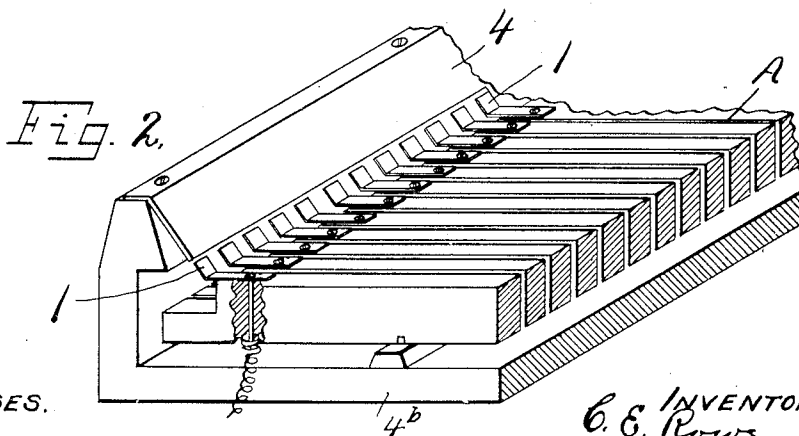
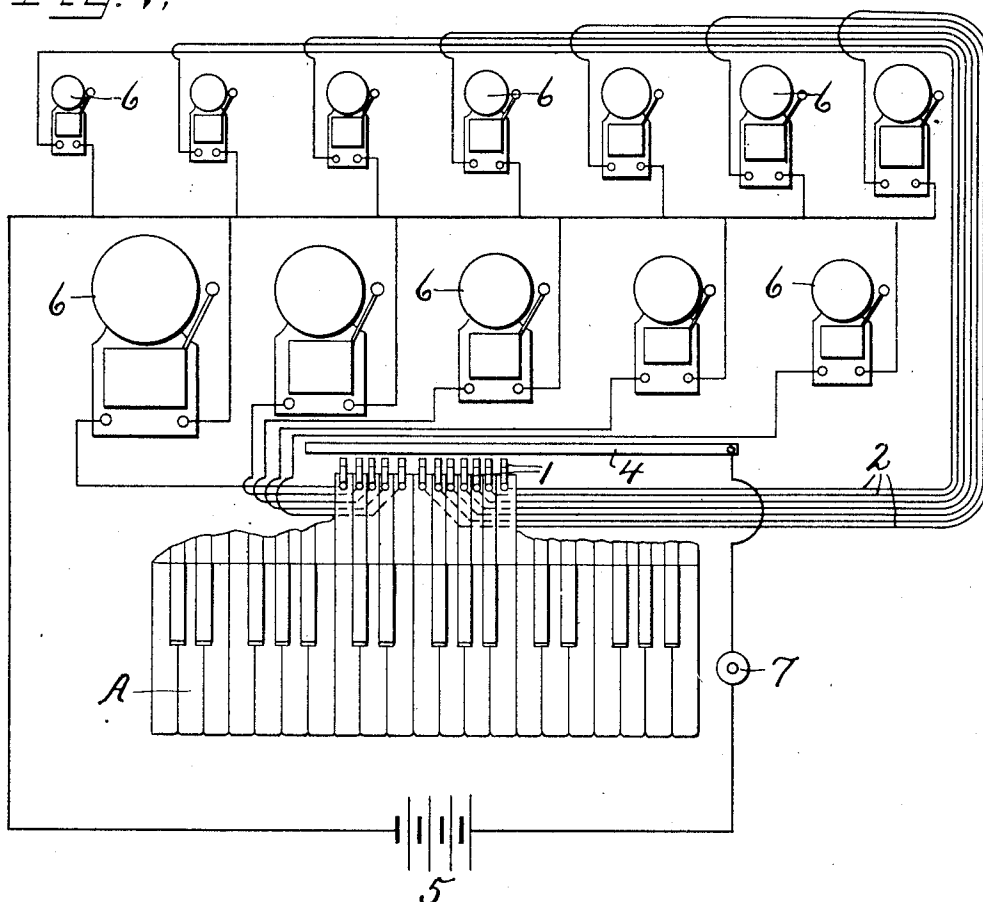


1,036,724.

Patented Aug. 27, 1912.

Fig. 1.



WITNESSES.

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KEYBOARD-CONTACT.

1,036,724.

Specification of Letters Patent.

Patented Aug. 27, 1912.

Application filed May 16, 1911. Serial No. 627,610.

To all whom it may concern:

Be it known that I, CHESTER E. ROWE, of Cortland, in the county of Cortland, in the State of New York, have invented new and useful Improvements in Keyboard-Contacts, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in attachment for piano fortes and similar key-board instruments and comprehends a series of electrically operated bells or other suitable sound producing devices adapted to be brought into harmony either individually or collectively with certain predetermined tones of a piano or other similar key-board instrument.

The main object is to enable these tone producing devices to be located at any point or points in proximity to or remote from the instrument with which the system is adapted to coöperate so as to produce novel harmonic effects in music halls, theaters and other places where such a system might be desirable or profitable. In other words I have sought to produce simple electrical means whereby one or more bells or other suitable tone producing devices may be operated electrically through the medium of coöperative contacts brought into action by the operation of one of the movable elements of the hammer action of a piano forte, whereby the same tone or any harmonizing tone may be produced simultaneously with that produced by the action of a selected hammer and string of a piano forte when operated manually in the usual manner or through the medium of any mechanical playing device.

Other objects and uses will be brought out in the following description.

In the drawings—Figure 1 is a diagrammatic view of a portion of the key-board of a piano forte showing a system of graded electric bells of selected tone and quality and a corresponding series of electric circuits having suitable contact devices mounted upon the rear ends of the keys of a piano and adapted to contact with a feed conductor common to all of the circuits for closing such circuits when the piano keys are operated. Fig. 2 is an enlarged perspective view of the rear ends of some of the keys of a piano forte showing more clearly the contact members mounted thereon and common

conductor with which they are adapted to contact.

As previously stated this electric tone producing system is adapted to be operated in connection with a piano forte or similar key-board instrument such as an organ and for this purpose I have shown in Fig. 1 a portion of a key-board —A— of a piano forte in which any predetermined number, in this instance twelve, of the keys representing one octave are provided at their rear ends with separate contact members —1— which are electrically connected in separate circuits —2— and are adapted to establish electrical connection by contact with a single conductor —4— as the keys are operated manually or mechanically in the operation of playing the piano. This conductor —4— is common to all of the circuits which may derive current from any suitable source of electric current as a battery —5—.

Connected in each of the circuits is at least one tone producing device as a bell —6— of predetermined tone and quality adapted to harmonize with the tone produced by the corresponding string of the piano forte with which it is associated through its connection with the contact —1— of the corresponding key of the key-board —A—.

The bells —6— or other electrically operated tone producing devices may be located in proximity to or remote from the piano with which they are electrically connected and in some instances may be grouped in sets or may be distributed in widely separated localities in a music hall, auditorium or other place where certain acoustic effects or distant tones harmonizing with those of the piano may be desirable, it being understood that each of the electrically operated tone producing devices will be harmonized with the tones produced by the particular key of the piano with which it is associated, the purpose being to afford musical accompaniment to the piano by means of separate electrically operated percussion devices.

I have shown the contact devices as located on the rear ends of the keys and adapted to contact with a single conductor common to all of the circuits but it is evident that these contacts may be mounted upon or connected to other parts of the hammer actions and that the location of the conductor —4— may be varied to conform

to the location of the contacts or may be made in separate pieces one for each contact but this latter arrangement would involve unnecessary wiring. The preferable and practical embodiment of the invention is therefore as herein shown and in which the conductor 4 is in the form of a metal strip that is shaped to have a portion 4' thereof lie flat upon and be secured to the upper face of the key-stop 4^a usually provided at the rear of the key bed 4^b. The remaining portion 4^c of the metal strip is projected downwardly and forwardly at an angle and overlies the keys A at the rear ends of the latter. The contact members 1 are in the form of flat plates secured to the upper faces of the keys A at the rear ends of the latter, the securing screws or bolts 1^a extending through the keys A and thus permitting the circuit wires 2 to be attached underneath the keys so as to be invisible. The members 1 project beyond the upper face of the keys A at their rear ends and have the projecting portions 1^b extended at an angle substantially in the same plane as the portion 4^c of the strip 4 so that when a key A is depressed at the forward end, the free end of the portion 1^b of a contact member is moved into engagement with the free edge of portion 4^c and a circuit completed through the corresponding tone producer 6.

An electric switch or circuit closer —7—

is connected in the circuit between the battery and conductor —4— to permit all of the tone devices to be thrown into and out of operative connection with the piano forte at will.

The electric tone producing device —6— may be of the ordinary electromagnetic single stroke or vibratory type except that the bells or other percussion devices which are used are constructed and selected for quality of tone.

What I claim is:

In key-board contacts, a key bed, a plurality of keys mounted thereon and a key stop lying above the rear ends of the keys, combined with a contact member secured to the upper face of each key at the rear end thereof and having an upwardly and rearwardly-extending free end, connections between said contacts and a source of electrical energy, and a conductor bar common to all of the contacts secured to the upper face of the key stop and having an angular portion extending downwardly and forwardly and disposed to have its free edge lie adjacent the free ends of the contact members.

In witness whereof I have hereunto set my hand on this 9th day of May 1911.

CHESTER E. ROWE.

Witnesses:

J. W. ANGELL,
S. G. WOOD.