

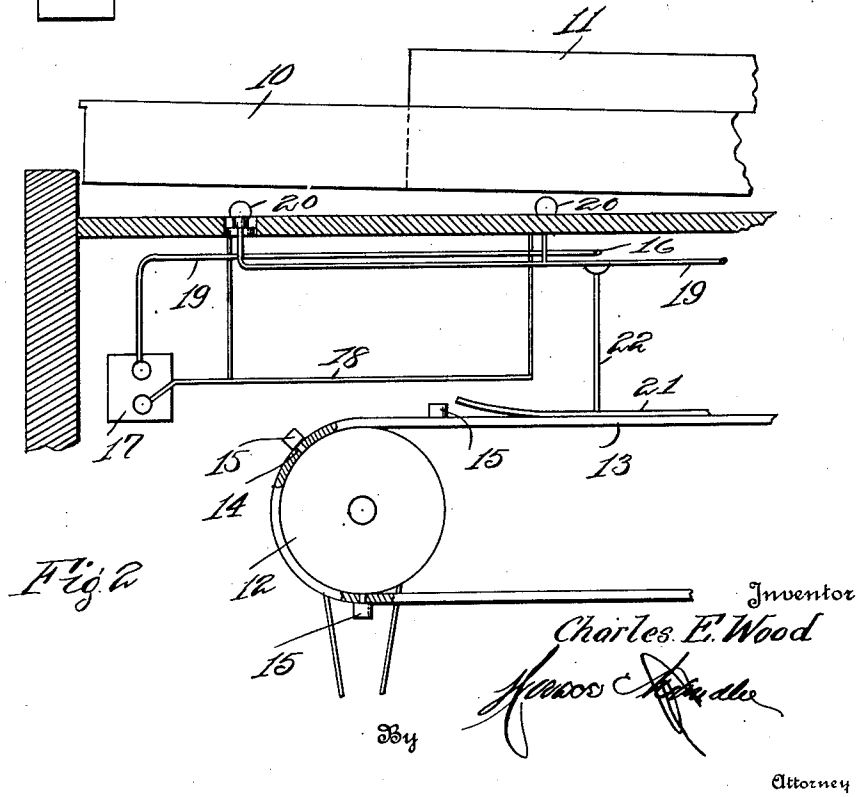
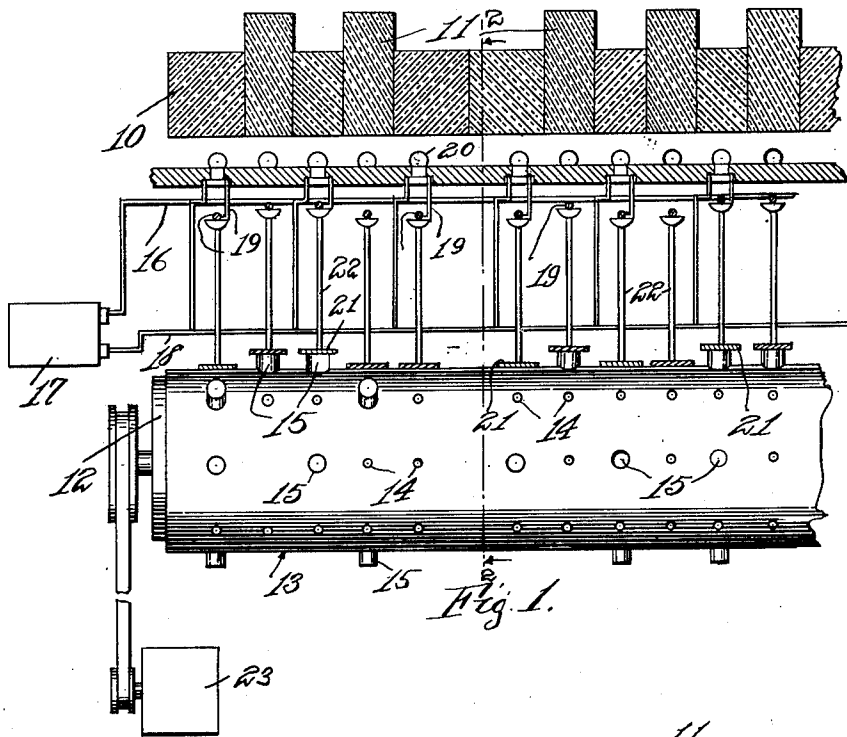
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MUSIC TEACHING DEVICE

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UNITED STATES PATENT OFFICE.

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MUSIC-TEACHING DEVICE.

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This invention relates to new and useful improvements in teaching devices, and particularly to devices for teaching the playing of the piano.

One object of the invention is to provide a device by means of which certain signals will be automatically displayed with relation to certain keys of the piano, which correspond to notes of a composition, whereby the novice will be able to instantly see which of the piano keys to depress.

Another object is to provide a mechanism which is adapted to close an electric circuit to light a lamp beneath a piano key corresponding to a particular note of a composition, such mechanism being adapted to changes corresponding to different compositions.

Other objects and advantages will be apparent from the following description when taken in connection with the accompanying drawing.

In the drawing:

Figure 1 is a vertical sectional view taken longitudinally of a key of the keyboard of a piano, showing the invention in position.

Figure 2 is a vertical transverse sectional view on the line 2-2 of Figure 1, showing the circuit closers, and the removable contact plugs of the endless belt.

Figure 3 is a horizontal sectional view.

Referring particularly to the accompanying drawing, 10 represents a series of white keys, and 11 the black keys of a piano keyboard, in connection with which the present invention is particularly adapted for use.

Mounted beneath the keyboard, and extending longitudinally thereof, adjacent the front and rear ends of the keys, are the rollers 12, and trained around these rollers, for movement longitudinally beneath the said keys, is the endless belt 13. This belt is provided with both transverse and longitudinal rows of sockets 14, into which are adapted to be inserted the insulated plugs 15. The longitudinal rows of sockets 14 are arranged to travel in a direction longitudinally of the key levers, as will be clear from an inspection of the drawing. Extending longitudinally of the keyboard, and beneath the keys, is an uninsulated wire 16, which is connected to a suitable source of electric current, such as the battery 17, a second wire 18 extending in parallel relation to the first wire, and being properly insulated. To this second wire are connected the series

of wires 19, each wire being disposed longitudinally beneath a key and uninsulated, and extending transversely of the wire 16, but normally out of contact therewith. Each of the wires 19 has an electric lamp 20 connected therewith, such lamp being disposed directly beneath a key of the keyboard. The keys are preferably formed of some transparent material, such as glass, so that the light from the lamp may be seen by the pupil, as he sets before the piano. Disposed longitudinally of each of the keys, is the flexible bar 21, and connected to this bar and to the wire 19, of that particular key, is a vertical rod 22, which is arranged to elevate the wire 19 into electrical contact with the wire 16, whereby to complete the circuit through the lamp and battery, so that the light of the lamp may be seen through the key by the pupil, thus indicating to him that he is to depress that particular key.

It will be noted that the belt 13 is arranged to travel beneath the keys so that the plugs successively engage the appropriate bars 21, and lift them so that the wire 19 connected therewith by the rod 22, will be brought into contact with the uninsulated wire 16, whereby to complete the circuit through the lamp of that key. In this way the plugs successively light the lamps of all of the keys corresponding to the notes of the composition being learned, and the pupil is instantly informed of the different keys to be depressed. The lamps of the white keys are preferably red, while those of the black keys are white, thus indicating, clearly and positively, to the pupil, which of the keys are to be depressed.

The rollers 12 are adapted to be driven at a slow speed by the motor 23, so that the lamps will remain lighted for a sufficient period of time for the pupil to note the positions of the lighted lamps, and depress the appropriate keys, before the lamps are extinguished. The flexibility of the bars 21 serve to maintain the wires 19 normally out of contact with the uninsulated wire 16.

By removing the plugs, and rearranging the same, in the different sockets of the belt, different compositions may be brought to the pupil, with the result that the pupil may quickly learn a number of compositions without a teacher.

What is claimed is:

1. A self-teaching device for a piano com-

prising transparent keys, an electric lamp beneath each of the keys, an electric circuit including the lamps, an uninsulated member in the circuit and common to all of the
5 keys, a movable contact associated with each of the keys and movable into contact with the uninsulated member, and means for successively moving the contacts into contact with the uninsulated member according to
10 the notes of a composition.

2. A self-teaching device for a piano comprising transparent keys, an electric lamp beneath each of the keys, an electric circuit including the lamps, an uninsulated member
15 in the circuit and common to all of the keys, a contact associated with each of the keys and movable into contact with the uninsulated member, an endless traveling belt movable beneath said contacts, and means

on the belt for successively engaging and
lifting certain predetermined contacts into
engagement with the uninsulated member. 20

3. A self-teaching device for a piano comprising transparent keys, an electric lamp beneath each key, an electric circuit including
25 the lamps, a contact member associated with each key, a bus bar in the circuit and arranged to be engaged by said contact members, each of the contact members having a
30 foot, an endless belt movable beneath the contact members, and removable and interchangeable projections carried by the belt for engaging said feet to elevate the contact
members into engagement with the bus
bar. 35

In testimony whereof, I affix my signature.

CHARLES E. WOOD.