

UNITED STATES PATENT OFFICE.

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PIANO.

SPECIFICATION forming part of Letters Patent No. 552,262, dated December 31, 1895.

Application filed September 3, 1895. Serial No. 561,365. (No model.)

To all whom it may concern:

Be it known that I, JULIUS ROHLAND, a citizen of the United States, and a resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Pianos; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to provide an upright piano with an apparatus that may be utilized at will to convert the tone of the instrument into that resembling a harp or zither without endangering the hammers or the apparatus itself; and it consists in certain peculiarities of construction and combinations of parts hereinafter set forth with reference to the accompanying drawing and subsequently claimed.

The drawing represents a perspective view of my improvements as applied to an upright piano.

Referring by letter to the drawing, A represents vertically-slotted blocks attachable to end pieces B of an upright piano, these blocks having the double function of guides and supports for vertically-reciprocative brackets C, to which the ends of a bar D are joined. It is preferable to provide each bracket with a horizontal slot *b* for the engagement of a bolt or screw-pin *c* run through the adjacent end of the bar D, as thereby I am enabled to utilize bars of standard length in pianos of various widths.

Glued or otherwise secured to the bar D is a depending buffer E of felt or other suitable material, and fast on said bar against the buffer are the upper ends of a series of depending spring-metal tongues F that extend some distance below said buffer. The tongues may be separate pieces, as herein shown, or they may form parts of one or more comb-like strips, as found most convenient or desirable in practice.

Rigidly secured to the bar D by any suitable means is a curved shell E', the latter being parallel to said bar and extended over the upper edge of the same. The lower edge of the shell is turned at a right angle to form a flange *f*, to which another buffer H of felt or analogous material is glued or otherwise secured, this latter buffer being in front of the spring-metal tongues F, above-specified.

Lifting-rods I are connected to the lower ends of the brackets C and operated by such lever mechanism as may be found convenient. By operating the lever mechanism (not shown) the rods I are lifted to cause an elevation of the brackets C, bar D and parts attached to the latter; but all of the parts being in the position herein illustrated the spring-metal tongues F are intermediate of the hammers M and tone-wires N of the piano. The hammers striking the metal tongues against the tone-wires produce sound similar to that given by a harp or zither, and the buffers E H prevent detrimental vibration of said tongues after the action of said hammers. When the harp or zither tone is not desirable the lifting-rods I are actuated to bring the spring-metal tongues F out of the way of the hammers M, and it will be understood that shift of said tongues in either direction may be made at any time by the person playing upon the piano.

By the employment of spring-metal tongues I can attain the desired result of tone conversion under all the varying conditions to which a piano is subjected, and the mechanism herein particularly set forth does not interfere with the forte or pianissimo actions of the instrument.

The construction and arrangement of parts thus far described are the same as have been set up in my previous application for patent filed April 22, 1895, Serial No. 546,629, and in addition thereto I herein show improvements having for their purpose the prevention of injury to the spring-metal tongues F of the tone-converter or the hammers M of the piano when said tone-converter is shifted in or out of working position.

In the first place the lower end of each spring-metal tongue F is curled so as to be blunt and yielding in case it should come in contact with a hammer M of the piano, while at the same time I provide at least one of the brackets C with a lateral cam P of suitable contour, the same being arranged to operate a crank-arm Q fast on a rock-shaft R, herein shown free to turn in bearings *g* constituting parts of brackets S that are clamped in place by the nuts T on the horizontal pins U found in pianos of the kind to which my invention relates, but I do not confine myself to any par-

ticular form or location of supports for the rock-shaft. In order to have the easiest possible action, the cam-opposing end of the rock-shaft crank-arm Q may be provided with an
5 antifriction-roller V, as herein shown.

Depending from the rock-shaft is a bail W, preferably covered with rubber or other suitable material h, and when the crank-arm Q is swung out to actuate the rock-shaft R said
10 bail is caused to exert pressure against the spring-metal tongues F, whereby the latter are held in out of the way of the hammers M, while a shift of the tone-converter takes place.

From the foregoing it will be seen that the
15 action of the bail W is entirely automatic and that it in no way interferes with the tone-converter tongues, except when the same are being brought in or out of position between the wires and hammers of the piano. By having
20 the rubber or other suitable covering h on the bail W the contact of the latter with the tone-converter tongues F is rendered noiseless.

Having now fully described my invention, what I claim, and desire to secure by Letters
25 Patent, is—

1. A structure adapted for vertical adjustment in an upright piano and comprising a series of spring-metal tongues that come between the hammers and tone-wires of the instrument when said structure is at one position of its adjustment, in combination with a deflector-mechanism having automatic action against said tongues when the aforesaid structure is shifted from one position to another.
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2. A structure adapted for vertical adjustment in an upright piano and comprising a series of curled and spring-metal tongues that come between the hammers and tone-wires
40 of the instrument when said structure is at one position of its adjustment, in combination with a deflector-mechanism having automatic action against said tongues when the aforesaid structure is shifted from one position
45 tion to another.

3. A structure adapted for vertical adjustment in an upright piano and comprising a lateral cam of suitable contour, as well as a series of spring-metal tongues that come intermediate of the hammers and tone-wires of the instrument when said structure is at one position of its adjustment; in combination with a rock-shaft having a bail depending therefrom in opposition to said tongues, and a crank-arm fast on the rock-shaft in position
50 to be actuated by said cam. 55

4. A structure adapted for vertical adjustment in an upright piano and comprising a lateral cam of suitable contour, as well as a series of spring-metal tongues that come intermediate of the hammers and tone-wires of the instrument when said structure is at one position of its adjustment; in combination with a rock-shaft having a muffled bail depending therefrom in opposition to said
60 tongues, and a crank-arm fast on the rock-shaft in position to be actuated by said cam. 65

5. A structure adapted for vertical adjustment in an upright piano and comprising a lateral cam of suitable contour, a series of
70 spring-metal tongues that come between the hammers and tone-wires of the instrument when said structure is in one position of its adjustment; a buffer of felt or analogous material carried with the tongues in rear thereof, 75 and a similar buffer in front of the same; together with a deflector-mechanism consisting of a rock-shaft having a depending bail in opposition to said tongues, and a crank-arm fast on the rock-shaft in position to be actuated
80 by said cam.

In testimony that I claim the foregoing I have hereunto set my hand, at Milwaukee, in the county of Milwaukee and State of Wisconsin, in the presence of two witnesses.

JULIUS ROHLAND.

Witnesses:

N. E. OLIPHANT,
GEO. W. YOUNG.