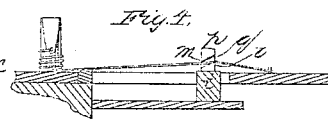
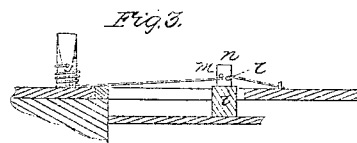
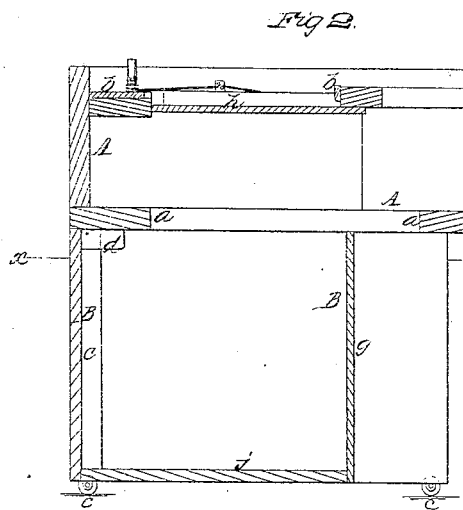
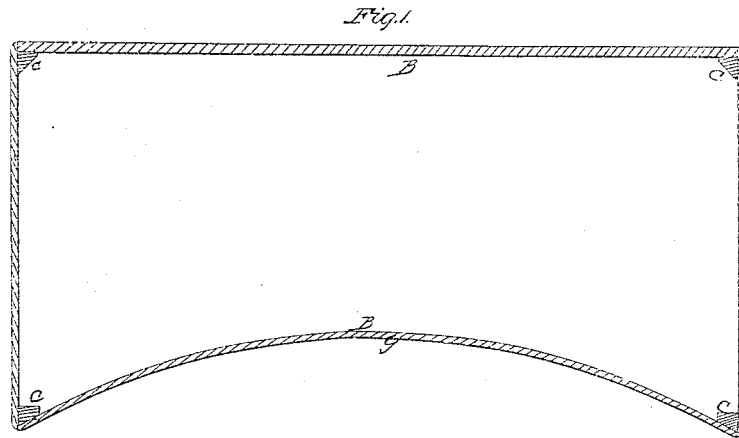


S. B. DRIGGS.
PIANOFORTE.

No. 47,196.

Patented Apr. 11, 1865.



Witness:
Henry T. Brown
W. Coombs

Inventor:
Spencer B. Driggs

UNITED STATES PATENT OFFICE.

SPENCER B. DRIGGS, OF NEW YORK, N. Y.

IMPROVEMENT IN PIANO-FORTES.

Specification forming part of Letters Patent No. **47,196**, dated April 11, 1865.

To all whom it may concern:

Be it known that I, SPENCER B. DRIGGS, of the city, county, and State of New York, have invented a new and useful Improvement in Piano-Fortes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a transverse vertical section of a square horizontal piano-forte constructed according to my invention. Fig. 2 is a horizontal section in the plane indicated by the line *x x*, in Fig. 1. Figs. 3 and 4 exhibit vertical sections of the wrest-plank, hitch-plate, sound board and bridge, and corresponding longitudinal views of the strings.

Similar letters of reference indicate corresponding parts in the several figures.

The principal object of my invention is to increase the volume and improve the quality of the tone of the piano forte, first, by providing a larger sounding-chamber than is practicable with the ordinary method of supporting the case of the instrument, and, secondly, by so connecting the strings with the sound-board as to make them actuate the said board to the fullest extent.

The first feature of my invention, which is illustrated by Figs. 1 and 2 of the drawings, consists in inclosing the commonly unoccupied space under the case proper of a piano-forte by a box of wood sufficiently thin for its free vibration to form a sounding-chamber in communication with the space below the sound-board within the case proper. In carrying out this feature of my invention I construct the case proper, A, of the instrument separate from the box B, which constitutes my sounding-chamber, and with its bottom, composed of a mere open frame, as shown at *a a*, in Fig. 1, and I prefer to employ an iron frame, *b*, of sufficient strength to sustain the tension of the strings.

The box or sounding chamber B is made with a bottom, sides, and ends of thin wood, but without a top, and is strengthened by upright corner-pieces *c c*, which supply the place of the ordinary legs of the instrument and form the main support of the case proper, A, which rests upon the top of the said box, and which is kept in place by dowels *d* upon its

bottom, fitting within the upper edges of the box, or by other suitable means. The said box is supported on casters *e e*, which keep the bottom *f* raised a short distance above the floor. The front *g* of the said box is made concave externally in its horizontal section, as shown in Fig. 2, to allow room for the legs and feet of the player and the ordinary pedal-work, and this front may be barred or otherwise strengthened at the middle of its length to serve the purpose of what is termed the "lyre" in the ordinary piano forte. The thin sides, ends, and bottom of this box or sounding chamber, being exposed to the vibration of the air produced by the action of the ordinary sound-board, *h*, of the instrument with which the strings are connected, present a large vibrating surface, by which I obtain not only a large increase of the actual tone of the instrument, but improve the sympathetic quality of the tone in a great degree. If it should be desirable for the purpose of facilitating transportation, the corners of the box B may be hinged to enable it to fold up.

The second feature of my invention, which is illustrated in Figs. 3 and 4, consists in a novel device for the attachment of the strings separately to the sound-board bridge, whereby I obtain for each string two metal bearings parallel, or nearly so, with the surface of the sound-board, and so arranged as to produce a sufficient bend of the string on and between the said bearings in a direction perpendicular to the sound-board, thereby forming a more rigid connection of the string with the sound-board, both in a perpendicular and parallel direction, than has been hitherto obtained, and to provide to the fullest possible extent for vibration of the sound-board with the string, both in a longitudinal and perpendicular direction; the principal object in this respect to be obtained being to secure the fullest longitudinal vibration of the sound-board without resting the strings upon the flat surface of the sound-board bridge in the ordinary zigzag form.

Fig. 3 shows one and Fig. 4 another mode of constructing the two bearings *l* and *m*. Fig. 3 represents these bearings as composed of two wire pins secured in one side of a metal stud, *n*, which is screwed firmly into the bridge *i*, and Fig. 4 represents the said bearings as

provided by the upper and lower edges of an oblique slot, *q*, cut in one side of a metal stud, *p*, screwed firmly into the bridge. This method of supporting the strings upon and connecting them with the sound-board bridge has all the advantage of the old mode of connecting the strings with the bridge by means of two pins, which produce a bend of the string in a direction parallel with the surface of the sound-board, and of string-clamps, such as that claimed in my Letters Patent of March 13, 1860, and other modifications of the said clamp subsequently patented, without the disadvantages of either method—that is to say, it obtains the bend of the string which experience shows to be the only method of preventing it from slipping longitudinally in or between its bearings, and it brings the entire bearing on or against metallic surfaces, and not directly upon the wooden surface of the bridge, in which the strings are liable to form depressions, thereby enabling a greater amount of “bearing” to be given to the string and allowing a more rigid sound-board to be used than has heretofore been practicable. This latter effect—viz., the use of a more rigid sound-board—is also contributed to by the sounding-chamber B, which gives so great an increase of vibrating surface.

One important peculiarity common to the two constructions of the bearing on the sound-board bridge represented in Figs. 3 and 4 consists in there being a lateral opening between the bearings *l* and *m*, which provides for the insertion of the strings laterally, and therefore more conveniently, than when the strings have to be passed longitudinally through holes or under a continuous top-bearing which extends the whole width of the scale or across several strings.

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

1. The sounding-chamber B, provided under the case proper of the piano-forte, substantially as and for the purpose herein specified.

2. Connecting each or any one of the strings with the sound-board bridge independently of the other strings by means of two metal bearings, *l m*, constructed or provided on or in one side of a stud, *n* or *p*, secured in the bridge and having between them a lateral opening through which the string can be inserted in a lateral direction, substantially as herein described.

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Witnesses:

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