

May 17, 1938.

G. RUNDSTATLER

2,117,363

MUSIC TYPEWRITER

Filed Sept. 24, 1936

3 Sheets—Sheet 1

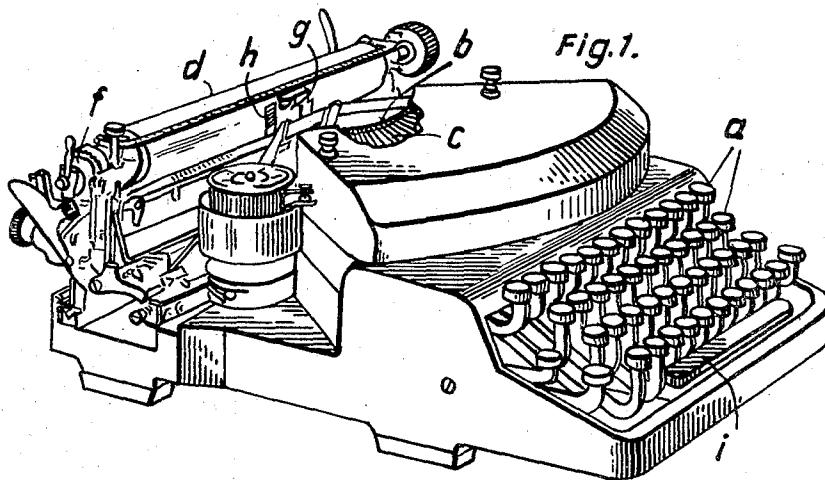


Fig. 2.

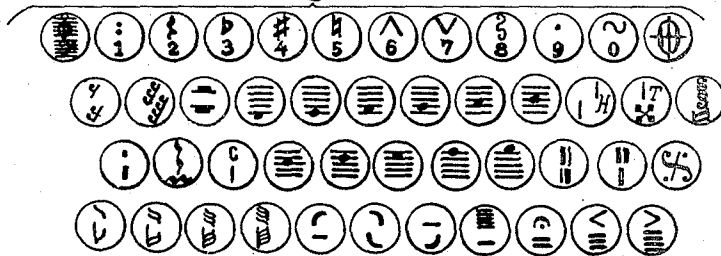
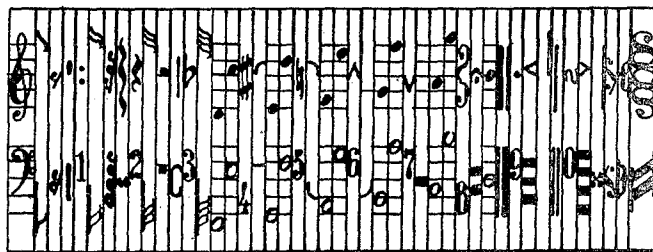


Fig. 3.



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Fig. 4.

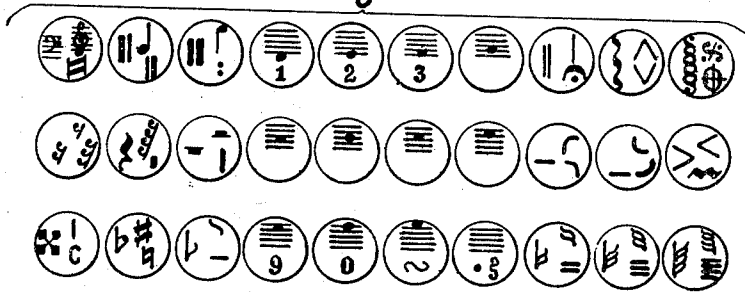


Fig. 5.

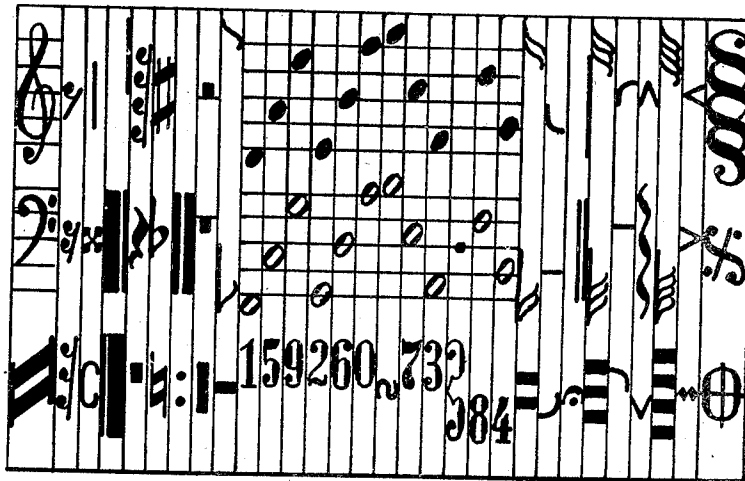


Fig. 6.



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Fig. 7.

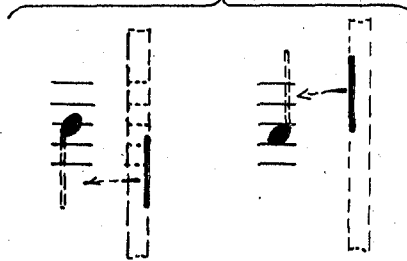


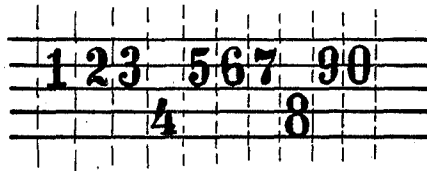
Fig. 8.



Fig. 9.



Fig. 10.



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UNITED STATES PATENT OFFICE

2,117,363

MUSIC TYPEWRITER

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Application September 24, 1936, Serial No. 102,292
In Germany December 20, 1933

7 Claims. (Cl. 197-8)

This invention relates to music-typewriters, namely, typewriters which are adapted to type the notes, signs, numerals and other symbols or characters used in music-notation. The invention concerns more particularly a music-type-
5 writer of the Rundstatler system.

The music-typewriter according to this invention is distinguished by the particular arrangement and construction of the keyboard and type-
10 heads whereby the fingering is simplified, the supervision is facilitated and the typing-speed is increased.

In the music-typewriter according to this invention, all the necessary open and closed notes within the five-line system, i. e., the staff notes, as well as the remaining notes, symbols and numerals, are provided in the keyboard and type-
15 crown and are distributed in such a manner that the open and closed notes of the same pitch and position on the stave are arranged on the same type-bar and type-head thereof. Further, the notes of chords, for example, can be typed one after the other by keys which do not effect an advance of the carriage, for convenience herein-
20 after referred to as dead keys, so that on typing a chord, the appropriate dead keys are struck in a similar manner to the successive striking of keys on a musical instrument.

Although in the music-typewriter according to the invention all closed and open notes within the five-line system, as well as all symbols, numerals and other characters usually employed in music notation are provided, yet in contradistinction to known music-typewriters which have either a single closed or a single open note head or always one complete note for different note values ($\frac{1}{4}$, $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$, $\frac{1}{64}$) in the keyboard and type crown, the keyboard of the music-type-
30 writer according to this invention can be substituted for any normal keyboard, so that the improved music-typewriter not only corresponds in space or size to the proportions of all known typewriters, but the keyboard can also be incorporated in typewriters of any of the usual varieties.
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The invention is particularly applicable to music-typewriters of the Rundstatler system which are adapted to type notes on paper that is not provided with staff lines, and in which each note is provided with the staff line, so that on the striking of each note key, the staff line is also typed with note or symbol.

In order to increase the typing speed, according to this invention, the keys of the keyboard which correspond to the open and closed notes
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(namely, those notes which have, respectively, outlined and solid heads) are grouped in the middle, occupying approximately a third of the keyboard. The keys which correspond to the other symbols and numerals are situated in the outer groups. The keys corresponding to especially large characters, such as treble clef, bass clef and so on, are arranged in the outer groups, since these can be extended in width as required. As however, these keys are not sufficiently wide for the accommodation of the large characters (e. g., in single-shift machines), these characters may be divided vertically, and can be typed by keys which are not only arranged side by side, but produce a feed of the carriage when oper-
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ated. Other features will become apparent from the following description of two forms of music-typewriter according to this invention, with reference to the accompanying drawings, wherein:
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Figure 1 is a perspective view of the new music-typewriter.

Figure 2 is a plan of a keyboard for a single-shift music-typewriter,

Figure 3 being a diagrammatic elevation of the corresponding type crown.
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Figure 4 is a plan of the keyboard for a double-shift music-typewriter,

Figure 5 being a diagrammatic elevation of the corresponding type crown.
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Figure 6 illustrates typing of notes on the leger lines typed by the music-typewriter.

Figure 7 illustrates typing of stems of the notes.

Figure 8 illustrates typing by the machine of ties in relation to the staff-lines.
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Figure 9 illustrates the individual type impressions on an enlarged scale for the formation of ties in relation to the staff-lines and to one another.

Figure 10 illustrates the novel arrangement of the time signature numerals and their typing height within the staff lines.
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In the example of a single-shift music-typewriter according to this invention, as shown in Figure 1, *a* indicates the keyboard, *b* the type crown, the separate type of which on the depression of the keys and consequent operation of the reciprocatory type bars, strikes against the platen or cylinder *d* of the paper carriage *f*. The invention is applicable to certain typewriters having
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pivoted type-bars. An indicator *h* is fitted on the type guide *g*, the indicator consisting for example of a bar engraved, or otherwise provided, with lines, which may be variously coloured, corresponding to the
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staff-lines and in certain cases, if desired, with leger lines. Similarly, note lines may be provided on the guide holder itself to facilitate use of the typewriter. *i* is the space bar which as usual, when operated, always produces a feed of the carriage.

In both instances of a single-shift machine (Figures 2 and 3) and of a double-shift machine (Figures 4 and 5), all the notes, symbols, numerals and so on are provided and the closed and open notes of the same pitch are provided on the same type head and on the same staff line, both in the keyboard (Figures 2 and 4) and in the crown head (Figures 3 and 5). Further, the staff line is provided on the key and type head corresponding to each note and is typed simultaneously with the note on the striking of the key, so that the notes can be typed on plain paper having no staff-lines.

From Figures 3 to 5, it is evident also that all the note keys are situated in the middle group, occupying approximately one third, of the keyboard, while the remaining symbols, numerals and so on lie outside this group, and in the double-shift machine lie partly in the shift of the note keys.

The great clef and like symbols may be situated in this case in the outer groups of keys and type-heads, and, if of abnormal size, may be divided and arranged on two keys and type-heads capable of being struck one after the other, although it is not indispensable that these keys and type-heads are actually side by side.

All note keys are dead keys, i. e. when operated, they do not produce a feed of the carriage. The object of this is to enable several notes, for example in the case of a chord, to be typed one above the other without necessitating a return of the carriage after each key is struck. On the other hand, the spacing bar *i* and all keys which correspond to continuous symbols, as for example, the ties between several notes and the like, as well as the keys corresponding to divided symbols, produce a feed of the carriage when operated.

When leger notes, such as shown in Figure 6, are to be typed on the machine according to this invention, the platen or cylinder *d* is rotated to and from the operator and to such an extent as to determine the position of the required note above or below the staff lines.

In order that a short piece of leger line shall be visible on each side of a leger note as usual in commercial reproduction of music notation and in spite of the very narrow width available, the heads of the notes are specially shaped, as indicated in Figure 6, to accommodate the projecting leger lines. The height of the head of the note, in this case, is equal to the space between two staff lines, but the width of the head is less. The heads may be more or less inclined or of oval shape, as shown in Figure 6.

In contradistinction to known machines, wherein the type for a stem of a note has the stem centrally disposed on the type head, according to the present invention, the stem is arranged to one side of the type head, whether for an upwardly or downwardly directed stem (Figures 3, 5, and 7). When a stem is typed, it is thus joined to the previously typed head of the note after the platen has been shifted (by rotation of the platen) below or above the line on which it was typed (Figure 7).

The type of the connecting ties for $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$ and $\frac{1}{64}$ notes each occupy in thickness one half of the space between two adjacent staff lines,

and the space between two adjacent ties is equal to one half of the space between two adjacent lines, as seen in Figures 5, 8, and 9, thereby corresponding to the controlled line spacing of the platen or cylinder. The visible typing of ties of any desired length is thus possible.

As shown in Figures 3 and 5, different type may be provided on the same type bar adapted to permit of horizontal ties being produced as in Figure 8, or upwardly or downwardly inclined ties.

In order to permit of the highest possible typing speed of the time signatures, the numerals which more often indicate the beat of the notes to be played, i. e. 4 and 8, are situated on the lower half of the numeral type heads, while the other numerals are situated so as to be typed on the upper half of the staff-lines. It is thus possible to type a time signature within the staff by a double striking of keys arranged within the compass of an ordinary keyboard.

The arrangement and construction of keyboard and type crowns above described can be applied to any makes of typewriter and any other note symbols instead of or in addition to those illustrated may be adopted.

The arrangement and distribution of the notes and other symbols in the keyboard and type crown may also be varied more or less without departing from the essence of the invention.

Further, the note keys and note type may be provided without staff-lines and the latter may be provided on a separate key and type, e. g. may be produced by the use of the spacing bar. In this case, when typing several notes above one another as in chords, the staff lines are typed only once.

I claim:

1. A music-typewriter having a keyboard and type crown containing all the required notes, signs, numerals and other symbols used in music-notation and having the open and closed notes of the same pitch provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed.

2. A music typewriter having a keyboard, a movable carriage and type crown containing all the required notes, signs, numerals and other symbols used in music notation, the open and closed notes of the same pitch being provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed, the keys of said keyboard comprising a middle group of keys which correspond to the notes and do not feed the carriage when operated, and side groups of keys which correspond to other less used symbols and feed the carriage when operated.

3. A music-typewriter having a keyboard, a movable carriage and type crown containing all the required notes, signs, numerals and other symbols for use in music-notation, and having the open and closed notes of the same pitch provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed, the keys of said keyboard comprising a middle group of keys which correspond to the notes and do not feed the carriage when operated, and side groups of keys which correspond to other less used symbols and feed the carriage when operated, the types corresponding to symbols of such size that they cannot be incorporated on a single type bar being divided vertically and

provided on two adjacent type bars which when operated feed the carriage.

4. A music-typewriter having a keyboard and type crown containing all the required notes, signs, numerals and other symbols used in music-notation and having the open and closed notes of the same pitch provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed, the type corresponding to the heads of the notes being provided with staff lines, said heads on said type being each of a height equal to the space between two adjacent staff lines but sufficiently less in width to permit of the provision of staff lines so that in the case of ledger notes, the lines are clearly visible on both sides of the head of each note.

5. A music-typewriter having a keyboard, a platen and type crown containing all the required notes, signs, numerals and other symbols used in music-notation and having the open and closed notes of the same pitch provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed and including type bars provided with type corresponding to stems for the heads of the notes, said note stem type being laterally displaced or so situated on the type bar heads that a stem when typed can be joined to the head of a note which has been previously typed in a central position and has been shifted by the platen upwardly or downwardly relatively to this position.

6. A music-typewriter having a keyboard, a platen and type crown containing all the required notes, signs, numerals and other symbols used in music-notation and having the open and closed notes of the same pitch provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed and including type bars provided with type corresponding to the connecting ties for $\frac{1}{8}$, $\frac{1}{16}$, $\frac{1}{32}$ and $\frac{1}{64}$ notes, said tie-type having a thickness and being spaced from one another by an amount equal to one half the space between two adjacent staff lines and corresponding to the controlled line spacing of the platen.

7. A music-typewriter having a keyboard and type crown containing all the required notes, signs, numerals and other symbols used in music-notation and having the open and closed notes of the same pitch provided on the same type bar, including a shifting device permitting upon the depression of the appropriate key either the open or closed note to be printed and including type bars bearing type corresponding to numerals for the time signature, the type of the numerals which more often indicate the beat of the notes to be played (4 and 8) being arranged on the type bars so as to be typed on the lower half of the staff, the type of the other numerals being arranged on their type bars so as to be typed in the upper half of the staff.

GUST RUNDSTATLER.