

C. BOERNER.

Pianos.

No. 154,447.

Patented Aug. 25, 1874.

Fig. 1.

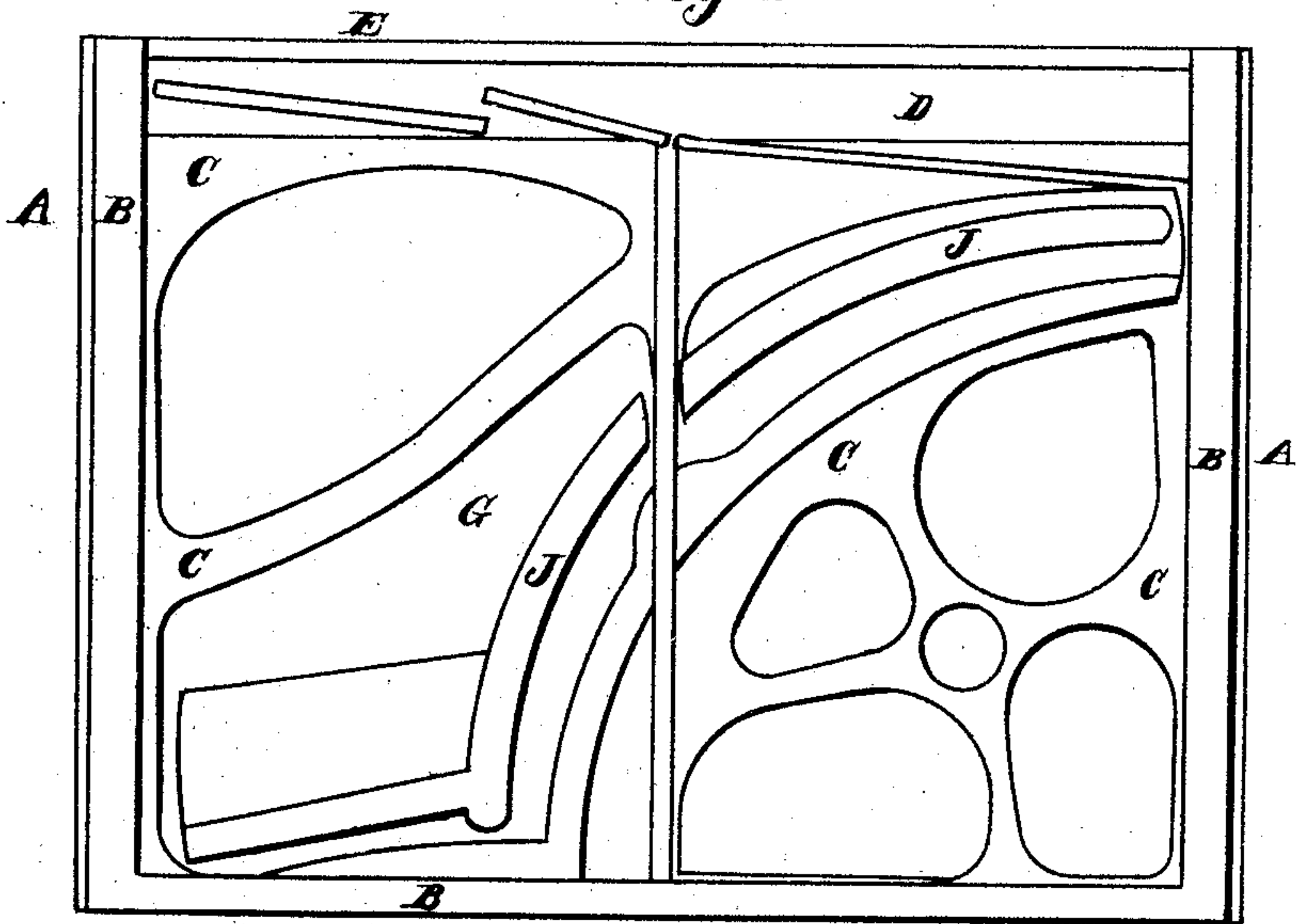
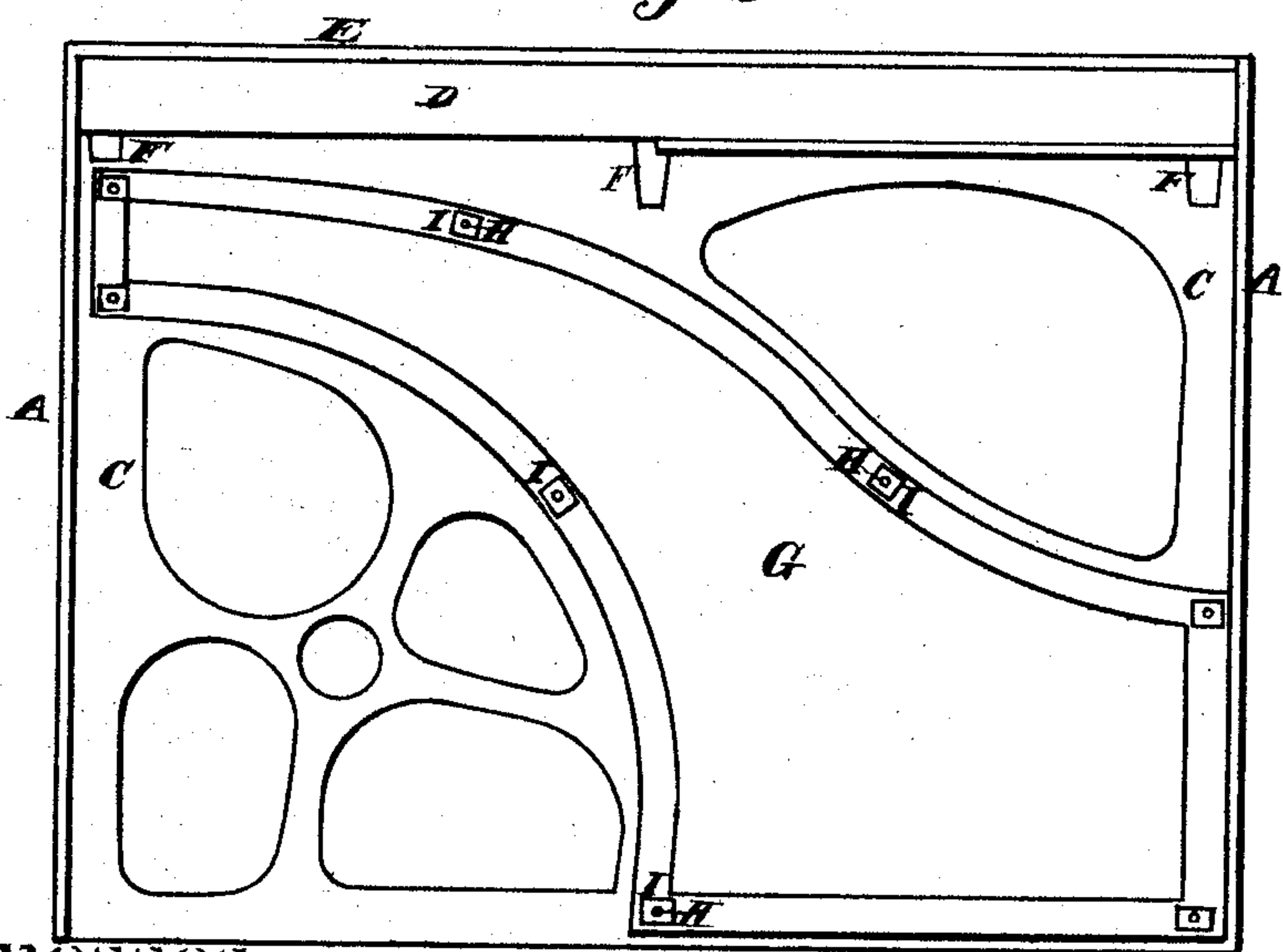


Fig. 2.



Witnesses

John L. Boone  
C. H. Richardson

Inventor

Christian Boerner  
by Sewey & Co.  
Attys

# UNITED STATES PATENT OFFICE.

CHRISTIAN BOERNER, OF SAN FRANCISCO, CALIFORNIA.

## IMPROVEMENT IN PIANOS.

Specification forming part of Letters Patent No. **154,447**, dated August 25, 1874; application filed May 6, 1874.

*To all whom it may concern:*

Be it known that I, CHRISTIAN BOERNER, of San Francisco city and county, State of California, have invented an Improvement in Upright Pianos; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvement without further invention or experiment.

My invention relates to certain improvements in the construction of upright pianos, by which I am enabled to so secure the iron frame to the wooden frame of the piano that I can make a larger sounding-board within a certain sized piano; and it further consists in a novel method of securing the sound-board within the piano so that it can be adjusted with relation to the strings and bridges, and secure in a greater degree the "singing-tone," so desirable in this instrument. The wrest-plank is also secured in a novel manner to prevent it from tipping over or springing.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a front view of my improved piano. Fig. 2 is a back elevation.

A is the piano-frame, made with the timbers B inside of it, to which the iron frame C is to be secured.

In the ordinary construction of this class of pianos these timbers are placed back of the iron frame, and as they are together from three and one-half to four inches thick, it will be seen that the sound-board, which must in all cases be placed behind the iron frame, will be just so much shorter and less available.

The timbers B being in front of the iron frame in my piano, this latter is screwed to the timbers by screws, and is very solid.

The wrest-plank D, which holds the tuning-pins, is ordinarily glued into its place, and also to vertical timbers, to which the sound-board is glued; but in my improvement this wrest-plank is screwed to the timbers B from behind, and an iron plate, E, is strongly screwed upon the top of the plank to prevent it from springing in the middle, or bending toward the front when the strain of the strings

is upon it. The iron frame has points or lugs F extending upward from its top, and these lugs enter the lower part of the wrest-plank and prevent it from being forced back by the strain of the strings across the bridge.

Another advantage possessed by my wrest-plank is, that it is free to move downward slightly, and altogether by the strain upon the strings; whereas, if it is glued to timbers at the back, any such strain has a tendency to split it.

Instead of employing vertical timbers behind the sound-board G, to which it and the wrest-plank are glued, I dispense with them entirely, and secure my sound-board directly to the iron frame C by means of screw-bolts H. Nuts I serve to draw the sound-board down toward the iron frame more or less, and thus adjust it so that the bridge J, over which the strings pass, can be brought to bear against them with a pressure just calculated to bring out the best tones; and if at any future time the bridge should not bear quite hard enough, by reason of the sound-board springing, it will be easy to set the latter up toward the strings a little, and thus the tone is always preserved at its best, which cannot be done where the sound-board is permanently fixed to the upright timbers, as before described.

By dispensing with these timbers I am enabled to make my instrument considerably lighter than by any other construction.

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

1. The wrest-plank D, the top metal plate E, and the legs F on the metal frame C, combined and arranged substantially as described, and for the purpose set forth.

2. In a piano, the metal frame C, in combination with the wrest-plank D and sound-board G, arranged together, relatively, as shown and described, for the purpose set forth.

In witness whereof I hereunto set my hand and seal.

CHRISTIAN BOERNER. [L. S.]

Witnesses:

JNO. L. BOONE,

C. M. RICHARDSON.