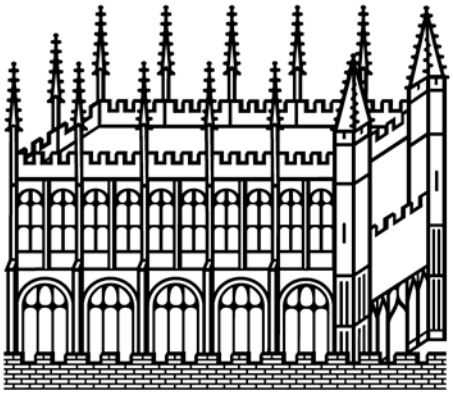

BROWN'S HARMONY

RUDIMENTS

OF

HARMONY

AND

COUNTERPOINT:

ON A NEW METHOD;

INTENDED TO ILLUSTRATE THE FIRST PRINCIPLES OF MUSICAL SCIENCE, AND TO SIMPLIFY THE STUDY BY THE REMOVAL OF ARTIFICIAL DIFFICULTIES.

BY

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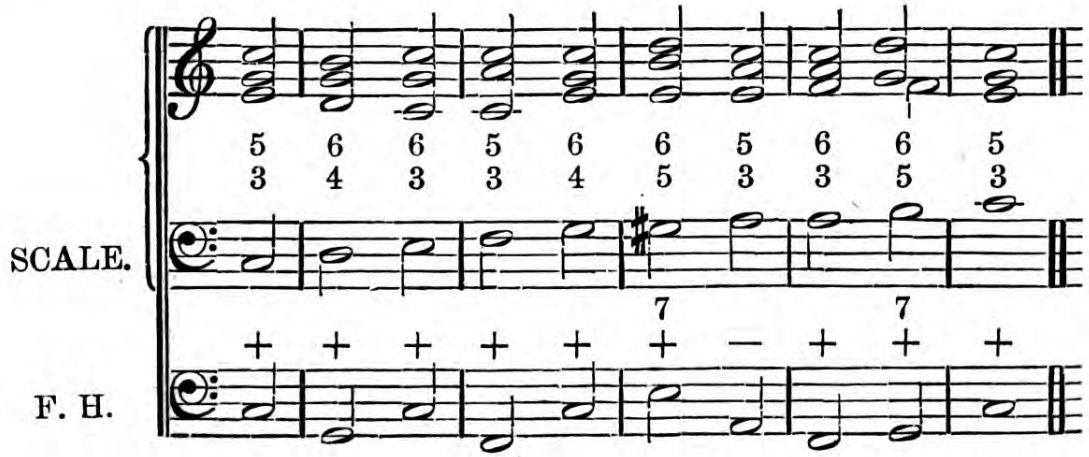
PREFACE.

THE following brief Treatise is chiefly an abridgment of a larger Work, by the same Author, entitled "Elements of Musical Science." A great deal of theoretical matter has been omitted, together with the Examples of Musical Analysis, which occupy near ninety pages of the "Elements." A chapter has been added on Counterpoint, containing progressive Examples from a Treatise by an eminent German Composer.

The Author's reasons for publishing the results of studies which were undertaken and prosecuted for his own satisfaction, are chiefly the two following:—

1. All combinations of notes that occur in composition are here reduced to their simplest elements; which are represented to the eye upon a separate Staff under the Bass. By this means the student is relieved from a burden on his memory, which frequently proves too heavy for him. It is not easy to make this intelligible without an Example. Take the following Scale and Accompaniment:—



The Scale is on the second Staff, the Accompaniment on the first, and the Chords are expressed by figures between them, in Intervals counted from the notes of the Scale, as a Bass. Both the figures, and the notes of the Accompaniment, are ambiguous; denoting different Intervals according to the place which the Bass note under them occupies in the Scale. Thus, in the Key of C, 3 represents a Major Third over F, C, and G, and a Minor Third over A and E.

In the Fundamental Harmony, which occupies the third Staff, the Intervals are counted from the Fundamental Bass of each Chord. This Harmony is exhibited to the eye, by a notation peculiar to this Work; in which every Chord has its own particular sign :—

The Major Triad is denoted by the sign +
The Minor Triad . . . by . . . —
The Dominant Harmony . by . . . $\frac{7}{+}$

By means of this notation, it is evident at a glance, that the Harmony of the foregoing Example consists of seven Major Triads, one Minor Triad, and two Dominant Harmonies.

This method of analysis, which is used throughout the Work, being equally applicable to all other Elementary Treatises, as well as to all Musical Compositions, is so great a relief to the memory, that the student who knows something of Harmony already, will have no reason to regret the time spent in acquiring a knowledge of it.

2. The simple elements into which the various combinations of sounds are reduced, are here taken, not from the seven notes of the Gamut, or Diatonic Scale, which is an invention of the

ear; but from the first seven notes of the Harmonic Scale, which are naturally produced by the vibration of a musical string or tube. Thus the Theory of Harmony is established on a scientific basis.

Readers who have an aversion to figures, may, at the first reading, pass over the fourth, fifth, sixth, and seventh Chapters. The Author, however, must be permitted to say, that it was by means of figures, that he was enabled to investigate the true nature and proportions of Musical Intervals and Chords.

Rockhaven, 31*st July*, 1863.

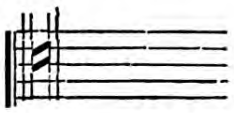
CONTENTS.

EXPLANATION OF SYMBOLS.

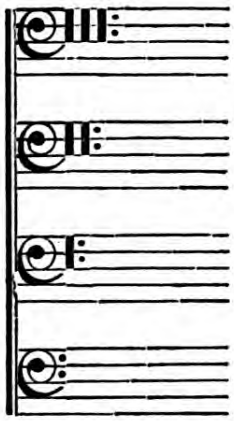
INTERVALS	.. ..	+ Major.
„	.. ..	— Minor.
„	.. ..	× Augmented.
„	.. ..	÷ Diminished.
CHORDS	.. ..	+ Major Triad.
„	.. ..	— Minor Triad.
„	.. ..	5 ÷ Diminished Triad.
„	.. ..	$\frac{7}{+}$ Dominant Seventh.
„	.. ..	7 ÷ Diminished Seventh.
„	.. ..	$\frac{6\times}{+}$ Augmented Sixth.

Delta, ∆, over a letter, denotes the Grave or Dominant Seventh.

CLEFS.



C, Tenor, an Octave below the Treble.



F, Altissimo, 3 Octaves above the Bass.

F, Soprano, 2 Octaves.

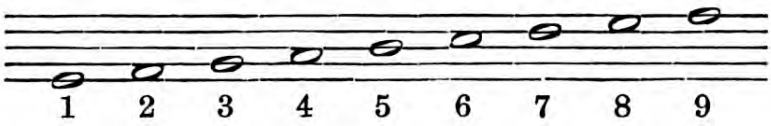
F, Alto, 1 Octave.

F, Basso.

ELEMENTS OF MUSICAL SCIENCE.

INTRODUCTION.

1. The notes of Music are represented to the eye upon a Scale, called the Staff; consisting of five horizontal lines, which, with the four spaces between them, contain nine Degrees:



2. The difference of pitch between two notes is called an Interval. The Intervals take their names from the number of Degrees included on the Staff. Thus, from 1 to 2 is called a Second; from 1 to 3, a Third; from 2 to 3 a Second; and so on.

3. These names are to be carefully distinguished from the fractional parts of a string, and the rate of vibration; to which they bear no analogy.

4. The Degrees being too few to express the notes contained within the compass of the Staff, the same name is applied to several Intervals, essentially different from each other; and distinguished by the epithets Major, Minor, &c.

5. In order to be understood, it is necessary to retain several of those epithets; and to render them visible, I use the common arithmetical signs, which are to be read thus:—

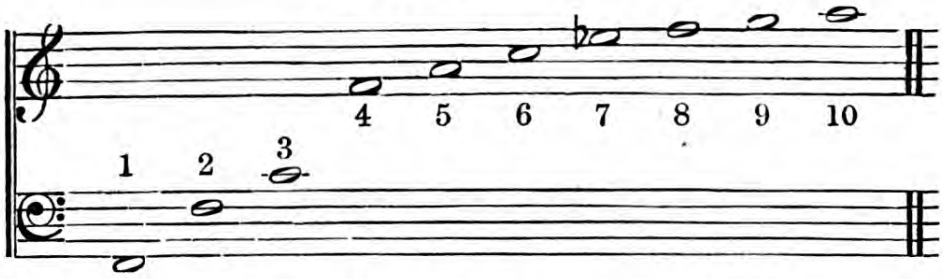
\+ Major.
− Minor.
× Augmented.
÷ Diminished.

6. The terms Major and Minor, belong properly to Thirds, Sixths, and Sevenths. The term Augmented, is applied to Perfect, or Major, Intervals, increased by a Semitone; and the term Diminished, to Perfect, or Minor, Intervals, decreased by the same.

7. The pitch of musical sounds being dependent on the rate or velocity of the vibrations by which they are produced, the Interval between two sounds is correctly measured by the relative velocity of their vibrations. For example, if one string vibrate twice, in the time that another vibrates once, the relation between them, which is 2 to 1, is the measure of the Interval called an Octave.

8. The simplest scale of sounds that can be imagined is this; that while the first or lowest note vibrates once, the second vibrates twice, the third thrice, and so on. This process, continued through ten notes, produces the following Scale:—

THE HARMONIC SCALE.



9. This Scale is naturally produced by tubes of sufficient length, such as the trumpet and French horn. It is contained in the Harmonics of a single musical sound. It is therefore no human invention; but is the work of the Great Creator Himself.

10. The Degrees of the Harmonic Scale, consist of Intervals decreasing regularly, in a geometrical ratio, from the Octave to the Minor Tone:—

1 : 2 . . .	Octave	F, F.
2 : 3 . . .	Fifth	F, C.
3 : 4 . . .	Fourth	C, F.
4 : 5 . . .	Major Third . .	F, A.
5 : 6 . . .	Minor Third . .	A, C.
6 : 7 . . .	Grave Third . .	C, E♭.
7 : 8 . . .	Tone Maximus .	E♭, F.
8 : 9 . . .	Tone Major. . .	F, G.
9 : 10 . . .	Tone Minor. . .	G, A.

11. Before proceeding to the grammatical part of Harmony, I shall describe the various Chords, and show their derivation from the Harmonic Scale.

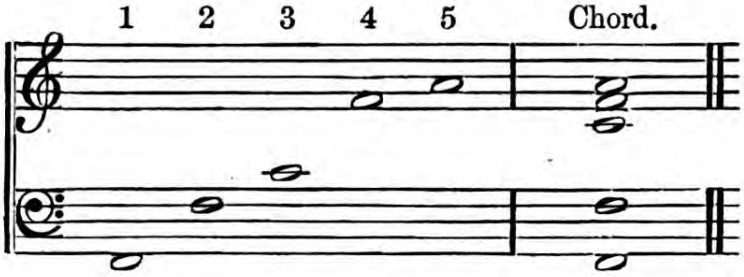
CHAPTER I.

HARMONIC CHORDS.

12. The Harmonic Scale, although it is properly one Chord, directly contains the two fundamental Concords from which all other Chords are derived: namely, the Harmonic Triad, or Major Common Chord, and the Harmonic Tetrad, or Dominant Harmony.

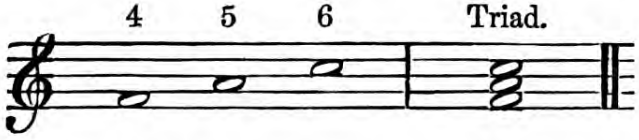
1. HARMONIC TRIAD.

13. The first five notes of the Harmonic Scale, when heard together, are called the Fundamental Concord, or Major Common Chord:—



This is reckoned the most perfect form in which the Chord can be produced by five notes.

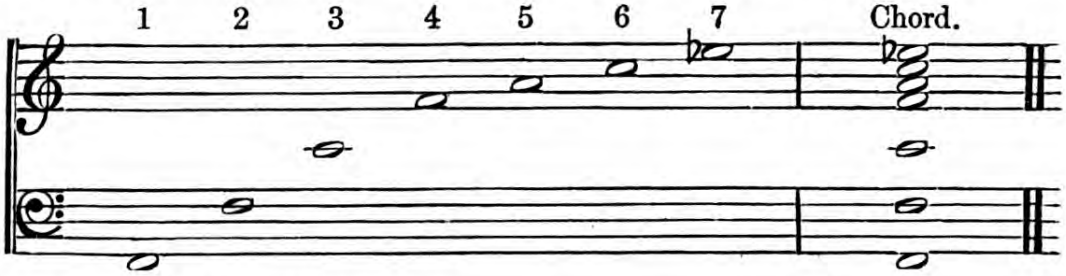
14. In the fourth, fifth, and sixth notes of the same Scale, the essential notes of this Chord are found together, in the form of a Triad:—



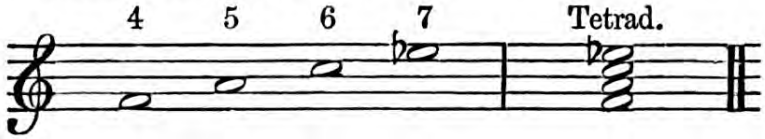
In this form it is called the Harmonic Triad, or Major Triad: and consists of a Root with its Major Third and Fifth. Its proportions are, as above, 4, 5, 6. In four parts, the Octave to the Root is generally added; but the name Triad is retained.

2. HARMONIC TETRAD.

15. The first seven notes of the Harmonic Scale, heard together, are called the Fundamental Seventh, or Dominant Harmony:—

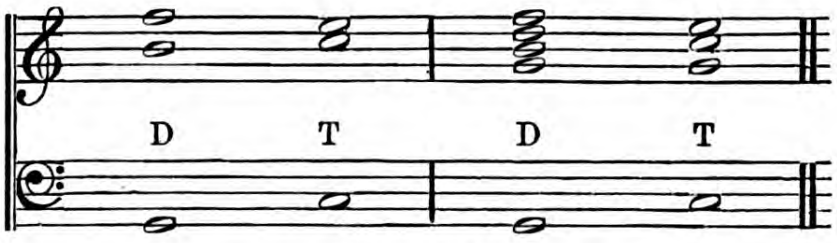


16. In the fourth, fifth, sixth, and seventh notes of the same Scale, the essential notes of this Chord are found together in the form of a Tetrad, or Chord of the Seventh:—



In this form it is called the Fundamental Seventh: or more commonly the Dominant Seventh, from its being peculiar to the Dominant, or Fifth of the Key. It consists of a Root, with Major Third, Fifth, and Grave Seventh. Its proportions are, as above, 4, 5, 6, 7.

17. The Dominant Harmony, when treated regularly, is followed by the Tonic Harmony, which is called its Resolution. The Major Third ascends a Semitone to the Tonic, or Key-note, and the Seventh descends one degree to the Third of the Key. When those two changes are made, the Chord is said to be resolved:—



18. The Dominant Seventh note, bears the same name, or letter, with the Subdominant note, or Fourth of the Scale; but differs from it in pitch, by an Interval of 63 : 64: and is distinguished from it in this work by a small delta ($^{\Delta}$) over the letter:—

Dominant Chord . . G B D $\overset{\Delta}{F}$ . . 4 . 5 . 6 . 7 × 9 = 36 . 45 . 54 . 63.
Subdominant Chord . F A C F . . 4 . 5 . 6 . 8 × 8 = 32 . 40 . 48 . 64.

CHAPTER II.

THE DIATONIC SCALE.

19. Two similar Triads, in which the uppermost note of the one, is the lowest note of the other, may be called adjacent Triads. A series of adjacent Harmonic Triads produces a Scale, consisting of alternate Major and Minor Thirds, which I shall call the Scale of Triads; and of which the following is a part:—

$$\overset{+}{B\flat}\quad D\quad \overset{+}{F}\quad A\quad \overset{+}{C}\quad E\quad \overset{+}{G}\quad B\quad \overset{+}{D}\quad F\sharp\quad \overset{+}{A}.$$

20. This Scale is of great use in the study of Music; throwing light upon the Diatonic Scale, the Minor Mode, the structure of Chords, the variety of Keys, and the Chromatic Scales.

21. Any three adjacent Triads contain the notes of a Diatonic Scale. For example:—

22. To construct the Scale of C: on the note F, set up the Major Triad F A C; on C, a similar Triad C E G; and on G another, G B D. Then, because F C G are perfect Fifths ascending, F is to C, and C to G, as 2 to 3 (Art. 10.). Wherefore if F be taken = 4, C will be = 6, and G = 9. Multiply the proportions of those Triads, 4, 5, 6, by 4, 6, 9, the value of F C G:—

Triad of F	.	.	.	F	A	C	.	.	4 . 5 . 6 × 4 = 16 . 20 . 24.
Triad of C	.	.	.	C	E	G	.	.	4 . 5 . 6 × 6 = 24 . 30 . 36.
Triad of G	.	.	.	G	B	D	.	.	4 . 5 . 6 × 9 = 36 . 45 . 54.

Set down these notes in succession, with the proportions thus found:—

16	20	24	30	36	45	54.
F	A	C	E	G	B	D.

To reduce them within an Octave, multiply F A, and divide D,

by 2. Then arrange them in alphabetical order, beginning with C, and adding its Octave :—

24	27	30	32	36	40	45	48
C	D	E	F	G	A	B	C

23. This is the Diatonic Scale of C, and of the Major Mode. Its Fundamental Basses are the Roots of the three Triads from which it was constructed; viz. :—

F, the Subdominant, or Fourth of the Scale;
C, the Tonic, or Key-note; and
G, the Dominant, or Fifth of the Key.

24. From the construction it is evident, that the fountain of the Diatonic Scale is not the Tonic, or Key-note, as is commonly supposed, but the Subdominant.

25. The Degrees of the Diatonic Scale, are ascertained from the proportions of the notes, as already given :—

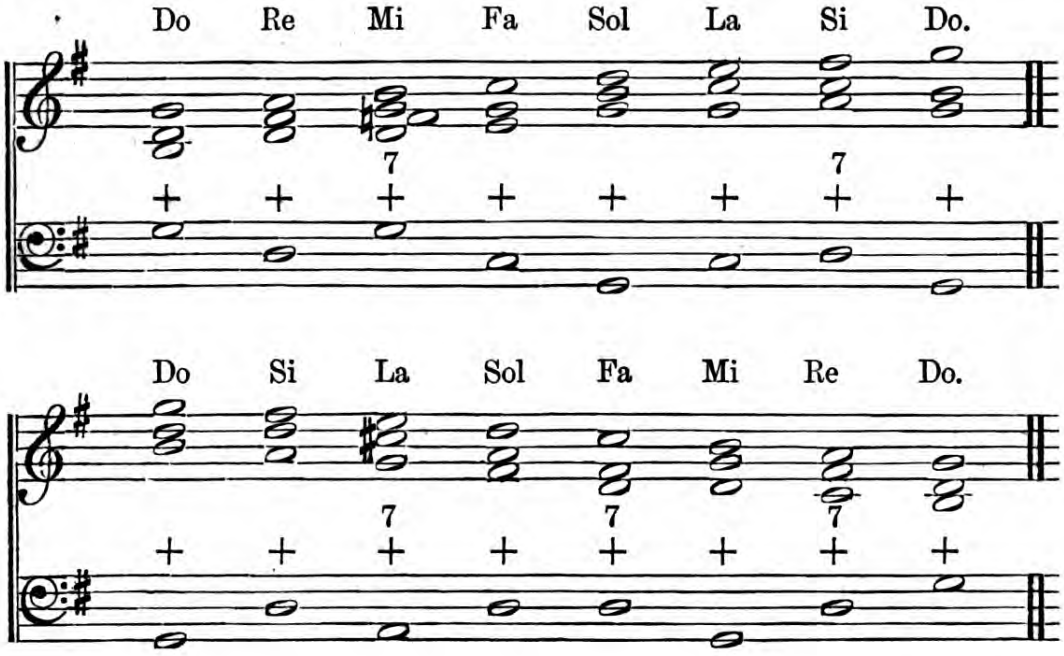
C D . . .	24 : 27 ÷ 3 =	8 : 9	Major Tone.
D E . . .	27 : 30 ÷ 3 =	9 : 10	Minor Tone.
E F . . .	30 : 32 ÷ 2 =	15 : 16	Diatonic Semitone.
F G . . .	32 : 36 ÷ 4 =	8 : 9	Major Tone.
G A . . .	36 : 40 ÷ 4 =	9 : 10	Minor Tone.
A B . . .	40 : 45 ÷ 5 =	8 : 9	Major Tone.
B C . . .	45 : 48 ÷ 3 =	15 : 16	Diatonic Semitone.

26. The names by which the notes of the Scale are commonly distinguished, are the following :—

First	The Tonic, or Key-note.
Fifth	The Dominant.
Fourth.	The Subdominant, or 5th below the Tonic.
Third	The Mediant.
Sixth	The Submediant, or 3rd below the Tonic.
Second	The Supertonic.
Seventh Major . . .	The Leading-note.

Each of these notes has its peculiar effect upon the ear, when the Key-note is kept in mind.

27. Example of the Diatonic Scale, accompanied by Harmonic Chords:—



28. The Scale of Triads (Art. 19) may be resolved into a series of alternate Major and Minor Triads, interwoven with each other; each Triad in the series, having two notes in common with the Triads above and below it. Thus the notes of the Diatonic Scale contain five Triads, three Major and two Minor:—

	16	20	24	30	36	45	54
	F	A	C	E	G	B	D
Major Triad. . . .	–	–	–	–	G	B	D
Minor Triad . .	–	–	–	E	G	B	–
Major Triad. . . .	–	–	C	E	G	–	–
Minor Triad . .	–	A	C	E	–	–	–
Major Triad . . .	F	A	C	–	–	–	–

29. From this table it is evident, that the Minor Triad is a compound Chord, taking its Minor Third from the Triad below, and its Major Third from the Triad above it; and so has two Harmonic Roots.

30. The proportions of the Minor Triad are 10, 12, 15:—

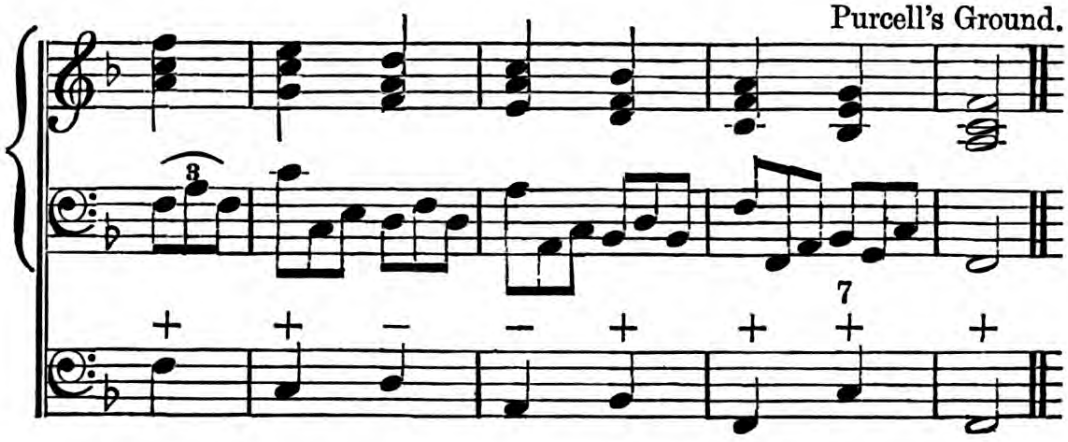
Triad of A . . A C E . . . 20 . 24 . 30 ÷ 2 = 10 . 12 . 15.
Triad of E . . E G B . . . 30 . 36 . 45 ÷ 3 = 10 . 12 . 15.

31. The Major and Minor Triads are compared, by reducing their Basses to the same terms; thus;—

Major Triad, 4 . 5 . 6 × 5 = 20 . 25 . 30.
Minor Triad, 10 . 12 . 15 × 2 = 20 . 24 . 30.

The difference lies in the middle term, which is 25 in the Major, and 24 in the Minor. This Interval 24 : 25, is commonly called a Chromatic Semitone.

32. Example of the descending Scale, accompanied by three Major and two Minor Triads:—



CHAPTER III.

THE MINOR MODE.

33. There are two Modes, or Scales, distinguished by the epithets Major and Minor. The Minor Mode imitates the Major; has its Tonic, Dominant, and Subdominant; and admits of a perfect close on its Tonic.

34. The characteristic distinction between the two Modes lies in the Thirds of the Fundamental Chords; which are Major in the one, and Minor in the other. The Minor, however, admits of exceptions to this rule; especially in the Dominant Chord, the

Third of which is generally Major; but the Third of the Tonic is always Minor.

35. The descending Scale of the Minor Mode may be constructed in the same way as the Major (Art. 22), taking Minor instead of Major Triads. Its proportions are:—

240	216	192	180	160	144	135	120
A	G	F	E	D	C	B	A

The Subdominant, Tonic, and Dominant, although not the Harmonic Roots, are considered as the Fundamental Basses.

36. In the ascending Scale, the Seventh is always Major, and the Sixth frequently.

37. Each Minor Scale is called the Relative Minor to the Major on its right hand in the Scale of Triads:—

Scale of C Major	F	A	C	E	G	B	D
Relative Minor A . . .	D	F	A	C	E	G	B	–

38. The Tonic Minor of a Major Key, is produced by flattening the Thirds of the Tonic, Dominant and Subdominant.

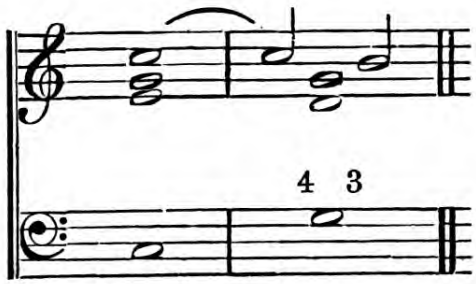
39. The Chord of the Dominant Seventh is the same in the Minor Mode as in the Major; but differs in its Resolution, by descending a Tone, instead of a Semitone.

CHAPTER IV.

CHORDS OF SUSPENSION.

40. Any note of a Chord, that descends one degree to a Concord in the next Chord, on the accented part of the Measure (Art. 128) may, before descending, divide the time of the new Chord, with the

succeeding note: as in this example, where the note C is prepared in the first Chord, suspended and resolved in the second:—



41. The Concords into which the suspensions are resolved, being the Third, Fifth, and Eighth, the suspended notes are properly the Fourth, Sixth, and Ninth; together with the Major Seventh, which is commonly resolved by ascending to the Eighth.

42. The Fourth and Sixth are prepared in the adjacent Triad *below*; or rather its Octave:—

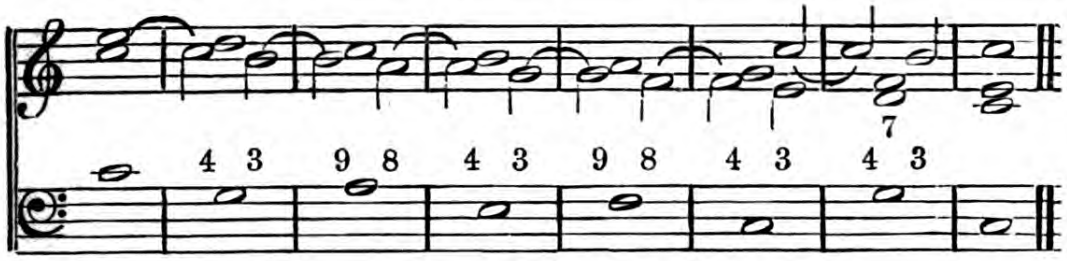
Triad of G	.	.	.	.	G	B	D	.	.	.	4	.	5	.	6	× 3 =	12 . 15 . 18.
Triad below	.	.	.	.	C	E	G	.	.	.	4	.	5	.	6	× 4 =	16 . 20 . 24.
Suspended Fourth				.	G	C	D	.	.	.	12	.	16	.	18.		
Suspended Sixth			.	.	G	B	E	.	.	.	12	.	15	.	20.		

43. The Ninth and Major Seventh are prepared in the adjacent Triad *above*:—

Triad of F	.	.	.	.	F	A	C	.	.	.	4	.	5	.	6	× 2 =	8 . 10 . 12.
Triad above			.	.	C	E	G	.	.	.	4	.	5	.	6	× 3 =	12 . 15 . 18.
Suspended Ninth				.	F	A	C	G	.	.	8	.	10	.	12	.	18.
Suspended Seventh				.	F	A	C	E	.	.	8	.	10	.	12	.	15.

44. The names and Signatures of the Chords of Suspension, being taken from the Intervals which the Suspended notes make with the actual Bass, change with every Inversion of the Chord. Thus, by a rise of a Third in the Bass, the Ninth is reduced to a Seventh, the Seventh to a Fifth, the Sixth to a Fourth, and the Fourth to a Second, or its Octave, a Ninth.

45. Example of the Fourth, alternating with the Ninth:—



46. More Rules, with copious Examples, will be found in the 'Elements of Musical Science,' Chapter VII.

CHAPTER V.

CHORDS OF ADDITION.

47. The Chords of Addition are, the Added Ninth, and the three Added Sixths.

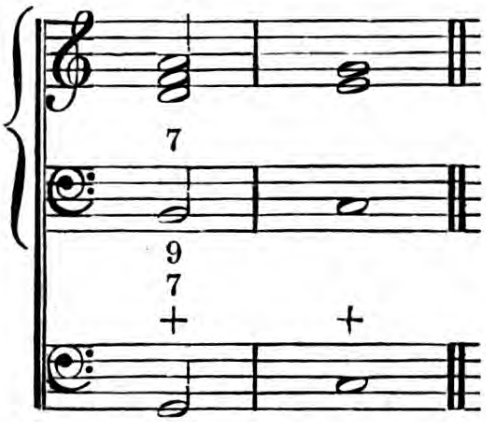
1. Added Ninth.

48. The Chord of the Added Ninth, is the Dominant Harmony, with the addition of the Fifth of the adjacent Triad above:—

Dominant Harmony G B D $\hat{F}$ . . . 4 . 5 . 6 . 7 ×2= 8 . 10 . 12 . 14.
Major Triad above D F♯ A . . . . 4 . 5 . 6 . – ×3=12 . 15 . 18.
Added Ninth . . G B D $\hat{F}$ A . 8 . 10 . 12 . 14 . 18÷2= 4 . 5 . 6 . 7 . 9.

49. In composition, the Root is almost always omitted; leaving a Diminished Triad with Minor Seventh,

B D $\hat{F}$ A . . . . 5 . 6 . 7 . 9.

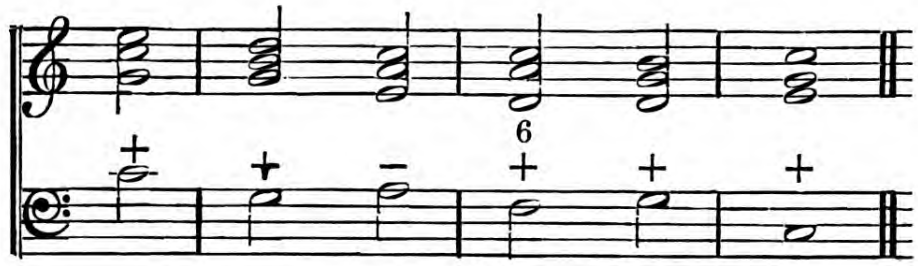


2. ADDED SIXTH.

50. There are three Chords that bear this name; one belonging to the Major Mode, and two to the Minor. They all consist of the Triad of the Subdominant, with the Third of the adjacent Triad below, or rather its Octave.

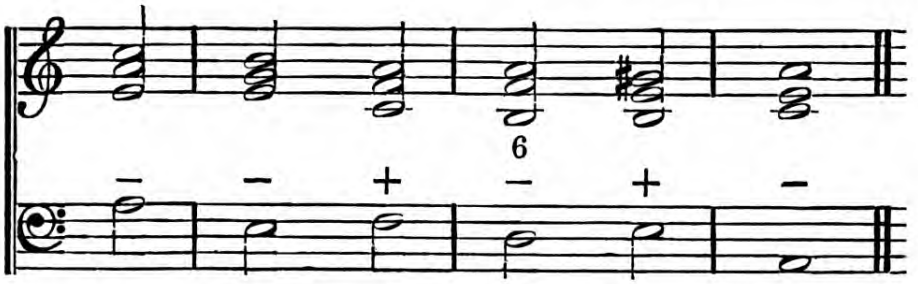
51. Major Triad with Major Sixth.

Subdominant . . . . F A C . . . . 4 . 5 . 6 × 3 = 12 . 15 . 18.
Triad below . . . . B♭ D F . . . . 4 . 5 . 6 × 4 = 16 . 20 . 24.
Added Sixth . . . . F A C D . . . 12 . 15 . 18 . 20.



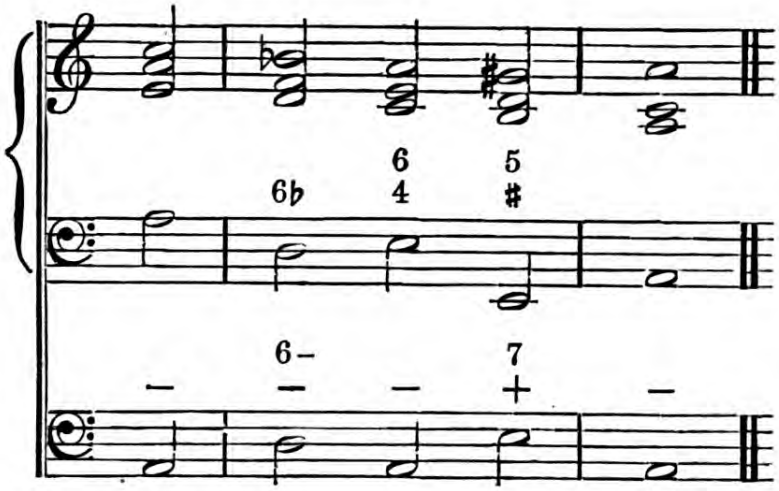
52. Minor Triad with Major Sixth.

Subdominant . . . D F A . . . 10 . 12 . 15 × 3 = 30 . 36 . 45.
Triad below . . . . G B♭ D . . . 10 . 12 . 15.
Tonic Major . . . . G B D . . . 4 . 5 . 6 × 10 = 40 . 50 . 60.
Added Sixth . . . D F A B . . 30 . 36 . 45 . 50.



53. Minor Triad with Minor Sixth.

Subdominant . . . D F A . . . 10 . 12 . 15 × 3 = 30 . 36 . 45.
Triad below . . . . G B♭ D . . . 10 . 12 . 15 × 4 = 40 . 48 . 60.
Added Sixth . . . . D F A B♭. . 30 . 36 . 45 . 48.
30 . 36 . 45 . 48 ÷ 3 = 10 . 12 . 15 . 16.



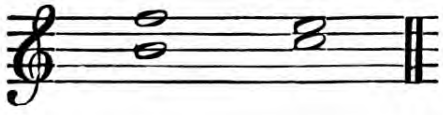
CHAPTER VI.

COMPOUND DOMINANT HARMONIES.

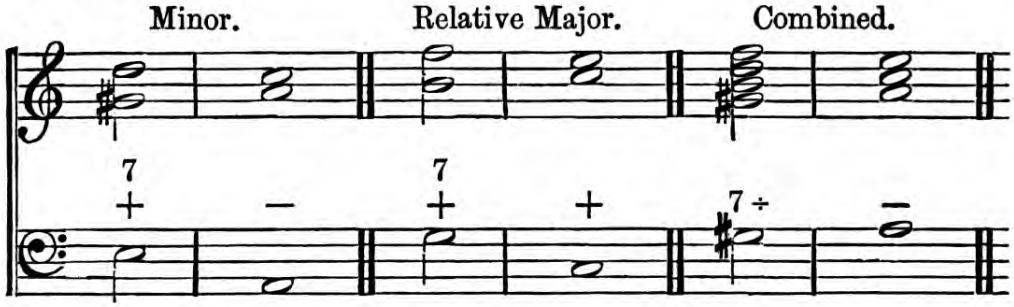
54. The Chords of the Diminished Seventh and Augmented Sixth, which have an effect peculiar to themselves, are evidently composed of different Dominant Harmonies united.

1. THE DIMINISHED SEVENTH.

55. The characteristic notes of the Dominant Harmony, are the Major Third and Grave Seventh; resolving into the Tonic and its Third. Art. 17:—



56. In the Minor Mode, the characteristic notes of the Dominant Harmony, and their Resolution, combined with the same notes of the Relative Major, produce the Chord of the Diminished Seventh, and its Resolution:—



57. The proportions of the Diminished Seventh, are,

25 . 30 . 35 . 42 :—

E G♯ D . . . . . 4 . 5 . 7 × 5 = 20 . 25 . 35.

G B F . . . . . 4 . 5 . 7 × 6 = 24 . 30 . 42.

G♯ B D F . . . 25 . 30 . 35 . 42.

58. This Chord, which was at first considered peculiar to the Minor Mode, has been adopted by the Major.

2. The Augmented Sixth.

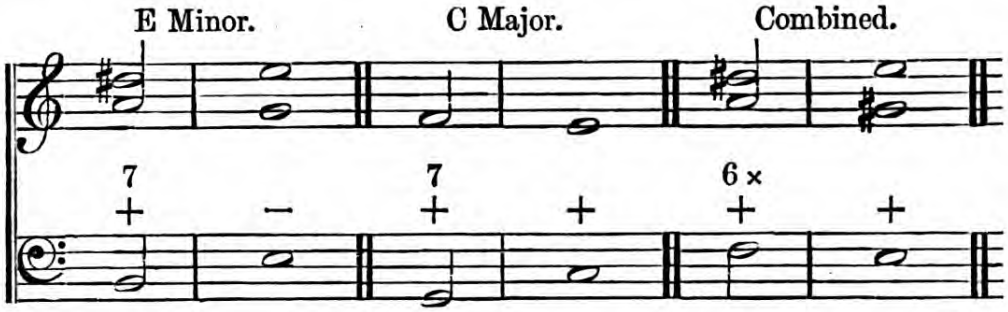
59. The Chords of the Augmented Sixth are Dominant Harmonies, resolving regularly, but always into the *Major* Tonic. They are three in number; viz.:

1. The Italian Sixth.
2. The French Sixth.
3. The German Sixth.

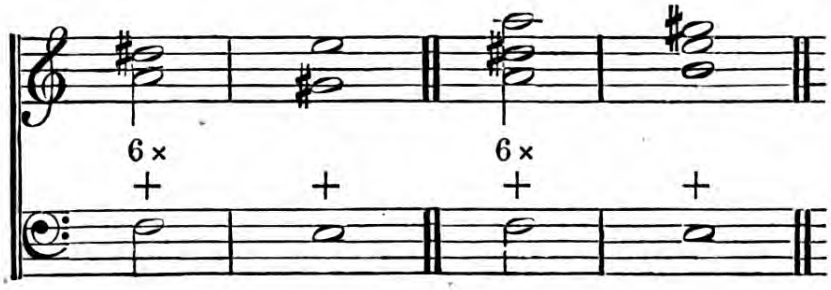
---

1. The Italian Sixth.

60. When the characteristic notes of the Dominant Harmony, in the Minor Mode, are inverted, and the Dominant Seventh note of the Major Triad below, is taken as a Bass, a Chord is formed which is called the Italian Sixth; consisting of Major Third and Augmented Sixth, and resolving into the Tonic Major :—



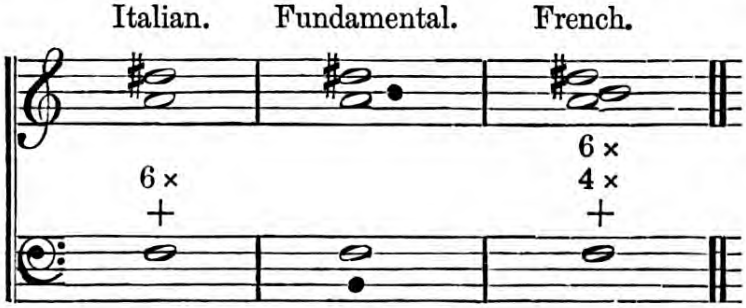
61. In four parts, the Third is doubled; and the lower Third is resolved by ascending, while the upper Third descends:—



62. The Inversions of this Chord are not used.

2. THE FRENCH SIXTH.

63. When the Octave to the Fundamental Bass is introduced into the Chord of the Italian Sixth, it is called the French Sixth:—

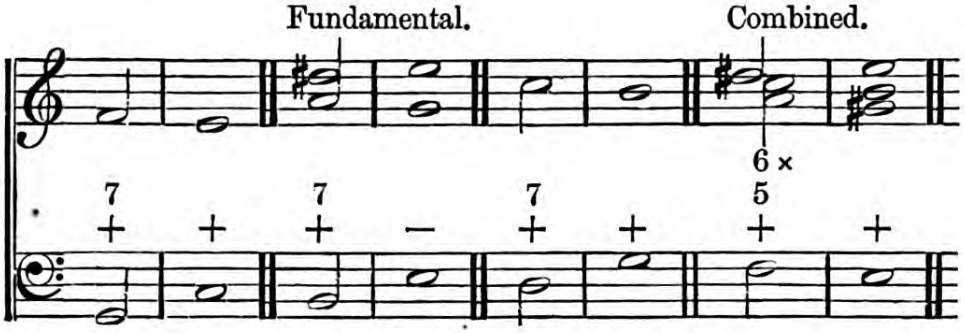


64. This Chord, which is very seldom used, consists of Major Third, Tritone, and Augmented Sixth.

3. THE GERMAN SIXTH.

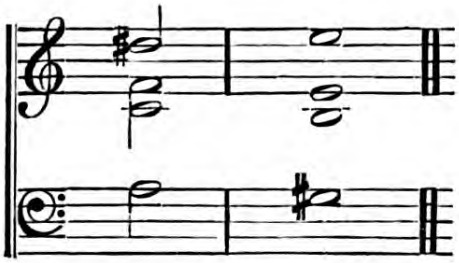
65. When the characteristic notes of the Dominant Harmony in

the Minor Mode are inverted, and combined with the Dominant Seventh *notes* of the Major Triads above and below it, a Chord is produced, called the German Sixth; consisting of Major Third, Fifth, and Augmented Sixth; and resolving, as aforesaid, into the Tonic Major :—



66. This intricate Chord is a compound of three Dominant Harmonies, taken on the notes of a Major Triad; the Third of which, is the Fundamental Bass of the Chord. Thus, the foregoing Example contains the Sevenths of three Dominant Harmonies, taken on the notes of the Triad G B D; in which B, the Fundamental Bass of the Chord, is Major Third.

67. The first Inversion of this Chord is used; but no other; thus :—



68. The derivation and proportions of the Chords of the Augmented Sixth, are as follows :—

DOMINANT HARMONIES OF G B AND D.

G B D $\hat{F}$ . . . . 4 . 5 . 6 . 7 × 4 = 16 . 20 . 24 . 28.

B D♯ F♯ $\hat{A}$ . . . . 4 . 5 . 6 . 7 × 5 = 20 . 25 . 30 . 35.

D F♯ A $\hat{C}$ . . . . 4 . 5 . 6 . 7 × 6 = 24 . 30 . 36 . 42.

B and D♯ are doubled, to raise them an Octave :—

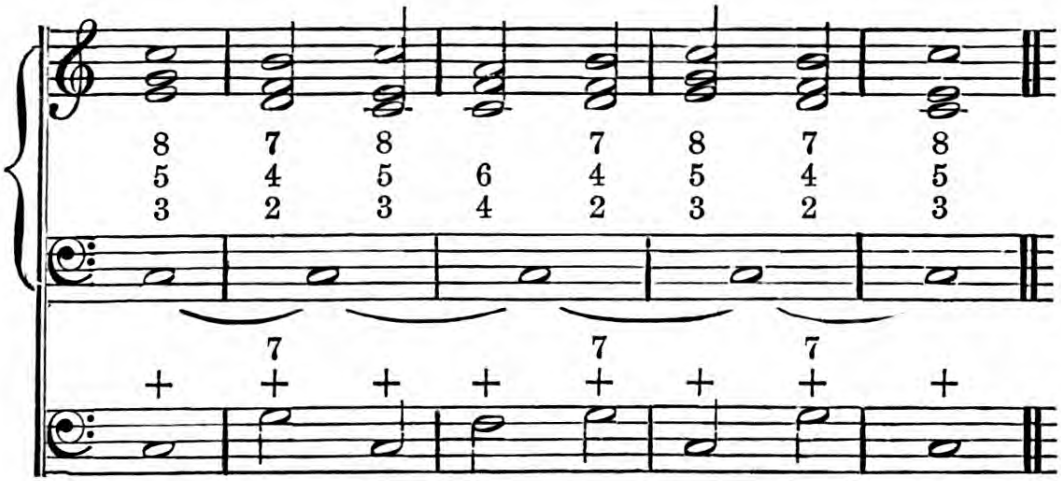
B . . . 20 × 2 = 40.
D♯ . . . 25 × 2 = 50.

Italian Sixth	F	A	—	D♯	. . . .	28 . 35 . — . 50.
French Sixth	F	A	B	D♯	. . . .	28 . 35 . 40 . 50.
German Sixth	F	A	C	D♯	. . . .	28 . 35 . 42 . 50.

CHAPTER VII.

PEDAL HARMONIES.

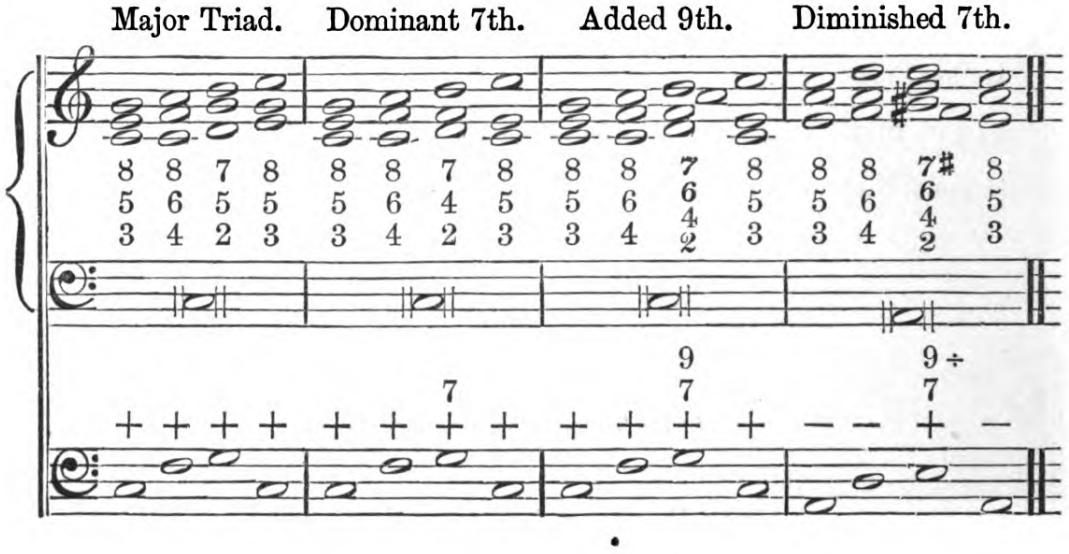
69. "When the Dominant Harmony is taken, unprepared, upon the Tonic Bass as a holding-note, whether preceded by the Tonic, or by the Subdominant Harmony; the passage is termed a Tonic Pedal note, or Organ point"* :—



In this Example, the Dominant Harmony is taken three times on the Tonic Bass C; which note is common to the other two Chords, the Tonic and Subdominant.

* Callcott's Grammar, Art. 472. Second Edit. 437.

70. The different Chords of the Dominant Harmony, may be thus arranged on a Tonic Bass :—



71. The Intervals being counted from the Tonic Bass, the Third of the Dominant Harmony becomes a Major Seventh; the Fifth becomes a Ninth, the Seventh an Eleventh, and the Ninth a Thirteenth: for which reason, these Chords are often called Chords of the Ninth, Eleventh, and Thirteenth. They are figured, however, an Octave lower, 2 . 4 . 6.

72. The proportions of the Pedal Harmonies are as follows :—

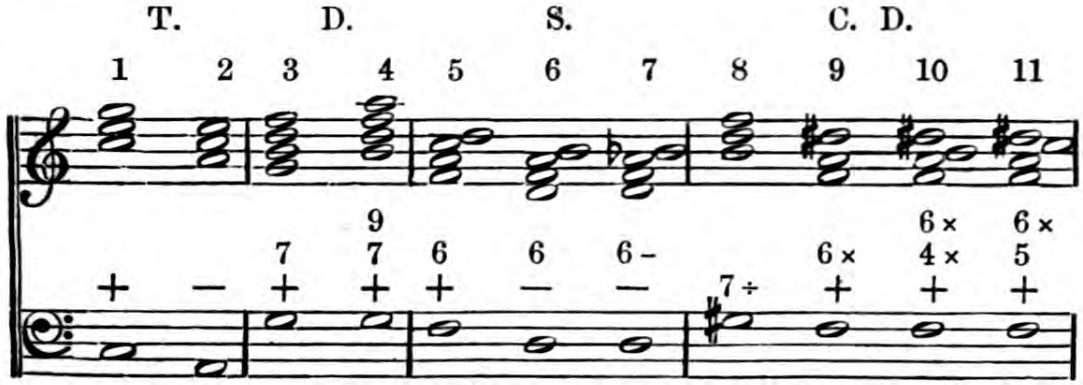
Ninth	C	G	B	D	.	8 . 12 . 15 . 18.
Eleventh	C	B	D	$\overset{\Delta}{F}$	.	8 . 15 . 18 . 21.
Thirteenth Major . .	C	B	D	$\overset{\Delta}{F}$	A	8 . 15 . 18 . 21 . 27.
Thirteenth Minor . .	A	G♯	B	$\overset{\Delta}{D}$	$\overset{\Delta}{F}$	40 . 75 . 90 . 105 . 126.

73. Sometimes the Pedal Harmonies are taken on the Dominant, instead of the Tonic: and sometimes the holding-note occupies an upper part, instead of the Bass.

CHAPTER VIII.

RECAPITULATION OF CHORDS.

74. The various Harmonies that have been described, are summed up as follows:—



Tonic Harmony:—

1. Major Triad . . . . . C E G . . . . . 4 . 5 . 6.
2. Minor Triad . . . . . A C E . . . . . 10 . 12 . 15.

Dominant Harmony:

3. Dominant Seventh . . . G B D $\overset{\triangle}{F}$ . . . . 4 . 5 . 6 . 7.
4. Added Ninth . . . . . G B D $\overset{\triangle}{F}$ A . . 4 . 5 . 6 . 7 . 9.

Subdominant Harmony:—

5. Added Sixth, Major Mode F A C D . . . . 12 . 15 . 18 . 20.
6. Added Sixth, Minor Mode D F A B . . . . 30 . 36 . 45 . 50.
7. Minor Added Sixth . . D F A B♭ . . . . 10 . 12 . 15 . 16.

Compound Dominant Harmonies:—

8. Diminished Seventh . . G♯ B $\overset{\triangle}{D}$ $\overset{\triangle}{F}$ . . . . 25 . 30 . 35 . 42.
9. Italian Sixth . . . . . $\overset{\triangle}{F}$ $\overset{\triangle}{A}$ — D♯ . . . . 28 . 35 . — . 50.
10. French Sixth . . . . . $\overset{\triangle}{F}$ $\overset{\triangle}{A}$ B D♯ . . . . 28 . 35 . 40 . 50.
11. German Sixth . . . . $\overset{\triangle}{F}$ $\overset{\triangle}{A}$ $\overset{\triangle}{C}$ D♯ . . . . 28 . 35 . 42 . 50.

75. These eleven Chords, varied by Inversion, Suspension, Pedal Basses, and omission of notes, are the basis of all classical Music.

76. The following list presents a *comparative* view of the principal Chords, with their proportions:—

MAJOR MODE.

Major Triad	12 . 15 . 18.
Dominant Seventh	12 . 15 . 18 . 21.
Added Ninth	15 . 18 . 21 . 27.
Added Sixth	12 . 15 . 18 . 20.
Suspended Fourth	12 . 16 . 18.
Suspended Sixth	12 . 15 . 20.
Suspended Fourth and Sixth	12 . 16 . 20.
Suspended Ninth	12 . 15 . 18 . 27.
Suspended Seventh	8 . 10 . 12 . 15.
Suspended Seventh and Ninth	8 . 10 . 12 . 15 . 18.

MINOR MODE.

Minor Triad	10 . 12 . 15.
Added Minor Sixth	10 . 12 . 15 . 16.
Suspended Sixth	10 . 12 . 16.
Suspended Seventh	10 . 12 . 15 . 18.

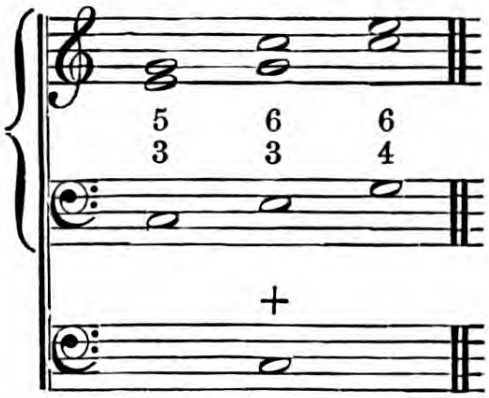
CHAPTER IX.

INVERSION.

77. We have hitherto treated of the Chords of Music, as they appear in their direct form; each having its Fundamental note for its Bass, and its higher notes arranged at the pleasure of the Composer.

78. When the Fundamental note is removed to a higher part, and another note of the Chord is taken as a Bass, the Chord is said to be inverted.

79. A Triad has two Inversions:—

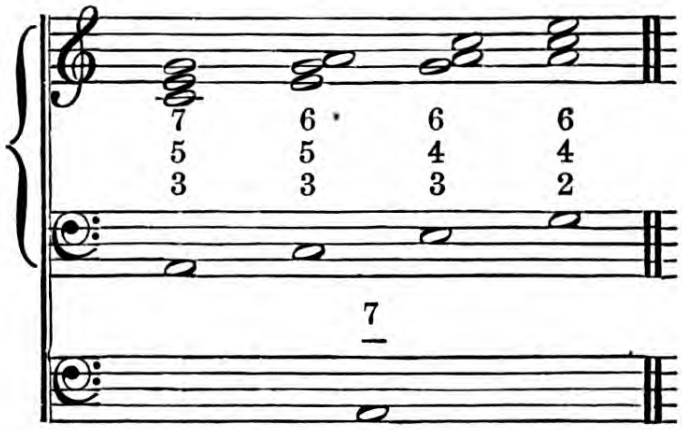


Direct Chord	C E G .	Third and Fifth.
First Inversion. . . .	E G C .	Third and Sixth.
Second Inversion . . .	G C E .	Fourth and Sixth.

80. The first Inversion of a Triad, is called, a Chord of the Sixth.

The second Inversion is called a Chord of the Fourth and Sixth.

81. A Tetrad has three Inversions:—



Direct Chord.	A C E G .	3 . 5 . 7
First Inversion	C E G A .	3 . 5 . 6
Second Inversion . . .	E G A C .	3 . 4 . 6
Third Inversion. . . .	G A C E .	2 . 4 . 6

82. The first Inversion of a Tetrad, is called a Chord of the Fifth and Sixth.

The second Inversion is called a Chord of the Third and Fourth.

The third Inversion is called a Chord of the Second and Fourth.

83. How useful soever these names may be to performers on keyed instruments, the student of Harmony will find his task simplified by neglecting them, and referring every chord to its direct form.

84. The different Triads and Tetrads are explained in the next Chapter.

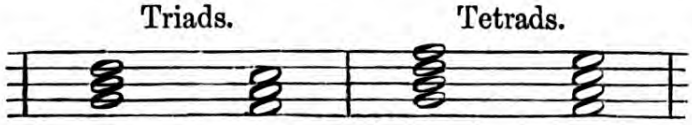
CHAPTER X.

THOROUGH BASS.

85. Thorough Bass, or Figured Bass, is a system of Musical short-hand, in which the Bass of an accompaniment is expressed by notes, and the Chords by figures.

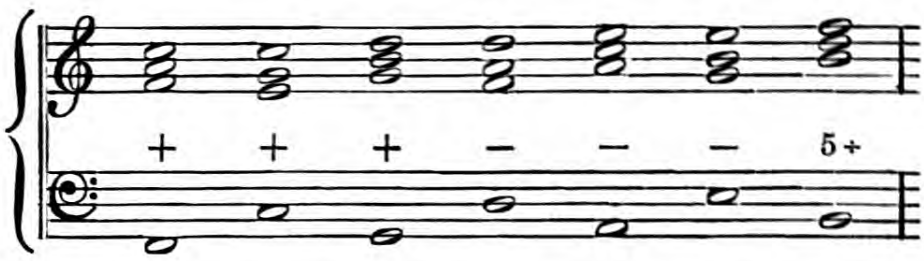
86. The figures point to the Intervals, as they would stand on the Staff, if the notes were written. The Intervals are counted from the written Bass under the figures.

87. Most Chords are reducible to Triads, or Tetrads; the former occupying three adjacent lines or spaces on the Staff, and the latter four:—

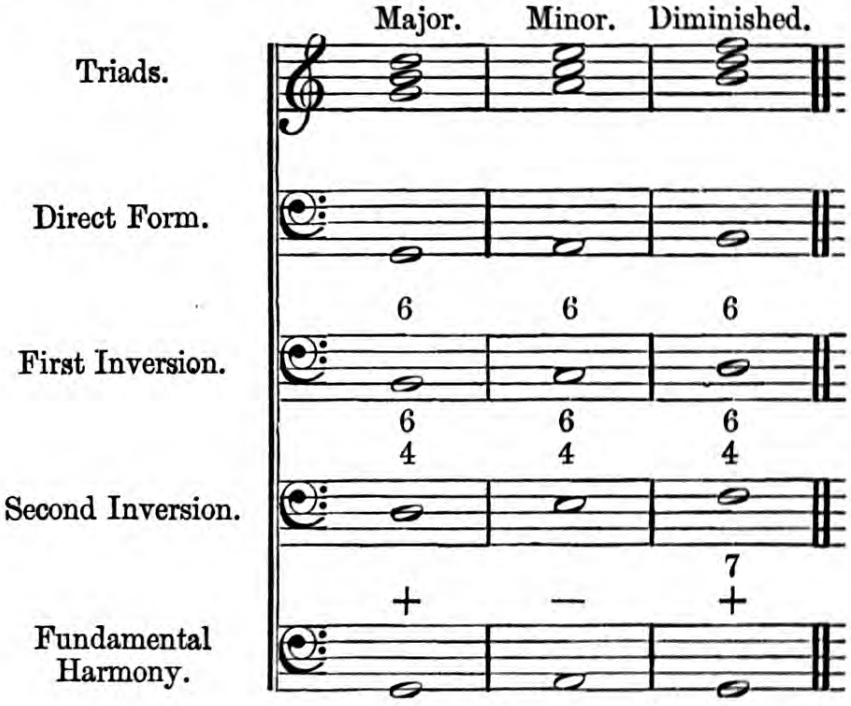


88. There are three Triads, Major, Minor, and Diminished. The last belongs to the Dominant Harmony; having, for its Bass, the Major Third of the Dominant.

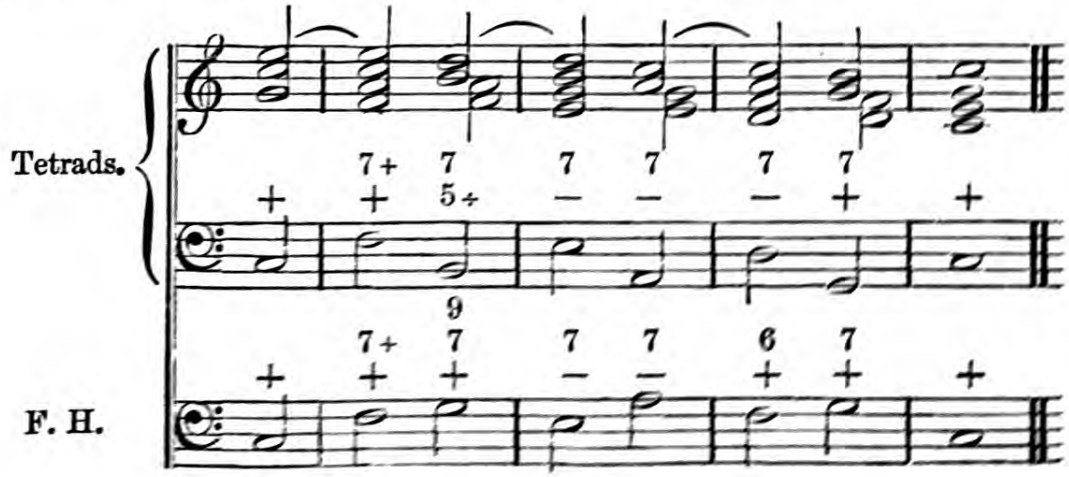
89. A Bass note without a figure, is accompanied by a Triad; which is Major, Minor, or Diminished, according to its place in the Scale:—



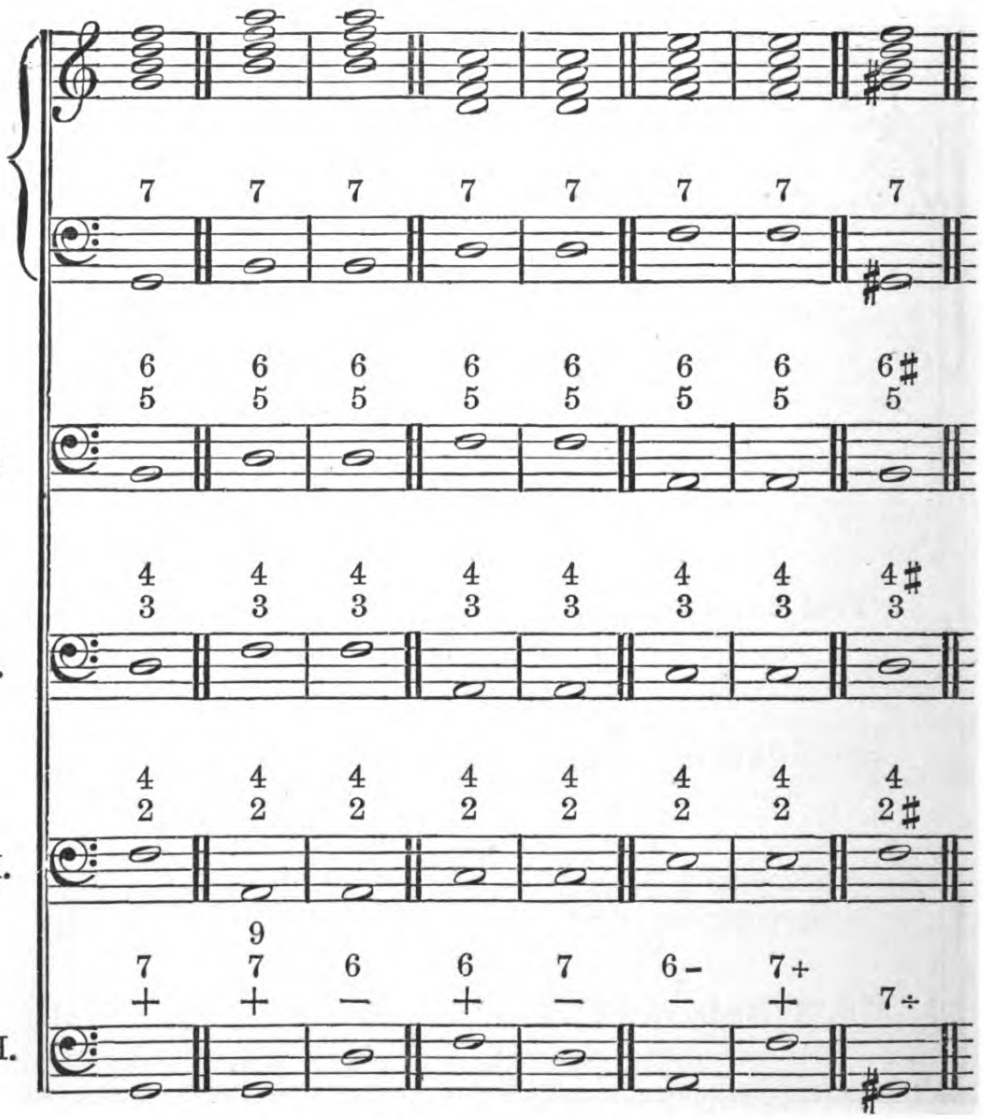
90. The Inversions of the Triads are figured as follows:—



91. The Tetrads, or Chords of the Seventh, consist of the same Triads, with Sevenths over them; which are Major, Minor, or Dominant Sevenths, according to their places in the Scale:—



92. The Inversions of the Tetrads are figured as follows:—



93. The following abbreviations are used in Thorough Bass:—

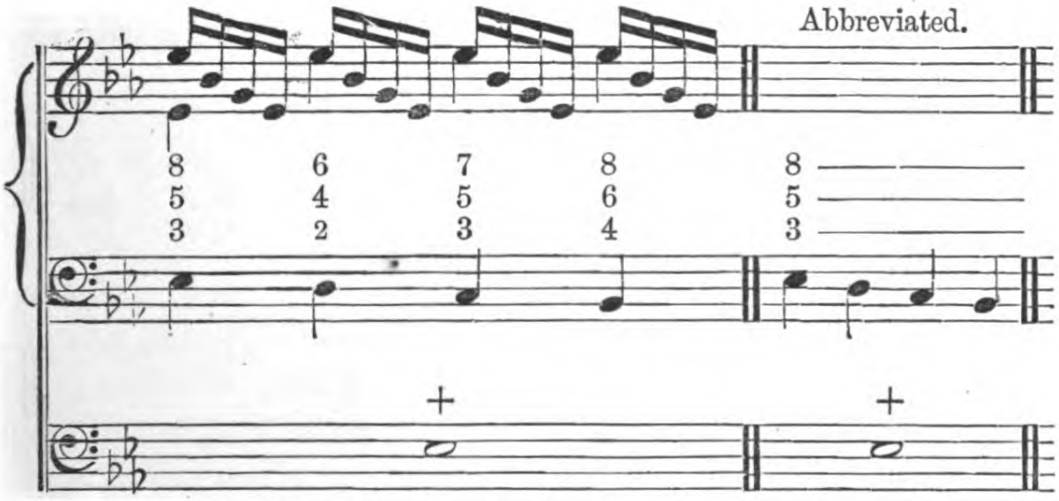
Chords . .	6	6	8	8	6	8				7	7♭	8	9	10
	4	4	5	5	4♯	5	5♭	6	6♯	5	5	5	5	8
	2 ,	2♯,	3 ,	4	2	3	3	3	3	3	3	3	3	5
Abbreviations	2 ,	2♯,	3 ,	4	4♯	5	5♭	6	6♯	7	7♭	8	9	10

94. A dash through the figure, is often used instead of a Sharp; as,

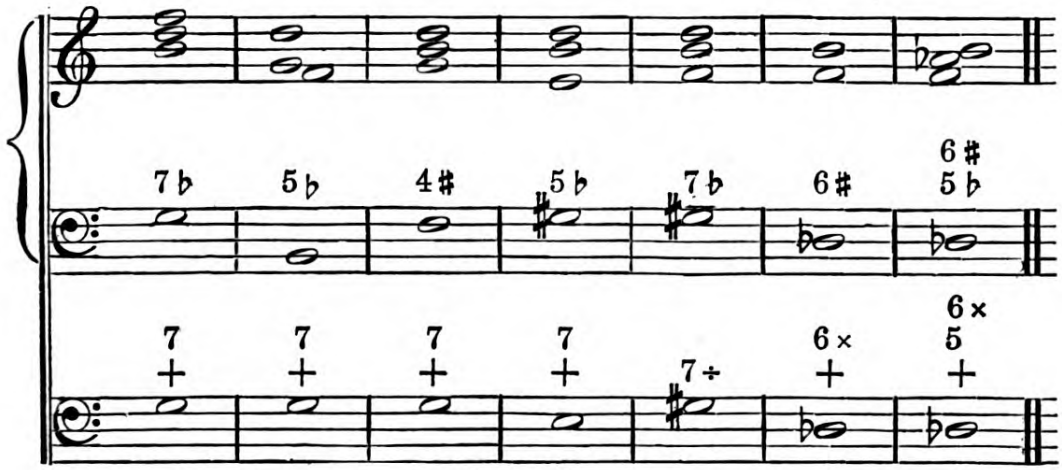
4 5 6 7

and a horizontal line after a figure, on a new Bass note, continues the note which is represented by the figure :—

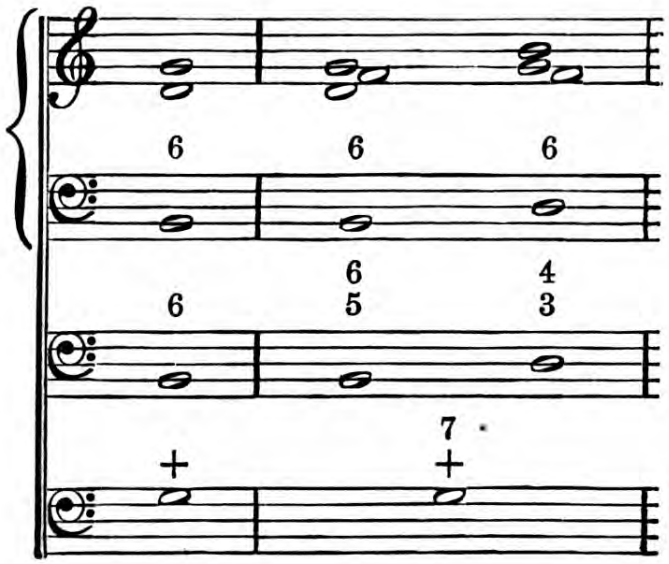
Corelli, Concerto 8.



95. Irregular signatures, containing Sharps or Flats where the notes are natural, are evidently intended by the Composers who use them, to hint what the chord is :—



96. The first and second Inversions of the Dominant Harmony were of old figured with a 6 ; the former being called the Great Sixth, and the latter, the Small Sixth. The performer was expected to know enough of Harmony to distinguish them from the first Inversion of the Triad, and from each other :—



CHAPTER XI.

PROGRESSION.

97. In the progression of Chords, the motion of the different parts divides itself into Direct or Similar, Contrary, and Oblique.

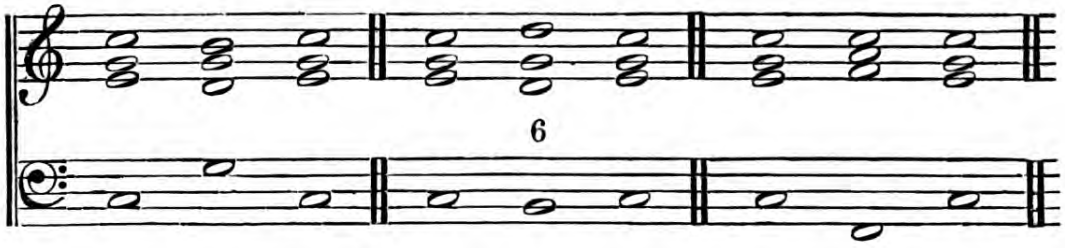
1. In the Direct motion, the parts move in the same direction, ascending or descending:—

2. In the Contrary motion, one part rises while the other falls:—

3. In the Oblique motion, one part continues at the same pitch, while the other rises or falls :—

98. The Oblique and Contrary motions, may be freely employed; but the Direct motion is subject to Rules of great importance.

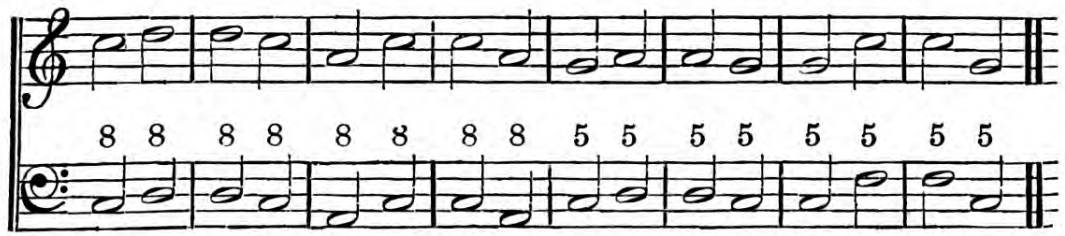
99. In accompaniment the parts should be taken closely, avoiding unnecessary leaps: and where one note of a Triad is to be doubled, it is best to double the Root or the Fifth. The *Major* Third ought not to be doubled, except for the purpose of avoiding greater faults, or accommodating the melody :—



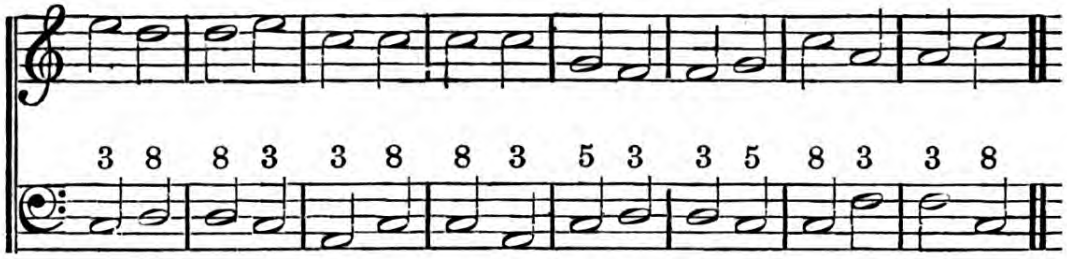
In the middle Example, the Bass note B, being Major Third of the Chord G B D, is not repeated in the Treble; but D, the Fifth of the Chord, is doubled, to complete the four parts. The Roots of all the other Chords are doubled. In the three Examples, the Direct motion is avoided between the extreme parts.

100. Consecutive Fifths and Octaves, between the same parts, are forbidden in the Direct motion. This Rule does not affect the Diminished Fifth :—

From Heck's Thorough Bass.

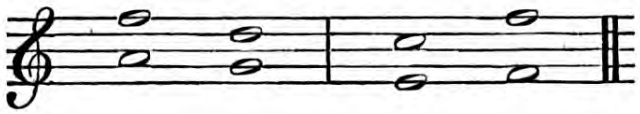


Corrected by Contrary and Oblique Motion.

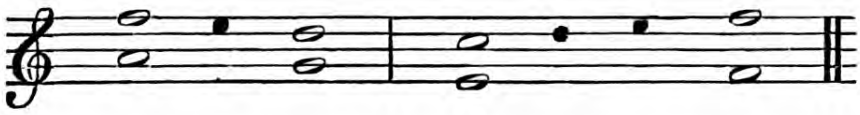


Exceptions do sometimes occur; but this Rule must be strictly observed by beginners, till they have acquired a correct taste, by the frequent hearing of good music, and the diligent study of the best models. See Horsley's 'Introduction to Harmony,' pp. 120, 121.

101. The progression from Thirds or Sixths to Fifths or Octaves, between the same parts, is forbidden, in the Direct motion, when the upper part moves more than one degree:—

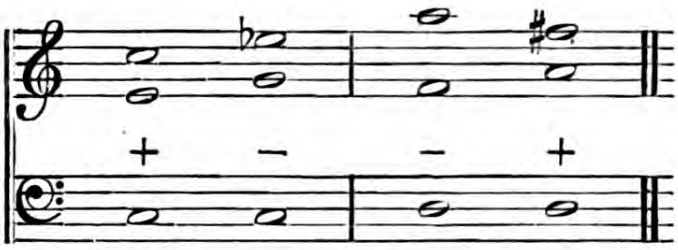


These progressions are supposed to contain what are called Hidden Fifths or Octaves; as A E . G D, and E E . F F, in the following Example, indicated by the black passing notes:—



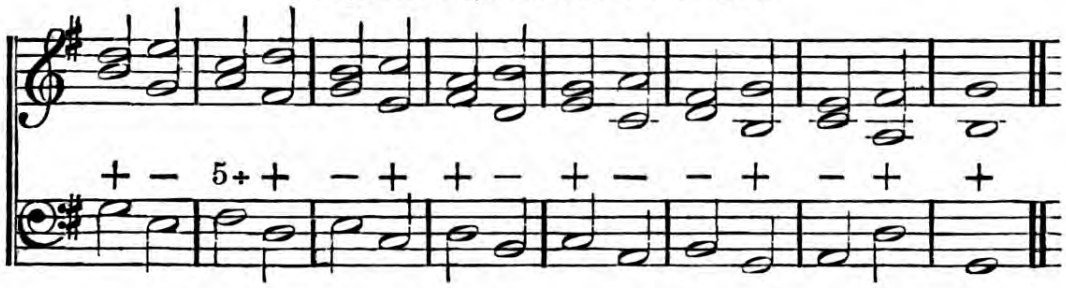
102. When a Major Chord is to be changed to Minor, or a Minor Chord to Major, the alteration should take place on the same degree, and in the same part:—

By the breach of this Rule, the Interval between the original and the altered note, instead of a Chromatic Semitone, becomes a Diminished or an Augmented Eighth, which is called a False relation :—

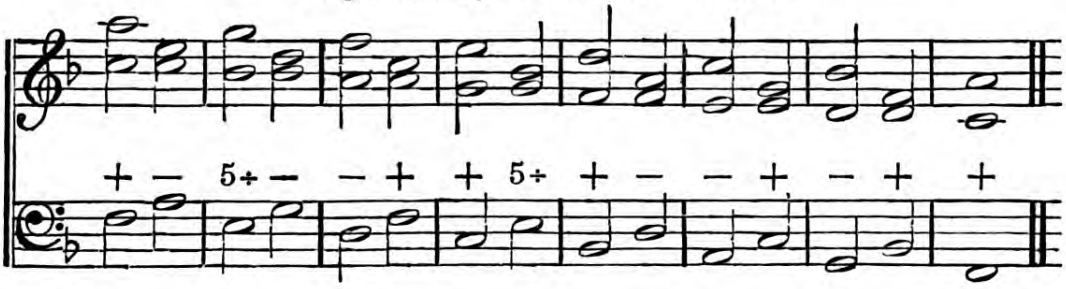


103. In the following Examples of Triads in Sequence, or regular progression, the contrary motion, between the extreme parts, is observed throughout :—

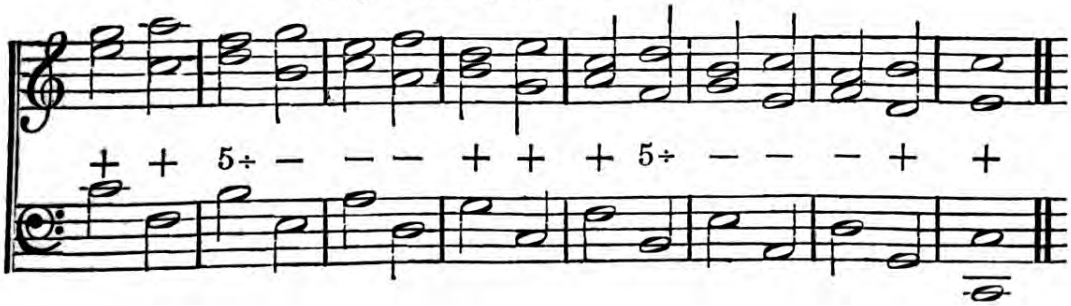
Progression by Seconds and Thirds.



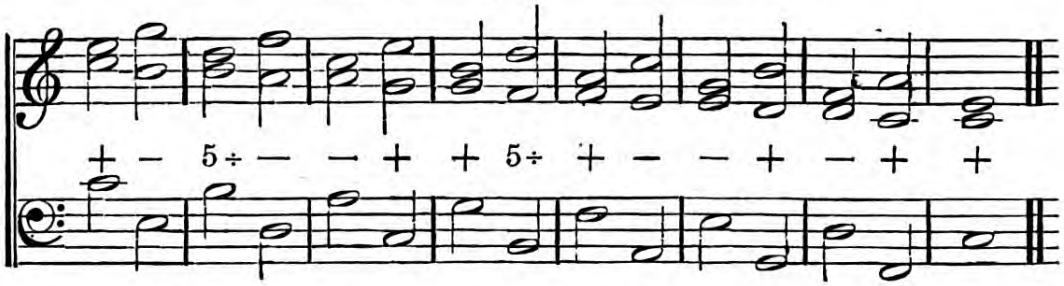
Progression by Thirds and Fourths.



Progression by Fourths and Fifths.



Progression by Fifths and Sixths.



CHAPTER XII.

MODULATION.

104. The order of Fifths, being of continual use in the study and practice of Music, and especially so in Modulation, should be always ready in the memory:

Order of ascending Fifths . . F C G D A E B.
Reversed in descending. . . B E A D G C F.

105. In modulating from one Major or Minor Key to another, the natural order is that of ascending or descending Fifths; every two adjacent keys in that order, having more connexion with each other, than with more remote Keys. Thus:—

Key of F. B♭ D F. F A C. C E G.
Key of C. . . . . F A C. C E G. G B D.
Key of G. . . . . C E G. G B D. D F♯ A.
Key of D. . . . . G B D. D F♯ A. A C♯ E.

In the Keys of F and C, the Triads F A C, C E G, are common to both. The keys of F and G, have in common the Triad C E G only: and the Keys of F and D, have no Triad in common.

106. Now, F being the Subdominant, and G the Dominant, of the Key of C, it is evident that the Keys which are most closely connected with any given Key, are those of its Subdominant and Dominant; which, for that reason, are termed by Dr. Callcott, its attendant Keys.

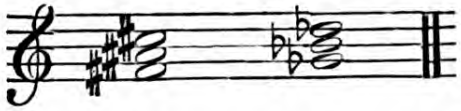
107. The scale of Keys may be extended upwards or downwards at pleasure. But in order to avoid the confusion of Double Sharps and Flats, the number of Keys is commonly restricted to twenty-four, or twelve Major Keys with their Relative Minors; corresponding to the number of Keys on the finger-board of our instruments.

108. The order of Keys, ascending by Fifths from F, is

F C G D A E B F♯.

Instead of proceeding to the next Key, which is C♯ with seven Sharps, it is usual to substitute D♭ with five Flats; returning to the Key of F, through A♭, E♭, and B♭. By this substitution, which is called an Enharmonic change, the names of the notes are changed, without altering the pitch.

Enharmonic change from F♯ to G♭.



109. By means of this Enharmonic change, the Bass, continuing to ascend by Fifths, instead of adding to the number of Sharps, subtracts from the Flats; and so leads back to the original Key.

TABLE OF THE TWENTY-FOUR KEYS.

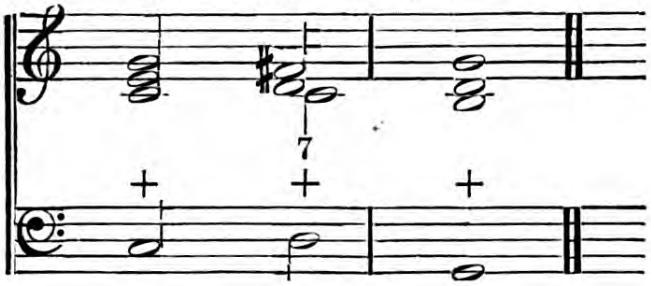
C	Major	A	Minor	Natural,	
G	Major	E	Minor	1 Sharp,	F.
D	Major	B	Minor	2 Sharps,	F C.
A	Major	F♯	Minor	3 Sharps,	F C G.
E	Major	C♯	Minor	4 Sharps,	F C G D.
B	Major	G♯	Minor	5 Sharps,	F C G D A.
F♯	Major	D♯	Minor	6 Sharps,	F C G D A E.
D♭	Major	B♭	Minor	5 Flats,	B E A D G.
A♭	Major	F	Minor	4 Flats,	B E A D.
E♭	Major	C	Minor	3 Flats,	B E A.
B♭	Major	G	Minor	2 Flats,	B E.
F	Major	D	Minor	1 Flat,	B.
C	Major	A	Minor	Natural.	

110. The Scale of Triads contains alternate Major and Minor Keys; each of which has six notes in common with the Keys immediately above and below:—

C Major . . F A C E G B D.
E Minor . . . A C E G B D F♯.
G Major . . . . C E G B D F♯ A.
B Minor . . . . . E G B D F♯ A C♯
D Major . . . . . G B D F♯ A C♯ E.

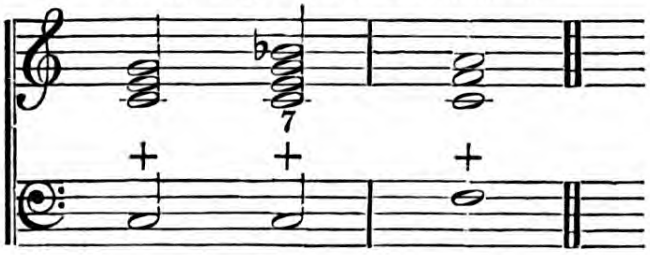
111. In modulating by ascending Fifths, as from C to G, the Supertonic becomes the Dominant of the new Key, and bears the Dominant Harmony:

To the Key of the Dominant.

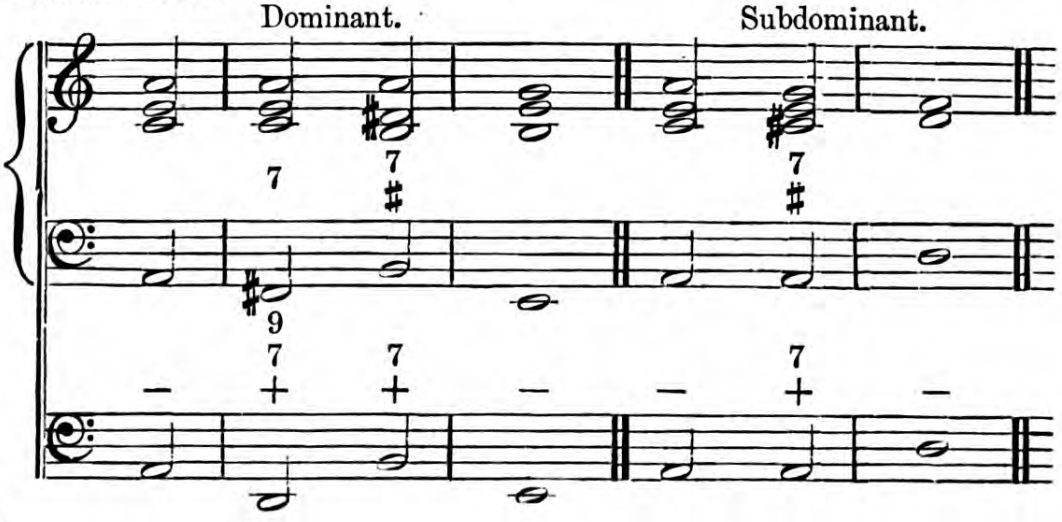


112. In modulating by descending Fifths, as from C to F, the Tonic becomes the Dominant of the new Key.

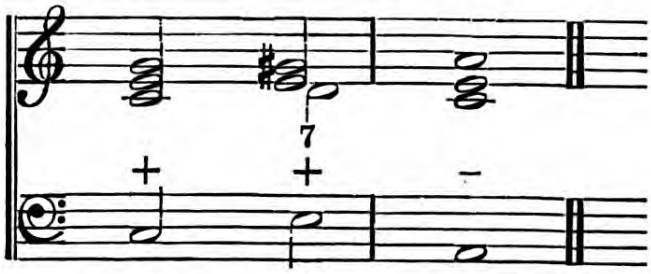
To the Key of the Subdominant.



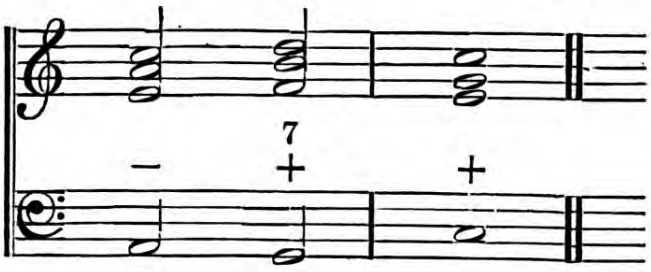
113. From the Minor Tonic, to the Key of the Dominant and Subdominant:—



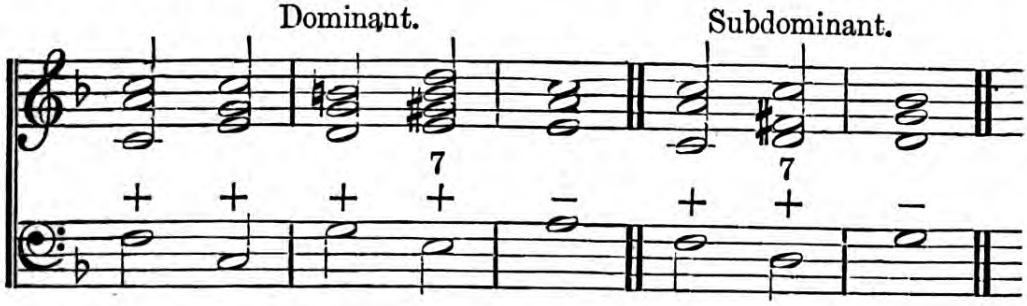
114. From the Major Mode, to its Relative Minor:—



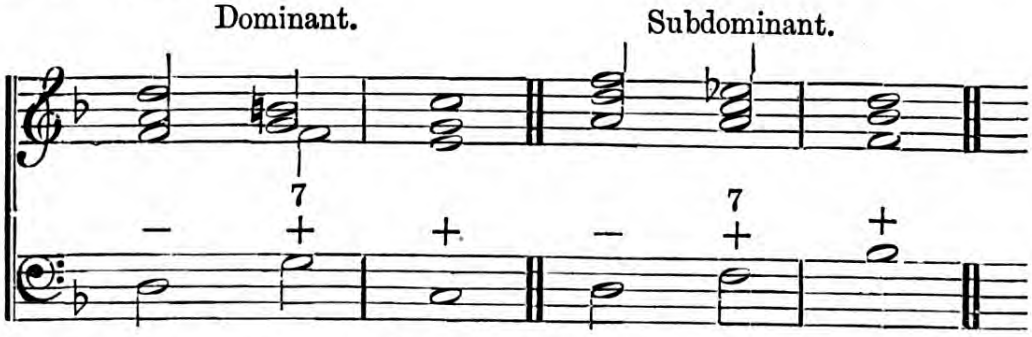
115. From the Minor Mode, to its Relative Major:—



116. From the Major Mode, to the Relative Minors of the Dominant and Subdominant:—



117. From the Minor Mode, to the Relative Majors of the Dominant and Subdominant:—



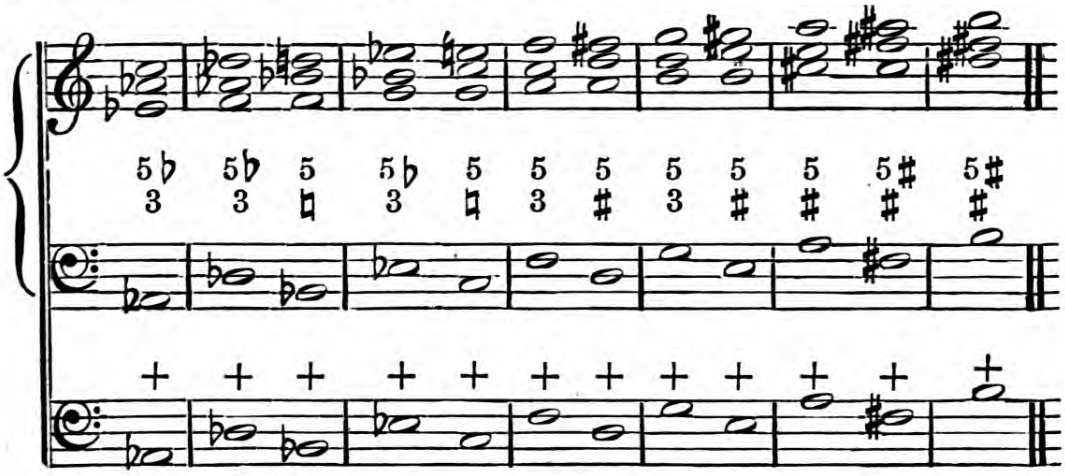
See "Elements of Musical Science," Chap. xx. Sect. 37, for Examples of Modulation from the masterly pen of C. P. Emanuel Bach.

CHAPTER XIII.

CHROMATIC MODULATION.

118. A series of ascending or descending Semitones, is called a Chromatic Scale. The most regular Scales of this kind are produced by a Fundamental Bass, moving round the circle of Keys.

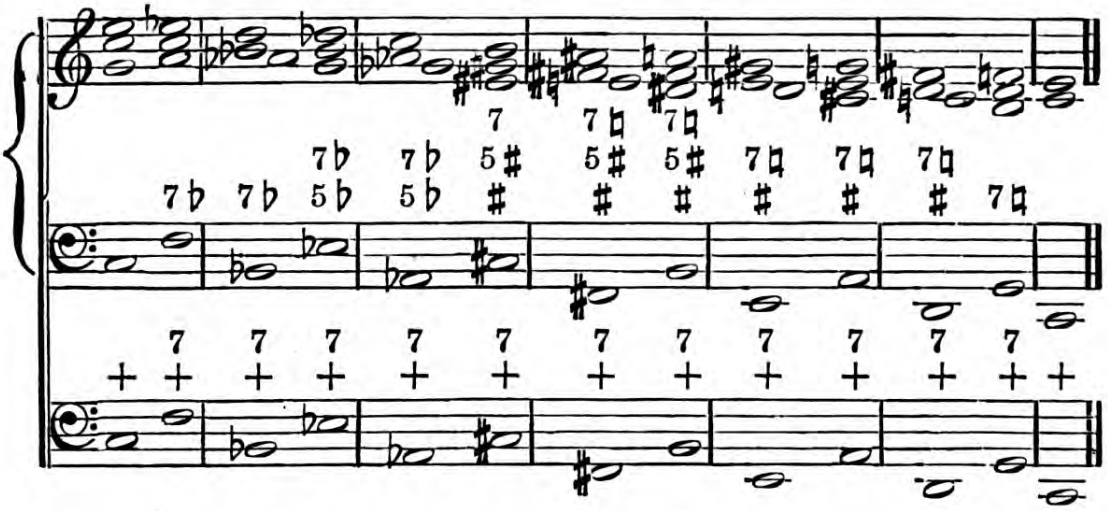
119. An ascending Chromatic Scale is formed by a series of Major Triads, whose Basses ascend by Fourths, and descend by Minor Thirds; the key continually changing. In this Scale the Chromatic notes are the Major Third and the Octave alternately: and the Degrees are alternate Diatonic and Chromatic *Semitones;* producing, by their sums, a succession of *Minor Tones:—*



120. A descending Scale is produced by reversing the foregoing: the Bass descending by Fourths, and ascending by Minor Thirds.

121. Another descending Chromatic Scale is formed by the Chromatic Sequence of Sevenths; a series of Dominant Harmonies, descending by Fifths, and ascending by Fourths; the Key changing continually. In this Scale, the Chromatic notes are the Major Third and the Dominant Seventh alternately: and the Degrees are alternate Major and Minor *Hemitones;* producing by their sums, a succession of *Major Tones:*

Chromatic Sequence of Sevenths.



122. The same Scale is produced by a descending Sequence of Diminished Sevenths; and an ascending Chromatic Scale, by reversing it.

123. On pianofortes, tuned in the usual way, the Chromatic Scale consists of twelve equal Semitones.

124. The rapid Chromatic divisions, with which some public performers astonish their hearers, are not subject to rule.

CHAPTER XIV.

PROSODY.

125. For a full and able exposition of this subject, the reader is referred to the fourth part of Dr. Callcott's 'Grammar.'

126. Musical Rhythm or Prosody, may be divided into three parts, viz.—

1. Accent.
2. Cadence.
3. Metrical division.

These I shall do little more than name.

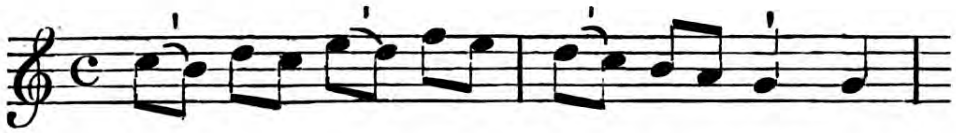
1. ACCENT.

127. Every piece of Music is divided by Bars, into equal parts called Measures. The principal accent is on the note that follows the Bar.

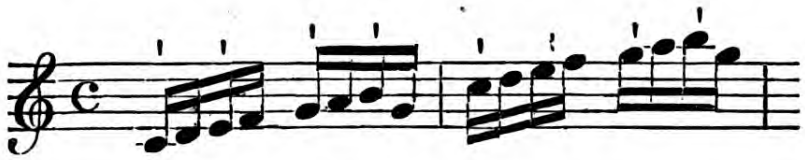
128. In Common time, each Measure is divided into four parts, or Times; the first and third of which are accented. In Triple time, each Measure is divided into three parts, the first of which is accented.

129. When the Times are subdivided into shorter notes, the accents are indicated by the grouping of the notes.

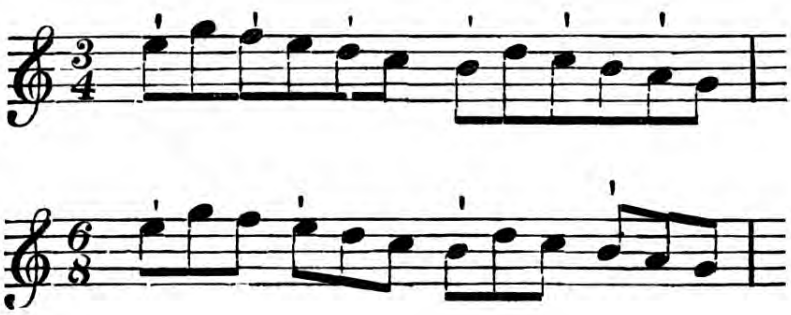
130. In the following Example, the accents are on the first and third *pairs* of quavers :—



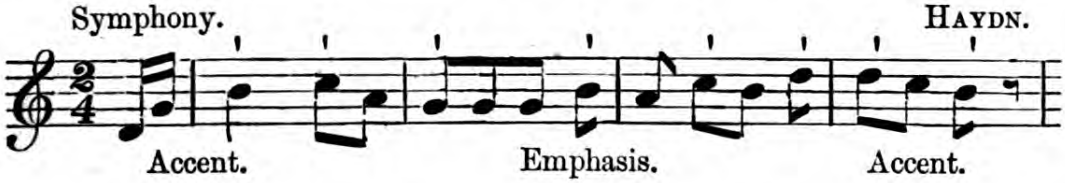
131. In the next, the accents are on the first and third notes of every group :—



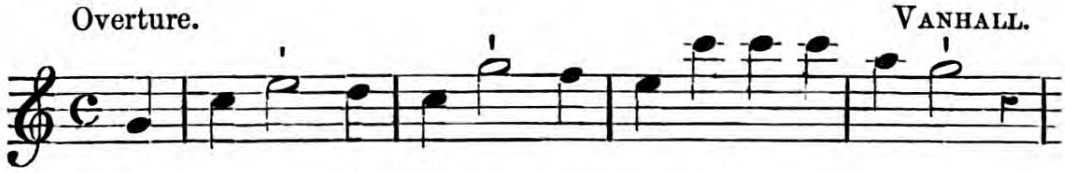
132. In Compound time, the difference between three-crotchet and six-quaver time, is known by the accent, and by the groups which regulate the accent :—



133. Sometimes a strong accent is laid upon the part of the measure that is usually unaccented. This kind of accent, which is also marked by the grouping of the notes, is called *Emphasis.*



134. Of this kind is the accent on Syncopated or Driving notes, which begin on the unaccented, and end on the accented part of the Measure.

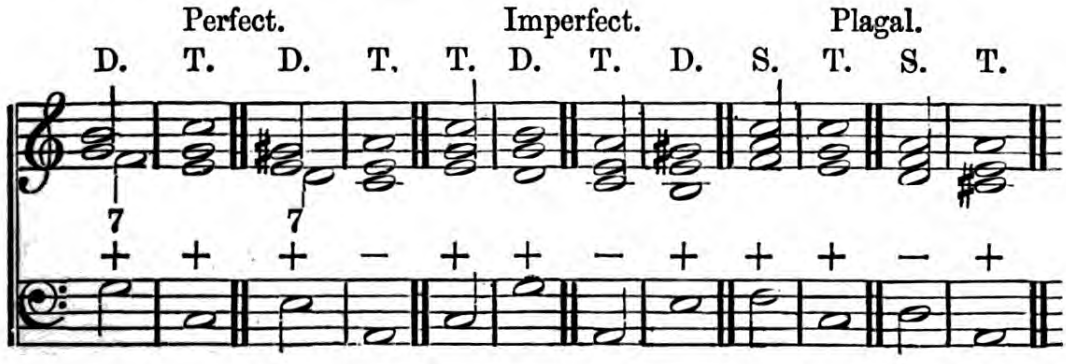


2. CADENCE.*

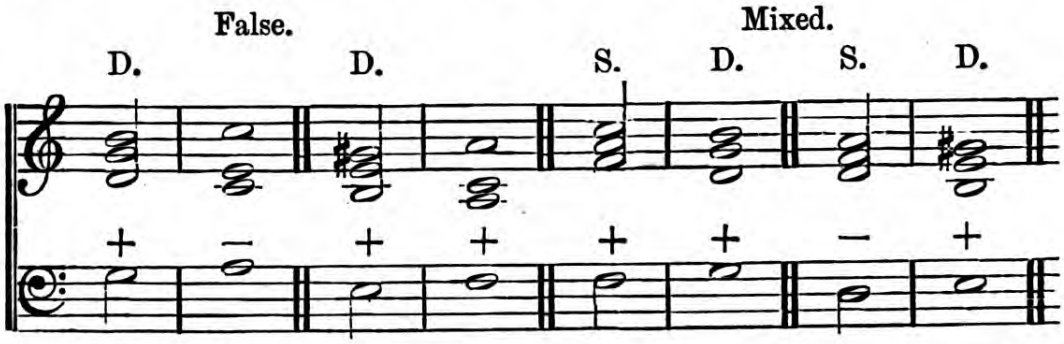
135. A Cadence, in Harmony, consists of two distinct Chords, the last of which is generally accented: and is used to terminate the Sections and Periods of musical rhythm. Art. 145, 147.

136. When the Basses of both Chords are the Roots of their respective Triads, the Cadence is termed Radical. Of these Cadences, there are four in general use; the Perfect, Imperfect, False, and Mixed: to which may be added the Plagal, or Church Cadence, which is only a variation of the Imperfect; and the Authentic, which is only the ancient name of the Perfect.

137. Radical Cadences:—

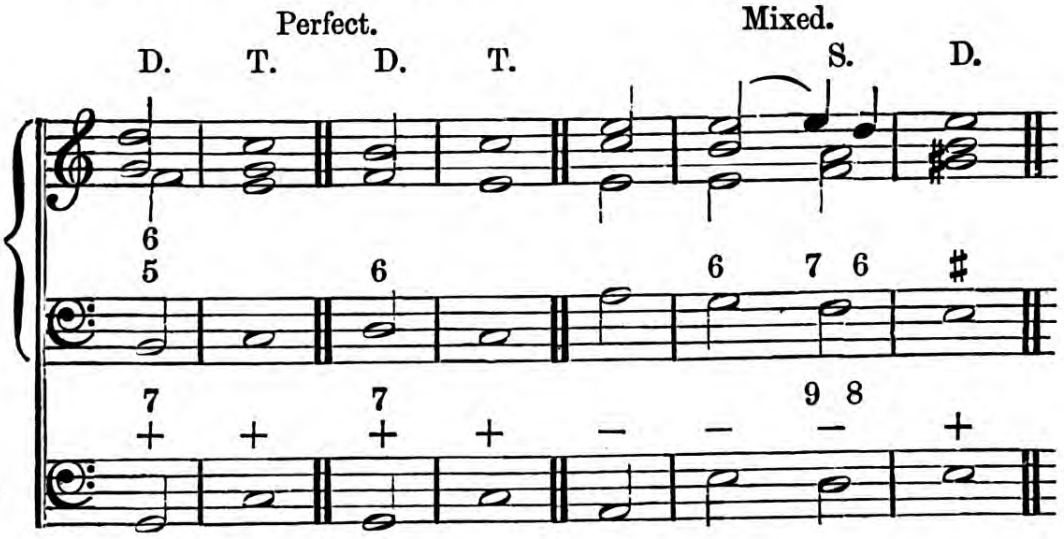


* Abstracted from Callcott's 'Grammar,' part III. chap. 4.

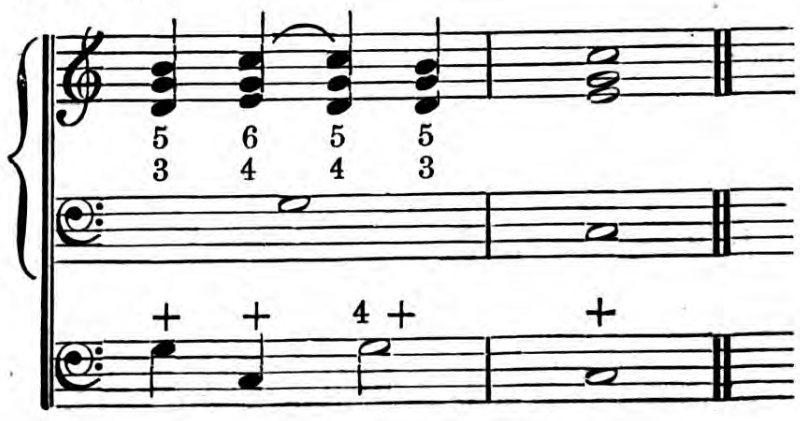


In these Cadences, the Dominant Harmonies (which are marked D), are always Major: as also the final Harmony of the Plagal Cadence.

138. Inverted Cadences:—



139. These Cadences are sometimes protracted, by using other Harmonies on the Dominant: as in what Dr. Pepusch calls the Grand Cadence:—



140. To these may be added several Deceptive Cadences, which by varying the final Chord, avoid the final close.

3. METRICAL DIVISION.

141. A musical Composition is divided, by double Bars, into Strains. A Strain consists of one or more Periods. The Periods are divided into Sections; the Sections into Phrases; and the Phrases into Feet.

142. A Foot, as defined by Dr. Callcott, is a small portion of Melody, with one principal accent, including the value of a simple Measure. It is analogous to the Foot in metrical poetry.

143. A Phrase is a short Melody, which contains no perfect or satisfactory musical idea. In Simple time, it generally consists of two feet.

144. In Figurate Counterpoint, where Imitations, Fugues, and Canons are employed, the Phrases are interwoven in the different parts.

145. A Section generally consists of two regular Phrases, the last of which is terminated by a Cadence; but it may be extended or contracted.

146. A Codetta is a short Phrase, or any other passage, which does not constitute part of a regular Section, but serves to connect one Section or Period with another.

147. A Period consists of one or more Sections, occasionally interspersed with independent Feet, Phrases, or Codettas, and ending with a Radical Cadence. Art. 136. The Deceptive Cadences, noticed Art. 140, are exceptions.

148. The Cæsure is the last accent of a Phrase, Section, or Period. Dr. Callcott's remarks upon it, are very valuable, on account of its great importance to the expression of the passage.

149. The Coda, or final Period, is a concluding passage, which sometimes occurs after a protracted perfect Cadence. In some

pieces, it contains several Sections; in others, merely a single Phrase.

150. The last seven Measures of the celebrated Hallelujah Chorus, consist of a Coda on the Chords of Subdominant and Tonic, concluding with the Plagal Cadence. On this Coda, Dr. Callcott remarks: "Such were the simple but sublime notes, which occurred to the genius of this truly great Composer: and the Chorus in which they occur, will ever remain a striking memorial of the immortal talents of Handel."

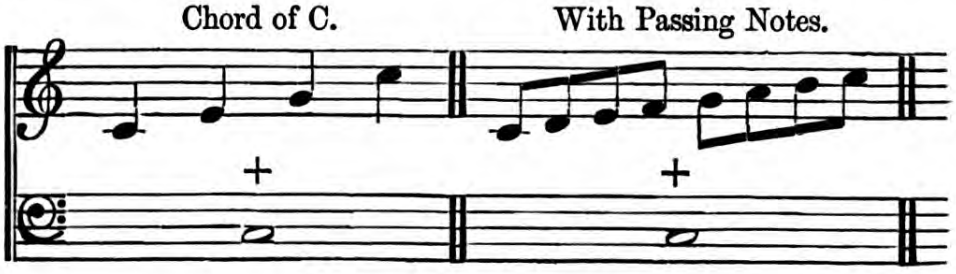
151. Having briefly defined the terms of Metrical division, I must refer the reader to Dr. Callcott's work, where the subject is fully explained and illustrated.

CHAPTER XV.

ANALYSIS OF THE SCORE.

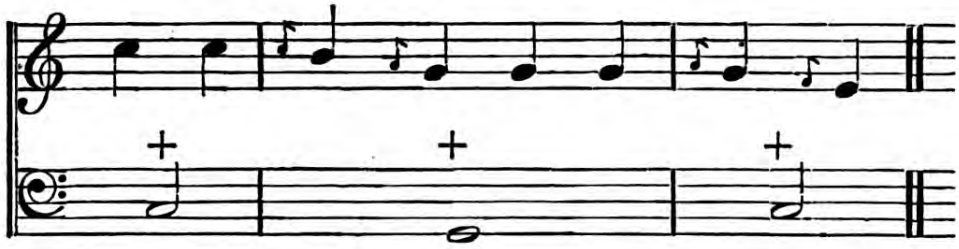
152. It is not very difficult to analyze a piece of plain Counterpoint, where no notes occur but those that belong to the Chords. Many other notes, however, are necessary to a flowing Melody, which are unnoticed in the Fundamental Harmony; for which reason, the student should be able to distinguish them, when they come in his way. They are commonly known by the names of Passing Notes, or Notes of Transition; Appoggiaturas, After-notes, and Anticipations.

153. Passing notes occur between the notes of the Harmony; thus:—



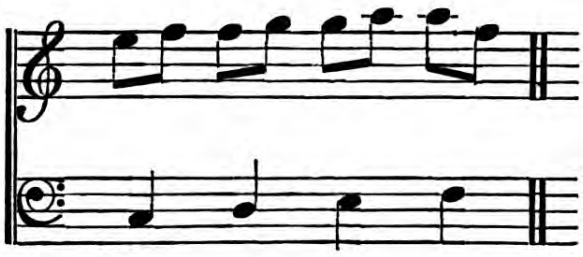
154. The Appoggiatura is an accented note, that *precedes* a note of a Chord. In the following passage, the first note of each pair of quavers is considered as an Appoggiatura:—

The reduction of this Phrase, shows the real notes of the Harmony:— *



155. The After-note resembles the Appoggiatura, but is unaccented, and *follows* a note of the Chord.

156. The following may serve for an Example of Anticipation; the second quaver of each pair, anticipating the next note:—



157. Instead of multiplying Examples of these subsidiary notes, I refer the reader to the numerous Examples of Counterpoint in the next Chapter; and proceed to consider the structure of the Harmony.

158. The unity of a Musical Composition is preserved by the

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* 'Callcott's Grammar,' art. 393, 394, first edition.

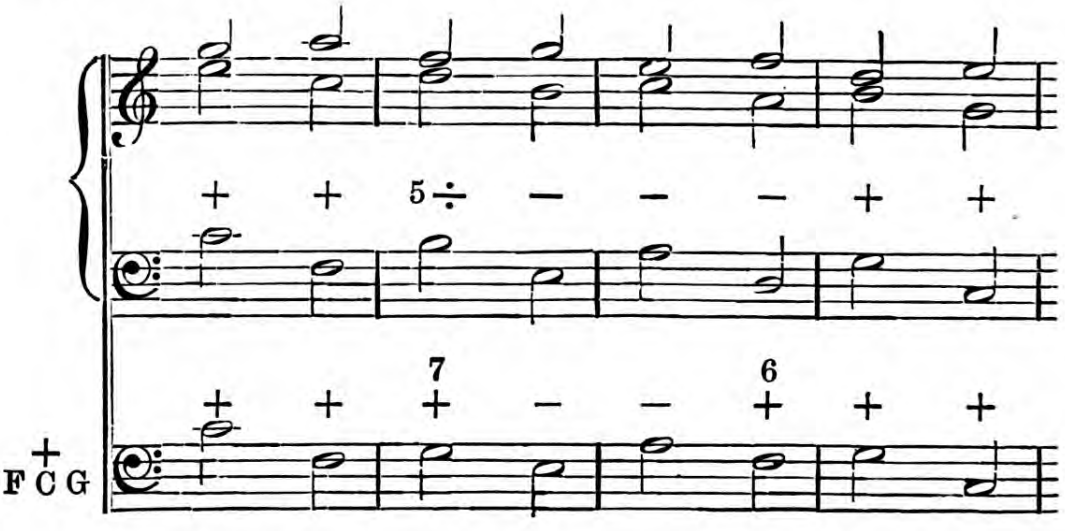
progression of the Fundamental Bass; which always moves, as Rameau expresses it, by consonant Intervals. The general effect depends very much on the march of the Fundamental Bass; which is partly regulated by the Times of the Measure. (Art. 128).

159. The Fundamental Basses of the Key, are its Tonic, Dominant, and Subdominant: to which may be added, in the Major Mode, the Relative Minors of the Tonic and Dominant; and in the Minor Mode, all the three Relative Majors.*

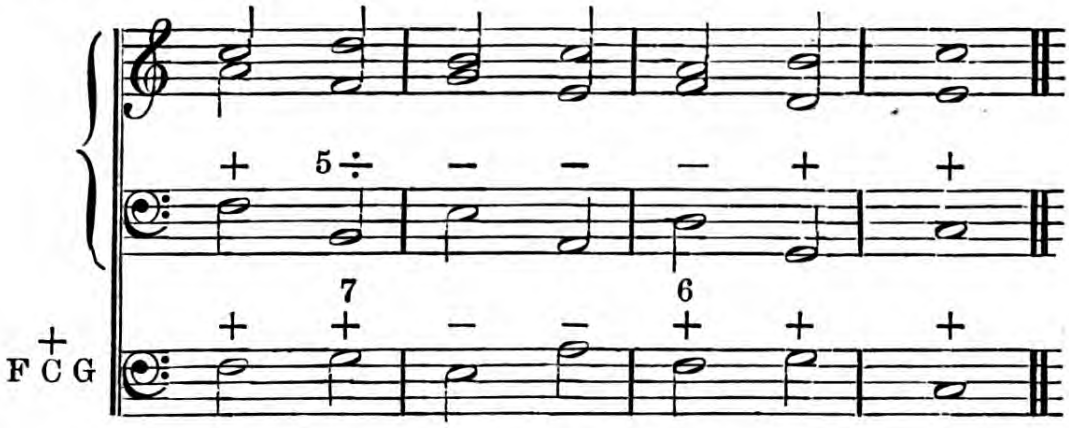
160. The Key having been first ascertained, the Fundamental Basses may be written, in letters, on the margin of a Staff, left for the Fundamental Harmony. The Chords are then to be examined, and compared with the Fundamental Basses on the margin. The notes of each Chord are to be gathered from the Score, without respect to their Positions or Inversions; and their Fundamental Basses inserted in the Staff reserved for that purpose.

161. If these notes can be arranged in the form of a Triad, having a *perfect Fifth*, the lowest note of the Triad is generally the Fundamental Bass of the Chord. The Triad on the Supertonic, or second note of the Scale, is an exception; as will appear by an examination of the Sequence of Triads.

162. Diatonic Sequence of Triads, Major Mode :—



* The Relative Minor of the Subdominant does also occur sometimes, as in the second measure of Handel's Coronation Anthem.



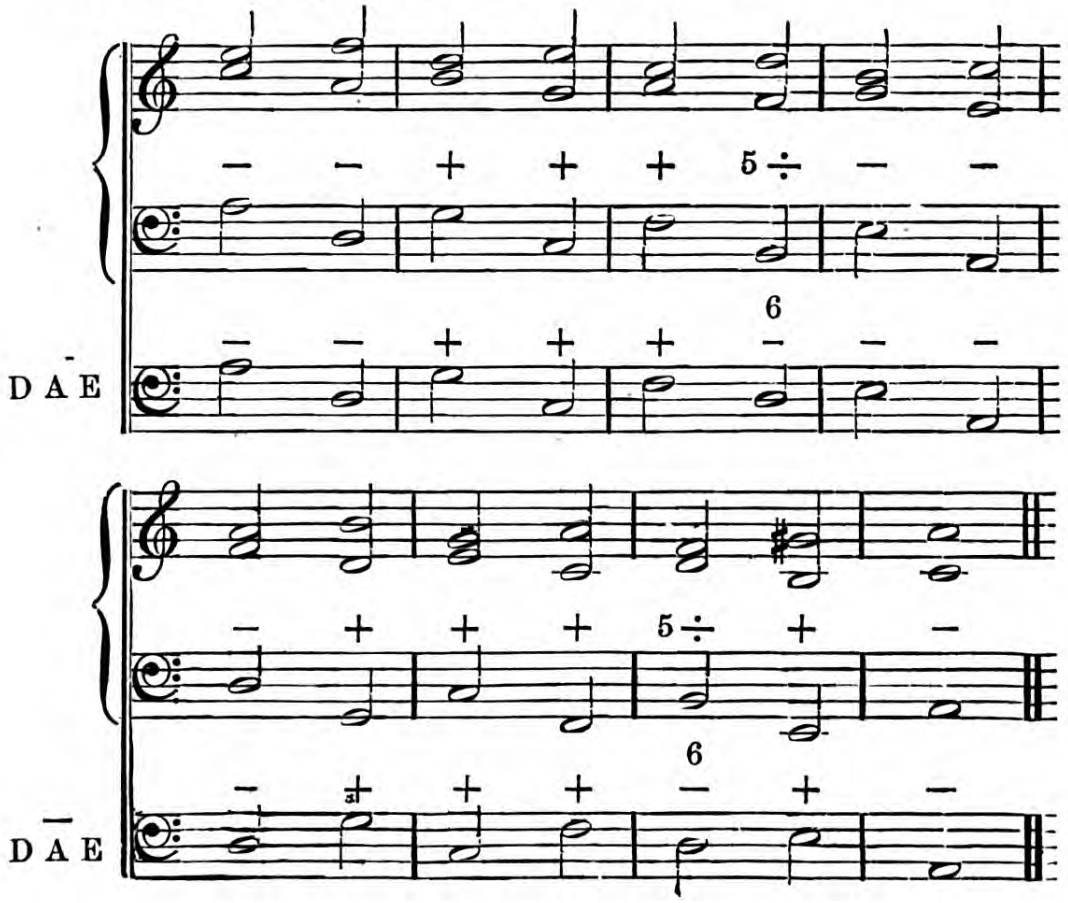
The Tonic, Dominant, and Subdominant, C G F, bear Major Triads.

The Mediant and Submediant E A, Minor Triads.

The Minor Triad on the Supertonic D, is the added Sixth of the Subdominant F, without its Fifth.

The Diminished Triad on the Leading note B, is the Dominant Harmony, without the Root.

163. Diatonic Sequence of Triads, Minor Mode :—



The Tonic and Subdominant, A D, bear Minor Triads.

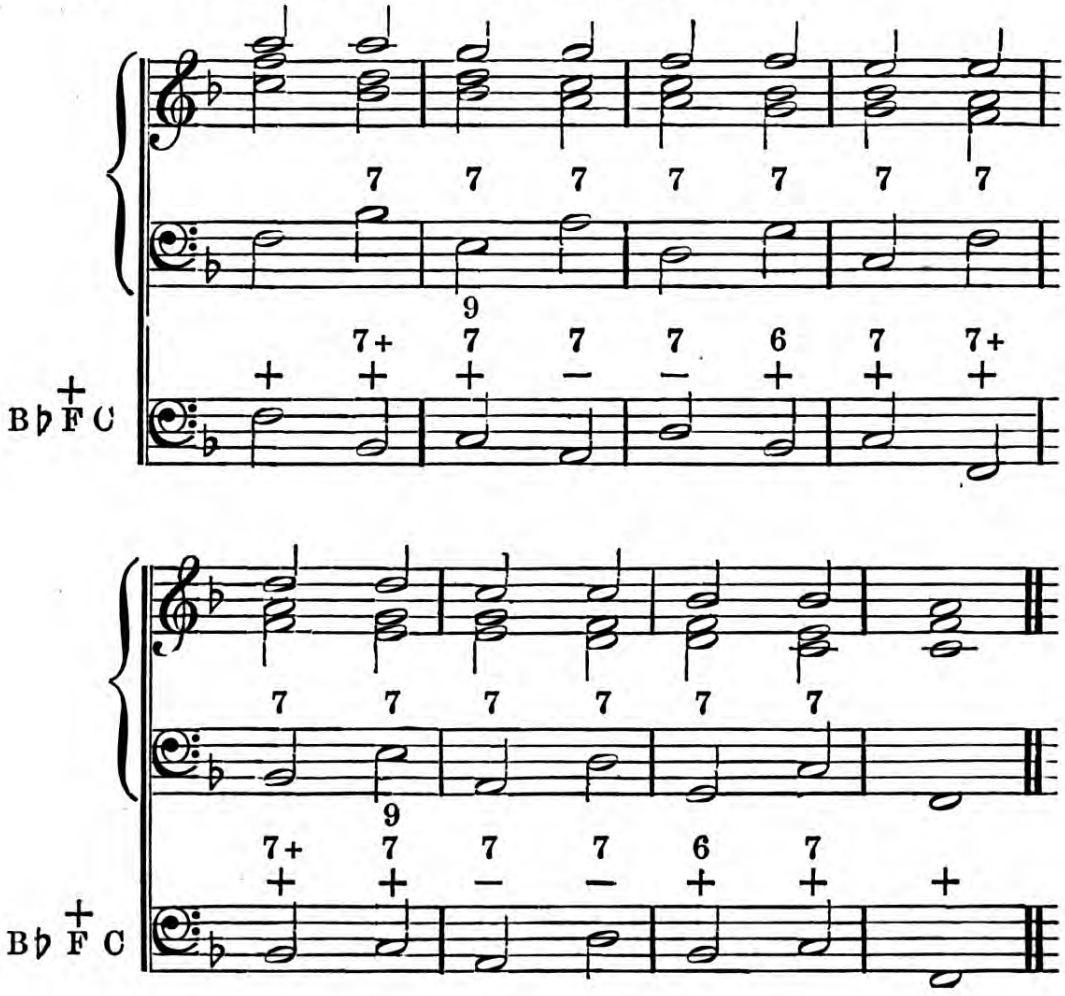
The Dominant E, sometimes a Minor, and sometimes a Major Triad.

The Mediant, Submediant, and Minor Seventh, C F G, Major Triads.

The Diminished Triad on the Supertonic B, is the added Sixth of the Subdominant D, without its Fifth.

164. If the notes of a Chord are reducible to a Tetrad, or Chord of the Seventh, they are still more equivocal. The Tetrads that occur in the Diatonic series, are as follows :—

165. Diatonic Sequence of Sevenths, Major Mode.



The Dominant C, bears the Dominant Seventh ;

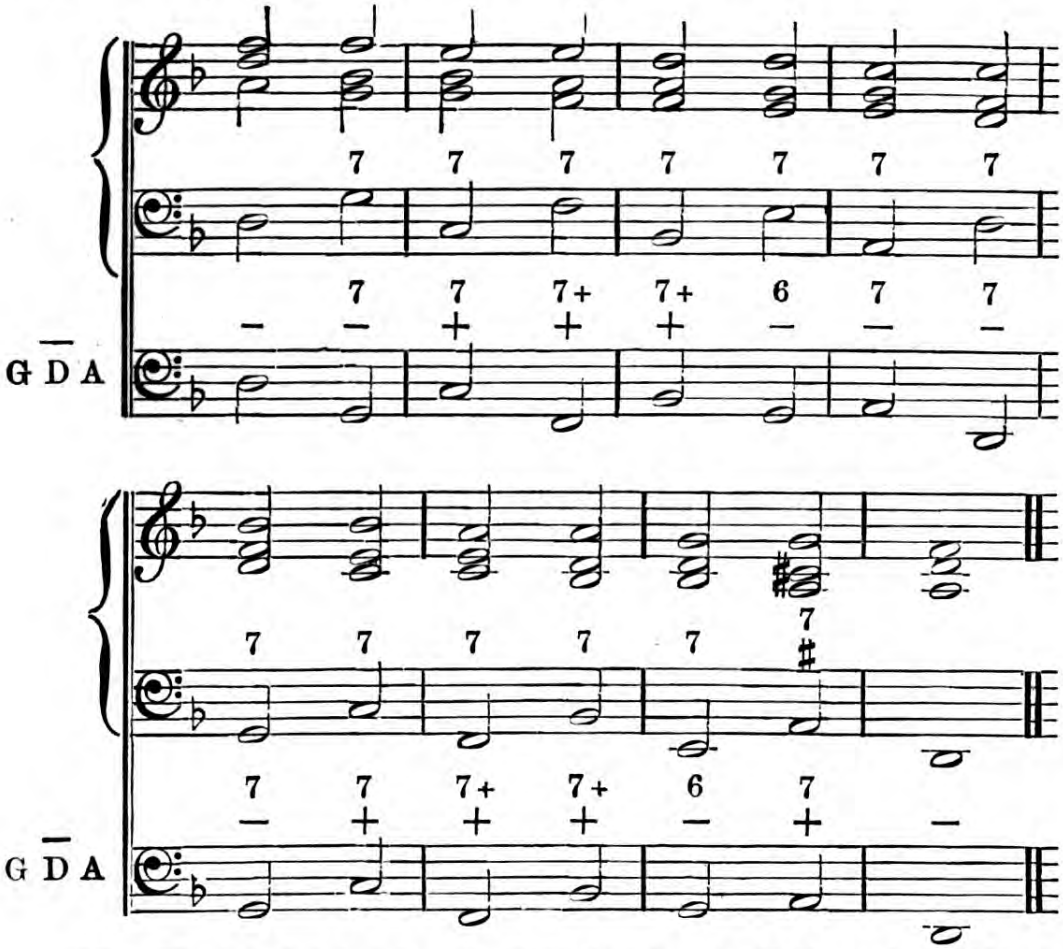
The Tonic and Subdominant F B♭, carry suspended Major Sevenths :

The Mediant and Submediant A D, bear suspended Minor Sevenths.

The Minor Seventh on the Supertonic G is the Added Sixth of the Subdominant B ♭.

The Diminished Triad with Minor Seventh, on the Leading-note E, is the Added Ninth on the Dominant C.

166. Diatonic Sequence of Sevenths, Minor Mode :—



The Tonic, Subdominant, and Dominant, D G A, bear Minor Sevenths; except at the close, where the last bears the Dominant Harmony:

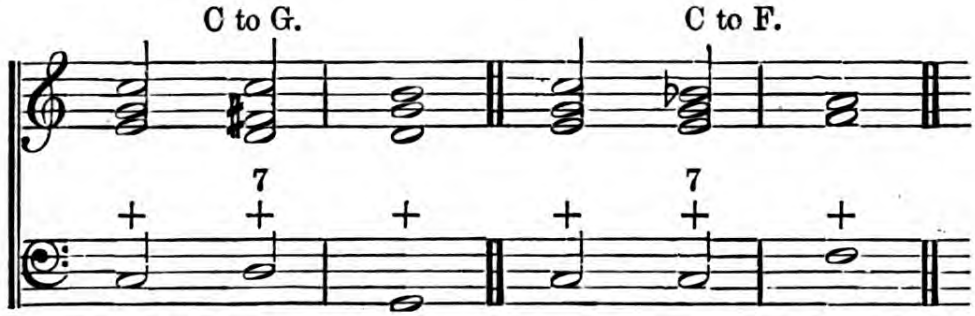
The Mediant and Submediant F B ♭, carry suspended Major Sevenths:

The Minor Seventh on the Supertonic E, is the Added Sixth of the Subdominant G:

The Minor Seventh on the Seventh of the Key C, is the Dominant Harmony of the Relative Major.

167. Suspended notes are expressed in the Fundamental Harmony by figures, as in Thorough Bass. As they are prepared in the preceding Chord, it is unnecessary to distinguish them by the Major and Minor signs; except in the case of the Major Seventh, which would otherwise be confounded with the Dominant Harmony. In the Resolution of the Chord, the Major and Minor signs are used instead of the figure 3.

168. Modulations, or changes of Key, are of course accompanied by changes in the Fundamental Bass. They are introduced by the Dominant Harmony; in which the Third is sharpened when modulating upwards, and the Seventh is flattened when modulating downwards:—



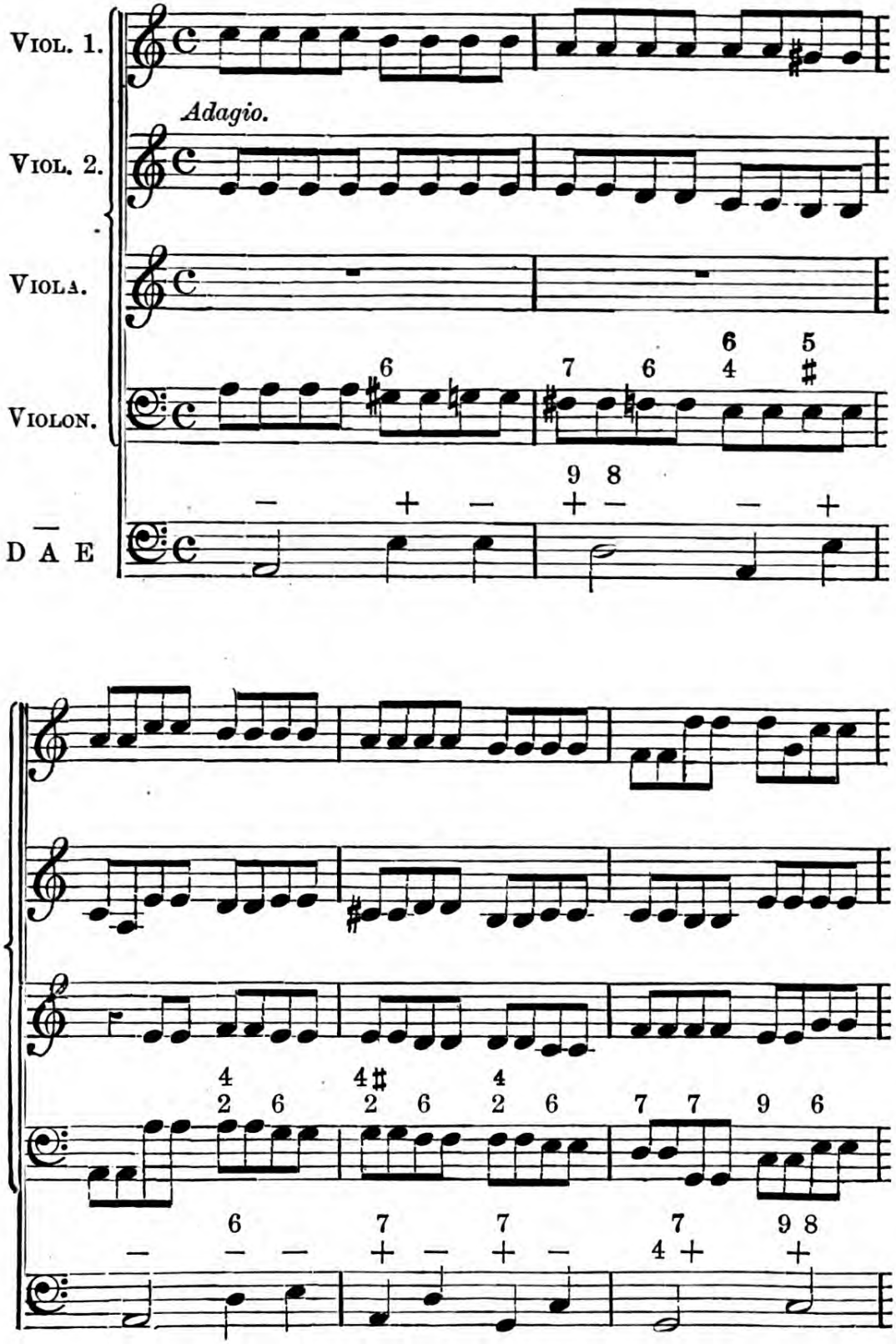
169. One of the chief difficulties in finding the Fundamental Bass, arises from the omission of one or more notes of a Chord; which is very common in the best compositions, and often renders it uncertain which of two Chords is intended. The ambiguity is to be removed by observing the connexion of the Harmony, or by consulting the ear.

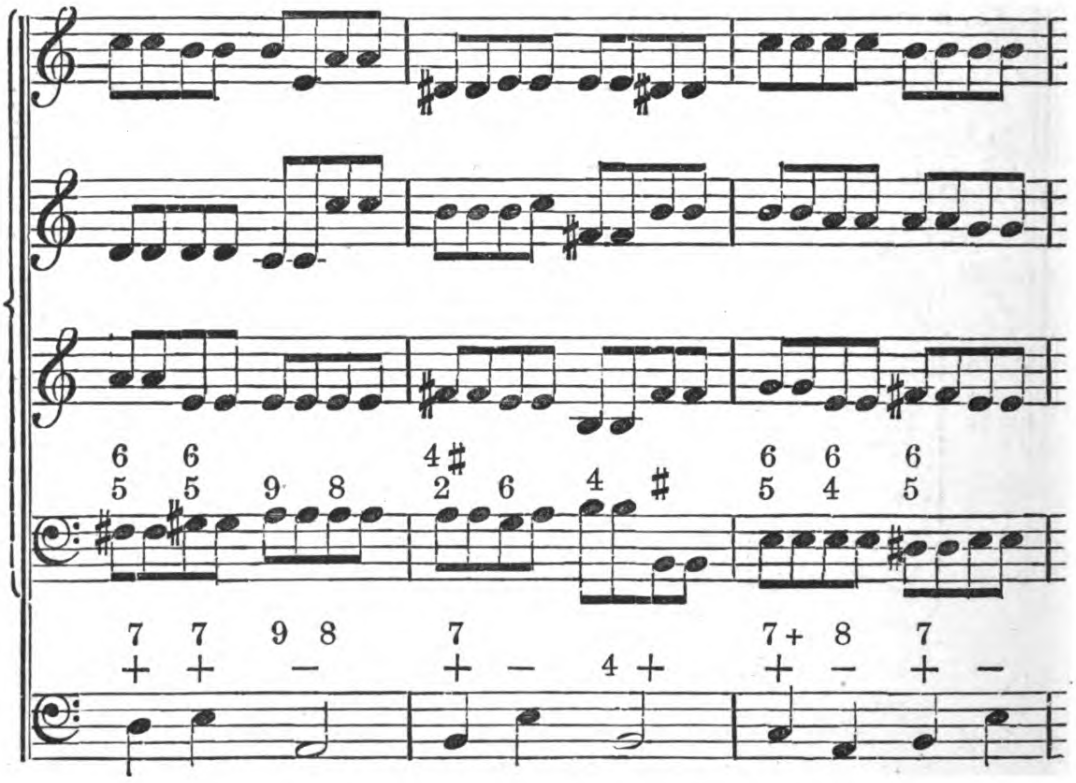
170. After the Fundamental Bass has been written out, it may be played, an Octave below, as an additional Bass, even on the same instrument, while the music is performed by another person. This is a very pleasing exercise; as well as a good way to try the correctness of the work.

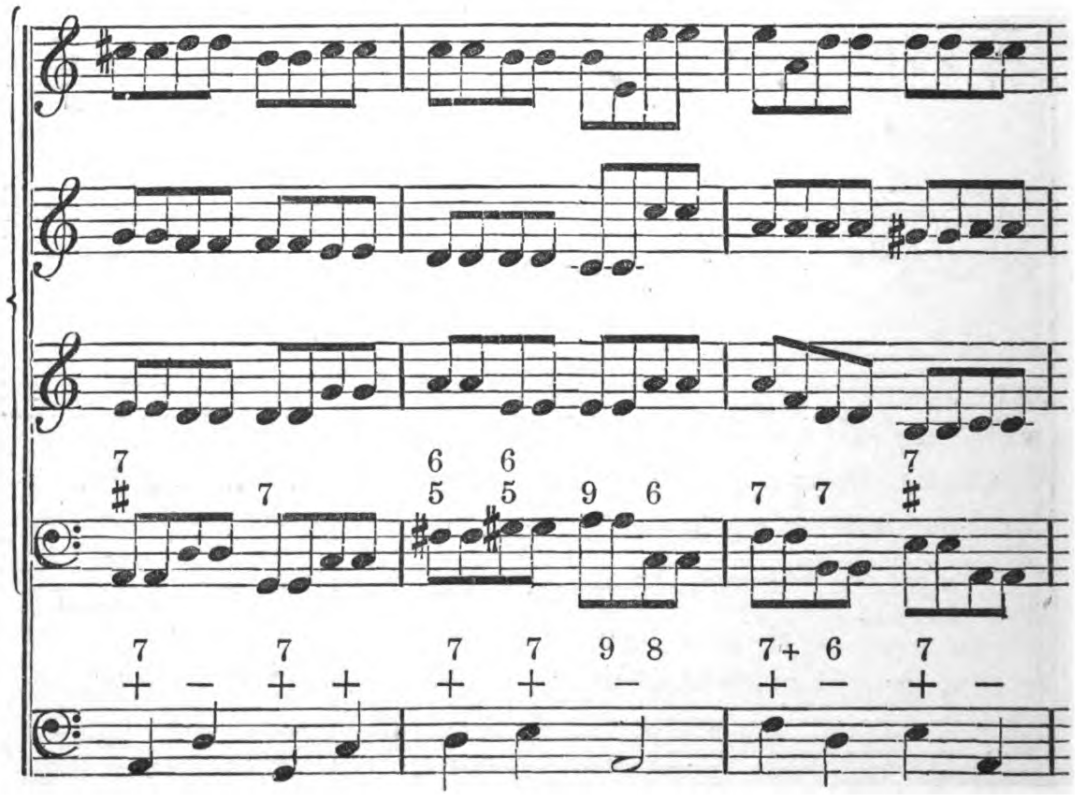
171. Having devoted a large portion of another Work, to Examples of Music in Score, with their Fundamental Harmony; I shall conclude this Chapter by one passage from Corelli: referring the reader for a copious selection to 'Elements of Musical Science,' pages 90 to 179.

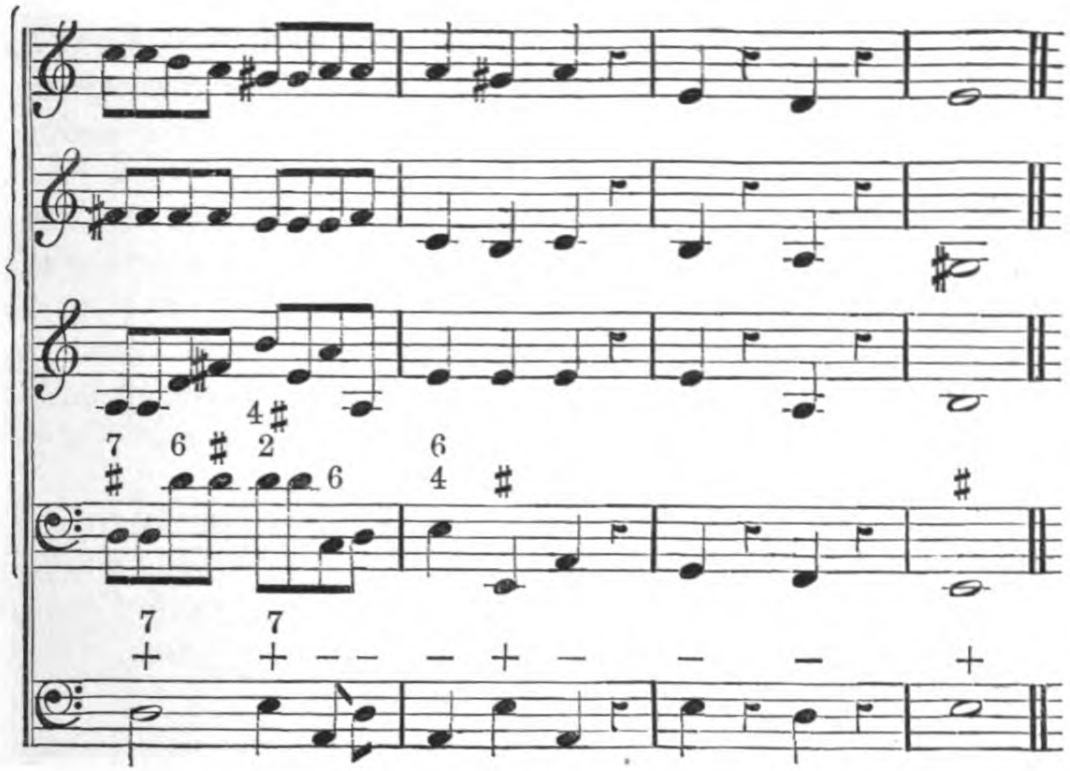
172. Concerto 4. Transposed from B Minor.

CORELLI.









CHAPTER XVI.

COUNTERPOINT.

173. Counterpoint is the art of combining and modulating consonant sounds. "This branch of musical practice," says Dr. Busby,* "derives its name from the *points* formerly employed in composition instead of notes; and may be understood, point against point, or note against note. This was the primitive state of Counterpoint; which has since been called plain or simple Counterpoint, in contradistinction to the modern figured or florid Counterpoint; in which, for the purpose of beautifying the melody, and enriching the general effect, many notes in succession are frequently set in one part, against a single note in another."

174. To readers who have not leisure and opportunity to study

* Busby's 'Dictionary of Music.'

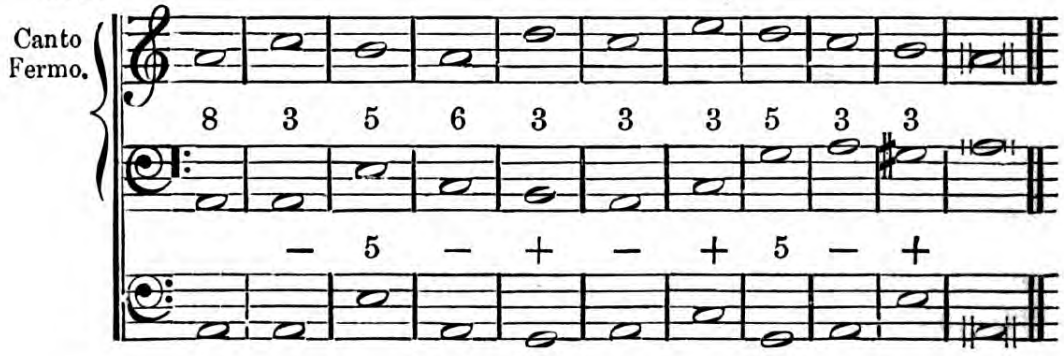
the Works of Cherubini and Albrechtsberger, the following Examples may suffice to give some idea of the first principles of musical composition. They are selected from a work of great merit, entitled 'Gradus ad Parnassum,' written in Latin by John Joseph Feux, chief Composer to the Emperor Charles VI., who reigned in the early part of last century. This work, which was translated into the English language, and published by Mr. Preston, is rarely to be met with: and the Examples, being printed in seven Clefs, are now nearly illegible. Those which I have selected, are, of course, transposed into the two Clefs which are now in use.

175. These Examples, having the Fundamental Harmony written under them, are an excellent introduction to the practice of musical analysis. They are all founded on one fragment of Canto Fermo; (the name given to the ancient Chants of the Romish Church, which were afterwards adopted as standing melodies:)—

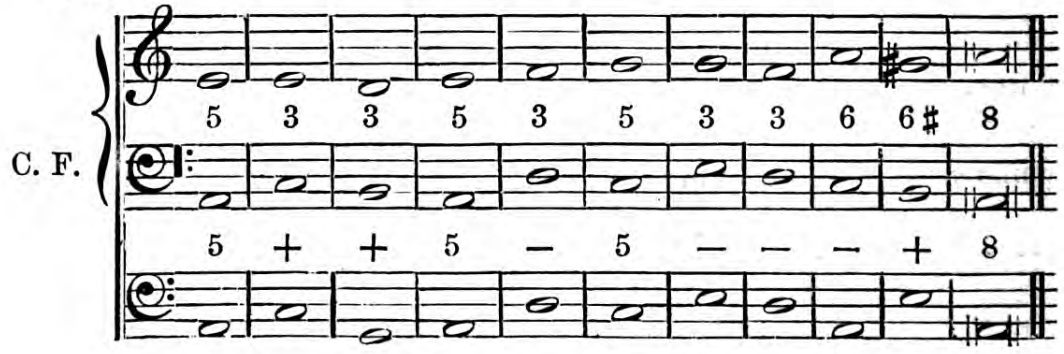
EXAMPLES FROM FEUX.

COUNTERPOINT IN TWO PARTS,—1. *Plain Counterpoint.*

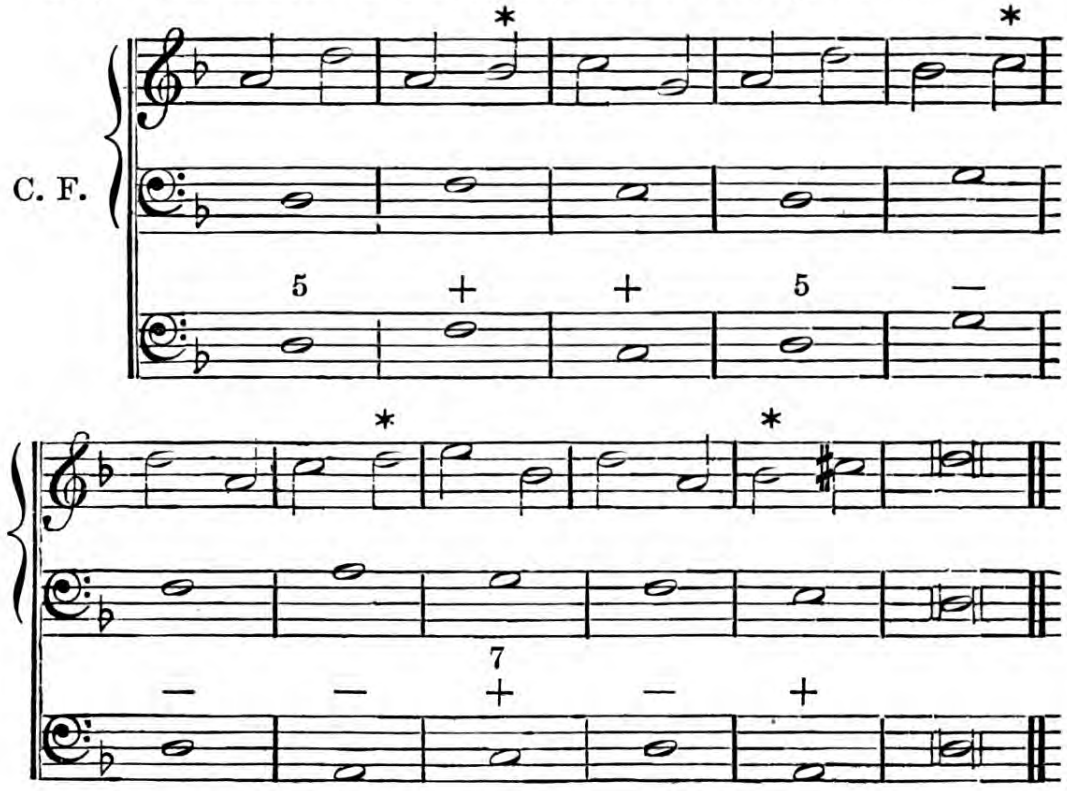
176.



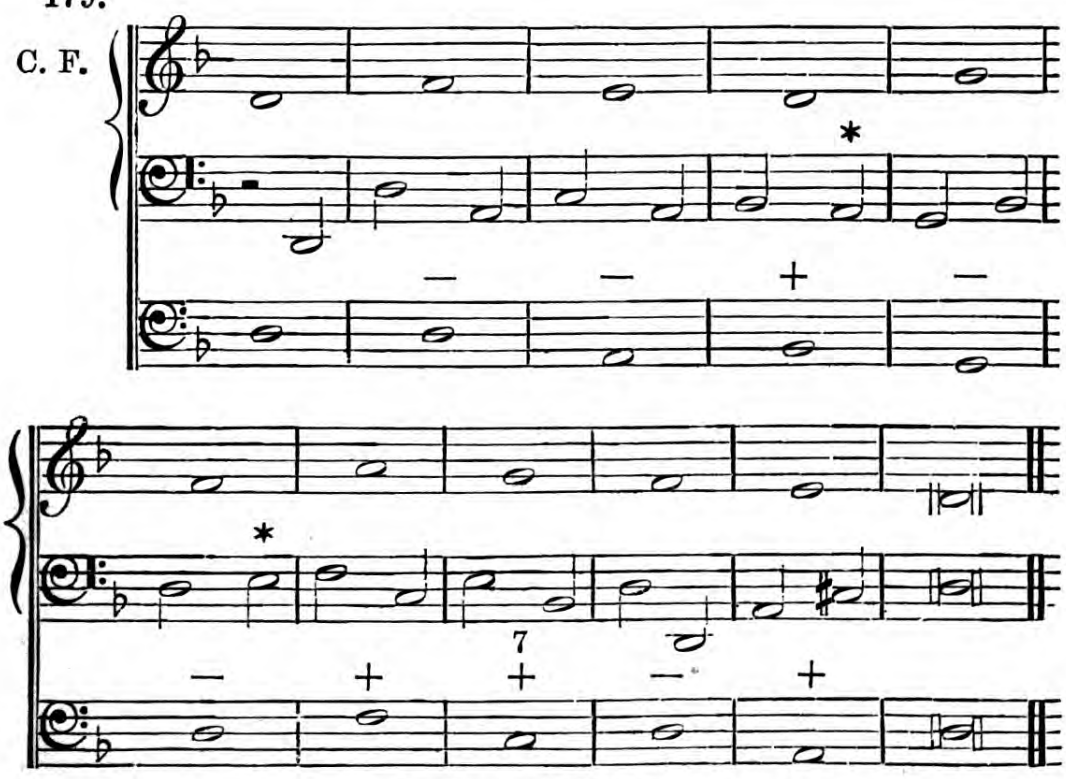
177.



178. COUNTERPOINT IN TWO PARTS,—2. *Two notes against one.*

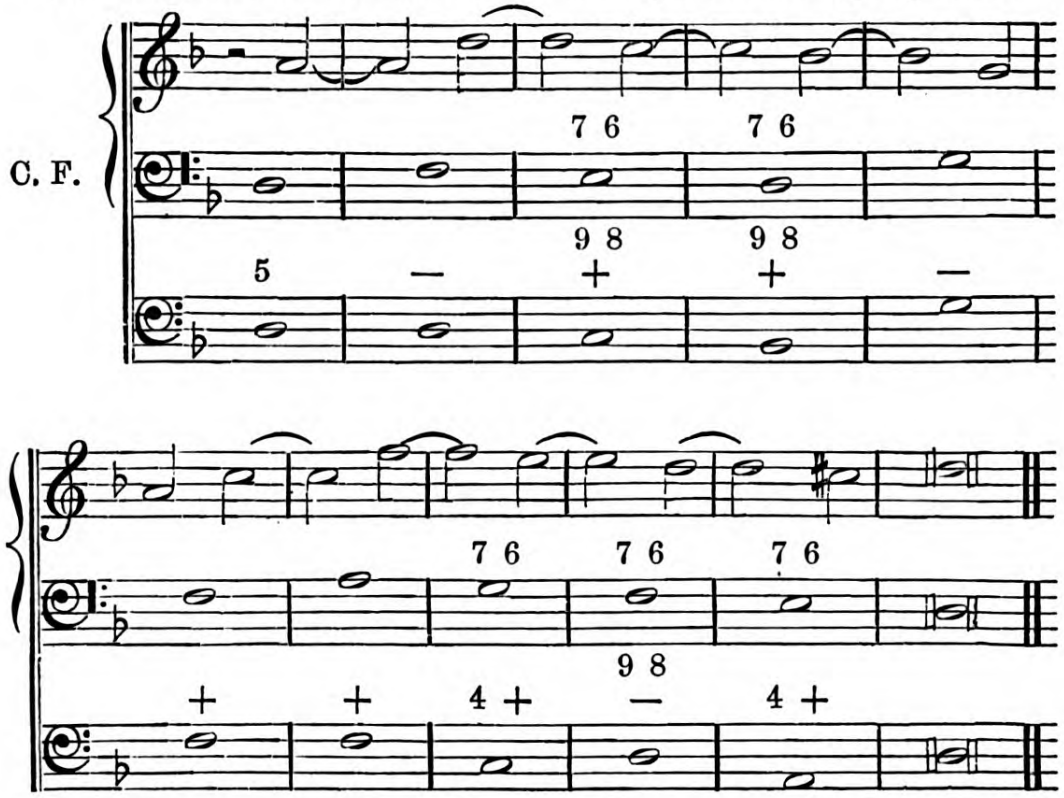


179.

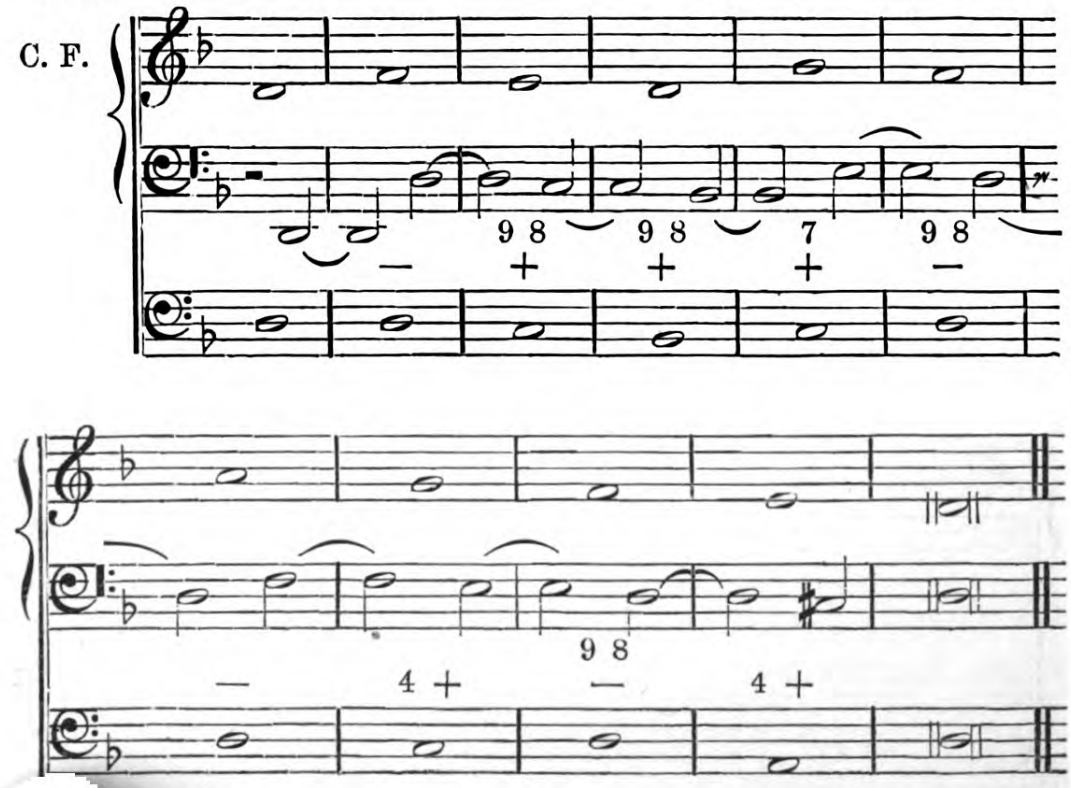


* The notes marked thus ∗ are Passing Notes, Art. 153.

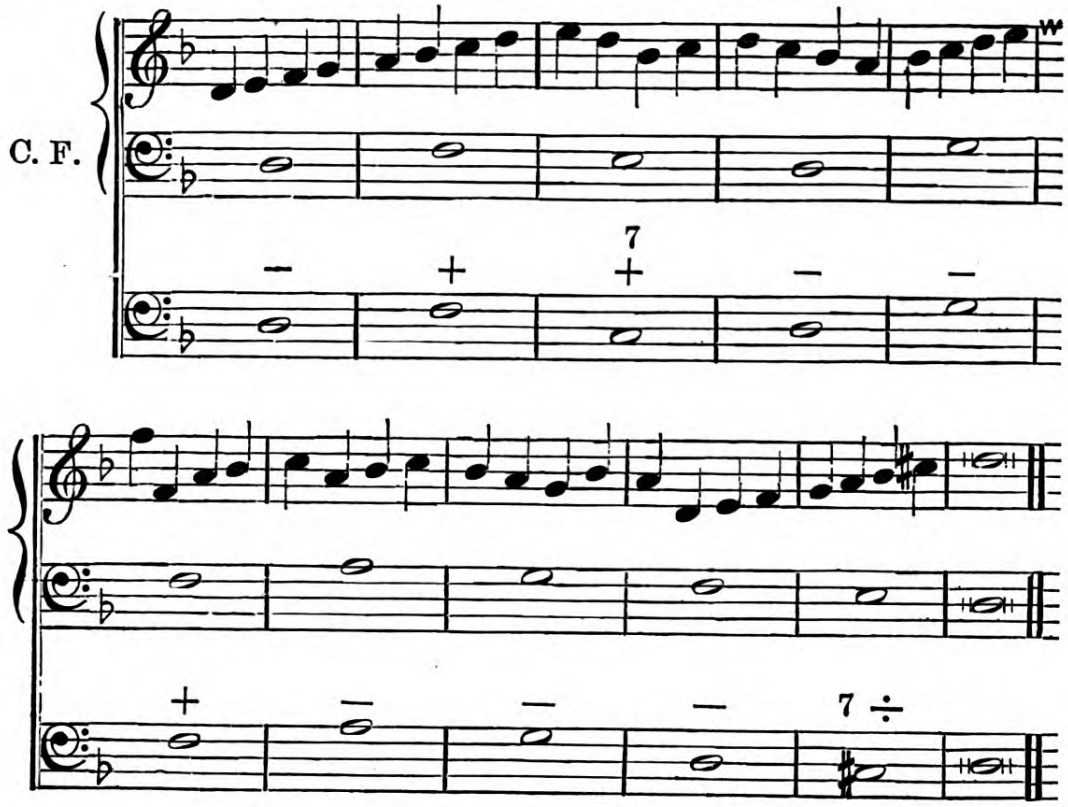
180. COUNTERPOINT IN TWO PARTS,—3. *Suspensions and Syncopations.*



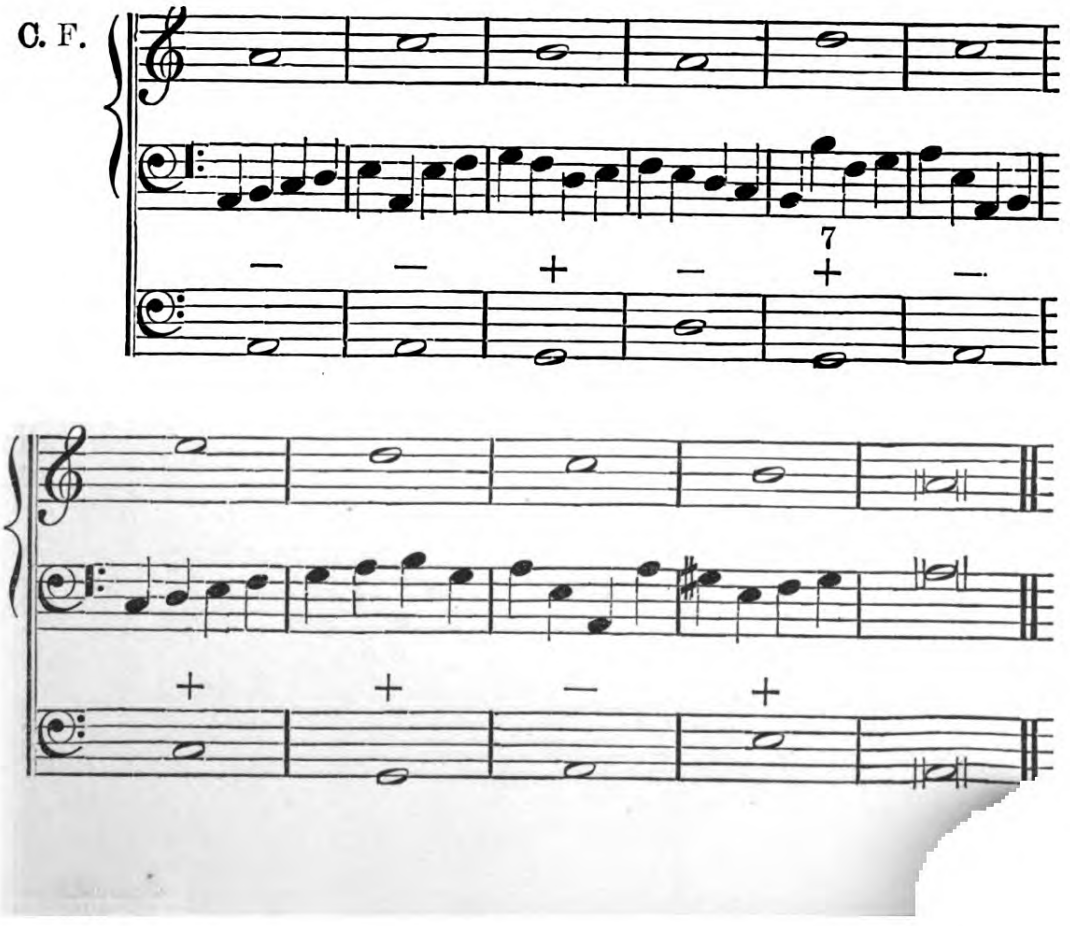
181.



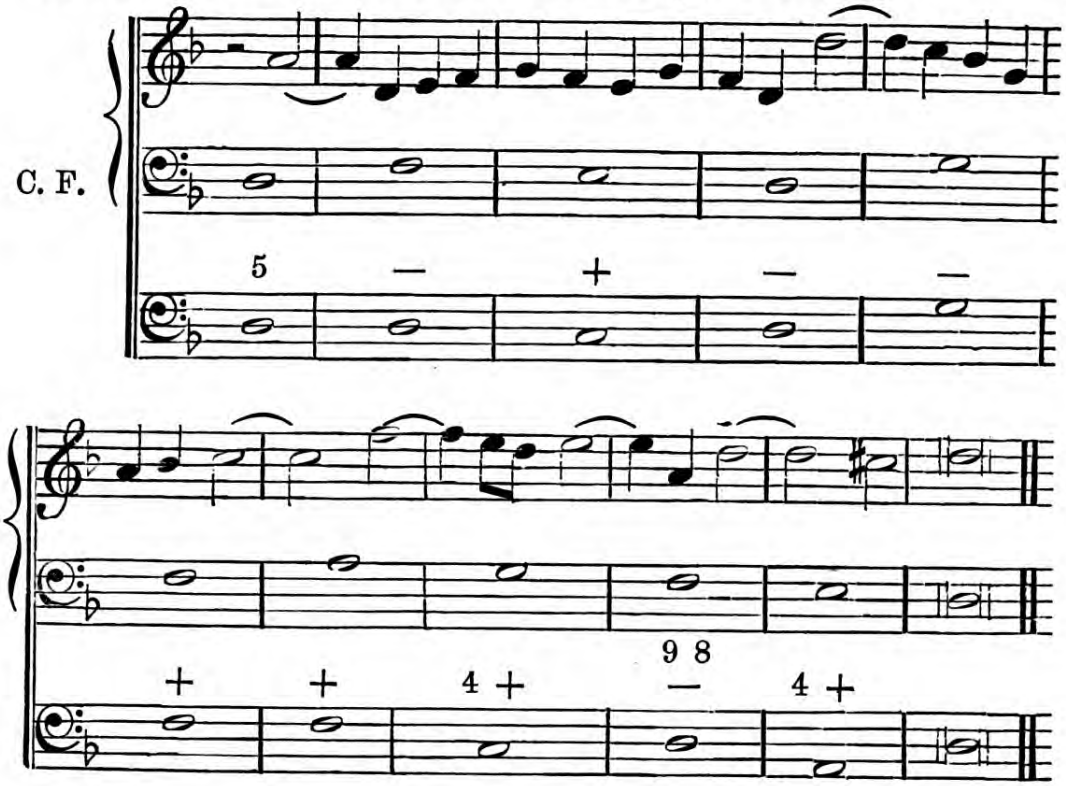
182. COUNTERPOINT IN TWO PARTS,—4. *Four Notes against one.*



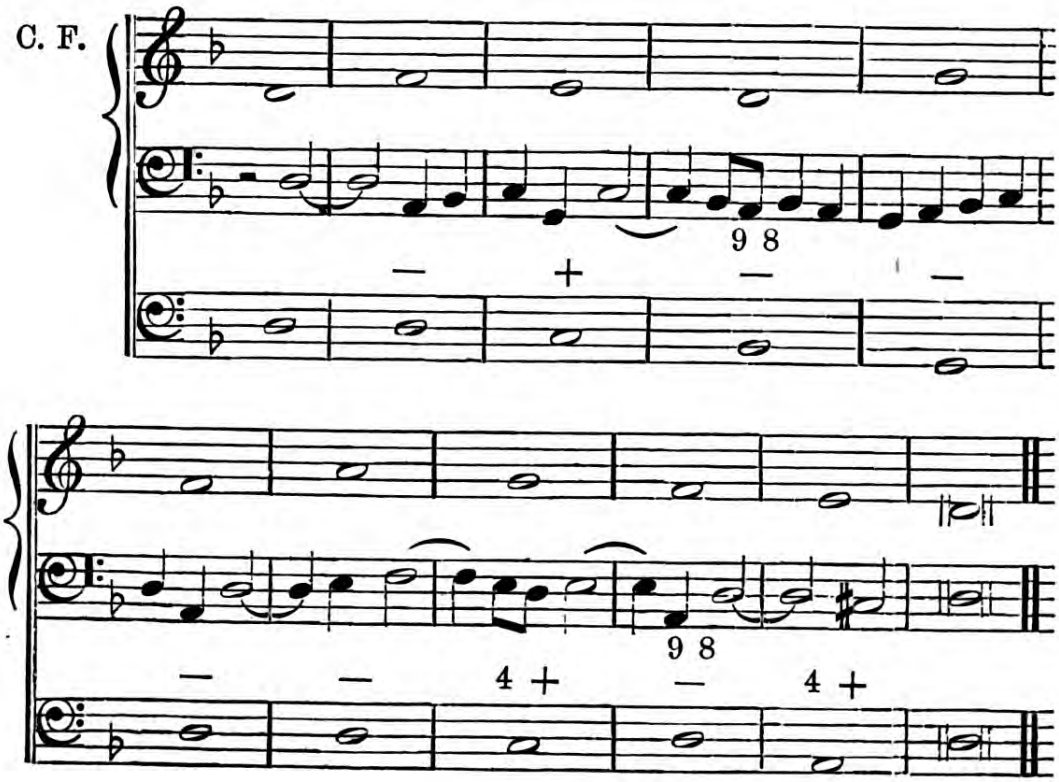
183.



184. COUNTERPOINT IN TWO PARTS,—5. *Figurate Counterpoint.*



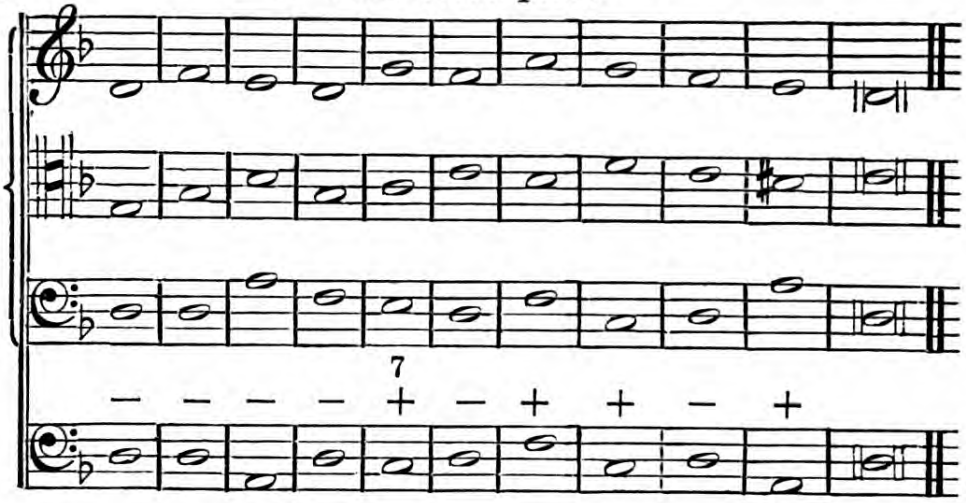
185.



COUNTERPOINT IN THREE PARTS.

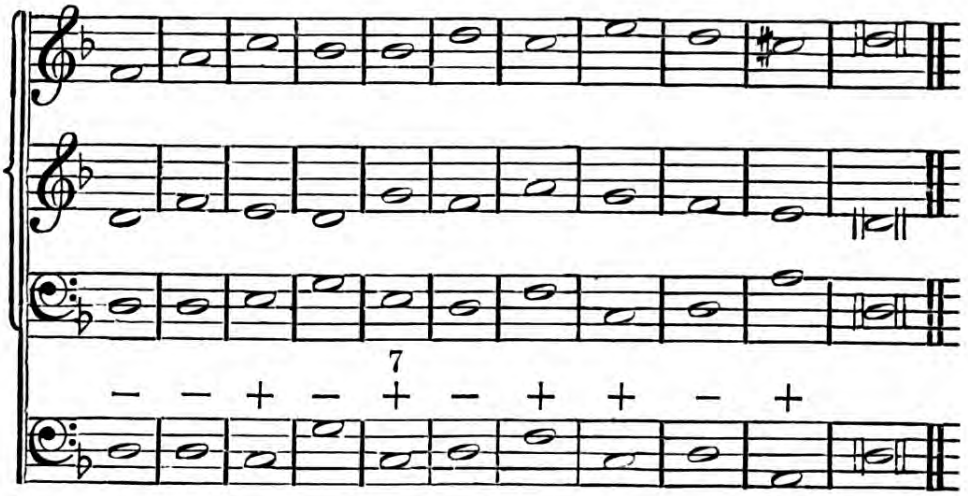
186. 1. *Plain Counterpoint.*

C. F.



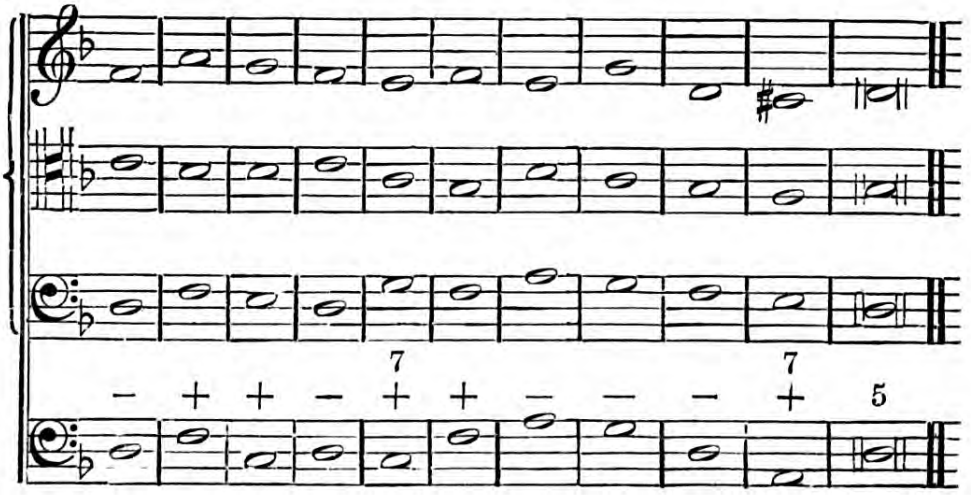
187.

C. F.

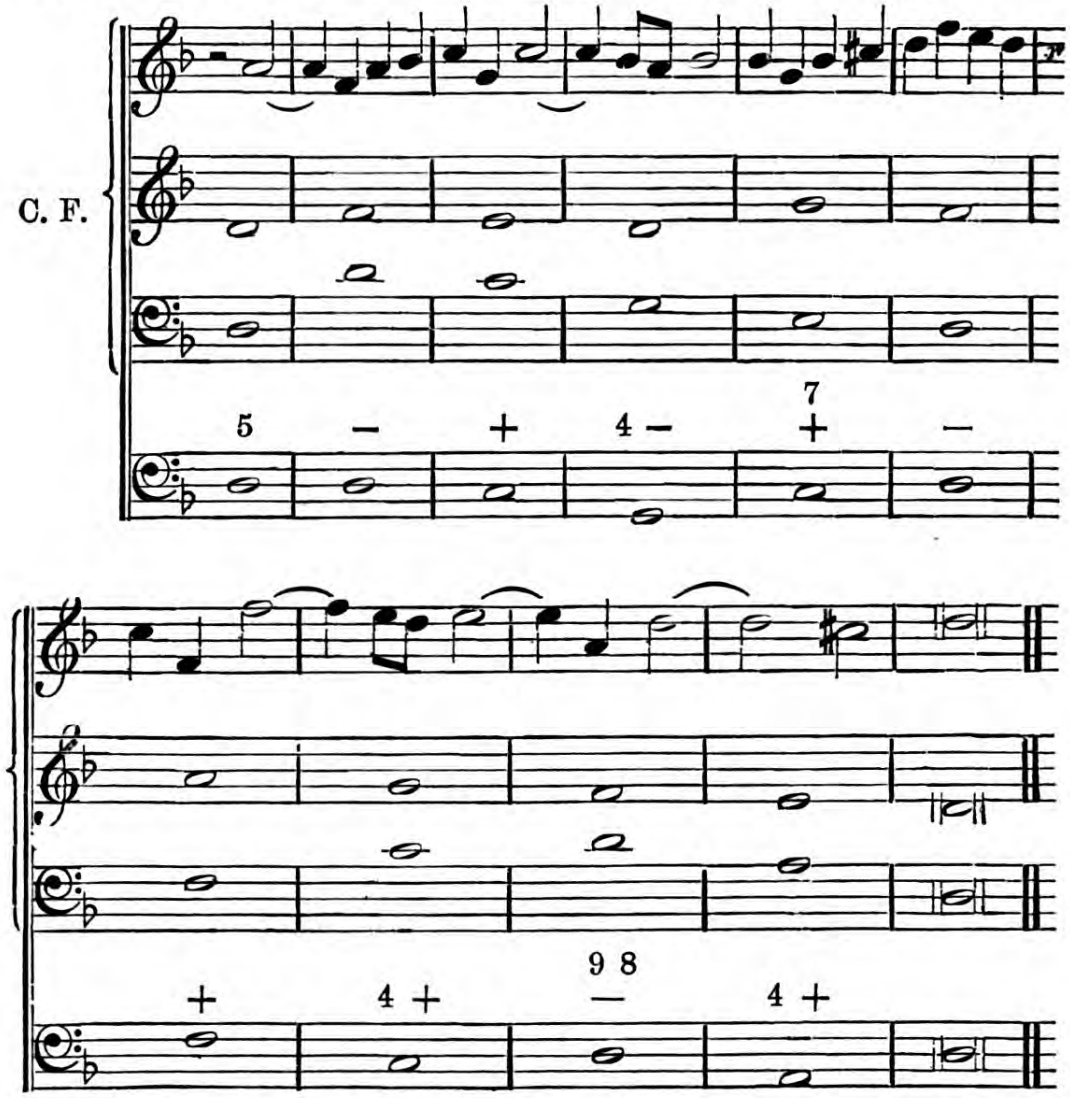


188.

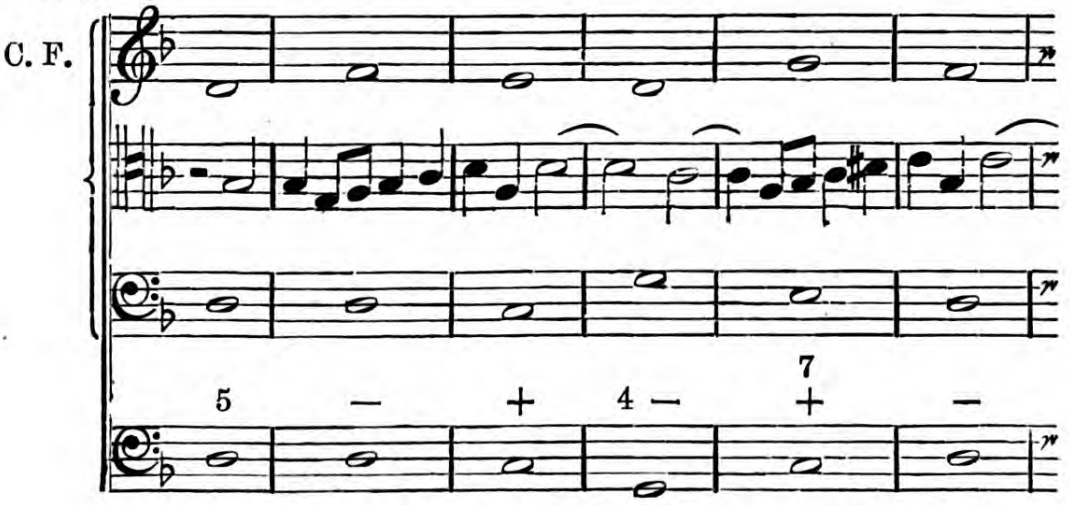
C. F.



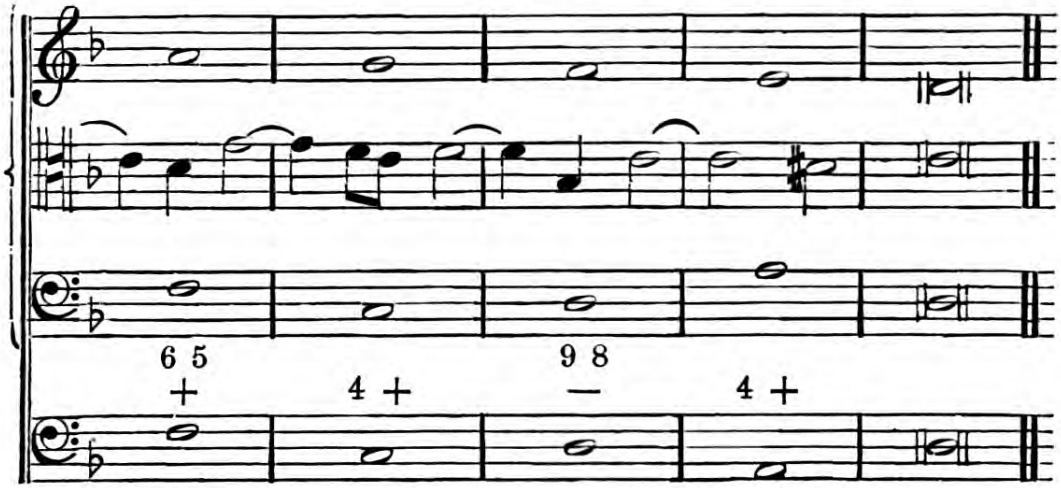
189. COUNTERPOINT IN THREE PARTS,—2. *Figurate Counterpoint.*



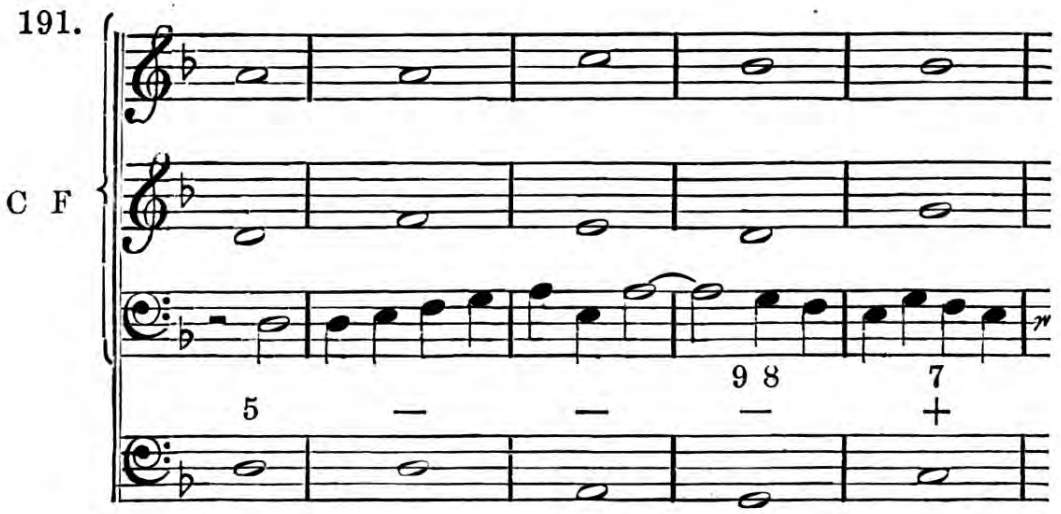
190.

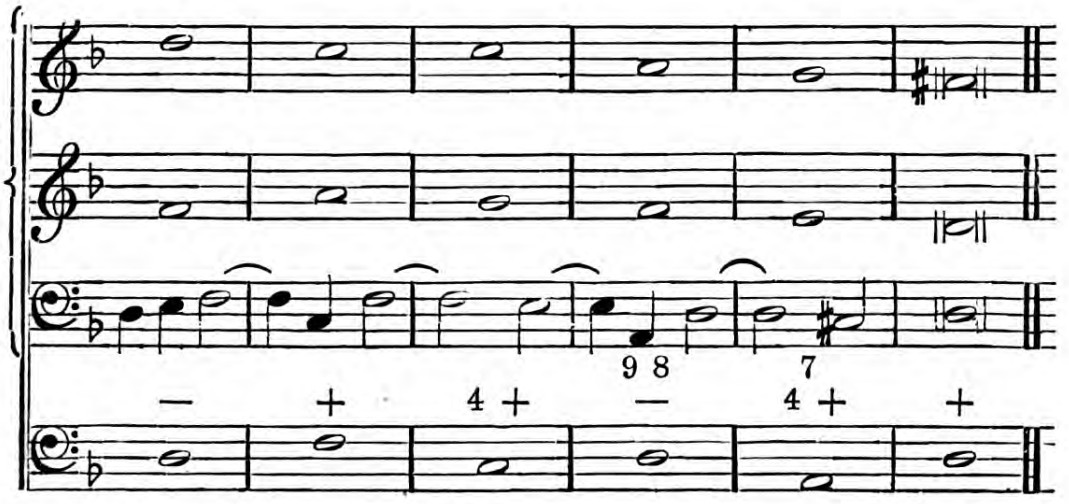


COUNTERPOINT IN THREE PARTS,—*Figurate Counterpoint.*



191.



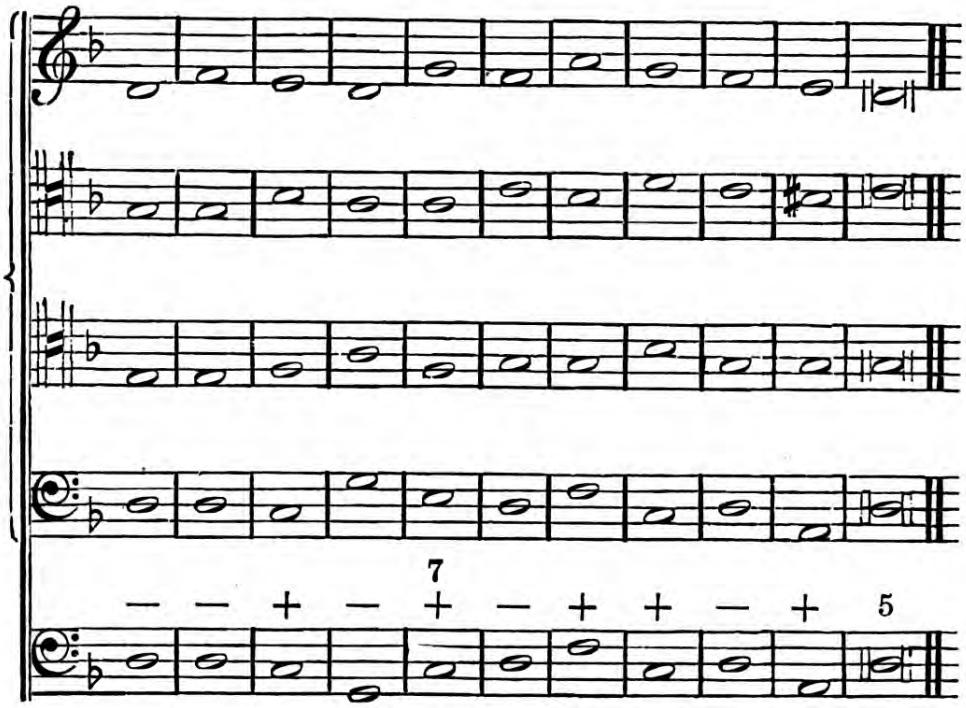


COUNTERPOINT IN FOUR PARTS.

1. *Plain Counterpoint.*

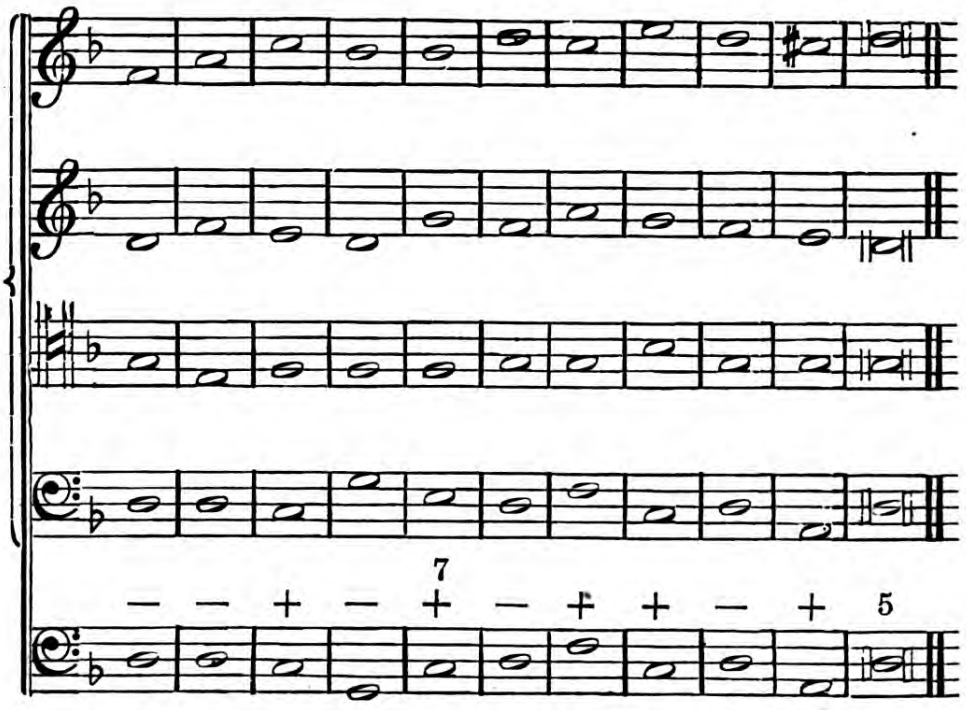
192.

C. F.



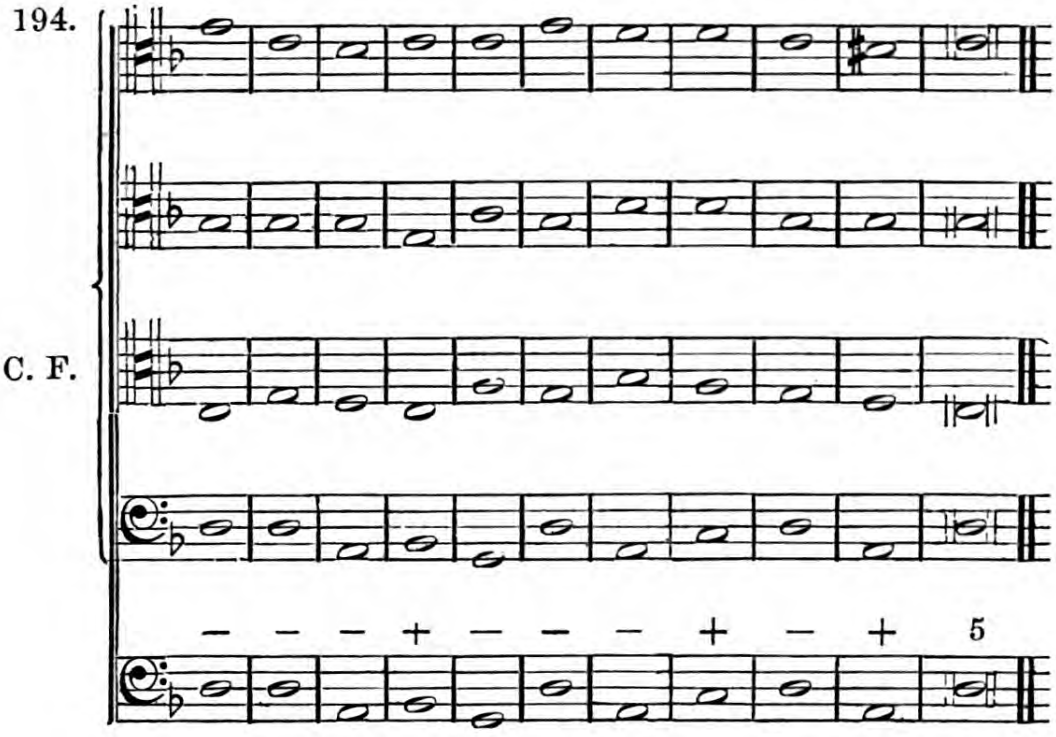
193.

C. F.

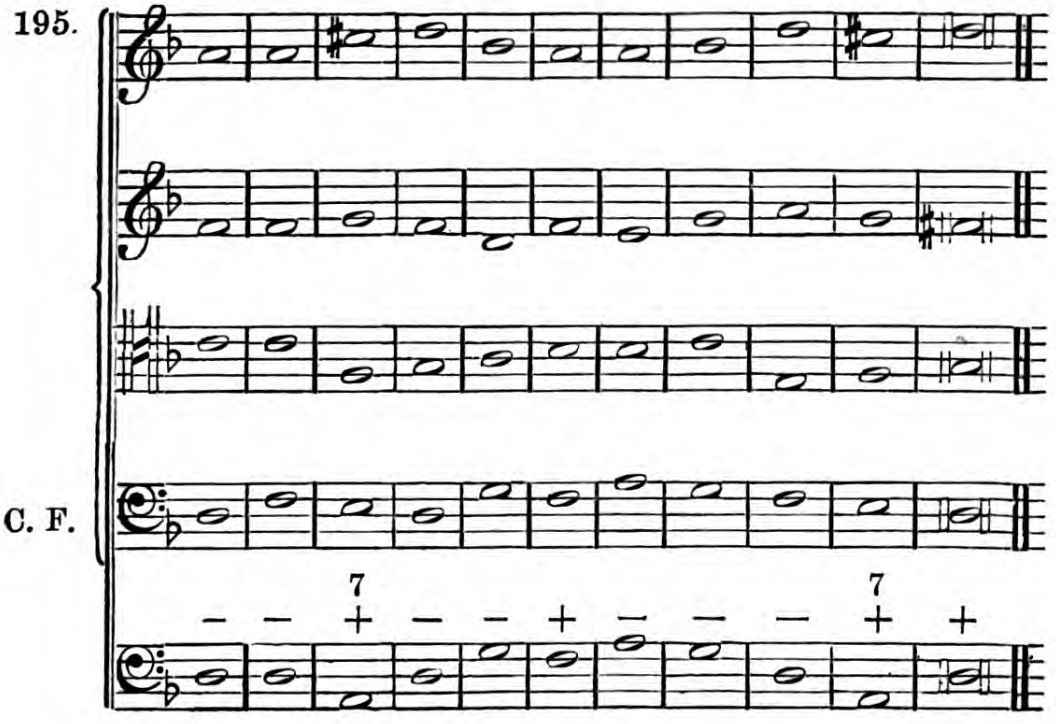


COUNTERPOINT IN FOUR PARTS,—*Plain Counterpoint.*

194.



195.

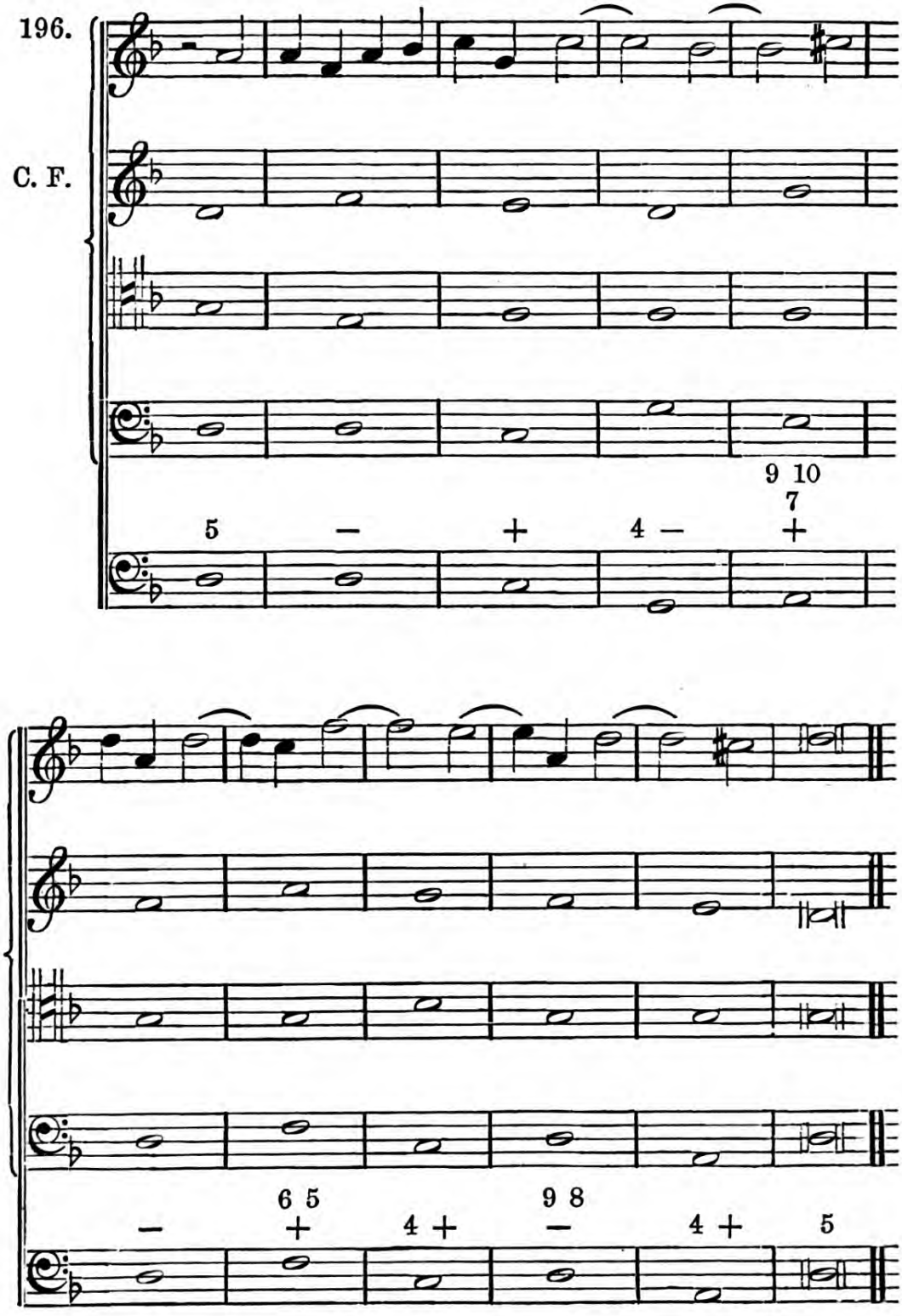


COUNTERPOINT IN FOUR PARTS.

2. *Figurate Counterpoint.*

196.

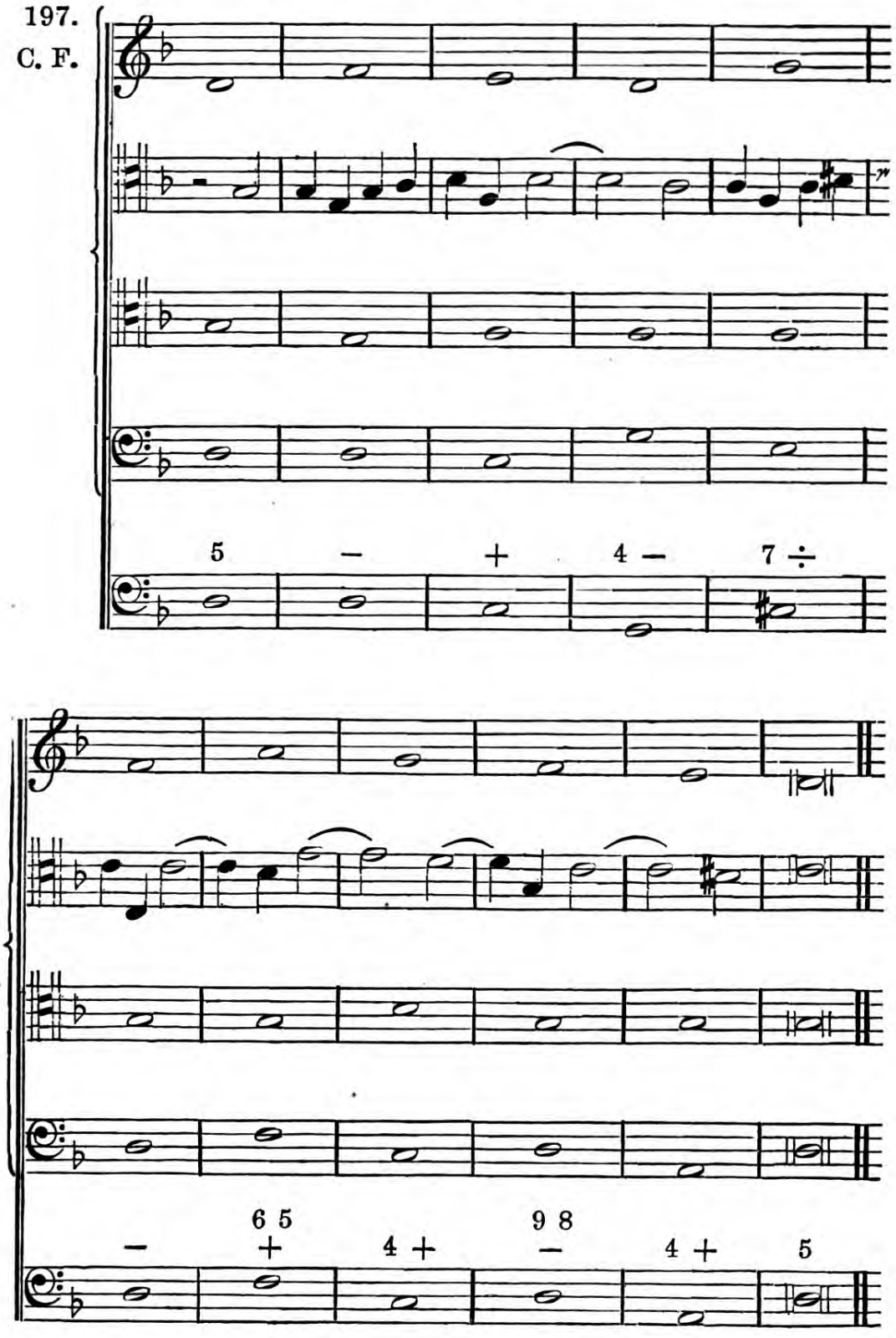
C. F.



COUNTERPOINT IN FOUR PARTS,—*Figurate Counterpoint.*

197.

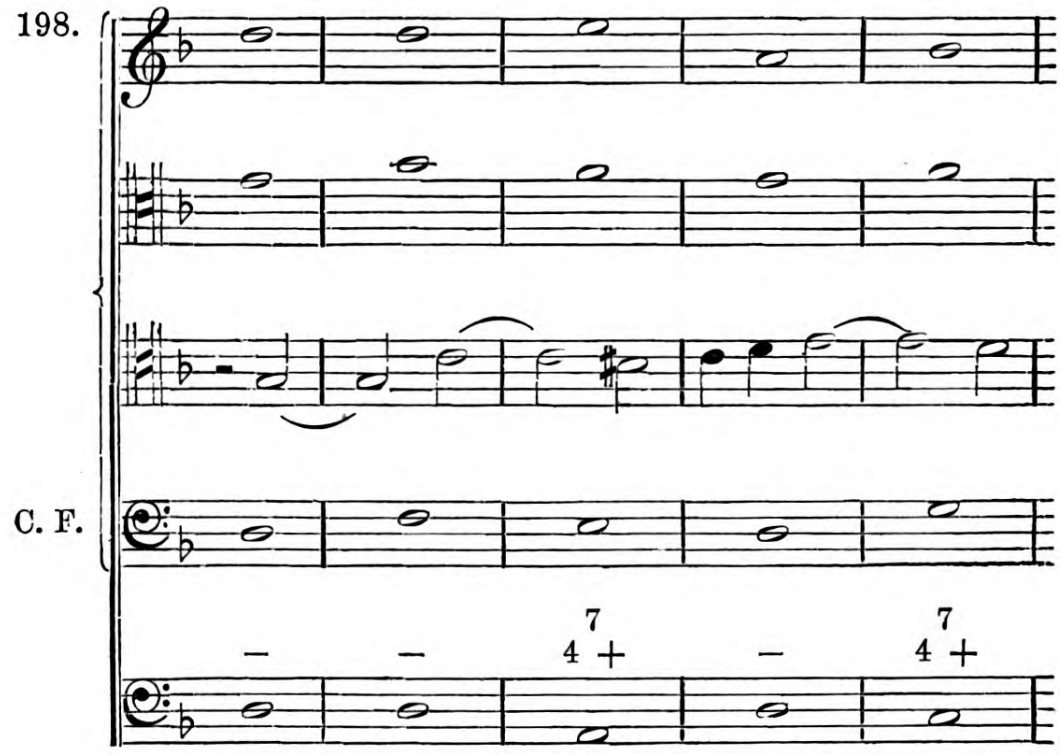
C. F.

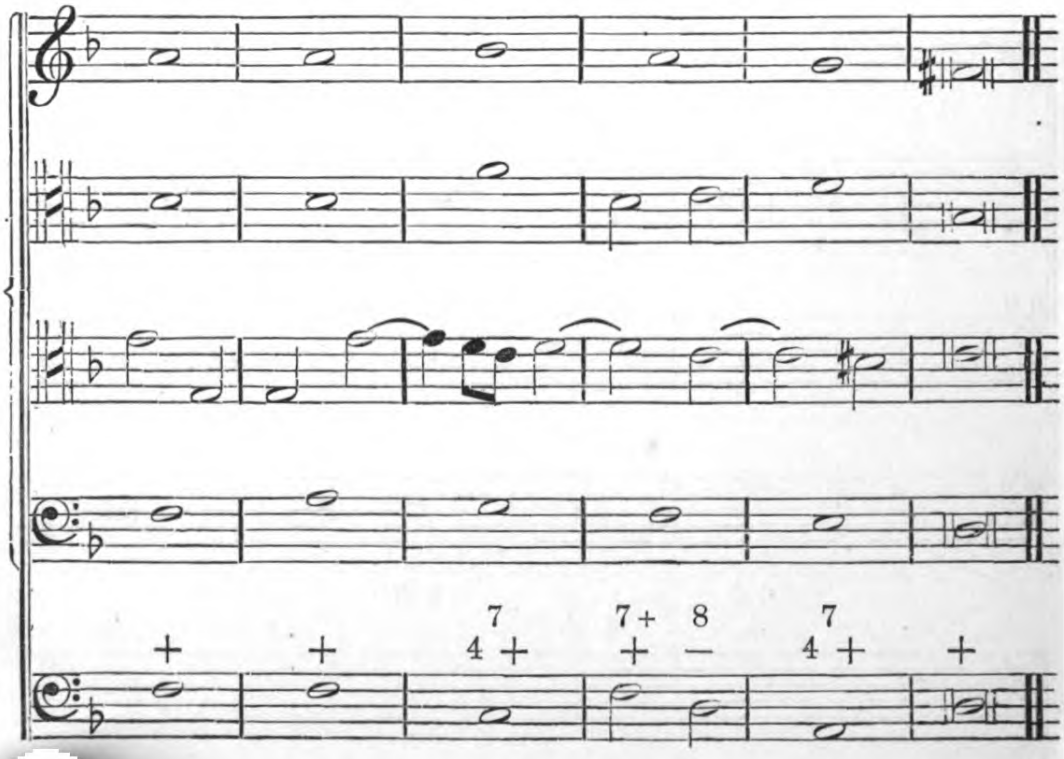


COUNTERPOINT IN FOUR PARTS,—*Figurate Counterpoint.*

198.

C. F.

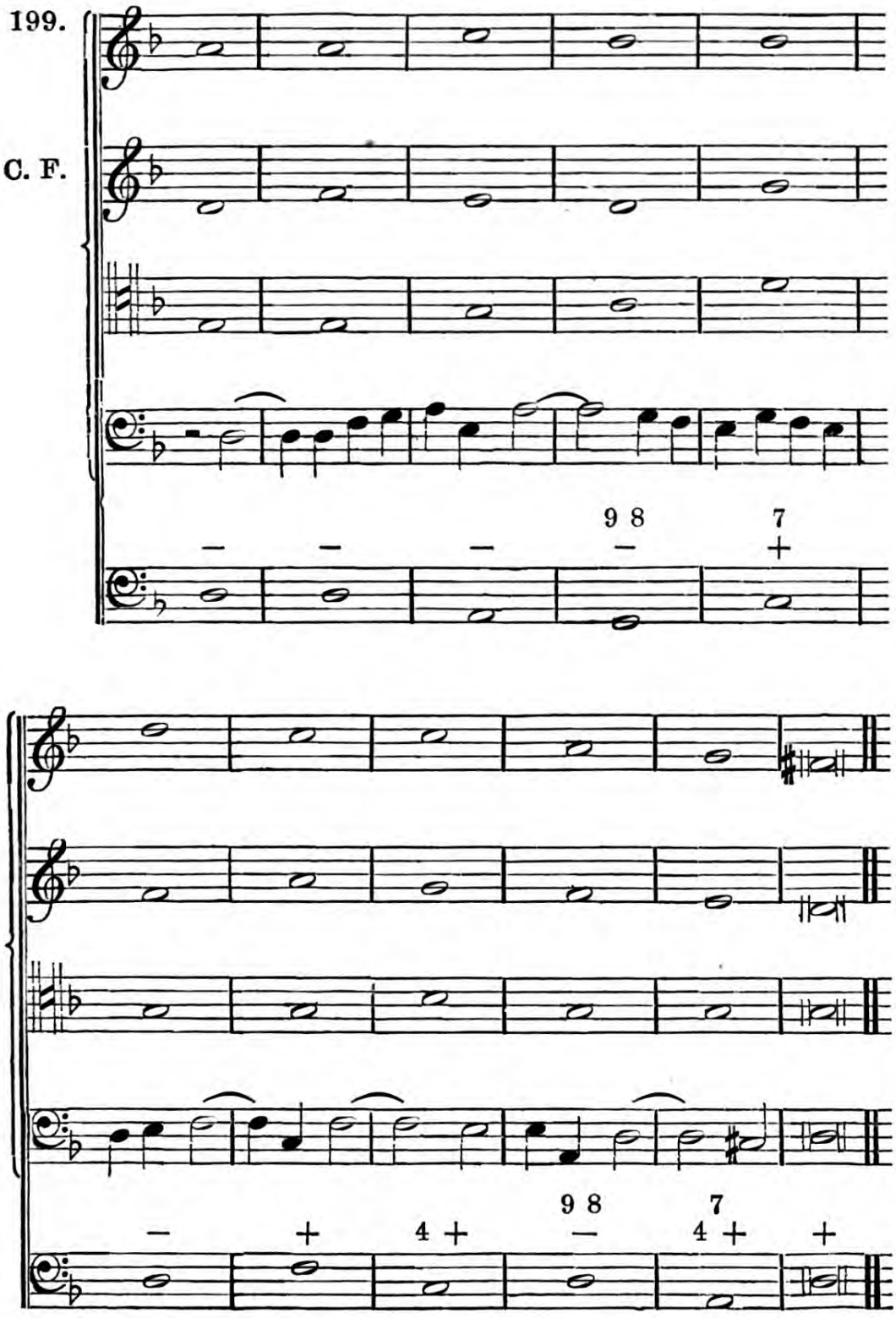




COUNTERPOINT IN FOUR PARTS,—*Figurate Counterpoint.*

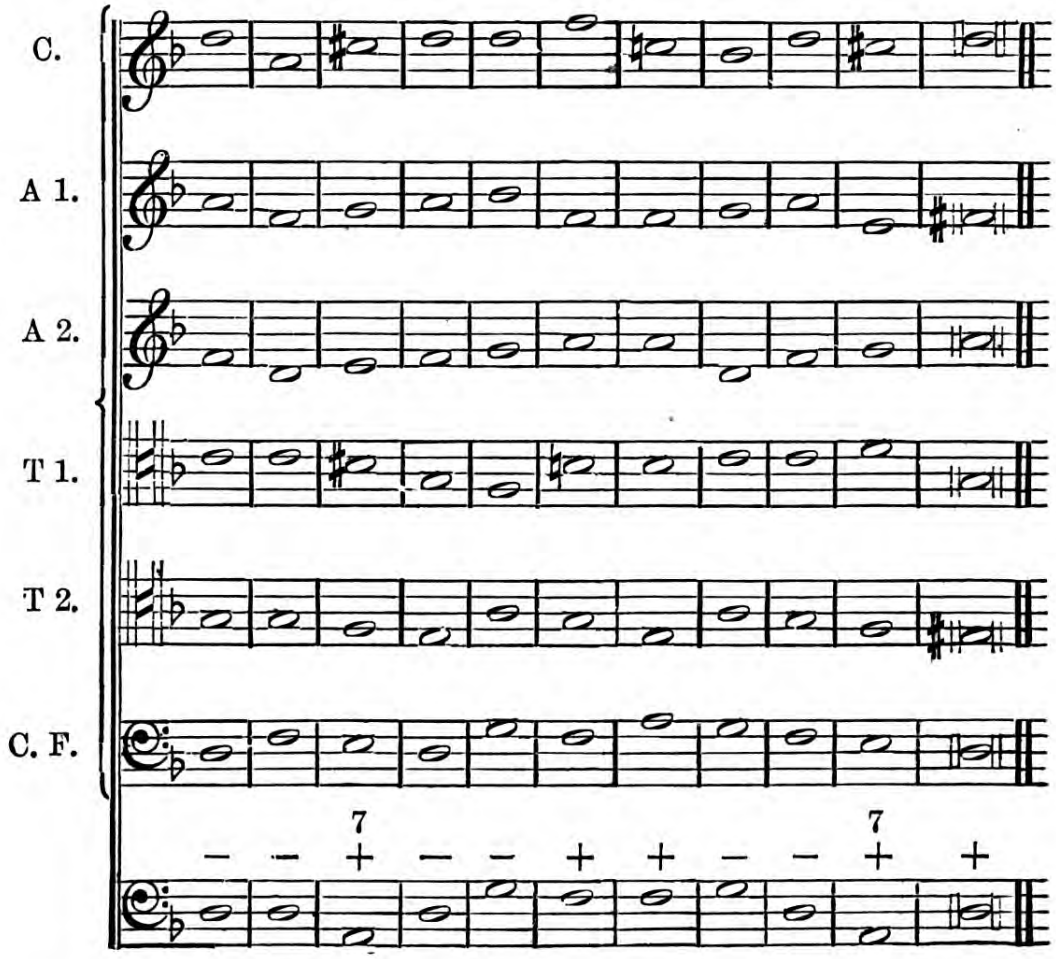
199.

C. F.



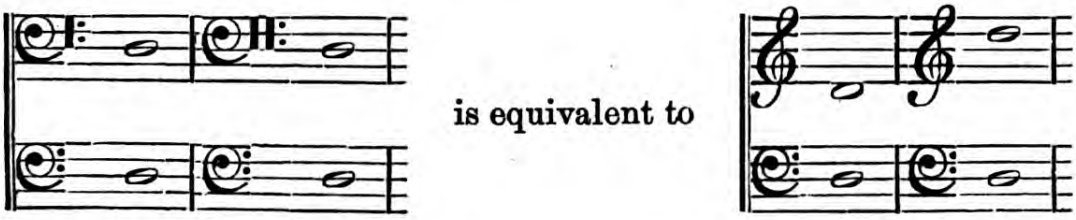
COUNTERPOINT IN SIX PARTS.

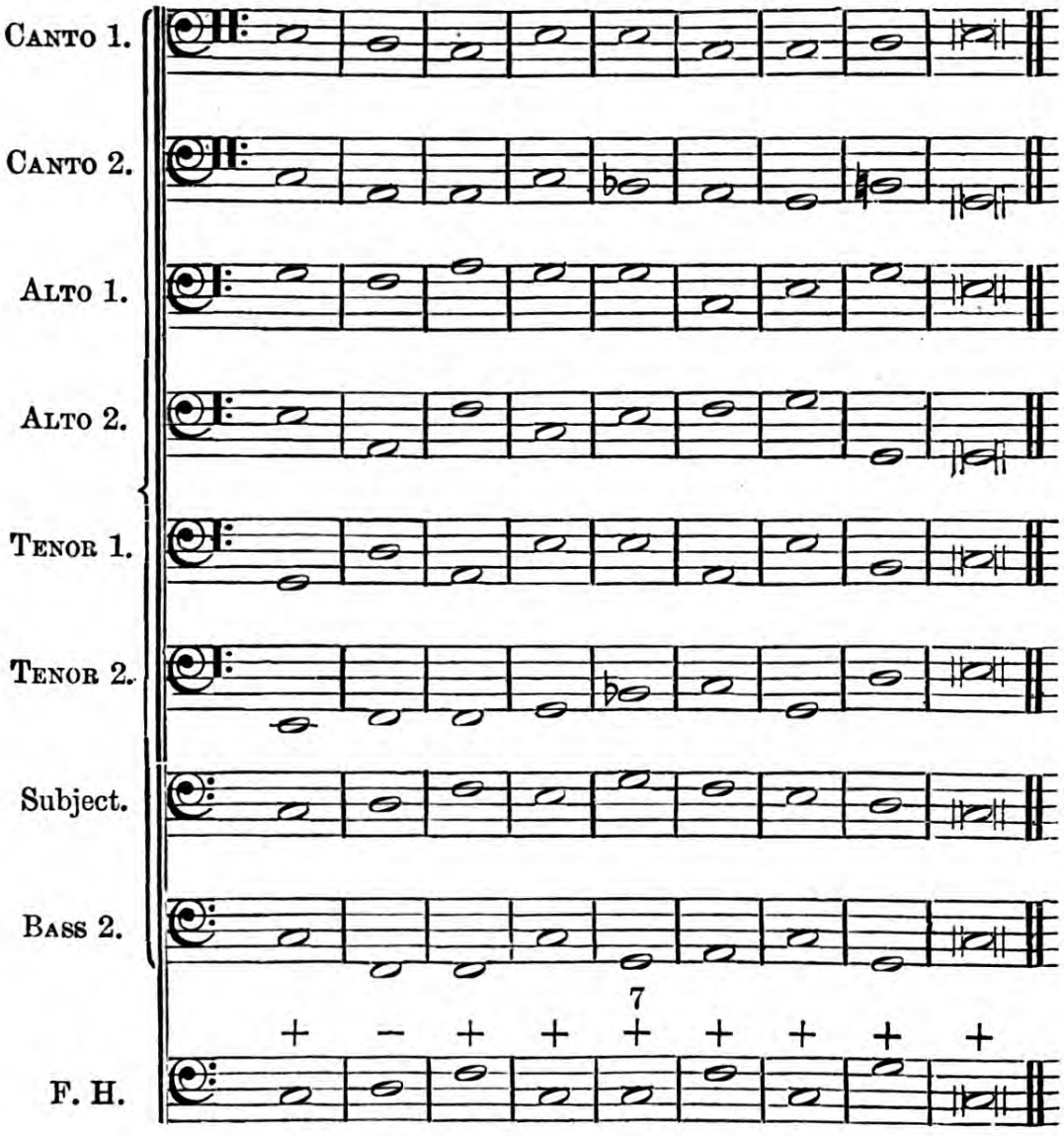
200. The following Example, on the same Subject, or Canto Fermo, is taken from Cherubini :—



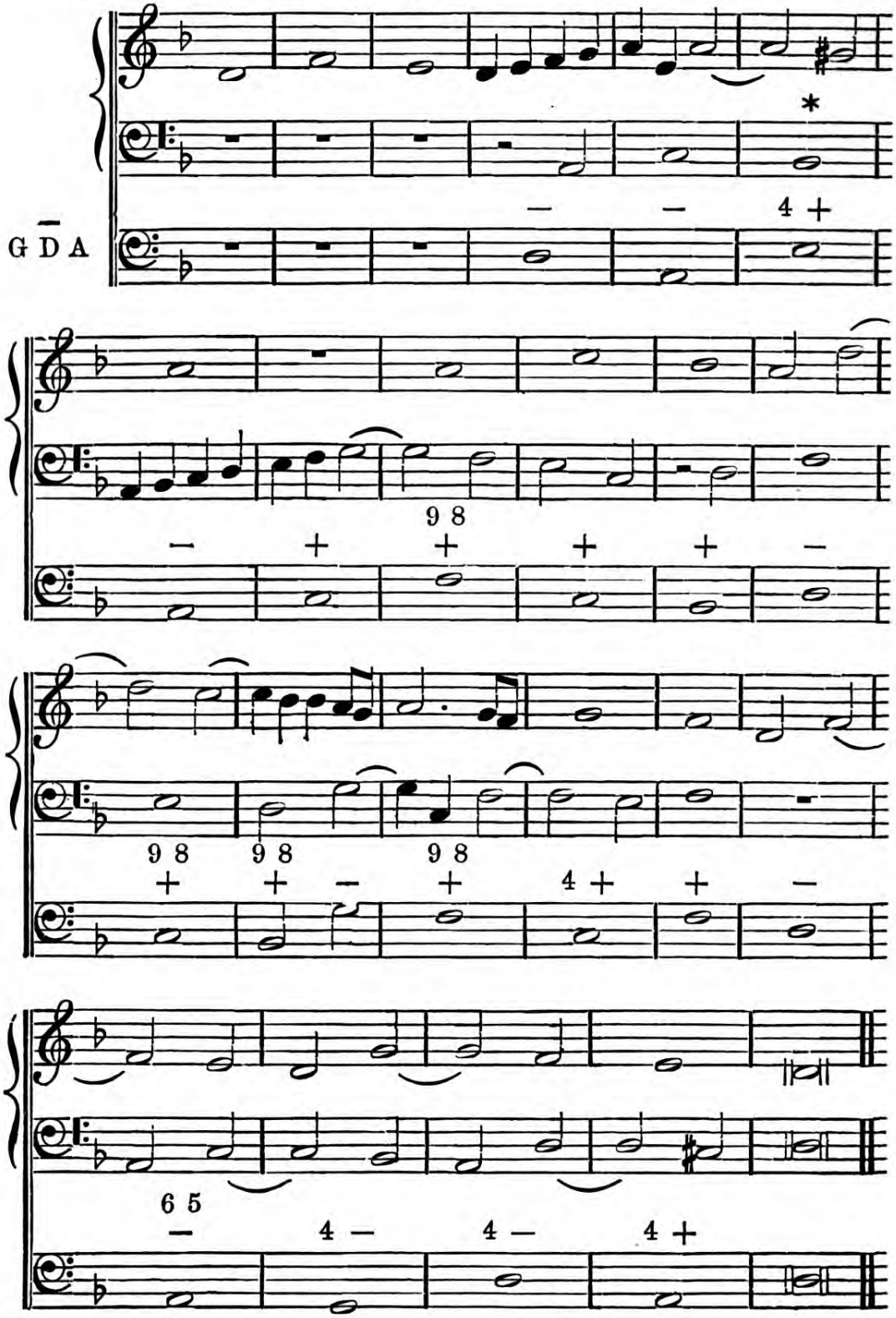
COUNTERPOINT IN EIGHT PARTS.

201. The next Example, which is also from Cherubini, is written in one Clef, that the Chords may be more easily taken up by the eye. The short Bars after the Clef, indicate that the notes are to be taken one or two Octaves above the pitch of the Bass Clef. Thus:—



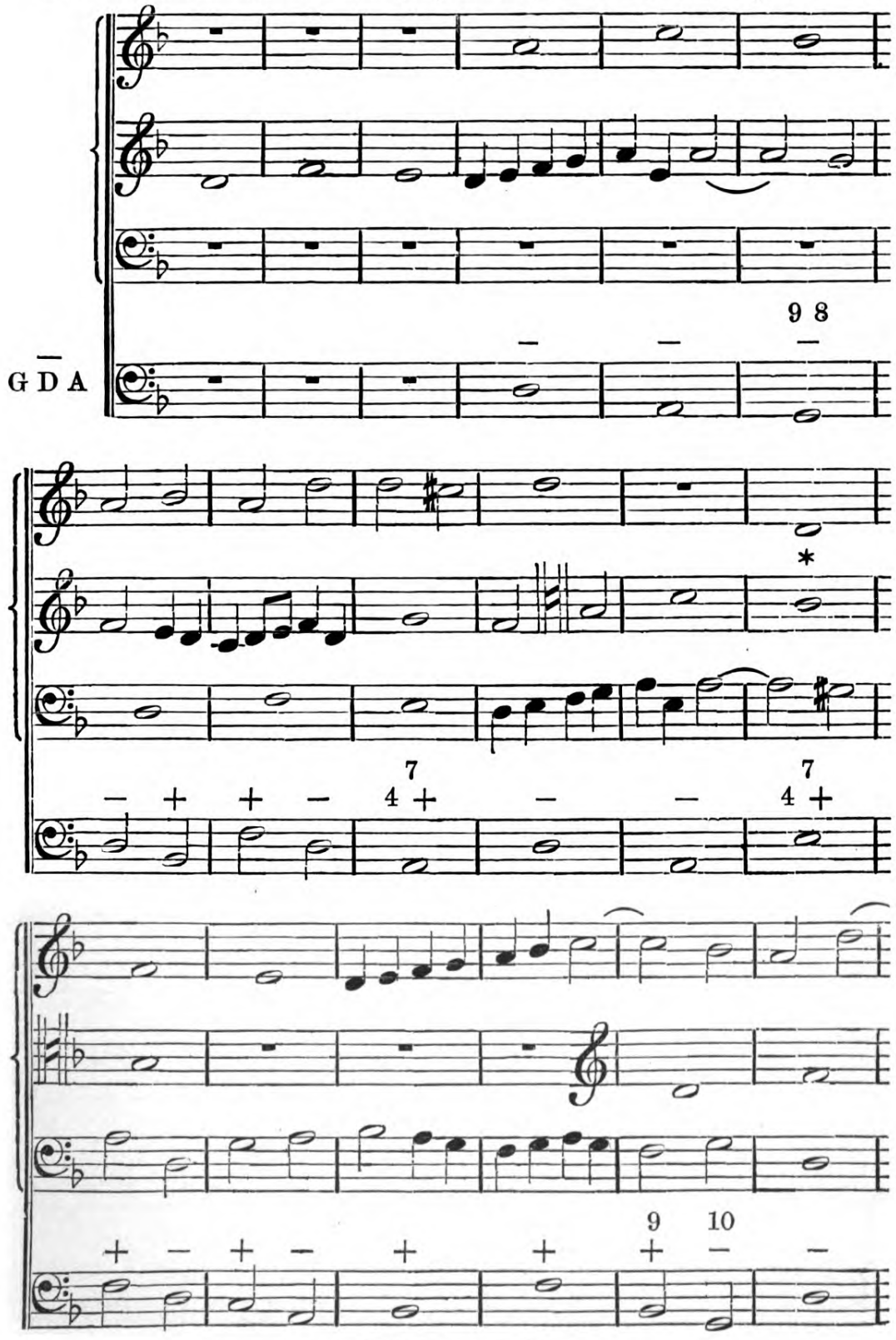


202. FUGUE IN TWO PARTS, by Feux, on the old subject :—



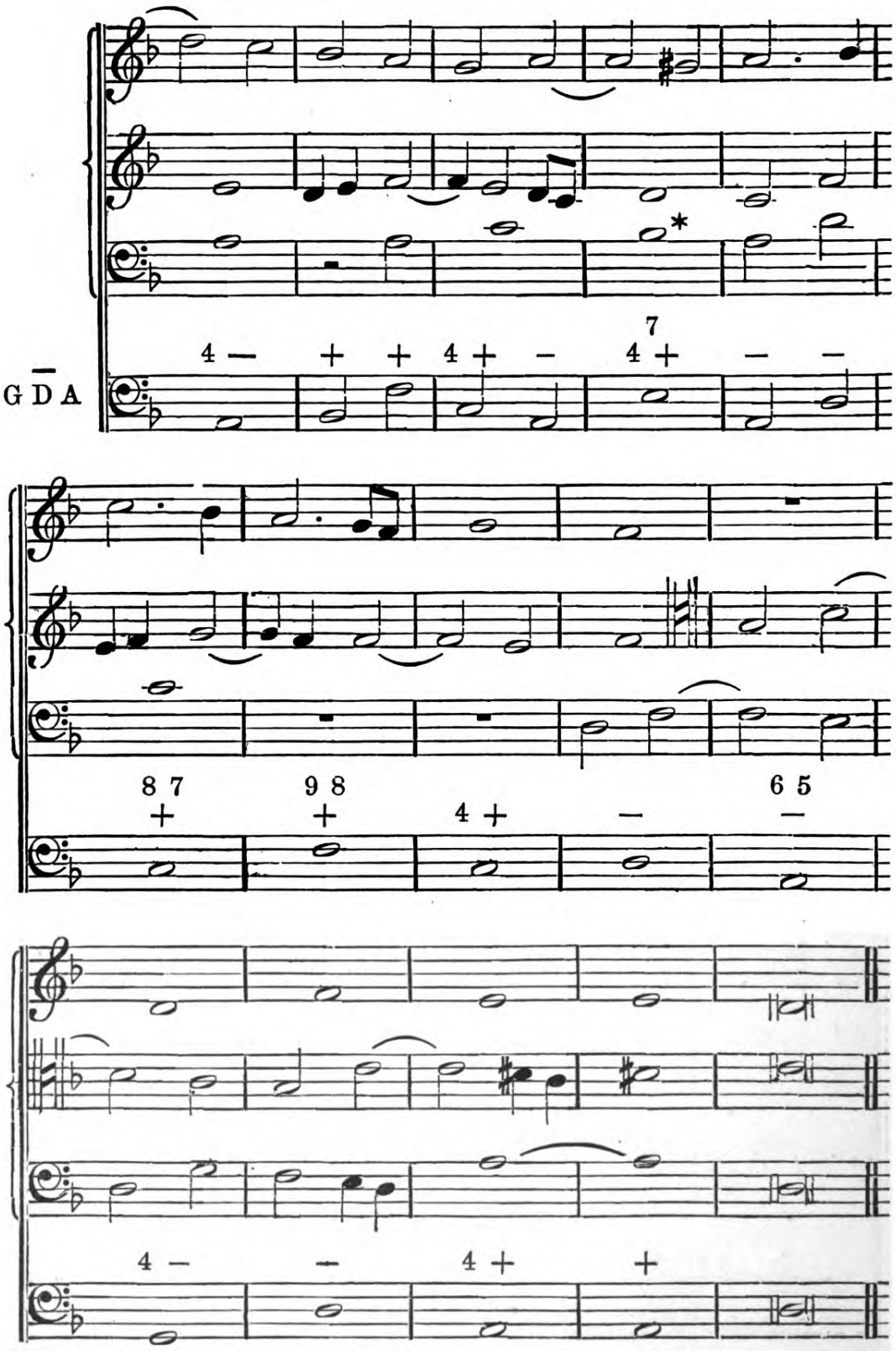
* B♭ a Passing Note between C and A.

203. FUGUE IN THREE PARTS, by Feux, on the same subject :—



* B♭ a Passing Note.

FUGUE IN THREE PARTS—*continued:*



* B♭ a Passing Note.

204. When the Tenor Clef is used in this work, as in the preceding Examples; instead of being placed on the third line, as in the Alto, or on the fourth line, as in the Tenor, it is placed on the space between them. By this means the notes are read as in the Treble Clef, but sounded an Octave lower.*

---

* The sooner this method is adopted for Alto and Tenor parts, the better. I am gratified by finding that it is not altogether an innovation. Mr. Mainzer used it in his "Specimens of the Old Psalmody of Scotland;" remarking, that it "seemed the only expedient by which to give the notes their real pitch, without increasing the difficulty of reading them."

The invention of seven Clefs, whereby each Degree of the Staff is made to denote, in succession, every note of the Scale, has introduced an artificial difficulty into the study of music, which, so far as I know, has no parallel in any other science. The irksomeness of reading and analyzing a Score constructed on such principles, can be understood by those only who have made the attempt. After having scored many Choruses, with all the vocal and instrumental parts, in one Clef (as proposed long ago by Mr. Salmon, of Oxford), I am convinced that the necessity pleaded for multiplying Clefs is purely imaginary. The Reader may judge of this for himself, by comparing the Scores in my 'Elements of Musical Science,' pages 120 to 179, with the editions of Handel's Works, published by Dr. Arnold, and by the Handel Society.

APPENDIX.

ON MUSICAL INTERVALS.

205. Having treated the subject of Intervals fully, in the 'Elements of Musical Science,' I shall do little more in this place than state the proportions of the most important of them, and show their derivation.

206. All Musical Intervals are derived, more or less remotely, from one Musical Sound, with its four Harmonics, the Octave, Fifth, Major Third, and Grave Seventh; which are best described by the numbers that denote their comparative rate of vibration:—

Root	1
Octave	2
Fifth	3
Major Third	5
Grave Seventh	7

207. By taking each Harmonic for a new Root, and continuing that process, we soon obtain all the Intervals of Music, down to the Minor Tone; and the differences between them, give the smaller Intervals.

208. In the following Table, Fifth denotes the Perfect or Harmonic Fifth, 2 : 3; Third, the Major or Harmonic Third, 4 : 5; and Seventh, the Grave, or Harmonic Seventh, 4 : 7.

TABLE OF HARMONIC NUMBERS.

1.	F	The Root.
2.	F	Octave to 1.
3.	C	Fifth to 2.
4.	F	Octave to 2.
5.	A	Third to 4.
6.	C	Fifth to 4.
7.	$\hat{E}\flat$	Seventh to 4.
8.	F	Octave to 4.
9.	G	Fifth to 6.
10.	A	Third to 8.
12.	C	Fifth to 8.
14.	$\hat{E}\flat$	Seventh to 8.
15.	E	Third to 12.
16.	F	Octave to 8.
18.	G	Fifth to 12.
20.	A	Third to 16.
21.	$\hat{B}\flat$	Seventh to 12.
24.	C	Fifth to 16.
25.	C$\sharp$	Third to 20.
27.	D	Fifth to 18.
28.	$\hat{E}\flat$	Seventh to 16.
30.	E	Third to 24.
32.	F	Octave to 16.
35.	$\hat{G}$	Seventh to 20.
36.	G	Fifth to 24.
40.	A	Third to 32.
42.	$\hat{B}\flat$	Seventh to 24.
45.	B	Third to 36.
48.	C	Fifth to 32.
50.	C$\sharp$	Third to 40.
60.	E	Third to 48.
64.	F	Octave to 32.
72.	G	Fifth to 48.
75.	G$\sharp$	Third to 60.

&c. &c. &c.

209. The most important Intervals are contained in the following list:—

1 : 2	F	F	Octave.
2 : 3	F	C	Fifth.
3 : 4	C	F	Fourth.
3 : 5	C	A	Major Sixth.
4 : 5	F	A	Major Third.
4 : 7	F	$\overset{\vartriangle}{\text{E}}\flat$	Grave Seventh.
4 : 9	F	G	Ninth.
5 : 6	A	C	Minor Third.
5 : 7	A	$\overset{\vartriangle}{\text{E}}\flat$	Grave Fifth.
5 : 8	A	F	Minor Sixth.
5 : 9	A	G	Minor Seventh.
6 : 7	C	$\overset{\vartriangle}{\text{E}}\flat$	Grave Third.
7 : 8	$\overset{\vartriangle}{\text{E}}\flat$	F	Tone Maximus.
7 : 9	$\overset{\vartriangle}{\text{E}}\flat$	G	Acute Third.
7 : 10	$\overset{\vartriangle}{\text{E}}\flat$	A	Tritone.
8 : 9	F	G	Tone Major.
8 : 15	F	E	Major Seventh.
9 : 10	G	A	Tone Minor.
14 : 25	$\overset{\vartriangle}{\text{E}}\flat$	C$\sharp$	Augmented Sixth.
21 : 25	$\overset{\vartriangle}{\text{B}}\flat$	C$\sharp$	Augmented Second.
25 : 42	C$\sharp$	$\overset{\vartriangle}{\text{B}}\flat$	Diminished Seventh.

210. The following Rules are useful in the treatment of Intervals:—

1. To add Intervals together, set down their proportions in the form of Vulgar Fractions: multiply their terms into each other; and reduce the Interval found, to its lowest terms. Thus:—

Add together the Fifth 2 : 3, and the Fourth 3 : 4:—

$$\frac{2}{3} \times \frac{3}{4} = \frac{6}{12} = \frac{1}{2}, \text{ Octave.}$$

2. To subtract one Interval from another, multiply the terms of the two fractions crosswise: observing that the lesser fraction denotes the greater Interval. Thus:—

From a Major Third 4 : 5, subtract a Minor Third, 5 : 6:—

$$\frac{4}{5} \times \frac{5}{6} = \frac{24}{25}, \text{ Chromatic Semitone.}$$

211. The small Intervals are the differences between the greater Intervals, found by cross multiplication; thus:—

Fifth	2 : 3	14 : 15,	Hemitone Major.
Grave Fifth	5 : 7		
Grave Fifth	5 : 7	20 : 21,	Hemitone Minor.
Fourth	3 : 4		
Fourth	3 : 4	15 : 16,	Diatonic Semitone.
Major Third	4 : 5		
Major Third	4 : 5	24 : 25,	Chromatic Semitone.
Minor Third	5 : 6		
Minor Third	5 : 6	35 : 36,	Quarter Tone.
Grave Third	6 : 7		
Tone Maximus	7 : 8	63 : 64,	Komma Major.
Tone Major	8 : 9		
Tone Major	8 : 9	80 : 81,	Comma.
Tone Minor	9 : 10		
Diatonic Semitone . . .	15 : 16	125 : 128,	Enharmonic Diesis.*
Chromatic Semitone . .	24 : 25		

212. The Logarithms of Intervals afford the nearest approximation to a common measure of their respective magnitudes. They also save labour, in long calculations; addition and subtraction, doing the work of multiplication and division. I have chosen the Minor Tone, as the most convenient Interval to be represented by 1, or unity, as its Logarithm.

---

* $\frac{15}{16} \times \frac{24}{25} = \frac{375}{384} \div 3 = \frac{125}{128}$.

213. In the following Table, the principal Intervals are arranged according to their comparative magnitudes :—

Ninth	F	G,	4	:	9	Log.	7.697
Octave	F	F,	1	:	2	„	6.579
Major Seventh	F	E,	8	:	15	„	5.966
Minor Seventh	A	G,	5	:	9	„	5.579
Augmented Sixth	$\overset{\triangle}{\text{E}}\flat$	C♯,	14	:	25	„	5.503
Grave Seventh	F	$\overset{\triangle}{\text{E}}\flat$,	4	:	7	„	5.311
Diminished Seventh . . .	C♯	$\overset{\triangle}{\text{B}}\flat$,	25	:	42	„	4.924
Major Sixth	C	A,	3	:	5	„	4.848
Minor Sixth	A	F,	5	:	8	„	4.461
Fifth	F	C,	2	:	3	„	3.848
Tritone	$\overset{\triangle}{\text{E}}\flat$	A,	7	:	10	„	3.385
Grave Fifth	A	$\overset{\triangle}{\text{E}}\flat$,	5	:	7	„	3.194
Fourth	C	F,	3	:	4	„	2.731
Major Third	F	A,	4	:	5	„	2.118
Minor Third	A	C,	5	:	6	„	1.730
Augmented Second . . .	$\overset{\triangle}{\text{B}}\flat$	C♯,	21	:	25	„	1.655
Grave Third	C	$\overset{\triangle}{\text{E}}\flat$,	6	:	7	„	1.463
Tone Maximus	$\overset{\triangle}{\text{E}}\flat$	F,	7	:	8	„	1.267
Tone Major	F	G,	8	:	9	„	1.118
Tone Minor	G	A,	9	:	10	„	1.000
Hemitone Major	$\overset{\triangle}{\text{E}}\flat$	E,	14	:	15	„	.655
Diatonic Semitone	E	F,	15	:	16	„	.612
Hemitone Minor	A	$\overset{\wedge}{\text{B}}\flat$,	20	:	21	„	.463
Chromatic Semitone . . .	C	C♯,	24	:	25	„	.388
Quarter Tone	$\overset{\triangle}{\text{G}}$	G,	35	:	36	„	.267
Enharmonic Diesis	E♯	F,	125	:	128	„	.225
Komma Major	$\overset{\triangle}{\text{F}}$	F,	63	:	64	„	.149
Comma	$\overset{-}{\text{A}}$	$\overset{+}{\text{A}}$,	80	:	81 *	„	.118

* $\overset{-}{\text{A}}$, 80, is Third to F, 64, see p. 72 ; and
$\overset{+}{\text{A}}$, 81, is Fifth to D, 54, (Octave to D 27).

214. Notwithstanding the number and variety of these Intervals, they will be found, on the strictest scrutiny, to be all in perfect tune. The reduction of them to a few, capable of being performed on a Key-board limited to twelve notes in the Octave, is accomplished at the expense of putting all Intervals, except the Octave, more or less out of tune.

215. I conclude with two or three Examples of Addition and Subtraction by Logarithms.

Add together the Fourth, Major Third, Tone Major, and Diatonic Semitone :—

Fourth	C F	Log.	2.731
Major Third	F A	„	2.118
Tone Major	A B	„	1.118
Semitone	B C	„	.612
Octave	C C	„	6.579

Add together 6 Minor Tones, 3 Commas, and Enharmonic Diesis :—

Minor Tone . . .	Log.	1.000×6 =	6.000
Comma	„	.118×3 =	.354
Diesis	„	.225 . .	.225
Octave . .	„	. . . . .	6.579

From Grave or Dominant Seventh, subtract Chromatic Semitone :—

Grave Seventh	Log.	5.311
Chromatic Semitone	„	.388
Diminished Seventh .	„	4.923

From Augmented Sixth, subtract Hemitone Major :—

Augmented Sixth	Log.	5.503
Hemitone Major	„	.655
Major Sixth	„	4.848

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