

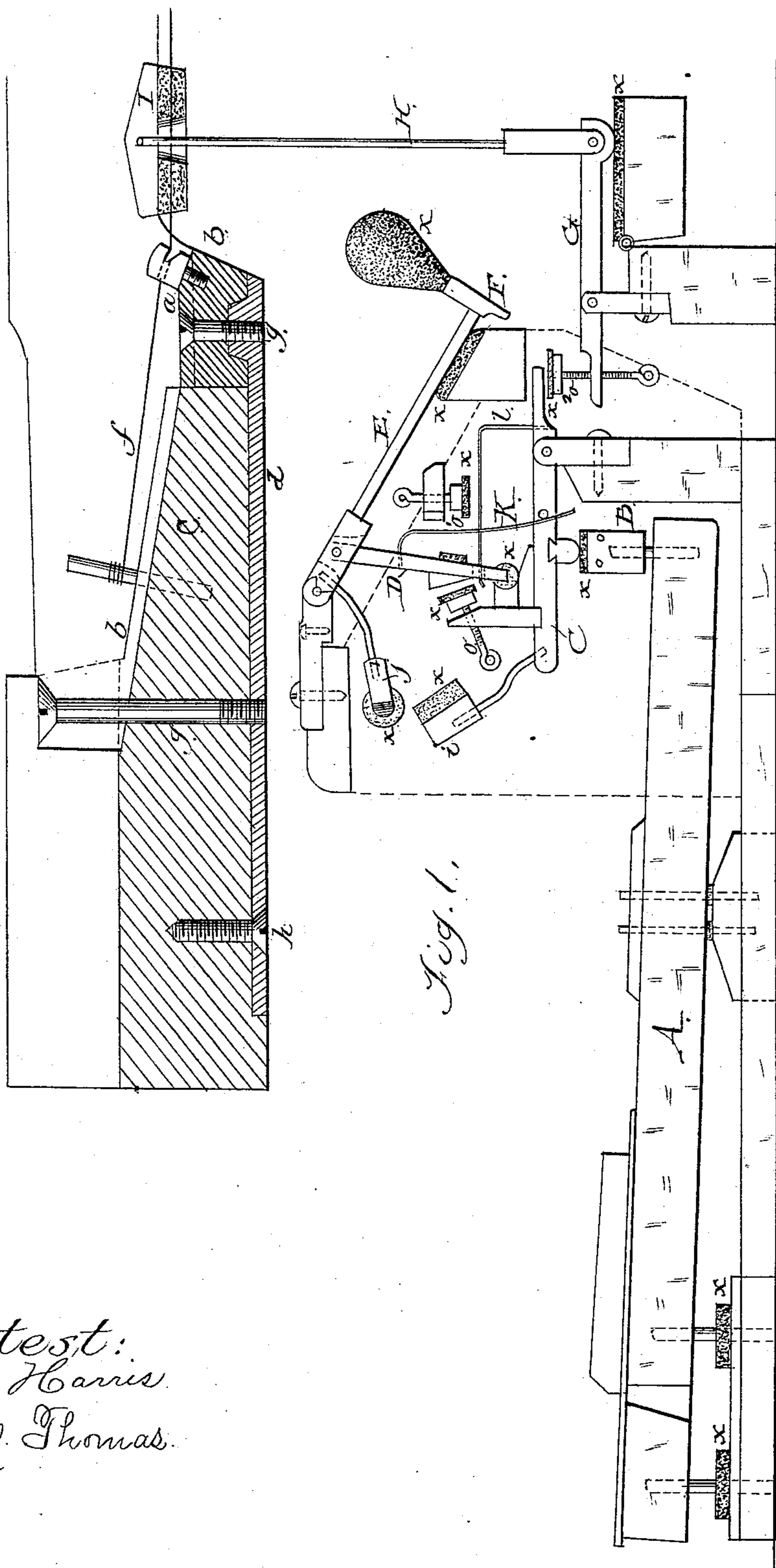
(No Model.)

J. EBEL.

PIANO.

No. 298,837.

Patented May 20, 1884.



Attest:
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Twentor;
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per
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atty

UNITED STATES PATENT OFFICE.

JULIUS EBEL, OF JAMESTOWN, NEW YORK.

PIANO.

SPECIFICATION forming part of Letters Patent No. 298,837, dated May 20, 1884.

Application filed November 28, 1882. (No model.)

To all whom it may concern:

Be it known that I, JULIUS EBEL, of Jamestown, in the county of Chautauqua and State of New York, have invented certain new and
5 useful Improvements in Piano-Fortes; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same,
10 reference being had to the accompanying drawing, which forms a part of this specification.

The object of my invention is to improve the piano-forte by making a new grand repeating-action, simplifying and so changing
15 its parts that the keys can readily be removed without taking the action from the case; also, strengthening the iron plate and wrest-plank or tuning-block by placing underneath the wrest-plank a heavy iron plate, and securing
20 it to the wrest-plank and upper iron plate by heavy screws, all of which will be readily understood by the following specification and accompanying drawing, in which is represented a side elevation of my improvements
25 showing treble end.

In the common method of making grand repeating-actions for grand pianos, it is found very difficult to remove the keys in case the action gets out of order. The actions are not
30 easily adjusted, have too much friction, and the repeating is not sharp enough. These difficulties are entirely overcome by my improvement, as will be better understood by the drawing and by a description of the practical operation, which is as follows: By striking key A, key-button B is raised against the under lever, C, thereby raising fly D, hammer-shank E, and hammer F to their proper positions. At the same time this is done the
40 regulating-screw button *o*, next to fly D, forces it off its lower rest onto the incline, and the repeating-spring *l* holds the hammer in proper position for getting the fly ready for repeating, and fly-spring K forces it back on its
45 lower rest. The regulating-screw *o'* over repeating-spring *l* prevents the spring from carrying the hammers too far when striking the key. Back-jacks *i* and *j* come together and hold the hammer-shank E parallel after striking
50 the string, and they return to the position, as shown in drawing, when the key is at rest. The regulating-screw *o''* in damper-lever G regulates the damper-head I to its proper position off the string when striking key A.
55 By raising the front end of key A off the

rock-pin it is readily removed, when desired, without disturbing any other part, and as readily returned to its proper position. This is very desirable when leveling the keys. *b* is the usual or upper iron plate, as used in other
60 grand pianos. *C* is tuning-block or wrest-plank. *d* is my improvement, which is a heavy iron plate extending the whole length under tuning-block C, having a rib or tongue on its back edge, that fits a groove in the upper
65 iron plate, and secured strongly thereto by heavy iron screws *g g*. The wrest-plank *c* lies between these plates, and all are secured together by means of the screws *g g*. The ribs, which project downward from the upper
70 iron plate, to form the groove for the rib on the under plate, greatly strengthen plates, and when screwed together and to the wrest-plank it can never warp, split, nor spring,
75 and all sounds are carried back to the sounding-board, and the power of the piano is greatly enhanced.

I am aware that thin plain plates of iron have been put over and under the wrest-plank; but they had not the ribs or means of
80 connection that I desire.

I claim---

1. In a grand piano, the repeating-action, composed of lever C, fly D, hammer F, repeating-spring *l*, fly-spring K, regulating-
85 screw *o*, back-jack *i* and *j*, damper-lever G, and damper-head I, arranged and combined to operate in the manner and for the purpose set forth.

2. In combination with the keys in a grand
90 piano, the repeating-action composed of lever C, fly D, hammer F, repeating-spring *l*, fly-spring K, regulating-screw *o*, and back-jacks *i* and *j*, in front of fly D, thereby making the repeating-action more compact, as shown, and
95 for the purpose set forth.

3. The combination, with the wrest-plank in a grand piano, of the upper iron plate, *b*, having ribs projecting downward on one edge to form a groove, and the heavy iron plate *d*
100 under the wrest-plank C, having a tongue or rib to fit said groove, and secured firmly thereto by screws *g g*, as shown, and for the purpose set forth.

In testimony that I claim the foregoing as
105 my own invention, I have hereto affixed my signature in presence of two witnesses.

Witnesses:

JULIUS EBEL.

HENRY DETTMER,

JOHN HALLER.