

May 23, 1939.

A. ROSE

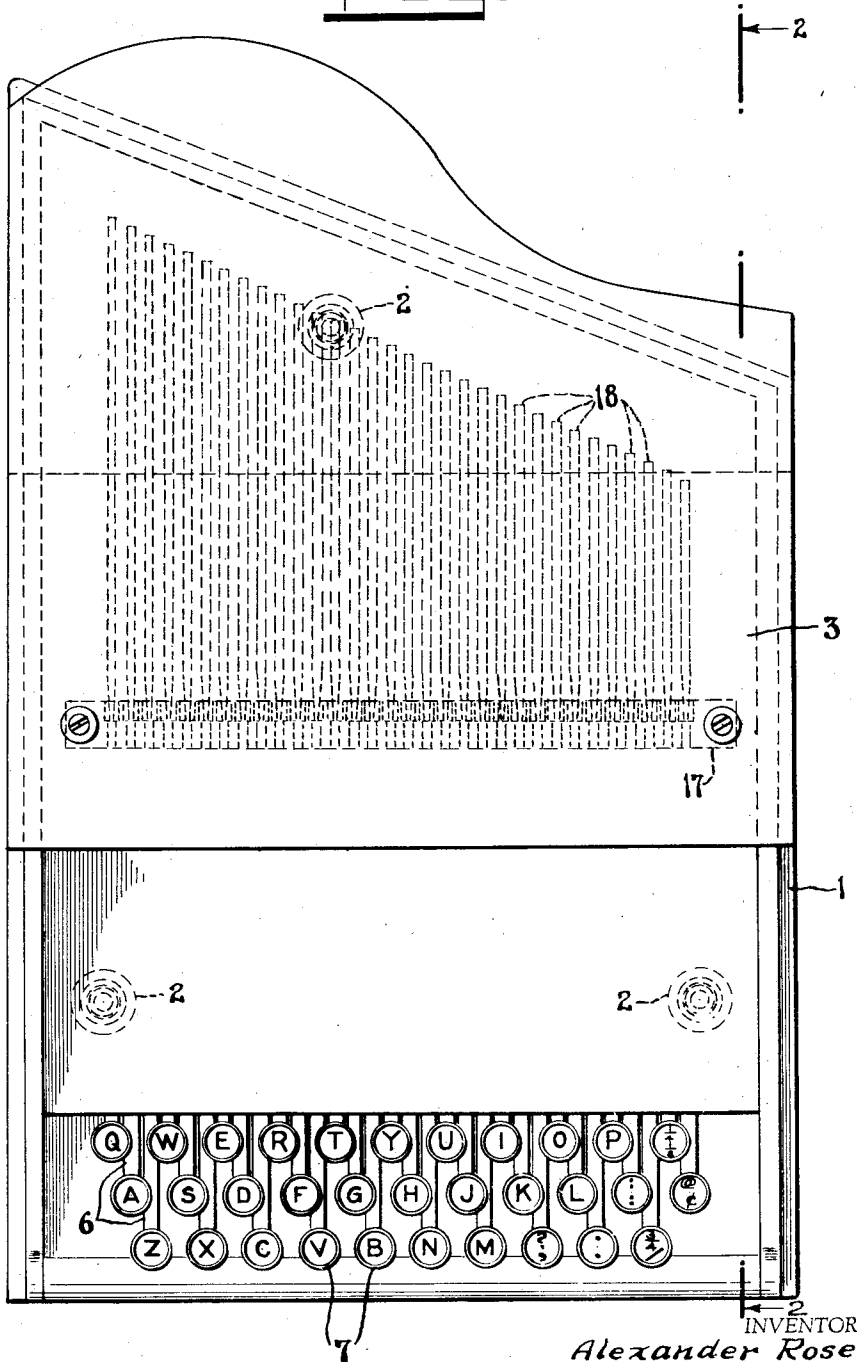
2,159,491

MUSICAL INSTRUMENT

Filed March 8, 1938

2 Sheets-Sheet 1

Fig. 1



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FIG. 2

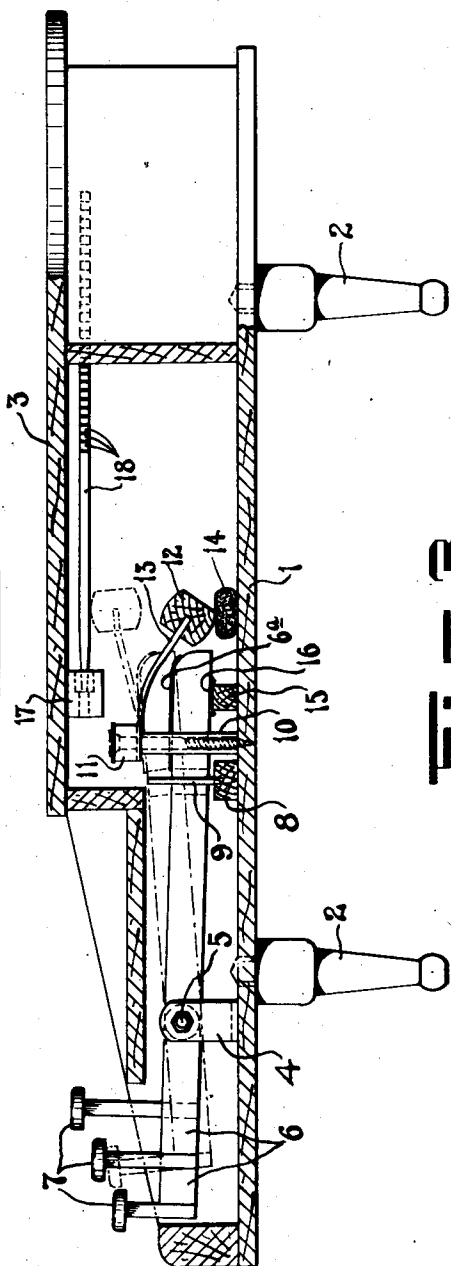
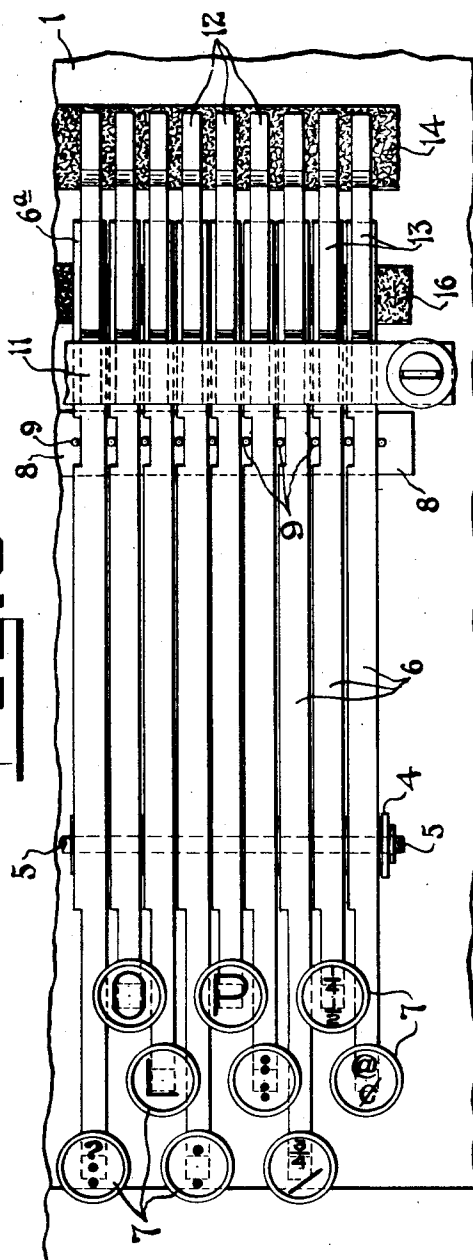


FIG. 3



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MUSICAL INSTRUMENT

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2 Claims. (Cl. 84-404)

This invention relates to improvements in musical instruments of a type adapted to be both entertaining and instructive.

The general combination of the invention consists of a series of tuned elements; preferably tuned in accordance with the chromatic scale, and a plurality of key actuated striking members having the keys marked in accordance with a portion of a standard keyboard of a typewriter. Other objects of this invention will be apparent from the following description when taken in connection with the attached drawings.

This invention resides substantially in the combination, construction, arrangement and relative location of parts, all as will be explained in detail below.

In the accompanying drawings,

Figure 1 is a top plan view of an instrument in accordance with this invention;

Figure 2 is a cross sectional view taken on the line 2-2 of Figure 1;

Figure 3 is a plan view of a portion of the mechanism, the remainder being broken away.

A general object of this invention is to provide a musical instrument having key operating members arranged and marked in accordance with a portion of a standard keyboard of a typewriter, so that those skilled in the operation of a typewriter, and those learning to operate one, may increase their proficiency while at the same time amuse themselves.

As will appear later, the notes of musical compositions may be represented by letters of the alphabet so that they may be reduced, in written form, to a series of letters arranged in lines which have no particular sequence. In other words, a particular melody when represented in this manner, will appear as a series of arbitrarily arranged letters. A person operating the instrument of this invention, following the touch system of typing, will strike, in sequence, the notes representing the tune or melody, thereby audibly reproducing it. While doing this their skill in the operation of the typewriter by the touch system will be perfected. It is believed that this characteristic of the device is enhanced by reason of the fact that the letters representing the notes of the music have an absolutely arbitrary sequence, thereby developing the user's typing ability.

Referring to the drawings, the device is shown comprising a base 1 of any suitable form, supported as for example by means of short legs or standards 2. At 3 is indicated a suitably shaped housing or cover in which the parts are enclosed. As will appear from the drawings, the housing

thus formed provides a space not unlike that at the front of a typewriter on which the various keys, as will be described later, are disposed.

Mounted within the housing thus formed are the standards 4 between which extend a shaft 5 upon which are pivotally mounted, intermediate the ends thereof, a plurality of levers 6. These levers, as is clear from Fig. 3, are of different lengths so that the key members 7 mounted on the ends thereof may be disposed in a bank, as is clear from Fig. 1, so as to be a substantial duplication of a standard typewriter key bank. These keys are marked, as is shown in Fig. 1, with the alphabet letters and the various numerals, symbols and punctuation marks, all of which together preferably comprise the letter rows of a standard typewriter keyboard. These characters are arranged in the same sequence and relationship as in the standard typewriter key bank, the numeral row being omitted.

Extending transversely of the levers 6, below them, and mounted on the support 1, is a bar 8 in which are mounted a plurality of vertically extending pins 9 disposed between the levers to form guide members therefor and to prevent transverse misalignment of the levers. Mounted on the support 1, near the ends of the levers 6, are a pair of standards 10 which support a transversely extending bar 11 which is disposed above the levers. Secured to this bar 11, by means of flexible arms 13, are the hammers 12. The flexible arms may be made of any suitable material which either is, or is not, inherently resilient in itself. For example these arms may be made of leather fabric and other flexible materials, or may be made of thin spring metal such as brass and the like. Secured to the top surface of each lever 6, near the end disposed under the arms 13, are strips 6a of a suitable soft resilient material such as felt, leather or the like. These surfaces of the levers represent the surfaces which engage the arms 13 when the keys are depressed, to kick the hammers upward. The felt strips 6a mainly serve the purpose of preventing generation of undesired sounds when the lever ends strike the arms. For a similar reason there is arranged transversely of the lever lengths, and mounted on the support 1, a strip 14 of any suitable soft material such as felt, arranged so that the hammers on their return strokes strike it. Likewise at 15 a transversely extending bar 15 is mounted on the support 1 below the ends of the lever 6 and provided with a soft surface 16 made, for example, of felt on which the ends of the levers rest.

Secured to the end surface of the cover 3 is a transversely extending bar 16, preferably of metal, in which are mounted a plurality of tuned sound generating elements consisting of steel rods of the proper length and cross section with respect to each other so that the characteristic note which each generates when set in vibration in sequence forms the chromatic scale. As is clear from the drawings, one of these elements is associated with each of the lever actuated hammers 12 so that the actuation of any particular lever always causes the striking of an associated element 18. Thus, for each key and the character marked thereon, there is a characteristic note.

As is clear from the above description and the attached drawings, the tuned elements 18 are associated with the keys of a portion of a standard typewriter keyboard so that in striking the keys from one side towards the other, as for example from the left to the right in Fig. 1, in the order of their displacement towards the right, the elements 18 are set in vibration in succession either up or down the scale, as for example up the scale in accordance with the arrangement illustrated in Figure 1. The result of such a combination is the fact that the elements set in vibration by any two adjacent keys in any row are separated by thirds. In addition, the elements set in vibration by any two adjacent keys in adjacent rows, as Q—A, A—Z, W—S, or S—X, etc., are separated by half-notes. By reason of this arrangement the device is exceedingly simple to play or operate and it is a very simple matter to set up various standard chords, which is in part due to the fact that every fifth key in a row with respect to another is separated by one octave, as for example the keys W and Y, or R and I.

It will be apparent to those skilled in the art that with such an arrangement any melody may be translated, so to speak, into a chart consisting entirely of letters of the alphabet, numerals, characters or punctuation marks, so that the melody may be reproduced on the instrument herein disclosed by simply striking, in the indicated sequence, the keys upon which the respec-

tive characters occur. Thus the operator using the touch system may operate the device from such a chart. The indiscriminate association of the letters, numbers, characters and punctuation marks, as required by a particular melody, naturally develops the touch system typewriter operator's ability to subconsciously strike the correct keys. All of this is accomplished at the same time as the operator is, so to speak, being entertained by the reproduction of a piece of music.

It will be apparent to those skilled in the art that the many details of structure involved can be varied without departure from the scope of this invention. For example, in place of the tuned rod elements, tuned wires may be employed or indeed any series of tuned elements capable of generating sound when set in vibration.

I do not, therefore, desire to be strictly limited to the disclosure as given for purposes of illustration, but rather to the scope of the claims granted me.

What I seek to secure by United States Letters Patent is:

1. In a device of the type described, the combination including a plurality of tuned sound generating elements arranged in chromatic scale sequence, and a plurality of key lever actuated devices respectively associated with said elements to set them in vibration, said key levers being arranged and marked to form at least a portion of a standard typewriter keyboard and associated with said tuned elements in the sequence of their arrangement.

2. In a device of the type described, the combination including a support, a plurality of tuned elements mounted on said support and adapted to respectively generate sound when set in vibration, said elements being tuned to form a chromatic scale, a plurality of hammer means, one for each element, a plurality of levers arranged to actuate said hammers individually, and a plurality of keys respectively connected to said levers and arranged and marked to form at least a portion of a typewriter key-bank.

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