

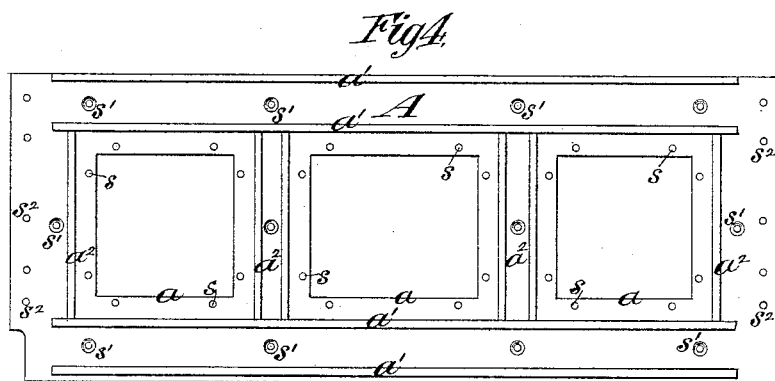
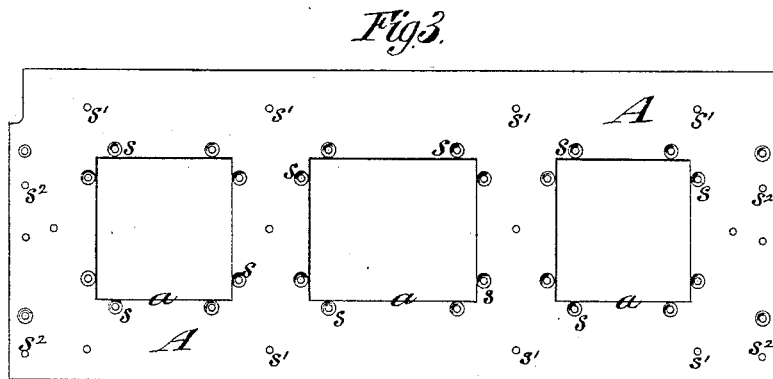
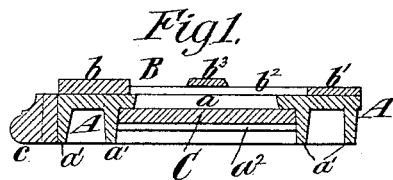
(No Model.)

S. LA GRASSA.

KEY BOTTOM FOR PIANOS.

No. 347,356.

Patented Aug. 17, 1886.



Witnesses.
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UNITED STATES PATENT OFFICE.

SALVADORE LA GRASSA, OF NEW YORK, N. Y.

KEY-BOTTOM FOR PIANOS.

SPECIFICATION forming part of Letters Patent No. 347,356, dated August 17, 1886.

Application filed November 20, 1885. Serial No. 183,434. (No model.)

To all whom it may concern:

Be it known that I, SALVADORE LA GRASSA, of the city and county of New York, in the State of New York, have invented a new and useful Improvement in Key-Bottoms for Pianos and Similar Instruments, of which the following is specification.

In the construction of upright and grand pianos the frame on which the keys are supported side by side is usually secured to a broad flat wood plank, which is attached at the ends to the under sides of arms projecting outward from the case, and is technically known as the "key-bottom." By changing seasons and the different and changing conditions of the atmosphere as to moisture this wood key-bottom is very liable to bend or warp both lengthwise and crosswise, and the keys are thereby thrown out of position to such an extent as to greatly impair the instrument and interfere with proper touch and execution in playing.

The object of my invention is to overcome the objections which are inherent in a key-bottom made entirely of wood, and to provide a key-bottom which will maintain its true flat surface under any atmospheric changes and always hold the key-frame and keys in proper position.

The invention consists, essentially, in a key-bottom of cast metal constructed in a novel manner, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a transverse section of a key-bottom embodying my invention and a key-frame supported thereon. Fig. 2 is a longitudinal section of the bottom and frame, and Figs. 3 and 4 are respectively a top and inverted plan of the key-bottom alone.

Similar letters of reference designate corresponding parts in all the figures.

A designates the key-bottom, and B the usual key-frame supported thereon, and composed of the front and back bars, b b' , and cross-bars b'' , and the bar b''' , whereon the keys are fulcrumed.

The key-bottom consists of a cast-metal plate or frame, preferably having a truly flat upper surface, which is continuous so far as is neces-

sary to support the several bars or rails of the key-frame B.

For the sake of lightness I have represented openings a at those parts of the key-bottom where no parts of the key-frame rest, and such openings may be closed boards or wood panels C, which may be held in place by screws inserted through holes s , in order to prevent dust from rising through the key-bottom and into the piano.

I have shown the plate A as provided on its under side with longitudinal ribs a' , which, as shown, are arranged in pairs on opposite sides of the openings a , and serve to prevent the plate or bottom from bending or warping in a direction lengthwise thereof. I have also shown the plate or bottom as having on its under side transverse ribs a'' , which also extend in pairs between the openings a and join the ribs a' .

The key-bottom, when constructed as above described, will be very stiff and yet light, and its upper surface, which supports the key-frame, will be maintained in its truly flat condition and will not be bent or twisted by any atmospheric changes.

I have represented the key-bottom as provided with holes s' , for the insertion of screws from its under side to secure the key-frame B in place upon it, and with holes s'' , for the insertion of screws into the arms of the piano-case for securing the key-bottom thereto.

I have shown the key-bottom as surrounded on the front and ends by a molding, c , as is usual with wood key-bottoms.

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

1. A key-bottom for pianos or similar instruments, formed of metal and provided with stiffening ribs or flanges, substantially as herein described.

2. A cast-metal key-bottom for pianos or similar instruments, consisting of a plate having upon its under side longitudinal strengthening-ribs, substantially as herein described.

3. A cast-metal key-bottom for pianos or similar instruments, consisting of a plate having upon its under side longitudinal and transverse strengthening-ribs, substantially as herein described.

4. A cast-metal key-bottom for pianos or similar instruments, having a flat upper surface for the support of a key-frame and having strengthening-ribs upon its under side, substantially as herein described.

5. A cast-metal key-bottom for pianos or similar instruments, having its upper surface flat and continuous or unbroken in those portions on which the key-frame is to rest, and having openings between such portions, and strengthening-ribs on its under side, substantially as herein described.

6. The cast-metal key-bottom A, having a flat upper surface with openings *a*, and panels C, covering the openings, and having on the under side strengthening-ribs *a'* *a''*, substantially as herein described.

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Witnesses:

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