B. S. STRIGHT.

TRANSPOSING DEVICE FOR PLAYER PIANOS.

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1,187,674. Patented June 20, 1916.

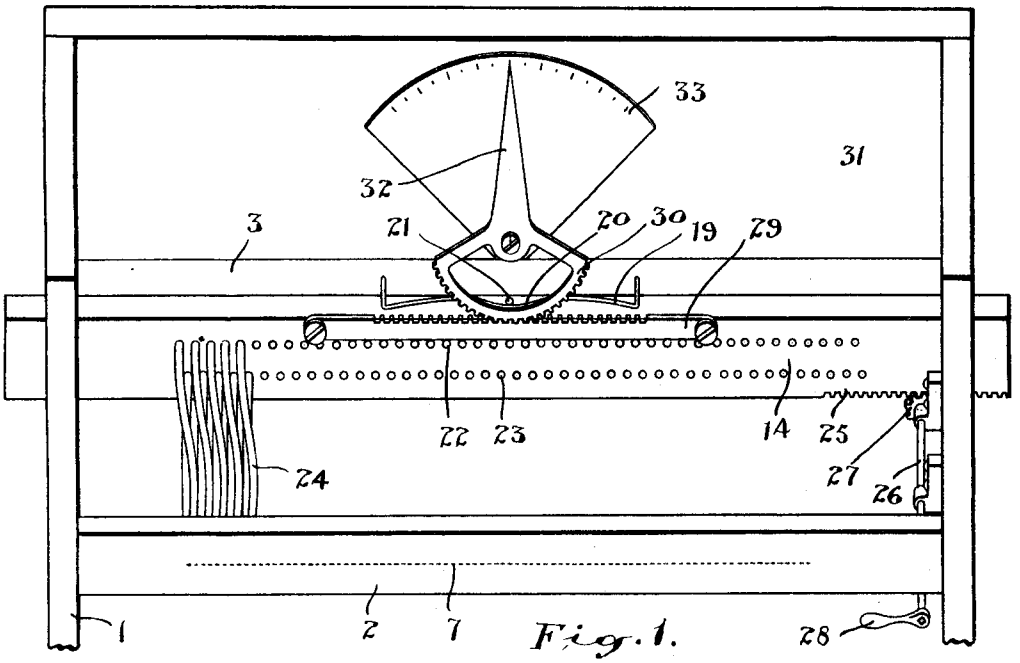


Fig. 1.

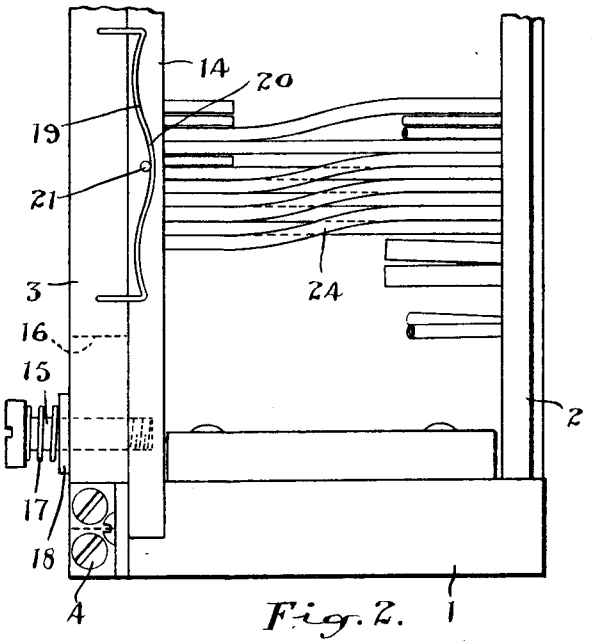


Fig. 2.

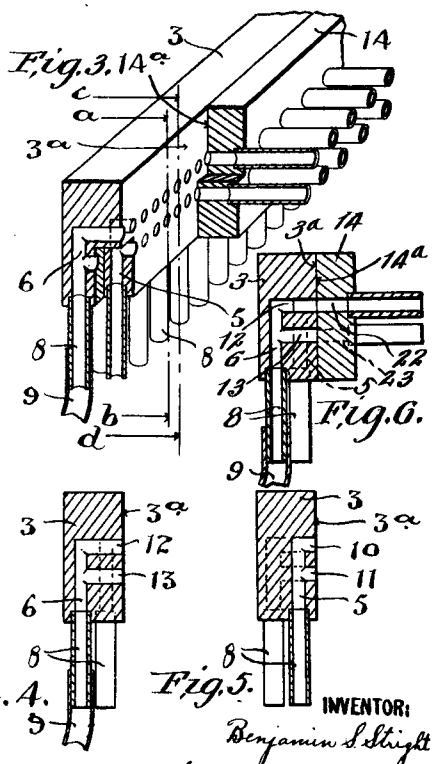


Fig. 3.

Fig. 6.

Fig. 4.

Fig. 5.

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TRANSPOSING DEVICE FOR PLAYER-PIANOS.

1,187,674. Specification of Letters Patent. Patented June 20, 1916.

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To all whom it may concern:

Be it known that I, BENJAMIN STECK STRIGHT, a citizen of the United States of America, and resident of the city of Toronto, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Transposing Devices for Player-Pianos, described in the following specification and illustrated in the accompanying drawings, that form part of the same.

The principal objects of the invention are, to render possible the use of a player piano as a universal accompanist so that any desired range may be obtained and any record transposed in order to obtain the rendition of the music in keys suitable for accompanying various instruments or voices of various register.

A further object is to obviate the necessity of having records for player pianos made in various keys.

A still further object is to effect the transposing of pieces of music on a player piano in a simple and thorough manner, and to devise means which will not interfere in any manner with the proper operation of the player mechanism.

The principal feature of the invention consists in interposing in the connections between the tracker bar and the pneumatics for operating the keys a pair of members having intercommunicating passages, said members being adaptable of adjustment to bring different sets of passages into register to effect the operation of different sets of keys.

In the drawings, Figure 1 is a perspective view of my device showing only a few of the flexible tubes connecting the tracker bar with the adjustable transposing member. Fig. 2 is an enlarged plan view of one end of the tracker bar and transposing members. Fig. 3 is a sectional perspective detail of a portion of the adjustable transposing members. Fig. 4 is a vertical sectional view through the line *a—b* of Fig. 3. Fig. 5 is a vertical sectional view through the line *c—d* of Fig. 2. Fig. 6 is a vertical sectional view through the transposer boards showing the relative arrangement of the passages therethrough.

Like numerals of reference indicate corresponding parts in each figure.

Referring to the drawings, 1 is a frame which is arranged within the piano case supporting at the forward side the tracker bar 2.

3 is a bar arranged at the inward side of the frame 1 in substantially the same horizontal plane as the tracker bar, being secured to the frame at the ends by the screws 4.

The bar 3 is formed with a plurality of vertical passages 5 and 6 bored upwardly from the bottom edge in staggered arrangement, said passages corresponding in number to the openings 7 in the tracker bar.

8 are tube connections leading from the bottom ends of the passages 5 and 6 having the tubes 9 secured thereto leading to the valves and pneumatics for operating the hammers of the piano.

10 and 11 are horizontal passages in the bar 3 arranged in pairs one above the other and leading from the vertical passages 5 to the forward face 3^a of said bar.

12 and 13 are horizontal passages arranged in horizontal alinement with the passages 10 and 11 and spaced therebetween and leading from the vertical passages 6 to the face 3^a.

14 is a bar slidably arranged at the forward side of the bar 3 having its rearward flat face 14^a fitted against the flat face 3^a of said bar 3 in air tight contact.

The bar 14 is slidably supported by the bolts 15 secured in the ends thereof and extending rearwardly through longitudinal slots 16 in the bar 3, said bolts having the spiral springs 17 and washers 18 arranged at the rearward side of the bar 3 and spring holding the bar 14 in close operating contact with the bar 3 but allowing perfect freedom of longitudinal movement.

19 is a spring clip having its ends secured in the bar 3 and the loop portion 20 extending around the pin 21 in the bar 14.

The bar 14 is provided with a double row of transverse orifices 22 and 23 arranged in staggered relation and corresponding in number with the openings 7 in the tracker bar and adapted to be brought into register with the horizontal passages 10 and 11 and 12 and 13 in the bar 3.

24 are flexible tubes leading from the openings 7 in the tracker bar and communicating with the orifices 22 and 23 alternately.

The flexible tubes 24 with the bars 14 and 3 and the tubes 9 provide the connection between the tracker bar and the pneumatic

valve chambers. The bar 14 is provided at one end with a toothed rack 25 preferably arranged on the underside.

26 is a spindle mounted in the frame 1 and carrying a pinion 27 meshing with the rack 25. The spindle 26 is provided at its forward end with a crank handle 28 to allow the same to be rotated, the rotation thereof causing the tube bar 14 to be moved longitudinally in either direction as may be desired.

29 is a toothed rack secured to the upper side of the bar 14 centrally of its length.

30 is a quadrant pivotally secured to the face plate 31 arranged above the bar 14 having an indicating finger 32 adapted to indicate upon the gage 33 the position of the said bar 14.

In the operation of this device the player roll passes over the tracker bar in the usual manner uncovering and covering the openings 7 therein. The vacuum tube connections leading from the tracker bar to the bar 14 communicate with the tubes 9 through the orifices in the bars 14 and 3 and consequently the pneumatics are operated in the ordinary manner. By operating the spindle 26 the bar 14 may be moved longitudinally either to the right or to the left and the result of such movement is to move the communicating passages 22 and 23 into register with a different set of passages 10 and 11 or 12 and 13. The consequence of this action is that a different set of notes will be operated and the piece will therefore be played in a different key. The flexibility of the tube connections between the tracker bar and bar 14 allows the shifting of the bar to transpose the music within a range of about ten tones more or less and by the peculiar arrangement of transverse passages in the bar 3 leading to the vertical passages 6 in conjunction with the staggered arrangement of passages in the bar 14 the shifting of the bar 14 will change the key a half a tone at a time. This is accomplished by reason of the fact that each of the vertical passages in the bar 3 is provided with two transverse passages leading to the face engaging the shifting bar 14 which has only half the number of openings as the bar 3.

A device of this kind gives great flexibility to player pianos allowing of any record being transposed correctly to any desired key so that any piece of music may be played to harmonize with any instrument or with any voice.

The device thus brings the player piano into the realm of the best musicians as very few musicians of ordinary attainment can transpose successfully at sight. The device is extremely simple and there is nothing whatever to get out of order. Further it does not in any way interfere with any of the devices now used in connection with the tracker bar, nor does it detract in any way from the appearance of the instrument.

I have shown herein an arrangement of bars having intercommunicating passages but it must be understood that considerable variation may be made from the form shown and also of the adjustment of the members in relation the one to the other without departing from the spirit of the invention which is the interposing into the connections between the tracker bar and the pneumatic valve chambers of adjustable perforate members adapted to bring different sets of passages into register.

What I claim as my invention is:—

1. In a transposing device for player pianos, the combination of the player mechanism, of a pair of members interposed in the connections between the tracker bar and the pneumatics of the player mechanism, one of said members having a plurality of passages corresponding in number to the number of the pneumatics, each of said passages having two branch openings leading to a common face, the other of said members having a plurality of transverse passages corresponding in number and connected with the openings in the tracker bar, said members being adjustable in relation to each other to effect the registration of different sets of passages.

2. In a transposing device for player pianos, in combination, a tracker bar, flexible tubes leading inwardly from said tracker bar, a movable bar having openings connected with said flexible tubes and arranged in staggered relation in two horizontal rows, a stationary bar having passages therethrough corresponding in number with the openings in the movable bar and the tracker bar, each of said passages having a pair of openings arranged in vertical relation and placed in a double row and adapted to register with the openings in the slidable bar, tubes leading from said stationary bar to the pneumatics of the player mechanism, and means for adjusting said movable bar.

BEN. S. STRIGHT.

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