

No. 632,260.

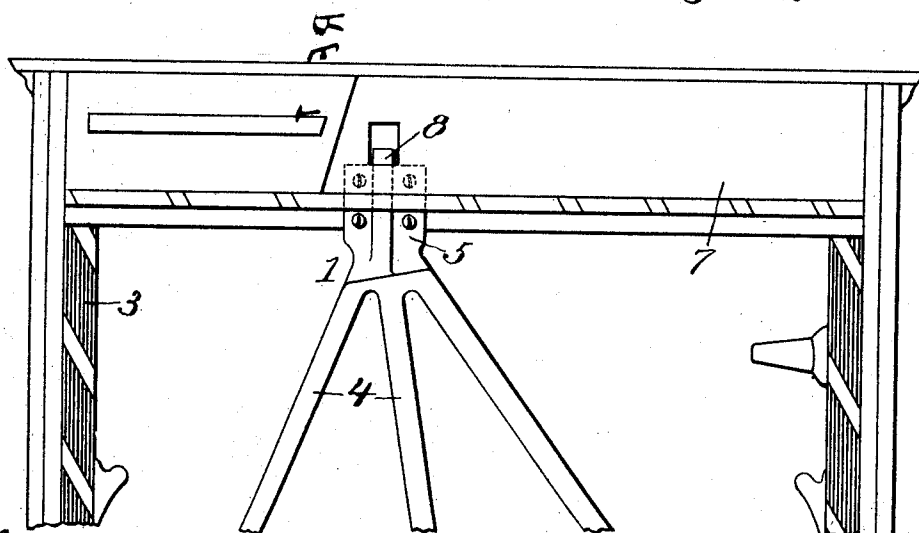
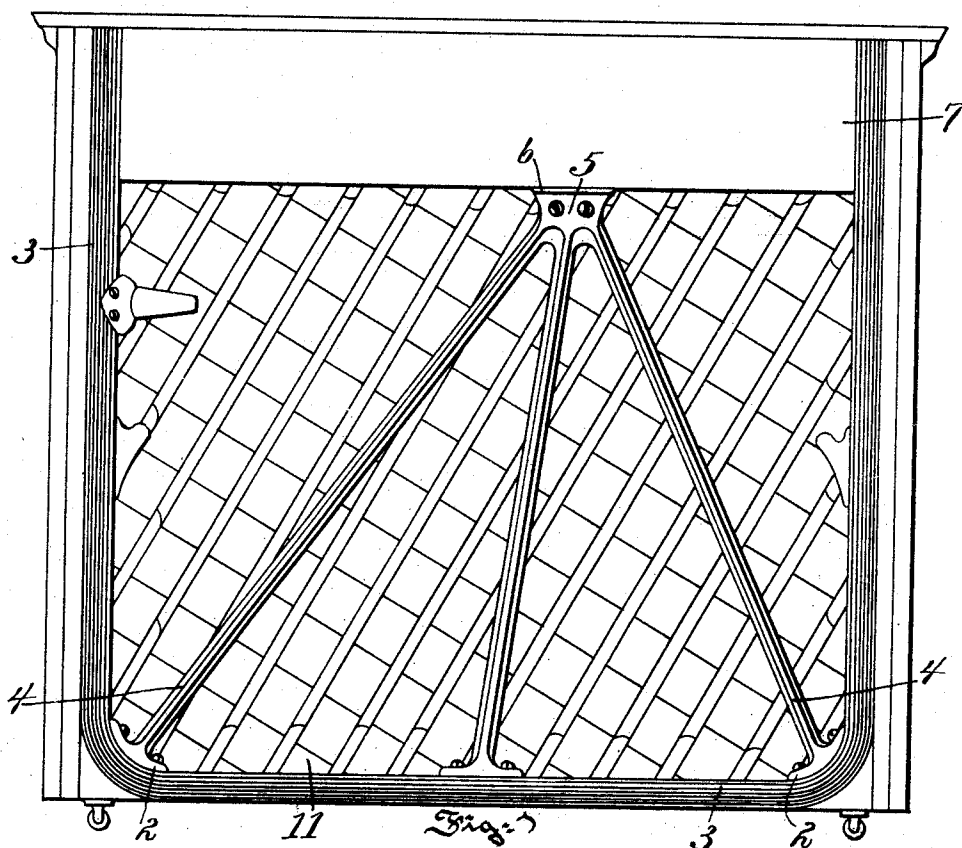
Patented Sept. 5, 1899.

H. W. GRAY.
METAL PIANO BRACE.

(Application filed May 11, 1899.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:
W. H. Jackson
Theodore Kesser

Fig. 2

Inventor:
Henry W. Gray
By
Augustus S. Koughlen
Attorney

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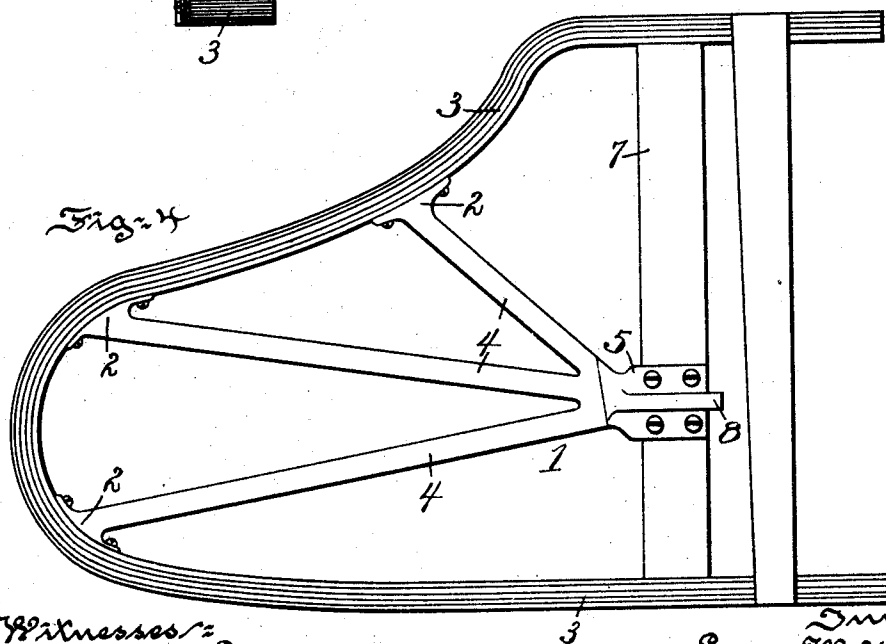
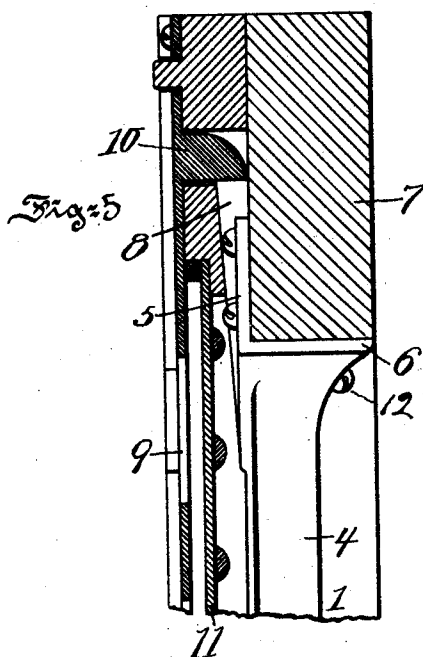
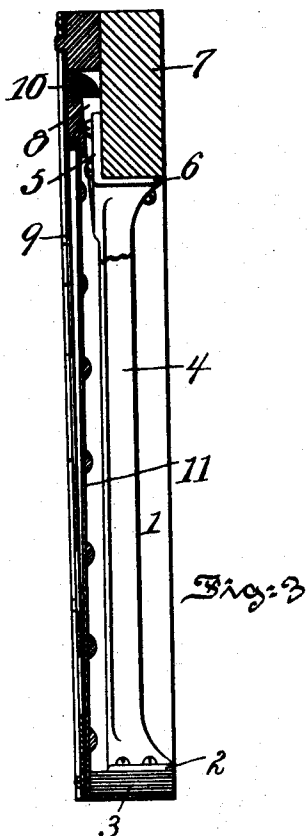
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Witnesses:
W. Jackson
Theodore Miller

Inventor:
Henry W. Gray
By
Augustus B. Skougden
Attorney

UNITED STATES PATENT OFFICE.

HENRY W. GRAY, OF PHILADELPHIA, PENNSYLVANIA.

METAL PIANO-BRACE.

SPECIFICATION forming part of Letters Patent No. 632,260, dated September 5, 1899.

Application filed May 11, 1899. Serial No. 716,336. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. GRAY, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Metal Piano-Brace, of which the following is a specification.

The objects of the invention are to prevent the various parts of a piano which bear the strain of the strings from being drawn thereby out of position and to thus make the instrument remain in tune for a comparatively great length of time, to improve the appearance of the instrument, to increase its mechanical strength, and to provide successful, durable, and efficient means for attaching the brace to the various parts which it supports.

The nature, characteristic features, and scope of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is a rear view of an upright piano constructed in accordance with the invention described in my application Serial No. 683,053 and equipped with a brace of my invention. Fig. 2 is a view taken from the front of the piano, with the sounding-board and all in front of it removed so as to illustrate the head of the brace. Fig. 3 is a transverse sectional view of Fig. 1, illustrating features of construction. Fig. 4 is a top or plan view illustrating my brace in application to a grand piano, and Fig. 5 is a sectional view drawn to an enlarged scale and illustrating the head of the brace provided with a seat for the pin-block of either an upright or a grand piano and with a support for the string-frame.

In the drawings, 1 is the metal piano-brace, which may be made of a single casting. It comprises shoes 2, conforming to the curvature of the inside frame 3 and fitted for attachment thereto, as by means of bolts, screws, or other fastening devices. These shoes 2 are formed at the ends of arms 4, radiating from a head 5. The head 5 is provided with a seat 6 for the pin-block 7. The head 5 is also provided with a suitable support, as 8, for the string-frame 9. The string-frame 9 is shown as equipped with a toe 10, that bears upon the support 8, as shown in Fig. 5. In use the shoes are attached to the inside frame at suitable points for bringing the resultants of the strain of the strings into line with the arms 4, and since the shoes conform to the

shape of the frame great mechanical strength is insured. It will be borne in mind that the string-plate 9 is also attached to the inside frame 3 and has attached to it one end of the strings. The head 5 of the brace contains within its seat 6 the pin-block 7, to which the other ends of the strings are attached. At the same time the support 8 engages the toe 10 of the string-plate, so that the entire strain of the strings is referred to the brace 1, which, being of metal, is rigid and not affected by dampness and dryness and therefore resists this strain. The sounding-board 11 is not in any way interfered with in its normal action, but, on the contrary, performs its functions in a better way than heretofore, because there is less material overlying it, the arms 4 being comparatively simple.

By reference to Fig. 5 it will be seen that the head of the brace overhangs toward the back of the instrument, so that a screw or suitable fastening device 12 can serve to firmly hold the pin-block 7 in position. The tendency of the pin-block 7 when subjected to the strain of the strings is to turn at its upper part toward the left of Fig. 5. Such tendency, however, is restrained by the fastening 12, as well as by the upwardly-extending portion, to which the reference-number 5 is directed in said figure.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. An integral metal piano-brace comprising shoes conforming to the curvature of the inside frame and formed at the ends of arms radiating from a head having a support for the pin-block of which a portion extends upward between the pin-block and the string-plate, substantially as described.

2. The combination of an integral metal piano-brace comprising arms radiating from a head provided with an upward extension and an overhanging portion, a pin-block fitted to said head and a fastening device connecting the pin-block with the overhanging portion of the head, substantially as described.

In testimony whereof I have hereunto signed my name.

HENRY W. GRAY.

Witnesses:

H. C. SCHOMACKER,
HORACE E. WALTON.