This invention relates to a device for making transpositions of music. In music transposition, it is necessary to transpose from one given key to another, for a particular instrument. This generally involves certain difficulties, inconveniences, and losses of time. In this connection, instruments for which music must be transposed are the so-called transposing instruments, such as a clarinet, a cornet, trombone, and French horn. Instruments in the concert key or the key of C, such as violins and other string instruments, piano, and the human voice, play or sing music as written without the need of transposition.

The present invention has as its object the provision of a relatively small, easily workable device, capable of manufacture at a very low cost, that will permit the necessary transpositions to be made swiftly and easily. A further object is to provide, for use in association with the slide device, a plurality of chord adapters, capable of use in locating, identifying, inverting, and transposing chords of various types and combinations.

Another object is to provide a slide-type transposing device which will differ from generally similar devices previously devised, in that it has three identical strips of scales exactly like a piano keyboard, arranged in an extremely simple way, to permit manufacture at a very low cost, as distinguished from devices previously conceived for the same purpose, which tend to be of a complexity such as to prevent their being used commercially.

Another object is to provide a device of the character stated that will use the chromatic or twelve-tone scale, giving each tone, whether it be a whole tone or accidental, equal value and space in the scale. By this means, it is proposed that an otherwise uneven progression will become an even step scale, thereby simplifying transposition to a marked degree, by permitting transposition to be carried out by merely measuring the amount of displacement between one scale and the other. Devices previously conceived for the same purpose, it has been noted, do not expose accidentals in a given key visually in the manner in which the present invention does.

Another object is to provide, in a device of the type stated, means that will further facilitate transposing for instruments, in particular brass instruments such as those indicated above, which means will show the fingering required for a given note opposite the same on a fixed scale of the device, while also showing notes on a movable scale that would be played by the fingering indicated in registration with particular indicia of the movable scale.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure:
each edge, however, elongated, inwardly extending transparent areas providing sight windows. As will be observed, the windows are not uniformly spaced along each edge, and are located in different locations along the several edges of each plate. This is so that each edge portion can be used, selectively to locate the windows.

The chord adapters are shown properly positioned in Figs. 7 and 8.

The chord adapter of Fig. 7 has legends along three sides thereof, as follows: "minor seventh" (on being the legend in use in Fig. 7); "major 7"; and "diminished seventh." Along the fourth edge are the following notations: "octave"; "leading tone"; "super dominant"; "dominant"; "sub-dominant"; "mediant"; "super tonic" and "tonic." There are no windows along said fourth edge.

The other chord adapter shown in Fig. 8 has windows along all four edges, with the following legends: "major triad" (this being the legend in use in Fig. 8); "diminished triad"; "minor triad"; "augmented triad." The manner in which the chord adapters are made can be varied. In the illustrated example, however, which is a preferred one, each chord adapter has a body composed of flat, clear plastic laminations between which is disposed a sheet on which the several legends are placed. The sheet is opaque except for the locations of the windows, where the sheet can be cut out, so as to provide full transparency at the window areas.

This window is desirable in that it provides for transparent windows at the edges without at the same time requiring notching of the plate, such as would be necessary if the windows were defined merely by recessing the plate at its edges.

In Fig. 10, there is shown another form of the invention, which is identical to the first form except for the fact that instead of the strip 18, there is provided a strip 18a. This strip is used as an additional aid for use in transposing for instruments, particularly the brass instruments. In this form of the invention, the strip is subdivided in a manner to provide representations of the French horn (any key) for notes on the top line. Thus, there is provided a plurality of series following one another continuously for the full length of the strip 18a.

Each series includes the following indicia: $\frac{3}{4}, 1, 1, 0, \frac{3}{4}, 1, 1, 0, \frac{3}{4}, 0$.

As will be seen, the transposing scale is composed of three identical strips, the outer two fixed rigidly to the body of the scale and the center strip attached to a movable slide. Each strip is divided into units of equal size representing half steps on the music scale exactly as one would encounter by starting at middle "C" on the piano and playing each key (both black and white) through an octave or more. By using letters on the white spaces, the names of the notes are represented and the intervening black spaces would therefore represent the corresponding sharp or flat for the adjacent letter notes. By placing middle "C" on the center scale so that it is registered with a given space on the outer fixed scales, the accidentals (sharps or flats) of the scale in the key so selected will automatically become apparent because the black blocks or spaces will not line up for certain notes. If these black spaces have the tops and bottoms offset to the left with respect to the center scale, the accidentals should be read as sharps. This process can be used to tell the accidentals of any given key, or to tell the key of given accidentals by moving the center slide until the desired black spaces are offset (left for flats and right for sharps) and the key of the scale will be on the outer fixed strips opposite the letter "C" on the center slide scale. This procedure applies to all major scales.

For minor scales, the above procedure applies with the exception that "A" should be used for the guide note on the movable center slide instead of the "C." If the modified minor scale is required, use "D" as guide note on the center scale. The logic behind the use of the above guide notes is as follows: in the key of "C" major, half steps occur between the 2nd and 3rd and the 7th and 8th notes. The standard minor key has half steps between the 2nd and 3rd and the 5th and 6th notes. The modified minor scale has half steps between the 2nd and 3rd and the 6th and 7th notes. Therefore, when "A" is placed between the letter "C" on the outer scales, the half steps occur, starting with the C-A-C alignment, half steps occur between the 2nd and 3rd notes (E and F) and the 6th and 7th notes (B and C).

One may set the center index slide so that the letter representing the initial key is positioned exactly abreast the letter on the outer fixed scales which represents the new key to which the original key is to be transposed. One now locates any desired note on the center slide and reads its transposed value directly on the outer fixed scales.

For example, to transpose for cornet in B flat from piano music in which is the key of "C," one sets center index slide so that the "C" on the slide is opposite the black space between the "A" and "B" notes on the outer scales (see Fig. 3). This black space represents the note "A" sharp or "B" flat. Music that is printed as "C" for the cornet should be played as B flat on the piano to be in unison. The note "A" on the cornet would be "G" on the piano, etc.

Due to the fact that the transposing slide is composed of equal spaces equivalent to half steps on the scale of the piano and all three strips are identical, the accidentals (sharps or flats) become of equal importance with respect to the so-called whole note tones of the scale and automatically appear in their proper place during transposition.

This is not possible if transposition is tried by counting up or down so many notes, lines or spaces on the music staff. For example, B flat on the cornet would become A flat on the piano, and C sharp on the cornet would become B natural on the piano.

Another example of transposing is given in Fig. 4. To transpose for French horn from the key of "F," one sets center index slide letter "E" opposite the letter "E" on the outer fixed slides. Music written for French horn in "E" and played on a French horn in "F" would be as follows: The note "C" printed on music for the horn in "E" would be played as "B" natural on the horn in "F." The note "A" printed on music for horn in "E" would be played as "G" sharp on the horn in "F." These examples hold true for transposition of music from any given key to another for any instrument in music transposition.

Instruments for which music must be transposed are the so-called transposing instruments such as the clarinet, cornet, trombone and French horn. Instruments in the concert key or the key of "C," such as violins and other string instruments, piano and the human voice, play or sing the music as written without the need for transposition.

Whenever an 8-note scale (Do-Re-Mi-Fa-Sol-Lo-Ti-Do) is started on any note but "C," this scale is said to be in the key of the note represented by "Do." Therefore, a major scale in the key of "C" would be found on the white keys only of the piano and would have no accidentals (sharps or flats). A major scale started on any other note such as B flat, will have accidentals, and in the case of the key of B flat major, there will be two flats, viz., B flat and E flat.

To demonstrate this (see Fig. 5) one may set the center index slide of the transposer so that the letter C is opposite the B flat on the outer scales. The two
black lines which do not match straight across are found between the letters a and b and d and e on the outer scales, and since they are displaced to the left with respect to the center scale, they are flats. Music so written and intended for piano or violin in the concert pitch of "C" will not be in unison with the French horn or cornet if played by these instruments without first being transposed to their respective keys. This double transposition is the stumbling block for most persons attempting to transpose such music mentally.

The slide transposing scale constituting the invention eliminates this difficulty and the usual errors, for as can be seen from the foregoing examples, music in the key of B flat major having B flat and E flat in the key signature is transposed to the key of "C" by transposing by this device, has the accidentals automatically converted into their proper place in the new key and no further corrective steps need be taken.

For example, as seen in Fig. 6, the scale in concert pitch which is the "Grave" of the French horn in "F" would involve setting the letter "F" on the center slide opposite B flat on the outer scales. One reads as follows:

Concert pitch scale: Bb-C-D-E-F-G-A-Bb
French horn scale: F-G-A-Bb-C-D-E-F
This demonstrates how the scale of B major in concert key pitch is transposed for French horn in the key of "F" so that the two flats of the B major scale are automatically compensated for by the slide transposing device.

It is important to note that it is not necessary to continuously make adjustments on the device in transposing, once it is set for a given key combination. Any note encountered in the musical scale can be transposed at a glance without changing the setting so long as the key does not change, since the device covers approximately four octaves of notes and their accidentals. Of course, when it is desired to transpose for a different instrument requiring a different key setting, then the slide must be changed.

The chord adapters are an adjunct to the transposing slide device. They can be used to locate, identify, invert and transpose chords of various types and combinations. Chords are classified according to their composition and as to their position of origin on the scale. The varied combinations of half steps within a chord between the individual tones composing the chord are responsible for the need of the composition names such as Perfect, Major, Minor, Augmented, and Diminished. The steps of the scale are given specific names to identify a chord having for its tonic, perfect, or bottom note, in root position starting on that step.

These steps names are positioned on one of the chord adapters so that when the tonic position is lined up with the "C" on the scale of the transposing slide, all letters of the scale are named including the next letter "c" which is the "Grave" of the French horn at the first. When the chord adapter is so placed, it is apparent that in the key of "C" a Dominant chord would start on "G." Using the Minor Seventh side of the adapter, one places it across the three scales of the transposer so that the printed words "Minor Seventh" lie approximately over the bottom fixed scale of the device and the left edge lies adjacent to and exposes the line of "G's." The clear windows then will then show the Dominant Seventh Chord to be, reading left to right, "G-B-D-F." If it is desired to know this chord in a different key, all that is required is to move the center slide until the letter or space representing that key is positioned between the "C" on the outer fixed scales, one then reads the transposed chord directly under the original chord through the transparent windows. For example, as seen in Fig. 7, the above Dominant Seventh Chord would appear as follows for the key of "D": top line key of "D"—A-C-F-G. In the key of "A flat" this chord would appear in the second line as Eb—G—B—Db, etc.

When the triad chord adapter is used, several pieces of information in chord construction are demonstrated. Using the major triad side of the card in the position as outlined above so that the three letters "c" line up to the left edge of the card (see Fig. 8), the Tonic Major chord in root position in the key of "C" would be C-E-G. It naturally follows that this chord can be transposed by moving the center slide to the desired key as described above. Further, it will be noted that various arrangements of the chord may be seen at a glance by covering up succeeding windows from the left.

Reading left to right, one finds the first inversion of the chord to be E-G-C and the second inversion of the chord to be G-C-E. It also holds true that these inversions can be transposed to a new key by setting the center slide to the desired key.

The above procedures apply to the use of the chord adapters for any chord form (Major, Minor, etc.) and for any position within the chord structure (root, 1st inversion, etc.) and for any position on the scale (Tonic, Sub-Dominant, etc.) and for transposing from any given key to another.

With respect to the form of the invention shown in Fig. 10, it will be noted that the bottom line represents fingering for French horn (any key) for notes on the top line. The center line represents notes of music for French horn in the key of F when played on instruments in key of B flat with the fingering shown. This is reversed or altered as desired, for any key. For a horn in F with the music in B flat, place F under B flat (B would be under E at the left) and read the fingering for the horn on the bottom line. It will be understood, in this connection, that individual strips would be required for the fingering applicable for playing of specific, different instruments. The invention in this connection is particularly useful to beginning students.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A slide device for transposing music comprising a body, a slide member carried thereby, and like series of indicia on the body and slide member respectively, each series being divided into half steps on the music scale, said device further including chord adapters in the form of flat plates having edge portions opaque except for selectively and irregularly spaced transparent portions adapted to be placed over selected indicia of said body and slide member, each of said chord adapters having selected legends adjacent each edge portion, for use of a selected edge portion of each adapter, each adapter being of a laminated plastic formation and including clear plastic outer laminations between which is interposed a center lamination opaque except at the locations of said transparent portions.

2. A slide device for transposing music comprising a body, a slide member carried thereby, and like series of indicia on the body and slide member respectively, each series being divided into half steps on the music scale, said device further including a chord adapter in the form of a flat rectangular plate having selectively and irregularly spaced transparent edge portions adapted to be placed over selected indicia of said body and slide member, said chord adapter having selected legends adjacent each edge portion thereof for use of a selected edge portion of the adapter, said adapter being opaque except at the locations of said transparent portions.
3. A slide device for transposing music comprising a body, a slide member carried thereby, and like series of indicia on the body and slide member respectively, each series being divided into half steps on the music scale, said device further including a chord adapter in the form of a flat plate having edge portions opaque except for selectively and irregularly spaced transparent portions adapted to be placed over selected indicia of said body and slide member, said chord adapter having selected legends adjacent each edge portion for use of a selected edge portion of the adapter, said adapter being of laminated formation including a clear lamination and a juxtaposed lamination which is opaque except at the locations of said transparent portions.