Oct. 13, 1931. L. AILLAUD 1,827,451

MACHINE FOR TYPEWRITING MUSIC

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Fig. 1

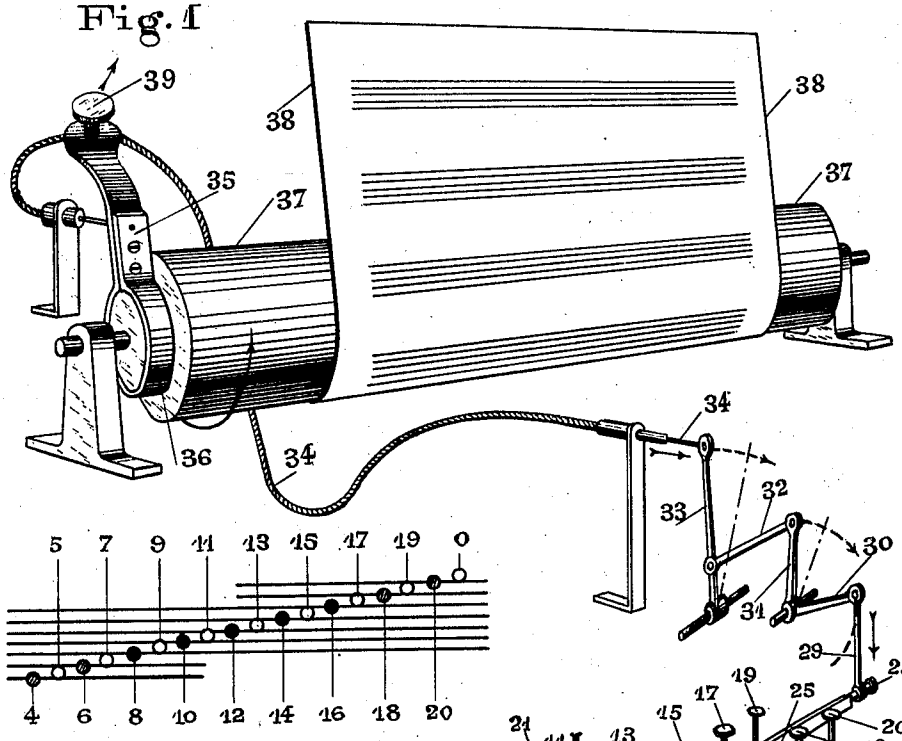
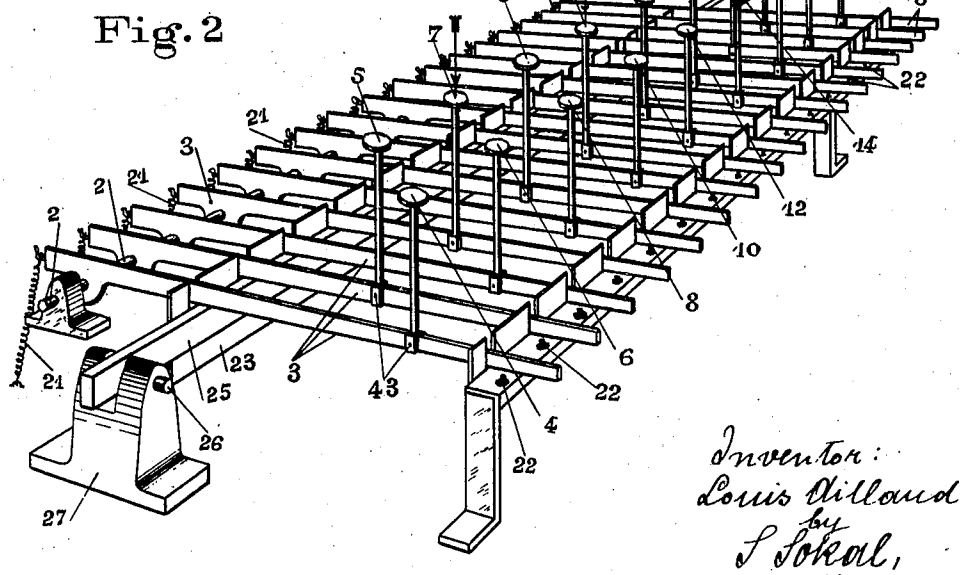


Fig. 2



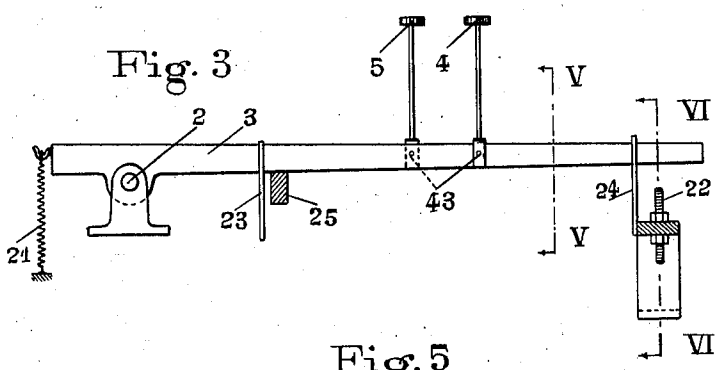
Inventor:
Louis Aillaud
by
S. Sokal,
Attorney.

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MACHINE FOR TYPEWRITING MUSIC

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Fig. 3



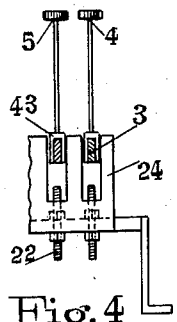


Fig. 4

Fig. 5

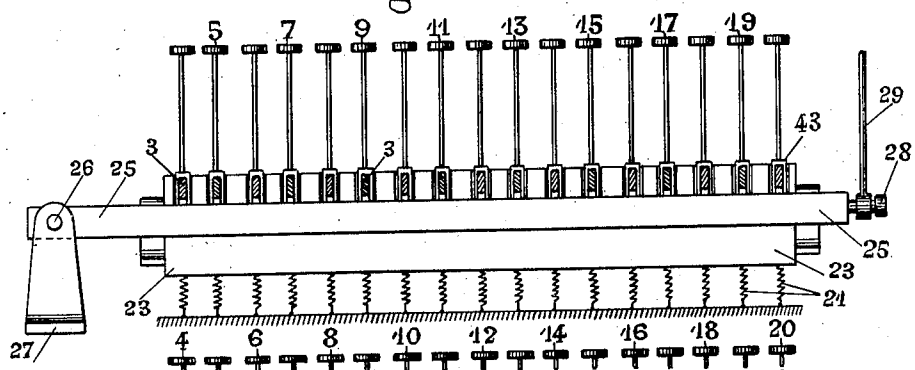


Fig. 6

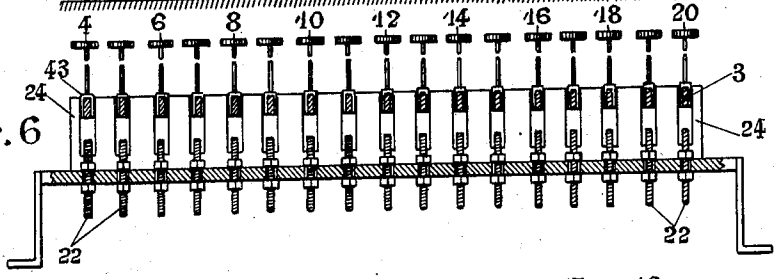


Fig. 7

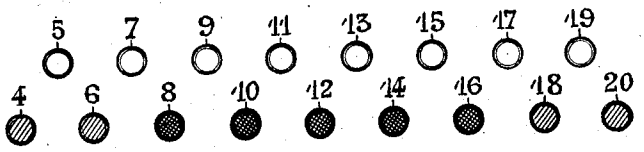


Fig. 8

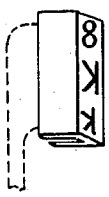


Fig. 9

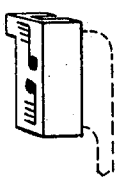
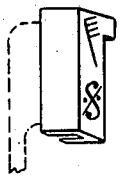


Fig. 10



Inventor:
Louis Aillaud
by
S. Sokal,
Attorney.

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MACHINE FOR TYPEWRITING MUSIC

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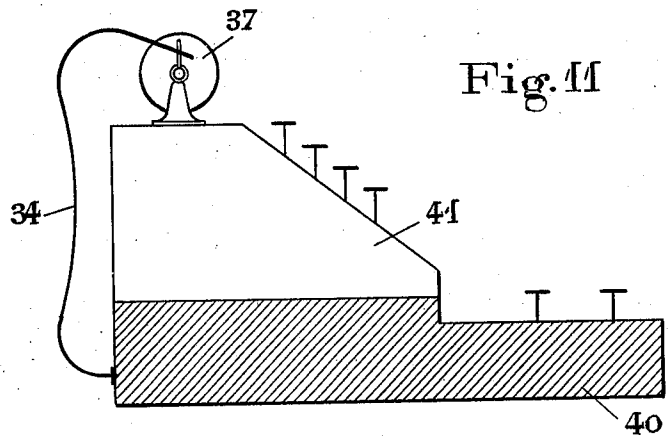
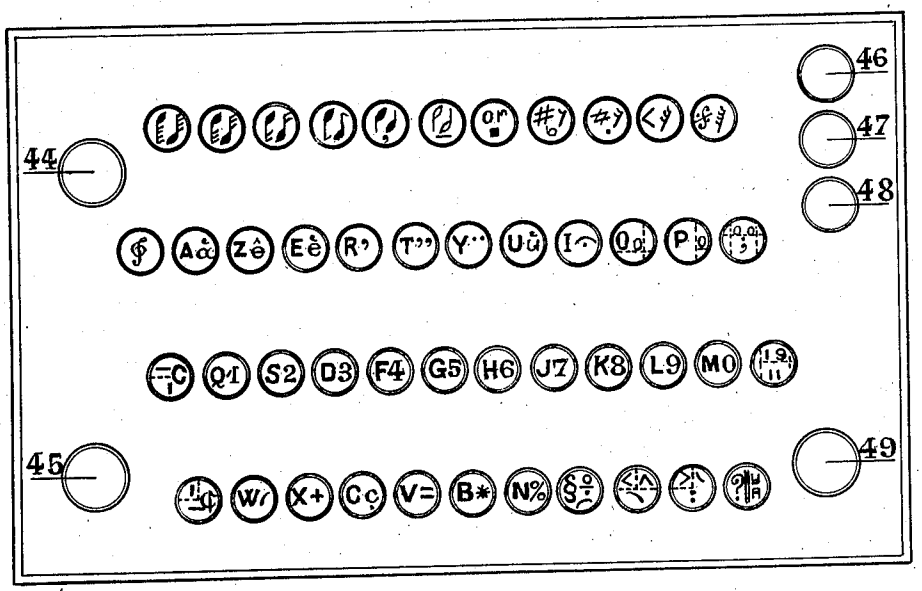


Fig. 11

Fig. 12



Inventor:
Louis Aillaud
by
S. Sokal,
attorney.

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UNITED STATES PATENT OFFICE

LOUIS AILLAUD, OF PLAN DE CUQUES, NEAR MARSEILLES, FRANCE

MACHINE FOR TYPEWRITING MUSIC

Application filed August 30, 1929, Serial No. 389,399, and in France July 23, 1929.

The present invention relates to a machine for typewriting music as well as ordinary text and more particularly to a machine of this kind wherein a device is provided which is adapted to be used in co-operation with an ordinary typewriter and comprises mechanism for turning the platen or roller of the typewriter on its axis in such manner as to bring it into a position corresponding exactly with the position which the note or musical sign to be typed must occupy in each individual case.

It is one object of the invention to provide a device of the aforesaid kind which can be used with any ordinary typewriter to enable music as well as ordinary text to be typed therewith and which comprises a keyboard provided with a set of keys adapted to operate control levers which actuate a single transmitting lever mechanically connected to a collar which is detachably fixed to the platen of the typewriter, whereby when one of the keys is depressed motion is transmitted from the corresponding control lever through the transmitting lever to the collar in such manner as to cause the platen to turn on its axis, the extent of the turning differing according to the particular key which has been depressed.

The combined machine for typing music or text is thus provided with two keyboards, but the two keyboards are independent of one another. By causing the platen to turn on its axis to an extent which is predetermined and is at the same time capable of being varied, the exact setting in position of the lines of the staff printed on the manuscript paper opposite to the striking mechanism of the typewriter is obtained in such manner that each note typed is printed exactly in its position whether it be on the lines, between the lines or on supplementary lines.

The control levers are preferably spring controlled and limited in their movement by means of adjustable stops and the transmitting lever is preferably arranged transversely to said control levers and pivoted at its one end in such manner that it is swung around its pivot through different angles by the depression of the different keys.

The transmitting lever may be connected to the collar by means of a flexible transmission cable, so that the device can be placed in any desired position with regard to the typewriter.

The keyboard of the device is preferably prolonged by a platform on which the ordinary typewriter can be placed.

The typewriter is, of course, provided with an ordinary keyboard having the usual number of keys, namely 42, 46 or other number according to the type of machine. The type bars of the typewriter are provided with type carrying the necessary extra signs for typing music and the keys are marked with the necessary corresponding indications, but in general the positions of the keys, particularly those corresponding to the capital and small letters remain unaltered, though the positions of the secondary indications such as those for punctuation, numbers and the conventional signs are preferably shifted.

The addition of the device for rotating the roller does not act in any way detrimentally to the functioning of the typewriter which serves indiscriminately and without any change for the ordinary writing or for the writing of the music.

The keyboard of the device is preferably provided with 17 keys corresponding successively to a scale of 17 notes (ascending).

A preferred constructional form according to the invention is illustrated by way of example in the accompanying drawings, in which:

Fig. 1 shows diagrammatically the arrangement of the parts constituting the device serving to displace in the direction of rotation the roller of the typewriting machine,

Fig. 2 shows the range of notes which can be obtained with the machine,

Fig. 3 shows to a larger scale a detail of one of the control levers for the rotation of the roller of the typing machine together with the corresponding key of the keyboard,

Fig. 4 shows in front view a means of connecting the key of this lever,

Fig. 5 shows in side view the transmitting lever for actuating the roller of the typing machine, and seen in section on line V—V of

Fig. 3, the control levers one of which is shown in Fig. 3,

Fig. 6 shows in front view the stop bar carrying the screws for regulating and adjustment, serving to determine the exact displacement of each of the control levers,

Fig. 7 shows diagrammatically in plan the arrangement of the keys of the keyboard for actuating the control levers,

Figs. 8, 9 and 10 show respectively to a larger scale in perspective the types of the blocks carrying the letters, the notes and the musical signs,

Fig. 11 shows diagrammatically in side view the position of the keyboard for the rotation of the roller and its platform supporting a typewriter provided with the ordinary keyboard for the actuation of the blocks carrying the letters, notes and signs arranged according to Fig. 12 and the mechanical connection of the device with the typewriter, and

Fig. 12 shows in plan the keyboard of the typewriter (in this case having 46 keys) on which the notes and the musical signs are inscribed without having eliminated the capital and small letters.

The machine for writing or typing music according to the invention consists of an ordinary typewriter 41 (Fig. 11) mounted on a base 40, carrying the keyboard for the rotation of the roller of the typewriter so as to set it in position exactly in accordance with the position which the note to be typed must occupy on the music manuscript paper carried by the roller.

The said keyboard for turning the roller of the writing or typing machine is made up of a spindle 2 (Figs. 1 and 3), on which the control levers 3, carrying the keys 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20 which are connected individually to each one of the levers 3 by the connecting members 43 (Figs. 3 and 4) oscillate. A return spring 21 is arranged at each one of the extremities of these levers, whilst their other ends come into contact with regulating and adjusting screws 22, which determine their range of displacement. Guides 23 and 24, constructed in the form of combs, avoid all lateral displacement of the levers 3. Each one of the levers 3 is in contact with a transmitting lever 25. This latter lever (Figs. 1 and 5) is carried on a spindle 26 fixed to the frame 27 and oscillates on the said spindle; at its opposite extremity a fixing device 28 of any kind is provided, which is adapted to receive a rod 29. The said rod (Fig. 1) is connected to a small branch member 30 provided on a double lever of which the branch 31 is likewise connected by means of a tie or a connecting rod 32, to a simple lever 33, to the extremity of which latter a flexible cable 34 is fixed. This cable is attached at its other end to the lugs 35, of a collar 36 fixed on a roller 37 of a typewriter carrying the musical manuscript paper 38. One of the lugs 35 is prolonged in order to afford reception for a return key 39, serving to return for manipulation the roller to its starting position, that is to say, into the position where the transmitting lever 25 is horizontal.

All the members which have just been described constituting the keyboard for adjusting the platen for the typing of music (Fig. 2) by the rotation of said platen, are mounted on a base (diagrammatically shown in Fig. 11), which forms a platform 40 supporting the typing machine 41, the roller 37 of which is connected by the cable 34 with the keyboard for the rotation of the roller.

The mode of operation for the machine for writing or typing music is as follows:

After having fixed the music manuscript paper 38 on the roller 37 by the usual means employed in typewriters, in such manner that the highest line of the musical staff, i. e. the starting point for the typing of music, is properly positioned opposite to the striking mechanism of the machine, it is then only necessary in order to type music to proceed in the following manner in order to bring the platen into the proper position for typing any desired note or sign. If the note which is to be typed has to be placed, for example, on the staff in the treble clef on one of the five lines (Fig. 2), it is necessary to depress one of the keys 8, 10, 12, 14, 16, the position of the keys after depression corresponding respectively to the notes mi, sol, si, re, fa. If the notes have to be written between the lines, it is necessary to depress one of the keys 7, 9, 11, 13, 15, 17, the position of each one of these keys corresponding respectively to the notes re, fa, la, do, mi, sol. If the notes have to be typed below the staff, it is necessary to depress one or other of the keys 4, 5 and 6, and in the case of the notes which have to be written above the staff, it is necessary to depress one or other of the keys 18, 19 and 20. If necessary, the note marked "zero" can be employed, which permits the junction of two musical scale portions inasmuch as the "zero" being a note lying between the lines, is followed by the second scale portion starting with a note on the line corresponding to key 4. In order, however, that the impression of each one of these notes should be in its correct position on the musical manuscript paper 38, it is indispensable that this latter should be displaced by a distance absolutely exactly equivalent to the distance which is to separate the note in question from a following note. This result is obtained by the displacement of the end of the transmitting lever 25, which is connected to the cable 29. In this connection it will be seen from a consideration of Figs. 1, 3 and 5, that each one of the levers 3 which are in contact with the lever 25 in

the neutral position corresponding to the note "zero" of Fig. 2, will produce by its depression a displacement of the end of the lever 25, to a different extent. If, for example, the first lever 3, carrying the key 4, located towards the left is lowered until it touches the corresponding stop 22, the end of the lever 25 will execute a long travel. On the other hand, when the key 20 located towards the right of the lever 25 is depressed, it will only cause the latter to execute quite a short travel. In accordance with the different degrees of travel of the lever 25 produced by the depression of the keys, corresponding movements in the direction of the arrows shown in Fig. 1 are caused which displace the rod 29, the levers 30 and 31, the connecting rod 32, and the lever 33, and through the medium of the cable 34 joined to the lugs 35 of the collar 36, will displace the roller 37 of the machine carrying the musical manuscript paper 38. It can, however, happen that the rectilineal movement transmitted by the keyboard members to cause rotary motion of the roller 37, deviates in certain cases from the correct amount necessary for accurately adjusting the position of the notes. The differences thus arising are in this case rectified by adjusting the position of the screws 22.

If the notes are descending and follow one another, the rotation of the roller 37 takes place progressively, but, on the contrary, if the notes are ascending, it is necessary after each striking operation to bring by means of the release key 39, into its initial position "zero", and inasmuch as, after this operation, each one of the positions of the paper is accurately controlled by the manipulation of the keyboard of the device, it is thus only necessary to actuate the key of the musical note or sign indicated on the ordinary machine keyboard shown in Fig. 12, in order to type the said note or sign on the staff of the musical manuscript paper 38 in the desired position. It will be understood that the device renders it possible to type any desired piece of music in any of the keys, and even to type an ordinary song. Examples of the type members bearing letters, notes and musical signs are shown in Figs. 8, 9 and 10. Simultaneously with the typing of the music, it is possible to type all the words, numbers or signs necessitated by the musical expressions, for instance those required for the phrases for music provided with a vocal score.

It will be understood that the dimensions and constructional details of each member constituting the machine for writing or typing music as hereinbefore described, can be varied without thereby departing from the scope of the invention.

In order to type matter below a staff, the procedure is as in the ordinary typing operation. That is to say, the musical device is disconnected and the roller of the typing machine is set free, and is thereby rendered completely separate from the musical keyboard so that the typing machine then functions normally by the use, for example, of the keyboard shown in Fig. 12, carrying the musical notes and signs, the letters, numbers, etc. of the ordinary writing, and also any usual auxiliary shift keys.

I claim:

1. A device for use with any ordinary typewriter to enable music as well as ordinary text to be typed therewith, comprising in combination: a set of keys, a plurality of control levers actuated by said keys, springs controlling said control levers, a single transmitting lever adapted to be depressed to different extents by said control levers, a collar detachably fixed to the platen of the typewriter, and a flexible cable for transmitting motion from said transmitting lever to said collar in such manner as to turn the collar and the platen, substantially as and for the purpose specified.

2. A device for use with any ordinary typewriter to enable music as well as ordinary text to be typed therewith, comprising in combination: a set of keys, a plurality of control levers actuated by said keys, a single transmitting lever actuated by said control levers, a flexible cable for transmitting motion from said transmitting lever, and a collar attached to said cable and detachably fixed to the platen of the typewriter, whereby when one of said keys is depressed, motion is transmitted to one of said control levers and through said transmitting lever and cable to the collar and the platen so as to turn the latter, the different control levers being adapted to displace said transmitting lever by different amounts, substantially as and for the purpose specified.

3. A device for use with any ordinary typewriter to enable music as well as ordinary text to be typed therewith, comprising in combination: a set of keys, a plurality of control levers arranged parallel to one another and rigidly attached to and actuated by said keys, a single transmitting lever arranged below said control levers transversely to the latter in such manner that said transmitting lever can be depressed to different extents by depression of said control levers, spring members for returning each of said control levers individually to the position of rest after depression, a collar detachably fixed to the platen of the typewriter, a flexible cable for transmitting motion from said transmitting lever to said collar in such manner as to turn the collar and the platen, and adjusting means for regulating the extent of depression of said control levers, substantially as and for the purposes specified.

4. A device for use with any ordinary typewriter to enable music as well as ordinary text

to be typed therewith, comprising in combination: a set of keys, a plurality of control levers actuated by said keys, springs controlling said control levers, a single transmitting lever adapted to be depressed to different extents by said control levers, a collar detachably fixed to the platen of the typewriter, a flexible cable for transmitting motion from said transmitting lever to said collar in such manner as to turn the collar and the platen, and a return key on said collar for bringing the platen back into its initial position when required, substantially as and for the purpose specified.

5. A device for use with any ordinary typewriter to enable music as well as ordinary text to be typed therewith, comprising in combination: a set of keys, a plurality of control levers actuated by said keys, springs controlling said control levers, a single transmitting lever adapted to be depressed to different extents by said control levers, a collar detachably fixed to the platen of the typewriter, amplifying levers connected to said transmitting lever, and a flexible cable for transmitting motion from said transmitting lever through said amplifying levers to said collar in such manner as to turn the collar and the platen, substantially as and for the purpose specified.

LOUIS AILLAUD.