



# UNITED STATES PATENT OFFICE.

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## PIANO TONE-DEFLECTOR.

SPECIFICATION forming part of Letters Patent No. 758,694, dated May 3, 1904.

Application filed January 29, 1904. Serial No. 191,147. (No model.)

*To all whom it may concern:*

Be it known that I, FRANCIS G. RIGGINS, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Piano Tone-Deflectors, of which the following is a specification.

My invention relates to piano tone-deflectors, and has for its object the production of an attachment for upright pianos belonging particularly to that class or character of devices consisting of a cover applied to the rear of the instrument, forming a passage, usually equal in width to the piano and opening forwardly over the top. Ordinarily the considerable volume of tone issuing from the back is dulled or lost in whole or in part by reason of the situation of the piano against the wall of a room. In nearly every room provided with a piano the listeners are seated before the instrument—that is to say, upon the same side with the performer—and that side is termed for purposes of this description the “front” of the piano; but little consideration is given to the great amount of musical sound sent out at the rear, which is left to find its way forward to the auditors as best it can by reflection from walls and furniture, with consequent lessening and distortion of its harmonious qualities. A number of attachments having the same general nature of my invention have been patented, equipped in many instances with movable pieces at their tops; but all of them with which I am familiar are composed of relatively heavy rigid boards of the same thickness throughout and all interposing at some point in the passage an abrupt turn or angle or cross piece from which the deflected tones acquire a hard unsympathetic sound, detracting from the originally-pleasing effect, at least to the ears of cultivated musicians, that is always aimed at and often attained by many makers of pianos.

It is the special purpose of my invention to construct a deflector of the kind stated which will take the sound emitted at the rear and carry it upward and deliver it forwardly perfectly pure, thereby amplifying the amount of sound customarily reaching the auditors. I accomplish the stated object by means of

the parts and their association, as illustrated in the accompanying drawings, of which—

Figure 1 is a rear view of a piano, showing a portion covered by my invention and a portion uncovered in order to exhibit certain curving recesses sometimes formed by me in the edge of the wrest-plank or pin-block of pianos to which my invention is applied. Fig. 2 is a side view, partly in section, showing my invention attached to a piano. Fig. 3 is a view in perspective of the angle pieces or catches which engage supporting-screws and by which my invention may be removably held in position at the back of a piano.

Like letters refer to like parts in the drawings.

Considering the drawings, letter A designates a piano, of which letter B marks the pin-block at the rear, letter C the base of the back frame parallel to the part B, and letters D the upright posts between them and arranged perpendicularly to them. The sounding-board of the piano is marked E.

The essential feature of my invention is the deflector-board F, joined to the back of the piano by angle-catches G and inclining upwardly and rearwardly, affording a widening chamber from bottom to top and curving parabolically forward at the top, as shown, presenting the opening of the chamber toward the front of the piano. It will be here noted that the interior of board F is continuous, smooth, uninterrupted, and without abrupt changes in direction. Furthermore, it will be observed that from bottom to the top board F decreases in thickness, and this feature, I have learned by trial, plays an important part in preserving unchanged the peculiar and desired tone characteristics of the special make of instrument to which it is applied in any case. As the tones rise, the widening chamber and decreasing thickness of board F have been determined by experiment almost perfectly adapted to carry and deliver the vibrations in their original purity. A material addition is thus made to the quantity of sound given out over that of an instrument not provided with the deflector. As the board F is of some extent, covering, as it does, the entire back of the piano, it is usually stiffened

by the vertical ribs *f*, which diminish in width as the top is reached. These ribs may be attached by glue, and a strip of molding *f'*, similarly secured, ordinarily guards the upper and forward edge of the board.

There are two side boards *J*, one being shown in Fig. 2, and these close the sides of the upwardly-diverging chamber, as illustrated.

Screws *H* secure catches *G* to the piano at the sides; but I do not confine myself to any special means for securing my invention to a piano.

To still further afford a free path for the sound-waves I occasionally cut away the edge of the pin-block *B* between the uprights *D*, (see Fig. 1,) the curving recesses formed being marked *b*.

Having thus described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A piano tone-deflector, comprising the deflector-board arranged at the rear of a piano and extending upwardly and inclining rearwardly, the said board having its lower edge against the base of the piano and its upper portion curved forwardly and situated higher than the top of the piano, the said board decreasing in thickness from its said lower edge upwardly, and means for securing said board to a piano, substantially as described.

2. A piano tone-deflector, comprising the deflector-board arranged at the rear of a piano and extending upwardly and inclining rearwardly, the said board having its lower edge against the base of the piano and its upper portion curved forwardly and situated higher than the top of the piano, the said board decreasing in thickness from its said lower edge upwardly, the ribs *f* attached exteriorly to said board, and means for securing said board to a piano, substantially as described.

3. A piano tone-deflector, comprising the deflector-board arranged at the rear of a piano and extending upwardly and inclining rearwardly, the said board having its lower edge against the base of the piano and its upper portion curved forwardly and situated higher than the top of the piano, the said board decreasing in thickness from its said lower edge upwardly, the ribs *f* attached exteriorly to said board, the side boards *J*, and means for securing said board to a piano, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANCIS G. RIGGINS.

Witnesses:

A. O. WINCHESTER,  
BERTHOLD B. TODD.