S. B. Driggs,

Piano.

No. 27,435. Patented Mar. 13, 1860.

Fig 2.

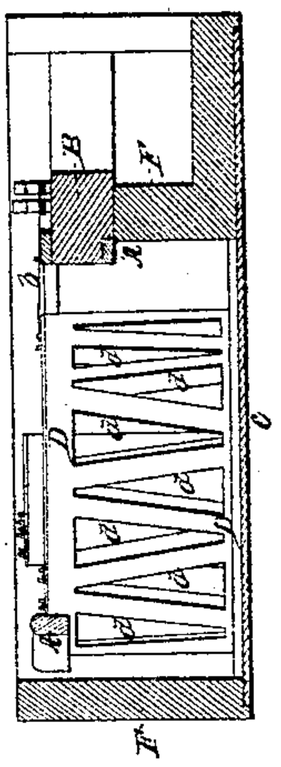


Fig 4.

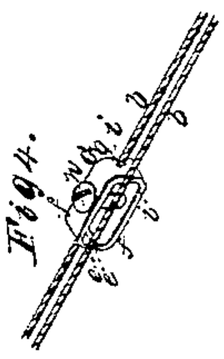


Fig 5.

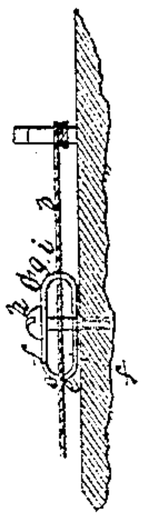


Fig 1.

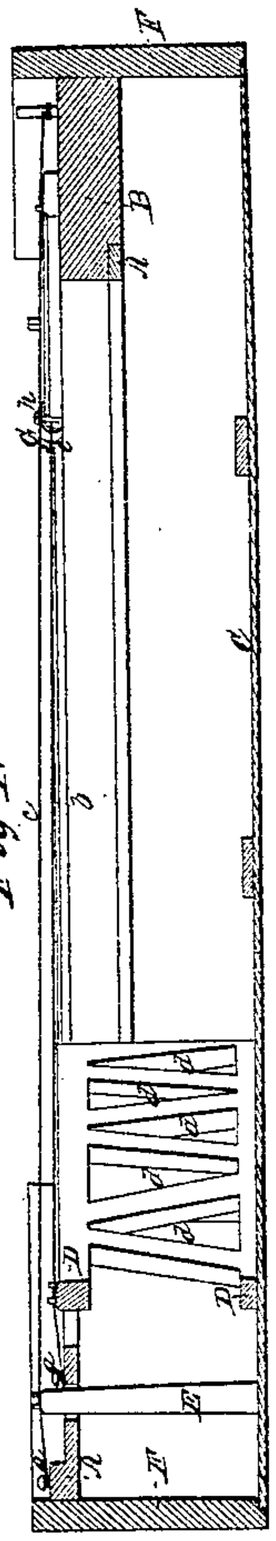
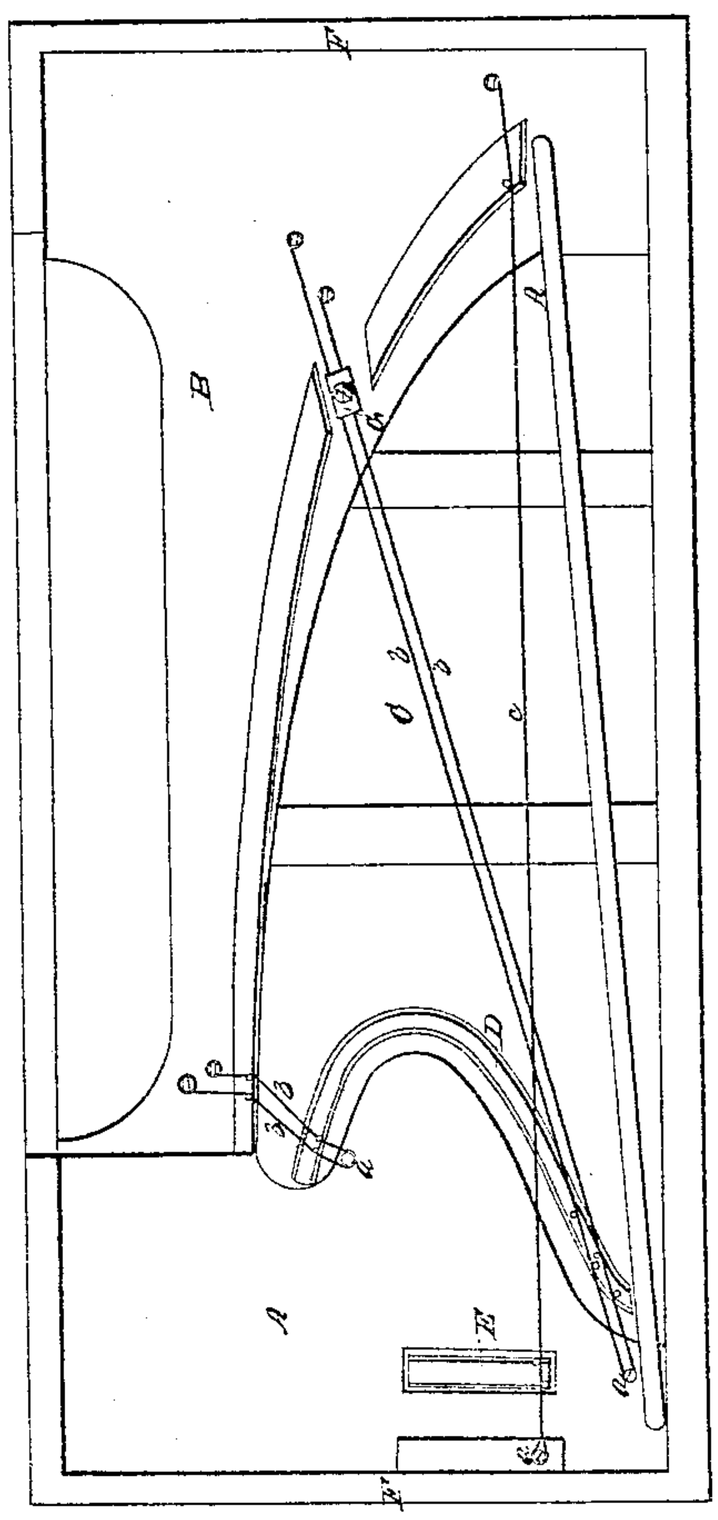


Fig 3.



Witnesses.
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R. S. Spencer

Inventor.
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UNITED STATES PATENT OFFICE.

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

PIANOFORTE.

Specification of Letters Patent No. 27,435, dated March 13, 1860.

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 certain new and useful Improvements in Pianofortes; 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 longitudinal vertical section of a square piano-forte illustrating my invention. Fig. 2, is a transverse vertical section of the same. Fig. 3, is a plan of the same. Fig. 4, is a perspective view of one of the clamps by which I propose to secure the strings at the points between which they vibrate. Fig. 5, is a longitudinal vertical section of the clamp.

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

My invention consists in the employment either in a horizontal or upright piano-forte, of a bridge, or bridges, of a depth equal or nearly equal to the whole depth between the strings and the bottom or back of the case, supporting the strings upon or against a single sound-board, which either constitutes the bottom or back of, or is arranged in the extreme lower or rear part of the case. It also consists in the employment for the purpose of holding the strings at the two bearings, or points between which they vibrate, or at either of the said bearings or points of a metal clamp of novel construction by which they are confined more securely than by the short oblique pins commonly employed for the purpose.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A, Figs. 1, 2, and 3, represent the metallic frame which supports the tuning block B, and part of which constitutes the hitch plate and contains the hitch pins *a*, *a*. This frame and the scale are represented of such form and so arranged as to bring the tuning block in the front part of the case, but this constitutes no part of the present invention, which is applicable with the usual arrangements of the frame, tuning block and scale.

The strings *b*, *b*, and *c*, *c*, are arranged at about the usual distance from the top of the case F, and the longer strings *c*, *c*, are overstrung.

C, is the sound board, secured to the lower edges of the sides of the case, and so applied as to form the bottom thereof. The case is made of about the usual depth.

D and E are the bridges which support the strings upon the sound board, made of a depth equal to the whole depth between the strings and the bottom of the case, which, as has been before mentioned is the sound board, and the only sound board used in the instrument. The bridge D supports the lower strings *b*, *b*, and the bridge E, the overstrings *c c*. The bridges may be made in the usual way, but for the sake of lightness, and to prevent their stiffening the sound board, so as to interfere with its vibration, the said bridges should have openings cut in them as shown at *d*, *d*, in Figs. 1 and 2.

In applying this improvement in the bridge and sound board, to a grand piano-forte, the usual arrangement of the strings may be preserved. The action, either in the grand or square piano-forte is to be arranged betwen the sound board and the strings. In an upright piano-forte the sound board is to constitute the back of the case, and to be at about the same distance from the strings, as in the horizontal instruments, so as to obtain the same depth of bridge; but in the upright piano-fortes, the action will be in the front of the strings as is commonly the case in those instruments.

The greatly increased depth of bridge and increased distance between the strings and sound board obtained by arranging the only sound board used in the instrument, at the bottom or back of the case, provides for a freer vibration of the air between the strings and the sound board, while by making the sound board the bottom of the instrument, its vibrations are unobstructed, and greater power and purity of tone is obtained for the instrument; and by the use of a single sound board, so arranged, an advantage in these respects, is obtained over the use of a sounding board so arranged in combination with one arranged at the usual distance from the strings.

Although it is at present my intention, and I consider it preferable to make the sound board constitute the bottom of the case of the horizontal, or back of the case of the upright instrument, I do not mean to confine myself to this point, as the case may have a thin bottom or back below or behind the sound board. This bottom or back, however,

should be entirely independent of the sound board, and not stiff enough to interfere with its vibration.

The metal clamp G, shown in Figs. 1, 3, 4, and 5, which constitutes the other feature of my invention, is made of a piece of sheet brass or other metal, bent in the form represented in Figs. 4 and 5, to form two straight parallel jaws *f*, *f*, whose extremities *e*, *e*, are turned toward each other to hold the strings between their edges like a pair of nippers. At the bend *g*, where the two jaws are connected, notches *i*, *i*, or holes are provided for the strings to pass through without touching. These clamps are each secured either to the tuning block, to the plate B, or to the sound board bridge, by means of a screw *h*, passing through a hole in each jaw and screwing into the block, plate or bridge, the end *g*, being arranged nearest the hitch pins or tuning pins. The lower jaw rests on the block, plate or bridge, and when the screw *h*, is screwed down tightly, it not only secures the clamp in place, but makes the edges *e*, *e*, of the jaws bite so hard upon the string or strings that the clamp constitutes a bearing for the string in every direction, and confines it much more securely and firmly than the oblique pins, commonly employed in the tuning block, or plate and bridge. The drawings only represent the application of one of these clamps at the tuning block end of the string, but it will be readily understood that the clamp can be applied to the bridge D or E, in the same manner.

I do not claim the arrangement of the sound board in such a manner as to constitute the bottom or back of the case when such board is used in combination with one arranged in the usual manner and does not support or form the bearing for the bridge, but,

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

1. The employment in a pianoforte of a bridge or bridges of a depth equal to or nearly equal to the whole depth between the strings and the bottom or back of the case, in combination with a single sound board which either constitutes the back of the case or is arranged in the extreme lower or near part of the same substantially as herein described.

2. The employment for the purpose of holding the strings at either or each of the bearings or points between which they severally vibrate, of a clamp G, constructed with two jaws and applied substantially as herein described so as to be made to bite and clamp the string or strings by the same screw, which secures it to the block, plate or bridge, as herein set forth.

SPENCER B. DRIGGS.

Witnesses:

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B. GRIOUX.