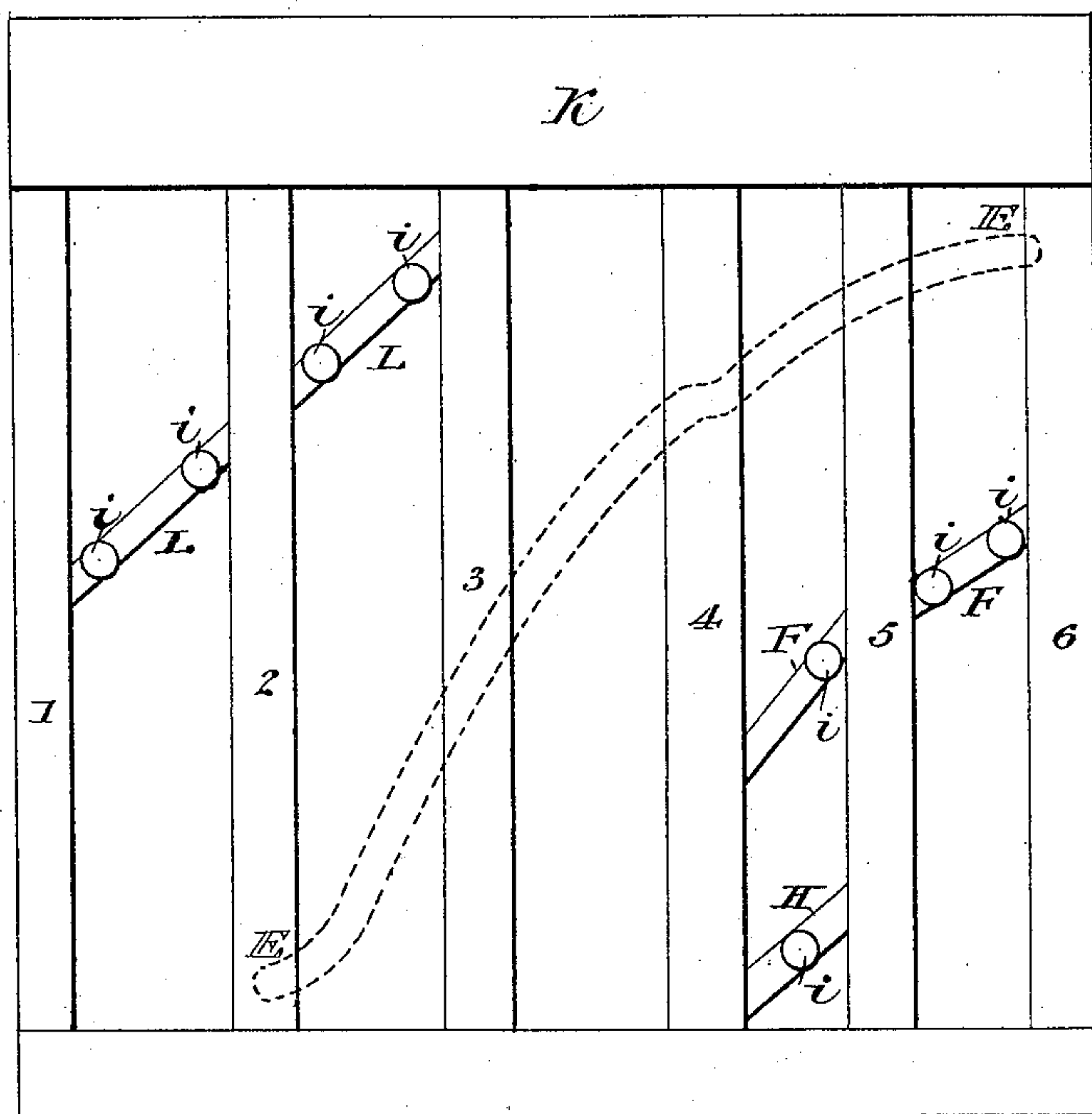


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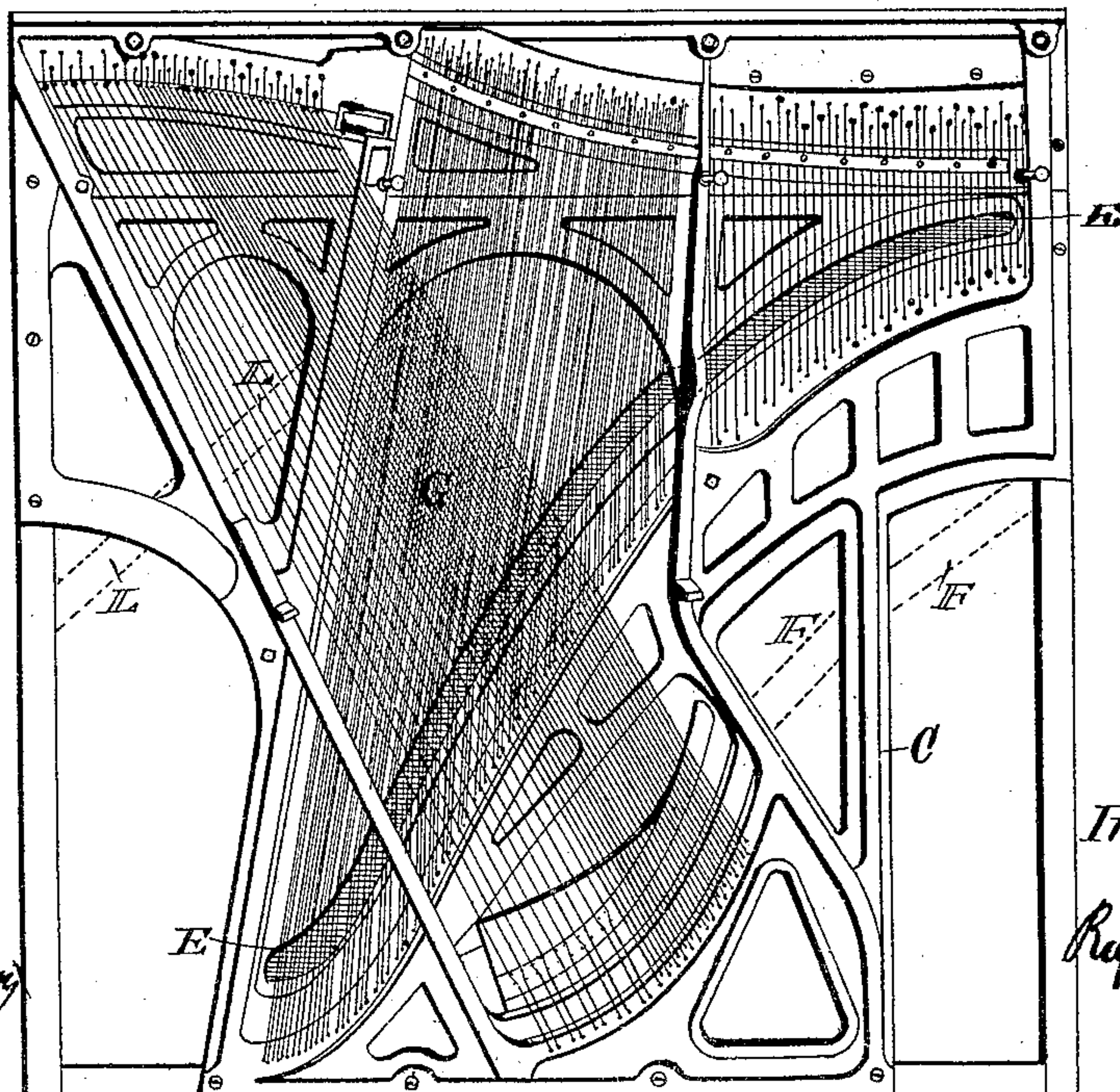
DEVICE FOR CORRECTING SOUNDING BOARDS IN UPRIGHT PIANOS.  
No. 605,729. Patented June 14, 1898.

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*Fig. I.*



*Fig. II.*



Witnesses.  
Is. G. Blunt  
Jeannine Blunt

*Inventor:*  
*Raphael Letton*

(No Model.)

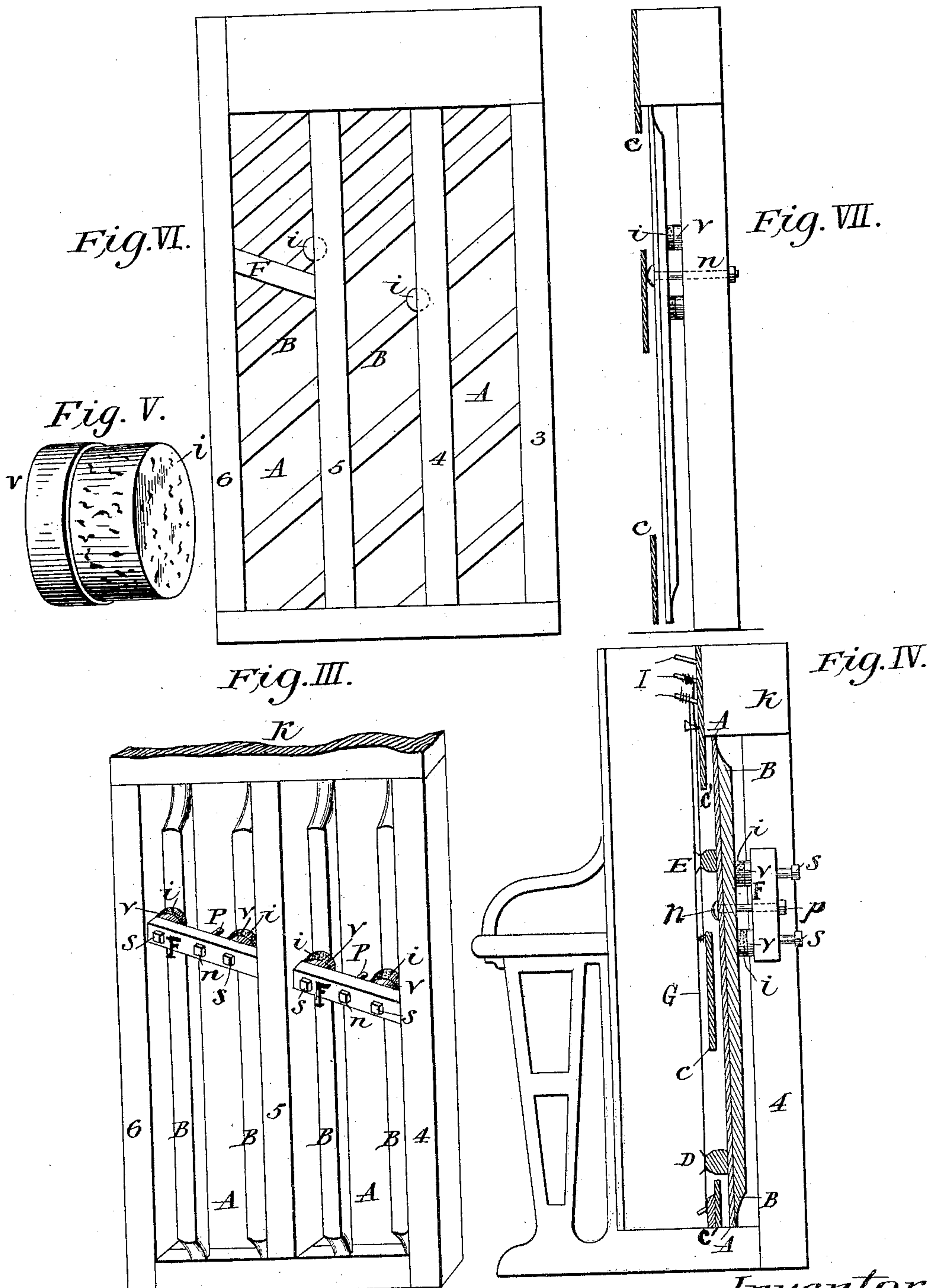
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R. E. LETTON.

DEVICE FOR CORRECTING SOUNDING BOARDS IN UPRIGHT PIANOS.

No. 605,729.

Patented June 14, 1898.



Witnesses.

G. B. Blunt  
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Raphael E. Letton



# UNITED STATES PATENT OFFICE.

RAPHAEL E. LETTON, OF QUINCY, ILLINOIS.

DEVICE FOR CORRECTING SOUNDING-BOARDS IN UPRIGHT PIANOS.

SPECIFICATION forming part of Letters Patent No. 605,729, dated June 14, 1898.

Application filed June 17, 1897. Serial No. 641,196. (No model.)

*To all whom it may concern:*

Be it known that I, RAPHAEL E. LETTON, a citizen of the United States, residing at Quincy, in the county of Adams and State of Illinois, have invented certain new and useful Improvements in Devices for Correcting Sounding-Boards in Upright Pianos, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to a device providing for the adjustment of portions of the sounding-board of an upright piano in such manner as to greatly energize and strengthen the acoustics of the shorter strings for the compass of three and one-half octaves. The device also effectually causes the separation of the greater vibrations of the long bass strings from influence regarding the shorter strings. The production of overtones in pianos has been a constant source of objection, and many attempts to overcome the defect have been made—for instance, such as removing a portion of the sounding-board—but the provisions have not been satisfactory, as they have resulted in serious objectionable features of other natures, while my invention accomplishes the desired purpose without the impairment of the acoustic qualities of the instrument.

My invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Figure I is a front elevation of the frame of an upright piano having my improvement applied thereto. Fig. II is a front elevation of the piano-frame, with the ordinary metallic auxiliary frame carried thereby. Fig. III is a rear view of a section of the piano-frame. Fig. IV is a view, partly in elevation and partly in vertical cross-section, through a piano equipped with my improvement. Fig. V is a perspective view of one of the pressure-blocks employed to adjust and correct the sounding-board. Fig. VI is a rear elevation of a section of the piano-frame, illustrating the employment of my improvement in connection with a piano in which the sounding-board ribs extend obliquely to the frame-standards. Fig. VII is an edge ele-

vation of the device shown in Fig. VI, with the metallic frame in section.

1, 2, 3, 4, 5, and 6 designate the standards of the back frame of an upright piano, said standards being seated, as usual, in a base-bar and the pin-block K.

C designates the common metallic auxiliary frame to which the lower ends of the strings G of the instrument are secured, the upper ends being attached to the tightening-pegs I, seated in the pin-block K.

A designates the sounding-board, placed and supported in the usual manner between the standards of the frame and the metallic frame C. On the front face of the sounding-board are the bridges E and D, and at the back of the sounding-board are ribs B.

L, F, and H are braces firmly secured between the standards of the piano-frame in such locations as to best serve the purpose desired to be obtained by their employment, as will hereinafter appear.

P designate bolts passing through the sounding-board A and through the braces L, F, and H, and provided with nuts, or the bolt may be a screw-bolt and the nut be dispensed with. These bolts are designed for employment in drawing the portions of the sounding-board adjacent to them in a rearward direction toward the braces.

i designates pressure-blocks seated between the braces L, F, and H and the ribs B on the sounding-board. These blocks are preferably of pliable material, such as cork, and are backed by a cap v of harder material, such as metal, that protects the pliable pressure-blocks.

S are set-screws inserted in the braces and having their inner ends adapted to bear against the caps v of the pressure-blocks, through the medium of which screws the blocks may be adjusted to cause them to exert a forward pressure against the ribs B.

With the parts arranged as described the adjustment of the board to correct it is accomplished in the following manner: By turning the set-screws S inward they press the caps v and pressure-blocks i forward, urging them against the ribs B of the sounding-board, carrying the sounding-board forward throughout the surrounding portions of it. The sound-



ing-board, the bridges, and the shorter strings of the instrument are by this means regulated, and the vibrations of the longer strings are separated from the vibrations of the shorter strings, thereby overcoming the conflict of the vibrations. The acoustic quality is defined, the overtones of the longer strings cease to control the tones of the shorter strings, and the purity and distinctness of the tones as a whole are greatly beautified. When the desired adjustment of the sounding-board is obtained by the manipulation of the pressure-blocks, the bolt *n* P is tightened until a sufficient pressure is attained, and the stability of the parts will be maintained.

In Figs. VI and VII, I have shown the employment of my improvement in connection with a piano in the construction of which the ribs B extend obliquely to the standards of the frame. In this form the bolts *n* pass through the sounding-board and the standards and the pressure-blocks *i* are seated between the standards and the ribs B. In this form the adjustment set-screws may be dispensed with or they may pass through the standards and bear against the caps *v*.

I claim as my invention—

1. In a device for correcting the sounding-

boards of upright pianos, the combination of the frame-standards, sounding-board, ribs, braces secured between said standards, bolts connecting said sounding-board to said braces, pressure-blocks seated between said braces and said ribs, and set-screws in said braces adapted to bear against said blocks, substantially as described.

2. In a device for correcting the sounding-boards of upright pianos, the combination of the frame-standards, sounding-board, ribs, pliable pressure-blocks arranged to bear against said ribs, and caps adapted to protect said pliable pressure-blocks, substantially as described.

3. In a device for correcting the sounding-boards of upright pianos, the combination of the frame-standards, sounding-board, ribs, pressure-blocks arranged to bear against said ribs, protecting-caps against which said pressure-blocks are seated, a brace seated against said caps, and a bolt forming a connection between said brace and said sounding-board; substantially as described.

RAPHAEL E. LETTON.

Witnesses:

GEORGE G. BLUNT,  
JOSEPH C. IVINS.