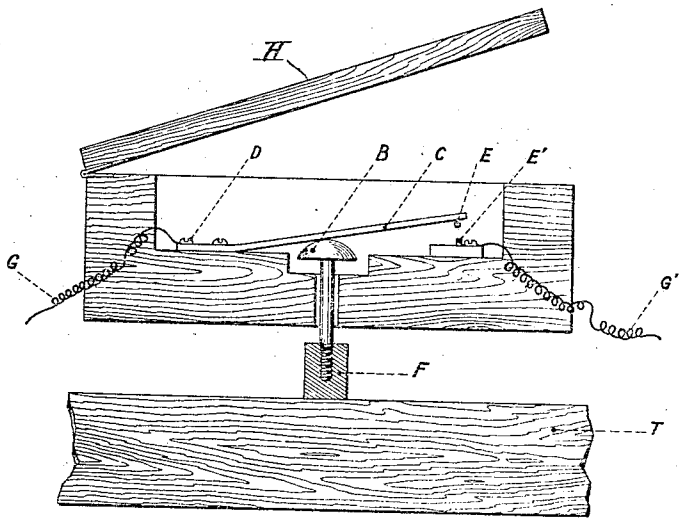
L. NUEDA.

SWITCHING MECHANISM.

APPLICATION FILED JULY 11, 1917.

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Patented Dec. 24, 1918.



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SWITCHING MECHANISM.

1,288,658. Specification of Letters Patent. **Patented Dec. 24, 1918.**

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To all whom it may concern:

Be it known that I, LUIS NUEDA, a subject of the King of Spain, and resident of Madrid, Spain, have invented certain new and useful Improvements in Switching Mechanism, of which the following is a specification.

The present invention refers to a switching mechanism for controlling the operative connection between an organ or harmonium or only one of these instruments and an ordinary manually operated or mechanical piano, forming with the piano one, two or more distinct pieces of furniture, joined to or separate from the piano, the shutter valves of the organ and harmonium notes operating congruously with the keyboard of the piano by means of electricity, the keys of the piano serving as interrupter bridges.

The piano is undoubtedly one of the most complete musical instruments known and in order to be perfect within its limited scope, the only thing wanting is to give to the notes their true value, sustaining them in all their length with equal intensity. However good the construction of a piano may be, the sounding board will only perform its function properly in connection with notes which are held or sustained.

It is the object of the invention to provide a switch for coupling an organ or harmonium to a piano in such a manner that the former instrument will readily respond to the touch of a piano key, allowing the air to pass through the reeds or tubes as long as the note produced is sustained on the piano. In this manner the sound of the note played on the piano will be blended with that of the sound produced on the harmonium or organ and thus the notes will be sounded to their full value and perfect legatos will be possible.

With this end in view a box is provided with openings in its bottom through which headed bolts are passed, the lower ends of which are secured to the keys of a musical instrument such as a piano, so that upon the depression of the keys of this piano, an electric circuit is closed in which the tune produced on the organ or harmonium is operated which corresponds musically to the one produced by the depression of the piano key.

In the accompanying drawing, forming part of this specification, a switch according to the present invention is illustrated partly in section.

This switch consists of a small rectangular box of appropriate size A in the bottom of which openings are provided through which the small bolts B are passed which will be as many in number as there are notes in the organ or harmonium. In the part of these small nails which protrudes from the exterior of the box are arranged fixtures F of wood, leather, gum or of any other substance, and which said keys T of the piano serve to support the fixtures, keeping up the small nail B as it is indicated in the figure while the key remains in its normal position.

A small spring C rests upon each one of the small nails. These small springs are fixed to the box by a screw D which at the same time serve to secure a wire G which is included in the electric circuit. At the opposite end of the screw small spring C has a point of contact E. Over the whole length of the box and exactly in front of the points of contact E of each small spring, an electric conductor of any form whatever E′ is extended and to which the other conductor G′ is connected.

Operation of working.—The working of these switches can be clearly deduced from the preceding description. On lowering the key T the small bolt B will fall also, impelled by the small spring C and the conductors E E′ will instantly meet thus closing the electric circuit corresponding to the note of the organ or harmonium which musically corresponds with the piano key which has been lowered, the circuit remaining closed until the key regains its normal position, in which case it pushes the small nail B upwardly and this in its turn will push the spring C, thus separating the points of contact E E′.

As the apparatus has been described, the fixtures F should bear against the keys, the box containing the switches having been positioned above the same.

In like manner, if instead of placing the contact E′ below the contact E it be placed above the latter, we shall have reversed the working of the interrupter, which will then close the circuit at the rising of the small nail B and the spring C and consequently in this case it would be necessary to place the box behind the articulations of the keyboard in a normal position or before the aforesaid articulations in an inverted position.

The box of interrupters may be provided with a lid H and may be further lined with a suitable sound insulating material, to eliminate any possibility of dust entering the casing, or sound being admitted therefrom. I wish it further understood that I may substitute the aforedescribed device for any similar device applied onto an organ or piano and that I may make such changes in the same as may be deemed practical without departing from the scope of my invention.

What I claim is:

In a switch of the character described, a box provided with openings in its bottom, headed bolts with their shafts passing through said openings, and adapted to be secured with their lower ends to the keys of a musical instrument such as a piano, and to be lowered upon the operation of said keys, springs secured by one of their ends to said box, against which the heads of said nails normally rest, electric contacts at one end of each of said springs, an electric conductor underneath said contacts on said springs to which electric wires are connected having their other ends connected to said conductor and to the ends of said springs at which they are secured to said box, substantially as described and for the purpose set forth.

In testimony whereof he affixes his signature in presence of two witnesses.

LUIS NUEDA.

Witnesses:
ALFONSO SIPE,
TETICIANO CALVO.

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