
Tutti-Normal. Tutti-Absolute.

The two Tutti cancels are elsewhere explained.

Percussion: Deagan.

Blower: 30 h.p. Orgoblo, three outlets.

THE CONSOLE

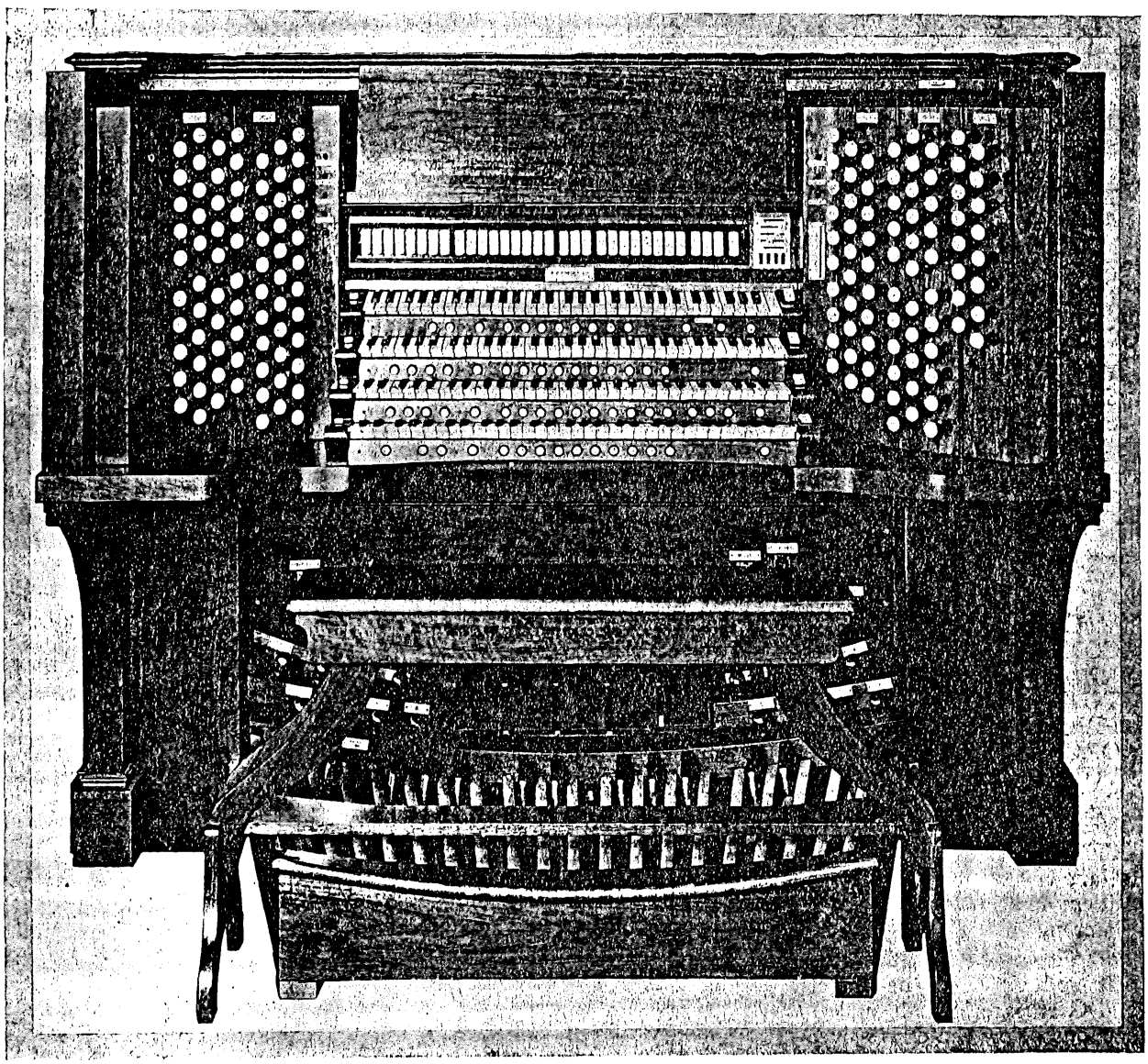
Stop-knobs: Pedal, left edge of left jamb, expressive section at the top, unexpressive at bottom. Great, center of right jamb, expressive at the top, unexpressive at bottom.

Swell, left jamb, right section. Choir, right jamb, left edge. Solo, right jamb, right edge.

Couplers are by rocking-tablets over the top manual, in six groups; left to right, to Pedal, Great, Swell, Choir, Solo, with the crescendo-coupler at the extreme right—and readers will note with satisfaction that this order follows the expressed preference of T.A.O.'s committee of 58 of America's most famous concert organists, as already fully reported in these pages. The logical order—and the only logical order—is: Pedal, Great, Swell, Choir, Solo, Echo, etc. That's the way organs are built up, be they 2m or 5m. The individual couplers within the respective groups also follow this logical order with but one exception. One-section couplers are located with the stop-knobs, the plan endorsed by 37% of the "famous fifty-eight."

Right of the coupler-board is Kimball's patented crescendo-arranger. If an organist does not like his crescendo-shoes in the order as found he can in about five seconds' time change them to suit himself: there is no limit. Readers will find this device illustrated and explained on page 271 of May 1932 issue, which in turn is an object-lesson in the speed of progress being made in the organ world today, for the present device is still further improved.

Right of the crescendo-arranger is the register-crescendo indicator, and its plate is evenly marked with lines up and down; if this plate will take pencil markings the organist will be able to make notations along the side



CONSOLE OF THE KIMBALL ORGAN IN MEMORIAL AUDITORIUM, WORCESTER, MASS.

and thus be more exact in the manipulation of the register-crescendo shoe.

Over the indicator are three light-indicators, top to bottom: Harp sostenuto, mezzo-forte ensemble, full-organ ensemble.

Indicators left of coupler-board, top to bottom: Chimes sostenuto, Chimes soft, 16′ and 32′ stops off, action-current with test-button, and two pairs of signal-lights and buttons.

Combons of the manual divisions are in normal position under each manual. Tutti combons are distributed under the four manuals just left of the manual groups. Combon setter is under the left end of Choir, with lock immediately to its left; capture system of combons.

Right of the Great combons are three reversibles, S-G, C-G, L-G.

Pistons under right end of manuals, top to bottom, are these cancels: Tutti-Absolute, Tremulant, couplers, Tutti-Normal. In the absence of any better definitions we adopt the new ones and explain them as follows: Tutti-Absolute not only cancels the stops and couplers but also physically closes the register-crescendo if it has been on and cancels physically the full-organ and mezzo-forte ensembles if these reversibles have been on.

Right of the Solo combons is the stage-shutters onoroff. The console is located directly beside the left chambers and quite distant from the right; if therefore the shutters are allowed to open, any organ close to the console will disturb the organist's judgment of dynamic balance. This onoroff enables the organist to allow these shutters to remain closed, or to allow them to open with the main shutters in the fronts of the chambers. In accompanying the chorus these stage-shutters will undoubtedly have to be operating so that the chorus can hear the organ, for with them closed the tone would be directed too much away from the singers.

In the left keycheeks are the four reversibles, top to bottom: 16′ manual and 32′ Pedal stops off, mezzo-forte ensemble, full-organ ensemble, all shutters to master-shoe.

In the right keycheeks, top to bottom, are the rocking-tablet onoroffs: two-section couplers to combons, Pedal combons to Swell combons, Pedal combons to Great combons, Pedal combons to Choir combons.

The crescendo-shoes are placed with the middle shoe in the famous E-F centralized position; the master-shoe is No. 4, next to the right of the centralized shoe.

The eight Pedal combons are operated only by toe-studs in the two lowest rows right of the crescendo-shoes.

The first eight tutti combons are duplicated by toe-studs in the two lower rows left of the shoes.

Left of the shoes, top row, reading away from the player, are: cres-

cendo coupler (reversible), Chimes sostenuto lock-down, Chimes soft lock-down, and Harp sostenuto lock-down.

Right of the shoes, top row, are two toe-levers, reading away from the player: mezzo-forte ensemble reversib.e, full-organ ensemble reversible. Just beneath them are four reversibles: G-P. S-P. C-P. L-P. These pedal reversibles duplicate the manual reversible pistons just left of the main combon groups.

The arrangement of stops in the console follows this general plan, top to bottom: one-section couplers, Tremulant, reeds from highest to lowest pitch, flues from highest to lowest pitch, percussion.

The couplers follow the logical order, as elsewhere noted, with but one exception. In the Pedal group this exception separates the 8′ and 4′ G-P couplers by placing between them three others, and that holds true of the entire group of Pedal couplers.

The combination mechanism is fool-proof, as made by Kimball. That is explained by Mr. W. W. Kimball thus: "Our action is so flexible that it can be used in any way and it cannot be broken or upset by pushing two pistons at one time or by doing any of the other little things which are so often fatal in the usual combination action. Our action can't break under any such circumstances."

In reference to the blower Mr. Kimball points out: "By having three outlets we are able to use a 30 h.p. blower, whereas if we had but one outlet it would require 40 h.p."

Another interesting detail has to do with the lock-down levers. These are located left of the crescendo shoes and the normal movement of the foot locks them down automatically, because the foot normally pushes slightly away from the player. But the Harp sostenuto has its notch on the player's side so that the foot can depress it and use it like the sostenuto pedal on the piano, and for the same purpose, without fear of its locking down. Perhaps some players would have wanted this for the right foot instead of the left, for obvious reasons.

This Worcester console is worthy of all the time it has taken to prepare an exact and detailed description of its accessories and their operation. It is the new type of Kimball console, insulated and with free-floating action parts that do not communicate their noises through any solid timbers or frames to the floor and the surrounding air; it aims at the perfection of noiselessness. No wind is used in it, and it can be moved off its own elevator and to any position on the stage. "Organists who have tried it say it is the most comfortable they have ever sat down to."

INTERPRETATIONS

The beginner in specification-reading may appreciate some help in understanding all the data packed into it as herewith printed. A study of our abbreviations as they are explained in the table herewith will make most of it clear even at the first reading.

The third stop in the Pedal Organ, Diapason-1, indicates that there are 32 open wood pipes and that their scale or size is 15½″ by 18½″.

The 16′ Bourdon has 68 pipes of stopped wood and the pitch of the lowest pipe is not 16′ but 32′.

The 16′ Gemshorn is borrowed from the Great.

8′ Octave-1 is No. 37 scale and has 44 metal pipes.

16′ Bombarde has a scale that makes its lowest pipes 13″ in diameter, and there are 68 pipes, the lowest of which is of 32′ pitch; these pipes are not flues but reeds, and the pipe-body is of metal. Thus, 16′ Bombarde, 13″ diameter, 68 metal reed pipes, 32′ pitch.

IV Mixture of the unenclosed Pedal is composed of four ranks speaking the fifteenth (two octaves higher than the note of the key pressed down to make it speak), the seventeenth, nineteenth, and twenty-second—which gives, for bottom C of the pedal clavier, this chord: C-E-G-C, and the one C is two octaves higher and the other three octaves higher than the note depressed. The scales or sizes of these four ranks are: Nos. 52, 62, 63, 64.

AND A CHALLENGE

Having devoted a great deal of time and patience to a clear, exact, and complete explanation of all the accessories in this interesting console, and having gotten all the answers with the cooperation of Mr. W. W. Kimball, T.A.O. wants to know if anything has been overlooked or if any explanations of the accessories are ambiguous. That is, we want to be able to tell our readers exactly what each and every new or unusual device does in an organ.

To further solicit the cooperation of our readers we will give a one-year renewal of subscription to any subscriber able to point out any detail not already explained in our presentation herewith. If the reader finds listed in these accessories any device whose action is not sufficiently clearly defined to enable him to know what it will do, we want to know what it is. Obviously this does not apply to such a common device as the register-crescendo; true, it is listed but not explained, because its function is already known to every modern American organist.

—DR. SCHWEITZER—

"How much I would like to come to America," exclaims Dr. Albert Schweitzer, "but for the moment I can't think of it. I am absorbed in work which will occupy me for a long time yet." And that work is described by an intimate friend:

"Dr. Schweitzer is now devoting such leisure as he can find from practical affairs to the completion of the third volume of his Philosophy, and his other literary activities to follow. When he returned to his hospital last April he found it full to overflowing, often with as many as 350 inmates. Patients come from increasing distances, up to nearly 400 miles, on foot and in canoes, and the number of major operations doubled in the course of last year and is still increasing. Raising the necessary funds to carry on in these difficult times is a great burden of anxiety for him."

As mentioned in these pages on various occasions, Dr. Albert Schweitzer is not only the Bach authority and enthusiast to whom Widor gives credit for revealing the true spirit of the choralpreludes, but is minister, missionary, and physician, and in this last-named capacity has established a hospital in Lambarene, Africa, which he maintains by his own efforts. (Dr. Schweitzer's autobiography, Out of My Life and Thought, has many chapters of keenest interest to organists; it was published early this year by Henry Holt & Co., priced $2.50. T.A.O. will gladly handle orders for the convenience of its readers. Proceeds from the sale of the book are invaluable to Dr. Schweitzer in helping him maintain his hospital work.)

—ROOSEVELTS—

The following Roosevelt Organs in Philadelphia are named by Dr. John M'E. Ward as additions to our list:

Park Avenue M. E., 2-18.

Chapel-Advocate P. E., 2-10.

St. Charles R. C., 3-30 (?)

An old organ formerly in the gallery of Holy Trinity, rebuilt and now in Nativity R. C.

Cathedral of Sts. Peter and Paul, an old Standbridge Organ rebuilt and revoiced with new reeds, by Roosevelt.

The American Guild of Organists

New England Chapter

One hundred sixty-fourth Recital

◆

Palmer Christian

Professor of Organ, University of Michigan

◆

Municipal Auditorium

Worcester, Massachusetts

◆

Monday Evening, November 6th, 1933

Program

I

Toccata in C major ..... Bach

The C major Toccata, frequently programmed as including an Adagio in A minor and a Fugue in C (the two latter sections being omitted on this occasion), is a work of compelling strength. In particular, the first section—the Toccata proper, while admittedly indicating the influence of Bach's immediate predecessors, presents to the listener the great vitality and breadth that permeate the composer's larger works.

Prelude ..... Corelli

From the Ninth Sonata for Violin, from the pen of one of the first great violinists.

Minuet and Gigue en Rondeau ..... Rameau

Rameau was the most important of the French contemporaries of Bach, his research and publications on theoretical subjects having been of great influence.

Fantasia and Fugue in C minor ..... Bach

The Fantasia, in 6/8 time, is quite in the manner of some of the orchestral accompaniments and interludes in the choral works; ending on the dominant, it leads directly into the Fugue (4/4 time, a la breve), which presents a short theme in swinging rythm. After the exposition, a new theme—rising, chromatic in character— is heard, surrounded by figuration used before, and building up in dynamic and dramatic interest to the stirring recapitulation.

II

Sonata Eroica ..... Jongen

Joseph Jongen is Professor of Composition at the Brussells Conservatoire. As in most of his smaller works, the Sonata is marked by individuality of style, knowledge of effect and sure writing.

The work is in one movement; opening with forceful octave passages and several bars of chromatic writing "a la fantasia", a diminuendo leads to the first announcement of the principal subject—"molto dolce e expressivo"—which is rather in the mood of a traditional French folk-tune. The remainder of the composition consists of a series of variations, either actual or suggested, on this theme.

III

Benediction ..... Karg-Elert

Neither lack of appreciation in his native Germany nor difficulties of mere existence as a teacher of composition at the Leipzig Conservatory seems to have retarded the work of this important composer. In the midst of strictly traditional musical surroundings, particularly in the matter of organ literature, Karg-Elert wrote ceaselessly; numerically, his efforts are imposing; but of vastly more consequence are the individuality of style and the evidences of keen and independent imagination. His contributions to the literature have enriched it beyond measure; he brought to the organ a type of beauty of which it was sorely in need.

Choral Improvisation on "In dulci jubilo" ..... Karg-Elert

A series of variations on a traditional melody.

Pantomime ..... Jepson

Harry Benjamin Jepson, organist at Yale University, writes with a cleverness of concept and a technique eminently musicianly. He is said to be opposed to the idea of a "program" in his compositions, yet such titles as "Pageant Sonata", "l'Heure exquise", and certainly "Pantomime" impress one as being decidedly programmatic titles.

Prelude on an ancient Flemish melody ..... Gilson

Paul Gilson, resident in Brussells, gives us a composition of unusual merit in this treatment of a plaintive theme.

Scherzo ..... Rousseau

Samuel Rousseau was an eminent French musician of the past generation; he was a member of the faculty of the Paris Conservatoire, and for many years was chorus-master at Ste. Clothilde.

Prelude to "The Blessed Damozel" ..... Debussy-Christian

The poem, "La Demoiselle Elue" by Gabriel Rosetti, was used as the text of a cantata for women's voices and solo soprano, with accompaniment for small orchestra. It is one of the composer's early works, but distinctly foreshadows the individualism of his later productions.

Nocturne ..... Grieg-Christian

Compositions such as the Debussy "Prelude" and the Grieg "Nocturne" (an early work for piano) are particularly effective on the modern organ, where delicacy of effect and nicety of shading are as important and as successfully achieved as the more bravura and stupendous compositions found in strict organ literature.

Carillon Sortie ..... Mulet

A sweeping, vigorous composition making telling use of the effect produced by clanging bells.

Specification of the Municipal Organ

Worcester, Massachusetts

The W. W. Kimball Company, Builders

Chicago, Illinois

GREAT ORGAN (Open Section)

Pitch	Name of Stop	Pipes
32′	Contra Gemshorn	49
16′	Double Diapason	61
16′	Contra Gemshorn	12
8′	Diapason I	61
8′	Diapason II	61
8′	Diapason III	61
8′	Harmonic Flute	61
8′	Gemshorn	12
5⅓′	Quint	61
4′	Octave I	61
4′	Harmonic Flute	61
3 1/5′	Tenth	61
2⅔′	Twelfth	61
2′	Fifteenth	61
V	Mixture (Plein Jeu)	305
8′	Trumpet	61
8′	Chimes (From Solo)	

GREAT ORGAN (Enclosed Section)

16′	Contre Basse	61
8′	Diapason IV	61
8′	Viola	61
8′	Bourdon	61
8′	Melodia (Contre Basse)	12
4′	Octave II	61
4′	Flute Ouverte	61
2′	Super Octave	61
VI	Harmonics	366
16′	Contra Tromba	61
8′	Tromba	61
4′	Tromba Clarion	61
	Tremolo	

SWELL ORGAN

16′	Contra Geigen	73
16′	Rohrbordun	12
8′	Diapason I	73
8′	Diapason II (Geigen)	73
8′	Clarabella	73
8′	Rohrflöte	73
8′	Spitzflöte	73
8′	Flute Celeste	61
8′	Viola da Gamba	73
8′	Viole d'Orchestre	73
8′	Salicional	73
8′	Voix Celeste	73
4′	Octave (Geigen)	73
4′	Flute Triangulaire	73
4′	Rohrflöte	12
4′	Violina	73
2⅔′	Nazard	61
2′	Fifteenth	61
2′	Flautina	

Pitch	Name of Stop	Pipes
1 3/5′	Tierce	61
V	Mixture (Fourniture)	305
16′	Double Trumpet	73
8′	Cornopean	73
8′	French Trumpet	73
8′	Oboe	73
8′	Vox Humana II	146
4′	Clarion	73
8′	Harp (From Choir)	
4′	Celesta (From Choir)	
	Tremolo	
	Vox Humana Vibrato	

CHOIR ORGAN

16′	Double Dulciana	12
8′	English Diapason	73
8′	Violin Diapason	73
8′	Concert Flute	73
8′	Cor de Nuit	73
8′	Dulciana	73
8′	Unda Maris	73
8′	Viola	73
4′	Principal	73
4′	Traverse Flute	73
4′	Dulcet (Dulciana)	12
2⅔′	Nazard	61
2′	Piccolo	61
2′	Dolcetin (Dulciana)	61 Notes
1 3/5′	Tierce	61
1⅓′	Larigot	61
1 1/7′	Septieme	61
1′	Twenty Second (Dulciana)	61 Notes
III	Mixture	183
16′	Bassoon	73
8′	Trompette	73
8′	English Horn	73
8′	Clarinet	73
4′	Clarion	73
8′	Harp	
4′	Celesta (Deagan)	61 Bars
	Tremolo	

SOLO ORGAN (Open Division)

8′	Tuba Magna (Prepared for)	

SOLO ORGAN (Enclosed Division)

8′	Orchestral Flute	73
8′	Violoncello	73
8′	Cello Celeste	73
4′	Concert Flute	73
8′	Tuba Mirabilis	73
8′	French Horn	73
8′	Orchestral Oboe	73
4′	Tuba Clarion	73
8′	Chimes (Deagan)	25 Tubes
8′	Harp (From Choir)	
4′	Celesta (From Choir)	
	Tremolo	

PEDAL ORGAN (Open Division)

32′	Major Bass	12
32′	Contra Violone	12
16′	Diapason I	32

Pitch	Name of Stop	Pipes
16′	Diapason III	32
16′	Violone	32
16′	Bourdon	32
16′	Gemshorn (Great)	32 Notes
10⅔′	Quint (Bourdon)	32 Notes
8′	Octave I	32
8′	Violoncello	12
8′	Stopped Flute	12
8′	Gemshorn (Great)	32 Notes
5⅓′	Octave Quint	32
4′	Super Octave	12
4′	Stopped Flute	12
IV	Mixture	126
32′	Contra Bombarde	12
16′	Bombarde	32
8′	Bombarde Octave	12
4′	Bombarde Clarion	12
8′	Chimes (From Solo)	

PEDAL ORGAN (Enclosed Division)

16′	Diapason II (Bearded)	32
16′	Contra Geigen (Swell)	32 Notes
16′	Contre Basse (Great)	32 Notes
16′	Double Dulciana (Choir)	32 Notes
16′	Lieblich Gedeckt (Swell)	32 Notes
8′	Octave II	12
8′	Open Flute	32
8′	Geigen (Swell)	32 Notes
8′	Dulciana (Choir)	32 Notes
8′	Stillgedeckt (Swell)	32 Notes
4′	Open Flute	12
4′	Octave Geigen (Swell)	32 Notes
16′	Trombone	32
16′	Contra Tromba (Great)	32 Notes
16′	Double Trumpet (Swell)	32 Notes
16′	Bassoon (Choir)	32 Notes
10⅔′	Tromba Quint (Great)	32 Notes
8′	Trumpet	12
8′	Tromba (Great)	32 Notes
4′	Clarion	12

SUMMARY—Including percussion instruments.

	Sets	Ranks	Stops	Pipes	Tremolos	Percussions
Great	25	34	29	2098	1	1
Swell	24	29	29	2033	2	2
Choir	20	22	26	1534	1	2
Solo	8	8	11	584	1	3
Pedal	14	17	41	604	.....	1
TOTALS	91	110	136	6853	5	9

COUPLERS, COMBINATION PISTONS AND MECHANICALS

The organ is equipped with a complete set of inter-manual, intrs-manual and pedal couplers with a generous supply of reversibles. There are 46 manual and pedal combination-pistons, and 12 universal combination-pistons. The organ is equipped with Kimball patented two-stage expression device, selective expression control, positive-action, remote control combinations, operating **all stops and couplers.** The construction of the console embodies the latest Kimball developments in non-rigid design, making the operation of the console unusually silent.

KIMBALL

PIPE ORGANS

KIMBALL

PIPE ORGANS

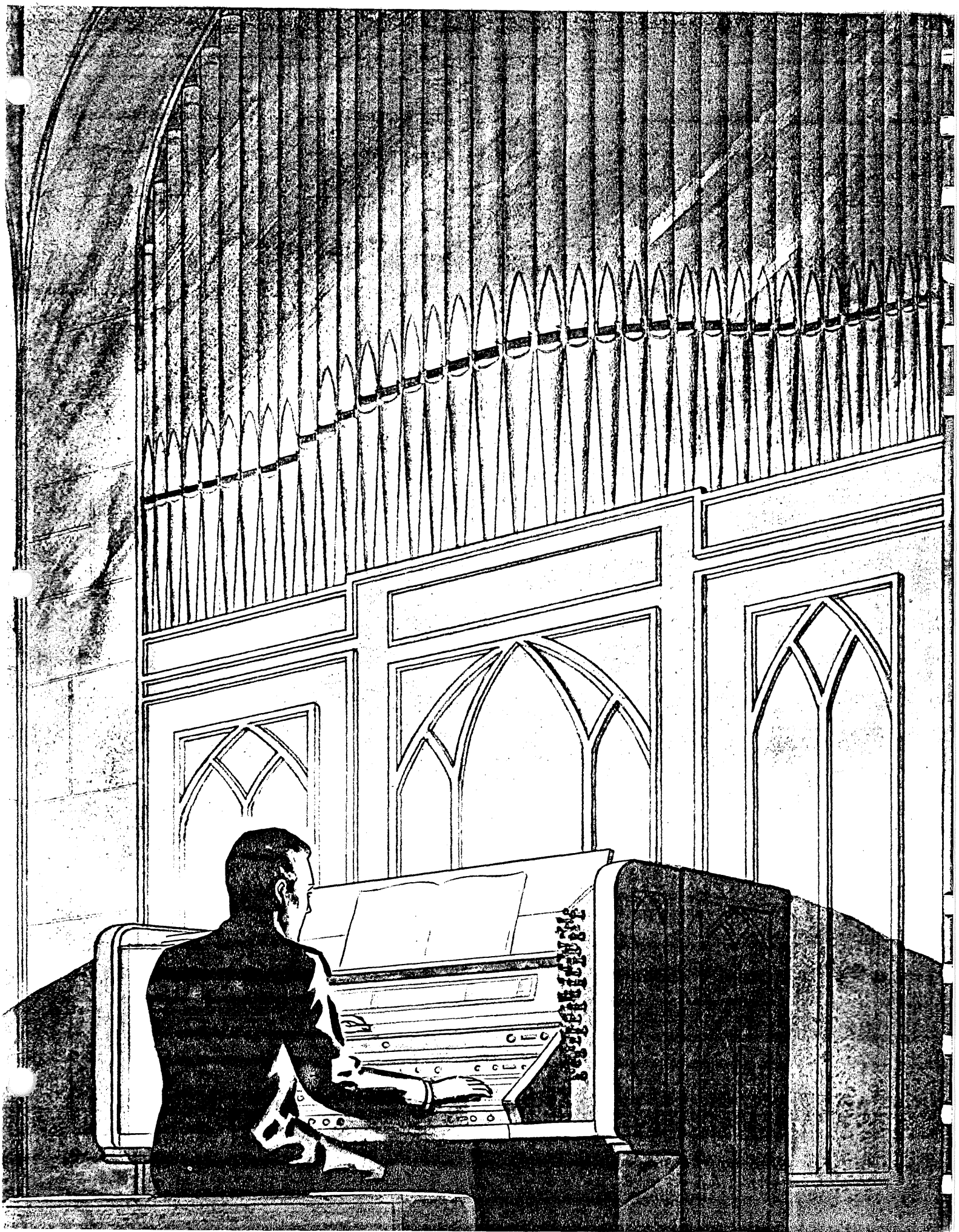
W · W · KIMBALL COMPANY

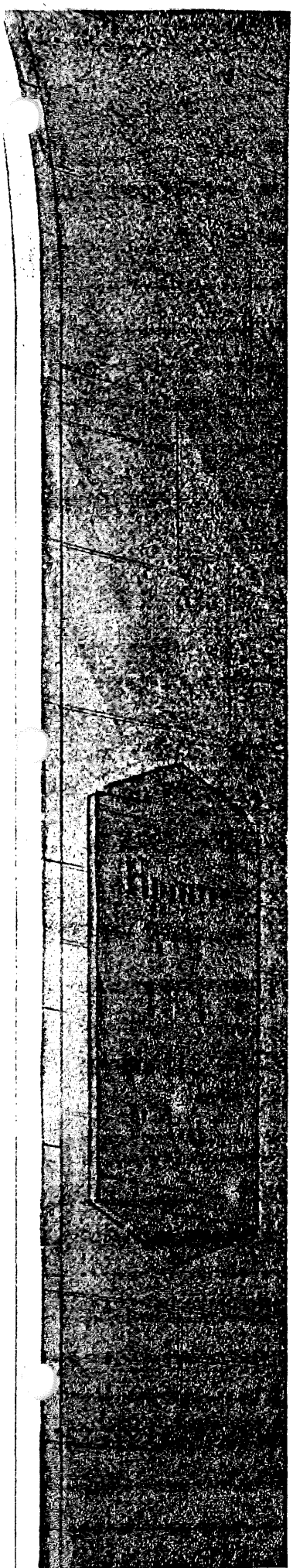
ESTABLISHED 1857

Organ Builders

EXECUTIVE OFFICES AND FACTORY

CHICAGO



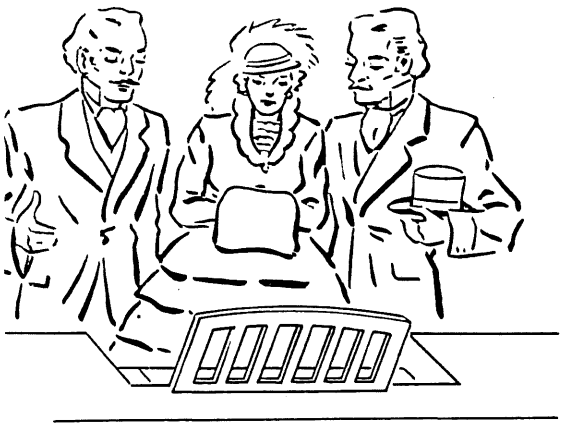


FOUR SCORE YEARS AND MORE

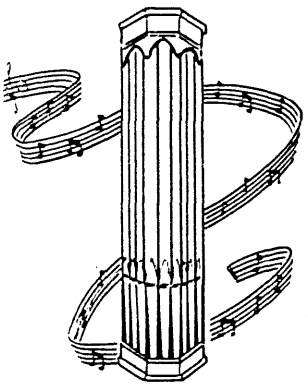
WE moderns care but little for the romance of the buried years—yet that same musty past bears striking moral for the music lover of today. It is not enough that we say the House of Kimball was born more than eighty years ago. This is a drab statement, in a way, for few of us are intrigued by age. It will interest, however, when you refresh your memory on the real meaning of more than four score years. When the House of Kimball was founded (in the City by the Lake, on the sprawling prairies of Illinois) in a town called Chicago, there were no telephones, harnessed electricity, skyscrapers, noise, bustle and flurry of the crowded millions. Buchanan was president of our forty-two states, the population of which was but thirty million. Abraham

FOUR SCORE YEARS AND MORE . . .

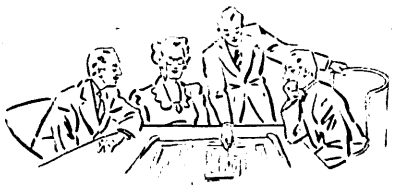
Lincoln, the Great Emancipator, the Illinois lawyer, the man of destiny, had not even gained national prominence. Men lived more simply then—the craftsmen in the musical arts were adapting the lessons of Europe to American ambitions. It was then that the House of Kimball was founded. ❧ From the beginning the business was built upon the solid rock of sound business methods. Production of the finest in musical instruments was never limited by economic emergencies. Modern transportation facilities soon brought the advantages of the tremendous Kimball factory facilities to piano and pipe-organ buyers throughout the United States and in remote corners of the world. Through three wars and seven depressions the financial responsibility of the W. W. Kimball Company has stood unquestioned. Necessity never had the opportunity to tempt a sacrifice of artistic integrity. ❧ Today's buyer of the Kimball pipe-organ has this eighty year record of sound growth and unparalleled stability as assurance of merit in the instrument he chooses. No promise of quality is so convincing as that which is backed by past performance.



TONAL DESIGN



All Kimball organs are built in our factory to the most exacting specifications, which are designed by the Kimball staff of organ architects in consultation with the purchaser and his advisers. No two organs may be built exactly alike, because each one must vary in its tonality and power in order to correctly suit the size and acoustics of the church and the purpose it is to serve. Careful designing by conscientious, experienced artists will therefore create an artistic, well balanced organ; whereas indifferent design results only in mediocrity. Skillful planning and careful attention to the specifications of Kimball organs are of the greatest value to the purchaser as it will insure the success of the organ—*BEFORE IT IS BUILT.* The Kimball staff of organ architects consists of men who have devoted their lifetime to the study of the pipe organ, its function as a musical instrument to render the playing of the great repertoire of music within its wide scope and, most important, the underlying fundamental principles of correct tone production. The Kimball staff is always happy to cooperate with you in the design of the ideal organ for your purpose without any obligation on your part.



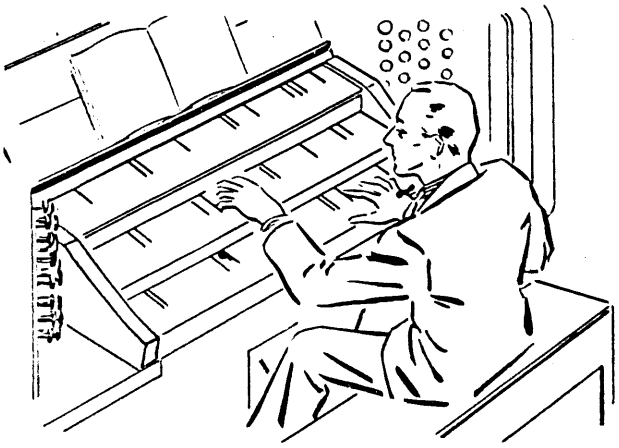
In every artistic field of endeavor in this country the influence of the Old World has left its unmistakable imprint and in the tonal design of American organs, the great European instruments stand as the criterion, to which close adherence is desirable. However, ingenuity and resourcefulness, the inherent qualities of our nation, have contributed many tonal and mechanical refinements to the contemporary American organ unknown to the Old World and the W. W. Kimball Company in no small measure has added its share of these improvements. All Kimball organs are basically designed along traditional tonal patterns and, furthermore, special care is taken to include the many lovely soft tone colors and solo stops, which science and modern manufacturing facilities make available today. The Kimball organ in both tonal and mechanical respects is a modern American organ—a truly fine masterpiece.

THE ORGANIST'S OPINION

We wish it were possible to publish all the letters of praise about the Kimball organ which we have received. Space here allows only a few. These below are all from outstanding organists whose opinions merit your fullest consideration.

WM. H. BARNES, EVANSTON, ILL.

The Diapason chorus is magnificent. In addition, the wealth of beautiful solo reeds and other soft effects is absolutely not surpassed in any organ that I have ever had the pleasure of playing . . . There has never been a cipher since I have played the organ.



PALMER CHRISTIAN, ANN ARBOR, MICH.

The reeds are characteristic, whether chorus or orchestral; the strings and flutes are so balanced that they are good both for melodic and accompanimental purposes. The Diapasons are solid, neither too tubby nor too edgey . . . The swells are effective; the shades are wonderfully responsive.

CHAS. M. COURBOIN, NEW YORK, N. Y.

The aristocracy of tone, the wonderful tonal balance — make these two instruments truly magnificent.

ARNOLD DANN, ASHEVILLE, N. C.

The fine Diapason families, brilliant chorus reeds, rich strings, ravishing soft stops, general blend and even build-up, make it one of the most effective instruments in my experience.

ARTHUR DUNHAM, CHICAGO, ILL.

The Kimball organ is incomparable in its quick response, its softer registers of lovely quality, its powerful registers of noble sonority, and, most important, its ensemble, the desideratum of all artistic players of organs.

LYNNWOOD FARNAM, NEW YORK, N. Y.

Tonally the organ was magnificent, there being a wealth of every class of tone and an overwhelming climax. The diversification and beauty of the string toned stops throughout the instrument, the charm and silvery character of the upper work, the good judgment shown in the treatment and strength of the flute and diapason registers and the excellent ensemble of the various departments, these, and the many other points, impressed themselves . . . Especially notable, too, is the finely graded, quiet and quickly responsive swell shutter action, with selective control. You are to be congratulated on your great achievement.

EMERSON RICHARDS, ATLANTIC CITY, N. J.

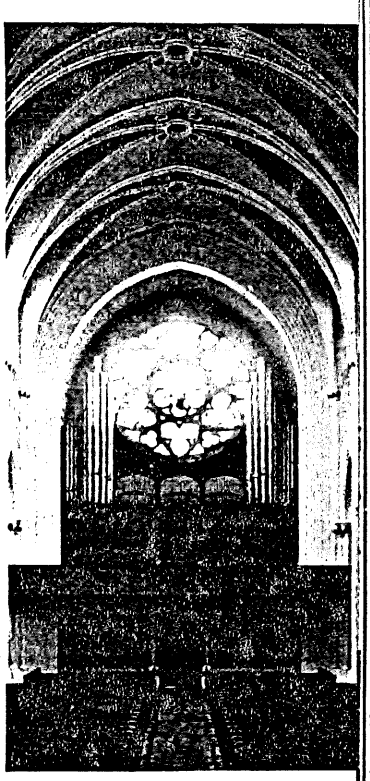
Tonally it is superb. Each voice has an individuality, while at the same time contributing to the ensemble—and in this respect the organ stands as the best demonstration in America of what a full organ ensemble should be.

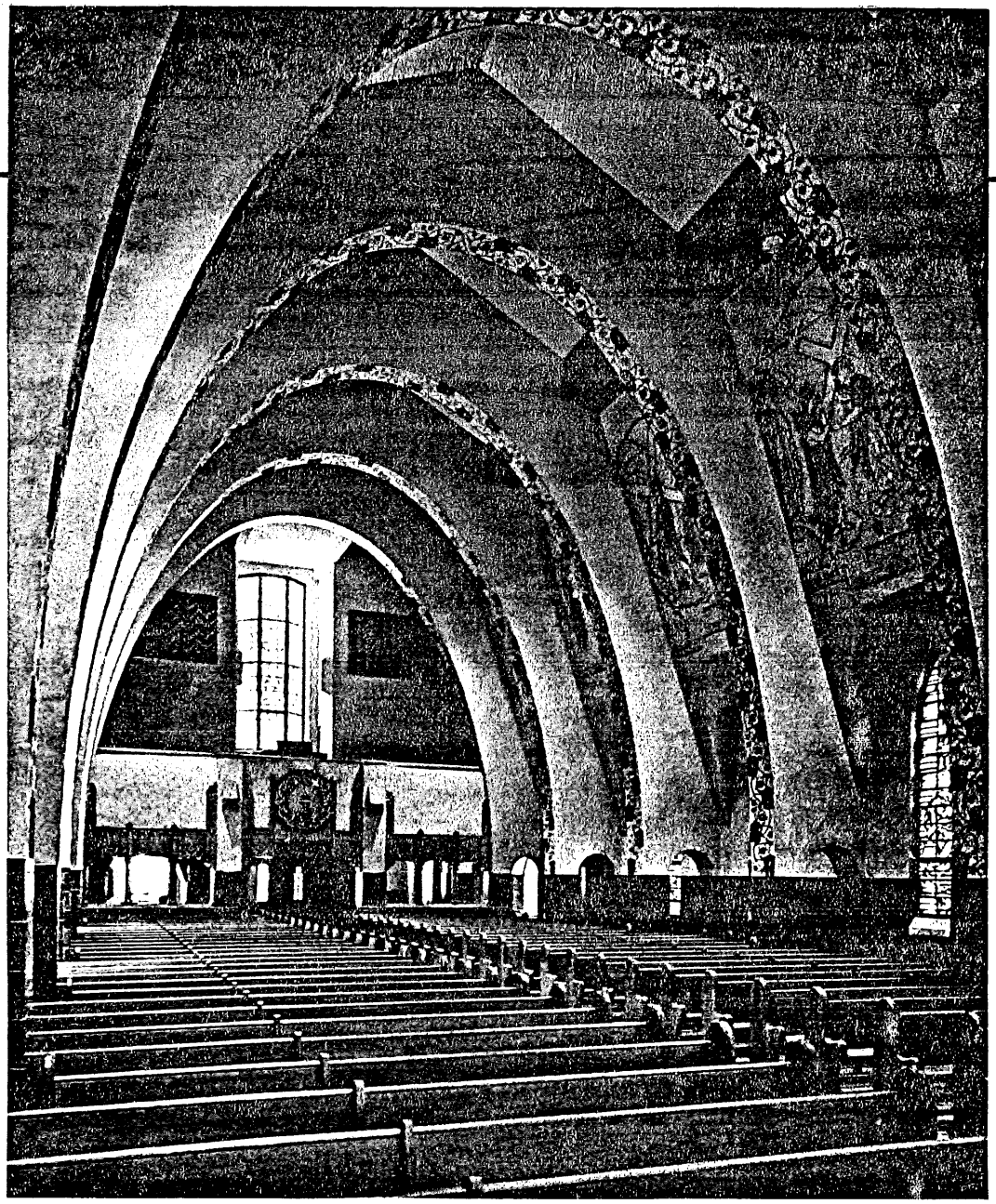
VAN DENMAN THOMPSON, GREENCASTLE, INDIANA

The full organ beggars description; I do not think I have ever heard such a blending of diapasons, mixtures and chorus reeds into an ensemble of glorious tone. The solo reeds are perfect, as are also the strings. I know I have made no mistake in choosing the Kimball . . . The swell shades were a revelation; such an even, smooth and continuous crescendo I never heard. Everything worked and did it quickly and silently.

KIMBALL PIPE ORGAN INSTALLATIONS

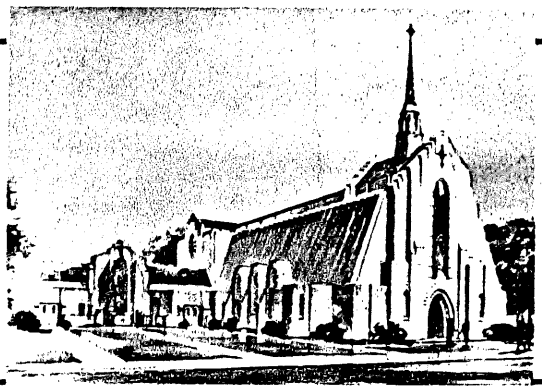
The W. W. Kimball Company has built over four thousand pipe organs. installed all over the world. The Kimball organ installations which are depicted n the following pages have been selected from our long list because they are typical installations. Every one of these organs was especially designed by the Kimball staff in consultation with the purchaser and his advisers to suit the acoustical conditions of the church and the purpose it serves.





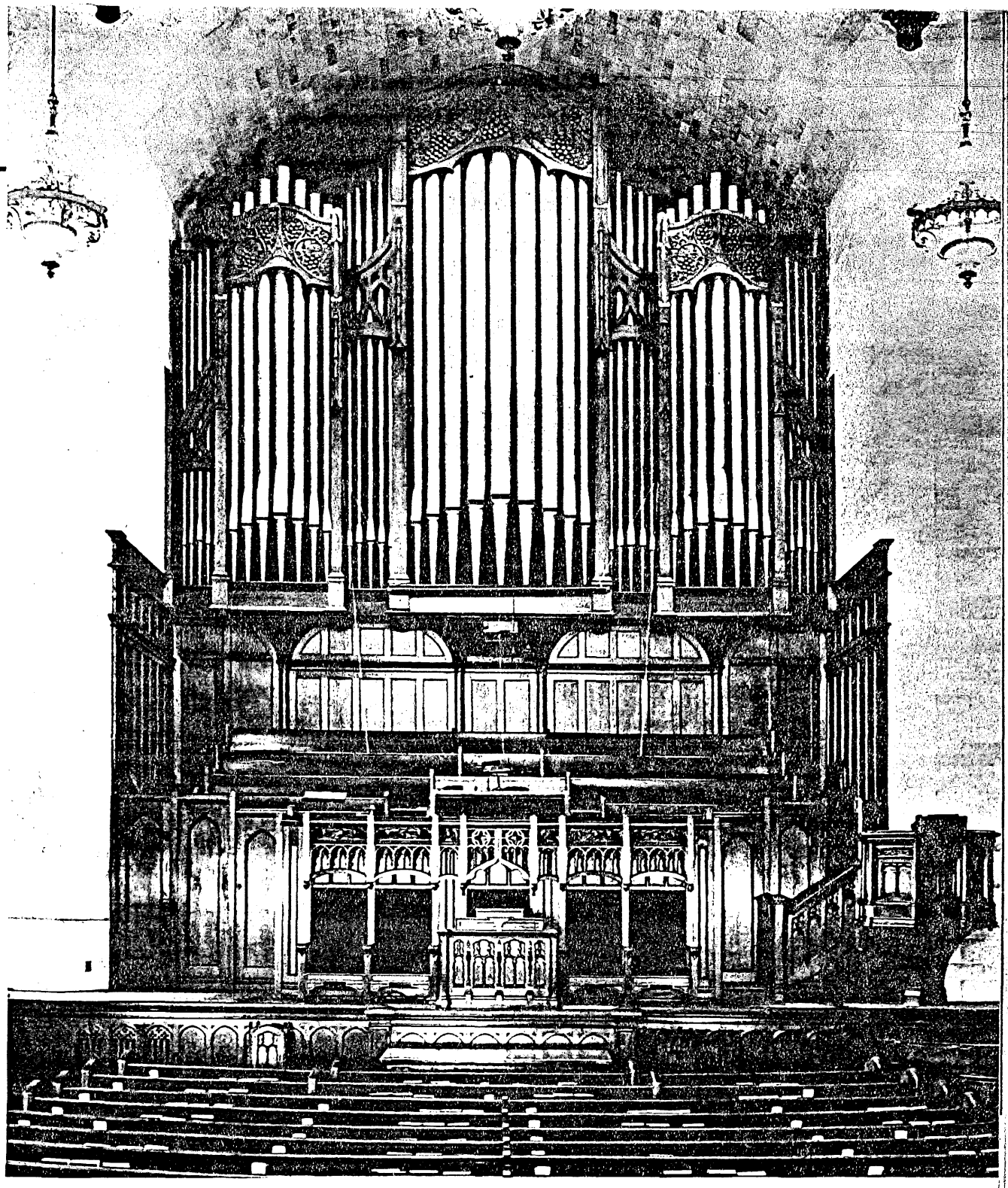
ST. BERNADETTE'S R. C. CHURCH • BROOKLYN, N. Y.

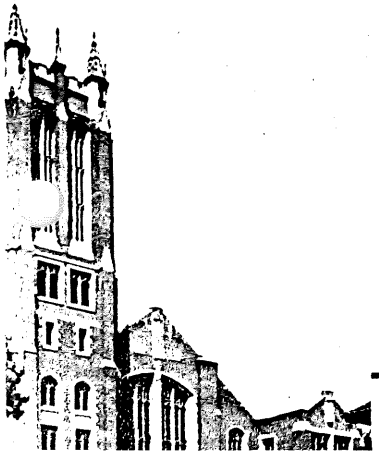
Architect: Henry V. Murphy, Brooklyn, N. Y



Of modern yet traditional architecture this church has as beautiful an interior as exterior.

The Kimball organ is located behind the decorative grilles on either side of the bayed stained glass window in the rear gallery.

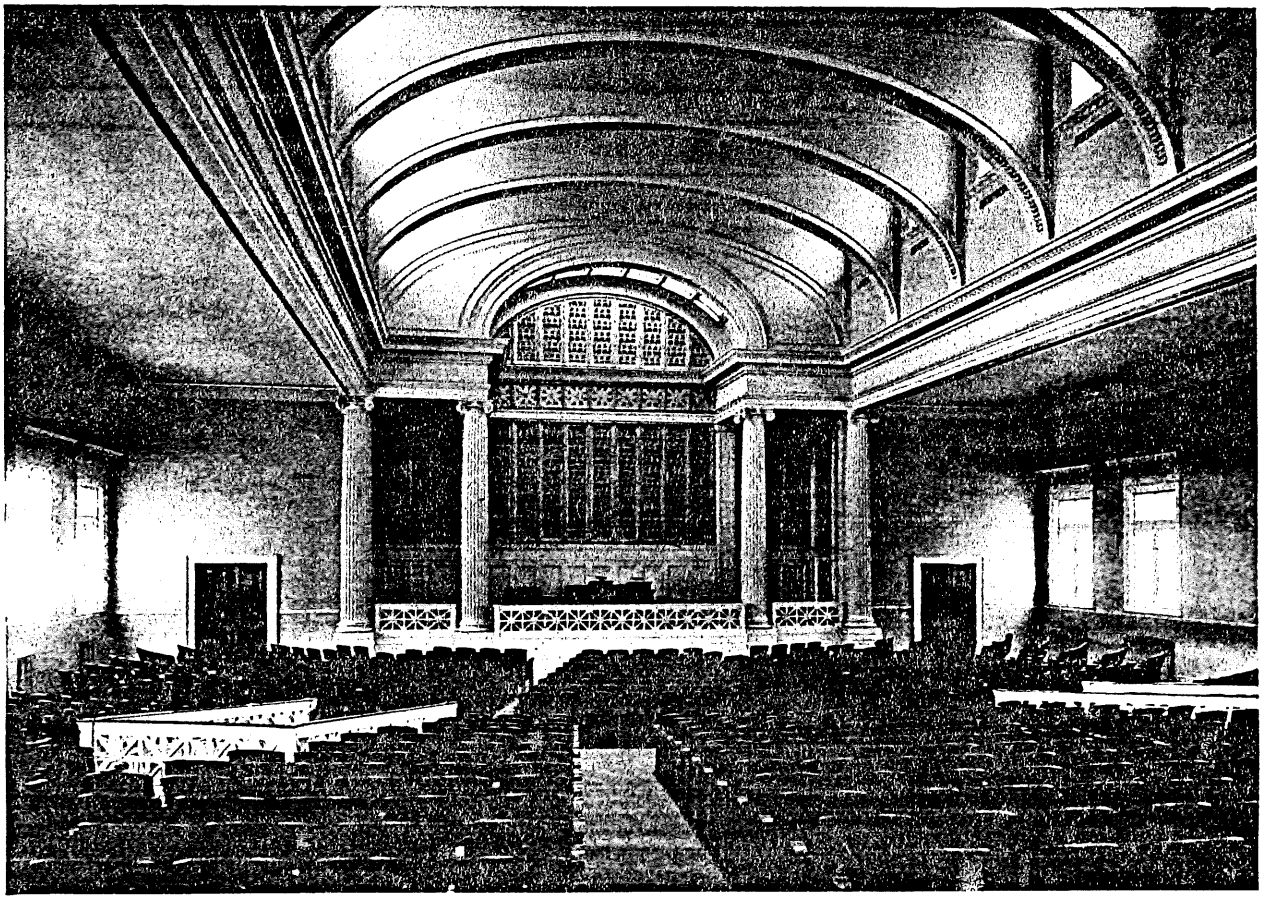




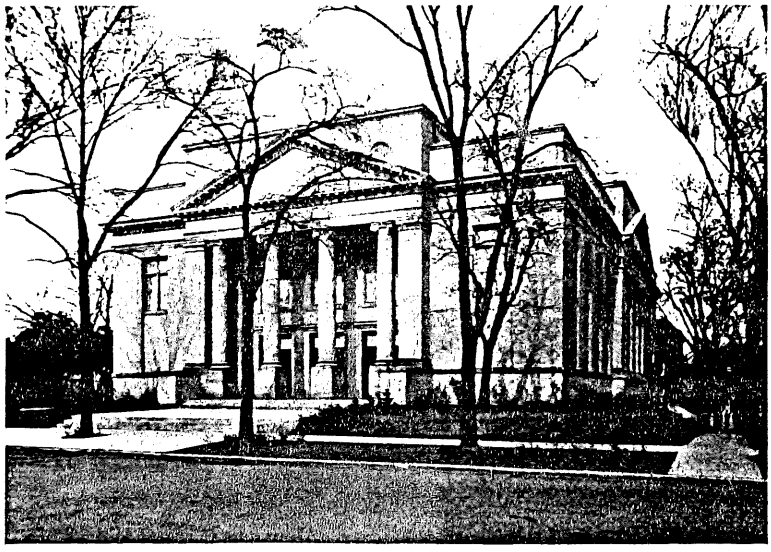
HOLLYWOOD PRESBYTERIAN CHURCH • CALIFORNIA

This edifice of English-Gothic architecture has a stately tower rising to a height of 125 feet in which there is a ten-tone set of tubular Chimes, played from the organ console. The interior is strictly in keeping with the architecture of the exterior. The large Kimball organ occupies the archway at the front of the church above the Choir balcony.

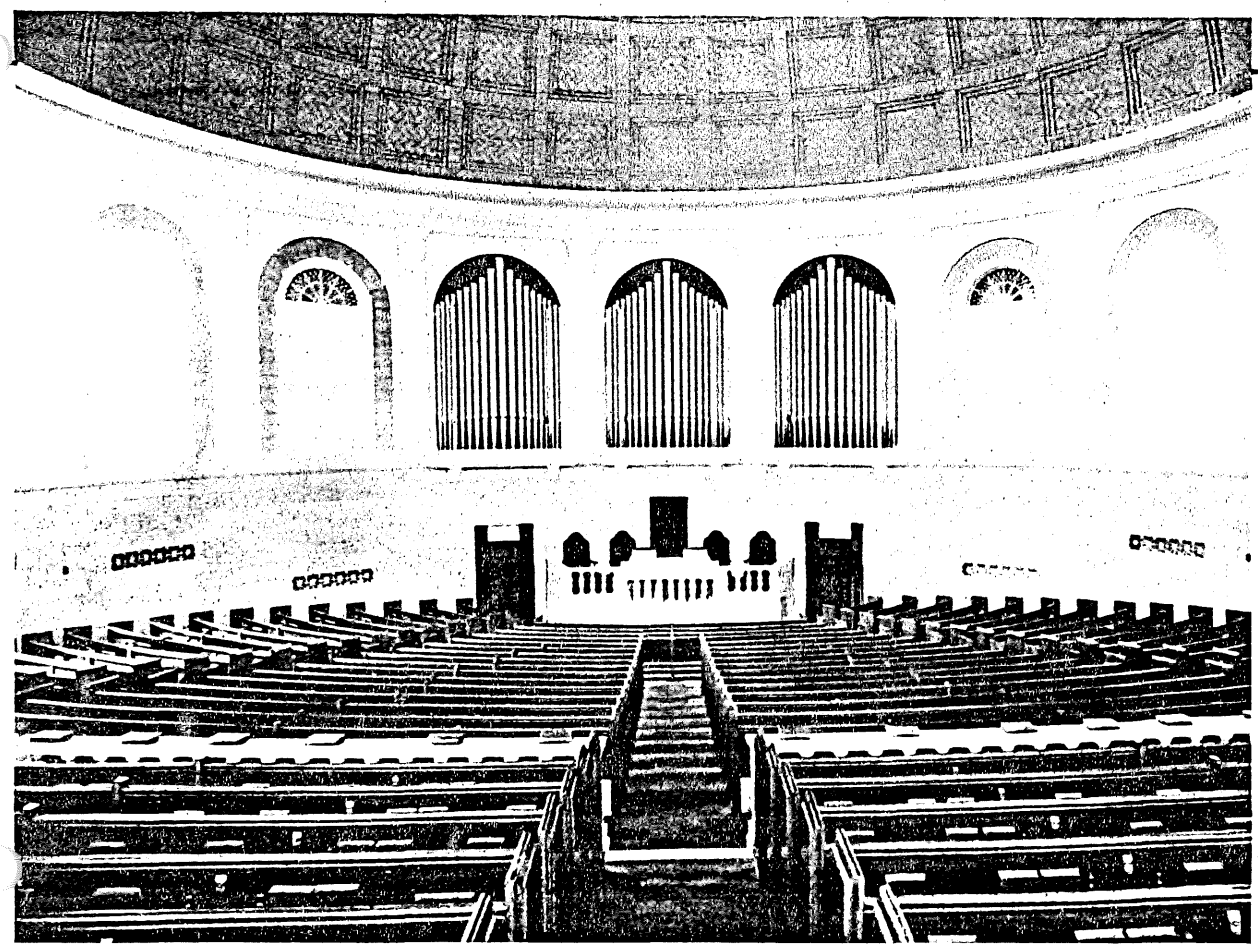
FIRST CHURCH OF CHRIST • SCIENTIST • OAK PARK • ILL.



The three manual Kimball organ is located directly behind the ornamental grille, which is the outstanding decoration of the interior. The

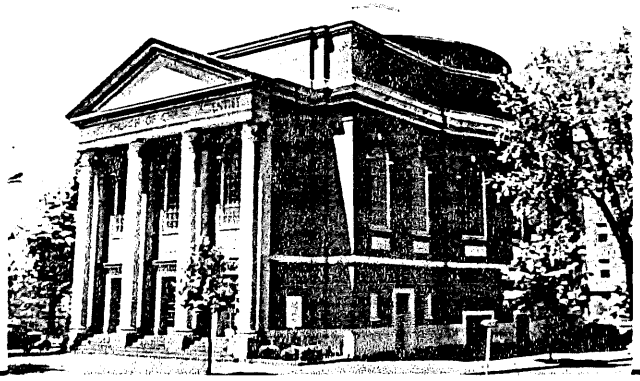


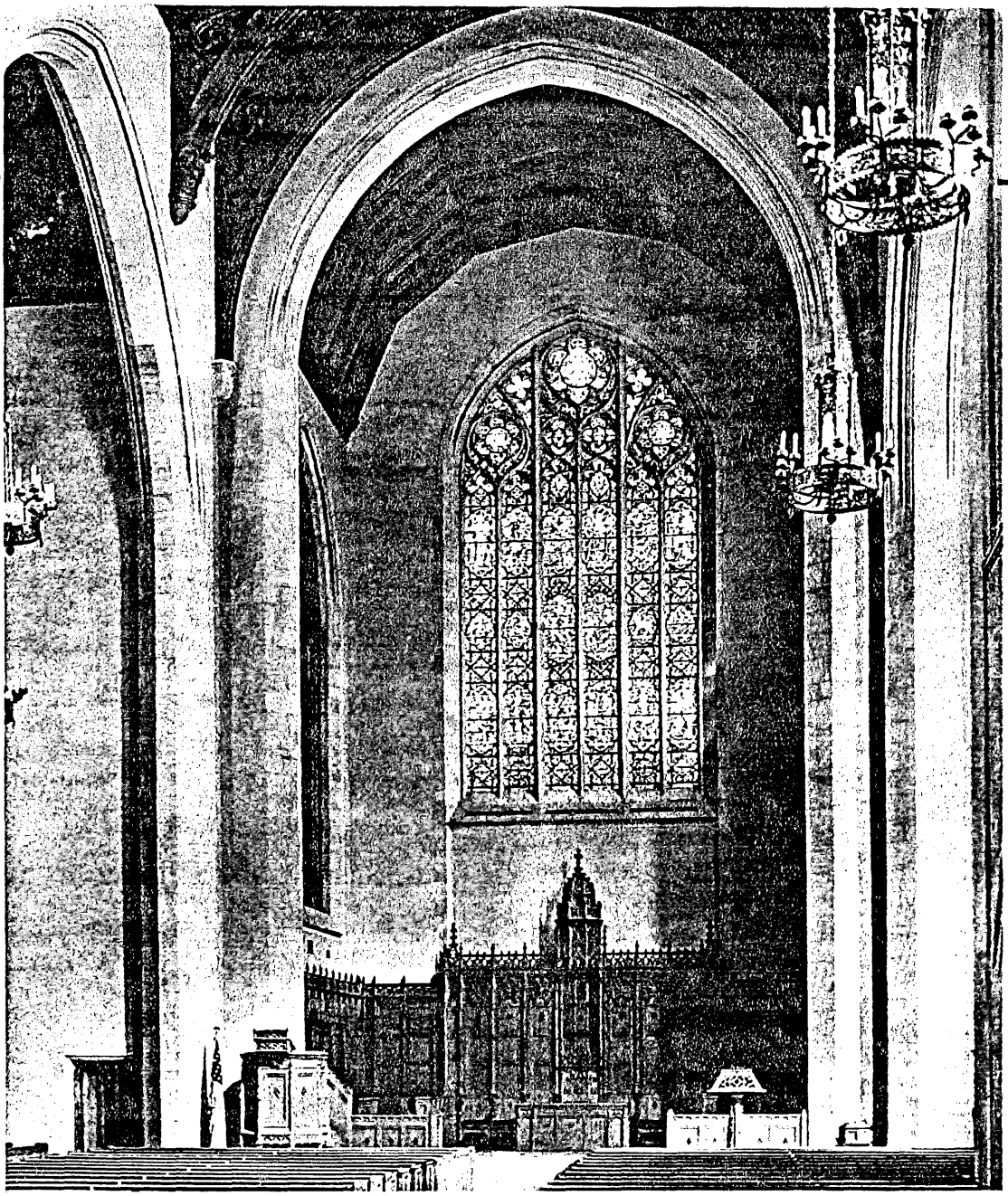
tonal beauty of this organ is charmingly enhanced by its ideal setting and is probably better known than any in Chicago's nearby suburbs.



FIRST CHURCH OF CHRIST • SCIENTIST • CAMBRIDGE • MASS.

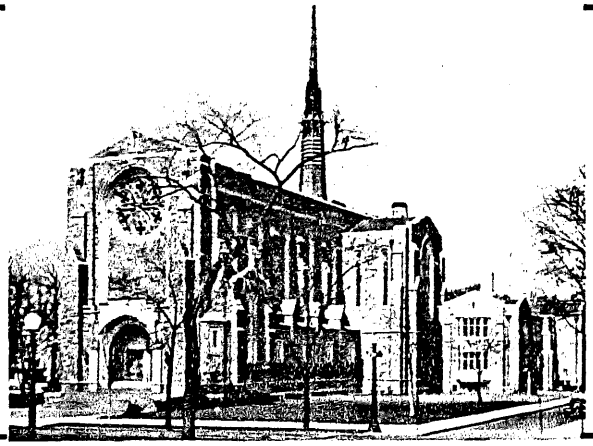
A fine example of contemporary Classical architecture, this beautiful edifice is graced by a three manual Kimball organ, installed behind the three arched tone openings at the front of the auditorium.



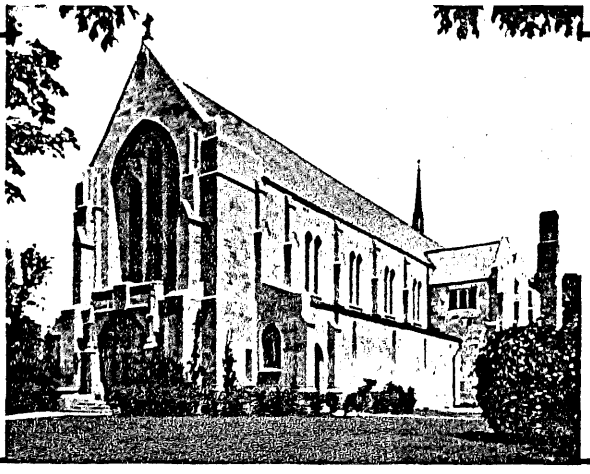


FIRST CONGREGATIONAL CHURCH • COLUMBUS • OHIO

Behind beautiful grillework, located on the left side of the Chancel, this very prominent Church has a large four manual Kimball organ. An Echo organ is placed over the balcony at the rear of the church.

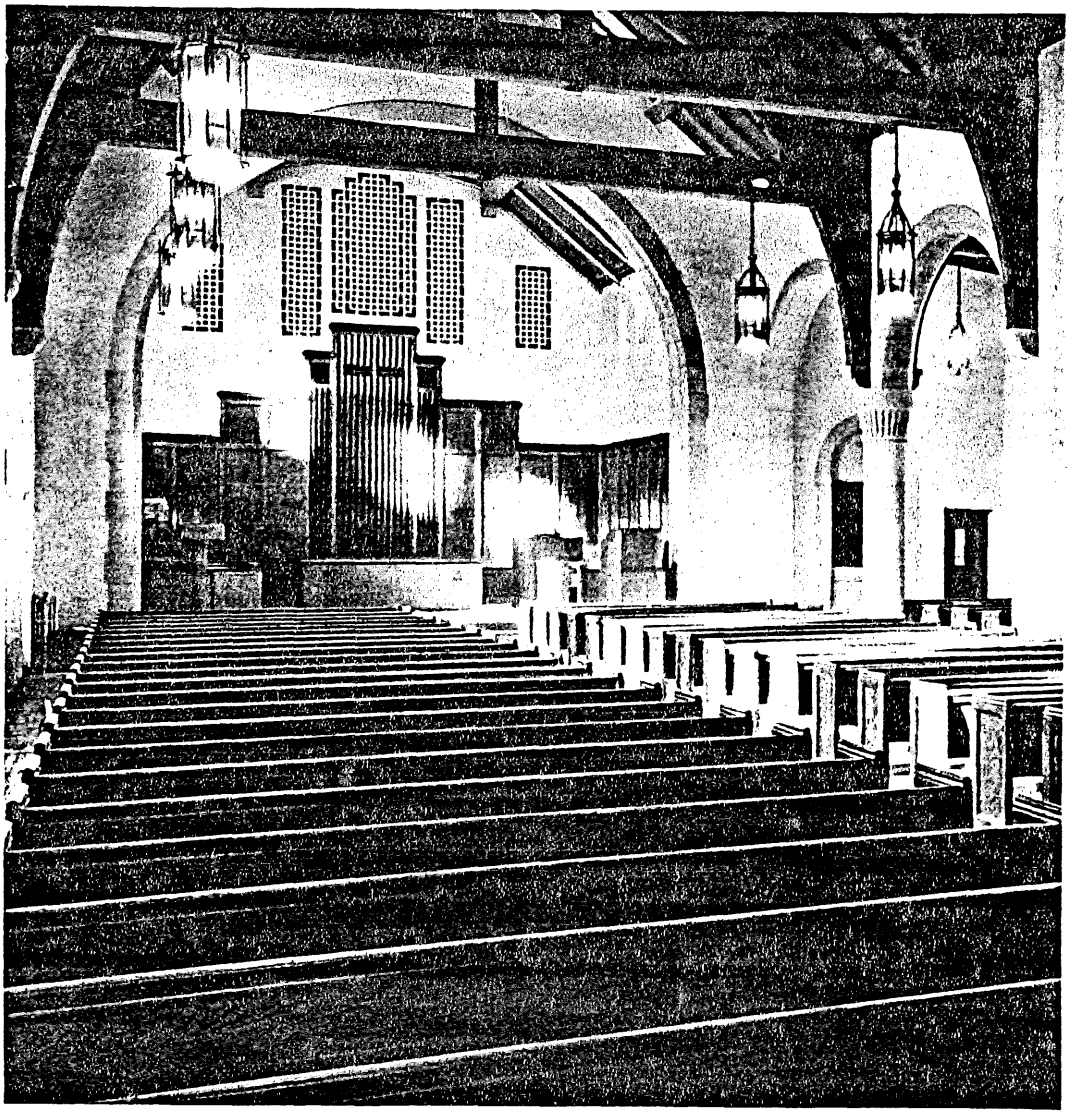


EMMANUEL EPISCOPAL CHURCH • LA GRANGE • ILLINOIS



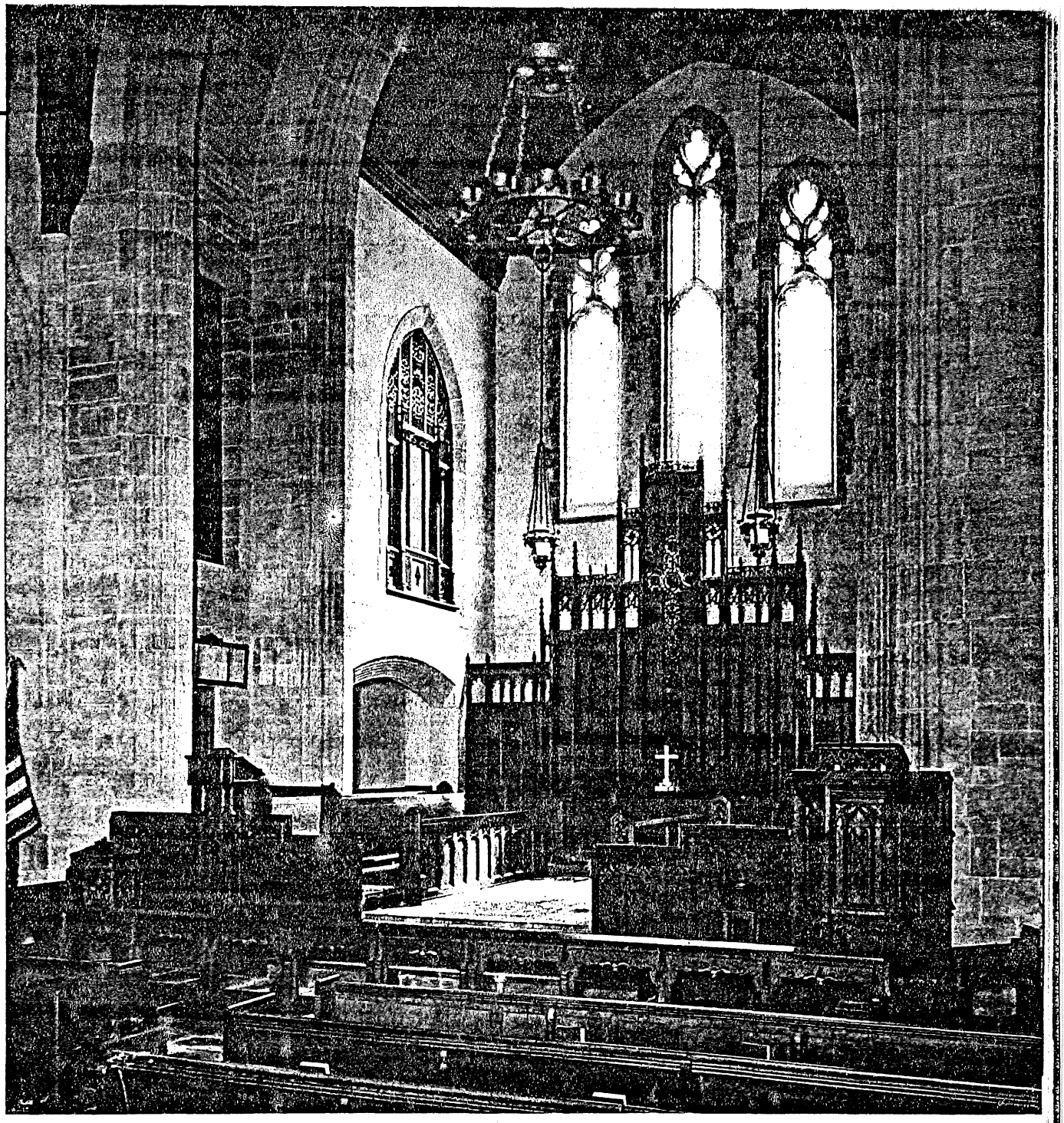
One of the most beautiful in the Episcopal diocese of Chicago, this Church represents an outstanding example of 13th century Gothic architecture in the United States. A noteworthy feature of the three manual Kimball organ was the effective installation of the organ in space very limited and at first apparently inadequate.

FIRST CHRISTIAN CHURCH • COLORADO SPRINGS • COLO.



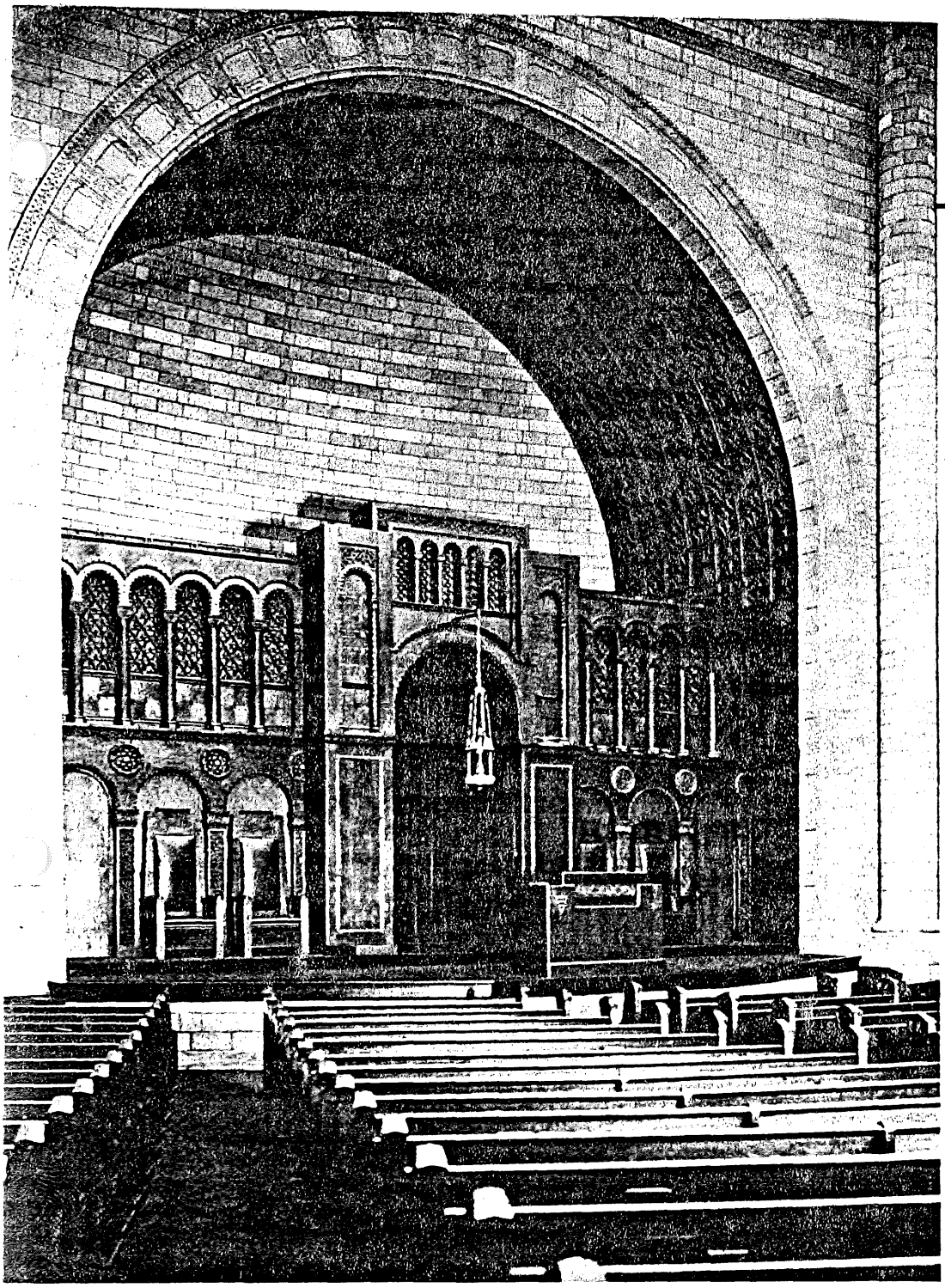
Simplicity was the keynote in the architectural design of this church—the result—serene beauty.

The Kimball organ is of two manuals and an Echo organ is located in the rear of the auditorium.



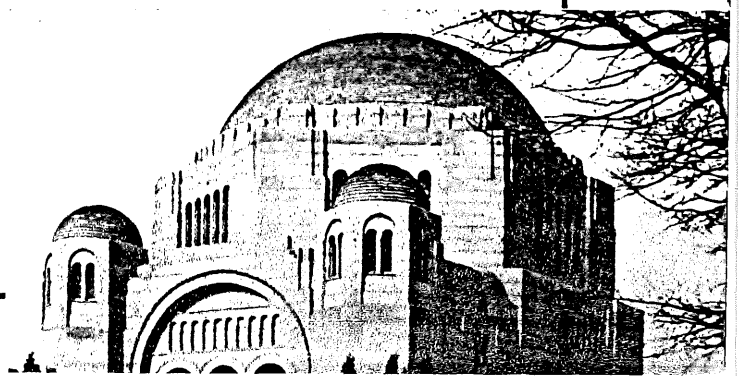
FIRST METHODIST EPISCOPAL CHURCH • WILMETTE • ILLINOIS

The three manual Kimball organ is installed in chambers on either side of the Chancel behind decorative grilles.

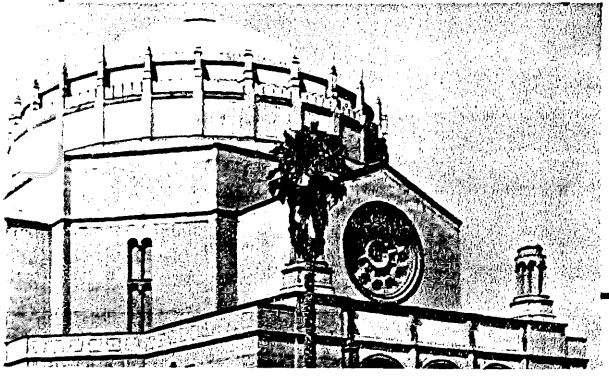


THE TEMPLE • CLEVELAND • OHIO

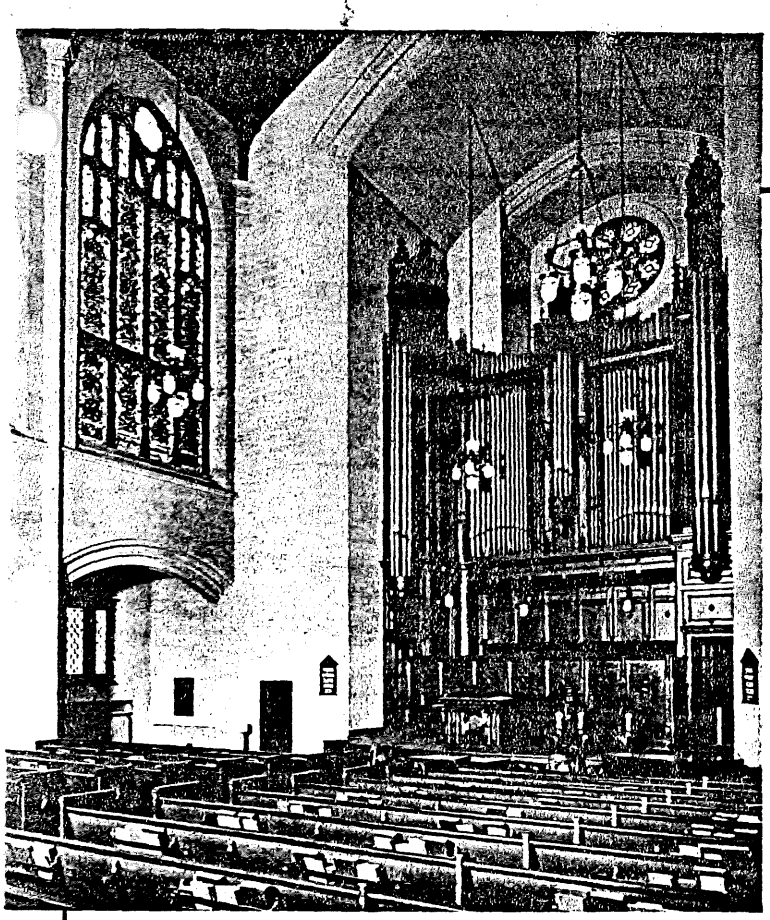
Of distinctive architecture, this edifice serves one of the most important Jewish congregations in this country. The four manual Kimball organ is located at the front of the auditorium and speaks through the grille above the arch. The console is not visible, being placed in the Choir loft behind a decorative screen. An Echo organ speaks through a grille at the rear of the church.



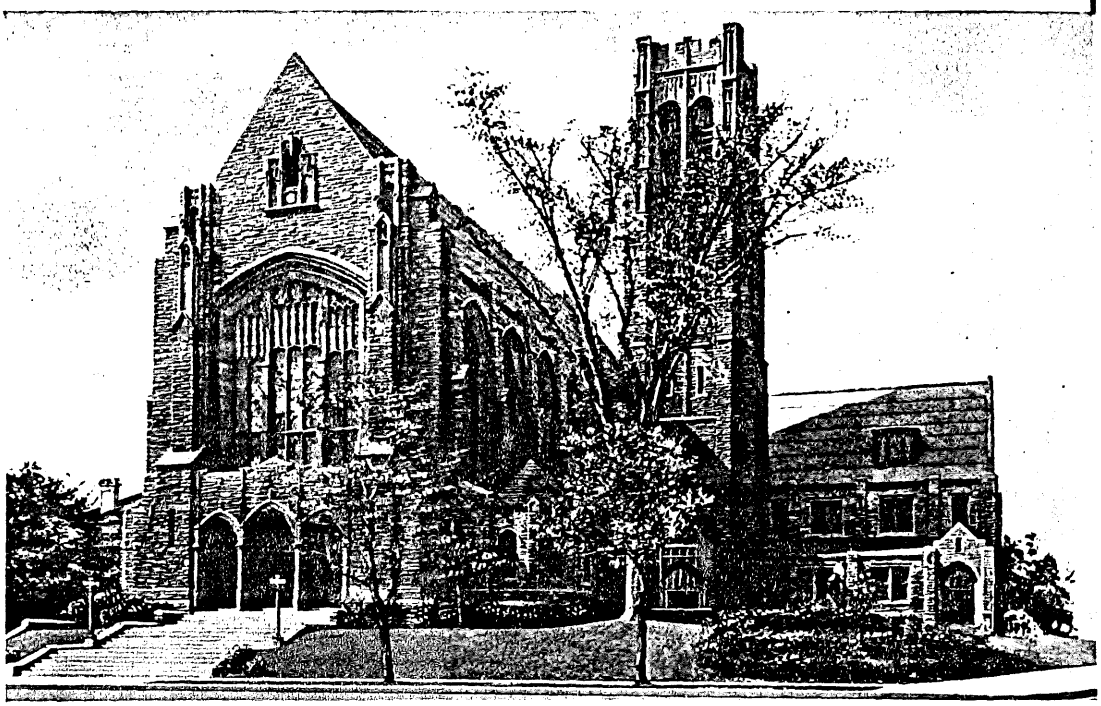
CONGREGATION B'NAI B'RITH • LOS ANGELES • CALIFORNIA



This magnificent Temple is known the world over for its beautiful murals executed by an European artist. The four manual Kimball organ is located directly behind the decorative grille above the Choir loft behind the wood panelled screen. There is also a two manual Kimball organ in a Chapel adjacent to the auditorium.

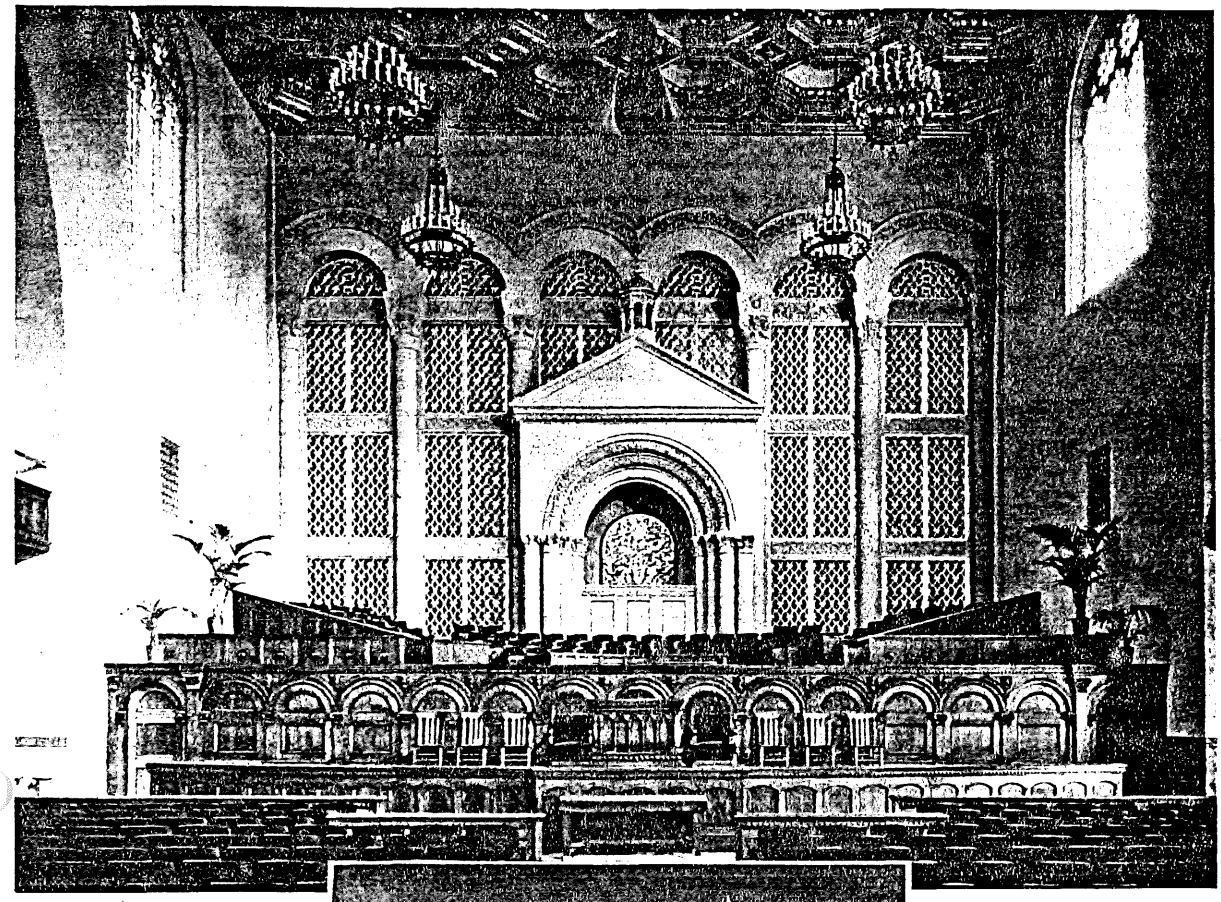


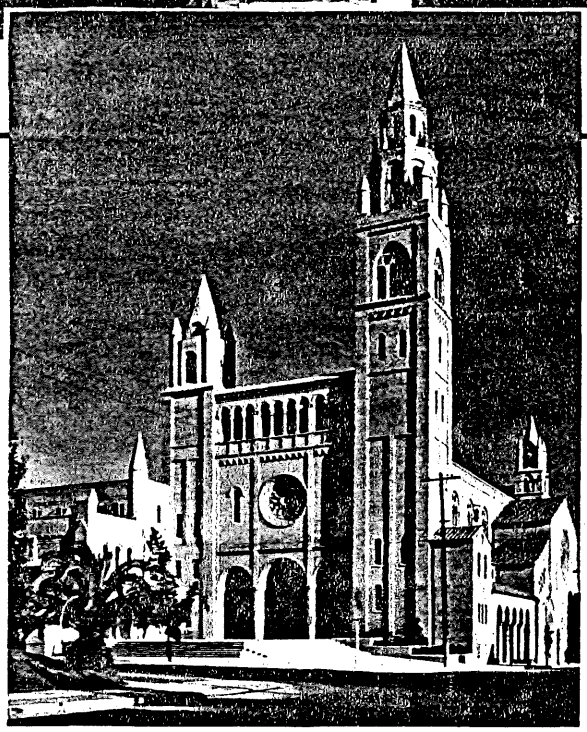
WESTMINSTER PRESBYTERIAN CHURCH AT ST. LOUIS, MISSOURI



One of the most churchly edifices in St. Louis; the three manual Kimball organ is in every way appropriate to the character and beauty of the Church and its service.

FIRST BAPTIST CHURCH • LOS ANGELES • CALIFORNIA

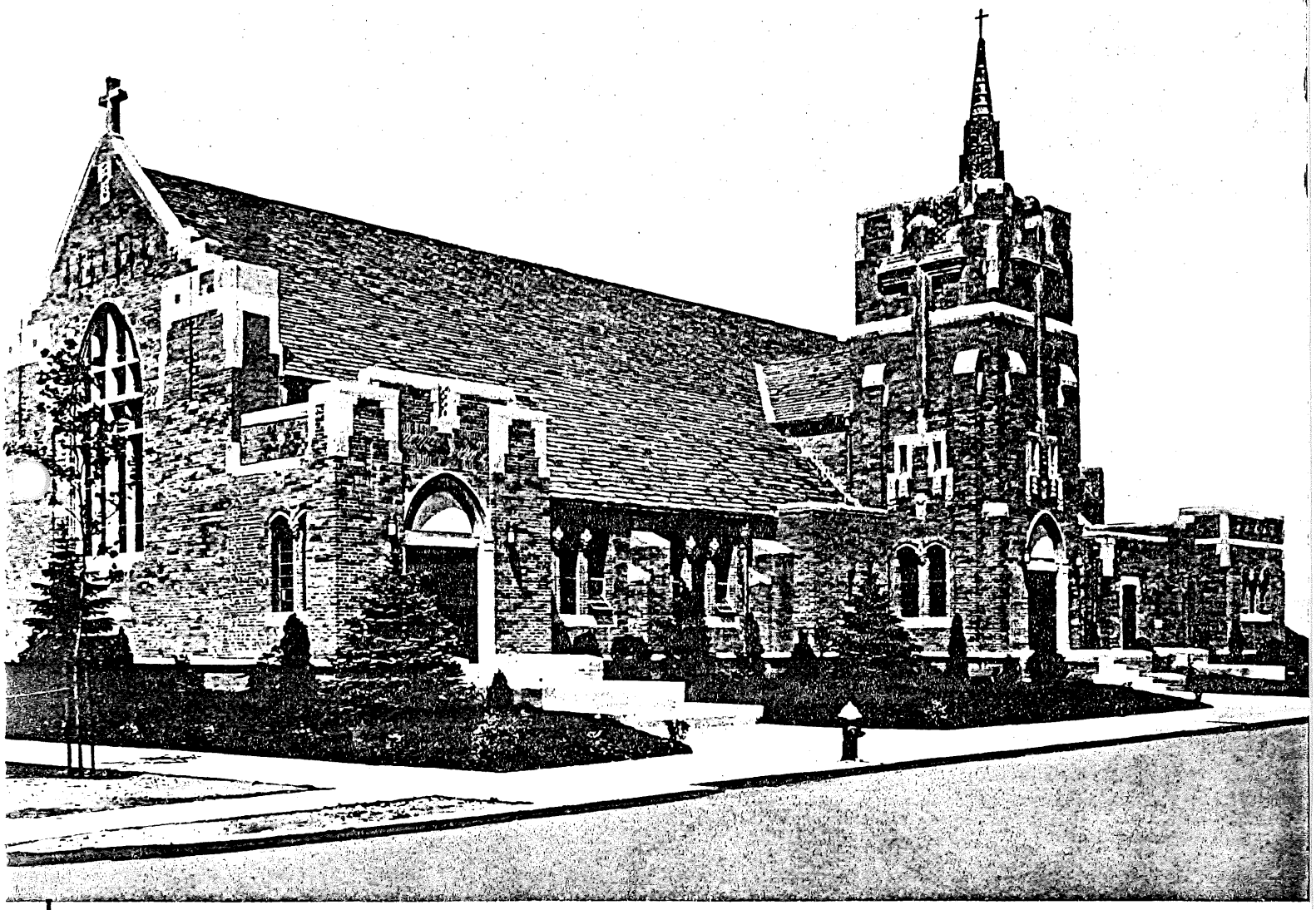




s edifice is one of the largest most beautiful churches of its mination in this country. The rose windows are reproduc- of the famous rose windows Chartres Cathedral, France.

Here we find a four manual Kimball organ behind the decorative grille; also a two manual Kimball organ in the adjacent Chapel.

ST. FRANCIS DE SALES ROMAN CATHOLIC CHURCH
BELLE HARBOR • LONG ISLAND • NEW YORK

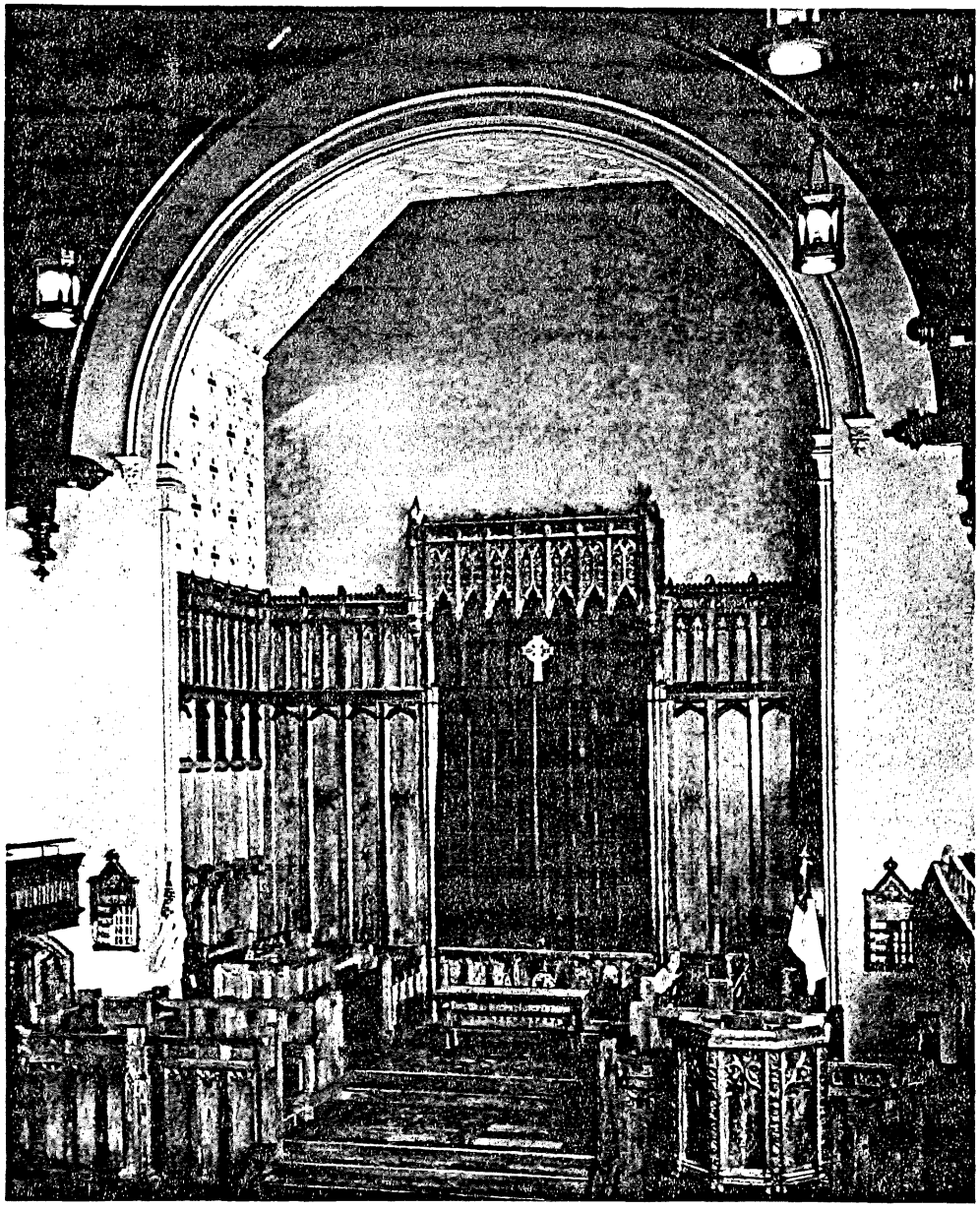


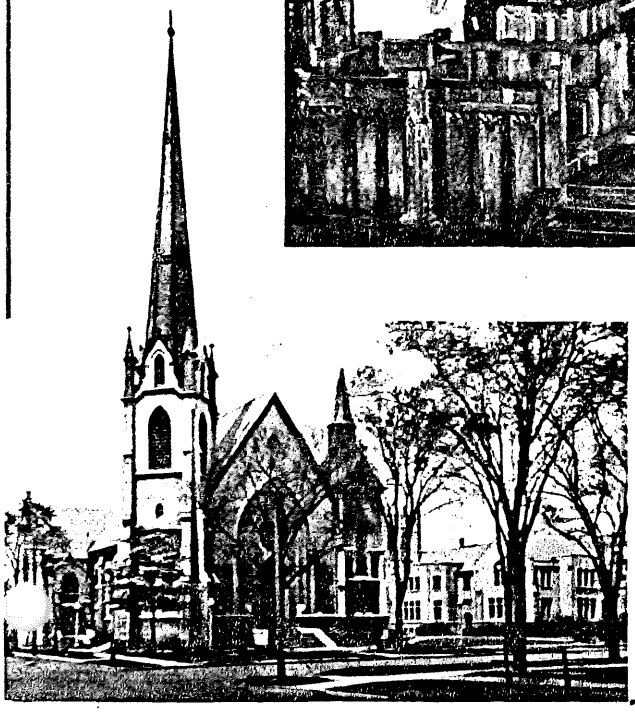
This beautiful parish Church was designed and built under the supervision of the Brooklyn Diocesan Building Commission, which also approved the purchase of the two manual Kimball organ, specially designed for the Catholic liturgy.

ST. PAUL'S CATHEDRAL • PITTSBURGH • PENNSYLVANIA

This four manual organ was one of many Kimball organs donated by Andrew Carnegie and was installed in 1900.

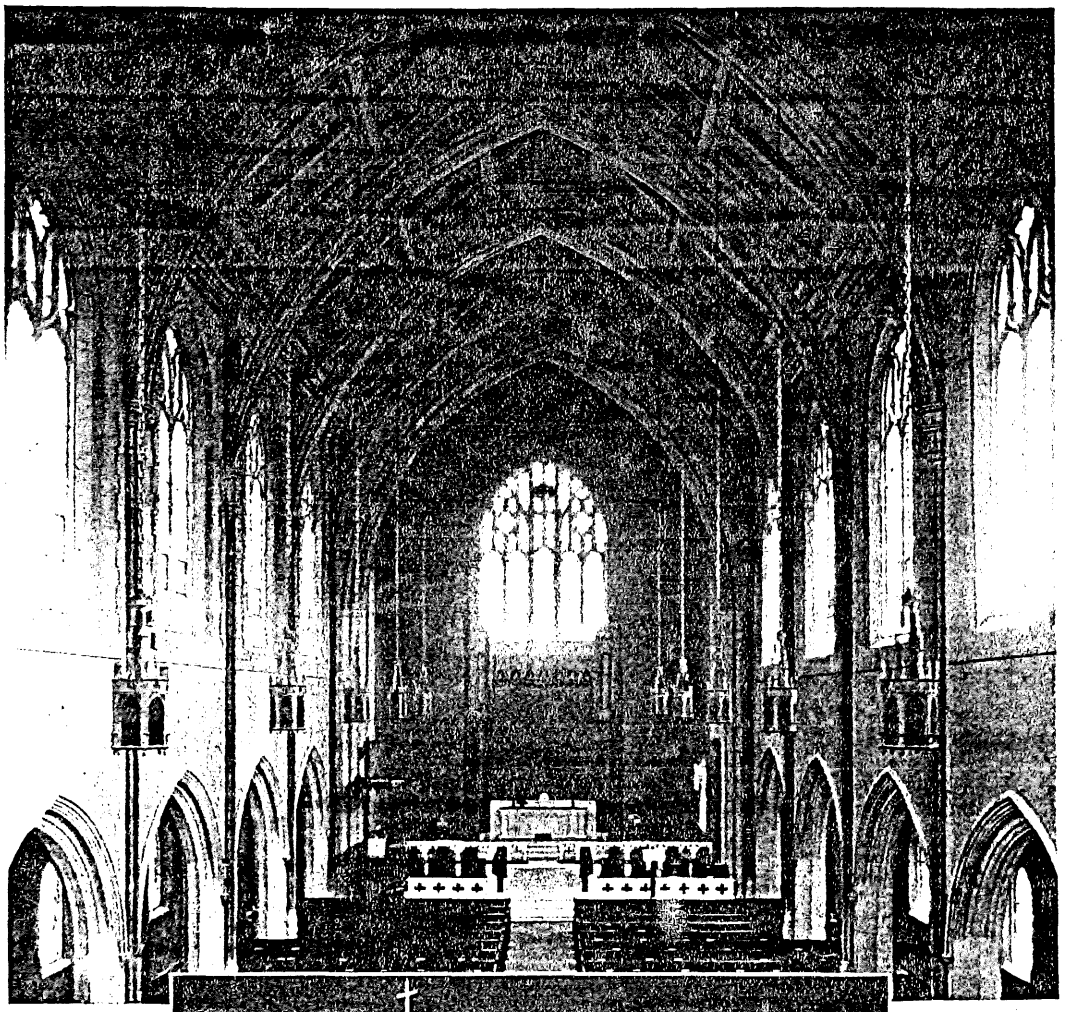
FIRST BAPTIST CHURCH • EVANSTON • ILLINOIS

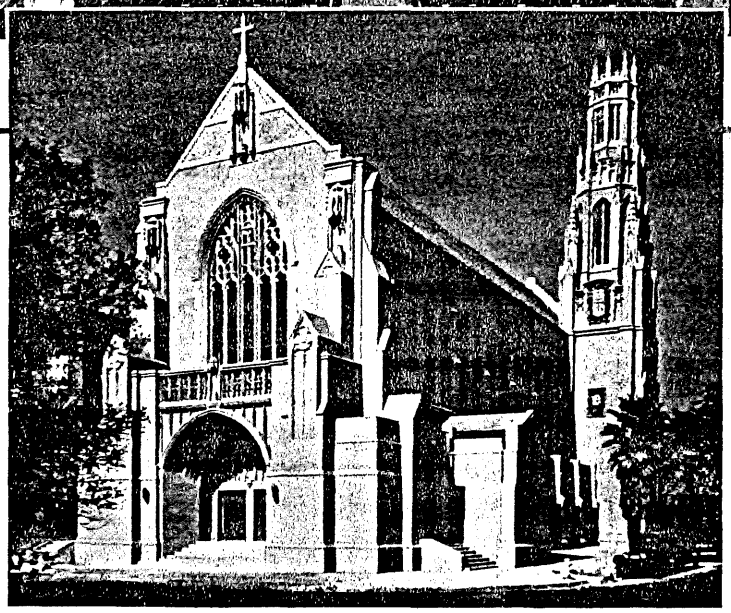




The three manual Kimball organ is located in chambers on either side of the Chancel and speaks through decorative grilles. This organ was designed by Dr. William H. Barnes, eminent organ architect and organist of this church. In Dr. Barnes' "The Contemporary American Organ," the most authoritative book on organ building, is found a detailed account of the specifications of this organ.

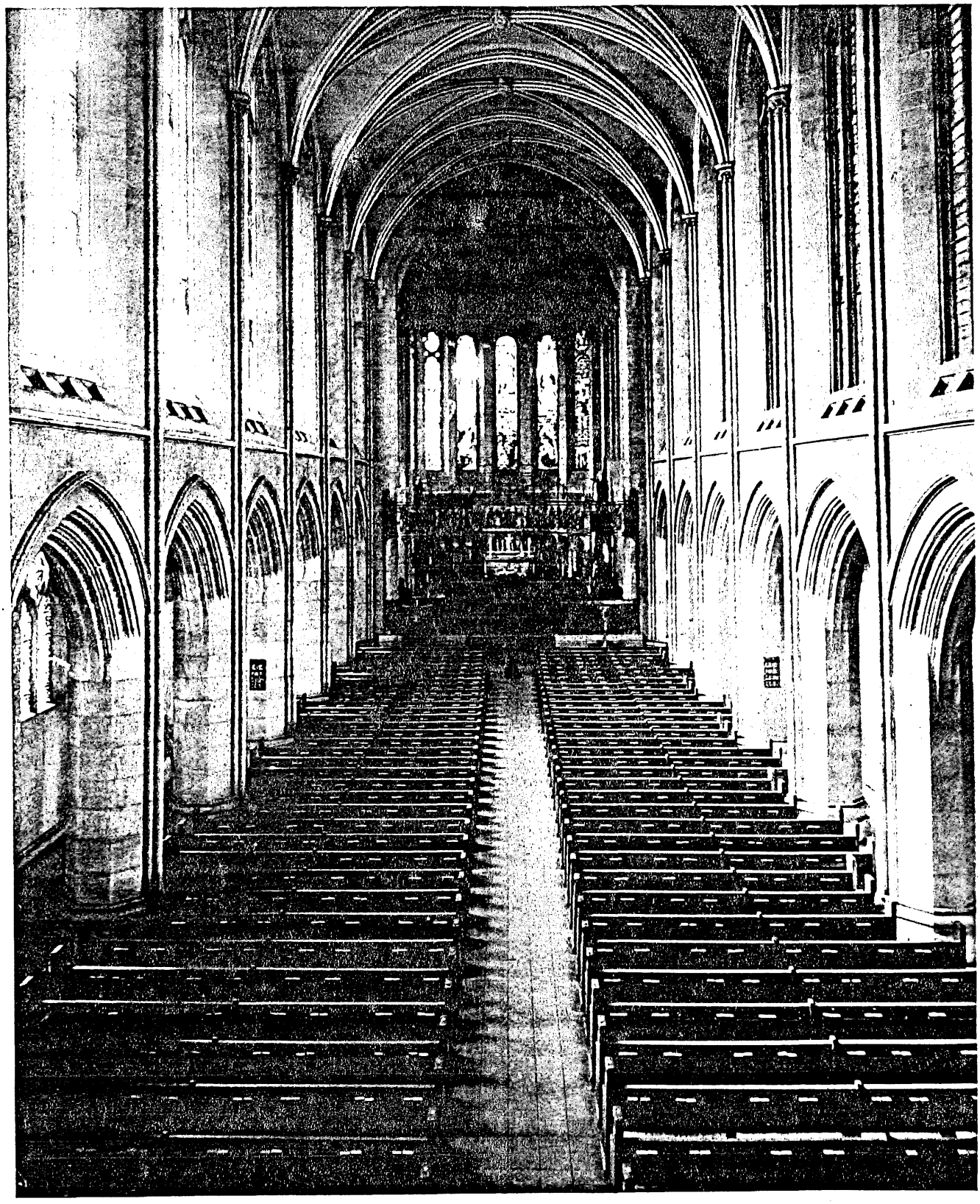
ST. JAMES EPISCOPAL CHURCH • LOS ANGELES • CAL.





Kimball organ is
r manuals and its
beauty is in keeping
this Church, which
rchitectural master-
The organ is di-
vided and placed in chambers over the Chancel on either side. An Echo organ is located above the ceiling of the Church and speaks through a grille.

ST. JOHN'S CATHEDRAL



T DENVER • COLORADO

his historic Episcopal Cathedral was incorporated in 1861 by special enactment of the gislature of the Colorado Territory. Today it is one of the important Cathedrals in the world. he four manual Kimball organ is most comprehensive, serving not only the musical require- ents of the Cathedral, but as a recital organ for the City of Denver. The organ was the gift of rs. Lawrence C. Phipps as a Memorial to her father, the late Platt Rogers, former Mayor the City of Denver, Colorado. Specifications of the organ are as follows:

GREAT

(Unenclosed, except as indicated)

	Double Diapason	61
	Quintaton	61
	First Diapason	61
	Second Diapason	61
	Third Diapason	61
	armonic Flute	61
	ourdon	61
	Gemshorn	61
	First Octave	61
	Second Octave	61
	Flute Harmonique	61
′	Octave Quint	61
	Super Octave	61
	Fourniture (19-22-26-29)	244
V	Full Mixture (1-8-12-15-17)	269
	Contra Tromba	61
	Tromba	61
	Clarion	61
	Chimes	from Solo
	Tremolo (for enclosed labial stops)	
	*Enclosed	

SWELL

	Contra Salicional	73
	Echo Lieblich	73
	Geigen Principal	73
	Hohl Flöte	73
	Rohrflöte	73
	Salicional	73
	Voix Celeste	73
	Aeoline	73
	Aeoline Celeste	73
	Flauto Dolce	73
	Flute Celeste	61
	Octave Geigen	73
	Traverse Flute	73
′	Twelfth	61
	Fifteenth	61
III	Cornet (12-15-17)	183
V	Plein Jeu (15-19-22-26-29)	305
16′	Waldhorn	73
8′	Trumpet	73
8′	Cornopean	73
8′	Oboe	73
8′	Vox Humana	61
4′	Clarion	73
8′	Harp	from Choir
4′	Celesta	from Choir
8′	Chimes	from Solo
	Tremolo	

CHOIR

16′	Contra Dulciana	73
8′	Diapason	73
8′	Viola	73
8′	Concert Flute	73
8′	Dulciana	73
8′	Unda Maris	73
4′	Prestant	73
4′	Viola	73
4′	Lieblich Flöte	73
2⅔′	Nazard	61
2′	Piccolo	61
1⅗′	Tierce	61
16′	Bassoon	73
8′	Trompette	73
8′	Clarinet	73
8′	Orchestral Oboe	73
8′	Harp	61 bars
4′	Celesta	from Harp
8′	Chimes	from Solo
	Tremolo	

SOLO

16′	Contra Gamba	73
8′	Flauto Mirabilis	73
8′	Gamba	73
8′	Gamba Celeste	73
4′	Orchestral Flute	73
4′	Gambette	73
2′	Piccolo Harmonique	61
8′	Tuba Mirabilis	73
8′	French Horn	73
8′	Cor Anglais	73
4′	Clarion	73
8′	Harp	from Choir
4′	Celesta	from Choir
8′	Chimes	25 tubular bells
	Tremolo	

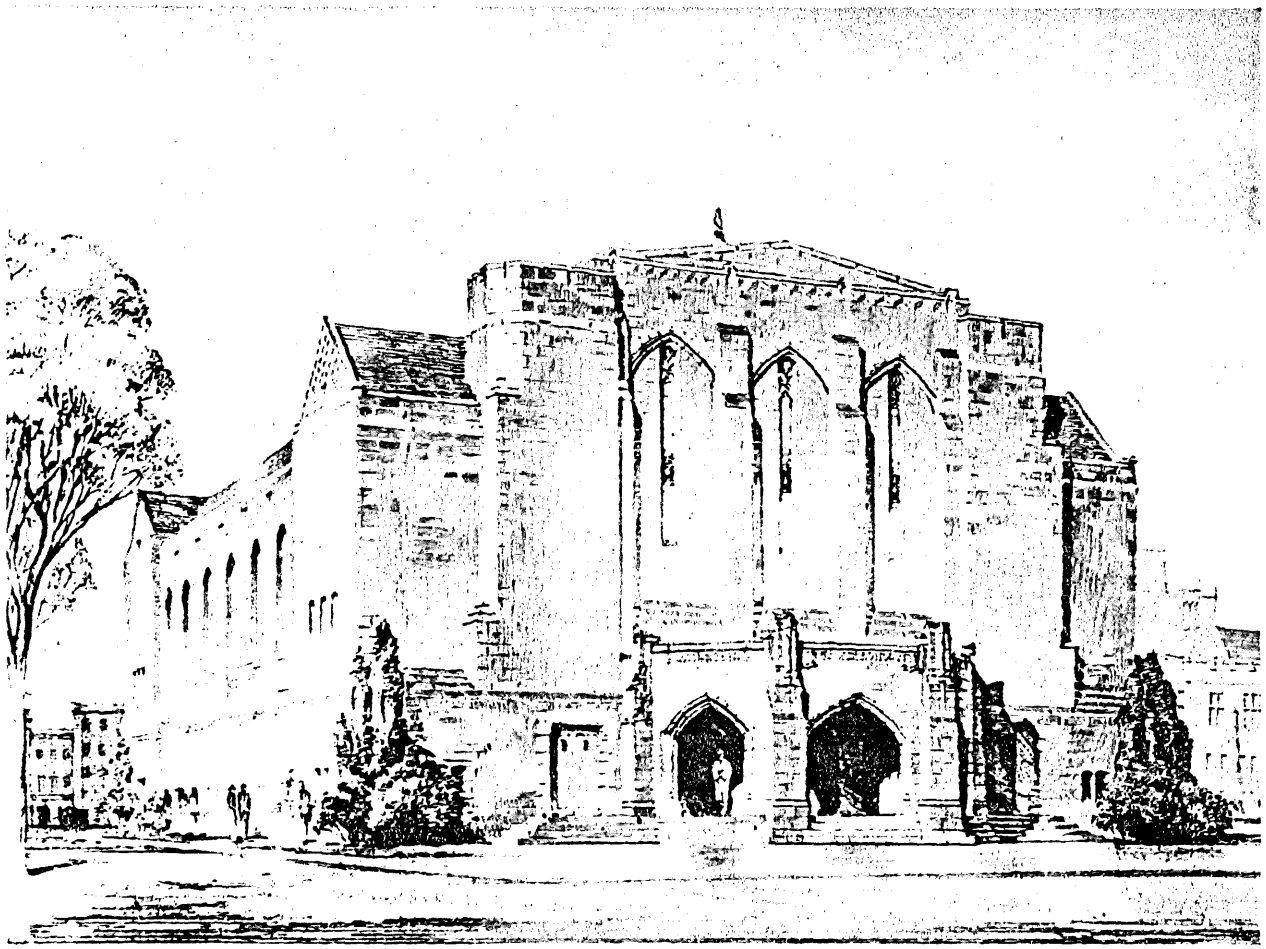
PEDAL

(Unenclosed, except as borrowed from manuals)

32′	Open Diapason	12
16′	Open Diapason	32
16′	Principal	32
16′	Double Diapason	from Great
16′	Geigen	32
16′	Violone	32
16′	Bourdon	32
16′	Contra Gamba	from Solo
16′	Contra Salicional	from Swell
16′	Echo Lieblich	from Swell
16′	Contra Dulciana	from Choir
8′	First Octave	12
8′	Second Octave	32
8′	Geigen	12
8′	Cello	12
8′	Flute	12
8′	Stillgedeckt	from Swell
8′	Dulciana	from Choir
4′	Super Octave	32
4′	Flute	12
IV	Mixture (12-17-19-22)	128
32′	Contra Waldhorn	12
16′	Trombone	32
16′	Contra Tromba	from Great
16′	Waldhorn	32
16′	Bassoon	from Choir
8′	Trumpet	32
4′	Clarion	32
8′	Chimes	from Solo

Thirty-seven couplers • Fifty adjustable combination pistons • Four balanced expression pedals; crescendo pedal • Mezzo-Sforzando and Sforzando reversibles • Nine reversible toe pistons, master expression and selective expression control to connect any or all expressions to any expression pedal.

THORNE HALL • NORTHWESTERN UNIVERSITY • CHICAGO



This auditorium serves the post-graduate Colleges of the Northwestern University and is a center for cultural activities for the University as well as the City of Chicago. The four manual Kimball organ has been played by the world's outstanding artists and has been widely acclaimed for its tonal beauty.

ORGANS FOR THE EDUCATIONAL INSTITUTION

THE very exact requirements of the educational institution as to its musical instruments must include tonal beauty, unfailing reliability and low cost of maintenance. The Kimball organ most admirably fulfills these demands as is evidenced by its world-wide acceptance by leading Universities and other educational institutions.

PARTIAL LISTING

Northwestern University, Chicago, Illinois

Vassar College, Poughkeepsie, New York

Cornell College, Mt. Vernon, Iowa

Grove City College, Grove City, Pa.

Ohio Wesleyan University, Delaware, Ohio

University of Oklahoma, Norman, Okla.

Lawrence College, Appleton, Wisc.

Missouri Valley College, Marshall, Mo.

Carleton College, Northfield, Minn.

Park College, Parkville, Mo.

State Teacher's College, Minot, North Dakota

American Conservatory of Music, Chicago, Illinois

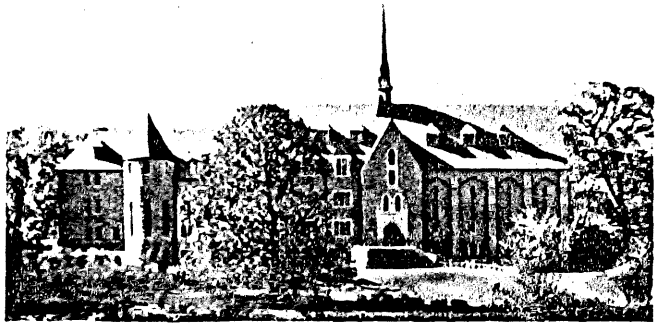
Detroit Conservatory of Music, Detroit, Michigan

Seijo—Sakuen School, Tokio, Japan

Union Medical College, Peiping, China

North Central College, Naperville, Ill.

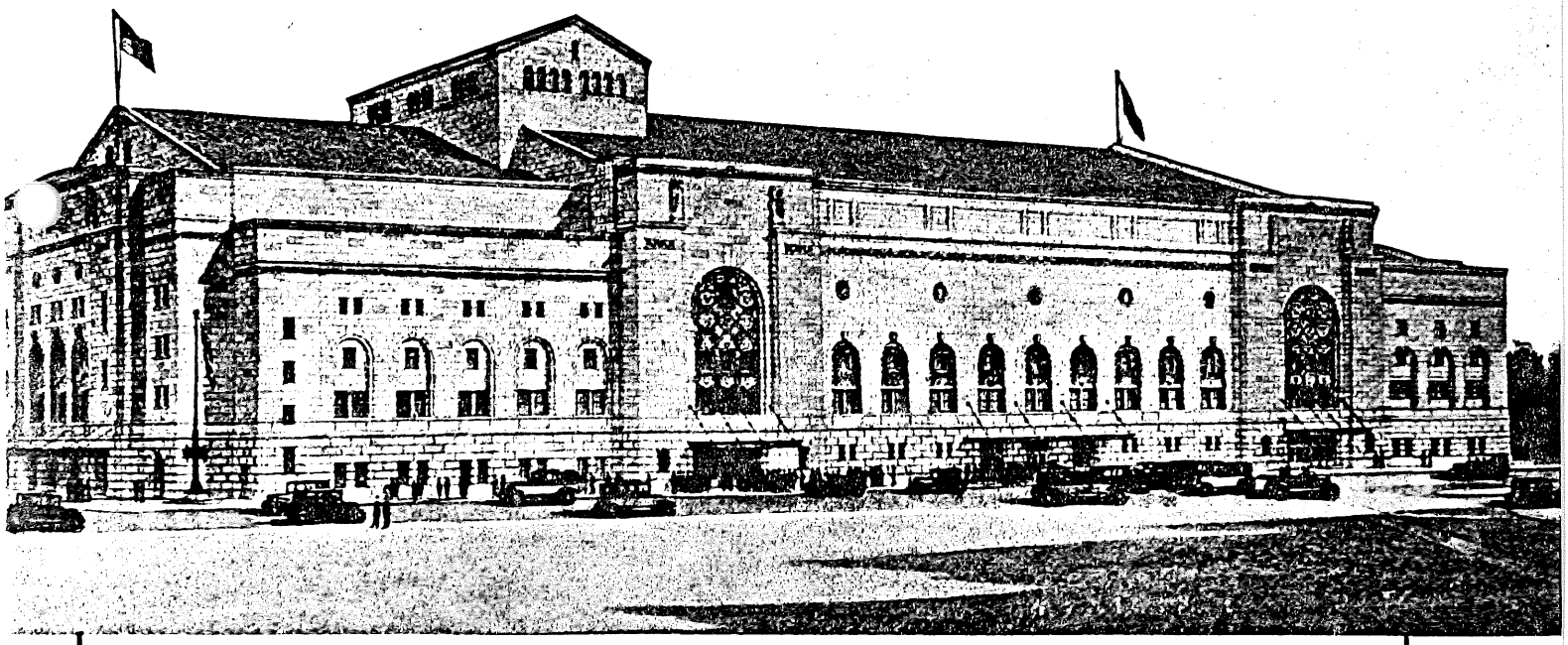
CORNELL COLLEGE, MT. VERNON, IOWA; four manual Kimball organ.



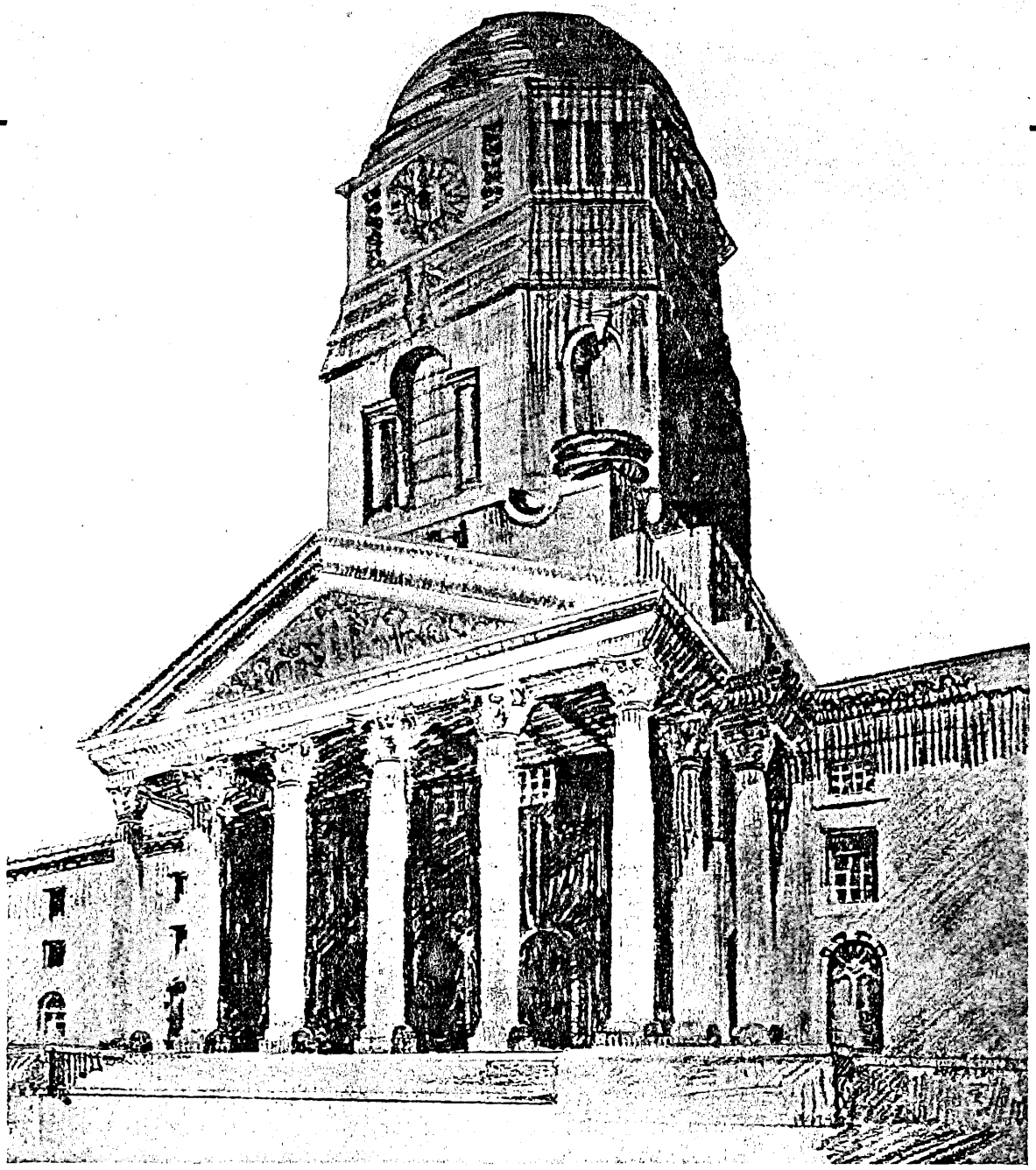
VASSAR COLLEGE, POUGHKEEPSIE, N. Y.; four manual Kimball organ, located in Belle Skinner Hall.

MUNICIPAL AUDITORIUM • MINNEAPOLIS • MINNESOTA

Seating 10,000 people, this huge auditorium has a large five manual Kimball organ of vast tonal resources. It is one of the largest organs in the world. Consisting of 102 speaking stops and 7 percussions, this organ is installed in specially built organ chambers on both sides of the proscenium arch. There



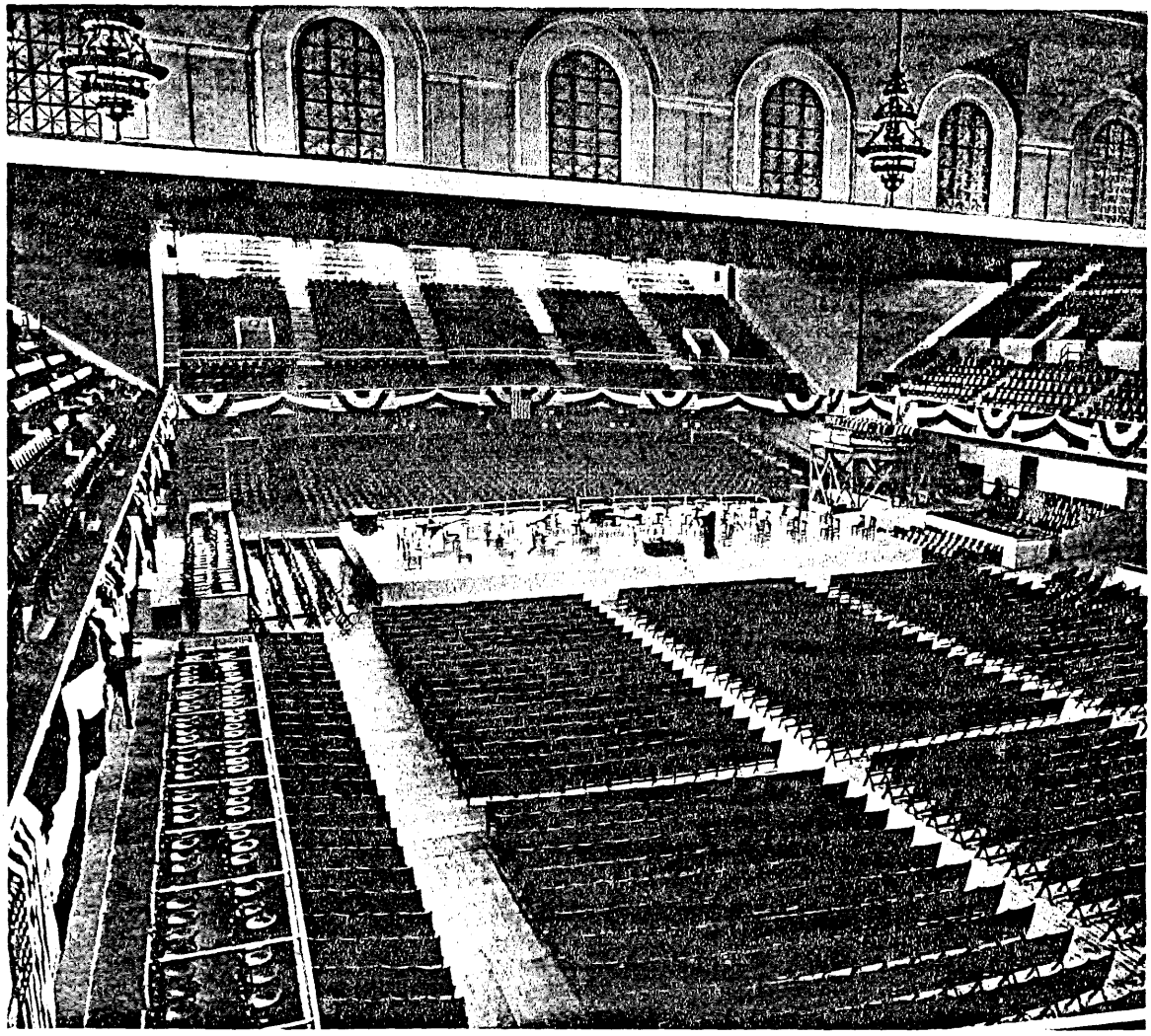
are two consoles, one five manual and one four manual, from which the organ can be played singly or simultaneously. The World's outstanding organists have played this organ before vast audiences and their praise of the tonal beauty of the organ is unanimous.



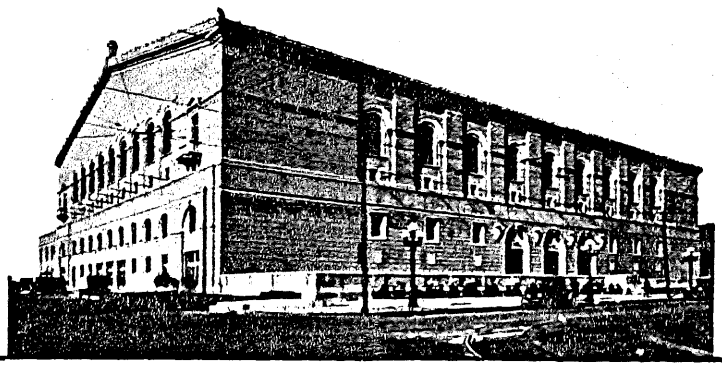
MUNICIPAL AUDITORIUM • PRETORIA • UNION OF SOUTH AFRICA

In this far away land of gold and diamonds, we find a large four manual Kimball organ, which serves as a fine recital organ for this city. The contract to build this organ was awarded in most severe international competition. The tonal beauty of the Kimball organ and its most reliable organ mechanism were the deciding factors in our favor, another proof of the world-wide confidence in the Kimball organ.

MUNICIPAL AUDITORIUM • MEMPHIS • TENNESSEE



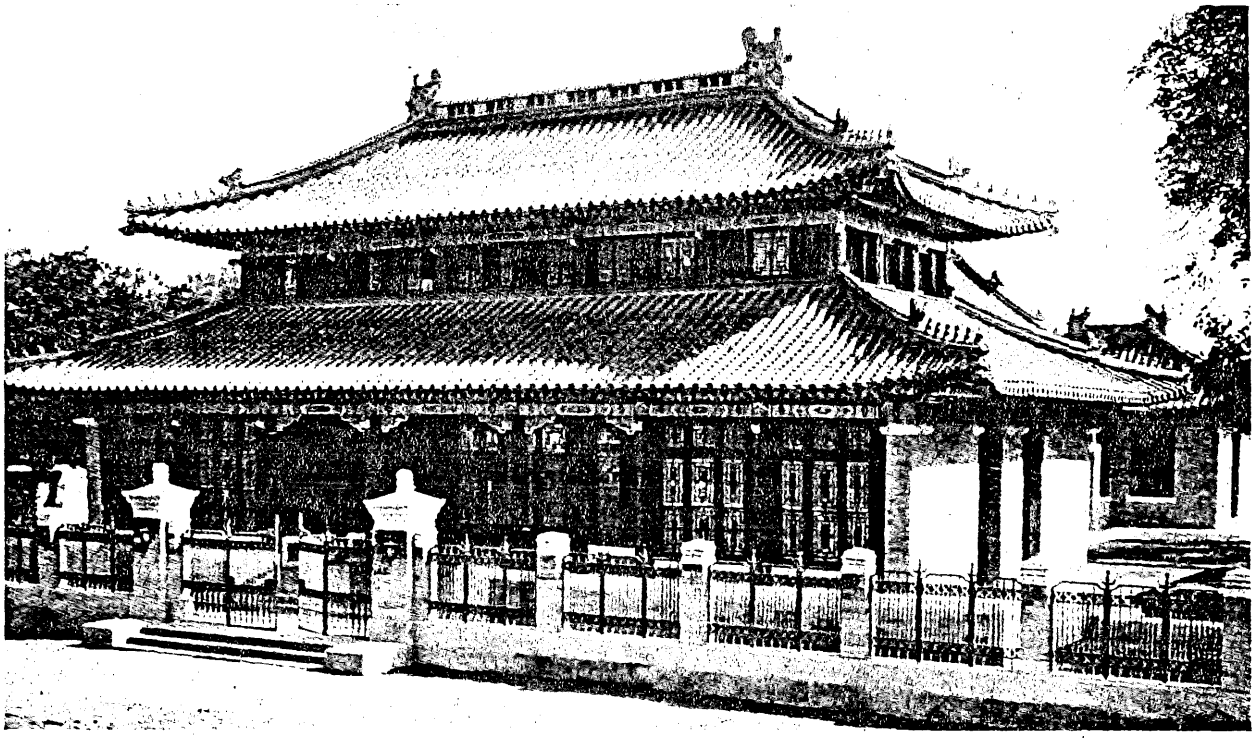
The large five manual Kimball organ is located in several chambers suspended across the auditorium, a most unique but ideal setting for the organ.



MUNICIPAL AUDITORIUM • WORCESTER • MASSACHUSETTS

This beautiful building, dedicated to the memory of those who paid the supreme sacrifice in the World War, is a most important center for musical activities in New England. The famous Worcester Festival, held here every year, draws attendance from the entire United States. The four manual Kimball organ is very comprehensive and was specially designed for the many purposes it serves.

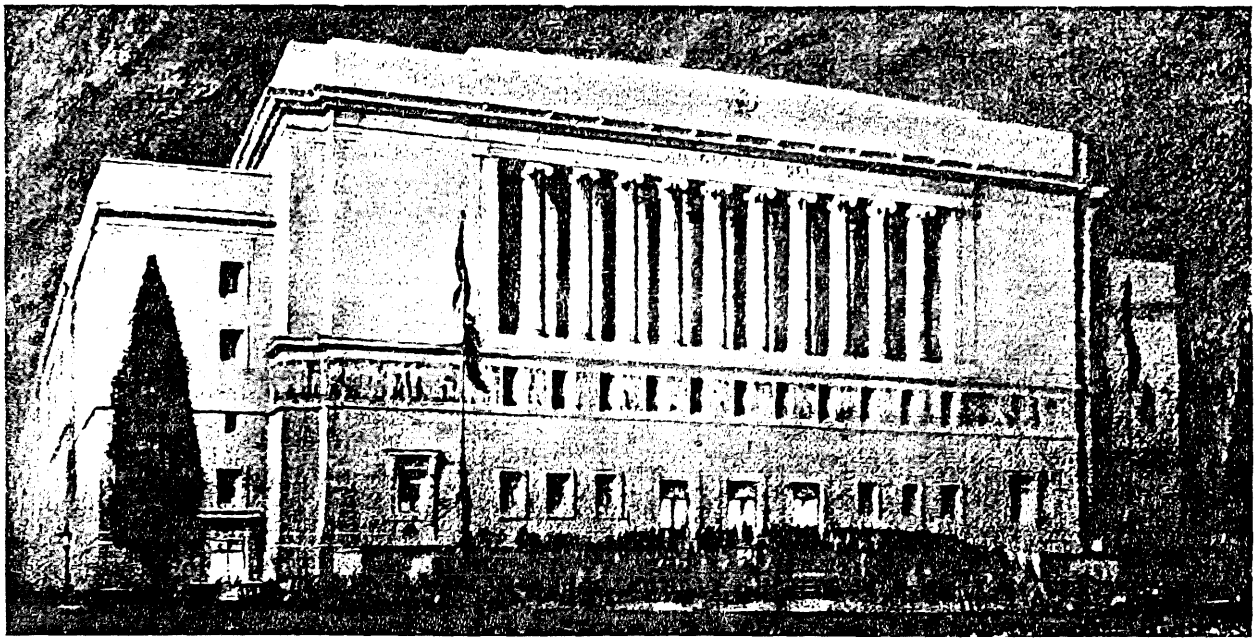
UNION MEDICAL COLLEGE • PEIPING • CHINA



Founded by the Rockefeller Foundation in 1919, this College consists of fourteen buildings on approximately ten acres of land. The architecture of all buildings is in harmony with the great architectural monuments of Peiping; the Chinese forms for the exteriors, but the interiors modified for the practical purposes for which the buildings are used. In the auditorium building, the center of all social and cultural activities, is found a Kimball organ used for Chapel services and recitals.

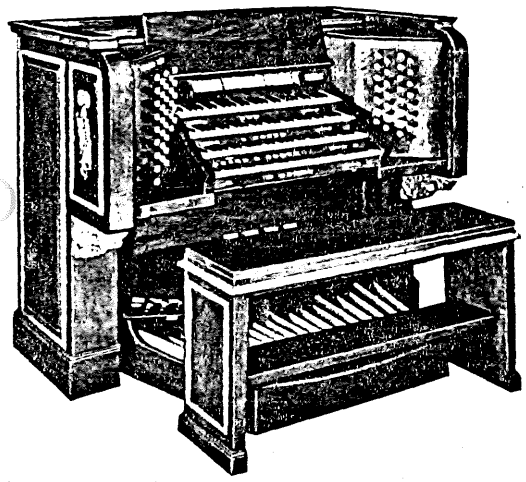
CATHEDRAL OF THE SCOTTISH RITE • ST. LOUIS • MO.

This stately building has a four manual Kimball organ in the large auditorium, which seats 3,000 people. Echo and Antiphonal sections of the organ are special features of this instrument, which is used primarily for accompaniment of the ritual work in the Lodge. Many organ recitals are also featured bringing out the beautiful solo effects of this instrument.



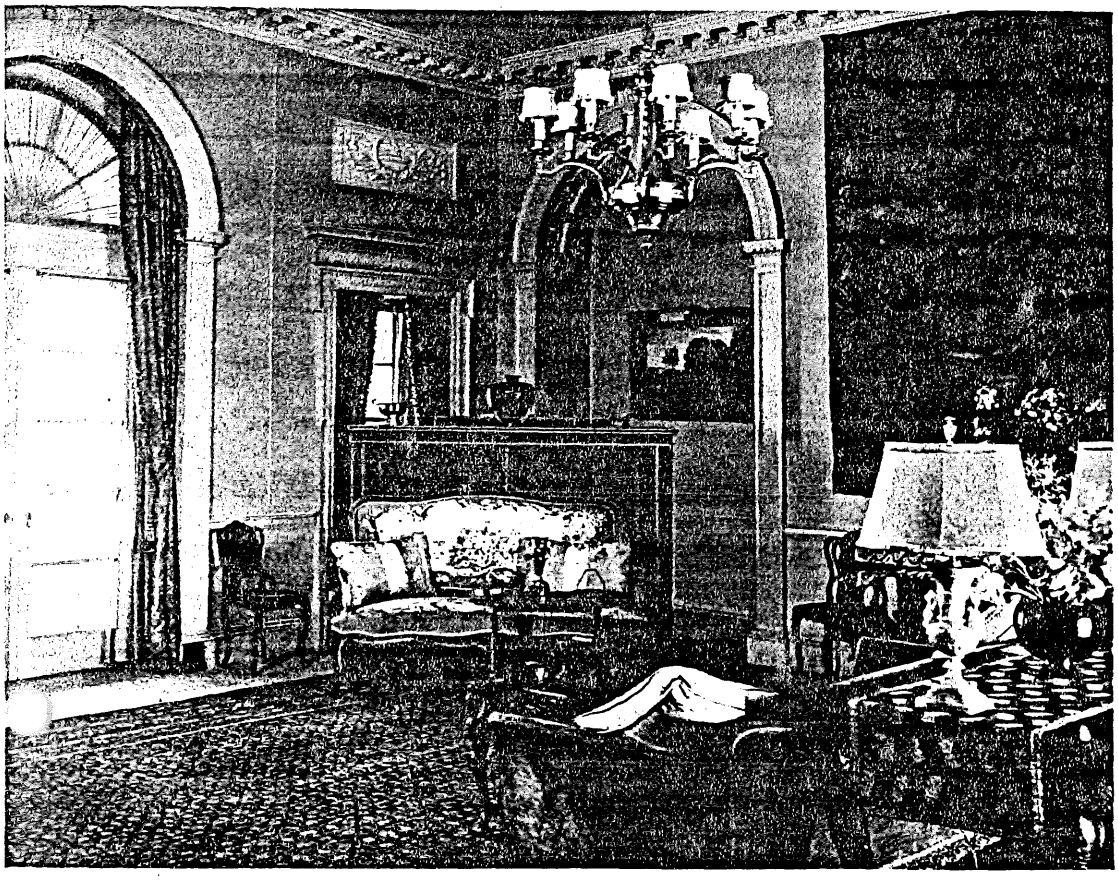
THE KIMBALL-WELTE

NO one has ever expressed the full value of fine music in the home. Filled with paintings, sculpture, objets d'art and every other luxury a home is poor indeed without some instrument of musical expression. What more irresistibly enchanting instrument can grace the home—than a reproducing pipe organ! A mere touch of a button will bring forth the great music of the world. from the simple melody of song to the majestic strains of a Beethoven Symphony or a Bach Fugue. The playing of the world's outstanding organists is at your command in the Kimball-Welte Reproducing Organ. In the words of one famous Artist: "*It produces the living soul of any artist so perfectly that I can distinguish my friends and colleagues in their interpretation and touch. It is impossible to tell the reproductions from the actual playing. It is the miracle of the century.*" The Kimball-Welte Reproducing Organ is easy to install. It may be placed in a basement, attic, stair or closet space with tone outlets through grilles in the living rooms. Its cost is moderate, its yield in beauty and enjoyment beyond evaluation.



Four manual console in Residence of Mrs. M. F. Yount, Spindletop Farm, near Lexington, Ky.

REPRODUCING ORGAN



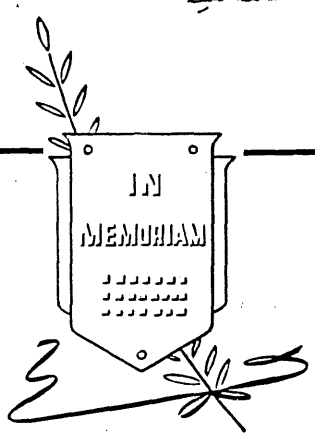
Music Room in Residence of Senator James A. Phipps, Denver, Colorado

Showing one typical Kimball-Welte Reproducing Organ installation, where the organ is located in the basement. The tone is carried into the living rooms by means of tone chutes and the tone openings are concealed behind hanging tapestries. The Kimball-Welte Player mechanism is installed in a separate cabinet and controlled from several program panels, from which any one of ten compositions can be selected at the mere touch of a button.

Residence of Senator James A. Phipps

THE PIPE ORGAN • A LIVING MEMORIAL

Frank W. Howes Memorial Chapel • Evanston, Illinois



The selection of a token given to cherish the memory of one departed merits careful and searching consideration. What more beautiful medium can be chosen for the expression of your thoughts—than a pipe organ! Its living quality of creating beautiful music — its dulcet tones of serene beauty — its vibrant and solemn grandeur — there is no other choice more capable of fulfilling your every wish.

PARTIAL LISTING

The Roger Platt Memorial Organ, St. John's Cathedral, Denver, Colo.

The William H. Martin Memorial Organ, First Cong. Church, Columbus, Ohio.

The World War Memorial Organ, Municipal Auditorium, Worcester, Mass.

The Belle Skinner Memorial Organ, Vassar College, Poughkeepsie, N. Y.

The A. C. Kuhn Memorial Organ, First Reformed Church, New Philadelphia, Ohio

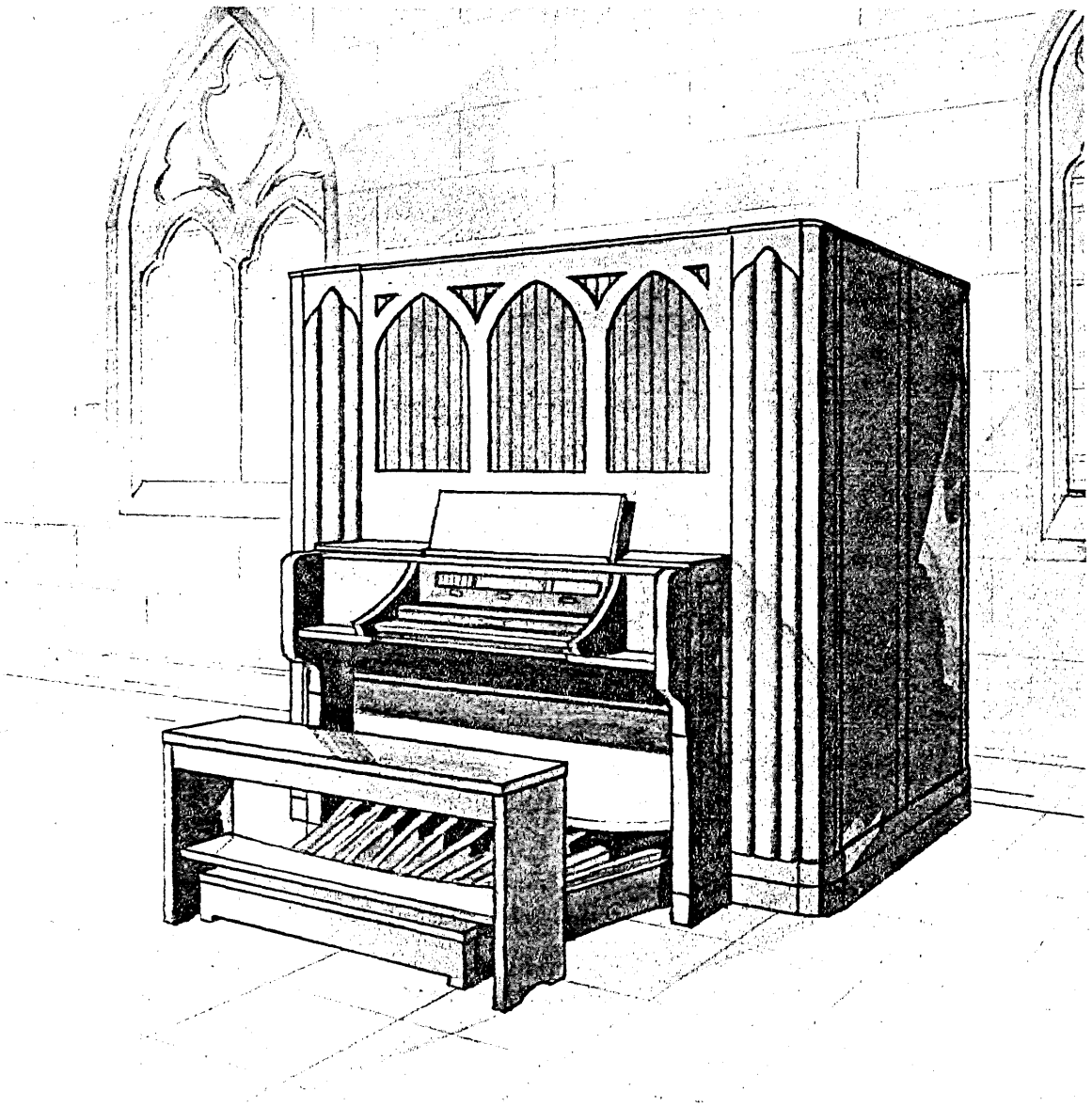
The F. W. Howes Memorial Organ, Howes Memorial Chapel, Evanston, Illinois

The S. M. Parrish Memorial Organ, Leigh St. Baptist Church, Richmond, Va.

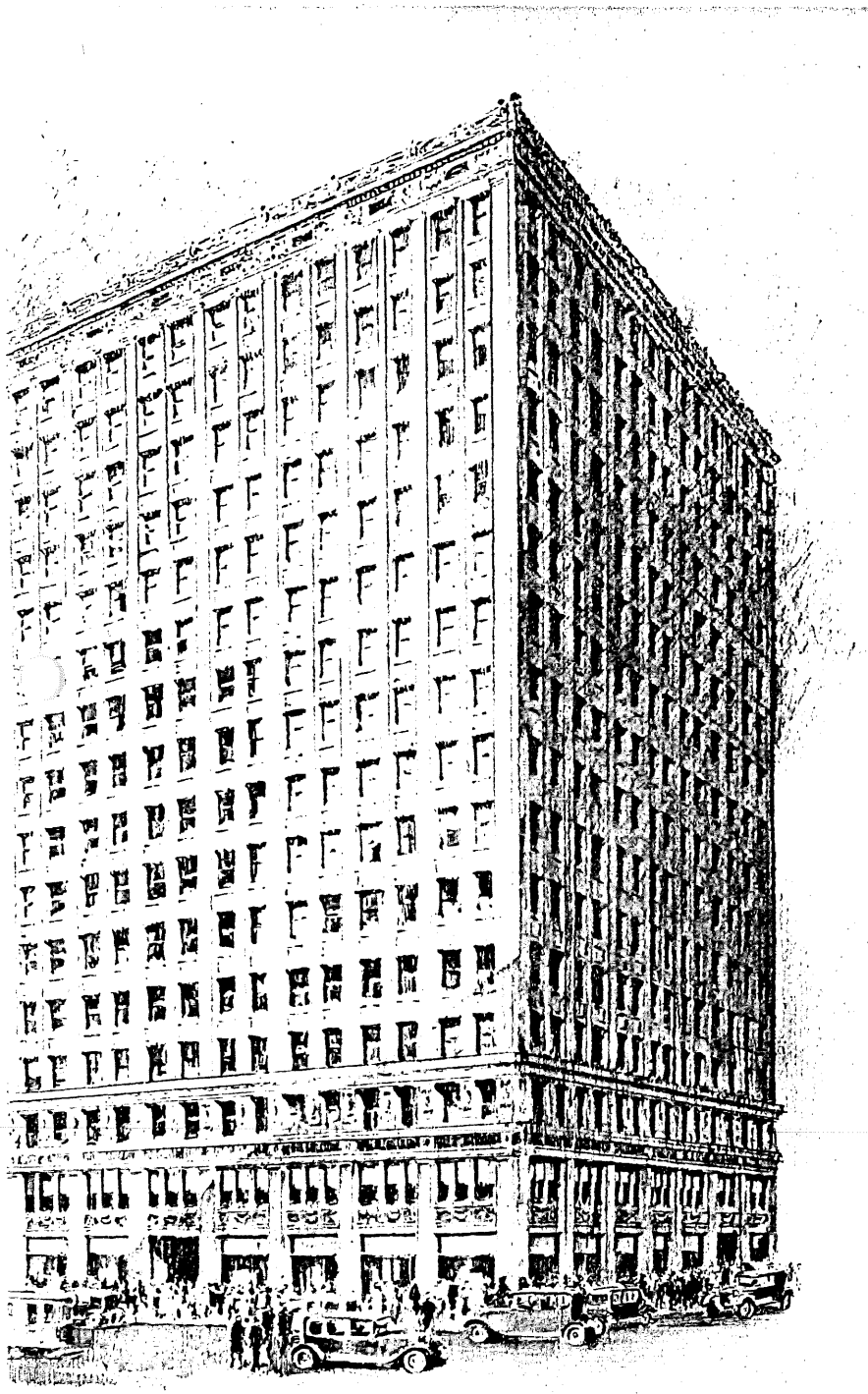
The Merner Memorial Organ, North Central College, Naperville, Ill.

The H. B. Hawley Memorial Organ, Women's Club, Des Moines, Ia.

THE KIMBALL SELF-CONTAINED ORGAN

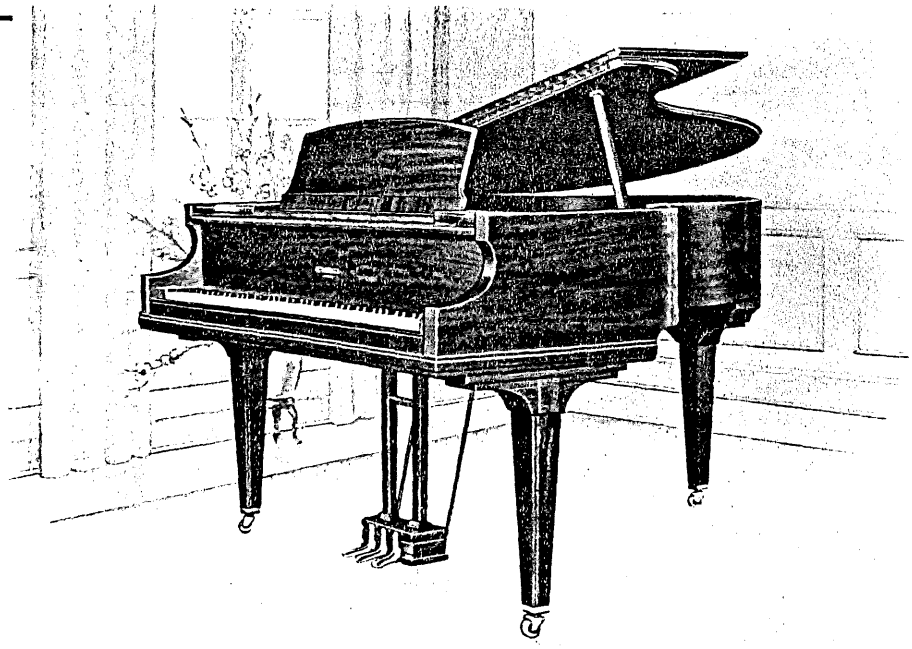


This Kimball organ is built in beautiful casework of Gothic design with the console attached as shown above. If so desired, the console can be detached at little extra cost. This organ needs only a connection to a nearby electric outlet for its operation and requires a minimum of space. Built to the same standard of high quality as the large Kimball organs, these remarkable instruments are outstanding in tonal beauty and mechanical reliability, yet priced within the reach of the most modest appropriation. A special brochure about these organs is available upon request giving full details and prices of the various models.



KIMBALL HALL

THE HOUSE OF KIMBALL has erected in Chicago a tribute to music. This is a monument in fact — a towering shrine. From ground floor to roof music is its theme, for many floors of this notable skyscraper of downtown Chicago are devoted exclusively to music. There are practice rooms, studios of world-famous musicians, publishers, makers and sellers of all types of musical instruments. In Kimball Hall is one of the three largest conservatories of the land; also the oldest conservatory in America. In the auditorium of Kimball Hall—nationally known for its definite contributions to musical education and culture—artists of greatest fame have appeared. Sitting at their feet tens of thousands have lost themselves in that spell of music which lifts mortals from the land of mere hurry and flurry. The main organ and piano display rooms, and the executive offices of the W. W. Kimball Co. are in this building. Vistors are always welcome, cordially received at Kimball Hall.



KIMBALL
GRAND

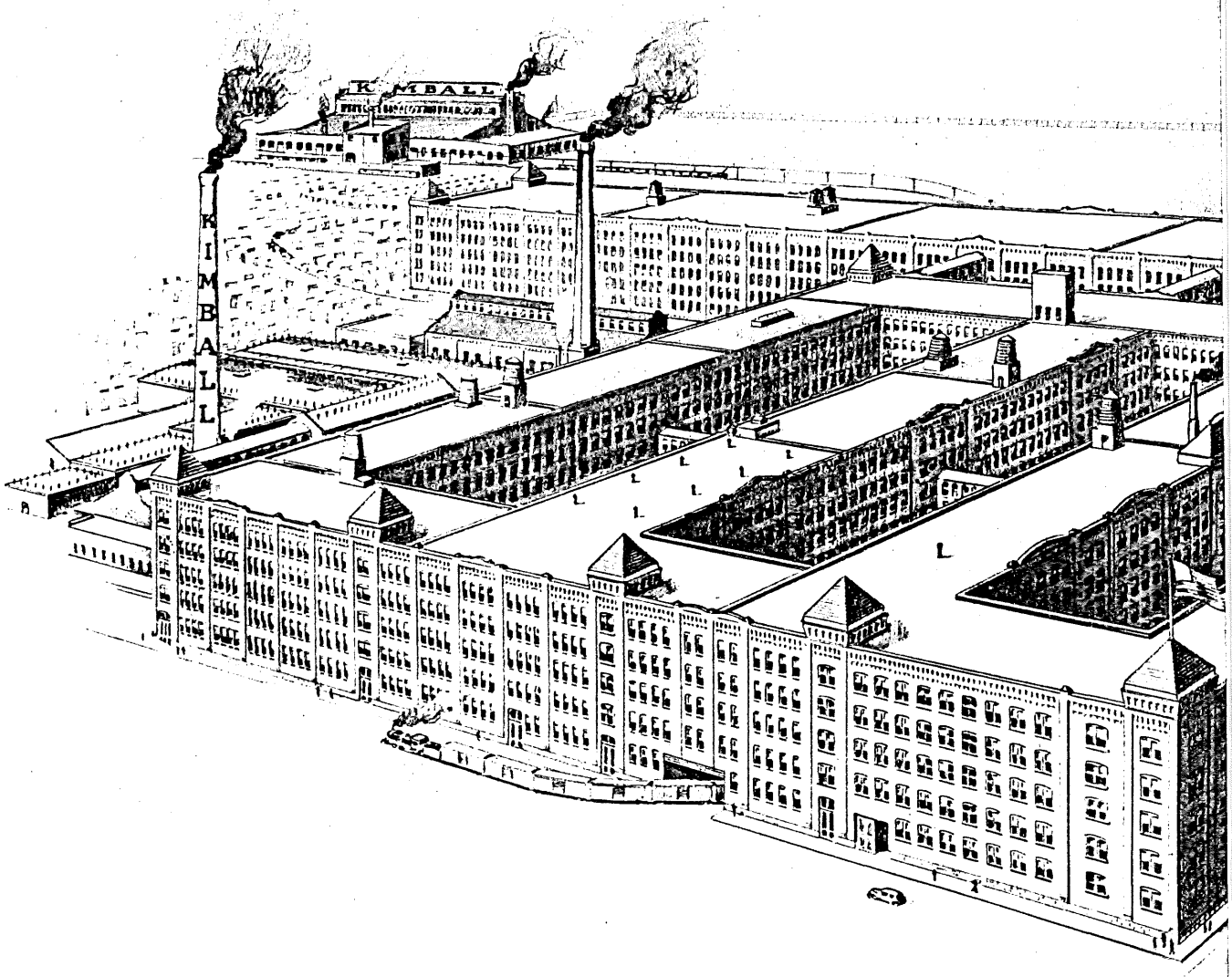
STYLE
"G"

KIMBALL PIANOS

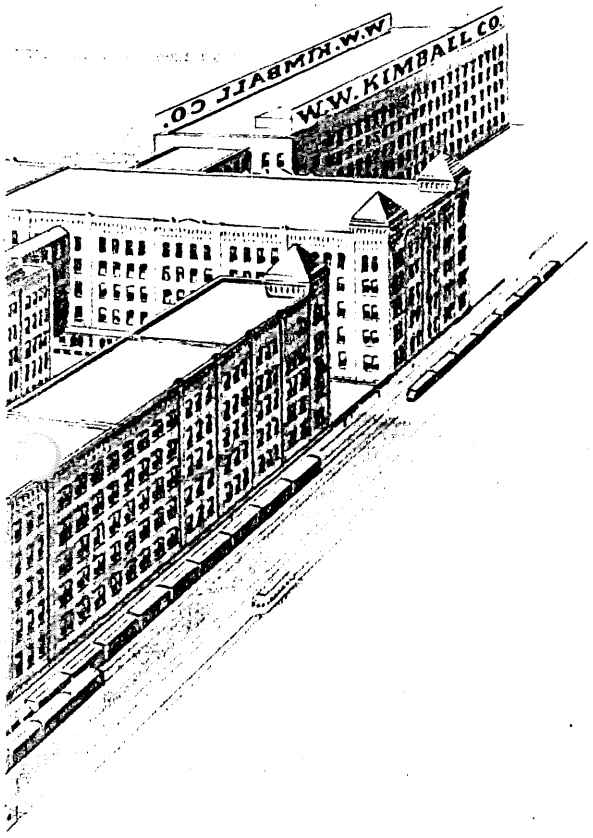
The Kimball piano of today as in the past, is as fine a piano as can be built. That is why many thousands of them are used in schools, colleges, conservatories; why the Kimball has for years been the choice of the world's finest musicians; why it is in more homes than any other fine piano. There is a Kimball piano priced for every purse, styled for every taste.

CONCERT
GRAND

STYLE
"M"

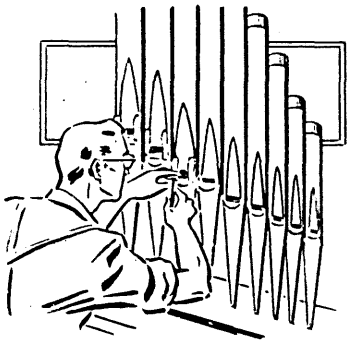


THE KIMBALL FACTORY • *The Largest in the World*
DEVOTED TO THE BUILDING OF FINE PIPE ORGANS AND PIANOS



THE KIMBALL FACTORY

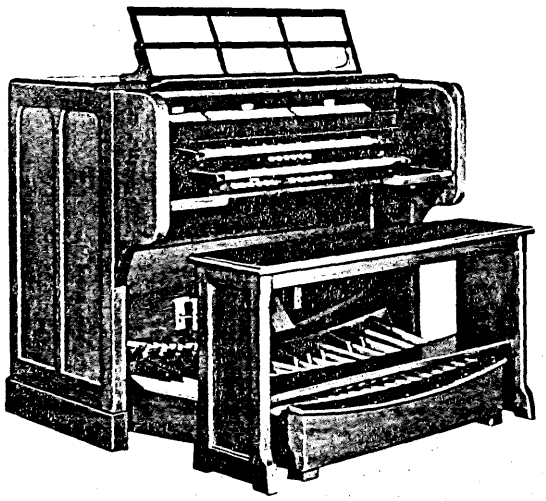
THE vast Kimball factory is located in the heart of Chicago's industrial section with its own railroad sidings for receipt of raw materials and shipping of the finished product. Its own power plant supplies power, light and heat—economy and independence are part of the Kimball creed. In the purchase of all materials the Kimball Pipe Organ Department benefits by the great purchasing power of the W. W. Kimball Company. The great volume of materials used by the combined organ and piano factories commands lower prices than can be obtained by those who manufacture pipe organs only. Many of our employees can look back on forty and fifty years of continuous service —father and son work side by side. As generations of the Kimball family succeed to the management of our firm, the families of our employees carry on from generation to generation. All parts of the Kimball organ are built in our factory. Rigid control of the quality of materials and workmanship is exercised at every stage in the building of the organ and the entire instrument is erected for a final and conclusive test in our factory before being shipped to its destination.



THE KIMBALL ORGAN

FOR those who are making a thorough and searching investigation of the various organs and who believe in FACTS, we recommend a close scrutiny of the following pages. It is our aim to show how the Kimball organ is built and how it operates—and in language which will be easily understood by all.

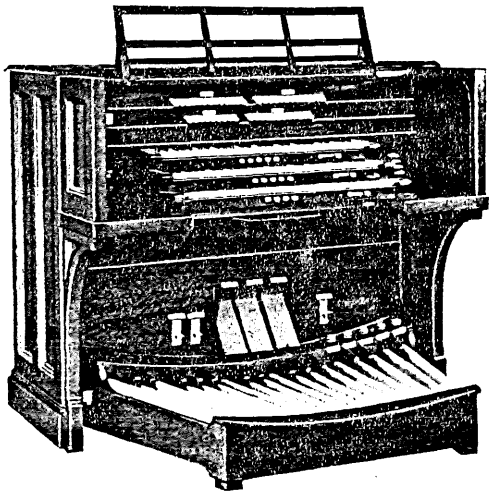
Let us take you to a Kimball organ — let us together closely examine every part of its mechanism and pipes. Our first glance will show that an organ is made up of two main divisions. The first one we encounter is the Console or Keydesk. The other is the Organ itself—its windchests, reservoirs, wind trunking, its expression controlling swell shutters and the ultimate reason for the mechanism—the pipes.



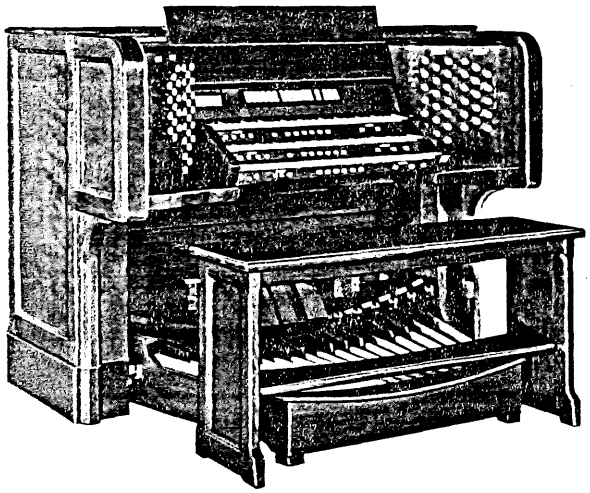
Two Manual Stopkey Console

THE CONSOLE

WE find that the Kimball console is a well executed example of the cabinet maker's art, built of whatever wood best harmonizes with the environment and well finished inside and out. There are two types of consoles, the stopkey console (as shown by illustrations No. 1 and No. 2) and the drawknob console (as shown by illustrations No. 3 and No. 4). The stopkey console is available in two and three manual organs and the drawknob type in all sizes. The choice of console has no bearing on the efficiency of the organ, but is rather one of personal preference of the organist



Three Manual Stopkey Console



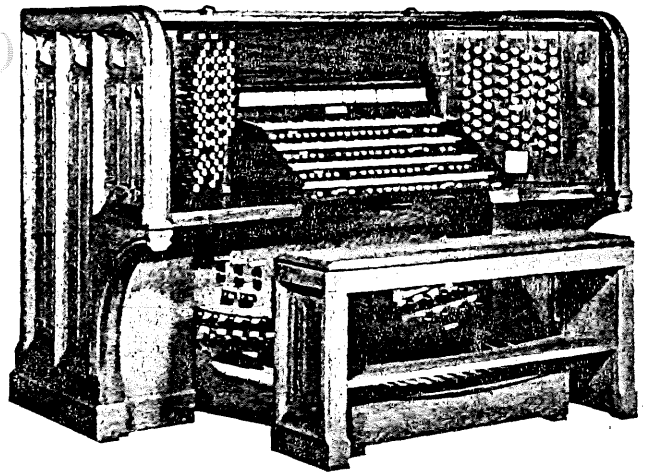
Three Manual Drawknob Console

and purchaser. ❧ All playing controls are located in accordance with the standards adopted by the American Guild of Organists and easily reached without loss of balance on even a five manual console. ❧ Both manual and pedal keys are hinged and removable for easy access to contacts and regulating devices. We note with interest that the sharps on the pedal keys are made of black moulded bakelite having remarkable wearing resistance, far superior to the wood sharps generally used. ❧ If stopkeys are chosen for stop controls, we find each one set in a metal frame containing the spring and adjusting screw and removable as a unit. The drawknobs move in and out in a straight line in velvet bushings and both types of stop controls are assisted in their motion by a toggle spring or cam so their position is positive, either on or off. The expression and crescendo pedals are mounted on a hardened steel shaft and turn in bronze bushings with independent tension adjustments. These bearings are lubricated from the outside by ball cup oilers so that wear is negligible and squeaks eliminated. All other controls such as combination pistons and toe pistons are mounted in self-contained units for easy inspection and adjustment. ❧ The combination mechanism is installed inside the consoles of stopkey type. It is prompt, reliable and quiet. The entire mechanism is of metal, made to

utmost precision. In drawknob consoles the actual combination mechanism is located outside the console, in the blower or relay rooms, and actuates the stop controls by remote control. This most ingenious and reliable mechanism is built according to a secret design and its perfection in speedy and accurate operation is a marvel of fine engineering. All consoles are insulated by special methods to reduce noise to its very minimum.

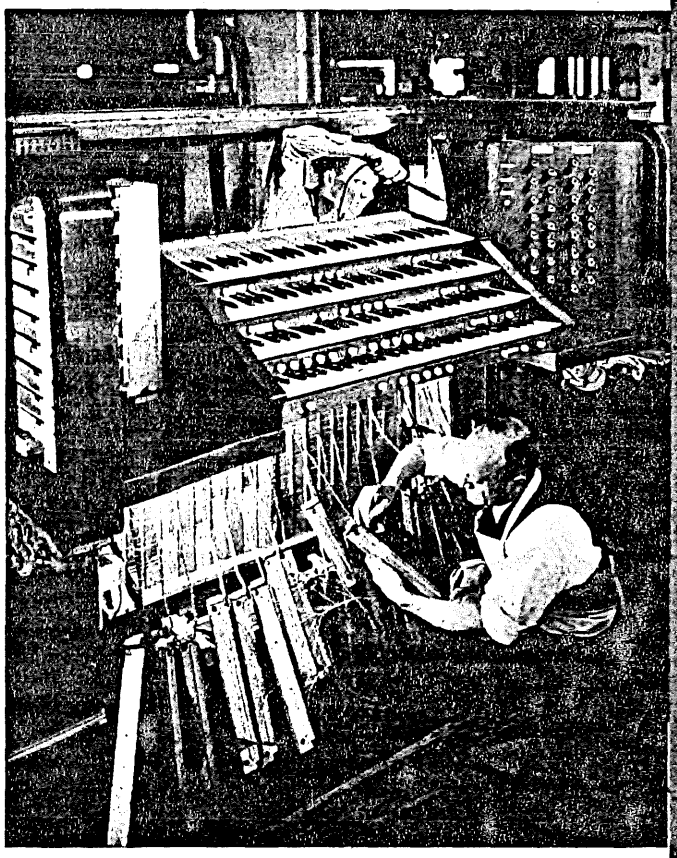
THE ORGAN

Turning now to the other main division we find the chests, reservoirs, etc. are made of No. 1 clear white pine. In the supporting structure we note the sound, clear Douglas fir. All this woodwork is carefully protected by two coats of lacquer, a tougher and more lasting finish than the widely used shellac. The compressed air originating in the blowing plant is delivered to the reservoirs which are equipped with several valves of graduated sizes, delivering a copious amount of wind to the chests and creating absolute "steady wind" for either "staccato" or "fortissimo" playing of the organ. The very finest alum tanned sheepskin is used both inside and out for the reservoirs insuring reliability and long life. The tremolos are of the bellows type, made of white pine. Their speed is governed by the adjustment of a weight, which acts like a pendulum. The intensity of beat is governed by a movable gate-valve in the supply pipe. A truly beautiful vibrato is obtained by this ingenious method of dual control of the tremolo. We now pay especial attention to the swell shades, which are made of laminated wood, two inches or more thick. Obviously, the unusual thickness is to secure the wide range of expression which is such a notable feature of the Kimball organ. The shutters are also graduated in size and each one is operated by its individual "motor", which in its turn is controlled electrically by contacts under the expression pedal in the console.

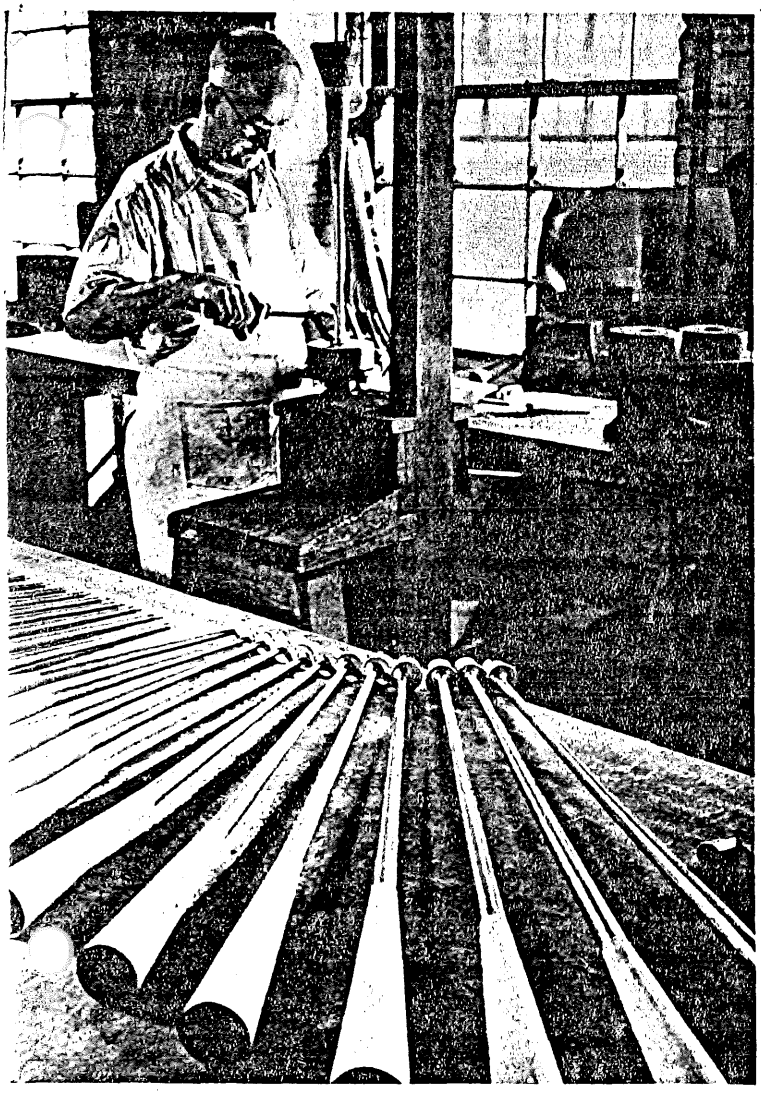


Four Manual Drawknob Console

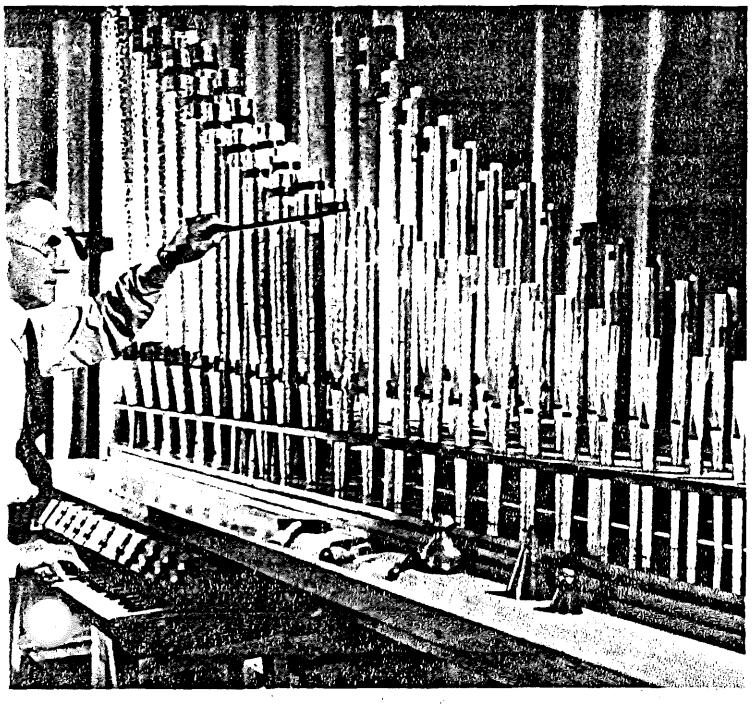
By opening the narrowest shutter first and the others in succession a smooth crescendo of tone is possible, truly astounding. The rapidity of the swell shutter mechanism permits the swiftest accents, so essential for the rendition of truly fine music. The number of movements of an organ key in only one year's use is almost incredible. The contacts must make circuit every time—and the first time even after long disuse. We find the contacts made of coin silver, an element which does not fail as a result of oxidization or tarnishing. In addition the motion of the key causes a slight rubbing action between the two surfaces of each contact which keeps them clean and polished. From the contacts the current flows into the cables and through them into the magnets. The cables are machine spun, soaked in paraffin, are wound in many wrappings of paraffined paper and encased in an outer covering which is impregnated with a flame-proof slate compound. Each wire in the main cables is individually insulated with nine coats of baked enamel under the paraffined insulation. Kimball cables comply with the code of the National Board of Fire Underwriters, which even permits their installation without conduit—so safe are they from electrical or fire hazard. The magnet armature, lifted by electrically energized magnet coils acting therefore as a valve, starts the train of pneumatic impulses which results in a speaking pipe. The magnet is therefore the "brains" of the organ and must always function under all conditions. We find the Kimball magnet made to utmost precision. The base is die cast in one single piece, the armature of copper plated soft iron, and the inlet of air to the magnet is protected by a fine mesh-screen which prevents the entrance of foreign matter which is the commonest cause of "ciphers". There is nothing finer than the Kimball magnet—many years of research and use have



Working on Console in Factory



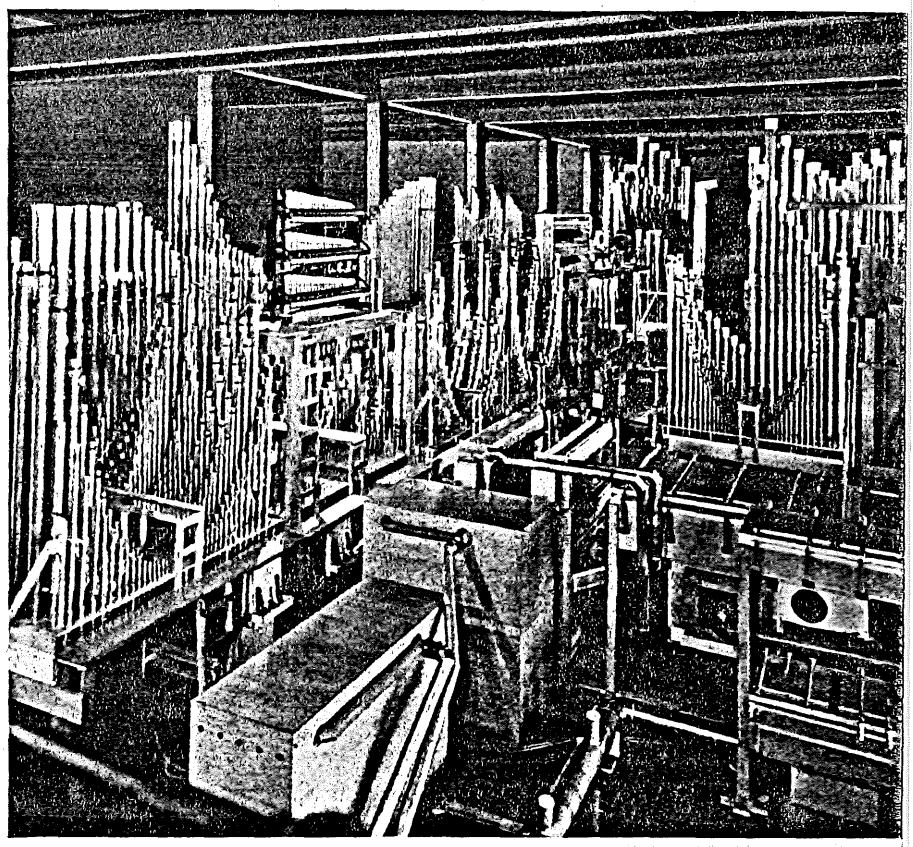
Reed Pipes Being Made in Pipe Shop



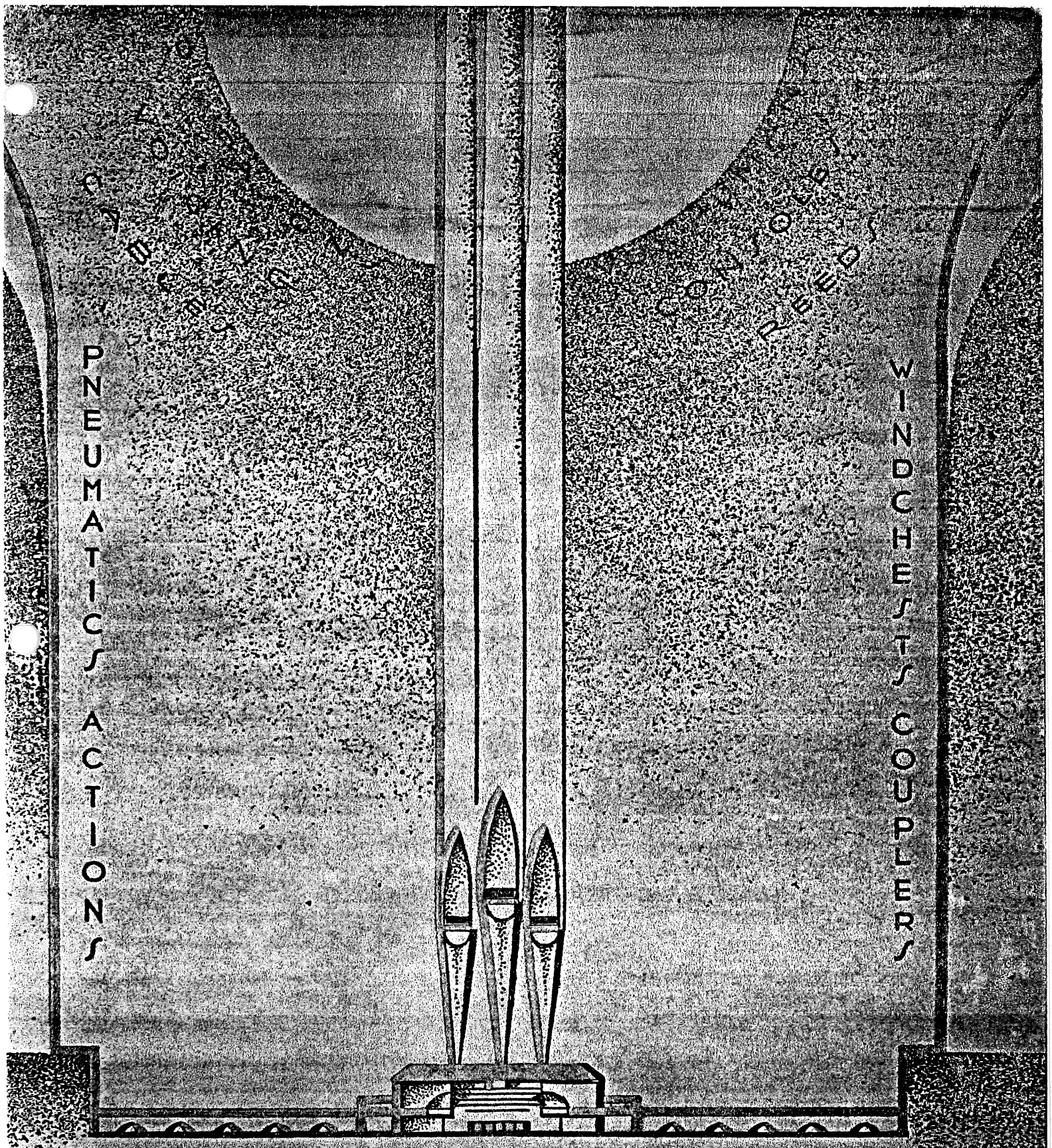
Voicing of Organ Pipes

proven its superiority. The Kimball chests are of the famous "Pitman" type and all air channels in the chest receive three coats of varnish to insure against any air leaks from one channel to another. The pouches are made of soft English tanned leather and the reliability and durability of this type of chest is proven by many years of use in thousands of pipe organs. The rapidity of the Kimball mechanism is largely due to this well designed and carefully built chest, which has no superior. All Kimball pipes are made in our factory. The metal pipes are made of metal sheets cast to desired thickness and of varying percentages of tin and lead as specified by the Voicing Department. Most Kimball Diapason pipes are made of "spotted metal," an alloy of 60% tin and 40% lead. Strings and flute pipes are made of metal of even higher percentage of tin, up to 90%, which is termed "pure tin". These metals, rich in tin, create pipes which can be voiced to give a rich, vibrant tone of great harmonic development. All metal pipes have slide tuners, even when slotted to insure permanency of pitch. All wood pipes are made of white pine with hardwood mouths and hardwood fronts and back in the pipes above 2′ C. The Kimball reed pipes are

made with spotted metal resonator bells, the reed tongues of heavy burnished brass, securely inserted in the eschallot by means of brass wedges. The tuning wire is heavy and passes through an extra heavy block, cast with a shoulder supporting the eschallot against the pressure of the tuning wire. The Kimball reed pipes due to their sturdy construction stand in tune as well as flue pipes. Voicing of the organ pipes is truly an art and the artisans who are entrusted with this important duty in our factory are men who have spent a lifetime at their work. Our head voicer is the directing genius who has the tonal picture of the entire organ in his mind and who lays out the scale and specifies all other details concerned with the pipe structure. His assistants, each a master in his specific branch of work voices the pipes in each set and then finally our head voicer makes a thorough inspection of each stop when completely finished. The Kimball voicing staff works closely with the Kimball staff of tonal designers—their purpose is one and the same—to create a truly fine tonal masterpiece. All Kimball organs are erected in our factory for a thorough mechanical test before shipment. Electrical and wind connections are made and each note is operated so as to be sure that nothing has been overlooked. Its installation is entrusted only to expert organ technicians trained in the Kimball factory. A final tone regulation is given the organ after it is completely installed, so as to bring it as close to perfection as the acoustics of the auditorium will allow. From the birth of a Kimball organ on paper—the specifications—to the last tonal regulation and tuning in its final home—it receives the attention of the most expert artisans—men whose life is that of love for their work. The Kimball creed is this; to create of mere material things a work of Art—a living memorial to human efforts.



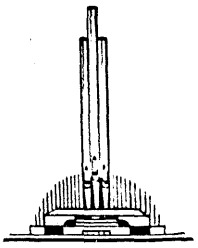
Kimball Organ Erected in Factory for Final Testing



KIMBALL ORGANS

from a Technical Standpoint

KIMBALL ORGANS



from a Technical Standpoint

This book is dedicated to those whose interest in the installation of an organ lies beyond the console—and whose desire to purchase only the finest prompts investigation of the instrument, part by part.

W. W. KIMBALL COMPANY

ESTABLISHED 1857

ORGAN BUILDERS

FACTORY AND EXECUTIVE OFFICES

CHICAGO, ILL., U. S. A.

A Glance Into The Past

TRADITION and mythology are the only records of the time when man first discovered the musical possibilities of blowing a whistle. Few of the arts and crafts date back even to that much later day when men began to assemble a number of whistles under the control of one performer into something like the organ of today. For centuries after that time the organ builder was a craftsman, who built organs just as carpenters build houses today. He brought his tools and his skill to the job and his work was done under the eye of his employer. Organ builders probably differed in ability and character just as they do now, but in that era of hand work, performed under the employer's eye, there was little need of formal contracts. The organ buyer hired an organ builder as he would hire any other craftsman—AND HE WATCHED THE WORK.

The Factory Invades an Ancient Art

A long time after, not many decades ago in fact, organs shared the results of the discovery that any work could be done better and more economically in one place, with the aid of machinery and power. This altered the old relation between the organ builder and his employer. Now the builder did all his work in the factory and delivered the finished instrument. Possibly the employer—now the buyer—could accept or reject the finished product, but he could no longer watch the actual materials or work. Still the old traditions lived on for a while, and much of the early factory work was executed as carefully and honorably as if it were still done under the eye of the employer. There was a new need for trust that the artist would really perform his undertaking in the far-off factory as faithfully as before, but this trust was generally deserved and freely given. The old traditions were still binding.

A New Competition Appears

As science and invention gave new tools to honest industry, they likewise gave new opportunities to the shrewd producer of shoddy imitations of the products of good craftsmen. Organs were no exception, as anyone familiar with recent organ building will testify. The ethics of the wooden nutmeg and the "pure fruit" jam of synthetic origin, invaded the organ industry. For obvious reasons, the organ builders who still maintained the old standards had to suffer this sort of competition, largely in silence, trusting to the buyer's good judgment to look very carefully before he leaped.

An Old Firm Meets the New Conditions

For more than an ordinary lifetime, the W. W. Kimball Company has been building organs and seeking employment to do so along traditional lines. It asked and obtained the buyer's trust because it deserved this trust. Purely on this basis it built and delivered many millions of dollars worth of its organs, but it was becoming steadily more evident that under modern conditions the buyer needed something like the old ability to watch the work, in order to aid him in discriminating between what was fine and what was shoddy. So this old concern decided to take a step hitherto unknown in organ building.

Henceforth it will continue to seek employment as an organ builder on a basis of trust—but now on a basis of trust founded on complete frankness. So far as Kimball is concerned, both buyer and seller are going to know exactly what each is to give and what each is to receive. The agreement between them is to be so clear and binding, that it will serve just as the ability to watch the actual work, served the old time organ buyer. This policy agrees with present trends in other lines. Jewelry is stamped, solid or plated, food packages bear labels which Federal law decrees must truthfully describe their contents. Extravagant claims are common in selling and in some forms of advertising, but the tendency is toward a frank and exact statement of what the buyer will get if he buys, and toward

sufficient explanation so that the buyer can know whether what is promised is, in fact, what he wants.

It was simple to put this policy into force. Since the buyer could no longer watch the materials going into his organ, W. W. Kimball Company decided to add a section to its contract listing every material and design which it would use if entrusted with the contract. Since workmanship and tone quality could hardly be described in enforcible legal terms, it would guarantee the results. Anyone familiar with contracts will see instantly that these two things have been done, in the most binding terms possible.

Still it would be of little advantage to the prospecive buyer of an organ to know in fullest detail just what he would get, unless he was also sufficiently informed to judge correctly whether what was promised was what he wanted to buy. Many buyers are so informed; others, because of little previous contact with organs, need some explanation, as well as information.

In addition to its revolutionary contract, the W. W. Kimball Company has prepared this book which takes up the promises made in the contract and describes what is promised, explains why it was chosen and what the result will be when the promises are carried out in a Kimball Organ. It is hoped that this absolute frankness will be pleasantly welcome to those who are qualified by experience to judge, and that it will be a great help to those who, for the first time, find themselves confronted with the problem of buying an organ.

The Kimball "Structural Details"

This section of the Kimball Organ Contract will repay the closest study by anyone interested in organs, and especially in the purchase of an organ. Part by part, from the console to the pipes, it lists the specific materials and designs which are used in all Kimball Organs. If the reader desires to do so, it is easy to check these provisions, point by point, with the explanation, which is the purpose of this book.

The Kimball Organ

How It Is Built---How It Works---Why It Is Best

LET us now, figuratively, go to a Kimball Organ and examine it part by part, in our effort to determine of what and how it is made, how it operates and why its makers know that each material and method chosen is best.

Our first glance will show that the instrument is made up of two main divisions. The first one we encounter is the Console or Keydesk. The other, generally completely concealed nowadays, is the Organ itself—its windchests with their supporting structure, its reservoirs, wind trunking, and its expression-controlling swell shutters. Examining these parts of the organ, we will naturally be interested in their materials, workmanship, finish and appearance.

In these divisions are the moving parts which together make up the "action" of the organ. Here our examination must concern itself not only with the materials, workmanship and finish, but also with the vitally important matter of designs which will permit the moving parts to perform their functions with accuracy, swiftness, quietness and freedom from any excessive effort or strain which would lead to early trouble.

Finally, we come to the pipes, which are the ultimate reason for all this structure and mechanism. Here we find the most modern development of an ancient art; an art which enlists every resource of the physical sciences and demands a complete knowledge of acoustics and sound. The educated hand and eye and the trained hearing of the voicer can never be displaced by machines or mechanical processes if the organ is to be a true work of art.

We shall want to look carefully into tone production, the making of pipes and the materials used, the determination of scales and voicing treatment. We shall wish to make sure that, as

the organ is finished, so it will stand, without deterioration of tone from sagging, crumbling, chemical action, broken tuners, splitting, warping, loosening of stoppers or other preventable causes. Recognizing to the full the importance of design, materials and skill in building an organ action that will be fast and reliable and give the pipes their chance to speak promptly and properly, all this accomplishment is in vain if the pipes themselves are lacking in musical qualities, are slow in speech, have not the individual characteristics desired, or do not blend into a balanced ensemble. So we quite properly insist upon prying into the conditions under which the voicers do their work, and learning how they produce musical sounds from the toneless pipes they receive.

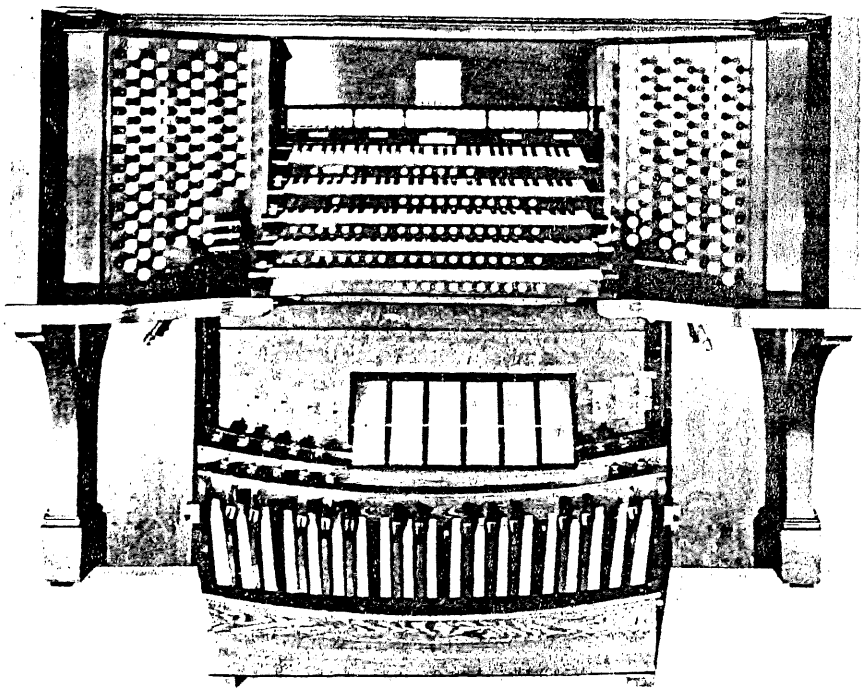
Having now clearly in mind the general purposes of our examination of the various parts, let us tackle the most obvious part first:

The Console

HERE we are looking at a part of the organ, sometimes concealed but often very important in the decorative treatment of the auditorium in which it is located. Since we are examining a Kimball Organ, we find that the console is a well executed example of the cabinetmaker's art, built of whatever native cabinet wood best harmonizes with the environment, and well finished inside and out.

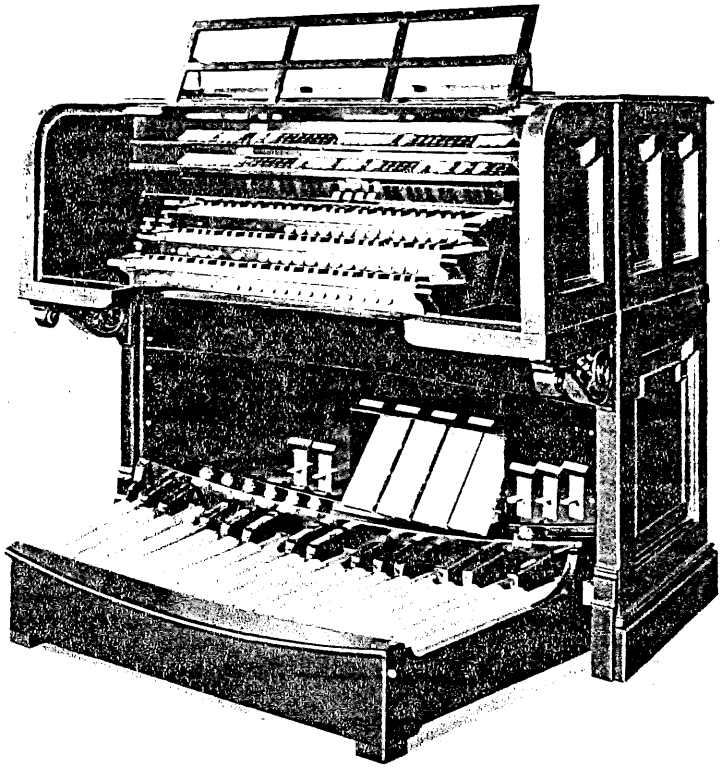
Since it is also the organist's point of contact with and means of control of the tonal resources, we should note what has been done to aid him. We find the keys surfaced with genuine ivory and ebony, because these materials have never been imitated successfully in either durability or "feel" by any of the numerous substitutes in use. We find the pedal keys surfaced with removable hard maple faces, so that when worn, these faces can be replaced without the need of installing new keys. We find both manual and pedal keys hinged and removable for easy access to contacts and regulating devices. Playing controls are so located that, even in a five manual organ, all keys and pedals can be reached without loss of balance. Since organists have never been able to agree on the type of stop control, the console we are examining may have stop keys set in one or two rows above the top manual. It may have stop keys set in rows in stop jambs at the sides of the keys, or it may have draw knobs set in vertical rows in stop jambs in a similar position and have tilting tablets for couplers. Kimball Organs are made with all these accepted types of control as desired. If stop keys are chosen, we find each one set in a metal frame containing the spring and adjusting screw and removable as a unit. If draw knobs are preferred, they move in and out in a straight line in velvet bushings. In either case the motion is assisted by a toggle spring, so that a touch will start them and the spring will complete the motion on or off. All other controls, such as combination pistons, toe pistons and swell pedal assemblies are mounted in self contained removable units so that inspection and adjustment are easy. The swell pedals are mounted on a hardened steel shaft and turn in bronze bushings with independent tension adjustment. These bearings are lubricated from the outside by ball cup oilers set in the face of the pedal, so that wear is negligible and squeaks are easily kept out. This mounting is in sharp contrast to the screen door hinges or wood on metal bearings generally used. For permanent appearance and wear, all exposed metal fittings are heavily plated with non-corrosive metal. For permanent ease of reading stop names, all stop controls are hand engraved and the color is inlaid in the engraving. Indicators are provided for all blind movements. Mice and rats cannot enter the console. All openings are closed off. All felt is poisoned against insects.

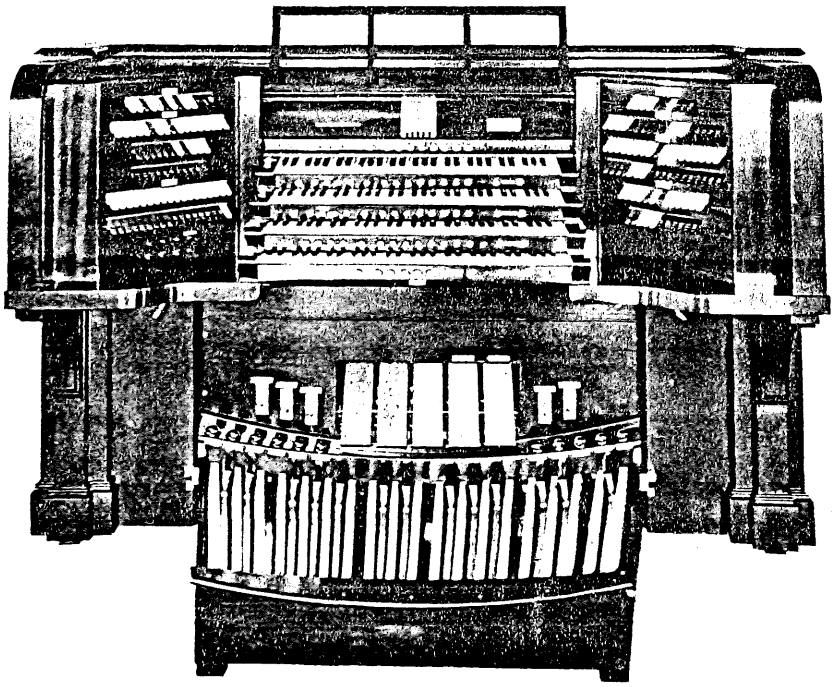
The adjustable combination action combines the advantages of the best types met with elsewhere. It is set *either* by arranging the stops, pushing the setter piston and then the desired combination piston, *or* by holding in the desired combination piston and moving the stop or stops to be changed. It is simple, quick and quiet; it cannot get out of order; and it possesses important advantages in dealing with couplers and the pedal organ. The setter piston can be locked.



In this conventional English type of console the speaking stops are operated by ivory draw knobs, the couplers by ivory tilting tablets. The Kimball selective expression controls and indicators are located just above the couplers. The convenient inclined keyboards of the five manuals are clearly shown, as are the hinged feature of the removable pedal board. The cover rolls down. Bench and music rack are not shown.

A three manual roll top console, with all speaking stops, couplers and tremolos controlled by stop keys; otherwise similar in conveniences and operation to the one shown above. The most compact form of all. The cases of all these consoles may be worked out in Gothic or other styles, to agree with their surroundings, and in any wood and finish.





This four-manual console has stop keys in vertical jambs, making possible a smaller console than when draw knobs are used. Another convenience is the Kimball selective swell control, which here operates six expression chambers from four expression pedals, in any desired combination.

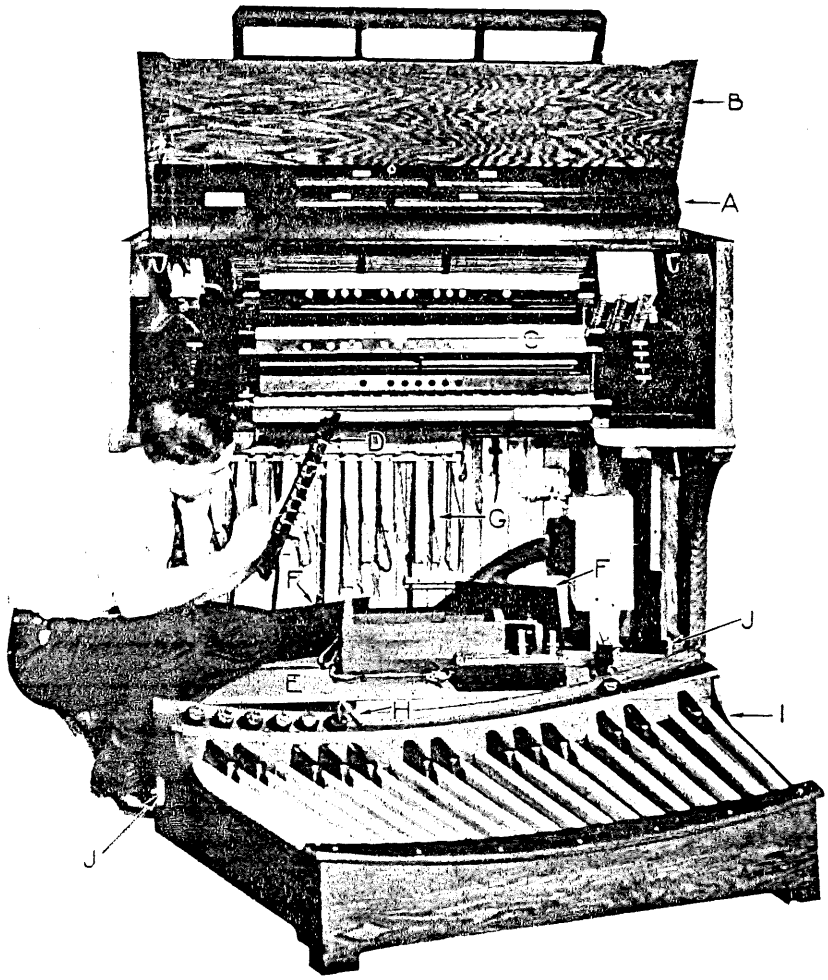


PHOTO SHOWS ACCESSIBILITY OF KIMBALL CONSOLE

(a) *Stop key bolster with combination action, raised.*

(b) *Top and music rack lift up.*

(c) *Keys hinged for access to contacts, key springs and regulating buttons.*

(d) *Combination piston assembly removable in unit.*

(e) *Knee panel removable in unit with expression pedal assembly.*

(f) *Motor and rat proof covers to all openings into console interior.*

(g) *Stretcher and pneumatic, single removable units.*

(h) *Toe pistons removable units.*

(i) *Pedal board removable.*

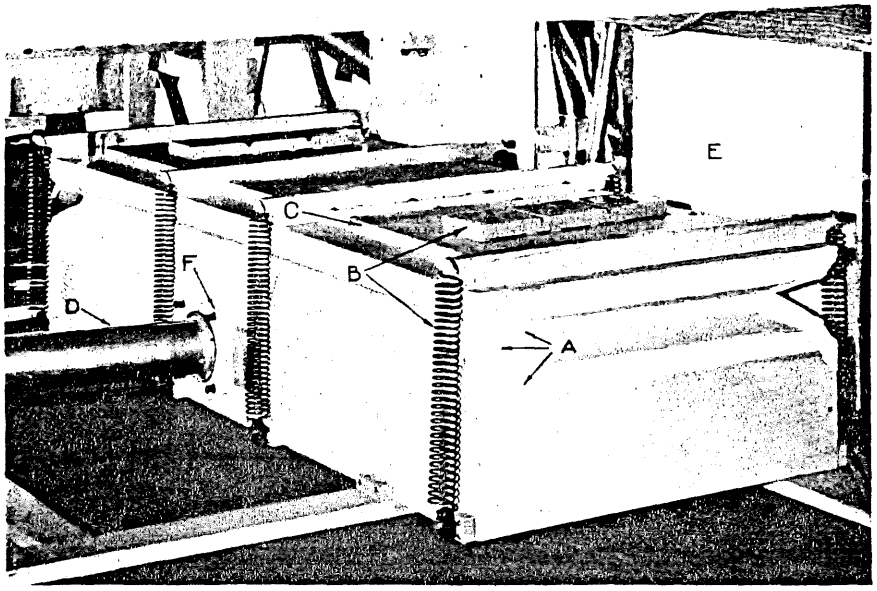
(j) *Pedal board hinged on metal trunnion so as to be raised without removal.*

The Organ

TURNING now to the other main division, we examine the general structure for character of material and finish. We find three woods used. The chests, reservoirs, windtrunks, etc., are made of No. 1 clear white pine. This wood, due to resinous oils, has the characteristic of permanent resistance to warping or splitting from atmospheric changes. Together with clear, hard maple, it has always been the "hallmark" of quality organs. In the supporting structure we note the sound, clear Douglas fir. These tough, strong woods offer both efficiency and economy for the purposes. All this woodwork is completely sealed from air by two coats of lacquer. Kimball Organs pioneered in bringing the advantages of this tougher, more elastic finish from autos to organs. The fact that this lacquer finish has supplanted former varnish jobs in automobile finishing, where the service is so much more severe, makes it interesting to find here. Varnish is used, however, to seal the air passages bored through the wood, which is immersed in boiling hot varnish that penetrates and seals the pores. Its use only in borings eliminates any question of wear.

This material has some important functions to perform besides being the supporting structure of the pipes and action.

First, it must act as the means of conveying the compressed air to the points where it is needed. This compressed air originates in the blowing plant, and is delivered to the reservoirs in the organ through heavy galvanized iron pipes. The function of the reservoirs is to admit just as much air as the organ is using and to maintain this air supply at an absolutely even pressure. Instead of the usual large single valve, we note that Kimball reservoirs are equipped with three valves of graduated sizes. The smallest is a hardwood cone valve which opens first. This valve is always working when the wind is on. As the rise and fall of the reservoir opens and closes it, just enough wind is admitted to offset the slight seepage of wind through the organ. The largest valve is of such dimensions that as much wind can enter through it as any possible requirement of playing can use. It comes into operation when a full organ chord makes a sudden heavy demand on the air supply. The other valve comes into operation between the first two and is of medium size. It admits air as required for ordinary *piano* and *mezzo forte* playing. In addition, it is so adjusted in size to the tremolo that it cannot admit air quite as fast as the periodic beats of the tremolo exhaust it, and thus the pressure varies slightly, which helps to impart the beautiful vibrato to the Kimball pipes. This equipment of three valves

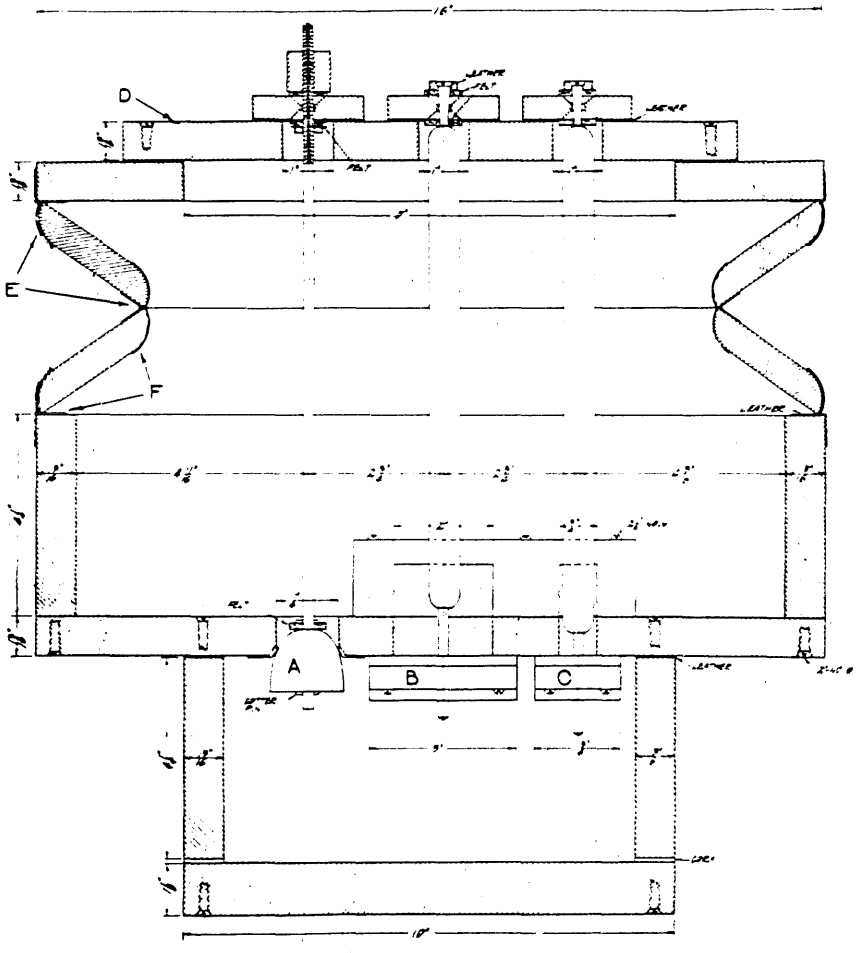


KIMBALL RESERVOIR

(a) *Heavy leather gussets and hinges—same construction duplicated inside of bellows.*
(b) *Pressure from coiled springs and felted screwed-on weights.*
(c) *Panels for easy access to interior.*
(d) *Metal conductor with heavy zinc flange.*
(e) *Large wood conductor.*
(f) *Wind regulating gate for tremolo.*

is rather costly, but, while the single valve could open far enough to admit sufficient air, provided it were large enough, this opening could occur only as the top of the reservoir which moves it is considerably displaced. There are considerable forces of wind pressure and momentum involved and the single valve does not supply wind enough, supply it quickly enough nor maintain a sufficiently uniform pressure for Kimball standards. When the reservoirs have performed their function of taking in wind and delivering it either with an absolutely steady pressure, or if the tremolo is operating, with a gentle undulation in pressure, the next step is to deliver this regulated wind to the various pipes.

The distributing system is annealed zinc conductors carefully enameled for appearance and resistance to corrosion, fastened onto the wooden parts with flanges, screwed on. Flanges are packed with felt or leather gaskets. This contrasts favorably with the paper or fibre tubes often used, which are merely pushed into holes in the wood and glued there. The larger sizes of Kimball conductors are made of white pine, equipped with flexible joints so that any settling or shifting of the parts they connect cannot break or strain them. They are permanently attached with screwed-on hardwood flanges, packed with felt.

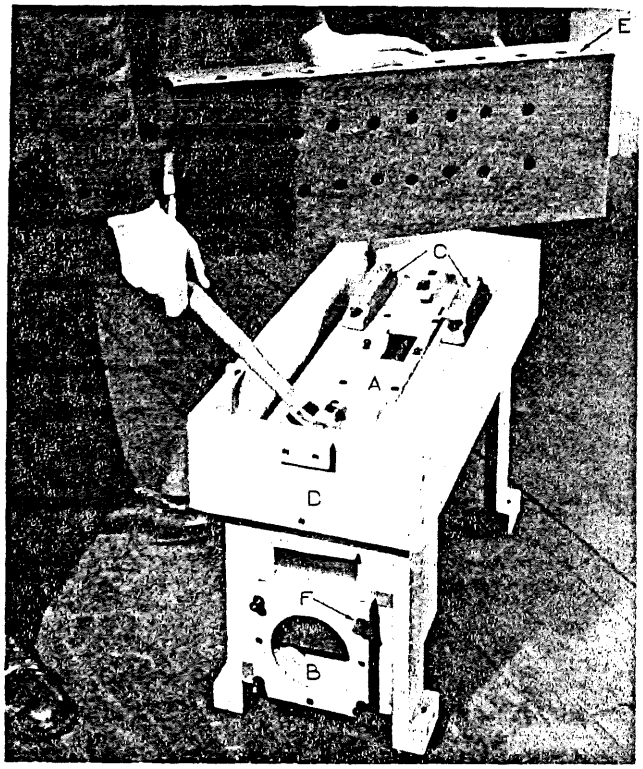


CROSS SECTION DRAWING OF RESERVOIR SHOWING THREE-VALVE WIND CONTROL

(a) *Cone valve admitting enough wind to offset seepage of air.*
(b) *Large valve to admit enough wind to maintain pressure against a sudden full organ chord.*
(c) *Medium valve calibrated to admit wind required for mezzo-forte playing and for response to the tremolo.*
(d) *Paneled top.*
(e) *Outside leather hinges and gussets.*
(f) *Inside leather hinges.*

The tremolos are of the bellows type, made of white pine. This type has a truer undulating effect than any of the older "beater" types. Their speed is governed by adjustment of a weight, which acts like a pendulum as it is moved closer to or farther from the hinge. The intensity of beat is governed by a movable gate in the supply pipe.

So far in our examination of the organ we have noted a sturdy, well finished structure of materials as good as and no better than actually required. We have noted the unusual precautions to insure the absolute equality of pressure if the tremolo is not in use, and the desirable gentle undulation if it is. Such points as the paneled construction of the reservoir for easy access to the interior and exclusive use of fine alum tanned sheepskin both inside and out, instead of the cheaper rubber cloth sometimes used, are interesting. Much of what we have noted so far is about what we would expect in a fine organ, although the reservoirs have

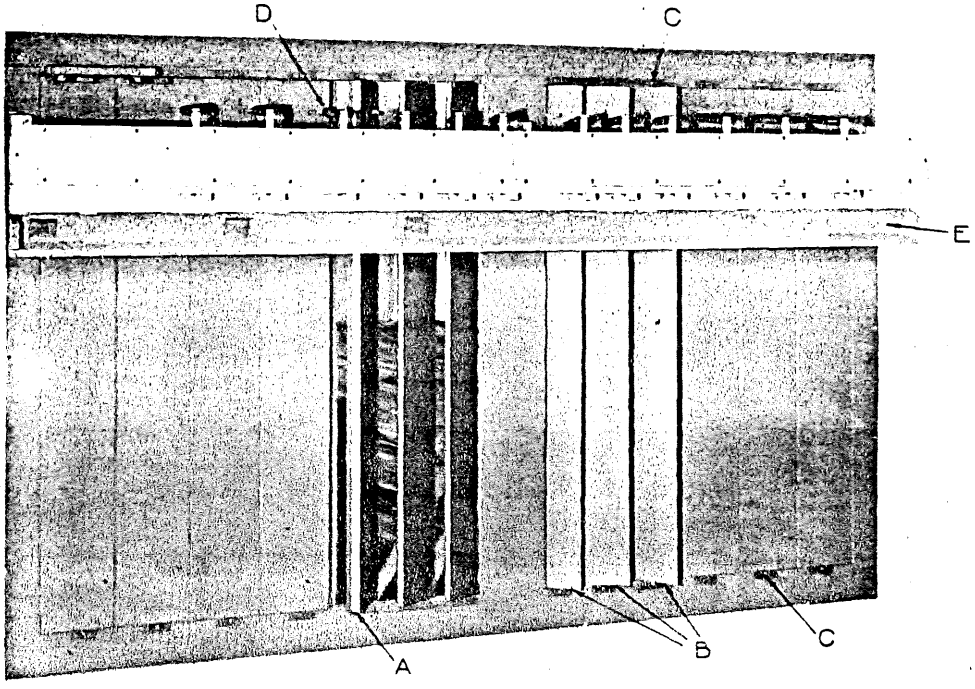


TREMOLO

a) *Double slide valves adjusting volume of air discharged by tremolo.*
b) *Wind gate governing volume of air which enters tremolo.*
c) *Adjustable felted weights which govern speed of beat.*
d) *Heavy wood muffler box.*
e) *Sound absorbent cover to muffler box.*
f) *Tension spring and washers.*

been unusual.

But now we notice the swell shades, which are so distinctive that we will want to be very sure of the reasons. We find that they are made of laminated chestnut, two inches or more thick. Obviously the lamination is to prevent possible warping and sticking. Obviously, too, the unusual thickness is to secure the range of power which is so notable a feature of Kimball Organs. But we notice that the shutters are of graduated widths, beginning very narrow, with a steady increase in width. Unlike most shutters, they are not operated all together but are designed to open successively. Every organist remembers how, with the old mechanically operated swells, he had to start his crescendo very gently because the first opening released so much of the tone. By making the first shutter to open, quite small, and gradually increasing the size of the shutters in the order they operate, it has been found possible to obtain an electrically controlled crescendo fully as smooth, gradual and responsive as the old mechanically operated swell gave when properly handled. But sometimes we do not want a smooth, gradual crescendo—just the contrary indeed, if we are after an accent. Here again this marvelous device proves superior. A full front of heavy shutters weighs hundreds of pounds. To move it all suddenly requires a powerful and often noisy machine. Once started, it is not easily stopped. With the individual, unconnected, non-binding shutters we are examining, each shutter is equipped with its



SWELL SHADES AND MOTORS

(a) *Shutters two or more inches thick — felted edges.*
(b) *Note graduated width of shades.*
(c) *Lubricating points for bearings.*
(d) *Individual motor and spring for each shutter.*
(e) *Felted muffler for swell front.*

own motor, which is graduated in size as the shutter itself is. The motor is just strong enough to move the shutter quickly. Each motor and shutter does exactly the same work in the same way, whether they come on in slow succession to make a smooth, gradual crescendo, or all at once to make the sharpest accent. There is no more force required, or momentum to absorb without noise, one way than the other. In relative quickness of response, this individual shutter action compares to any single engine type about as a string of electric cars, each with its own power, compares to a freight train, pulled by one engine. Every organist makes some remarks—audible or silent—on the subject of squeaking swell shades. Here we note that the shades move on a hardened steel surface and in wooden bearings which have been boiled in oil. Squeaks are improbable and easily removed. So all in all, our examination of the organ structure has shown us, as we would expect, the usual high grade materials and construction typical of quality organs, and the unusual features of the more durable lacquer finish, the three-valve reservoirs and the superior shutter system.

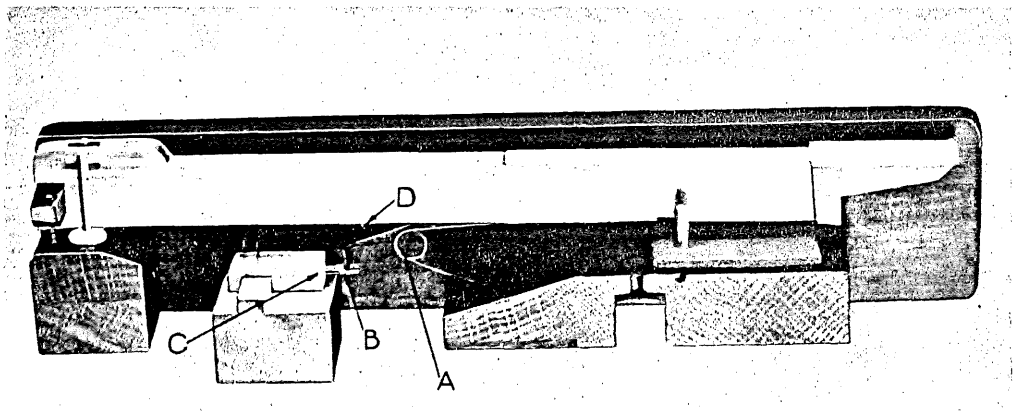
The Action

BY the term "action," organ builders mean that train of operations starting at the key and ending at the valve under the pipe, through which the organist controls the tonal resources of his instrument. Certainly we are going to demand two things of this train of mechanism. IT MUST BE RELIABLE AND IT MUST BE RESPONSIVE.

Like most other modern actions, the Kimball action is electric, or, more properly, electro-pneumatic. Electricity is used to transmit the impulses, which it does with the speed of light, more than 180,000 miles per second. Compressed air, necessarily present to blow the pipes, is used for power. It is not desirable to use electricity for power, having compressed air available, because sufficient current for power purposes would burn the contacts rapidly. It is not desirable to carry the transmission of impulses part way by means of electricity and then turn this electric impulse into some train of mechanical devices. The ideal is to get the speed of electricity right up to the point where power is needed and then to use the force of the compressed air. Let us in imagination press a key, and, as we follow the train of operations through the action until the pipe sounds, we can study the materials and methods used and the reasons which guided their selection.

Contacts

IN pressing an organ key we are doing about the same thing as we do in ringing a doorbell. We are closing an electric circuit which terminates in a magnet. The main difference is that the button only rings a single bell. The organ key, on the other hand, has to play a great number of pipes, or any combination of pipes made possible by the coupler system, and therefore it is necessary for the key to close a great number of circuits simultaneously. These contacts must be absolutely reliable and very durable. The number of operations of an organ key in a year's use is almost incredible. The contacts must make circuit every time and the first time, even after long disuse. The problem then is to make them in such a way and of such a material that they will stay clean constantly and be durable. We find that the Kimball contacts cannot accumulate dirt because the two elements are of cylindrical shape and are set so that one element is at right angles to the other, thus securing always a *point* of contact on which dirt cannot lodge. In addition, the motion of the key causes a slight rubbing action between the two elements which aids in keeping them bright and polished. We find the contacts



KEY AND CONTACTS

(a) *Spring located at position on key where it will keep the proper tension.*
(b) *Contact plates faced with concave silver bar attached directly to key, eliminating all mechanical connections between key and silver contacts.*
(c) *Silver contact wires in block located directly below key.*
(d) *Regulating screw for contact plate.*

durable for two reasons. They operate magnets which consume very little current (being wound for the high resistance of 400 ohms), the coils of which act as condensers to prevent any sparking. Twenty-seven of these magnets require but one ampere at 15 volts. No other organ magnets consume so little current. One other builder uses magnets wound to 240 ohms resistance, one uses magnets wound to 200 ohms and the rest average around 90 ohms. Naturally contacts are subject to burning in proportion to the quantity of current passing, and the resulting intensity of the spark when the contact breaks. Again, the contacts are durable because they are made of silver.

In determining the best material for this purpose, a test was run, using contacts of many designs and materials. This test, which mechanically reproduced the motion of the keys, extended over a period of six months, at the rate of 240 contacts per minute, 48 hours per week. The metals tested included three alloys of silver, two alloys of phosphor bronze, tungsten, platinum, German silver and others. Only platinum, tungsten and silver stood up under this test. Silver, the only metal obtainable in spring wire, was chosen. We know that metallic oxides are non-conductors of electricity, and that most metals oxidize rapidly at a point where a circuit is being broken, thus soon coating the contacts with a layer of non-conducting oxide and causing dead notes. This is particularly true of phosphor bronze. Silver tarnishes, but the tarnish, a sulphide, is a good conductor of electricity.

The relative conductivity of metals in use today for organ contacts, as given in standard engineering tables ("Mechanical Engineers' Handbook," "Non-Ferrous Metallurgy," "Handbook for Electrical Engineers," etc.), works out at: silver, 100; (copper, 77.43), phosphor bronze, 10.77. Further indicating the eligibility of silver, from the standpoint of low resistance, we have: silver, 1.47 (copper, 1.589); phosphor bronze, 7.75.* Copper and the alloys in which it predominates, while good conductors for the flow of electric current, are notoriously bad as contact metals.

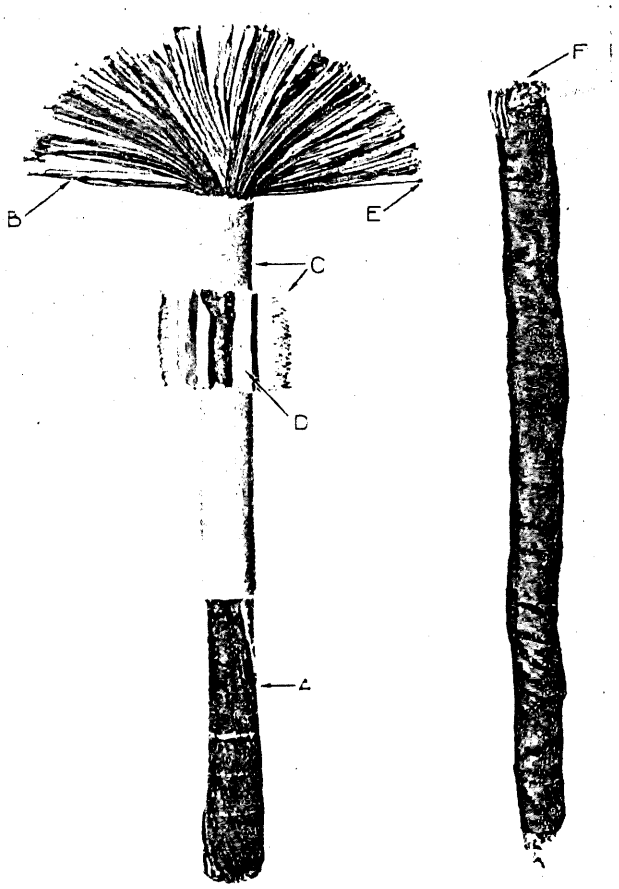
It will be of interest to note that gold and platinum, believed by many to possess superior characteristics, show on the same scales conductivities of 55.19 and 12.91 respectively, while brass is extremely low at 17.034—though all these metals make a better showing than phosphor bronze. Inversely, the resistances are: gold, 2.20; brass, 3.64; platinum, 31.8; and German silver, 38.4. Platinum, having the highest melting point, was once regarded as ideal, tiny bits being soldered to other metals to take the destructive spark in the early days of electric organ actions when magnets consumed so much current. Brass and German silver (which contains no silver) were then the alternatives in low priced organs.

Thus we see that in design and materials, Kimball contacts, like Kimball magnets, are as near trouble-proof as science and experience can make them.

*Resistance variable with temperature.

Wiring

FROM the contacts the current flows into the cables, and through them to the magnets. Hundreds, often thousands, of wires are contained in these cables. Every wire is soldered at both ends. One wire may be carrying the current which is to actuate a pedal pipe, the next may be attached to a swell shutter. Obviously short circuits, from dampness or defective insulation, would be disastrous musically, in addition to the danger of fire. Here again we see evidence of thought and precaution, unknown in any other organ. These cables are machine spun. They are soaked in paraffin, are wound in many wrappings of paraffined paper, so that water cannot affect them, are encased in an outer covering which is impregnated with a flame-proof slate compound, and each wire in the main cables is individually insulated with nine coats of baked enamel, under the paraffined cotton insulation. They are very expensive compared to the usual cable, which is just the required number of cotton covered wires wrapped up in friction tape, but short circuits are impossible. Kimball cables comply with the Code of The National Board of Fire Underwriters, which even permits their installation without conduit, so safe are they from electrical or fire hazard. For protection against mechanical injury, however, such as sawing or nailing when making building alterations, all wiring should be run in conduit.



CABLES

(a) *Note exact laying of wires.*
(b) *Note color code in wires.*
(c) *Flame proof woven covering.*
(d) *Layers of waxed paper.*
(e) *Cotton insulation over tinned and enameled wires.*
(f) *Ordinary taped cable from (—) organ, replaced by Kimball.*

Magnets

THE final device in the electrical part of the action is the magnet. Its function is to transform the incoming electric impulse into a puff of compressed air which can be stepped up in power to whatever strength is required. This it does by lifting an armature which opens an exhaust port, starting the train of pneumatic mechanism.

In our examination we cannot see all the electrical details of the magnet structure and we cannot duplicate all the experiment and study which guided its development. But we can examine some of the points of excellence that are plainly visible. We note that the coils are of No. 40 enameled wire and that this fine wire is soldered onto stranded terminals, where it leaves the coils. Thus the fine wire is exposed to no possible strain and breakage, eliminating a very frequent source of dead notes found in some other organs. We note that the air ports are screened, and we wonder why this simple precaution against the entrance of dirt has not

been used in other organ magnets, until we consider the enormous number of magnets used in a year's production of organs and the consequent cost of this little extra thought. We note that the base contains no wooden or soft metal parts, being die-cast, in one single piece, from aluminum. There is thus no chance for air to leak out and set the succeeding mechanism in action, which, together with dirt preventing the valve from seating airtight, is the common cause of "ciphers." We remove the bakelite cap. If it is tight we try a penny in the slot of the cap and find it serves as a screw driver. An odd instance of the thought used throughout. It was remembered that the organ man might not have so large a sum as a nickel or a dime, but it was hoped that he would always have a penny, so the slot was made to correspond exactly with the outline of a penny, which will always serve perfectly as a screw driver. The cap, when removed, shows a smooth, sharp edge on which the valve, or armature, rests. If fine dirt should get by the screen, it cannot stay on this edge and by preventing the seating of the armature, cause a "cipher." The armature turns out to be a simple disc of soft iron, purposely bare of any packing material, and copper plated to prevent rust. This means that it must seat perfectly airtight without any packing and that the entire assembly must be microscopically accurate. This is much more expensive than to make the assembly fairly accurate and rely on packing, but it is permanent, which can hardly be said of the attempt to stick discs of packing material to the iron armatures. Coupled with the electrical efficiency and economy previously noted, this mechanical excellence seems to imply a very superior magnet which is permanently reliable. In fact, we note that there is no means whatever provided for adjustment—*none being needed.*

This covers the electrical part of the action. We have noted the precautions taken to guard against burning or failure of the contacts, to guard against short circuiting of the electrical impulse in the cables, and to see that its work is done through a really efficient mechanism when it reaches the magnet. No electrical system in any organ approaches the efficiency of the one we have been studying, as competitive examination will show.

Pneumatic System

WHEN the electric impulse arrives at the magnet the action becomes pneumatic, the succeeding functions being operated by compressed air controlled by valves, of which the magnet armature is the first. This operates a small pneumatic bellows called the primary, about one inch square, which moves a two-way valve. The primary valve in turn operates the valves under the pipes.

In order to take the electric impulse as close as possible to the pipe valve, no primary operates more than seven pipe valves, so the air channel from primary to pipe valve can hardly be longer than about three feet. No mechanical device intervenes and no pipes are "tubed off" from the main chests. There can be no appreciable lag from some mechanism or long travel of air, after the electrical impulse has arrived.

The armature, which at the same time is the first valve in the action, is only .020 in. thick, weighs 1.73 oz., and moves but .020 in. The primary valve assembly weighs 1/4 oz. The average weight of the pipe valves is 1/10 oz. The largest of them does not have a greater motion than 3/8 in., and few move 1/4 in. In fact, the entire assembly of moving parts in the largest Kimball manual windchest operated in one train weighs less than one ounce.

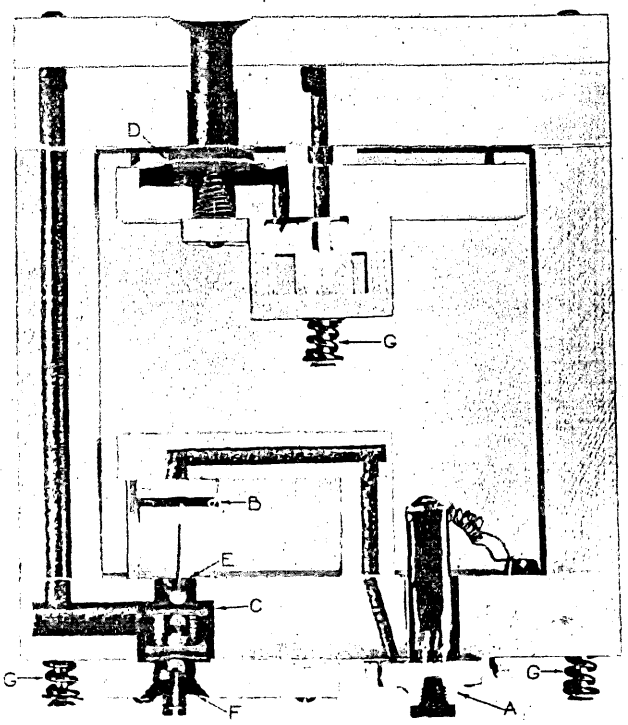
If it is important in an automobile to make the pistons of aluminum, even when moved by the explosive power of gasoline, to keep moving parts light, it is much more important in an organ action, where the power is so small and any lagging would blur the clearness of the organist's performance.

The impulse has now arrived at the pipe valve and we will want to look closely at this assembly, for now we are getting close to the pipes and

what we find here greatly affects their speech and tone. We note that the valve floats on the center of a round disc of soft English tanned pneumatic leather and thus moves absolutely without friction. It is located directly under the pipe foot so that the air travels the shortest possible distance from valve to pipe. The pipe hole is counterbored, so as to be considerably larger at the point of entrance of air than at the point of exit into the pipe. This insures that a supply of air larger than the pipe can possibly use is instantly released, and the shape of the boring acts like a steam injector to increase the velocity with which it enters the pipe. We see that by this additional precaution all the preceding costly effort to get the impulse to the pipe instantly is not neutralized by choking or long travel of the air from the pipe valve to the pipe. No Kimball pipe is ever "grooved," "ditched" or set otherwise than directly over its valve.

But we remember that there are stops as well as keys, and it is important that they work accurately and promptly as well as that the keys do so. It is still common to divide chests into compartments by partitions under each set of pipes. These individual compartments can then be supplied with compressed air or deprived of such supply by opening or closing large ventils. These compartments contain about 2.3 cubic feet of space, and to fill or empty them suddenly is a problem, not to mention the noise. In the organ we are examining this is not even attempted. The wind is never cut off from the windchests. The stop control is through pitman valves, one in each note channel of each set. These pitmans work in unison with the stop and shut off or open the channels between the primary valves and the pipe valves of the individual sets. In this system the amount of air required to operate a set of pitman valves is .0652 of a cubic foot. This is done with key-speed rapidity and complete quiet. These valves are discs of suede leather guided by beech tails. Tails, guides *and seats* are all graphited and burnished, so that sticking is impossible.

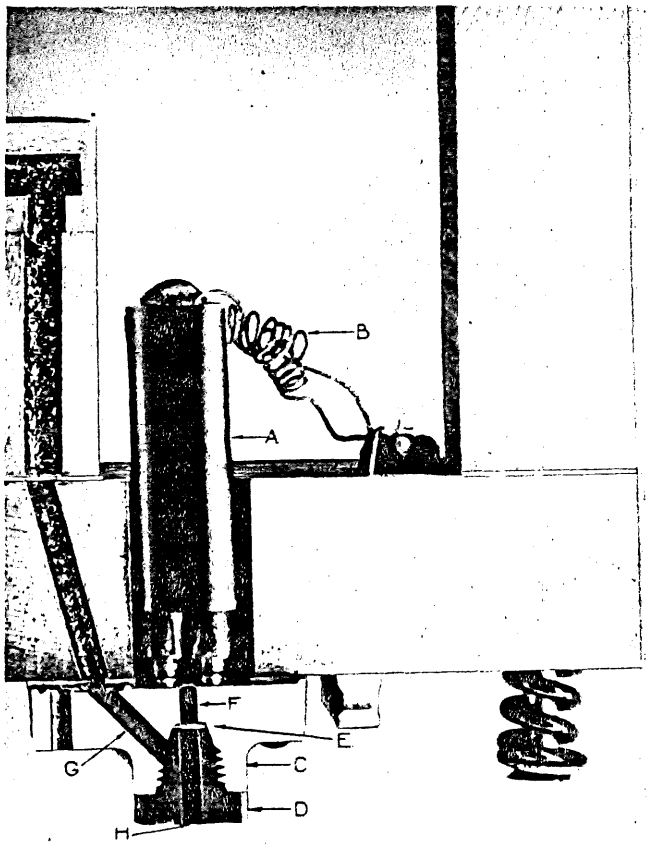
So far we have examined what is merely machinery and structure. No question of art has entered except as thought and experiment and willingness to spend necessary money have provided mechanism which is the connecting link between the organist's musical thought and its accurate expression in the resulting music. Now, having assured ourselves that this mechanism is adequate to, and in fact far superior to any other similar devices, we turn to the purpose of it all.



CONSTRUCTION OF WIND CHEST

(a) *Magnet.*
(b) *Primary pneumatic.*
(c) *Primary valve.*
(d) *Diaphragm and valve.*
(e) *Wind supply boring to diaphragm board.*
(f) *Wind exhaust boring to diaphragm board.*
(g) *Tension springs.*

The pipes stand in two staggered rows, each pipe set in one of the countersunk holes directly over its valve (each hole is burned with a rotating burning iron to perfect smoothness, to fit the pipe toe), and are supported rigidly in a vertical position by the system of rack boards and standing racks, to the latter of which the larger pipes are hooked or tied against fitted and felted supports.



Pneumatic System

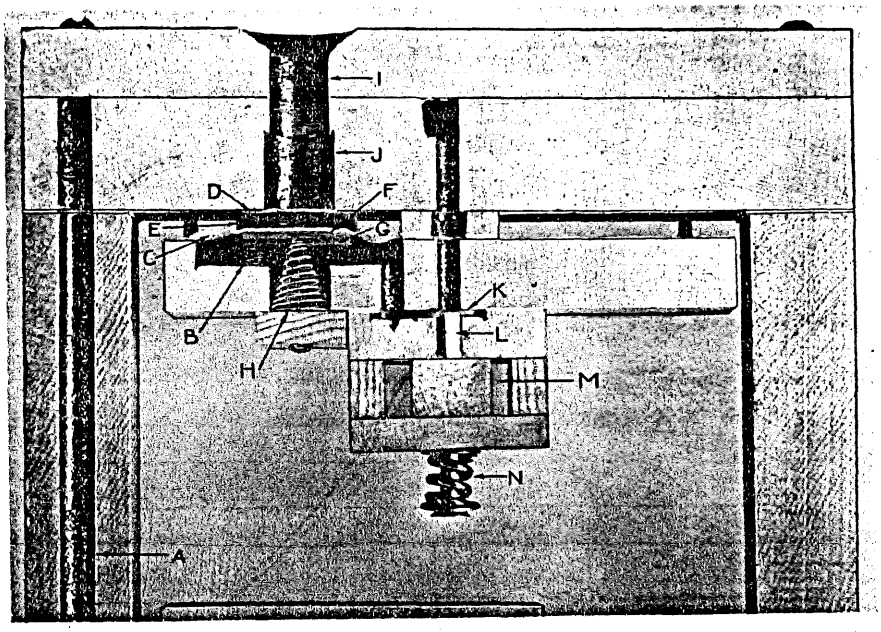
(Continued)

PRIMARY AND MAGNET

(a) *Winding of magnets.*
(b) *Braided terminal wire.*
(c) *Aluminum base.*
(d) *Bakelite valve seat.*
(e) *Armature.*
(f) *Windway supplying wind to armature valve chamber.*
(g) *Windway supplying wind from armature valve chamber to primary pneumatic.*
(h) *Windway exhausting magnet from valve chamber.*

VALVE AND PITMAN

(a) *Continuation of wind supply boring to diaphragm.*
(b) *Wind chamber below diaphragm.*
(c) *Diaphragm (leather).*
(d) *Leather punching.*
(e) *Soft felt punching.*
(f) *Fibre disc.*
(g) *Felt bumper.*
(h) *Conical spring.*
(i) *Windway to pipe.*
(j) *Counter bore.*
(k) *Pitman valve.*
(l) *Pitman valve stem.*
(m) *Pitman wind supply chamber.*
(n) *Tension spring.*



The Pipes

WE find the diapason pipes, the foundation of organ tone, made of heavy alloys of lead and tin (never under 25% tin) *and nothing else,* tin enough to give proper rigidity, no antimony to cause later crumbling, no coned pipes, no pipes with rolled tuners. We find that the diapasons are carried down into the big pipes of the lower octaves, many notes; sometimes an octave farther in cast metal than diapason pipes of other makes. Zinc must be used in some of the largest pipes because the alloys would crush of their own weight if carried too far into the bass, but the use of zinc is restricted to a minimum. The accompanying illustration will show what this means in size and weight and give some idea of the cost, a cost which is justified by the fine, firm tones, which hold their character clear down to the lowest notes. Like all Kimball metal pipes, these diapasons are never cut to length and tuned by coning, because that is sure to result in ultimate injury and loss of tone. They are never slotted and tuned by rolling down a strip of the metal, because this roll would be certain to break off with repeated bending and thus leave the pipes without any means of tuning. All are equipped with slide tuners which cling tightly to the pipes and stay where set better than any other tuning device, and can be moved up or down indefinitely without injury to the pipes. In small pipes the slides are sprung on, in medium pipes they are taped on and in very large pipes they are clamped tight with a screw tension.

Open diapason pipes are designed to give loud, firm tones which combine pure fundamental with desired overtones. Their walls must be very firm and heavy so as not to vibrate sympathetically with the vibrations of the air column and thus impart undesirable harmonics. In string pipes the opposite is the case. These tones have little fundamental and are rich in harmonics. Here it is desirable to have a very light, hard pipe wall which can vibrate freely in sympathy with the air column and aid in developing harmonics. These pipes we find made of an alloy containing at least 45% tin, or often of so-called "pure tin" (90% tin, balance lead). Where a slot has been found helpful in building up string or horn tones, the metal is cut away, never turned down to form a tuning roll, which would be still more likely to break off because of the thin construction. They, too, have slide tuners.

"OPEN DIAPASON 8' METAL"

Here is the actual size of the set of Kimball pipes listed in specifications under this name:

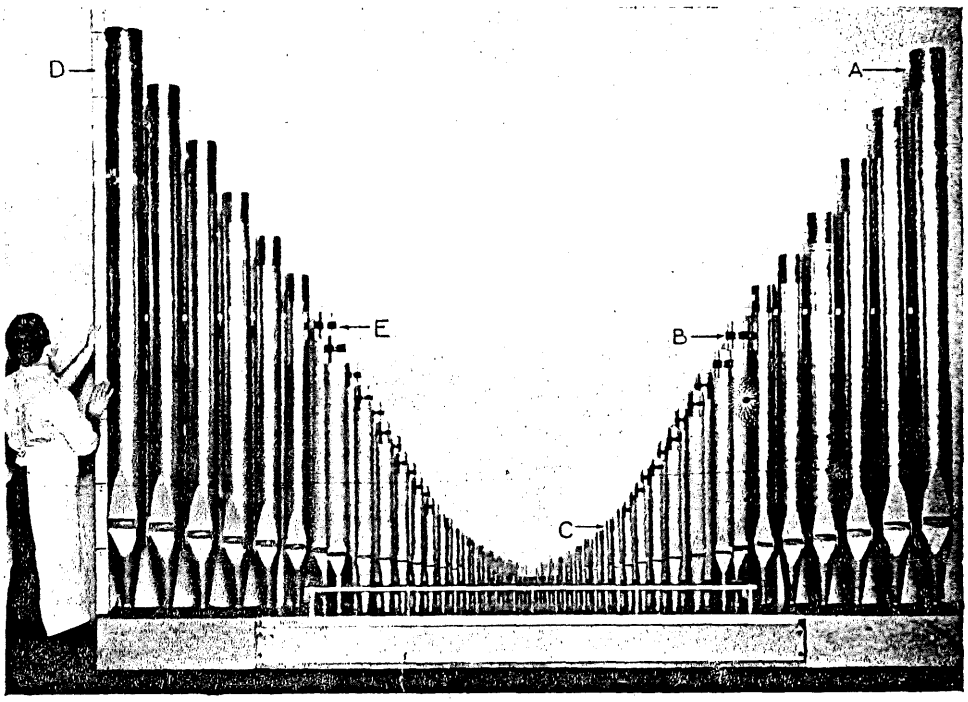
(a) *Bolted slide tuners on large pipes.*

(b) *Taped slide tuners on medium pipes.*

(c) *Slide tuners on small pipes.*

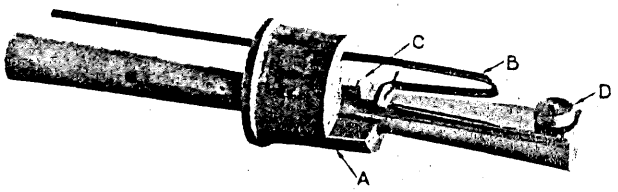
(d) *Man with rule marked in feet for comparison with size of pipes.*

(e) *Size of largest cast metal pipe in average scale Kimball diapasons, tenor C. (In some instances heavy cast metal is carried two to seven notes farther down the scale and matched to open wood pipes or extra heavy zinc.)*



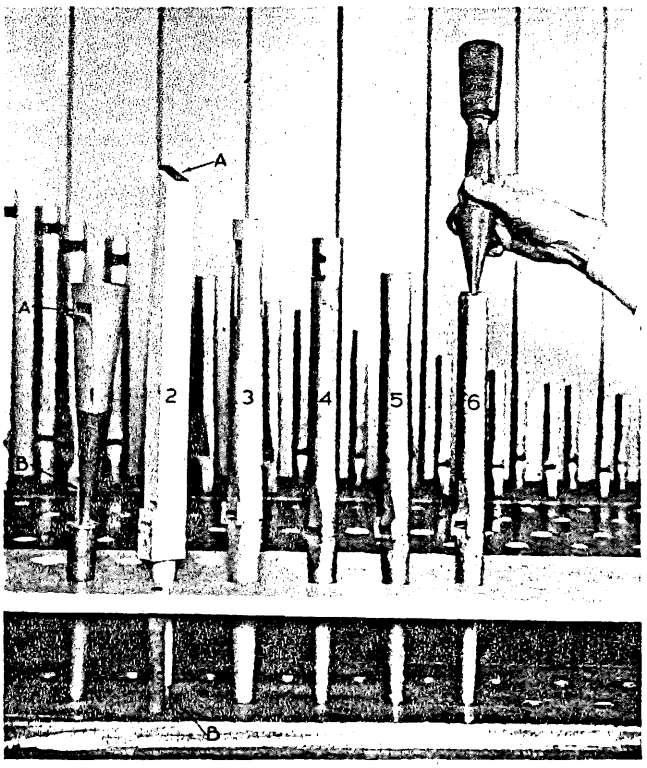
Flute pipes are found to be made of either metal or wood, according to the character of tone desired. Their common characteristic is the presence of few harmonics, over a strong fundamental tone. To sound well they must be of reasonably heavy construction, whether made of wood or metal, and their mouth parts must be very accurately and substantially made, so as to keep the adjustment given by the voicer. Flute pipes are generally made of spotted metal (45% tin, balance lead), occasionally of diapason metal (25% to 33 1-3% tin, balance lead) or of white pine with hardwood mouth parts, and hardwood fronts and backs in the pipes above two ft. C.

Reed pipes are imitative of the orchestral brass and wood wind instruments. Their tone is produced by the beating of a brass tongue, similar to the reed of a clarinet or saxophone. This vibration is amplified by the air column of the pipe, which acts as a resonator. The tonal outcome depends mainly on the formation of the tongue, the character of the eschallot and the material of the pipe. We find at least one-third of the area of Kimball reed pipes is heavy metal. The tongues are of heavy burnished brass. They beat against the eschallots, which in most cases are bored out of solid brass. They are secured in place by machined brass wedges instead of the usual wooden wedges. The tuning wire is heavy and it passes through an extra heavy block, which is cast with a shoulder that supports the eschallot against the pressure of the tuning wire. All these factors give such a rigidity and mechanical grip to the elements which must be moved in tuning the pipes and which the vibration is always trying to move out of place, that these Kimball reed pipes stand in tune as well as flue pipes. All these points of structure and material are important; indeed, they are quite costly compared to much that passes current in organ building, but they are vital because these pipes are the raw material on which the voicer's skill and taste is exercised and we remember that nothing executed in cheap, poor material is likely to be permanent or to satisfy. Now at last we come to the very heart of our investigation.



REED BLOCK ASSEMBLY

(a) *Note extra heavy block with shoulder.*
(b) *Heavy tuning wire.*
(c) *Brass wedge.*
(d) *Reed weight screwed to tongue.*



METHODS OF TUNING

(1) *Reed pipe.*
  (a) *Tone regulating slot.*
  (b) *Tuning wire.*
(2) *Wood flute pipe.*
  (a) *Tuning shade.*
  (b) *Metal toe for regulating.*
(3) *Slotted octave pipe with slide tuner.*
(4) *Slotted octave pipe with roller tuner. Note liability of roll to break with repeated bending in tuning. Never permitted in Kimball Organ.*
(5) *Diapason pipe with slide tuner.*
(6) *Flue pipe. No means of tuning—must be coned—note inevitable damage from repeated tuning. Never used in Kimball Organ.*

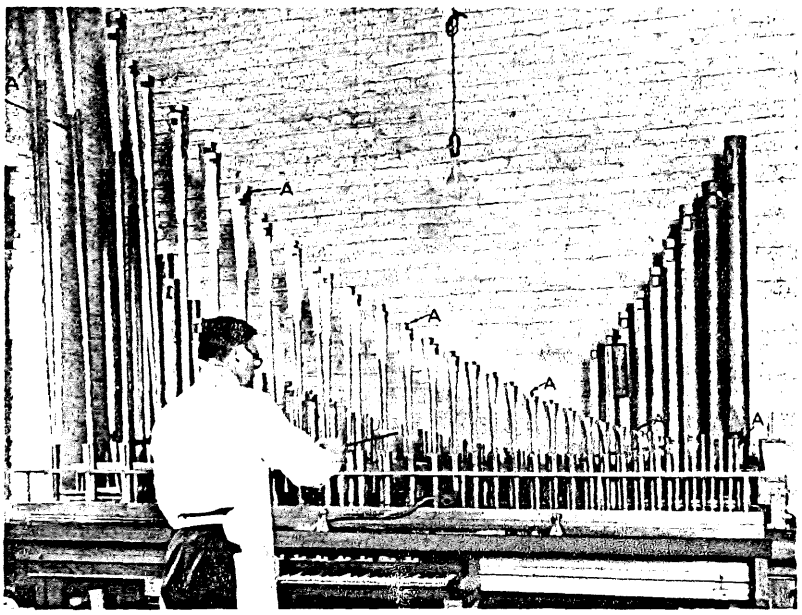
The Voicing

HERE we reflect that the organ under examination is just one of many and whether we like it or not, it belongs to someone else and we cannot buy it. What we want to get at is, first, have the voicers good pipes to work on? And, second, is their work done under conditions which insure a uniformly fine result? So we go to the Kimball factory and pry into every process and material involved in tone production.

With every order comes a full description of the auditorium, the size, the seating capacity, the type of service, or other use, the probable acoustical conditions. With all available information before him, the head voicer determines the scales of the pipes, the pressures to be used and general tonal treatment. Whenever possible, his decision is based on personal study of the building, but in any event it is guided by complete information and his experience with thousands of other organs. He is seldom confronted with a problem not previously encountered and solved and he knows how the former solution worked out. He then orders the pipes to be made up in the pipe shop, being limited only by the standard materials and practices of the Company, which he helped to decide. When the pipes are done, he takes middle "C" of each set and balances these pipes till he has the combined tone which is to be the desired full organ tone of the completed instrument. In his hands is the individual characteristic tone of each stop and also their blending into a perfect ensemble. When he has each middle "C" to his satisfaction, both as an individual tone and as a part of the ensemble, he proceeds to set all the other "C" pipes of each octave to the same tone color and volume. That done, he turns the stop over to the assistant voicer who specializes in that class of tone, to fill in the other notes of the scale. All of these assistant voicers have been trained under him and each has specialized in some class of tone, as diapason, flute, string, orchestral reed or chorus reed. Each is thus qualified to carry through the outline of the tonal scheme entrusted to him by the head voicer. The voicers are under no compulsion to hurry their work. They work with the finest possible materials under the most favorable circumstances, and they know that their work must pass the inspection of the head voicer and superintendent.

By these means every detail of the tone is under the control of one man, and that man is qualified as few living men are, by ability and experience, to produce dependable tonal results of uniform quality, in any possible circumstances.

The best voicing would suffer from bad planting or crowding of pipes. Ideal speech is provided for in the Kimball windchest layout, and the pipes are so set that they cannot turn and shade each other. How different the situation, and naturally the results, where commercial conditions force the purchase of stops from stock pipe makers, and hasty work, necessary to keep within a competitive price.



VOICING ROOM

Final inspection of set of Oboe pipes by head voicer:

(a) *Shows the "C" pipes originally voiced and regulated by head voicer before turning stop over to assistant voicer to fill in balance of stop.*

The Purchase

THE necessary act of purchase must be the signing of an organ contract. It is to the terms of this contract and their faithful execution unwatched by us, that we must look for our protection, in our purchase. So we finally turn again to the contract, and as it is a Kimball contract, we find precisely the assurances we desire, given by an organization of unquestioned financial strength and integrity. We find all the details we noticed in our examination of the console and organ, definitely covered.

We find exact electrical and mechanical specifications of all parts of the action fully given.

We find complete absence of such meaningless, ambiguous or deceptive expressions as "Swell shades to be of *ample* thickness," "The pipes to be of the *best and most approved* materials," "Console measurements to be the *correct standard.*" In place of such expressions we find every material plainly specified, together with size, weight and formula, where such information is needed.

We find the exact details of the pipes, the formulae of the metals to be used, the portions of the stops to be of these metals and the portions to be made of zinc, all plainly stated.

We find the design of every part so described that from our examination we understand why these designs were chosen.

We find that while such matters as workmanship and tonal excellence cannot be legally defined and guaranteed in words, *the result, which is what we are concerned in, can be, and is.*

We find a positive assurance that every pipe in every Kimball organ is made in the Kimball factory.

We find the same positive assurance that every pipe is voiced by Kimball voicers, and for the organ of which it becomes a part.

We are promised that each Kimball organ shall be completely erected, tested and tuned before shipment.

We are promised that each Kimball organ shall be installed by a trained Kimball expert, not by whatever local organ man happens to live nearest the point of delivery.

We are promised that the organ shall be installed to our complete satisfaction, as purchasers.

We are promised that tonally the organ shall be completely satisfactory to us, as purchasers.

We are promised that the makers will stand back of the organ in every respect—even tuning—for one full year after delivery, and will make any adjustments, repairs or replacements during that time without charge, except where such work is made necessary by damage to the organ from outside sources.

We can accept these promises without any reservation because they are given by a firm which has made and sold over a million organs and pianos during the past seventy odd years; carrying on its business under the same name, in the same place, and under the same family management. It has never experienced a failure, a reorganization, or a change of family ownership, and it has long enjoyed the highest possible financial rating.

We realize by this time that these promises are not irresponsible sales talk, nor are they merely high sounding phrases in sales letters. They are in the Kimball contract, and are as specific and legally binding as are the names of the stops to be supplied or the amounts of money to be paid.

Knowing all this, we can feel the same confidence in the outcome, even in spite of the fact that under modern factory conditions, we cannot watch the work, as did the organ buyer of long ago, when he watched each stick of lumber and pound of metal take shape under the hands of the old time craftsman.

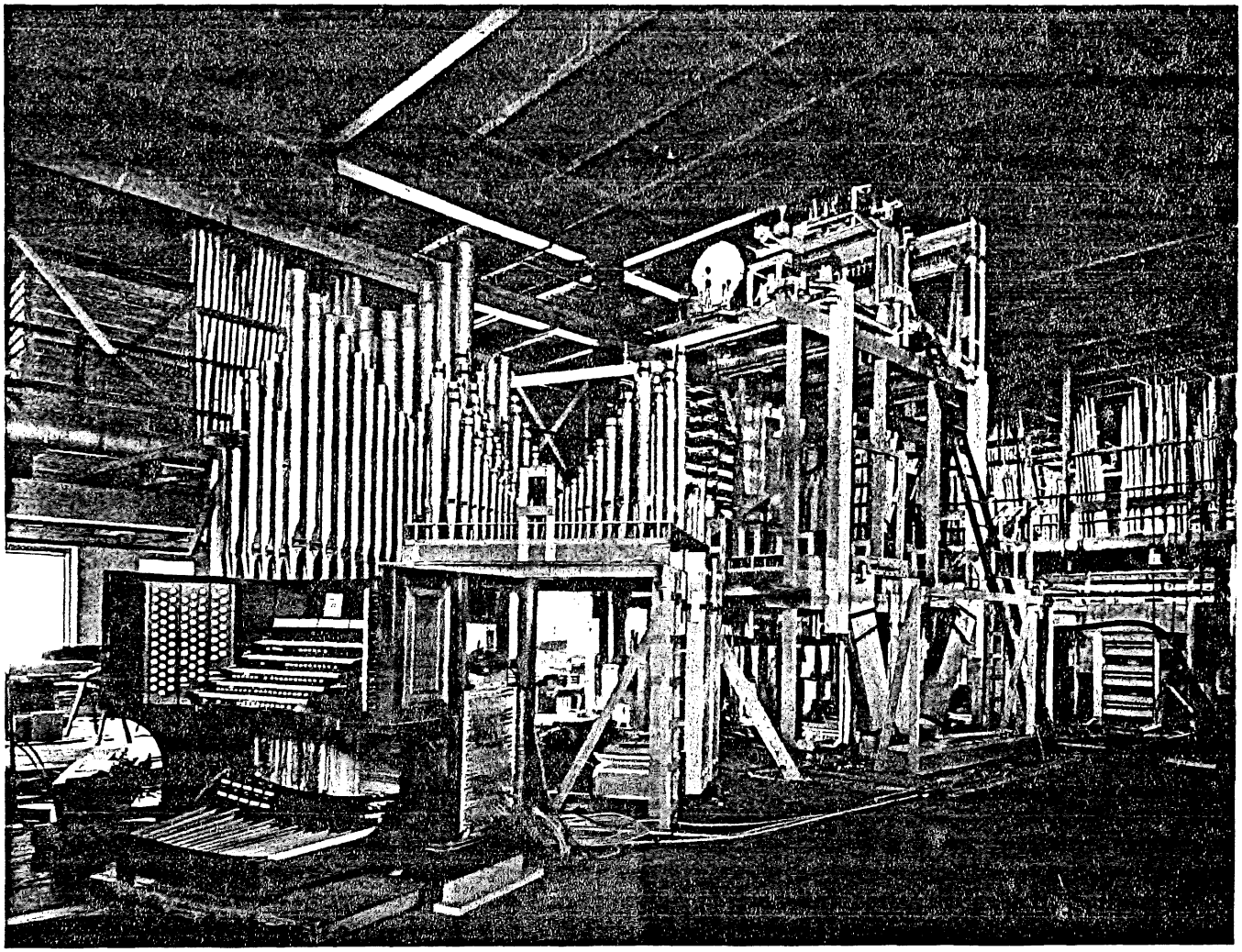
The Test

WHEN an organ is finished, our interest in seeing it properly installed prompts the process which you see pictured below. The enclosing walls are outlined by strips fastened to the floor and the organ is erected as it will stand in the building for which it was ordered. Electrical and wind connections are made, and its own console—not merely a shop testing console—is connected with the very cables that will be used in the permanent installation.

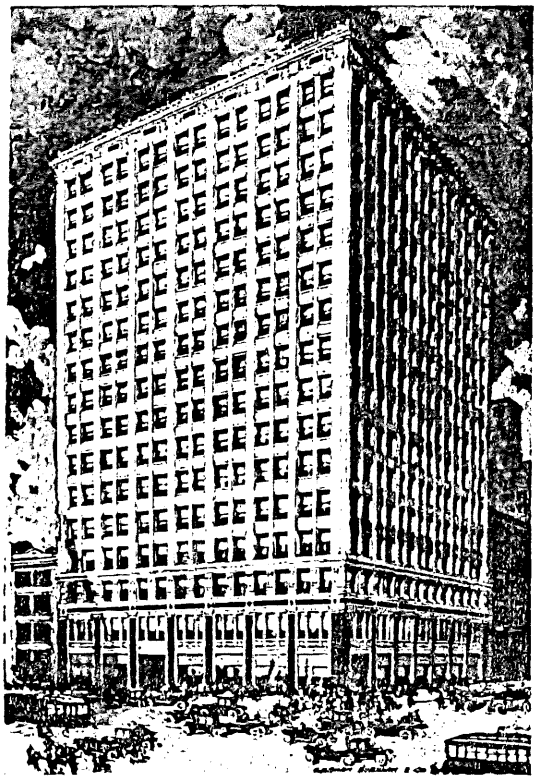
After the mechanism has been tested in every respect, each key, stop and accessory found to work perfectly, the wind is weighed in the reservoirs. The pipe holes in the windchests are blown out (the reed pipe holes also dusted out with a feather) and the pipes are set in place.

Then come the head voicer and an assistant, who go over the regulation of the pipes and check up the general balance of tone. (The final "finishing" cannot be done until the organ is installed and subject to the acoustical conditions of its permanent home, and to its expression shutters—and then comes the most careful work of all.)

At last, another Kimball organ is ready for shipment to those whose possession of it will never cease to be a pleasure.



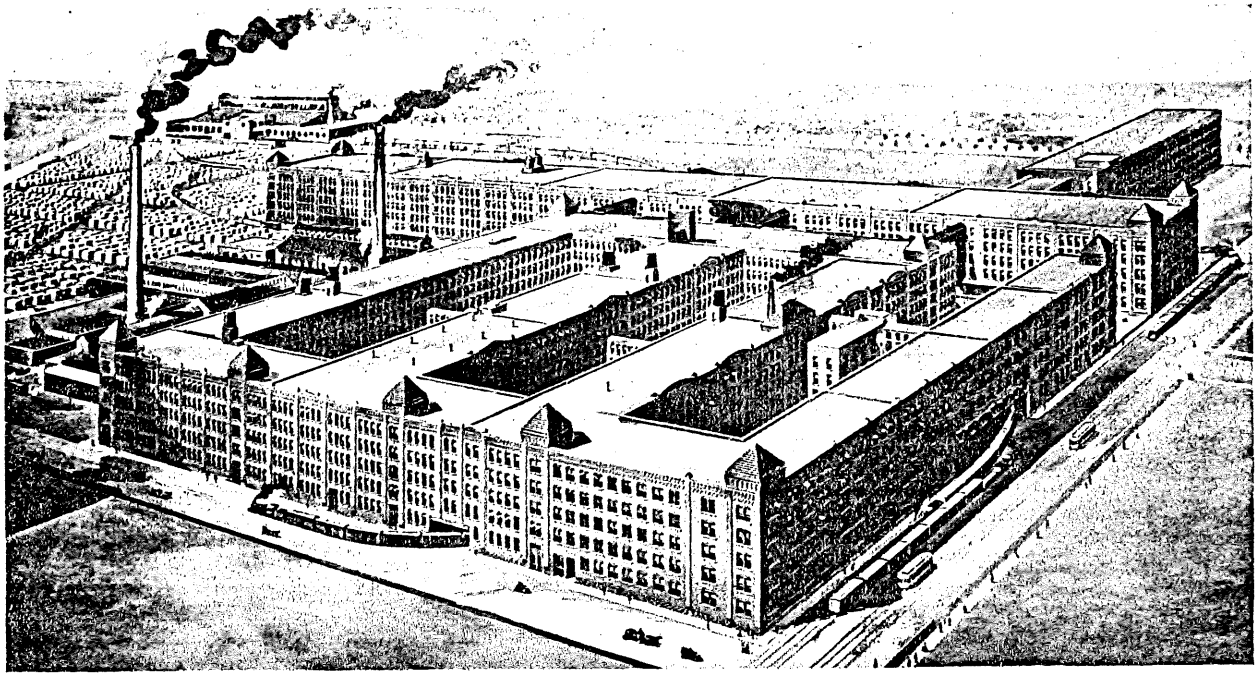
A CORNER OF THE LARGE ERECTING AND PROVING ROOM WHERE EVERY KIMBALL ORGAN IS COMPLETELY SET UP, TESTED AND PLAYED BEFORE SHIPPING.



KIMBALL HALL BUILDING
Executive and General Offices and Salesrooms

KIMBALL ORGANS are the product of a factory "more than double the size and output of any similar institution." They share in the economy which results from the purchase of raw materials in great quantities, its delivery by rail and water direct to the plant, and the making of all component parts of organs, pianos and radios in one group of factories and under one operating expense, while they retain every advantage of independent management. Kimball Organs are built, not merely assembled, the company operating its own casting and pipe making plant—no necessity of buying pipes, voiced or unvoiced.

The technical and directing staff is composed of experienced men who are acknowledge leaders in their particular branches. The financial resources of the Company are of unquestioned extent and stability.



W. W. KIMBALL COMPANY FACTORIES, CHICAGO