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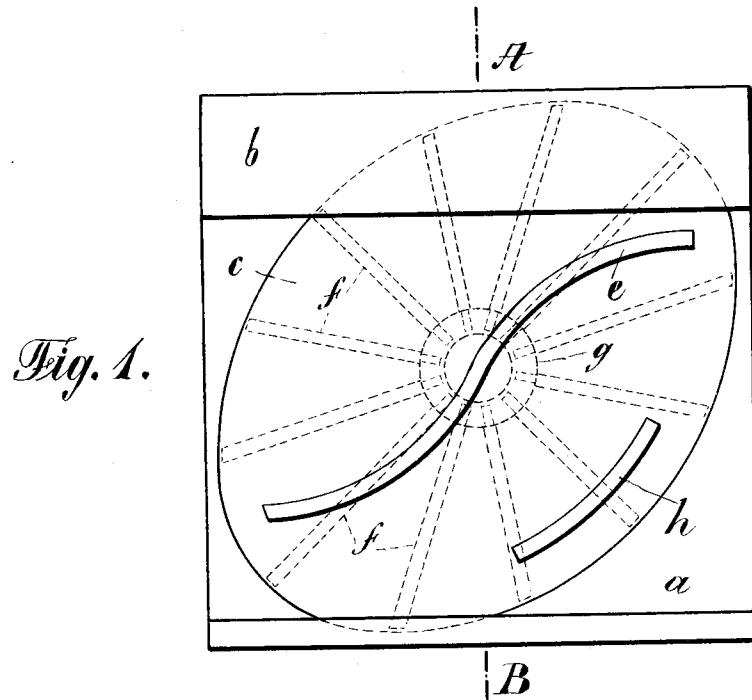


Fig. 1.

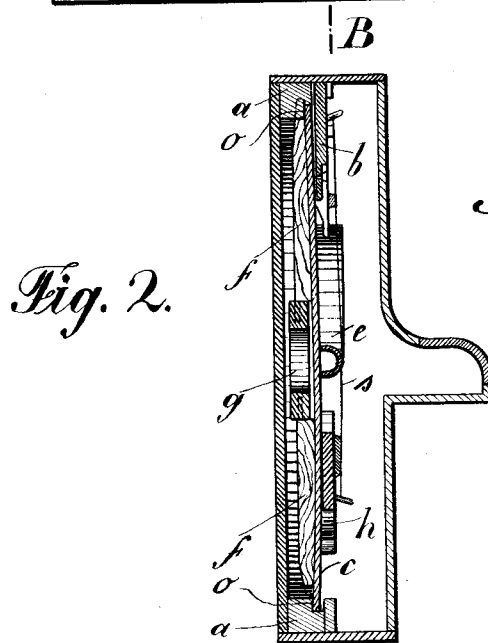


Fig. 2.

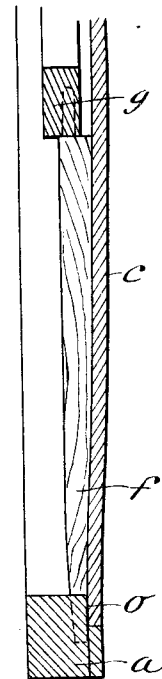


Fig. 3.

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UNITED STATES PATENT OFFICE.

RICHARD SCHMITT AND JACOB RINDLISBACHER, OF HAGEN, GERMANY.

SOUNDING-BOARD FOR PIANOS.

1,052,755.

Specification of Letters Patent.

Patented Feb. 11, 1913.

Application filed May 23, 1910. Serial No. 563,033.

To all whom it may concern:

Be it known that we, RICHARD SCHMITT and JACOB RINDLISBACHER, subjects of the Emperor of Germany, and both residing at Hagen, Germany, have invented a certain new and useful Improvement in Sounding-Boards for Pianos, of which the following is a specification.

This invention relates to improvements in sounding boards for pianos.

A defect in pianos at present in use is the lack of stability of the usual angular sounding board. Often, even after a short time, the board yields to the stress of the strings, and the full tone of the instrument is gradually lost. Many attempts have been made to impart greater stability to the sounding board. Double boards have been made, or tension devices, for example metal ties, have been used for holding the board in position. These constructions, however, have not met with approval.

The present invention has for its object to provide a construction of sounding board by which the above mentioned defect is completely overcome, and which at the same time allows of the bridge being carried across the center of the sounding board, whereby in the mid-portion a full tone will be obtained. The mid-portion of the bridge intersects exactly the center of the board. The periphery of the board has for this purpose the form of a continuous curve without corners. The uniform support of the board and absence of sharp corners render the interruption of vibration impossible.

A further great advantage of the invention is the great stability obtained against the stress of the strings. This stress is distributed uniformly over the periphery from every point. In grand pianos a board of circular form may be used, but in small pianos, where there is but a limited supporting surface for the bridge in treble and in bass an almost elliptic or elliptic sounding board is more suitable. In order to increase the stability of the board without diminishing the vibratory effect, the ribs are preferably arranged radially, extending outwardly from a supporting ring arranged clear of the board.

In the accompanying drawings which illustrate the invention, Figure 1 shows the board alone in front elevation without the

strings, and Fig. 2 is a section on the line A, B of Fig. 1 showing the board fitted in a piano. Fig. 3 is an enlarged sectional view of a portion of the sounding board showing the convexity of the ribs *f* and the beveled surface of the support for the sounding board.

Referring to Figs. 1 and 2, *c* denotes the elliptical sounding board arranged in the frame *a*. By means of the ribs *f* radiating from the center, which ribs are connected with a supporting ring *g* arranged clear of the board, the latter acquires a form slightly convex toward the forward side, thus offering an elastic resistance to the stress of the strings, which stress owing to the elliptical form of the board is uniformly distributed in all directions. The convex shape of the sound board is obtained by reason of the edge *o* of the frame *a*, against which the sound-board bears, being slightly beveled. When the sound board is fixed to such beveled support it will assume a convex shape. It will be seen that the convex front faces of the ribs *f*, which are as usual glued to the sounding board, together with the beveled surface *o* of the support *a*, combine to flex or convex the sounding board toward the strings. The ribs are mounted in the support *a*, as clearly shown in Fig. 3. Such shaping is possible with an elliptical board and herein lies the particular advantage of the employment of such boards. An angular board for instance, although it could be bulged, could not be strained into convex shape of perfectly uniform deflection which is necessary to make it too highly elastic backing for the strings. The mid-portion of the bridge *e* (which is shown hollow) for the strings *s*, Fig. 2, passes through the center of the board *c*. This arrangement of the bridge *e* is rendered possible by reason of the fact that the board projects upwardly clear of and behind the tuning peg block *b*. The bass bridge *h* runs parallel with the circumference of the board in the form of an arc. As is obvious, the ribs may be otherwise arranged, for instance, they may be parallel.

It will be seen by reference to Fig. 1, that the sounding board has a continuously curved periphery, and that the curvature is convex throughout the periphery of the board, as regards the center of the board.

Having now described and ascertained the

nature of our invention what we claim and desire to secure by Letters Patent of the United States is:

1. A piano comprising in combination, an
5 elliptical sounding board, a support therefor
having beveled portions engaging opposite
edges of the board and serving to convex
the same toward the string side thereof, a
10 bridge extending across the string side of
the board and abreast of and across the center
of the board, ribs shaped to conform
to the convex deflection of and secured to and
15 radially disposed on that side of the board
opposite the string side to stiffen the board
and maintain convex deflection thereof, and
a frame connected with the inner ends of
the ribs and disposed abreast of but out of
20 contact with the center of the board to prevent
impairment of resonance at such central
portion, substantially as described.

2. A piano comprising in combination, an
elliptical sounding board, supporting means
for convexing the board toward the string
25 side thereof, ribs secured to the board to
stiffen the same and maintain convex deflection
of the board, a bridge extending

across the center of the board on the string
side thereof, and rigid means connected
with the ribs and disposed abreast of but out
of contact with the center of the board to 30
prevent impairment of resonance at such
central portion, substantially as described.

3. A piano comprising in combination, a
sounding board having a continuously con- 35
vexly curved periphery, supporting means
for convexing the board toward the string
side thereof, ribs secured to the board to
stiffen the same and maintain convex deflection
of the board, a bridge extending across 40
the center of the board on the string side
thereof, and rigid means connected with the
ribs and disposed abreast of but out of contact
with the center of the board to prevent
impairment of resonance of such central 45
portion, substantially as described.

In testimony whereof we affix our signatures
in presence of two witnesses.

RICHARD SCHMITT. [L. s.]

JACOB RINDLISBACHER. [L. s.]

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."