

UNITED STATES PATENT OFFICE.

FREDERICK C. REICHENBACH, OF PHILADELPHIA, PENNSYLVANIA.

METHOD OF CONSTRUCTING HORIZONTAL PIANOFORTES.

Specification of Letters Patent No. 2,099, dated May 19, 1841.

To all whom it may concern:

Be it known that I, FREDERICK C. REICHENBACH, of the city of Philadelphia, in the State of Pennsylvania, have invented certain Improvements in the Manner of Constructing Pianofortes, which improved instrument I denominate the "American Grand Wing-Piano;" and I do hereby declare that the following is a full and exact description thereof.

My improvements consist first in the manner in which I have combined the wrest pins by which the instrument is tuned, with the wrest pin block and the bridge upon which the wires rest, and over which they are strained; and secondly in an improved manner in forming and arranging braces of wrought iron for counteracting and sustaining the tension of the strings; and I do hereby declare that the following is a full and exact description thereof.

As regards the action of the hammers upon the strings of piano fortes, there are two principal varieties in the mode of constructing these instruments. In the ordinary horizontal piano, the hammers are placed below the strings, and when, by the action of the keys, the hammers are made to strike upon said strings, the tendency of the blow is to raise the string which is struck, from the bridge over which it is strained, and to produce, from this cause, an undecided and impure tone. In the second variety of piano fortes this defect is obviated by placing the hammers above the strings, and causing them, when acted upon by the keys, to strike down upon the wires and thus to force them against the bridge; in effecting this, however an arrangement of considerable complexity has been found necessary, which is not only costly, but much more liable to get out of order than that first described; the hammer also, under this second arrangement does not tend by its position and gravity, to escape from the string directly after striking it, but must be compelled so to do by the particular construction of the action. In my improved piano forte the hammers are placed below the strings as in the variety first named, but the bridge upon which the wires are sustained is placed below the wrest pin block, and the blows of the hammers force the wires, therefore, against the bridge, as in the second variety. I am aware that an arrangement similar in character to this, so

far as the foregoing description extends, has been heretofore essayed, but it appears that the manner of constructing the apparatus was not such as to afford satisfactory results, and the plan was abandoned. I do not claim therefore to be the first to have made the hammers of piano fortes to strike below strings which are sustained by a bridge placed above them, but I limit my claims to the novel and particular manner in which I have combined and arranged the parts by which I accomplish this object.

In Figure 1 in the accompanying drawing *a, a*, is the wrest pin block and *b*, a section of the bridge upon its under side, over which bridge the wires are strained by the wrest pins *c c*; the wrest pin block is so situated and arranged, as shown in the drawing, as to allow the wrest pins to pass entirely through it, their heads, which receive the tuning hammer, standing above said block, and their lower ends, around which the wires are wound, projecting below it. By passing the wrest pins entirely through the block in this manner they are held much more firmly, and consequently preserve the tension of the wires more perfectly, than under any other known arrangement. The action, and the other parts of the instrument, excepting in the manner of fixing the braces do not require description, they being the same or nearly the same, with those which have been adopted in other piano fortes. For the expensive steel braces which have been used in some piano fortes, I substitute braces of wrought iron, which I so construct, and combine with the instrument as to render them perfectly convenient and effective, while they are neat in their appearance and are supplied at little cost. *d, d*, are these braces, which are firmly screwed down to the wrest pin block at their fore ends *d'*, and extend back to the cast iron straining pin plate *e*, upon which they rest, being secured in place by means of a screw *h*, passing through them, and through the plate *e*. They are three eighths of an inch in thickness, and extend over a large portion of the wrest pin block as shown in the drawing. They have an offset, or are widened out, at *d²* where they bear upon the back edge of the block, into which an iron plate *f*, is inserted to sustain their pressure.

Fig. 2 is a top view of one of these braces exhibiting it in its proper dimensions; as

the other parts of the instrument are represented in the drawings. Besides the fastenings by screws at the two ends of the braces, as shown in the drawings, I pass screws
5 into their lower sides, through the body of the instrument, as represented at *g, g*, Fig. 1, by which means they are firmly held and secured from vibration.

Having thus fully described the nature
10 of my improvements and shown the manner in which I combine them with the other parts of the instrument, what I claim therein, and desire to secure by Letters Patent, is—

15 1. The manner of constructing and arranging the wrest pin block and the wrest pins, so that the latter shall pass entirely through

the former and receive the piano forte wires at their lower, projecting ends; the whole being arranged and operating substantially
20 as set forth.

2. I likewise claim the particular manner of constructing, arranging and combining, the wrought iron braces with the wrest plank and straining board; said braces passing
25 over the wrest pin block, bearing against its back edge, resting at their rear ends on the straining pin plate *e*, and being formed, secured and operating as herein set forth.

FR. C. REICHENBACH.

Witnesses:

THEODORE THURRY,
CHARLES JUNGANOREAS.