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The Organ

W. G. ALCOCK

THE ORGAN

BY

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I wish to express my best thanks to **Mr. J. J.** Walker for the explanatory photographs he has so kindly prepared, sparing neither time nor trouble. His co-operation greatly enhances whatever value my work may be found to possess.

W. G. A.

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PIECES IN DIFFERENT STYLES.

INTRODUCTION.

It may be said with truth that no instrument encourages bad musicianship so readily as the Organ, for it offers every inducement to "trifle," so much variety of tone and power being available with so little expenditure of energy and serious thought.

But notwithstanding this and its limitations of direct expression, the organ is capable of portraying the loftiest thoughts and emotions, while it has inspired many of the greatest composers to give of their best through its medium.

The study of the instrument should be undertaken only by those who have acquired some facility in pianoforte technique. They should also be quick in musical perception and able to read at sight at least moderately well, while proficiency in the theory of music would be found an invaluable aid to rapid progress.

Seeing that much has already been written on the history and construction of the organ, it has been decided to give only such details as will enable the beginner to accustom himself to its general management, while he is mastering the early difficulties of manuals and pedals. Before beginning actual practical work on the instrument, it will therefore be necessary for the student to acquire a general knowledge of the mechanical means by which its sounds are produced.

There can be no doubt that the organ is the development of the simple idea of a flute or whistle blown by the mouth. It would be an easy matter to blow more than one of either at a time, and the idea of doing so by mechanical means followed as naturally as the development of the steam-engine from a kettle of boiling water.

We find, then, that the organ consists of a number of pipes placed on a box of wind, with means for admitting the wind to the pipes at will. That there should be more than one group of pipes, and more than one box of wind is simply part of the process of development, and the modern instrument with three, four, or even five rows of keys for the hands, and a row for the feet, becomes merely a group of organs of varying power and tone-quality, brought conveniently under the control of one performer.

SECTION I.

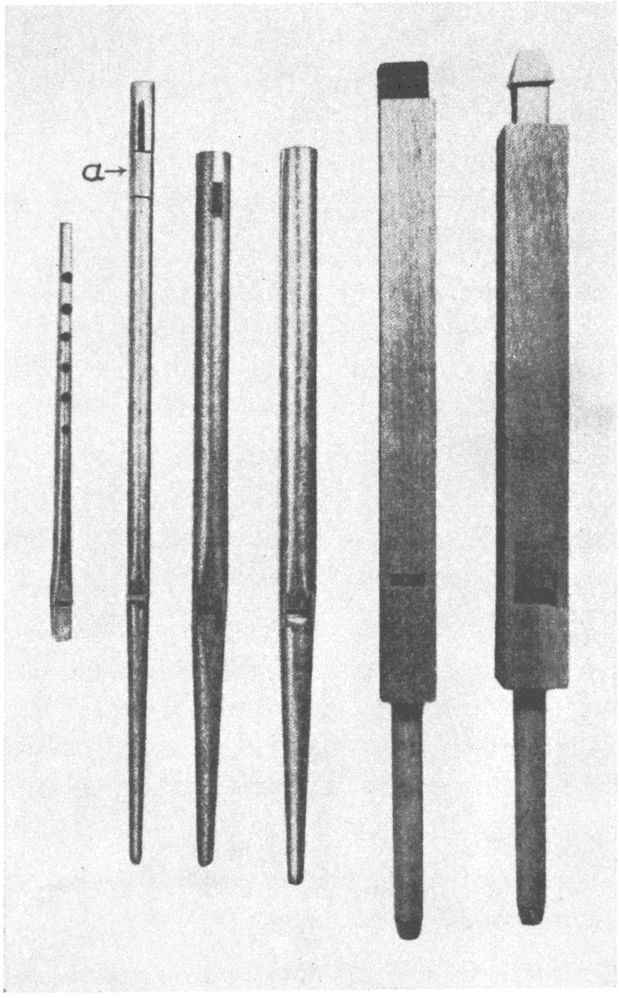
Pipes, Manuals, Couplers, Etc.

The sounds produced by the organ may be divided into two principal classes, viz. :

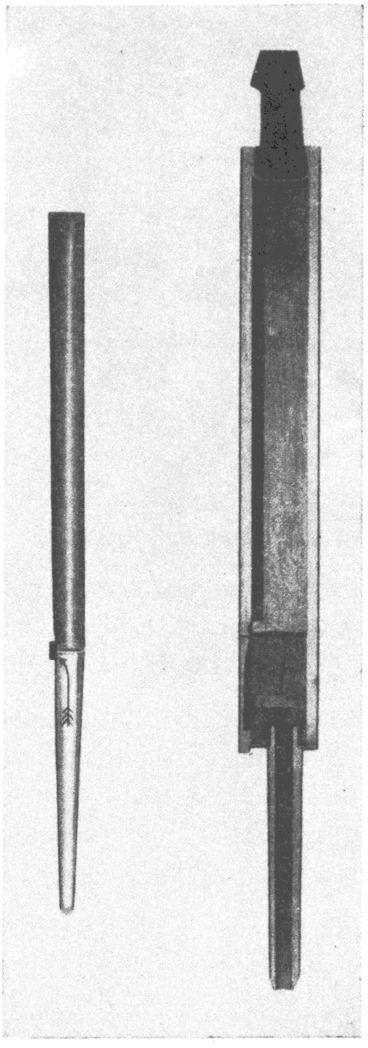
(*a*) Those obtained from " Flue-pipes " ;

(*b*) Those obtained from " Reeds."

The former must be considered to be the true foundation tone of the organ, but the reeds are of great importance in building up the tone, now that the quality of their voicing has been so much improved.



FRONT VIEW.



SIDE AND SECTIONAL VIEW.

The sound of a flue-pipe is produced in exactly the same way as in a whistle, which consists of :—

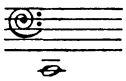
(1) An enclosed column of air ; and

(2) A means of setting this into vibration.

The illustration will show the similarity between various flue-pipes and an ordinary whistle.

In the sectional view, it will be seen that the wind strikes the upper lip. This gives rise to a concussion, which results in alternate compression and rarefaction of the air in the column of the pipe, producing a sound of definite pitch.

The length of the column of air determines the pitch of the pipe.

For instance, a pipe 8 feet long will give, approximately, the note  while a pipe half as long (proportionately formed) will sound an octave *higher*. A pipe twice the original length, *i.e.*, 16 feet, will sound an octave lower, and so on.

The rate of vibration is the same as in any other method of sound-production, that is, the ratio of two notes an octave apart is as 1 is to 2. The same rules apply in the case of a stretched string. If the fourth string of a violin be sounded, it will, if in tune, give the note  But if the finger be placed half-way on the string, the octave above will be the sound produced. It simply means that in the latter case the string is divided into two equal parts, and that the vibrating half gives a sound an octave above that of the open (or whole) string, there being in the higher note twice as many vibrations in the same period of time.

This principle may be applied to any *flue-pipe*, so far as the question of the rate of vibration is concerned. Let it then be remembered that the shorter the pipe the higher will be the sound, saving the inevitable exceptions, which will now be explained.

It is an interesting fact that if a pipe be closed at the top by means of a wooden or other stopper, its pitch will be lowered one octave. Speaking generally, the reason of this is, that the vibrating column of air is forced by the stopper to vibrate in the reverse direction in addition to its upward course, thus doubling the distance, while the vibrating cause remains the same. This results in the production of half the number of vibrations in the same period of time, a note an octave lower being produced.

But the process of thus stopping a pipe brings about also another important change, viz., an alteration of tone-quality. It is only necessary to sound a note on an Open Diapason and a Lieblich Gedact, alternately, to appreciate this fact.

The converse of the stopped pipe may be found in stops of the Harmonic class. The Harmonic Flute, for instance, is made up of pipes twice the length necessary for the required pitch, which, however, they are made to give by means of a small hole pierced about half-way up the air column. This is analogous to the effect produced upon a violin by lightly touching the string at its middle.

There are many varieties of flue-pipes, some of them taking peculiar shapes, while the material, though generally metal, may also be of wood.

A point which usually surprises the uninitiated is that each sounding stop provides a separate pipe for every key of the manual upon which the stop is placed. There are thus many hundreds of pipes in an organ of even moderate size, while in such an instrument as that at the Albert Hall there are no fewer than 9,000.

In considering the Reeds we meet with an altogether different means of producing sound.

There is a pipe enclosing a column of air, but this, while not altogether governing the pitch, is indispensable in the matter of quality and character of tone.

A reed-pipe consists of :—

(1) A vibrating tongue of metal fitted to a brass tube; and

(2) A tube which is really a resonator, giving power and quality to the sound produced by the reed.

The reed is made up of a piece of brass tube (*a*), stopped at one end and planed away on its side until the internal diameter is almost entirely visible. Over this opening is placed a thin piece of hard sheet brass (called "the tongue" (*b*)), to which a slight curve has been given. The whole is then fitted (by means of a wooden wedge (*c*)) into a thick metal "block" (*d*), in which also stands the main tube or resonator. (See Illustration B.)

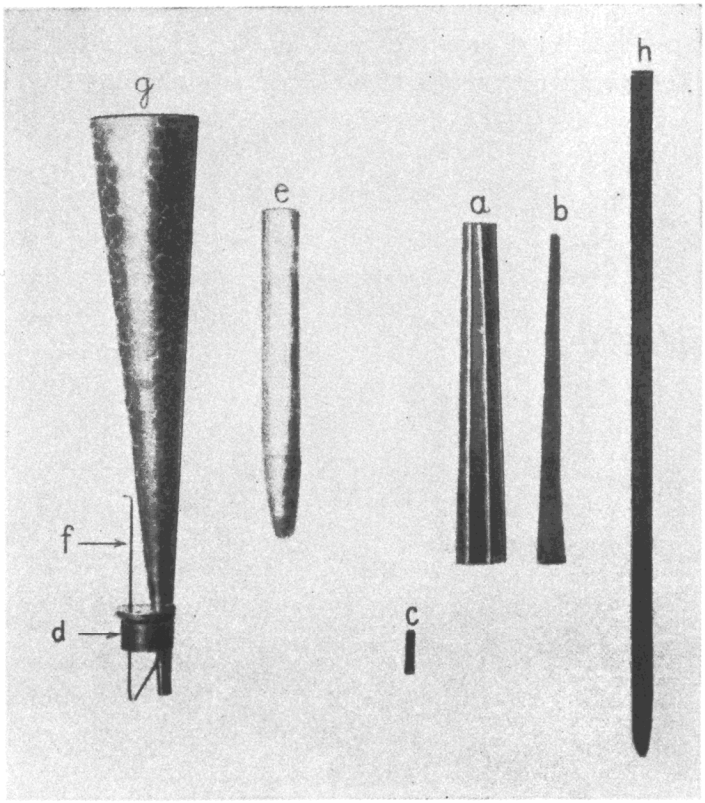


ILLUSTRATION B.

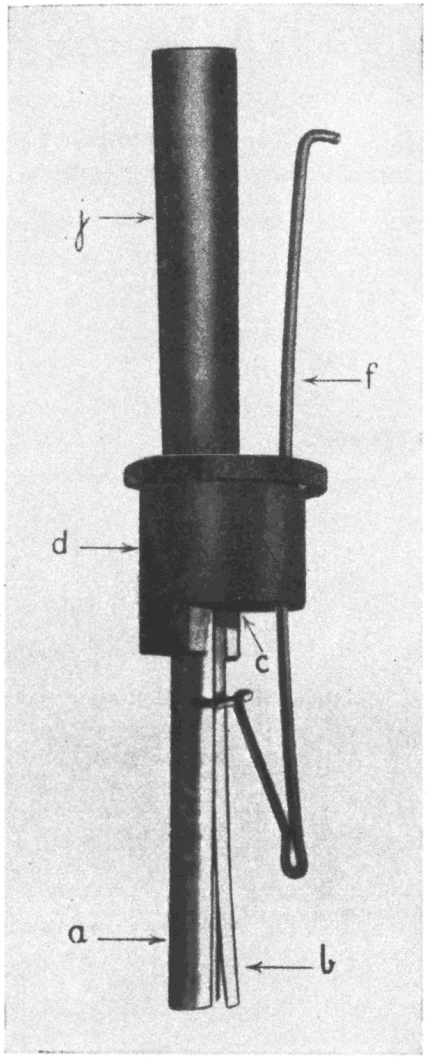


ILLUSTRATION C.

The figure under (*g*) shows the reed-pipe before being placed in the "boot" (*e*). The tuning-wire (*f*) will be noticed, and will be explained later. Figure (*h*) shows a "reed-knife," used for tuning.

Illustration C gives an enlarged and clearer view of the actual working parts in position. (*j*) is a socket into which the resonator is fitted.

It will thus be seen that the whole of the reed-pipe consists of a "block" upon which rests the large (wood or metal) tube or resonator, while the sound-producing "reed," with its "tongue," hangs from it. The reed and block are enclosed in a metal (or wooden) tube called the "boot"; and on air entering the hole provided at the base of the boot, its only means of egress is by way of the aperture between the tongue (which has a slight curve) and the reed. This results in the vibration of the "tongue," to which pitch is given partly by means of a tuning-wire and partly by the tube above.

As in the case of "flue-pipes," reeds possess some variety in the shape of their upper tubes or resonators, and the same rules as to length governing pitch may, speaking generally, be applied to reeds. The harmonic principle is very frequently applied to reeds, the pipe-lengths being doubled and even trebled.

There is also considerable variety in the shape of the reeds and their fittings.*

The tuning of flue- and reed-pipes is effected by entirely different methods. The former, when of metal, are tuned by means of cones, slides, or slides and slots. (The pipes should be touched by the hands as little as possible, as warmth tends to alter their pitch.)

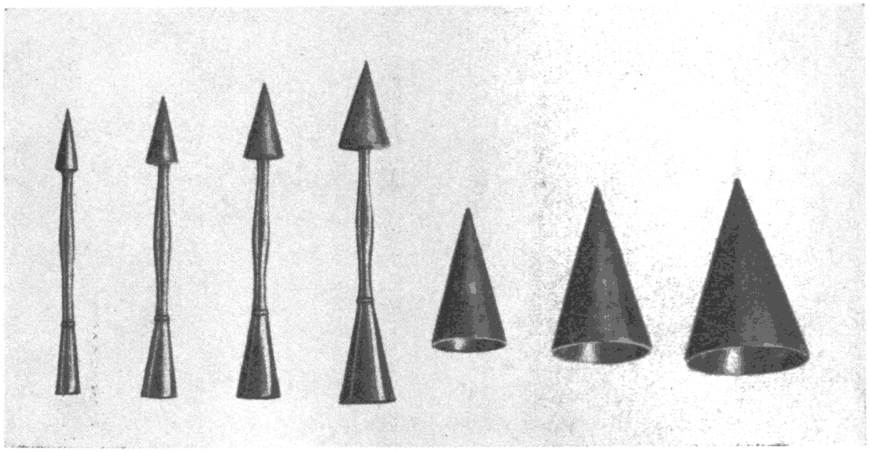


ILLUSTRATION D.

When tuning by cones, which is usual in the case of small pipes, the cone is used to open out the top of the pipe, with the effect of shortening it, and so raising its pitch. Or should the pipe be "sharp," the cone is reversed and placed over the pipe, when by smartly tapping it the pipe is slightly closed, thus flattening the pitch. (Illustration D.)

In cases where provision is made for tuning by slides, the process is as shown at (*a*) in the first illustration of pipes. By tapping the slide upwards the pipe is made longer, with a consequent flattening of its pitch, while the reverse operation sharpens it.

In some instances the pipe is slotted, but the piece of metal cut out is left attached by its lower end to the pipe, and used for tuning, as in the former examples.

Open wood pipes may be tuned in several ways, *e.g.*, by a flap of metal or wood.

Stopped pipes are tuned by raising or lowering their stoppers, thus lengthening or shortening the column of air.

* The student wishing for a more complete knowledge of organ-pipes is recommended to obtain a copy of "A Dictionary of Organ Stops," by J. I. Wedgwood (G. Schirmer, Ltd., 5s. net).

The tuning of reeds is accomplished by means of a wire which, passing through the block, presses on the tongue. This wire is movable in a vertical direction, and to flatten the pitch it is gradually tapped upwards, thus leaving a longer portion of the tongue free to vibrate. The reverse movement sharpens the pitch. The slot provided in the resonating tube of some reeds is used for increasing or diminishing the amount of tone, in conjunction with the tuning-wire. The "reed-knife" (*h*) on Plate B is used for tuning reeds, for the same reason mentioned regarding flue-pipes—viz., their sensitiveness to changes of temperature.

It would be well if every organist were able to tune at least the reeds of his organ; he will find that the flue-work will generally stand in tune for some time, and it would be unwise for him to attempt much in this department, as he might upset the "bearings" of the instrument. By this is meant the equal division of the octave into twelve semitones, a process requiring years of study and experience, and one best left to the practised hand of the professional tuner. These "bearings" are "laid" upon the stop named "Principal," and from this the reeds are tuned from the middle octave upwards; the lower notes are generally tuned in octaves without the Principal (except for checking possible error) when once the middle octave has been tuned with it. But an hour spent with the tuner will teach more than can be imparted by means of a written description, and the student is strongly advised to miss no opportunity of watching the tuner at work. It will add greatly to his interest in his study, and enable him to correct some irritating pipe when there is not time to secure professional help. A word of *warning* is, however, necessary. The organ contains much delicate mechanism, and great damage might result from a careless step or unskilled manipulation of pipes. The matter of organ mechanism, in view of its remarkable complexity, hardly comes within the scope of this book, and may best be studied in the many works now so easily obtainable. For those who wish to become familiar with its mysteries, the following may be consulted:—"The Organ," by Hopkins and Rimbault; "Organ Construction," by Dr. J. W. Hinton; and "A practical Treatise on Organ Construction," by F. E. Robertson, &c.

It will now be necessary to consider the distribution of the stops which may be found in an organ of average dimensions.

On many organs the pupil will probably find three sets of keys, or manuals, the stops of which will be found to possess varying characteristics of tone and pitch. The first organ of which we have any historical evidence consisted merely of a row of pipes placed over a box of wind. The wind was, as already stated above, admitted at will to any pipe or pipes by means of mechanical contrivances, which have at last resolved themselves into the beautiful and delicate keys we are familiar with. As time went on other rows of pipes were gradually added, until it became absolutely necessary to devise some means of selecting any particular row or rows at will. This is now done by means of the stop-knobs which will generally be seen on either side of the console. Some variation of this is to be found in organs controlled by electric or electro-pneumatic action, in which stop-keys are arranged in front of the player. But in any case the object of stop-knobs or stop-keys is merely that of selecting rows of pipes which shall sound at the will of the player on the manuals or pedals.

To return to the manuals, in a three-manual organ we may look upon the middle one as representing the organ in its simplest form, and the others as varieties of it.

The lowest row of keys may be considered as a small edition of the middle one, while the top manual is only an organ placed in a box provided with shutters, which are movable by means of a pedal.

These shutters may be compared to a Venetian blind, and, indeed, when horizontal they are named Venetian shutters. A recent development promises, however, from its many advantages, to supersede the earlier form. In this case the shutters are placed vertically, and will thus remain in any position, an advantage not before obtainable, though many ingenious devices have been tried with more or less success.

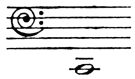
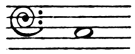
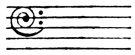
We have, then, three distinct organs, to which the following names have been given :—Top manual, the Swell Organ (obviously from the swelling effect produced by its movable shutters) ; middle manual, the Great Organ (from its capabilities of great or grand effect) ; lowest manual, the Choir Organ (one derivation coming from its use in early days as an accompaniment to the choir in their exclusive part of the services). A modern feature of this department is the use of a separate swell-box, for which much may be said, though the Choir Organ possibly loses some of its characteristic effect when enclosed.

SHUTTERS OPEN.

The various groups of stops will be found under different labels, such as Choir, Great, Swell, &c., and will act only upon those manuals under the name of which they are placed.

But the manuals of an organ would give only a part of the grand and broad sound which we associate with the instrument, and this brings us to a consideration of the row of keys which will be found beneath the feet of the performer, and are thus named the " Pedals." This portion of the organ is, or should be, complete as a means of providing a suitable bass to any combination of stops chosen for use on the manuals. Unfortunately, however, many organs are singularly poor in choice of Pedal stops of varying tone and power, the all-too-prevalent rule being two or three stops of much the same character. This probably arises from the now universal use of what are known as Pedal Couplers, which will be explained later.

The ideal Pedal Organ would probably contain at least as many stops as the Great Organ, when there should be no difficulty in obtaining a suitable bass for any manual.

The important difference between Manual and Pedal stops lies in their pitch. It will be remembered that a pipe 8 ft. in length will sound the note  This is the lowest note in the Open Diapason on any manual. But in the Pedal Open Diapason the lowest note in the series of pipes forming that stop is an octave lower. It will also be found that the lowest note on the manual stop named " Principal " is  but on the Pedal stop of that name it would be  There is an unfortunate exception in the case of the stop named "Bourdon" or " Bordun," which is composed of stopped pipes, and will be found on either or both Pedals and Manuals in 16-ft. pitch. A better name for it as a Manual stop would be " Double Stopped Diapason," thus reserving the former name for it as a Pedal stop.

SHUTTERS CLOSED.

But in stop nomenclature there is much which is open to improvement. The further consideration of the important subject of choice of stops will be found under the section " Registration."

We now come to the mechanical draw-stops which will generally be found in a separate group under the name of " Couplers," though they are sometimes grouped under the various stops upon which they act.

A coupler may be described as a mechanical means by which the stops drawn on one manual may be made to sound when the keys of another to which it is coupled are depressed. In some organs the actual keys on the coupled manual will fall, corresponding with those played on the manual to which it is coupled. This would be the case on an organ in which the primitive

arrangement known as "Tracker Action" has been adopted, which consists of wooden levers acting upon the pallets admitting wind to the pipes. It is clear that as organs grew in size, the weight of these levers and the increased wind-pressure would be found very tiring to the player. It may be added that but for its weight in organs of any size, tracker action would still be the most satisfactory. This defect was, however, obviated by an ingenious contrivance called the "Pneumatic Lever," invented in 1832 by Mr. C. S. Barker, which in its turn has given place to the still lighter pneumatic action of the present time. It may here be pointed out that in a modern organ to which this later action has been applied, the keys of the coupled manual do not fall, though the pipes speak as if the visible key-depressions had taken place.

It will be found, then, that by the use of couplers we may combine the Manuals with each other or with the Pedals. If we draw the coupler named "Great to Pedals," it means that upon depressing a pedal (say lowest C) the lowest note of the Great Organ will be coupled to it, and will speak on as many of the stops as are drawn on the Great Organ. Or, by drawing the coupler named "Swell to Great," when playing on the Great Organ, the stop or stops drawn on the Swell will be made to sound. There are also couplers by means of which we may, by playing a single note, obtain in addition the sound of the octave above or below. If the coupler named "Swell Octave" be drawn, and middle C be played on the Swell with the Open Diapason, not only will the note of the depressed key sound, but that of the key an octave above will also be heard. The octave below may be obtained by drawing the "Swell Sub-octave."

A modern accessory named "Unison Off' silences the actual key depressed, though the octave above or below may be sounded by either the Super- or Sub-octave coupler respectively or by both simultaneously.

Through the agency of pneumatic action these additions make no difference to the weight of the key when depressed by the finger.

The student is warned against the too-frequent use of these Octave- and Sub-octave couplers. They should seldom, if ever, be used in full combinations, as they will be found to upset the balance of tone. There are, no doubt, some delightful effects to be obtained by their means, but he is advised to avoid the use of these couplers until his taste and judgment mature.

We must now give some attention to the means provided for controlling the various combinations of stops, for it is clear that in organs of even moderate size it would be impossible to manipulate the stops entirely by the hands. The idea of having an assistant is objectionable, for the stops should be just as artistically "played upon" as the keys, and ought certainly to be considered as part of the organist's work. It is a case where "two heads are *not* better than one."

Stops may be controlled by means of "Composition pedals" or, as they are sometimes called, "Combination pedals." These consist of iron pedals which are placed just above the Pedal board, and each will be found to give a special combination of its own. In some cases those on the Great Organ will act also on the Pedal Organ, giving a suitable amount of Pedal for each group of Great Organ stops. The "Combination-pistons" (invented by Mr. Henry Willis) are also, fortunately, becoming very generally adopted. They will be found in rows on the key-slips of the manuals, and like the composition-pedals, each will give its own combination. In many cases there will be found a stop-knob marked "Great Pistons to Ped. combinations," which will, when drawn, combine the groups of Pedal-stops given by the pedals with those given by the pistons—a most convenient arrangement.

A useful contrivance of modern invention is found in what are known as "Selective pistons," by which we may vary the combination given by the pistons so named at will.

CLASSIFICATION OF STOPS.

A LIST OF STOPS, OF WHICH A SELECTION MAY BE FOUND IN ENGLISH ORGANS UNDER VARIOUS GROUPS, OF BOTH FLUE AND REED VARIETY.

Manual Flue Stops.

Pitch.	Name.	Character and quality of tone.	Where usually found.
16-ft.	Double Open Diapason	Full tone	Gt.
	Bourdon	Soft	Sw. or Gt.
	Quintaton	Soft, with prominent 12th	Sw. or Ch.
	Contra Gamba	Somewhat reedy	,, ,,
	Contra Geigen	Full, less reedy than above	Gt.
	Double Dulciana	Soft and sweet	Ch.
8-ft.	Open Diapason—large	Full and rich	Sw. & Gt.
	,, ,, —small	Softer than above	Sw. Gt. & Ch.
	Geigen	Full, less reedy than Gamba	,, ,, ,,
	Stopped Diapason	Adds body of tone	,, ,, ,,
	Lieblich Gedact	Soft and sweet	,, ,, ,,
	Hohl Flute	Full tone	Gt. & Ch.
	Rohr Flute	Soft and sweet	Sw. & Ch.
	Spitzflöte	Thin and delicate	Ch.
	Flûte d'Amour	Soft and clear	Ch. or Solo.
	Zauberflöte	Full and liquid	Sw. or Ch.
	Harmonic Flute	Full and bright	Gt. Ch. Solo.
	Dulciana	Quiet and delicate	Gt. & Ch.
	Salcional or Salicional	Fuller than above	Sw. Gt. Ch.
	Echo Gamba	Soft and delicate	Sw.
	Vox Angelica	Very soft and delicate	Sw. or Ch.
	Viol or Viola	Very keen *string* tone	Sw. & Ch.
	Gamba	Reedy and full	Gt. or Ch.
	Gemshorn	Thin and delicate	Sw. or Ch.
	Viol d'Orchestre	Reedy and powerful	Sw.
	Voix Celeste	Soft and delicate, producing a "wavy" effect in conjunction with a soft stop of similar tone	Sw. or Solo.
	Unda Maris	Consisting of two ranks of pipes slightly out of tune with each other	Ch. or Solo.

MANUAL FLUE STOPS—*continued.*

Pitch.	Name.	Character and Quality of Tone.	Where usually found.
5⅓-ft.	Quint (so called from its being a perfect 5th above 8-ft. pitch)	Full; useful only in combination	Gt.
4-ft.	Principal	Very bright	Sw. Gt. Ch.
	Spitzflöte	Bright	Gt. Ch.
	Gemshorn	Reedy and bright	Ch.
	Salicet	„ „	Ch.
	Harmonic Flute	Full and bright	Gt. Ch.
	Flûte d'Amour	Bright, sometimes reedy	Ch.
	Flute	Sweet and bright	Ch. Gt. Sw.
	Lieblich Flöte	Soft and rich	Sw. Ch.
2⅔-ft.	12th (sounding a 12th above 8-ft. pitch)	Bright; useful only in combination	Gt.
2-ft.	Fifteenth	Very bright	Sw. Gt.
	Harmonic Gemshorn	„ „	Ch.
	Piccolo	Bright and fluty	Ch.
	Flageolet	„ „ „	Sw.

COMPOUND STOPS.

It may be here pointed out that if carefully listened for when a note on, say, an Open Diapason is played, one or more notes above will also be heard. These are termed "harmonics." The most prominent are generally the octave and twelfth. It has been shown by Helmholtz that the distinctive *timbre* or quality of tone of various instruments is dependent upon certain of their harmonics or overtones, and that the absence of these would render the tone featureless and uninteresting.* Stops in which several pipes speak for each note played are called Mixtures or Compound stops. Their function is to assist the foundation stops by strengthening their harmonics.

There can be no question that Mixtures have in recent years become too prominent; but a reaction has set in, and we now find a softer stop of smaller scale, named "Dulciana Mixture," extensively used. The pipes are of a quieter tone than formerly, and give an effect best described as "silvery." Mixtures of this character are very useful in instruments of moderate size, though they are found in larger organs also. In early days the Mixtures contained many ranks or rows of pipes, even twenty or more, distributed over three or four stops. The Compound stops now usually found may be selected from the following list:—

Mixture 2, 3, or more ranks.
Sharp Mixture (containing pipes of higher pitch than the above).
Dulciana Mixture.

Others are:—Fourniture; Cymbal; Harmonics; Sesquialtera.

Mixtures are used chiefly on the Swell and Great Organs, while a small one of two or more ranks may sometimes be found on the Choir. The stop named Cymbal may be seen in a few instruments on the Solo Organ. The Pedal Organ of large instruments usually contains a Mixture.

* For a knowledge of acoustics the student is referred to "The Scientific Basis of Music," by Stone (Novello).

One of the greatest improvements in modern organs lies in the voicing of the Reed stops. In the list which follows, the student will probably find those of his organ represented. He will notice that their drawstops are placed above those governing the flue-pipes.

MANUAL REED STOPS.

Pitch.	Name.	Character.	Where usually found.
16-ft.	Double Trumpet	Full-toned	Sw. Gt.
	Contra Posaune	„ „	Sw. Gt.
	Contra Hautboy	Soft and liquid	Sw.
	Double Bassoon or Contra Fagotto	Rather fuller than the last-named	Sw. or Solo.
8-ft.	Orchestral Oboe	Imitative stops, the first four being generally used as Solo stops	Sw. Ch. Solo
	Clarinet		
	Corno di Bassetto		
	Cor Anglais		
	Vox Humana		
	Oboe	Soft and liquid, most useful in combination	Sw.
	Cornopean	Full and rich	Sw.
	Horn	„ „	Sw.
	Trumpet	Loud, full, and brilliant	Sw. Gt.
	Tromba	Full and brilliant	Gt.
	Posaune	Loud and broad	Sw. Gt.
	Tuba	Very loud and majestic	Solo, or occasionally Choir when no Solo Organ.
4-ft.	Clarion	Brilliant and keen	Sw. Gt.
	Octave Tromba	Clear and bright	Gt.

The stops so far considered will be found to speak, with one or two exceptions, throughout the compass of the manuals on which they occur, while those in the lists following must be considered as providing a suitable bass for the several manual stops.

There can be no better example of this than the Pedal Bourdon 16-ft., which will combine with many manual combinations. But in the matter of nomenclature it is important again to note that the Pedal stops, with one or two exceptions, are one octave lower than those on the manuals.

A good illustration is afforded by the Open Diapason, which, when on the manuals is of 8-ft. pitch, will be found of 16-ft. pitch on the Pedals. Again, the Posaune on the manuals is an 8-ft. stop, while on the Pedal Organ it is of 16-ft. pitch under the name of Trombone, or in old specifications, Grand Posaune.

PEDAL FLUE STOPS.

Pitch.	Name.	Character and Quality of Tone.
32-ft.	Contra-Bourdon (stopped pipes)	Soft, and requiring combination with 16-ft.
	Double Diapason (wood)	Fine massive tone to within few notes of lowest.
	Double Diapason (metal)	Softer than wood, with pure "stringy" tone.
16-ft.	Bourdon	Soft and very useful.
	Sub-bass	Fuller than above.
	Contra Gamba	"Stringy" and pungent.
	Violone	Fuller and more pointed tone.
	Open Diapason (wood)	Heavy and full.
	Open Diapason (metal)	Somewhat "stringy" tone.
10⅔-ft.	Quint	Useful in adding weight.
8-ft.	Bass Flute (stopped wood)	Soft, and very useful.
	Principal	Full, strengthening the bass of manuals.
	Violoncello	,, ,, ,, ,,
5⅓-ft.	Twelfth	Adds fulness.
4-ft.	Fifteenth	Adds brightness.

A Mixture is sometimes found on the Pedal Organ of large instruments, and may be of three or more ranks.

PEDAL REED STOPS.

Pitch.	Name.	Character and Quality of Tone.
32-ft.	Contra Posaune	Fine addition to full organ.
	Contra Bombarde	Fuller tone than above.
16-ft.	Contra Fagotto	Soft, useful in soft combinations.
	Trombone	Loud and full.
	Bombarde	Very powerful.
	Ophicleide	,, ,,
	Bassoon	Soft.
8-ft.	Trumpet or Clarion	Adds brilliancy.
4-ft.	Octave Clarion	Very bright.

It will now be advisable for the student to classify the foregoing *Manual Flue-stops* under four distinct heads, viz.: *Doubles* = 16-ft.; *Foundation* = 8-ft.; *Mutation* = 5⅓-ft., 4-ft., 2⅔-ft., 2-ft.; and *Compound* = Mixtures. He must remember that the Foundation stops are those of unison pitch with the pianoforte, while those named Mutation and Compound are designed to add brilliance to the Foundation tone. The Doubles add weight and dignity to the whole. These remarks apply to flue-stops generally, but to a degree the same characteristics may be found also to be shared by the reeds. For instance, the Swell Hautboy or Oboe (not the Orchestral Oboe) is a reed, yet it may be looked upon as a foundation stop, as also may the Swell Cornopean; and either may be used for Solo work. The relative pitch of the Pedal Organ has already been explained.

If the student has followed these general details he will be prepared to study the specification now given of an organ possessing three manuals and a separate Pedal Organ. It is proposed that this instrument shall contain all that is necessary for the performance of the exercises which follow, though with some rearrangement (which will furnish good practice) they may be quite easily adapted to an organ of only two Manuals and Pedals, a specification of which is also given.

SPECIFICATION OF THREE-MANUAL ORGAN.

Great Organ.

	Feet.		Feet.
Double Diapason	16	Harmonic Flute	4
Open Diapason (large)	8	Twelfth	2⅔
,, ,, (small)	8	Fifteenth	2
Wald Flute	8	Mixture	3 ranks
Principal	4	Trumpet or Tromba	8

Swell Organ.

	Feet.		Feet.
Lieblich Bourdon	16-ft. tone	Fifteenth	2
Open Diapason	8	Dulciana Mixture	3 ranks
Lieblich Gedact	8-ft. tone	Contra Fagotto	16
Echo Gamba	8	Horn	8
Voix Celeste (tenor C)	8	Oboe	8
Principal	4		

Choir Organ.

	Feet.		Feet.
Open Diapason	8	Suabe Flute	4
Viol da Gamba	8	Harmonic Piccolo	2
Dulciana	8	Clarinet	8
Lieblich Gedact	8		

Pedal Organ.

	Feet.		Feet.
Open Diapason	16	Bass Flute	8
Bourdon	16	Principal	8
Violone	16	Trombone	16

Couplers.

Choir to Pedals.
Great ,,
Swell ,,
Swell to Great.
Swell to Choir.
Swell Octave.
,, Sub-octave.
,, Unison off.

SPECIFICATION OF A TWO-MANUAL ORGAN.

Great Organ.

	Feet.		Feet.
Open Diapason	8	Principal	4
Wald Flöte	8	Flute (wood)	4
Dulciana	8	Fifteenth	2

Swell Organ.

	Feet.		Feet.
Lieblich Bourdon	16-ft. tone	Gemshorn	4
Violin Diapason....	 8	Mixture (12th and 15th)	
Lieblich Gedact....	8-ft. tone	Horn	8
Salcional....	 8	Oboe	8
Voix celeste	 8		

Pedal Organ.

Open Diapason	.... 16-ft.
Bourdon	16-ft. tone
Lieblich Bourdon (borrowed from Swell)	16-ft. tone
Flute	8-ft. tone

Couplers.

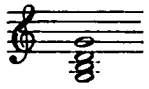
Great to Pedals.	Swell to Great.
Swell to Pedals.	Swell Octave.

In this organ, a Choir Organ may be obtained from the Great by using the Wald Flöte, Dulciana, and Flute 4-ft. This is generally allowed for in two-manual organs.

ON "REGISTRATION" OR CHOICE OF STOPS.

Some attention should now be given to the important subject of the choice of stops. The various qualities of tone may be considered as so many colours which lend themselves to almost infinite combination, though it is easily possible to produce a mixture of tone which at once condemns itself as unpleasant. It was pointed out that by means of couplers we are enabled to play upon the pipes of one manual through the keys of another. This is a perfectly simple device, and may be illustrated in a homely manner by imagining a piece of string to be fastened from, say, middle C on the Swell Organ down to the same note on the Choir. It is at once seen that if a Swell stop be drawn it may be made to sound by depressing the Choir Organ key. The Pedal couplers, Swell to Pedals, Great to Pedals, and Choir to Pedals, may be similarly explained.

Now let the Dulciana on the Choir Organ be drawn, and the following chord played upon it.



A quiet, contemplative tone is heard, and our first step would be to combine some other tone with it. Upon adding the Lieblich Gedact 8-ft., an effect of warmth and fulness is produced, and this may be further brightened by drawing the Lieblich Flute 4-ft. But by coupling the Swell by means of the coupler so-named (viz., Swell to Choir), we may obtain a more gradual building up of tone by means of the Swell stops, commencing with, say, the Echo Gamba, then the Lieblich Gedact, and then, after gradually opening the Swell to a small extent, the Choir stops may be added in the order named. Then we may add the Swell Open Diapason, and possibly the Oboe. So far, however, no Pedal Organ has been used, and it should be remembered that many beautiful effects may be obtained upon the manuals alone. But as an illustration, we will add a suitable bass by drawing the Pedal Bourdon and the Choir to Pedal coupler, and adding the lowest G on the Pedal board with the left foot. As our Manual tone increases, so will that on the Pedal require strengthening, and this is gained by drawing the Bass Flute, and afterwards the Violone, &c., as may be necessary. We may then add the Swell Principal, and

having already drawn the Wald Flute on the Great and the Swell to Great coupler, pass on to the Great, also drawing the Great to Pedal coupler, when by adding the Small Open Diapason we may (after closing the Swell) add the Horn, then the large Open Diapason, then the whole of the remaining Swell stops (the Voix Celeste excepted), then the Principal on Great with the Pedal Principal.

We have now reached the point when the most effective use may be made of the Swell Pedal; gradually open the Swell, and when nearing midway add the Great Double Diapason, 12th and 15th, still increase the power of the Swell by further pressure on the Swell Pedal, and when completely open (and in the case of the old-fashioned pedal, locked down), draw the remaining Great and Pedal stops.

We have now brought into use nearly all the stops, but it is obvious that the possibilities other than this gradual *crescendo* are almost unlimited. Though the three manuals have now been combined, the student is advised *to explore and build up the tone on each separately*, remembering also that single stops are often very beautiful, and far too infrequently used. For instance, the effect of the Swell Oboe alone, if the stop be properly and quietly voiced, is delightful. Or the Choir Lieblich 4-ft., played an octave lower, is remarkably pure and delicate.

Then such a combination as the Echo Gamba and Lieblich Bourdon on the Swell produces a charming effect when played an octave higher. The Swell Horn and Contra Fagotto combined sound very fine, especially when controlled by the Swell Pedal. The tone produced by coupling all the Reeds in the organ (if properly voiced) is very impressive.

But these are merely a few examples, and the student should endeavour to find out what is possible in each department. Much will of course depend on the music played, and it is a curious fact that many modern organs are, with all their wonderful mechanism and variety of tone, somewhat over-equipped for the real necessities of music written for the instrument. But in a Primer this point can only be touched upon. Sufficient has perhaps been said to enable the student to grasp the general details necessary to his early steps in the art.

When using any stop of a solo character, such as the Clarinet, it will be necessary to choose as an accompaniment some stop or combination of stops on another manual, when possibly the softer 8-ft. stops would be found suitable. Another charming solo effect is produced by drawing the Swell Oboe and Lieblich Gedact. The accompaniment might then be played on the Dulciana on the Choir.

The various groups of tone-colour, viz., Diapasons, Flutes, so-called "String-toned" stops and Reeds should each be studied, and their combining properties determined. Stops should be added or withdrawn at suitable points, better described as "contrapuntal entries."

As a general rule the Pedals are coupled to the manual used for the accompaniment, though it is often possible to use the Bourdon and Bass Flute uncoupled. The reason for either method is that a 16-ft. Pedal stop alone would leave too large a gap between the Pedals and the Manuals

Most organs are now provided with a Tremulant, which will be found on the Choir or Swell Organs or on both. Its effect is to produce a rhythmical unsteadiness of wind, which is intended to give expression to the stops upon which it acts. It may at once be said that the true artist will use this appliance with the greatest reserve, and for a very short time only.

A fourth row of keys will be found on many church and concert organs to which the name of "Solo Organ" has been given, from the fact that the stops controlled by it are intended for solo use, and are of an imitative character. The principles already laid down will apply as in the other manuals.

A few instruments contain a fifth manual to which the name of "Echo Organ" has been applied. The stops on such a manual will in general be lightly voiced, and as they are usually placed at some distance from the main instrument, many very beautiful effects may be obtained. A fine example occurs at Norwich Cathedral. St. Paul's Cathedral organ possesses a fifth manual called "Tuba Organ," as the stops upon which it acts are of the Tuba variety, and in this case grandeur rather than delicacy is secured. The fifth manual on the Westminster Abbey organ is named "Celestial Organ." It should be added that the Solo Organ manual is placed above the Swell, and that the fifth manual is placed above the Solo.

In some three-manual organs a Tuba will be found on the Choir Organ, but this will be used only as if on a fourth manual.

The use of the Couplers is very important, and those combining the Pedals with the various Manuals will require much attention.

The *Great to Pedals* coupler is probably more frequently called upon than any other, and care should be taken to time its effect at exactly the proper point.

The *Swell to Great* is no doubt the most abused of the couplers, and is generally pulled out and *kept* out. It should be remembered that the uncoupled Great is capable of fine and characteristic effect when heard alone, and such use of it should be encouraged. The same remarks will apply equally to the Choir, to which the Swell is too often coupled. Of the Octave- and Sub-octave couplers little more need be said, beyond warning the student against their too-frequent use. They should on no account be used with the full Swell, as the whole tonal balance is at once ruined. This rule might conceivably be relaxed in the case of small organs, where the tonal scheme is incomplete. It must be noted that in an organ unprovided with an extra octave of pipes to every stop on the manual on which the couplers act, the highest note available for the Octave coupler is an octave below the extreme note on the right hand, and for the Sub-octave, an octave above the lowest note on the left. Extra pipes for the Sub-octave are very rare, if they even exist.

The student should realise that the artistic rendering of the music must be his first aim, and that the various mechanical devices must be rigidly kept under artistic control, whether they be drawstops or the means of employing them.

The organ, while capable of very great expression, is in this respect a most dangerous instrument in unskilful hands. It is so easy, with pneumatic pistons and the many aids to registration, to overburden the music under performance with constant changes of tone. Unless absolutely called for, it were better to depend upon clear phrasing and purity of touch, and to let the music speak for itself. This is far too often lost sight of, and the Fugues of Bach, for example, are frequently used as illustrations of the organist's adroitness in changing his manuals. It is seldom necessary to "bring out" (as it is called) the subject on another manual.

THE USE OF THE SWELL PEDAL.

This device may be found on the Choir, Swell, Solo, and Echo Organs, and the student is advised to accustom himself at once to its use, as its manipulation is likely to disturb his actual performance. It is, after all, the variety of muscular movement which constitutes one of the chief

difficulties of organ-playing; and the mental distraction necessary for even the putting down of a composition pedal, or the pressing in of a piston, may, and often will, render an otherwise easy passage difficult of performance.

The Swell pedal and the pneumatic pistons are neglected by many players who, had they persevered at the outset, might have acquired facility in the use of these aids to expression, and thereby strengthened their artistic equipment. It is important to note that the first inch or two of motion of the Swell pedal produces the best effect of the Swell *crescendo*, and it will have been seen in the paragraph on building up the tone how great use was made of this.

Sir John Stainer, in his organ primer, truly says, "A good organist may be known, if by nothing else, by his use of the *Crescendo* of the Swell Organ." It (the swell pedal) has for long been used as a rest for the right foot (!), while the left foot has been endeavouring to play the lowest possible pedal ! !

The Pedal part in even such a simple thing as a Chant or Hymn-tune should, as a rule, be played as written, and not an octave lower, a fault only too common among those who neglect the right foot in pedalling.*

The release of the Swell pedal is of equal importance to its depression, though in the modern "balanced" form of pedal, used with vertical shutters, this is hardly so serious, as the return movement is obtained by a positive action. In the early form the return was secured by a weight or spring, and such a system would certainly be a trap to the unthinking. The difficulty of the old lever pedal is that, unless locked down (shutters open) it will return to its normal position (shutters closed) so soon as the pressure of the foot is withdrawn. Many ways have been devised to overcome this, and perhaps the most successful is what is known as "the balanced pedal," which, as before explained, acts upon vertical shutters. The advantage with this form is that the pedal remains exactly where it is left by the foot.

In using the pedal, the student should be careful to avoid anything like a spasmodic effect, and to let his use of it be strictly suggested by the music.

It has already been shown that the Swell pedal is of great value in building up the tone of the organ. When the Swell Organ is coupled to the Great, the hands being on the latter, stops may be added on the Swell (while closed) and, by a judicious use of the Swell pedal, brought forward to mingle with the tone of the Great. The pedal is often useful in conjunction with the hands in actual phrasing, making it possible to "round off" a phrase in the happiest possible way.

The student must not be discouraged if his early progress be slow. The organ makes great demands upon his musical perception, while the mechanical side of the art is often liable to interrupt his actual playing of the notes. Regular and painstaking practice cannot fail to have its effect, and the satisfaction of increased fluency and readiness will far outweigh the self-denial which the years of laborious study will demand for the acquirement of the art. It is a mistake to practise the organ for long at a time, the mental and muscular exertion being considerable. An hour well spent will usually be found enough, while two hours a day should produce a result sufficiently encouraging to the most enthusiastic. Every opportunity should be taken of hearing the best players, particularly those whose programmes include the best music, which need

* Attention may here be given to exercises 177 to 180 on the use of the Swell pedal.

not necessarily be pure organ music, though this should predominate. We must have the "Transcription," but it is a mistake to suppose that all orchestral music is transferable to the organ.

Sincerity and high ideal are infinitely preferable to the desire for popularity. The organ recital is undoubtedly a factor in the musical education of the day, and the student should, from the commencement of his studies, determine that his eventual contribution shall be at least worthy of the best traditions, either of the art of church service accompaniment or of the recital.

It may be necessary to point out that the various sections of this book are not intended to be studied in their printed order, but under the guidance of a teacher several may be worked at simultaneously.

In commencing the study of any exercise or piece the pupil is earnestly advised to remember that *slow* practice is of the greatest importance, and that his progress will depend upon the amount of self-denial in this respect he is prepared to impose upon himself. It is also very necessary to play always in *strict* time, at whatever pace, and never to permit the slightest looseness or irregularity. There will no doubt be passages which will at first refuse to "go," the best plan then being to give them special separate practice, starting and finishing at convenient points.

In conclusion it may be urged once more that it is so easy to waste time at the organ. But the pupil who is determined to make real and lasting progress will resist the blandishments held out by a highly equipped modern organ, and settle down at once to thorough and systematic work, in the knowledge that his reward will be certain and speedy.

SECTION II.

PEDAL EXERCISES.

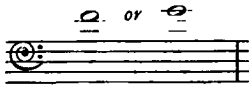
It has been assumed that the student possesses sufficient manual dexterity to permit him to give early attention to the Pedals.

The pedal-board is now so commonly of the form known as "radiating and concave," or "Willis pattern" (from the name of its inventor, though Dr. S. S. Wesley was equally responsible for it in collaboration with Mr. Henry Willis in 1851), that it bids fair to become universal. Indeed, most of those who were opposed to it have capitulated after a brief experience. It may be interesting to note here that the objection actually made is that if the pedals radiate so should the manuals! But the ankle-joints are quite different in action from those of the wrists, and while the legs are restricted in motion by the position of the organ-stool the wrists are accommodated by the arms. It is thus clear that the radiating pedal-board must be of great assistance by the variety of angle given to the pedal keys.

The movement necessary for the heels in a left-to-right direction and *vice-versâ* is much less than in the straight pedal-board. Suppose, for example, low E flat followed by D are to be played by the left toe and heel. It will be obvious that on a straight board the heel will have to be turned further to the left for the D than will be the case on the radiating board. But it is only necessary to give the latter system a fair trial to be convinced of its superiority.

Though the beginner may find it occasionally necessary to look at his feet, he is advised to accustom himself as much as possible to feel his way. This is a perfectly simple matter, and may be mastered by placing the toes in the spaces between the groups of short keys. It will be found when the player is seated that the gap between the middle E flat and F sharp is within easy reach of either foot, and from this other adjacent notes may readily be measured by feeling for them. It is at first a good plan to hold a fairly large music-book in the hands over the knees, so that any tendency to look at the feet is frustrated.

The pupil should be warned that any change of position on the organ-stool would at once disturb his estimate of the various measurements. The stool should be so placed that the highest and lowest notes can be easily reached, and without the heels being under the stool.

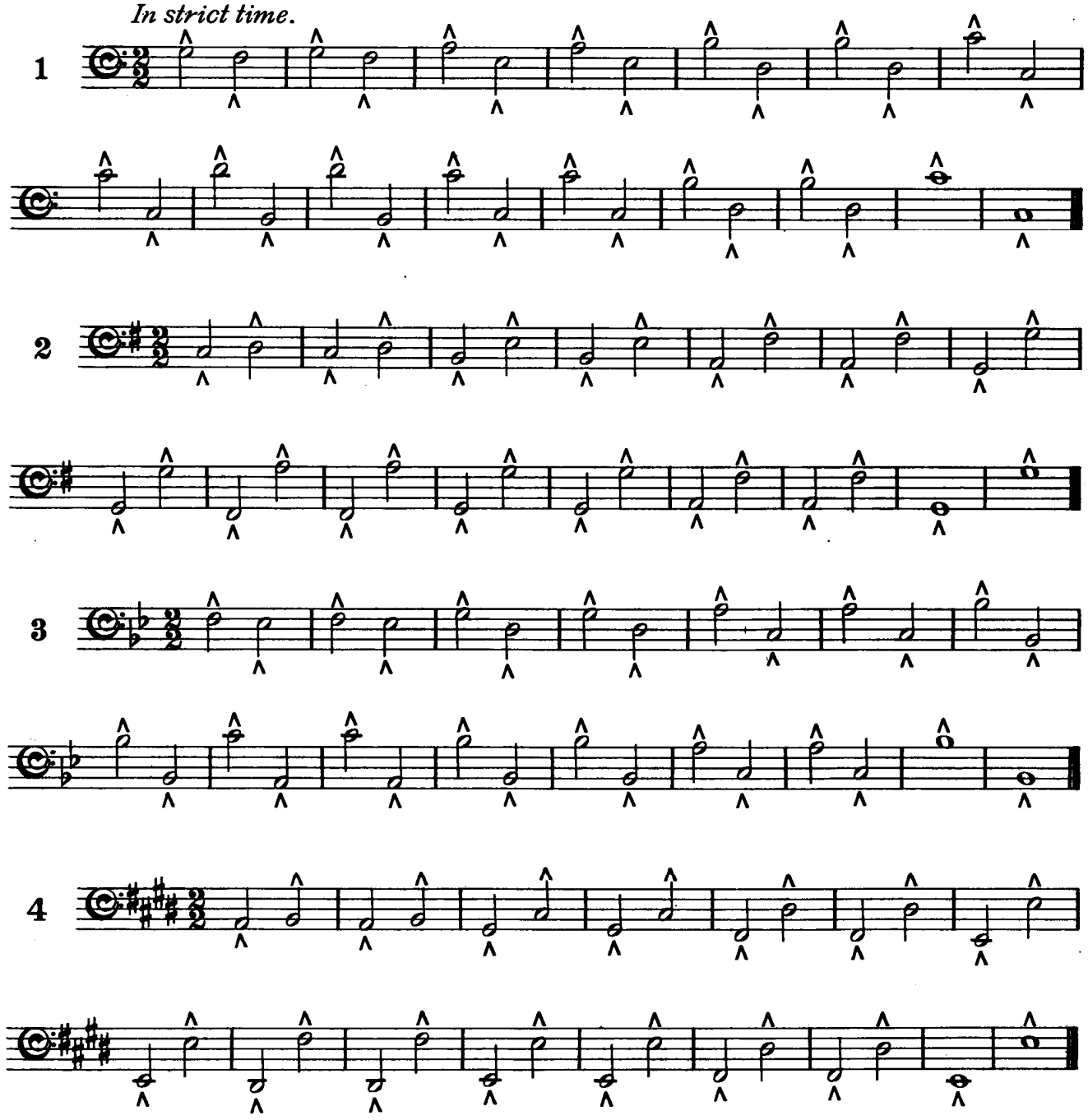
After drawing the Great Open Diapason (Small), and the Pedal Bourdon, with the Great to Pedals coupler, let the student accustom himself to the distances between the keys, first by looking at the pedals, and then by playing such an exercise as the following. (He will observe that in organ music the lowest key on the Pedals is denoted by the note  and the highest by  and that the pedal-keys are arranged exactly as the keys on the manuals, though the compass is necessarily smaller.)

To be played with loose ankles, though a firm and decided action is very important. All up-and-down motion of the knees should be avoided, and any tendency to hold on to the stool corrected, a good plan being to clasp the hands lightly.

The sign ∧ when above the notes signifies Right toe, and when below the notes, Left toe.

Draw Small Open Diapason Gt.,Ped. Bourdon and Gt. to Ped. Coupler.

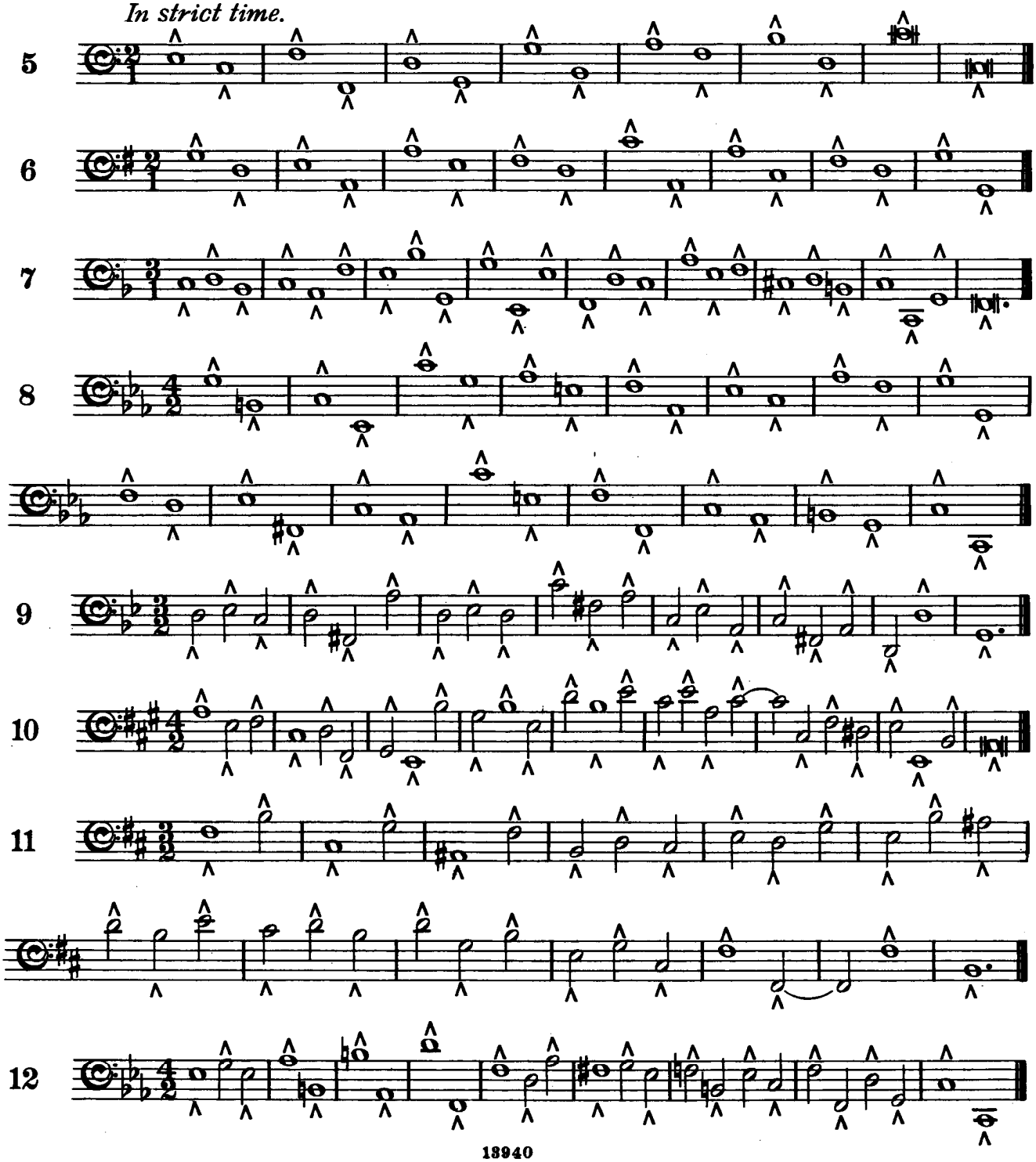
In strict time.



A series of exercises is now given which will accustom the student to the pedal distances. In the first four he will have time to find each note by feeling with the toes the edges of the short keys, or the gaps between the groups which are made up of short keys. In the later exercises he must endeavour generally to judge the position by sense of distance.
The pace may be increased as confidence and fluency are gained.

Draw Gt. Open Diap.,Ped. 16 & 8 ft. and Great to Ped.

In strict time.



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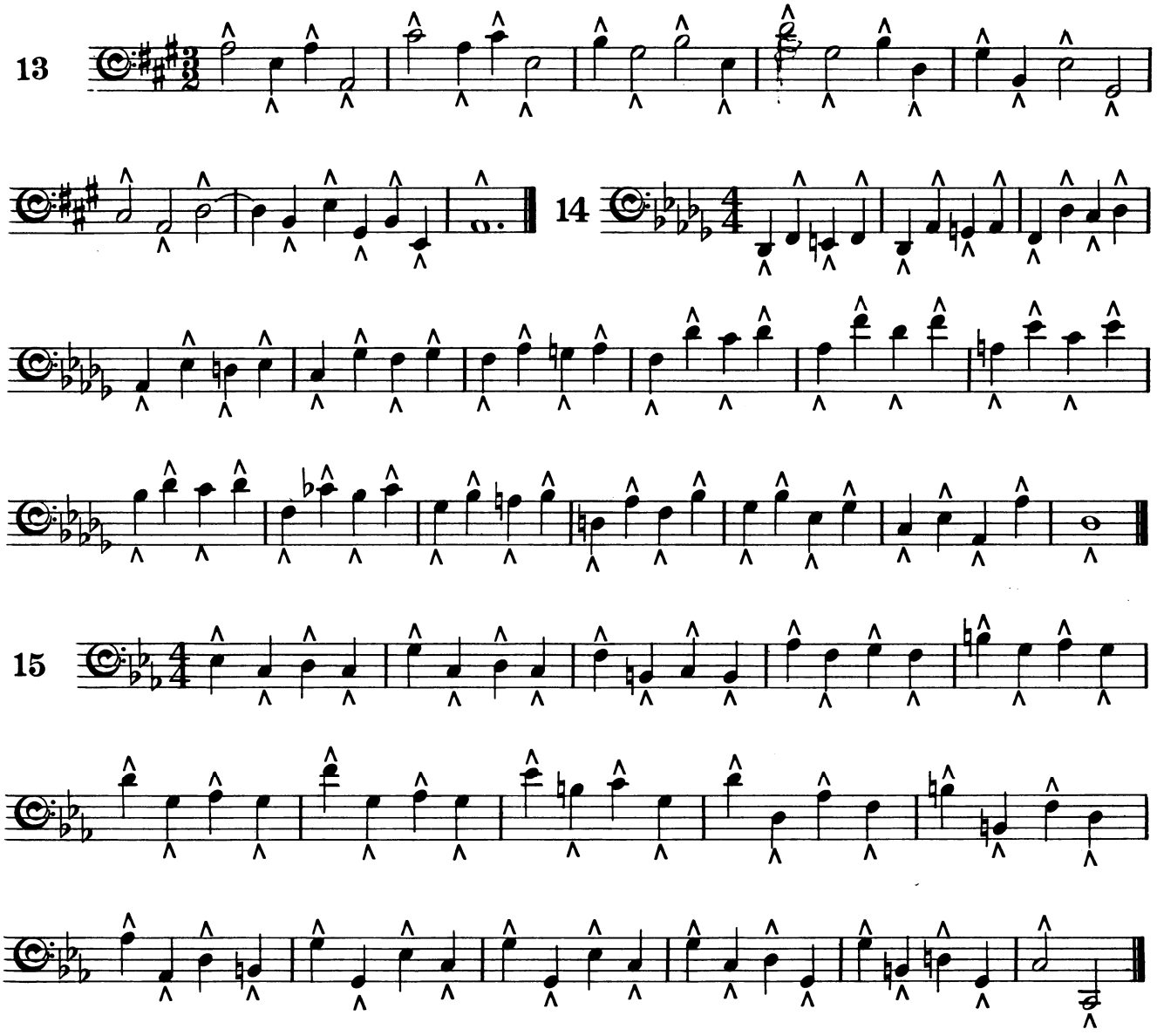

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Exercises 16 to 22 combine the practice of intervals with scale passages.

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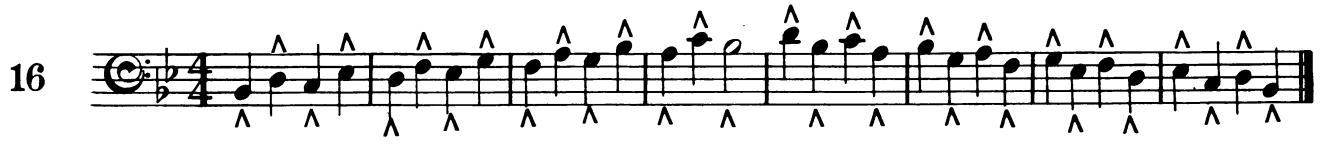

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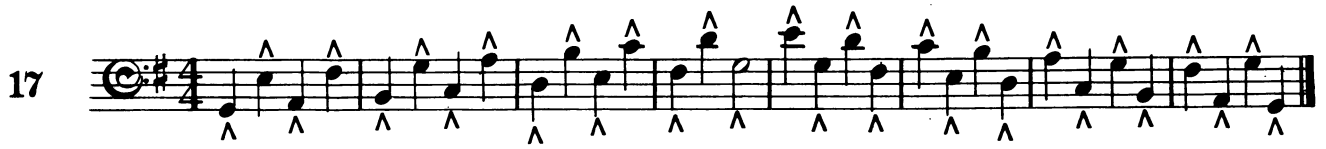

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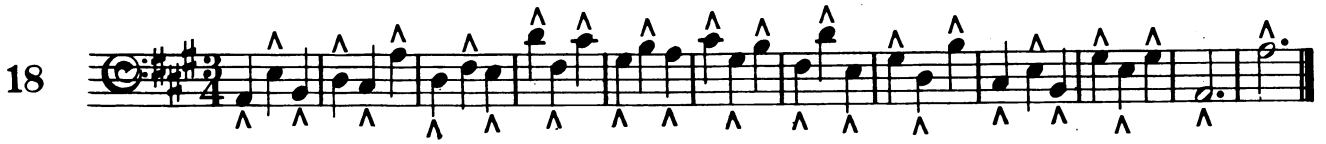

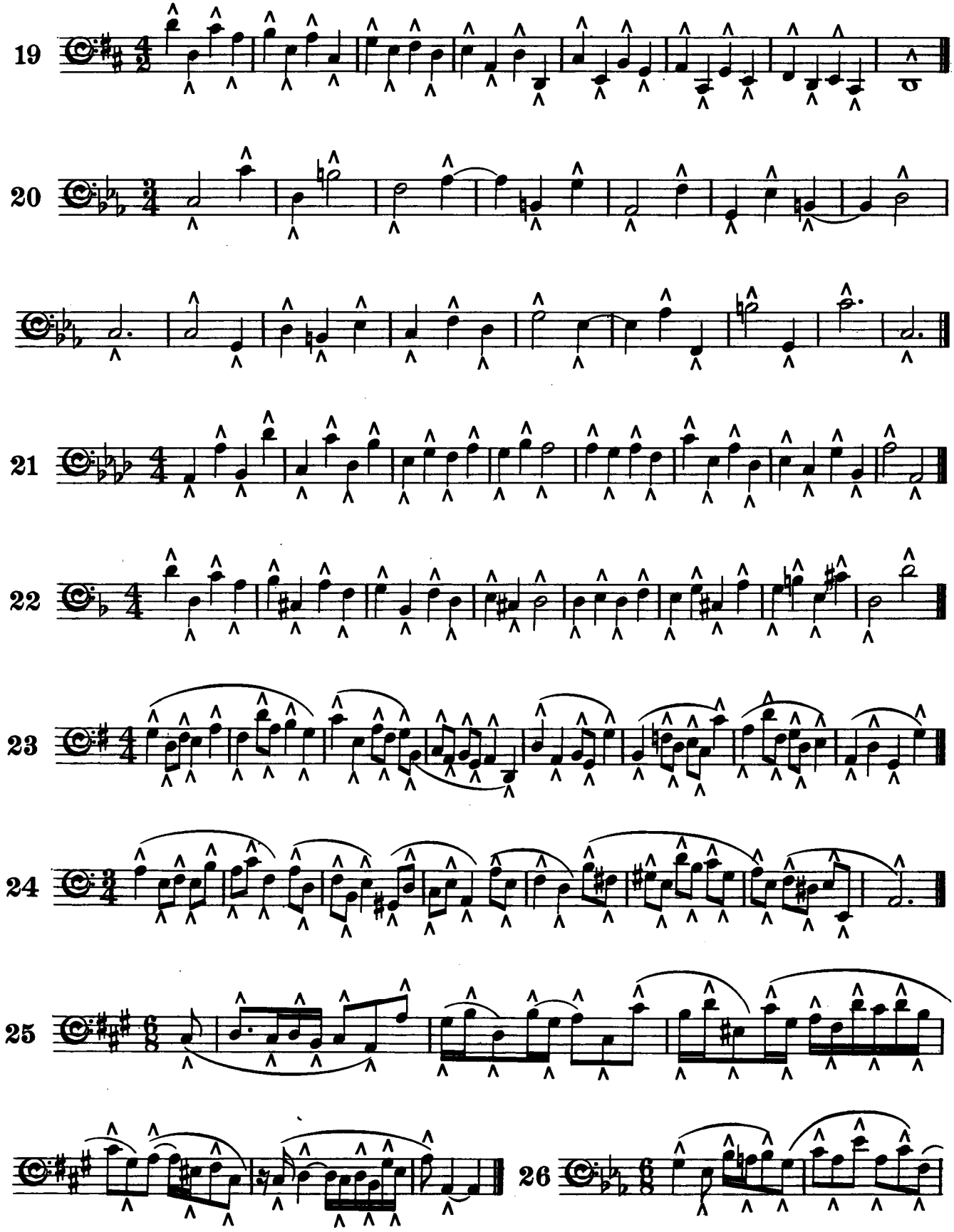
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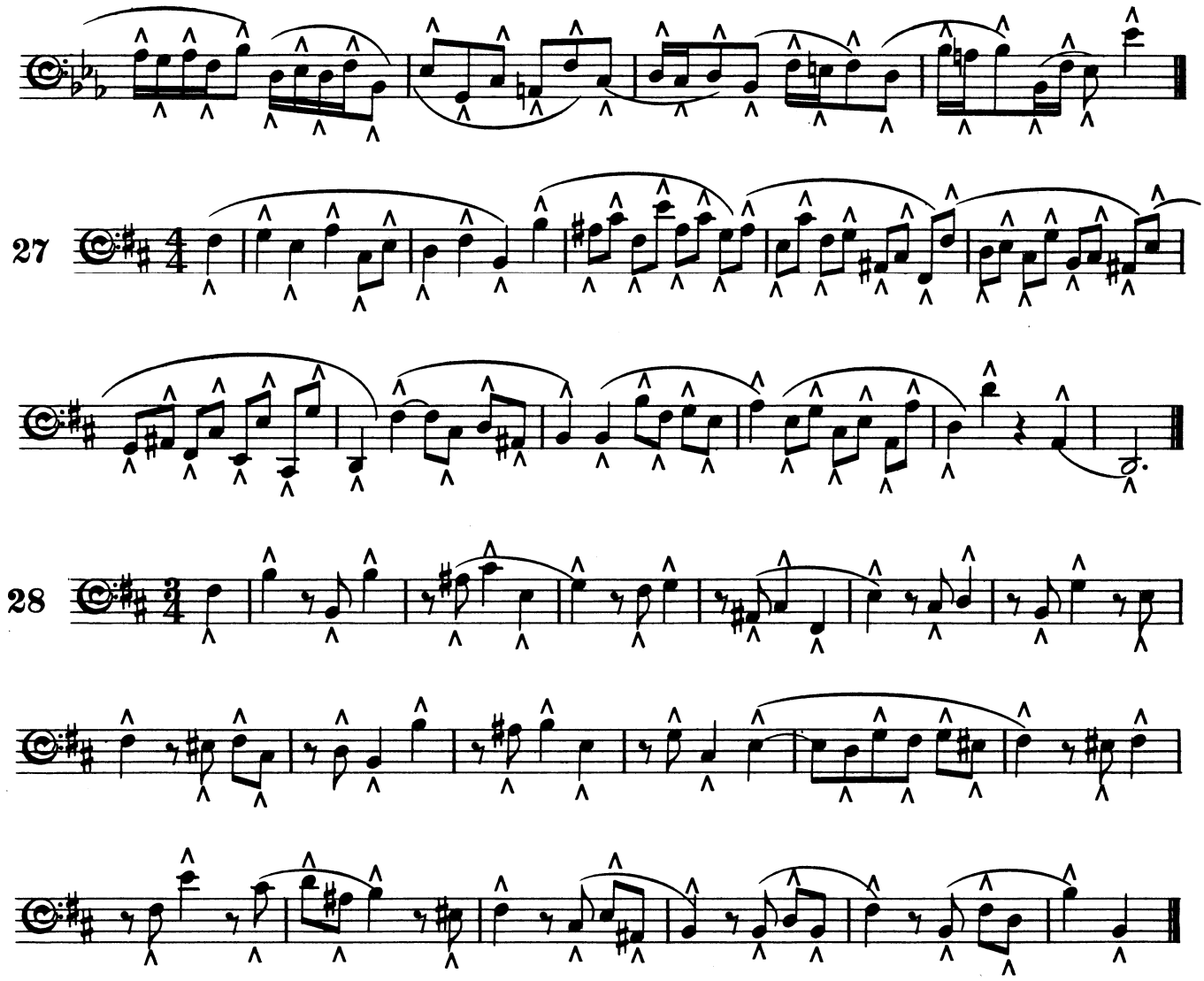
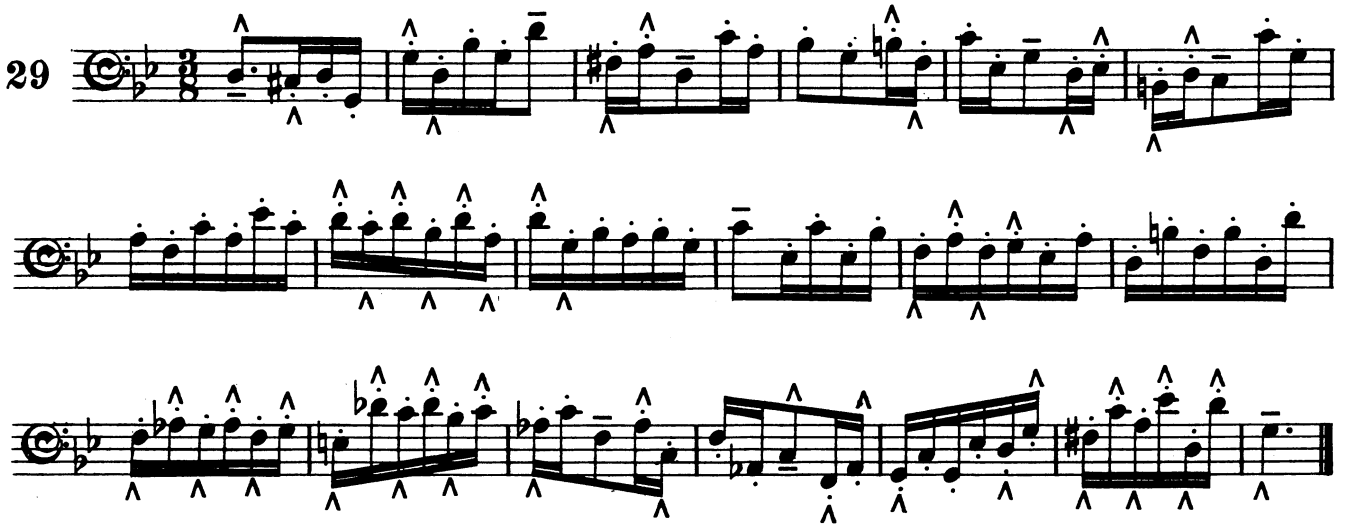


On alternate "tenuto" and "staccato."



Exercises in which the feet pass each other. The illustration will explain one necessary method, which is that in the case of a small interval, the heel of the forward foot does not cross the toe of the other. In passages involving the use of long keys only, the left foot is placed slightly *behind* the right, so that it may pass easily when necessary. The interposition of a short key of course modifies this rule;

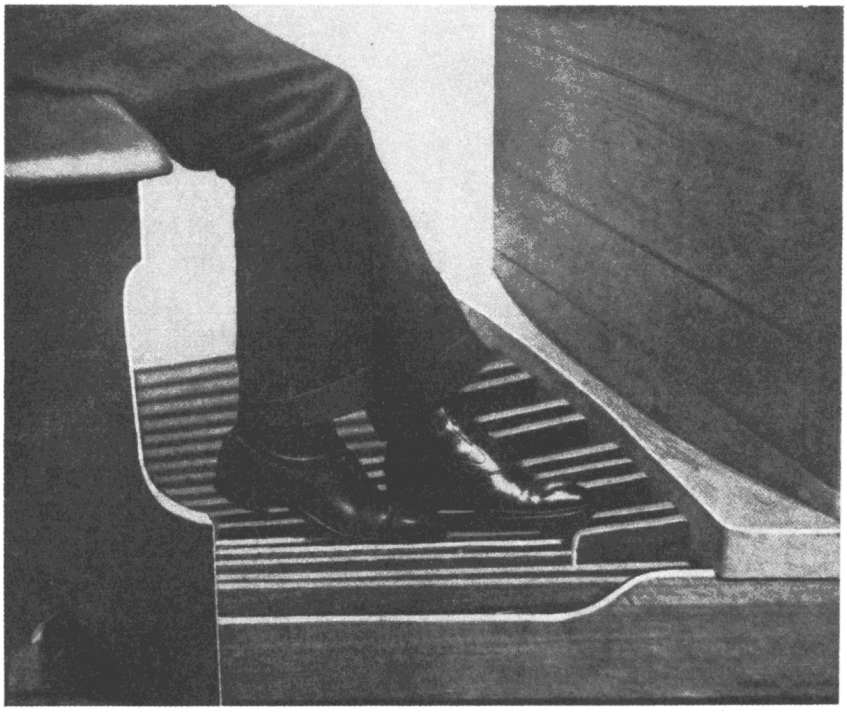


ILLUSTRATION G.

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31 *sempre legato*

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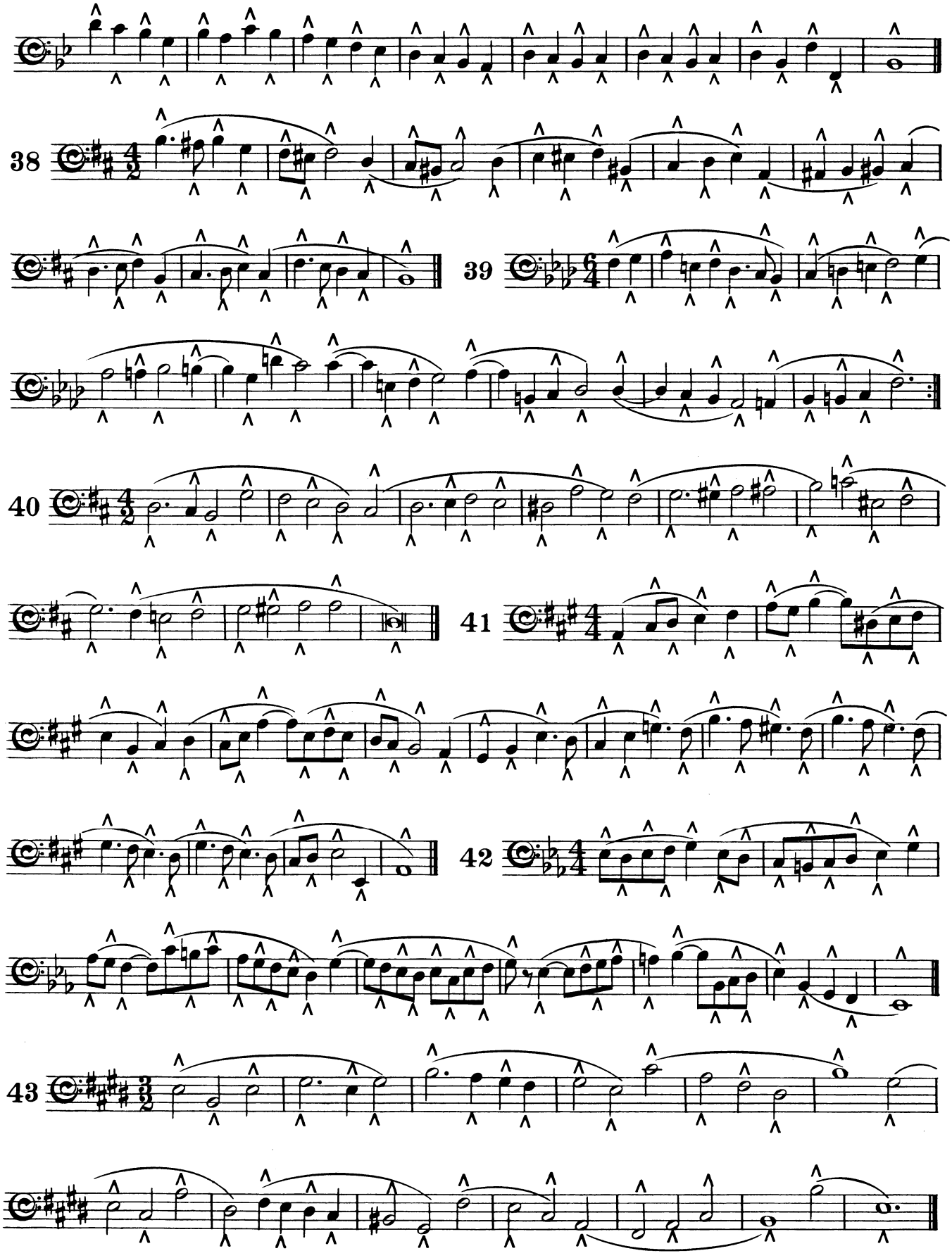
37 *legato*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SECTION III.

MANUAL TOUCH, PHRASING AND EXPRESSION.

The introduction of the Pneumatic, Electric, and Electro-pneumatic actions, has brought about a radical change in organ "touch."

In former days the muscular effort of the fingers was carried by a system of wooden levers (called "trackers") to the pallets, the function of the latter being to admit wind to the pipes at the will of the performer. It was of course possible to open and close a pallet to some extent gradually, and for this reason some variation of *attack* and *release* in actual touch was possible.

It must be allowed that tracker action is the ideal mechanism for an organ, though the development of the instrument in size and wind-pressure, with consequent increase of resistance, soon demanded greater leverage.

Mr. C. S. Barker's contrivance consisted of a small oblong bellows, the top of which rose when wind was admitted by the finger upon the key. The action beyond was fastened to the top of the bellows, and was thus actuated. The actual finger work consisted merely in admitting wind to the bellows, which in turn overcame the resistance offered by the pallet. It should be mentioned that each key upon the manual had its own special pneumatic lever, and that these were arranged in tiers. The mechanism was also applied to the Pedals.

The principle was carried to a high state of efficiency by Mr. Henry Willis and others, but became generally superseded by what is known as Tubular Pneumatic Action. With this, any degree of lightness is possible, while it occupies much less space. The former characteristic has in some cases been carried to excess, the mere touch of a coat cuff being often sufficient to make a note sound!

The principal features of Electric Action are:—

(1.) The possibility of separating the console (or sets of keys, pedals, stops, &c.) from the pipes, by practically any distance;

(2.) Any degree of lightness;

(3.) Greater reliability than in its earlier days, though occasional failure is possible.

Electro-pneumatic action is, as its name implies, a combination of the two systems, and seems to be more reliable than purely electric action. The electric current is used to bridge the distance between the keys and the organ (this is independent of the time necessary for the transmission of sound through air, which is 1,090 feet per second at 32° Fahrenheit), while the pneumatic principle is applied to the pallets under the pipes. [Not only have the principles of pneumatic and electro-pneumatic action been applied to keys and pedals, but the draw-stop action is in many cases so actuated. The Swell Pedal, too, is occasionally worked on the same method, when the question of distance has to be considered.]

But in any of these three systems it must be conceded that the action of the finger in depressing or releasing a key (at whatever speed, slowly or quickly) can have but the simple result of *quickly* admitting wind to the pipes, and as quickly shutting it off. This undoubted fact has a very important result, for it reduces the possible "touches" to two, viz., Legato, and Staccato (Detached). There may be some degrees of staccato, but there can be but one legato. The student should grasp the fact that the release of the key is of the greatest

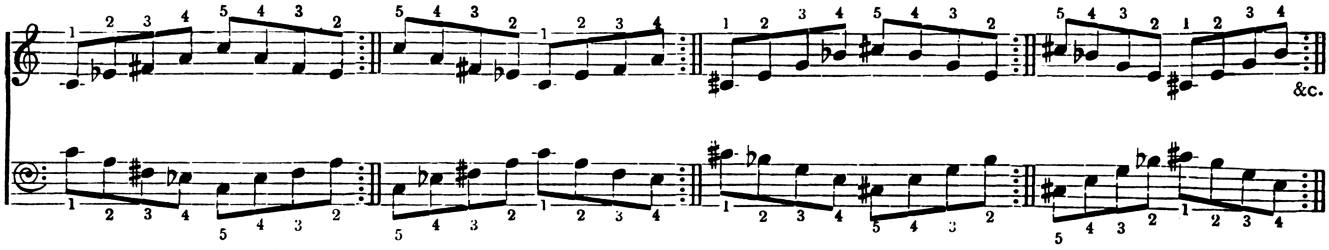
importance in securing a clear legato. The art lies in just preventing two successive pipes speaking simultaneously, and yet to allow no gap to occur between the two sounds. A real legato might be described as "*a continuous sound formed of several different notes.*" In old organs of large size employing tracker action, this legato touch was produced by the pressure of the hand, backed by the weight of the arm, and was exceedingly fatiguing, while anything like staccato was rarely attempted, for much the same reason.

With pneumatic action, however, a true legato may be secured upon a large or small organ with no greater effort (often with less) than the pianoforte demands. Whatever may be offered in objection, it may confidently be stated that the two main characteristics of pianoforte touch, viz., firmness of attack and release, are of such value to the organist, that technical preparation for the organ should first be undertaken at the pianoforte. As finger exercises are necessary for their attainment the pupil is advised to study them in the Methods of Plaidy, Herz, Wieck, &c., besides making himself a fluent performer of scales and arpeggios. An excellent daily exercise may be found in the broken chords of the diminished seventh and its inversions.

ILLUSTRATION H.

It will be seen at once that their value lies in the variety of finger position offered by the alternation of black and white keys.

The following are examples:—



The inversions of each should be practised, and in all cases with the hands together and separately. Care should be taken that the keys are struck and released with precision.

The position of the hands is illustrated above.

An objection frequently urged against the organ is that in effect it is cold, and lacking in expression. If this be so it must be more the fault of the player than the instrument, for notwithstanding its mechanical attributes the organ is equipped with extraordinary variety of tone, while much may be done in the matter of phrasing, which may be described as "the division of a piece of music into logical sentences." When compared with stringed or wind instruments, or even with the pianoforte, its possibilities are no doubt limited. If the scale of the pipes (by which is meant their diameter relative to their length) could be varied by the player at will, and the wind supply to any pipe modified as desired, we could no doubt do much more than is now possible. But under the hands of an artistic player, by judicious choice and management of stops, and with good phrasing, the organ may and should be regarded as an instrument of great expressive value. Schumann said of it, "there is no instrument which so readily shows up bad musicianship,"—even though, as was suggested in the Introduction, it may actually encourage it—and in recommending the young student to "miss no opportunity of playing upon the organ" he very strongly supports the contention urged above.

Phrasing may be said to appeal to the intellect, by its demand for clearness of form as expressed by definite relative sections. To be of value, a musical phrase must be capable of subdivision into one or more sentences, and on most instruments, and with the human voice, it is easy to enunciate these sentences by means of *accent.* Unfortunately, accent is just the thing most difficult to produce on the organ. There are, practically, three methods, viz. :—

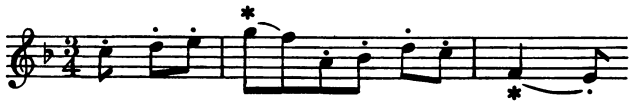
(1.) By the sudden addition, followed by the immediate subtraction, of stops;

(2.) By the Swell pedal;

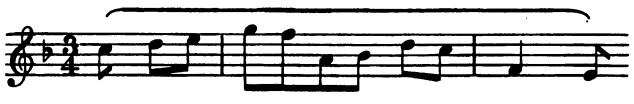
(3.) By the admixture of the *legato* and *staccato* touch.

Of these, the last-named is of the greatest importance, and the student should make a careful study of the subject.

It was said in the section on "Touch" that on the organ two touches only are possible—*legato* and *staccato.* By their combination, the ear is deceived, and readily admits the superior importance of a note held its full time when compared with others in the context of shorter duration, as in the following example:—



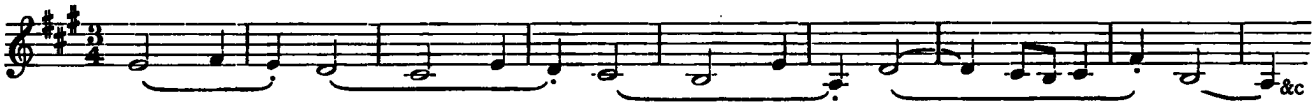
In this passage the notes G and F are made to stand out, and seem louder by their relation to the short ones. If the passage were played:



it would not only be meaningless, but might rhythmically be indistinguishable from compound, duple, or triple time.

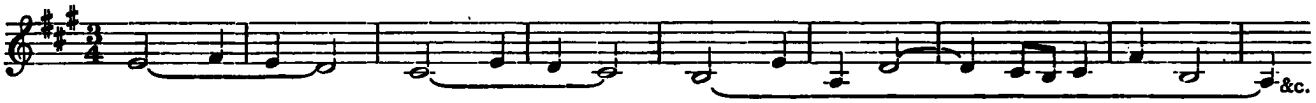
But phrasing cannot be taught by any book. The student's taste must be formed by contact with music and musicians, and by a study of the principles of the former as exemplified in the vocal and string writing of the best masters.

It is quite possible to over-phrase, and many are tempted to do this in their treatment of Bach. Such a subject as that in the Fugue in A major is often played as follows :—

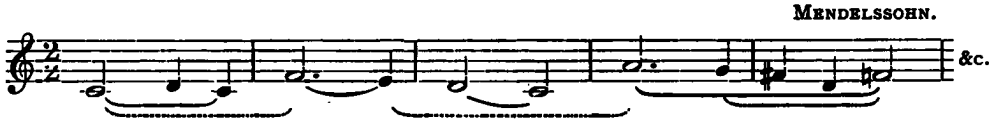


The sentences as represented by the phrasing can hardly be called logical!

The phrasing as indicated by the music is as follows :—



The student should spare no pains to look below the surface if he would reproduce in actual sound what he sees on paper. He should even be warned not to trust always to printed phrasing, as the next example will show :—



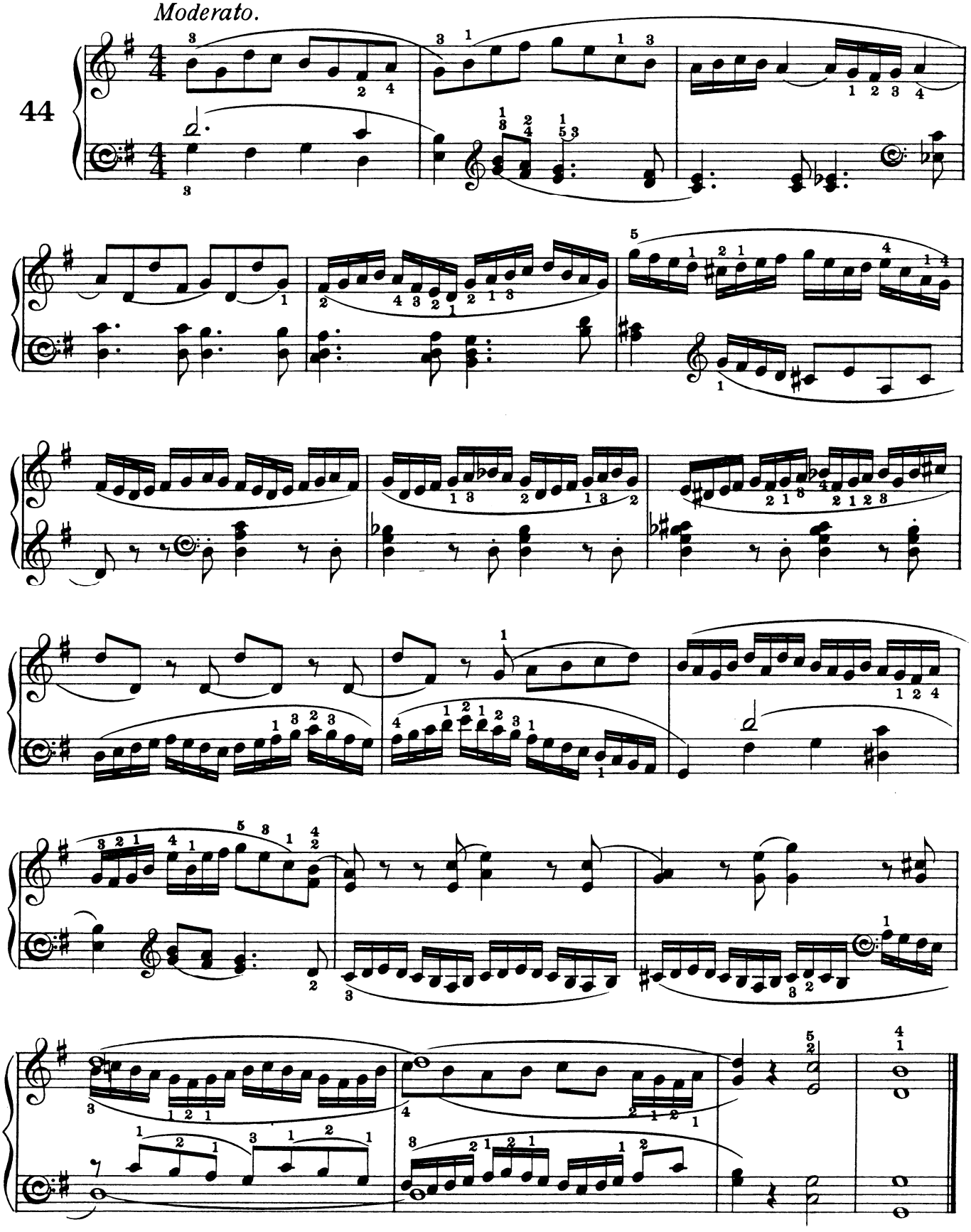
The correct phrasing is given in dotted lines, and is admittedly the logical treatment of the passage. It will be seen that all the notes under one phrase-mark must be played *Legato*, and the very slightest break made between one group and the next.

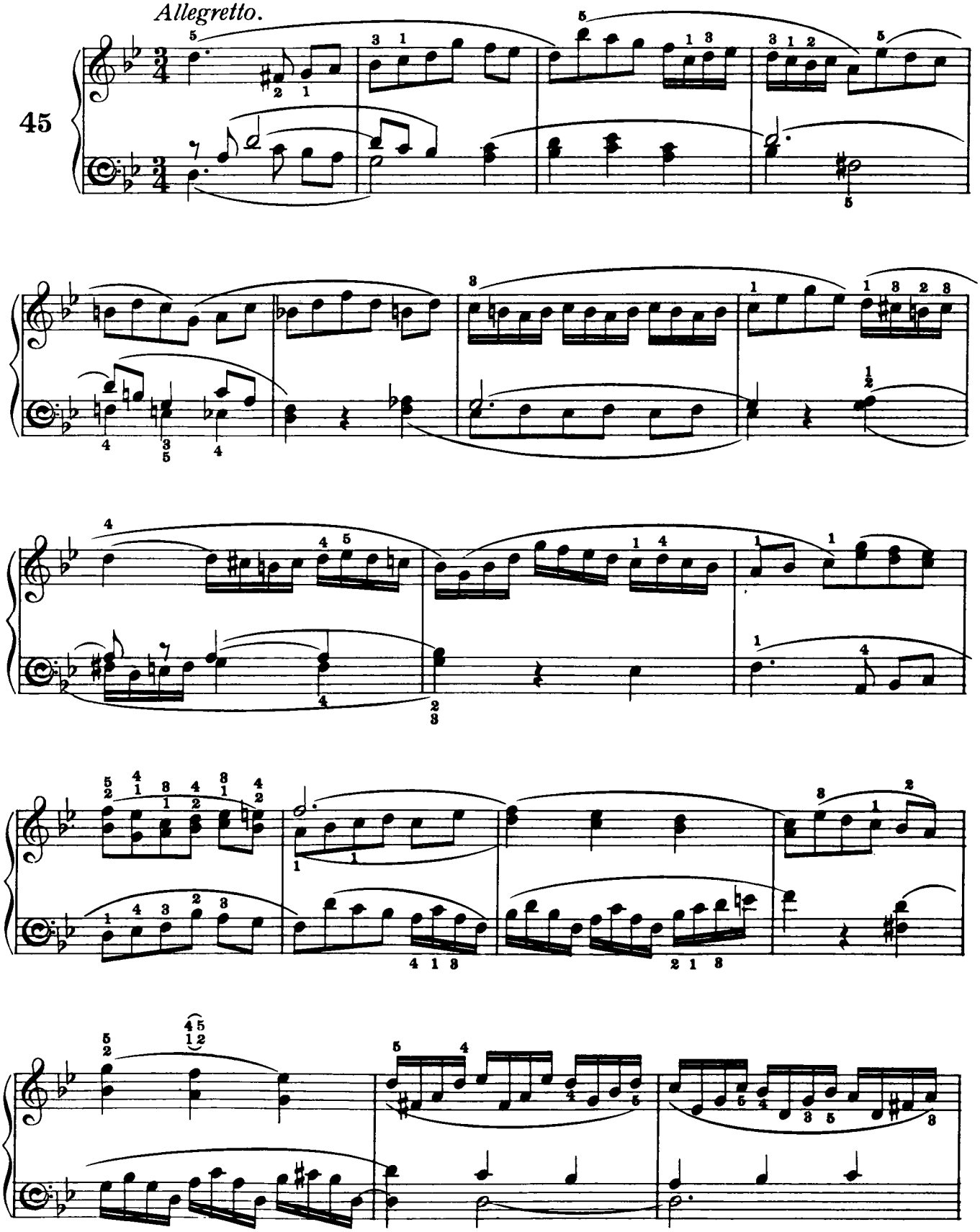
An important point often overlooked is, that not only must the phrasing of the highest part be observed, but every other part, either intermediary or the lowest, should receive equal attention. So much organ music is of a contrapuntal character, that much will be gained by an observance of this rule.

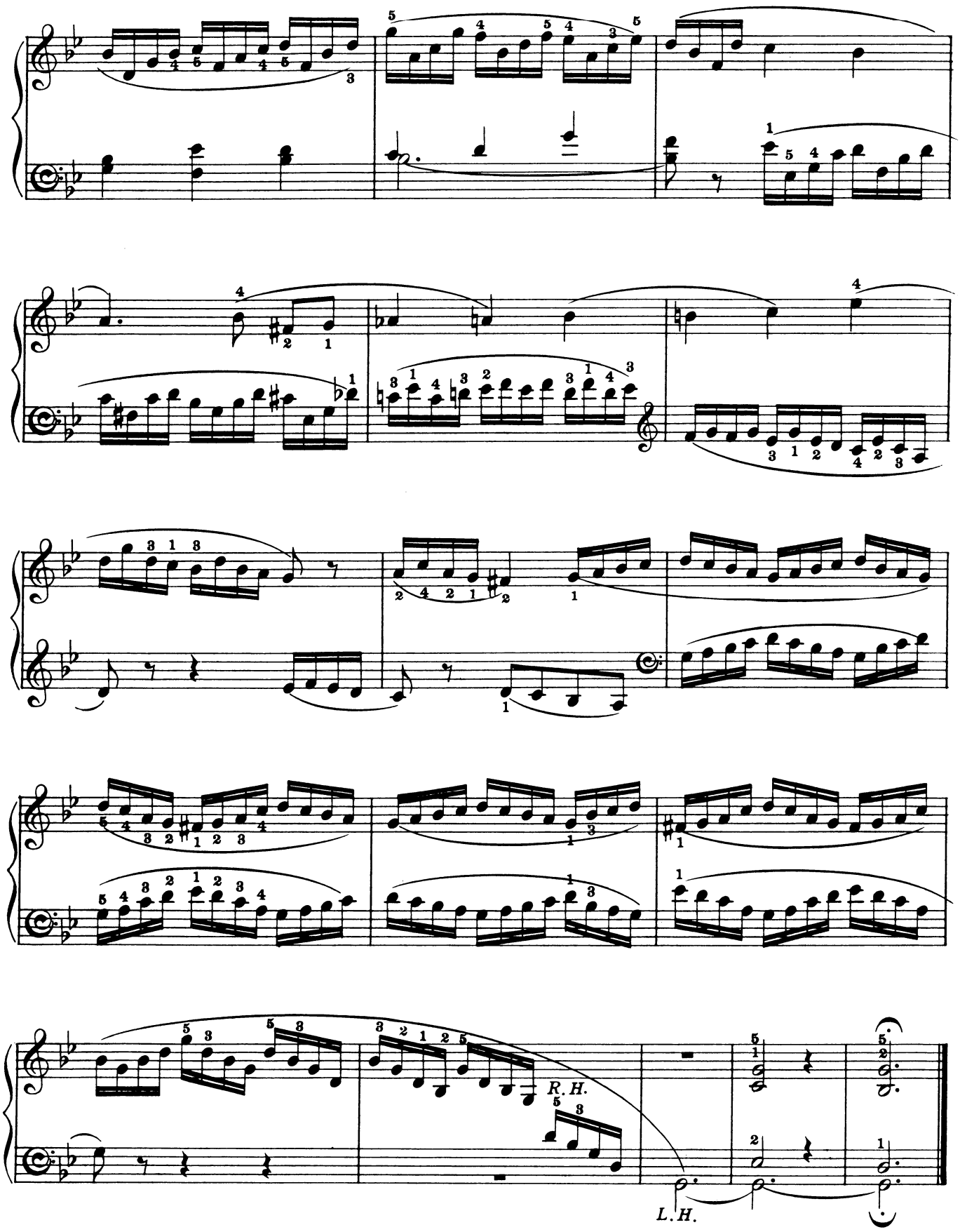
They should be practised upon various manuals and soft combinations of stops.

Moderato.

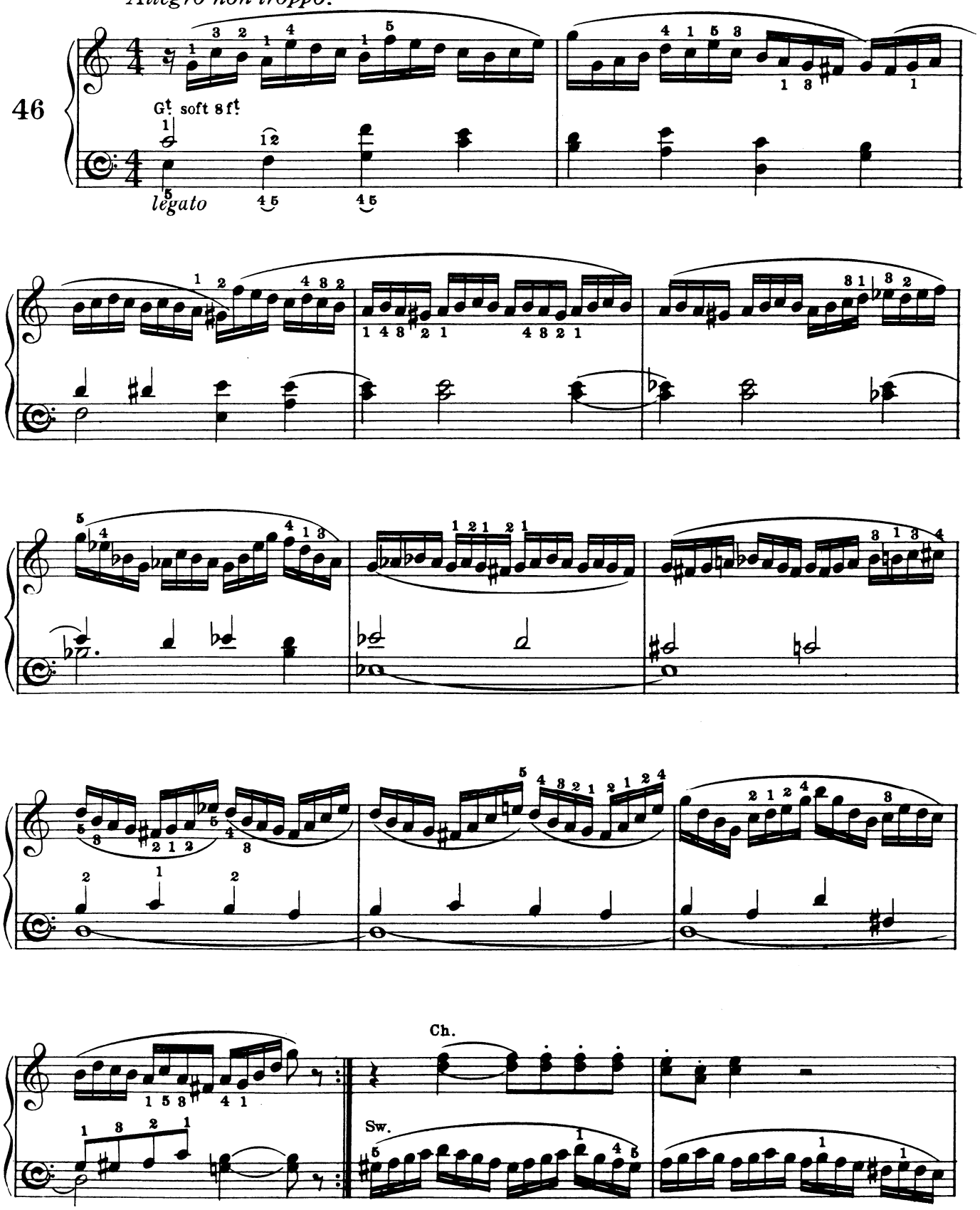
44

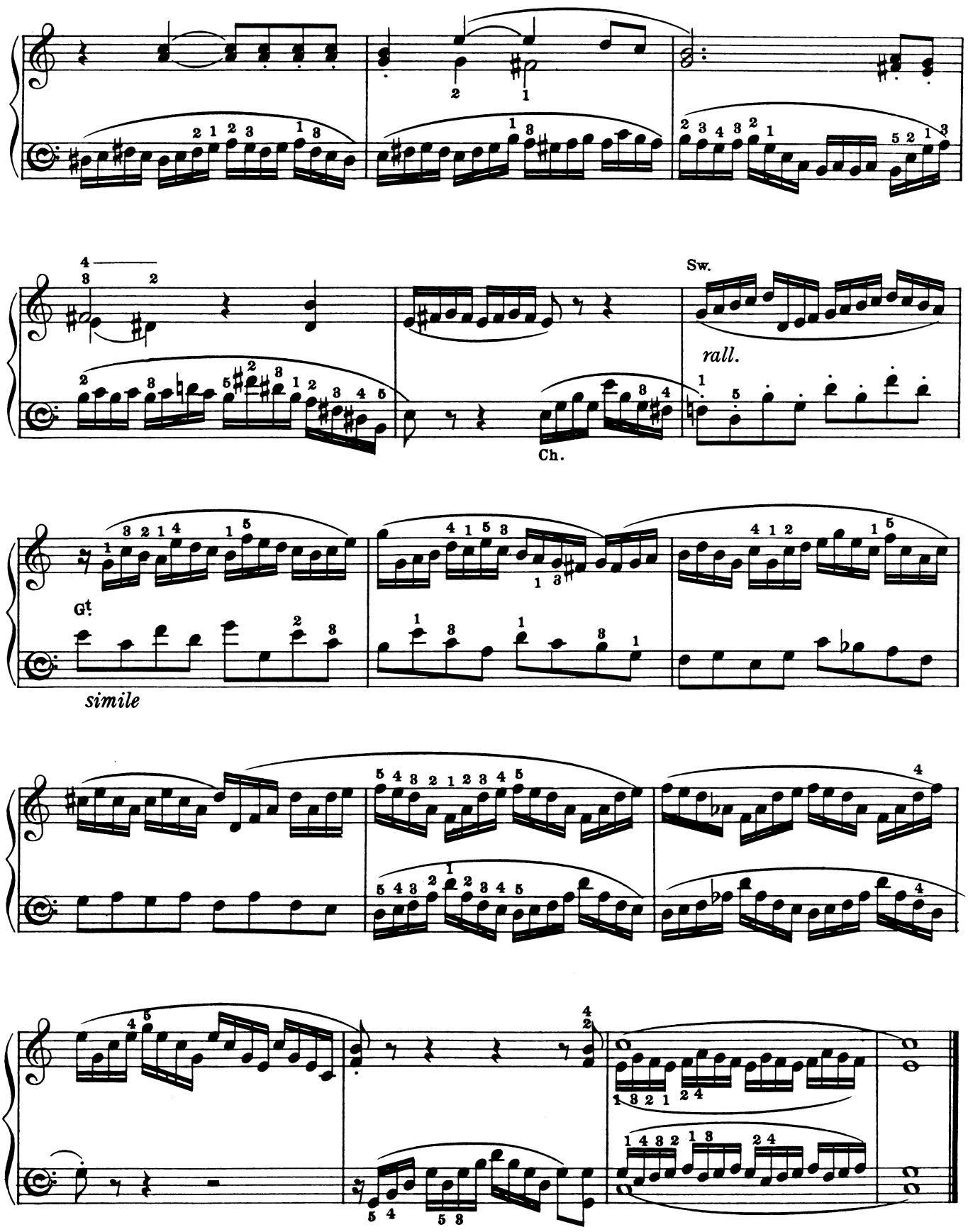



Allegretto.
45


R. H.
L. H.

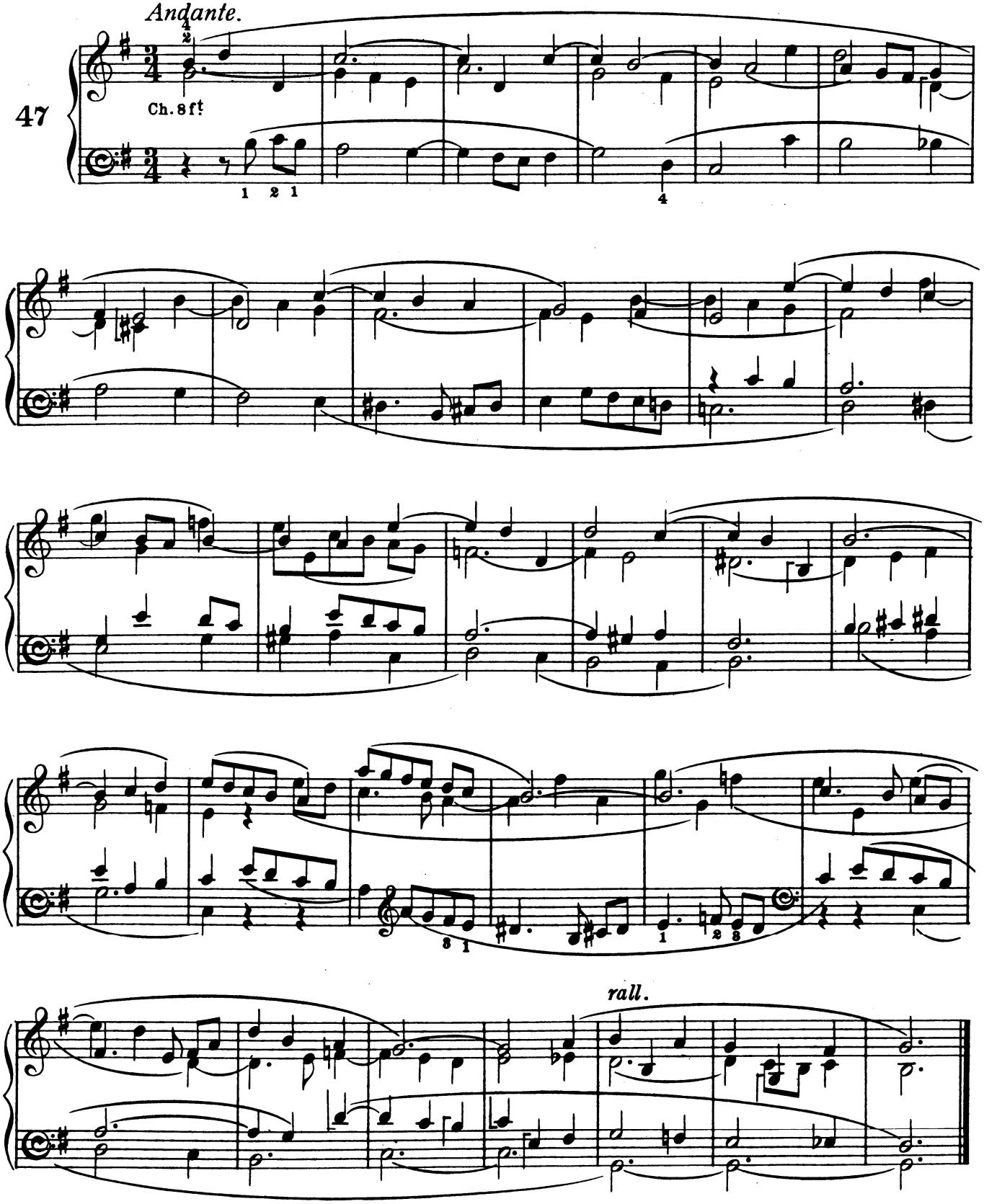
Allegro non troppo.



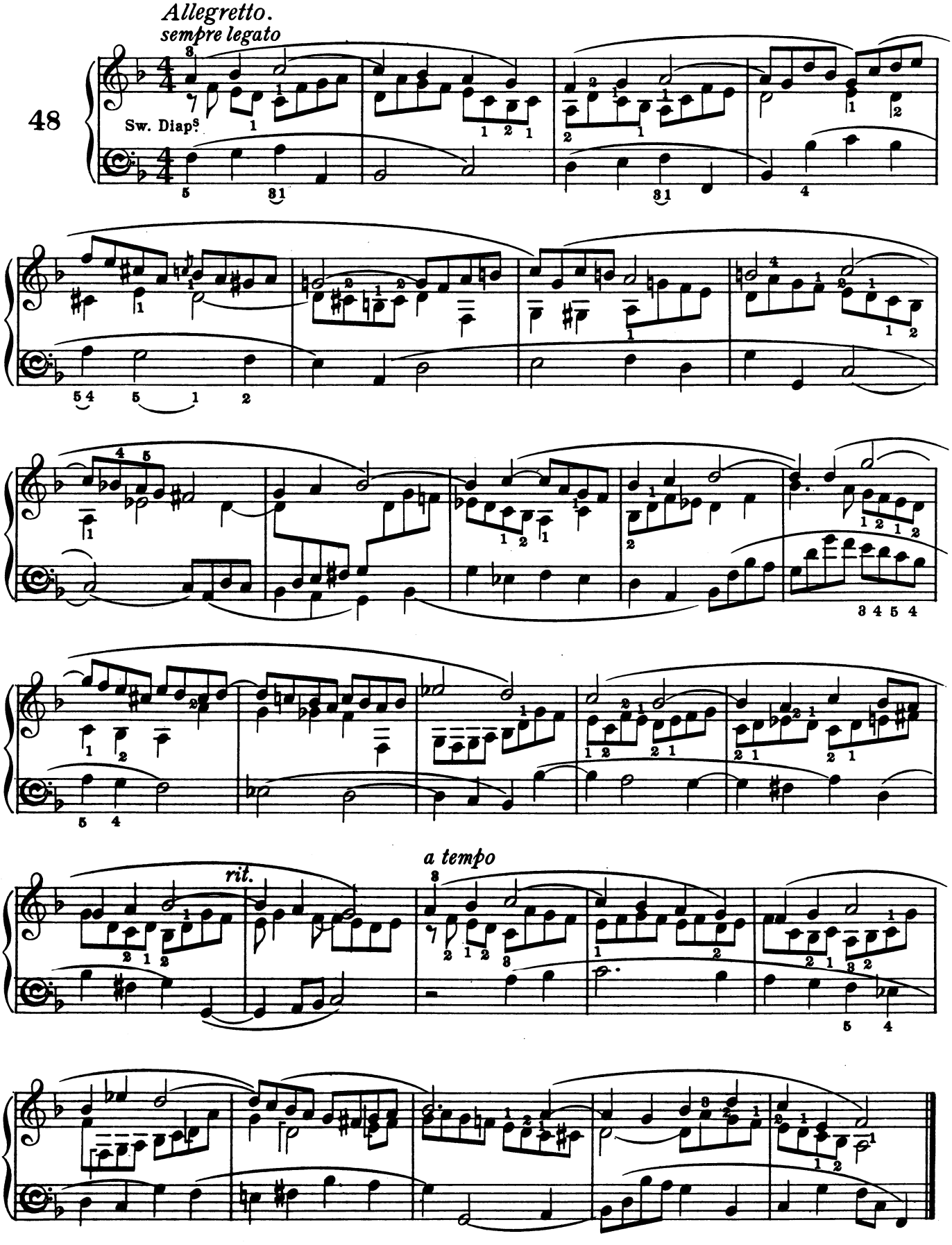

Sw.
rall.
Ch.
Gt.
simile

Manual Exercises on special technical points.

In the first exercise the progress of the two upper parts will be seen by the direction of the stems of the notes, and great care must be taken to give all notes their full value.

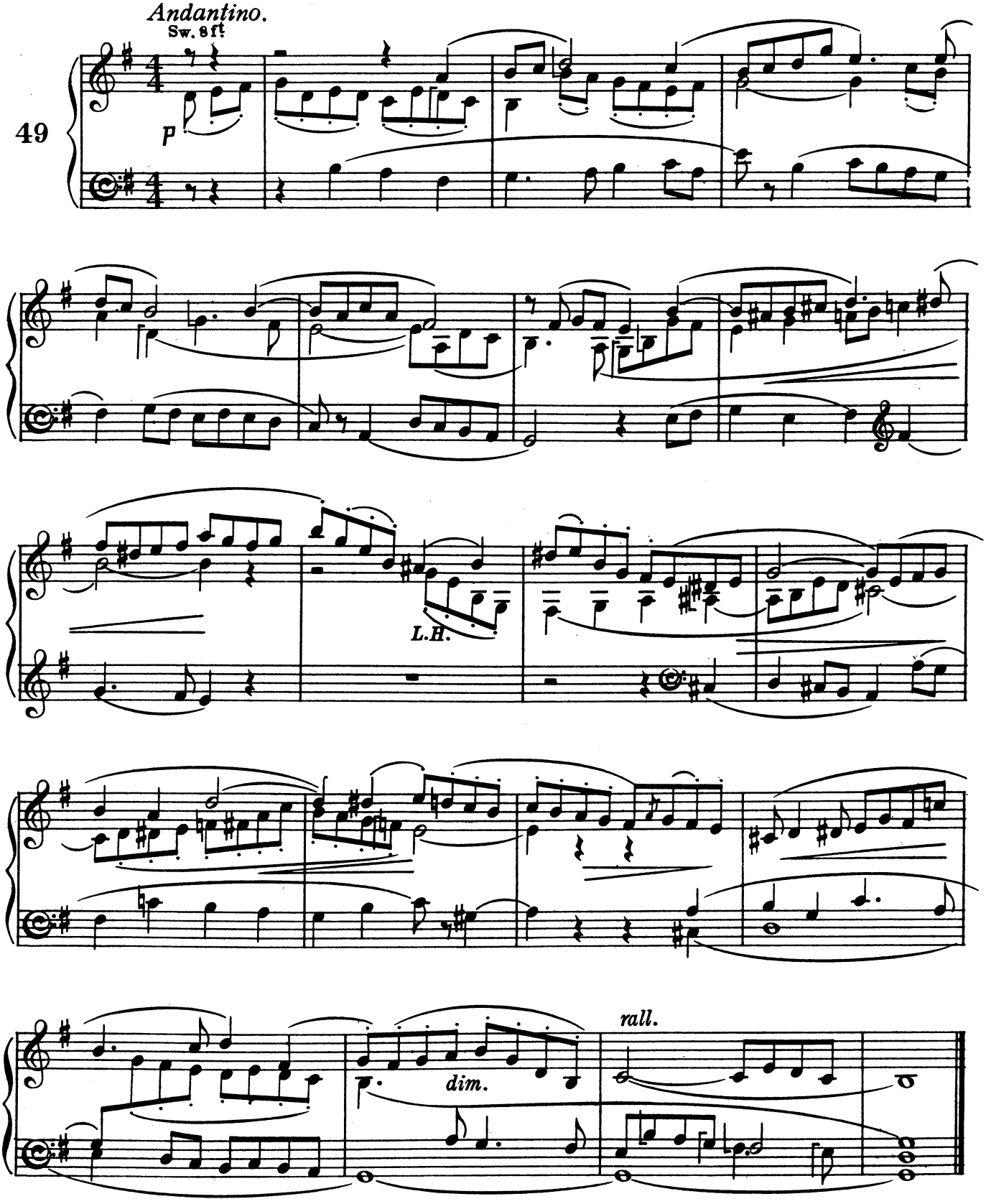


The following exercise shows the method of transferring the middle voice from one hand to the other. The fingering above the notes is for the right hand, and that below for the left hand.



On combined phrasing and staccato.

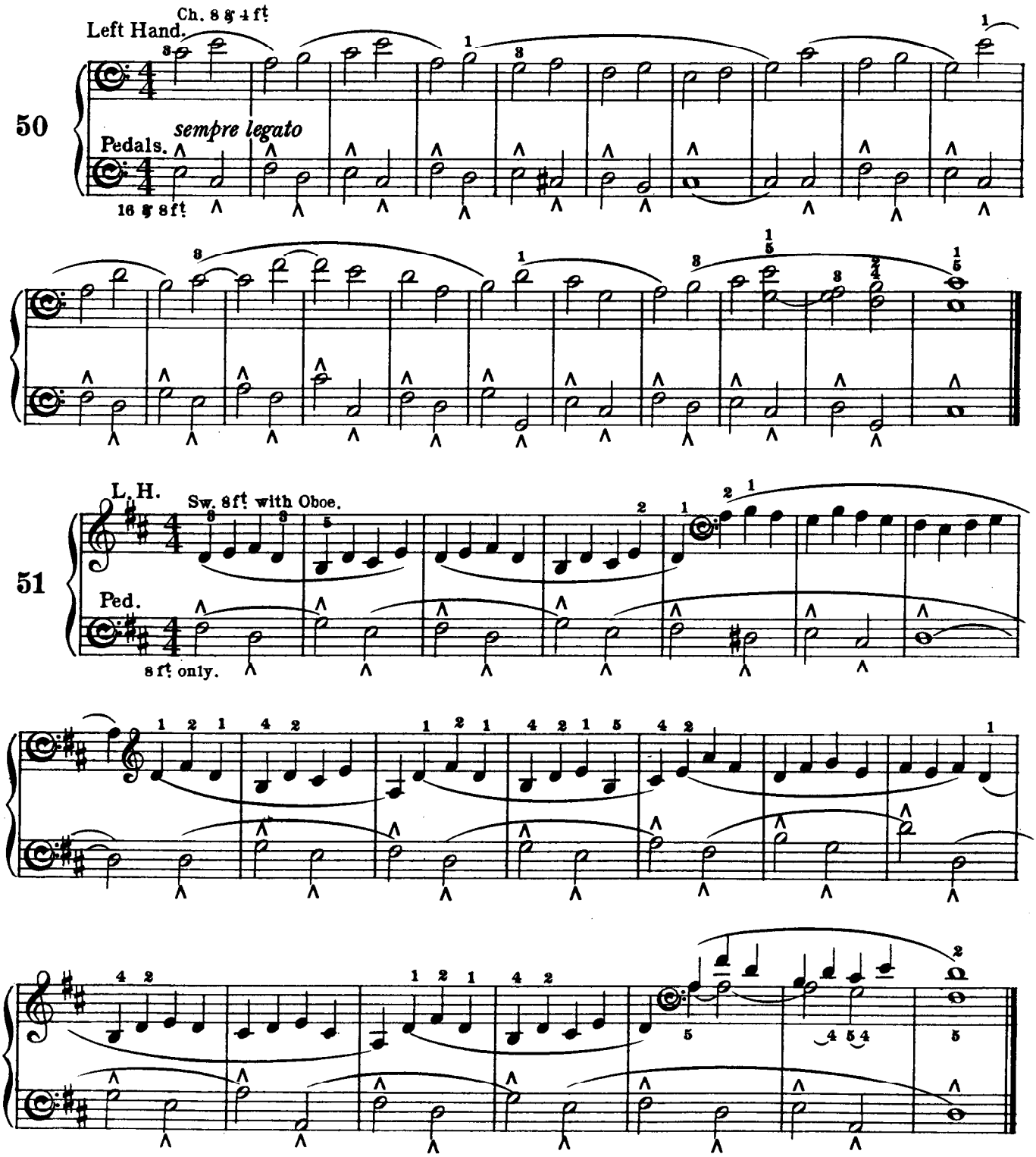
It should be remembered that the organ staccato is generally akin to the "portamento" touch used on the pianoforte. The short staccato is rarely used on the organ, and should be reserved for special effects, which will not often occur.

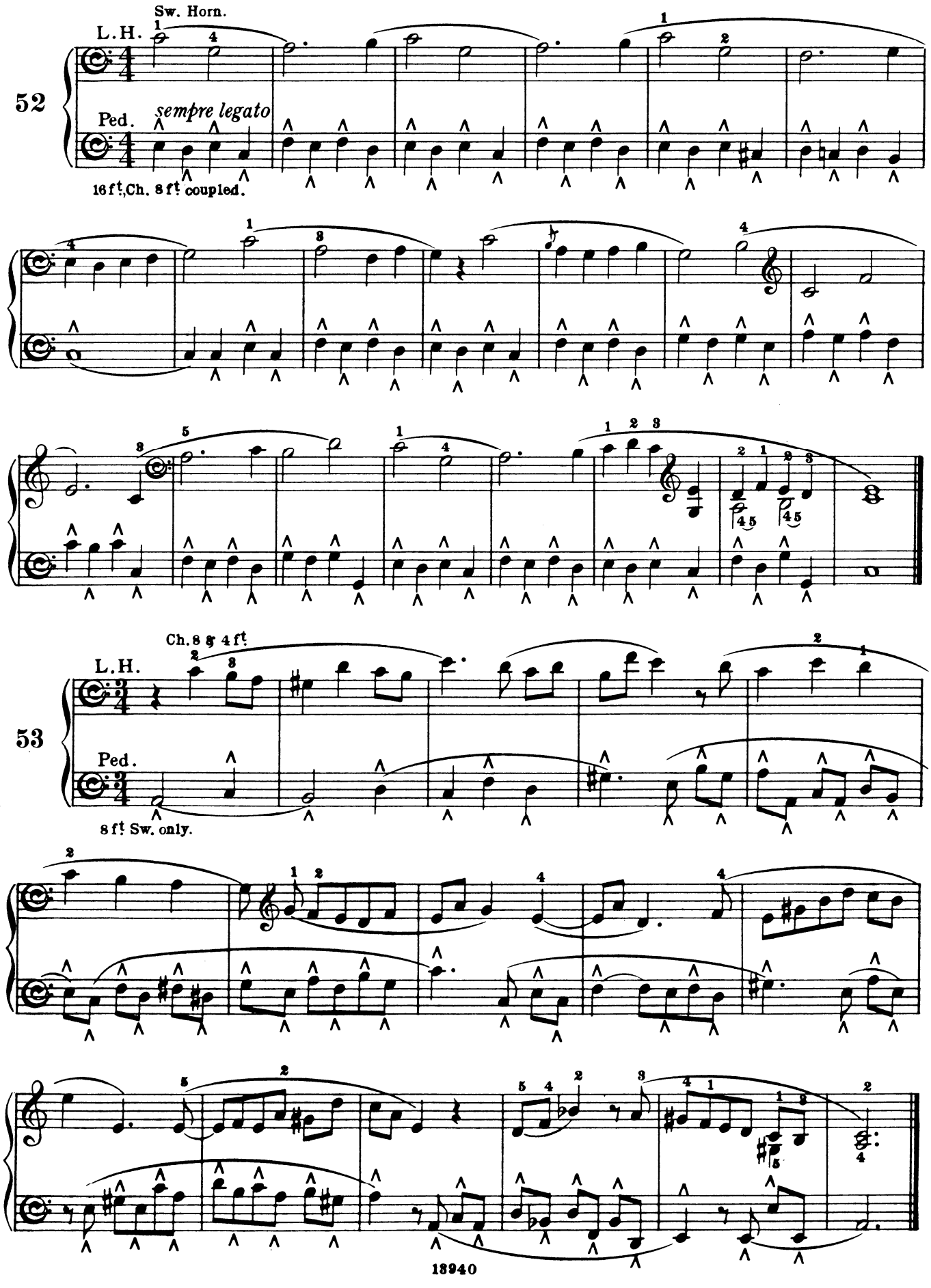


SECTION IV.

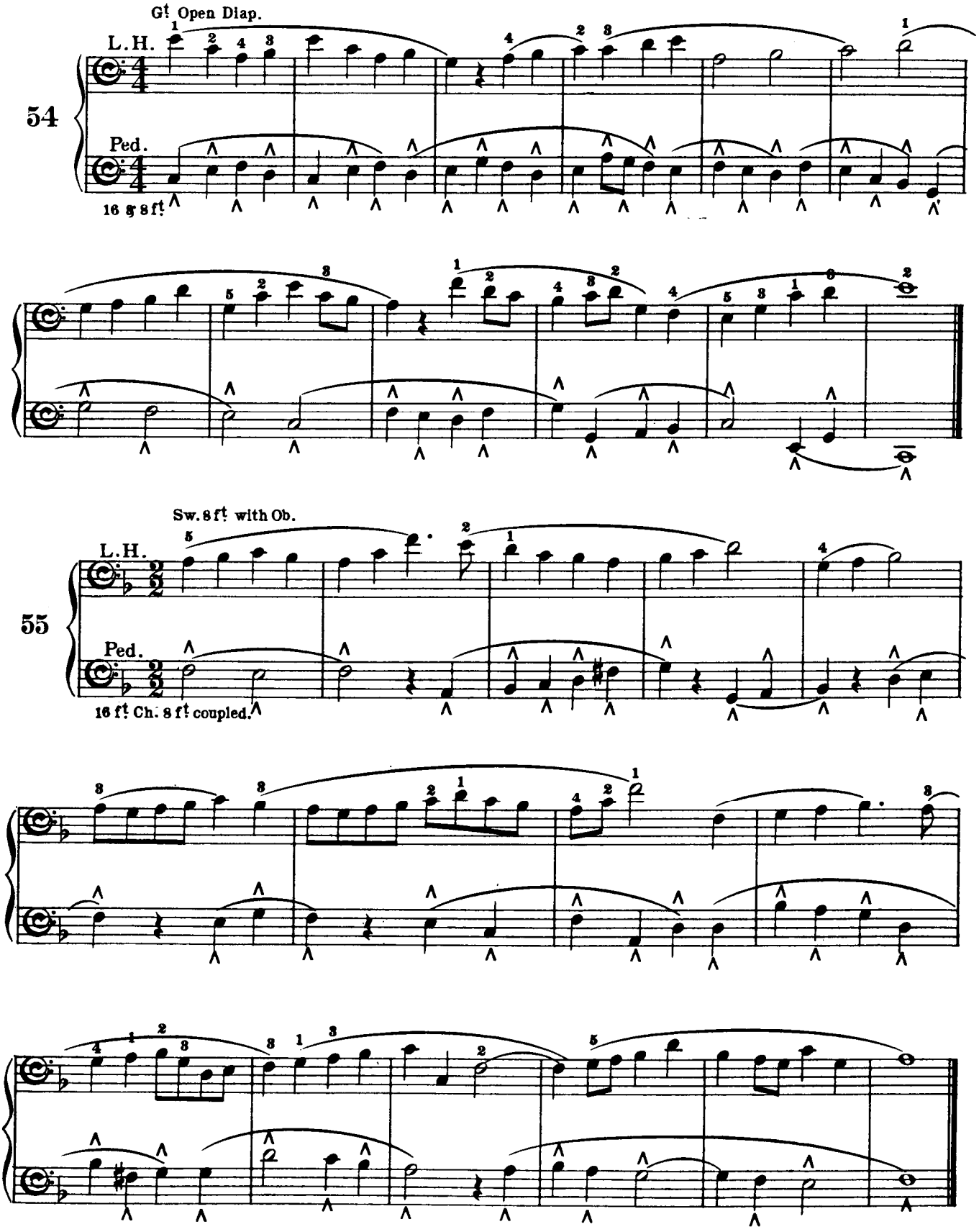
Left hand and Pedals.

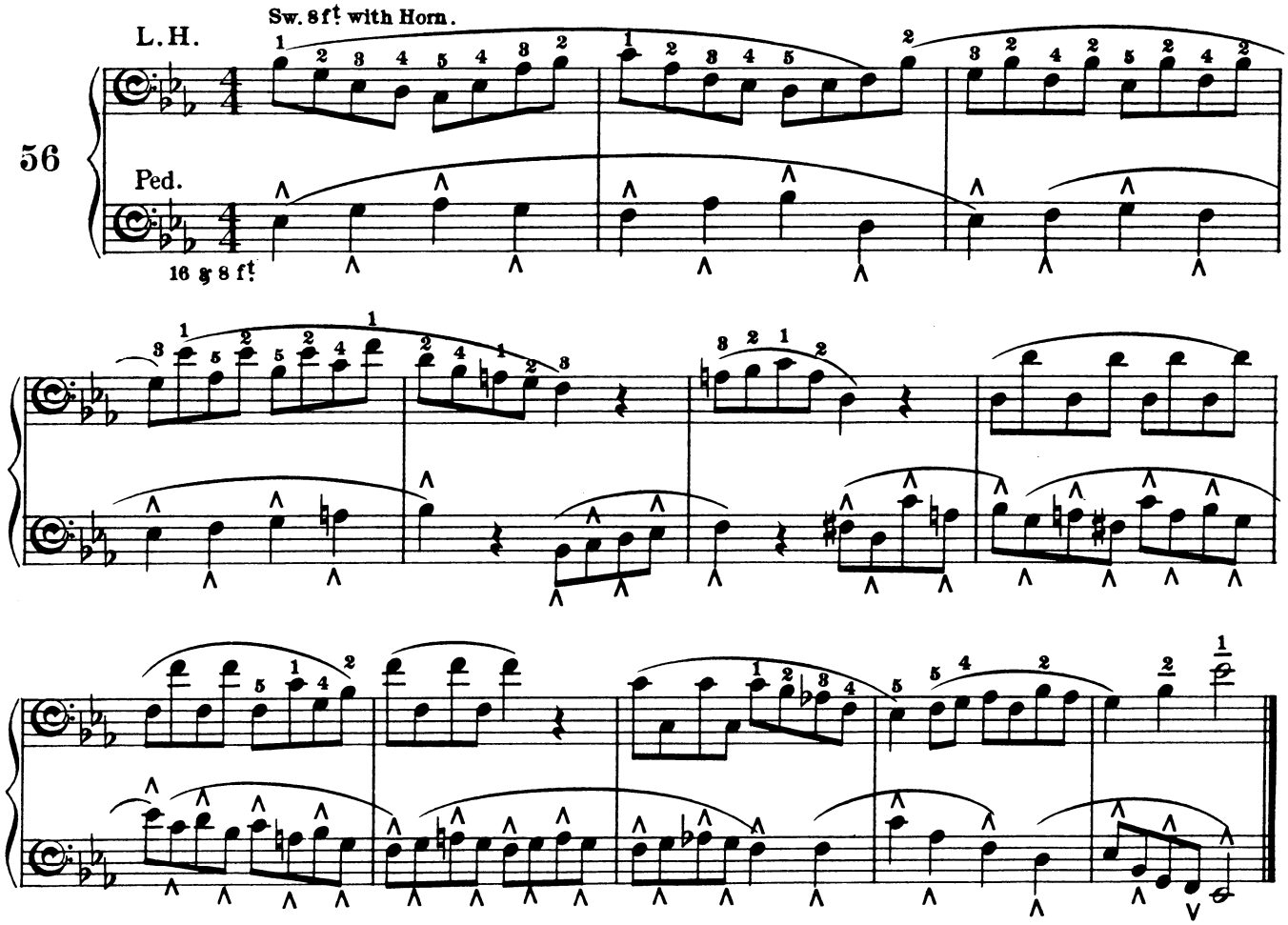
One of the chief difficulties of organ playing lies in the performance of passages involving contrary motion between the left hand and the pedals. The following exercises will be found to give some independence in this respect. It would be well to couple the pedals to some manual other than that used by the left hand, if coupling be necessary. The manual part may, as an additional exercise be also played with the right hand in place of the left. Suggested registering is given, but it may of course be varied.




Sw. Horn.
L.H.
52
Ped.
sempre legato
16 ft, Ch. 8 ft coupled.
Ch. 8 & 4 ft
L.H.
53
Ped.
8 ft Sw. only.

These Exercises involve the crossing of the feet.



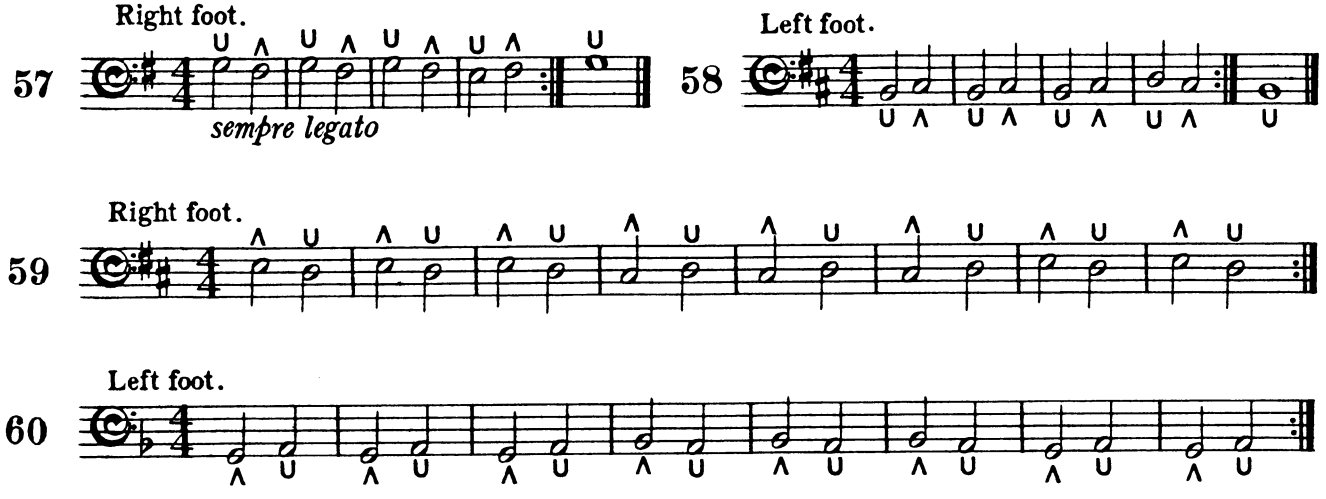


Hitherto the toes only have been used, so as to ensure accuracy in estimating the distances on the pedalboard. The use of the heels is of equal importance, however, for the acquirement of smooth pedalling.

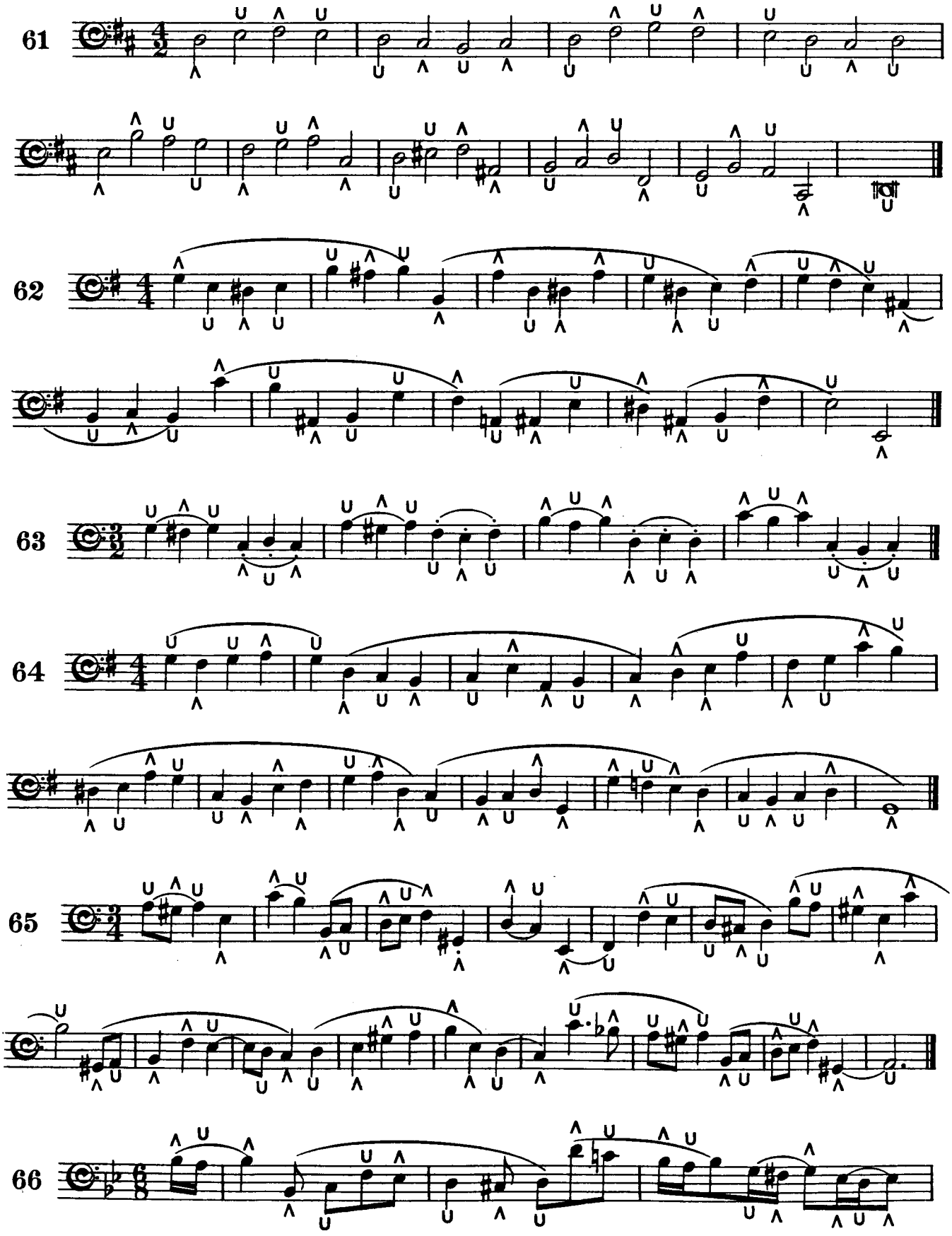
In the exercises now given, care should be taken to render the passages smoothly, yet without any indistinctness caused by allowing two notes to sound simultaneously.

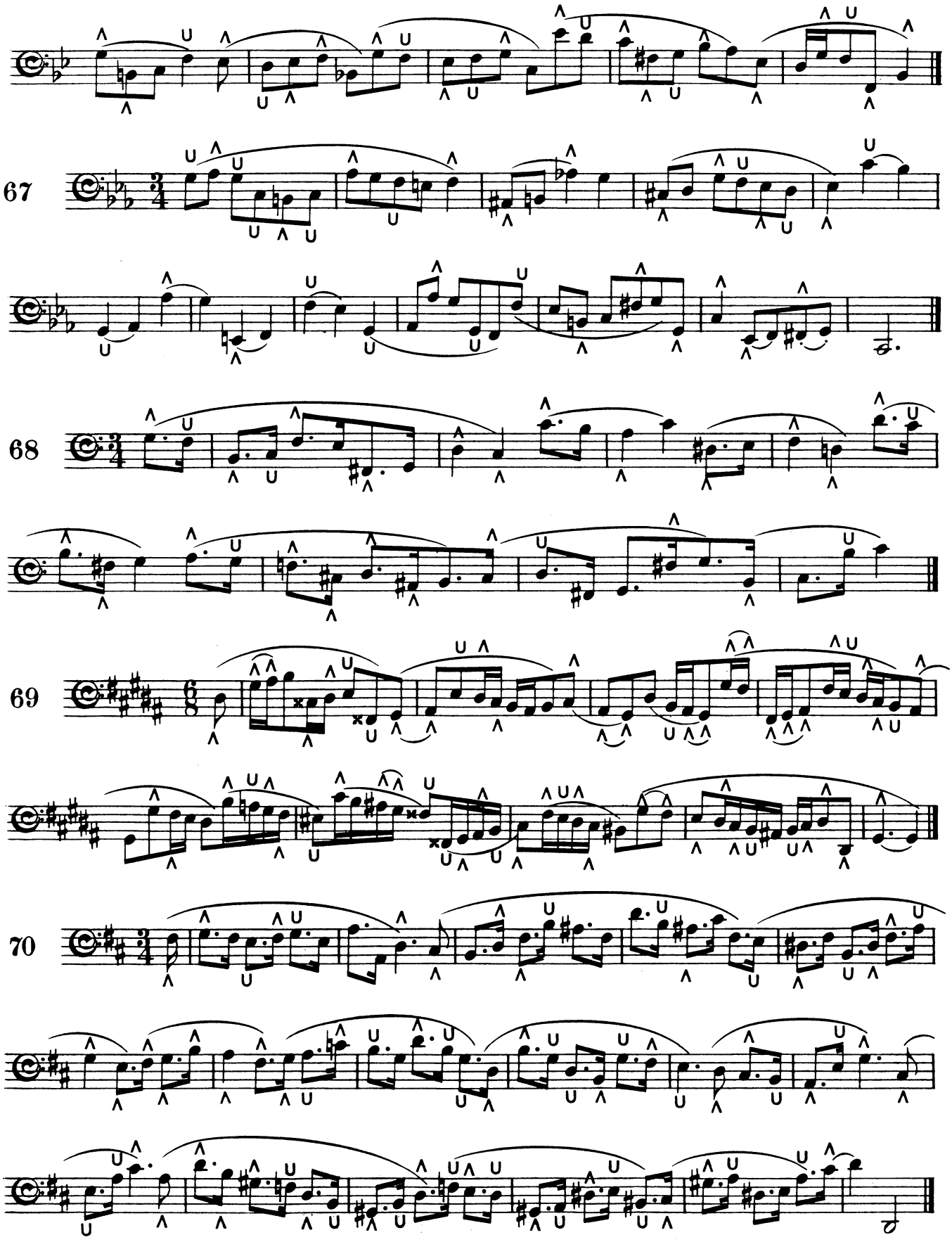
The sign U denotes the use of the heel of either foot.

Preliminary Exercises.



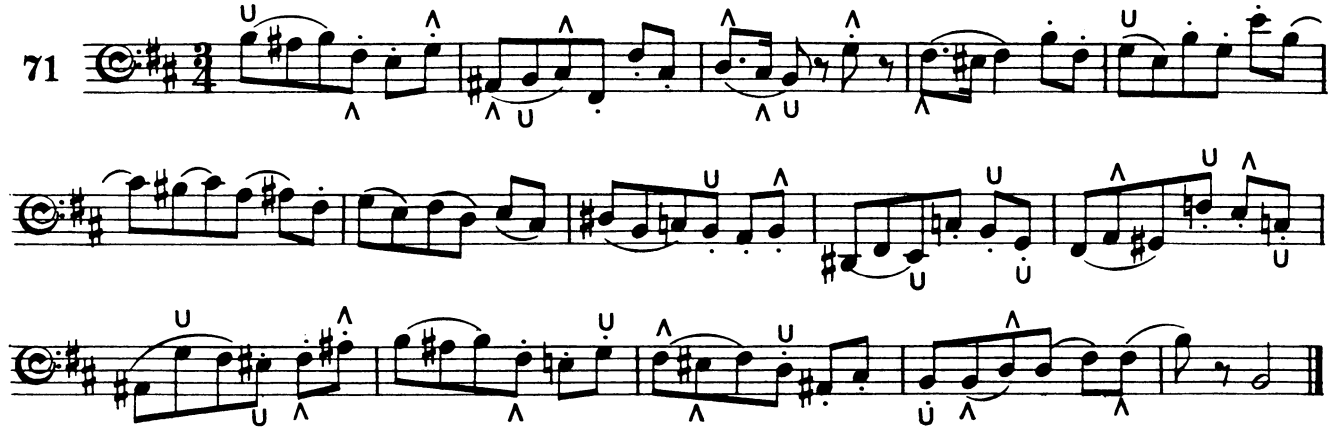
Extended Exercises.





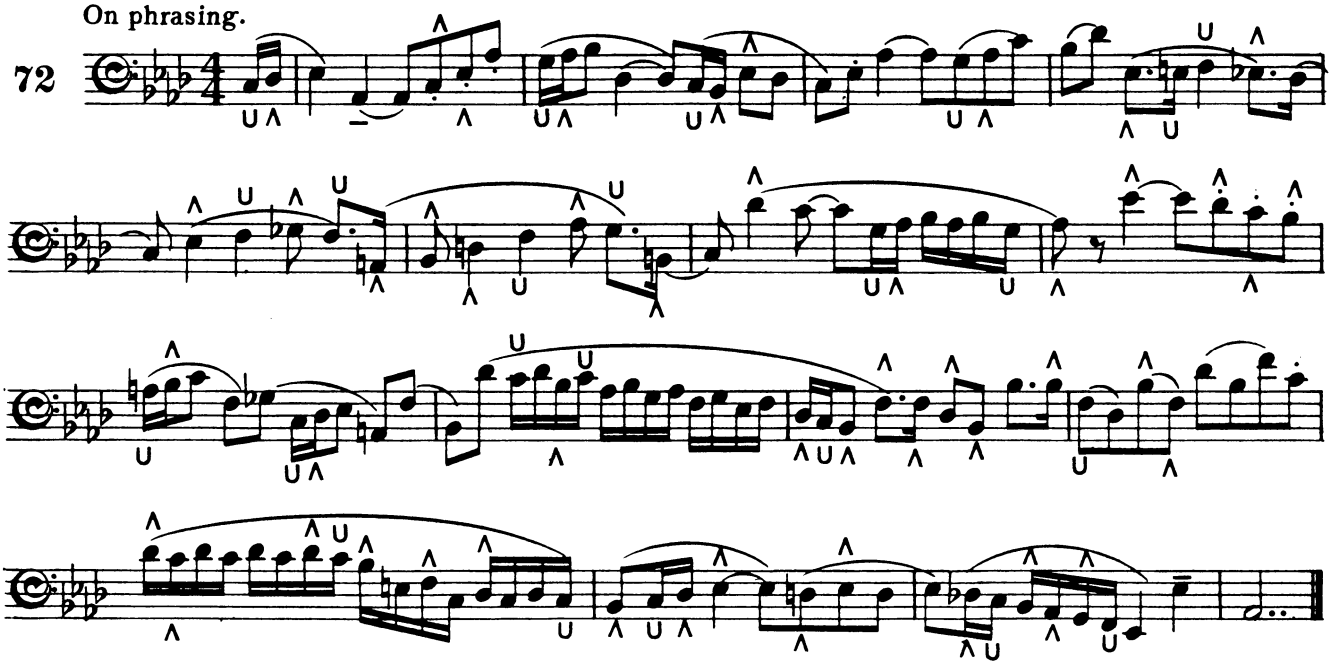
On alternate legato and staccato.

71



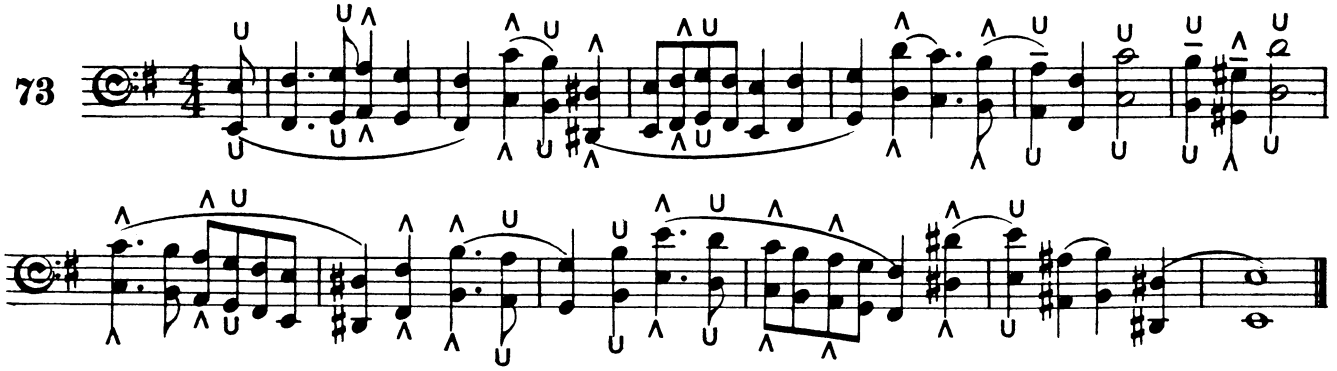
On phrasing.

72

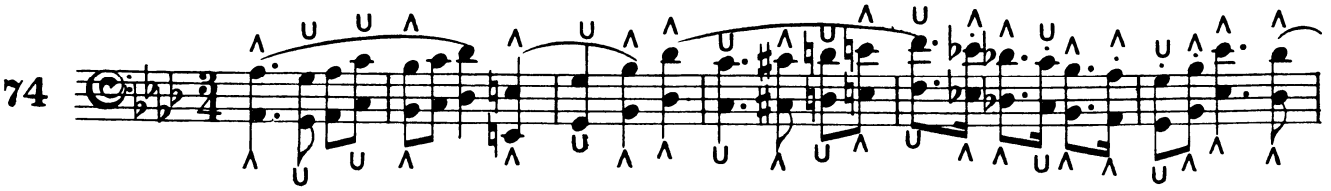


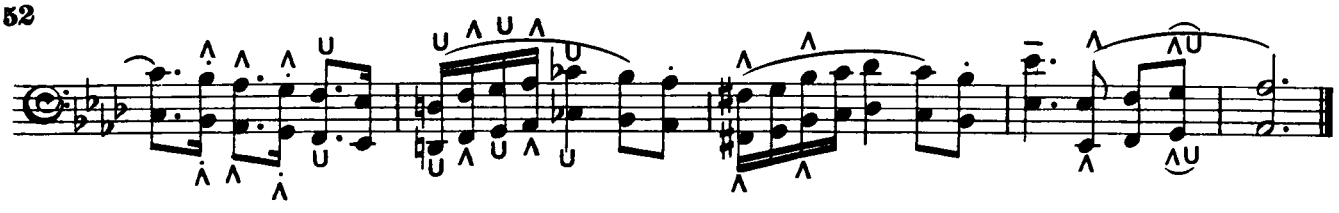
On double pedalling. Care must be taken that both notes sound simultaneously.

73



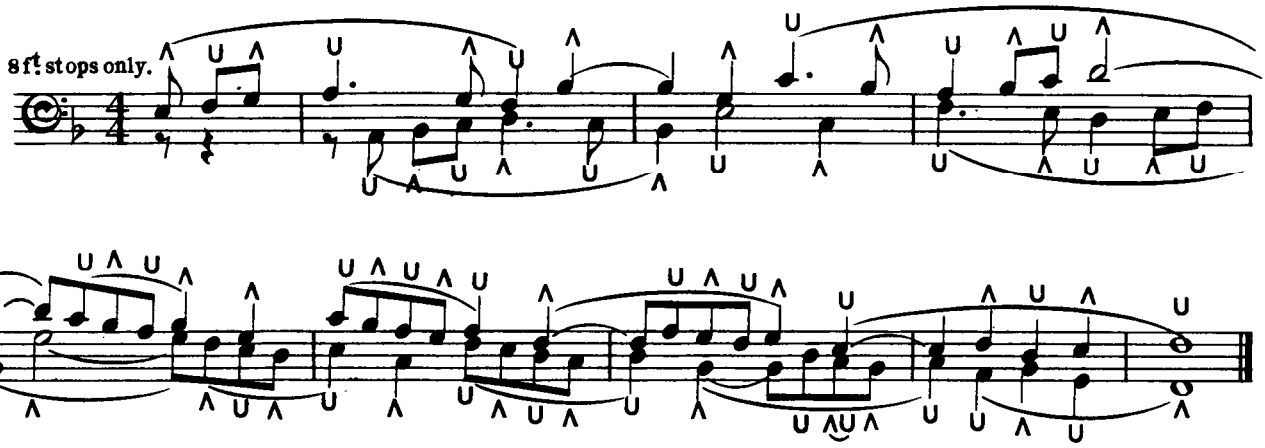
74





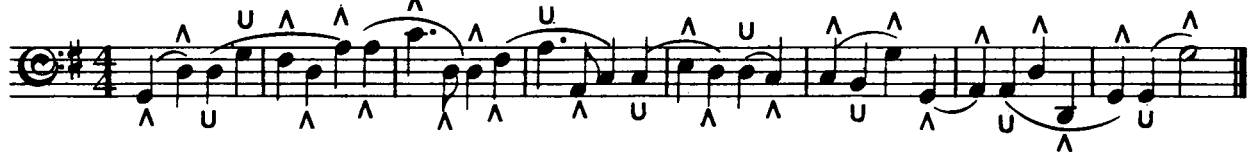
8 ft. stops only.

75

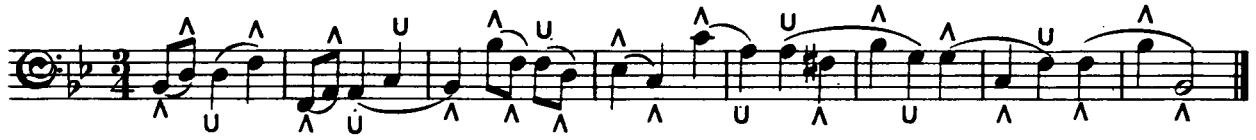


Exercises on changing feet.

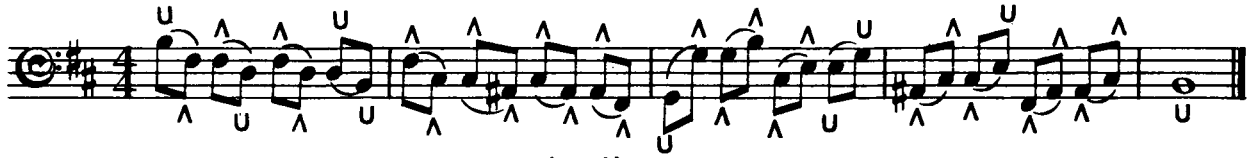
76



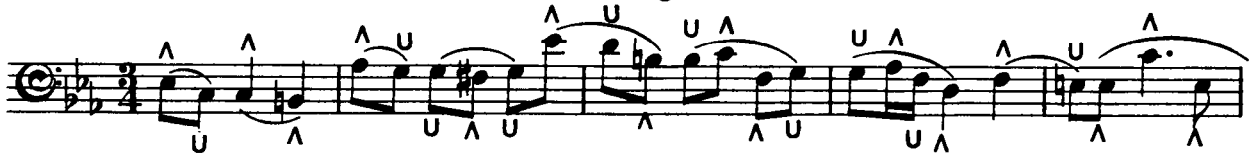
77

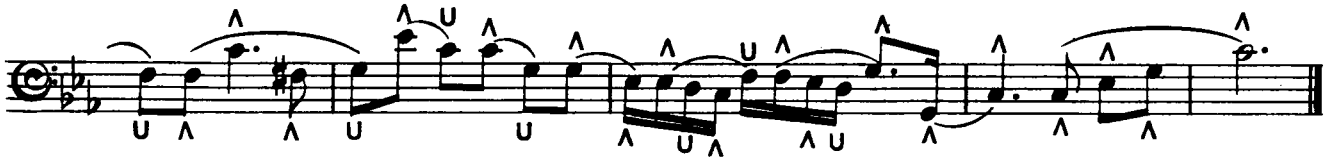


78

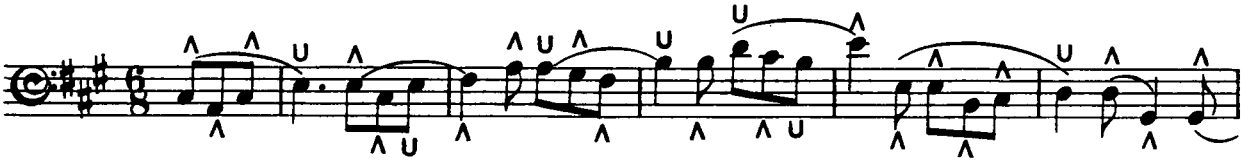


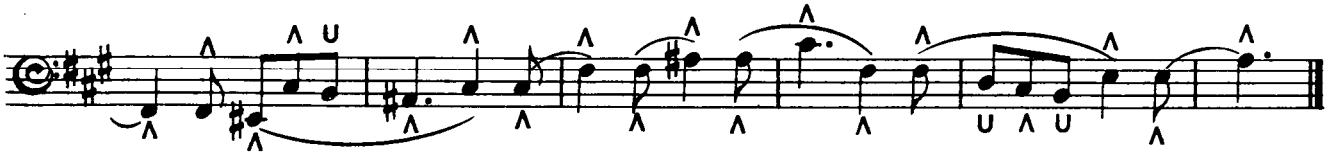
79





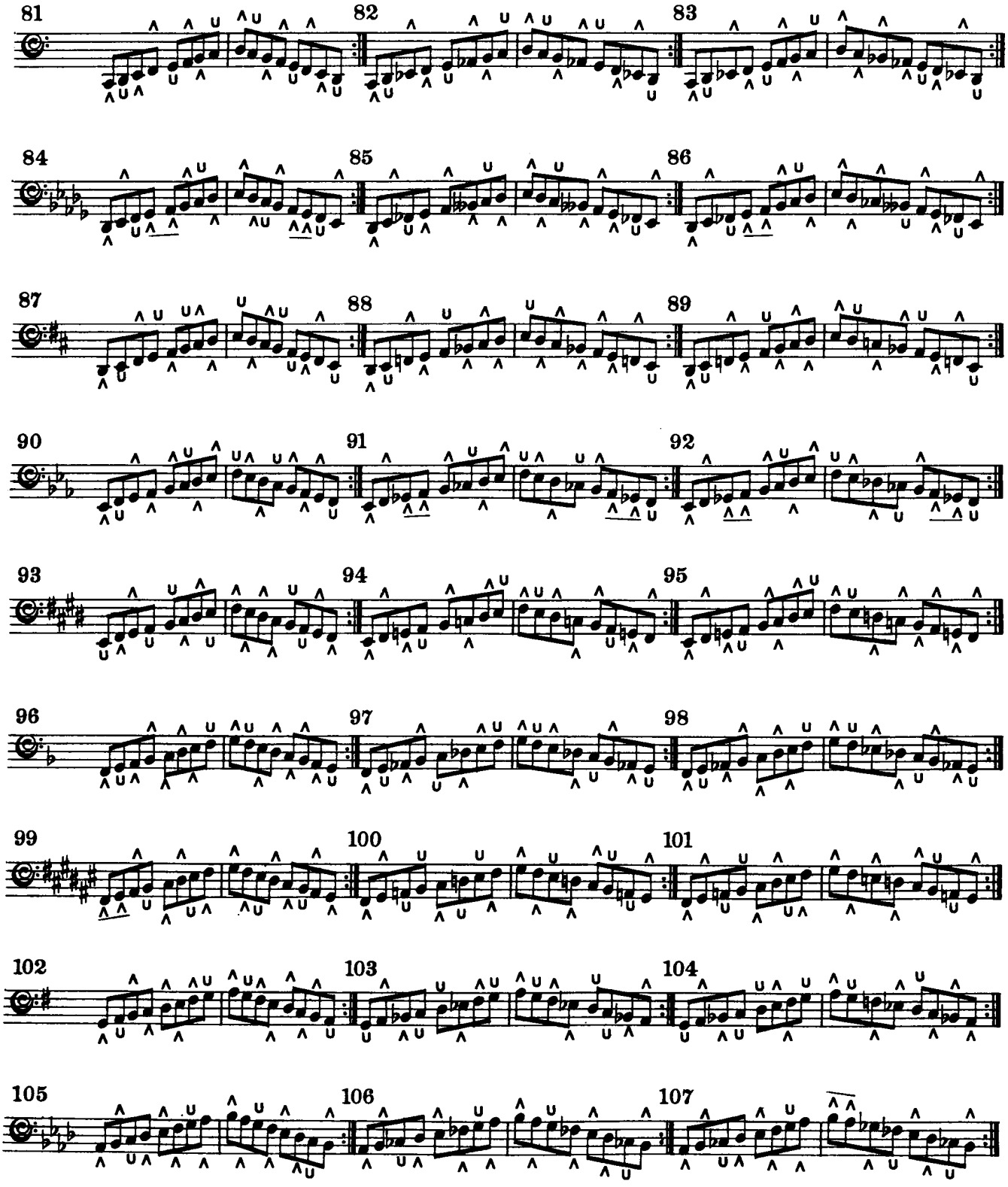
80

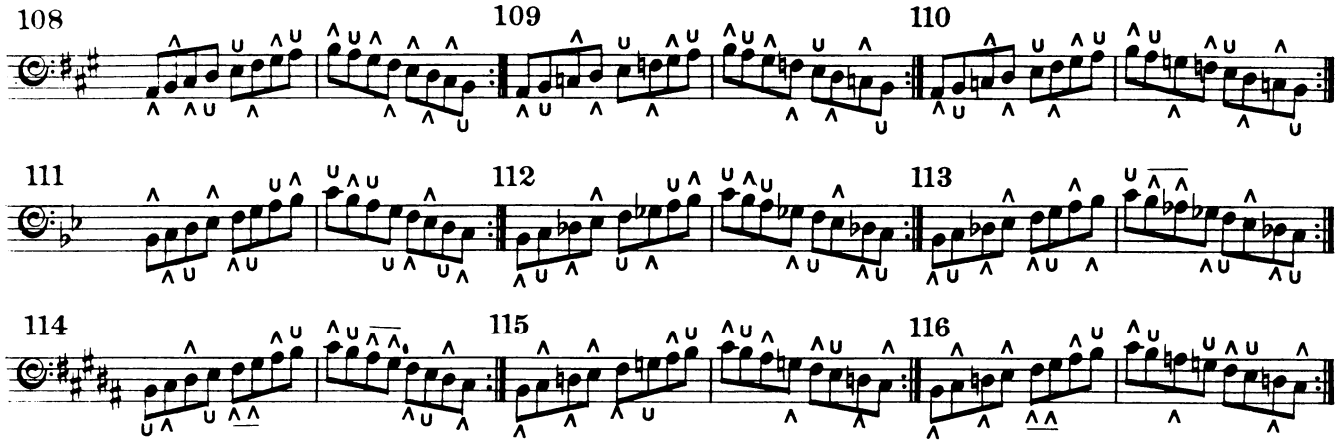




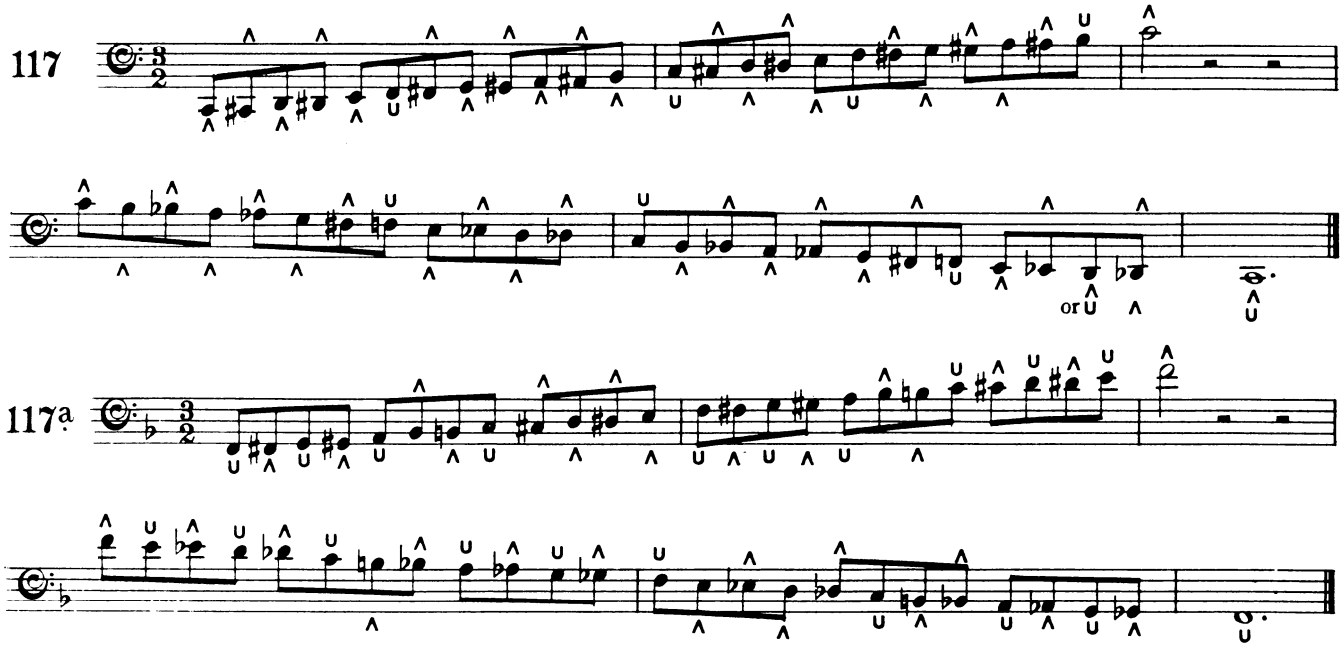
Major and Minor Scales in all Keys.

The following should be played upon a combination of stops of firm and decisive tone—Draw the Diapasons on Great, the Great to Pedals, and Ped. Open Diapason and Principal.

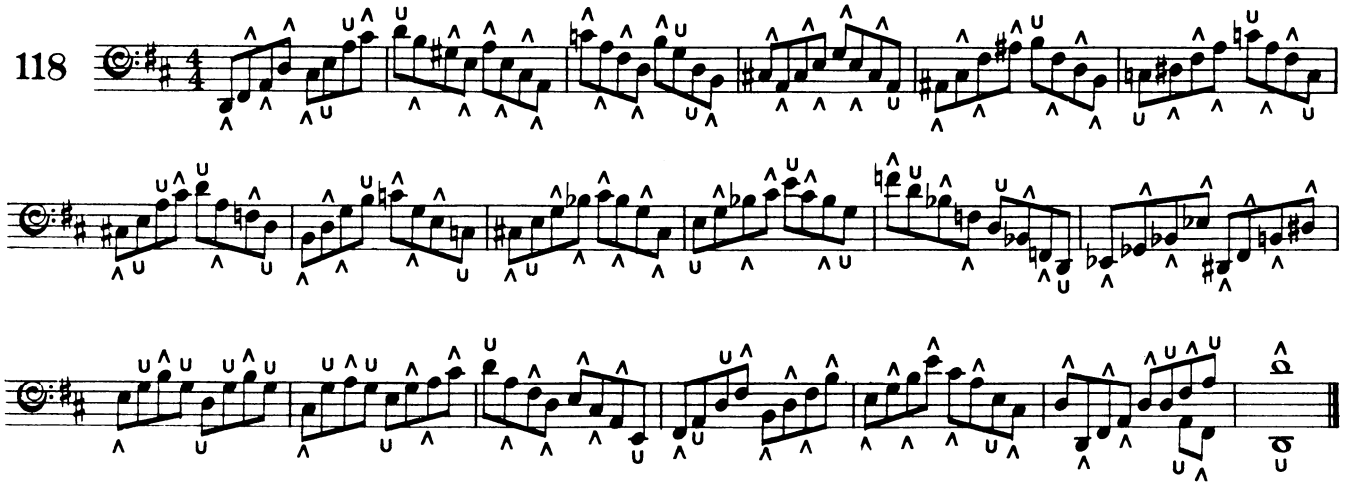




The following are two of several ways of pedalling the Chromatic Scale. Others should be thought out by the student.



Study in Arpeggios.



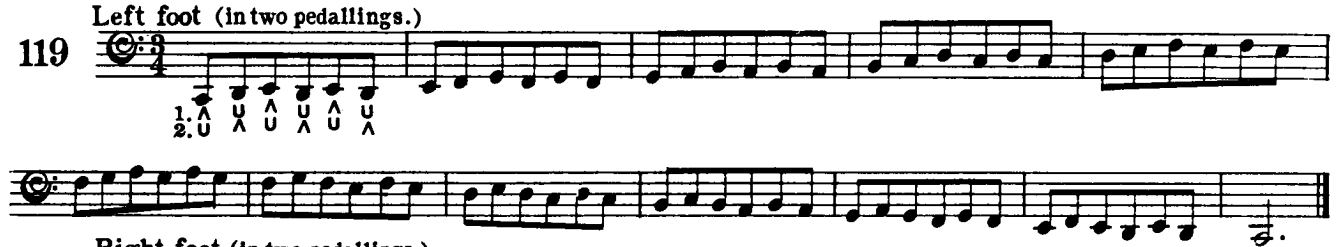
Exercises for loosening the ankles.

Though the student is earnestly recommended to use both feet as equally as possible, there are many occasions when a foot is required for the Swell Pedal or for the manipulation of Composition Pedals. But the fact must not be betrayed by unequal pedalling with the other foot. The amazing facility (!) attained by some organists in the case of the *left* foot (the right being constantly engaged in overcoming the resistance of the Swell Pedal) should be cultivated in both equally.

The following Exercises will develop some freedom in this respect.

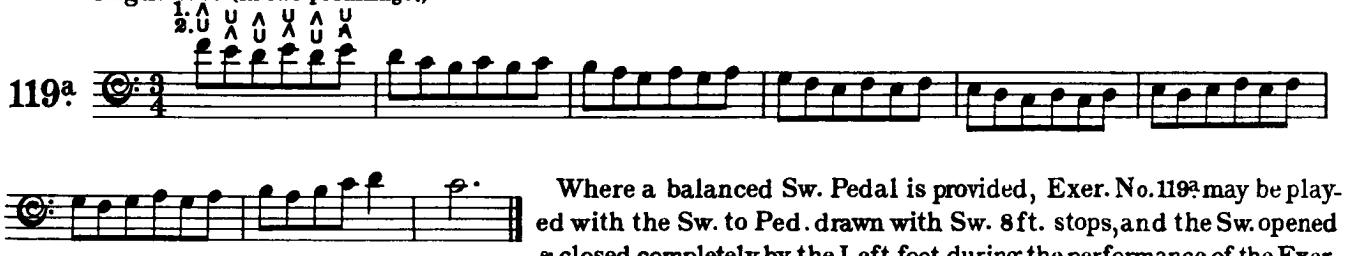
Left foot (in two pedallings.)

119



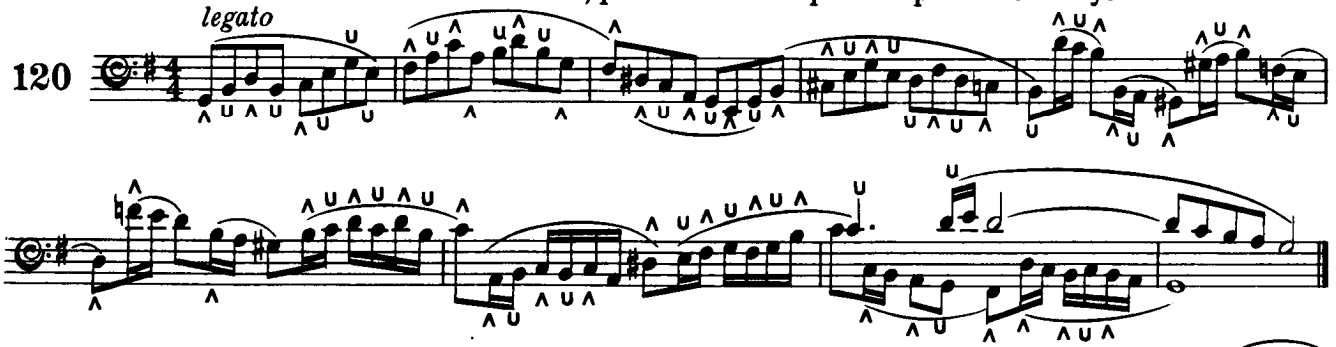
Right foot (in two pedallings.)

119a

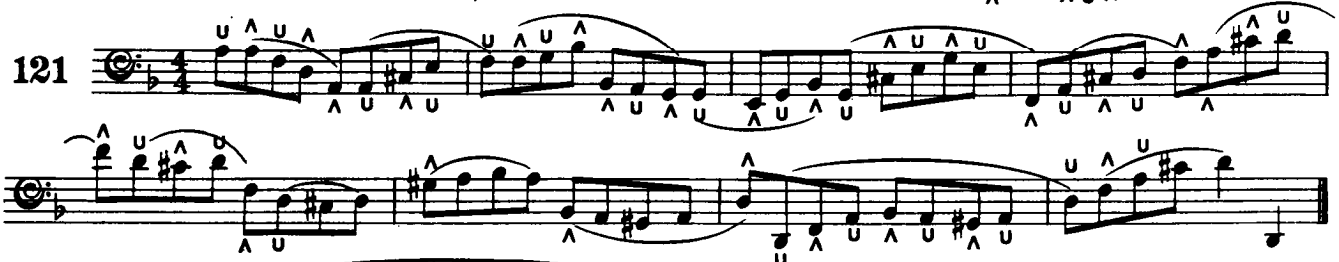


Where a balanced Sw. Pedal is provided, Exer. No. 119a may be played with the Sw. to Ped. drawn with Sw. 8 ft. stops, and the Sw. opened & closed completely by the Left foot during the performance of the Exercise, provided that the pedal is placed centrally.

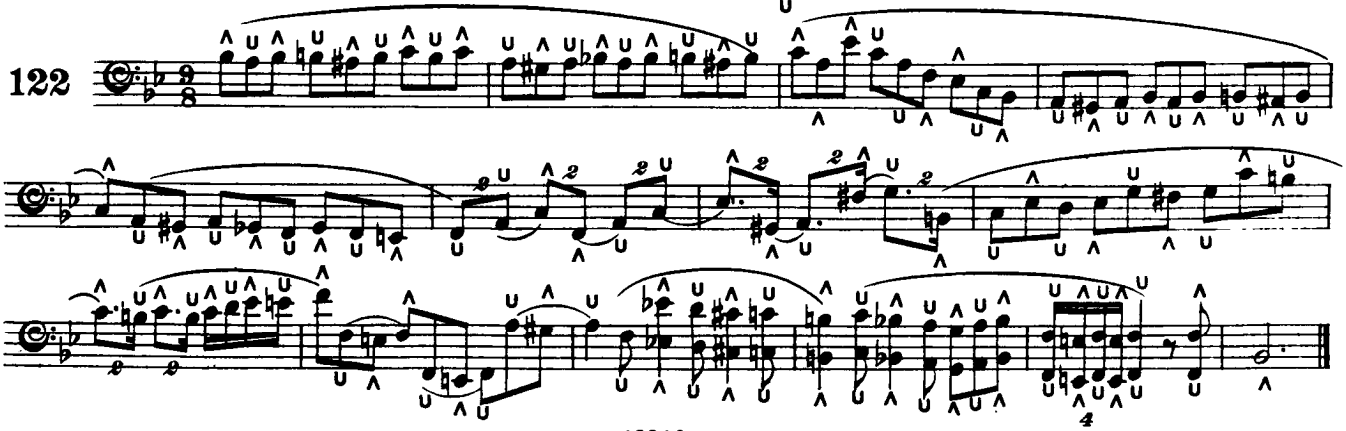
120



121

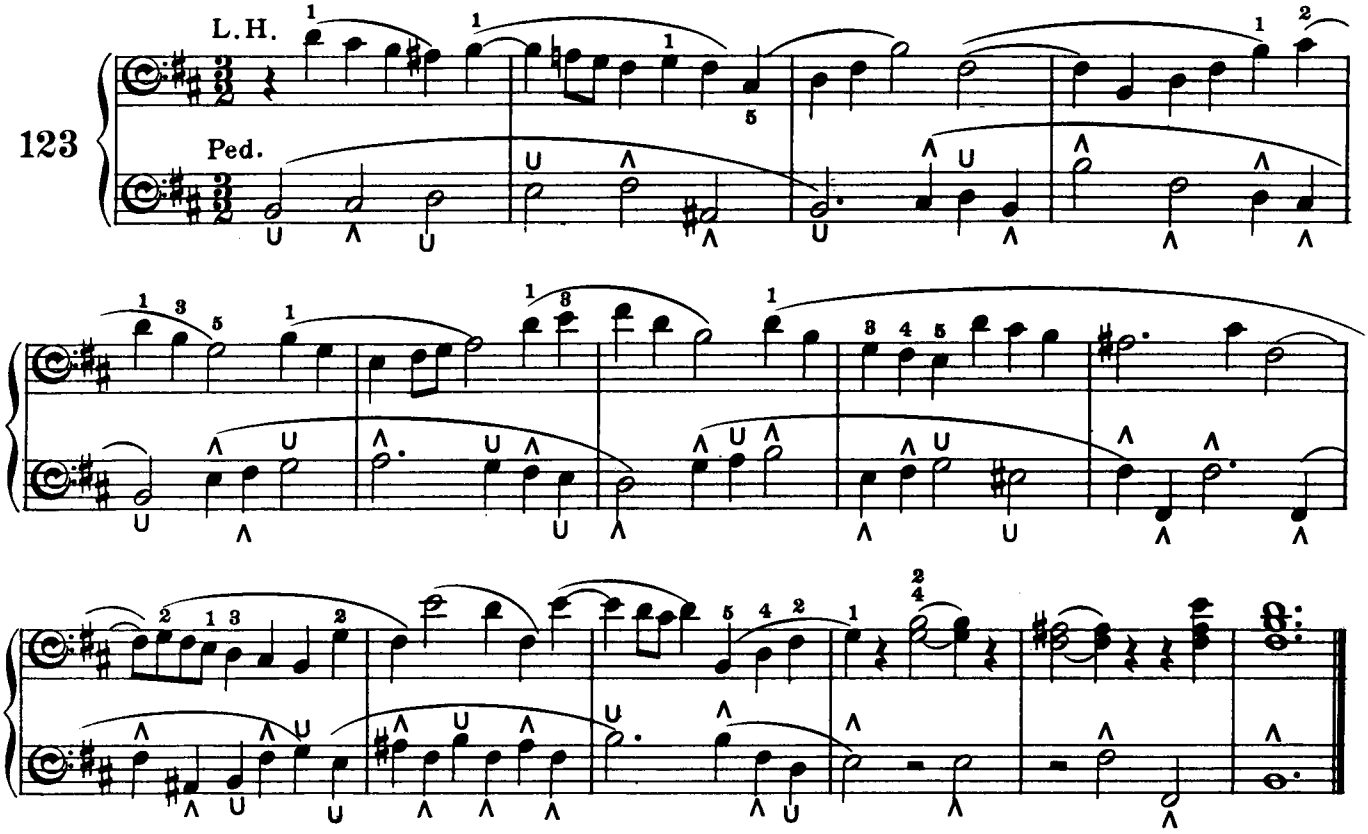


122



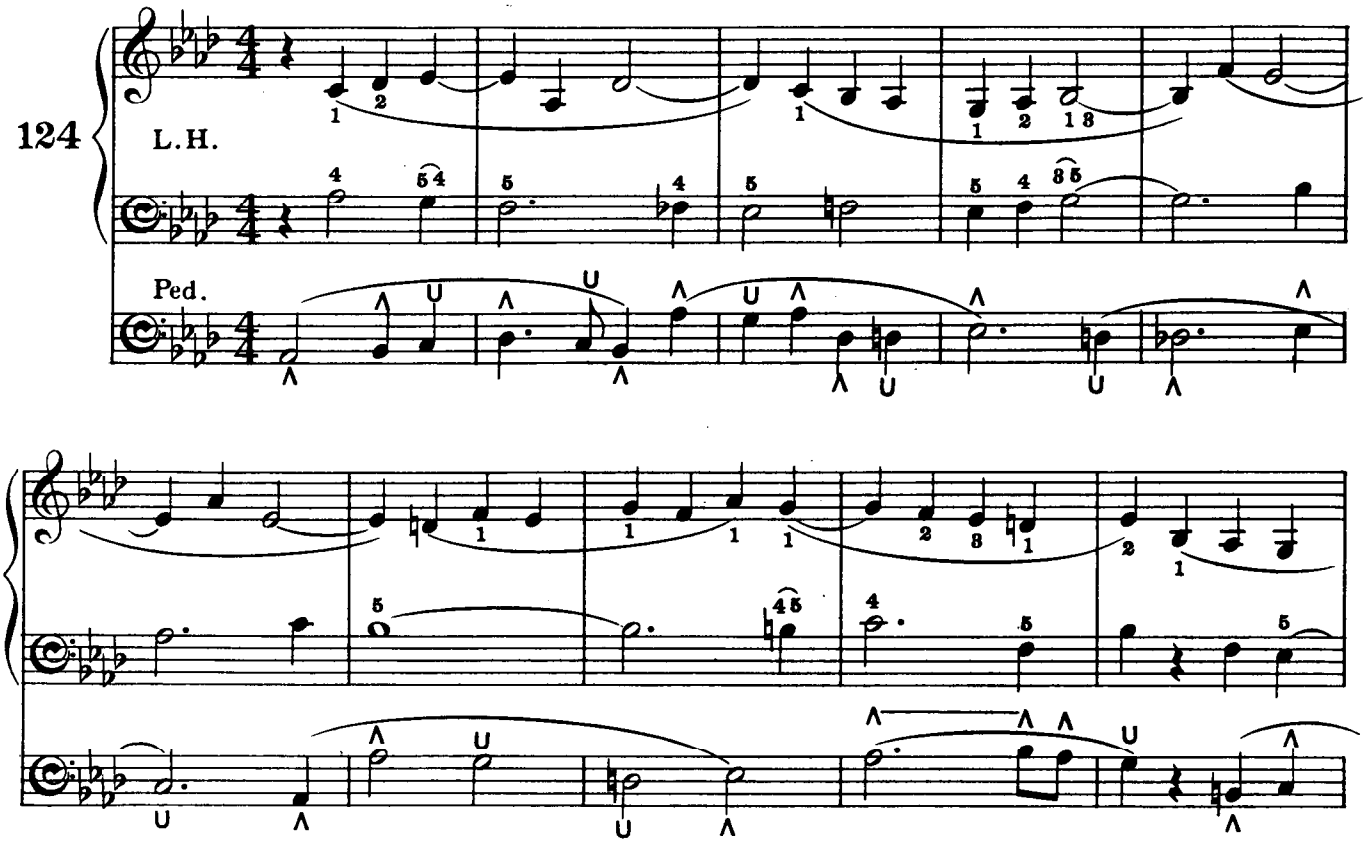
Exercises for the Left Hand and Pedals, involving the use of the heel. The choice of manuals and stops should be varied. Preliminary exercises will be found on page 130

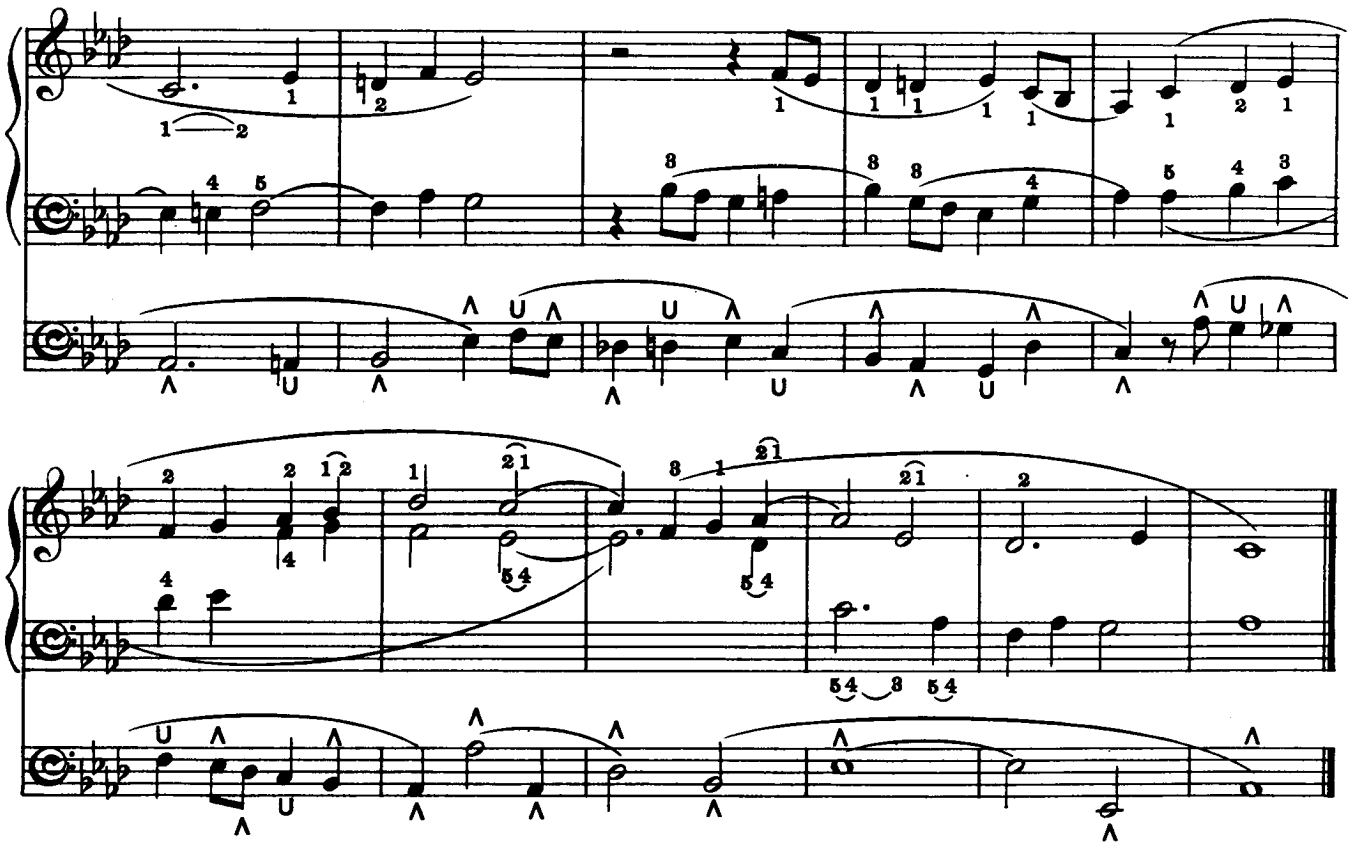
123

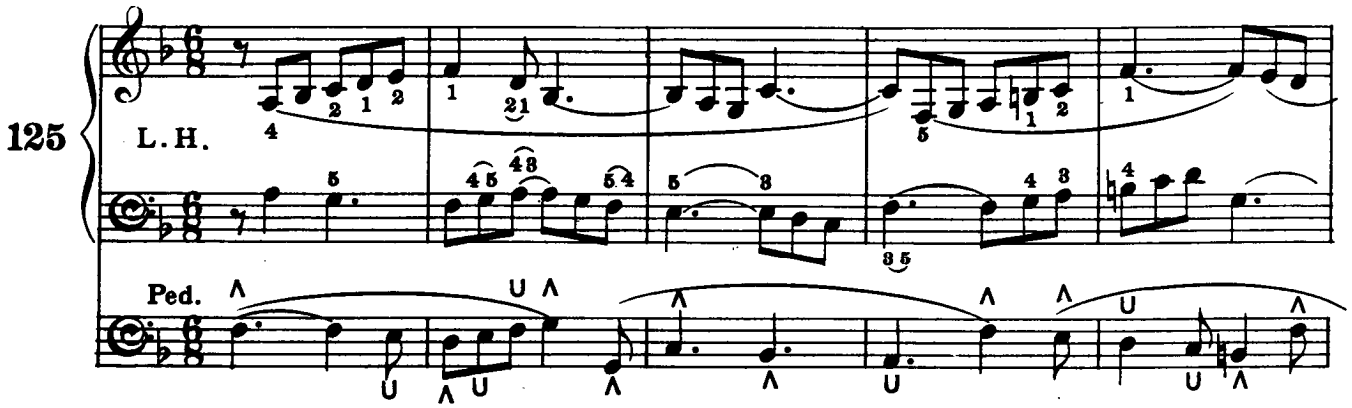


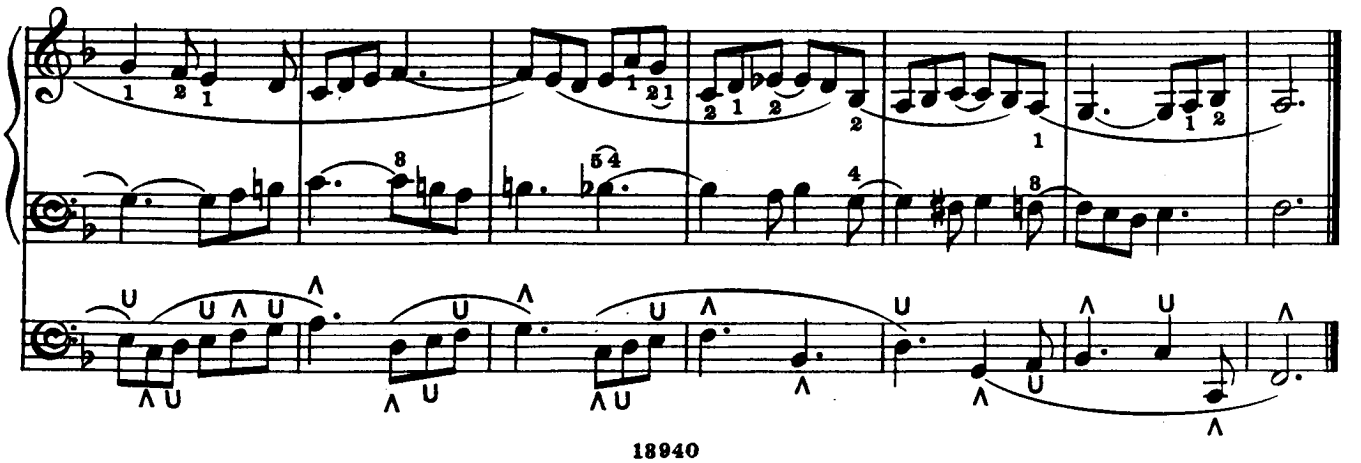
Similar Exercises in which two staves are used for the Left Hand.

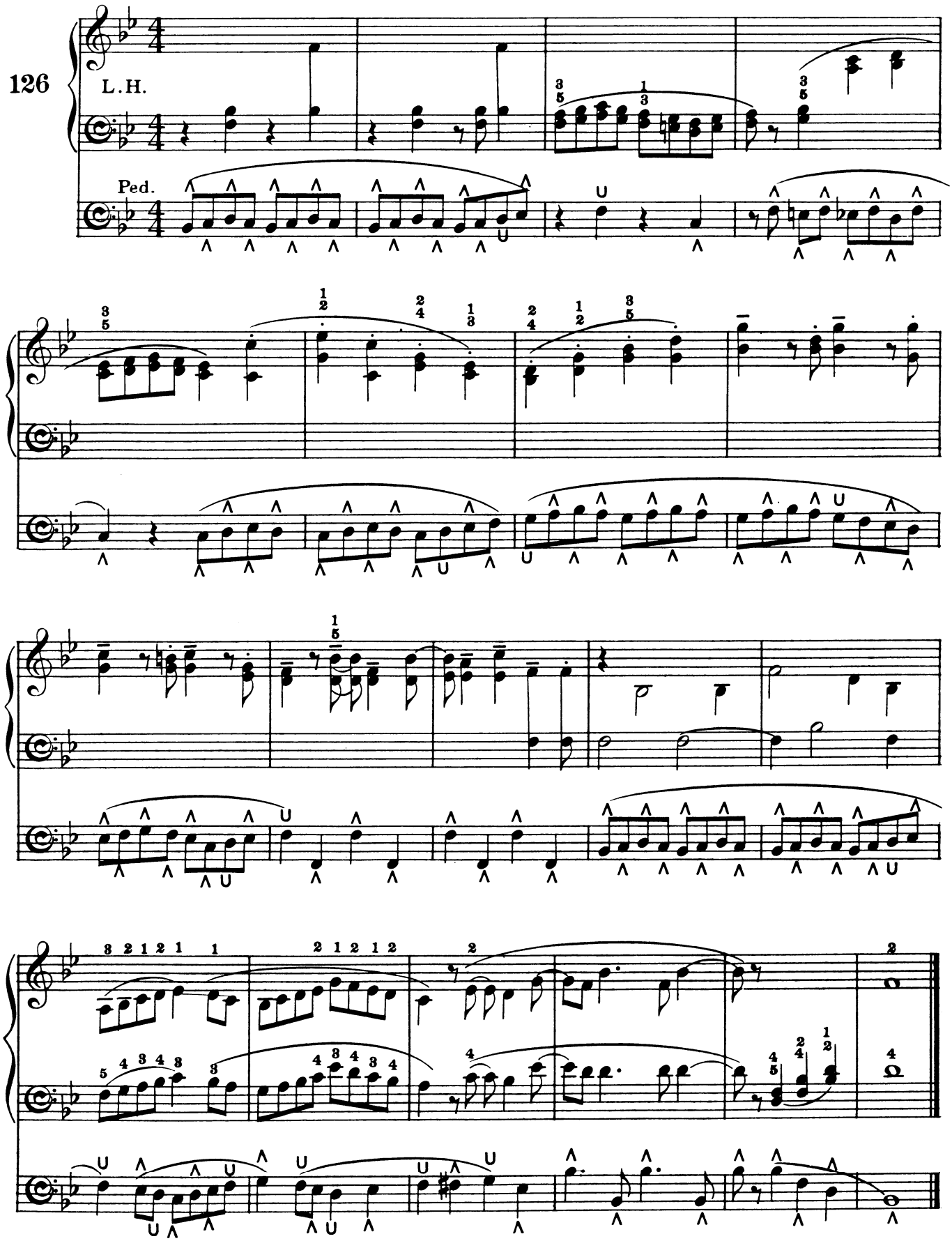
124

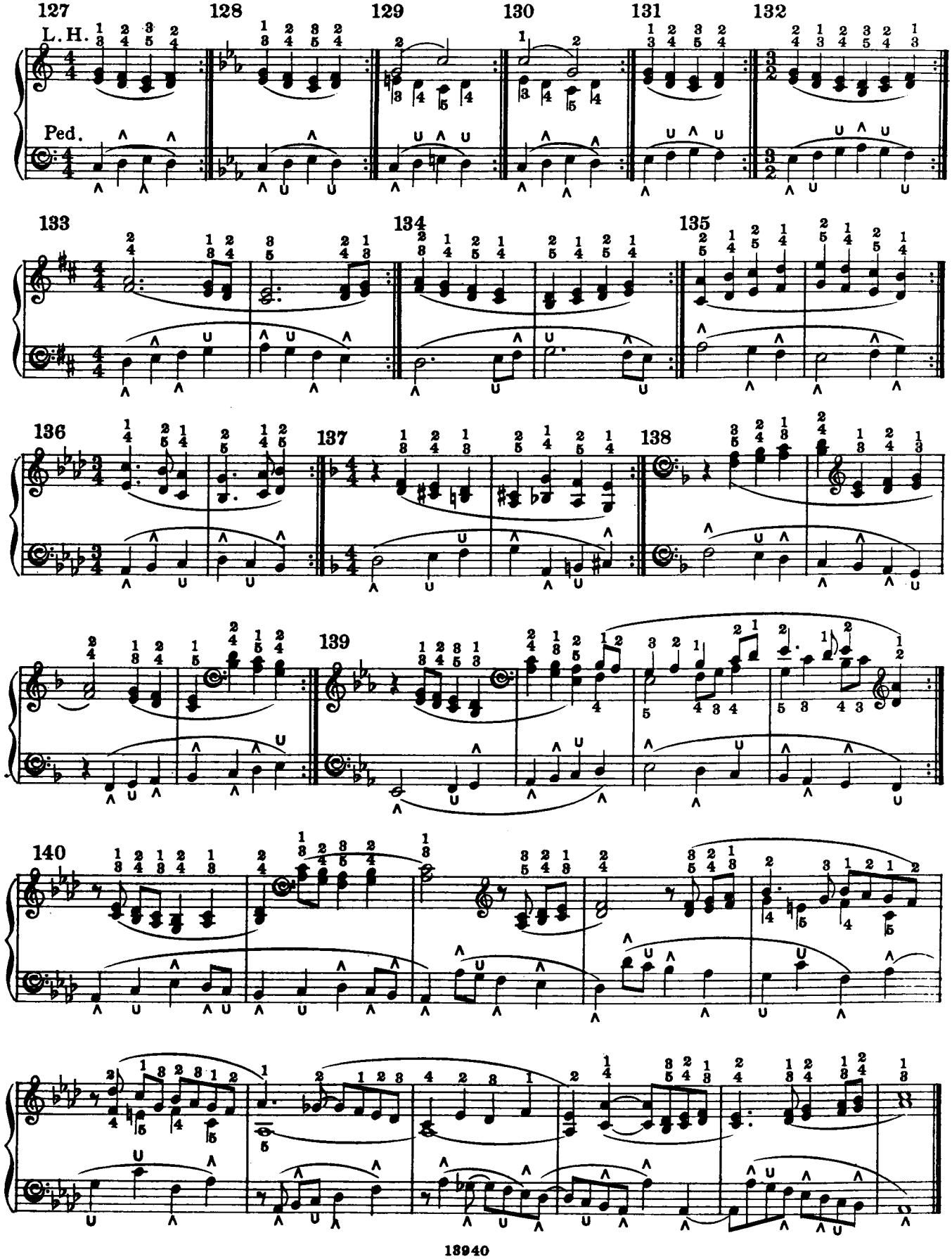





125
L. H.
Ped.




126
L.H.
Ped.


127
128
129
130
131
132
L. H.
Ped.
133
134
135
136
137
138
139
140

SECTION V.

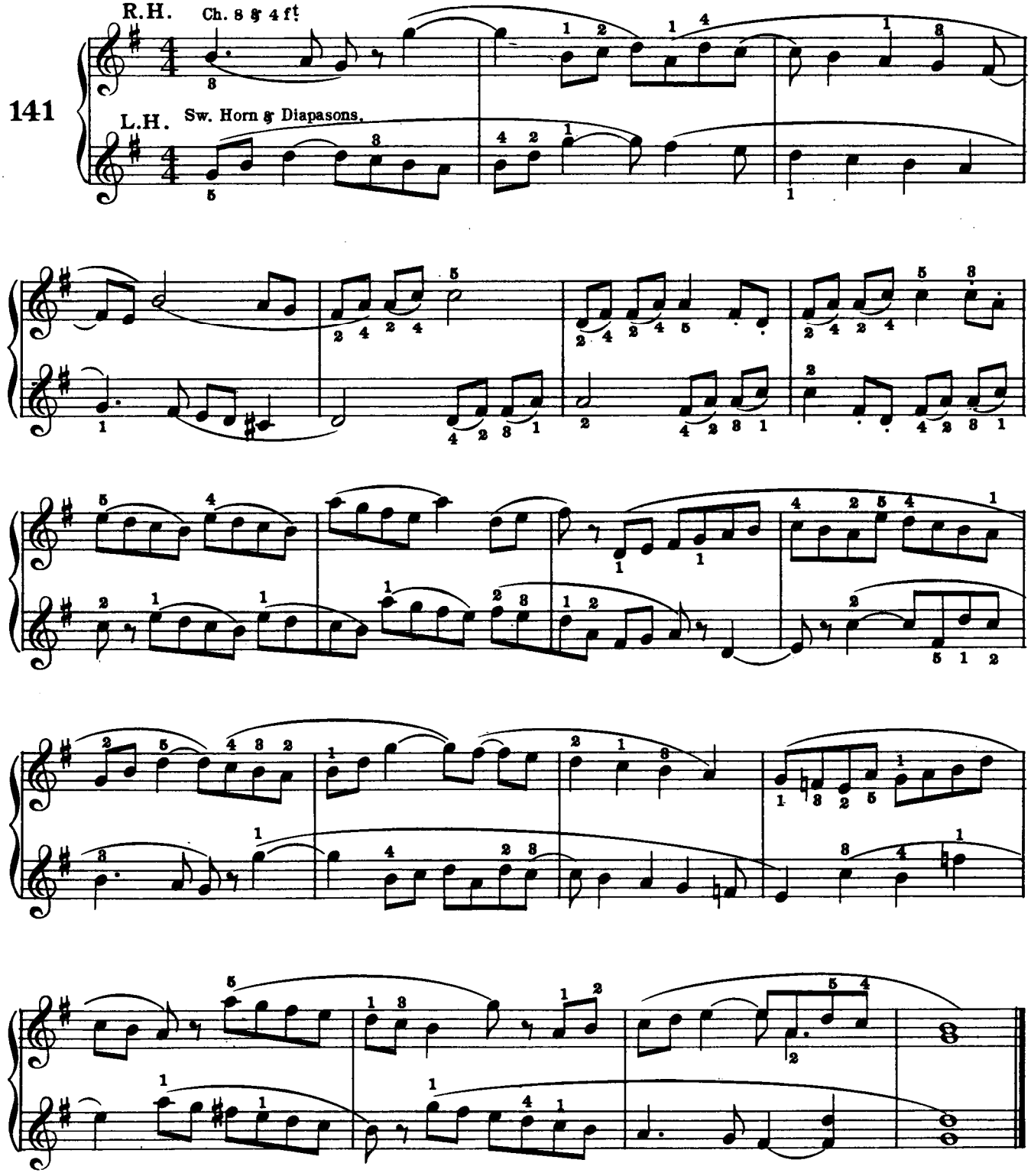
Exercises on crossing the hands.

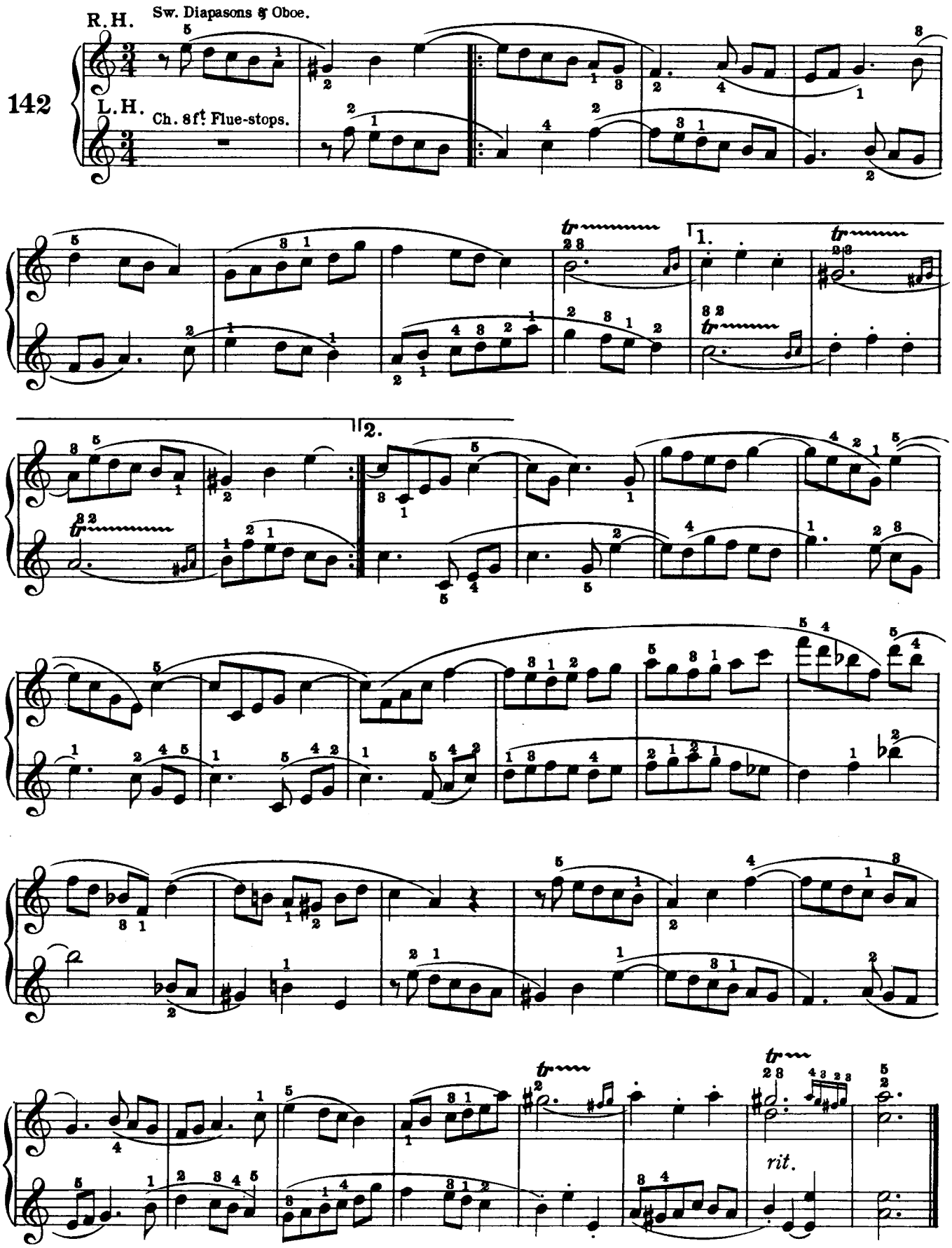
These may be played on the organ by using two manuals, in which stops of contrasted quality but of equal power are employed. Attention must be given to precision of touch, which of course includes clean release of the keys. The choice of manuals and stops may be varied under the direction of the teacher.

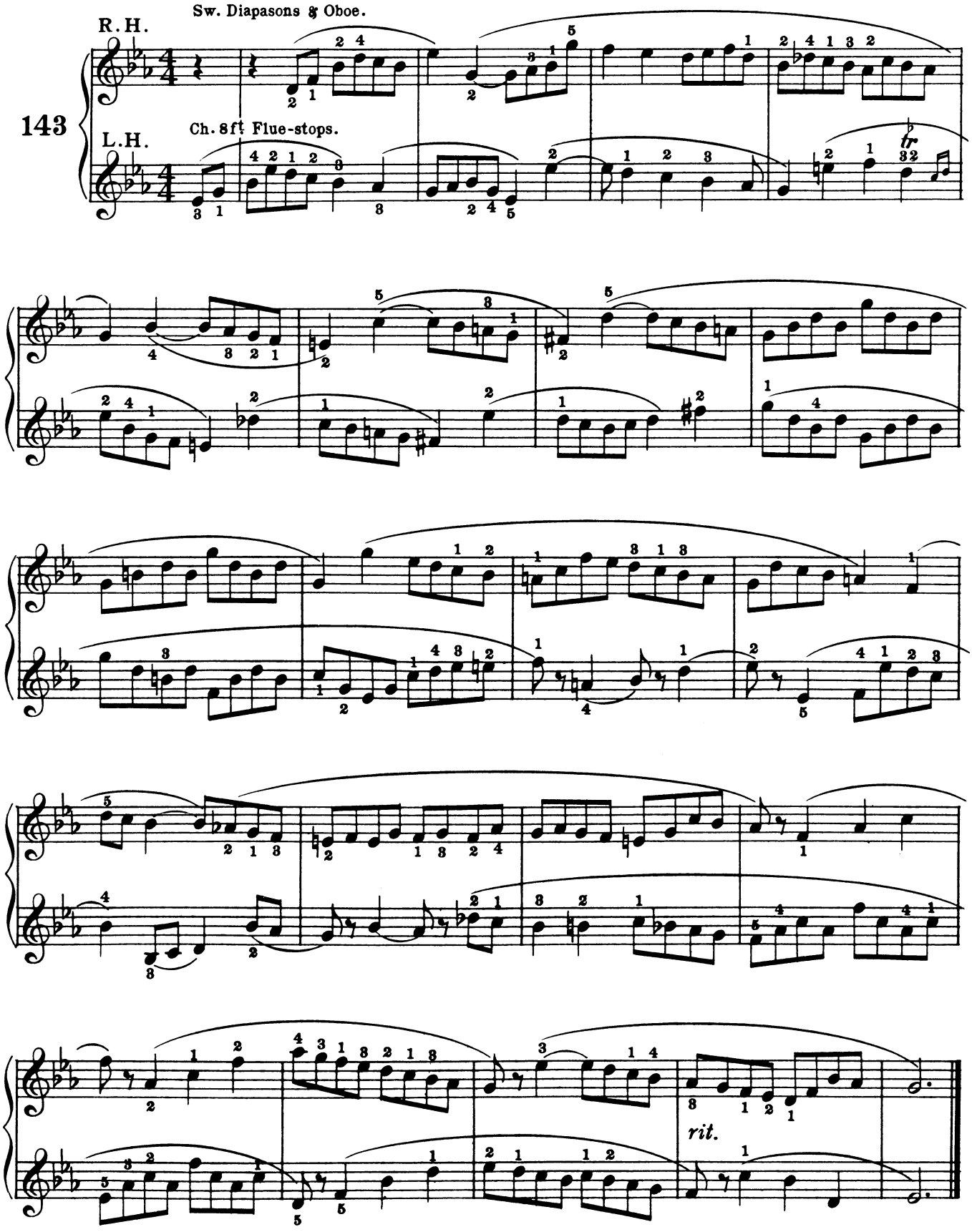
141

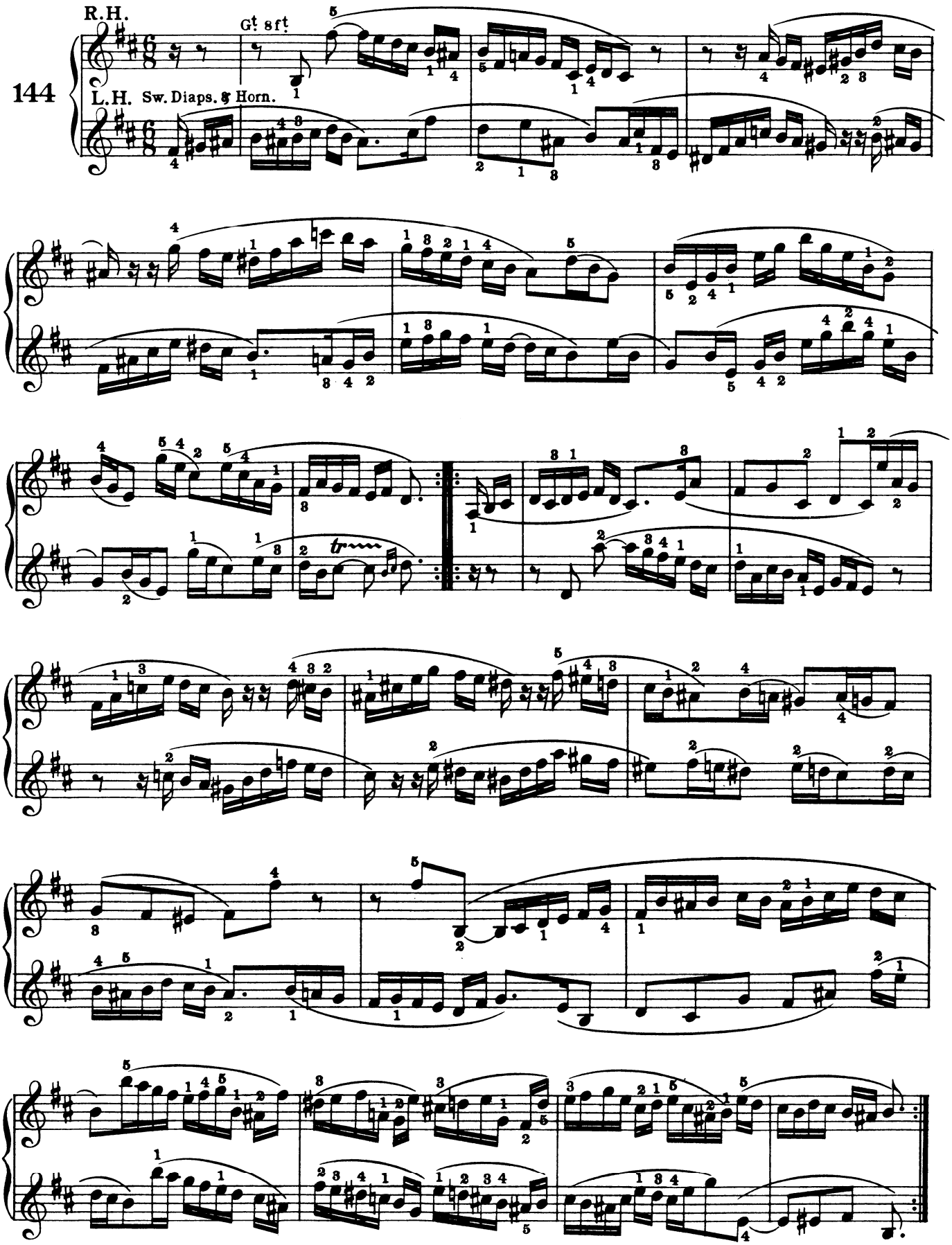
R.H. Ch. 8 & 4 ft.

L.H. Sw. Horn & Diapasons.




142
R.H.
Sw. Diapasons & Oboe.
L.H.
Ch. 8ft. Flue-stops.
1.
2.
rit.


Sw. Diapasons & Oboe.
R.H.
143
L.H.
Ch. 8ft Flue-stops.
rit.


R.H.
Gt. 8ft.
144
L.H. Sw. Diaps. & Horn.
tr

SECTION VI.

Three-part Studies.

In the following Trios for two manuals and pedals, the tone of each part should be contrasted as regards quality, while their power should be equally balanced. The student is advised to vary the position of the hands on the manuals, i.e. use any two different manuals for the right and left hands.

Preliminary exercises will be found on page 131

145

Man. I.

Man. II.

Ped.

8 ft only.

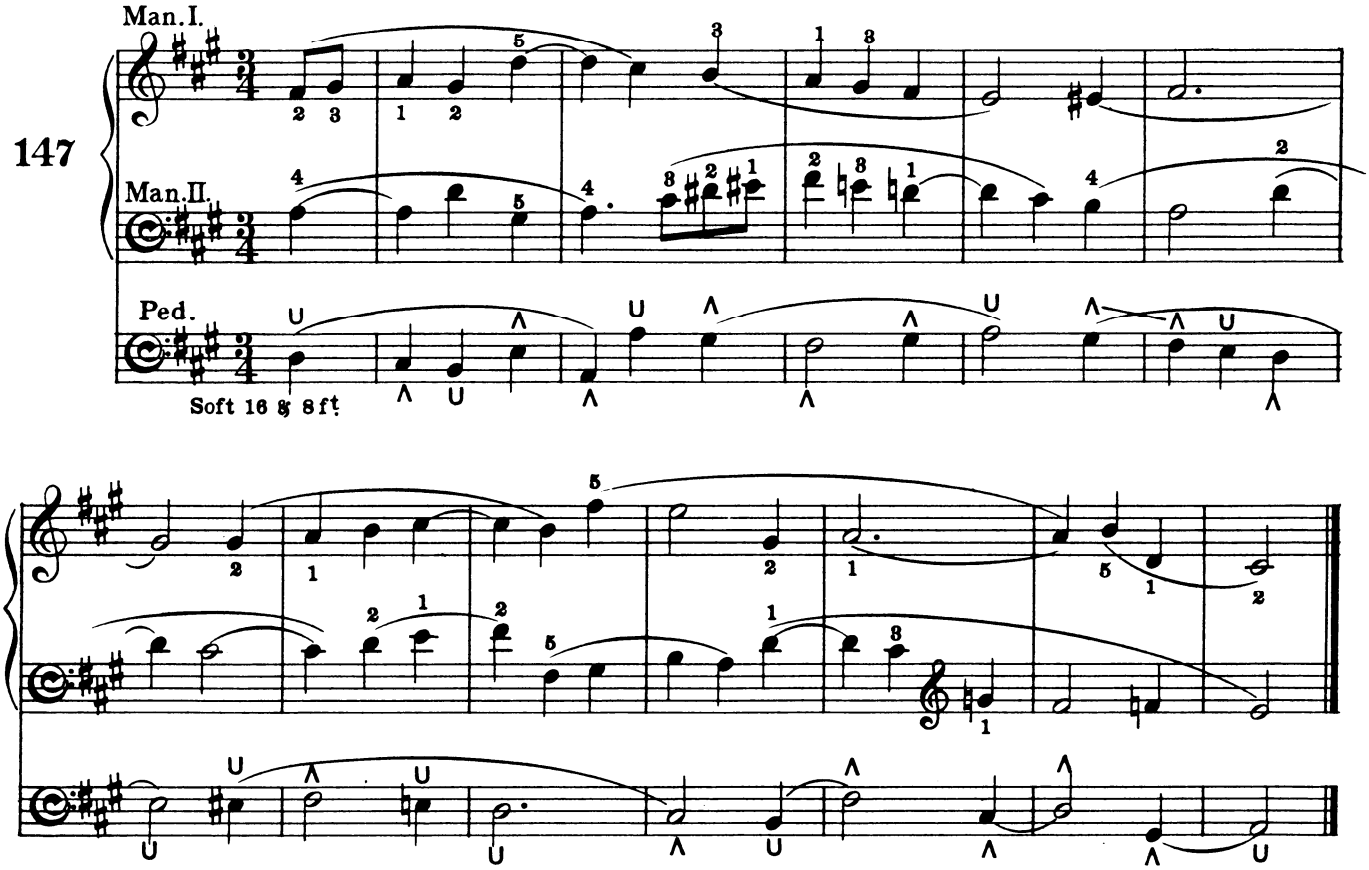
146

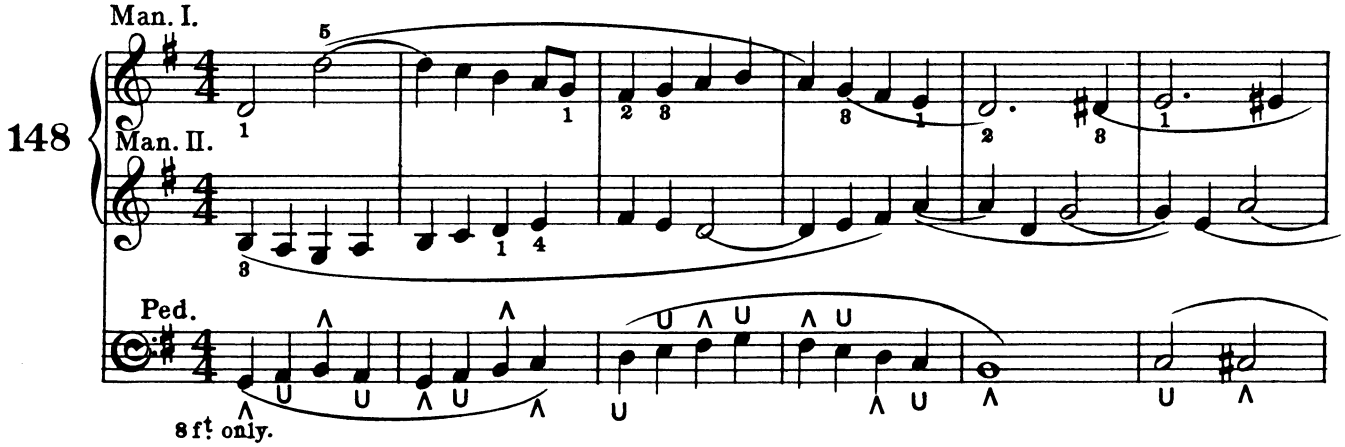
Man. I.

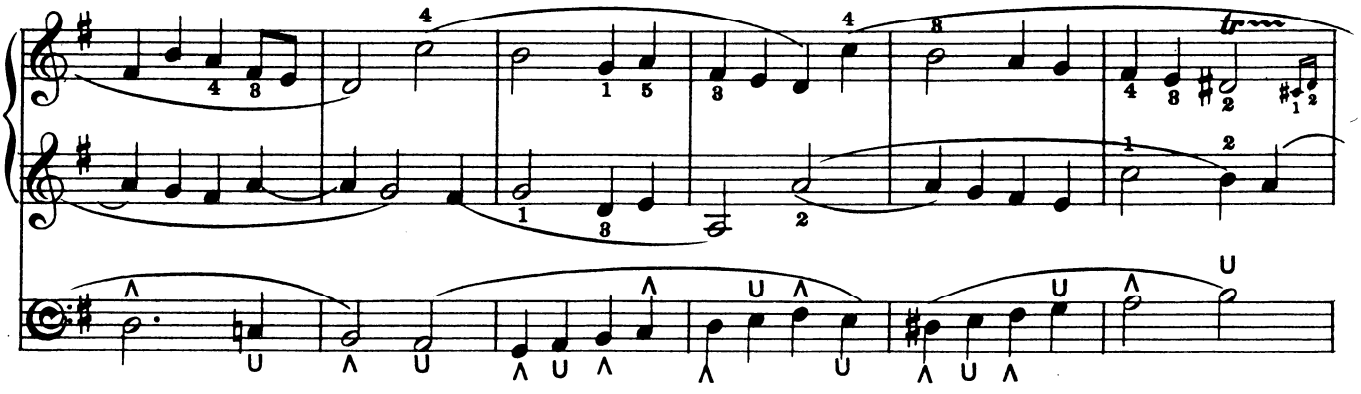
Man. II.

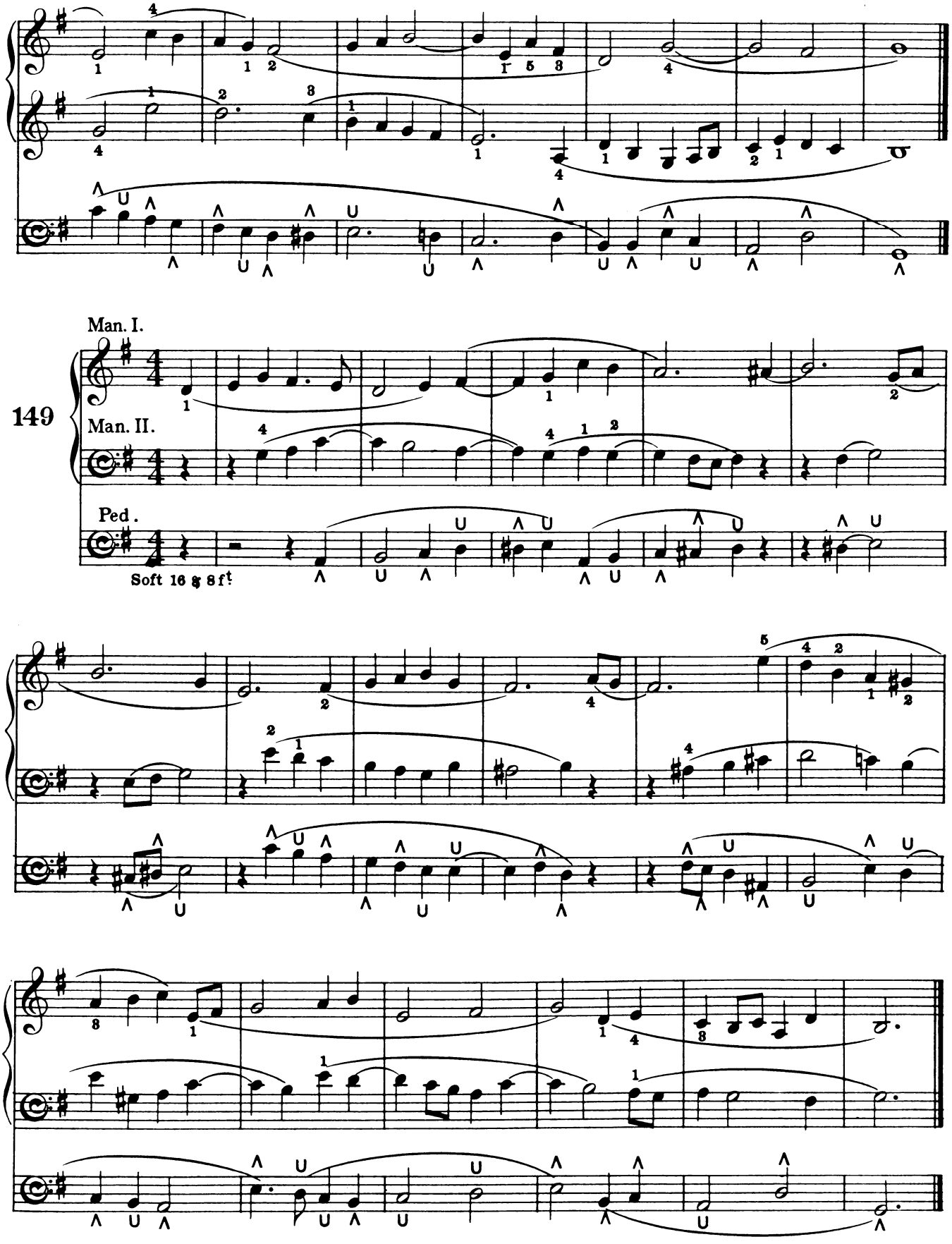
Ped.

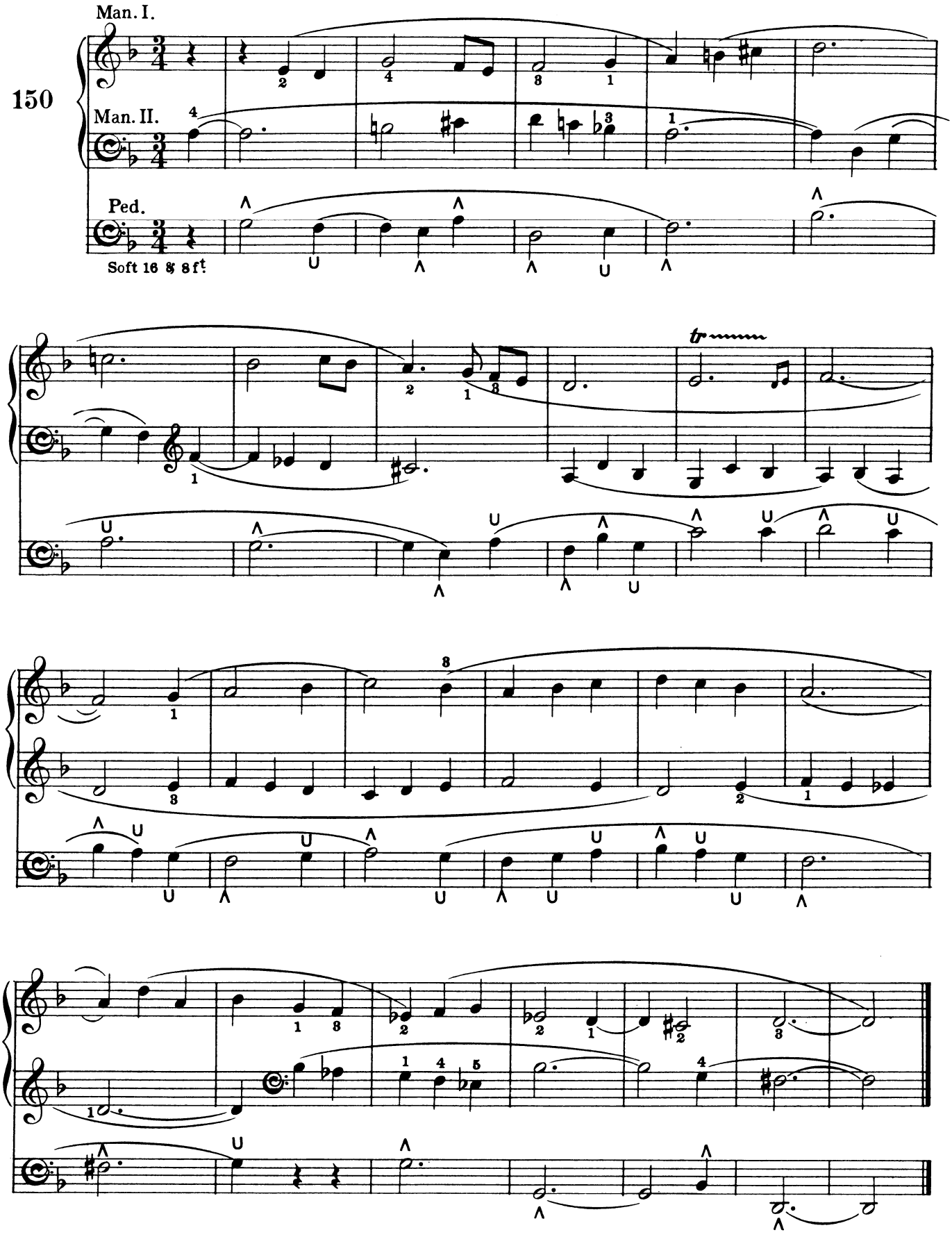
Soft 16 & 8 ft

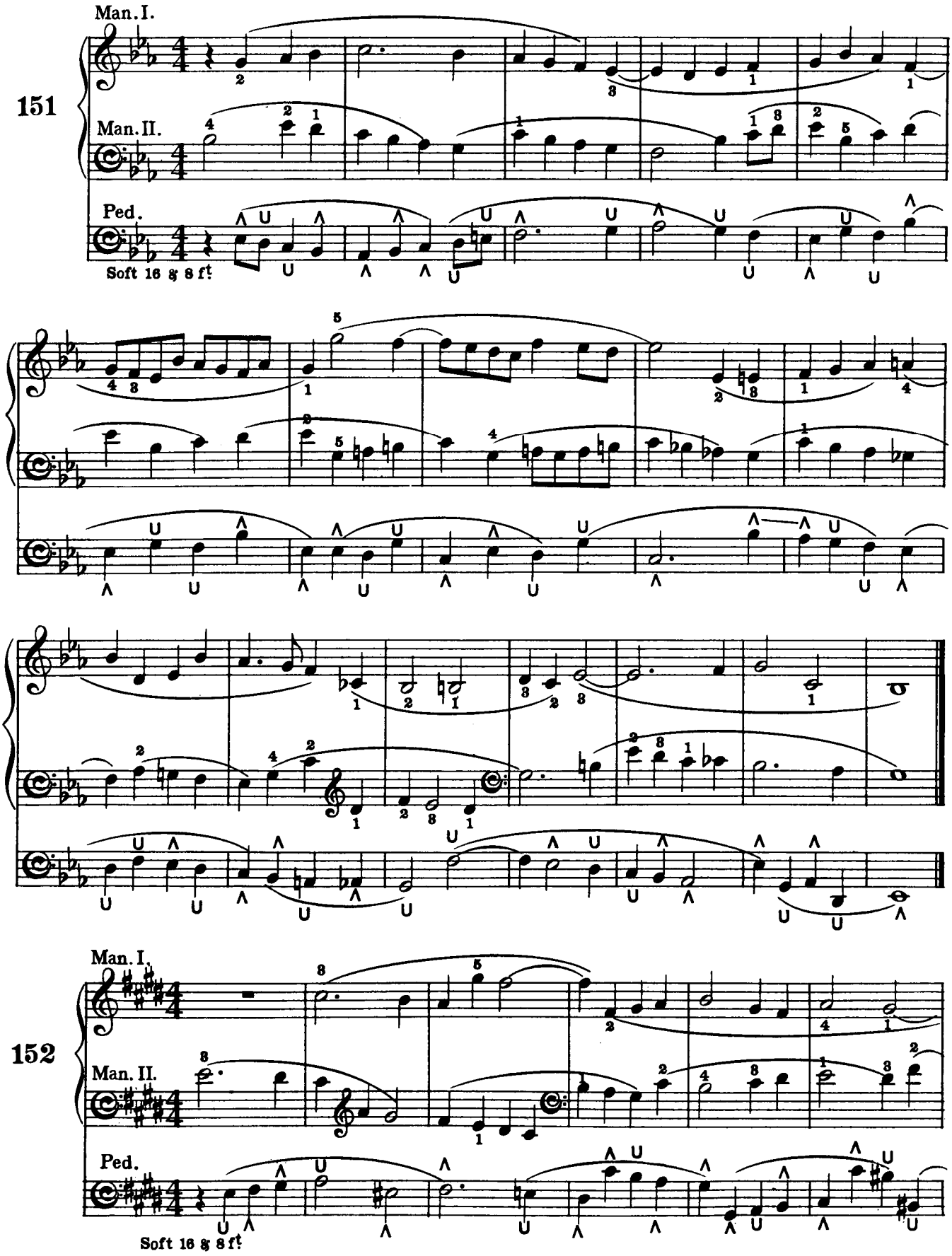

147
Man. I.
Man. II.
Ped.
Soft 16 & 8 ft

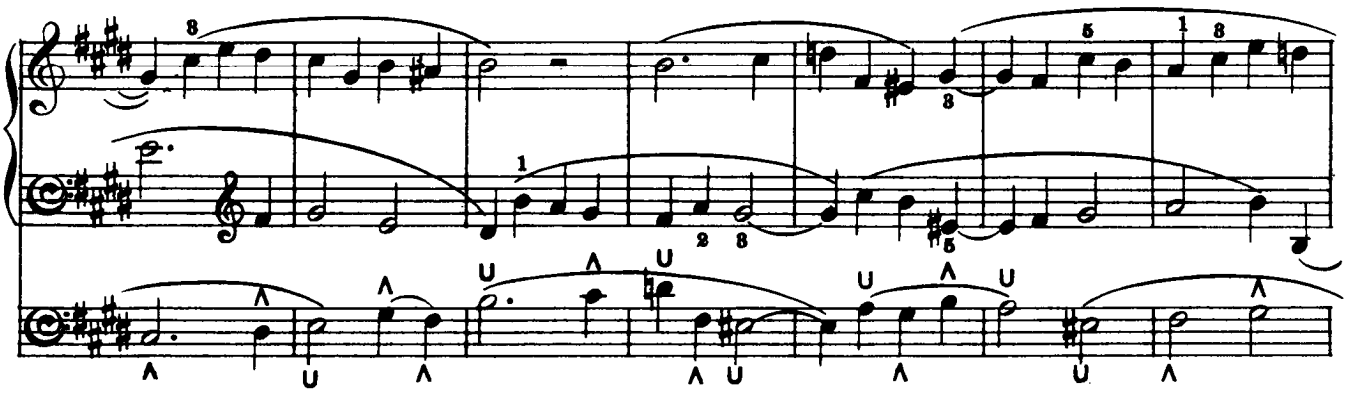

148
Man. I.
Man. II.
Ped.
8 ft only.

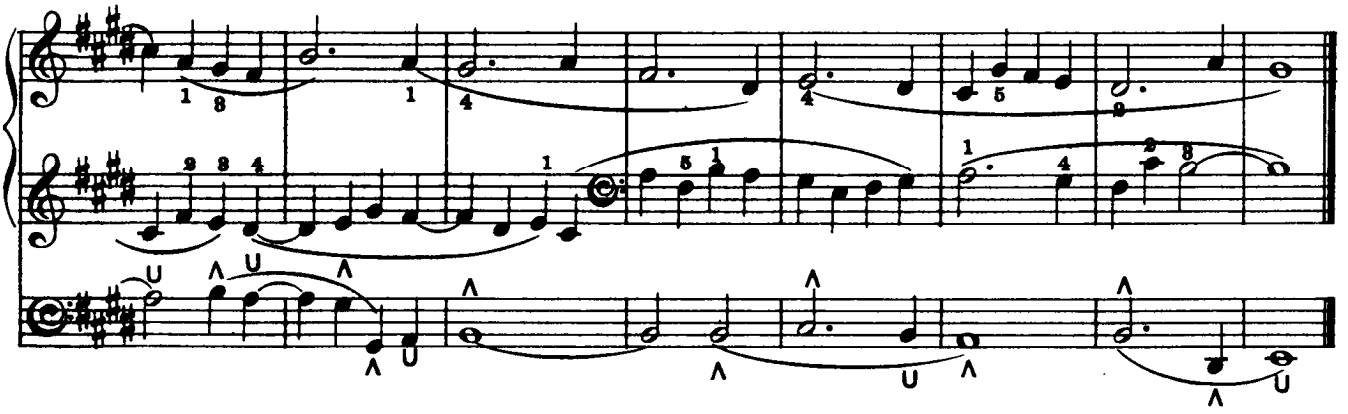



Man. I.
149
Man. II.
Ped.
Soft 16 & 8 ft


Man. I.
150
Man. II.
Ped.
Soft 16 & 8 ft.
tr


Man. I.
151
Man. II.
Ped.
Soft 16 & 8 ft
Man. I.
152
Man. II.
Ped.
Soft 16 & 8 ft





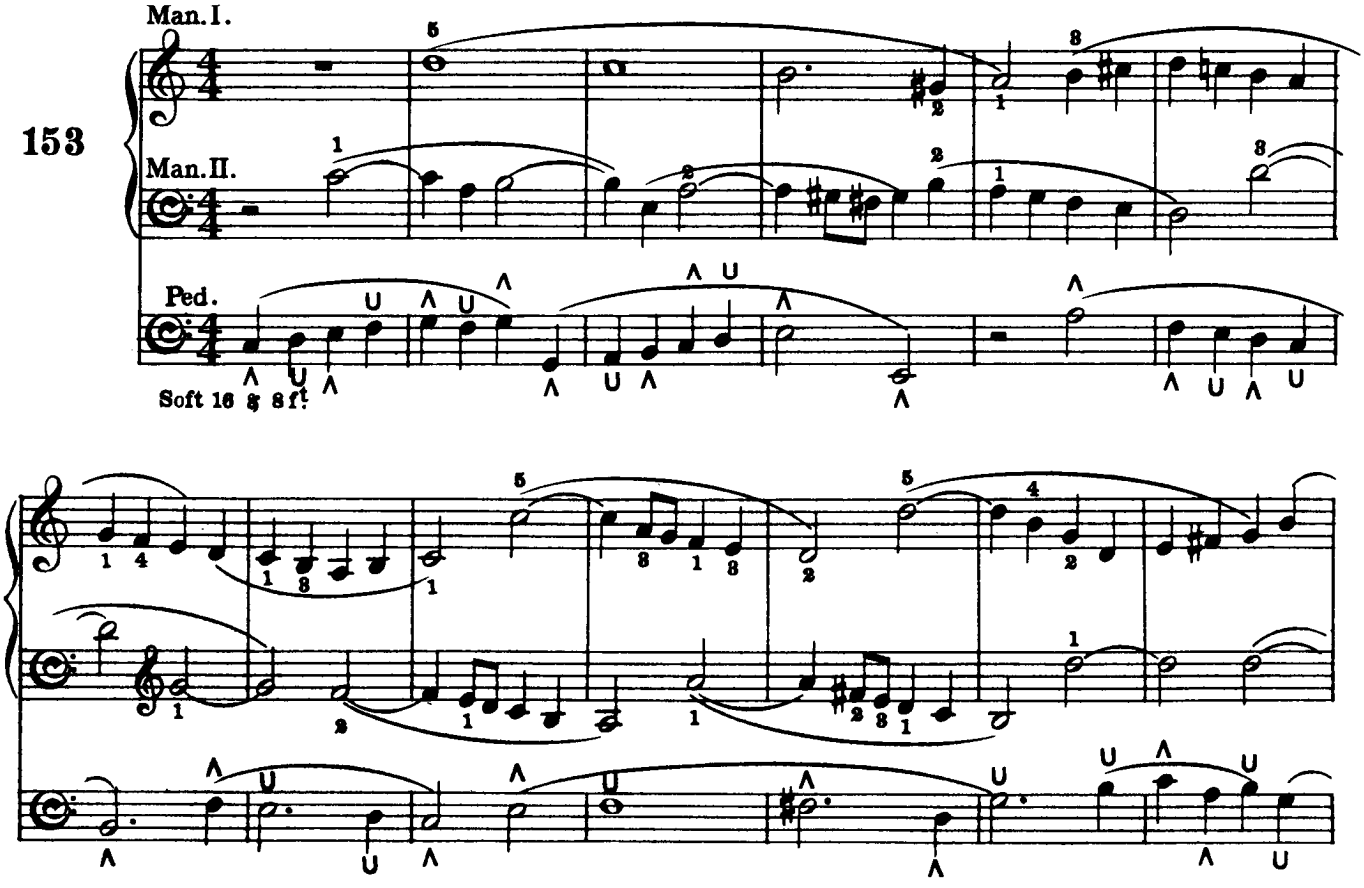
153

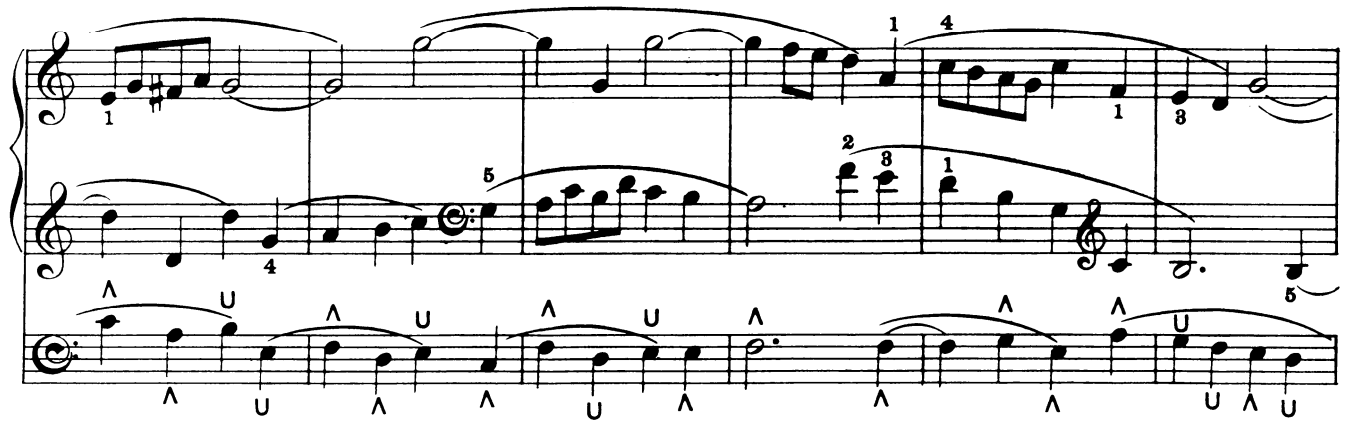
Man. I.

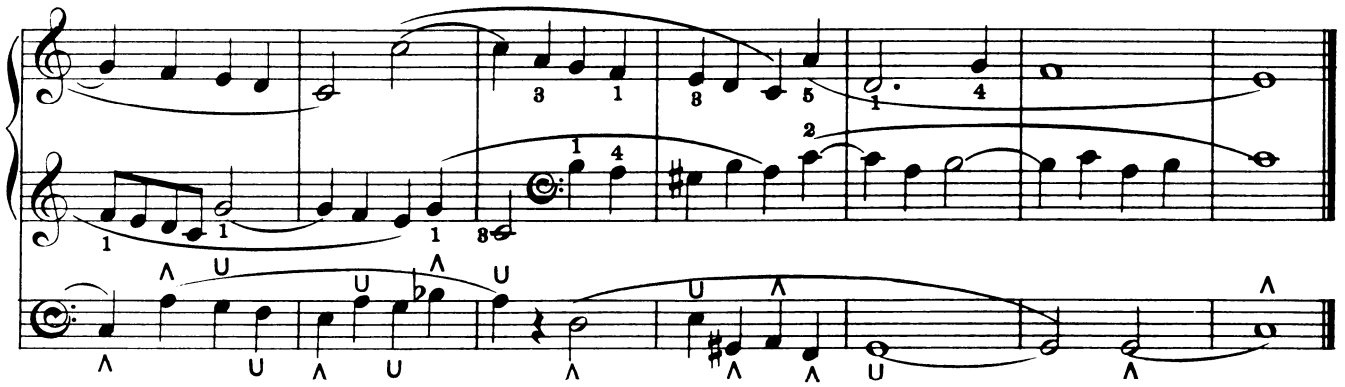
Man. II.

Ped.

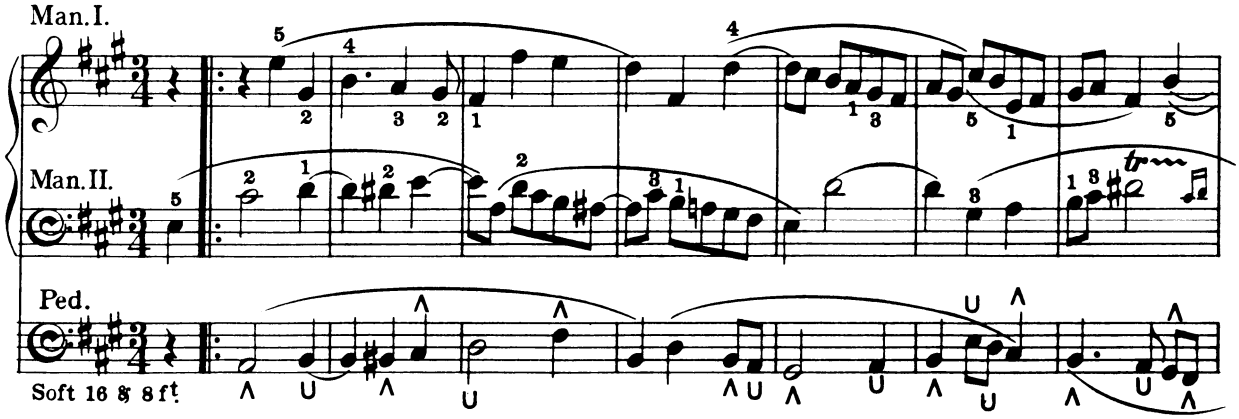
Soft 16 & 8 ft.

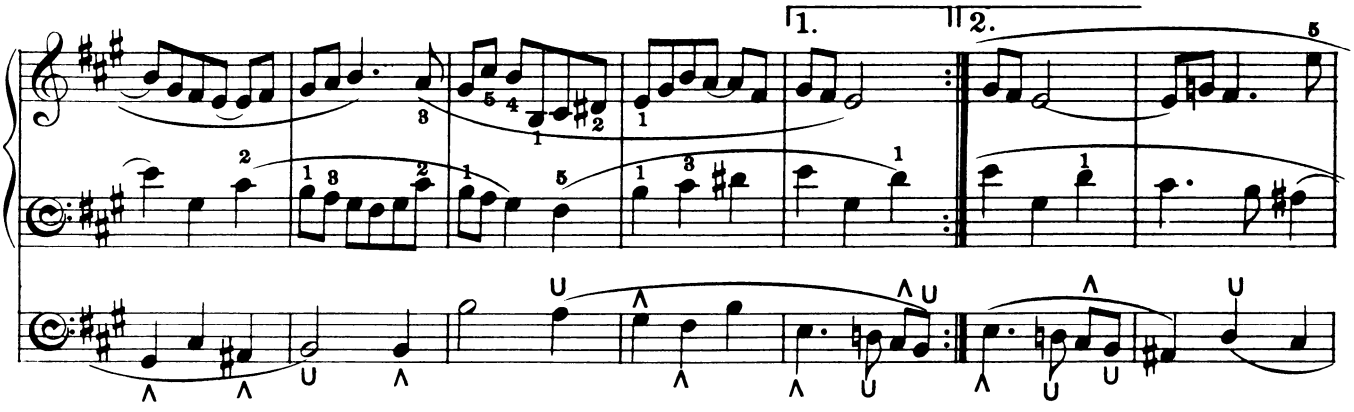


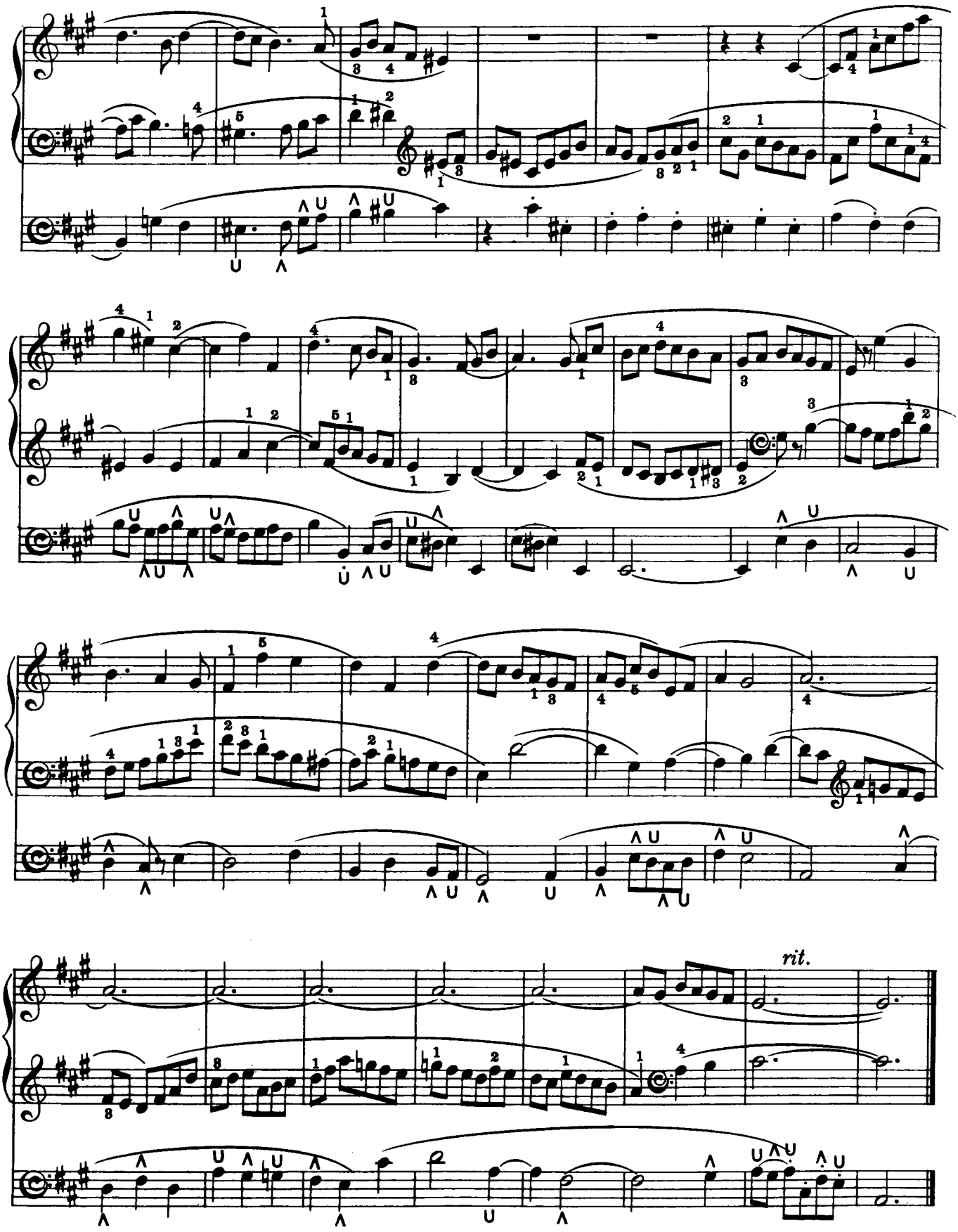


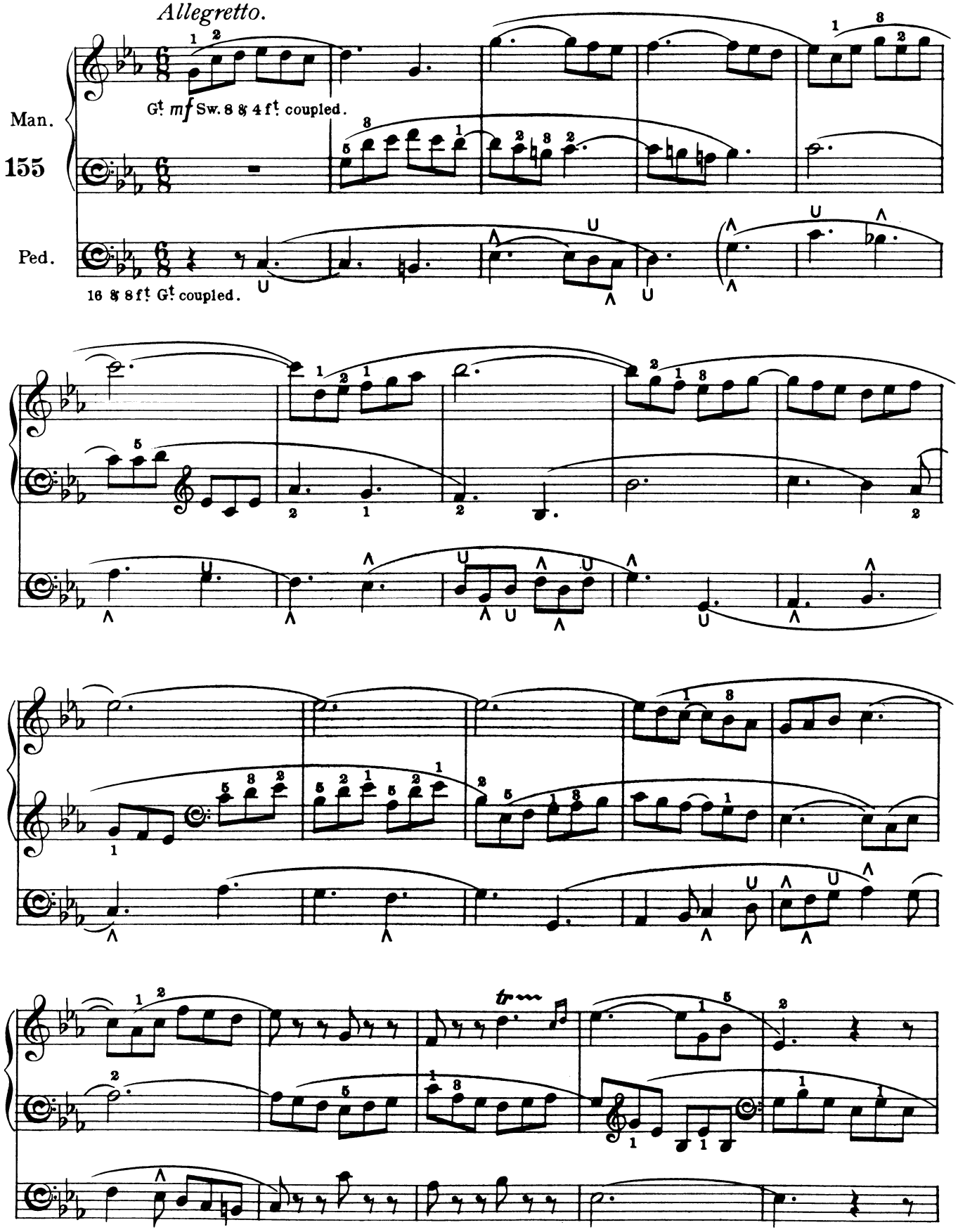


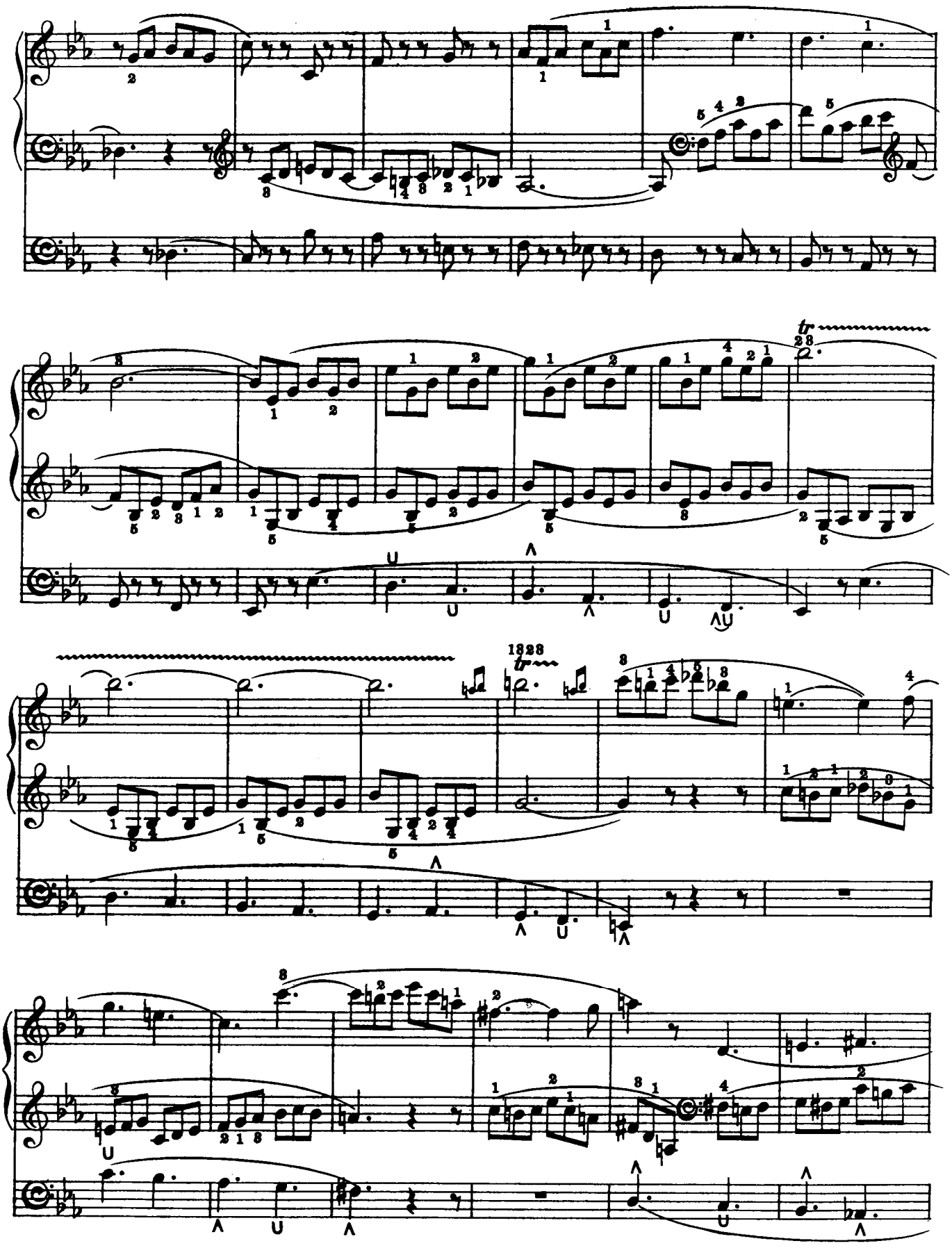
154

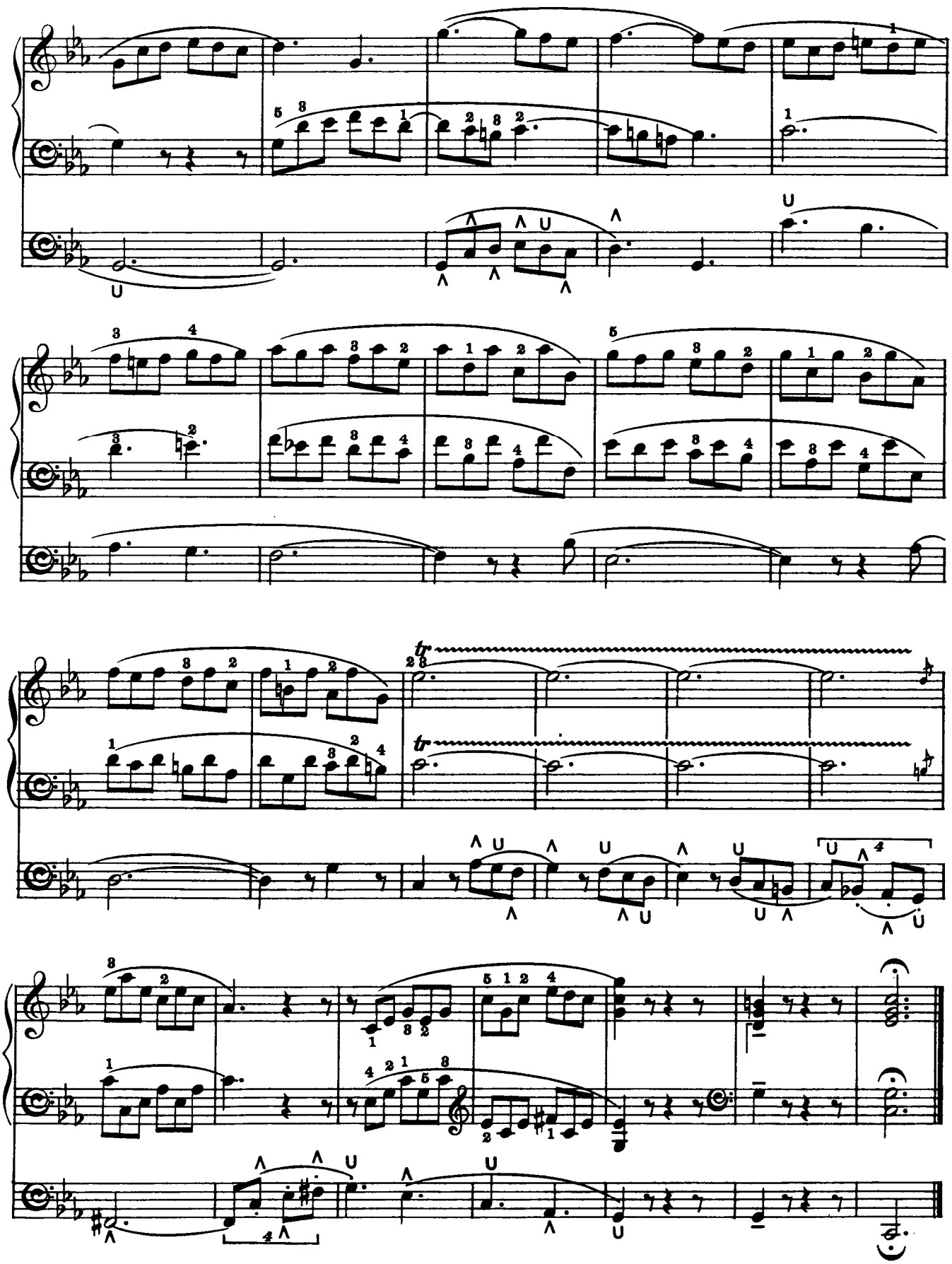





rit.


Allegretto.
Man.
155
Ped.
G! mf Sw. 8 & 4 f! coupled.
16 & 8 f! G! coupled.



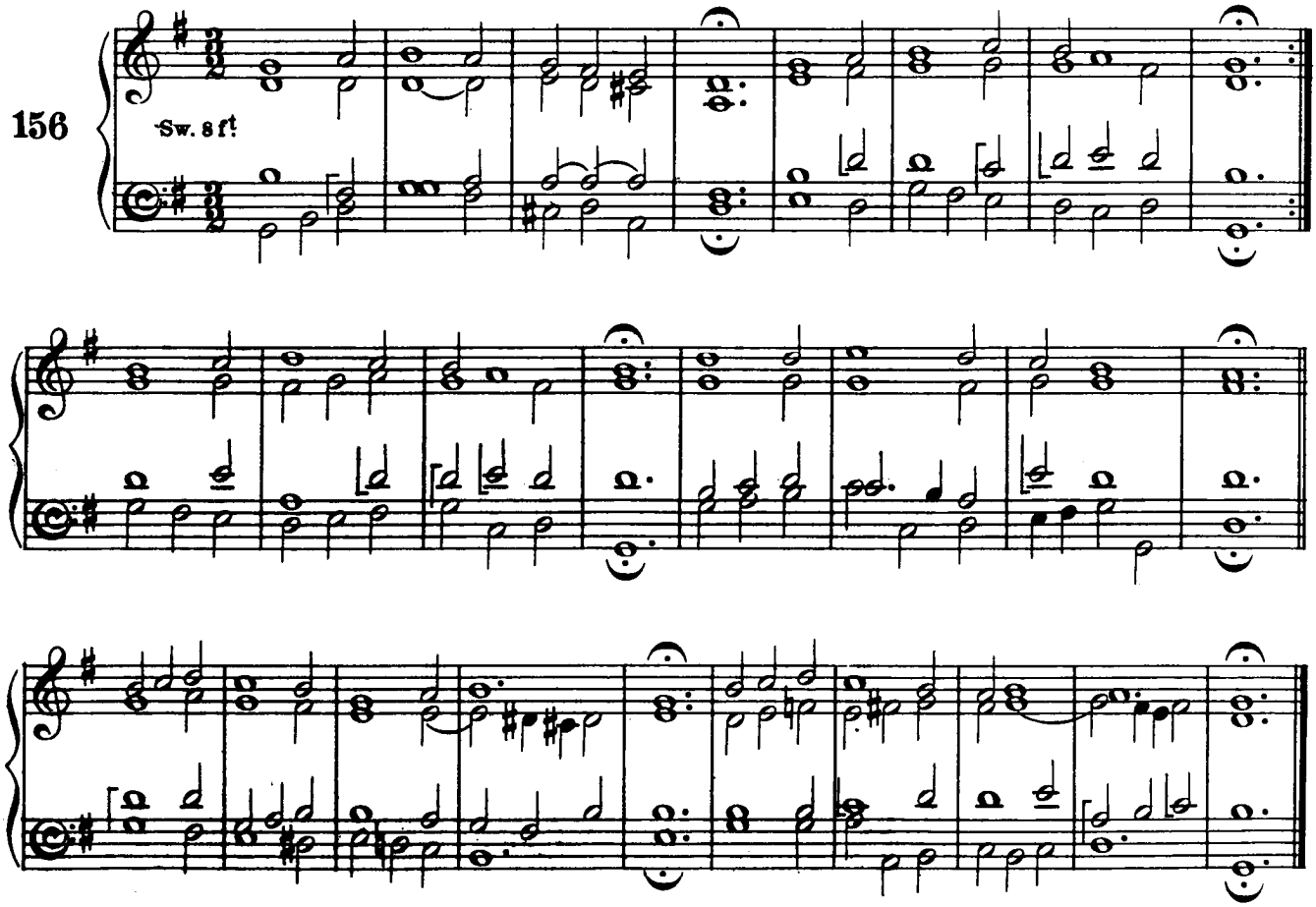


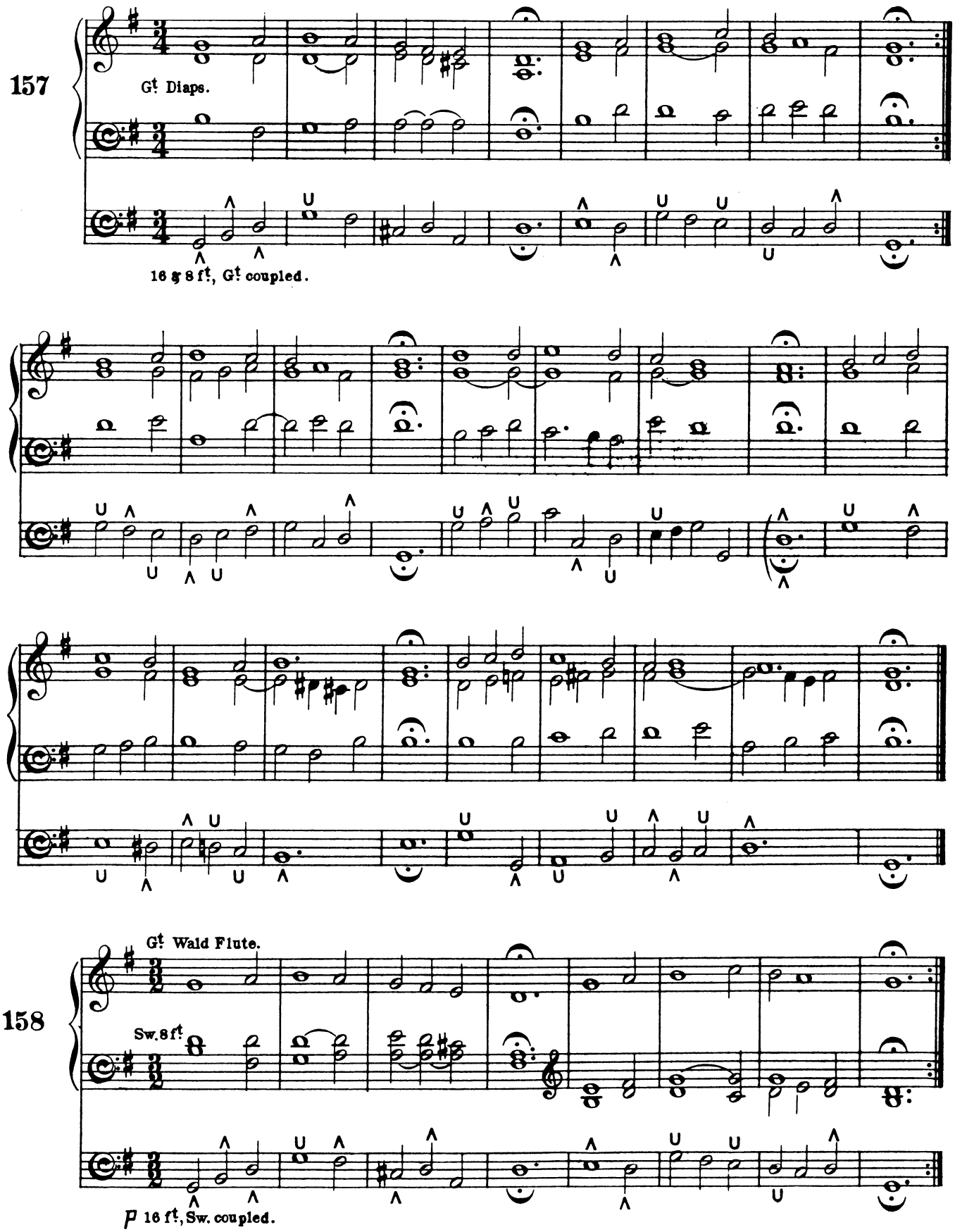
SECTION VII.

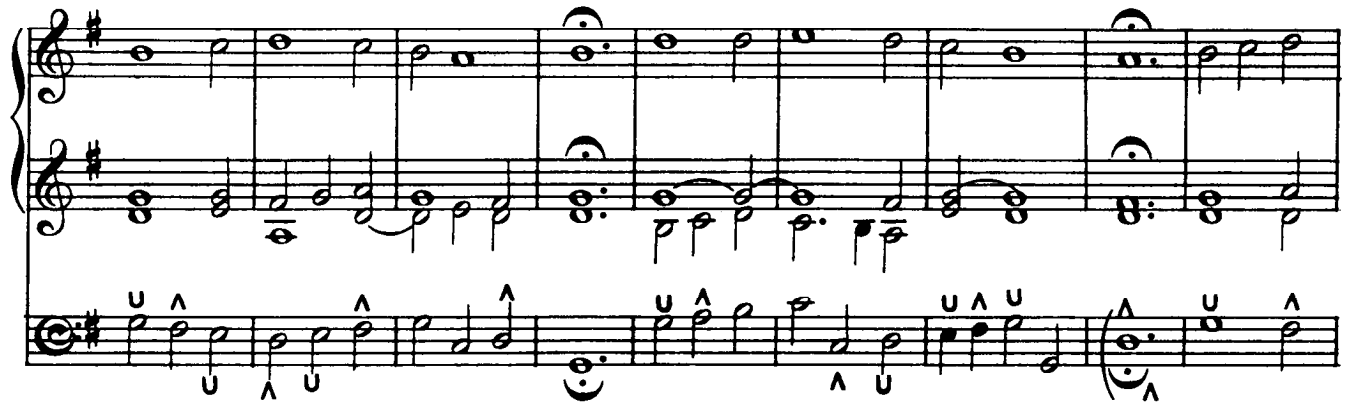
On the playing of Hymn Tunes.

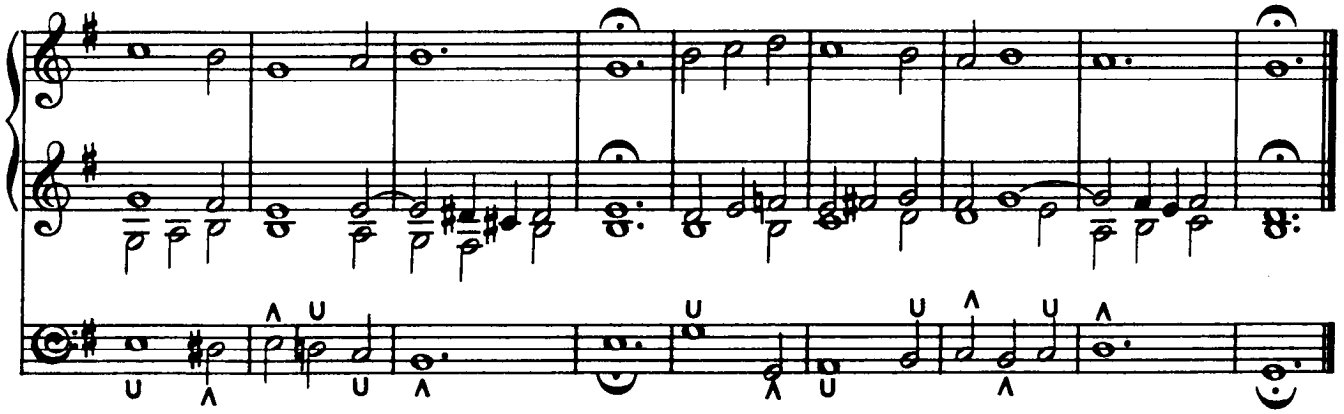
As the majority of organ students eventually become Church or Chapel organists, it is essential that they should possess fluency in the accompaniment of Hymn Tunes and similar music requiring a legato touch. To this end a series of Chorales is now given, and it will be seen that each one is playable in three different ways, viz: by hands alone, by hands (on the same manual) and feet, and by hands (on *two* manuals) and feet. In the matter of fingering, the greatest care must be taken, and the method of changing from one finger to another on one note without repetition of that note, must be carefully studied. Also, either hand must help the other on occasion. This is well illustrated in the first Chorale (manuals only), the bracket showing where it is necessary. Although the rule in true organ music is that reiterated notes should be repeated, this is somewhat relaxed in the case of Hymn Tunes. The ties will indicate where it is desirable to sustain repeated notes. The following Chorales are included, with many others, in two volumes of Chorales harmonised by J. S. Bach, edited by Ludwig Erk (Peters No. 22), and the student is recommended to obtain one or both, as they will be found an invaluable aid to the cultivation of a true legato touch.

FREU' DICH SEHR, O MEINE SEELE.

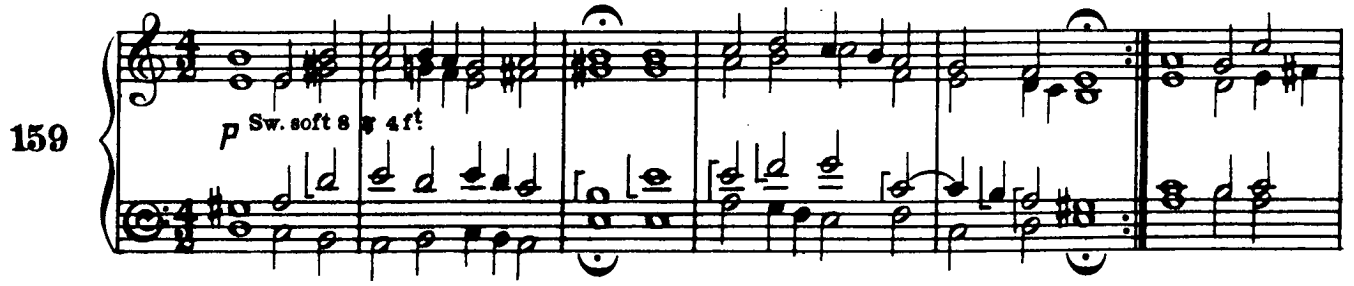


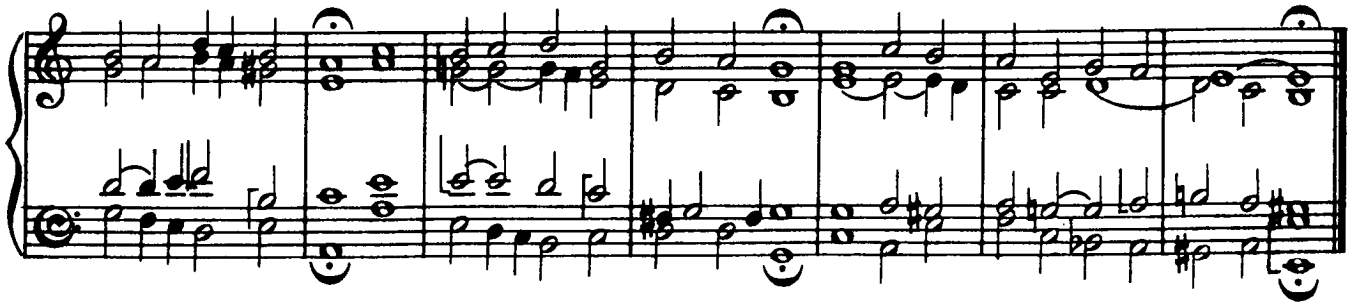

157
Gt Diaps.
16 & 8 ft, Gt coupled.
158
Gt Wald Flute.
Sw. 8 ft
p 16 ft, Sw. coupled.



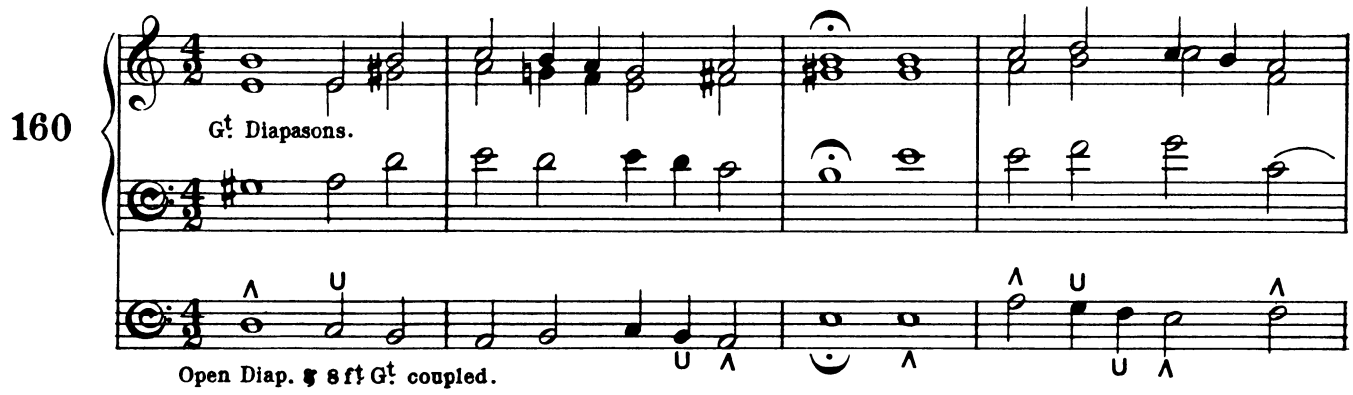


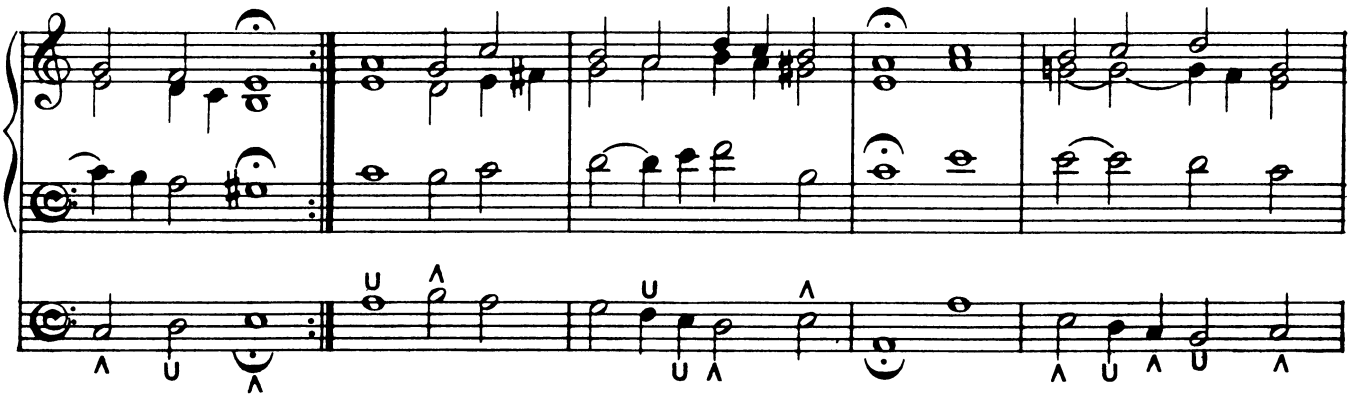
AUS TIEFER NOTH SCHREI' ICH ZU DIR.

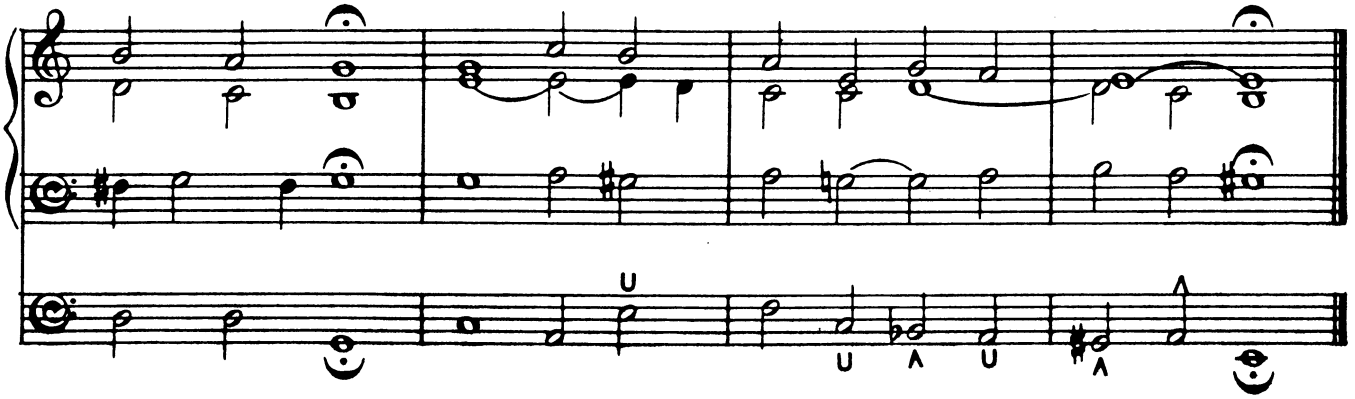




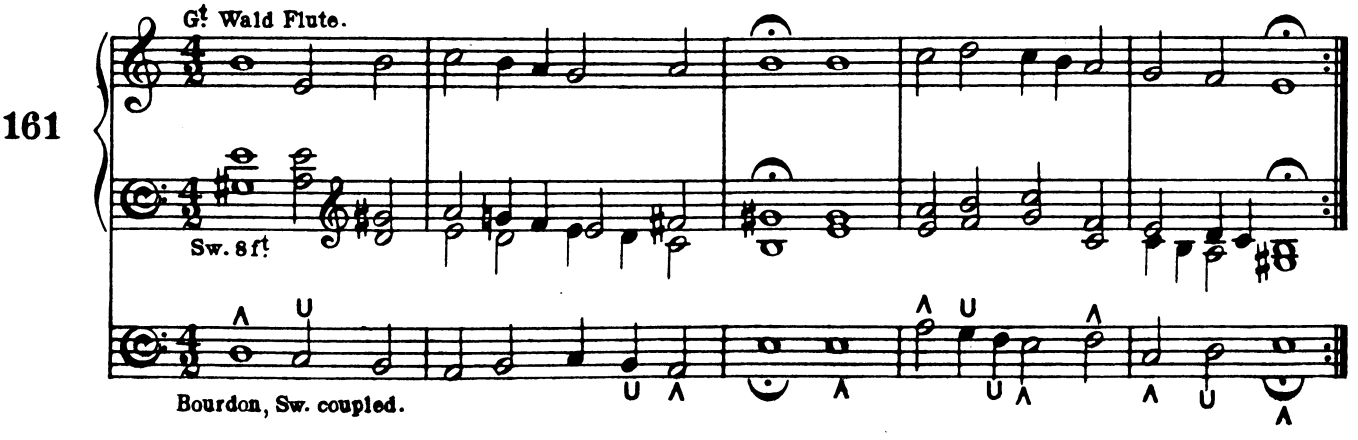
160

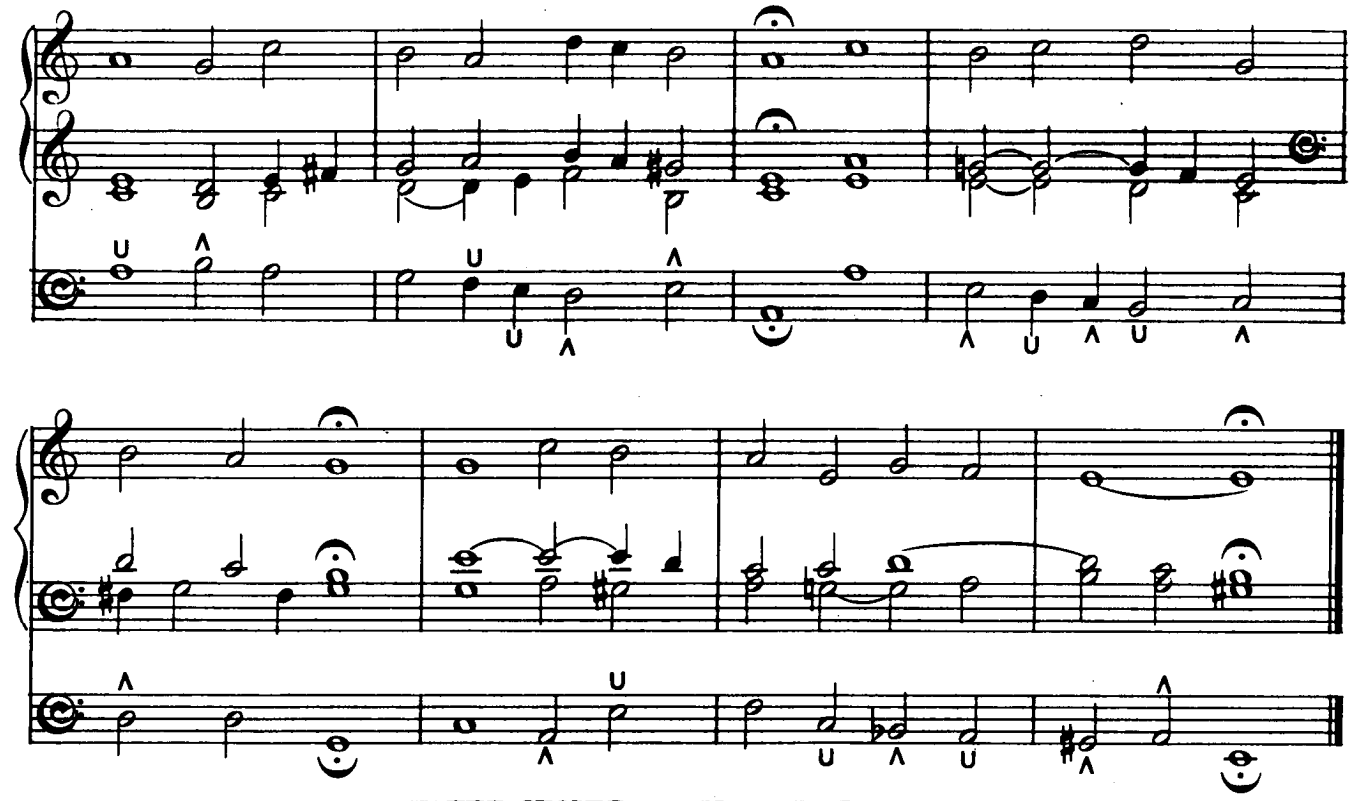

Gt. Diapasons.
Open Diap. & 8 ft. Gt. coupled.



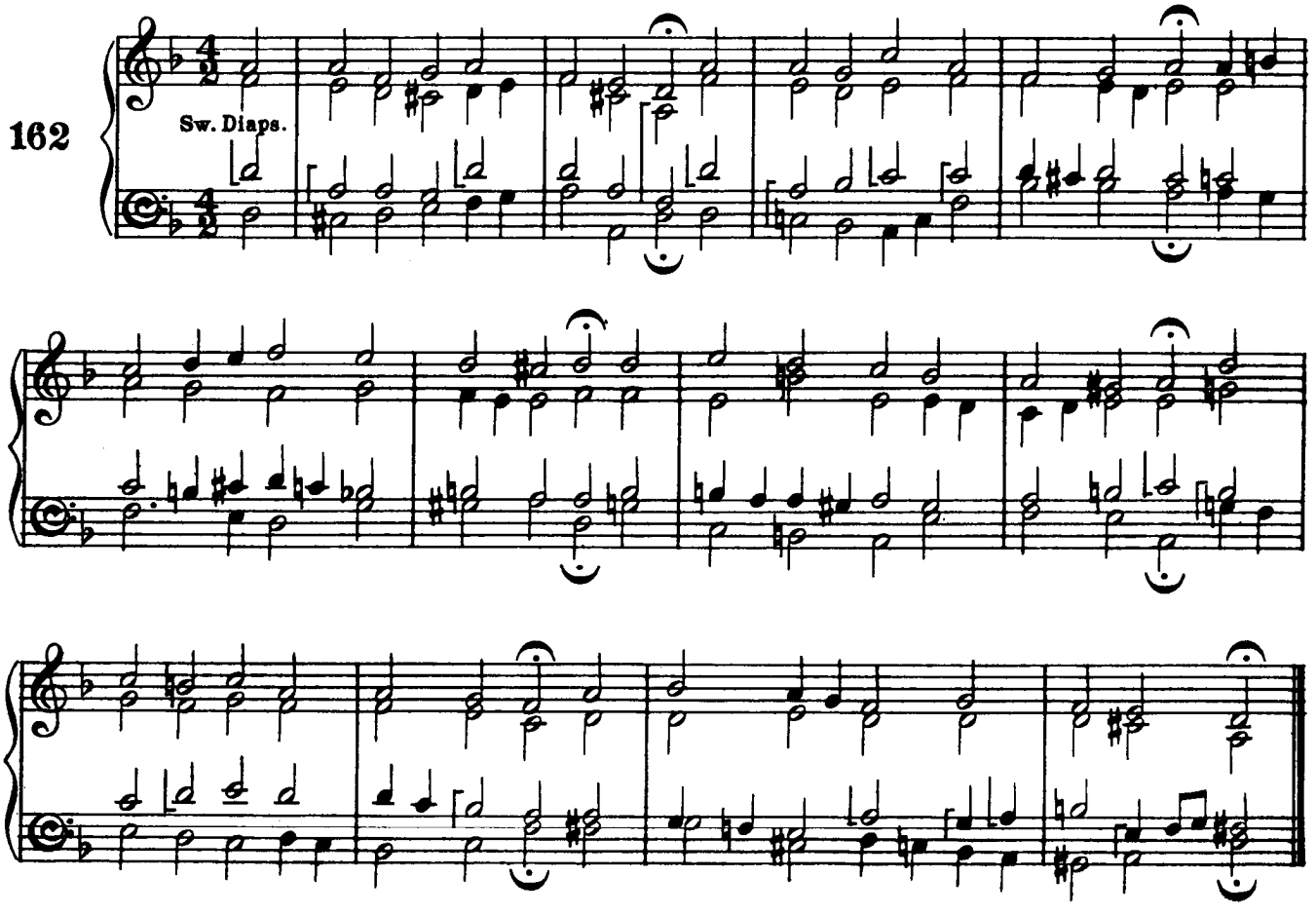


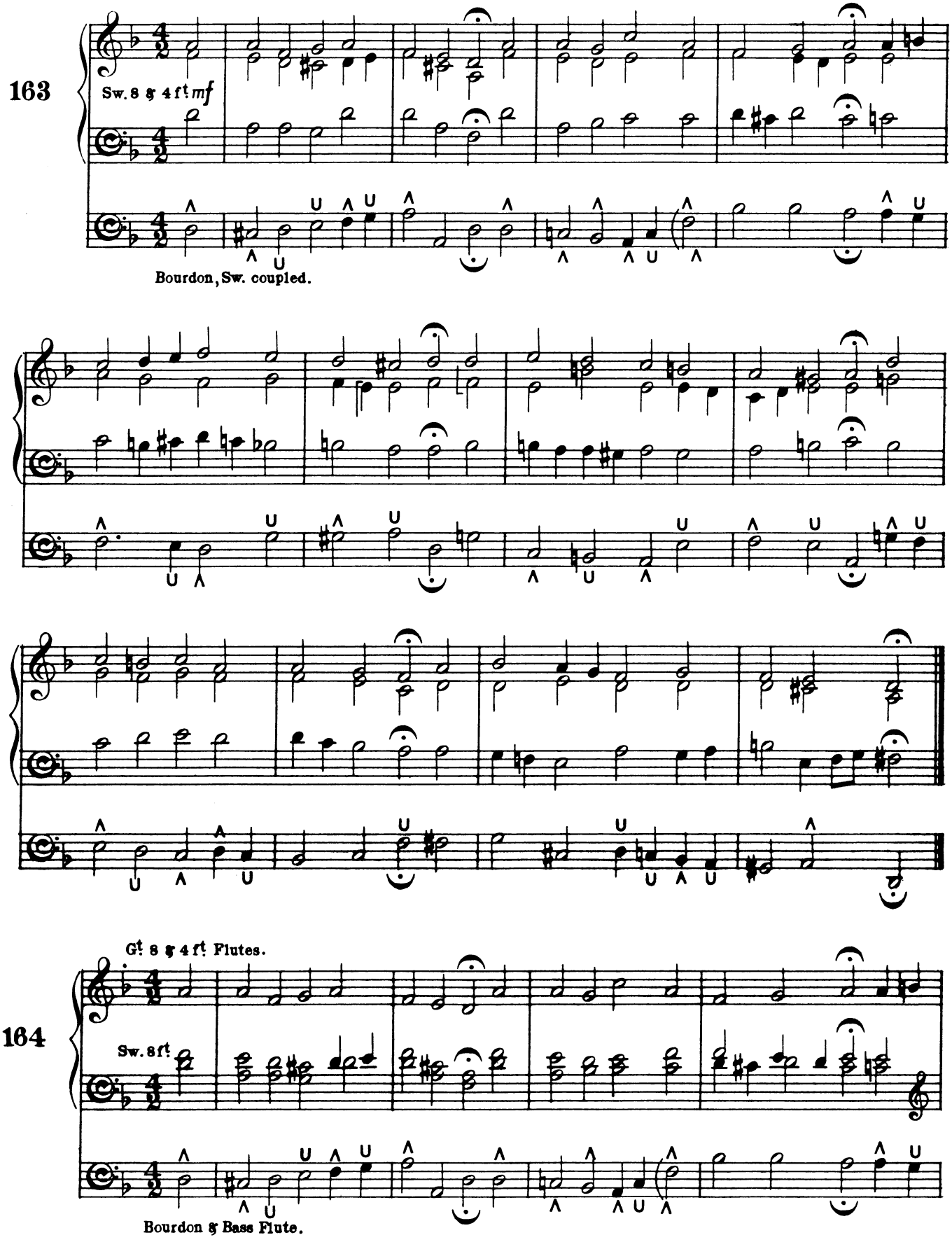
161

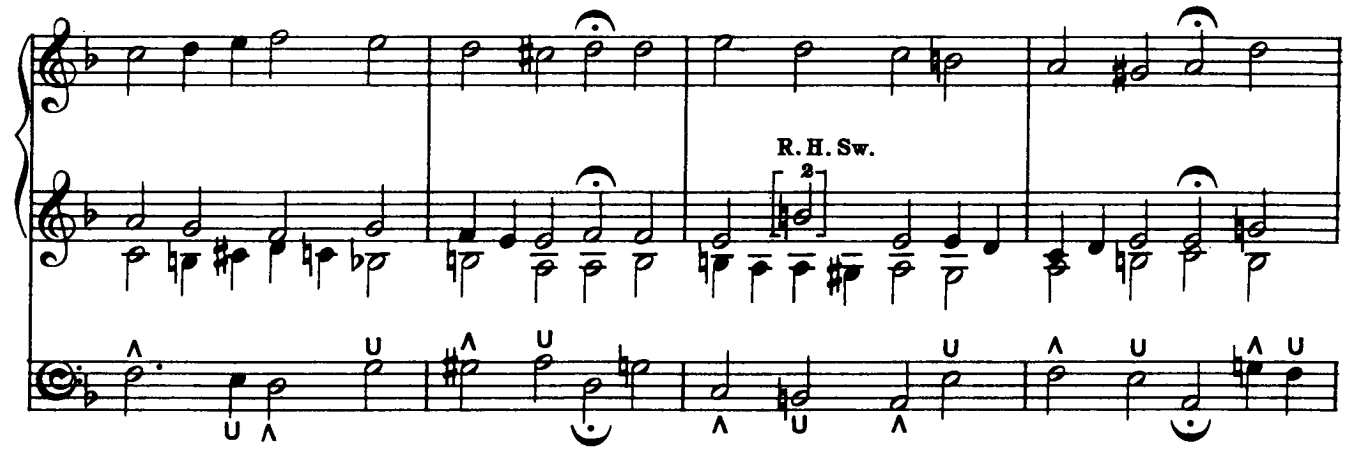

Gt. Wald Flute.
Sw. 8 ft.
Bourdon, Sw. coupled.

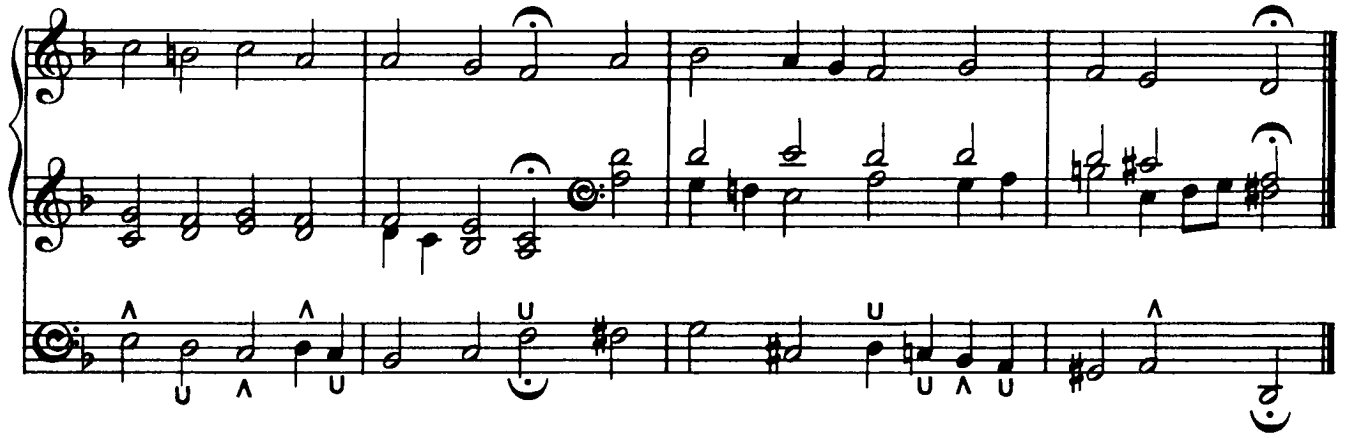


VATER UNSER IM HIMMELREICH.

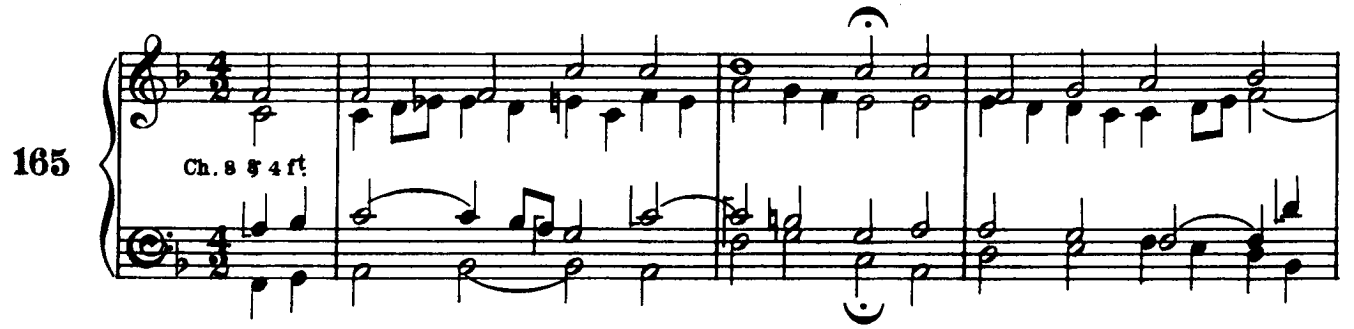


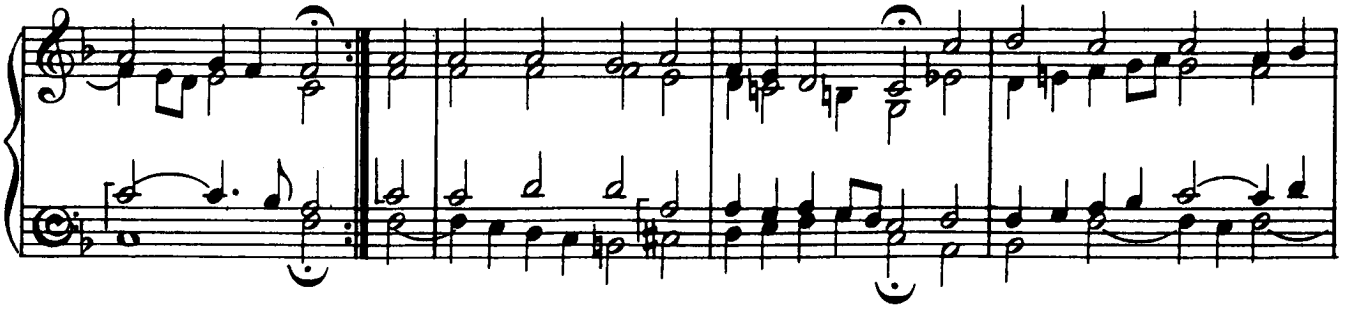

163
Sw. 8 & 4 ft. mf
Bourdon, Sw. coupled.
Gt. 8 & 4 ft. Flutes.
164
Sw. 8 ft.
Bourdon & Bass Flute.

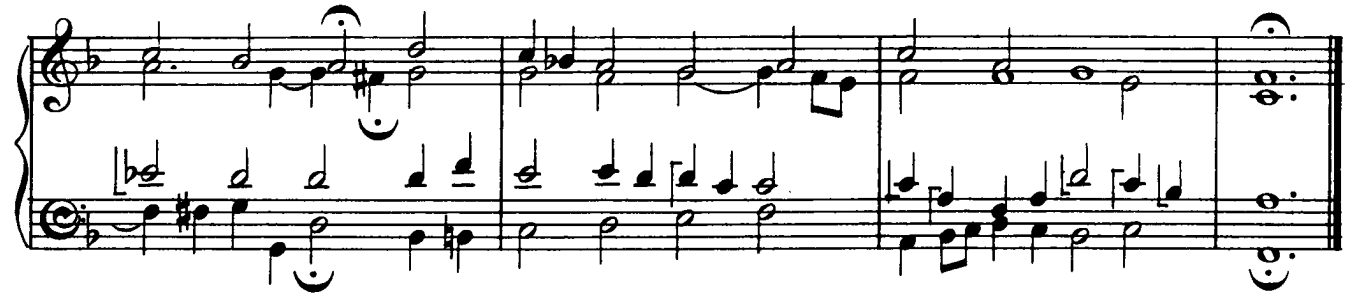




O LAMM GOTTES UNSCHULDIG.

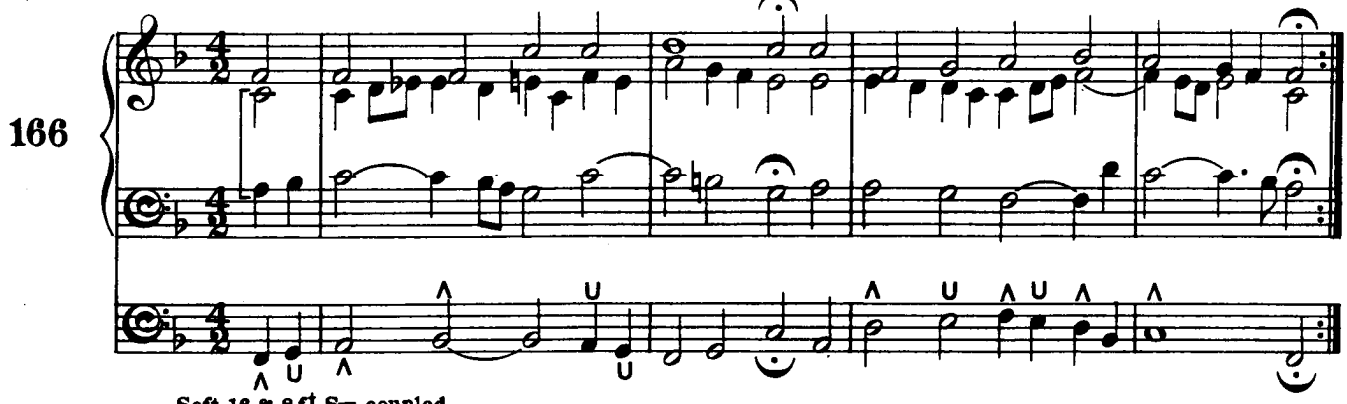




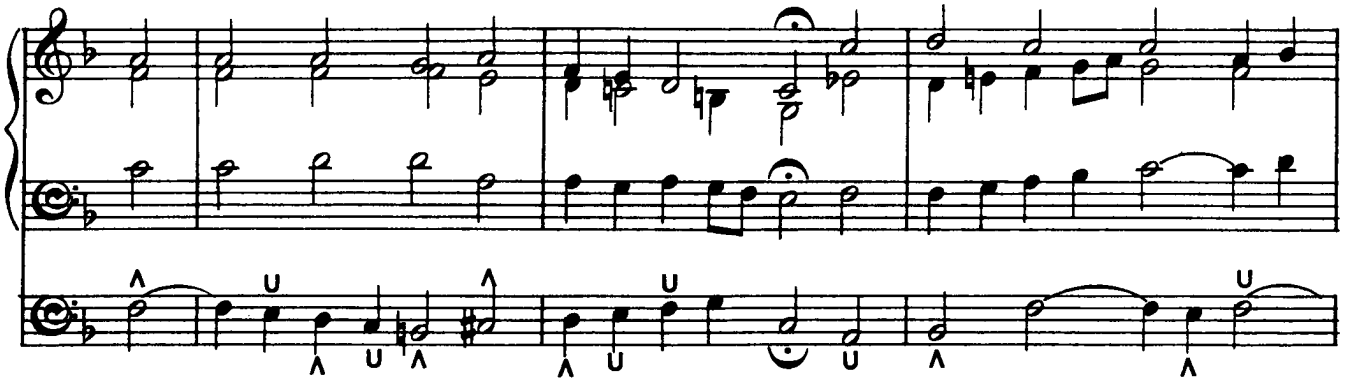


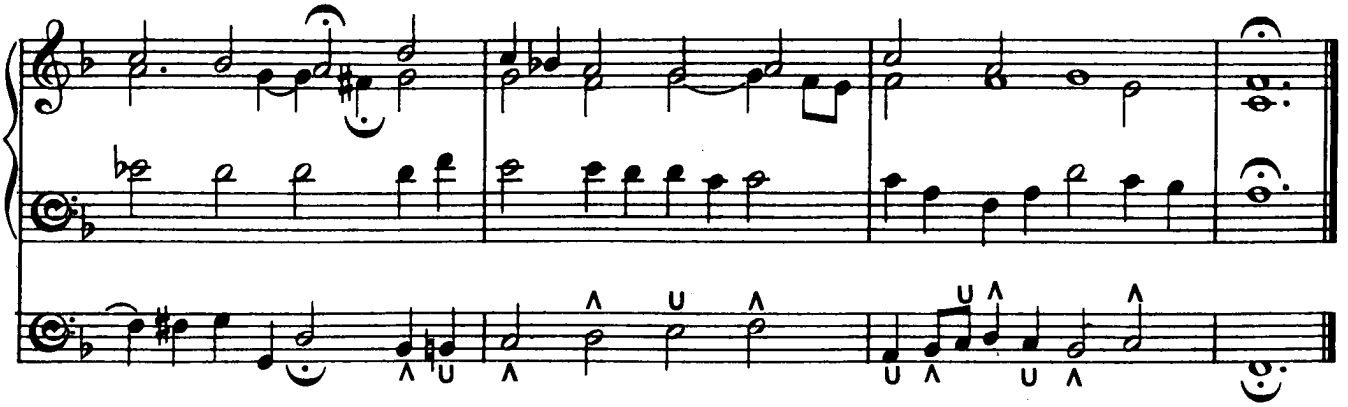
Treble part with R.H. on G^{t} 8 f^{t}
Alto and Tenor with L.H. on Sw. soft 8 f^{t}

166



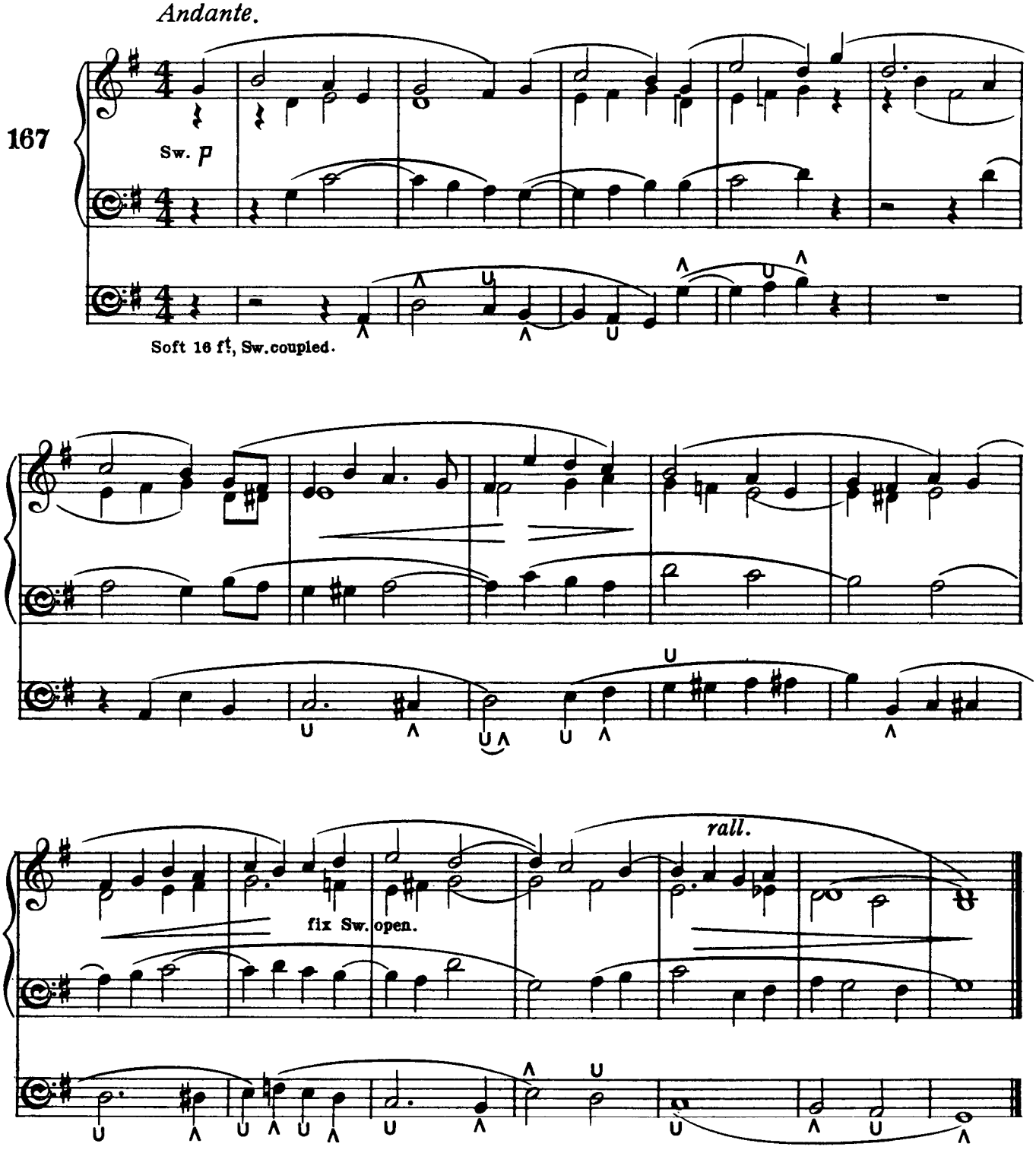
Soft 16 & 8 f^{t}, Sw. coupled.



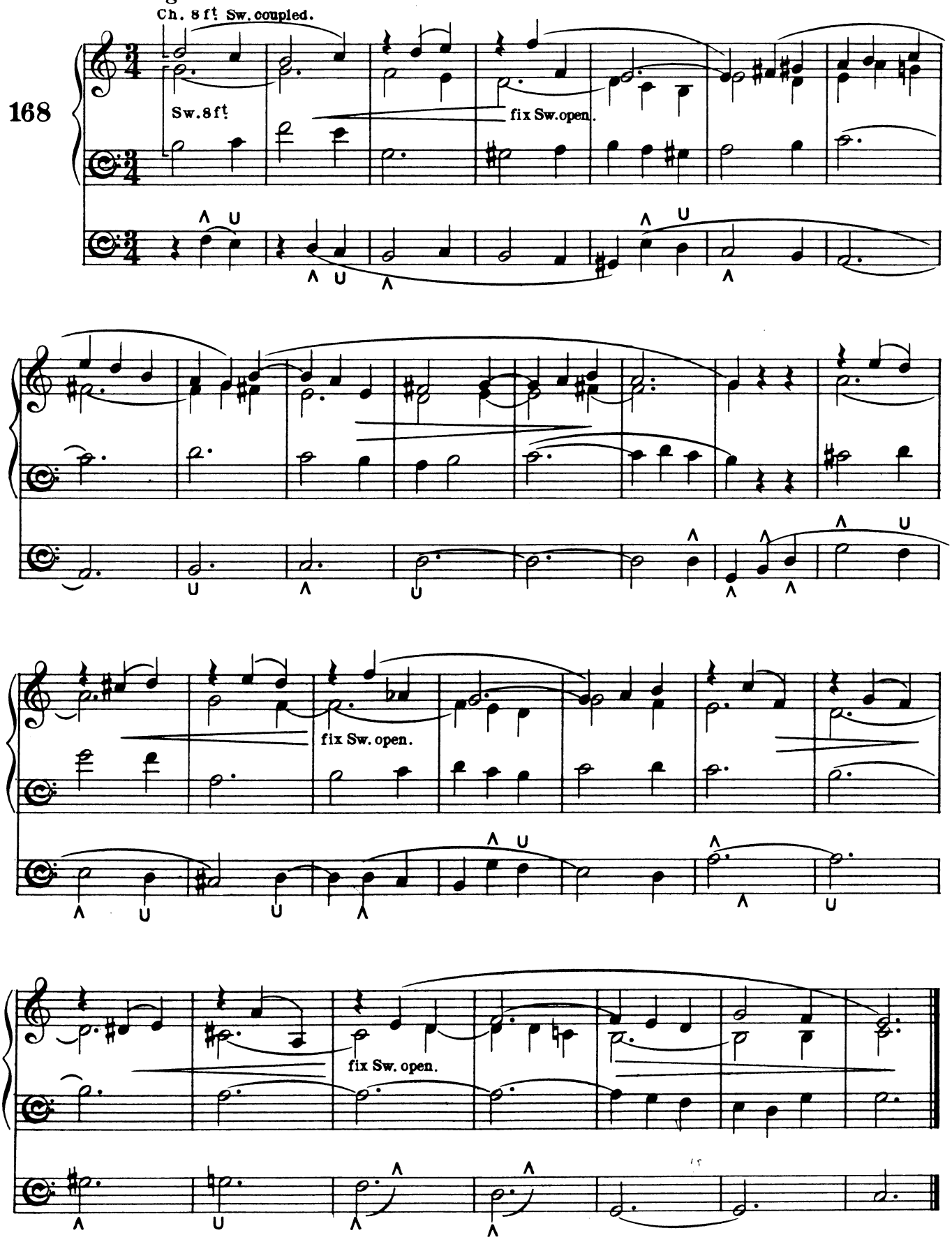


SECTION VIII.

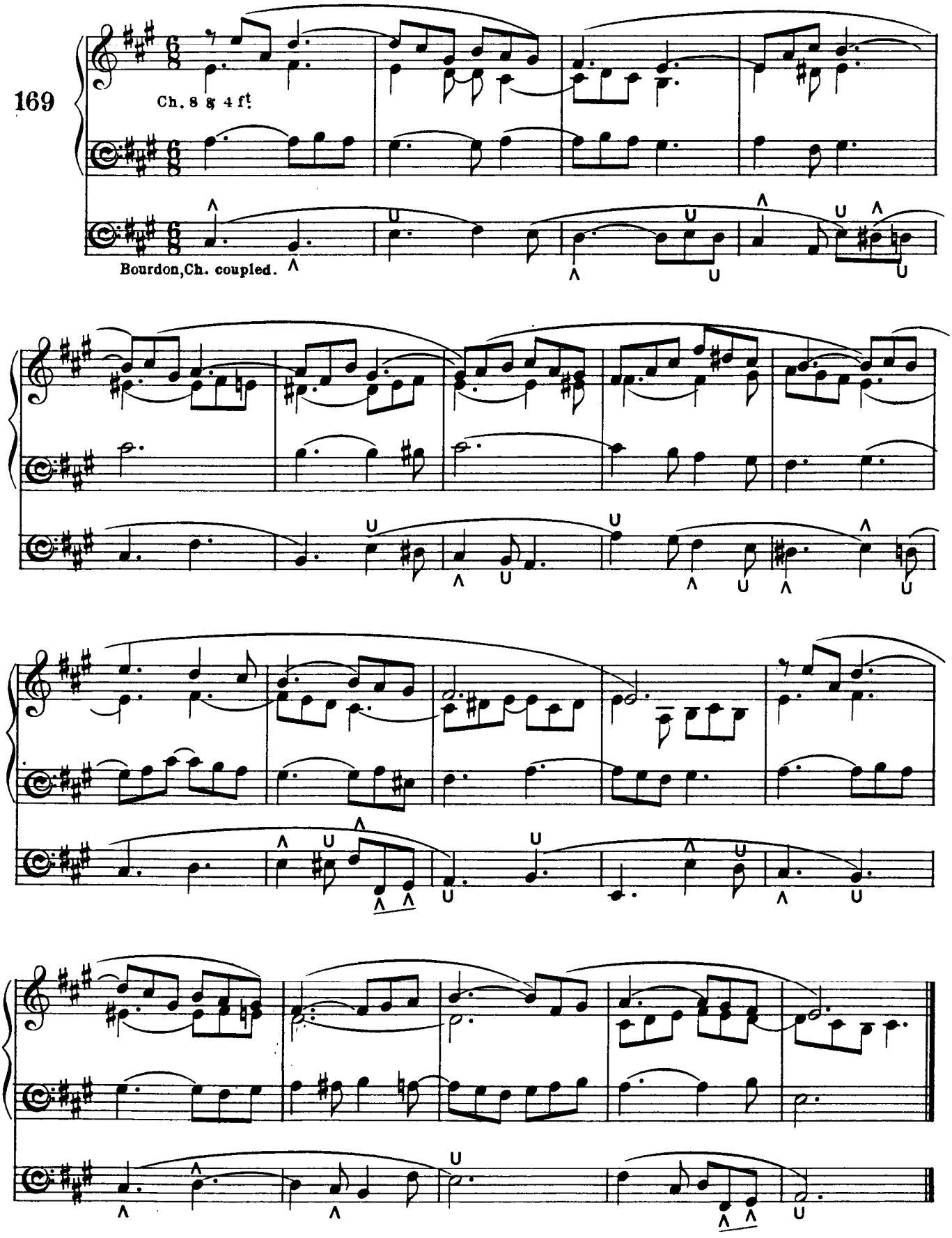
Exercises in Four parts.



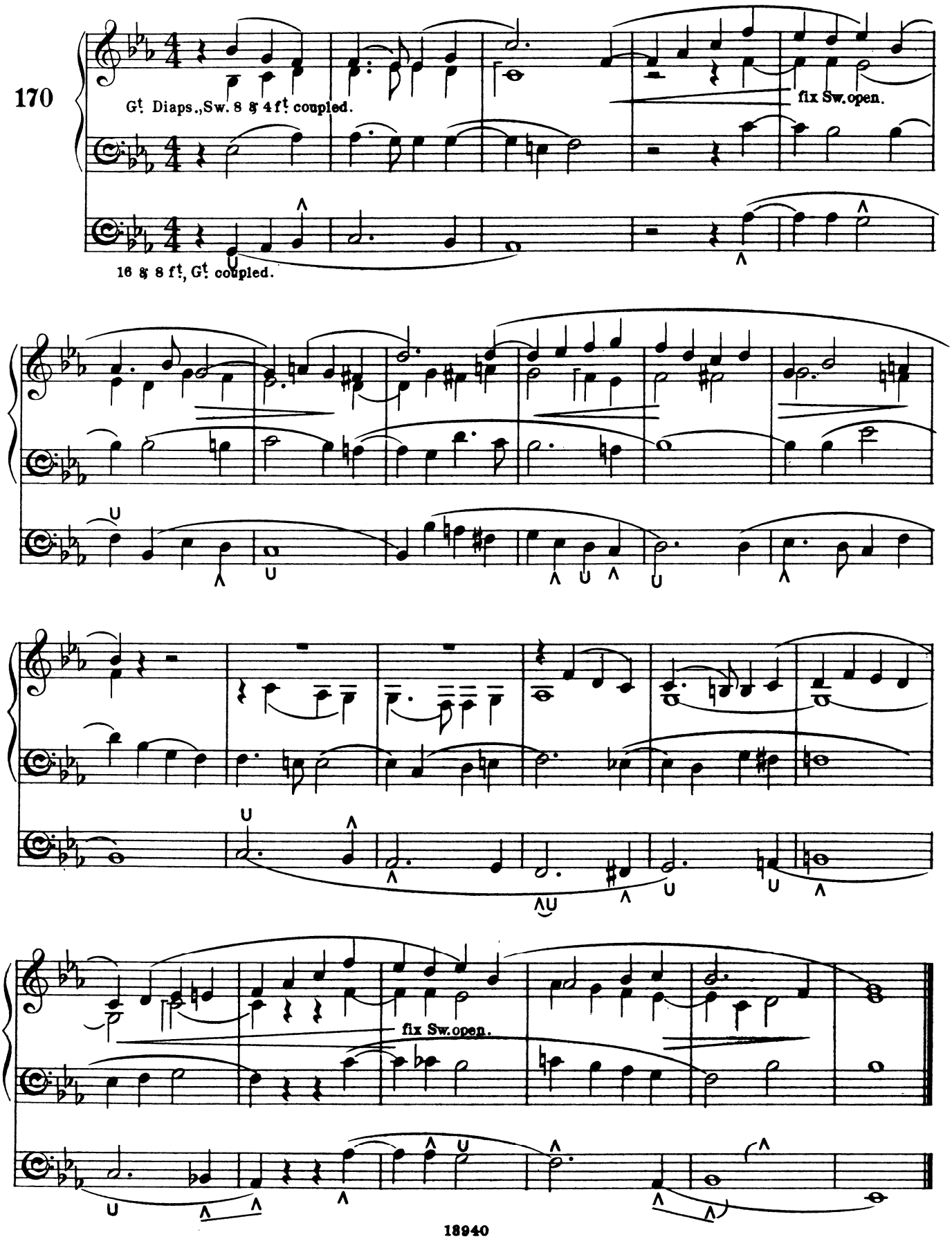
Allegretto.



Andantino.



In the following Exercise special care should be taken over the repeated notes.

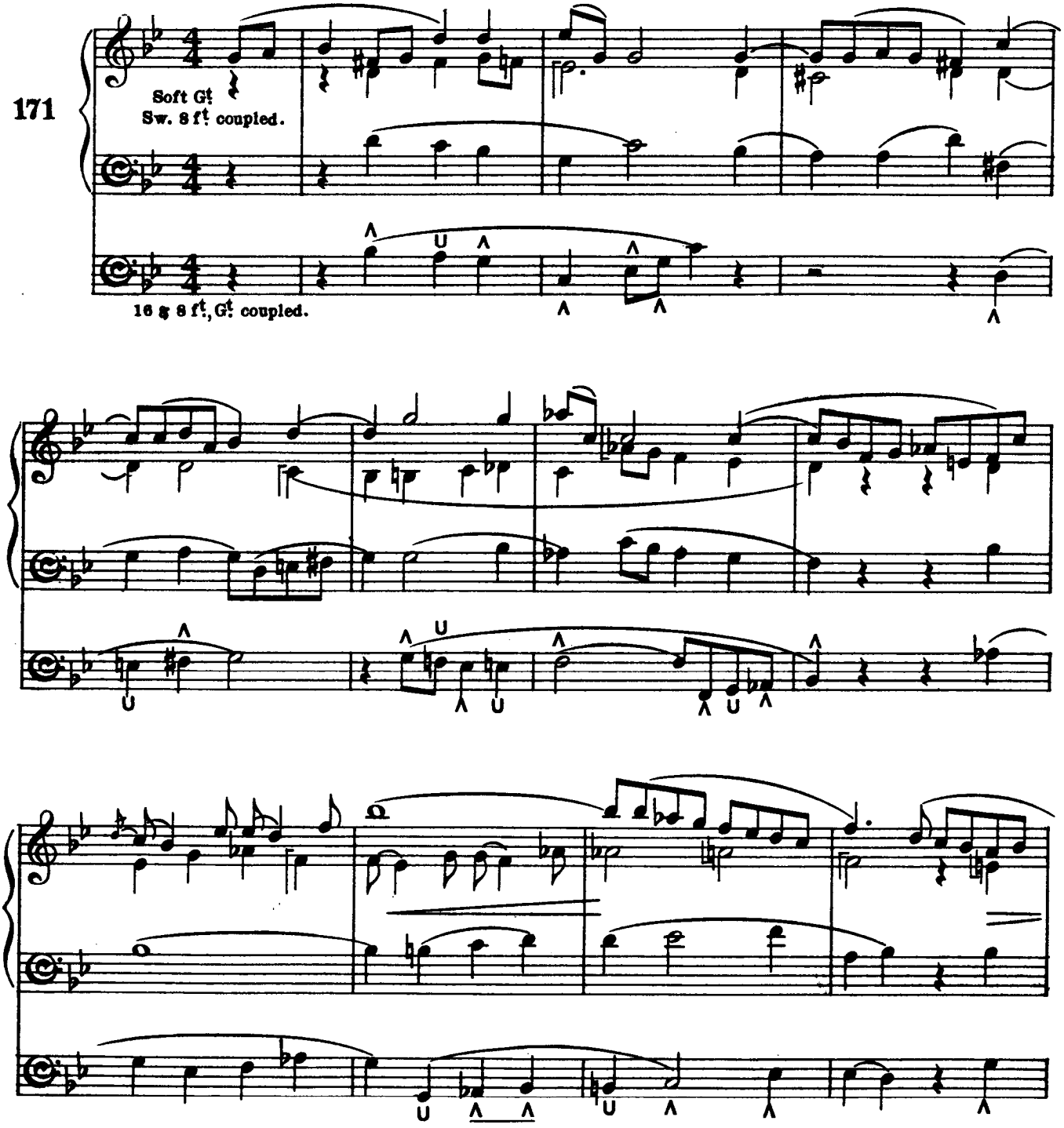


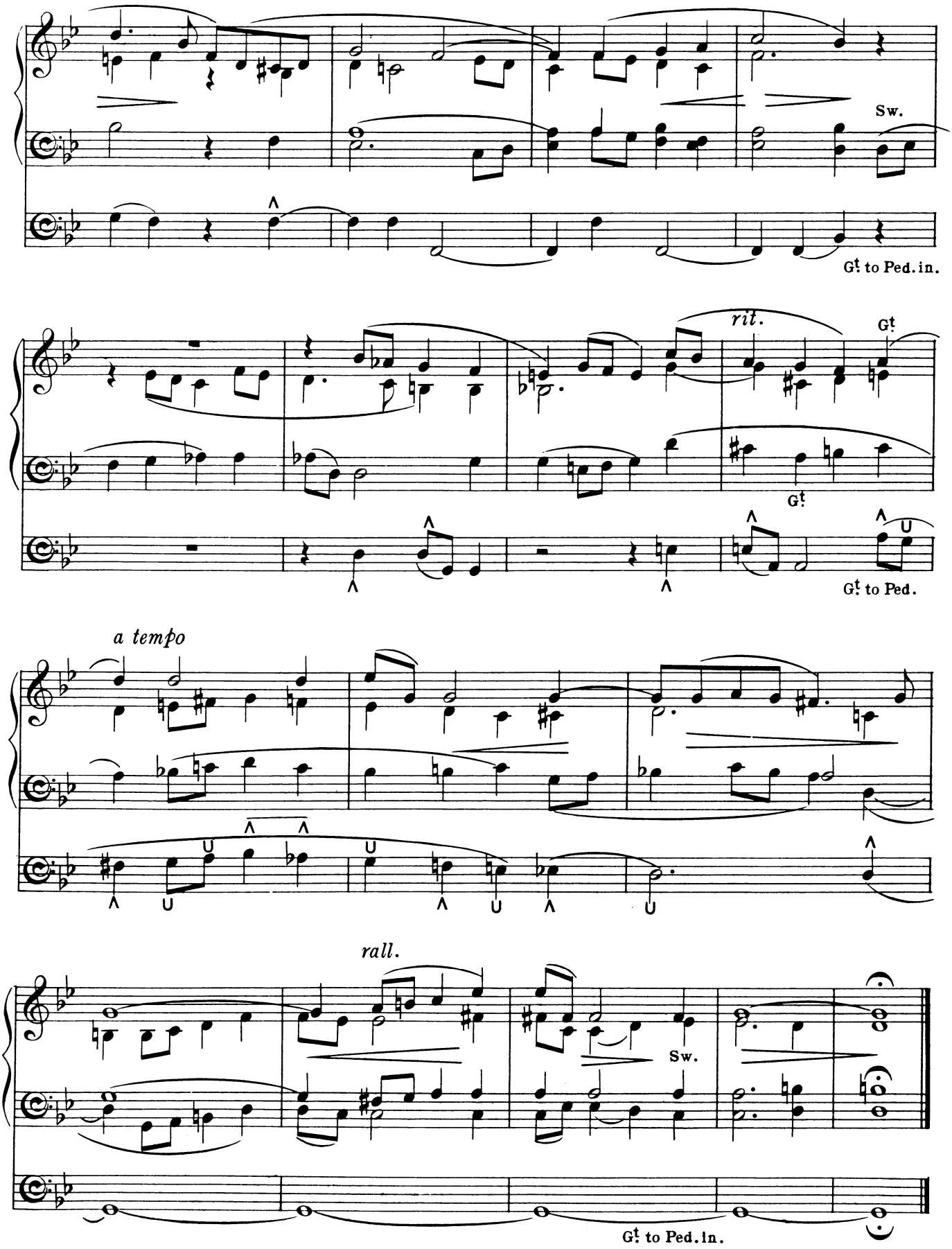
SECTION IX.

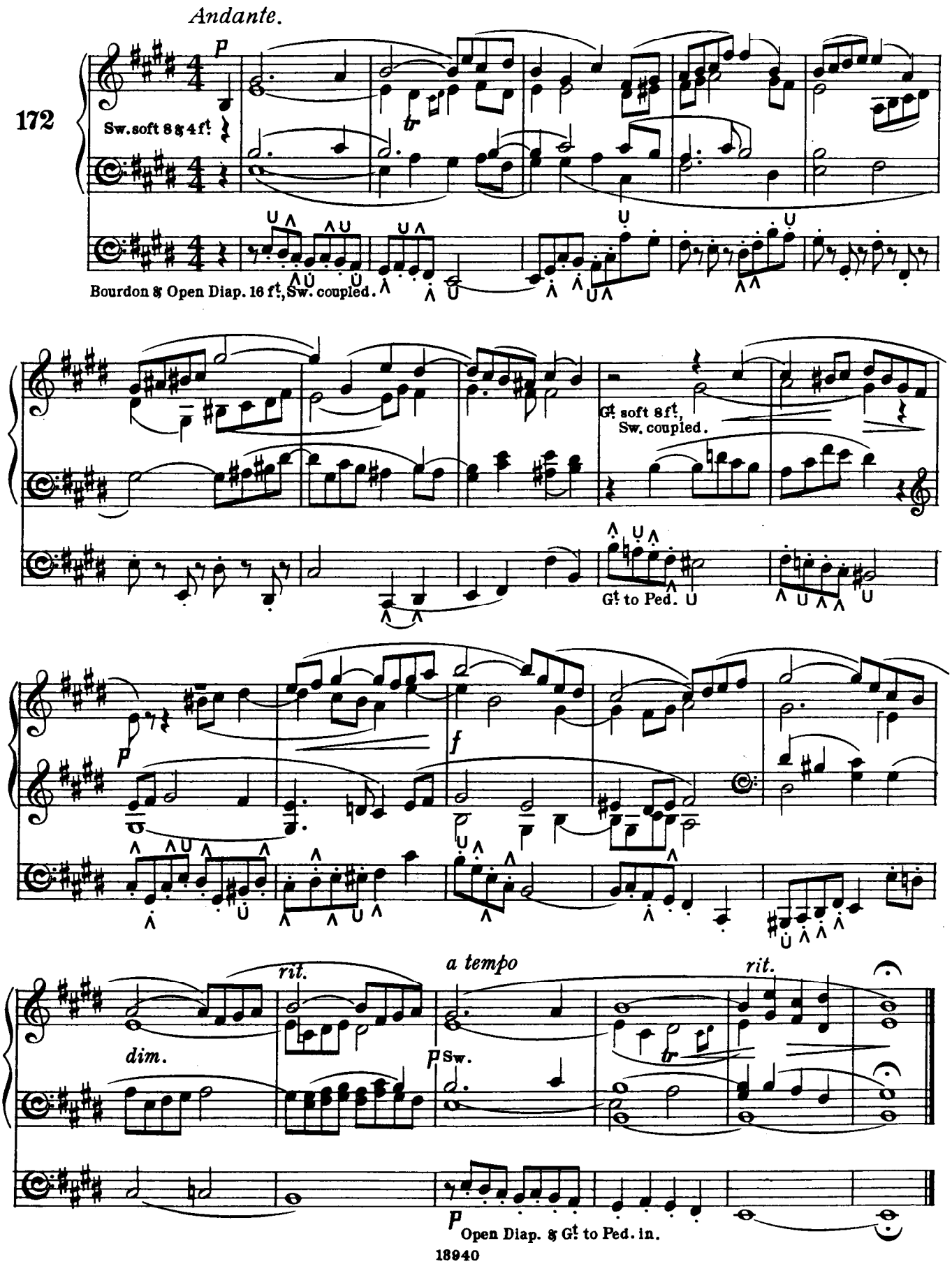
Six Short Pieces on various Technical points.

Repeated Notes.

Andante con moto.

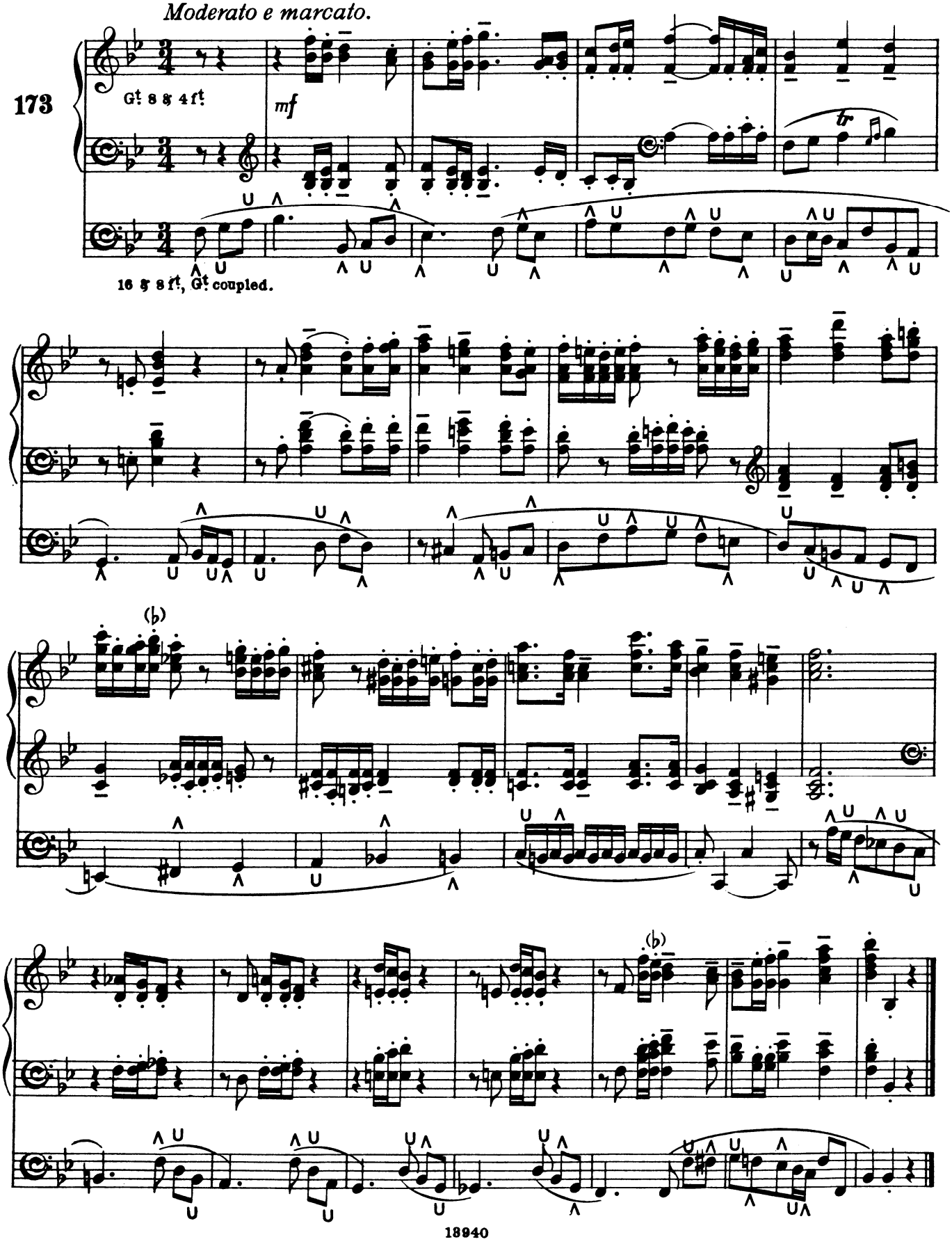



Sw.
Gt to Ped. in.
rit.
Gt
Gt
Gt to Ped.
a tempo
rall.
Sw.
Gt to Ped. in.

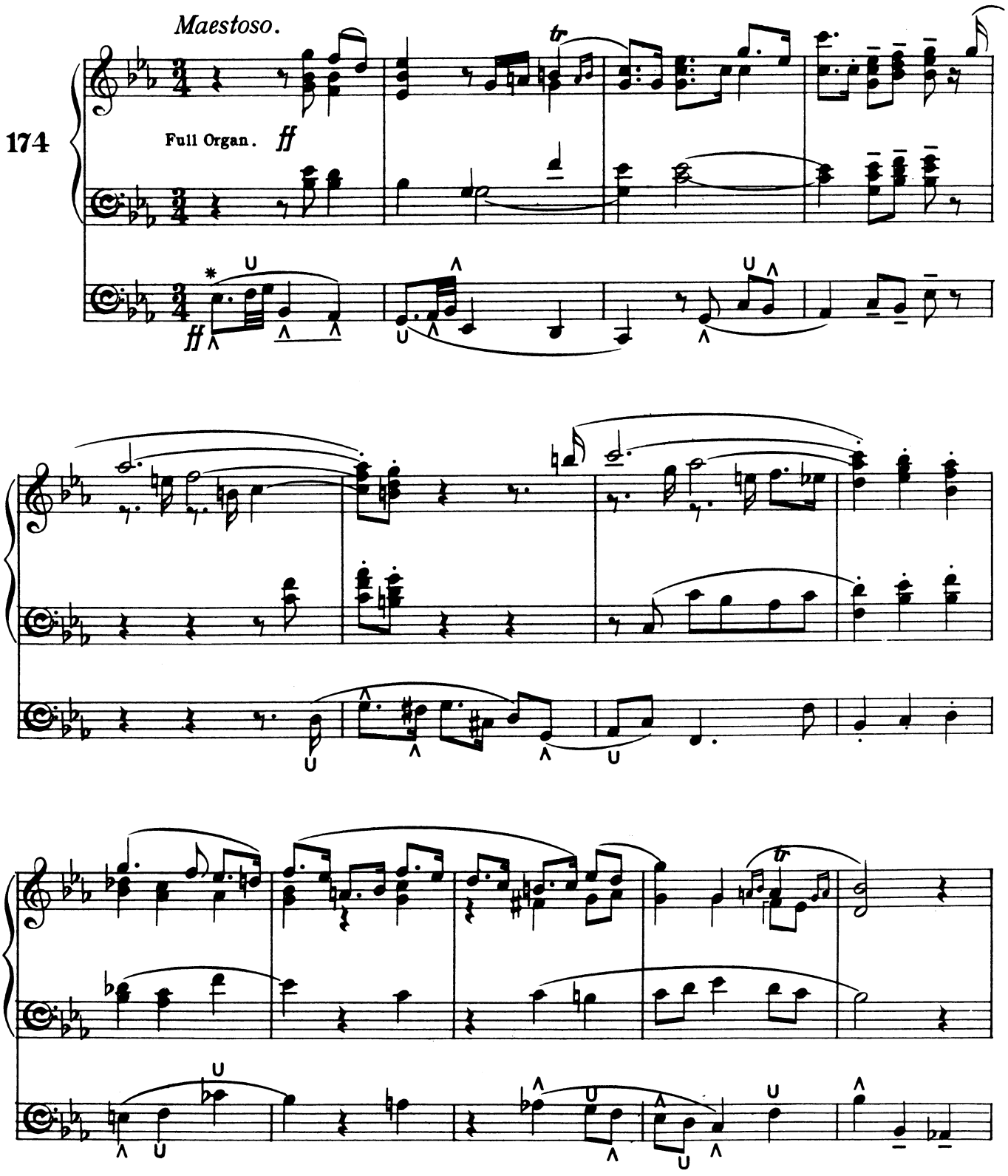

Andante.
172
Sw. soft 8 & 4 ft.
Bourdon & Open Diap. 16 ft., Sw. coupled.
Gt. soft 8 ft., Sw. coupled.
Gt. to Ped.
rit.
a tempo
rit.
dim.
Sw.
Open Diap. & Gt. to Ped. in.

Legato Pedals combined with Staccato Manual Chords.

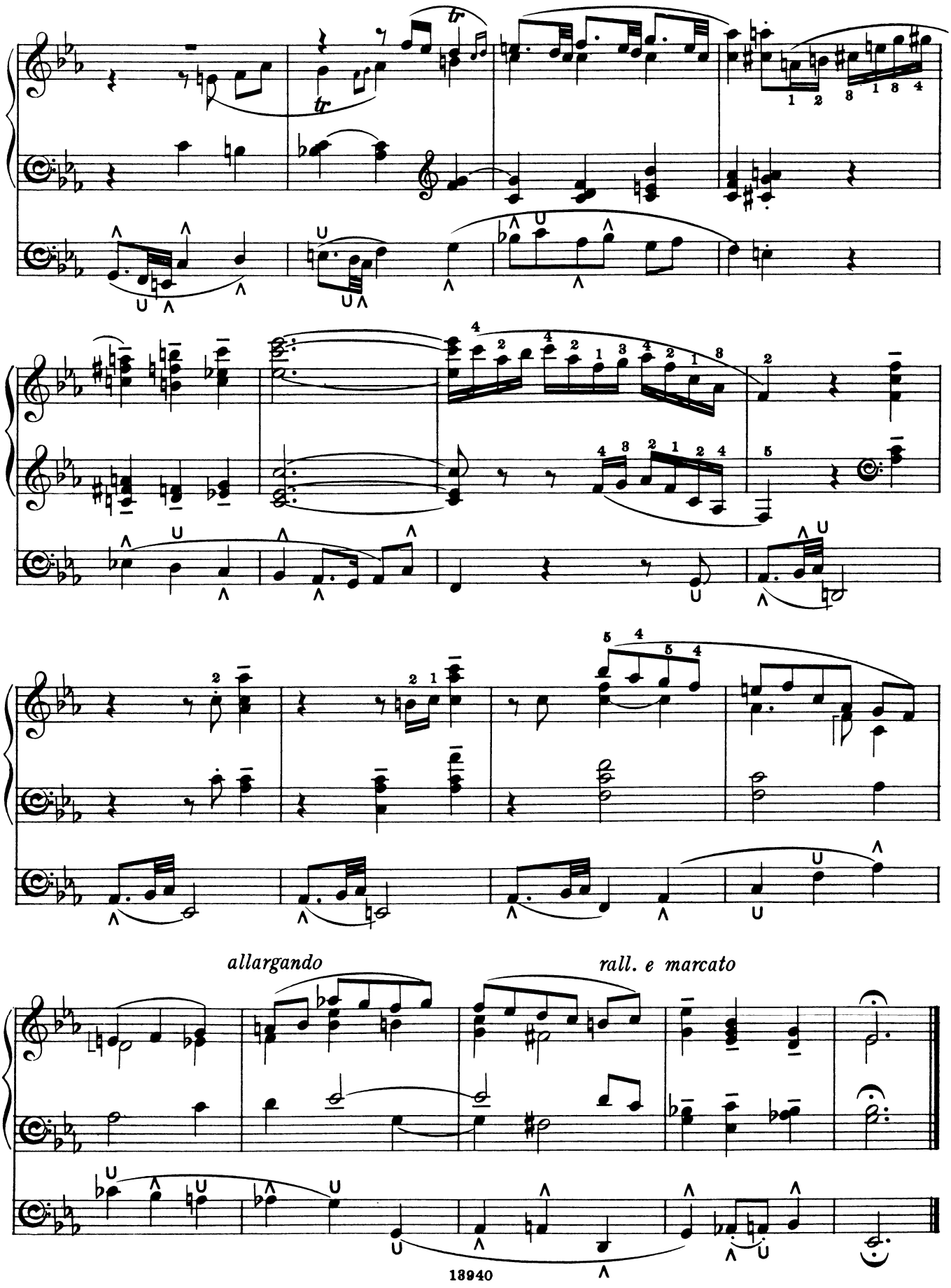
Moderato e marcato.



Breadth of Style.



* Rhythmic figure suggested by Rheinberger's Sonata in E flat minor.


allargando
rall. e marcato

Thumbs on a separate Manual.

Allegretto.

Sw. Diapasons.

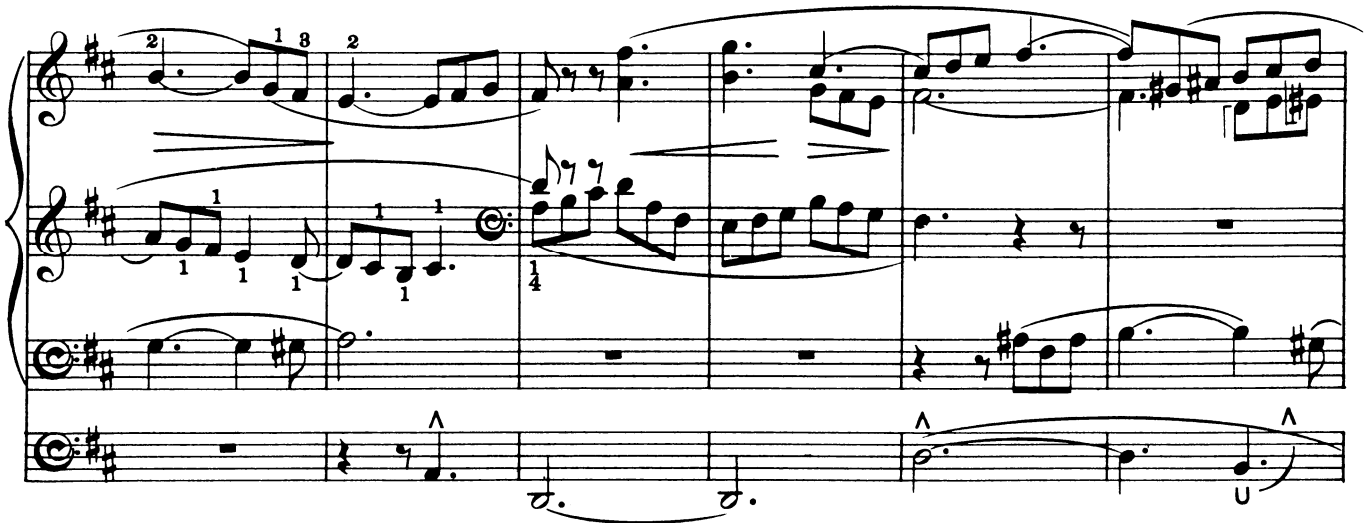
mf sempre legato

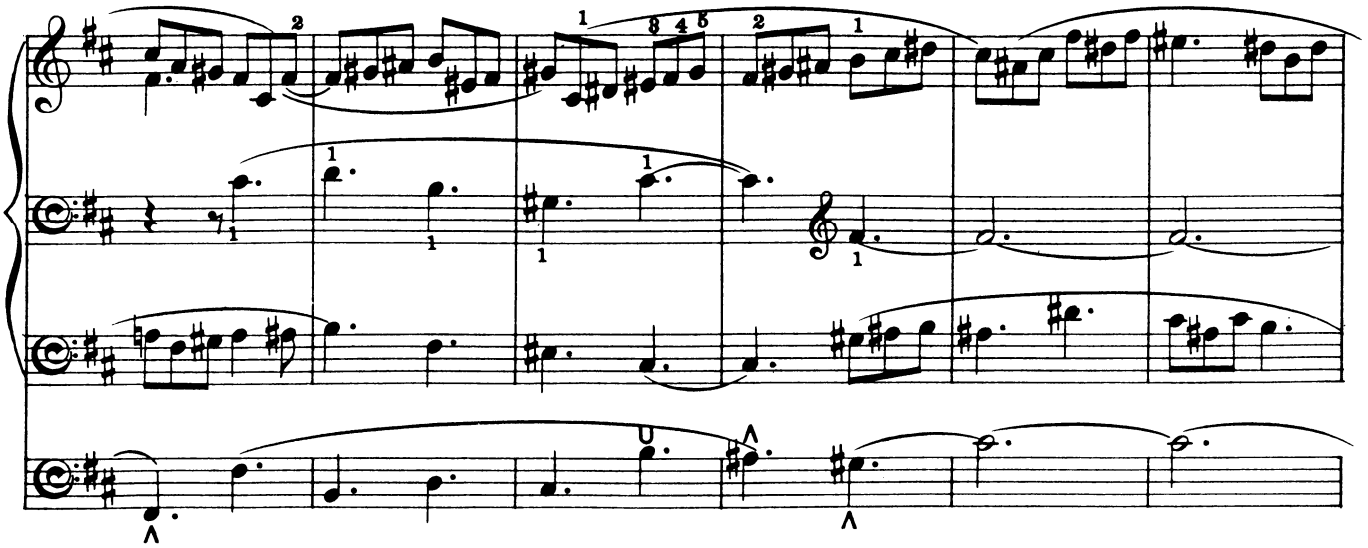
175

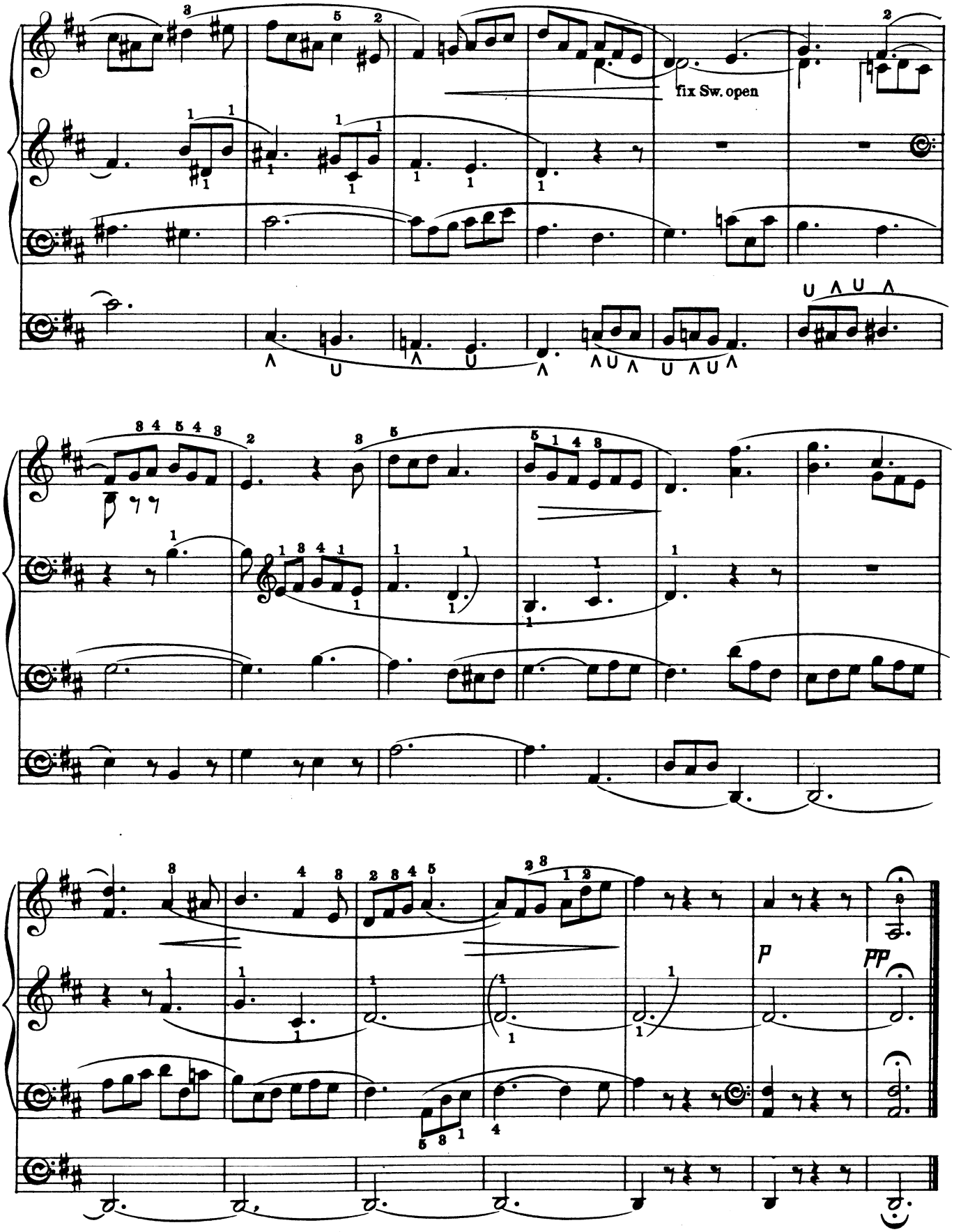
Gt. 8 ft. Flute.

Sw. 2/4

Soft 16 & 8 ft. uncoupled.






fix Sw. open
P
PP

Dotted Notes.

176

Andante con moto.

Gt. soft 8 ft, Sw. coupled.

p

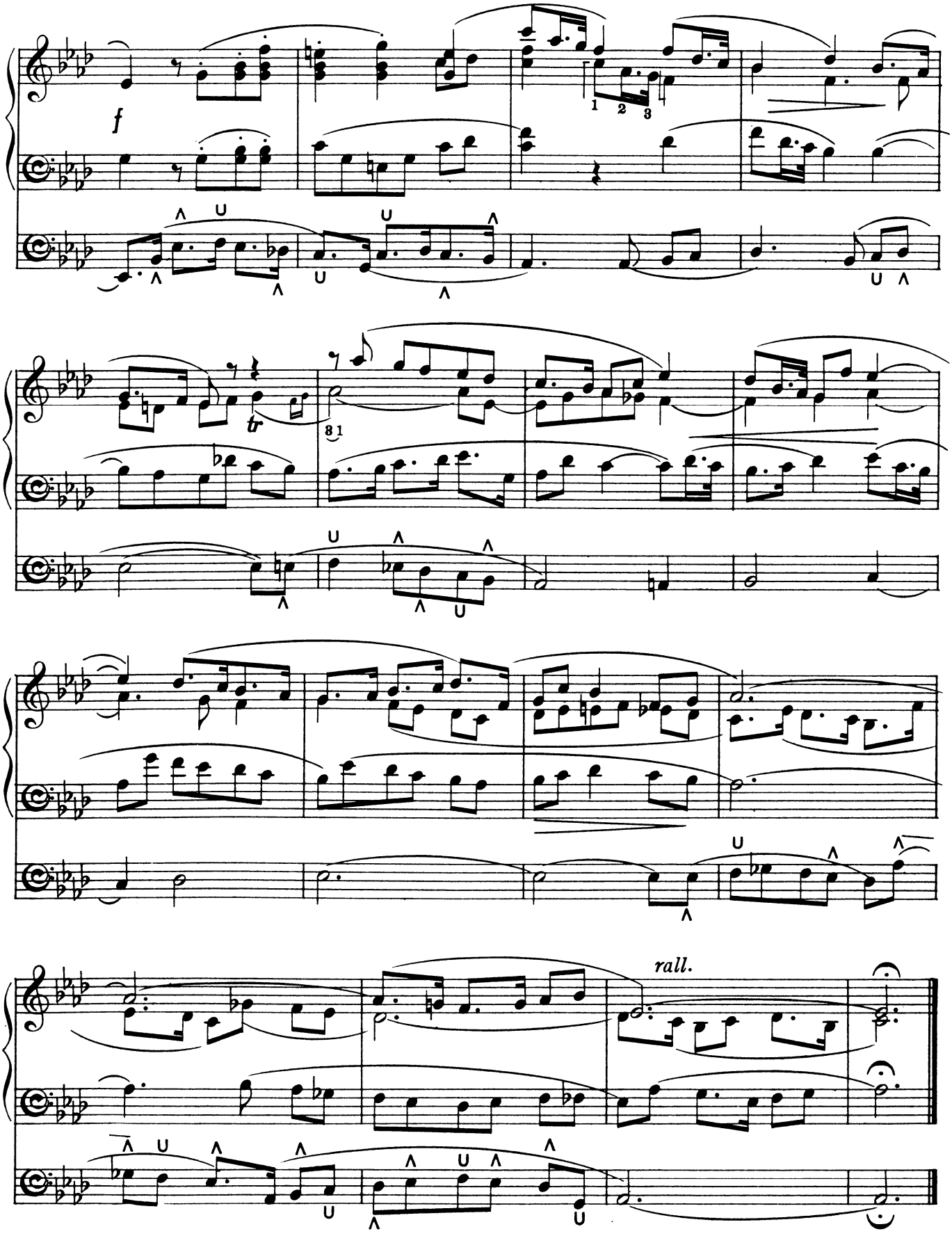
Sw. soft 8 ft

Gt.

Soft 16 ft, Gt. coupled.

add

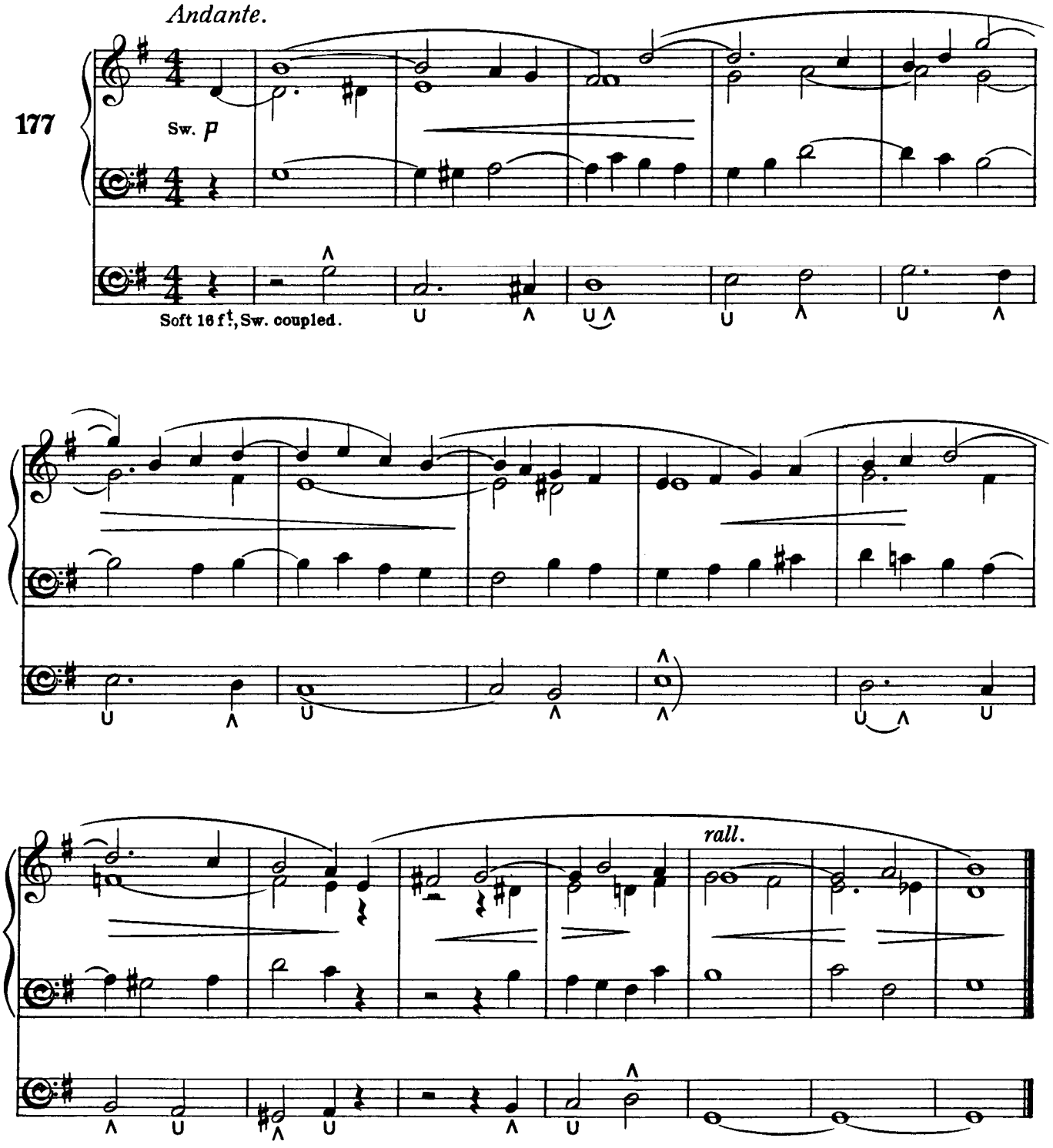
fix Sw. open.

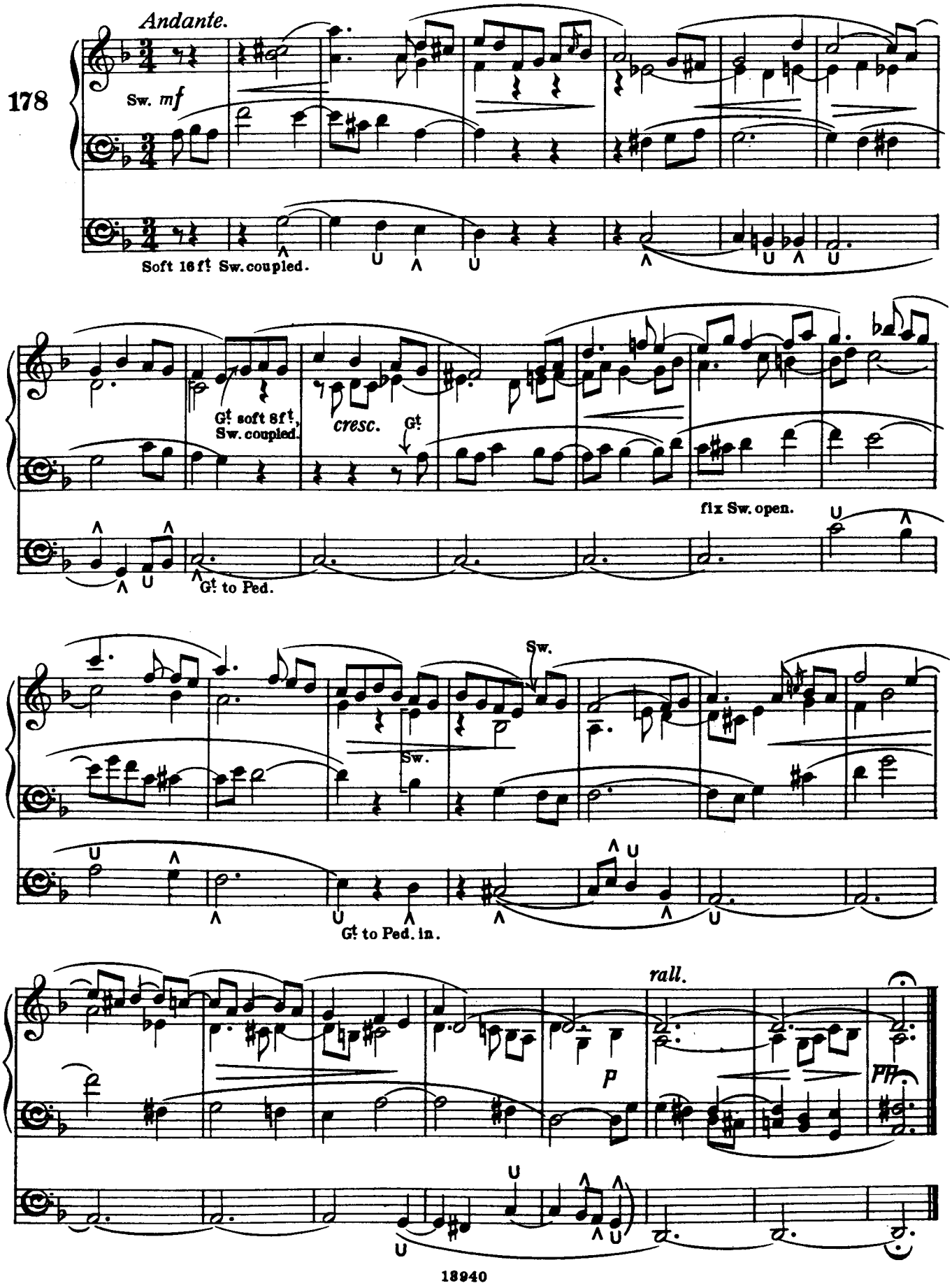

f
1 2 3
tr
3 1
rall.

SECTION X.

Exercises on the use of the Swell Pedal.

a. For the lever form of Pedal.




Andante.
178
Sw. mf
Soft 16 ft Sw. coupled.
Gt soft 8 ft, Sw. coupled.
cresc.
Gt
fix Sw. open.
Gt to Ped.
Sw.
Sw.
Gt to Ped. in.
rall.
p
pp
13940

b. For the balanced form of Pedal.

Con moto.

179

Gt Diaps.
Sw. 8 ft coupled

16 & 8 ft, Gt coupled.

(L. F.) *

(R.F.)

(L.F.)

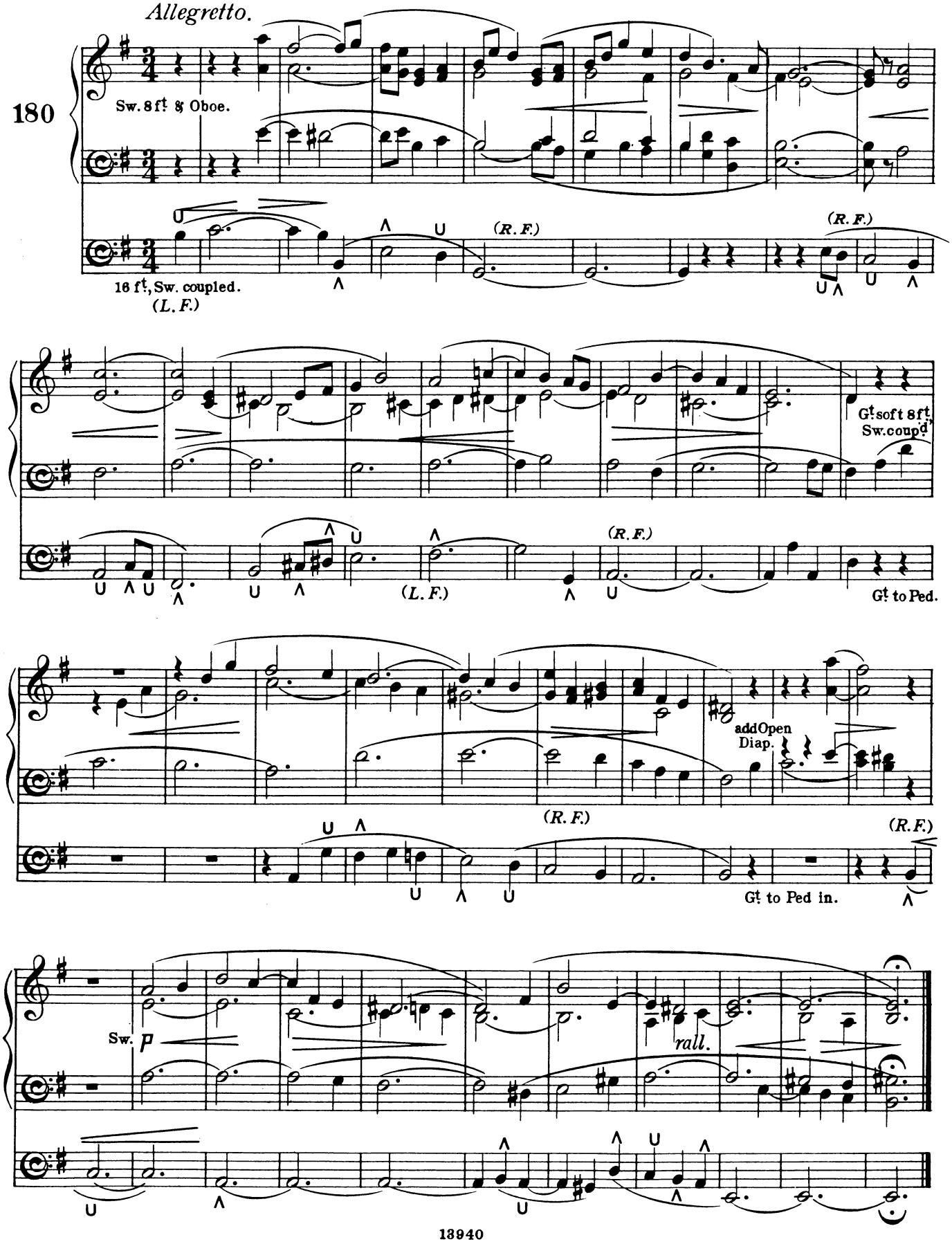
(R.F.)

(L.F.)

(R.F.)

rall.

* *L. F.* and *R. F.* denote which foot is to be used for the Swell Pedal.


Allegretto.
180
Sw. 8 ft & Oboe.
16 ft, Sw. coupled.
(L. F.)
(R. F.)
(R. F.)
Gt soft 8 ft, Sw. coupd
(L. F.)
(R. F.)
Gt to Ped.
add Open Diap.
(R. F.)
(R. F.)
Gt to Ped in.
Sw. p
rall.

PIECES IN DIFFERENT STYLES.

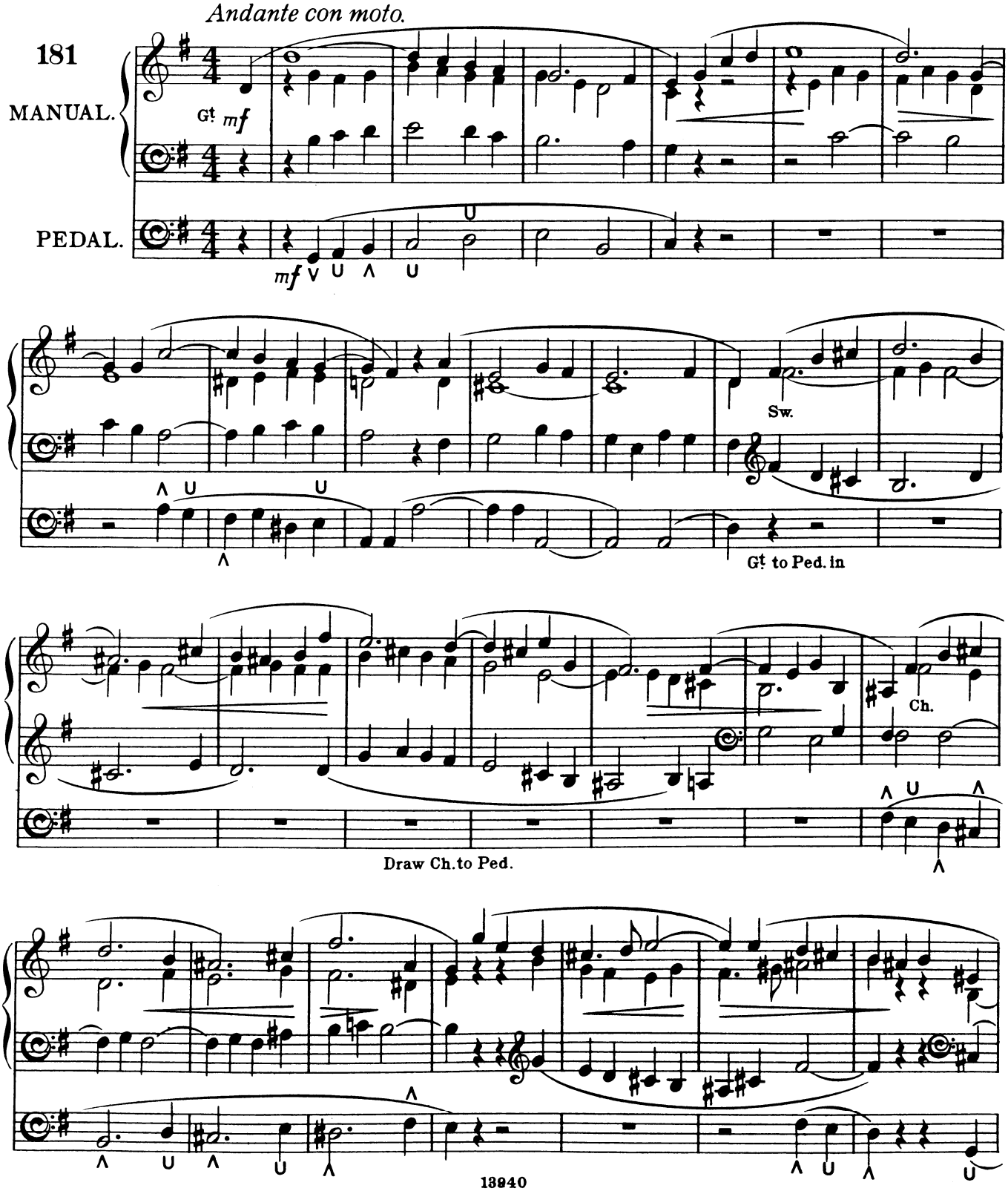
Though neither originality nor merit is claimed for them, the following pieces have been added with the object of gathering up the threads of what has gone before. While becoming acquainted with them, the student will be reaching that stage from whence he may explore a wider field. For Pedal Studies, Best's "Art of Organ Playing," Part II., will provide excellent practice, while for Studies and Pieces the easier works of John Sebastian Bach, and later his Sonatas, will carry the enthusiast many steps on his road.

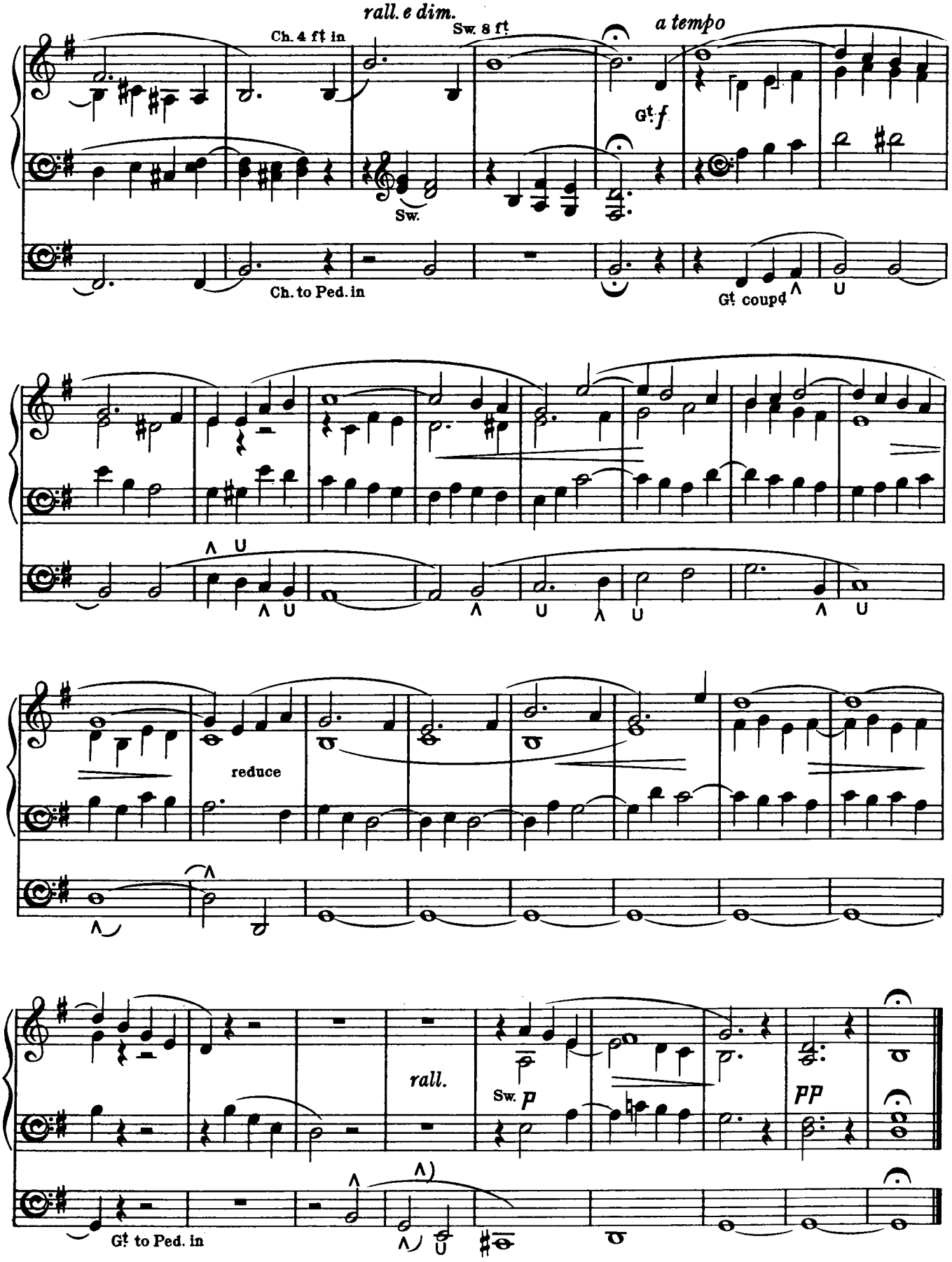
If the study of this short treatise could but result in the mastery of the principles underlying Bach's organ works, its object would be accomplished, as upon that foundation rests the whole fabric of legitimate organ-playing. Though early enthusiasm may tempt the student beyond the bounds of orthodoxy, he will be better guided by his later judgment, realising that the organ has its own nobility of character, which can never be reconciled with any attempt to convert it into an orchestra. While much (within limits) may certainly be done with organ transcriptions, it is to be hoped that the rapidly growing répertoire of true organ music, not only by foreign but by English composers, will appeal to an ever-increasing number of organists and (what is quite as important) those to whom they play.

Prepare:
Sw. 8 & 4 ft
Gt Diaps
Ch. 8 & 4 ft
Ped. 16 & 8 ft
Couplers. Sw. to Gt; Sw. to Ch.; Sw. to Ped.; Gt to Ped.

VOLUNTARY.

Andante con moto.



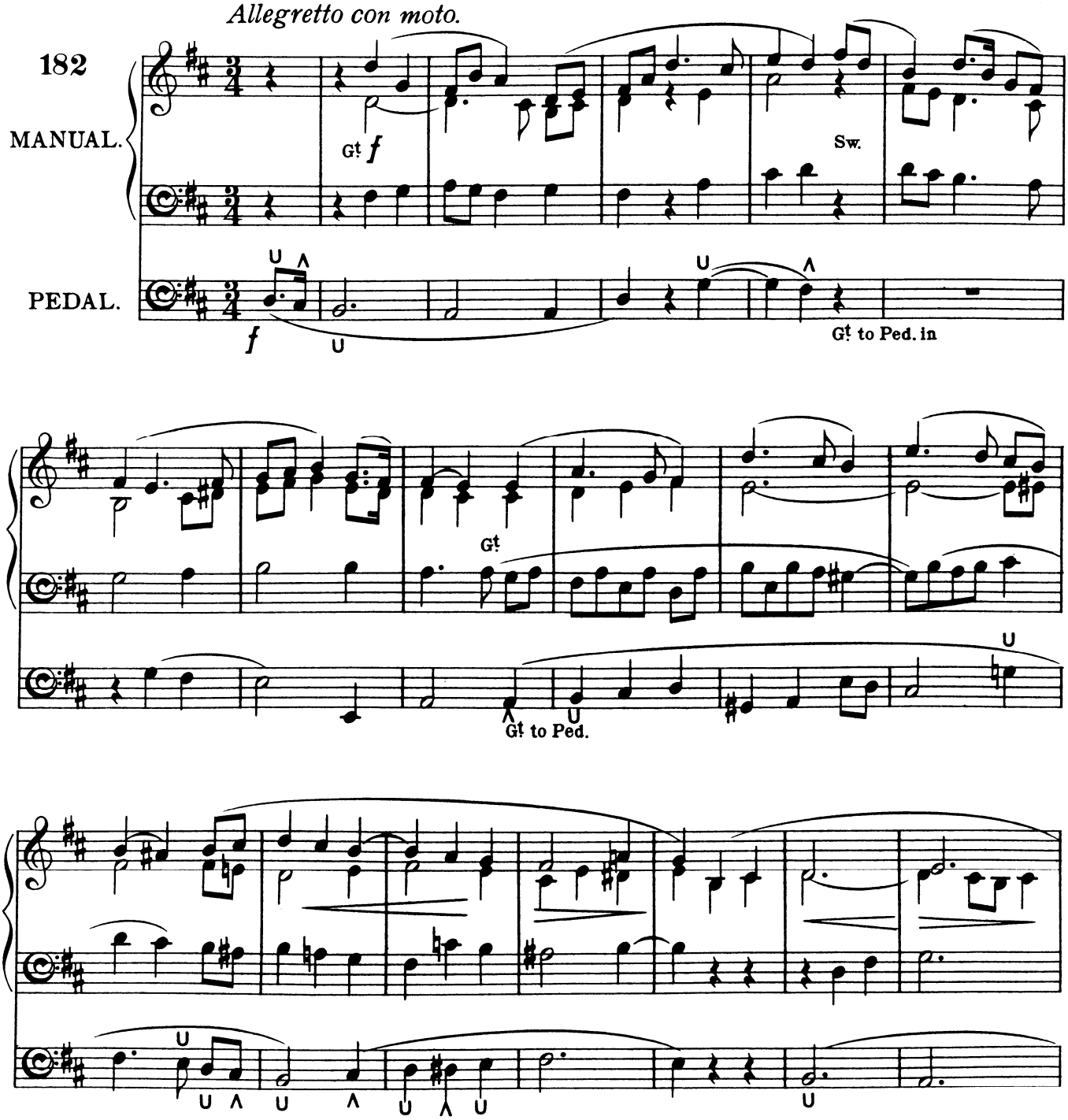

rall. e dim.
Ch. 4 ft in
Sw. 8 ft
a tempo
Gt. f
Sw.
Ch. to Ped. in
Gt. coupd
reduce
rall.
Sw. p
pp
Gt. to Ped. in

Prepare:
Sw. to Oboe
Gt small open Diap.
Ch. 8 & 4
Ped. 16 & 8
Couplers. { Sw. to Gt / Sw. to Ped. / Gt to Ped.

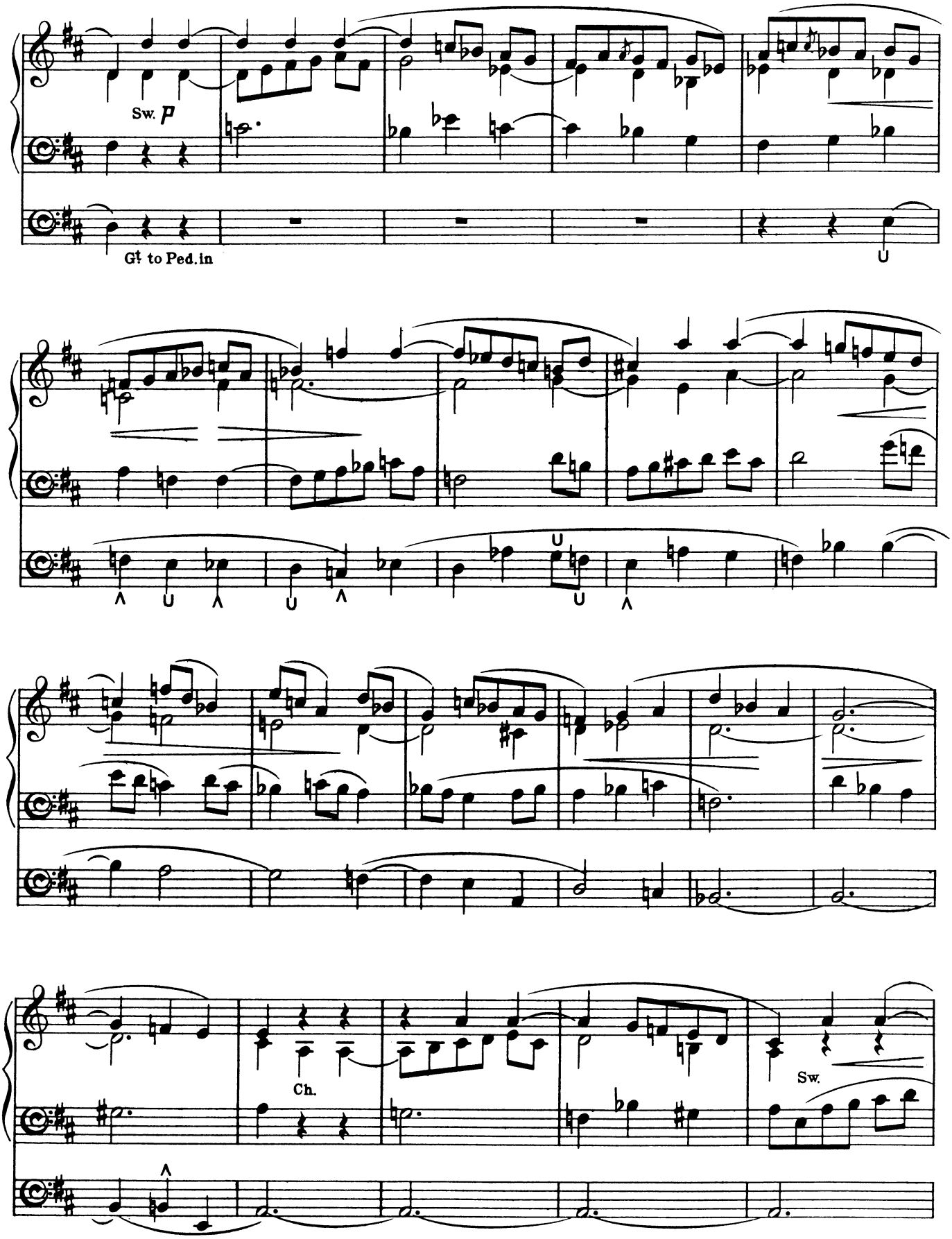
IMPROMPTU.

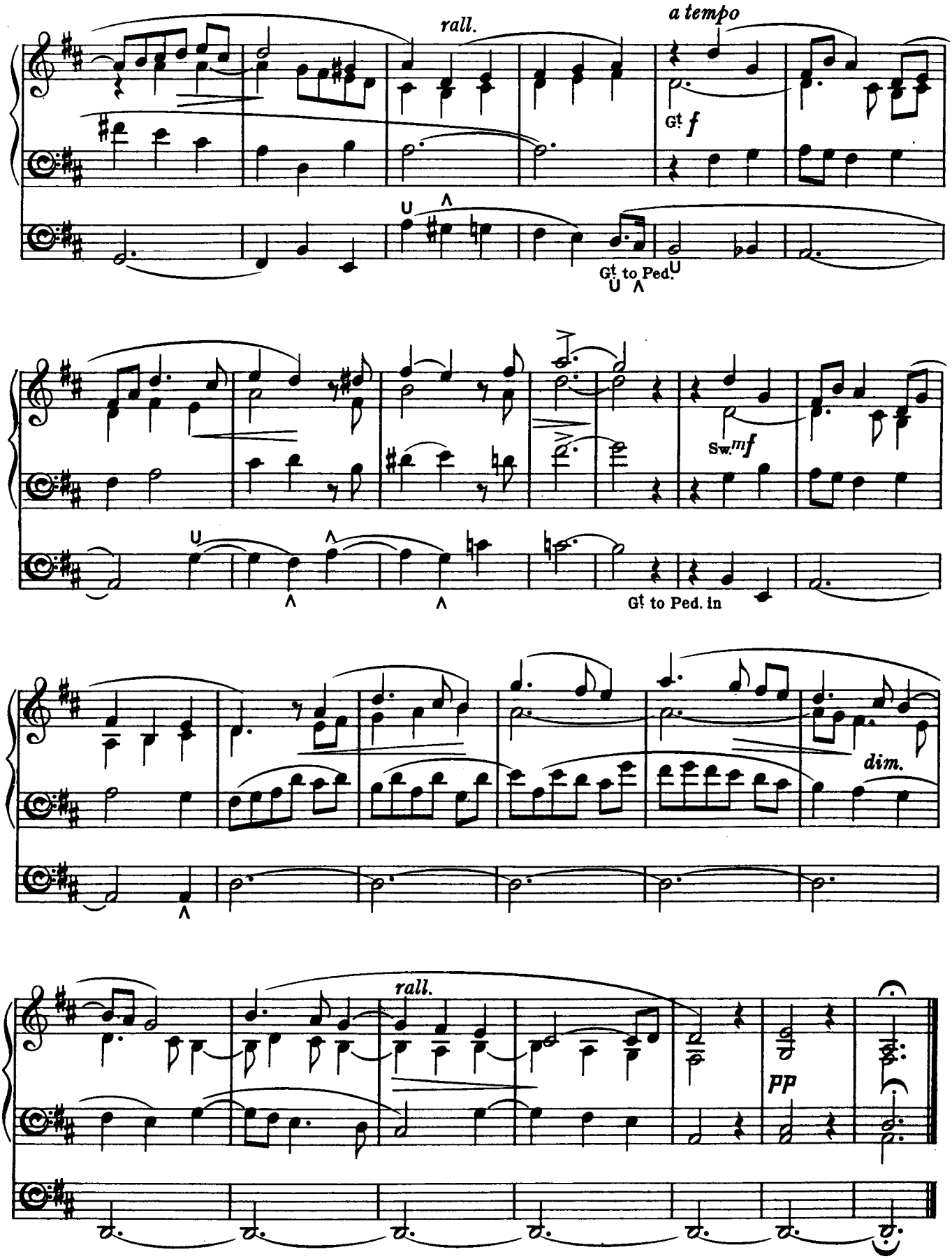
Allegretto con moto.

182



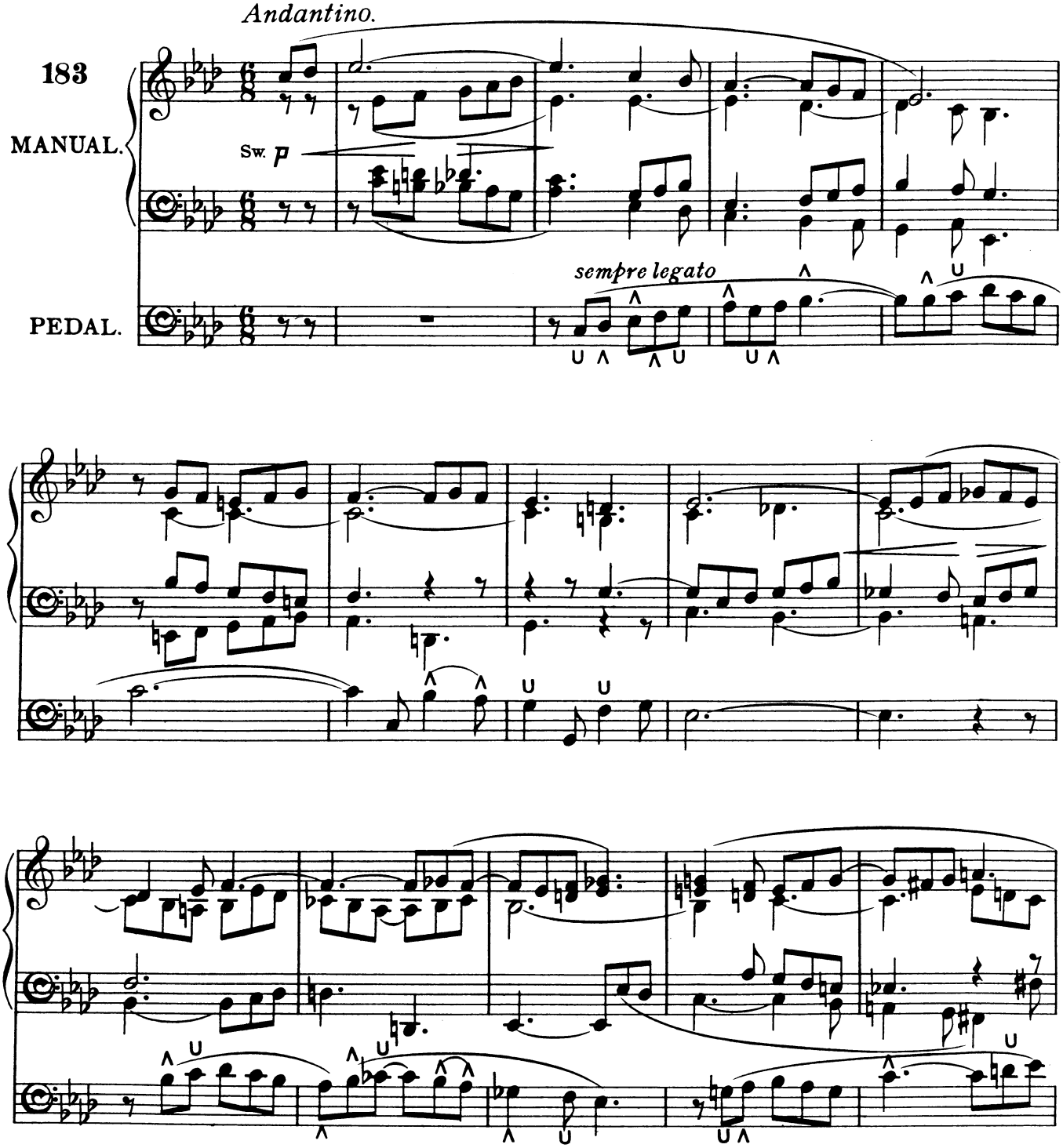
13940


Sw. p
G♮ to Ped.in
Ch.
Sw.

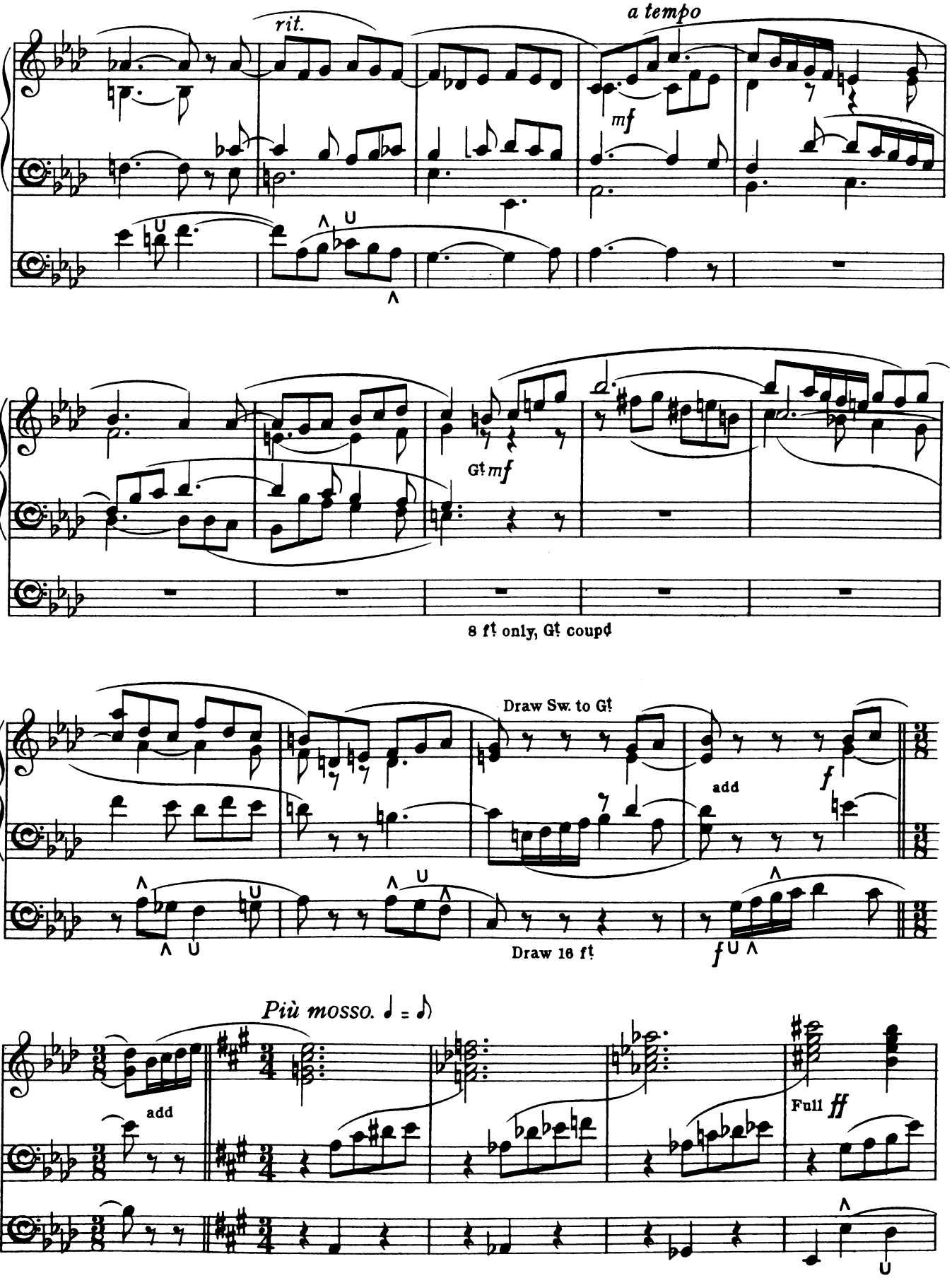

rall.
a tempo
Gt f
Gt to Ped.
Sw. mf
Gt to Ped. in
dim.
rall.
pp

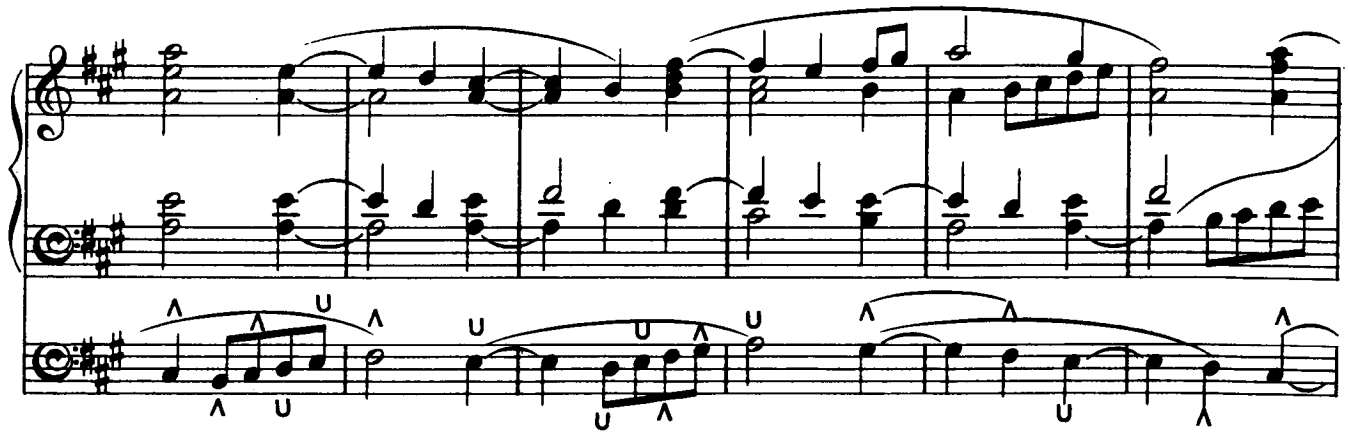
Prepare:
Sw. soft 8 ft
Gt. soft 8 ft
Ch. Suabe Fl. *
Ped. - - -
Couplers. Ch. to Ped.

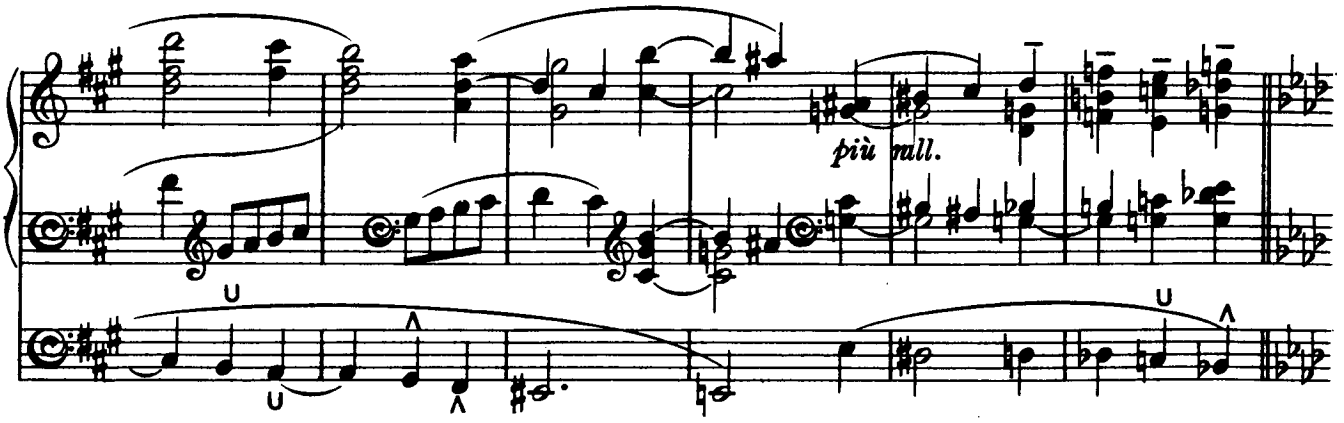
LEGEND.

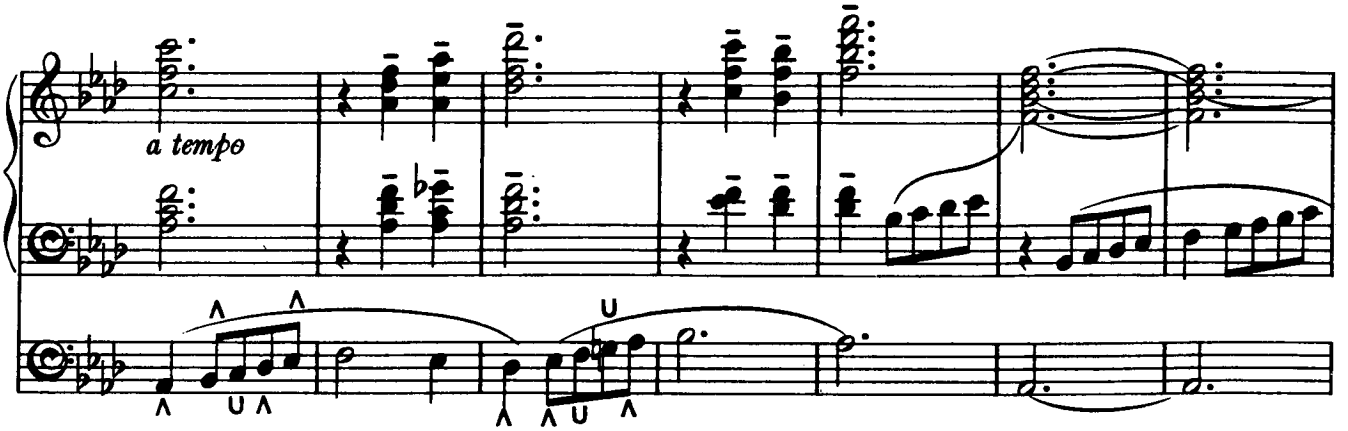


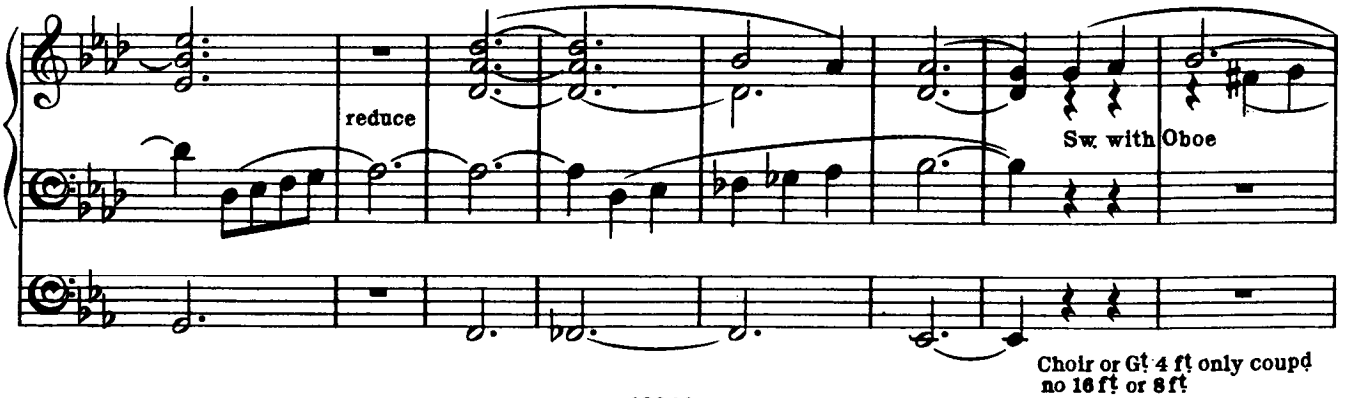
* On a Two-Manual Organ the Gt 4 ft Flute may be substituted.

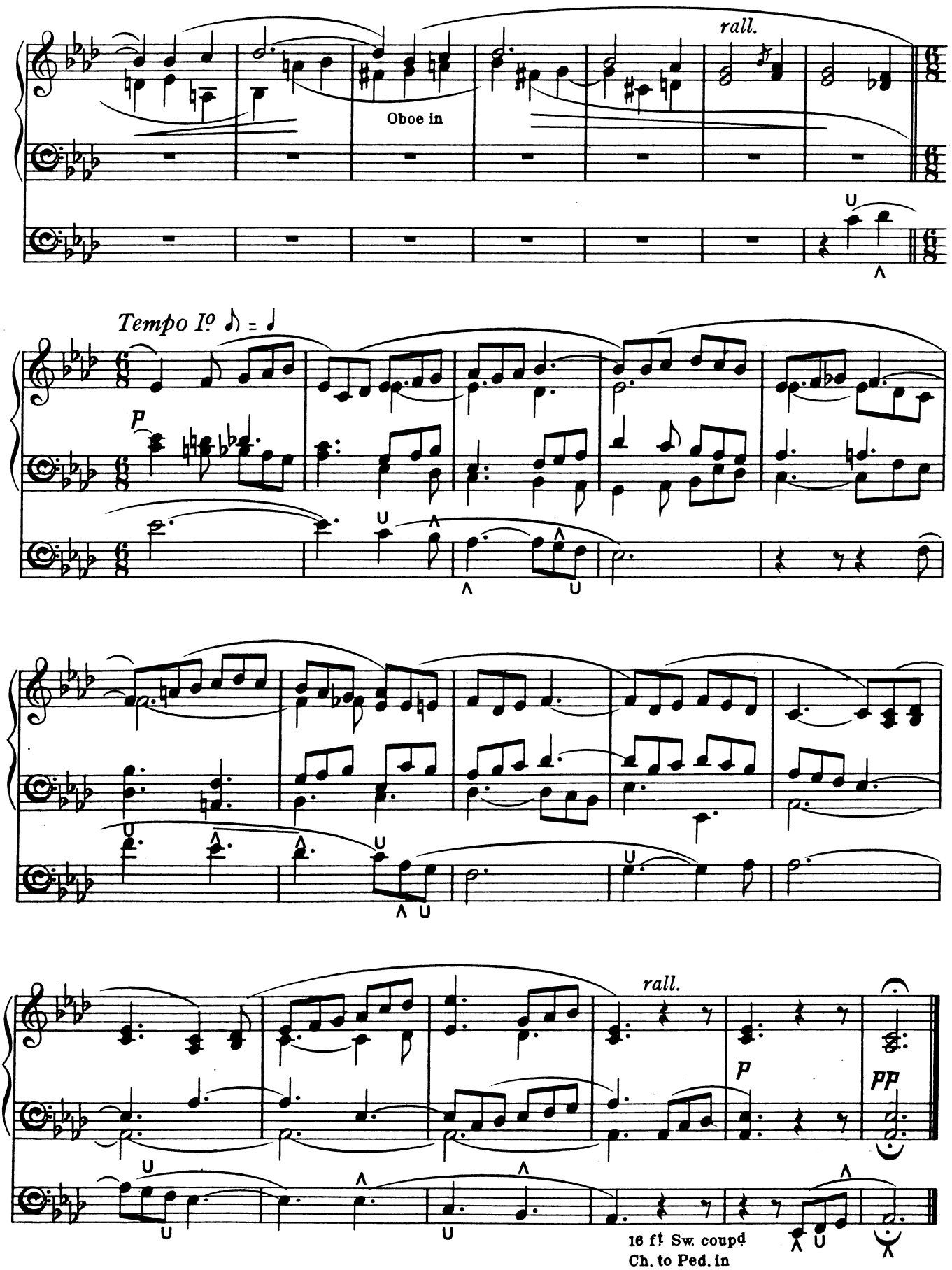

rit.
a tempo
mf
Gt mf
8 ft only, Gt coupd
Draw Sw. to Gt
add
f
Draw 16 ft
f
Più mosso. ♩ = ♪
add
Full ff




più rall.


a tempo

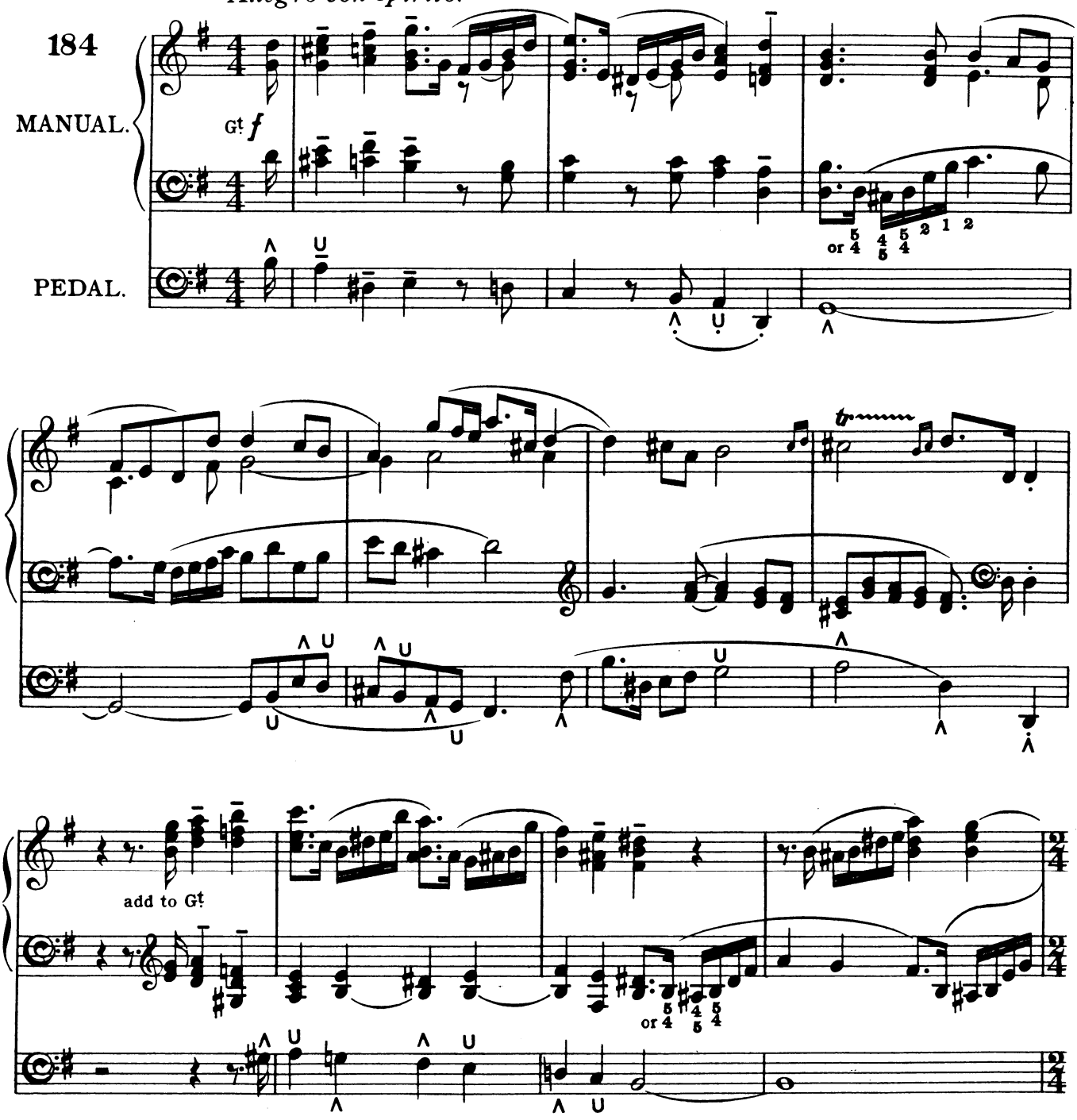

reduce
Sw. with Oboe
Choir or Gt. 4 ft. only coupd
no 16 ft. or 8 ft.

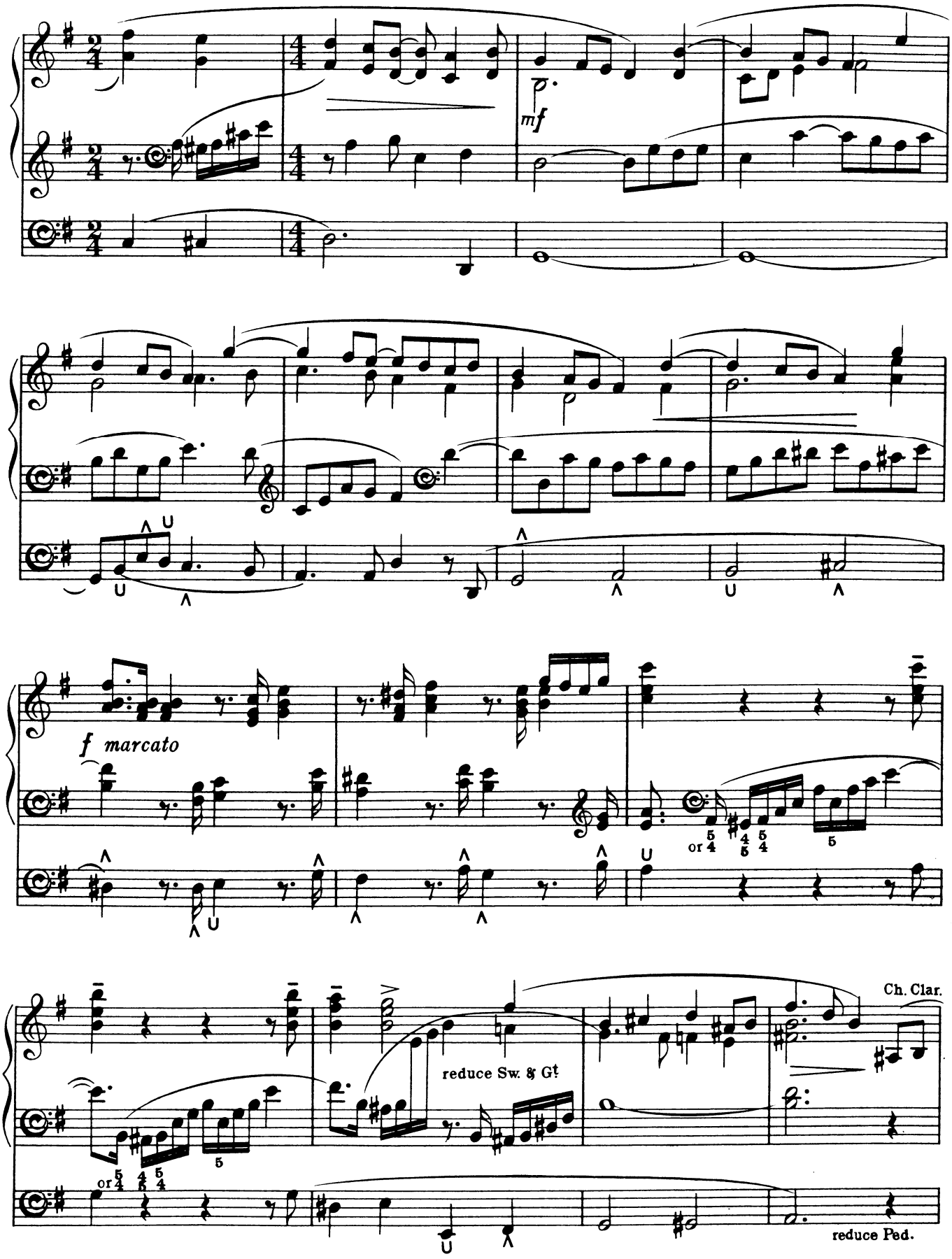

rall.
Oboe in
Tempo Iº ♪ = ♩
p
rall.
p
pp
16 ft Sw. coupd
Ch. to Ped. in

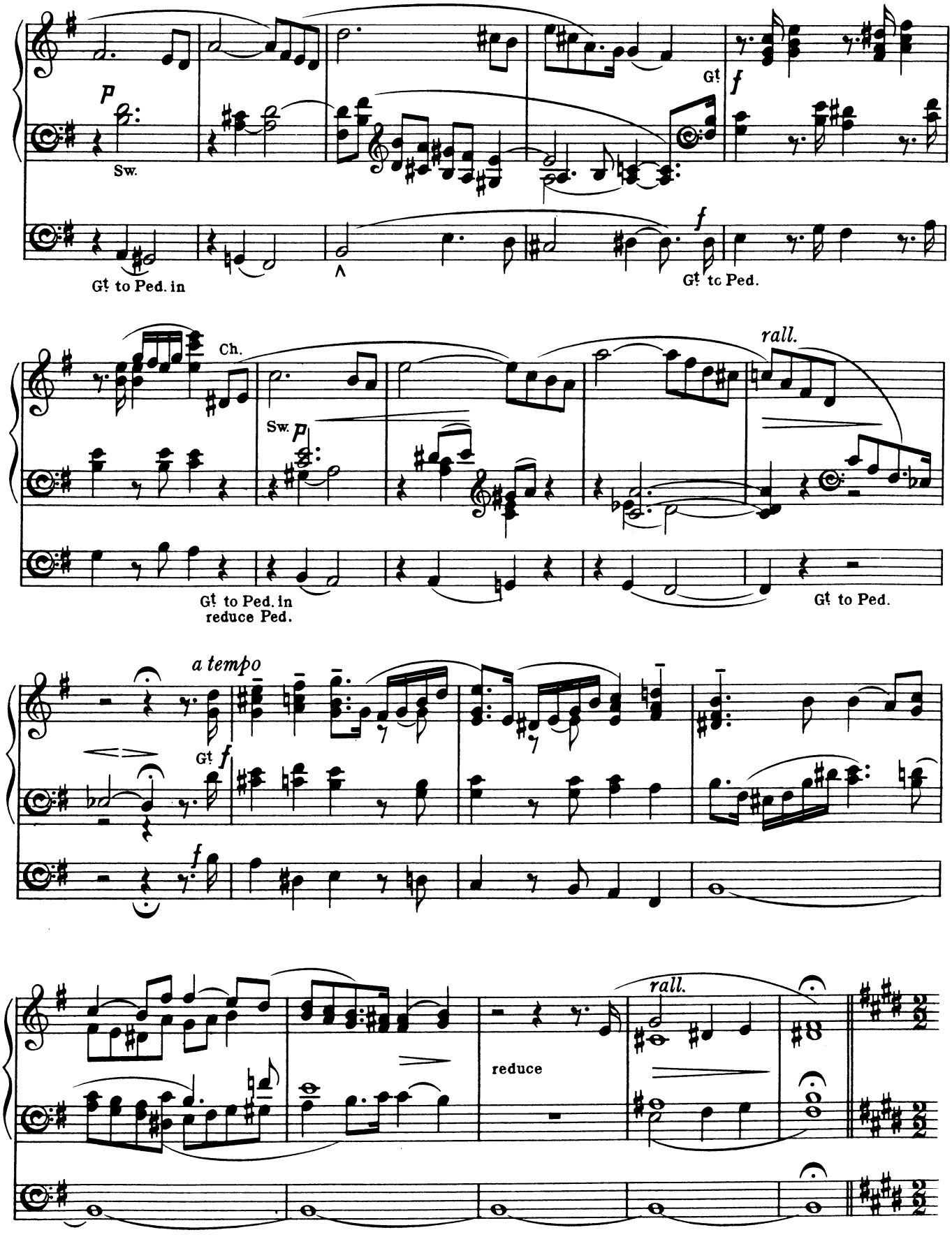
Prepare:
Sw. to Horn
Gt. to Princ.
Ch. Clarinet
Ped. Open Diap. Bourd. & Princ.
Couplers. {Sw. to Gt. / Sw. to Ped. / Gt. to Ped.

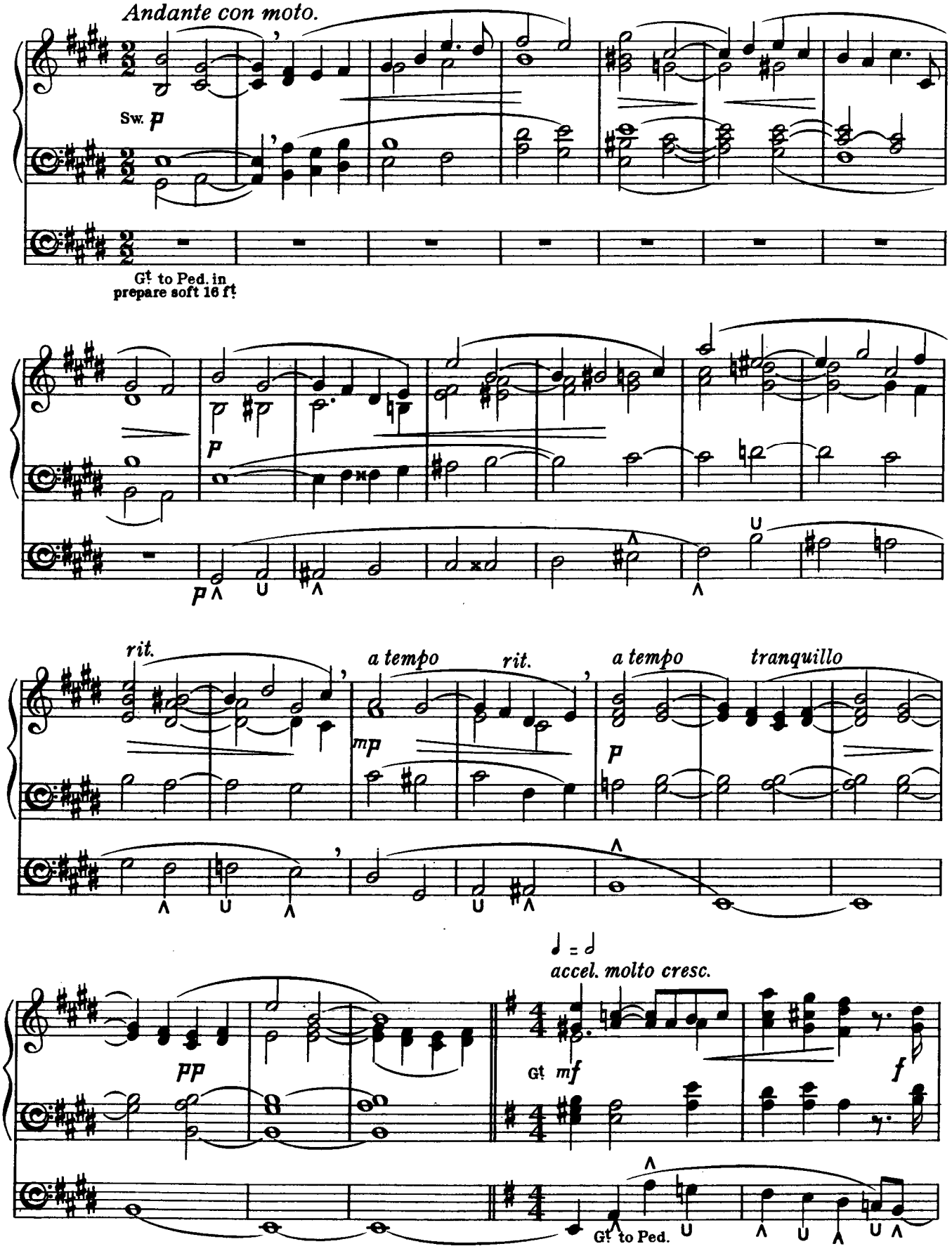
FANTASIA.

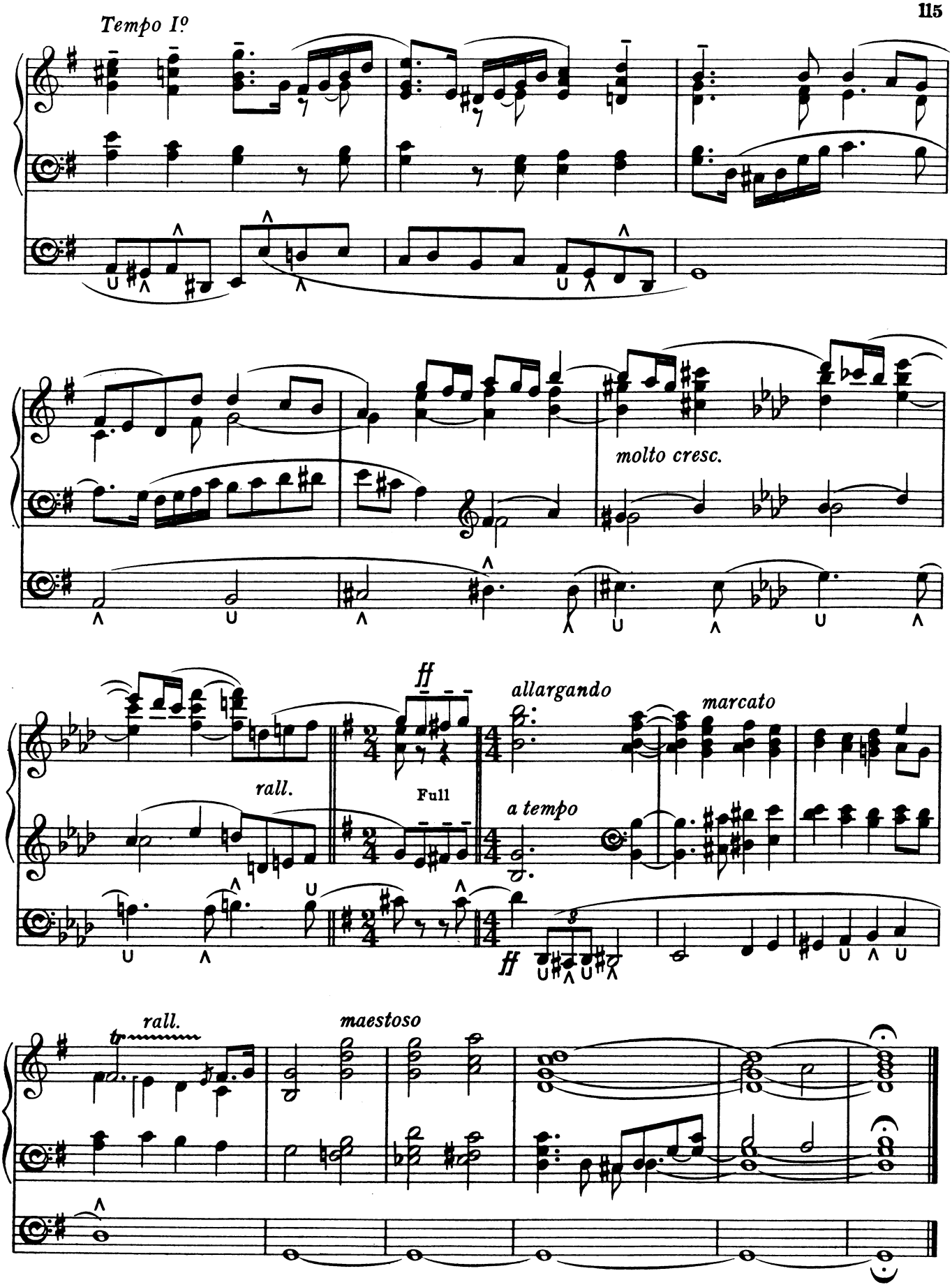
Allegro con spirito.




mf
f marcato
or
reduce Sw. & Gt.
Ch. Clar.
reduce Ped.


p
Sw.
Gt
f
Gt to Ped. in
Gt to Ped.
Ch.
Sw. p
rall.
Gt to Ped. in
reduce Ped.
Gt to Ped.
a tempo
Gt f
f
rall.
reduce

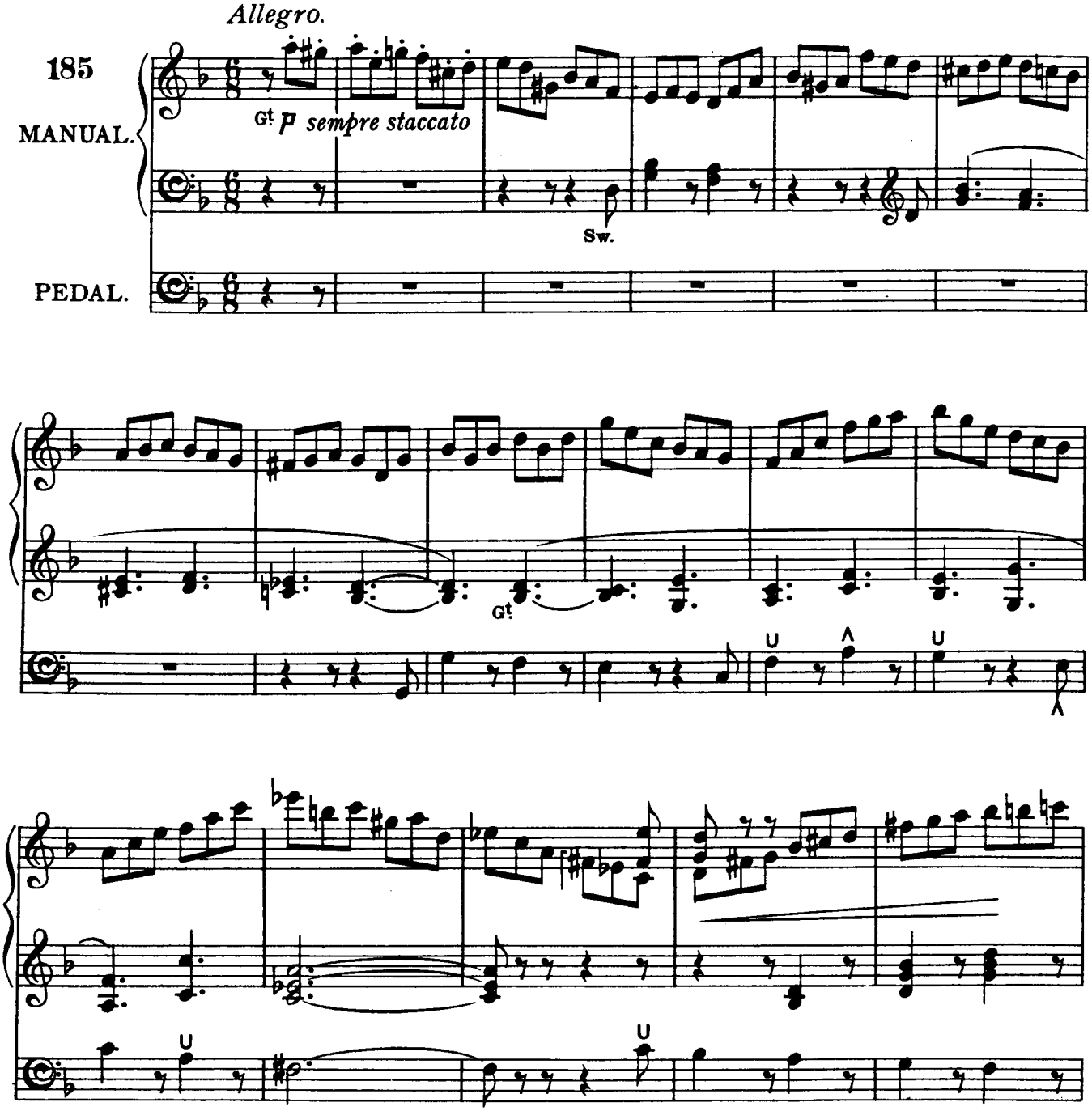

Andante con moto.
Sw. p
Gt to Ped. in prepare soft 16 ft
p
rit.
a tempo
rit.
a tempo
tranquillo
mp
p
pp
♩ = ♩
accel. molto cresc.
Gt mf
f
Gt to Ped.

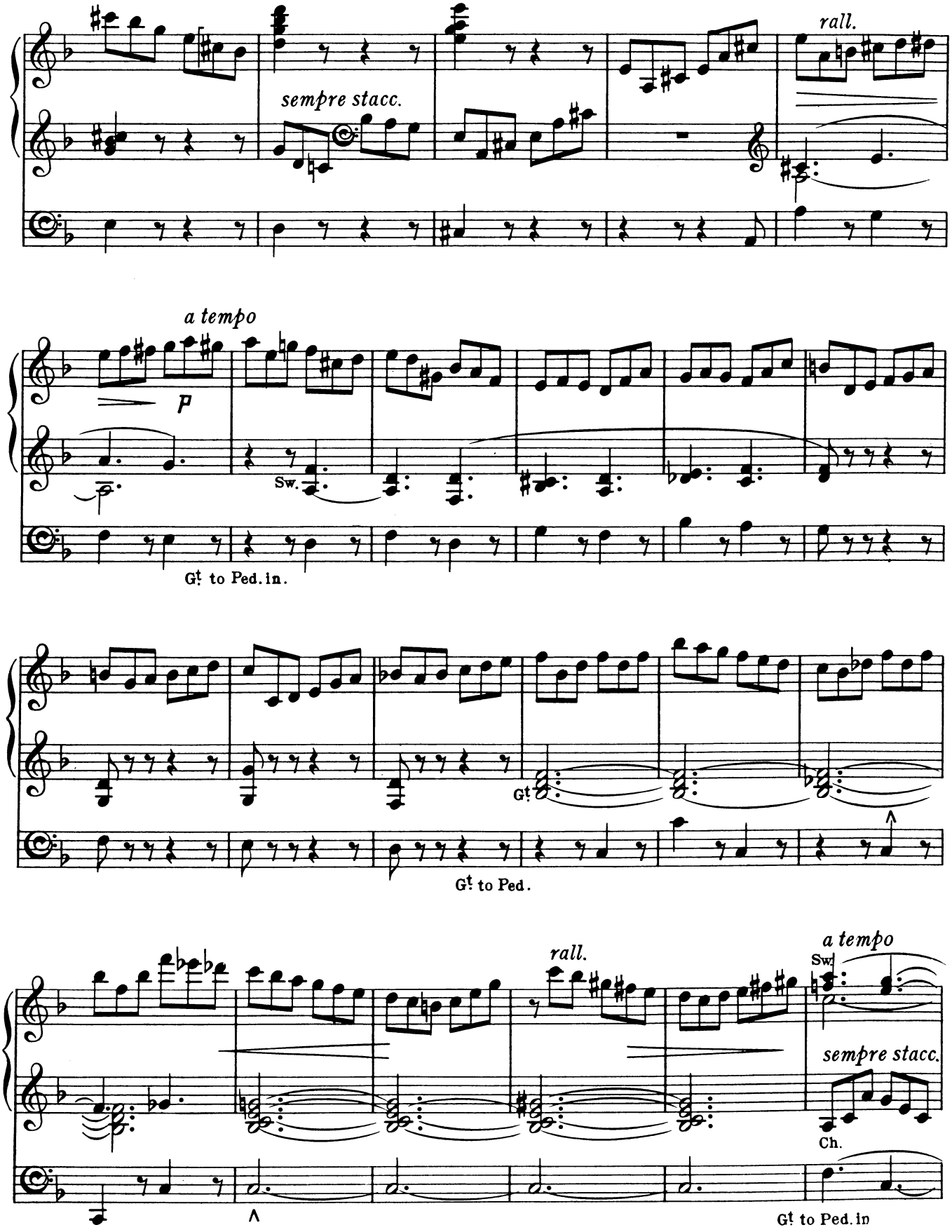

Tempo Iº
molto cresc.
ff
allargando
marcato
rall.
Full
a tempo
ff
rall.
maestoso

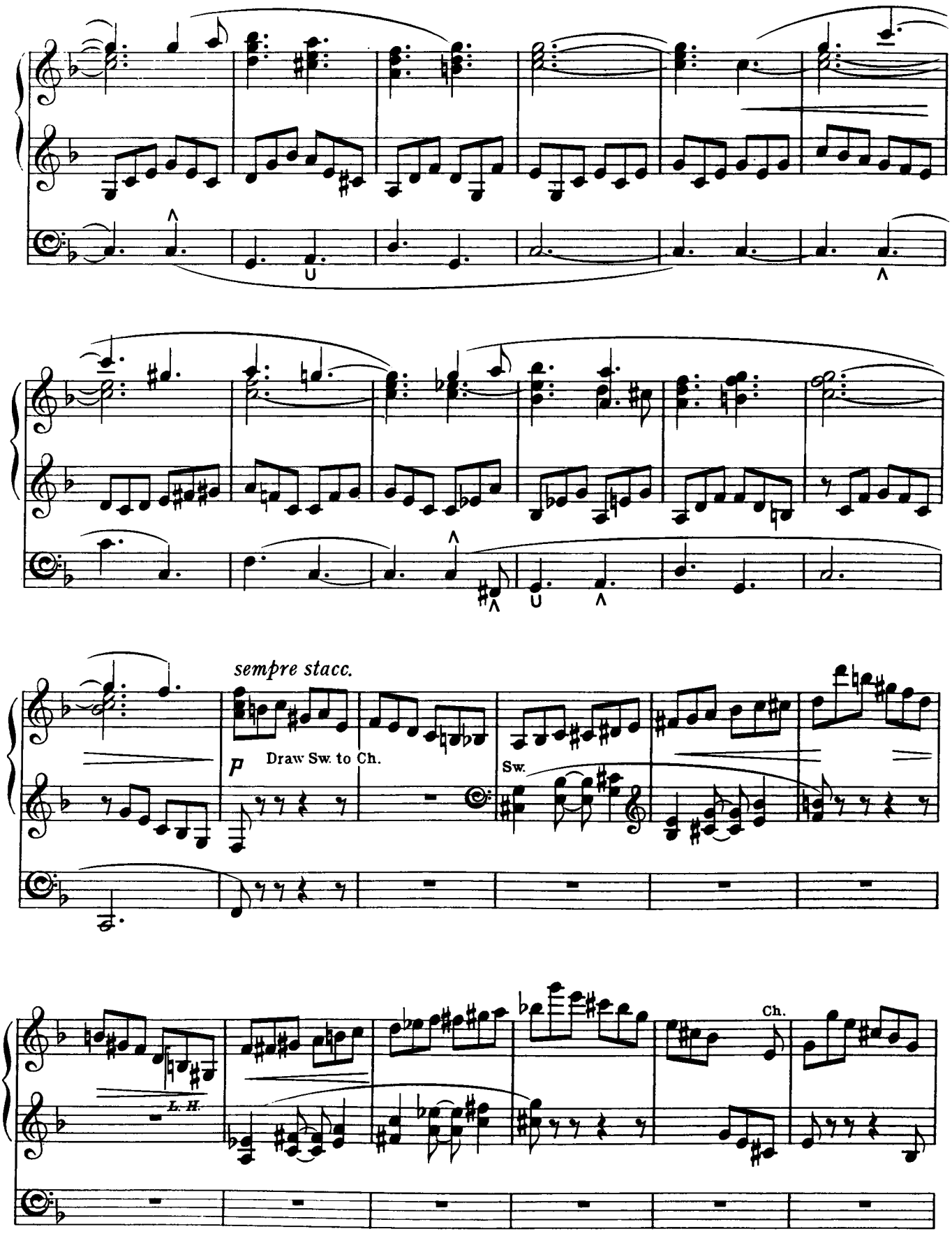
Prepare:
Sw. soft 8 ft
Gt soft 8 ft
Ch. soft 8 ft
Couplers. { Sw. to Gt / Sw. to Ped. / Gt to Ped.

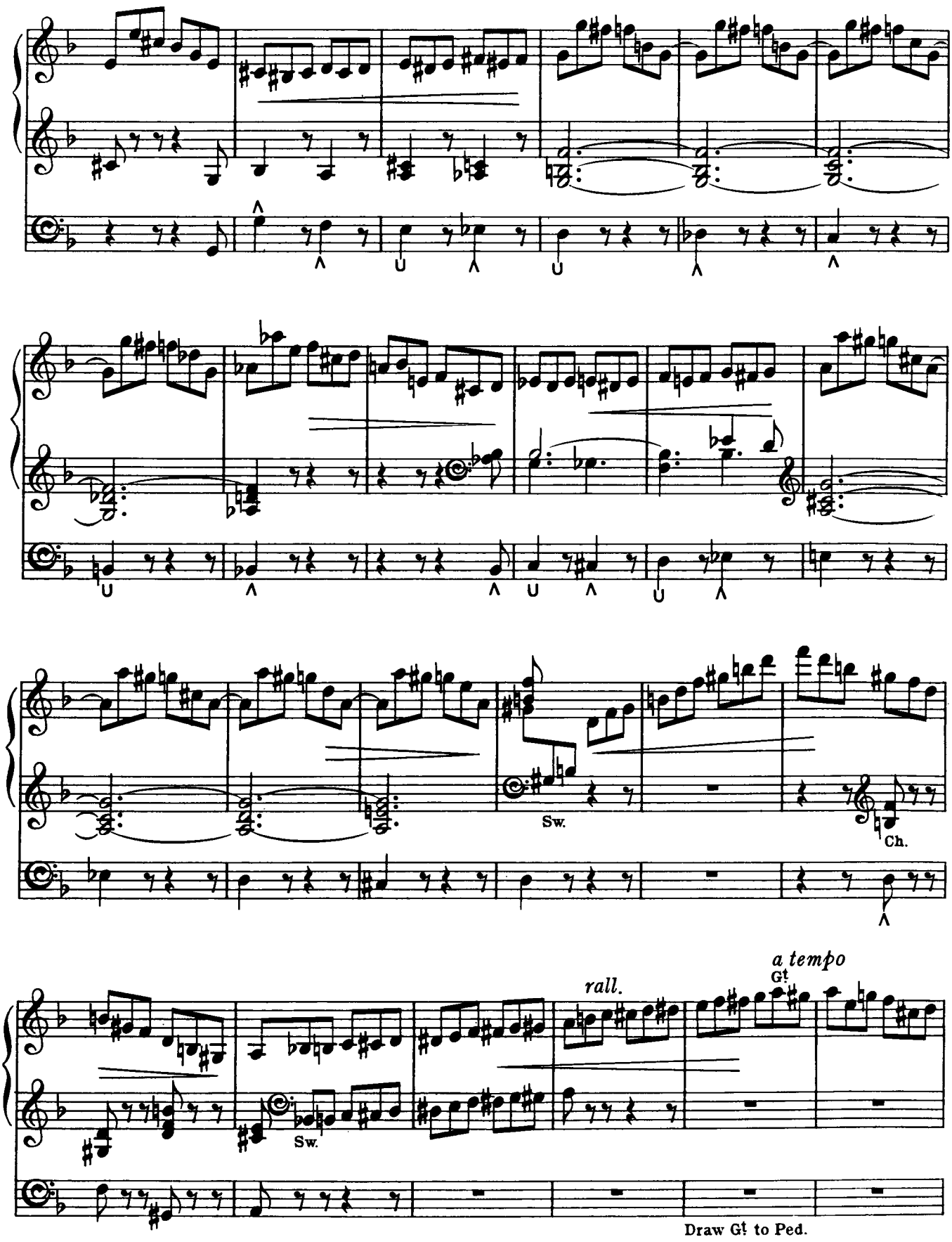
TOCCATINA.

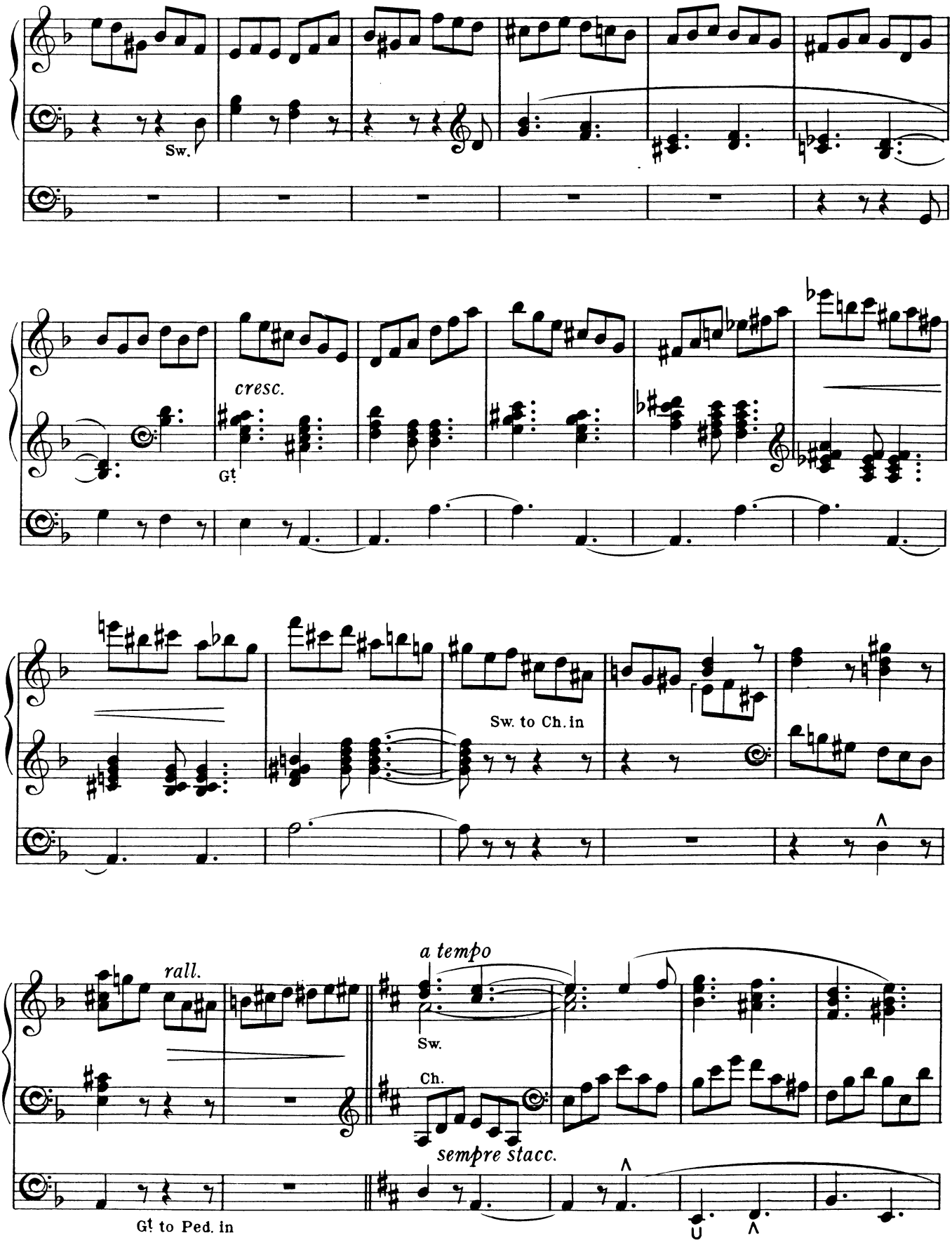
(A Study in Staccato.)

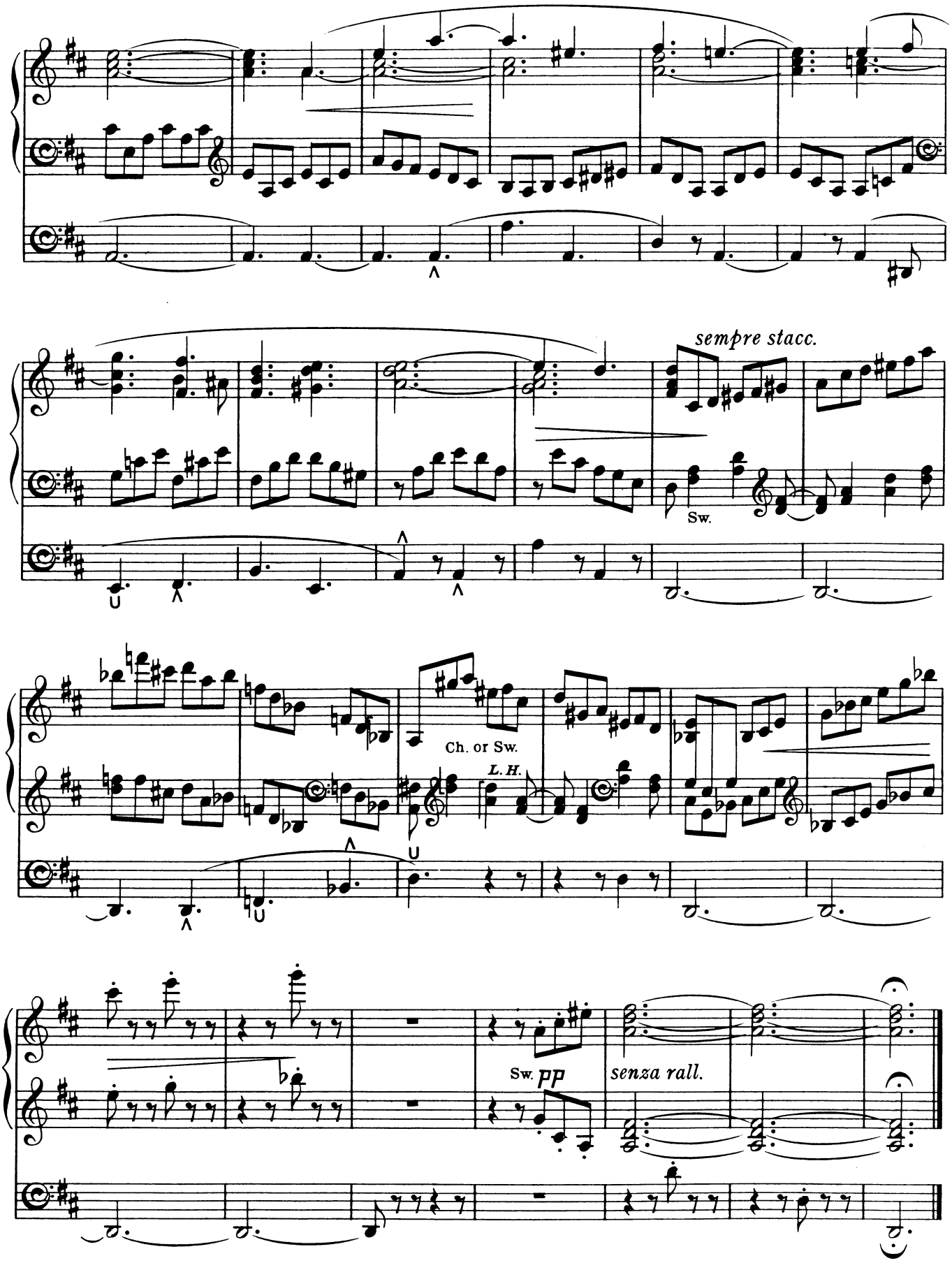



rall.
sempre stacc.
a tempo
p
Sw.
Gt to Ped. in.
Gt
Gt to Ped.
rall.
a tempo
Sw.
sempre stacc.
Ch.
Gt to Ped. in


sempre stacc.
p
Draw Sw. to Ch.
Sw.
L. H.
Ch.


Sw.
Ch.
rall.
a tempo
Gt
Sw.
Draw Gt to Ped.

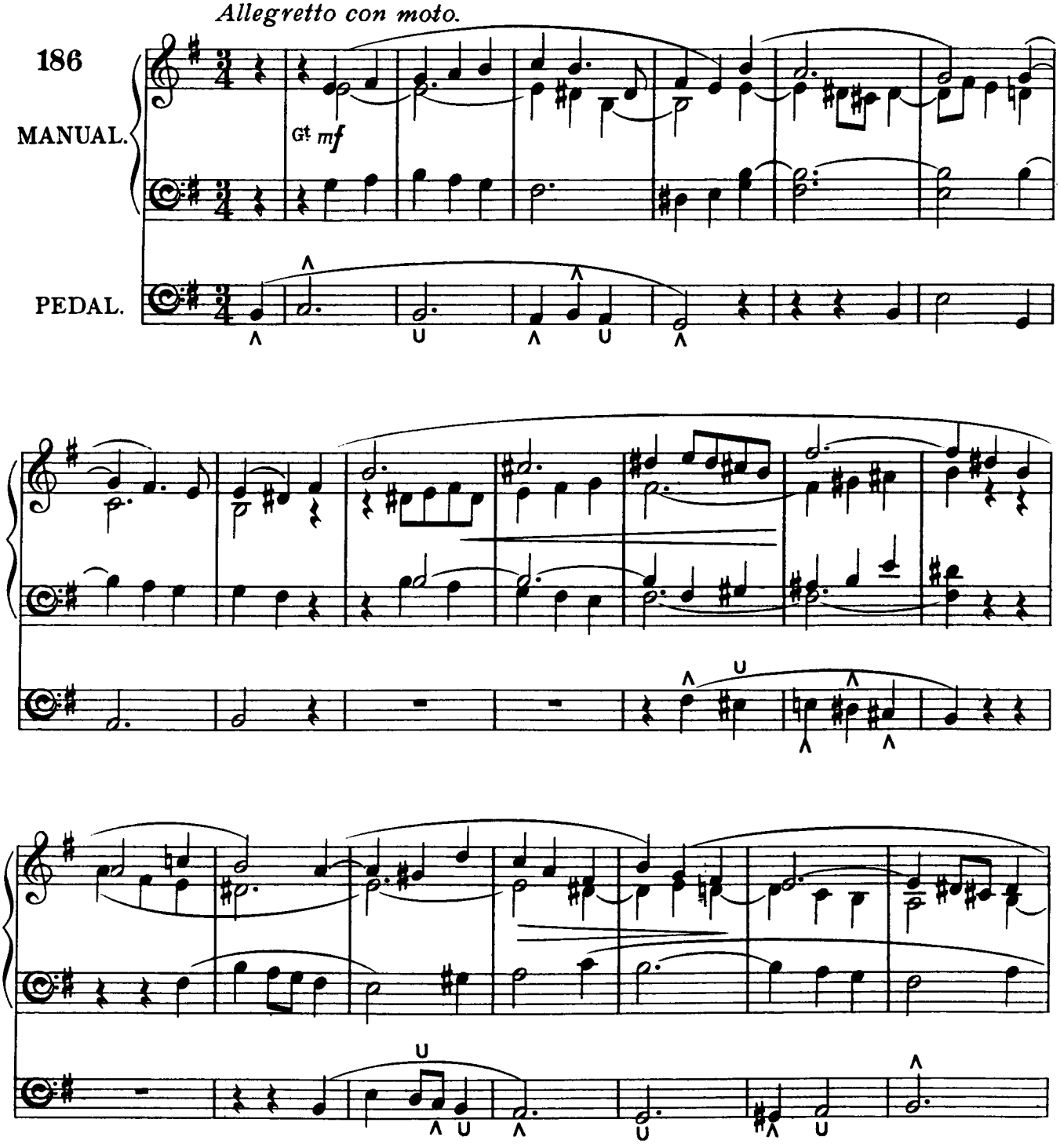

Sw.
cresc.
Gt
Sw. to Ch. in
rall.
a tempo
Sw.
Ch.
sempre stacc.
Gt to Ped. in

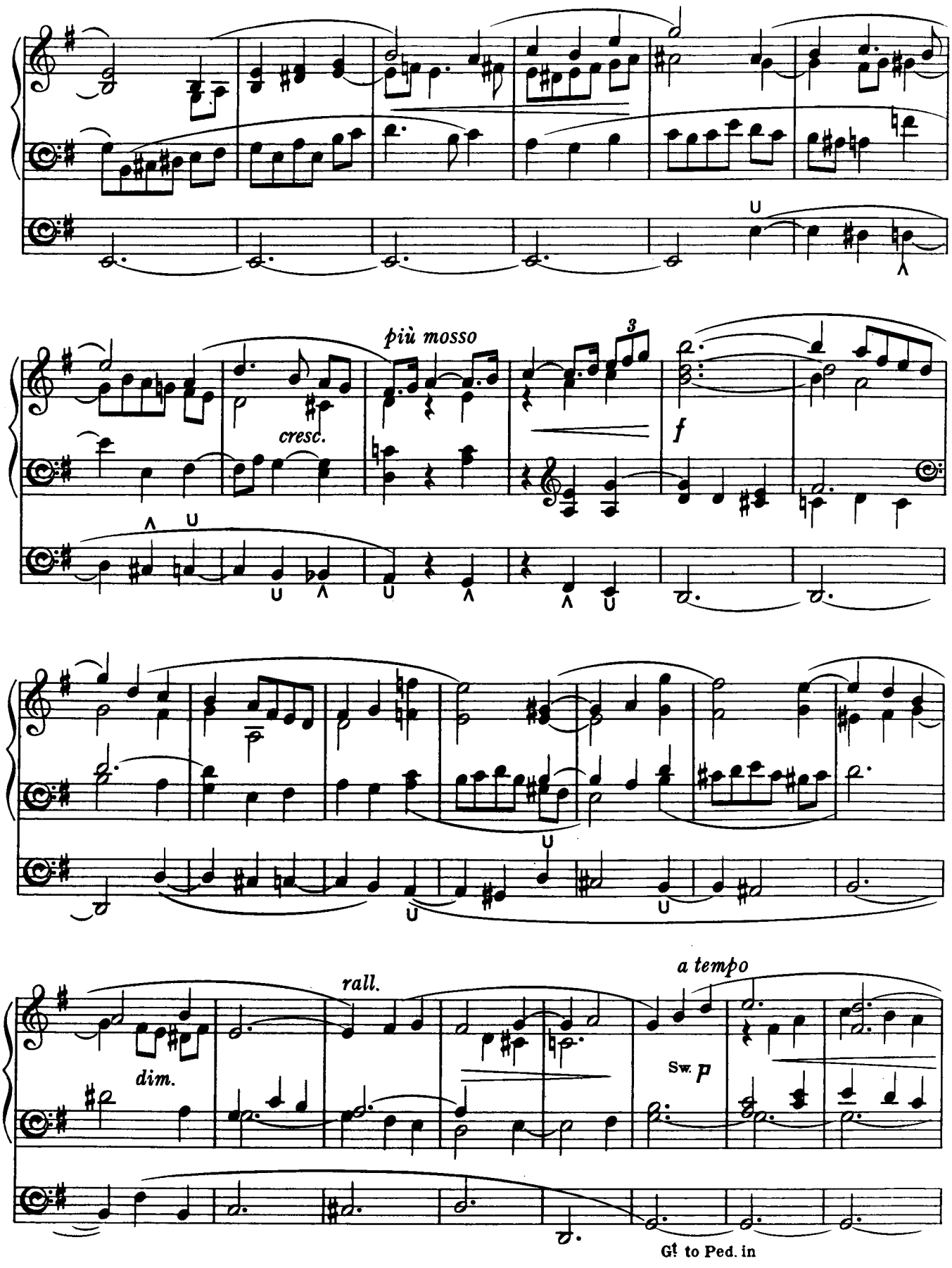

sempre stacc.
Sw.
Ch. or Sw.
L. H.
Sw. pp
senza rall.

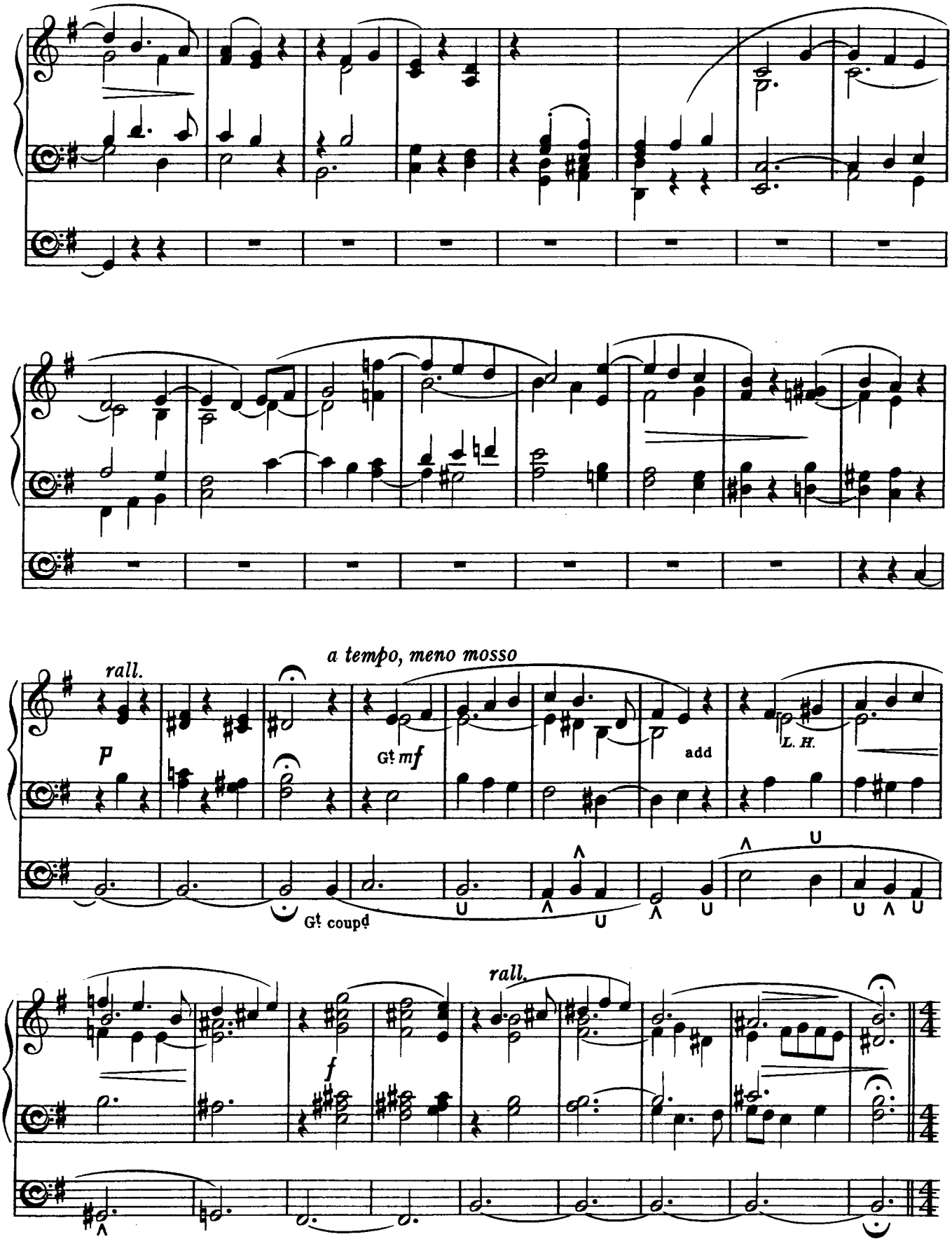
Prepare:
Sw. 8 & 4 ft
G! 8 ft *mf*
Ch. 8 & 4 ft
Ped. 16 & 8 ft
Couplers. Sw. to G! / Sw. to Ped. / G! to Ped.

INTRODUCTION and FUGHETTA.

Allegretto con moto.




più mosso
cresc.
f
rall.
a tempo
dim.
Sw. p
G! to Ped. in


rall.
a tempo, meno mosso
p
Gt mf
add
L. H.
Gt coupd
rall.
f

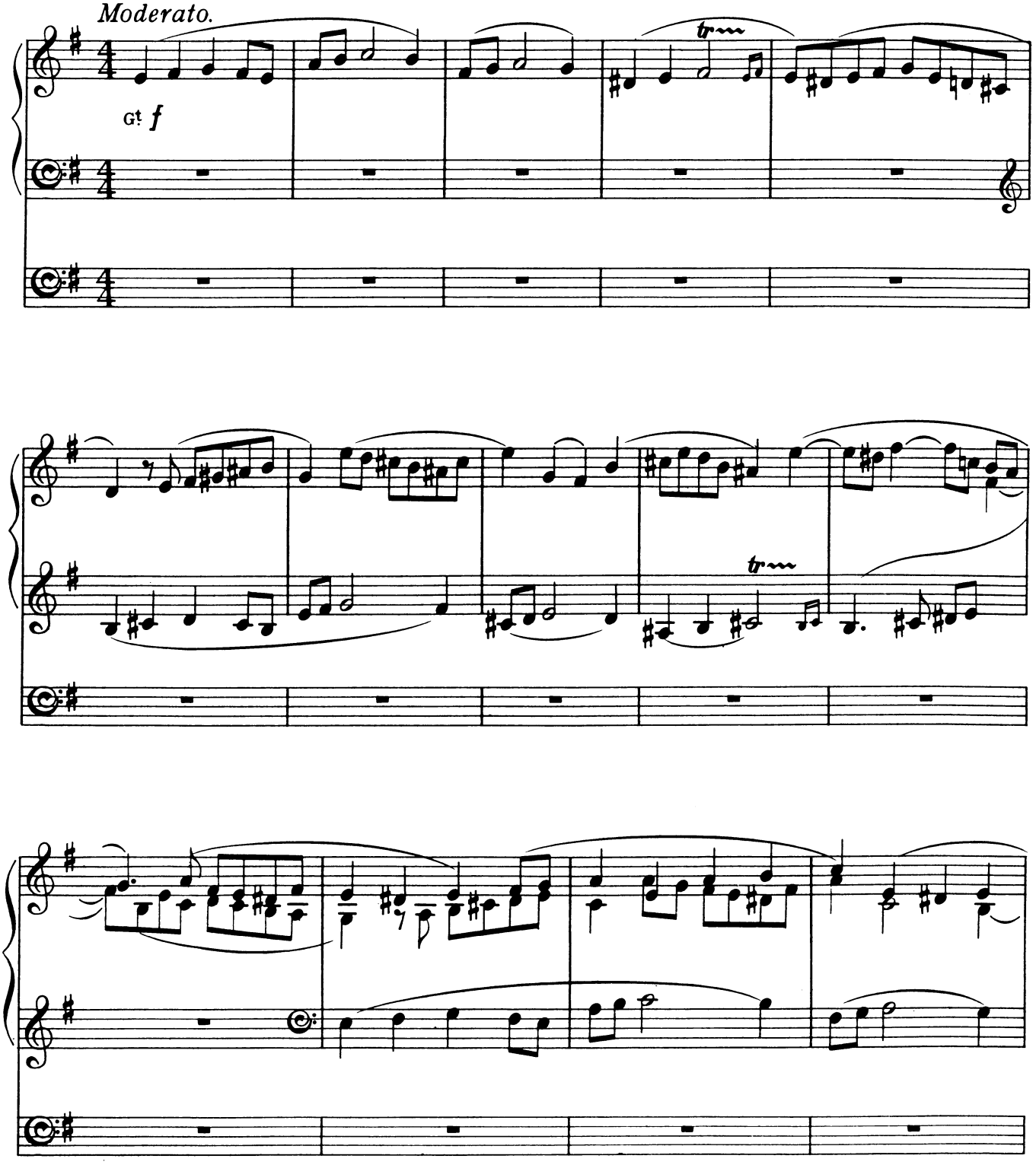
Prepare:

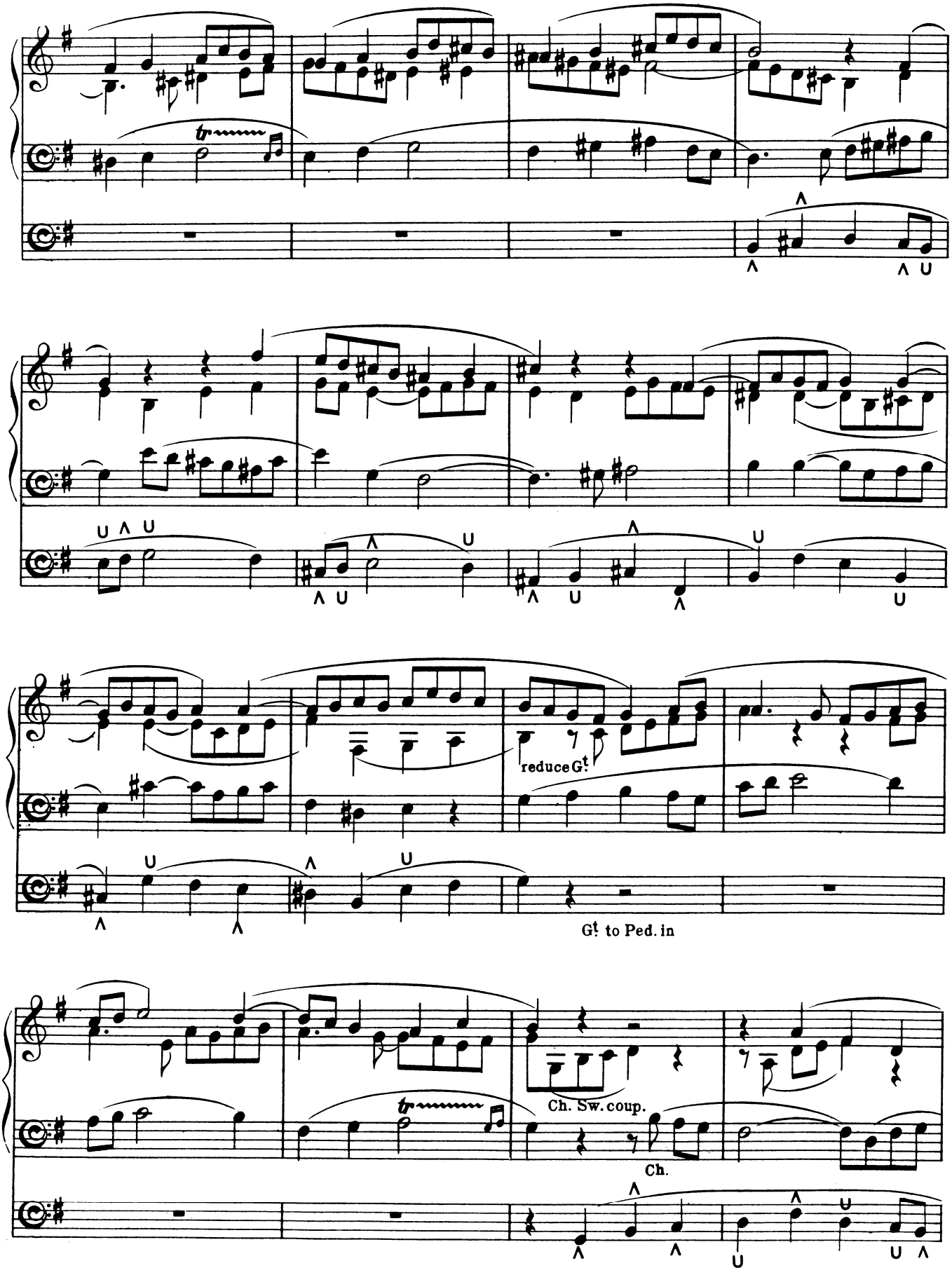
Sw. 8 & 4 ft	Ch. 8 & 4 ft
Gt. 8 ft	Ped. 16 & 8 ft

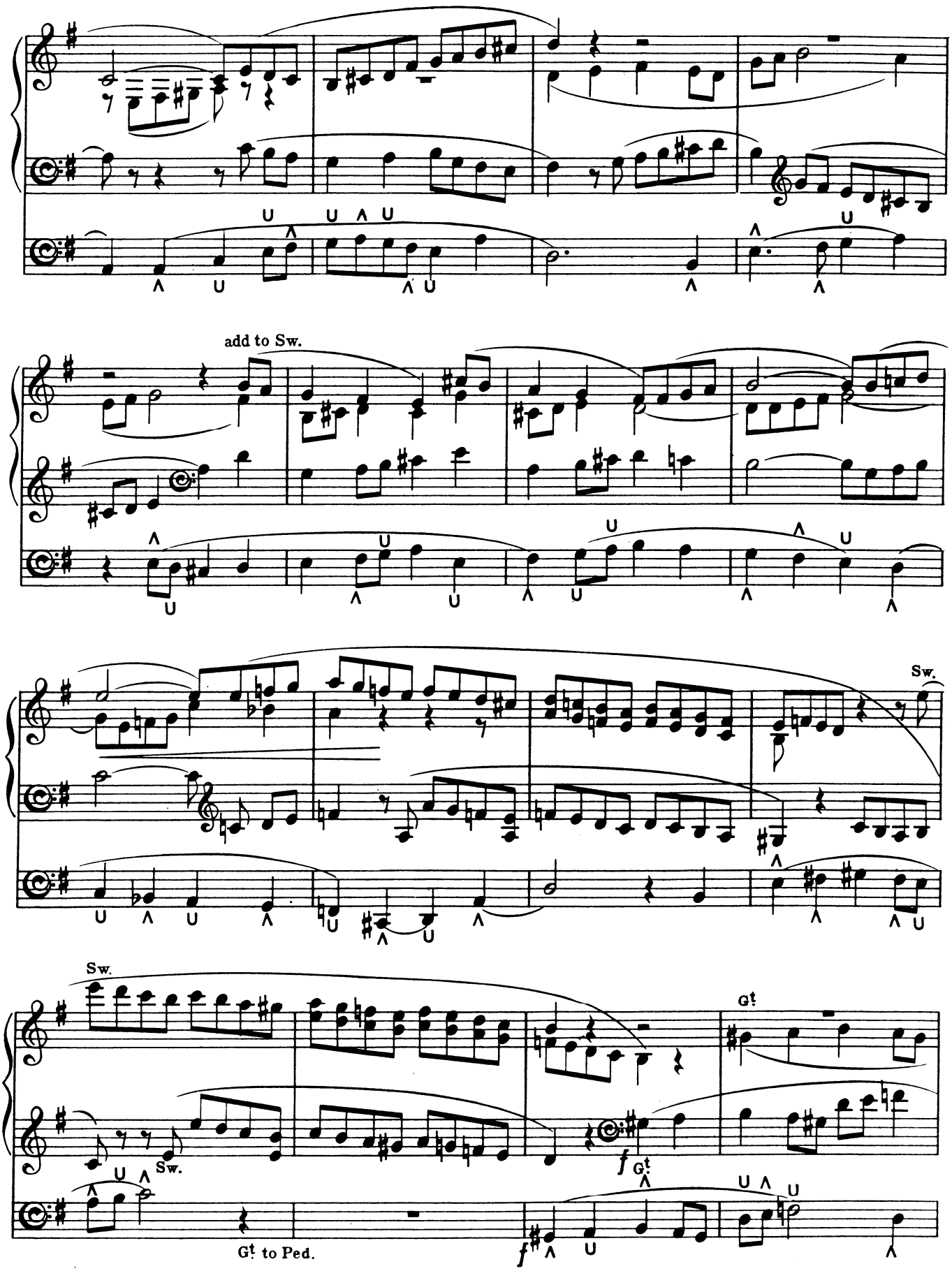
Couplers. Sw. to Gt. / Sw. to Ch. / Sw. to Ped. / Gt. to Ped.

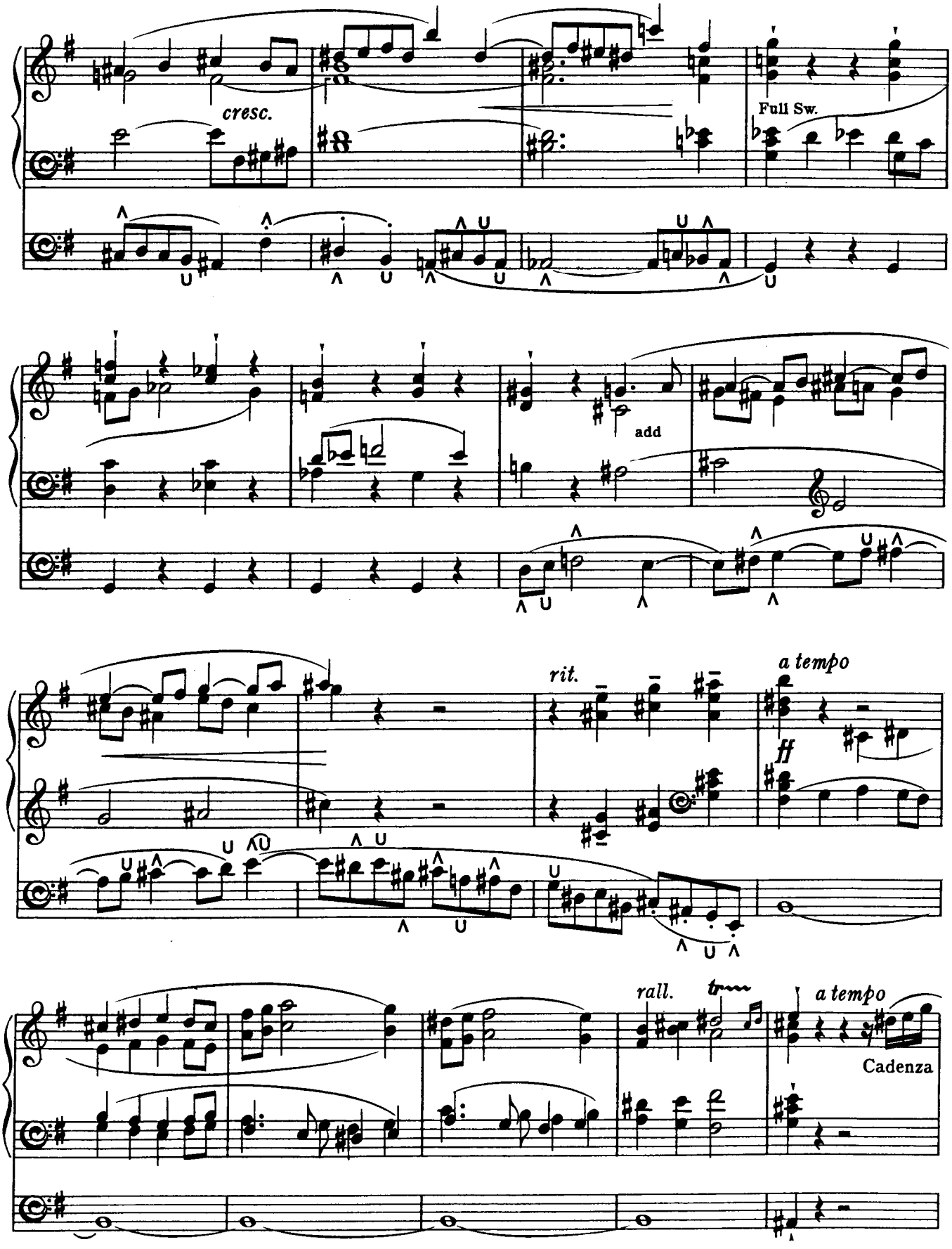
FUGHETTA.

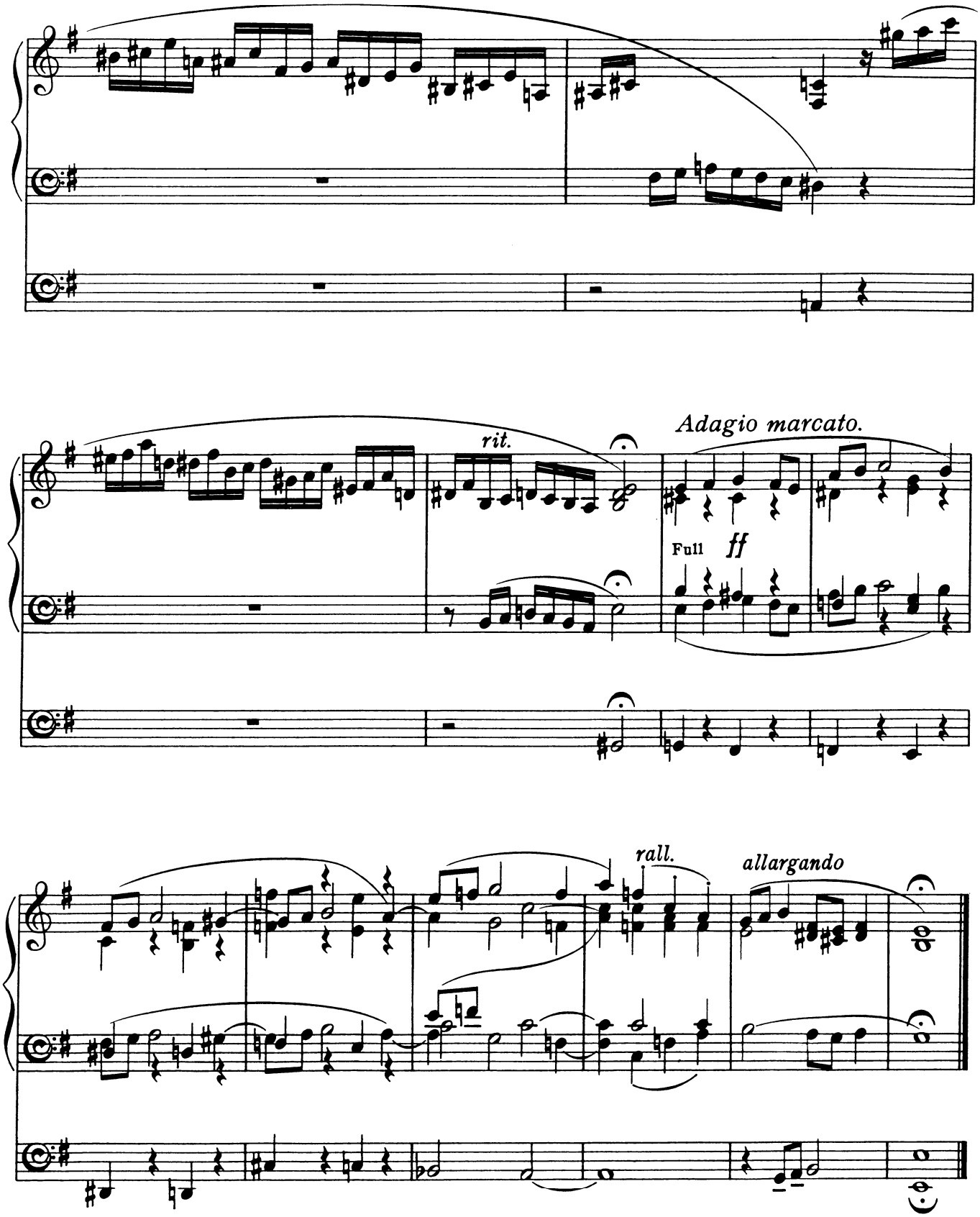
Moderato.



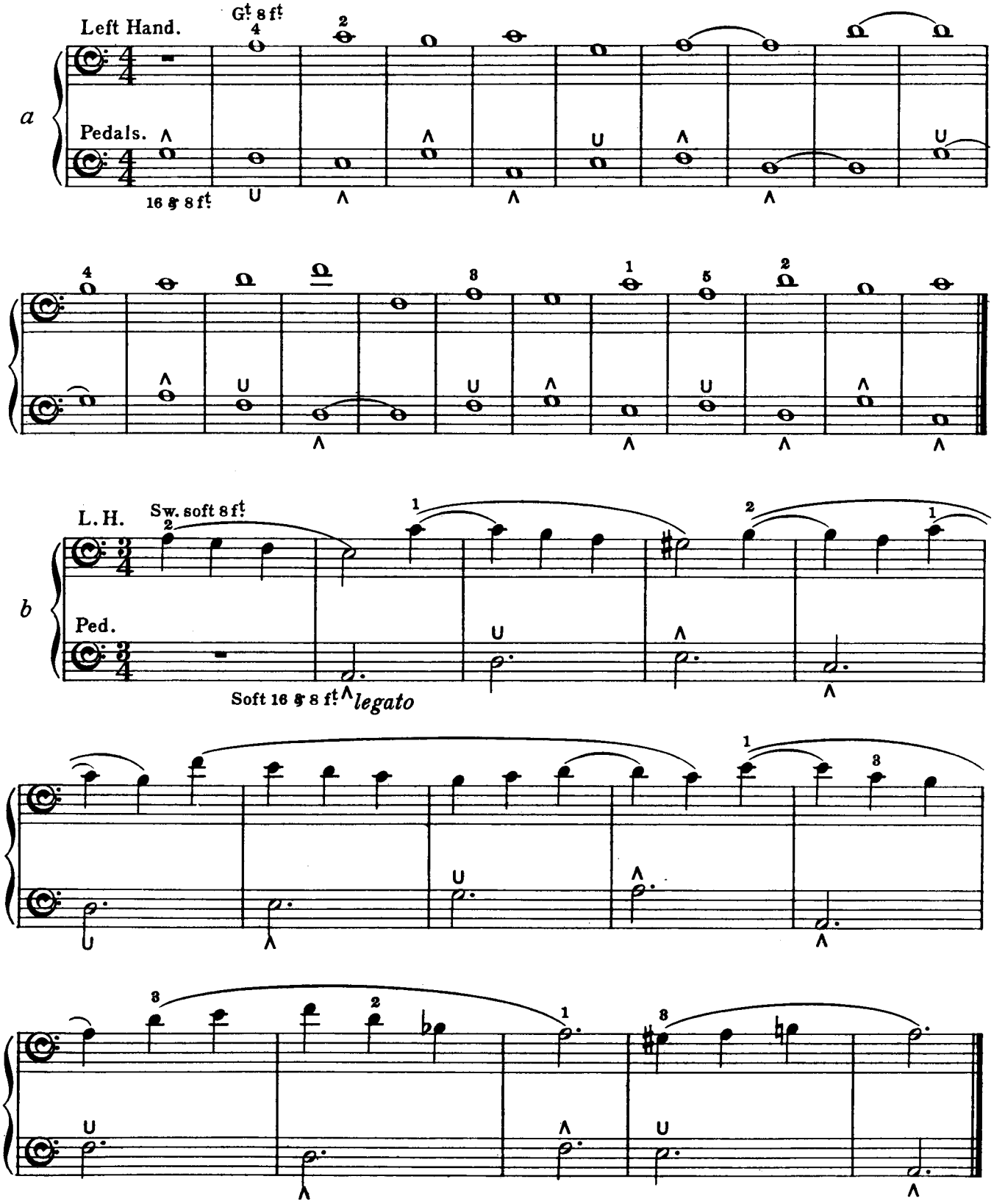

reduce G.t
G.t to Ped. in
Ch. Sw. coup.
Ch.


add to Sw.
Sw.
Sw.
Sw.
Gt.
Gt.
Gt. to Ped.

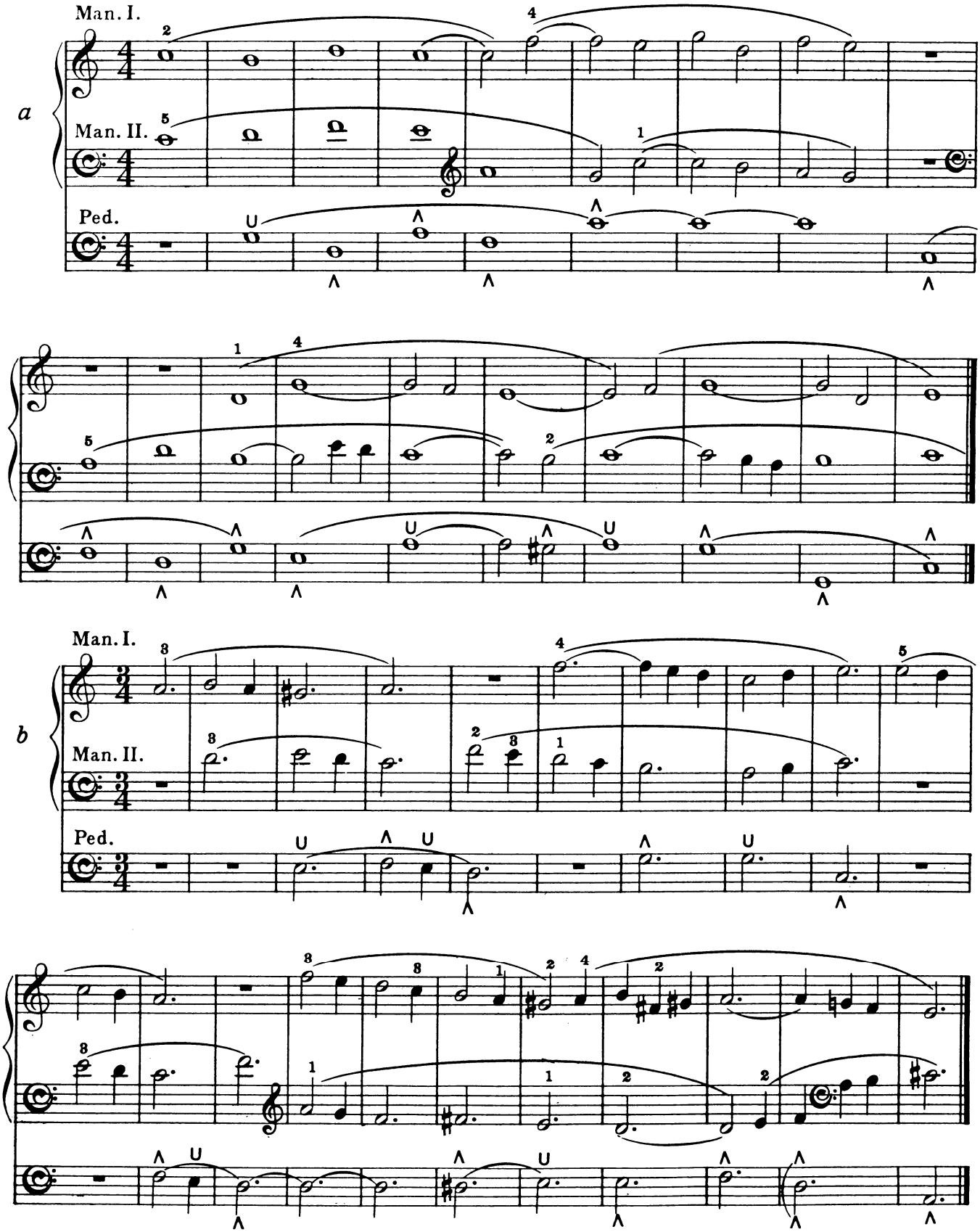

cresc.
Full Sw.
add
rit.
a tempo
ff
rall.
a tempo
Cadenza


rit.
Adagio marcato.
Full
ff
rall.
allargando

Left hand and Pedals.



Three-part Studies.



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OVELLO
AND
Cold