

UNITED STATES PATENT OFFICE.

GEORGE CADDICK, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN PIANOS.

Specification forming part of Letters Patent No. **202,408**, dated April 16, 1878; application filed January 16, 1878.

To all whom it may concern:

Be it known that I, GEORGE CADDICK, of Allegheny, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Upright Pianos, of which the following is a description, reference being had to the annexed drawing, and to the letters marked thereon.

The improvement relates to upright pianos; and consists in a number of tubes or bars composed of iron, steel, or other metal, with screw-threaded sockets on their ends. These are placed between the sound-board and strings of the instrument, pass through the bridge, and abut against the wrest-plank and plate-plank, having a metal bearing-bar, provided either with bosses to receive the ends of the tubes or equivalent devices intervening between the ends of the tubes and said wrest and plate planks. The tubes serve to resist the pull of the strings, and also to distend the sound-board.

The object of the invention is to obtain a light yet staunch resistance to the pull of the strings, and to provide a means of regulating the sound-board to its proper tension, so as to produce the best volume and quality of sound, which is accomplished by adjusting the screw-threaded sockets on the tubes until the desired distension of the sound-board is produced. After this distending the plate-plank is secured to the frame.

The method of distending may be after the sound-board is inserted into the wrest-plank and plate-plank, and before securing the same to the back frame; or, secure the wrest-plank to the frame, insert the lower edge of the sound-board into the groove in the plate-plank, place in the tubes, then insert the upper edge of the sound-board into the wrest-plank, and distend the same before securing the plate-plank to the frame.

Figure 1 is a plan view of a device embodying my invention. Fig. 2 is a view of the same in section.

A is the back frame or stanchions, to the front of which is secured the wrest-plank B and plate-plank C. D is the sound-board, (the fiber running perpendicular,) one end of which is let into the plate-plank, and the

other is let into the wrest-plank. E are the tubes, having screw-threaded sockets on their ends. G is an iron bar, or equivalent, intervening between the wrest-plank and tubes, as also between the plate-plank and tubes, and having bosses I. H is a metal plate, with flange, to which the strings of the instrument F are attached in the usual way. It is firmly bolted to plate-plank C. K are the bridges, over which the strings F pass to tuning-pins in the wrest-plank. J are screw-threaded pins, screwed through plate H and into tubes E, and while the pins hold the iron plate at proper distance from the tubes, the tubes are thereby kept straight, and will the better resist the strain.

By the above arrangement of the pins J it is apparent that a proportion of the pull of the strings is transmitted to the tubes, whereby a much lighter iron plate may be used than heretofore, which will very materially reduce the weight of the piano.

It is evident that the tubes, being placed between the sound-board and strings, act as a center, so that the pull of the strings maintains the distension of the sound-board against extension and contraction by atmospheric changes.

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

1. A number of tubes or bars, composed of iron, steel, or other metal, placed between the sound-board D and strings of the instrument to resist the strain of the strings, and having screw-threaded sockets on their ends for distending the sound-board D, substantially as shown and specified.

2. The screw-threaded pins J, screwed through the plate and into the tubes, for the purpose set forth.

In testimony that I claim the foregoing improvements in upright pianos, as above described, I hereunto set my hand this 3d day of January, 1878.

GEORGE CADDICK.

Witnesses:

JOHN MCKAIN,
JOHN J. MCCORMICK.