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P. DUFFY.

KEY BOTTOM FOR PIANOS, ORGANS, &c.

APPLICATION FILED NOV. 11, 1907.

Fig. 1.

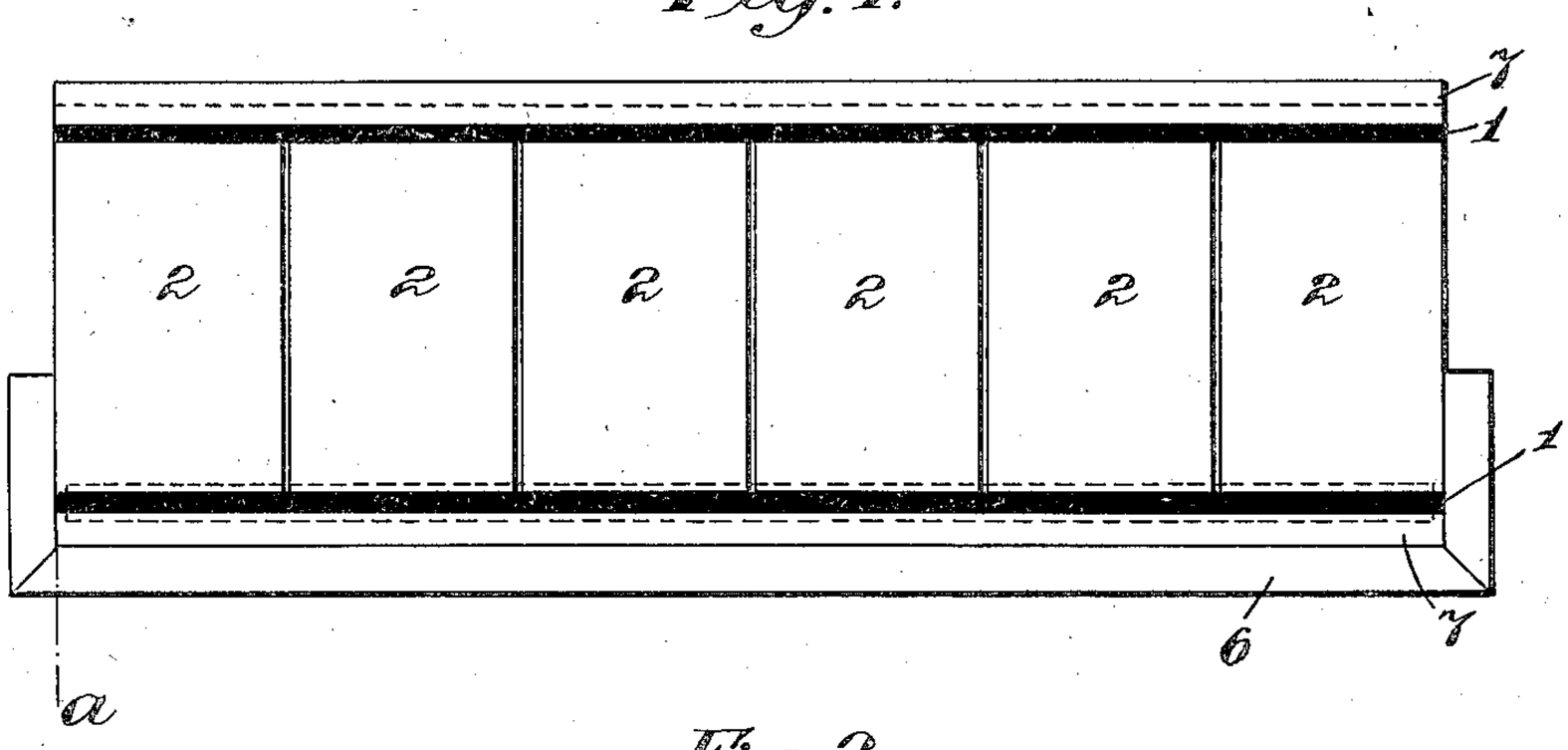


Fig. 2.

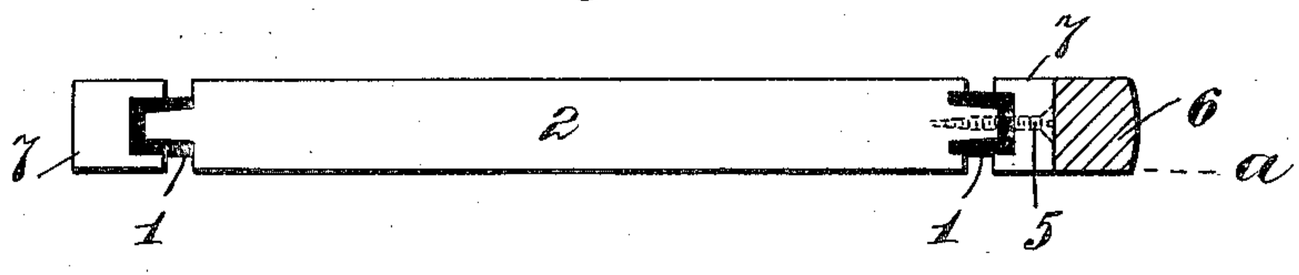


Fig. 3.

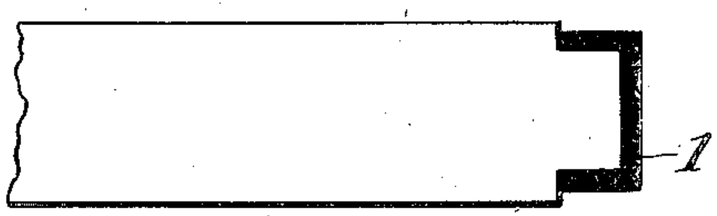


Fig. 4.

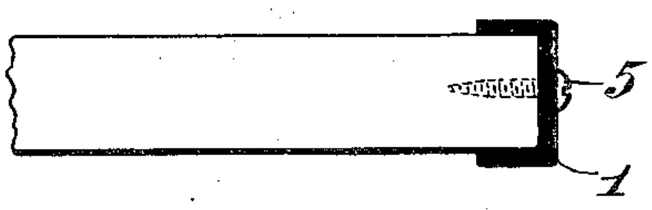


Fig. 5.

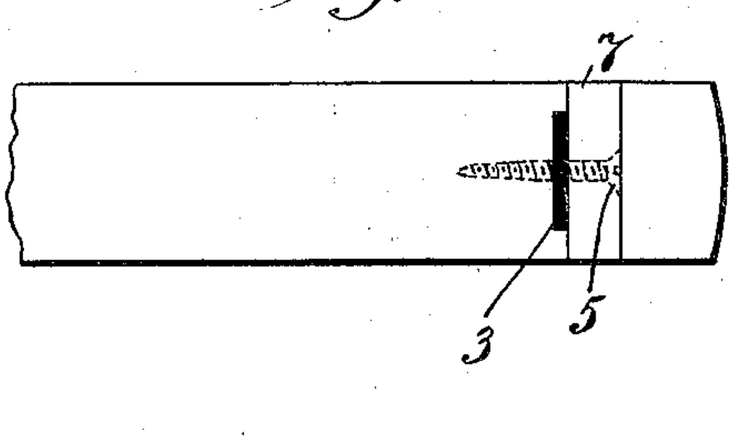
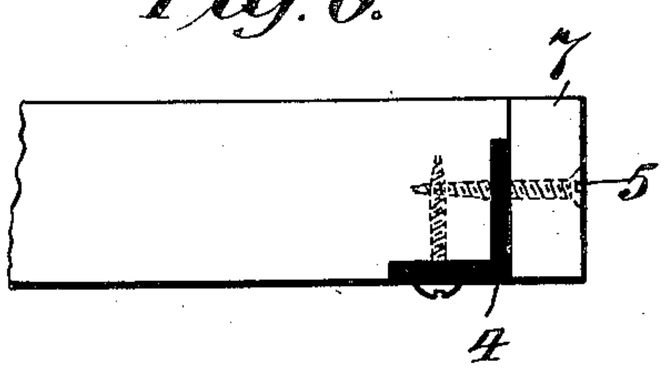


Fig. 6.



Attest: H. Wolfe
M. O. Sullivan

Inventor:
Peter Duffy.

UNITED STATES PATENT OFFICE.

PETER DUFFY, OF NEW YORK, N. Y.

KEY-BOTTOM FOR PIANOS, ORGANS, &c.

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Application filed November 11, 1907. Serial No. 401,751.

To all whom it may concern:

Be it known that I, PETER DUFFY, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Key-Bottoms for Pianos, Organs, &c., of which the following is a specification.

My invention has for its object the construction of a key bottom for the support of the keyboard in a piano or organ, or the like, which shall insure the keys being kept in exact level and in permanently correct adjustment with the coöperating "action" parts of the instrument, and which key bottom shall be of simple and more economical construction than prior devices.

In the accompanying drawings Figure 1 is a plan view of my key bottom; Fig. 2 an end view taken at line *a* of Fig. 1; and Figs. 3, 4, 5 and 6 are end views of various modifications of the reinforcing elements. Fig. 1 is drawn to a scale approximately $\frac{1}{8}$ in. to 1 in., Fig. 2 quarter scale, and Figs. 3, 4, 5 and 6 half scale.

My improved key bottom is a composite structure of wood and metal, the latter preferably iron or steel because of strength and cheapness.

The reinforcing metal consists of bars, rails or strips as 1, laid longitudinally of the structure to give the rigidity in that direction, and the wood is disposed between said metal parts to complete a light structure to which the keyboard and other parts may be readily connected by ordinary wood screws or glue.

The wooden portion 2 intermediate the metal strips, preferably has the grain thereof running transversely of the structure, *i. e.*, from one longitudinal metal bar to another, thus preventing change of fit between the wood and the metal rails, and securing a permanent level from front to rear of the key bottom without the use of metal or extra stiffening means in that direction, this form being the simplest, although the wood may be framed up like a door, of rails and stiles with filled in panels, or other forms of cabinet working may be employed, and with one or two of my reinforcers, subject to claims herein. It is preferable to have the transverse wood of several narrow pieces with spaces or expansion joints between them to prevent lengthwise crowding from swelling. In some cases it may only be desired to stiffen one edge of the key bottom in which case my manner of utilizing the metal is also valuable although I generally employ both front and rear stiffening.

The metal rails may be plain strips as 3 of Fig. 5 or **L** shape as 4 of Fig. 6, but a channeled or recessed form, as 1 of Figs. 1 to 4 secures increased rigidity and a very secure assemblage of the structure, the recessed side of the metal rail being towards the middle part of the key bottom, with the main bed of wood neatly fitting into such recess, such wood being either of the same thickness as the vertical dimension of said recess, as Fig. 4, or preferably tongued to fit the recess and being enough thicker to be planed level after assembling to finish a little thicker than the full height of said rail, as in Figs. 1 and 2. When a plain metal strip is used it is preferable to recess the wood to receive it securely, as in Fig. 5. To insure permanent snugness of joints it is desirable to add screws as 5, passing through the metal rail into the main bed of wood, and binding them together.

Where the key bottom is to have its front edge completed with the polished wood rail molding 6 of the instrument, or where either or both edges of the key bottom require a wooden edge for appearance, ease of attachment thereto, or other purpose, I place a rail of wood outside of the reinforcing metal, having its grain longitudinal of the key-bottom, and preferably grooved to receive and engage the metal, as in Fig. 2, and usually have screws as 5 passing from said wooden rail through the metal and into the main wood bed, clamping all firmly together. To this outer wooden member 7 any finishing molding 6 or other part may be readily glued or screwed.

With my double metal rail and screw-clamped structure it is possible to produce a perfect key bottom using only short and medium width pieces of wood and the two inexpensive metal rails, securing great economy with the highest grade results.

What I claim as my invention is:

1. A composite key bottom having a metal reinforcer disposed longitudinally of and approximately at the edge of said key bottom, and in the horizontal plane thereof, and a main bed of wood attached therewith consisting of a plurality of pieces arranged in a row longitudinally of the structure and with intervening expansion divisions, the

grain of said wood lying transversely to said reinforcer.

2. A composite key bottom having a metal reinforcer disposed longitudinally of and approximately at the edge of said key bottom, and in the horizontal plane thereof, and a main bed of wood attached therewith, the grain of said wood lying transversely to said reinforcer, an outer wooden rail disposed on the outer edge of said reinforcer, and binding-means extending from said outer wooden rail through said reinforcer into the wooden main bed.

3. A composite key bottom having a metal reinforcer disposed longitudinally of and approximately at the edge of said key bottom, and in the horizontal plane thereof, and a main bed of wood attached therewith consisting of a plurality of pieces arranged in a row longitudinally of the structure and with intervening expansion divisions, the grain of said wood lying transversely to said reinforcer, an outer wooden rail disposed on the outer edge of said reinforcer, and binding-means extending from said outer wooden rail through said reinforcer into the wooden main bed.

4. A composite key bottom having a metal reinforcer disposed longitudinally of and approximately at the edge of said key bottom, and in the horizontal plane thereof, and a main bed of wood attached therewith, an outer wooden rail disposed on the outer edge of said reinforcer, and a binding-means extending from said outer wooden rail through said reinforcer into the wooden main bed.

5. A composite key bottom having a wooden main bed, a metal reinforcer extending longitudinally thereof, in the horizontal plane with, and approximately at the edge thereof, a wooden rail disposed on the outer edge of said reinforcer, and a finishing member or molding attached to the outer part of said wooden rail.

6. A composite key bottom having a wooden main-bed, a metal reinforcer with an inwardly facing recess and disposed longitudinally of and near the edge of said key bottom in the horizontal plane thereof, said wooden main bed tongued and said tongue entered into said recess, the part of said bed adjacent to said tongue having its vertical dimension greater than the vertical dimension of the rail.

7. A composite key bottom having a metal reinforcer with an inwardly facing recess, a wooden main bed entered into said recess, and a grooved wooden rail disposed at the outer edge of said reinforcer, said reinforcer entered into the groove of the outer wooden rail.

8. A composite key bottom having a metal reinforcer with an inwardly facing recess, a wooden main bed entered into said recess, and a grooved wooden rail disposed at the outer edge of said reinforcer, the reinforcer entered into the groove of the outer wooden rail, both the wooden main bed and the outer wooden rail having their vertical dimensions adjacent to said reinforcer greater than the vertical dimension of said reinforcer.

9. A composite key bottom having a wooden main-bed, a metal reinforcer extending longitudinally thereof, in the horizontal plane with, and approximately at the edge thereof, a wooden rail outside of said reinforcer, and binding-means connecting said rail and reinforcer.

PETER DUFFY.

Witnesses:
FREDERICK WOLFE,
WM. B. BROWNELL.