

G. STECK.
Grand Pianos.

No. 143,789.

Patented Oct. 21, 1873.

Fig. I.

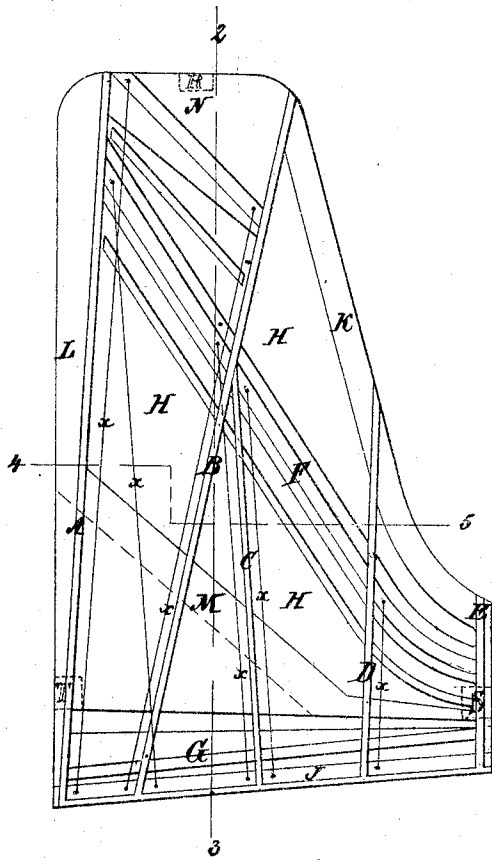


Fig. II.

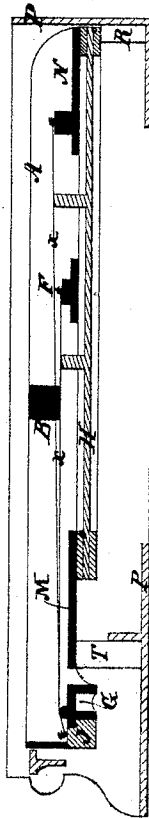


Fig. III.



Witnesses.
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UNITED STATES PATENT OFFICE.

GEORGE STECK, OF NEW YORK, N. Y.

IMPROVEMENT IN GRAND PIANOS.

Specification forming part of Letters Patent No. **143,789**, dated October 21, 1873; application filed July 31, 1873.

To all whom it may concern:

Be it known that I, GEORGE STECK, of New York, State of New York, have invented certain new and useful Improvements in Grand Pianos, of which the following is a specification:

Figure I represents a top view of the frame of a grand piano-forte embodying my invention. Fig. II is a longitudinal section at line 2 3, and showing its position in the piano-case. Fig. III is a cross-section at the line 4 5, Fig. I.

Like letters designate corresponding parts in all the figures.

The object of this invention is to construct and arrange an iron frame for grand pianos which needs no back-stays, frame, or braces, as required by the usual modes of construction, dispensing thereby with all bolts at present required to connect the present iron frames with said wooden frames or braces, and allowing the construction of a solid plain sounding-board without any holes or perforations, whereby the instrument obtains extraordinary power, fullness, and clearness of tone. This invention is an improvement on the patent No. 116,169, granted to me on the 20th of June, 1871.

A, B, C, D, and E are the longitudinal braces. F is the curved diagonal brace or bridge. G is the front bar or rail, to which the wrest-plank J is attached; and K, L, M, and N are the outside or border parts of the frame, to the under side of which the sounding-board H is attached. The braces A, B, C, D, and E, with which the strings x run nearly parallel, are so arranged that one-half of their width or depth, or nearly so, shall project above the plane of the strings, and the other half of their depth below said plane, whereby the tension of the strings is caused to be midway, or nearly so, of the braces, and has therefore no tendency to bend or warp the frame either one way or the other.

By this construction I obtain a frame strong

enough in itself to sustain the whole strain of the strings without requiring any back-stays, frame, or braces of wood arranged in the wooden casing, as at present, and with which the iron frame has to be connected by means of a number of bolts, in consequence of which the sounding-board H can be made of one unbroken solid surface, and as there is no framework or wooden braces below this sounding-board there is nothing to obstruct the sound, and the instrument has extraordinary power, fullness, and clearness of tone.

This iron frame is supported in the casing P, which need be only a light shell, upon three blocks, R S T, one of which, R, is situated at the extreme end, and the other two, S and T, on the sides near the front. (See Figs. I and II.)

Besides the above-mentioned advantages, a great feature of my invention consists in the facility of the construction or manufacture of a grand piano, as the iron frame, constructed as above described, can be completely finished and strung independent of the casing, while by the present mode of construction the casing, with its necessary wooden braces, has first to be fitted to the iron frame, and the same securely fastened by suitable bolts to said wooden braces, after which the casing is first finished before any further work can be done to the iron frame.

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

The iron frame for grand pianos having the longitudinal braces A, B, C, D, and E, arranged in relation to the plane of the strings as set forth, in combination with the solid sounding-board H and wrest-plank J, substantially as herein described.

GEORGE STECK.

Witnesses:

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