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TOUCH AND TECHNIC.

— FOR —

Artistic • Piano • Playing.



BY MEANS OF A NEW COMBINATION OF EXERCISE-FORMS AND METHOD OF PRACTICE
CONDUCTING RAPIDLY TO EQUALITY OF FINGER POWER, FACILITY
AND EXPRESSIVE QUALITY OF TONE.

— BY —

DR. WILLIAM MASON.

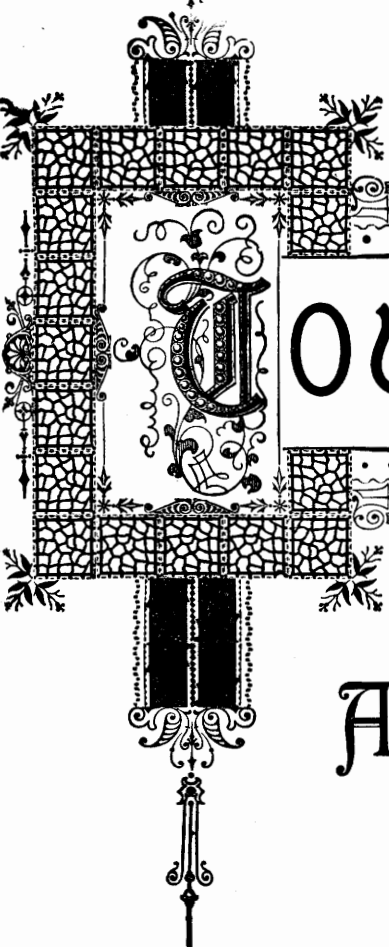
✦ OP. 44. ✦

Vol. I.—TWO-FINGER EXERCISES (School of Touch),	\$1.00 net
Vol. II.—COMPLETE SCHOOL ON SCALES (School for Brilliant Passages	1.00
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NOTE.—Although published in separate volumes, the four kinds of exercises contained therein are intended to enter into the daily practice concurrently, through the entire course of study from the first grade upwards.


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This illustration shows the correct hand-position at the piano, as drawn from Dr. Mason while playing.

TOUCH AND TECHNIC;

OR,

THE TECHNIC OF ARTISTIC TOUCH

BY MEANS OF THE TWO-FINGER EXERCISE.

PREFACE TO REVISED EDITION.

Advantage is taken of the demand for a new edition of Volume I of "Touch and Technic," to rearrange the material and make certain additions in order to render it clearer, more convenient for teachers not previously accustomed to the system, and better arranged for gradation, according to the demands of pupils in different stages of progress.

INTRODUCTION TO THIS EDITION.

A SHORT HISTORY OF THE TWO-FINGER EXERCISE.

The two-finger exercise in its primitive form is one of the oldest known devices for strengthening and individualizing the fingers. It is found in most of the piano instruction books of the last century and appears also in the more modern works of Clementi, Hummel, and Czerny.

The author of this work claims no originality as to the exercise itself, but solely as to its *manner of treatment* as set forth in the following pages, the main features of which are: (1) Its adaptation to metrical and rhythmic forms through varieties of grouping and accentuation. (2) The cultivation of strength and stability as well as lightness and speed in playing by means of the "graded sequence" and "velocity" forms. (3) The development of a *musical* as well as mechanical legato quality of touch by means of the employment of the diverse and varied muscular movements which contribute thereto.

These things in proper combination enhance the value and efficacy of the two-finger exercise in a wonderful degree, because they involve the cultivation of phrasing and expression as well as of mere muscular strength and dexterity; of firmness and elasticity; of light and shade; and of repose in action which is so necessary to a finished and artistic style in playing.

The author's attention was first directed to the two-finger "motif" during his stay in Weimar, Germany, in the years 1853-54. At that time Liszt's pupils were few in number, only three, in fact, viz., Dionys Pruckner, Karl Klindworth, and the writer. One day the boys were discussing the subject of mechanical technic and wishing for some little "*multum in parvo*" exercise, which should be so comprehensive and far-reaching in its results as to do away with a multiplicity of exercises, and acting like magic, accomplish the whole thing *instantly* and thus obviate the necessity of slow plodding. They finally referred the matter to Liszt, and his reply was that inasmuch as all pianoforte pieces consisted of scale, arpeggio, chord, and octave passages, the practice of these could never be wholly dispensed with; but, he continued, "of all exercises of which I have knowledge, for stimulating, strengthening, and limbering the fingers, this simple little exercise is the most effective." He went to the piano and played the two-finger exercise in the form presented on page 22, and numbered 8, but without observing any particular metrical form. "You know," he continued, "that I have given up my concerts and public playing, but when occasionally I do play in private for my friends and feel the need of preparation, I practice this exercise solely and for two or three hours uninterruptedly. As a result I regain my full technic without practice of anything else, either exercise or piece." Tausig, who got this exercise from Liszt at a later

period, also held it in high esteem, and, according to the testimony of many of his pupils, he used it in his individual practice more than any other form of exercise.

Shortly after the writer began his work as a teacher, in the year 1855, he first conceived the idea of developing and increasing the usefulness of the exercise by means of the varied treatment explained in the following pages, and he has continued it ever since with invariably the best results.

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INTRODUCTION.

GENERAL FEATURES AND PECULIARITIES OF THE SYSTEM.

Of Touch in General.

SECTION 1. The object in view is to lay the foundation of, and to build up, a good pianoforte touch and technic in the shortest possible time, and after this has been accomplished, to keep the muscles which are employed in such a touch in the highest state of training, through the continued and daily use of the exercise best adapted to that end. Success in this undertaking depends entirely on the method of practice. In itself, the two-finger exercise is as simple and elementary a form as can well be devised, but through the application of different kinds of touch to its various forms, it becomes comprehensive and exhaustive in its results, because it searches out and brings fully into action, in the most complete and thorough manner, nearly all of the muscles which are used in pianoforte playing. The truth of this assertion may not at first appear, but is easily demonstrated on investigation, and is quickly wrought into the experience of those who give the matter a faithful and persistent, if only a short, trial.

The elements of strength and elasticity are both essential to a good pianoforte touch, and in accordance with their presence in varied degree and combination will be the tone-color, or quality of tone produced. The application of mere force without elasticity produces a hard, piercing, and unsympathetic tone. On the other hand, an undue exercise of elasticity results in a characterless tone. The combination of the two principles in right proportion accomplishes the desired result. The strength furnishes the staying power and backbone, so to speak, and the elasticity mellows and tempers the tone by supplying the needed buoyancy and springiness. Elasticity of touch is gained through the proper use of the flexor and extensor muscles, extending from fingertip to elbow, acting in harmonious union with various muscles of the upper arm, of which the *triceps* is the great extensor of the elbow-joint, while the *biceps* and *brachialis anticus* are the antagonistic flexors. Of these the *triceps*, which lies upon the outer part of the upper arm, affords practically the key to the whole situation, and careful attention to its proper action in playing will in a short time bring about results which can be attained in no other way. This is due to its important influence in the development of a generally relaxed muscular condition and to its powerfully effective agency through these means in the production of a musical and resonant quality of tone, which is, at the same time, pervasive and singing in character and of great carrying power. (See Section 26.)

Supple and flexible muscles are indispensable in the production of a musical and sympathetic tone. On the other hand, a hard and heartless tone is the natural result of stiff and rigid muscles.

Until up to within a comparatively recent date, the thorough and systematic training of the muscles under consideration has been in a great degree neglected, or, at least, they have received nothing like the attention they deserve, but the importance of such training is now beginning to be recognized. It is not intended to claim that through the employment of any merely mechanical means a truly emotional touch can be acquired. Such a touch is inborn, and, as the Germans aptly express it, "of the grace of God." But a discriminative and versatile touch, as regards quality and power, is within the reach of every one who will properly bring into action and training the God-given muscles common to us all. In order to accomplish this the daily practice should not be regulated solely with a view of acquiring strength, but a good portion of time and attention should be given to the use of that particular kind of touch

especially adapted to the development of the various muscles, by bringing them into full play and giving the utmost scope to their freedom of action, both as regards elasticity and speed.

SEC. 2. By TOUCH is meant the art of eliciting tone from the pianoforte. Touches may be classified according to the tone qualities and effects they produce, as legato, staccato, demi-staccato, portamento, etc.; or according to the particular part of the muscular apparatuses most active in eliciting the tone, as arm touch, hand touch, finger touch, etc.

In all forms of touch the various muscles from the shoulder to the fingertips co-operate to such a degree that in the inaction of any one of them it would be impossible for the others to elicit the precise tone quality desired; nevertheless the touches are easily to be discriminated, as already said, according to the predominant activity of one part of the muscular apparatus above the others. Thus, for instance, when the lightest possible caress of the points of the fingers has been delivered to the keys, the hand, forearm, and upper arm have all helped by furnishing the necessary solidity of repose—the fulcrum against which the levers of the fingers have moved themselves. Or, in the touch farthest away from the light finger-caress just mentioned—the fall of the arm with its full weight upon the keys—the fingers are still very much concerned, since it is their important office to distribute the force to the proper tones of the chord; the hand and forearm meanwhile are equally important, because they constitute the medium through which the fall of the arm reaches the keys, producing the desired tonal effect. Thus, whatever the kind of tone desired, it is indispensable to have all parts of the apparatus in working condition, ready for transmitting the will-impulse,—the actual motor in producing tonal combinations.

In common speech the expression "striking the key" is sometimes used. Although allowable as a matter of convenience, it must be understood and never be lost sight of that the finger must *fall* upon the key rather than strike it. At the moment of contact, which does not mean *collision*, the finger settles upon the key with a determined and resolute pressure, which is, however, tempered by an immediate relaxation or yielding of the muscles throughout the arm,—Delsarte would call it "devitalized;" the key is then held firmly, but without stiffness or inflexibility. The character of hardness or austerity must be avoided. That there will be more or less contraction of the muscles at the moment of contact goes without saying. But do not understand this word contraction to be synonymous with rigidity. For example, the good qualities of courage, resolution, firmness, and fortitude must not be confounded with their counterfeits,—bravado, obduracy, obstinacy, and stubbornness, whatever fancied resemblance there may be between them.

SEC. 3. The name "TOUCH AND TECHNIC" has been selected as an appropriate designation for a system of training which aims at developing, synthetically as well as analytically, all the various forms of finger-facility commonly embraced under the name of "technic;" and in connection therewith the education of a *deep, full, light, expressive touch*, without which no musical playing is possible.

The component elements of first-class piano-playing are the following:

Tune (as regards the pianoforte, accuracy of execution).

Time (attention to meter and rhythm).

Quality of Tone (by different gradations and methods of touch).

Expression or Phrasing (through quality of tone as produced by different kinds of touch, and by inflectional emphasis and accent).

Facility of Execution, and at the same time Repose (in passages of every variety of speed).

The exercises in this system contain all these elements, or the germs of them, and are intended to bring them into action and use from the very outset. Inasmuch as the qualities enumerated above are all factors in the composite unit, *good playing*, no one of them can be neglected at any stage without impairing the general result; and the habit of attending equally to each and every one of them simultaneously must be acquired at the earliest possible moment. This is not so difficult as has generally been supposed, nor is it in violation of the principle of "one thing at a time." There is but one "thing," which is the interpretation or expression of the musical idea; but this one thing properly considered requires equal attention to all the factors enumerated. The material and opportunity for musical expression afforded by a two-finger exercise is indeed limited, for the "*motif*" contributes but little to interest the hearer. Scales, arpeggios, chords, and octave passages afford a wider scope. But exercises need not be played in a dry, perfunctory, and exclusively mechanical way. Under the fingers of an artist, expert in the act of eliciting a fervent and musical tone by means of a touch adapted to that end, they take on new life and interest. It is this certain *musical habit* which the novice must strive for early in the beginning and keep constantly in mind at every successive step. Remember that an "ounce of prevention is worth a pound of cure," and "a stitch in time saves nine," and avoid sowing the seeds of mere mechanical playing, which, devoid as they are of musical feeling, can naturally beget only their own kind.

A player of native musical temperament always plays *musically* by instinct, and such playing never lacks phrasing, nuance, and expression, even in the practice of exercises,—for to play otherwise would be to do violence to his musical nature.

A player who lacks these finer perceptions must nevertheless learn from the example of one who possesses them, and follow, so far as possible, in his footsteps.

The student should in every way avail himself of every possible advantage and surround himself with a musical atmosphere, so to speak. A very important and valuable accessory and aid to this is a fine instrument,—one with a beautiful singing and resonant quality of tone together with a delicately adjusted and responsive action, for these things are powerful helps in the acquirement of a good touch. The celebrated pianist, Thalberg, noted for his lovely touch and tone, once remarked to the author that an instrument possessing these qualities not only aided in the formation of a habit of sympathetic touch, but more than that, it really suggested musical ideas and allured the player into a mood for composing. Do not be led astray by the idea that "any piano is good enough for a beginner," nor by the direction to "first get the notes right, then the expression." A better motto is, "while getting the notes right, attend also to the expression." Experience shows beyond controversy that better results follow this course.

Synopsis of Touch and Technic.

SEC. 4. This system of "Touch and Technic" consists of four different kinds of passage (or exercise), and it is intended that the pupil practice something of each class every day, excepting when for good reason one element or another may be temporarily intermitted, namely:

1. *Two-Finger Exercise*. ("Touch and Technic," Vol. I.)
2. *Metrical Scales*. ("Touch and Technic," Vol. II.)
3. *Metrical Arpeggios*. ("Touch and Technic," Vol. III.)
4. *School of Octaves and Bravours*. ("Touch and Technic," Vol. IV.)

The daily practice is intended to include these different kinds of exercise, each in turn, for a comparatively short time only,

and no one of them to excess. By this method of practice the burden of the student is made as light as possible and no one set of muscles or faculties is over-exercised. At the same time, through the system of metrical elaboration the attention is absorbed and concentrated to a degree otherwise unattainable in the practice of exercises.

Inasmuch as a musical and discriminative touch intelligently applied is the most important part of a player's outfit, Volume I of "Touch and Technic" is exclusively devoted to this part of the training. Its object is to thoroughly train the hands and fingers in all those varied manners of touching the keys, without which the different tone-tints and musical effects required in the compositions of the greatest tone-poets cannot receive adequate expression. With this end in view it aims to form the indispensable practical complement to the distinctly musical material through the study of which the musical faculties themselves are rendered sensitive and deepened, the tone-perceptions more delicate and discriminating, and musical feeling more refined and spiritual.

SEC. 5. Volumes II, III, and IV cover different ground, which must now be considered. Pianoforte passages consist either of scales, arpeggios, chords, or octaves. These in the aggregate comprise the totality of brilliant pianoforte technic. They are not generally played in the deliberate and impressive manner appropriate to melody, but with speed, brilliancy, and at times with almost inconceivable lightness and delicacy. The effective execution of this part of the playing has long been regarded as the distinguishing mark of a well-trained pianist, and instruction books and manuals of technics have furnished a great number of typical forms intended for training in this direction. All arbitrary combinations of tones devised for practice have, however, the great disadvantage of being vacant of meaning, nor is it possible by simply repeating them over and over to build up out of them significant unities. The habitual reiteration of them in daily practice engenders mental habits of the most careless description, and owing to their tiresome character and arbitrary construction, the fingers derive from practicing them but limited aid toward overcoming the difficulties offered by well-made bravours pieces.

SEC. 6. In the effort to surmount these unfavorable elements of practice, the author conceived the idea of putting the scales and arpeggios,—the radical elements of brilliant passage playing,—into metrical form, the sole object at first being to compel close attention on the part of the pupil; in other words, to secure mental concentration. Successful results were immediate and gratifying beyond expectation. Pupils invariably expressed themselves as greatly interested in, and pleased with, the new way of practicing. Apathy gave way to earnestness and well-directed effort took the place of aimlessness. Another advantage not at first contemplated was gained, viz., a habit of attention to metrical form was awakened and fostered, and the sense of rhythmic effect was rendered more sensitive and acute, and its practical observance became more or less habitual on the part of the player. Little things of this kind are of the first importance because they involve, in the aggregate, the germs of phrasing, style, interpretation, and expression. Finally, another benefit resulting from metrical treatment is so obvious that it hardly needs demonstration here, viz., its decided and efficient influence in developing strength and endurance where most needed by the pianist. Thus the main and characteristic feature of this method is that through the daily practice of scale, arpeggio, octave, and chord passages in all variety of forms, the entire muscular apparatus used in pianoforte playing receives its "daily bread" in a manner complete and comprehensive,—the entire practice occupying much less time than has generally been supposed indispensable where a high degree of technical attainment is intended.

A New Method of Developing Speed.

SEC. 7. Long experience in teaching has shown that average pupils can attain speed in a much shorter time by alternating slow and fast practice, rather than by dwelling for a long time on slow motions before attempting the fast ones, as is commonly the case. Rapid playing at a very early stage of progress is extremely efficacious in building up and confirming finger and hand power, as well as correct muscular action. For rapid finger motions necessitate an independent finger action, and inasmuch as the quickness of their movements effectually prevents a joggling or jarring motion of the hand, persistent practice of this kind aids essentially in bringing about and establishing a quiet hand position, and this, too, almost unconsciously to the pupil. No fault is more common, and at the same time objectionable, than the jarring motion here referred to, for it utterly precludes the possibility of musical legato and cantabile playing. It is a very serious fault and difficult to deal with, for once acquired it adheres with persistent obstinacy, and is almost impossible to overcome. In large measure it is the result of long-continued, exclusively slow practice, aided and promoted by the wrong use of the muscles in the effort to gain strength. For the novice in attempting to increase the power and produce a larger tone, unconsciously lifts and moves the hand at every step when playing slowly, whereas all such motions ought to be vigilantly avoided so that the hand may be trained to a quiet and tranquil position while the fingers move independently, freely, and rapidly. In many instances the first seeds of this fault are sown early in childhood, for little children who get at a piano begin to pound either with the fist or with a single finger of the right hand, and naturally the impulse does not come from the finger joints and knuckles but solely from the arm. In this way they thump out bits of simple melodies from day to day and quickly contract the habit of an unsteady and unstable hand, which is so fatal an obstacle to genuine progress in later years. This fault is very rarely found to excess in the left hand, which from the beginning has been wont to play only simple accompaniments in quiet and stationary five-finger positions.

Now, the teacher is obliged to take these things as he finds them and apply the cure in as ingenious a way as he can devise. Merely telling the pupil that the hand must be held perfectly still and the fingers made to do the work independently, and showing how by practical example, seems as a rule to be of no use whatever in securing good and careful practice. Therefore the only resort is to use some artifice which will compel the pupil to exercise the right muscles unconsciously.

The author was led in this way to devise the Graded Exercise as applied to scale, arpeggio, and other passage playing. (See Sections 8 to 12 inclusive.) The velocity forms (see Section 42) were designed many years before the Graded Exercise was thought of, and with the special object of promoting and establishing a quiet hand position and independent finger action, for the impossibility of a jarring hand in such rapid movements was seen at the outset. They were constantly used and thoroughly tested in his private teaching for some fifteen years before being given to the public for the first time in his work entitled "Pianoforte Technics," published in 1876. He considers these forms, viz., Graded Exercise and Velocity Exercise, to be of vital significance, and the principle upon which they rest is the central thought of his entire method of practice.

SEC. 8. In the present work this principle meets the student at the very outset of his studies in every form to which metrical treatment is applied. After a very few preliminary performances of the passage, whether arpeggio or scale, he is immediately required to play it in a metrical gradation of rhythm, proceeding from whole-pulse rhythms to half-pulse, quarter-

pulse, and eighth-pulse lengths, at a rate of speed already corresponding in the first grade to a strong allegro. Contrary to the impression of teachers who have not tried it, young pupils arrive at the first grades of speed by this system with very little trouble, and it is only a short time before they are able to make a successful approximation to the great rapidity of the last form, Grade IV.

The principle upon which the exercise rests is that of first making the player conscious of the musical figure out of which the exercise is composed, and of the muscular motions needed in playing it. This happens in Grade I. In Grade II there is still time for deliberation as to figure and finger; in Grade III a degree of speed is at once taken, which, under the old system, is not reached until after a much longer time of preliminary study. And in Grade IV we come immediately to a speed which is great even for good players. This, in the case of beginners, may not be reached for a little time; but if the effort is persisted in, and the unerring testimony of the metronome be continually appealed to, in order that there may not be a weakening of the metrical motion for the accommodation of slow fingers, the pupil will, in almost an incredibly short time, acquire the knack of the hand and finger motions upon which fast playing depends.

SEC. 9. It will be observed that this method of velocity differs in two important respects from all other velocity practices offered students. In the first place, the musical form is very short, and is a real unity of itself, such as appeals to every latent musical intelligence. In this respect it differs from all arbitrary formulas used as motives. Second, it admits and invites development into larger and larger unities, which, as soon as formed, are just as apprehensible and comprehensible, even by young pupils, as the short forms out of which they have been composed. In this respect, again, it differs from all long passages developed out of arbitrary musical figures. Hence, at this point the student is already in a very favorable position with reference to the high degree of speed required, since the mental strain of conceiving the entire passage as a unit does not exist; the passage, when composed of arpeggios or scales, being felt as a unity by the intuitive exercise of musical intelligence of a grade requiring little or no preliminary training.

SEC. 10. Still more important, third, are the conditions under which speed is demanded in this exercise. Instead of leaving the student to "gradually increase the speed as he gains in ease," he is made here to *exactly double the speed* at the very first step. There is no question of waiting, he is to do it at once—intuitively. The metronome is ticking away, leaving no possible doubt as to what this exact doubling may mean. Then he proceeds again to double this in turn, the metronome still going on with its relentless admonition. And, finally, he doubles once more, the metronome being still the witness. In this way, besides gaining speed more rapidly than in the old way, the sense of time is strengthened to a remarkable degree.

The author has found by experience that in the old way of expecting the speed to be gradually increased, the majority of pupils continued with very slight increase of movement beyond the moderate pace which they first happened to hit as a fast form; but in the new method the mathematical relation of the fast way to the slow way immediately preceding affords the student an enormously efficient incitation, so that as soon as the sense of time becomes quickened to the true significance of the fast form, the speed is very soon attained, even in the high grades.

SEC. 11. The principle of the fast forms, Grades III and IV, is in no way different from that of the velocity exercises which were so important a feature in the "Technics," and several of his

previous works. (See Section 7.) But the *method* of making the student conscious of the high speed desired is applied in another way, and *this method is everything*. It lies at the very foundation, and affords a way by which inexperienced players can learn the knack of playing fast, and at the same time secure what is of equal importance to the later development, *the certainty of practicing their exercises in three or four degrees of speed radically different from each other*. By this diversified speed of practice alone will brilliant playing be attained.

SEC. 12. So whatever of novelty the teacher may find in these graded exercises, and however difficult they may seem for the place they occupy in every department of this system, it is hoped that they will be faithfully attempted, in careful observance of the directions appended; which being done, the author has no fears for the result. He desires simply that other teachers may find in this simple exercise the aid that he has invariably had from it in many years' experience in teaching.

Definitions.

SEC. 13. In the course of these works it is found convenient to employ certain terms in definite meanings, which, being in part peculiar to this system, or not generally a part of the terminology of technics, need to be accurately defined.

Time in music includes all the elements of tone-length and duration, as also rests, pauses, holds, etc.

Meter is movement measured by regular pulsations divided into uniform groups or *measures*. *Measures* are made apparent to the ear by means of periodic stress or accent. Every piece regulates its motion in time by assuming a certain pattern of pulse-rapidity and a certain recurrence of accent. This continues to the end of what is called the *movement*, which is changed whenever there is a new *rate* of pulse, or a new *grouping* of pulses into measure. Meter holds the same place in the *time* of music that tonality holds in *tune*. In the same way that a movement is composed in a certain *meter*, so a melody is composed in a certain *key*; *i. e.*, all the tones in the melody are taken from a certain key, or are related to it. In like manner, all the duration and intensities in a piece are computed by reference to the meter.

Rhythm is the rate at which the tones of the music move, as measured against the background of the meter. Hence, rhythms are complicated to an endless degree, and it has not been found possible to form a terminology capable of expressing them clearly. In the present work the rhythms are comparatively simple, being pulse-rhythms, or half-pulse, quarter-pulse, etc., without subordinate modifications. Moritz Hauptmann says: "We call the constant measure by which the division of time is made, *Meter*; the kind of motion in that measure, *Rhythm*."

Metrical Treatment.—By metrical treatment is meant playing the form (that is to say, the scale or arpeggio) in a certain kind of meter (measure).

Rhythmical Treatment.—By rhythmical treatment is meant playing an exercise in rhythmical relation, which may be either one of two kinds, or both together:

First: The different meters may be combined in it in such a way as to show their mutual relation. This takes place in the Sequence Forms, such as those in Sections 20 and 24, in Vol. I, and in all the Rhythmic Tables, such as Nos. 2, 3, 4, etc., in Vol. II, and Nos. 6, 7, 11, 36, 39, etc., in Vol. III. These are designed to correct the common misapprehension of the exact relation existing between half-pulse, quarter-pulse, and eighth-pulse motions in the same movement.

Second: A single rhythmic motion may be taken and repeated over and over throughout the form until the rhythmus is completed by the return of the accent to the starting point. This is what takes place in all the exercises in Vol. I, especially in the sixes, nines, and other forms which are not completed upon the first performance of the pattern.

Third: Both methods may be combined in the same exercise. This takes place in all the Graded Tables, especially in those containing sixes and nines.

Rhythm, representing as it does the mathematical part of music, must enter into the playing with the exactness of mathematical proportion, and the object of rhythmical treatment is to aid in intensifying the sense of rhythm and in promoting the habit of mental concentration.

Accent is a stress laid upon a tone in order to indicate its relation to something else in the same connection.

Metrical Accents are those which mark the meter by a stress laid upon certain tones in order to indicate the boundaries of rhythmical unities. Hence two important practical considerations follow: First, the accent must be *distinct to the ear of the hearer*, and unmistakable. This is a vital point too generally neglected. Second, every rhythmic unity has two boundaries, a beginning and an ending. The hearer must be able to distinguish both these by means of accent. The end of one unity is generally the beginning of another.

Motion-Patterns, or simply "patterns," are outline-patterns of the *direction* which the hands take with reference to each other, in the performance of scales or arpeggios. Such are *direct* (both hands, one octave apart, moving in the same direction); *contrary* (the hands moving in opposite directions); *canon* (where one hand follows the other at a certain interval, repeating the same melody); *velocity* (the instantaneous sweep of the hands from one extreme to the other), etc. The term "practice-forms" is used for application to the different forms arising from treating the "motion-pattern" metrically. Hence every motion-pattern may afford a considerable number of "practice-forms."

PART FIRST. ELEMENTARY TREATMENT OF TOUCH.

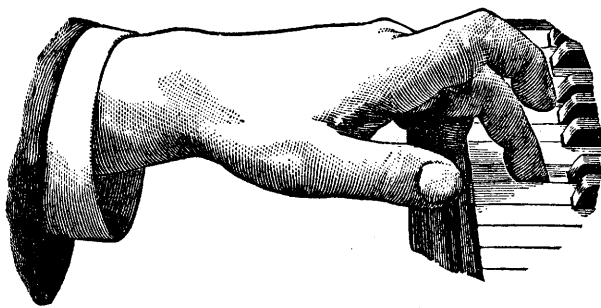
Finger Touch. The Clinging Legato.

SEC. 14. By finger touch is meant a method of eliciting tone in which the *finger* appears more active than any other part of the playing apparatus, and as such the main instrumentality in producing the tone. Chief among finger touches is that known as the *clinging legato*, employed in cantabile passages and melody playing in general.

The clinging legato is by reason of its nature a foundation touch and "built upon a rock," so to speak. This expression, "built upon a rock," is not intended to convey any idea of rigidity, hardness, or stiffness in the touch, but, distinctly differing from that, it signifies stability, strength, repose. If applied in the right way the result will be a tone which is full, warm, and pervasive. The finger falls upon the key with decision, but free from rigidity—settles firmly down upon it with a sense of having come to stay. This steady, continued, though never rigid pressure is transferred at exactly the proper time to another key through the agency of another finger. In this way the tones are bound together, and, as it were, melt into each other, as expressed by the word *legato*, signifying to bind. Each key must be held with moderate pressure and without rigidity throughout the full time-value of the tones as indicated by the notes, but not one instant longer.

Before giving directions for the practical application of touch a few explanations are necessary. The musical examples in

Part First are confined to a compass of five degrees—from C to G. In the Material, page 21, this compass is in general extended to nine degrees—from C to D above the octave. It may be further extended at the will of the player, but such extension is not at all necessary. The exercise may and should be transposed to any key or adapted to any arpeggio or broken-chord form. But the main purpose of illustration is accomplished if the fingers are restricted to the white keys alone—thus, to the scale of C major. Hence all of the pictorial illustrations represent the fingers as being on the C position. Some of these show the second and third fingers of the left hand, while others present the fourth and fifth fingers of the right hand. It is believed that an intelligent working idea can be gained from a careful comparison of these two positions. In the directions which follow, the second and third fingers of the left hand are used for the purpose of description, and to serve as a model for the use of the other pairs of fingers. The reason these fingers are chosen for this purpose is because they show to better advantage in the plates, as in the beginning of the ascending C position. The essential point is to convey an accurate idea of the correct position and movement of the two fingers under present consideration. For the better accomplishment of this purpose the thumb, as represented in the cuts, is drawn back somewhat out of its true place, which in a five-finger or scale position would be a little further forward, extending slightly over the edge of the keys. The beginning

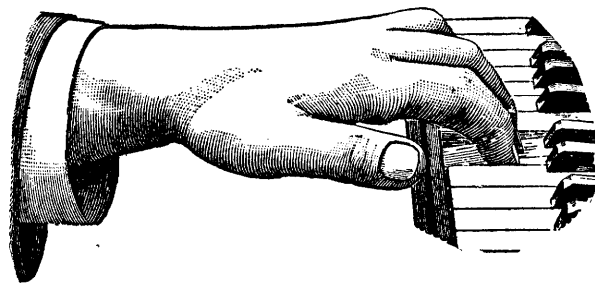
FIGURE 1, *a*.

is made with the second and third fingers, these being naturally the strongest and therefore the easiest to manage at first. As soon as the student has become familiar with the motions it is better to begin the daily practice with the fourth and fifth fingers, so that these naturally weak fingers may derive the full benefit of the freshness of first attention. It goes without saying that each pair of fingers must receive daily attention.

Directions.—Begin with C, of the so-called small octave, or one octave below middle C, using the hand touch for the first tone. (See Section 33.) Let the third finger of the left hand fall upon this C, the second finger being at the same time raised in a curved position as high as possible directly over D. (Figure 1, *a*.) Next, without permitting the key to rise, let the upraised finger fall with full strength on D. Both the third and second fingers are now holding down C and D, thus bringing the surface of these keys to a level. The two keys must be held down firmly, but at the same time muscular rigidity or stiffness must be carefully avoided. (Figure 1, *b*.) The third finger now slides up to the second finger on D, without permitting the D to rise, and the second finger instantaneously relinquishes its place to it and rises again as before, but this time directly over E. The finger transfer just described takes place with the quickness of thought—so quick, indeed, as to be almost imperceptible to the eye. Proceed in like manner throughout the ascending part of the exercise,—the left finger of the pair doing the clinging and sliding. In descending, this proceeding is precisely reversed, that is, the right finger of the pair does the sliding. The right hand begins on middle C, and

this rule is to be applied throughout the exercises as presented here, excepting those on the black keys.

The two-finger Diatonic Scale exercises which follow, are from the MATERIAL beginning on page 21, and they retain here the number there given them.

FIGURE 1, *b*.

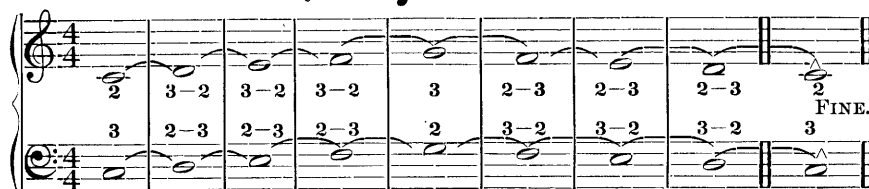
A sequence in Rhythm I consists of Nos. 1, 2, 4, 6, 8, 10, and 12, all even numbers excepting the first one. A sequence in Rhythm II begins also with No. 1, which is followed by the odd numbers 3, 5, 7, 9, 11, and 13. (See pages 21 and 22.)

FIRST GRADE.

The Clinging Legato Touch.

First slow form. Rhythm I. $\text{♩} = 84$.

See Material No. 1.



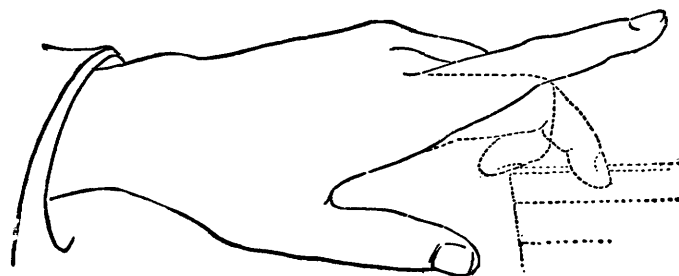
Practice also impartially and faithfully with each of the other pairs of fingers, viz.:	Right hand.	4	5-4
		3	4-3 etc.
		1	2-1
	Left Hand.	2	1-2
		4	3-4 etc.
		5	4-5

SEC. 15. This exercise can also be carried out in the chromatic scale, and upon the black keys, and in the arpeggio of the diminished seventh, as written in Nos. 46, 51, and 56.

In these, owing to the succession of black and white keys, the sliding of the following finger on to the key of the leading finger is not practicable. The fingers change upon the keys, but do not slide across from one to the other. They must, however, cling to the keys as closely as possible.

The Finger Elastic Touch.

SEC. 16. The elastic touch, also a fundamental form, is the direct antithesis of the clinging legato, inasmuch as in its performance the finger takes the key while "on the wing," so to speak; that is, the finger strikes and sweeps the key while in the act of flexion, or in pulling toward and closing up to the hand, as represented in the following cut:

FIGURE 2, *a*.

The dotted lines represent the course of the second finger in the action of flexion. See also figures 2, *b* and *c*.

The tone produced by this touch has a buoyancy, lightness, and flexibility which is enlivening and exhilarating. The tones float and rebound, as it were, and are not dull, colorless, or monotonous. The daily and faithful use of this touch accomplishes vastly more than this, however, and its comprehensive and far-reaching influence can only be realized by experience. A position of the hand in which the fingers are arched or bowed is universally recognized as best adapted for pianoforte playing. If the muscles controlling the finger joints are weak, such a position is not possible; but by persevering day by day in the finger flexion characteristic of this touch, these muscles are thoroughly strengthened and the desired position comes as of itself, almost unconsciously to the player, who is thus relieved in great measure from the drudgery of incessantly watching the finger motions. Another important result of this constantly repeated finger flexion is the loosening of the muscles of the wrist and forearm which are used in octave playing, thus making them limber and pliable. In this connection it may be aptly termed the "infant school" of octave playing. The benefit resulting from the daily use of the elastic touch will be quickly manifested, but only by long acquaintanceship will its usefulness be thoroughly appreciated.

SECOND GRADE.

Clinging Legato and Elastic Touch in Alternation.

Second slow form. Rhythm II. ♩ = 96.

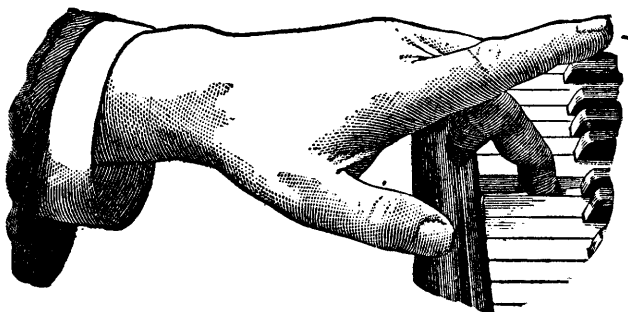
Material No. 2.



Do not neglect in practice any of the pairs of fingers.

Practical Directions.—Begin as before, taking small C with a hand touch with the third finger of the left hand, the second finger being at the same time raised as high as possible, directly over D. This time, however, the upraised finger, instead of having a curved position, must be extended in a straight or even rising line from the hand, as represented in the following cut:

FIGURE 2, b.

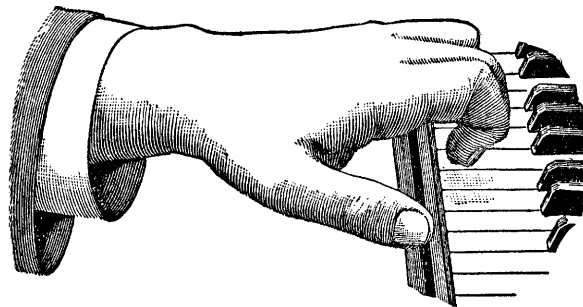


Now suddenly and vigorously flex the muscles of the upraised finger by shutting and pulling it quickly inward and with decision toward the palm of the hand, so that in the act of closing it wipes but also forcibly strikes the key D. The object in view is to secure the utmost possible flexion, or sweeping motion of the striking finger. At the completion of this elastic touch the hand remains stationary, as shown in figure 2 c, but the wrist must be entirely free—that is to say, all the necessary constriction which accompanies the forcible effort of performing the elastic touch must be suddenly relaxed.

SEC. 17. At this point the elastic touch can be applied, at the discretion of the teacher, to the chromatic scale, arpeggio of the diminished chord, black keys, etc., according to the patterns in Nos. 46, 51, 56, etc.

The legato, called also *plain* legato, is the standard and staple touch for ordinary and general use. It closely resembles the clinging legato, but in the latter touch the pressure always exceeds the natural power of the fingers, drawing somewhat from the arm, whereas in the plain legato this is not the case, but the required strength comes from the fingers alone. The

FIGURE 2, c.



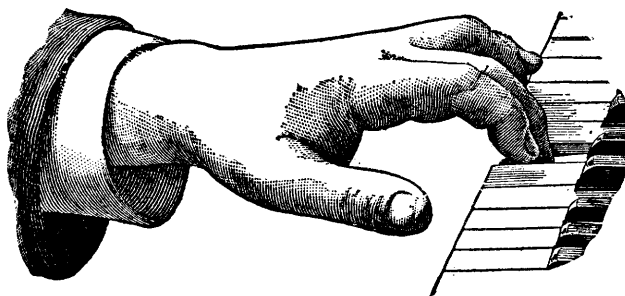
clinging legato is especially adapted to the bringing or pressing out of a full and sonorous tone in the performance of melodies. (See Section 27, with especial reference to the triceps muscle.) The legato is applicable to the accompaniments of melodies as well as to all varieties of scale and arpeggio passages.

The Light and Fast Forms.

SEC. 18. In the clinging legato and elastic touches the exertion is considerable, being such as is proper in earnest and somewhat impassioned playing only. In order to counteract the one-sided influence which would result from the exclusive use of this method of practice, the light and fast forms will be found to be of very great importance.

In the fast forms the rhythmic pulsations are more than twice as rapid as in the forms already given, and each pair of tones is played as if constituting a single word of two syllables. The wrist is entirely limp, the hand falls a very slight distance upon the first tone of every alternate pair, and the second or every fourth tone is played with the least possible finger motion, with a slight drawing inward of the point of the finger on leaving

FIGURE 3.



the key. The value of this exercise does not turn upon the amplitude or intensity of the motions, but upon their clearness, quickness, flexibility, and lightness.

The fingers, instead of being raised high, as in the slow forms, must be held close to the keys in order to favor rapidity of motion, for there is no time for superfluous motion in a degree of speed which is hardly exceeded by the quickness of thought. (See figure 3 for illustration of hand and finger position suitable to this touch.) The mental grouping of the tones will be promoted, as also the correct motions for the touch, by a preparatory moderato form like the following:

THIRD GRADE.

Legato and Mild Staccato Touches in Alternation.

For the sake of abbreviation the exercises which follow hereafter are written out only on the right hand part of the staff. The left hand plays uniformly one octave below the right. Fingering above the notes for the right hand and below for the left.

First moderato form. Rhythm I. $\text{♩} = 138$. Material No. 4.

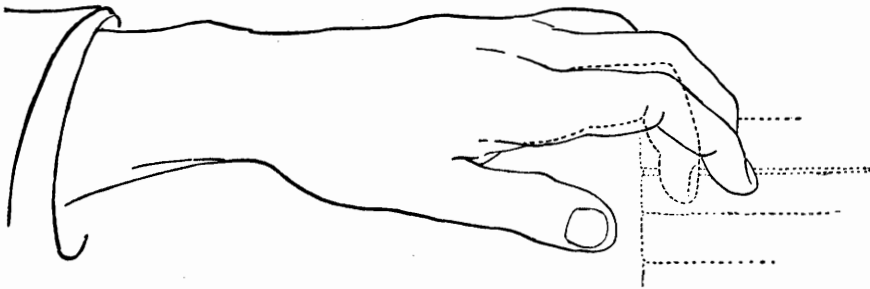
Right Hand. $\text{2 3} \quad \text{2 3 etc.} \quad \text{3 2} \quad \text{3 2 etc.}$ FINE.

Left Hand. $\text{3 2} \quad \text{3 2 etc.} \quad \text{2 3} \quad \text{2 3 etc.}$ An octave lower than written.

Caution.—Be careful to give the rests their entire value.

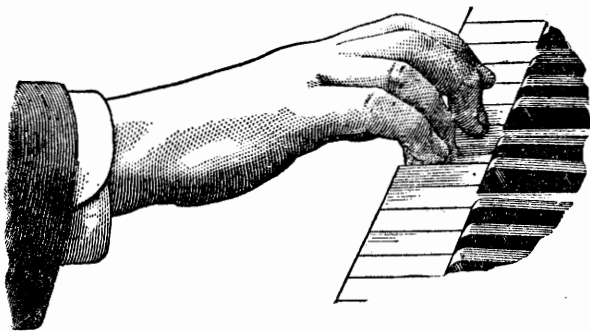
SEC. 19. The mild staccato touch is a modified form of the elastic. This touch detaches or separates the tones in accordance with the degree and rapidity with which the fingers are

FIGURE 4, a.



flexed. There are other kinds of staccato touch which consist in partially contracting the muscles of the hand or wrist, and by means of which short and crisp tones may be produced; but as these are of minor importance in connection with the two-finger exercise, they do not receive attention here, further than to remark that in all of them the attack alone is made, without the pressure. Two kinds of the mild staccato touch, differing but slightly, are used in the two-finger exercise. The most important and useful of these is effected by a slight and almost imperceptible flexion of the finger-tips at the moment of contact with the key. This sliding or caressing touch is exceedingly effective in the performance of very rapid passages, the tones resulting therefrom being so uniformly and distinctly clear and musical as to suggest the simile of a "string of pearls." This has given rise to the expression, a "pearly touch." In the performance of very rapid scale and arpeggio passages, and also as used in the velocity form, the degree of finger flexion is so

FIGURE 4, b.



slight as to be hardly perceptible to the eye. The other form of the mild staccato is used in passages of such extreme rapidity as to preclude the possibility of finger flexion, and is effected by moving the finger by means of the metacarpal joint. To attempt to illustrate these forms of touch by a picture is not easily practicable, but some idea may be obtained from figures 4, a and b.

In figure 4, b, the fourth and fifth fingers of the right hand are represented merely for the sake of variety.

To acquire the mild staccato touch requires in the beginning more of a mental effort, and it is well to keep the general idea of finger flexion in mind during a part of each practice hour, and to apply it in different degrees, not only to the fast forms of the two-finger exercise, but, where it may be employed to advantage, to rapid scale and arpeggio passages as they occur in pianoforte pieces. One of the most efficient aids in mastering this touch is the daily and continued practice at short intervals of the following old-fashioned exercise. Try to play rapidly and make each and every note clear, crisp, and distinct. The degree of finger flexion will, of course, vary in accordance with the different rates of speed. See figure 4, a, illustrative of the finger flexion adapted to this exercise.

Acc. of 12s. Right hand. Ascending. Acc. with 4th or 5th finger.

Right. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

Left hand. An octave lower.

Acc. of 12s. Descending.

Right. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

Left. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

The best and most complete results accrue from the varied accentual treatment of this exercise, for by such treatment each finger is compelled in turn to put forth a greater degree of muscular action than its fellows. In this way a habit of attention to the most rudimentary principles of dynamics is engendered, a differential touch is fostered, and matters of light and shade, by means of rhythm, meter, emphasis, etc.,—all necessary factors of a finished style of phrasing and interpretation,—are gradually assimilated and cultivated up to a point of artistic development. The following examples illustrate in some degree the variety of forms which result from accentual treatment:

Acc. of 4s. Acc. with 4th or 5th finger.

Right. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

Left. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

Acc. of 4s. Acc. with 3rd or 4th finger.

Right. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

Left. $\text{4 3 2 1} \quad \text{4 3 2 1} \quad \text{etc.}$
 $\text{5 4 3 2} \quad \text{5 4 3 2} \quad \text{etc.}$

Right hand. Acc. with 2nd or 3rd finger.

Right. $\text{4 3} \quad \text{2 1} \quad \text{4 3} \quad \text{2 1} \quad \text{etc.}$
 $\text{5 4} \quad \text{3 2} \quad \text{5 4} \quad \text{3 2} \quad \text{etc.}$

Left. $\text{4 3} \quad \text{2 1} \quad \text{4 3} \quad \text{2 1} \quad \text{etc.}$
 $\text{5 4} \quad \text{3 2} \quad \text{5 4} \quad \text{3 2} \quad \text{etc.}$

Acc. with 1st or 2nd finger.

Right. $\text{4 3 2} \quad \text{1 4 3 2} \quad \text{1}$
 $\text{5 4 3} \quad \text{2 5 4 3} \quad \text{2}$

Left. $\text{4 3 2} \quad \text{1 4 3 2} \quad \text{1}$
 $\text{5 4 3} \quad \text{2 5 4 3} \quad \text{2}$

Faithful practice of the foregoing exercises secures to each finger an equal amount of discipline. The practice may be varied by working a part of the time on the following exercise. Apply similar treatment to groups of 8, thus:

Right. Acc. with 4th or 5th finger.



Acc. with 3rd or 4th finger.



Acc. with 2nd or 3rd finger.



Acc. with 1st or 2nd finger.



Apply the accent in similar fashion to all forms of triple and compound triple measure. Many other figures are well adapted for similar treatment, especially the following, viz.:



In fact, these are more easily played than the others, because in more comfortable hand position. They should be practiced in ascending as well as descending form.

Legato and Mild Staccato Touches in Alternation.

Second moderato form. Rhythm I. Acc. of 4s. $\text{♩} = 138$.



FOURTH GRADE.

First fast form. Rhythm I. Acc. of 8s. $\text{♩} = 96$ to 120.



Second fast form. Rhythm I. Acc. of 16s. $\text{♩} = 96$ to 120.



Practice all of these and the following forms a part of the time with the mild staccato touch exclusively. (See Section 19, figures 4, a and b.) Do not neglect the legato touch.

Third fast form. Rhythm I. Acc. of 12s. $\text{♩} = 96$ to 120.



Apply various degrees of force to all of these fast forms, as well as to the moderato forms. Play many times in succession *forte*, then *mezzo*; afterward *piano* and, finally, *pianissimo*, as delicately as consistent with clearness, accuracy, and precision. Play rapidly, lightly, and delicately. Practice also with uniform distinctness and elasticity. Be sure that the accent on the first part of each measure is unmistakable.

Another very useful way of practicing is to make a well-graded and continuous crescendo throughout the ascending passage and a corresponding diminuendo in descending. Do not hurry the time while making the crescendo. Give equal attention to the legato and to the mild staccato touches.

Apply also to other melodic formulas, such as Nos. 28, 33, 86, etc.

Sequences for Daily Practice.

SEC. 20. The best possible results of the daily practice will be attained only when the different varieties of touch have been combined in the proper proportion and the due balance maintained between slow and rapid playing—the former conducing to strength and certainty, and the latter to lightness, celerity, and brilliancy. In effecting combinations of this kind it is to be observed as an invariable rule that slow movements make the best possible preparation for the fast ones which are immediately to follow. Repose is induced, and inaccuracy and slovenly execution avoided. The skilful trainer of a horse, on taking the animal out for exercise, permits him to walk or trot slowly for a while, in order to “warm him up” gradually, before putting him to the top of his speed. The muscles in this way receive the best and most thorough preparation.

After the movements of the fingers become thoroughly facile, natural, and easy, much of the time may advantageously be given to the fast forms, as is more fully explained in the directions for sequences following. Remember, also, that to play rapidly does not mean to play hurriedly. Hurry in playing must be vigilantly and unremittently avoided. Quietness of motion, and complete repose in action, must invariably be the rule, even in the swiftest movements. In order to assure the proper combination of forms and grades of speed in the daily practice, the sequence pattern has been devised, the general plan of which is illustrated in miniature in the short exercise following:

SEQUENCE MODEL.—This is much the best form for beginners. When thoroughly mastered, extend the compass so that it embraces nine tones, as in the examples which follow later on,

where the two-finger exercise is applied to the diatonic scale. Repeat the following exercise throughout the four grades several times in succession without interrupting the time.

THE FIRST RHYTHM.

Sequence Model. Rhythm I.

Right hand. 1st slow form. $\text{♩} = 76 \text{ to } 100$. Material No. 1, in half notes.

Left hand. 2-3 etc. 2 3-2 etc.

2nd slow form. Material No. 2.

Moderato form. Material No. 6.

Fast form. Material No. 8.

In order to avoid any interruption in the regularly succeeding grades of speed, the following form has not been included in the foregoing sequence. It is of great use, however, on account of the close connection effected between the two fingers, and it has a strong tendency to improve the legato touch. It is especially useful for beginners and children, as it facilitates their binding of the two tones. It is, therefore, added as a supplement to the series.

Fast form. Material No. 4, in 16th notes.

THE SECOND RHYTHM.

SEC. 21. By "second rhythm" is meant a reversal of the order of touches as well as accents in the two-finger motive. In this second rhythm the accent falls upon the staccato tones with which the measure begins, and is made by the flexion finger. In the first rhythm the accent is made in large degree by the arm and shoulder. In the second rhythm it is produced mainly by the flexion of the finger, though the mechanism of the muscles differs somewhat.

Observing this difference, the directions given for the two varieties of touch used in the second slow form of Rhythm I will suffice for the corresponding touches in Rhythm II.

SEC. 22. The two fundamental forms of touch which have just been described are of equal importance, and should receive daily attention. The practice of either one of them separately and to the exclusion of the other, if persisted in for any length of time, would doubtless prevent the most favorable results. When used in companionship they compensate and assist each other, and there is brought into action a correlative and reciprocal influence which prevents the preponderance of either extreme. The hammer-like touch proceeding from the metacarpal joints has its use and can not be altogether dispensed with; but the hard, harsh, and unsympathetic tones it produces when used exclusively will be made tender and beautifully sympathetic by subjecting it, in proper degree, to the softening and mollifying influences of the elastic principle.

SEC. 23. The slow, moderato, and fast forms for the second rhythm here follow. The touches are precisely similar to the same forms in the first rhythm, excepting that they are reversed and the place of the accent is changed.

Forms of Exercises for Rhythm II.

Clinging Legato Touch and Elastic Touch in Alternation.

Second slow form. Rhythm II. $\text{♩} = 96$. Material No. 3. FINE.

Right. 3 2 3 2 3 etc. 3 2 3 2 etc.

Left. 3 2 3 2 etc. 2 3 2 3 etc.

Give each pair of fingers faithful practice.

First moderato form. Rhythm II. $\text{♩} = 138$. Material No. 5. FINE.

Right. 2 2 3 2 3 etc. 3 3 2 etc.

Left. 3 3 2 3 2 etc. 2 2 3 etc.

Second moderato form. Rhythm II. $\text{♩} = 138$. Material No. 7. FINE.

Right. 2 2 3 2 3 etc. 3 3 2 etc.

Left. 3 3 2 3 2 etc. 2 2 3 etc.

First fast form. Rhythm II. Acc. of 8s. $\text{♩} = 96 \text{ to } 120$. Material No. 9. FINE.

Right. 3 2 3 2 3 etc. 3 3 2 etc.

Left. 2 3 2 3 2 etc. 2 2 3 etc.

Second fast form. Rhythm II. Acc. of 16s. $\text{♩} = 96 \text{ to } 120$. Material No. 11. FINE.

Right. 3 2 3 2 3 etc. 3 3 2 3 2 etc.

Left. 2 3 2 3 2 etc. 2 2 3 2 3 etc.

Third fast form. Rhythm II. Acc. of 12s. $\text{♩} = 96 \text{ to } 120$. Material No. 13.

Right. 3 2 3 2 3 etc. 2 3 3 2 3 2 etc.

Left. 2 3 2 3 2 etc. 3 2 2 3 2 3 etc.

FINE.

The second rhythm may also be carried out at this stage in other melodic formulas, such as Nos. 29, 31, 50, etc.

Sequence Model for Rhythm II.

SEC. 24. Rhythm II is to be carried out in sequence forms corresponding to those already given for Rhythm I. The following is the pattern. Repeat several times in steady time:

1st slow form. $\text{♩} = 76 \text{ to } 100$.
 Right hand. Material No. 1, in half notes
 2 3-2 3-2 etc. 3 2-3 2-3 etc.
 Left hand. 2-3 2-3 etc. 2 3-2 3-2 etc.

2nd slow form. Material No. 3.
 2 2 3 2 3 etc. 3 3 2 3 etc.
 3 3 2 3 2 etc. 2 2 3 2 etc.

Moderato form. Material No. 7.
 2 2 3 2 3 etc. 3 3 2 3 2 etc.
 3 3 2 3 3 etc. 2 2 3 2 3 etc.

Fast form. Material No. 9.
 2 2 3 2 3 etc. 3 3 2 3 2 etc.
 3 3 2 3 2 etc. 2 2 3 2 3 etc.

Not included in the preceding, but extremely useful for practice. (See the final exercise in Section 20.):

Fast form. Material No. 4, 16th Notes.
 2 2 3 2 3 etc. 3 3 2 3 2 etc.

SEC. 25. The student having faithfully mastered the various touches thus far given, and having learned how to combine them into sequences, may, at the discretion of the teacher, be directed to practice the individual forms and sequences in any of the melodic formulas given in the Material, Nos. 1 to 74.

The consideration of advanced elements of touch, according to the directions upon the following pages, may be deferred several months, or even longer, at the discretion of the teacher. They should, however, all be mastered before completing the fourth grade of studies, after which they should enter into the daily practice in fair proportion, according to the needs of the individual pupil.

PART SECOND. ADVANCED ELEMENTS IN TOUCH.

SEC. 26. **The Triceps.**—For many years the writer has been conscious of elements of touch which were not explained in any of the works upon piano technics known to him. These, moreover, were precisely those elements which impart character and nobility to the tone, and are the main dependence of the artist in all moments of serious, elevated, and earnest playing. Some of them were formulated and embodied in the earlier editions of "Touch and Technic," under the name of Arm Touches, and most of them he had been in the habit of using in his private teaching for many years previously.

More recently, however, he has been able to arrive at nearly the precise muscular action entering into one of the most im-

portant and universally employed of these elements of touch, the details of which are here explained in print for the first time, to the best of his knowledge.

of all muscles. The contraction of the triceps muscle will be distinctly felt by the left hand.

Still retaining the left hand on the arm, produce a tone on the keyboard by means of a pushing touch of this kind, making the contraction brief, and leaving all the muscles relaxed. The contraction of the triceps will be felt as before.

Now, removing the left hand, produce a strong touch in the same manner as before, and if the sleeves are not too loose, the motion of the triceps muscle will be visible to the eye.

Finally, producing tones in the same way, try to realize the contraction of the triceps by the muscular sense alone, which will not be difficult after a few trials.

These experiments progress logically. First, the player *feels* the throbbing of the triceps with his hand; then he *sees* it with his eyes; and, finally, he becomes conscious of it by the muscular sense alone.

The Scapular Muscles.—The scapular or shoulder muscles, situated in the shoulder blades or upper back, exert an important influence in the production of a full, sonorous and musical tone. Elasticity and freedom of movement in these muscles will tend to dispel all harshness of tone. In order to develop them any exercise consisting of large detached chords, such as exercise 112, Volume IV, page 23, may be used. Play at a moderate rate of speed. Briskly close the fingers on the keys of each chord with a sudden push and a determined shrug of the shoulders, followed by immediate and complete relaxation. If done in the right way, this exercise will be found peculiarly invigorating and refreshing, as it brings all the muscles of shoulder, arm, and hand into brisk action and full co-operation.

SEC. 27. The highest service which the proper use of the arm and shoulder muscles renders is in the capacity of a guide, for their influence quickly "leavens the whole lump" of the muscular system; it penetrates, pervades and vitalizes the entire action, and accomplishes more in bulk and in detail in the development of a temperamental touch than is possible in any other way. The feeling of restraint common to most players at a certain stage is quickly counteracted and overcome, and a sense of suppleness, ease, and repose takes its place. Playing ceases to be a labor and becomes a joy. The relaxed and limber condition of all the muscles gives a rare sense of exhilaration; the whole muscular movement becomes at once free and powerful, like the flight of a bird.

As applied to the "Clinging Legato" touch (see Section 14,

FIGURE 5.



portant and universally employed of these elements of touch, the details of which are here explained in print for the first time, to the best of his knowledge.

The triceps muscle is located upon the outer part of the upper arm, a little nearer the elbow than the shoulder, as shown by the hand in the illustration. Its action may be traced as follows:

Place the left hand on the upper right arm, as shown in figure 5. Then, with the fingers of the right hand resting lightly on a table or keyboard, give a slight push, the impulse coming from the upper arm, followed by a complete relaxation

Vol. I) the triceps and scapular muscles are exceedingly useful when that touch, as is commonly the case, draws upon the arm for the elastic quality; also in all forms of the up-arm touch and in all cantabile passages when the tone is produced without preliminary raising of the fingers; also in all tones produced by a springing motion backward from the keys.

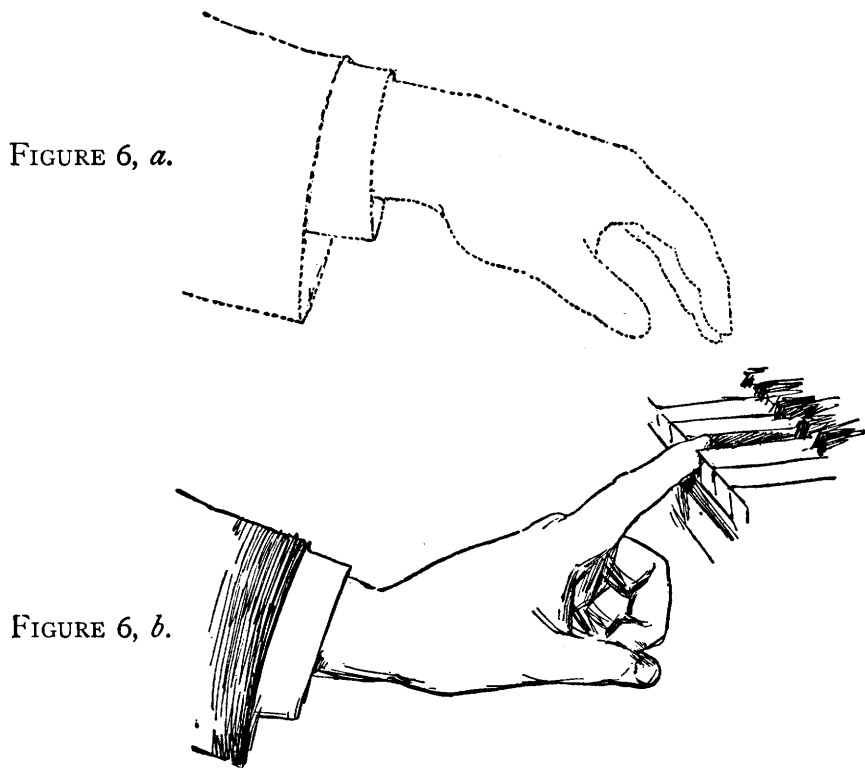
It is the neglect of this entire class of touches which renders the technic developed solely by finger-falls so dry, inoperative, and unsatisfactory as concerns character. It is desirable that the pupil should become familiar with this element in touch very early in the course of instruction.

ARM TOUCHES IN GENERAL.

SEC. 28. Although artists have always and necessarily drawn upon the forces of the arm in bravoura and brilliant passages, as well as in all melody playing involving a deep and broad tone, the true functions of the arm have not been recognized and formally stated, so far as known to the author, until the publication of the present work in 1889. There are three typical conditions of arm in touching, which, from the exertions most easily securing them, may be called the "down-arm," the "up-arm," and the "relaxed" or "devitalized" arm.

SEC. 29. THE DOWN-ARM.—By "down-arm" touch is meant that fall of the arm in which its weight supplies the force actuating the keys.

PREPARATORY EXERCISE.—Let the pupil turn away from the keyboard and permit the hand to lie upon the lap, resting near the knee. Then, with an impulse from the upper arm, throw



the hand upward to a height of perhaps six inches, permitting it to fall back again of its own weight, exactly as a ball turns again and falls to the earth after having been thrown upward into the air. This limp fall of the arm is the condition sought in the down-arm touch.

PRACTICAL EXERCISE.—Turning back to the keyboard, let the hand be extended above the keys at a height of perhaps three inches, as represented by the dotted lines in figure 6, a. Then by act of will "let go," withdraw the will from the muscles, and the arm will fall inert, limp, freely of its own weight, exactly as it did in the preparatory exercise, or as if in the condition com-

monly known as "asleep." The second finger extended—each finger should be used in turn—touches C, thus breaking the force of the fall, and immediately after the touch is delivered, the wrist in turn relaxes into a perfectly limp condition, and the hand sinks into the position shown in figure 6, b.

The force is always that of the weight of the arm, which falls but is never struck down upon the keys.

Having gained complete control of this touch the distance of the hand-fall must be lessened by degrees until the space through which it falls is only a quarter of an inch, or even less. Preserve carefully the same limp, muscular condition and add to the weight of the arm by a push, the impulse of which has its origin in the *triceps* muscle in the upper arm, and can easily be traced to that source by means of the *muscular sense*.

This form of touch is useful in many heavy effects, and the condition of arm is an indispensable preparation for securing proper development of finger power in later exercises.

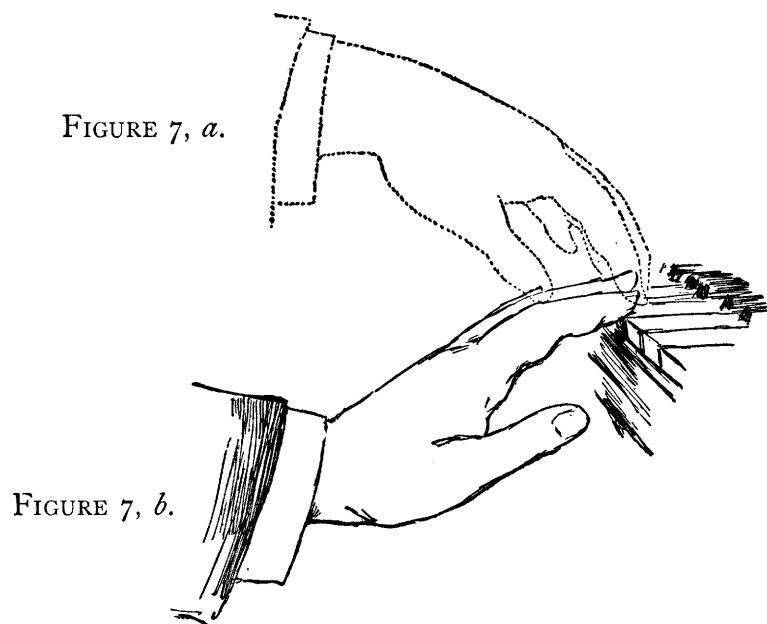
Two ways of practicing this exercise will be found advantageous.

First Way:—Play according to exercise c, the wrist sinking into the second position, figure 1, b, at the count "two." Here it remains until time to be ready for the next following touch.

Second Way:—Playing according to d, the wrist sinks immediately after the touch is made, there being no perceptible interval of holding between the attack and the relaxation of wrist. This is the proper manner of making the touch; the first way is recommended as preparatory merely. This is a one-finger exercise, but each finger may be exercised in turn.



SEC. 30. THE UP-ARM.—The "up-arm" touch is so named because in making it the arm seems to spring boundingly into the air away from the keyboard, and when properly



made there is no sense of having delivered a finger-blow downward upon the keys.

PREPARATORY EXERCISE.—Place the second finger upon middle C, the point resting upon the key but without in the slightest depressing it, as shown by the dotted lines in figure 7, a. Merely feel the key with the finger, and in this sensitive but inoperative contact retain it throughout the preparatory exercise.

Let the hand and wrist be entirely relaxed, so that the hand falls to the position shown in figure 7, *b*. Then, still retaining the sensitive contact of the finger-point with the key, gently raise the wrist until it again occupies the position shown by the dotted lines at *a*.

This alternation of up-and-down position must be repeated several times with perfect looseness of wrist. When this is secured, proceed to the touch itself.

PRACTICAL EXERCISE.—With the point of the finger in contact with the key, the wrist in the down position, suddenly, with an impulse from the upper arm, almost with a push, causes the wrist and forearm to spring away from the keys, the point of the finger delivering a strong blow as the expression of the arm-impulse from near the shoulder (the operative agent being the triceps muscle, Section 26), the hand and arm at completion of the touch assuming a position like figure 7, *a*. In the first efforts the arm will sometimes rise without delivering the impulse from the point of the finger, and no tone is produced.

In this case return to the exercises for the triceps muscle, until its co-operation is assured, when the tone will follow the touch without any active effort of the finger (which is not to be shut or flexed), and a powerful tone will result. When the up-arm motion is added to the action of the triceps muscle, as in this exercise, the volume of tone is greatly increased.

This form of touch is extremely effective where great power is desired in chords, heavy octaves, and the like, and it has the further two advantages that it is remarkably free from liability to false notes, and is accomplished with little effort as compared with its tonal results. Use the same finger throughout.



SEC. 31. THE RELAXED ARM.—By “relaxed” is meant a condition of perfect limpness, suppleness, and limberness throughout the arm, hand, and fingers, without resistance or constriction anywhere.

PREPARATORY EXERCISE.—Allow one hand to hang listlessly by the side; while in this position, shake it backward and forward at first by pushing the upper arm with the other hand, all the joints of the arm and hand being in a limp and unresisting condition, so that the hand and fingers swing limply with a wave-like motion as the impulse passes downward through the length of the arm.

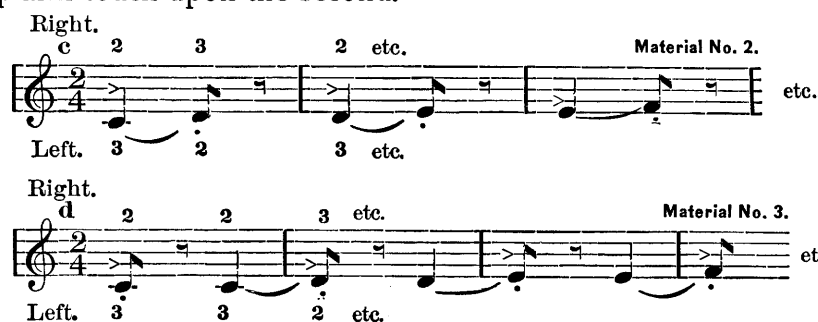
Second, swing the arm and hand in exactly the same manner, but by means of its own upper arm muscles, without using the other hand; and be sure that the limp condition is not impaired, and that the wave-like impulses propagate themselves downward through the arm precisely the same as before.

PRACTICAL EXERCISE.—Swinging the hand in this limp condition upon the keys, play the following musical example with this same limp touch, the impulse for each group of tones appearing to come from the upper arm. The tone so produced will be very light in volume and will be almost totally wanting in character, but the condition of arm while playing in this way is one of the most important of all, since it is the indispensable starting-point from which many of the finest nuances of phrasing and interpretation are to be evolved. It also has an important bearing upon the development of strength and responsiveness in the fingers. Observe the rests. (See also “Touch and Technic,” Vol. IV, Section 2.)



In this exercise the forearm will retain the position usual in playing, *i. e.*, nearly level with the keys, and the fingers will be a little straighter than in the usual five-finger positions. But the feeling of the fingers and hand and arm must be as loose as when it is in the position shown in figure 7, *b*; that is, wholly free from constriction or positive effort. In accenting the first tone of each group there will necessarily be a slight muscular contraction in the tip of the finger which falls upon the key. Muscular relaxation instantaneously follows, and is again succeeded by muscular reconstruction in time for the next group. In the same manner, play the fast two-finger exercises.

SEC. 32. THE HEAVY ARM TOUCHES TOGETHER.—A very useful exercise results from carrying out the two-finger formula by means of the down-arm touch upon the first tone, and the up-arm touch upon the second.



SEC. 33. HAND TOUCHES.—In the free-hand touch the hand moves upon the wrist with extreme pliancy, the finger delivering the force to the keys. Contrary to the usual teaching of elementary books of technic, the impulse which comes to expression through the hand motion has its origin further back in the arm, and can never be correctly or effectively expressed by a motion entirely localized in the hand. If, for example, the hand be laid in the lap, and while the forearm remains entirely quiet the hand be moved upward and downward, we have the type of hand touch which is often taught as the correct method of playing chords and octaves. This peculiar touch doubtless contributes in some degree to facile wrist motion, but it is not in accordance with the mechanism of artists in playing chords and octaves. The true touch, which has its origin further back in the arm, will be obtained in the following manner, if the directions be carefully carried out:

PREPARATORY EXERCISE.—Place the hand upon the lap, near the knee, and by means of an arm impulse throw it upward a few inches, the forearm moving somewhat, but the hand more. The wrist is entirely loose, and the hand falls back upon the lap, limp.

Second, repeat the touch in the same manner, except that now the hand is to be struck downward by an impulse from the arm, the hand swinging loosely upon the wrist, like the free end of a flail. This is the correct hand touch for producing tones by means of a down-stroke. It is more arm than strictly hand, but the motion differs from the arm touches proper in being more active in the hand at the wrist, and less so in the arm.

SEC. 34. PRACTICAL EXERCISE.—This touch, being mainly applicable to rapidly changing chords, octaves, and double notes, generally in a light and rapid movement, is most easily acquired by an exercise in thirds, such as the following. Be sure that the hand impulse and motion do not begin at the wrist but come from the arm, the wrist swinging entirely free and limp. The principal motion is that of the hand, but the

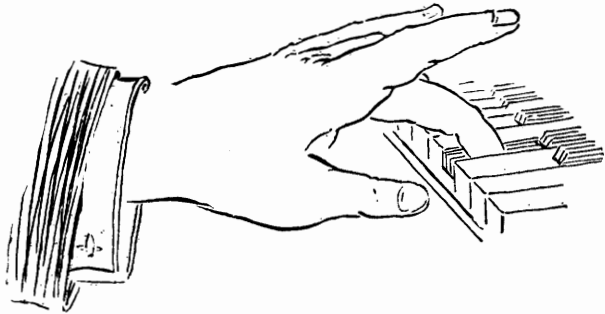
impulse originates in the arm. If the arm is held rigid, the hand touch degenerates into the false form frequently taught, as mentioned in the preceding section (33). Descend also.



SEC. 35. ANOTHER METHOD.—Mr. E. M. Bowman has devised yet another method of attacking the first tone of the exercise for elastic touch. It is called the stabbing touch, from the method in which the finger springs out to make the attack. The following description is in his own language:

PREPARATORY POSITION. (To secure right distance from the keys.)—Place finger on key in position shown in figure 8, *a*. In this position it will be observed that the wrist and three joints

FIGURE 8, *a*.



of the finger are very slightly bent, so that the impression will be that from the finger-tips to the elbow the arm follows a large circle. This position yields the largest percentage of muscular control and elasticity.

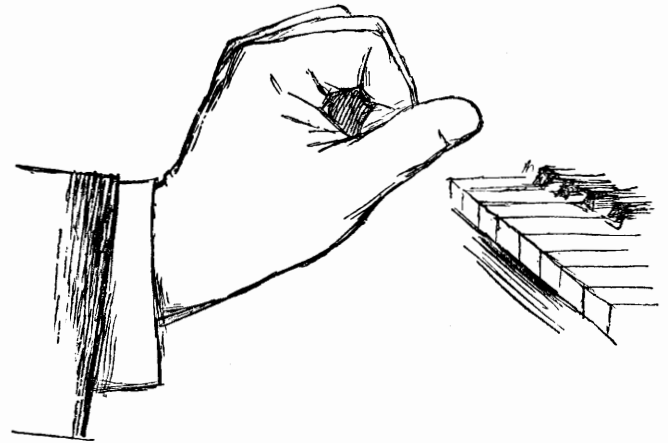
POSITION TO ATTACK.—Keeping the arm from the wrist upward, firmly but without stiffness in the same position as above, close the fingers to a fist form, bending the hand at the wrist-joint upward and backward as far as possible. Close the fist rather loosely, but bend each joint, assuming the position of figure 8, *b*. The hand is now ready for the attack. Summoning all the energy, the key is to be attacked by returning, with the utmost power and quickness of action, to the preparatory position described above—figure 8, *a*. In this action, therefore, the wrist and three joints of the finger will be opened or extended to a nearly straight, “very slightly bent” position; the finger-tip will engage the key near the front end as if to slide along it—a glancing attack. The motion is to be very quick, the opening of the finger and thrusting it upon the key following so rapidly one upon the other as to constitute but a single act.

CAUTION 1.—Do not extend the fingers prior to the action at the wrist, else the attacking finger will fall vertically on the key with a percussive effect. This must be avoided; the glancing attack is an important feature for the reason that it concentrates an effort on the flexor muscle of the nail-joint which speedily strengthens that joint in the development of a virile touch, and

fortifies it against the collapse common to weak fingers. Indeed, this application of the two-finger exercise was invented to conquer that very weakness. It need not be added that it is also an extremely valuable aid in the development of a versatile touch.

Until strong enough to resist collapse, time should be taken after each attack to flex the finger back into the “slightly

FIGURE 8, *b*.



curved” form directed in Preparatory Position. This is imperative. It is the speedy way of preventing the collapse altogether.

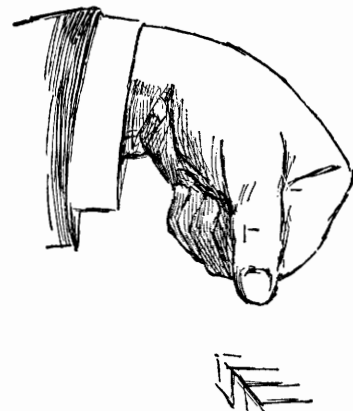
Conclusion.—In returning to the “fist” position, figure 8, *b*, for the next attack, the contiguous finger is to complete the phrase by means of a mild form of the elastic staccato, like that described under figure 2, only less vigorous. This act and the pause between attacks, with loosely closed fist, constitute the period of recuperation preparatory to the next onslaught.

CAUTION 2.—The arm during the attack *must not move, but remain firmly in its place*. Its only function is (*a*) to supply an immovable support to the hand during the attack and (*b*) to carry the hand laterally to the next key. Owing to the necessity of time for recuperation after the vigorous effort incident to this touch, the metronome movement of about 52 to a quarter is recommended as on the whole advisable.

Apply to musical example No. 2.

SEC. 36. An exaggerated form of the elastic touch should be frequently used in practice; it produces excellent results.

FIGURE 9.



In this exercise the flexion is not confined to a single finger or pair of fingers, but in delivering the blow the whole hand is quickly and tightly closed in the form of a fist. The muscles of the wrist are also included in the act, and as the blow is completed the hand is drawn in toward the arm, causing

the wrist to rise slightly, assuming the position shown in figure 9. This full and complete flexion is especially effective in certain chord passages, and produces a quality of tone attainable in no other way. (See p. 23, Vol. IV, of "Touch and Technic.")

Observation on the Relative Value of the Touches.—The question will naturally occur to the new student of the system as to which of these different manners of playing the elastic touch exercises is to be preferred. To this the answer is, *all are to be practiced*. At first the arm forms are to be used, for one or two lessons, or longer if the pupil does not readily fall into the free uses of the wrist and arm therein employed. Then the hand touches with the finger elastic are to be taken, and both forms carried forward together for one or two lessons. When these are well done, Mr. Bowman's stab touch may be added, since it is intended to reinforce the strength and endurance of the fingers to a desirable degree. The extreme flexion, shown in figure 9, is only for partial application; but used moderately it has an admirable effect, and gives a firmness and grasp to the touch beyond that of any of the preceding forms of touch.

Perhaps a good way of dividing the practice would be for the slow forms to be played twice through with the arm elastic touches; then twice through with the hand and finger elastic; then once with the Bowman "stab" touch, and once through with the extreme flexion shown in figure 9.

SEC. 37. PUSH AND PULL.—From another point of view all varieties of piano touch may be classified as those produced by a "push" or a "pull," according to the manner in which the fingers attack the keys. The orthodox finger touch is properly a "push" touch, since it is made by a sort of push of the finger.

Opposed to this are all forms of the elastic touch, to be hereafter described; they all partake of the character of a "pull," the touch being effected by means of a drawing-in of the fingers toward the hand. In strict mechanical accuracy all touches must be produced by means of some sort of a blow upon the keys, in which the elastic touches are included as well as those which have the general aspect of "push" touches. But there is such a radical difference *between* the condition of the levers and the muscles actuating them when the touch is delivered in the form of a "blow" or "push"—and a touch of similar amplitude produced by the corresponding form of the "pull" touch,—that the student can not too soon learn to distinguish the one from the other. In all forms of the "pull" touch, the levers of the hand and arm are disposed in lines well suited to elasticity; and at the same time the muscles are in a corresponding condition of elastic and vital tension. The touches, therefore, immediately show their differences in the resulting tone-quality.

The daily and long-continued use of the elastic touch results in such a habit of muscular suppleness, pliancy, and flexibility, that the hardness of tone-quality characteristic of the rigid hammer-touch will never be unduly manifested, because tempered by a counteracting influence.

In certain forms of immaturity of touch, where there is a distinct lack of positiveness, the push form may be assumed for a little time, since in this form the impulse comes so unmistakably from the upper arm that a positive tone-quality follows almost immediately upon the effort to produce it in this manner. Just as soon, however, as the desired positiveness of tone-quality has been attained, the elastic types of touch must be resumed in the practice, because in them are involved all the peculiarly musical qualities of the playing.

PART THIRD. MATERIAL.—VARIOUS FORMS OF THE TWO-FINGER EXERCISE FOR PRACTICE.

The following examples illustrate the application of the two-finger principle to various melodic formulas, such as the diatonic scale, broken thirds, double thirds, chromatic scale, the black keys, arpeggio of the diminished seventh, double sixths, and octaves. Only a small proportion of the exercises resulting from metrical treatment of these various melodic formulas are here presented. The teacher will find it easy to devise a great variety of forms following in general the patterns given in Nos. 1 to 74.

The system of treatment is alike in all, excepting that the exercises in broken thirds are almost universally treated legato instead of being phrased in the usual two-finger manner. This affords a variety of finger-training, taking the place of the five-finger forms once so popular.

The slow forms are played with elastic finger or arm touches and with breadth, dignity, and depth. All the fast forms are to be played after the manner described in Section 18. The movement may be faster or slower, at pleasure of the teacher; but the general character of looseness, lightness, and crispness is always to be maintained. It is of the utmost importance that the practice be varied not alone in speed and by the selection of various forms, but also in degrees of force, tone-quality, and expression.

EXPLANATION OF THE EXERCISES.

SEC. 33. The two-finger exercise is so named because its application is confined to two fingers at a time, and these are

used in pairs. The corresponding pairs in both hands are used together, thus:

Right hand,	1-2	2-3	3-4	4-5
Left hand,	2-1	3-2	4-3	5-4

Each hand should be exercised separately as well as both hands together.

This method of using the fingers in pairs may be adapted to an almost endless variety of scale and arpeggio passages, but as used in this work the application is confined mainly to the white keys of the pianoforte—thus, to the scale of C major. Examples are also given of its manner of application to the chromatic scale and to the black keys of the instrument. All of the exercises excepting the first appear in two rhythms, which, for the purpose of classification, are called Rhythm I and Rhythm II. These two rhythms seem at first sight to be very nearly alike. In reality, one is quite the reverse of the other, and necessitates a different action of the muscles. It will be observed from the names of the different forms comprising the series which follows, that a graduated increase in the rate of speed is included in the general design, viz.:

No. 1 is the first slow form, and is designed exclusively for the clinging legato touch.

Nos. 2 and 3, Rhythms I and II, are included in the second slow form and vary as to rhythm. They are intended for the use of the clinging legato and the elastic touches in alternation.

Nos. 4, 5, 6, and 7, Rhythms I and II. These are moderato forms, but in their use the rate of speed may be varied in accordance with the player's judgment.

Nos. 8* to 13 inclusive, Rhythms I and II, are fast forms, varied in measure by means of accentual treatment.

Nos. 14, 15, and 16 are in triple measure and combine both rhythms. They should be practiced at various rates of speed.

Nos. 17 to 22 inclusive, Rhythms I and II, with derivatives, are velocity forms.

No further directions are necessary than to urge the distinct indication of the time by especially accenting the tones which fall on the first part of the measure.

BIRD'S-EYE VIEW OF THE TWO-FINGER EXERCISES.

SEC. 39. The present volume contains the two-finger exercises applied as follows:

1. The Diatonic Major Scale, Nos. 1 to 22
2. Diatonic Broken Thirds, Nos. 23 to 40
3. Diatonic Double Thirds, Nos. 41 to 45
4. Chromatic Scale, Nos. 46 to 50
5. Black Keys, Nos. 51 to 55
6. Diminished Seventh Chord, Nos. 56 to 64
7. Diatonic Sixths, Nos. 65 to 69
8. Octaves, Nos. 70 to 74

Other exercises for two, three, and four fingers:

9. Graded Shake- or Trill-Exercise, Nos. 75 to 78
10. { The Mordent, } Nos. 79 and 80
 { The Inverted Mordent, }

Of these, classes 1 to 5 belong to the two-finger series proper; classes 6 to 8 belong to the octave school, having for their more immediate object the training of hand-solidity, and so of octaves and chords, as distinguished from finger facility, which has more immediately to do with passage work and melodic playing.

The student is cautioned against undertaking too many of these exercises in the practice of a single day. The thorough practice of the exercises of any of the first five classes, carried out in sequences of one or both rhythms (see Section 20) will be enough for one day. This will occupy from seven to ten minutes in all, carrying each pair of fingers in turn through the sequence selected. If octave preparation is desired, a similar sequence may be founded upon one of the classes, 5, 6, or 7. A sequence of this kind will add about four minutes more to the total time required in this department of the practice, and the student thus arranging his daily work will presently find that not only has he gained immeasurably in facility, and in depth, sweetness, and quality of tone, but that he has also acquired the entire technical apparatus for fine phrasing, in consequence of which he will be able to play, in an attractive manner and with very little difficulty, compositions which previously had seemed uninteresting or at least difficult.

MANNER OF PRACTICE.

SEC. 40. The best results depend altogether upon the manner and quality of practice. In this connection three conditions are of special importance and must invariably be observed. These are:

* No. 8 (without accentual treatment) was a favorite of Liszt and Tausig, and constantly used by them in daily practice. Liszt frequently recommended its use to his pupils, especially as applied to the chromatic scale. The idea of increasing its usefulness by applying different kinds of touch, and presenting it in rhythmic forms, as also by means of accentuation, occurred to the author of this work some forty years ago, and he has since then kept it in constant use in his private teaching, invariably with the most beneficial results. (See Introduction.)

1st. THE SAME PAIR of fingers must be carried throughout the entire SERIES before beginning with another pair.

2d. Strictly observe the ORDER in which the exercises succeed one another.

3d. Apply the RIGHT TOUCH to each form.

The first condition is in order that one and the same set of muscles may receive full treatment before beginning with another set. The treatment consists of very slow motions followed by a gradually increasing rate of speed until the maximum degree is attained in the velocity forms. This course insures the most orderly development of elasticity and the muscular power of endurance.

The second condition is in accordance with the same principle of passing by gradations from slow movements to fast ones. The third condition is a matter of course. It goes without saying, too, that strict accuracy in keeping time is absolutely and invariably necessary.

The musical examples in the preceding part of this work are confined to the white keys, and, with four exceptions, to a compass of five degrees, extending from C to G inclusively. These short forms, or models, are both easily understood and admirably adapted for purposes of illustration and practical application. Progress in skill and facility will be much more rapid and complete if beginners, as well as those who are novices in the two-finger exercise, confine themselves to these abbreviated forms until they have been diligently practiced and *thoroughly mastered*. The compass may then be increased to nine degrees, —thus from C to D above the octave, as is the case with the exercises which follow under the heading of "MATERIAL," "Two-Finger Exercises, Diatonic Scale," beginning on page 21. All of these forms may and should be transposed to any key, or adapted to any arpeggio or broken-chord exercise, and the pictorial illustrations in the letter-press part of the work, although all representing the C position, will serve equally well for transpositions.

The compass of the exercises in the "MATERIAL" may be yet further extended at the will of the player, and made to embrace two, three, four octaves, or more.

HOW TO PRACTICE SEQUENCES.

SEC. 41. The sequence is to be carried out with each pair of fingers in turn, at first beginning with the stronger fingers, every day; but not forgetting to apply to the weak fingers a larger number of repetitions of the entire sequence. Sometimes better results are obtained by beginning the daily practice with the weak fingers. Observe that it is an integral part of this system to carry one pair of fingers entirely through the sequence, with all its grades and repetitions, before taking up another pair of fingers.

It is not expected that children and beginners will be able immediately to accomplish the four grades of speed completing a sequence. At the outset, and for a while, three will suffice until the fingers have gained in power and adaptability. The tempo of the slow grades may be taken a little more rapidly in such cases, but the exact ratio between the grades must be scrupulously observed from the very first. The fourth grade should be introduced, however, at the earliest moment possible.

Note Concerning the Broken Thirds.—The broken thirds afford finger discipline in two different directions, and in order that the student may not miss either of them he will do well to vary the manner of constructing the sequences upon them. For example, by taking a sequence composed of Nos. 23, 24, and an eighth-note form of No. 28, followed by No. 28 itself, phrased in pairs, the finger- and touch-training will be of the

same kind as in all other forms of these exercises, with the important addition of separating the fingers. A sequence composed of No. 23, played as it is, and quarter-note and eighth-note forms of No. 28, followed by No. 28 itself, all played with the pure finger legato, clinging in the slow forms and lighter in the fast forms, will be found to possess all the advantages of the venerable "five-finger exercises" so highly esteemed by many teachers. In his own teaching, the author has generally made use of a combined form of sequence, composed of Nos. 44, 45, and 49, carried out in two degrees of speed, and as if written first in eighths and then in sixteenths.

Exercises Nos. 17 to 22 Inclusive. Velocity Forms.

SEC. 42. A well-known proverb warns us that "haste makes waste;" another one cautions us to "make haste slowly," while a third urges and incites us to action, viz., "nothing risked, nothing won." These adages are in nowise conflicting or contradictory. They all express truths of equal importance, and the aim must be to accomplish their happy union in action and practice. Having passed by gradation from slow motions to fast ones, it is next in order to increase the speed to such a degree as to involve a positive risk in each effort. In the slow forms each single movement of the finger, or each separate tone produced by the finger-blow, may be called the unit of thought. As the speed is increased, the unit of thought includes a group of motions or tones, and these groups grow larger by degrees. A group of tones or series of motions is, therefore, in this sense a unity, and is practically carried into effect as by a single volition. In the velocity forms here used, the smallest group consists of five notes. The germ of this principle has already been foreshadowed in the first moderato form of the two-finger exercise, Rhythms I and II, which contain two notes in each group. (See Musical Exercises at the end of Sections 18, 20, and 24.) Before making the attempt to play, let the thought run through the entire group, concentrating itself on the final note; or, in other words, take aim at the final key of the group as at a target. Remember that the effort is in the nature of a risk, and rush ahead accordingly. If a failure occurs, try again from the beginning. Precautions were in order when practicing the slower forms, but now risks must be taken. There is no time to stop and aim over again in the middle of the passage. It is like throwing a stone at an object a short distance away. The direction of the stone cannot be changed after it leaves the hand. Nor in the act of jumping does one first take the leap and afterward, while passing through the air determine the place of alighting. The eye distinctly takes in the objective point before undertaking the jump. The preparation, the aim, and the effort constitute the unit of thought. While, however, a positive risk is taken, and without hesitation, be careful to avoid any blurring or telescoping of the tones intervening between the first and last ones of the groups, each and every one of which must be perfectly distinct. In practice, these groups are to be repeated many times in succession, *taking care to observe the rests* between the groups. The importance of these rests can hardly be overestimated, not only in the oppor-

tunities they afford for discipline in increasing the feeling for strict accuracy in time-keeping, but because they give time for the mental concentration which should necessarily precede the act about to follow.

Place the hand in position. Take aim at, and fix the thought mainly on, the final key of the group. Take the leap,—giving a secondary thought to the intervening keys,—and snap the finger off of the last one, using the extreme elastic touch, as accomplished by complete finger-flexion. Probably success will not be achieved until after repeated trials. But remember the proverbs and try again. Persistence, if *careful* and not *thoughtless*, will succeed in the end. (See Section 7.)

The Mordent and Inverted Mordent Exercises.

SEC. 43. Particular attention is requested to the Mordent and Inverted Mordent exercises. (See Material, page 28, Nos. 79 and 80.) These are to be practiced both as two-finger and as three-finger exercises, and especially in the latter form they are wonderfully serviceable in limbering, individualizing and strengthening the fingers and particularly the metacarpal joints. On account of the position which they here occupy,—being on the last page of the book,—they are liable to be overlooked and their great usefulness may easily be underestimated; the author therefore wishes especially to emphasize the fact that he regards them as being fully as important in their way as any exercise in this work. Those who practice them in detail with patience, persistence, and perseverance, although for comparatively a short time each day, will be surprised and gratified at the results attained, for their beneficial influence in finger and hand movements can hardly be overestimated.

Relation of these Exercises to the Technic of Phrasing.

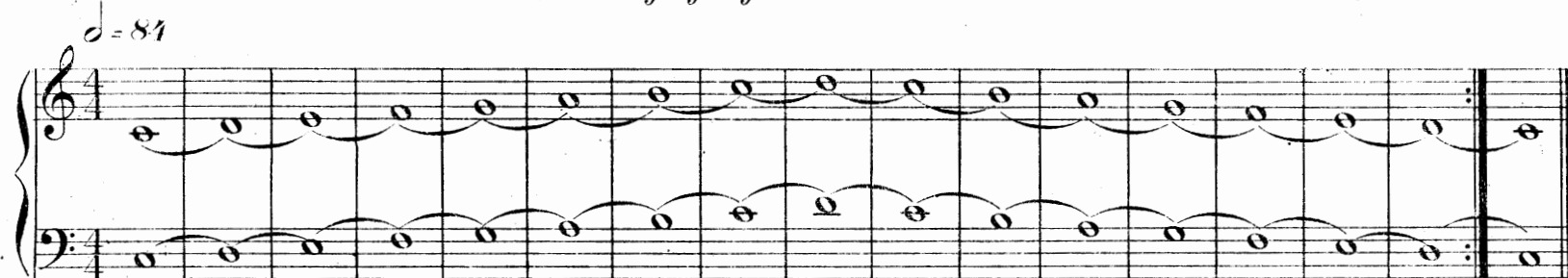
SEC. 44. The attentive student will presently observe that the different touches comprised in these exercises afford the technical resources necessary for artistic phrasing. It is literally true that they furnish precisely the training of hand and finger in the different manners of attacking, sustaining, and finishing tones, in order to effectively phrase all kinds of artistic music. In fact, they fully accomplish this vital and indispensable part of pianoforte training. It is for this reason, mainly, that their daily practice can never be dispensed with for any considerable time.

In assigning the lesson, it will suffice for the teacher to indicate the melodic form and the rhythm. Hence the direction "Diatonic Scale, Rhythm II," would indicate a sequence composed of Nos. 1, 3, 7, and 9. The direction "Broken Thirds, Rhythm II," would indicate a sequence composed of Nos. 23, 25, and 29, the latter in two grades of speed. "Chromatic Scale, Rhythm I," would indicate a sequence of Nos. 46, 47, 49, half as fast as written, and 49 as it stands. The sequence so indicated the pupil is to carry through all pairs of fingers and in all varieties of touch, and with the number of repetitions indicated in the table of practice above.

Two finger exercises. Diatonic Scale.

Exercise No 1. First slow form. *The clinging legato touch.*

See Sections 14 & 15



For the sake of abbreviation the exercises which follow are written out on the right hand part of the staff.

The left hand plays uniformly one octave below the right, beginning on c of the small octave. Fingering above the notes for the right hand and below for the left.

No 2. Second slow form. *Rhythm I. Clinging legato touch and Elastic touch in alternation.*

See Secs. 16 & 17

No 3. Second slow form. *Rhythm II.*

See Secs. 16 & 17.



To avoid crowding the plates the application of the other three pairs of fingers is here omitted, but on no account must they be neglected in practice. See Sec. 10.

No 4. First moderato form. *Rhythm I.*

See Secs. 18 & 19.



Caution. Be careful to give the rests their entire value in both exercises, Nos. 4 and 5.

No 5. First moderato form. *Rhythm II.*

See Secs. 18 & 19.

No 6. Second moderato form. *Rhythm I.*

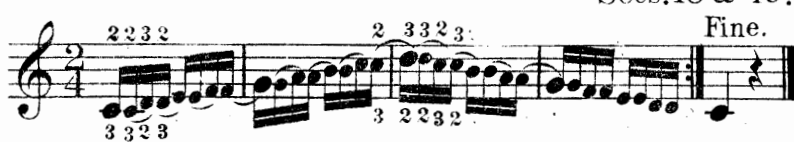
See Secs. 18 & 19.

No 7. Second moderato form. *Rhythm II.*

See Secs. 18 & 19.



MATERIAL.

No 8. First fast form. *Rhythm I. Acc. of 8^s*No 9. First fast form. *Rhythm II. Acc. of 8^s*

Practise all of these and the following forms a part of the time with the Mild Staccato touch exclusively. See Sec. 15, and the outline cut at the end of that Section. Do not neglect the Legato touch.

No 10. Second fast form. *Rhythm I. Acc. of 16^s*No 11. Second fast form. *Rhythm II. Acc. of 16^s*

Apply various degrees of force to all of these Fast forms, as well as to the Moderato forms. Play many times in succession forte; then many times mezzo; afterwards piano, and finally pianissimo, as delicately as consistent with clearness, accuracy and precision.

No 12. Third fast form. *Rhythm I. Acc. of 12^s* Secs. 18 & 19.

Another very useful way of practising is to make a well-graded, and continuous crescendo throughout the ascending passage and a corresponding diminuendo in descending. Do not hurry the time while making the crescendo. Give equal attention to the Legato, and to the Mild Staccato touches.



Play rapidly, lightly and delicately; also with uniform distinctness and elasticity of touch, but with an unmistakable accent on the first part of each measure.

No 13. Third fast form. *Rhythm II. Acc. of 12^s* Secs. 18 & 19.

No 14. Triple measure.



No 15. Compound double measure.



No 16. Compound triple measure.



Triple measure combines both Rhythms I and II. Likewise Compound double, and Compound triple measure.

MATERIAL. Velocity forms.

23

Nº 17. First velocity form. *Rhythm I*. Sec. 42.



The rests in Nos. 17 and 18 are of especial importance. Carefully observe their full time value.

Nº 18. First velocity form. *Rhythm II*. Sec. 42. In the application of *Rhythm II*, observe throughout all of the velocity forms the change of fingers on the first two notes of each group.



Nº 19. Second velocity form. *Rhythm I*. Sec. 42.



Nº 20. Second velocity form. *Rhythm II*. Sec. 42.



Nº 21. Third velocity form. *Rhythm I*. Sec. 42.



Nº 22. Third velocity form. *Rhythm II*. Sec. 42.



In the following exercise the fingers cannot be raised high before striking as in Exercise Nº 1. Be careful to sustain the tones their full value, so that there always will be two keys held down, except during the infinitesimal time required for moving a finger as quickly as possible from one key to the next.

Nº 23. Diatonic broken thirds. First slow form. *The clinging legato touch*. See Secs. 14 & 15.



In playing this exercise the pupil should have in mind the simultaneous movement of two voices in each hand's part.

Nº 24. Second slow form. *Rhythm I*. Secs. 16 & 17.



Nº 25. Second slow form. *Rhythm II*. Secs. 16 & 17.



Nº 26. First moderato form. *Rhythm I*. Secs. 18 & 19.



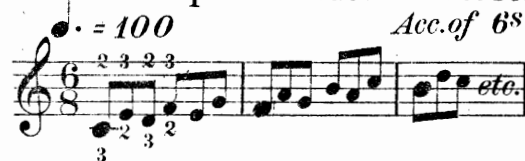
Nº 27. First moderato form. *Rhythm II*. Secs. 18 & 19.



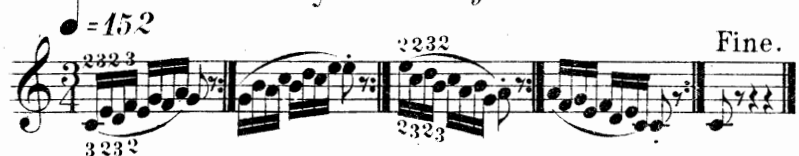
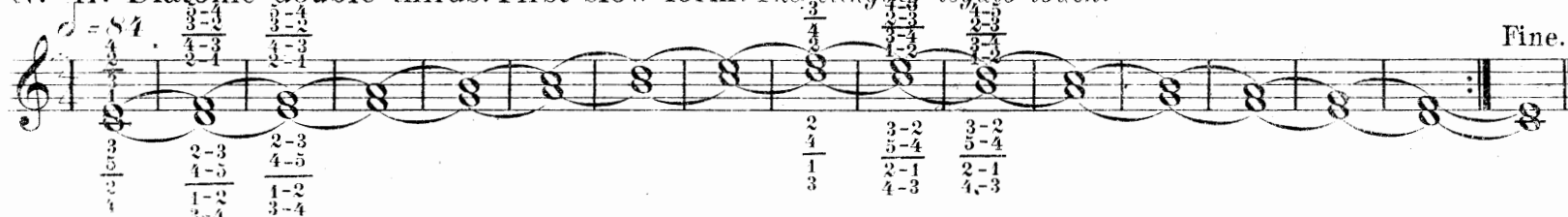
MATERIAL.

No 28. First fast form. *Rhythm I. Acc. of 8^s*No 29. First fast form. *Rhythm II. Acc. of 8^s*

The directions interlined on page 14 are equally applicable to exercises 28 to 32 inclusive.

No 30. Second fast form. *Rhythm I. Acc. of 16^s*No 31. Second fast form. *Rhythm II. Acc. of 16^s*No 32. Third fast form. *Rhythm I. Acc. of 12^s*No 33. Third fast form. *Rhythm II. Acc. of 12^s*No 34. Triple measure. *Acc. of 3^s*No 35. Compound double measure. *Acc. of 6^s*No 36. Compound triple measure. *Acc. of 9^s*

Velocity forms.

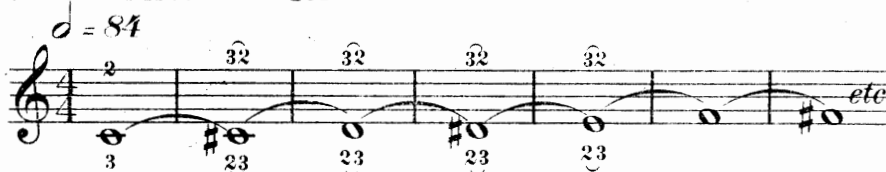
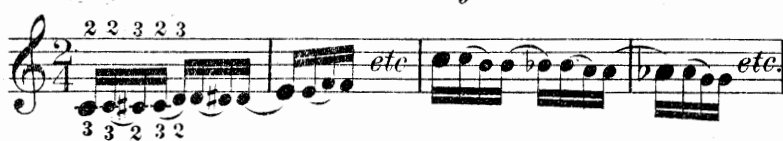
No 37. First velocity form. *Rhythm I.*No 38. First velocity form. *Rhythm II.*No 39. Second velocity form. *Rhythm I.*No 40. Second velocity form. *Rhythm II.*No 41. Diatonic double thirds. First slow form. *The clinging legato touch.*

No 42. Second slow form. *Rhythm I.*No 43. Second slow form. *Rhythm II.*No 44. First fast form. *Rhythm I.*No 45. First fast form. *Rhythm II.*

To be followed by all varieties including velocity forms. To be applied also to diatonic double sixths.

Chromatic Scale.

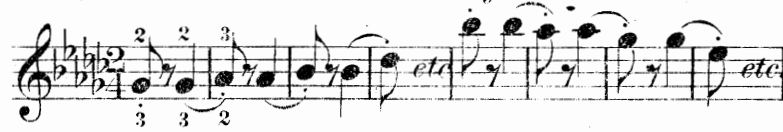
No 46. First slow form.

No 47. Second slow form. *Rhythm I.*No 48. Second slow form. *Rhythm II.*No 49. First fast form. *Rhythm I.*No 50. First fast form. *Rhythm II.*

To be applied also to chromatic broken thirds; chromatic double thirds, major and minor, and chromatic double sixths, major and minor, etc. Velocity forms must be included.

Two-finger exercise applied to the black keys.

No 51. First slow form.

No 52. Second slow form. *Rhythm I.*No 53. Second slow form. *Rhythm II.*No 54. First fast form. *Acc. of 8th Rhythm I.*No 55. First fast form. *Acc. of 8th Rhythm II.*

To be followed by all varieties including velocity forms.

Arpeggio of the Diminished Seventh.

It sometimes happens that the hand motions in the two-finger exercise are more easily acquired from the arpeggio of the diminished chord than from scale passages.

No 56. First slow form. *The clinging legato touch.*

No 57. Second slow form.

No 58. Second slow form.

No 59. First moderate form.

No 60. First moderate form.

No 61. First fast form. *Fingering as before.*

No 62. First fast form. *Rhythm II.*

No 63. Another fast form. *Fingering as before.*

No 64. Another fast form. *Rhythm II.*

Apply these exercises to all other derivatives of the diminished Seventh. See Vol. III. "Touch and Technic," page In many cases the correct hand motions will more easily be attained in these forms than in those derived from the scales. Moreover, the different degrees of separation in the fingers, in the various positions, afford most excellent discipline to the touch.

Double Diatonic Sixths.

Double Diatonic Broken Sixths, although not given here, should be practiced in corresponding forms to those of Diatonic Broken Thirds. (See No's 23 to 40.)

No 65. First slow form. *Clinging legato touch.*

No 66. Second slow form. *Rhythm I. Elastic touch.*

No 67. Second slow form. *Rhythm II.*

No 68. First fast form. *Rhythm I.*

No 69. First fast form. *Rhythm II.*

The same patterns may be adapted to the major and minor chromatic sixths, at the discretion of the teacher, or the ambition of the student.

Two finger exercises in Octaves.

Nº 70. First slow form. *Clinging legato touch in the upper voice of the right hand, and lower voice of the left hand. The thumb as legato as possible.*

Nº 71. Second slow form. *To be practiced with the Arm touches and with Hand and Finger Elastic. (Sec. 3.)*

Rhythm I.

Nº 72. *Rhythm II.*

Nº 73. First fast form. *With light touch, devitalized.*

Rhythm I.

Nº 74. *Rhythm II.*

Graded shake or trill exercise.

Directions. Observe strict time in passing from one grade to the next. The tendency will be to play too fast in the slow grades and too slowly in the fast ones. Practice with each pair of fingers in turn, also with different fingers in alternation, thus $\left\{ \begin{smallmatrix} R. 1.3.2.4 \\ L. 4.2.3.1 \end{smallmatrix} \right\}$ and $\left\{ \begin{smallmatrix} 2.4.3.5 \\ 5.3.4.2 \end{smallmatrix} \right\}$ also $\begin{smallmatrix} 1.2.1.3 - 2.3.2.4 - 3.4.3.5 \\ 2.1.3.1 - 3.2.4.2 - 4.3.5.3 \end{smallmatrix}$

Nº 75. Beginning with the lower tone.

The touch which in the beginning is bold, firm and decisive, becomes supple and elastic when the fast grades are reached.

Nº 76. Beginning with the upper tone. Above fingering also in reversed order, thus, $\begin{smallmatrix} R. 4.2.3.1 \\ L. 1.3.2.4 \end{smallmatrix}$ and $\begin{smallmatrix} 5.3.4.2 \\ 2.4.3.5 \end{smallmatrix}$ also $\begin{smallmatrix} 3.1.2.1 \\ 1.3.1.2 \end{smallmatrix}$ etc. etc.

Nº 77 Velocity forms. Apply the principal forms of fingering given for the Mordent and Reversed Mordent. See next page.

Velocity forms must also be practiced beginning with the upper tone of the trill.

Nº 78. Adapt the trill exercise to each and all of these forms using the fingering indicated above.

Apply also the following fingering to *b.d.e.f.g.* $\begin{smallmatrix} R. H. 1.3.1.3 & 2.4.2.4 & 3.5.3.5 \\ L. H. 3.1.3.1 & 4.2.4.2 & 5.3.5.3 \end{smallmatrix}$

The Mordent and the Inverted Mordent (See Sec. 43)

These embellishments, with many others of similar character are of frequent occurrence in the works of Bach and his contemporaries. They may be played with two or with three fingers in alternation. When only two fingers are used the manner is as follows

No. 79. The Mordent. (w)

Right hand. $\begin{matrix} 5 & 4 & 5 \\ 4 & 3 & 4 \\ 3 & 2 & 3 \end{matrix}$ same fingering. (w)

Left hand. $\begin{matrix} 1 & 2 & 1 \\ 2 & 3 & 2 \\ 3 & 4 & 3 \end{matrix}$ same fingering.

No. 80. The inverted Mordent. (w)

R. H. $\begin{matrix} 4 & 5 & 4 \\ 3 & 4 & 3 \\ 2 & 3 & 2 \end{matrix}$ same fingering. (w)

L. H. $\begin{matrix} 2 & 1 & 2 \\ 3 & 2 & 3 \\ 4 & 3 & 4 \end{matrix}$ same fingering.

Other fingerings are possible and sometimes useful, viz;

Mordent.	R. H. 121-131-141-151	Inverted mordent.	212-313-414-515
	L. H. 212-313-414-515		121-131-141-151

At No. 79. *a.* the alternation is between two adjacent white keys; at *b.* between a white key and the next black key to the left; at *c.* between a black key and the next white key to the left; at *d.* between two neighboring black keys while *e* differs from *b* inasmuch as the former is a major, and the latter a minor second. No. 80 is the reverse of No. 79 and will be easily understood without further explanation.

It is however very much better to use three fingers rather than two in playing these embellishments, as thereby free and off-hand muscular action is greatly facilitated. On examination of the following tables for fingering, it will be seen that there are thirty-two different ways indicated. If these are brought fully under control by careful practice the result will be great facility of muscular movement in the joints of the fingers, metacarpus and wrist, extending by means of the extensor and flexor muscles to the elbow, and even to the shoulder, when properly played. Some of the varieties tend in a great degree to facilitate the passing of the thumb under the fingers and hand, and altogether they exercise a far-reaching and comprehensive influence over most of the muscles used in Pianoforte playing, developing strength, agility and speed, combined with suppleness and elasticity. All of the various fingerings should be thoroughly mastered, but if this task seems too formidable let the student, at the very least, get easy control of the few forms which are in most general use viz;

Mordent. R. H. 312-321-123-423-435
L. H. 132-231-312-

Inverted mordent. R. H. 132-213-231-243-143
L. H. 321-213-312-324-431

The following tables show thirty-two different ways of fingering the *Mordent* and the *Inverted mordent*.

The Mordent w See example No. 79.

Beginning with the thumb or 1st finger.

R. H. 123-124-125-134-135-145
L. H. 132-142-152-143-153-154

Beginning with the 3rd finger.

R. H. 312-314-315-321-324-325
L. H. 312-314-315-341-342-351-352-354

Beginning with the 5th finger.

R. H. 512-513-514-521-523-524-531-534-541
L. H. 512-513-514

Beginning with the 2nd finger.

213-214-215
231-241-251-213-214-215-243-253-254

Beginning with the 4th finger.

412-413-415-421-423-425-431-435
412-413-415-451-452-453

The inverted Mordent w See example No. 80.

Beginning with the thumb or 1st finger.

R. H. 132-142-143-152-153-154
L. H. 123-124-134-125-135-145

Beginning with the 3rd finger.

R. H. 312-314-315-341-342-351-352-354
L. H. 312-314-315-321-324-325

Beginning with the 5th finger.

R. H. 512-513-514
L. H. 512-513-514-521-523-524-531-534-541

Beginning with the 2nd finger.

231-241-251-213-214-215-243-253-254
213-214-215

Beginning with the 4th finger.

412-413-415-451-452-453
412-413-415-421-423-425-431-435

How to Practice: These exercises like all other velocity forms, should be practiced in the order observed in the following examples. At *a* there is a long silence between each repetition of the figure. At *b* the interval of rest is much shorter, and at *c* the figure is repeated in somewhat rapid succession. Each effort is immediately succeeded by an instantaneous relaxation, followed by a re-construction of the muscles, which takes place during the pause. Be very careful to give the rests their full time value and during this interval of silence, make careful mental preparation for the next effort. Always keep strict time.

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AND EXPRESSIVE QUALITY OF TONE.

— BY —
DR. WILLIAM MASON.

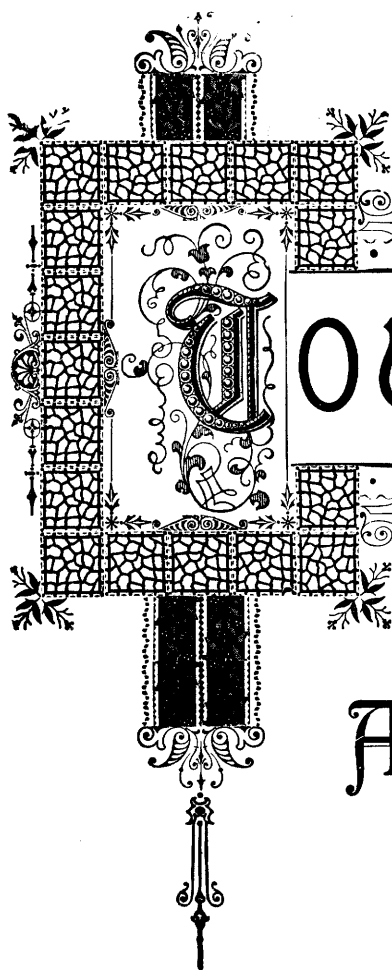
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NOTE.—Although published in separate volumes, the four kinds of exercises contained therein are intended to enter into the daily practice concurrently, through the entire course of study, from the first grade upwards.


1922



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AUTHOR'S PREFACE.

The four volumes of the present series undertake to present in orderly sequence and arrangement the entire system of pianoforte technics, as evolved in the teaching experience of the author during his professional career of more than thirty-five years. The central feature of the system is the combination of elements in the daily practice for securing the highest possible degree of flexibility, responsiveness, and versatility in the fingers, and, at the same time, educating the ear to all shades of tone-color, and securing a reposeful and exact rhythm and clear accentuation in all degrees of speed. These, I believe, are the technical qualities through which musical interpretation upon the pianoforte comes to expression.

This diversity of qualities is sought in all parts of the practice, but the elements of tone-color are mainly prepared in the Two-Finger Exercises. Meter and Rhythm are elucidated in the metrical treatment of the Scales and Arpeggios, where all the sensational and ornamental qualities of pianoforte playing are constantly held in view. The school of Octaves and Bravoura puts the finishing touches to the playing upon its sensational side.

Exercises more or less completely illustrating these principles were first published in 1867, when their practical value had already for several years been demonstrated. The Two-Finger Exercise was more fully elaborated in my *Technics*, 1876, and has been still more carefully explained in the first volume of *Touch and Technic*, 1890. The other types of exercise peculiar to this system are the accentual treatment, the harmonic changes of the diminished seventh, the principle of velocity, the principle of octave-playing, and the new apparatus of Graded Rhythms. The latter, which has been used in my teaching for more than twenty years, is found to secure in the same exercise three extremely important advantages, which are not so well united in any other exercise, or short combination of exercises, known to the writer. In the same

effort it secures an exact observance of meter and rhythm, in a combination embracing four grades of speed, geometrically developed. Out of full-pulse, rhythms grow half-pulse, quarter-pulse and eighth-pulse rhythms, all carried through at the same rate by the metronome. In connection with this, there is the transition from the full, round, reposeful, clinging legato, to the lightest and most rapid play of the fingers. In the present work, especially in volumes II and III, it has received a fuller development, and is placed in the very fore-front of the system—a position to which it is well entitled, by reason of its productive value as an educational apparatus.

All of these elements were original with this system and, after some ten years' use in private teaching, which served to test and establish their efficiency, were first published in 1867. More recently they have been copied, although without regard to method, into various instruction books, technics, and collections of exercises, thus affording additional testimony to their usefulness.

It is, perhaps, unnecessary to say, further, that great pains has been taken in the present volumes to place the system in its entirety and in its individual elements before the reader in such a way as to reveal to him (1) its fundamental principles, (2) the exercises applying them, and (3) the leading features in their relative importance, as clearly and easily as possible. In accomplishing this part of my task, I have received important assistance from my friend, Mr. W. S. B. Mathews, who for twenty-one years has been an appreciative and diligent supporter of the system, and who was once before associated with me in presenting it to the public. His ready assistance has enabled me to complete this work at a much earlier date than I should otherwise have been able to do, owing to a not very robust state of health and a stress of professional occupation.

William Mason.

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THE COMPLETE TECHNIC OF THE SCALES.

BY MEANS OF RHYTHMIC AND METRIC TREATMENT, SYSTEMATIC GRADATIONS OF SPEED
VELOCITY, CANON, AND MANY VARIETIES OF TOUCH AND FORCE; THE
WHOLE FORMING A COMPLETE SCHOOL OF ELEGANCE AND
STYLE, IN SCALE-PASSAGES OF EVERY KIND.

BY
WILLIAM MASON.

OPUS 44. No. 2.

GENERAL INTRODUCTION.

SECTION 1. The name "TOUCH AND TECHNIC" has been selected as an appropriate designation for a system of training which aims at developing, synthetically as well as analytically, all the various forms of finger-facility commonly embraced under the name of "technic;" and in connection therewith the education of a *deep, full, light, expressive touch*, without which no musical playing is possible.

The component elements of first-class piano-playing are the following:—

TUNE, (as regards the pianoforte, accuracy of execution.)

TIME, (attention to meter and rhythm.)

QUALITY OF TONE, (by different gradations and methods of touch.)

EXPRESSION { (through quality of tone as produced
or by different kinds of touch, and by
PHRASING, { inflectional emphasis and accent.)

FACILITY OF EXECUTION, { (in passages of every
and at the same time { variety of speed.)
REPOSE.

The exercises in this system contain all these elements, or the germs of them, and are intended to bring them into action and use from the very outset. Inasmuch as the qualities enumerated above are all factors in the composite unit, *good playing*, no one of them can be neglected without impairing the general result; and the habit of attending equally to each and every one of them simultaneously must be acquired at the very beginning. This is not so difficult as has generally been supposed, nor is it in violation of the principle of "*One thing at a time.*" There is but one "thing," which is *the interpretation* (or expression) *of the musical idea*; but this one thing properly considered requires equal attention to all the factors enumerated. No one of them should be lost sight of while giving

special attention to the others, because if this happens it will naturally and inevitably be found later that habits of omission have been acquired, which are difficult, if not impossible, to eradicate. They are the natural result of the incomplete and defective musical concept unconsciously established in the student's mind, through the one-sided and misleading method of practice too often permitted. Habits of this kind are fully as difficult to overcome as those of commission. It is true that exercises are generally designed for some specific purpose; but the student may lay it down as an invariable rule that, while any one special feature of playing is under study, all the other qualities of good playing should concurrently and constantly be observed in the practice.

It will be noticed by the attentive reader that the foregoing are exactly opposed to the direction often given young students, "First get the notes right, then the expression." Experience shows, beyond controversy, that better results follow the study if the musical effect is borne in mind from the very beginning.

BIRDSEYE VIEW OF TOUCH AND TECHNIC.

SEC. 2. This system of "Touch and Technic" consists of four different kinds of passage (or exercise), and it is intended that the pupil practice something of each class every day, excepting when for good reason one element or another may be temporarily intermitted, namely:—

1. TWO-FINGER EXERCISE. ("Touch and Technic," Vol. I.)
2. METRICAL SCALES. ("Touch and Technic," Vol. II.)
3. METRICAL ARPEGGIOS. ("Touch and Technic," Vol. III.)
4. SCHOOL OF OCTAVES AND BRAVOURA. ("Touch and Technic," Vol. IV.)

The daily practice is intended to embrace each of these different kinds of exercise in turn, for a few minutes only, but no one to excess. This system of technical practice imposes but slight burdens upon the pupil, and never over-exercises one set of muscles or faculties; and at the same time, through the system of metrical elaboration, absorbs and concentrates the attention to a degree otherwise unattainable in the practice of exercises. The hand is left elastic and in a high condition of artistic responsiveness, the value of which is seen positively in the superior musical quality of the playing of those trained under it; and negatively in the fact that not a single case of pianist's "cramp," so far as known, has been experienced by students practising in the diversified manner here directed.

SEC. 3. Volume I. Inasmuch as a musical and discriminative touch intelligently applied is the most important part of a player's outfit, the first volume of "Touch and Technic" is exclusively devoted to this part of the training. That volume having now been some time before the public, and many thousands of copies circulated, it is not necessary here to occupy much space with its especial features. Suffice it to say that its object is to thoroughly train the hands and fingers in all those varied manners of touching the keys, without which the different tone-colors and musical effects required in the compositions of the greatest tone-poets cannot be given adequate expression. With this end in view it aims to form the indispensable practical complement to the distinctly musical material through the study of which the musical faculties themselves are rendered *sensitive* and deepened, the tone-perceptions more delicate and discriminating, and musical feeling more refined and spiritual.

SEC. 4. Volumes II, III and IV. The present and companion volumes cover different ground, which must now be considered. Pianoforte passages consist either of *Scales*, *Arpeggios*, *Chords* or *Octaves*. These in the aggregate comprise the totality of brilliant pianoforte technic. They are not generally played in the thoughtful and impressive manner appropriate to melody, but with speed, brilliancy, and at times with almost inconceivable lightness and delicacy. The effective execution of this part of the playing has long been regarded as the distinguishing mark of a well-trained pianist, and instruction books and manuals of technics have furnished a great number of typical forms intended for training in this direction. All arbitrary combinations of tones devised for practice have, however, the great disadvantage that they are vacant of meaning, nor is it possible by simply repeating them over and over to build up out of them significant unities. The habitual reiteration of them in daily practice engenders mental habits of the most careless description, and owing to their tiresome character and arbitrary construction, the fingers derive from practising them but limited aid toward overcoming the difficulties offered by well-made bravoura pieces.

SEC. 5. In the effort to surmount these unfavorable elements of practice, in the case of certain pupils more than usually inattentive, yet with an encouraging amount of latent musical endowment, the Author, about thirty years ago, had recourse to the metrical treatment of the radical elements themselves of brilliant passages, namely, the *Scales* and *Arpeggios*. The immediate results were so gratifying, that by degrees further applications of the same principle were made in the instruction of some hundreds of pupils, a large number of whom are now concert players, high-class teachers, and accomplished musical amateurs. The system has made encouraging progress through the somewhat uncertain medium of oral teaching, and at several times its principles and methods have been given to the public in more or less completeness. But with the purpose of securing yet greater simplicity and clearness in the explanations, and of including the latest conclusions relating to it, the present volumes are offered to the consideration of teachers, and students.

SEC. 6. The fundamental principle of this system, then, is that scale, arpeggio and chord passages comprise the totality of brilliant technic. They employ comprehensively and unitedly the muscles of the fingers, wrist and arm. And the main and characteristic feature of the method of practice is, that every day the hand receives its "daily bread" in each one of these different faculties; no one being neglected, but all receiving attention, if but for a few minutes,—the entire practice occupying much less time than has generally been supposed indispensable where a high degree of technical attainment is intended.

A NEW METHOD OF DEVELOPING SPEED.

SEC. 7. The Author feels that he would be unjust to his readers, and to the experience of which the volumes of this series are the fruit, were he to fail to call attention in advance, and in a formal manner, to one of the most vital elements of the whole system of practice here exhibited, and at the same time the most novel. Reference is made to the new method of developing speed. About thirty years ago he discovered that speed could be arrived at by average pupils much more quickly by intermingling fast and slow practice in certain proportions, than by confining the attention to either one, to the exclusion of the other; and that rapid playing indeed was necessary in order to establish proper hand positions, and correct muscular action. He also found that speed would come sooner by making a sudden transition from slow practice to a very fast playing of a passage for a few times, and then recurring to the slow motions, upon which the sure order and method of the playing depended. More than twenty years ago he devised his Velocity forms, which were first printed in his *Technics*, in 1876. These had in them the germ of the entire principle, but the application was incomplete; and while many pupils experienced great benefit from this method of prac-

tice, there were others whom it still failed to reach. Some time before the publication of the *Technics* he had been in the habit of using in his own teaching a graded study of rhythm like that in No. 275 of the *Technics*, and the exercise was correctly printed in that work, but owing to its location, amid a variety of other forms of exercise with which it had no very apparent connection, its vital significance, as the central thought of the entire method of practice, was not appreciated by students, and its use has accordingly and very naturally been limited.

SEC. 8. In the present work, this principle meets the student at the very outset of his studies in every form to which metrical treatment is applied. After a very few preliminary performances of the passage, whether arpeggio or scale, he is immediately required to play it in a metrical gradation of rhythm, proceeding from whole-pulse rhythms to half-pulse, quarter-pulse, and eighth-pulse lengths, at a rate of speed already corresponding in the first grade to a strong allegro. Contrary to the impression of teachers who have not tried it, young pupils arrive at the first grades of speed by this system with very little trouble, and it is only a short time before they are able to make a successful approximation to the great rapidity of the last form, Grade IV.

The principle upon which the exercise rests is that of first making the player conscious of the musical figure out of which the exercise is composed, and of the muscular motions needed in playing it. This happens in Grade I. In Grade II, there is still time for deliberation as to figure and finger; in grade III, a degree of speed is at once taken which under the old system is not reached for a much longer time of preliminary study. And in Grade IV, we come immediately to a speed which is great even for good players. This in the case of beginners may not be reached for a little time, but if the effort be persisted in, and the incontestible testimony of the metronome be continually appealed to, in order that there may not be a weakening of the rhythmic motion for the accommodation of slow fingers, the pupil will in almost an incredibly short time seize the knack of the hand and finger motions upon which fast playing depends.

SEC. 9. It will be observed that this method of velocity differs in two important respects from all other velocity practices offered students. In the first place, the musical form is very short, and is a real unity of itself, such as appeals to every latent musical intelligence. In this respect it differs from all arbitrary formulas used as motives. Second, it admits and invites development into larger and larger unities, which as soon as formed are just as apprehensible and comprehensible (even by young pupils) as the short forms out of which they have been composed. In this respect again, it differs from all long passages developed out of arbitrary musical figures. Hence at this point the student is already in a very favorable position with reference to the high degree of speed required, since

the mental strain of conceiving the entire passage as a unity does not exist, the passage, when composed of arpeggios or scales being felt as a unity by the intuitive exercise of musical intelligence of a grade requiring little or no preliminary training.

SEC. 10. Still more important, third, are the conditions under which speed is demanded in this exercise. Instead of leaving the student to "gradually increase the speed, as he gains in ease," he is made here to *exactly double the speed* at the very first step. There is no question of waiting, he is to do it at once—intuitively. The metronome is ticking away, leaving no possible doubt as to what this exact doubling may mean. Then he goes on again to double this in turn, the metronome still going on with its relentless admonition. And, finally, he doubles once more, the metronome being still the witness.

The Author has found by experience, that in the old way of expecting the speed to be gradually increased, the majority of pupils continued with very slight increase of movement beyond the moderate dog-trot which they first happened to hit as a fast form; but in the new method the mathematical relation of the fast way to the slow way immediately preceding affords the student an enormously efficient incitation, so that as soon as the sense of time becomes quickened to the true significance of the fast form, the speed is very soon attained, even in the high grades.

SEC. 11. The principle of the fast forms, Grades III and IV, here is in no way different from that of the Velocity exercises which were so important a feature in the *Technics*, and several of his previous works. Only the *method* of making the student conscious of the high speed desired, is applied in another way. But *this method is everything*. It lies at the very foundation, and affords a way by which inexperienced players can learn the knack of playing fast, and at the same time secure what is of equal importance to the later development, *the certainty of practicing their exercises in three or four degrees of speed radically different from each other*. By this diversified speed of practice alone will brilliant playing be attained.

SEC. 12. So whatever of novelty the teacher may find in these graded exercises, and however difficult they may seem for the place they occupy in every department of this system, it is hoped that they will be faithfully attempted, in careful observance of the directions appended; which being done, the Author has no fears for the result. He desires simply that other teachers may find in this simple exercise the aid that he has invariably had from it in many years' experience in teaching.

DEFINITIONS.

SEC. 13. In the course of these works it is found convenient to employ certain terms in definite meanings, which being in part peculiar to this system, or not generally a part of the terminology of *technics*, need to be accurately defined.

Time in music includes all the elements of tone-length and duration, as also rests, pauses, holds, etc.

Meter is the measuring off of the time into a definite rate of *pulsation*, and the grouping of these into *measures* by means of accents. Every piece limits its motion in time by assuming a certain pattern of pulse-rapidity, and a certain frequency of accent. This continues to the end of what is called the *movement*; which is changed whenever there is a new *rate* of pulse, or a new *grouping* of pulses into measure. Meter holds the same place in the *time* of music that tonality holds in *tune*. In the same way that a movement is composed in a certain *meter*, so a melody is composed in a certain *key*; *i. e.*, all the tones in the melody are taken from a certain key, or are related to it. In like manner all the durations in a piece are computed by reference to the meter.

Rhythm is the rate at which the tones of the music move, as measured against the background of the meter. Hence rhythms are complicated to an endless degree, and it has not yet been found possible to form a terminology capable of expressing them clearly. In the present work the rhythms are comparatively simple, being pulse-rhythms, or half-pulse, quarter-pulse, etc., without subordinate modifications. An established rhythm of this kind in a piece of music is called a *motion*, and is generally found in the accompaniment, or the counterpoint, and rarely, in this simple form, in the melody itself.

Metrical Treatment. By metrical treatment is meant playing the form (that is to say the scale or arpeggio) in a certain kind of meter (measure).

Rhythmical Treatment. By rhythmical treatment is meant playing an exercise in *rhythmical relation*; which may be either one of two kinds, or both together: First, the different meters may be combined in it in such a way as to show their mutual relation. This takes place in all the Rhythmic Tables of the present work, such as those in Exercises 6, 7, 11, 36, 39, and many others. These are designed to correct the common imperfect misapprehension of the exact relation existing between half-pulse, quarter-pulse, and eighth-pulse motions in the same movement. Second, a single rhythmic motion may be taken and repeated over and over through the form until the rhythmus is completed by the return of the accent to the starting point. This is what takes place in all the exercises in the present work, especially in the sixes, nines, and other forms which do not complete themselves upon the first repetition of the pattern. Third, both methods may be combined in the same exercise. This takes place in all the Graded Tables, especially in those containing sixes and nines. The object of rhythmic treatment is that of intensifying the sense of rhythm, which being the representative of the mathematical part of music, requires to enter into the playing with the exactness of mathematical proportion.

Accent is a stress laid upon a tone in order to

indicate its relation to something else in the same connection.

Metrical Accents are those which mark the meter by a stress laid upon certain tones in order to indicate the boundaries of rhythmical unities. Hence two important practical considerations follow: First, the Accent must be *distinct to the ear of the hearer*, and unmistakable. This is a vital point too generally neglected. Second, every rhythmic unity has two boundaries, a beginning and an ending. The hearer must be able to distinguish both these by means of accent. The end of one unity is generally the beginning of another.

Motion-Patterns, or simply "Patterns," are outline-patterns of the *direction* which the hands take with reference to each other, in the performance of scales or arpeggios. Such as *direct* (both hands in the same direction and at octaves); *contrary*, (the hands moving in opposite directions); *canon*, (where one hand follows the other at a certain interval, repeating the same melody). *Velocity*, (the instantaneous sweep of the hands from one extreme to the other,) etc. The term "practice-forms" has been reserved for application to the different forms arising from treating the "motion-pattern" metrically. Hence every motion-pattern may afford a considerable number of "practice-forms."

REASON AND METHOD

OF

SCALE PRACTICE.

SEC. 14. To the young student and to the performing artist the daily practice of the scales is alike indispensable. So far all piano teachers agree, and have done so ever since the time of Sebastian Bach, who established the fingering as we now have it. Early in the present century Tomaschek, of Prague, invented fingering for the scales in double thirds and sixths, and these in turn have become a part of the recognized resources of the teacher and student. Nor has it been found possible to supersede the practice of the scales with any other form of exercise. Without their constant use it is not possible to impart to the playing certain qualities of *fluency*, *neatness* and *consistency* in running passages—qualities universally recognized as characteristic of well-trained pianists.

SEC. 15. A careful analysis of the elements involved in the technical treatment of the scales shows the following as the objects which this practice is calculated to secure—objects which it is immediately seen upon statement cannot be accomplished simply and directly by any other form of exercise.

OBJECTS OF SCALE PRACTICE.

1. *To form the hand to the Key* (Tonality). And this (1) with the hands singly, (2) together in the same movement, and (3) simultaneously in independent movement (contrary motions, canons, etc.).

2. *To Establish Automatic Fingering*, in such a way that the hand will of its own accord apply the established fingering to any scale, as it occurs, almost without the consciousness of preliminary reflection.

3. *To Acquire Rapidity, Lightness and Delicacy*, in such a degree that whatever the tonal style of the run the hand will spontaneously and without difficulty adapt itself to the demands.

SEC. 16. The scale treatments and motion-patterns following are those which have grown up in the experience of the author as best adapted for securing all the objects assigned above, in their respective importance and order. Further, experience warrants the claim that they do this to a degree not equalled by any combination of practice forms elsewhere proposed. The general order of the material is according to the following plan:—

GENERAL PLAN OF MATERIAL IN THE PRESENT WORK.

1. *Primary Forms* for developing Tonal Sense, Solidity of Touch, and Speed, and Exact Rhythm. (Pages 9 to 15, inclusive.)

2. *Motion-Patterns*, or simply *Patterns*, illustrating a great variety of relative motions through which the hands can be conducted in scale practice, for developing independence and reliability. (Pages 16 to 23, inclusive.)

3. *Metrical Treatment* of a few of the leading Patterns, showing the manner in which metrical treatment is to be applied to all. (Pages 24 to 29.)

4. *The Chromatic Scale* metrically treated. (Pages 30 to 32.)

5. *All the Major and Minor Scales with Fingering*. Also the *Scales in Double Thirds and Sixths*. (Pages 33 to the end.)

Throughout the work the "Directions for Practice," on page 9, must be exactly and conscientiously observed.

SEC. 17. *Caution*. While the practice of the scales scientifically adapted to the pupil's state will result in the various kinds of benefit above specified, it is imperatively necessary, in order to attain the best results, that the successive steps be carefully taken in the order in which they are here presented. The first thing in the study of the scales is to form the hand to the various tonalities, which must be done very early in the course of study—in the first grade. The practice here will mostly be slow, and the order of fingers must be taught patiently. Nothing like automatic fluency, however, will result unless every scale is played occasionally in a greater degree of speed. Hence, even in the lower grades, the graded exercises in rhythm, like those in Exercises 2, 3 and 4, must be studied. The two objects named in the table above as first and second

must be gained simultaneously. First, the scales in single-hand forms, and in short compass; then in longer forms, and the two-hand patterns are introduced. The independence of the hands will be secured by the various forms into which contrary motion enters, and the canons. These latter also conduce most rapidly to the automatic certainty of finger. Meanwhile, the varieties of touch must be observed from the very outset. As soon as a scale of one octave can be accurately and easily played slowly, it must be studied with at least two, or perhaps three, degrees of speed and force; while at the same time two varieties of touch must be alternately applied, viz., the *legato* and the *mild elastic* touches, which are described in Touch and Technic, Vol. I. Only in this way of carrying along the various qualities simultaneously can the higher excellencies of scale playing be attained.

The selection of a scale for beginning the practice has been influenced by the convenience and natural position of the fingers upon the keys; the scale of D flat bringing the hand and fingers in the most natural position possible, and carrying in the relative conformation of white and black keys a suggestion of the proper application of the fingers. The order in which one scale should follow another in practice may often be made to correspond with the key of the piece which happens to be in study. The scale of the same key will be more interesting, and the exercise of the fingers in it will render them more obedient in the difficulties of the piece, whether those difficulties be few and simple or many and complicated.

Upon the same grounds of convenience of hand the scale of C minor is here taken for the few forms introduced as illustrations of many others to be derived from the patterns of the major scales, both single and double, and above all in canon. The practice of the minor scales, moreover, cannot safely be omitted, however unpleasant it may be to the ear of the student to hear them. It is quite possible that the music students of the present generation are more sensitive than those of a generation or two ago. The emotional implications of the minor scale are felt more deeply, and there is a very natural repugnance at having to hear lamentation for certain half-hours per day. Nevertheless, they must be practiced. The standard of playing demands it, and will continue to demand it so long as the minor mode enters into pianoforte literature to the extent that it now does.

SEC. 18. Three forms of the minor scale are given in this work: (1) The true minor, or "Harmonic" minor (so called because it is obligatory wherever harmonic relations are involved), see page 34; (2) the so-called "Melodic" minor, having a major sixth and seventh in ascending (both of which are changed to minor in descending), see page 34; (3) a "mixed" form, having a major sixth and seventh in ascending, the sixth being changed to minor in descending, pages 14, 16, 18, and 32. This form was introduced by Johann Wenzel

Tomaschek (Section 14), and has many advocates among prominent pianists, Alexander Dreyschock and Hans von Bülow, for example. The author of this method prefers it for general practice mainly for the reason that in scale passage writing it is more frequently met with throughout the works of modern Pianoforte writers than any other form. Bach, indeed, forms an important exception, as he makes much use of the old Greek modes in which the leading tone characteristic of our modern scale is lacking and its place supplied with a minor, instead of a major seventh. Students however who have mastered the descending form of the diatonic major scales will find themselves easily at home in these and without need of further special practice.

Sec. 19. The scale of D flat major is chosen for illustration

of different forms of Scale treatment because of its easy hand position owing to the fact that the reach of the fingers is longer than that of the thumbs. For example, - place the thumb of the right hand on F and let the 2^d 3^d & 4th fingers fall lightly over the three black keys to the right. This position is unconstrained and natural, and the easy fit of the fingers to the keys is at once apparent. Inasmuch as the technic for one scale is in a great degree the technic for each of the others, the quality of fluency and freedom of finger-action acquired in one will be easily extended to all. Nevertheless, this is not to be taken as absolving the student from carrying his scale practice throughout the entire circle of the Keys. They are to be taken in turn, and in such forms of treatment as the judgment of the teacher may direct. Scrupulously observe the fingering. There must be no exception to this rule.

Elementary Forms of Scale Treatment.

Sec. 20. The beginning of scale treatment is to be made by exercises calculated to form the pupil's ear to the key, lead him imperceptibly to realize the tonic as the central point of the scale, around which the entire tone-series centers; at the same time the elementary motions of scale-technic are being acquired, such as the art of put-

ting the thumb under the fingers, etc. Among the many exercises which have been proposed, the author has found the following about the best for this purpose, and if administered to the pupil orally, or by imitation, with the attention centered upon the sounds produced, and upon the keyboard, the best attainable results will follow.

Exercise I. Preparatory Practice, for Fingering and for tonal Sense.

Observe carefully the fingering marked, and accent somewhat perceptibly upon the first tone in the measure. Repeat each form several times through.

Twice through is necessary in order to complete the full rhythm.

Method of Practice.

Sec. 21. As soon as the foundation has been laid by the preceding exercise, proceed directly to the following preparatory studies in graded rhythms, marked a, b, and c.

1. Time. Be sure to keep the movement unbroken, and precise with the metronome from Grade I to the very end of Grade IV. Young pupils at first may play two grades; then, after a very few times through the two grades, three and very soon four.

2. Rate of movement. Begin at the metronome mark 72 for quarters. As soon as four grades can be played in this movement, advance the speed gradually, day by day, until the rate of 100 is reached. Advanced pupils will be able to play this and all the other graded exercises as fast as 152, four grades in this tempo. For pupils in the intermediate stage the speeds above 100 up to 184 may be practiced in three grades only. The intention is to secure at least three grades of speed in

every day's practice, and to advance the rate as fast as the fingers gain in facility and perhaps a trifle faster.

See what is said of the principle of speed on page 6.

3. Touch. Play Grade I with the clinging legato touch according to the directions in Vol. I of "Touch and Technic," page 8. Play Grade II with the legato touch, but with less pressure than in Grade I. Grade III is played with still less weight of finger, and Grade IV very light.

These different touches are explained in Vol. I of "Touch and Technic" Sec. 14, and following. The force is always to be greater in the slower grades than in the fast. In fact one of the reasons why pupils find it impossible to play rapidly is carrying the hand too heavily upon the keys. So if Grade I is played fortissimo, play Grade II forte, Grade III mezzo, and Grade IV piano. If Grade I be taken forte, each of the succeeding grades will be reduced one degree accordingly.

(2) The various forms of the finger staccato must be applied to the exercise for at least a small part of the practice every day. In Grade I the full elastic touch must be used; in Grade II a mild staccato, and so on through the grades with less and less force, but with something of the "pulling," or "drawing-in" touch throughout. The use of this touch for a part of the practice imparts greater distinctness and a more elastic and pearly quality to the tones and to running effects generally.

4. Accent. The meter must be clearly defined, whatever the speed or whatever the kind of touch employed.

Throughout Grade I full strength must be applied. The tones are all *forte* and of uniform power. In all other grades the accent on the first part of each measure must be decided and unmistakable to the ear.

5. Important. Observe the varied number of repetitions directed for each grade and pass immediately from each to the next without break or intermission. The slower grades are precautionary, for their speed is not so excessive as to prevent an ever present sense of full control, whereas the faster ones, especially Grade IV is in the nature of a risk. Attack it with courage and a determination to go ahead at all events.

Study a, in Graded Rhythms. *Compass of five tones.* Play Grade I twice through, Grade II four times, Grade III six times and Grade IV two times. Keep exact time from beginning to end and let there be no break in passing from one Grade to the next.

Grade I. $\bullet = 72$.

Right hand *2 3 1 2 3* Grade II. Grade III. Grade IV. *Fine.*

Left hand *3 2 1 4 3* Twice through. Four times. Six times. Two times.

Study b, in Graded Rhythms. *Compass of nine tones.*

Grade I. $\bullet = 72$.

Right hand *2 3 1 2 3 4 1* Grade II. *Fine.*

Left hand *3 2 1 4 3 2 1* Twice through. Four times through.

Grade III. Grade IV. *Fine.*

Six times through. Six times through.

Study c, in Graded Rhythms. *Compass of seventeen tones.*

Grade I. $\bullet = 72$.

Right hand *etc.*

Left hand Play once through.

Grade II. Play twice through.

Grade III. Play six times through.

Grade IV. *Fine.*

Play four times through.

Exercise 4. *Rhythmical Table III. Meters of 3's, 9's, and 27's.*

Count three in a measure when playing this as a graded study in rhythm, and when using the Meter of 9's in daily practice. The rhythm of 27's, however, may be obtained by counting 9, playing triplets to each count. This is the best way for young pupils.

Grade I. *Meter of Threes.*

Right *etc.*

Left

Grade II. *Meter of Nines.*

Right *etc.*

Left

Grade III. *Meter of Twenty-sevens.*

The meter of 27's requires nine times up and down the compass of three octaves. Count three and play nine to a count; or count nine and play three to a count. The former is obligatory when it is used as a graded exercise. The latter way is the better for young students.

Right *etc.*

Left *etc.*

Exercise 5. Grade III. *Meter of Eighteens.*

In place of coming from the meter of 9's to that of 27's, which may be difficult for young pupils, the meter of 18's may be taken instead, each note of the triplets in the nines being subdivided into two,* instead of into three as in the 27's. Or for everyday practice the same meter may be had by counting six and playing triplets as here written.

Right *etc.*

Left

Fine.

* In the former case the measure-sextolet will have the form

13
Velocity Exercises.

Sec. 22. We here enter upon the direct practice of velocity, in a method differing in many important respects from the usual exercises proposing this end. In order to gain the utmost possible benefit from this practice, observe the following directions.

(1) Play in strict time at the metronome rate of 60, 72 or 84. (2) Hold out the first tone firmly, then, with the mind fixed upon the closing tone of the series, take aim for it and pass lightly to it, arriving there at the precise beat of the metronome. (3) Count out the rests their full time. This is very important. (4) Play with the expression marked. (5) Begin with small distances, the right hand first, then the left hand answering it in the same distance. Gradually increase the length of the run, adding one tone at each repetition, up to the limit of the present capacity. (6) Make this exercise a part of every day's practice. Its proper place is that of an appendix or supplement to the other forms of scale practice in every key. (7) Finger the last note strictly according to rule, as if

Exercise 6. Velocity Ascending.

Fix the mind principally on the final tone of the series, but secondarily upon the intervening tones, which must not be indistinct.

Exercise 7. Velocity Descending.

Exercise 8. Ascending in Thirds and Tenths and Sixths.

Exercise 9. Descending in Thirds, Tenths and Sixths.

Exercise 10. Contrary Motion.

All the forms preceding are to be carried out next in the key of C minor, observing the rule of the minor scale form, according to the law on page 32. See also what is said of the "Mixed" minor scale form in Section 18, page 7.

Exercise 11. *Rhythmical Table I Carried out in the Scale of C Minor.*

Grade I. *Meter of Fours.* Observe all the rules of practice and touch.

Melodic form ascending. *Harmonic form descending.*

Right 1 2 3 1 2 3 4 1 etc.

Left (1) 5 4 3 2 1 3 2 1 4

Grade II. *Meter of Eights.*

Right etc.

Left

Grade III. *Meter of Sixteens.*

Right etc.

Left

Grade IV. *Meter of Thirtytwos.*

Right etc.

Left

Velocity in Minor.

Sec 23. In Velocity runs in the minor scale the rule regarding the use of the minor sixth in runs proceeding in thirds or sixths is occasionally disregarded in ascending. This is done in order to avoid the objectionable progression of the augmented second. Moreover the run goes so rapidly that the harmonic effect is lost. When the run in thirds or sixths, however, stops upon the sixth, the minor sixth is invariably used.

Exercise 12. Ascending.

Exercise 12 consists of three systems of piano and right-hand parts. The piano part is marked *Molto cresc.* and *ten*. The right-hand part is marked *cresc.* and *ten*. The exercises are in 4/4 time and G minor. The first system has four measures, the second has four measures, and the third has four measures ending with *etc.*

Exercise 13. Velocity in Thirds, Sixths and Tenths. Ascending and Descending.

Exercise 13 consists of three systems of right and left hand parts. The right hand is marked *Right* and *cresc.* and the left hand is marked *Left* and *ten*. The exercises are in 4/4 time and G minor. The first system has four measures, the second has four measures, and the third has four measures.

Exercise 14. Contrary Motion.

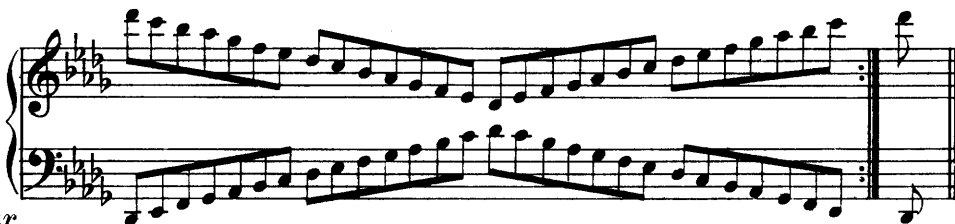
Exercise 14 consists of two systems of piano and right-hand parts. The piano part is marked *ten* and *cresc.* and the right-hand part is marked *ten* and *cresc.*. The exercises are in 4/4 time and G minor. The first system has four measures, and the second has four measures ending with *etc.*

Sec. 24. Scale Patterns for Metrical Treatment.

The following scale-patterns illustrate different manners in which the hands are to be related in the practice of the scales, for the purpose of securing independence and certainty. They are of two kinds; forms involving Contrary Motion, and Canons. The latter represent a higher degree of independence of hand and

finger. The canons with one or more turning points moveable are the most difficult scale-forms in existence. They will follow quite naturally, however, after the canons with the upper turning point moveable, and those with the lower turning point moveable. All these forms are destined to receive metrical treatment, concerning the application of which see page 26.

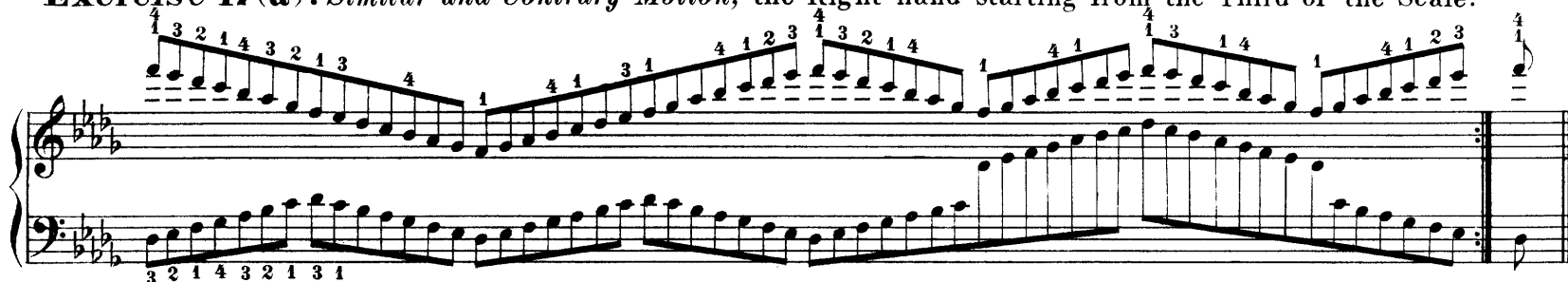
Exercise 15. *Pattern Form. Scale in Contrary Motion. Each hand through Two Octaves.*



Exercise 16. *Pattern. Contrary and Similar Motion combined. Both hands starting from the Tonic.*

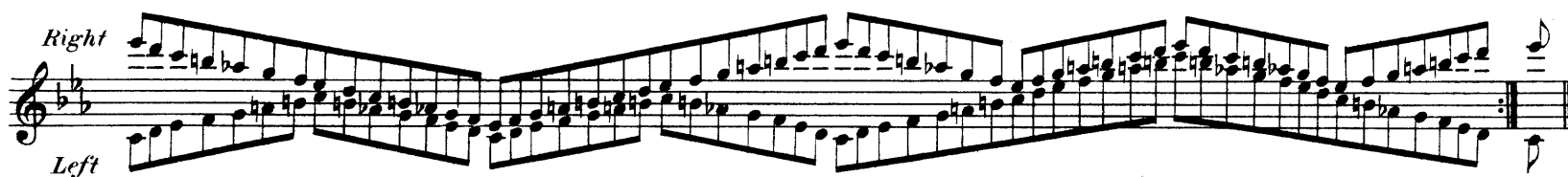


Exercise 17(a). *Similar and Contrary Motion, the Right hand starting from the Third of the Scale.*



Exercise 17(b). The preceding with the left hand starting an octave higher, thus bringing the hands nearer together and giving rise to thirds instead of tenths in the parallel motion.

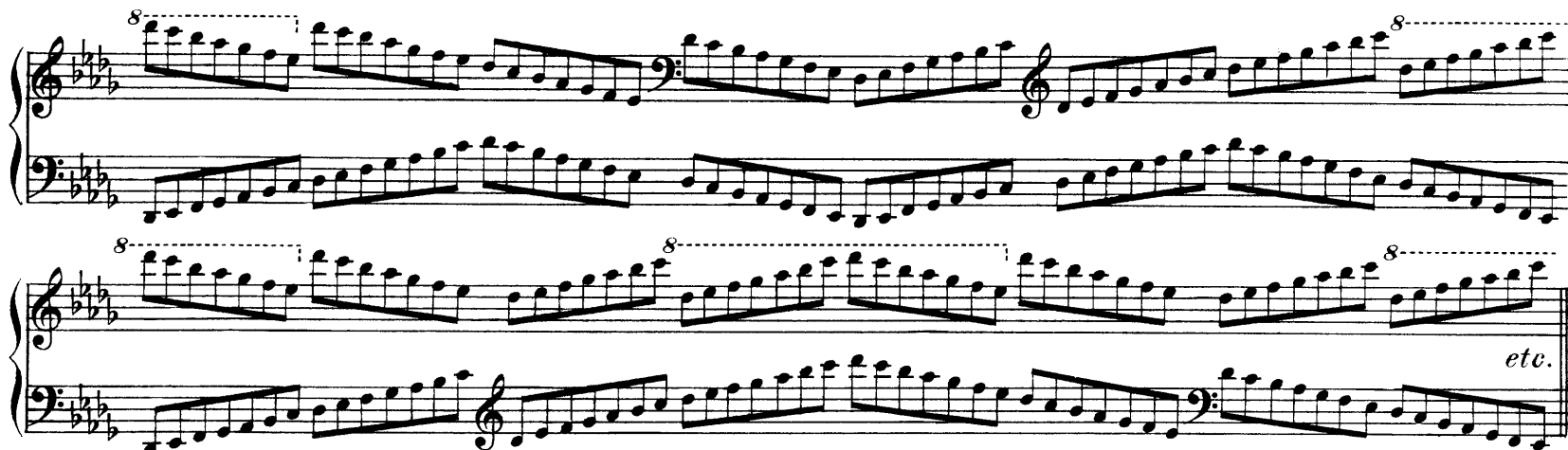
Exercise 17(c). The preceding carried out in the Minor mode, in order to illustrate the irregularity of the sixths.



Exercise 18. Inversion of exercise 17(a). The left hand begins upon the third, the right hand upon the tonic. The same order and distances of ups and downs for each hand are observed as in ex 17(a), but the parallel motion will give rise to sixths, instead of thirds or tenths. Owing to its similarity to the original, the notes of this form are omitted. Nevertheless it must be practiced.

Exercise 19. *Pattern. Four Octaves compass, Contrary and Similar Motion combined.*

This is the same as Ex. 16 extended to four octaves.



17 Scales in Canon form.

Sec. 25. The canon patterns are without exception the most important of all which this book contains, as well as a feature believed to be original and peculiar to it. They were in use by the author for several years prior to their first publication in the Mason and Hoadley method in 1867. A Canon is a form in which a second voice exactly repeats the melody of its leader at a definite interval behind. The most common form of Canon is the vocal form called "round," in which several singers follow each other simultaneously through a melody especially constructed with a view of furnishing a succession of agreeable chords when thus performed. Scale Canons arise naturally when the second hand begins two

tones later than the leader, both starting from the tonic and proceeding in similar motion, excepting at the turning points. Here the leader anticipates, and for two tones the parts are proceeding in contrary direction. The Canon is equally valid and musical whether the left hand lead, producing a succession of sixths in ascending and tenths in descending; or the right hand lead, producing tenths in ascending, and sixths in descending. The practical result is the same, but it is better to alternate the modes of leading than uniformly to confine the lead to either hand to the exclusion of the other. The great value of the Canon form for Scale practice is found in the individuality it gives to each hand.

Exercise 20. Scale Canons of different dimensions.

1. 2. 3.

4. 5. 6.

Through Fourteen tones.

7.

Through Two Octaves.

8.

Canon of Three Octaves.

9.

Canon with Left Hand Leading.

10. 11.

Exercise 21. The Canons in Minor Mode.

The treatment of the minor scale in canon form involves peculiar difficulties, in consequence of the half melodic, half harmonic nature of the resulting effects. Upon the whole the best treatment appears to be that in which the ascending canon conforms to the melodic minor, having a major sixth in ascending. To this there are two exceptions: When the canon turns back at the sixth tone the minor sixth must be used, in order to preserve the character of the minor mode. It is the same when the canon turns at the seventh of the scale; (see Ex 7 below) here also the minor sixth must be succeeded by the major seventh, bringing out prominently the most characteristic interval of the minor mode, the augmented second. The descending forms remain harmonic in all cases. On account of the importance of this variety of scale treatment a number of minor scale canons are here written out in full. In playing them the student must be very careful to observe the fingering, especially at the upper and lower turning points.

Each form in turn is to be treated in all the principle meters especially those of 6s, 9s, 8s, 12s, and 16s. Be sure and "complete the rhythm" by repeating each form as many times as necessary. In one case it will come out after once through; in another it requires three times, and then nine times.

(1) Compass of one Octave. (2) Through Nine tones. (3) Compass of a Tenth.

(4) Compass of a Eleventh. (5) Compass of a Twelfth.

(6) Compass of a Thirteenth. (7) Compass of a Fourteenth. Notice the Harmonic form in both directions.

(8) Compass of Two octaves. Precisely the same as No 1. extended an octave.

(9) Compass of Three octaves.

The following are examples, or patterns, in which the left hand leads. All the distances must be practiced in this form as well as in the form where the right hand leads.

(10) Compass of One octave. (11) Turning on the Sixth above. (12) Turning on the Seventh. Harmonic in both directions.

(13) Pattern extending through Four octaves.

Exercise 22. *Pattern. Canon with upper turning points movable.*

Pattern of continuous Canon, progressively extended from one octave to two, and then progressively reduced to its original compass. To be treated metrically.

The musical score for Exercise 22 is presented in five systems, each consisting of a treble and bass staff. The key signature is three flats (B-flat, E-flat, A-flat), and the time signature is 4/4. The score is a canon with upper turning points that are movable. The pattern is progressively extended from one octave to two and then reduced back to its original compass. The notation includes various musical symbols such as notes, rests, and fingerings (1, 2, 3, 4) to guide the performer. The first system shows the initial pattern, which is then extended in the second and third systems, and finally reduced in the fourth and fifth systems. The score is designed to be treated metrically.

Exercise 23. *Pattern. Canon with both turning points movable.*

In ascending the up scales are an octave, and the down scales seven, in descending this is reversed, the descents being an octave and the ascents seven degrees.

Sec 26. *Pattern Forms of Double Scales.* All the following patterns should be treated metrically.

Exercise 24. *Diatonic Major Thirds through four octaves.* (Observe the legato.)

Parallel Motion.

Exercise 25. *Diatonic Double Sixths through four octaves.*

EXERCISE 10: Double Triads with Parallel and Contrary Motion Combined.

The exercise is presented on a grand staff (treble and bass clefs). It consists of two main parts, (1) and (2), each featuring a series of double triads. Part (1) shows parallel motion in the upper voice and contrary motion in the lower voice. Part (2) shows contrary motion in both voices. The exercise is designed to develop skills in voice leading and interval training.

The same with a longer run for the left hand.

(2)

Exercise 27. Double Sixths, in Contrary and Parallel Motion.

(1)

p

Exercise 28. Velocity Exercise, in Double Thirds.

Exercise 29. Velocity Exercise, in Double Sixths.

Exercise 29. Velocity Exercise, in Double Sixths.

ten cresc. ten cresc. etc. ten cresc. etc.

Metrical treatment of the forms preceding.

Sec. 27. The success of students in this system will very largely depend upon the thoroughness with which metrical treatment is applied to the pattern-forms preceding, and the same carried out in all keys. This, obviously, will be a work requiring a great deal of time, since the resulting exercises will be extremely numerous. Nevertheless if properly distributed in the daily practice, and but a few minutes a day, (a third or half an hour at most,) for the usual number of years that students take lessons, it will be found that almost every pupil will be able to complete all the forms here indicated, and still have much time to spare.

The Rhythmical Tables on pages 10 to 15 illustrate the manner in which the principle meters arise, and their relations to each other. These are to form the foundation studies for rhythmical education, and the introduction to velocity, as explained on page 5. These forms also, are the ones which should be applied in all the scales as fast as the different keys are introduced. Very soon, however, the shorter canons must be taken up, in order to establish the fingering more thoroughly and to render the hands more independent of each other. The method of applying rhythm to these is illustrated on page 24. Next in importance after these come the contrary motions, at first in short distances, and the hands in the most natural position with relation to each other; later in longer distances, and the hands in third or sixth positions, like exercises 17 and 18. The manner of applying rhythm to these is illustrated on page 24. The double scales come later, when the hand has gained considerable power and maturity. The manner of applying rhythm to the double scales is the same as in the single forms.

All these forms, whatever the meter, must be practiced in various forms of touch, as illustrated on page 9 in the directions preceding Rhythmical Table I.

The general principles governing the practice in metrical forms are the following:

Choice of Meters. Meters of 6's, 8's, 9's, 12's, and 16's are the most important for daily use.

Grades of Speed. Combine the meters in such a way that at least two grades of speed are comprised in every exercise. That is to say, 8's and 16's in connection, (Table I, page 10); 6's and 12's, according to Table II; 9's and 27's in connection, or 9's and 16's in connection, (Table III, page 12), etc.

Complete the Form. In all cases of metrical treatment there is one principle which is absolutely universal, admitting of no exception. The rhythmical form is to be completed, by playing the pattern over and over so many times as may be necessary for bringing the accent back again upon the tone where it commenced. Sometimes this will happen at the end of a single repetition; at other times after two or three repetitions; in other cases many times through are required before the accent will fall again upon the starting point. But in every case the form must be played quite through to the end. If through inattention or sluggish rhythmic sense the meter be lost, the exercise must be begun again, and this must go on over and over until the attention is educated up to the ability to carry the accent quite through, no matter how long the form may be. On page will be found an example of meter of nines applied to the pattern exercise 19. This requires eighteen times up and down the keyboard before the form is completed. It will not escape the observation of students unusually acute in the sense of rhythm that the nines really require twice through the form before the rhythmus is completed symmetrically. The nines in Table III, (page 12) for example, are only half the complete rhythmus. For elementary purposes, however, this point may be waived, and the single form, with the accent returned to the starting point, be regarded as complete. Therefore the student and teacher must bear in mind that the partial forms indicated hereafter, with an "etc." at the end, are to be played entirely through to the end, and in practical use never left unfinished, as they are here in the notes.

In the earlier stages of practice the meter of nines should be applied to the two hands in similar motion, through a compass of two octaves, which will require nine times through to complete. In all but the compass this will resemble the nines in Table III, (page 12). Then immediately go on to the four octave compass, as follows in Exercises 30 and 31.

Exercise 30. Meter of Sixes. Count Two.

Meter of Sixes.

Exercise 31. Direct Motion. Four Octaves compass, Meter of Nines. (Carried out.)

This is one of the most important forms for daily practice.

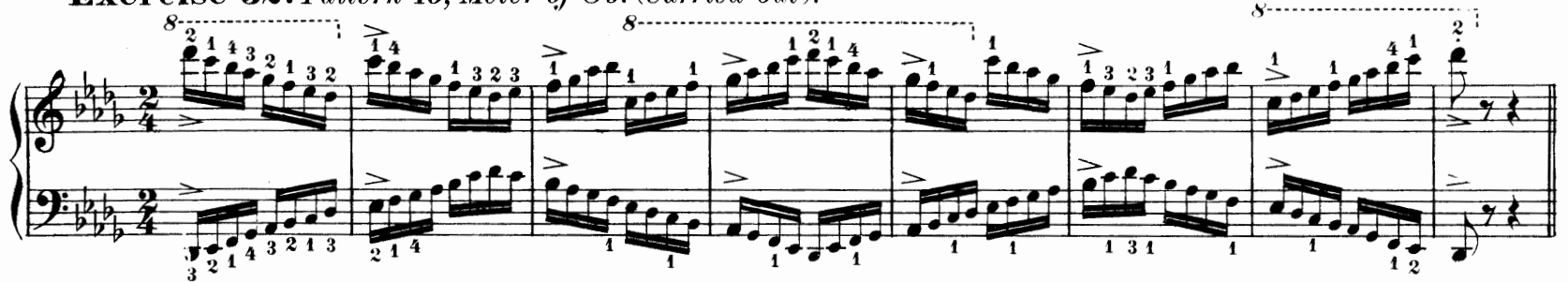
Meter of Nines.

The musical score is written for piano, featuring a continuous melodic line that ascends and descends across four octaves. The notation is in 3/8 time, with a key signature of three flats (B-flat, E-flat, A-flat). The score is divided into two parts: 'Right.' (treble clef) and 'Left.' (bass clef). The melody is carried out for nine measures, with the final measure marked 'Fine.' and ending with a double bar line. The notation includes various musical symbols such as notes, rests, and dynamic markings like 'etc.' and 'Fine.'

In like manner 6's, 12's, and 18's are to be carried through four octaves compass.

The Application of Meter to the Patterns 15 to 17 gives rise to beginnings like the following:

Exercise 32. *Pattern 15, Meter of 8's. (Carried out).*



Exercise 33. *Pattern 15, Meter of 6's. (Carried out).*



Exercise 34. *Pattern 15, Meter of 9's. (Indicated). To be completed by the player.*



Exercise 35. *Pattern 17 Extended to Four Octaves. Meter of 16's. (Indicated).*



Exercise 36. *Pattern 17 b, Extended to Two Octaves. Meter of 6's. (Indicated).*



Exercise 37. *Pattern 18 Extended. Meter of 16's. (Indicated).*



Application of Rhythm and Meter to Canons.

Although the application of meter and rhythm to scale canons appears to the young student a matter of considerable difficulty, it is in reality very simple. The accent invariably begins with the third tone of the leading voice, whether this be in the right hand or the left; the form is then repeated over and over until the accent returns to the point where it began. The following are examples which sufficiently illustrate the manner of applying meter. They are merely indications of metrical treatments which must be applied in great variety to all the canon forms given in Exercises 20 to 23.

Exercise 37. Graded Scale Exercise in Canon form. Quadruple Measure. (See Sec. 25.)

Consisting of four grades of speed combined with graduated intensities of power, and varied qualities of tone produced by different kinds of touch. The degrees of power are indicated as follows:

Grade I^a marked *ff* uniformly *fortissimo* throughout.

" I^b " *ff* and *f* The accented tones are *fortissimo*, the unaccented *forte*.

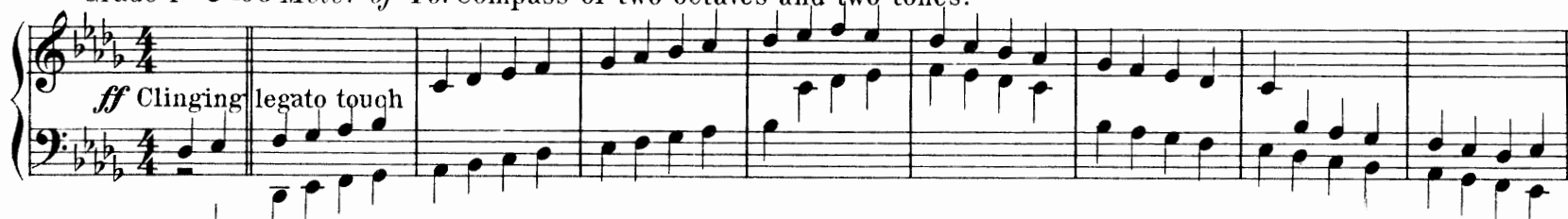
" II " *f* and *m* " " " *forte*, " " *mezzo*.

" III " *m* and *p* " " " *mezzo*, " " *piano*.

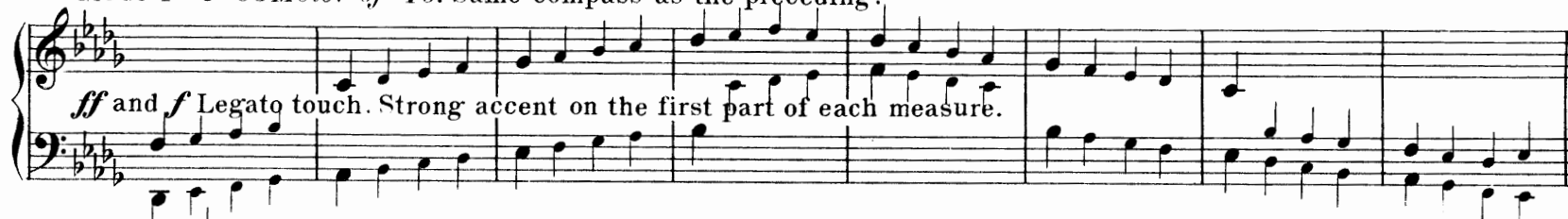
" IV " *p* and *pp* " " " *piano*, " " *pianissimo*.

In these examples the right hand leads. They should also be practised with the left hand leading.

Grade I^a ♩ = 96 Meter of 4 s. Compass of two octaves and two tones.



Grade I^b ♩ = 96 Meter of 4 s. Same compass as the preceding.



Grade II. ♩ = 96 Meter of 8 s. Compass of four octaves. Play twice through in order to complete the rhythm.



Grade III. ♩ = 96 Meter of 16 s. Compass of four octaves. Twice through completes the rhythm.



Grade IV. ♩ = 96 Meter of 32 s. Four times through completes the rhythm.



* Note: The 8^{va}..... applies to both voices.

Graded Scale Exercise in Canon form. Triple measure.

The directions for playing are the same as in N^o 37.

Grades III and IV must be completed according to the directions in Sec 27.

Practise the Exercise also with the right hand leading.

Grade I^a *Meter of 3s.* Compass of two octaves and four tones.

ff Clinging legato touch.

Grade I^b *Meter of 3s.* Same compass as the preceding.

ff and **f** Legato touch. Strong accent on the first part of each measure.

Grade II. *Meter of 6s.* Compass of three octaves.

f and **m.** Legato touch.

Grade III. *Meter of 12s.* Compass of four octaves. Three times through.
completes the rhythm.

m and **p** Both Legato touch and mild Staccato touch.

Grade IV. *Meter of 24s.* Compass of four octaves. Three times through
completes the rhythm.

p and **pp** Both Legato touch and mild Staccato touch.

* The 8..... applies to both voices.

Exercise 40. *Pattern 19, in Meter of 9's. (Indicated.)* The pattern is comprised in the first twelve and a half measures ending at (a), and requires nine repetitions before the full Rhythmus is completed by a return of the accent to the point where it began.

Exercise 41. *Pattern 17 b, extended to four octaves and treated in 9's.*
The Rhythmus must be fully completed.

Exercise 41, b. *Pattern 18, extended to four octaves in meter of 9's.*

Treatment of the Chromatic Scale.

Sec. 28. The Chromatic scale is one of the most important finger-forms which the pianist has in his stock. And in consequence of its habitual use in rapid and light passages, it is of the greatest importance that the correct fingering be acquired at the very outset of the study because a wrong fingering once acquired can hardly be corrected in a life-time.

Rule: The Right hand 2^d finger always on C and F.

The Left hand 2^d finger always on E and B.

Exercise 42. Graded Rhythms applied in the Chromatic Scale.

In beginning the following table of graded rhythms, it may perhaps be better for the student to play first the ascending scale with one hand alone. After a few repetitions immediately play it in the same time in Grade II, exactly twice as fast; then Grade III, exactly four times as fast. When the motions of the ascending scale begin to be a little familiar, introduce the descending scale in the same way, first in Grade I; then in Grade II; and finally Grade III. As soon as this is done the entire table is to be practiced, at first with each hand separately; later with both hands together. The introduction of fast playing at the very beginning has the same value in the chromatic scale as in the diatonic forms in which so universal an application has already been illustrated.

Grade I. *Meter of 3s.* Touch uniformly full, strong, and even.

Grade II. *Meter of 6s.* Accent.



Grade III. *Meter of 12s.*

Grade IV. *Meter of 24s.*



Exercise 43. Chromatic Scale starting from each degree in an octave. *Meter of 12s.*

The following is intended if carried out on all the degrees to render the fingering more certain.



Exercise 44. *Meter of 12s.* Count Six.



Exercise 45. *Meter of 6s.* Count Two.



Exercise 46. Up and down one octave. *Meter of Nines.* (Completed.)



Exercise 47. Pattern ascending by degrees. Observe the ending of the descending scales. *Meter of 12s.*
The fingering is of great importance. Caution. Give the rests their full value.



Exercise 48. The preceding reversed.



Exercise 49. The preceding combined into a continuous exercise by omitting the long tones and the rests.
Meter of 12s.



Exercise 50. *Meter of 12s* applied to Exercise 43. Count two. The Sixtolets may be played as triplets or as three twos.



Exercise 51. The same, in continuous form, being the same as Exercise 49 in different meter.



Exercise 52. *Pattern 49 in Meter of 9s.*

Ascends to C three times before the accent comes again on Middle C at the beginning of a measure.



Chromatic Scale in various forms of contrary motion.

30

Exercise 53. Consisting of Patterns 47 and 48 combined in contrary motion.

Exercise 54. The preceding in continuous form.

Exercise 55. Pattern 53 in Meter of Sixes. Count Two.

Exercise 56. The preceding in continuous form.

Exercise 57. The same in Nines.

Exercise 58. In Minor Thirds. Meter of 12s. Pattern 47.

Play the above also as a continuous exercise similar to those preceding. Also apply accents of sixes and nines. Practice also with the left hand an octave lower, producing tenths instead of thirds.

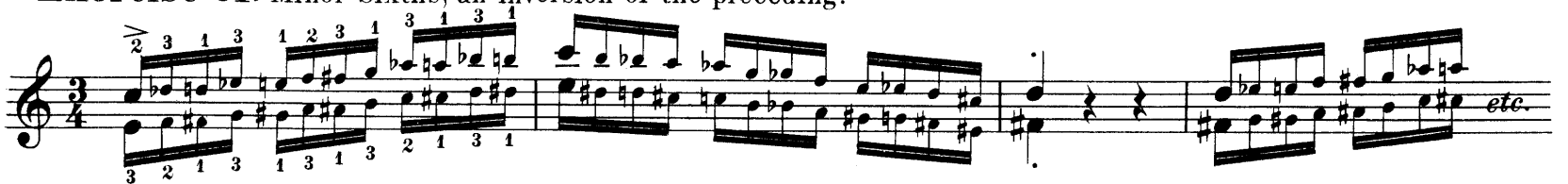
Exercise 59. In Major Sixths. The preceding inverted.



Exercise 60. In Major Thirds.



Exercise 61. Minor Sixths, an inversion of the preceding.



Apply [>]all accents as heretofore indicated.

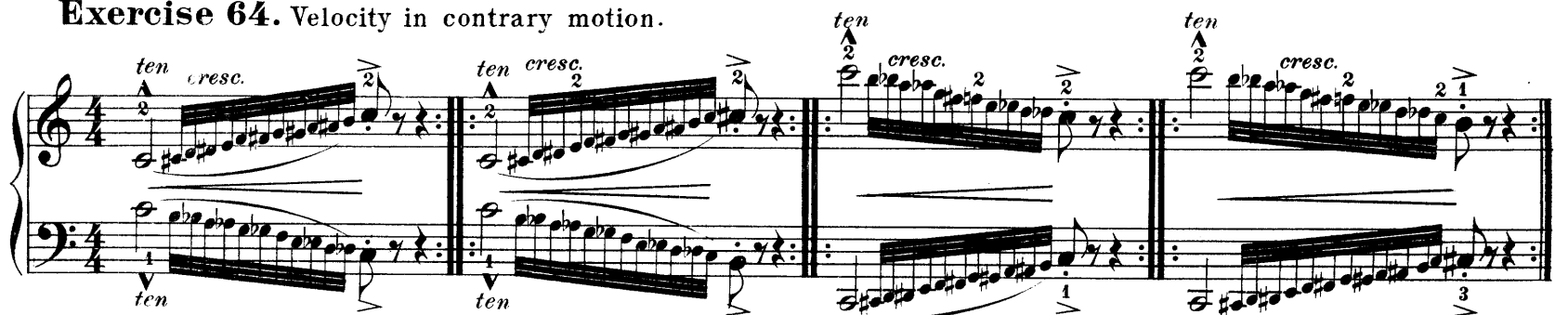
Exercise 62. In Velocity Ascending.



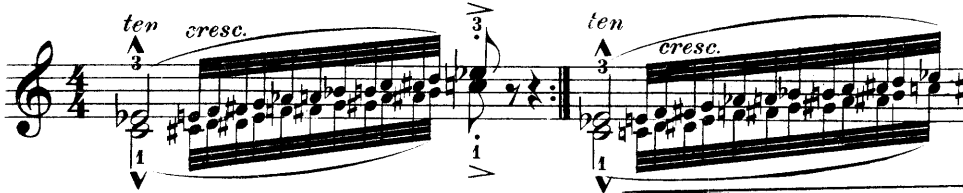
Exercise 63. Velocity Descending.



Exercise 64. Velocity in contrary motion.



Exercise 65. In Minor Thirds.



Descend in like manner.

Exercise 66. In Sixths. Major.



Exercise 67. Major Thirds.



Descend in like manner.

Exercise 68. Minor Sixths.



Note.- All these forms of the Chromatic Scale should be practiced in the order in which they stand, starting from G. This affords different points of departure, and will be found to present new difficulties, which are due, probably, to the fact that the scales in these new positions appear differently on the key board.

Sec 29. The fingering of the single scales depends upon the point selected for employing the 4th finger, which is used once in every octave. If the place of this finger be mastered, all the others will fall in their proper order. The correct fingering is to be retained in all the practice of scales in this system. The prime matters here in view being, first, to form the hand to the key, and, second, to make the fingering certain and uniform. At a later period in the training of advanced pianists

there may be occasion to deviate from this fingering temporarily; but in the early and middle stages of the progress the order of fingering must be rigorously observed.

The fingering of the entire series of major and minor scales may be learned by a child in a few minutes and afterwards remembered, by the following classification and rules. These must be committed to memory when the first scale of the class is taken for practice.

Rules of Scale-Fingering.

Class First: Scales having not more than four sharps in the signature. Scales of C, G, D, A, and E, major and minor.

The careful and thorough practice of the minor scales affords a more thorough discipline for the hand than that of the major scales because in many of the former the black keys occur in different places.

Rule - Right Hand, fourth finger on Seven of the scale.

Left Hand, fourth finger on Two of the scale.

Class Second. Scales having five black keys. Scales of B, F#, C#, D^b, G^b, and C^b, with the minor scales of the same name, or enharmonic with them.

Rule - Right Hand fourth finger upon the uppermost black key of the group of three. Hence upon A# or B^b.

Left Hand fourth finger upon the lowest black key in the group of three. Hence upon F# or G^b.

Class Third. Scales in Flats, having four flats or less in the signature. Scales of A^b, E^b, B^b, and F; with the minors of the same name.

Rule - Right Hand fourth finger upon B^b.

Left Hand fourth finger upon Four of the Scale, except in F, where it falls upon Two.

Scales of the First Class. (See Rule above.) MINOR SCALES. Mixed Form.

The image displays musical notation for six scales of the first class, arranged in three rows. Each row contains a major scale and its corresponding minor scale. The scales are: C major, C minor, G major, G minor, D major, and D minor. For each scale, the Right Hand (RH) and Left Hand (LH) parts are shown on separate staves. Fingerings are indicated by numbers 1 through 5. The C minor scale is shown in both Melodic and Harmonic forms. The G minor and D minor scales are also shown in both Melodic and Harmonic forms. The notation includes key signatures, clefs, and specific fingering instructions for each note.

A major *etc.* **A minor** *(Melodic)* *(5)* *(Harmonic)*

E major *etc.* **E minor** *(Melodic)* *(5)* *(Harmonic)*

Scales of the Second Class. Having five black keys each.

B major *etc.* **B minor** *etc.* *(5)*

G^b major *etc.* **F[#] minor** *etc.* *or 3*

D^b major *etc.* **C[#] minor** *etc.* *or 3*

Scales of the Third Class. (See Rule above.)

A^b major *etc.* **G[#] minor** *etc.*

E^b major *etc.* **E^b minor** *etc.*

B^b major *etc.* **B^b minor** *etc.*

F major *etc.* **F minor** *etc.*

Minor Scales in MELODIC Form.

Minor Scales in HARMONIC Form.

A minor. *etc.*

E minor. *etc.*

B minor. *etc.*

F# minor. *etc.*

C# minor. *etc.*

G# minor. *etc.*

Eb minor. (*D# minor has the same fingering.*) *etc.*

Bb minor. *etc.*

F minor. *etc.*

C minor. *etc.*

G minor. *etc.*

D minor. *etc.*

A minor. *etc.*

E minor. *etc.*

B minor. *etc.*

F# minor. *etc.*

C# minor. *etc.*

G# minor. *etc.*

Eb minor. (*D# minor has the same fingering.*) *etc.*

Bb minor. *etc.*

F minor. *etc.*

C minor. *etc.*

G minor. *etc.*

D minor. *etc.*

Scales in double Thirds.

Sec 30. The scales in double thirds are played mostly by an alternation of two pairs of fingers: R.H. $\frac{3}{1} \frac{4}{2}$; L.H. $\frac{1}{3} \frac{2}{4}$, which are repeated over and over except that in one place in every octave the 5th finger is employed. The place of the 5th finger is therefore the key to the fingering. In the chromatic scales of this form the 5th finger is used twice in every octave.

The most important consideration in practicing these scales is that of preserving the legato. This can be done perfectly both in ascending and descending in the two pairs first mentioned. In one direction the

3d finger is twisted over the 4th, while the thumb is curled under the 2d finger. In the other the same process is reversed. At one place the legato cannot be fully preserved. The fingers $\frac{5}{3}$ are immediately followed by $\frac{3}{1}$, the 3d finger swinging over the 5th as on a pivot. In the opposite direction the 3d finger swings over the thumb, as a pivot. In these cases the legato is to be preserved as closely as possible.

All the forms of rhythm and the Patterns already applied to the single scales should be applied to the double scales.

The image displays musical notation for double third scales in five major and five minor keys: C major, C minor, G major, G minor, D major, D minor, A major, A minor, and E major, E minor. Each key is represented by a pair of staves (Right and Left hands). The scales are written in treble and bass clefs. Fingerings are indicated by numbers 1-5 above or below the notes. The scales are chromatic, moving by half steps. The notation includes 'etc.' to indicate the continuation of the scale. The scales are arranged in two columns, with major keys on the left and minor keys on the right for each row.

B major.

B minor.

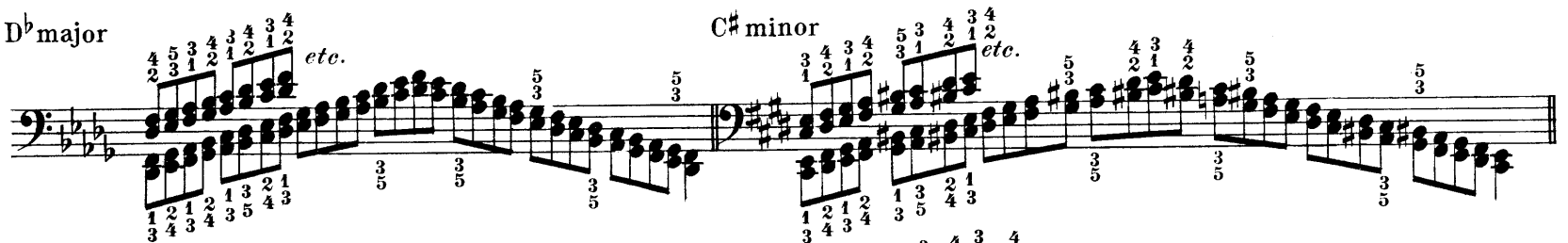


F# major

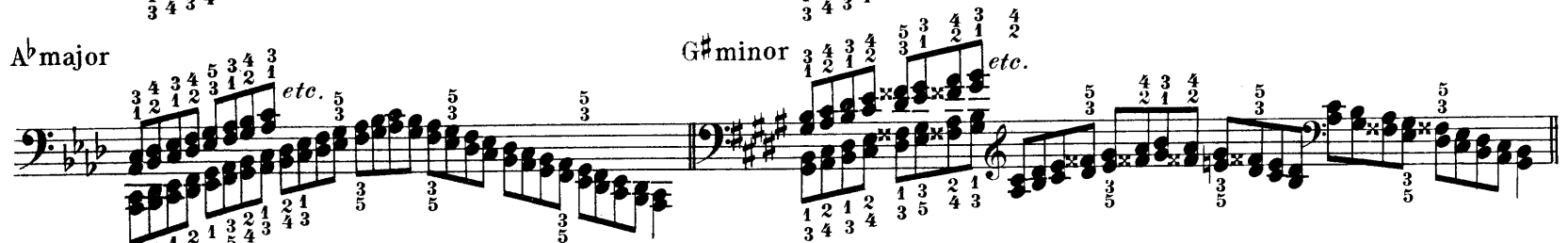
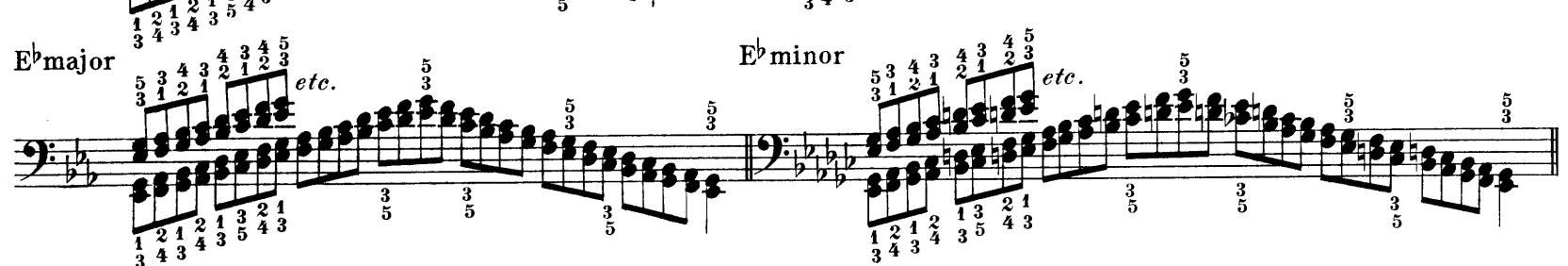
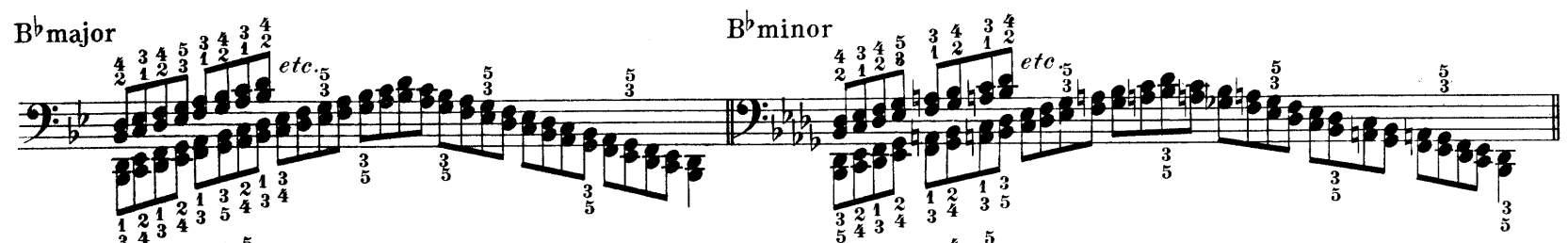
F# minor

D^b major

C# minor

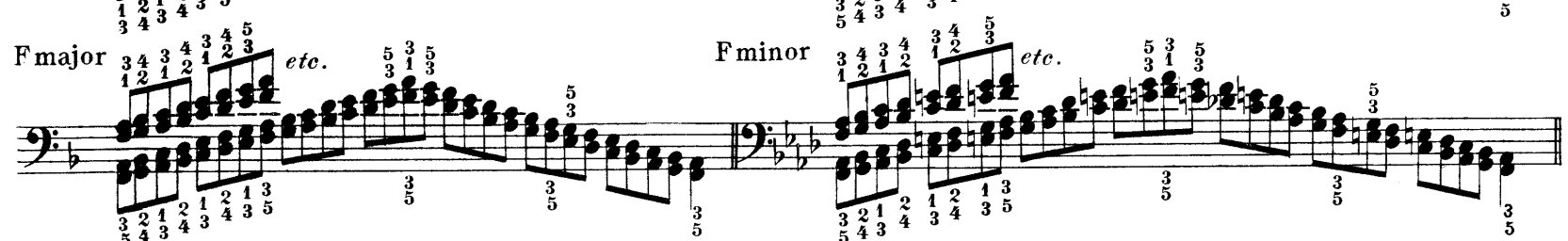
A^b major

G# minor

E^b majorE^b minorB^b majorB^b minor

F major

F minor



Scales in double Sixths.

Sec 31. The scales in double sixths are fingered by an alternation of two pairs of fingers, $\frac{4}{1} \frac{5}{2}$; once in every octave the 3d finger is introduced, giving rise to the succession, $\frac{3}{1} \frac{4}{1} \frac{5}{2}$, the thumb being used twice. In chromatic double sixths this figure occurs twice in every octave.

The legato is to be preserved wherever possible, which

is always the case in at least one of the voices, and half the time in both.

The rhythmic tables in at least two grades if not three, are to be applied to these double scales. Also the velocity forms. This is very important, since many effects in compositions of Chopin and other fine writers turn upon the mastery of these double scale forms.

The image displays ten musical staves, each representing a double sixths scale in a specific key. Each staff is divided into two parts: the left part is in the bass clef and the right part is in the treble clef. The scales are labeled as follows:

- C major**: Bass clef starts on C4, treble clef starts on C5. Fingerings: $\frac{4}{1} \frac{5}{2}$ etc.
- C minor**: Bass clef starts on C4, treble clef starts on C5. Fingerings: $\frac{5}{2} \frac{4}{1} \frac{3}{1}$ etc.
- G major**: Bass clef starts on G3, treble clef starts on G4. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- G minor**: Bass clef starts on G3, treble clef starts on G4. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- D major**: Bass clef starts on D3, treble clef starts on D4. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- D minor**: Bass clef starts on D3, treble clef starts on D4. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- A major**: Bass clef starts on A2, treble clef starts on A3. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- A minor**: Bass clef starts on A2, treble clef starts on A3. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- E major**: Bass clef starts on E2, treble clef starts on E3. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.
- E minor**: Bass clef starts on E2, treble clef starts on E3. Fingerings: $\frac{5}{4} \frac{4}{2} \frac{3}{1} \frac{2}{3}$ etc.

Each scale is written in a 2/4 time signature. The notation includes various fingerings (1-5) and 'etc.' to indicate the continuation of the scale. The scales are arranged in two rows of five.

B major *etc.* B minor *etc.*

F# major *etc.* F# minor *etc.*

Db major *etc.* C# minor *etc.*

Ab major *etc.* G# minor *etc.*

Eb major *etc.* Eb minor *etc.*

Bb major *etc.* Bb minor *etc.*

F major *etc.* F minor *etc.*

Chromatic Scale in Double Thirds.

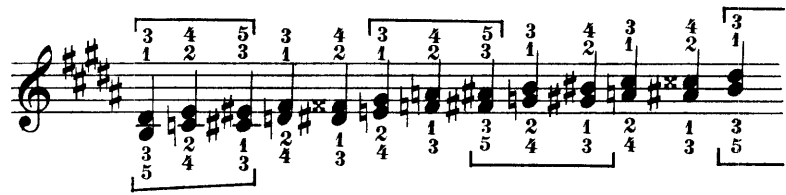
There are several manners of fingering the chromatic scale in double thirds, but in all of them there are leading positions in each hand which determine the fingering, the controlling feature being the succession of the first three fingers upon the sequence of two white keys and the following black. These are what the student must fix in his mind.

Chromatic Scale in Double Major Thirds.

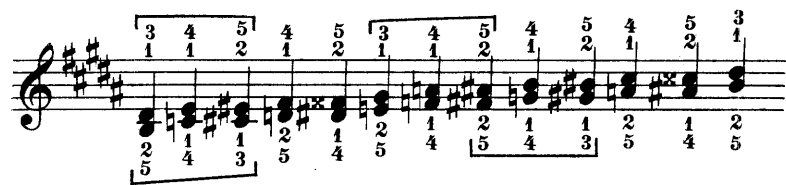
The two leading positions in each octave which determine the fingering are as follows;



By beginning this scale in the Key of B major as follows, the leading positions of fingering are very plainly shown, as included in brackets.

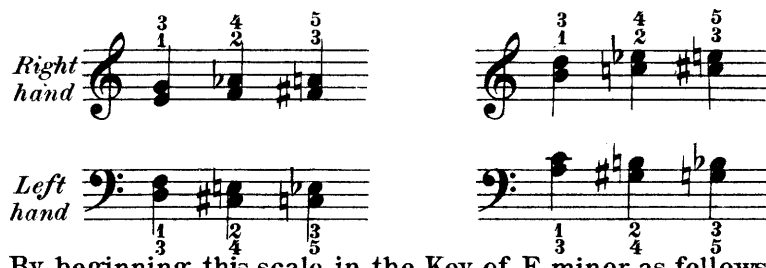


Another fingering commonly attributed to Chopin is as follows; leading positions shown in brackets.

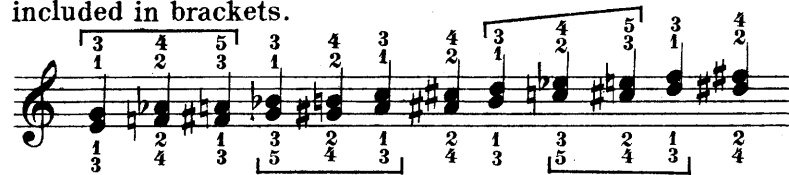


Chromatic Scale in Double Minor Thirds.

The two leading positions in each octave which determine the fingering are as follows;



By beginning this scale in the Key of E minor as follows, the leading positions of fingering are very plainly shown, as included in brackets.



Another fingering commonly attributed to Chopin is as follows.



Yet another fingering which employs the fifth finger less than the preceding.

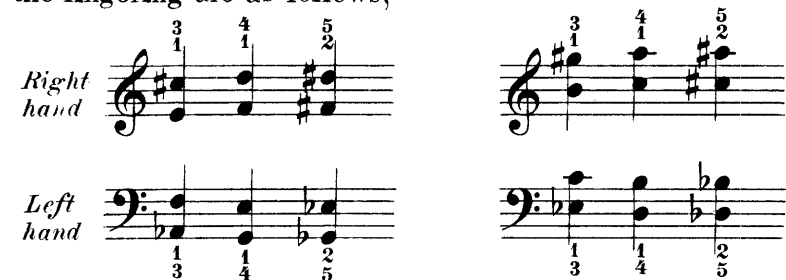


Chromatic Scale in Double Sixths.

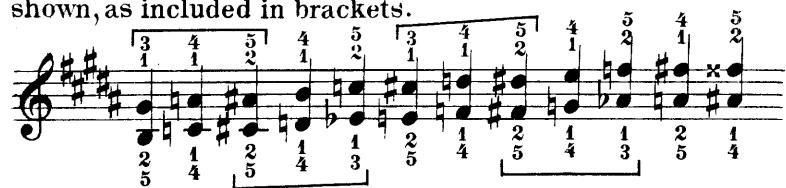
The chromatic scales in double sixths are practicable in only one method of fingering, the essential points of applying which turn upon the selection of the two best places in every octave for employing the third finger. Whenever two white keys occur in succession, as E-F and B-C, the third and fourth fingers are used in connection with them, as shown in the examples below.

Chromatic Scale in Double Major Sixths.

The two leading positions in each octave which determine the fingering are as follows;



By beginning this scale in the Key of G sharp minor as follows, the leading positions of fingering are very plainly shown, as included in brackets.

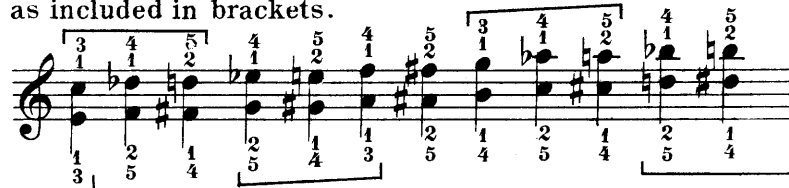


Chromatic Scale in Double Minor Sixths.

The two leading positions in each octave which determine the fingering are as follows;



By beginning this scale in the Key of C major as follows, the leading positions of fingering are very plainly shown, as included in brackets.



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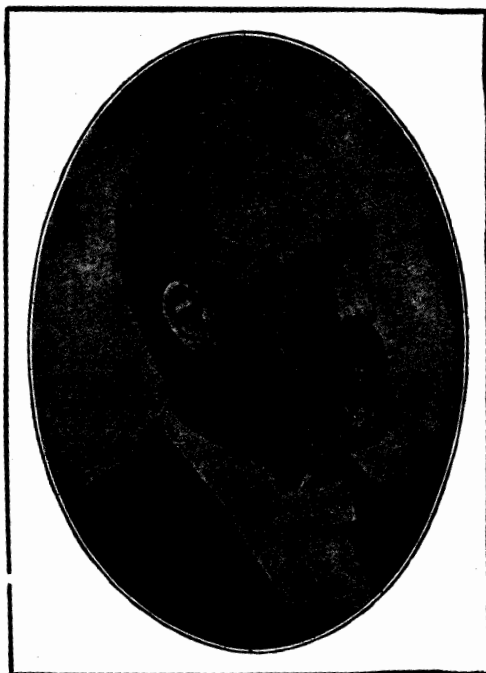
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