Aug. 8, 1950 J. VICTOR ET AL 2,518,204

MUSIC PRINTING PROCESS AND APPARATUS

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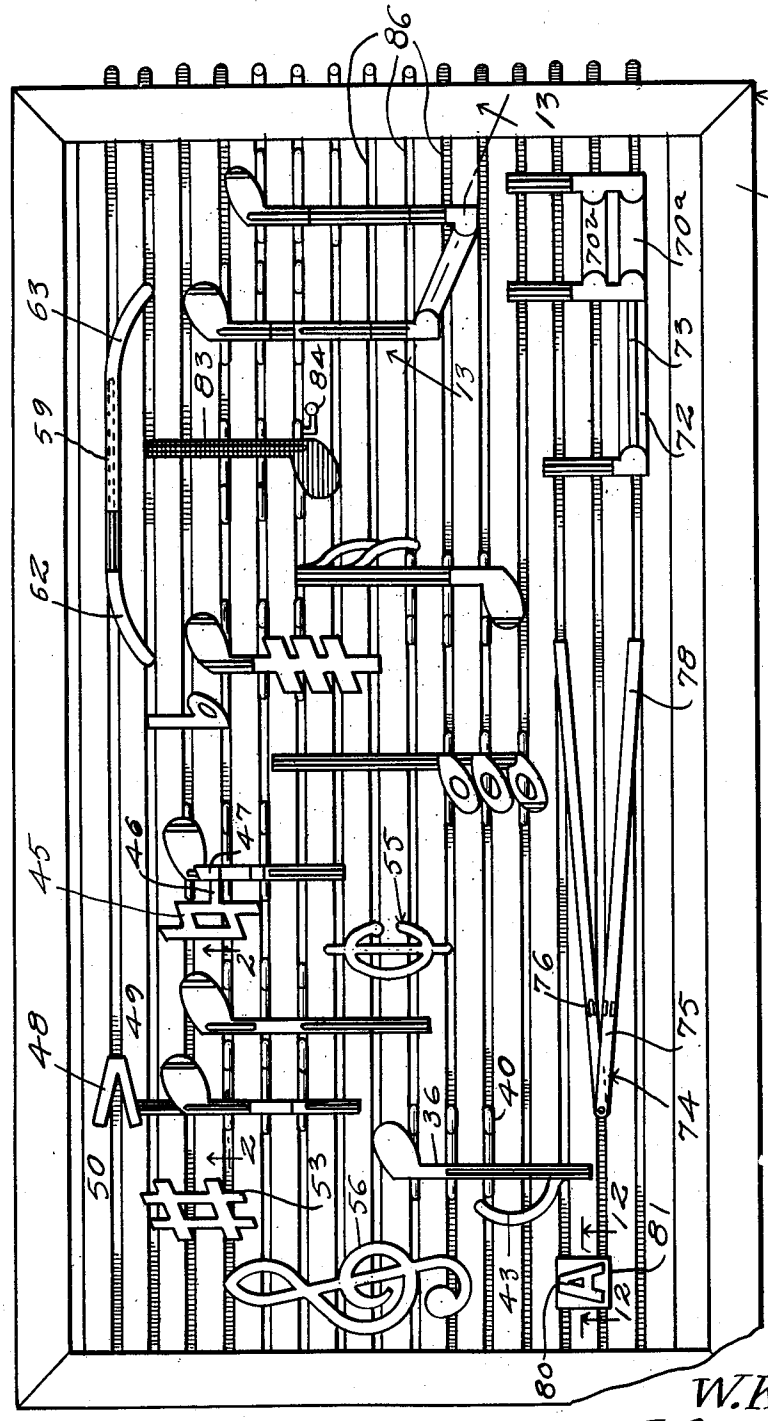


FIG. 1.

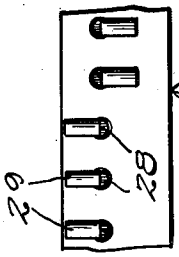


FIG. 1a

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Fig. 2.

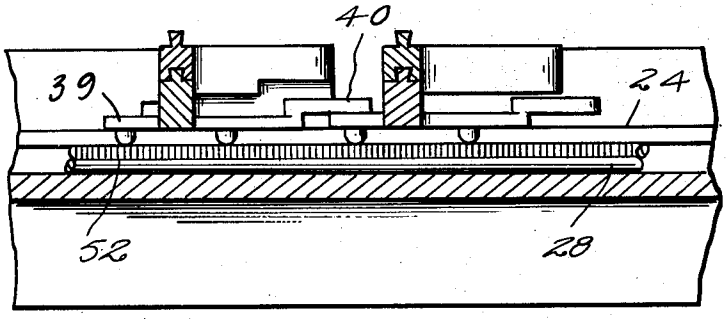


Fig. 3.

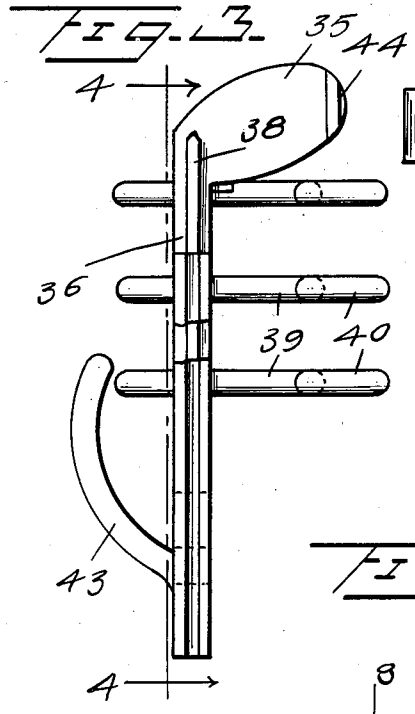


Fig. 4.

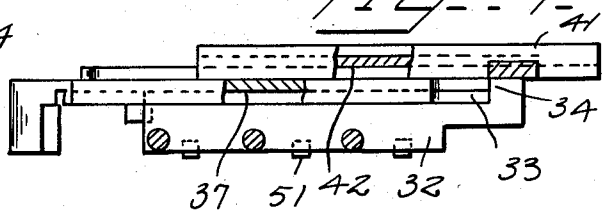


Fig. 5.

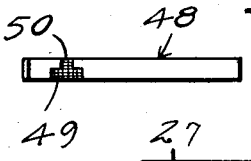


Fig. 6.

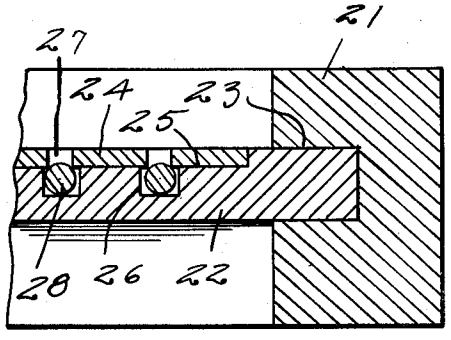


Fig. 7.

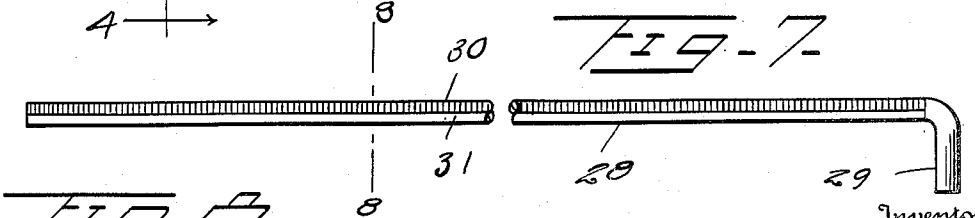
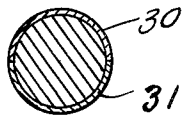


Fig. 8.



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Fig. 9.

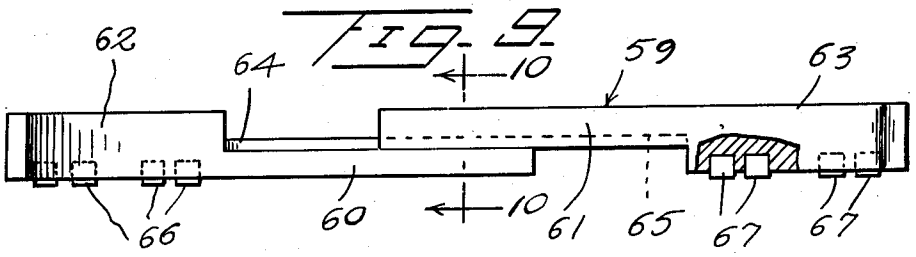


Fig. 10.

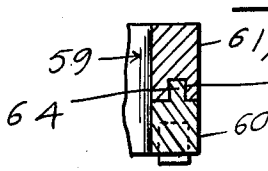


Fig. 11.

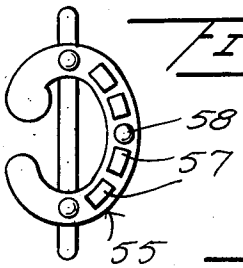


Fig. 12.

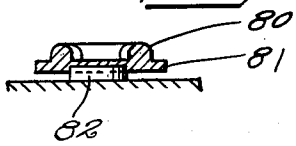


Fig. 13.

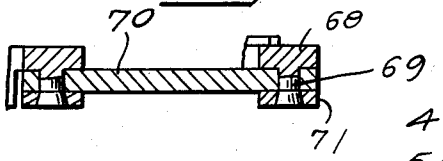


Fig. 15.

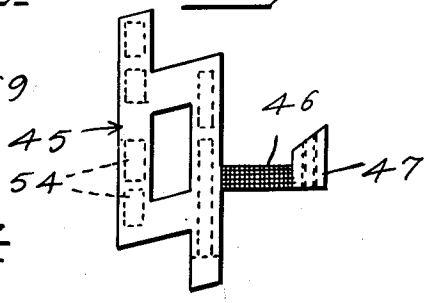


Fig. 14.

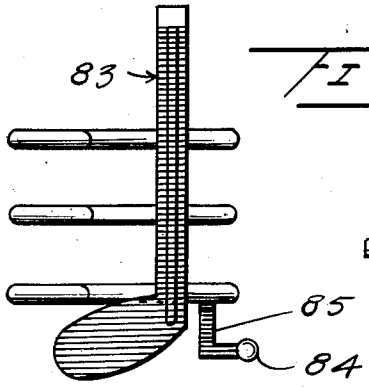
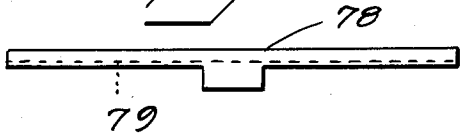


Fig. 17.



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Patented Aug. 8, 1950 2,518,204

UNITED STATES PATENT OFFICE

2,518,204

MUSIC PRINTING PROCESS AND APPARATUS

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Application July 21, 1947, Serial No. 762,344

6 Claims. (Cl. 40—142)

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This invention relates to the art of printing or producing music, and more particularly to an improved and practical method and means for printing or producing music.

In the matter of printing music, one of the first steps is the proper setting up of the notes and associated indications. This is accomplished in a number of ways, including the engraving of plates, and the photographing of boards upon which the music has been placed by removable elements and then making up the plates from the photographs. The photographic process is on the order of changeable exhibitors where the the characters or elements are placed on a board in selected positions. However, in view of the great variations in the characters used, it has been found impractical and laborious to have separate characters for every variation or combination of characters. It is an object of this invention to provide an improved method and apparatus which is sufficiently flexible so that all normal character variations may be produced from changeable base elements having interlocking portions so that the combinations will be locked together.

Another object of this invention is to provide a base board having a metal front on which the staff may be adjustably indicated and on which the characters may be adjustably and removably positioned.

A further object of this invention is to provide in combination a metal staff board and magnetic character elements which will adhere by their magnetism to the metal in any selected position.

A further object of this invention is to provide improved characters or elements which are formed out of plastic and to which are secured one or more permanent magnets which will effect adhesion of the characters to the staff board and holding of the characters to the board when the latter is disposed in a vertical or inclined or inverted position. The characters being light in weight will require only small magnets and the latter may be shifted on the metal board with only slight force.

Where desired, the characters or elements may be suitably colored and the photographing accomplished with colors. Where the music is black on white background, the board is preferably black and the characters or elements white, so as to produce the desired negative.

The notes or base elements include positioning pins or lugs which provide for proper positioning and aligning of the elements on the base board,

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and the base note elements include fragmentary staff lines which will merge with the staff lines if the notes are within the staff, but which will register on the photograph if the note is either above or below the staff.

A further object of this invention is to provide in combination a staff board and music designating characters which may be adjustably positioned on the board, being so constructed and arranged that the staff may be shifted relative to the notes, and the music can be easily and quickly transposed from one key to another with little change in the set up of the characters.

With the above and other objects in view, my invention consists in the arrangement, combination and details of construction disclosed in the drawings and specification, and then more particularly pointed out in the appended claims.

In the drawings,

Figure 1 is a detail front elevation of a photographing music board,

Figure 2 is a fragmentary sectional view taken on the line 2—2 of Figure 1,

Figure 3 is a plan view, partly broken away, of one of the note or music characters,

Figure 4 is a fragmentary sectional view taken on the line 4—4 of Figure 3,

Figure 5 is an end elevation of one of the music characters or elements,

Figure 6 is a fragmentary transverse section of the music board,

Figure 7 is a plan view of one of the staff rods,

Figure 8 is a sectional view taken on the line 8—8 of Figure 7,

Figure 9 is a detail side elevation, partly broken away and in sections, of another one of the characters,

Figure 10 is a fragmentary sectional view taken on the line 10—10 of Figure 9,

Figure 11 is a bottom plan of another one of the characters,

Figure 12 is a sectional view taken on the line 12—12 of Figure 1,

Figure 13 is a fragmentary sectional view taken on the line 13—13 of Figure 1,

Figure 14 is a plan view of another one of the music characters,

Figure 15 is a plan view of a further music character; and

Figure 16 is a fragmentary end elevation of the staff board.

Figure 17 is a plan view of an extension character bar for use with crescendo character members.

Referring the drawings, the numeral 20 desig-

nates generally a staff board which is formed of an outer rectangular frame 21, a panel 22 inset in a groove 23 formed in the outer frame 21, and a plurality of parallel spaced and longitudinally extending metal bars 24.

The metal bars 24 form a metal panel which, as shown in Figure 6, is inset in a recess 25 formed in the panel 22. The outer sides of the metal strips 24 are preferably coated black so that they will not photograph on a black and white photographic film. The panel 22 is formed with a plurality of lengthwise extending channels 26 which are disposed beneath the spaces 27 formed between the metal strips 24.

A staff line indicating rod 28 is rotatably disposed in the channel 26 and is of a diameter such that the adjacent lower corners of the bars or strips 24 will prevent the rods 28 from moving outwardly through the spaces 27.

One end of each rod 28 is formed with a substantially right angular handle adjusting member 29 so that these rods 28 may be manually rotated in order to present to the photographic film either a non-photographing coating 30 or a photographing coating 31. The coating 30 which will not register on a black and white photographic film may be either red or black, whereas the film or coating 31 may be white so as to register as a black line on a black and white negative. In this manner the board 20 may be of a length substantially equal to one line of music and may have a width from top to bottom equal to one page of music so that the entire page of music may be photographed in one operation.

In order to provide an improved note character which is capable of being photographed and registering on a negative, and at the same time may be adjusted in any desired manner on the staff board 20, I have provided, as shown in Figures 3 and 4, a note character which embodies a base part 32, having disposed on its upper longitudinal edge a key 33 and a stop 34 at one end of the key 33. A note element, including a head 35 and a stem 36 is adapted to removably engage the base member 32, being provided with a keyway 37 in the lower side of the stem 36 for engagement with the key 33.

The stem 36 is also provided on its upper side with a longitudinally extending key 38. A plurality of laterally extending staff line indicating members 39 extend from opposite sides of the base member 32. These staff line indicating members 39 are also formed with upwardly offset outer end portions 40 on the side of the base member 32 so that at least two members may be disposed in closely adjacent position with the staff line indicating members 39 of one note member underlapping the upwardly offset extensions 40 of the adjacent note member.

The upper key 38 is provided for the purpose of permitting the positioning of an additional modifying element on the stem of the note. As shown in Figures 3 and 4, an elongated bar 41 formed with a keyway 42 is disposed on the upper side of the stem 36, being lengthwise adjustable relative to the stem 36 and secured thereto by the correlated locking means including the key 38 and keyway 42.

A flag or laterally projecting note modifying member extends from one side of the bar attaching member 41. This flag may be upwardly or longitudinally curved, as shown in Figure 3, for the purpose of designating the fractional character of the note.

The head 35 is provided at its outer end with a small key 44 so that a further note modifying or indicating element may be attached to the note, being positioned closely adjacent thereto. As an example of a note modifying element which may be secured either to the stem of the note or to the head thereof on the key 44, there is disclosed in Figure 1, a note modifying character 45 which is formed with a laterally projecting extension 46 having a short bar 47 formed with a keyway for engagement either on the key 38 or on the key 44.

In Figures 1 and 5 there is disclosed an expression character generally designated as 48, constructed in the form of a V, which has a laterally projecting stem 49 extending from one side thereof and formed with a key 50 for engagement in the keyway of a note character. In order to provide a means whereby the note characters and the modifying or identifying elements may be adjustably secured to the metal strips 24, the base member 32 is provided with a plurality of permanent magnets 51 which will magnetically hold the base member 32 in any adjusted position relative to the staff board 20.

The note characters and modifying elements are also provided with positioning means so that they may be positioned at selected points on the staff board 20. As shown in Figure 2, the staff line indicating members 39 are provided with positioning pins or lugs 52 which are adapted to engage in the spaces 27 between the metal strips 24. In this manner when the note character is positioned with one or more of the staff line members 39 within the staff, the line members 39 will merge on the photographic film with the white coating 31, whereas the line members 39 when either above or below the staff will register independently and show the correct position of the note with respect to the staff.

We have provided separate characters generally designated as 53 which are disconnected from the notes. As shown in Figure 1, the character 53 is a sharp designating character and it will be understood that a flat designating character formed in the conventional manner may also be used and formed after the manner of this invention.

The character 45 is a natural designating character and this character is also formed with permanent magnets 54 (See Figs. 1 and 15), on the lower side thereof for mounting the character 45 more securely on the staff board 20. The character 53 will be formed similar to the character 45 by embedding permanent magnets in the lower side thereof.

A time designating character 55, and a clef character 56 are adapted to be formed after the conventional manner of indicating the time of the music and the treble clef, and the lower side of each member is provided with at least one pair of permanent magnets 57, as shown in Figure 11. Positioning pins 58 extend from the lower side of the time designating member 55 for disposing the member 55 in the proper position with respect to the staff.

A longitudinally curved tie or slur character generally designated as 59 is shown in Figures 1, 9, and 10. This tie member 59 is constructed in the form of a pair of elongated bars 60 and 61 formed at one end thereof with a curved extension 62 and 63 respectively. The bars 60 and 61 are formed with correlated locking means in the form of a key 64 on the bar 60, and a keyway 65 in the lower side of the bar 61. Per-

manent magnets 66 are carried by the lower side of the curved extension 62 and permanent magnets 67 are carried by the lower side of the curved extension 63. By providing the sliding connection in the form of the key and keyway, the bars 60 and 61 may be lengthwise adjusted to the desired degree.

Where two or more notes are connected together on the ends of the stems thereof, the connecting bar which is similar to a flag in shortening the note value is pivotally connected between the stems, as shown in Figure 13. The stems of a pair of notes engage with parts 68 which are formed with downwardly extending pins 69 and a connecting bar 70 pivotally engages the pins 69.

An apertured magnet 71 is fixed on the lower extended end of each pin 69 and provides the means for holding the connecting bar 70 on the lower ends of the note stems. There may be two or more of these connecting bars 70, as shown at 70*a* and 70*b* in Figure 1, and another laterally extending connecting bar 72 may be coupled to the connecting bar 70, the latter being formed with a keyway within which a key 73 carried by the connecting bar 72 is adapted to engage.

A crescendo character generally designated as 74 and shown in Figure 1 may be adjustably positioned on the staff member 20. This crescendo character includes a pair of pivotally connected bars 75 formed with keys 76 on which extensible bars 77 are adapted to adjustably engage. The bars 77 may also be provided with further extensions in the form of extension bars 78 (Fig. 17) having keyways 79 engaging on the keys of each bar extension 77.

The lyrics may also be adjustably disposed on the staff board 20, the lyrics being formed by separate alphabetical characters 80 mounted on a plate 81 to facilitate spacing, and the plate 81 is provided with a permanent magnet 82 for magnetic engagement with the metal side of the staff board 20. The plate 81 may also be provided with positioning lugs to facilitate mounting the character 80 on the staff board.

The note characters and modifying elements herein disclosed are preferably made of plastic or non-magnetic material and may be made either white for imposing on a black metal panel, or may be made black for imposing on a white panel. If desired, and as shown in Figure 14, the note characters may be formed of colored plastic indicated at 83. As shown in Figure 14, a modifying character in the form of a dot 84 is carried by the character 83, being attached to the character 83 by means of an L-shaped securing member 85, the color of member 85 being such that it will not register on a photographic negative.

In the use and operation of this invention, the notes are placed on the staff board 20 in their proper positions with respect to the staff indicated by the white lines 86 in Figure 1, and which represent the white surfaces 31 of the staff rods 28. The five lines making up the staff may be disposed at any desired position on the board 20, and the note characters and modifying elements may then be laid on the metal strips. The magnets carried by the characters will securely hold these characters or elements in their proper positions so that the board may be disposed in either a horizontal, vertical, or other inclined position for photographic purposes.

By providing a variable staff indicating means there is provided means whereby the music may be transposed from one key to the other. This

is accomplished by merely shifting the staff up or down and leaving the notes and their elements in their previously arranged positions. In this manner it is not necessary to completely reset the music in order to obtain the necessary transpositions from one key to another.

We do not mean to confine ourselves to the exact details of construction herein disclosed, but claim all variations falling within the purview of the appended claims.

What we claim is—

1. A musical character supporting member for photographic printing comprising a board member formed with parallel spaced and lengthwise extending channels, an elongated rod rotatably disposed in each channel, said rod having a coating on a portion of the circumference thereof adapted to register on a photographic film and having a non-photographing coating on the remaining portion of the circumference thereof.

2. A musical character supporting member for photographic printing comprising a board member formed with parallel spaced and lengthwise extending channels, an elongated rod rotatably disposed in each channel, said rod having a coating on a portion of the circumference thereof adapted to register on a photographic film and having a non-photographing coating on the remaining portion of the circumference thereof, and means at one end of each rod for rotatably adjusting the latter.

3. A musical character member for photographic printing comprising, a pair of note members each formed of a head and a stem part, an extension member for said stem part, correlated securing means carried by said stem parts and said extension members for securing said stem part and said extension members together, a tie bar, and means pivotally securing said tie bar to said extension members.

4. A musical character member for photographic printing comprising, a pair of note members each formed of a head and a stem part, an extension member for said stem part, correlated securing means carried by said stem parts and said extension members for securing said stem part and said extension members together, a tie bar, and means pivotally securing said tie bar to said extension members, said latter named means including a pair of permanent magnets for magnetically securing said extension members to a metal board or panel.

5. Apparatus adapted to be photographed in musical photographic printing comprising a board member, coated staff forming rods rotatably carried by said board along the length thereof, character members including a head, a stem on said head including a plurality of stem sections extensibly connected to adjacent stem sections, and musical note time modifying members on certain of said stem sections, and means carried by said character members detachably securing said character members on said board.

6. A musical character member adapted to be photographed in photographic printing comprising a note member formed with a head and a stem, said stem including a plurality of separable sections, each of said sections formed with a head on one side thereof and a groove on the other side for sliding engagement with a correlated bead and groove on an adjacent section, and musical indicia carried by said stem sections.

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WALKER K. VICTOR.

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