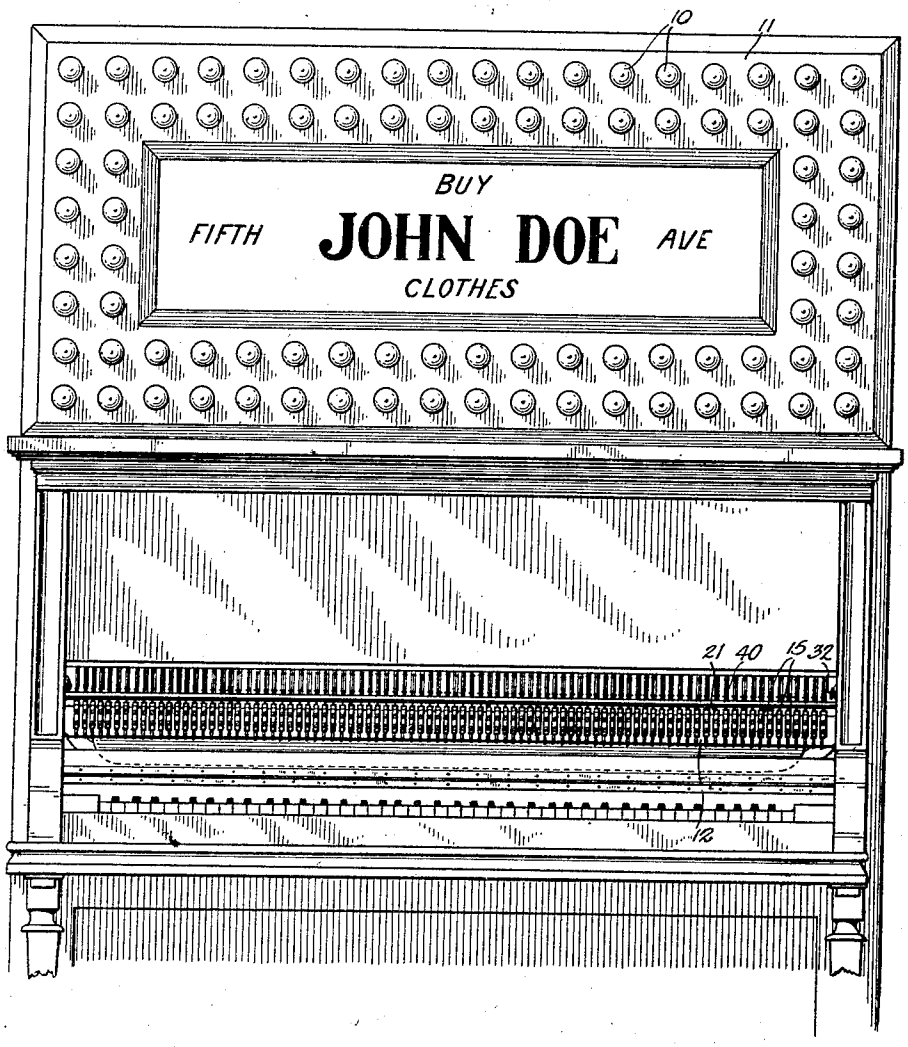
Dec. 15, 1925. 1,566,202

H. A. GILLER

ILLUMINATING ATTACHMENT FOR MUSICAL INSTRUMENTS

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Fig. 1.



WITNESSES

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Fig. 2.

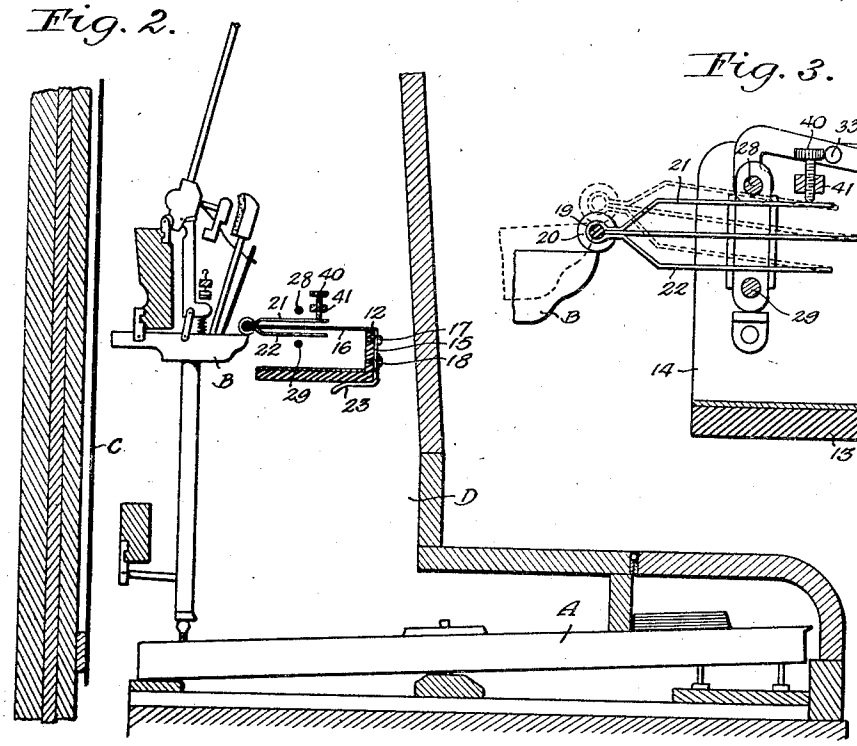


Fig. 3.

Fig. 4.

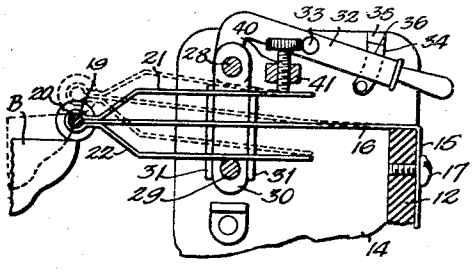


Fig. 5.

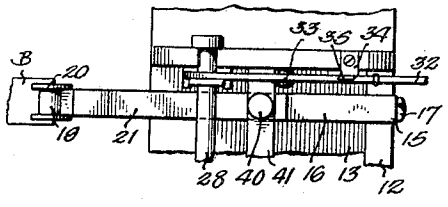
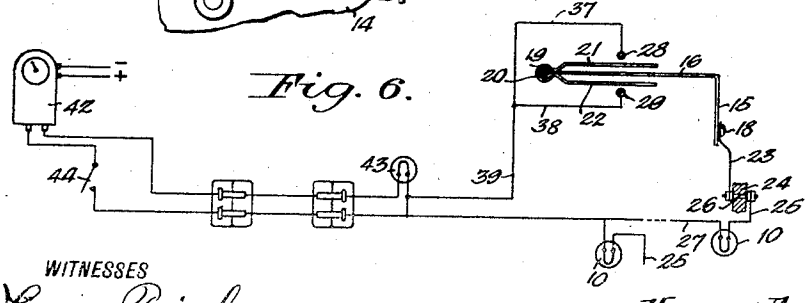


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

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ILLUMINATING ATTACHMENT FOR MUSICAL INSTRUMENTS.

Application filed January 2, 1924. Serial No. 684,071.

To all whom it may concern:

Be it known that I, HUGO A. GILLER, a citizen of the United States, and a resident of Elmhurst, borough of Queens, in the county of Queens and State of New York, have invented a new and Improved Illuminating Attachment for Musical Instruments, of which the following is a full, clear, and exact description.

This invention has relation to an illuminating attachment which is particularly designed for use in connection with pianos, organs or other similar musical instruments by means of which the flashing of the illuminating means coincides with the rhythm of the music.

The invention broadly comprehends an attachment for pianos, organs or the like which comprises a circuit including a bank or series of lamps, and a mechanism for simultaneously energizing or deenergizing the lamps in the circuit coincident with the actuating movement of the sound producing elements of the instrument.

One of the outstanding objects of the present invention resides in the provision of an attachment of the character set forth which is adjustable to normally energize all of the lamps of the bank or series whereby upon operation of the actuating elements the lamps coinciding therewith will be selectively extinguished or for normally deenergizing all of the lamps whereby upon operation of the actuating elements the lamps coinciding therewith will be selectively energized.

As a still further object the invention comprehends an attachment of the character set forth which is comparatively simple in its construction and mode of operation, which is inexpensive to manufacture and install, and which is effective and attractive for the purpose for which it is intended.

With the above recited and other objects in view, the invention resides in the novel construction set forth in the following specification, particularly pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that the right is reserved to embodiments other than those actually illustrated herein to the full extent indicated by the general meaning of the terms in which the claims are expressed.

In the drawings—

Figure 1 is a fragmentary front view of a piano equipped with an attachment constructed in accordance with invention, the front cover of the piano being partially raised to illustrate the underlying portion of the attachment.

Fig. 2 is a fragmentary cross sectional view through the piano with the attachment in applied position.

Fig. 3 is a fragmentary enlarged cross sectional view through the attachment illustrating the same adjusted to a position in which the lamps are normally extinguished.

Fig. 4 is a similar view illustrating the shifted position of the same in which the lamps are normally energized.

Fig. 5 is a fragmentary plan view of one end of the attachment.

Fig. 6 is a diagrammatic view.

Referring to the drawings by characters of reference, A designates a key of a piano action, B the wippen and C the strings. The attachment constituting the invention consists of a bank of lamps 10 arranged on a suitable display board 11 or otherwise employed for the purpose of advertising or producing electrical effects in rhythmic time with the piano or other similar instrument. The lamps preferably correspond in number to the number of keys or notes on the piano and are designed to be selectively energized or deenergized coincident with the striking of the various notes of the piano. In order to carry out the invention, a circuit closing mechanism is provided in the circuit which includes the lamps 10. The circuit closing mechanism which is adapted to be arranged within the housing or casing D of the piano consists of a carrier rail 12 of suitable non-conducting material such as bakelite which is provided with a horizontal longitudinally provided with a horizontally longitudinally extending flange 13 at its lower end and end walls 14 secured to the rail and flange 12 and 13. The rail 12 has secured to the front face thereof the downturned extremity 15 of a contact 16 by means of upper and lower fastening screws 17 and 18, one contact element being provided for each key and wippen A and B. The contact elements 16 are of a resilient conducting material and are equidistantly spaced throughout the length of the rail 12 with their free ends projecting rearwardly beyond the rear edge of the horizontal flange 13. The free rear ends of the

contact elements 16 are each formed with a bearing 19 in which a roller 20 is mounted, said roller being disposed directly in the path of movement of the wippen B and in contact therewith for actuation thereby. The free ends of said contact elements are further provided with forwardly projecting upper and lower contact fingers 21 and 22 which are also of a resilient conducting material. The lower fastening screw 18 of each contact element in addition to securing the downturned extremity to the rail 12 serves to connect the terminals of the conductor wires 23 to the respective lamp 10 in the bank through a connector board 24 and conductor wires 25 which lead from the binding post 26 on the connector board directly to the lamps. From the lamps conductor wires 27 lead to the source of supply. In order to render the device adjustable whereby the lamps of the bank may be all normally extinguished or energized and the device operated by the playing of the instrument to deenergize or energize the corresponding lamps in rhythm with the music. A pair of conductor bars 28 and 29 are employed which extend longitudinally above and below the upper and lower contact fingers 21 and 22. The bars are each secured at their opposite ends in a vertically slidable yoke 30 which is mounted between parallel vertical guides 31 provided on the inner face of the end walls 14. One of the yokes 30 has connected therewith a manipulating lever 32 which is pivoted as at 33 to the end wall 14 to afford means for effecting vertical adjustments of the yokes 30 and bars 28 and 29. In order to retain the yokes and bars in their vertically adjusted positions a segment or rack 34 is secured to the end wall 14 and the teeth 35 and 36 thereof engage over the upper edge of the lever as illustrated. The bars 28 and 29 are respectively connected by branch conductors 37 and 38 with a common return wire 39 which also leads to the source of supply. By shifting the lever to engage beneath the lower tooth 36, as illustrated in Fig. 4, the contact fingers 23 of each contact element are normally in engagement with the conductor bar 29 whereby the circuit is normally closed to energize all of the lamps of the bank or series. When the instrument is played, the wippen B in rocking upwardly, as illustrated in dotted lines, will effect an upward flexing or bending of the corresponding contact element 16 and the finger 22 so that the corresponding lamp is deenergized and extinguished in rhythm with the music. When the lever 32 is engaged beneath the upper tooth 35 the yokes and bars will be moved downwardly so that the bar 29 is out of contact with the fingers 22, while the upper bar 28 is disposed above and out of contact with the upper fingers 21. It will thus be seen that the circuit is normally open so that the lamps are normally deenergized and extinguished. When the instrument is played and the wippen B moves upwardly, the upper contact fingers 21 corresponding to the note played will engage with the bar 28 so that the normally deenergized lamps will be energized and lighted in rhythm with the music. In order to eliminate or minimize vibration and consequent noise due to the movement of the element 16 and the fingers 21 and 22, a plurality of adjustable elements such as set screws 40 are employed for engagement with the fingers 21. The set screws are threaded through a non-conducting bar 41 which is secured to the end walls 14 and traverse all of the fingers 21.

In view of the fact that the source of electrical energy for use in connection with the device is usually received through a meter 42 and a fuse is arranged in the circuit, it is essential to prevent blowing out of the fuse by suddenly overloading the circuit where a number of keys are operated simultaneously, and to this end it is proposed to employ a concealed lamp 43 which is constantly energized when the main switch 44 is closed. Under this arrangement the current if continually flowing while the device is in operation functions to prevent the sudden overloading of the current which would operate to blow the fuse.

I claim:

1. In an illuminating attachment for pianos, organs or similar instruments provided with actions for the notes, comprising a circuit including a series or bank of lamps, means operable by the actuation of the action for closing the circuit when normally open, or opening the circuit when normally closed to said lamps coincident with the playing of the notes, said means consisting of a movable contact element for each note engageable by a moving part of the action which sounds said note, and a pair of adjustable relatively fixed common contact elements operable upon one adjustment to normally close the circuit to all of the lamps whereby upon playing of the instrument the circuits to said lamps are broken and operable upon another adjustment to normally open the circuits to all of the lamps, whereby upon playing of the instrument said lamp circuits are closed.

2. An illuminating attachment for pianos, organs or similar musical instruments provided with actions for the notes, for controlling the illumination in rhythm with the music, comprising a circuit including a plurality of lamps arranged in parallel in said circuit, independent circuit closing means operable by moving part of the action for controlling the individual lamps coincident with the striking of the notes, said circuit closing means being adjustable whereby to

permit normal deenergization of the lamps and energization when the instrument is played, and normal energization of the lamps and deenergization when the instrument is played.

3. A rhythmic illuminating attachment for pianos, organs or similar musical instruments provided into actions for the notes, comprising a circuit including a plurality of lamps corresponding in number to the number of notes of the instrument and arranged in parallel in said circuit, independent circuit closing and breaking elements for each lamp operable by the movement of the action of the corresponding note, said circuit breaking and closing elements each including a movable contact member and a pair of common fixed contact members, the latter being adjustable for respectively maintaining the circuit to all of the lamps in open condition whereby upon playing of the instrument the circuits to said lamps are broken or in closed condition, whereby upon playing of the instrument said lamp circuits are closed.

4. A rhythmic illuminating attachment for pianos, organs or similar musical instruments provided with actions for the notes comprising a circuit including a plurality of lamps corresponding to the number of notes of the instrument and arranged in parallel in said circuit, a pair of common fixed contact members in said circuit, a movable contact element for each lamp in said circuit operable by the means for producing the note, and means for effecting relative adjustments between the common fixed contact elements and the movable contact elements whereby the circuit to said lamps are normally closed and adapted to be opened upon playing of the instrument or normally open and adapted to be closed upon playing of the instrument.

HUGO A. GILLER.