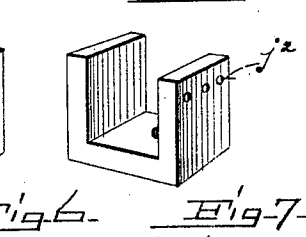
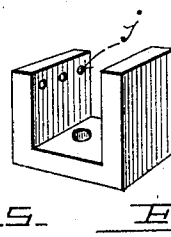
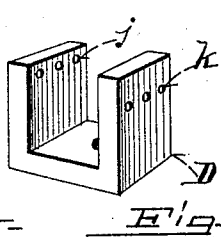
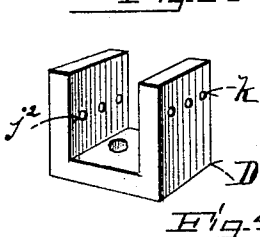
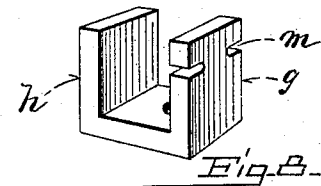
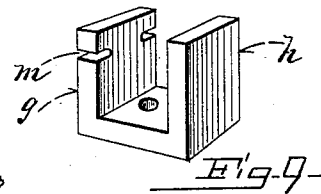
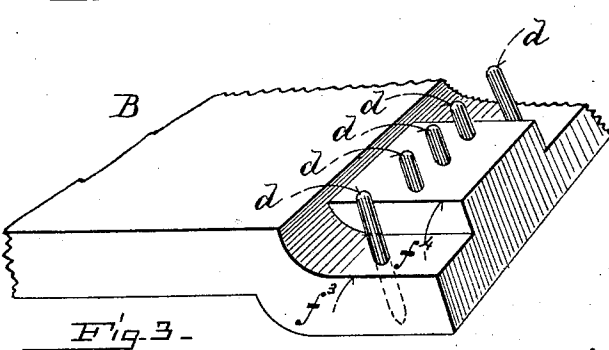
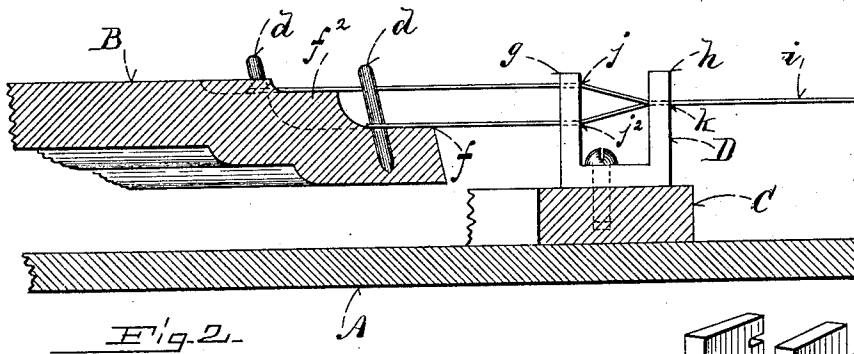
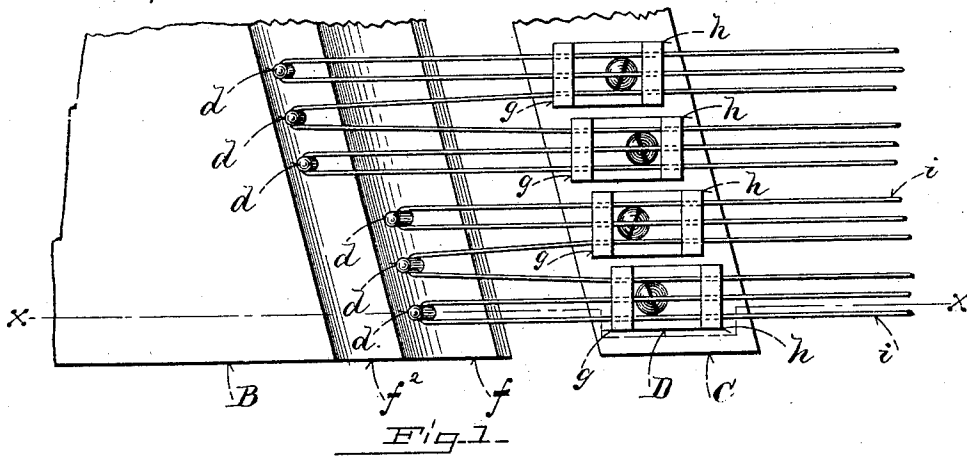


(No Model.)

J. W. BRACKETT.
PIANOFORTE.

No. 549,054.

Patented Oct. 29, 1895.



WITNESSES=
A. C. White
Laban Heath

INVENTOR=
John W. Brackett

UNITED STATES PATENT OFFICE.

JOHN W. BRACKETT, OF BOSTON, MASSACHUSETTS.

PIANOFORTE.

SPECIFICATION forming part of Letters Patent No. 549,054, dated October 29, 1895.

Application filed January 23, 1893. Renewed October 5, 1894. Serial No. 524,976. (No model.)

To all whom it may concern:

Be it known that I, JOHN W. BRACKETT, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Pianofortes, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of a portion of a hitch-pin plate and sounding-board bridge, showing my improvement. Fig. 2 is a vertical longitudinal section of the same; Fig. 3, a perspective view showing a modification in the formation of the hitch-pin plate; Figs. 4 and 5, perspective views, respectively, from opposite ends of the channeled bridge-plates; Figs. 6 and 7, like views illustrating a modification, and Figs. 8 and 9 similar views showing the form of bridge-plate employed with wound strings with eyes.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates especially to means for equalizing or relieving the strain from the strings on the sounding-board bridge of a pianoforte; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simple, cheap, and effective device of this character.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the sounding-board; B, the hitch-pin plate; C, the base of the sounding-board bridge. The edge of the hitch-pin plate B, in which the pins D are secured, is terraced or off-set from the web of the plate at $f f^2$, so that the line of pull on the strings shall be in a plane coinciding with the central horizontal plane of said plate.

The channeled bridge-pieces D are of a width to receive a determined number of strings of the instrument, in the present instance three strings being supported by each bridge-piece D, which is secured to the ordinary wooden bridge-base C, mounted on the sounding-board A in the usual manner. These

metallic bridge-pieces D, formed of channel metal, as described, have two arms $g h$. The strings i are passed around or secured to the hitch-pins d , which are arranged alternately on the terraces $f f^2$ by tones.

The bridge-pieces D have openings k in their arms or members h for the strings, all at equal distances from the base, or in the same horizontal plane. The companion arms g have openings j for the strings, said openings in alternate bridge-pieces being in planes, respectively, above and below the plane of the wire-openings k , as best shown in Figs. 4 and 5. The strings from the hitch-pins are passed through the openings j of the arm g of the first bridge-piece, which, as shown in Fig. 2, are above the plane of the openings k in the companion arm, the second set being passed through the openings j^2 in the second bridge-piece, which are in a plane below the openings k , said strings being then passed through said openings k in each bridge-piece and strained by the wrest-pins in the usual manner. The pull on the strings i , as thus arranged, is in a plane equidistant between the terraces $f f^2$, the strings of alternate tones being passed through the openings $j j^2$ and thence through the openings k in said plane, the pressure on the bridge being thereby equalized. For example, the strain on the bridge-plates is upward from the strings secured to the hitch-pins d in the lower terrace f and downward from the pins d in the upper terrace f^2 .

The objections attending the use of a continuous strain on the sounding-board from the strings, which is sensitive to the changes of temperature and by which the strings easily get out of tune, are entirely overcome by this improved arrangement.

In Figs. 6 and 7 a modification in the form of bridge-pieces is shown, no string-openings being constructed in the arm or member h ; but the strings passing from the openings j or j^2 in the members g are carried over the top or upper edge of the member h , effecting substantially the same result.

In Figs. 8 and 9 a form applicable for use with wound strings is shown. As is well known, these strings are constructed ordinarily with a loop or eye in their ends for receiving the hitch-pin. It being impracticable to pass said loop through the openings $j j^2$, I slot or

notch the edges of the arms g of the bridge-pieces, as shown at m in Figs. 8 and 9, so that said strings can be passed therein.

Fig. 3 shows a modified form of construction for the hitch-pin plate. A single terrace f^3 is formed and a raised block or other suitable device f^4 is mounted thereon to support the pins d , sustaining the strings of alternate tones, the effect being substantially the same as where the double terrace-plate is employed. The blocks f^4 may be secured on the ordinary hitch-pin plate to form a raised plane for the alternate pins, if desired; but I prefer the terraced form described.

While relieving the sounding-board from the great weight accruing from the constant downward pressure of the strings, the vibration is in no manner impaired by my improved method, and the board is enabled to augment to its maximum the quality and duration of the tone of the instrument.

Having thus explained my invention, what I claim is—

1. In a pianoforte a hitch-pin plate terraced or rabbeted into different horizontal planes at its edge in combination with hitch-pins secured on said terraces and a sounding-board bridge perforated to receive the strings from said pins and said perforations being so disposed that the line of pull on said strings shall be in a plane central between said terraces.

2. In a piano-forte the combination with a hitch-pin plate having the pins of alternate tones in different planes, of a sounding board bridge provided with a series of arms, alternate arms being provided with string open-

ings respectively in the same planes as said hitch-pins.

3. In a piano-forte the combination with a hitch-pin plate having the pins of alternate tones in different planes, of a sounding board bridge provided with two series of arms, alternate arms in the series adjacent said plate being provided with spring openings respectively in the same planes as said hitch-pins and the companion series of arms having string openings in a plane central between both, the hitch-pin planes and the web of the hitch-plate, substantially as set forth.

4. In a piano-forte, a sounding board bridge having a series of channel metal bridge pieces, provided in one of their members with a series of string holes, holes for alternate tones being respectively in different planes;— substantially as and for the purposes set forth.

5. In a piano-forte the combination of a hitch-pin plate with pins for alternate tones arranged thereon in different planes, with channel metal sounding board bridge pieces having openings for the strings in one of their arms in planes respectively with the pin planes and a series of openings, in the companion arms of said bridge pieces, in a plane central between said pin planes and strings passing from the hitch-pins through said openings, to the tuning pins whereby the strain of said strings on the bridge may be equalized; substantially as set forth.

JOHN W. BRACKETT.

Witnesses:

IRA E. WHITE,
LABAN HEATH.