C. F. T. STEINWAY.

Sounding-Board for Piano-Fortes.

No. 204,110. Patented May 21, 1878.

Fig. 2.

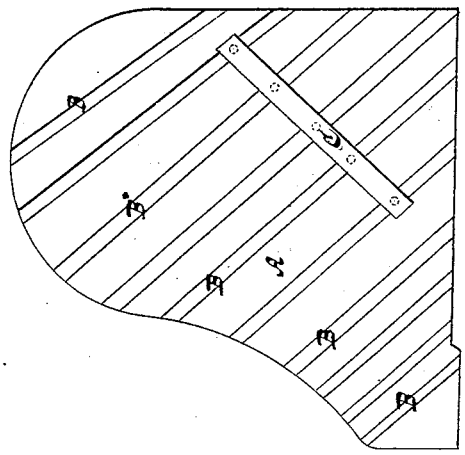


Fig. 3.

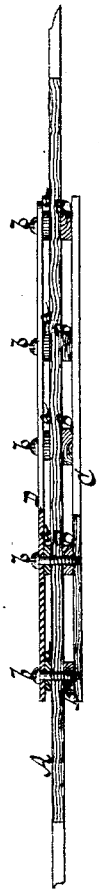
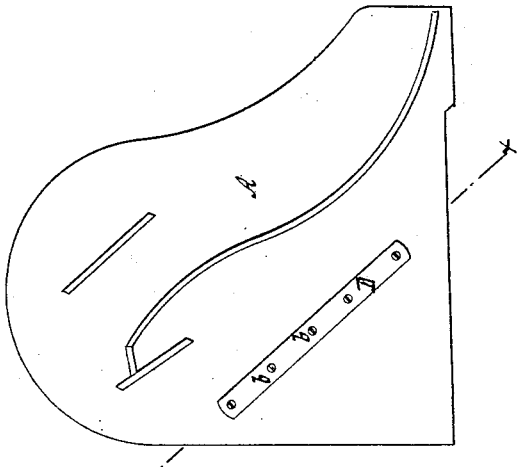


Fig. 1.



Witnesses.

Otto Stupeland.

Hugo. Brueggemann

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by

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UNITED STATES PATENT OFFICE.

CHRISTIAN F. T. STEINWAY, OF NEW YORK, N. Y.

IMPROVEMENT IN SOUNDING-BOARDS FOR PIANO-FORTES.

Specification forming part of Letters Patent No. **204,110**, dated May 21, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, CHRISTIAN FRIEDRICH THEODOR STEINWAY, of the city, county, and State of New York, have invented a new and useful Improvement in Sounding-Boards for Piano-Fortes, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 represents a plan or top view. Fig. 2 is an inverted plan. Fig. 3 is a vertical section in the plane *x x*, Fig. 1, on a larger scale than the previous figures.

Similar letters indicate corresponding parts.

The invention consists, first, in the combination, with a piano-forte sounding-board, of a sustaining-bar (one or more) arranged crosswise with relation to the ribs, and connected to the sounding-board, either above or below, at a distance from the bridge equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board, for the purpose of preventing the sounding-board from warping without disturbing its proper vibrations, and also forming a limit for the vibration; secondly, in the combination, with the sounding-board, of two coincident sustaining-bars, which are arranged crosswise to the ribs, and are fastened to said board, one above and the other below, at a distance from the bridge equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board the upper bar being metallic, and supported by cushions of wood or other suitable material, for the purpose of preventing lateral movement of the ribs, and to increase the duration and strength of the sound.

In the drawing, the letter A designates the sounding-board of a piano-forte, which is strengthened by a series of ribs, B, secured to its under surface, and running transversely to the grain of the body of the sounding-board. With this sounding-board I have combined a sustaining-bar, C, which runs transversely to the ribs B, and is fastened to the same in any suitable manner, and which terminates at both ends at a distance from the edge of the sounding-board. This sustaining-bar is arranged about parallel to the general position of the bridge, and at a distance therefrom equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board. One or more such sustaining-bars may be used and fastened to the sounding-board, either above or below, and said sustaining-bars may be made of wood or any other suitable material. I can use one sustaining-bar, C, below, and another sustaining-bar, D, above, the upper sustaining-bar, D, being made of a thin strip of steel or other suitable material, and being situated in line with the lower sustaining-bar, C. The upper sustaining-bar, D, rests upon cushions *a*, of wood or other suitable material, which are situated each over one of the ribs B, (see Fig. 3,) the bar D being fastened by means of screws *b* or dowels, which pass through the cushions *a* into the ribs B.

By the action of the sustaining-bar C the sounding-board is prevented from warping without disturbing the vibrations, and this effect is still further increased by the employment of the sustaining-bars C D, one above and the other below. Furthermore, by the metallic sustaining-bar D, the duration and strength of the sound are materially increased.

My invention enables me to increase the area of the sounding-board without incurring the danger that such sounding-board will bulge up or sag down. I have found that by running the sustaining bar or bars out to the edges of the sounding-board the beneficial effect of the same is reduced.

A sustaining-bar has been heretofore applied to a sounding-board directly under the bridge, but so applied the bar forms no limit for the vibrations.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a piano-forte sounding-board, of a sustaining-bar (one or more) arranged crosswise with relation to the ribs, and connected to the sounding-board, either above or below, at a distance from the bridge equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board, and forming a limit to the vibrations of said board, substantially as described.

2. The combination, with the sounding-board, of two coincident sustaining-bars, which are arranged crosswise to the ribs, and are

fastened to said board, one above and the other below, at a distance from the bridge equal or nearly equal to the distance of the bridge from the opposite edge of the sounding-board, the upper bar being metallic, and supported by cushions of wood or other suitable material, substantially as and for the purpose set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 18th day of March, 1878.

C. F. THEODOR STEINWAY. [L. S.]

Witnesses:
W. HAUFF,
E. F. KASTENHUBER.