

J. J. Fischer

Piano

N<sup>o</sup> 29068.

Patented July 10 1860.

Fig. 3.

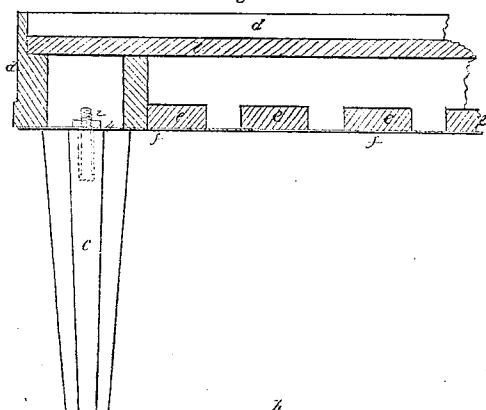


Fig. 4.

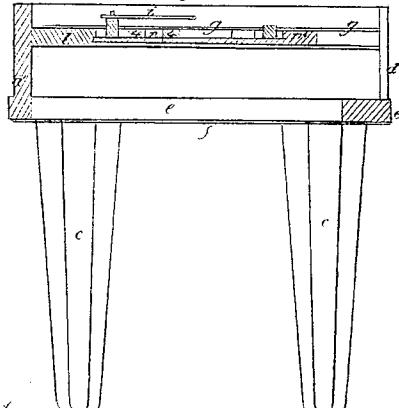


Fig. 1.

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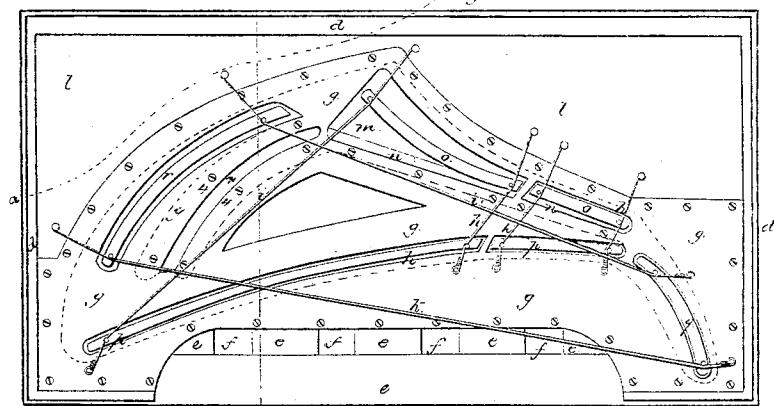
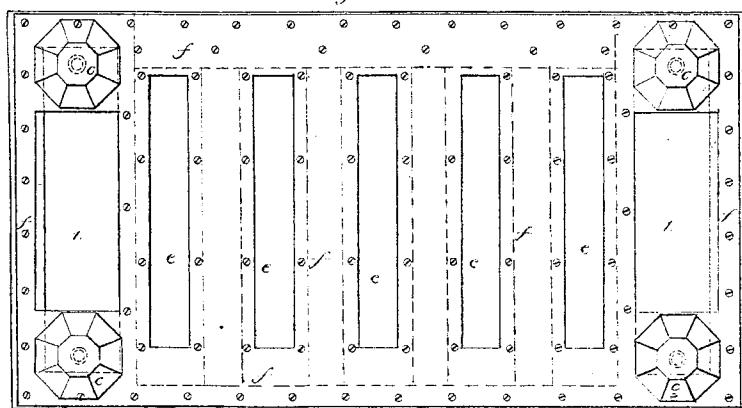


Fig. 2.



Witnesses.

Levi W. Gould

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# UNITED STATES PATENT OFFICE.

JOHN U. FISCHER, OF NEW YORK.

## PIANOFORTE.

Specification of Letters Patent No. 29,068, dated July 10, 1860.

To all whom it may concern:

Be it known that I, JOHN U. FISCHER, of the city and State of New York, have invented, made, and applied to use a certain 5 new and useful Improvement in Pianofortes; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawing, 10 making part of this specification, wherein—

Figure 1, is a plan of my improved piano. Fig. 2, is an inverted plan of the case. Fig. 3, is a vertical section of a portion of the piano at the line *a*, *a*, and Fig. 4, is a cross 15 section at the line *b*, *b*.

Similar characters denote the same parts. Pianos have heretofore been formed with metal frames to take the strings, and also with a metallic base or bottom to the instrument, and the strings have been passed over each other in two planes. My said invention does not relate broadly to either of these points, but consists in an improved iron frame for the strings in a triangular 25 form, whereby the tension and strain from the strings is balanced and the tendency to draw the frame and piano out of shape is avoided, and a more permanent tone produced. I also attach my sounding board to 30 said metallic frame at the edges of the openings through said sounding board, whereby the strength and durability of the sounding board are preserved and the power of the instrument is increased.

35 The bottom of my said piano I form of a wooden frame work instead of the solid bottom heretofore in use, and I connect this frame by a metallic plate screwed onto the underside of said wooden frame, whereby 40 the difficulties attendant on the solid wooden base or the metallic base are avoided, for on the one hand the wooden base when made of seasoned wood expands and warps under the heat and moisture of warm climates, and 45 shrinks in dry climates, and on the other hand the metallic bases for the pianos produce a heavy and dead tone.

My improvements are shown as applied to the square piano but the same may be used 50 with the grand or other pianos.

In the drawing *c*, *c*, are the legs of the instrument, *d*, is the case, and *e*, the base or bottom of the piano formed of a strong surrounding frame, and cross sills as shown 55 by dotted lines in the inverted plan. These cross sills form the bed for the key board,

and are connected and held in place by the plate *f*, that is screwed onto the bottom of the piano, as seen in Fig. 2, and this plate is formed with openings at the parts where 60 said sills *e*, cross for lightening said plate, at the same time the openings between these sills are covered by the plate. At the end of the piano I form openings 1, 1, in the plate *f*, and case, and attach the legs by 65 means of a fastening or screw set into the end of each leg with a nut 2, above the plate *f*. By these openings I am enabled to get at the fastenings or nuts to screw them up, and avoid the difficulties heretofore attendant upon the use of screws on the 70 legs entering holes in the base of the instrument, or other attachment where each leg is obliged to go to a given place and cannot be turned around beyond a certain 75 point. This opening in the case affording access to said nuts is a great convenience, for either leg can be applied at any place and turned with any desired side toward the front.

80 The metallic frame *g*, is formed of the general shape represented. I have however shown only a few of the strings to illustrate their general direction which it will be perceived is triangular.

85 *h*, *h*, are the treble strings, *i*, *i*, the strings near the center, and *k*, the bass strings. The plate *g* is surrounded by a rest plank *l*, to which its edges are attached and which receives the tuning pins; the sounding board 90 *m*, is connected at its edges to said rest plank, and both the sounding board *m*, and plate *g*, are provided with openings as at *n*, for the hammers, and at this point the sounding board *m*, and plate *g*, are attached 95 together by screws through the rib pieces 4, 4.

100 *o*, and *p*, are the bridges for the strings *h*, *i*. These bridges project from the sounding board *m*, through openings in the plate *g*, and rise slightly above the surface of the same, and *q* and *r*, are the bridges for the strings *i*', *k*, and rise from the sounding board through openings in *g*, sufficiently 105 for the strings *i*', *k*, to pass freely over *h*, *i*. It will now be evident that the sounding board *m*, and plate *g*, are somewhat similar to a violin case and give off a full and prolonged tone from the strings, because both 110 ends of all the strings rest on bridges supported by the sounding board; and this manner of stringing the instrument in a

triangular form balances the strain of the strings on the frame or plate *g* itself and relieves the case. The tension of *i'*, is sustained by the plate *g*, near the bridges *o*; 5 and that of *k*, by the plate at the bridges *p*, and the tension of *i*, is taken by the plate *g*, near the bridge *r*, and this plate being sustained as shown cannot be crushed in by the strain all around its sides and 10 can be much lighter than those heretofore in use and the rest plank does not require to be so heavy for it also forms a triangular shape.

Having thus described my said invention, 15 I remark that I do not claim two ranges of strings one over the other; neither do I claim a metallic base to the piano, but

What I claim and desire to secure by Letters Patent, is—

20 1. The arrangement of the strings in the triangular form specified for balancing the strain on the metallic plate as set forth.

2. The metallic plate *g* and sounding

board *m*, connected together at the edges of the openings for the hammers by the ribs or 25 strips *4*, *4*, when the length of string is determined by bridges at each end that rest on the sounding board and pass through openings in said plate *g*, as specified.

3. Forming the base or bottom *e*, of the 30 piano of the wooden cross pieces or sills within the wooden surrounding frame in combination with the metallic plate *f*, screwed onto the bottom of the instrument for the purposes described and shown. 35

4. The openings 1, 1, in the bottom of the piano to afford access to the nut 2, or fastenings for attaching the legs *c*, *c*, substantially as specified.

In witness whereof I have hereunto set 40 my signature this eighth day of May 1860.

JOHN U. FISCHER.

Witnesses:

LEMUEL W. SERRELL,  
CHAS. H. SMITH.