

(No Model.)

2 Sheets—Sheet 1.

C. HINZE.
SOUNDING BOARD FOR PIANOS.

No. 472,878.

Patented Apr. 12, 1892.

FIG. I.

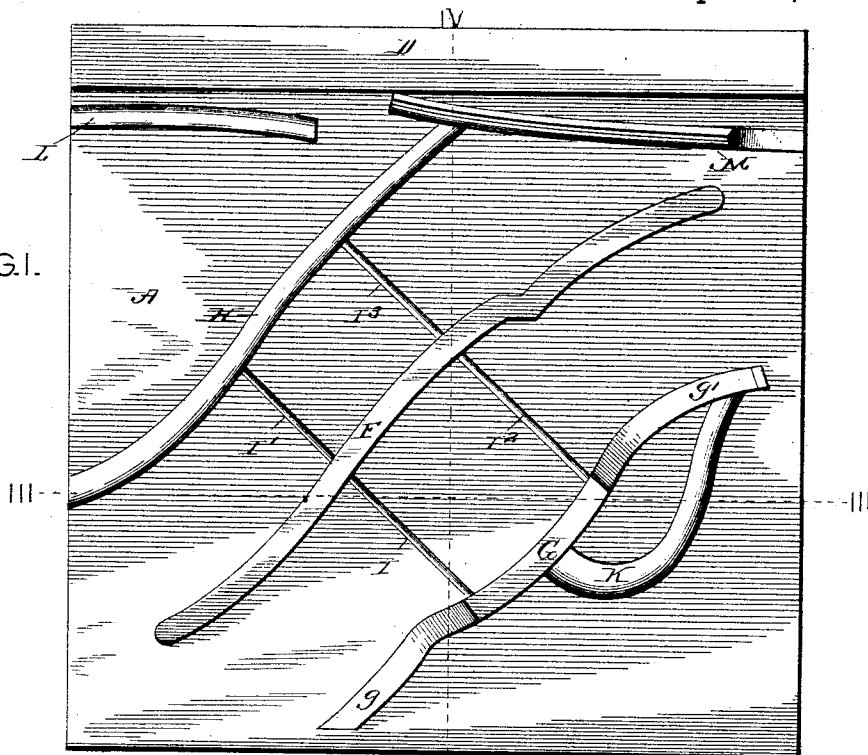


FIG. II.

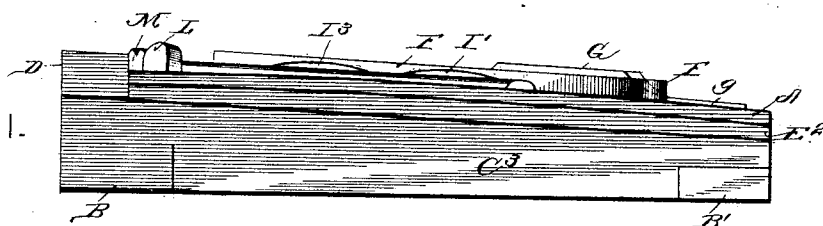
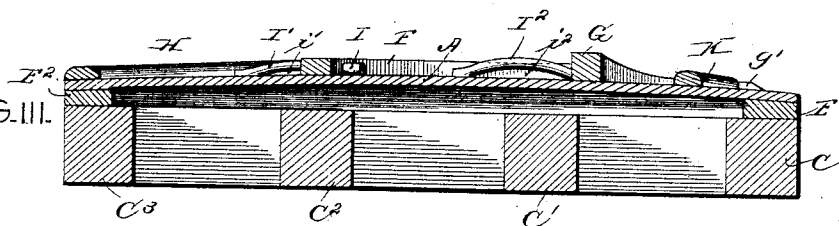


FIG. III.



Attest.

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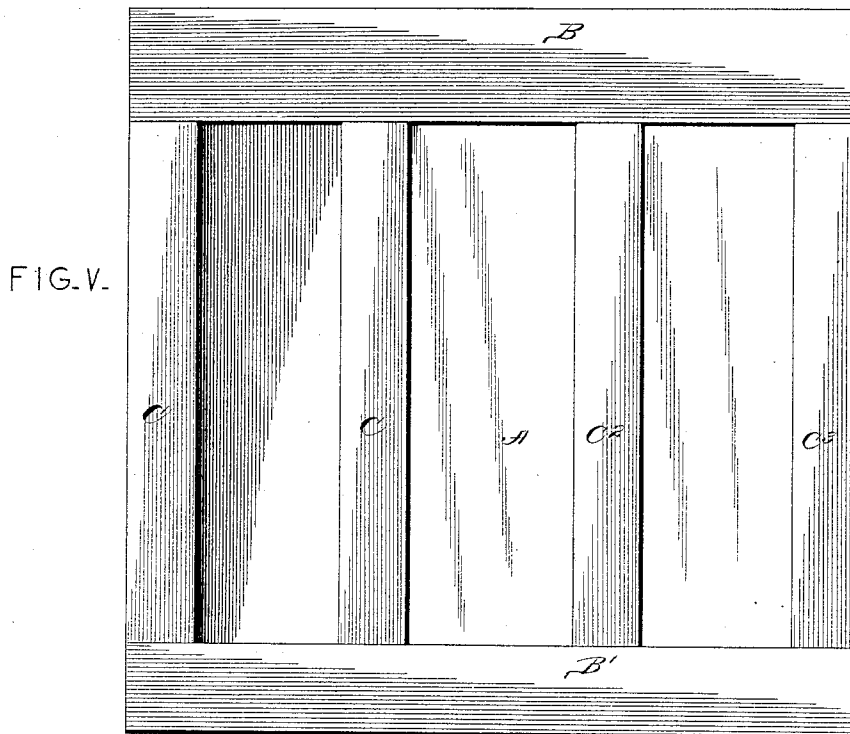
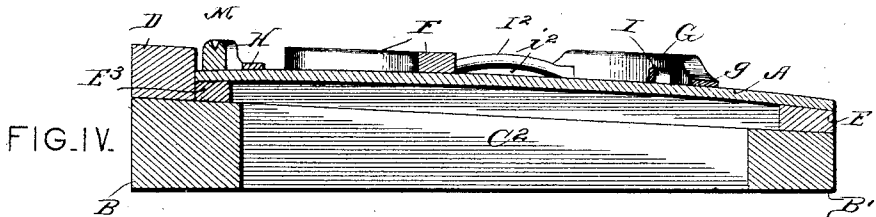
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UNITED STATES PATENT OFFICE.

CARL HINZE, OF DES MOINES, IOWA.

SOUNDING-BOARD FOR PIANOS.

SPECIFICATION forming part of Letters Patent No. 472,878, dated April 12, 1892.

Application filed December 12, 1891. Serial No. 414,849. (No model.)

To all whom it may concern:

Be it known that I, CARL HINZE, a citizen of the United States, residing at Des Moines, in the county of Polk and State of Iowa, have invented certain new and useful Improvements in Sounding-Boards for Pianos; and I do hereby declare that the following specification, taken in connection with the accompanying drawings, is a full, clear, and exact description, such as will enable those skilled in the art to make and use the same.

My invention, which relates to the construction of sounding-boards for pianos, has for its object to strengthen and purify the tone of a piano.

The object of my invention above defined is accomplished by omitting from the sounding-board the customary supporting-ribs and connecting the several bridges by means of sounding-posts, &c., so that the vibration of any one string will be equalized and intensified by the influence of the whole of the sounding-board.

To this end my invention consists of the following features of improvement: First, I form the sounding-board without the customary supporting-ribs, so as to produce a clearer tone, and in order to afford the proper amount of strength and firmness the sounding-board is arched; second, the bridges for supporting the strings on the sounding-board are curved on their under surfaces, so as to fit snugly and evenly on the arched sounding-board and are level on their upper surfaces to afford the proper seat for the strings; third, I add a third bridge, which is lower than the other two and is not touched by the strings, and connect all three of the bridges by a series of sounding-posts to unify and equalize the tone and obviate the breaks occasioned in most pianos by the division of the bridges, and, fourth, the two string-bridges which are commonly supported upon the pin-block are supported on the sounding-board adjacent to the pin-block, also for improving the sound of the piano; and my invention consists of other features of novelty, all of which will first be described with reference to the accompanying drawings, and then more particularly defined in the claims.

In said drawings, Figure I is a front plan view of my improved sounding-board. Fig.

II is a side elevation of the same. Fig. III is a sectional view taken on the line *iii iii* of Fig. I. Fig. IV is a sectional view taken on the line *iv iv* of Fig. I. Fig. V is a rear view of the sounding-board, and Fig. VI is a side elevation of one of the bridges.

Like letters of reference indicate the same parts throughout the several views.

The sounding-board A is built upon a strong frame consisting of the main longitudinal strips B B' and the series of transverse strips C C' C² C³, which are tenoned together in any desired manner to form a rectangular frame. The transverse strips C C', &c., are widest at their upper ends and gradually taper down to their lower ends, and the upper longitudinal strip B is wider than the lower strip B', so that the frame will have an inclined upper surface, upon which the sounding-board is supported in a slightly-inclined position. Secured to the upper face of the strip B across the head of the frame is the customary pin-block D.

E, E', E², and E³ are small wooden strips, which are formed widest through their centers and have their upper faces taper gradually toward their opposite ends. These strips are also slightly beveled on their upper faces, as shown in Figs. III and IV. They are secured to the upper face of the supporting-frame and made flush with the edges, the strip E³, which runs along the head of the frame, being placed close up to the pin-block D. The edges of the sounding-board A are securely glued or otherwise fastened to these strips E E', &c., which will cause said board to arch from all of its edges toward a common center. By arching the sounding-board in this manner a board of great strength and firmness is secured and the ordinary supporting-ribs are done away with.

F is the treble-bridge, and G is the bass-bridge, which are formed with lower faces cut out or curved to correspond to the contour of the arched sounding-board, so as to fit snugly on the sounding-board and with even or level upper faces to afford proper seats for the strings. From this it is obvious that these bridges will be thicker at their ends than at their centers, though their upper faces are level. These bridges are arranged across the face of the sounding-board in approximately

parallel lines and are, as usual, formed in the shape of compound curves. The bass-bridge is higher than the treble-bridge, so as to raise the strings which it supports out of contact with the treble-bridge, and the treble-bridge extends on each side of it, so that the strings supported by the treble-bridge will not be interfered with by the bass-bridge. I prefer to form the bass-bridge G with gradually-tapering extension ends *g g'* for the purpose of having the bridge supported upon and influence a greater area of the surface of the sounding-board and also to give firmness to the sounding-board.

H is a third bridge or thin strip secured to the sounding-board on the opposite side of the treble-bridge F and approximately parallel with it, for the purpose which will presently appear. This third bridge is made thinner than the other two, so as not to interfere with the strings.

I, I', I², and I³ are a series of sounding-posts secured at their ends to the sounding-board and to the bridges F, G, and H for connecting the bridges and rendering the whole sounding-board under the control of either bridge and for making the sounding-board strong and firm. These sounding-posts are cut away on their under faces, as shown at *i, i', i², and i³*, and attached only at their ends, so as not to interfere with the vibration of the sounding-board any more than is necessary. The sounding-posts I and I' are arranged approximately in a straight line, and the sounding-posts I² and I³ are arranged approximately in a straight line, and both pairs of sounding-posts are arranged approximately parallel.

K is a curved strip extending from the center of the bass-bridge G out to the side extension *g'* of said bridge. This curved strip is also for the purpose of placing a large portion of the surface of the sounding-board under the direct influences of the bridges. By this arrangement of bridges a fuller and freer tone is produced and the necessary firmness attained without the customary supporting-ribs, which contract the tone.

L and M are the string-bridges, which are of ordinary construction; but instead of being supported on the pin-block, as is customary, they are supported on the sounding-board adjacent to the pin-block. This arrangement has been found to greatly improve the tone of a piano.

The parts of my improvements are constructed of the approved materials and the strings are arranged as usual.

Having thus fully described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In combination with a piano or other similar musical instrument, a sounding-board supported upon a suitable frame at its edges and suitable bridges supported on the sounding-board for the strings to rest upon, said sounding-board being arched from all of its

edges toward a common center for affording the proper amount of strength and firmness, whereby the customary supporting-ribs can be omitted and the sound of the piano improved, substantially as herein set forth.

2. In combination with a piano or other similar musical instrument, a sounding-board supported upon a suitable frame at its edges and arched from its edges toward the center and bridges supported on the sounding-board for the strings to rest upon, said bridges being curved on their under faces to correspond with the contour of the sounding-board, so as to fit snugly and evenly thereon, substantially as herein set forth.

3. In combination with a piano or other similar musical instrument, a sounding-board supported upon a suitable frame at its edges and arched from its edges toward the center and bridges supported on the sounding-board for the strings to rest upon, said bridges being curved on their under faces to correspond with the contour of the sounding-board, so as to fit snugly and evenly thereon and level on their upper faces to afford the proper seat for the strings, substantially as herein set forth.

4. In combination with a piano or other similar musical instrument, a sounding-board supported from its edges upon a suitable frame, bridges snugly fitting on said sounding-board for the strings to rest upon, and a series of sounding-posts connecting said bridges, whereby the tone of the piano is equalized, substantially as herein set forth.

5. In combination with a piano or other similar musical instrument, a sounding-board supported at its edges upon a suitable frame, bridges snugly mounted on said sounding-board for the strings to rest upon, and a series of sounding-posts connecting said bridges, said sounding-posts having their under faces cut away so that they will come in contact with the sounding-board only at their ends, substantially as and for the purpose herein set forth.

6. In combination with a piano or other similar musical instrument, a sounding-board supported at its edges upon a suitable frame, the treble and bass bridges mounted upon the sounding-board for the strings to rest upon, a third bridge or strip lower than the other two, so as not to touch the strings, and also mounted upon the sounding-board, and a series of sounding-posts extending between said bridges for connecting them, whereby the tone of the piano is equalized, substantially as set forth.

7. In combination with a piano or other similar musical instrument, a sounding-board supported from its edges upon a suitable frame, the treble-bridge, the bass-bridge, and the third sounding-board bridge or strip, all mounted upon the sounding-board and extending in approximately parallel lines, and two or more pairs of tuning-posts connecting said bridges, said pairs of tuning-posts being arranged in approximately parallel lines and

each of said pairs extending in approximately a straight line, substantially as and for the purpose set forth.

8. In combination with a piano or other
5 similar musical instrument, a sounding-board supported from its edges upon a suitable frame, the sounding-board bridges mounted upon said sounding-board, the pin-block from which the strings extend, and the string-
10 bridges also mounted upon the sounding-board adjacent to the pin-block, substantially as and for the purpose set forth.

9. In combination with a piano or other

similar musical instrument, a sounding-board supported from its edges upon a suitable 15 frame, the bridges mounted upon the sounding-board, sounding-posts connecting the bridges, the bass-bridge being provided with extension ends, and a curved strip extending from the center of said bass-bridge to one of 20 the extension ends, substantially as and for the purpose set forth.

CARL HINZE.

Witnesses:

FRIDIRCH KANZORK,
JOHN H. FRANKLIN.