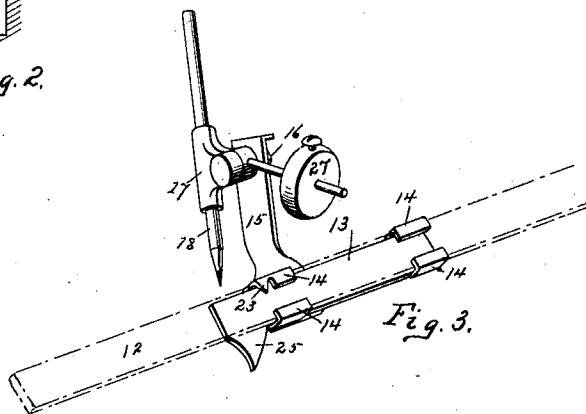
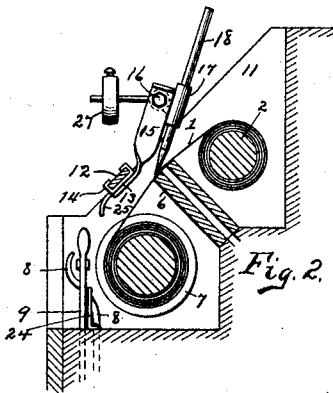
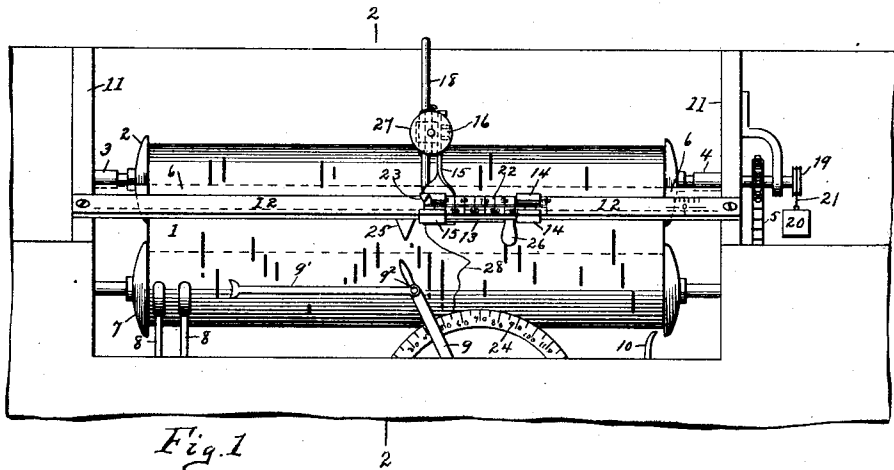


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 TEMPO MARKING DEVICE FOR MUSIC ROLLS.
 APPLICATION FILED APR. 25, 1910.

1,059,040.

Patented Apr. 15, 1913.



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UNITED STATES PATENT OFFICE.

FREDERICK M. CRAFT, OF CRANFORD, AND GEORGE HOWLETT DAVIS, OF WEST ORANGE, NEW JERSEY.

TEMPO-MARKING DEVICE FOR MUSIC-ROLLS.

1,059,040.

Specification of Letters Patent.

Patented Apr. 15, 1913.

Application filed April 25, 1910. Serial No. 557,470.

To all whom it may concern:

Be it known that we, FREDERICK M. CRAFT and GEORGE HOWLETT DAVIS, citizens of the United States, and residents, respectively, of Cranford, county of Union, and West Orange, county of Essex, both in the State of New Jersey, have invented certain new and useful Improvements in Tempo-Marking Devices for Music-Rolls; and we declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains or with which it is most nearly related to make, construct, and use the same.

The object of our invention is to provide an attachment for automatic player instruments in which perforated music rolls form the actuating devices for so marking the tempo upon such rolls, that they may be reproduced upon any other musical instrument in connection with the device, either of the patents to G. Howlett Davis granted on December 29, 1903, No. 748,266 or July 2, 1907, No. 858,708, and in connection with such devices to reproduce exactly the tempo as indicated by the zigzag line placed upon the roll by means of the device of our invention.

Reference is had in the accompanying description to the drawings forming a part hereof in which—

Figure 1 illustrates our improvement in connection with the roll winding device and trackerboard of an ordinary player instrument or player piano. Fig. 2, is a vertical section on line 2, 2 of Fig. 1. Fig. 3, is a view of our improvement detached from the instrument.

The ordinary perforated music roll 1, which is supported upon a spool 2, is carried in spindle bearings 3, 4, the latter bearing being connected by sprocket chain 5, to the motor mechanism of the device by which the roll after being played may be re-wound upon the spool 2. The roll 1 is carried over the usual trackerboard 6, to the winding roll 7, the latter being actuated by means of the usual spring motor.

The ordinary expression levers 8 are provided upon the instrument for varying the dynamic effects of the selection upon the roll.

The tempo lever 9 is used for varying the speed with which the roll 1 is wound upon the winding roll 7, and by its manipulation

the varying tempo effects desired by the operator or indicated upon the roll are produced in the playing. This tempo lever is connected to and forms a part of the governor of the motor mechanism. It is provided with a laterally extending pivoted handle 9¹ to be grasped by the left hand, by which it may be readily moved from side to side over the dial, 24.

10 represents the ordinary re-winding lever by which the spindle of the winding roll 7 is disconnected from, and the spindle 4 is connected to the motor for re-winding the roll 1, upon the spool 2.

The structure thus far described is the ordinary structure of the player piano or piano player, and forms no part of our invention except as its parts may be used in combination, but is simply described to show the use to which our improved structure may be put in connection with such a player instrument.

Secured to the side walls 11 of the instrument in any convenient, but detachable manner, is a bar 12, located so as to lie parallel with, and slightly below and forward of the trackerboard 6, as clearly indicated in Figs. 1 and 2. Mounted upon this bar near its right-hand end, is a slide 13, located at the rear side of said bar and provided with the series of tangs 14, which lap over the front face of the bar 12 in the manner indicated, so as to permit the slide 13 to move easily from right to left and vice versa upon the bar 12. Extending upwardly from the slide 13 is an arm 15, carrying at its upper end a stub shaft 16, upon the extremity of which is secured a pencil holder 17, carrying the pencil 18 in such a position that the point of the pencil will bear upon the music roll 1, just over the trackerboard 6. If desired, the pencil holder may be provided with a counterweight 27 so as to cause the pencil to bear upon the face of the perforated roll 1 with uniform pressure. In order to indicate the relative positions of the tempo lever 9 and the pencil point, we provide an extension 25, from the slide 13, which extension projects downwardly close to the path of the lever 9; the object being to afford the operator means for observing whether or not the pencil point is moving in unison with the tempo lever. A handle 26 may also be provided upon the slide 13 whereby it may be more readily manipulated

lated with the right hand. We may also provide the spindle 4 with a brake device consisting of a sheave 19 and weight 20, supported by a friction belt 21, said belt passing over the sheave 19 with its opposite end secured to some fixed point on the frame of the machine. This latter device is for the purpose of preventing the spool 2 from unwinding too rapidly, and serves as a sort of tension device to prevent the paper of the roll 1 from buckling under the pressure of the pencil.

When our improved device is not in use, it may be removed from the frame of the player instrument, or it may be slid over to one side of the bar 12 where it may be out of the path of the perforated roll 1.

As a convenient means for indicating the range of movement of the slide 13 and with it the pencil 18, we make use of the scale 22; substantially the same as that indicated in patent of July 2, 1907, No. 858,708, and provide one of the tangs 14 with a pointer 23 to indicate upon the scale the position of the pencil point.

We will now proceed to describe the operation of our device.

With the music roll 1 in position, and motor started, the perforated roll will be wound upon the winding roll 7 in the usual manner. The operator, after becoming familiar with the selection upon the roll, is enabled to so manipulate the tempo lever 9 as to produce the best musical effects to be obtained from the selection, so far as tempo expression is concerned. If now he desires to preserve this tempo expression he may move the slide 13 into the position indicated in Fig. 1, with the pencil point bearing upon the face of the paper and the pointer tang 23 at the same point on the scale as is indicated by the tempo lever 9 upon the dial 24; then as the playing of the selection progresses, the operator will continue to manipulate the tempo lever 9 with his left hand and simultaneously move the slide 13 with the pencil 18 back and forth with his right hand in exact unison with the movement of the tempo lever 9; resulting in producing a zigzag line 28 running throughout the roll in exact accordance with the tempo expression given to the selection by the operator in his manipulation of the tempo lever 9. After the selection has been so marked, the slide 13 with its accompanying parts may be moved out of the way and the selection again played in connection with the scale 22 in the manner indicated in the prior patents above referred to and more particularly in No. 858,708, so that by manipulating the tempo lever 9 in accordance with the deviations of the zigzag pencil line, causing the tempo lever 9 to move to points on the dial corresponding to the positions of the line with respect to the divisions on the scale 22,

an exact reproduction of the playing may be had. If desired, the pencil line may be subsequently gone over with ink so as to render it substantially permanent, or if desired, a stylographic pen may be substituted for the pencil 18 and the zigzag line made permanent in the first instance.

It will thus be seen that our improvement is of such a nature as to enable a musical artist to permanently record upon a music roll a sinuous or zigzag line, the extent of the deviations in which from side to side will correctly indicate the tempo of the selection so that such roll may thereafter be played upon an instrument provided with the indicating device shown and described in Patent No. 858,708, and an exact reproduction be given.

We claim:—

1. A tempo marking device for music sheets comprising a bar, a slide longitudinally movable upon said bar, a pencil pivotally mounted upon said slide, and means for detachably securing said bar to a player instrument in front of the perforated music roll thereon, with said pencil bearing upon the face of said roll.

2. A tempo marking device for music sheets comprising a bar, a divided scale upon said bar, a slide mounted upon said bar, a pointer upon said slide contiguous to said scale, marking means pivotally mounted upon said slide, and means for detachably securing said bar to a player instrument in front of the music roll thereon with said marking means bearing upon the face of said roll.

3. A tempo marking device for music sheets comprising a bar, a marking device slidably mounted upon said bar, means for indicating the position of said marking device with respect to said bar, and means for detachably securing said bar to a player instrument in front of the music roll thereon with said marking device bearing upon the face of said roll.

4. A tempo marking device for music sheets comprising a horizontal bar, a marking device slidably mounted upon said bar, a scale upon said bar, a pointer associated with said marking device for indicating the position of said device with respect to said scale, and means for detachably securing said bar to a player instrument in front of the music roll thereon with said marking device bearing upon the face of said roll.

5. A tempo marking device for music sheets comprising a bar, a divided scale upon said bar, a slide mounted upon said bar, a pointer upon said slide contiguous to said scale, marking means pivotally mounted upon said slide, and means for detachably securing said bar adjacent to the music roll upon a player instrument with said marking device bearing upon said roll.

6. A tempo-marking device for music sheets comprising a horizontal bar, a marking device slidably mounted upon said bar, means for indicating the position of said marking device with respect to said bar, and means for detachably securing said bar adjacent to the music roll upon a player instrument with said marking device bearing upon said roll.

10 7. A tempo marking device for music sheets comprising a horizontal bar, a marking device slidably mounted upon said bar, a scale upon said bar, a pointer associated

with said marking device for indicating the position of said device with respect to said scale, and means for detachably securing said bar adjacent to the music roll upon a player instrument with said marking device bearing upon said roll.

This specification signed and witnessed this 23d day of April 1910.

FREDERICK M. CRAFT.

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Witnesses:

MAY VAN NESS,

LOUIS M. SANDERS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."