

L. W. NORCROSS.

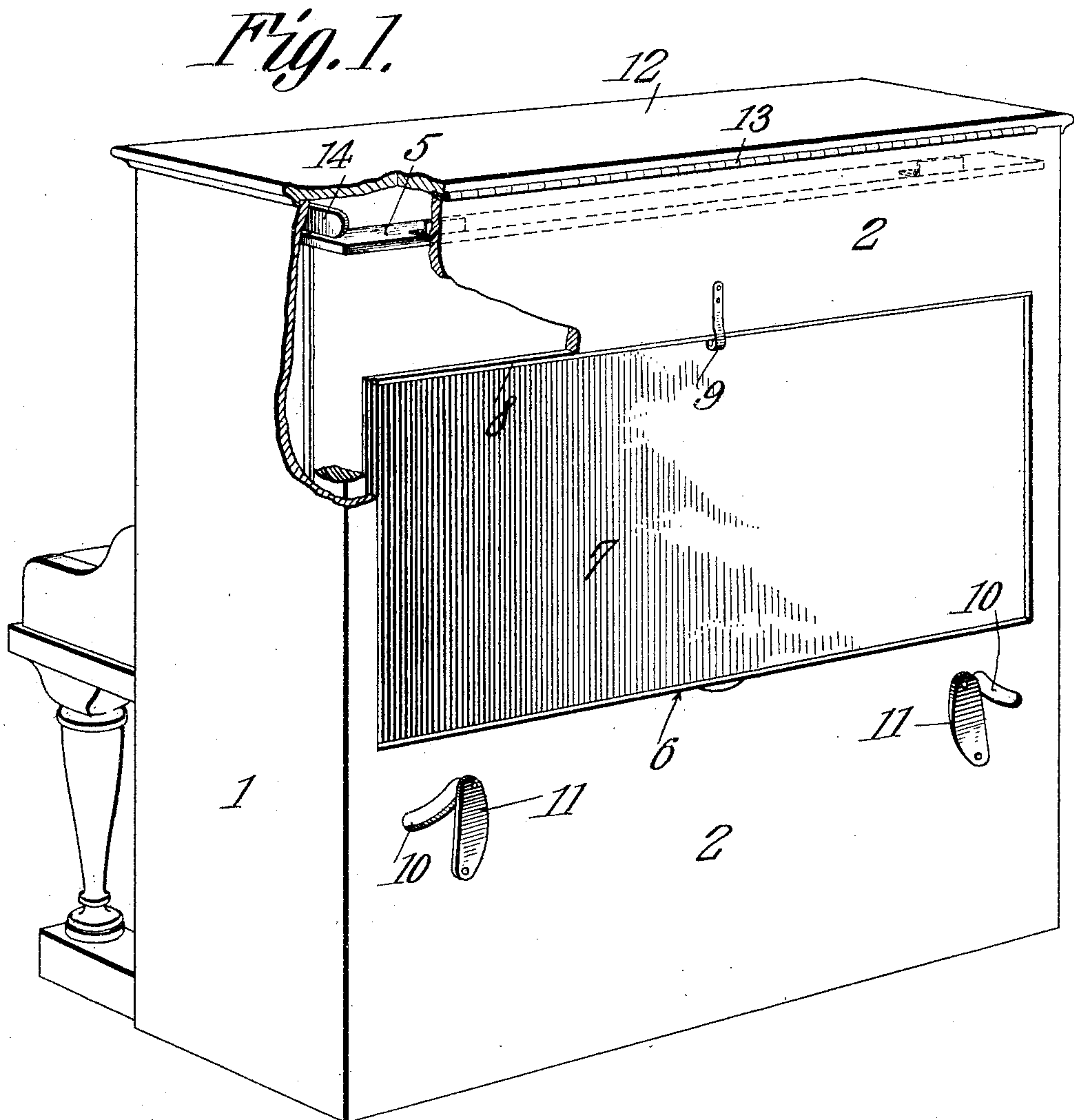
PIANO.

APPLICATION FILED FEB. 15, 1909.

955,096.

Patented Apr. 12, 1910.

2 SHEETS—SHEET 1.



Witnesses

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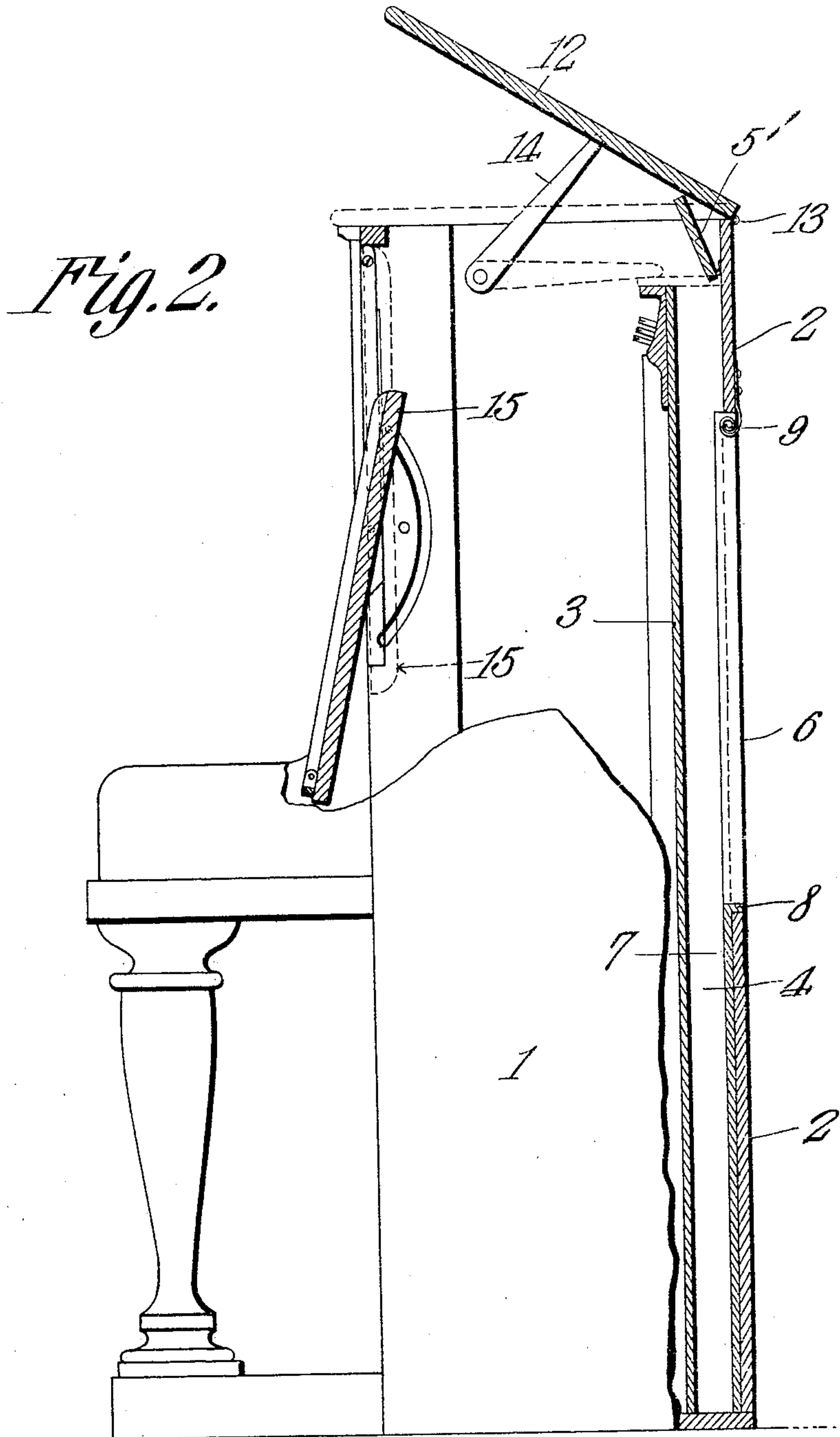
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# UNITED STATES PATENT OFFICE.

LEVI WATSON NORCROSS, OF FORT WORTH, TEXAS.

PIANO.

955,096.

Specification of Letters Patent. Patented Apr. 12, 1910.

Application filed February 15, 1909. Serial No. 478,035.

*To all whom it may concern:*

Be it known that I, LEVI W. NORCROSS, a citizen of the United States, residing at Fort Worth, in the county of Tarrant and State of Texas, have invented a new and useful Piano, of which the following is a specification.

This invention relates to pianos and other instruments of similar types utilizing sounding-boards.

The invention is especially applicable to pianos of the upright type and its object is to provide means whereby the distribution of sound-waves may be controlled so as to increase or diminish the volume of sound produced by the instrument, this being a feature especially desirable in order to adapt pianos to rooms of different sizes, as well as for modifying the sound during practice and at any other times desired.

Another object of the invention is to provide sound-modifying means all parts of which are readily accessible, said means also serving as a protection for the sounding-board of the instrument and preventing injury thereto from moisture, and from other causes.

With these and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a rear perspective of a piano embodying the present improvements, a portion of the case being broken away to show the controlling valve. Fig. 2 is a vertical section, taken from front to rear of the upper portion of a piano case, the lower portion of the case being shown in elevation, and the various parts of the sound-modifying mechanism being shown in position to permit the escape of the sound-waves with the least possible resistance.

Referring to the figures by characters of reference, 1 designates the case of a piano, the same being of the ordinary or any preferred construction, and differing from the ordinary case only in the provision of a back wall 2 which completely closes the back of the case and thus protects the sounding-board 3 from the action of moisture. A compartment 4 is formed between the sounding-board 3 and the back wall 2, and this compartment is normally closed at its

upper end by a valve in the form of a hinged strip 5, the free edge of which normally rests upon the upper edge of the sounding-board as shown in Fig. 1 and by dotted lines in Fig. 2. Although this valve has been shown hinged, it is to be understood that the same may be slidably mounted or movably supported in any other preferred manner. A large opening 6 is formed in the wall 2 and this opening may be closed by means of a door 7, which, in the present instance, has been shown slidably mounted, although it is to be understood that the same may be hinged or supported in any other preferred manner. When a sliding door or closure 7 is utilized a cleat 8 may be arranged at the upper edge thereof for engagement with a catch 9, whereby the door or closure may be secured in shut position as indicated in Fig. 1. This cleat also constitutes a grip to facilitate the closing of the door when the same is in lowered position as indicated in Fig. 2. In lieu of the grip ordinarily provided at the back of the piano for the purpose of facilitating the moving thereof hand-holes are formed within the back wall 2. Slides or closures 11 are connected to the back wall and are designed to assume positions over these holes so as to prevent the escape of sound-waves there-through.

The top panel 12 of the case is hingedly supported as indicated at 13 so as to swing upwardly to permit the escape of sound-waves from the top of the case, any suitable means such as pivoted braces 14, being utilized for the purpose of supporting the top panel in an inclined position.

The upper front panel of the case has been indicated at 15. This panel is mounted for pivotal and swinging movement with relation to the case and is capable of being swung outwardly and downwardly to assume the position shown in Fig. 2, or, if preferred, said panel can be swung upwardly into the position indicated by dotted lines in Fig. 2. When the panel is in the first of these positions it may be utilized as a music-rack and it leaves an open space between its upper edge and the top panel through which the sound-waves are free to pass from the front of the case. When however the front panel 15 is in closed position as indicated by dotted lines in Fig. 2 the escape of sound-waves through the front of the instrument is practically prevented.



The particular construction of the front panel and the mechanism for movably supporting it constitutes no part of the present invention but forms the subject matter of a  
 5 separate application filed by me on Feb. 15th, 1909, Serial No. 478,034.

It will of course be obvious that when the front and top panels are closed, the valve 5  
 10 in position on the top of the sounding-board, and the door 7 shut, the volume of sound produced by the instrument will be materially reduced, this reduction amounting to fully one half the volume which would  
 15 otherwise be obtained. By opening the door or closure 7 the sound-waves are free to pass from the compartment 4 and outwardly from the rear of the piano, the volume being of course increased, if desired, by opening the  
 20 valve 5 to permit additional sound-waves to pass over the sounding-board and thence downwardly and outwardly through the opening 6. By closing the door 7 and opening valve 5 and the panel 15 the sound-waves  
 25 will be free to leave the instrument through the opening in the front thereof and the volume can be considerably increased by also raising the top panel 12. It will be seen that by providing this arrangement of valve and closures the volume of sound produced  
 30 can be controlled at will and the instrument thus adapted for use in rooms of different sizes. For example, should a piano be placed in a small room where the ordinary volume of sound would be too great any or  
 35 all of the various closures and the valve may be closed, whereas in a larger room all of the parts may be opened. Also when a performer is practicing upon the instrument the volume of sound may be reduced at least  
 40 one half by closing the various panels, the valve 5, and the door 7.

Importance is attached to the fact that the casing is closed in the back and therefore the sounding-board is amply protected from  
 45 moisture and dust, etc.

It is of course to be understood that various changes may be made in the construction and arrangement of the parts without departing from the spirit or sacrificing the ad-  
 50 vantages of the invention.

What is claimed is:—

1. A piano case having a back wall provided with an opening, a sounding board within the case and spaced from the back  
 55 wall to form a compartment, and a closure for said opening slidably mounted upon the back wall of the case, said closure being arranged at all times entirely within the case.

2. A piano case having a back wall provided with an opening for the escape of  
 60 sound-waves, a sounding-board within the case and spaced from the back wall, and forming a compartment between the sounding-board and the back wall, and means for controlling communication between said  
 65 compartment and the interior of the case.

3. A piano case having a back wall provided with an opening, a closure for said opening, a sounding-board within the case and spaced from the back wall to form a  
 70 compartment, and a closure for said compartment within the case.

4. A piano case having a back wall provided with an opening for the escape of sound-waves, a closure for said opening, a  
 75 sounding-board within the case forming a compartment between the sounding-board and the back wall, and a valve for controlling the passage of sound-waves over the sounding-board and to or from said com-  
 80 partment.

5. A piano case having a back wall, a sounding-board within the case and spaced from said wall to form a compartment, a valve for controlling the escape of sound-  
 85 waves from said compartment into the case, and separately movable panels constituting portions of the case, said panels being shiftable for controlling the escape of sound-waves from the case.  
 90

6. A piano case having a back wall provided with an opening for the escape of sound-waves, a closure for said opening, a sounding-board within the case and coöperating with the back wall to form a compart-  
 95 ment, a valve for controlling the escape of sound-waves from said compartment over the sounding-board, and separately movable panels constituting portions of the case.

7. A piano case having a back-wall pro-  
 100 vided with an opening for the escape of sound-waves, a closure for said opening, a sounding-board within the case and coöperating with the back wall to form a compartment within the case, and movably mounted  
 105 means within the case and normally bearing upon the sounding-board for preventing the escape of sound-waves from said compartment into the case.

In testimony that I claim the foregoing as  
 110 my own, I have hereto affixed my signature in the presence of two witnesses.

LEVI WATSON NORCROSS

Witnesses:

DAVID R. CARB,  
 F. G. SMITH.