

No. 677,057.

Patented June 25, 1901.

W. G. BETZ.

SOUNDING BOARD FOR MUSICAL INSTRUMENTS.

(Application filed Jan. 3, 1901.)

(No Model.)

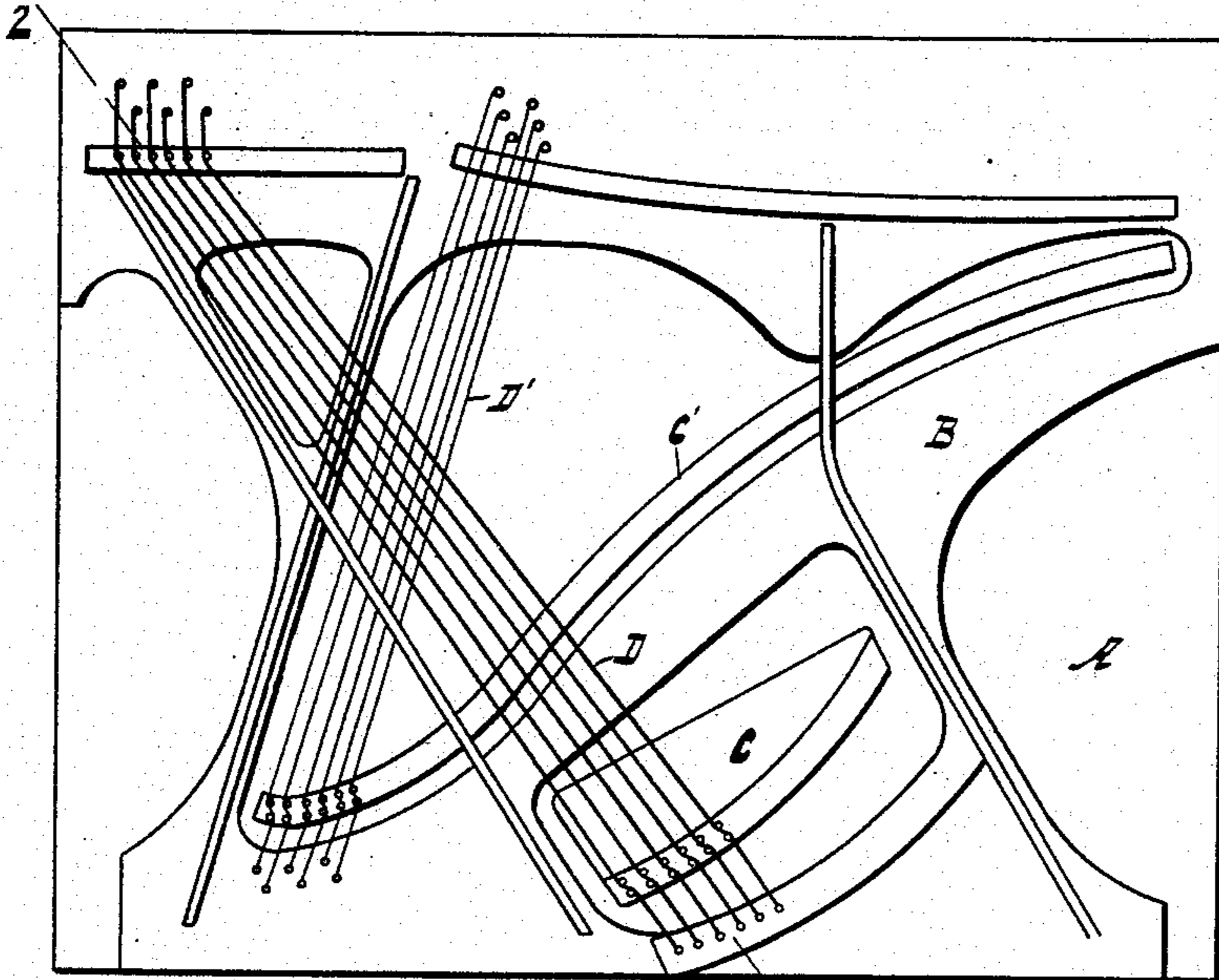


Fig. 1.

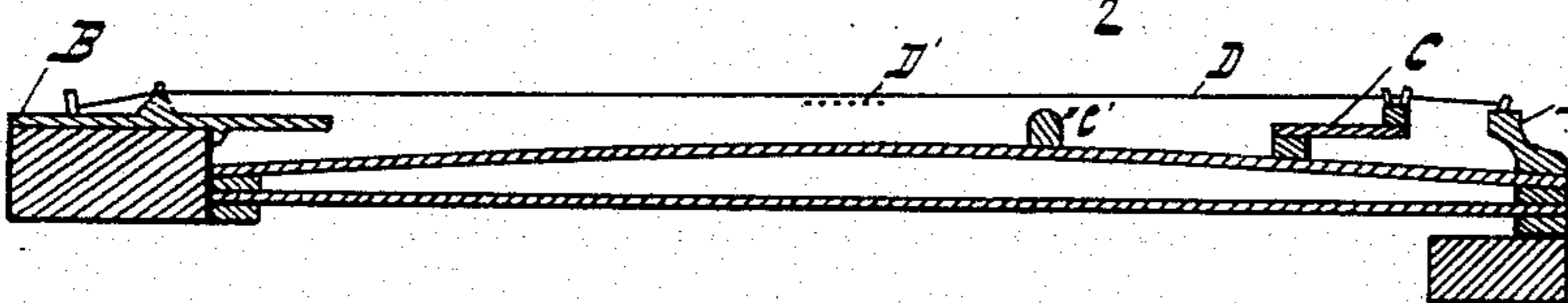


Fig. 2.

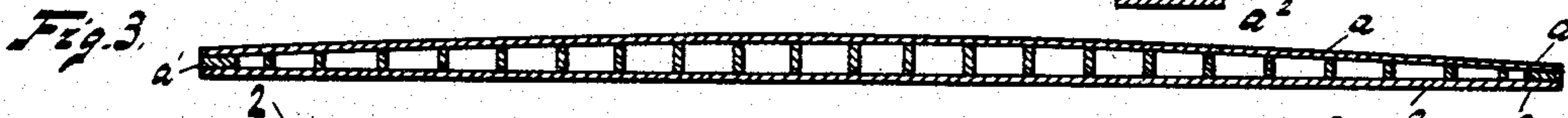


Fig. 3.

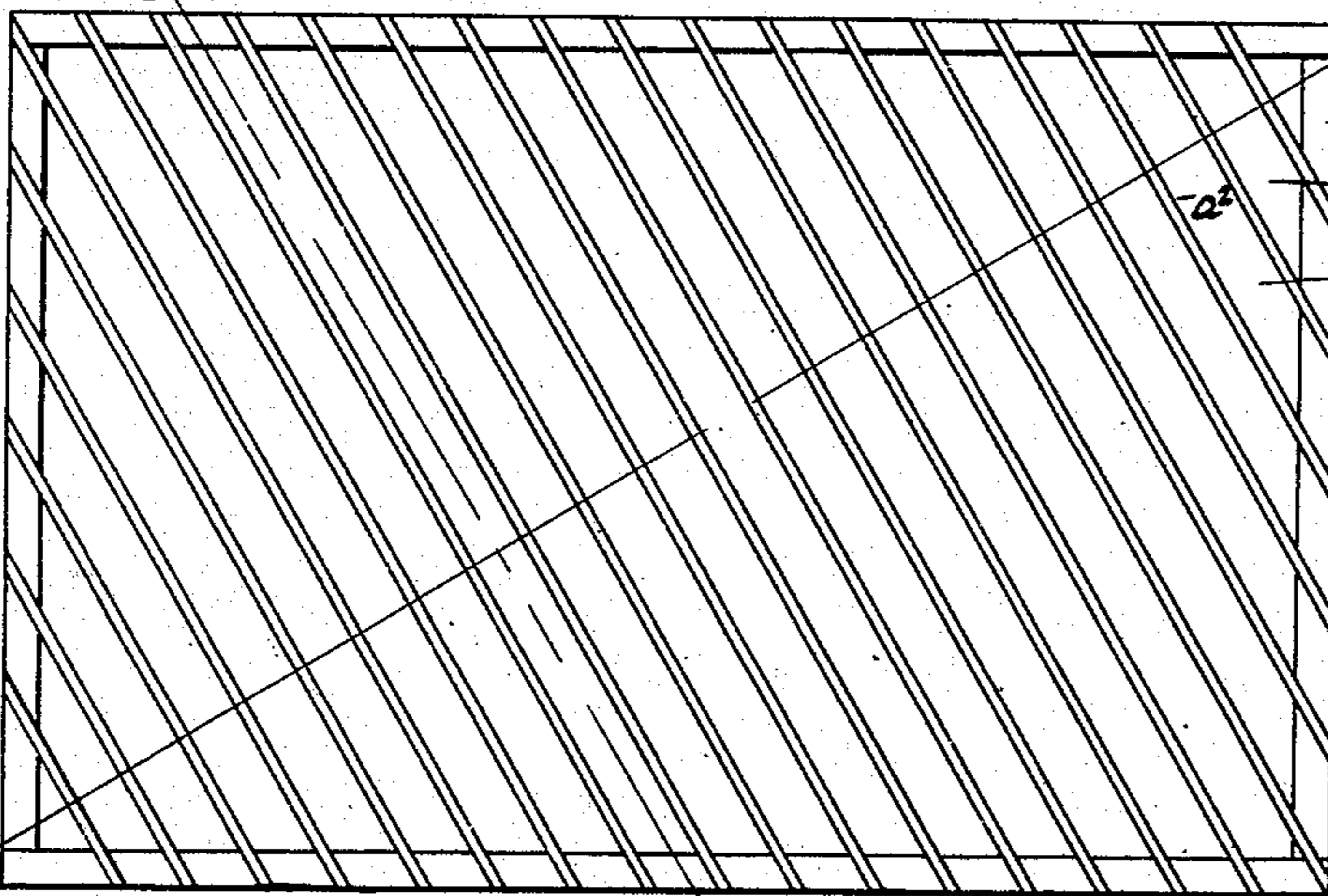


Fig. 4.

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM G. BETZ, OF ERIE, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO DANIEL RAY AND CHARLES J. WINTERBOTHAM, OF SAME PLACE.

SOUNDING-BOARD FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 677,057, dated June 25, 1901.

Application filed January 3, 1901. Serial No. 41,976. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. BETZ, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have
5 invented certain new and useful Improvements in Sounding-Boards for Musical Instruments; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same.

This invention relates to sounding-boards for musical instruments; and it consists in certain improvements in the construction thereof, as will be hereinafter fully described, and
15 pointed out in the claims.

In sounding-boards for musical instruments as heretofore constructed difficulty has been encountered in making the sounding-board
20 sufficiently light to produce a resonant tone and at the same time sufficiently strong to bear the strains incident to the bridge. I have produced a board in which this difficulty is overcome in a manner which gives to the
25 bridge ample support and at the same time produces a more resonant board than those heretofore made.

The invention is illustrated in the accompanying drawings as follows:

30 Figure 1 shows a front view of the board with the string-frame in place thereon. Fig. 2 shows a section on the line 2 2 in Figs. 1 and 4. Fig. 3 shows a section on the line 3 3 in Fig. 4. Fig. 4 shows a side elevation of the
35 board with one of the faces removed.

A marks the board. It comprises the two face pieces or plates a a , which are separated by a surrounding edge piece a' . Between the faces or plates, preferably in a parallel series, are also arranged the ribs a^2 . These ribs
40 are preferably run diagonally across the board substantially in line with the bass strings and are also preferably arched, so as to give to one face of the board a curved surface. The grain
45 of the boards or faces a a is preferably arranged across or approximately at right angles to the ribs a^2 . The ribs a^2 preferably extend through the edge pieces a' , so as to strengthen the board to the extreme edge.

50 This sounding-board may be used with any musical instrument. As shown in the draw-

ings, it is adapted to an upright piano. The ordinary string-frame B is placed upon it, and it is provided with the bridge C for the bass strings and the bridge C' for the treble strings. 55 The strings D and D' are arranged over these bridges as in the ordinary construction of pianos. The board is particularly desirable in pianos because of its superior strength, especially where the bridge C for the bass strings
60 is extended a distance to one side of its support, as clearly shown in Fig. 2. With ordinary sounding-boards this construction of the bridge so strains the board as to warp it or bend it out of shape. By making the ribs a^2 65 substantially in line with the bass strings the strain of the bridge C is brought into line with them, so that the board is braced against this strain. This bracing effect is increased by arching the board, as clearly shown in Figs. 70 2 and 3.

With this construction of the board I get a more resonant and durable tone than with the ordinary sounding-board, because the board is much more rigid than the ordinary
75 board of the same weight, and at the same time the board holds its shape against the bridge strains, so that its quality is continued for an indefinite period.

The component parts of the board may be 80 joined together in any desirable way; but I prefer to unite them with glue or cement, not only uniting the edges of the faces a a with the edge pieces a' , but also uniting the faces or plates a a throughout with the ribs a^2 . 85 The ribs a^2 form a web connection between the plates and are preferably continuous and secured to the plates from edge to edge. The plates are, as shown, preferably of the same size and shape and free from openings in order that the confined air may assist in causing the parts of the board to vibrate in unison. The effect of the confined air is increased by making the spaces between the ribs practically air-tight compartments. 95

What I claim as new is—

1. A sounding-board for musical instruments, comprising two face-plates, having the body portions thereof free from openings and separated from each other; and means forming a web connection between the plates. 100

2. A sounding-board for musical instru-

ments, comprising two face-plates of approximately the same size and shape in plan having the body portions thereof separated from each other; and ribs extending across said plates from edge to edge arranged between and secured to the said face-plates from edge to edge.

3. A sounding-board for musical instruments, comprising two face-plates having the body portions thereof free from openings and separated from each other, and ribs extending across said plates from edge to edge, arranged between and secured to said plates from edge to edge.

4. A sounding-board for musical instruments, comprising two face-plates having the body portions thereof free from openings and separated from each other; and a series of approximately parallel ribs extending across said plates from edge to edge arranged between and secured to the said plates from edge to edge.

5. A sounding-board for musical instruments, comprising two face-plates free from openings, separated from each other; an edge piece arranged around the edges of said board, between said plates and forming a confined air-space between the plates; and means forming a web connection between the bodies of said plates.

6. A sounding-board for musical instruments, comprising two face-plates, of approximately the same size and shape in plan separated from each other; an edge piece arranged around the edges of said board, between said plates; and ribs extending from edge to edge arranged between and secured to said plates from edge to edge.

7. A sounding-board for musical instruments, comprising two face-plates of approximately the same size and shape in plan, said plates being free from openings and separated from each other; an edge piece around and between the edges of said plates; and ribs, extending from edge to edge, arranged between and secured to said plates from edge to edge, the said edge pieces forming a confined air-space between the plates and the said ribs, dividing this into separate compartments.

8. A sounding-board for musical instruments, comprising two face-plates, separated from each other; an edge piece arranged around the edges of said board, between said plates; and ribs extending through the edge pieces to the edges of the plates, and arranged between and secured to said plates.

9. A sounding-board for musical instruments, comprising two face-plates separated from each other; and a series of ribs extending across the body of said plates, said ribs having one edge curved to give to one of the plates a crowned or convex surface.

10. A sounding-board for musical instruments, comprising two face-plates, separated from each other; and ribs arranged between and secured to said plates, said ribs being arranged to come in line with the bass strings, for a piano.

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

WILLIAM G. BETZ.

Witnesses:

R. F. LANZA,
H. C. LORD.