2 Sheets-Sheet 1.

C. Bogard,

Piano Sounding-Board.

No. 8,575. Patented Dec. 9 1851.

Fig. 2.

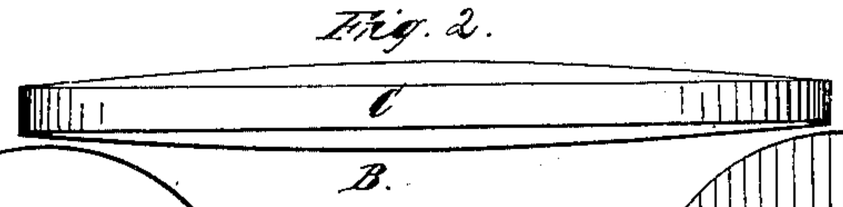
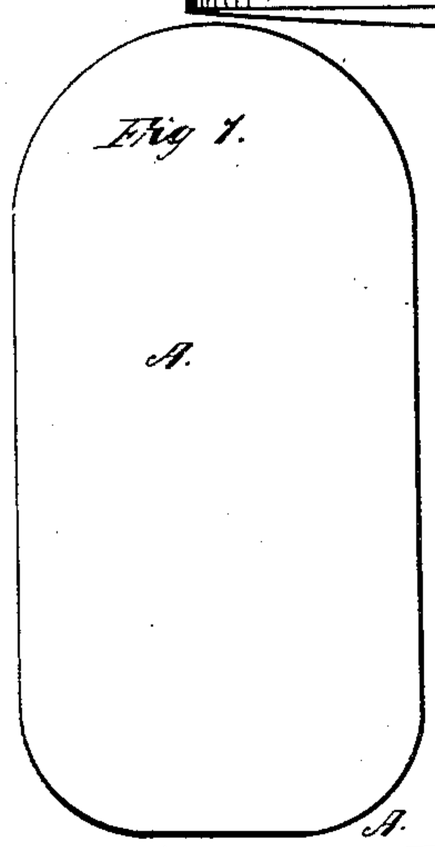


Fig 1.



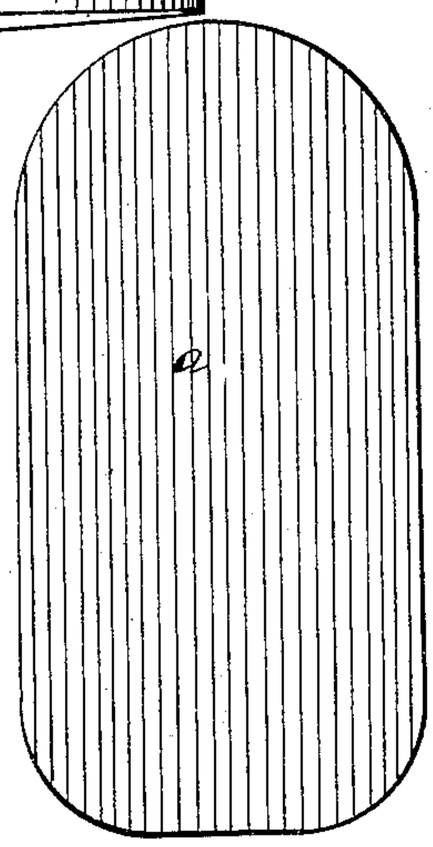
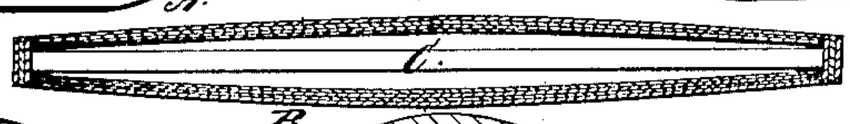


Fig. 3.

Fig. 4.



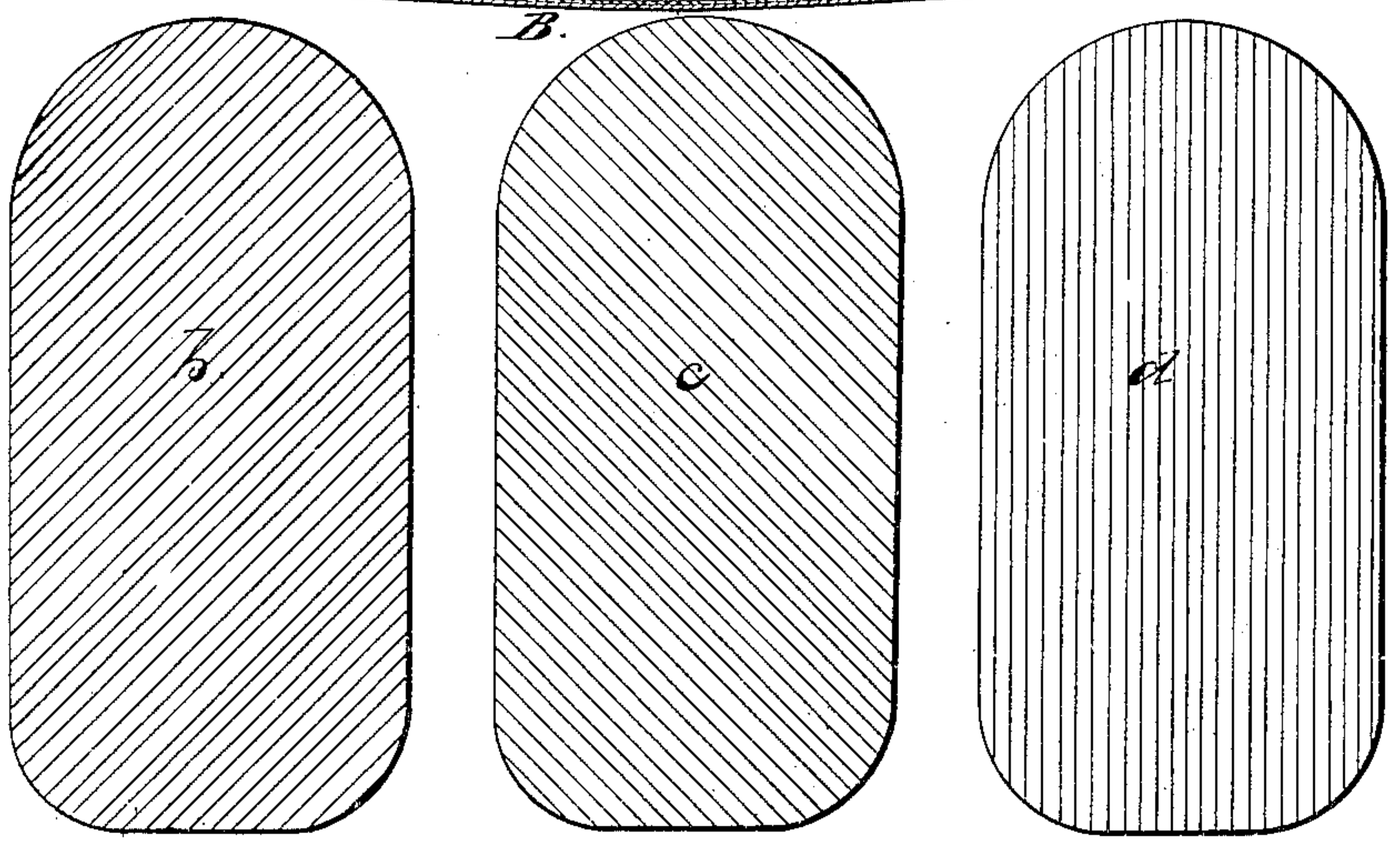
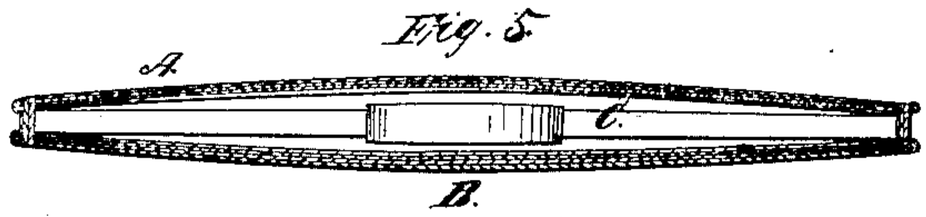


Fig. 5

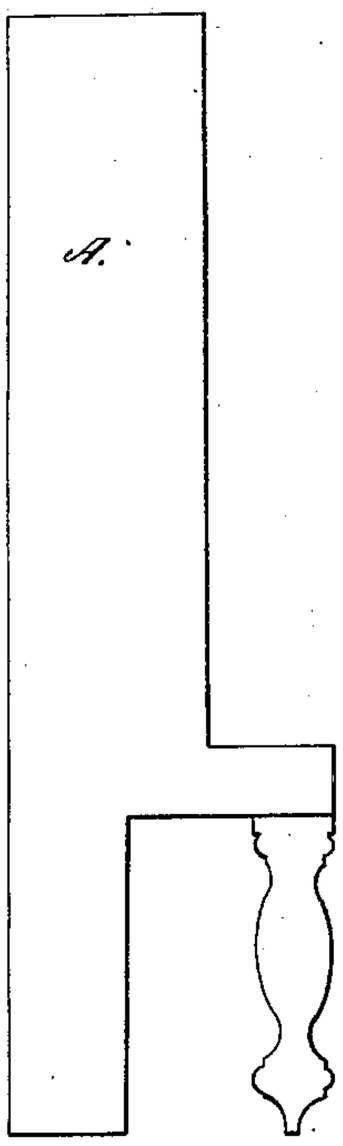


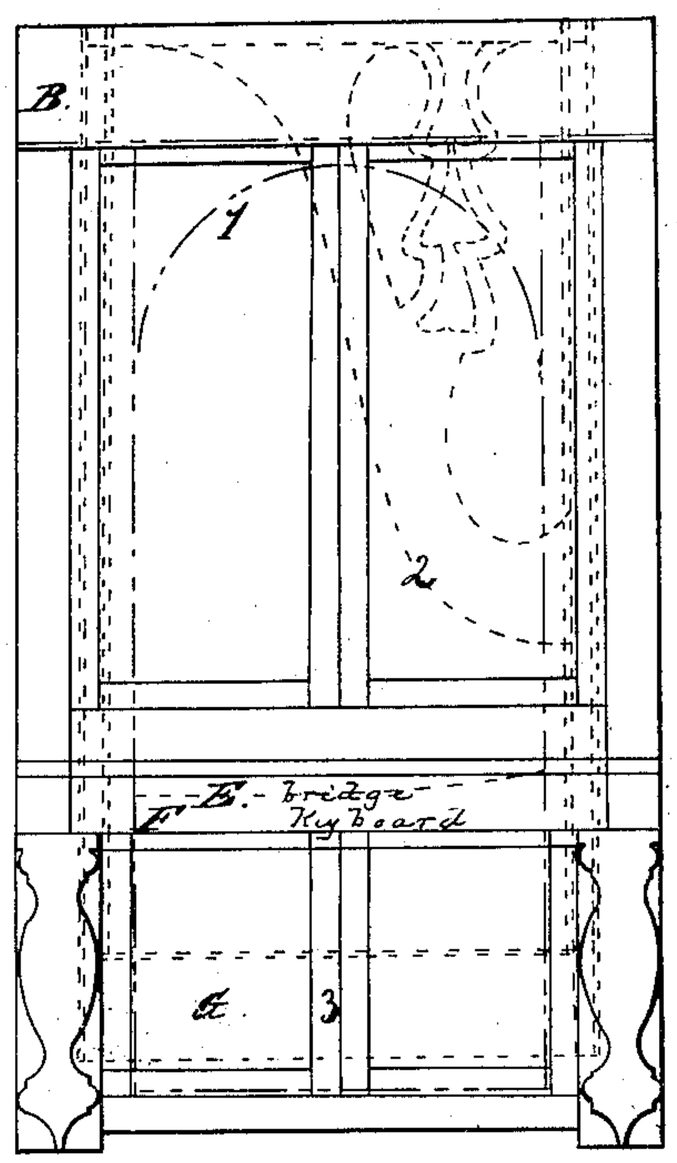
2 Sheets-Sheet 2.

C. Bogard,

Piano Sounding-Board.

No. 8,575. Patented Dec. 9 1851.





UNITED STATES PATENT OFFICE.

C. BOGART, OF CHARLESTOWN, MASSACHUSETTS.

CONSTRUCTION OF SOUNDING-BOARDS FOR MUSICAL INSTRUMENTS.

Specification of Letters Patent No. 8,575, dated December 9, 1851.

To all whom it may concern:

Be it known that I, CORNELIUS BOGART, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented a new and useful Mode of Constructing the Sounding-Boards of Pianos, Violins, and other Stringed Instruments; and I do hereby declare that the same is fully described and represented in the following specification and accompanying drawings, letters, figures, and references thereof.

Of the said drawings Figure 1 denotes a top view of one of my improved sounding boards for a piano forte. Fig. 2 is a side or edge view of it. Fig. 3 is a vertical, central, and longitudinal section thereof. Fig. 4 denotes the four different layers of wood to form one of the convex parts of the sounding board of a piano forte as detached from one another, the direction of the grain being represented by the cross lines. Fig. 5 is a vertical, longitudinal and central section of the body or shell of a violin (which corresponds to the sounding board of a piano forte) constructed according to my improved mode.

It is well known among musicians that the tone of any stringed instrument, and particularly of violins, is very much softened and otherwise improved by age, and this is mainly owing to the gradual drying of the wood, the consequent increase of its elasticity and closing up of its pores. This advantage in old instruments I have endeavored to secure in new ones by composing the sounding board of different layers of wood very compactly pressed together and into the desired form, so that an instrument with my improvement applied to it does not vary in external appearance from any other.

In the drawings above referred to, A, in Figs. 1, 2 and 3, represents the upper convex surface of the board, B, is the lower one and, C, the connecting hoop.

In Fig. 4, *a* shows the top layer, *b*, the second one, *c*, the third, and, *d*, the fourth or bottom one.

My mode of preparing and shaping the wood is as follows: In Fig. 5, the letters are the same as in Figs. 1, 2, and 3, denoting corresponding parts. I first obtain by any suitable means a cast-iron mold, die or press so shaped as to give to any pliable material placed between its pressing surfaces the exact form which I wish to give to the board to be constructed. I next take four or any other suitable number of very thin layers of wood I place their flat sides together and having put some very strong glue or other suitable material between their adjacent surfaces, I place the piece thus formed in said press, mold, or die, which must be first slightly warmed. These layers of wood are not placed with the direction of the grain parallel to each other but the first I lay with its grain parallel to its length as seen at *a*, Fig. 4. The second I place in such manner as to cause the direction of its grain to make an angle of perhaps 45 degrees with its length as seen at *b*; the third I place in such manner that its grain shall make an angle of perhaps 90 degrees with the first as seen at *c*, and the last I place parallel to the first as seen at *d*. I do not however intend to confine myself to any particular angle, but shall vary such angle or angles as I please, except that I always make the two outside layers have the direction of the grain and their length parallel for the purpose of making a smooth sound and a nice finish to the instrument. After putting the piece formed as above described I apply as much pressure as may be necessary in order to make the different layers come perfectly in contact and take the desired form. When it is dry it will be slightly warped, but by again putting it into the warm mold and letting it remain until cold the form will remain perfect and it is ready to be applied, in connection with other similar pieces (the number and form of which will vary according to the instrument to which it is to applied) to the instrument for which it is intended; that is to say, in pianos I construct the sounding board very much like the body of a violin, consisting of two convex pieces to form the top and bottom each, constructed and prepared as above and shaped as seen in the drawings, and a connecting hoop C, also composed of three or any other suitable number of layers of wood prepared and put together as above dedescribed; in violins the construction is precisely the same; the top, back, and connecting hoop each being composed of any suitable number of layers of wood as above; in other instruments the construction is varied to suit the form of the instrument, but the principle above set forth, viz, that

of combining different layers of wood together as above specified, is the same.

I do not intend to confine my invention to the construction of pianos, or violins, but shall if I please apply it to all stringed instruments; neither do I intend to confine myself to any particular number of layers of wood in the construction of my improved sounding boards, but may use as many or as few as may be proper or convenient.

Instruments constructed in this manner, or with my improvement applied to them far surpass in richness and quality of tone any hertofore constructed possessing a depth of tone which has never before been attained.

What I claim as my invention and desire to secure by Letters Patent is—

The above described mode of constructing the sounding boards of stringed instruments by combining or arranging together any suitable number of pieces of wood, prepared as above, all in manner and for the purpose as herein set forth.

CORNELIUS BOGART.

Witnesses:

OLIVER C. ISBELL,

A. N. JOHNSON.