

(No Model.)

H. S. PARMELEE.
PIANO SOUNDING BOARD.

No. 301,068.

Patented June 24, 1884.

Fig. 1.

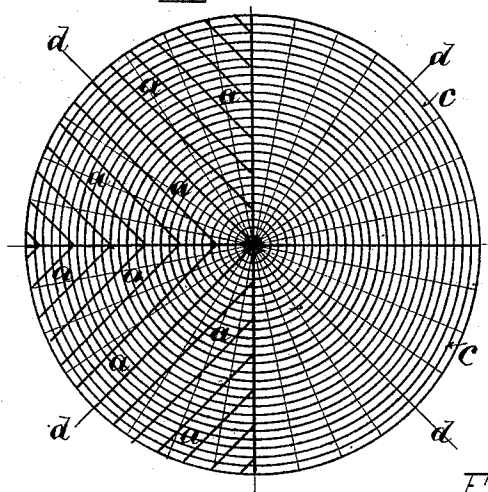


Fig. 2.

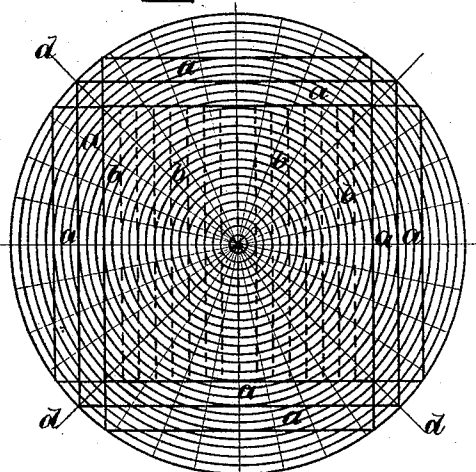


Fig. 3.

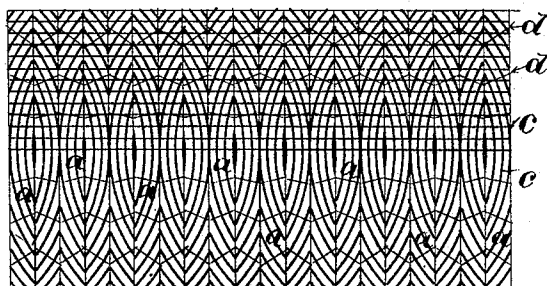
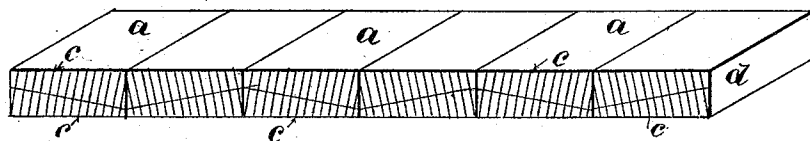


Fig. 4.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY S. PARMELEE, OF NEW HAVEN, CONNECTICUT, ASSIGNOR TO THE
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PIANO SOUNDING-BOARD.

SPECIFICATION forming part of Letters Patent No. 301,068, dated June 24, 1884.

Application filed February 21, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. PARMELEE, of the city and county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Sounding-Boards for Musical Instruments and Methods of Making the Same, of which the following is a specification.

My invention relates to the sounding-boards of musical instruments generally, but particularly those of piano-fortes.

The object of my invention is to produce a sounding-board the mass of which shall be of uniform density, while the disposition of the wood-grain shall be such as to increase the degree and improve the character of the sonorousness of such board.

My invention consists in an improved method of preparing the sounding-board from the stock after cutting from the logs; and it also consists in the peculiar and novel construction of the sounding-board, as hereinafter described and claimed.

In order that my invention may be fully understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure 1 is a cross-section of a log, showing the ordinary manner of cutting the stock for sounding-boards. Fig. 2 is a similar view of a log, showing my improved manner of cutting the stock. Fig. 3 is a view of the stock set up in readiness to be cut into sounding-boards. Fig. 4 is a perspective view of a portion of a sounding-board constructed in accordance with my invention.

In Fig. 1 the spaces *a a* represent the stock as it is cut from the log by the former method, it being seen that the lines of the cuts extend obliquely from a line drawn diametrically through the heart of the log. Stock cut in this way possesses two essential conditions requisite in sounding-board stock—viz., the radial grain *d* of the log passes approximately through the width of the stock, while the annular grain *e* of the log passes approximately through the thickness of the stock. All things being equal, this stock is in proper form to be made into sounding-boards, because the disposition of the radial and annular grain of the wood relative to the width and thickness, re-

spectively, of the stock is such as to afford the most sensitiveness to sound-vibrations and the highest degree of transmission of the same throughout the mass of the board; but sounding-boards constructed from stock thus cut fail both in sensitiveness and in power of transmission, because, while the wood-grains of the stock are properly disposed, the stock is not of uniform density, inasmuch as that side of the stock which was near the heart of the log is of greater density than the opposite side, which was near the bark.

Now, by the first step in my improved method, I so cut the stock that it shall be of substantially uniform density and practically of perfect uniformity in this respect. I accomplish this result by cutting the stock in lines not obliquely to the diameter of the log, as heretofore, but parallel to it, as shown in Fig. 2. In this figure, *a a* designate the stock cut in accordance with my improved method; but from an inspection of Fig. 2 it will be seen that, while I thus secure the utmost uniformity in density, I do not have the annular and radial wood-grains properly disposed, respectively, relative to the depth and width of the stock.

Before proceeding to describe the second step of my method, whereby I bring the wood-grains into proper disposition, I will mention certain important incidental advantages which result from my method. That portion of the log which I use for sounding-board stock is the portion which is ordinarily wasted in squaring the log in sawing lumber. At the same time by the improved method the log is squared by the cutting operation. By the former method of cutting, the portion of the log not used for sounding-board stock was worthless waste, and hence the cost of the stock was the cost of the entire log, which greatly increased the expensiveness of the stock. Furthermore, the old method of sawing required so much labor and produced so much waste that the mills would not readily undertake the work. By my improved method all these objectionable hinderances are avoided, and the value of the portion *b*, Fig. 2, which is available for other purposes, does not affect the cost of the sounding-board stock.

Now, the stock cut as described is set up side to side, as shown in Fig. 3, and these sides

are united by glue. The block thus formed is now cut across the direction of the sides, so that the sides become the edges of the sounding-board sections, and the radial and annular wood-grains, which previously extended respectively through the thickness and width of the stock, now extend approximately through the width and thickness thereof, respectively.

In placing the stock at the stage represented in Fig. 3 the portions of the stock which were near the heart of the log and the portions which were near the bark may be disposed promiscuously with relation to each other, and a very superior sounding-board will be produced, owing to the quality of the stock; but in order to make the most perfect sounding-boards the stock should be so arranged at the stage represented in Fig. 3 that after subsequent cutting the part of each strip which was near the heart of the log shall be contiguous to the part of the adjoining strip which was near the bark, as illustrated in Fig. 4. I preferably cut two slabs from each square, thus obtaining eight slabs from each log, and the slabs are preferably not less than one inch nor more than two inches in thickness.

Having thus described my invention, I claim—

1. The improved method herein described for making sounding-boards, consisting in first cutting the stock from the log in lines parallel with the diameter of said log, then uniting the pieces of stock thus cut side by side with

glue, and then cutting said stock transversely to the lines of union, whereby a sounding-board is produced the sections of which are of uniform density, and in which the annular wood-grain extends approximately through the thickness of the sections while the radial wood-grain extends approximately through the width of said sections, for the purposes described.

2. An improved sounding-board for musical instruments, formed of a number of sections cut, as described, so as to be each of uniform density, and united by glue, the said sections having the annular wood-grain extending approximately through the thickness of the sections, and the radial grain extending approximately through the width of said sections, substantially as set forth.

3. An improved sounding-board composed of a number of sections cut, as described, so as to be each of uniform density, and united by glue, and having the radial and annular wood-grains extending, respectively, approximately through their widths and thicknesses, the part of each section which was near the heart of the log being placed contiguous to the part of the next section which was near the bark, as and for the purpose described.

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Witnesses:

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