Feb. 12, 1924. 1,483,380

S. A. REEVE

MUSICAL NOTATION

Filed July 14, 1919

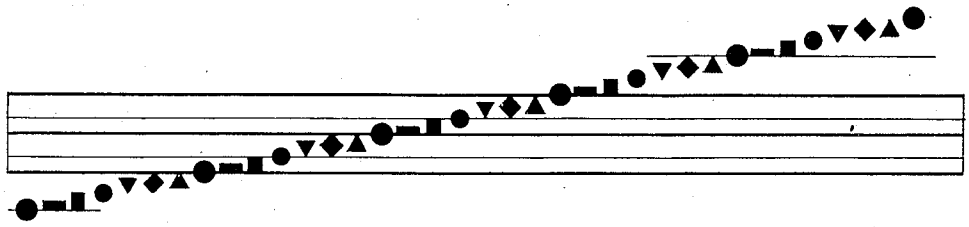


Fig. 1

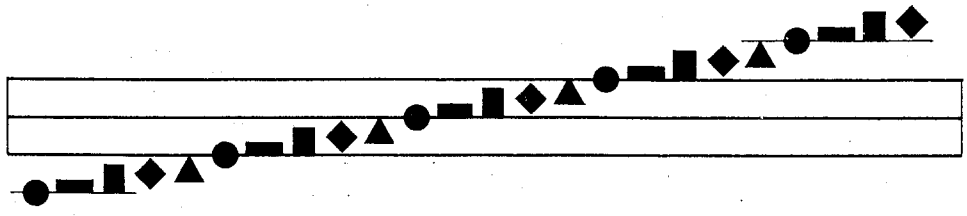


Fig. 2

Sidney A. Reeve Inventor

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UNITED STATES PATENT OFFICE.

SIDNEY ARMOR REEVE, OF NEW BRIGHTON, NEW YORK.

MUSICAL NOTATION.

Original application filed March 6, 1913, Serial No. 752,258. Divided and this application filed July 14, 1919. Serial No. 310,636.

To all whom it may concern:

Be it known that I, SIDNEY A. REEVE, a citizen of the United States, and resident of New Brighton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Musical Notation, of which the following is a specification.

This invention relates to musical notation for stringed instruments. This application constitutes a division of my earlier application filed March 6, 1913, Serial 752,258, from which the matter relating to the pianoforte, organ or orchestral score resulted in Patent 1,313,015, issued August 12, 1919.

In my invention the form of staff employed is based upon the mechanical arrangement of the type of instrument for which the notes are intended. Thus my notation for the pianoforte, the keyboard of which is arranged upon the octave as its basic interval, has a staff having its horizontal lines arranged like the groups of two and three black keyboard-keys which repeat themselves each octave on the pianoforte-keyboard, with a series of mutually contrasted forms of notehead which also recurs each octave.

But in the stringed instruments the basic interval upon which the mechanical aspect of the instrument is arranged is the fifth (for the violin, viola or cello) rather than the octave or, for the bass viol, double bass or contrabass, as it is variously called, the fourth. Therefore my staff for these stringed instruments is correspondingly arranged for a recurrence of certain lines, and of a series of contrasted forms of notehead, once each interval of a fifth in music for the violin, viola or cello, or once each fourth for the double bass.

These contrasted forms of notehead, thus recurring at each interval between adjacent strings, therefore indicate, each by its peculiar form, a certain fingering-point, or invisible fret, on the fingerboard, the pitch of which is indicated by the location of said notehead relatively to one line or another.

In the drawings, Fig. 1 represents music for the violin, viola or cello. Fig. 2 represents that for the double bass. Since my invention relates solely to the indication of pitch, the indication of time being substantially that now usual, the drawings show no note-tails, stems, bars, etc., but only staff and noteheads.

In Fig. 1 the three heavier lines of the staff indicate the three upper strings of the instrument. These strings are tuned in D, A and E for the violin, or in G, D and A for the viola or cello. The lighter lines shown in Fig. 1 are not essential to my invention, but may be employed if occasion requires. The pitch-distinction between Figs. 1 and 2 is to be indicated upon the regularly published music by the appearance of the word "violin", "viola" or "cello" respectively, printed upon each page, or by other suitable symbol aside from the staff itself. Fig. 1 also shows two lighter lines intermediate between the heavier, open-string lines, indicating a minor third above the open string; but these secondary lines, while of aid to beginners, are not necessarily a part of my staff and may be omitted as in Fig. 2. In Fig. 2 the three lines indicate the three upper strings of the four-stringed double bass, tuned in A, D and G respectively.

In both figures appear, upon occasion, extra lines outside the staff proper, recurring at the pitch-interval and space-interval separating adjacent heavy lines of the staff itself. These lines are called guide-lines. It is a feature of my invention that one such guide-line, in combination with its series of mutually contrasted noteheads now to be described, suffices to determine the pitch of every note in the series, or of every half-tone throughout the interval in question. Hence one such a guide-line, with its series of notes, amounts in effect, in my system, to a staff, so far as the pitch-interval in question ranges.

In each figure the several half-tones of each basic pitch-interval are indicated by contrasted forms of notehead, arranged in such a way that no two adjacent half-tones are indicated by similar forms. For instance, the open string is indicated, in the drawings, by a circular notehead. In Fig. 1 this form recurs at a minor third above the open string—although with the circle preferably of a smaller diameter than for the open string. In Fig. 2 this form does not recur until the next open string is reached, or until an interval of a fourth has been passed.

The selection of any particular set of contrasted notehead-forms, such as that illustrated in the drawings, is of secondary importance to the general features already

described, but the particular arrangement illustrated has these following advantages. In the "first" position of the hand on the fingerboard of the violin, viola or cello, the full tone above the open string is played by the first finger, and the half-tone above the open string by this same finger somewhat distorted, or flatted. The use of an upright rectangle for the full tone, with a flattened rectangle for the half-tone, indicates most graphically to the player the act needed to produce the pitch in question.

Similarly, the fourth above the open string is played upon the violin or viola by the third finger, and upon the cello by the fourth finger, with the half-tone above or below often reached by a distortion of that finger for that purpose. Therefore the use of an oblique square or diamond-shaped notehead for the interval of a fourth above the open string, with a triangle pointing downwards for the half-tone below (or the major third above the open string) and one pointing upwards for the half-tone above, is of like graphic aid to the player, in his efforts to select the act needed to produce the pitch desired.

Again, the one position of the hand used most commonly after the first position, by learners upon the violin or viola, is the "third," with the first finger stopping the string at an interval of a fourth above the open string. In this position the second finger stops the string at a pitch in unison with the next open string above, while the fourth finger plays what would be played by the second finger in the "first" position on this string above. In other words, in shifting from one of these two most common hand-positions to the other, the second and fourth fingers (with the open string as an equivalent of the latter) interchange functions, and so do the first and third fingers.

Therefore it is of aid to the player to have the notehead-forms for the open string, the minor third above and the fifth above, of similar shape, such as circles (possibly of differing diameter), or as circle and ellipse respectively, or as oblate and prolate ellipse respectively (as at *a* and *b*, Fig. 1), while the full-tone and fourth intervals above the open string are indicated by forms contrasted with those just mentioned, but similar with each other, such as the squarely and obliquely set rectilinear forms shown in Fig. 1. It is also of incidental advantage that the octave from the open string is indicated, in Fig. 1, by an oblique square, which is a form more like to the circle used for the open string than is any other rectilinear form shown. For the octave, while not the basic pitch-interval in the mechanism of the stringed instruments, has a musical importance which is only secondary thereto in the performance of more difficult music.

Speaking more generally of all four instruments covered by the drawings, the arrangement of the contrasted forms of notehead in a series which recurs but once each pitch-interval between the strings of the instrument in question results in the fact that each form of notehead comes to indicate an invisible, intangible fret crossing the fingerboard of the instrument, beneath all four strings. Thus the player, upon seeing any one of these specific forms of notehead, will recognize it as indicating a certain position on the keyboard, regardless, for the moment, of the exact string concerned. This leaves to the player, in order to achieve the proper pitch, only the task of selecting the proper string—an act in which there is virtually no possibility of error. Since, in playing any stringed instrument—and especially the cello or double bass, whereon the span of the hand covers only a fraction of the pitch-interval between one string and the next, whereas on the violin or viola it covers that entire interval—the great difficulty is to determine just which hand-position will cover the next few notes, and then to calculate by a rapid mental arithmetic the particular finger which, in that hand-position, will stop the string at the desired pitch, this system of intangible frets, each distinguished by a characteristic form of notehead, is of great aid to the player.

It will be noted that the position of the notes on the staff, in their vertical relation to the lines, is roughly proportional to the pitch indicated, the notes (measured at the center of area of the notehead) progressing upwardly on the staff as they do in pitch, half-tone for half-tone.

I claim:

1. In a musical notation for stringed instruments having equal pitch-intervals between its several strings, the combination of a blank, horizontal lines thereon forming a staff, the lines of which indicate the open strings, with a series of contrasted forms of note-head recurring once in each said pitch-interval, one form for each half-tone, the vertical position of the noteheads on the staff progressing with the pitch, substantially as described.

2. In a musical notation for stringed instruments having equal pitch-intervals between its several strings, the combination of a blank, lines thereon forming a staff, the said lines indicating the open strings, with a series of contrasted forms of note-head recurring once in each said pitch-interval, one form for each half-tone, substantially as described.

3. In a musical notation for stringed instruments having equal pitch-intervals between its several strings, the combination of a blank, lines thereon forming a staff the lines of which indicate the open strings, with

curviform noteheads for the notes of the open string and the third above it, and rectilinear noteheads for a whole tone and fourth above it, substantially as described.

4. In a musical notation for stringed instruments having equal pitch-intervals between its several strings, the combination of a blank, horizontal lines thereon forming a staff, the lines indicating the open strings, with a circular notehead to indicate the notes of the open string, a recumbent rectangle to indicate the note a semi-tone above that of the open string, an erect rectangle to indicate the next half-tone above that, a curviform notehead to indicate the minor third above the open string, and a triangle touching the next line above to indicate the half-tone next below said upper line, substantially as described.

5. A musical notation for stringed instruments having equal pitch-intervals between its several strings, comprising a blank, a staff of lines thereon having a line for each string of the instrument except the lowest one, and a series of different forms of notehead, one form for each half-tone of the series, the said series recurring at each said pitch-interval, substantially as described.

6. A musical notation comprising a blank, lines thereon forming a staff and indicating by their lateral separation certain pitch-intervals, and noteheads of contrasted form associated with said lines in such manner that the distance of the center of area of each notehead from the lines progresses with the pitch indicated by said notehead, substantially as described.

7. In a musical notation for stringed instruments having equal pitch-intervals between its several strings, the combination of a blank, lines thereon forming a staff and indicating by their lateral separation the said-pitch-intervals, each line indicating an open string, with a plurality of series of contrasted forms of notehead, one form for each half-tone in said pitch-interval, each series extending from one of the lines to the next and progressing with the pitch, the order of recurrence of the said forms with advancing pitch being the same in each of said series, substantially as described.

Signed at New Brighton, Staten Island, in the county of Richmond and State of New York, this tenth day of July, A. D. 1919.

SIDNEY ARMOR REEVE.

Witnesses:
A. L. Schwab,
Mildred Kahn.