

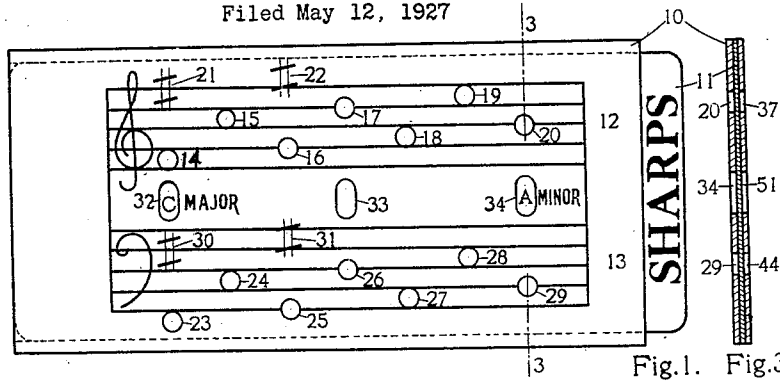
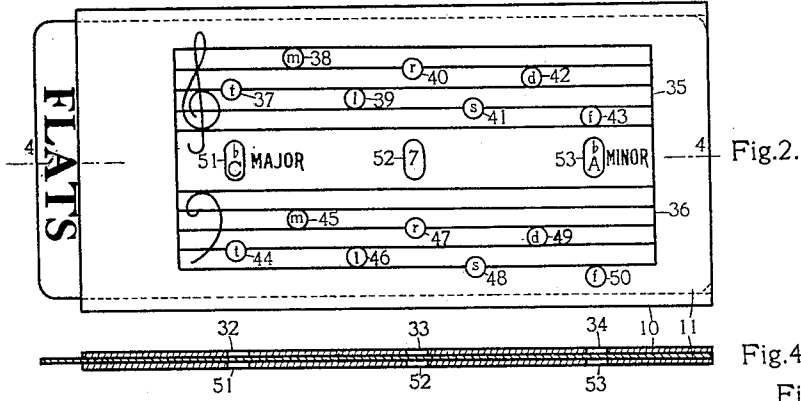
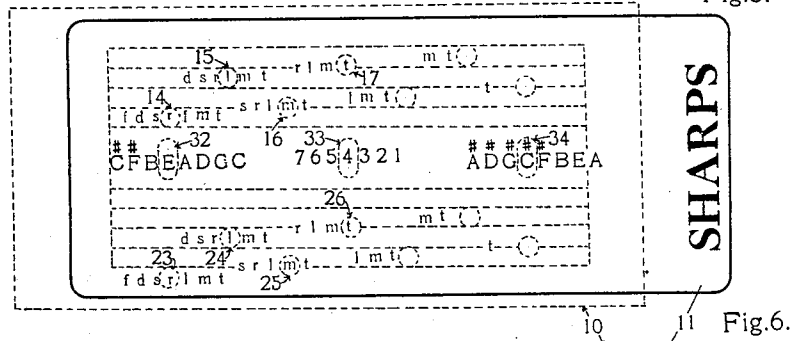
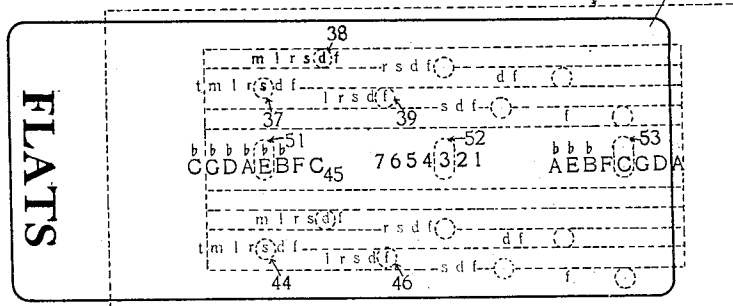
Dec. 2, 1930.

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1,783,361

MUSIC INSTRUCTION DEVICE

Filed May 12, 1927



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MUSIC-INSTRUCTION DEVICE

Application filed May 12, 1927, Serial No. 190,914, and in Canada April 4, 1927.

This invention relates to music instruction devices and has for its object to provide a simple and inexpensive device by means of which the tonic sol-fa name of any staff notation note in any key can be readily discovered and learnt.

By the use of the device it is possible to find quickly and easily for staff notation music written in any given key, the name of the major or relative minor key note, the tonic sol-fa names of the notes which are sharpened or flattened by the key signature and also the tonic sol-fa names of the remainder of the scale of the key in question. The tonic sol-fa names are graphically indicated in the lines and spaces of the corresponding notes in the staff notation, so that conversion from one notation to the other is accomplished with great simplicity and rapidity.

Various forms of charts and other apparatus have been proposed with this object in view, including devices consisting of sheath-like members on which are printed musical staves on one or both sides and having perforations on the lines and spaces of the staves, through which tonic sol-fa names and key signatures appear, the tonic sol-fa names and key signatures being printed on a slidable card mounted in the sheath-like member.

The object of the present invention is to provide an improved and particularly advantageous form of the type of device described in the next paragraph.

According to the present invention the music instruction device comprises a member bearing musical staves and perforated on the lines and spaces of said staves and a slidable element bearing musical indicia adapted to be exposed through said perforations, characterized in that on one or more staves for "sharp" keys the perforations are arranged in a regularly ascending, but staggered, progression on the lines and spaces corresponding to the notes F C G D A E B, while on one or more staves for "flat" keys the perforations are arranged in a regularly descending, staggered progression on the lines and spaces corresponding to the notes B E A D G C F.

It will be noticed that the perforations are

arranged on the lines and spaces corresponding to the notes of a key signature of seven sharps or flats, but with this difference that, ordinarily the sharps for F and C are arranged an octave above the position in which the corresponding perforations are disposed according to the present invention. This difference makes it possible to make the "sharp" perforations ascend regularly in a staggered sequence or progression, which greatly facilitates the instruction of music, and has the additional advantage that the "sharp" perforations may be made to register with the "flat" perforations.

Furthermore, the scale sequence indicated by the sol-fa names appearing on the sharpened notes in conjunction with the two oblique parallel lines of apertures leads by direct and easy inference to the sol-fa names of the remaining or unsharpened notes in any required key in sharps. That is to say, in the key of three sharps *l t* — — — — represents the appearance of the device at the apertures on F G A B clearly inferring that — — — — is to be mentally noted to read *d r* and that *m* — — — — represents the appearance of the apertures on C D E clearly inferring that — — — — here is to be mentally noted to read *f s* so that the lower of the oblique lines of aperture is *l t d r* and the upper is *m f s*.

The indicia borne by the slidable element is such that when the device is set to a required key the tonic sol-fa names of the sharpened or flattened notes appear on one side of the device, while the tonic sol-fa names of the balance of the scale simultaneously appears on the other side of the device. The perforations thus serve two useful purposes.

Referring now to the accompanying drawings which illustrate, by way of example, one convenient embodiment of the invention,

Figure 1 is a front elevation of the complete device;

Figure 2 is a rear elevation;

Figure 3 is a section on line 3—3 of Figure 1;

Figure 4 is a section on line 4—4 of Figure 2;

Figure 5 is a front view of the slidable element, and

Figure 6 is a rear view of the slidable element.

The improved device comprises a sheath-like member 10 which, in the preferred and illustrated form, is rectangular and open at each end. Arranged within the sheath 10 is a slidable member 11 which is also preferably of rectangular shape and of slightly greater length than the sheath 10.

On the front of the sheath 10 (see Figure 1) is printed treble and bass staves 12 and 13, though other staves may be substituted or added by suitable modification if so desired.

A series of apertures 14, 15, 16, 17, 18, 19, 20 is formed in the front wall of the sheath, these holes being of a vertical dimension not greater than the distance separating the lines of the staves. The seven holes, 14 to 20, are located on the lines and spaces of the staff 12 which correspond to the notes which are sharpened in a key signature of seven sharps, that is to say, these apertures are arranged on the staff notation notes F, C, G, D, A, E, B. The apertures 14 and 16 corresponding to the F and G sharps are arranged an octave lower than their customary position, the usual position being indicated by printed sharps 21 and 22, which, in conjunction with their respective apertures 14 and 16, may be used to demonstrate and teach that the octave of any note in a space is always on the fourth line above it, and that the octave of a note on a line is in the fourth space above it.

A similar series of holes 23 to 29 and printed sharps 30 and 31 are arranged on the bass staff 13 vertically below the treble series 14 to 20.

At convenient positions on the sheath 10, and preferably in the space between the staves 12 and 13, are arranged three apertures 32, 33 and 34, the vertical dimension of which is preferably somewhat larger than that of the aperture on the staves.

The back of the sheath (see Figure 2) bears treble and bass staves 35 and 36 and a series of perforations 37 to 43 on the lines and spaces of the staff 35, which correspond to the staff notation notes which are flattened in a key signature of seven flats. A similar series of holes 44 to 50 is provided on the bass staff 36 vertically beneath the treble series 37 to 43. Three larger holes 51, 52 and 53 are also formed between the staves 35 and 36.

In the form illustrated the apertures in the front wall of the sheath register with the apertures in the rear wall, the front apertures 14, 32 and 23, registering with the rear apertures, 43, 53, 50, and so on, so

that the front and rear apertures may be formed by a single punching operation.

The exposed end of the movable element or card 11 bears on the front (see Figure 5) the word "Sharps" and on the rear (see Figure 6) the word "Flats". On the front and respectively arranged to be exposed through apertures 32 and 34 are printed the major and minor key notes corresponding to any desired number of sharps, which number is exposed through apertures 33. In horizontal alignment with each of the staff apertures is a letter or group of letters indicating tonic sol-fa names of notes, the first or, as illustrated, the left-hand letter being arranged seven space units to the left of its respective aperture, a space unit being the distance between the centres of the letters in any group. Arranged to co-act with the various holes are the following groups of indicia;

Aperture No.	Groups of indicia							
14 and 23	<i>f</i>	<i>d</i>	<i>s</i>	<i>r</i>	<i>l</i>	<i>m</i>	<i>t</i>	0
15 and 24	<i>d</i>	<i>s</i>	<i>r</i>	<i>l</i>	<i>m</i>	<i>t</i>	.	0
16 and 25	<i>s</i>	<i>r</i>	<i>l</i>	<i>m</i>	<i>t</i>	.	.	0
17 and 26	<i>r</i>	<i>l</i>	<i>m</i>	<i>t</i>	.	.	.	0
18 and 27	<i>l</i>	<i>m</i>	<i>t</i>	.	.	.	.	0
19 and 28	<i>m</i>	<i>t</i>	.	.	.	.	.	0
20 and 29	<i>t</i>	.	.	.	.	.	.	0
32	C#	F#	B	E	A	D	G	C
33	7	6	5	4	3	2	1	0
34	A#	D#	G#	C#	F#	B	E	A

The normal position of the respective perforations in relation to the first character of each group is indicated by "0" in the above table, from which it will be seen that the first, or left-hand character, is in all cases normally seven space units from its aperture.

The groups of characters on the back of the card 11 are as follows:

Aperture No.	Groups of indicia						
0	t	m	l	r	s	d	f
37 and 44	m	l	r	s	d	f	.
38 and 45	l	r	s	d	f	.	.
39 and 46	r	s	d	f	.	.	.
40 and 47	s	d	f	.	.	.	.
41 and 48	d	f	.	.	.	.	.
42 and 49	f	.	.	.	.	.	.
43 and 50	Cb	Gb	Db	Ab	Eb	Bb	F C
51	7	6	5	4	3	2	1
52	Ab	Eb	Bb	F	C	G	D A
53							

From this table it will be clear that the first, or left-hand character of each group registers with its respective aperture when the movable card 11 is in its normal position with respect to the sheath 10.

When it is desired to convert staff notation music into tonic sol-fa the card 11 is moved in relation to the sheath 10 until the number of sharps or flats in which the staff notation music is written is exposed through aperture 33 or 52. The tonic note of the de-

sired key may then be read through aperture 32 or 51, if it is a major scale, or aperture 34 or 53, if it is a minor scale. If it is a key in sharps the tonic sol-fa names of the sharpened notes for the desired key are automatically exposed through the apertures on the front of the sheath, and the tonic sol-fa names of the complementary part of the scale in the desired key is at the same time automatically exposed through the apertures on the back of the card. If the desired key is in flats the back of the device is first consulted to discover the number of flats, the major or relative minor key note and the tonic sol-fa names of the flattened notes, and the tonic sol-fa names of the complementary part of the scale can be found from the front of the device without further operation.

Four examples may be seen from the drawings. Figures 1 and 2 shows the device in closed or normal position. Figure 1 shows the front of the device and indicates that, when there are no sharps, the key note of the major scale in staff notation is C, and that A is the key note of the relative minor scale. Then by reversing the device, (see Figure 2), letters indicating the tonic sol-fa names of the notes for a scale with no sharps or flats may be read on the lines and spaces of the corresponding notes of the staff notation scale in question.

Conversely, if the desired key is in seven flats, the back of the device is read in the position shown in Figure 2, and it is found that the major scale is C $\flat$ and the relative minor A $\flat$. In this instance the key signature exposed through the staff apertures also gives the tonic sol-fa names of all the notes of the scale, so that no complement is necessary to complete the scale, and by consulting the other side of the device, (see Figure 1), it will be seen that this is true.

In Figures 5 and 6 the card is shown in full lines and the sheath is indicated in chain-dotted lines as set for the scale of four sharps or three flats. Figure 3 shows that for a scale of four sharps the major scale is E and the minor C $\sharp$, and the tonic sol-fa names, Ray, Lah, Me and Te (indicated by the letters *r*, *l*, *m* and *t*) are exposed through the apertures 14, 15, 16, 17 and 23, 24, 25, 26, which are in the lines and spaces of the corresponding notes F C G D in the staff position. The back of the device, with the same setting, automatically indicates the tonic sol-fa names of the complementary notes of the scale in four sharps, namely, Soh, Doh and Fah, the initial letters of which are exposed through apertures 37, 38, 39 and 44, 45, 46, as will be seen from Figure 6.

Similarly Figure 6 shows that three flats is the key of E $\flat$ major or C minor, and that the three flattened notes are Soh, Doh and Fah in the tonic sol-fa notation. For the same setting the front of the device, (Figure

5) shows the other four notes Ray, Lah, Me and Te on the lines and spaces of the corresponding staff notation notes F, C, G, D of the scale of three flats.

The movable element and its sheath may be made of any suitable material, which has the necessary strength and durability.

The device may be readily modified in various ways without departing from the invention. For example, the series of letters and apertures may be made both on the same side of the card and sheath. The staves for sharps and flats will then be arranged side by side and may be more conveniently read, though the device will then be twice the length of the illustrated form and therefore less convenient for carrying.

The device may also be arranged so that the card moves obliquely or vertically with respect to the sheath. Or the sheath and card may be made of partial cylindrical form with the axis of the cylinder extending either vertically or horizontally.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:

1. A music instruction device of the character described comprising a member bearing a representation of a musical staff and perforations on the lines and spaces of the said staff disposed in two inclined but parallel rows, characterized in that on a staff for "sharp" keys the perforations are arranged in a regularly ascending but staggered progression on the lines and spaces corresponding to the notes F C G D A E B, while on a staff for "flat" keys the perforations are arranged in a regularly descending but staggered progression on the lines and spaces corresponding to the notes B E A D G C F.

2. A music instruction device of the character described, comprising a member bearing musical staves and perforations on the lines and spaces of each said staff disposed in two inclined but parallel rows, and a slidable element bearing musical indicia adapted to be exposed through the said perforations, characterized in that on one or more staves for "sharp" keys the perforations are arranged in a regularly ascending but staggered progression on the lines and spaces corresponding to the notes F C G D A E B, while on one or more staves for "flat" keys the perforations are arranged in a regularly descending but staggered progression on the lines and spaces corresponding to the notes: B E A D G C F.

3. A music instruction device of the character described, comprising a member bearing musical staves and perforations on the lines and spaces of each said staff disposed in two inclined but parallel rows, and a slidable element bearing musical indicia adapted to be exposed through the said perforations, characterized in that on one or more staves for

"sharp" keys the perforations are arranged in a regularly ascending but staggered progression of the lines and spaces corresponding to the notes F C G D A E B, while on one or more staves for "flat" keys the perforations are arranged in a regularly descending but staggered progression on the lines and spaces corresponding to the notes: B E A D G C F, wherein the staff or staves for "sharp" keys is or are arranged on the one side of the member while the staff or staves for "flat" keys is or are arranged on the other side of the member, a "sharp" staff being disposed to register with a "flat" staff and the perforations (F C G D A E B) on a sharp staff being arranged to register with the perforations (B E A D G C F) on a "flat" staff.

4. A music instruction device of the character described, comprising a member bearing musical staves and perforations on the lines and spaces of each said staff disposed in two inclined but parallel rows, and a slidable element bearing musical indicia adapted to be exposed through the said perforations, characterized in that on one or more staves for "sharp" keys the perforations are arranged in a regularly ascending but staggered progression on the lines and spaces corresponding to the notes F C G D A E B, while on one or more staves for "flat" keys the perforations are arranged in a regularly descending but staggered progression on the lines and spaces corresponding to the notes: B E A D G C F, wherein the staff or staves for "sharp" keys is or are arranged on the one side of the member while the staff or staves for "flat" keys is or are arranged on the other side of the member, a "sharp" staff being disposed to register with a "flat" staff and the perforations (F C G D A E B) on a sharp staff being arranged to register with the perforations (B E A D G C F) on a "flat" staff, in which the slidable element bears the tonic sol-fa names of the notes corresponding to the staff notation notes indicated by the perforations on the lines and spaces of the said staves, characterized in that for each registering position of the slidable element "sharped" notes only are so registered on the "sharp" staves and indicate a "sharp" key, the letter name of which is contained in the letter name of the "flat" key registered simultaneously on the "flat" staves on which "flatted" notes only are registered.

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