

No. 792,095.

PATENTED JUNE 13, 1905.

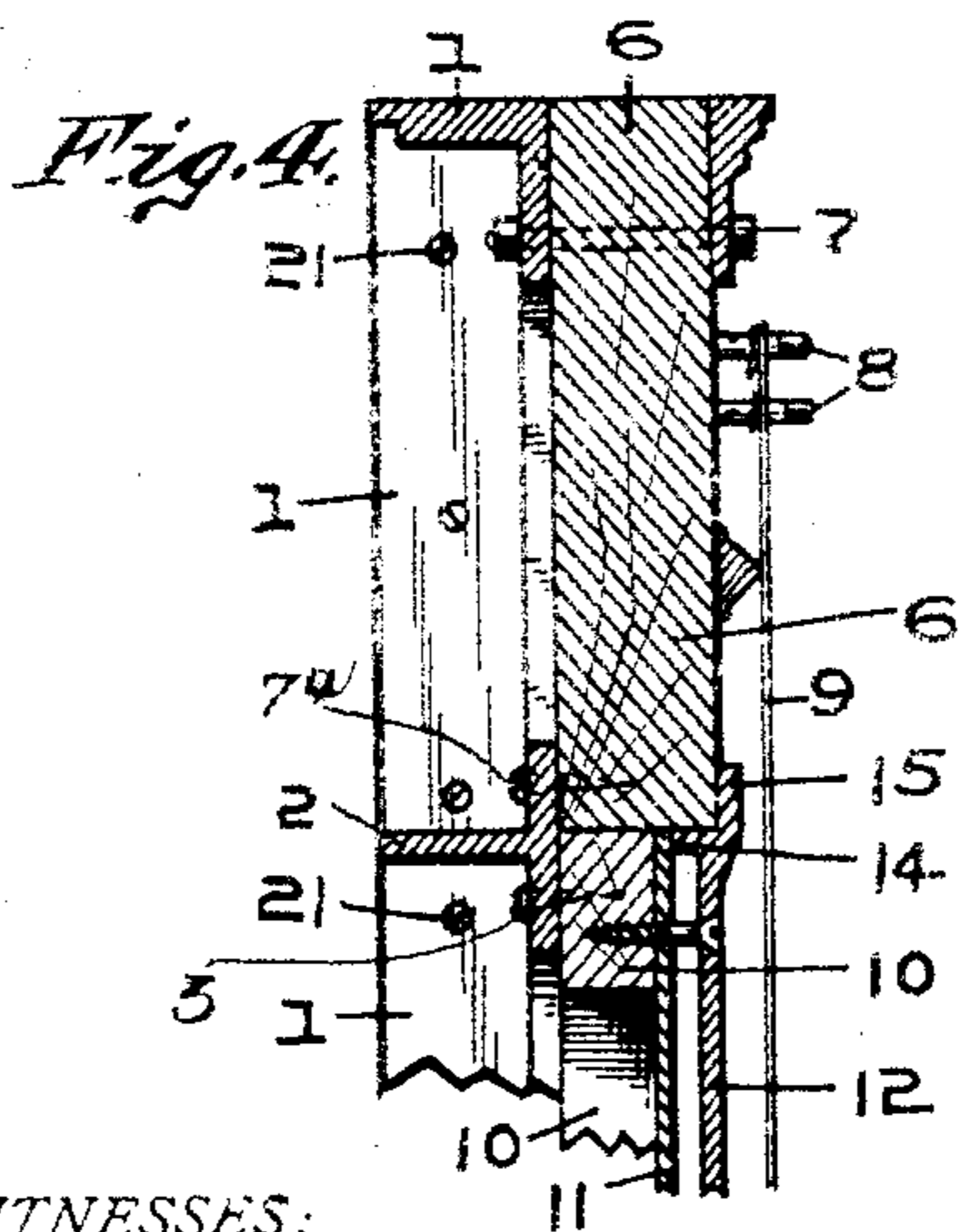
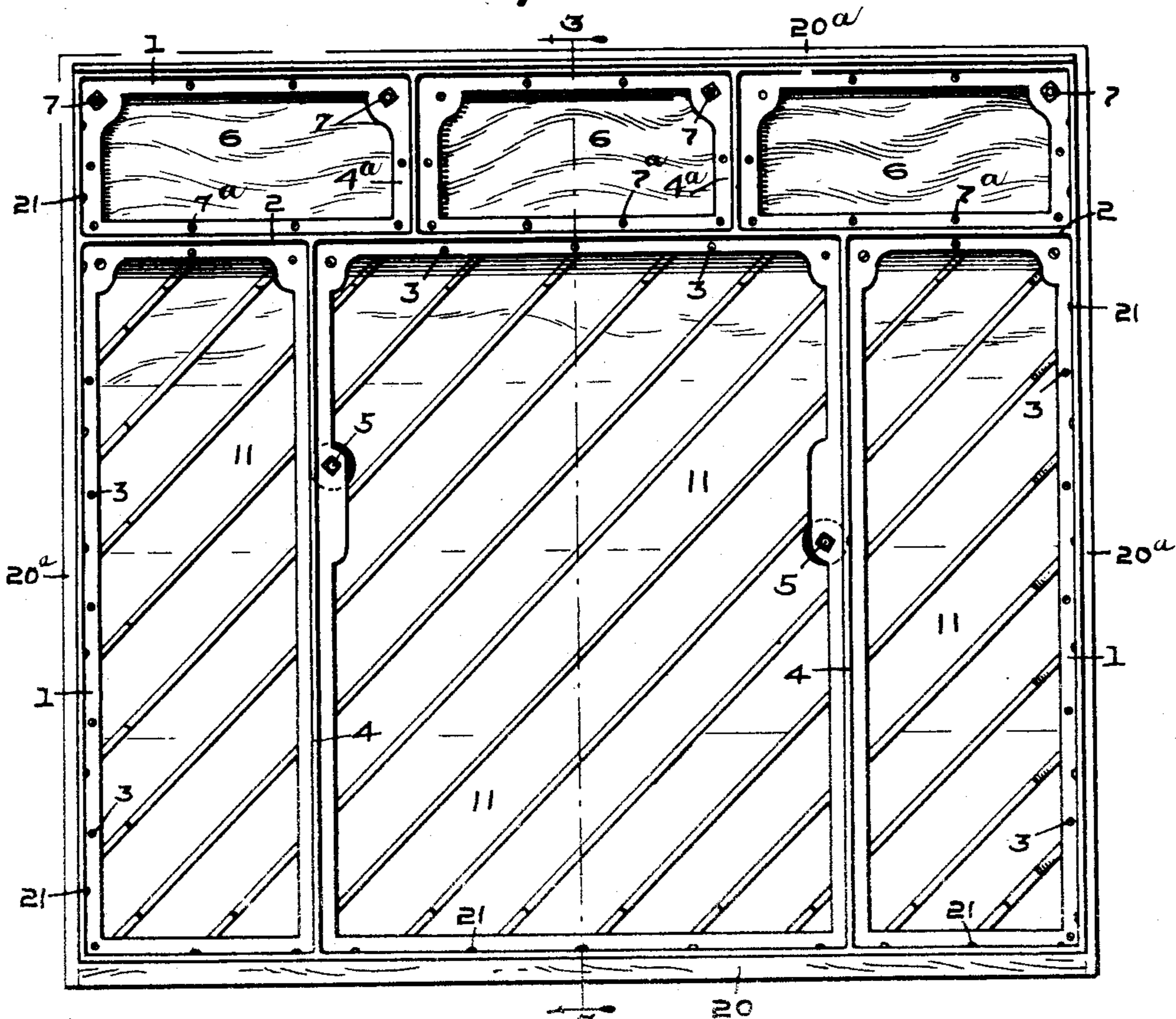
H. J. WEILER.

PIANO.

APPLICATION FILED JUNE 13, 1902.

2 SHEETS—SHEET 1.

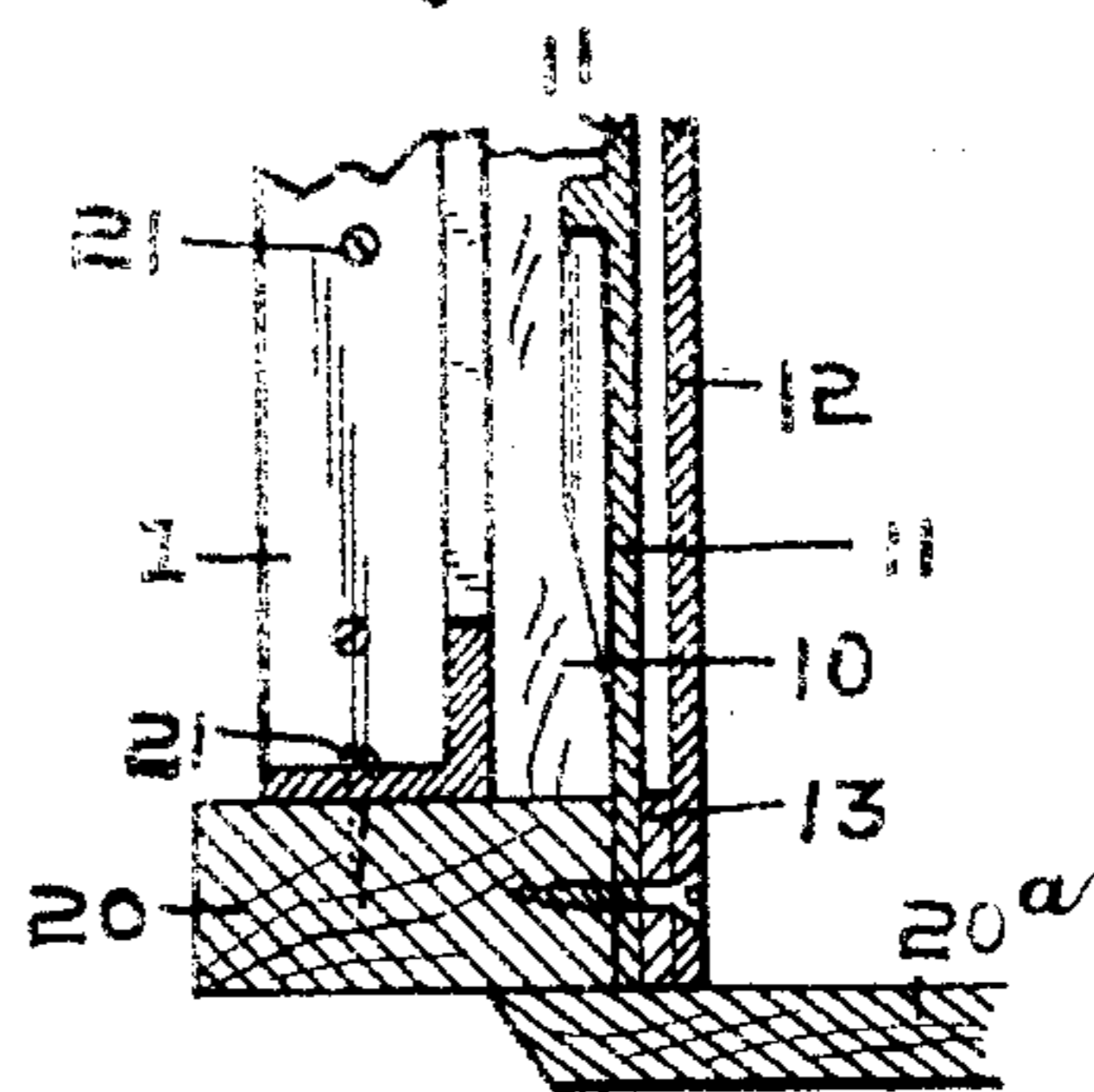
Fig. 1.



WITNESSES:

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Fig. 5.



INVENTOR.

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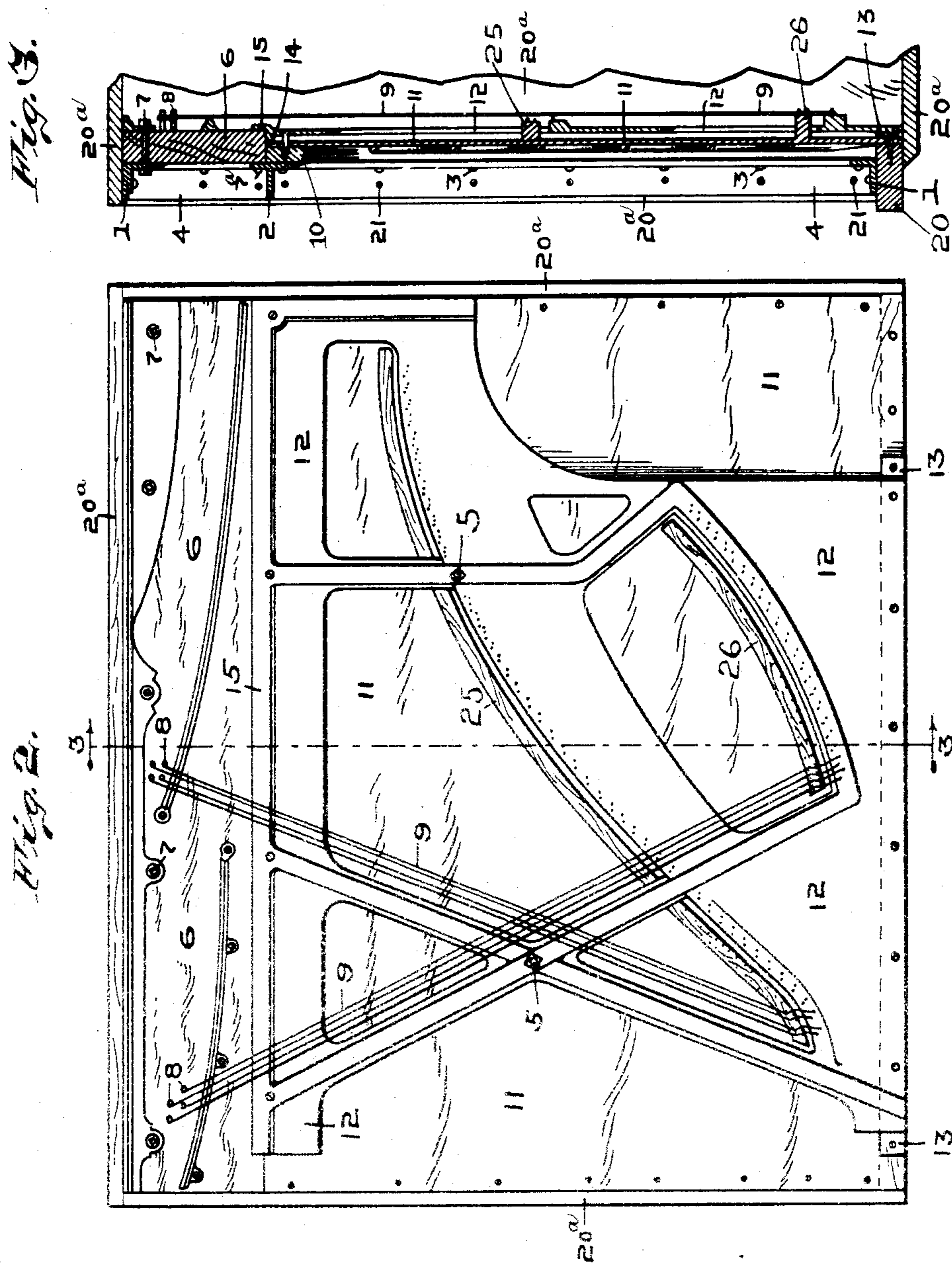
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UNITED STATES PATENT OFFICE.

HENRY J. WEILER, OF INDIANAPOLIS, INDIANA, ASSIGNOR TO WEILER PIANO COMPANY, OF INDIANAPOLIS, INDIANA, A CORPORATION OF INDIANA.

PIANO.

SPECIFICATION forming part of Letters Patent No. 792,095, dated June 13, 1905.

Application filed June 13, 1902. Serial No. 111,508.

To all whom it may concern:

Be it known that I, HENRY J. WEILER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in Pianos, of which the following is a specification.

My invention is in the nature of an improvement in upright pianos designed to improve the quality and increase the volume of tone.

It relates to that class of pianos in which the frame is composed of an iron back and an iron front plate, between which the sounding-board is secured; and it consists in the novel construction and arrangement of parts in this general organization, which I will now proceed to describe with reference to the drawings, in which—

Figure 1 is a vertical elevation of the back of the piano-frame. Fig. 2 is a vertical elevation of the front of the piano-frame. Fig. 3 is a vertical section on the line 3 3 of Figs. 1 and 2 looking in the direction of the arrows. Fig. 4 is an enlarged vertical section of the upper part of Fig. 3, and Fig. 5 an enlarged vertical section of the bottom part of Fig. 3.

In the drawings the numeral 1 represents the back frame, which is made of metal cast in one integral piece of rectangular shape and extending from the bottom to the top of the piano and from side to side of the same. This frame is a skeleton frame whose marginal ribs or members are of L shape in cross-section and whose divisional ribs or members are of T shape in cross-section. The divisional member 2 of the back extends horizontally from side to side at a distance from the top equal to the vertical width of the pin-block or wrest-plank 6, and the upper flange of the T-shaped rib 2 extends above the lower edge of the pin-block and is screwed to the same by screws 7^a, as seen in Figs. 3 and 4. Vertical strengthening-ribs 4^a 4^a extend from the horizontal member 2 to the top of the back frame and corresponding vertical ribs 4 4 extend from the horizontal member 2 to the bottom of back frame, these two latter ribs being so spaced as to leave a large open space between them and a smaller open space be-

tween each of them and the outer side members of the back. The pin-block 6 is secured to the lower flange of the top of the frame by bolts 7 and also by intermediate screws. This pin-block forms an anchorage for the pins 8, to which the upper ends of the strings 9 are screwed and which are tightened thereby.

Immediately below the pin-block 6 and screwed to the lower flange of the rib 2 of the back by screws 3 (see Fig. 4) is the hardwood strip 10, which extends the full length of the pin-block and forms a back bearing to receive the upper edge of the sounding-board 11, which latter is thus kept out of direct contact with the metal back. The sounding-board is secured along its lower edge (see Fig. 5) to the horizontal wooden bar 20 of the piano-frame, on the top of which is also fastened by screws 21 the lower flange of the metal back 1. This wooden bar 20 extends a short distance in front of the metal back, so as to reach the plane of the sounding-board. It will thus be seen that the sounding-board is spaced away from the metal back at the top by the hardwood strip 10 and at the bottom by the extension of wooden bar 20, so that the sounding-board is entirely free from all direct contact with the metal back.

Referring to Fig. 2, 12 is the front iron plate, to which the bottom ends of the strings are attached. This plate lies in front of the sounding-board, but is spaced away from the same at the bottom by a thin strip of wood 13 (see Fig. 5) and is screwed through the strip into the wooden bar 20. At the top this front plate is formed with a horizontal flange 14 and a vertical flange 15, both extending along the upper edge of the sounding-board and forming in the angle between them a seat to receive the lower front edge of the pin-block, (see Fig. 4,) by which the great tension of the strings on the pin-block is made to come directly upon the front plate. The integral flange 14 of the front iron plate reaches to and forms a back bearing against the extreme edge of the sounding-board, and this front plate is secured at the top by screws passing through the sounding-board into the hardwood strip 10 behind it.

The maintaining of the proper tension and pitch of the strings after the piano has once been tuned depends largely on the stability of the pin-block, and in the construction described this stability is maintained by the direct thrust or resistance of the front plate, and the seating of the pin-block within the flanges 14 and 15 prevents it from having the slightest movement under the tensile strain. While this result is attained, a full, rich, and prolonged tone is secured.

To prevent the front plate 12 from springing out of its plane under the compressive strain on it, bolts 5, Figs. 1 and 2, are made to connect the front plate 12 with enlargements on the flanges of the vertical divisional ribs 4 4 of the back, the sounding-board being formed with enlarged holes through it to give passage for these bolts without contact with the sounding-board, so as to avoid interfering with its vibration.

25 and 26 are the bridges, which are attached to the sounding-board, over which the strings are strung, and 20^a is the case of the piano.

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

1. A piano - frame comprising a skeleton frame back made of metal and having a horizontal divisional cross member along the lower edge of the pin-block, a horizontal pin-block secured at its upper edge to the top of this divisional cross member, a wooden bearing arranged in front of this divisional member and below the pin-block, a wooden bar arranged below the metal back and extending in front of its plane, a sounding-board bearing against this extension of the wooden bar and against the wooden bearing above, and a metal front plate having a double-flanged seat along its upper edge to receive the pin-block and means for securing the metal front frame into the wooden bearings behind the sounding-board substantially as described.

2. A piano - frame comprising a skeleton frame back made of metal and having a horizontal divisional cross member along the lower edge of the pin-block, a horizontal pin-block secured at its upper edge to the top of this divisional cross member, a wooden bearing arranged in front of this divisional cross member and below the pin-block, a wooden bar arranged below the metal back and extending in front of its plane, a sounding-board bearing against this extension of the wooden bar below and against the wooden bearing above, a metal front plate having a double-flanged seat along its upper edge to receive the pin-block one of

said flanges extending below the pin-block against the sounding-board and the other flange extending up in front of the pin-block, and a wooden strip arranged between the lower edge of the front metal frame and the sounding-board, and means for securing the parts together in this relation substantially as described.

3. A piano-frame comprising a rectangular skeleton metal back having a horizontal divisional cross member along the lower edge of the pin-block and vertical divisional member connecting the horizontal divisional members with the top and bottom portions of the metal back, a horizontal pin-block secured at its upper edge to the top of this metal back and at its lower edge to this divisional cross member, a wooden bearing arranged in front of this divisional cross member and below the pin-block, a horizontal wooden bar arranged below the metal back and extending in front of its plane, a sounding-board bearing against this extension of this wooden bar below and against the wooden bearing above, and a metal front plate having a seat along its upper edge to receive the pin-block and means for securing this metal front frame into the wooden bearings behind the sounding-board substantially as described.

4. A piano-frame, comprising a rectangular skeleton metal back having a horizontal divisional cross member along the lower edge of the pin-block and vertical divisional members connecting the horizontal divisional member with the top and bottom portions of the metal back, a horizontal pin-block secured at its upper edge to the metal back and at the lower edge to this divisional cross member, a wooden bearing arranged in front of this divisional cross member and below the pin-block, a horizontal wooden bar arranged below the metal back and extending in front of its plane, a sounding-board bearing against this extension of this wooden bar below and against the wooden bearing above, a metal front plate having a seat along its upper edge to receive the pin-block, means for securing the metal front frame into the wooden bearings behind the sounding-boards, and through-bolts extending from the metal front through the sounding-board and into and connecting with the main vertical divisional members of the metal back substantially as described.

In witness whereof I have hereunto set my hand and seal, at Indianapolis, Indiana, this 10th day of May, A. D. 1902.

HENRY J. WEILER. [L. s.]

Witnesses:

C. C. TOPP,

F. W. WOERNER.