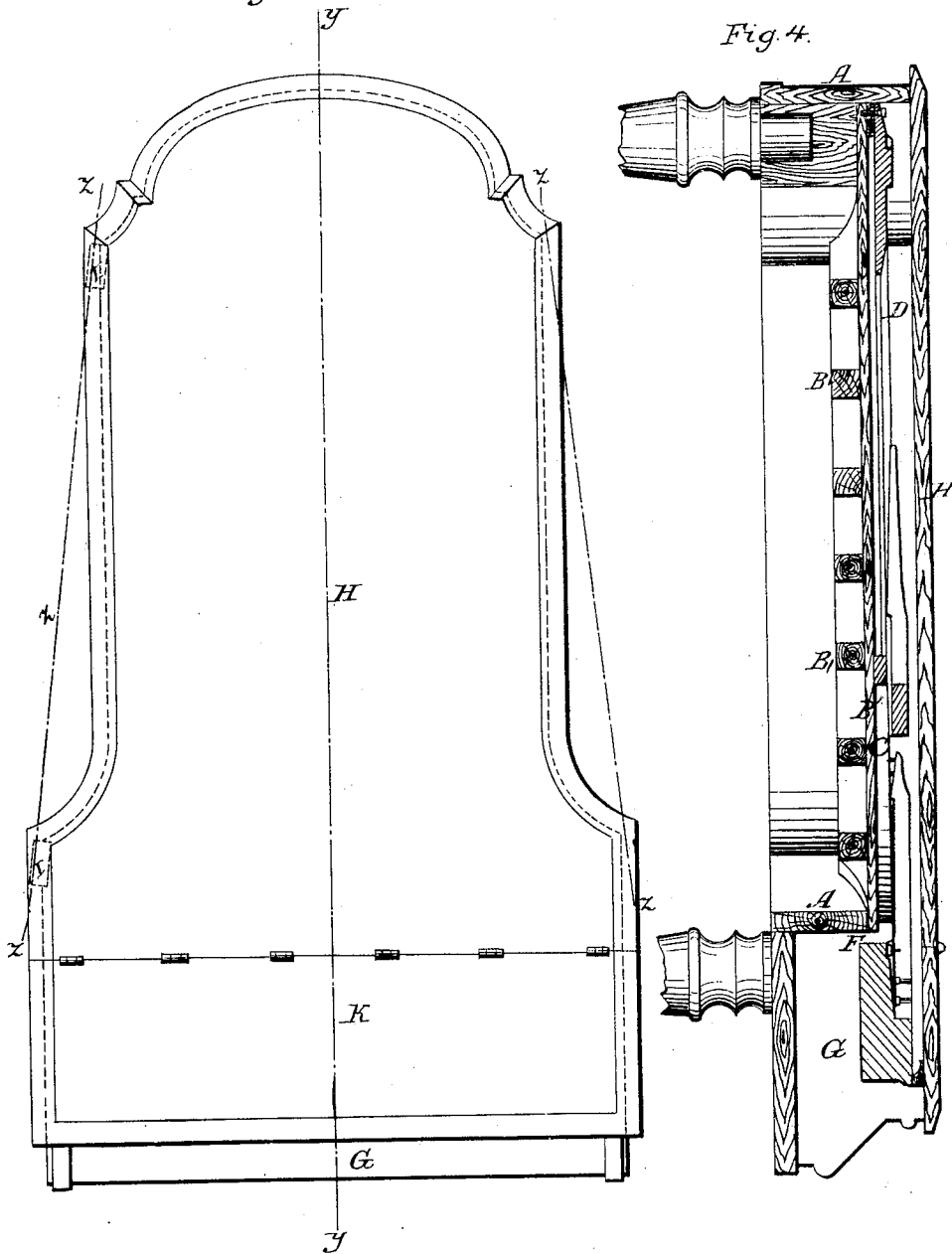


G. H. Davis, 2 Sheets, Sheet 2.

Piano.

No. 100,266. Fig. 3.

Patented Mar. 1. 1870.



Witnesses

D. B. Whitney
Chas. A. Jordan.

Inventor.

Geo^r H. Davis.

United States Patent Office.

GEORGE H. DAVIS, OF BOSTON, MASSACHUSETTS.

Letters Patent No. 100,266, dated March 1, 1870.

IMPROVEMENT IN GRAND PIANOS.

The Schedule referred to in these Letters Patent and making part of the same:

I, GEORGE H. DAVIS, of Boston, in the county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Grand Piano-Fortes, of which the following, with the accompanying drawing, is a specification.

Nature and Objects of the Invention.

The objects of my invention are in the first place to so modify the construction of grand pianos (so called) that a greater volume and a better quality of tone will be produced thereby than by the construction usually adopted; and in the second place to give the instrument a much more beautiful and pleasing form than that which is usually given to grand pianos; and in the third place to enable either side of the instrument to be equally adapted to be the front side.

My invention relates to an improved construction of those parts of a grand piano which produce the tones; and consists in the combination of, first, a wooden frame or case made to receive the action at the front end, and having its sides made symmetrical, and back of the action made to recede by ornamental curves so as to contract the width of the case in the back part; and second, a symmetrically-formed sounding-board conforming to such form of the case, and filling the same back of the action placed near the strings, and having the curved bridge of the strings placed centrally thereon, and as far as possible from the edges of the board; and third, an iron frame to support the strings at both ends, made to conform to such form of case and to such sounding board, and to receive a series of strings arranged in a single plane or flat scale, so called; and fourth, a series of strings thus arranged; and fifth, an action placed at the front end and below the plane of the strings; all constructed substantially as will be hereafter described.

From a long experience in the practical construction of pianos, I have found that the resonance of the sounding-board and the volume and quality of the tones produced are much improved by attaching the bridge for the strings to the sounding board near its center, and also that it is of great advantage to give to the strings for the high notes as large an area of sounding-board as is given for the lower notes, neither of which is done in grand pianos as heretofore constructed; and I have also found that it is important to place the sounding-board near the strings, and that the connection between the two should be as direct as possible, so that the vibrations of the strings may be communicated to the board with the greatest freedom.

These several conditions and modifications in construction are embodied in the instrument herein described and represented.

Description.

In the drawings—

Figure 1 is a plan of the piano with the covers turned up vertically and in section;

Figure 2 is a transverse section on the line x of fig. 1;

Figure 3 is a plan of the piano closed, showing the construction of the covers; and

Figure 4 is a longitudinal section of the line $y y$ of figs. 1 and 3.

A represents the frame or case of the instrument, the exterior of which is made symmetrical to the center line y , as shown.

B is the sounding-board, which is placed immediately beneath the iron frame D which carries the strings, and is also made symmetrical in outline, and is stiffened by the bars B' upon the under side, and is attached to the case at the edges in the usual way.

To the upper surface of the board the curved bridge C is attached, as shown, and is so located that the greater part of it is near the middle of the board, which gives to each string an area of vibrating surface of the board and a freedom of vibration not obtained in the usual construction, thus greatly improving both the volume and quality of tone, especially in the upper notes.

D is the iron frame to which the strings are attached in one plane, forming the so-called flat scale, and which supports the strain of the strings in the usual way. It is also made to conform to the symmetrical form of the case and sounding-board, and to the position of the bridge C thereon, and is attached to the case at the edges by screws in the usual way.

E E, &c., are the strings arranged in the same plane, both ends of which are attached to the frame D, and they are connected with the bridge C in the usual way.

F is the space for the hammers; and

G is the space for the keys and other parts of the action, which may be made in any of the usual ways, and are not represented, as they form no part of the present improvements.

H is the main cover of the instrument, which is also made symmetrical in outline to the center line y , and is hung to the case at the prominent points I I near the ends by hinges having their axes in the line z , which is diagonal to the center line y . It is obvious that the hinges can be put upon either side of the instrument, as may be desired, or hinges may be fitted to both sides, and by withdrawing one set of hinge pins the cover can be made to open on that side that may be found most convenient.

K is the front cover, which is made parallel with the front end of the instrument, and is hinged to the main cover, as shown, and operates in the same man-

ner on whichever side the main cover is hung. But where the purchaser can give direction before making, it will be necessary to fit hinges to one side only to conform to the position in which the instrument is to be placed in the room.

L is the prop to hold the main cover open while the instrument is played, when the cover K is turned back on the top of the main cover, as is shown in fig. 1.

It will be observed that my improvements especially apply to the grand piano, large or small, having a flat scale, as in this mode of constructing the instrument all the strings are of equal distance from the sounding-board, and as near as practicable to it. And this scale has several advantages over the overstrung, as there is less difficulty in securing a uniform gradation in volume, uniform character and delicacy of tone and equal action of all the strings upon the sounding board so far as this is affected by distance therefrom, and especially as regards the upper notes; and it has been a leading object in my experiments to so construct the several parts as to combine these advantages of a

flat scale with those due to the symmetrical form of the instrument.

Claims.

I claim as my invention—

The combination of the symmetrically-shaped case, the symmetrically-shaped sounding-board, with the bridge placed centrally upon it, and of such height as to bring the strings close to it; the iron frame to support the strain of the strings adapted to such form of case and sounding-board, and to receive a set of strings arranged in a horizontal flat scale; the series of strings so arranged, and an action arranged at the front end below the level of the strings; all substantially as described.

Executed September 20th, A. D. 1869.

GEO. H. DAVIS.

Witnesses:

G. E. WHITNEY,
CHAS. A. JORDAN.