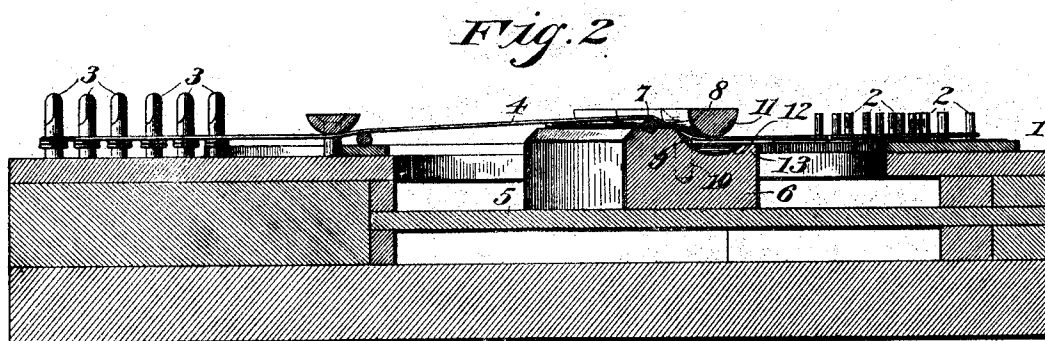
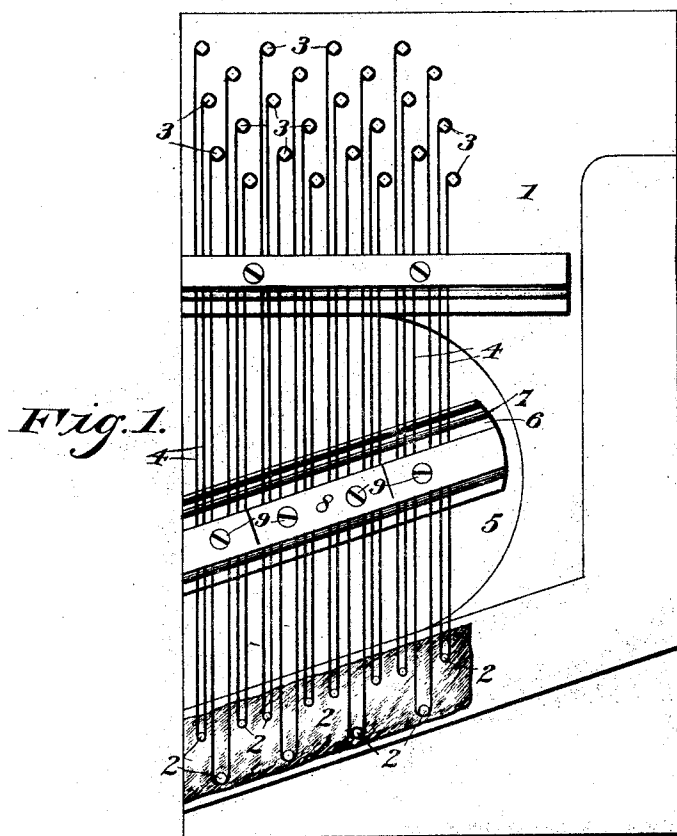


(No Model.)

P. DUFFY.
PIANO.

No. 505,447.

Patented Sept. 26, 1893.



Witnesses;

J. M. Withersow
Is Myers

by *Peter Duffy,*
Supplemental Attorneys

UNITED STATES PATENT OFFICE.

PETER DUFFY, OF NEW YORK, N. Y.

PIANO.

SPECIFICATION forming part of Letters Patent No. 505,447, dated September 26, 1893.

Application filed April 11, 1893. Serial No. 469,931. (No model.)

To all whom it may concern:

Be it known that I, PETER DUFFY, of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Pianos, of which the following is a specification, reference being had to the accompanying drawings.

My invention is designed to provide improved devices whereby the use of bridge pins may be avoided, and also injuries to an instrument consequent thereon, while at the same time the tone of the instrument is improved.

In the accompanying drawings, Figure 1 is a top plan view of a section frame plate of an upright piano, for example, showing a number of strings in position and fastened to the sounding board bridge by my device. Fig. 2 is a view of a portion of the plate, sounding-board bridge, and my bridge attachment, as in use.

Referring to the figures on the drawings, 1 indicates the plate, preferably made of cast metal, provided, as usual, with hitching pins 2, on one side, and on the other side with tuning pins 3.

4 indicates springs passing from the hitching pins to the tuning pins.

5 indicates a sounding board, upon which is secured in any suitable manner an all-wood sounding board bridge 6. The sounding board bridge is connected to the sounding board without the use of metal of any sort, so that it forms in effect a ridge upon the board of the same material as itself, and possessing corresponding qualities with respect to the influence upon the tone of the instrument. In the top of this wooden bridge is set a bearing edge, as for example, a bead 7, preferably made of small steel wire. This bead affords a firm and equal bearing for all of the strings and fixes their nodal points with precision; and at the same time its character is such as to impart to the tone of the instrument none of the objectionable metallic sounds which would be incident to the employment of a metallic bridge.

8 indicates a press-bar, which in practice

is of sufficient length to cover two or more notes on the piano. It is adapted to be secured to the top of the bridge by suitable means, as for example, screws 9 set into screw-holes 10 in the bridge, whereby it may be adjusted. The press-bar is rounded or convex in cross section, as indicated at 11 in the drawings, and is in practice located over a corresponding concavity 12 in the bridge. The side 13 of the bridge is considerably proportionately lower than the top of the bead 7. Consequently sufficient pressure may be exerted upon the strings by the press-bar to secure them firmly over the bead or nodal line without bending them into the concavity of the bridge, which tends in practice to render the springs fragile in tuning. Moreover, if the press-bar is required to depress the string between two points into a concavity more difficulty is experienced in obtaining the proper tension of the string. In practice the press-bars are seldom disturbed after one adjustment. Consequently when the tension of the string is diminished, so as to lower its tone, and the key is applied to tune it, the resistance of the press-bar bending the string between two bearing edges is so great as to permit that part of the string between the tuning key and the adjacent bearing edge of the bridge—designated by the figure 7 in this instance—to be tuned or raised to a proper tension while that part of the string behind the bridge, or between the bridge and the hitching pins, does not receive the same tension. In use, however, the vibration of the instrument tends to permit the tension from the one part to be divided with the other part, and consequently to lower the tone.

By my invention, while I secure the advantages sought for, I confine the string between two bearing edges, one upon the bridge, and the other upon the press-bar; and in that manner provide for equal distribution of tension through the whole lengths of the strings between the tuning pins and the hitching pins.

What I claim is—

In a piano, the combination with the frame,

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plate, strings, and tuning pins, of a sounding
board, a bridge secured thereto, an elevated
bearing upon one side of the bridge higher
than the other side thereof, and a press bar ad-
5 justably secured vertically above the bridge,
to one side of the bearing, the strings being
thus secured over the bridge between an upper
bearing edge on the bridge and a lower bear-
ing edge upon the press bar, and the strain of

the strings upon the bar being in vertical line, 10
substantially as and for the purpose specified.

In testimony of which I have hereunto sub-
scribed my name.

PETER DUFFY.

Witnesses:

L. J. N. NARHOUN,
PETER ANDERSON.