S. A. REEVE.

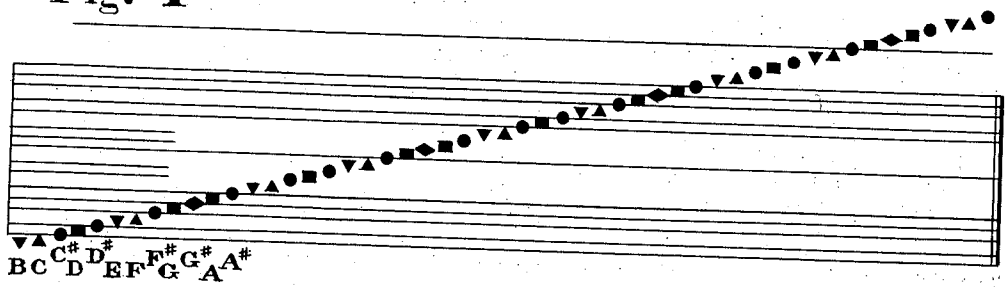
MUSICAL NOTATION.

APPLICATION FILED NOV. 23, 1918.

1,313,015.

Patented Aug. 12, 1919.

Fig. 1



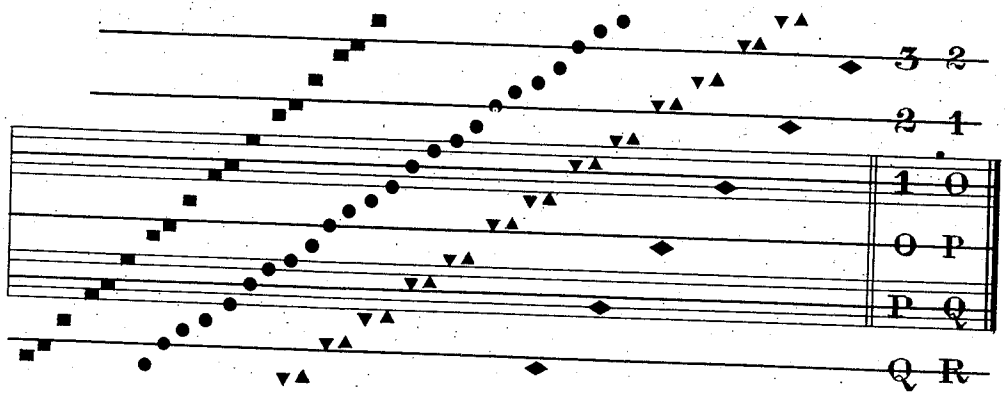


Fig. 2

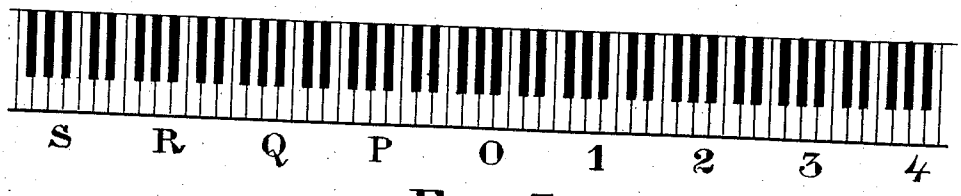


Fig. 3

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UNITED STATES PATENT OFFICE.

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MUSICAL NOTATION.

1,313,015. Specification of Letters Patent. Patented Aug. 12, 1919.

Continuation of application Serial No. 752,258, filed March 6, 1913. This application filed November 23, 1918. Serial No. 263,875.

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 Notations, of which the following is a specification.

This application forms virtually a renewal of my earlier application filed March 6, 1913, Serial No. 752258.

My invention relates to musical notation for the pianoforte, organ or orchestra. Its object is to facilitate the type-setting, engraving, printing and reading of music, the use of musical typewriting, the musician's interpretation of the printed notes into musical sounds, and the transition of popular use from the system now virtually universal to a better one. Thus, while its immediate object is to simplify the system of symbols so as to show the eye with the least mental effort not merely the pitch desired, but also the mechanical means to be taken to produce that pitch in sound, yet its ultimate and all-important object is to select that combination of symbols which will make it practicable for the musical public to step from the old system to the new—lacking which feature no suggestion for an improved notation can be of use.

In my system of musical notation each type of instrument is to have its own peculiar staff and notation, arranged to follow the mechanical peculiarities of that type of instrument, so as to lead the mind of the performer as directly as possible toward the action requisite for producing any desired note. Orchestral scores, however, may preferably follow the notation of the pianoforte, with which instrument the majority of musicians are familiar, and the tempered scale of which forms the basis for all study of harmony; and for special purposes other sorts of music may follow my pianoforte-notation. But in general, this present invention relates only to music for pianos, organs or orchestral scores, the application of the same general idea to other instruments being the subject of other applications for Letters Patent.

My invention relates only to the means for representing pitch, those for representing time being, so far as practicable, similar to those now ordinarily employed.

In the drawings, Figure 1 shows a great staff of my music, with a chromatic scale extending over four octaves.

Fig. 2 shows a great staff extended by one special or "guide" line per octave to cover six octaves. On this staff the four forms of notehead shown in Fig. 1 are segregated into four groups, to show their determinativeness of pitch when relying upon only a single line per octave, and also their special relationship with others of their own form. In Fig. 2 the A-sharp line of each octave is drawn heavier than the others, but Fig. 1 shows that this is not an essential feature.

Fig. 3 is a diagram of the pianoforte-keyboard, showing an arrangement whereby the significance of the staff may be shifted by one or more octaves, when desired.

My invention consists in part of a particular form of staff, consisting of sets of five horizontal lines, each set grouped in two and three, which suggests to the eye the appearance of the piano-keyboard, with its black keys spaced in sets of five per octave, each set grouped by two and three. On this staff the note representing each key of the piano-keyboard has a separate and distinctive location, either on a horizontal line or relatively to such a line, corresponding to the lateral position of the keyboard-key in question relatively to the adjacent black keys of the keyboard. In further part, my invention consists in the combination with this staff of an assortment of contrasted forms of notehead, each form adapted peculiarly for its particular location on the staff, and the particular relationship to its fellows, in which it is used. In this great staff each octave of keyboard is allotted an equal space vertically, and within this space are located the set of five lines (or sometimes a single line representing the five) corresponding to the five black keyboard-keys of that octave, each line representing one of the five black keys. In certain octaves four of these lines may be omitted, with resultant gain in clearness, leaving only a single "guide-line," as it may be called, to represent the five.

More particularly, the double or great staff, similarly with that now familiar to piano-players, would preferably be made up, in my system, of two such sets of five lines, separated vertically by a space just sufficient (allowing space for the white keyboard-keys at the top and bottom of each octave-group

of black keyboard-keys) for a third intermediate set. Thus this great staff represents proportionately, in vertical spacing, the horizontal spacing of three octaves of black keyboard-keys, and resembles them in appearance, as is apparent from the left-hand end of Fig. 1. But preferably, for clarity to the eye, all of the lines of the intermediate octave or set, except the middle or guide line for that set (either the line for F-sharp or that for A-sharp, according as Fig. 1 or Fig. 2 is followed) are omitted. It is a feature of my invention that the forms of notehead are so adapted to their positions relatively to the horizontal lines, and to each other, that one such guide-line per octave suffices to indicate the pitch with no possible doubt, whether in this intermediate octave of the great staff or in the octaves above or below it. While leger-lines may be used in my system upon occasion, as in exercises for beginners or for other reasons, yet one of the advantages of my invention is the usual elimination of all leger-lines.

Upon such a staff the pitch of each note is determined, once for all, whatever may be the key of the composition, by its vertical location—the eye's sense of vertical location being aided, as is desirable, by the peculiar form of notehead. Each location bears always the same form of notehead, and each location, with its peculiar form of notehead, means always the same pitch, regardless of the key in which the music may happen to be written. A note on a line, or one indicating by its form and position that it would lie on a line were that line present, means always the note played by the corresponding black key of the piano-keyboard. A notehead between two lines, or indicating by its form such a position were the lines all present, means always the note played by the white keyboard-key lying between the black keyboard-keys corresponding to the lines in question.

In order to aid the eye, to certain locations upon the staff are assigned forms of notehead peculiarly adapted for visibility in that position, and for indication of the act to be performed by the player. Instances of this are the triangular noteheads assigned to B, C, E and F in my system. Here the form of the notehead combines contiguity with the line with clear visibility distinct from it, while the apex of the triangle, pointing up or down, as the case may be, indicates automatically to the performer whether the upper or the lower of the pair of white keys involved is to be played. This proper combination of form of notehead with locality on the staff, and, as appears from Fig. 2, with its fellow noteheads, results in simplicity and lucidity.

I am aware that suggestions have been made for a staff representing, in one way or another, the appearance of the piano-keyboard; but such suggestions have been quite distinct from the plan of representation disclosed herein, and are impracticable. I am also aware that suggestions have been made for the use, upon the ordinary staff, of twelve different forms of noteheads, one for each half-tone of the octave; but such an array of different noteheads is too confusing to the eye and mind, and too lacking in consonance with the staff upon which they are used, to be of help. My invention consists not alone of a staff which of itself is useful, from its graphic and clear representation of the spacing of the piano-keyboard, but in the combination therewith of as few different forms of notehead as may be consistent with having a distinct form to correspond to each of the different and contrasted sorts of location upon the staff or keyboard. These sorts are four in number, namely: (1) a white key with a black key contiguous upon either side, which I prefer to represent by a rectangular notehead, which form best fits a space between two lines. (2) A white key having a black key contiguous on one side and a white key on the other, which I prefer to represent by a triangular notehead, with its apex pointing toward the line representing the contiguous black key. (3) A black key having a pair of white keys as its neighbors on one side, which I prefer to represent by a circular notehead. (4) A black key in the middle of a group of three black keys, which I prefer to represent by a diamond-shaped notehead, or oblique square, with its apexes pointing vertically in both directions. The forms of notehead may be varied, but those illustrated will be found to be well adapted for the purposes stated.

The proper interrelation between form of staff and form of notehead may be attained by attention to the following rules or principles of selection, which principles I believe to be novel, namely: (A) The form of notehead is to suit its position upon the staff as to legibility, by using on the lines only forms having their maximum width at mid-height, as the circle, the diamond of the oblique square, by using between the lines only square or rectangular noteheads, of equal width up and down, and by using for positions adjacent to a single line a form touching the line at one point but having the bulk of its area apart from the line; (B) adjacent half-tones shall not be represented by like or similar forms of noteheads: (C) in the open spaces of the great staff, where there is preferably only a single guide-line per octave, no two noteheads of similar form shall occur within sufficient propinquity to confuse the eye or mind as to the pitch intended; (D) the number of different forms of notehead shall be kept to the minimum consistent with the foregoing principles.

The combination of staff and noteheads indicated by these rules and illustrated by the drawings forms a notation much easier of legibility by adults of limited technique or defective eyesight, and of comprehension by beginners, than is ordinary music. The absence of clefs, signatures, and accidentals saves space, makes publication cheaper and makes typesetting or typewriting in music practicable where now it is impracticable. Yet its general appearance is not so dissimilar from ordinary music as to make it impracticable of adoption, as is true of all suggestions for an improved musical notation hitherto disclosed.

In my system the three octaves represented by the great staff may preferably be assumed, when no indication to the contrary appears, to be the middle three octaves of the piano-keyboard, namely, from the F which may be played upon the C-string of the violoncello to the E of the open E-string of the violin. But for special purposes, or for orchestral scores, it may become desirable to shift the significance of any set of five lines (or corresponding space) of my staff, up or down, by an interval of one or more octaves. For this purpose a large symbol may be placed upon the staff, as illustrated at the right-hand end of Fig. 2, indicating octaves upon some such a system of letters and numbers as is illustrated in Fig. 3, in which the set of five black keyboard-keys marked O is the middle one of the piano-keyboard, the octaves or sets to the right being marked by numerals and those to the left by letters.

In Fig. 1 the staff for each octave extends from C below to B above, with the line for F-sharp used as the single middle or guide line. In Fig. 2 the octave of each staff extends from F below to E above, with the line for A-sharp used as the single middle or guide line. Either method embodies my invention. Fig. 2 also shows the single line of each octave drawn heavier than the others, to aid the eye in distinguishing octave-intervals; but this is not necessarily a feature of a staff such as that of Fig. 2, as distinguished from Fig. 1.

Fig. 1 illustrates how principles "A" and "B" stated above may be observed in the selection of notehead-forms to suit the various locations upon the staff, while Fig. 2 illustrates how principle "C" may be observed, while both figures illustrate principle "D." But other selections of notehead-forms than those illustrated, and other omissions of certain lines from those corresponding with the black keyboard-keys than those illustrated, may be used without departure from my invention.

I claim:

1. A musical notation comprising a plurality of horizontal lines spaced like the black keys of a piano-keyboard through a range of three or more octaves, two non-contiguous octaves being represented by five lines each and the other octaves by only a single line each, substantially as described.

2. A musical notation comprising a plurality of horizontal lines spaced like the black keys of a piano-keyboard through a range of three or more octaves, a predetermined black key of each octave being represented by a heavy line alone, while other octaves are also represented by lighter lines corresponding to their four remaining black keys, substantially as described.

3. In musical notation, a staff of horizontal lines, each line indicating a black key of the piano-keyboard, in combination with curved forms of notehead on the lines to indicate the black keys of the keyboard, and angular noteheads between the lines to indicate the white keys of the keyboard, substantially as described.

4. In musical notation, a staff consisting of horizontal lines spaced like the black keys of the piano-keyboard, each line representing a black keyboard-key, in combination with three contrasted forms of notehead representing respectively a black keyboard-key, a white key between two black keys, and a white key between white and black keys, each form adapted for legibility in its peculiar place upon the staff, substantially as described.

5. In musical notation, a staff consisting of horizontal lines spaced like the black keys of the piano-keyboard, each representing a black keyboard-key, in combination with noteheads indicating respectively a black keyboard-key, a white key between two black keys, and a white key between white and black keys, of circular, square and triangular forms respectively, substantially as described.

6. In a musical notation, a staff of five horizontal lines, grouped in two and three, indicating the five black keyboard-keys of an octave of piano-keyboard, in combination with one form of notehead used in the spaces between the lines of a group, a contrasted form of notehead used on the lines, and a third contrasted form of notehead used in the spaces between groups, substantially as described.

7. A musical notation comprising a plurality of horizontal lines relatively spaced like the black keys of a piano-keyboard, and noteheads of different shapes to indicate the different notes of an octave, substantially as described.

8. A musical notation comprising a plurality of horizontal lines relatively spaced like the black keys of a piano-keyboard, with rectangular noteheads to indicate the notes A, D and G natural, triangular noteheads to indicate the notes B, C, E and F

natural, round noteheads to indicate the notes A-sharp, C-sharp and F-sharp and diamond-shaped noteheads to indicate the note G-sharp, substantially as described.

9. A musical notation comprising a plurality of horizontal lines relatively spaced like the black keys of the piano-keyboard through a range of a plurality of octaves, the middle black key of each octave being represented by a single line alone, certain octaves being also represented by lines corresponding to their four remaining black keyboard-keys, consecutive octaves, counting in one direction from the middle octave of the keyboard, being denoted by consecutive letters and in the other direction by numbers, substantially as described.

10. A musical notation comprising equidistant horizontal guide-lines, one for each octave of the piano-keyboard, each guide-line representing the same black keyboard-key of its respective octave, with note-heads spaced in vertical relation to the guide-lines as the keyboard-keys which they indicate are spaced in horizontal relation to said black keyboard-keys, said noteheads being of five contrasted forms, with no two contiguous half-tones indicated by the same form, substantially as described.

11. In musical notation, a staff composed of horizontal lines spaced like the black keys of the piano-keyboard, in combination with noteheads having their maximum width at mid-height used on the lines, noteheads of uniform width used in the single spaces between lines, and noteheads having their maximum width farthest away from the line to which they are contiguous used in the double spaces between lines, substantially as described.

Signed at New York, in the county of New York and State of New York this 22nd day of Nov. A. D. 1918.

SIDNEY ARMOR REEVE.

Witnesses:
J. C. DALE,
J. BLAKE KELLOGG.