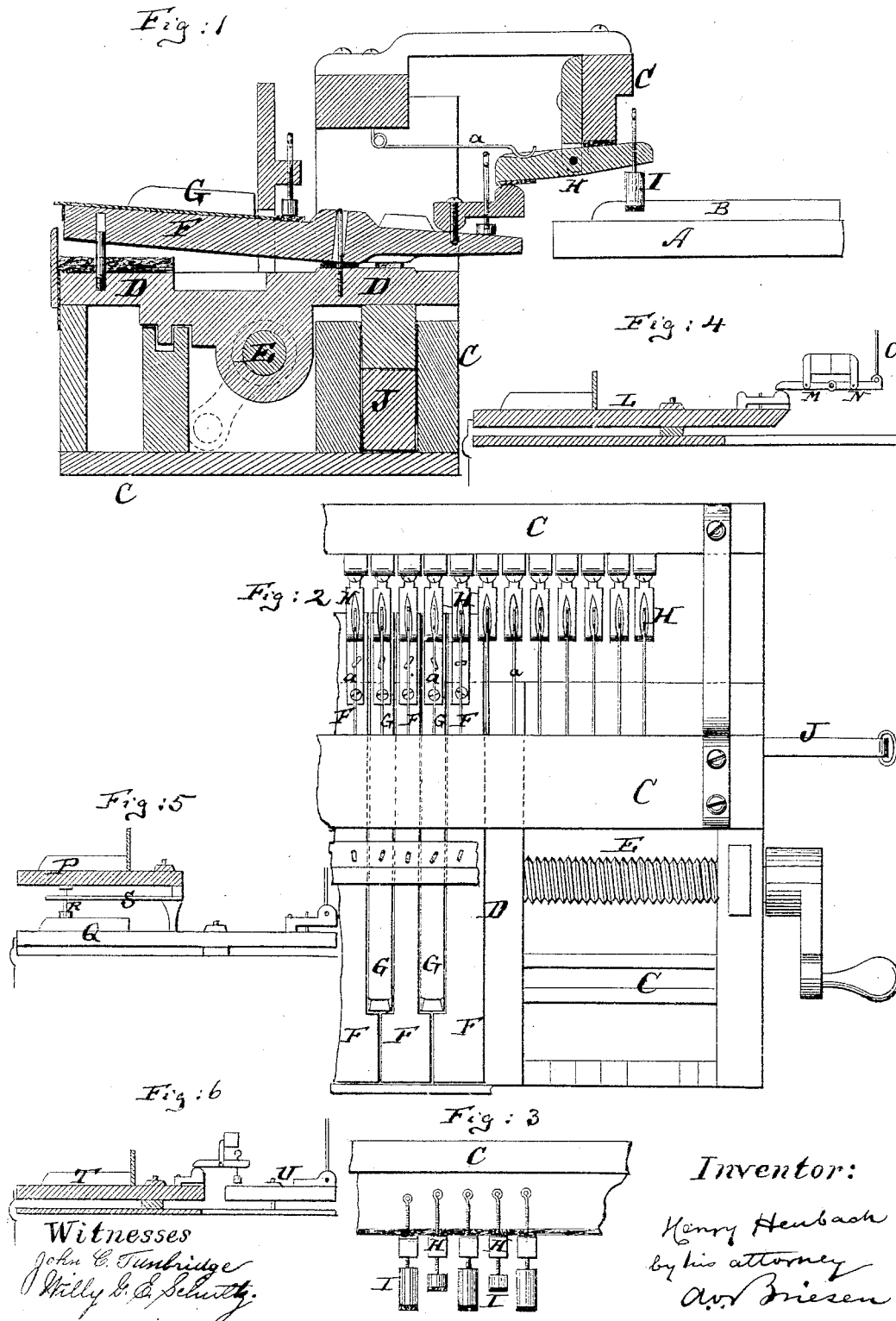


H. HEUBACH.  
Adjustable Keyboard for Musical Instrument.  
No. 214,566. Patented April 22, 1879.



# UNITED STATES PATENT OFFICE

HENRY HEUBACH, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN ADJUSTABLE KEY-BOARDS FOR MUSICAL INSTRUMENTS.

Specification forming part of Letters Patent No. **214,566**, dated April 22, 1879; application filed February 8, 1879.

### *To all whom it may concern:*

Be it known that I, HENRY HEUBACH, of the city of Brooklyn, county of Kings and State of New York, have invented a new and Improved Adjustable Key-Board for Piano-Fortes, &c., of which the following is a specification.

Figure 1 is a vertical cross-section of a key-board provided with my improvement. Fig. 2 is a top view of the same. Fig. 3 is a back view thereof. Figs. 4, 5, and 6 are detail vertical cross-sections of modifications of apparatus to which my invention is applicable.

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

The music prepared by musicians is written in "keys" which correspond to those of the piano-forte. (I will use the term "piano-forte" to include all key-board instruments, be they organs, melodeons, or other.) Thus a piece of music written in C major indicates to the player precisely which of the black and white keys of the key-board are to be touched in succession.

If it is desired to transpose the music directly into another key by the player without writing it entirely anew, the instruments are not adapted thereto; yet such transposition is frequently desirable and necessary. In accompanying a singer whose voice is not adapted to the particular pitch in which the music is written, in the accompaniment of other musical instruments not tuned precisely as the piano-forte, in attempting to gradually accustom a voice to a lower or higher pitch, and in endeavoring to play a piece on a simple key which is written in a complex key transposition is eminently desirable.

The value of an arrangement by which the player can play on the key-board in a given key, and yet strike the strings in a different key, will appear from the fact that the ordinary octave is capable of two hundred and sixty-four transpositions, being one hundred and thirty-two in the major and one hundred and thirty-two in the minor key, and by the further fact that it is a matter of extreme and extraordinary difficulty for a player to transpose music on an ordinary key-board. It is in fact as difficult as to transpose the letters

of the alphabet while reading, so as to read *f* for *e*, *g* for *f*, &c.

My invention renders transposition easy by providing means for varying the relative position of supplemental keys to the ordinary keys, hammers, and strings in a piano-forte, valves and pipes in an organ, and allowing of their convenient adjustment.

I am aware that transposing key-boards have already been proposed; but they were not adapted to be raised from and replaced on the ordinary key-board of a piano.

My invention consists in the peculiar mechanism for entirely breaking contact between the keys of the movable key-board and those of the permanent key-board preparatory to adjusting the movable key-board; also, in the new combination and arrangement of parts, hereinafter described.

In the accompanying drawings, the letter A represents one of the white keys, and the letter B one of the black keys, of the key-board of a piano-forte or other key-instrument. In front of the ordinary key-board I secure a suitable frame, C, which carries a sliding frame, D. The frame D can be moved laterally along the face of the instrument by means of a suitable screw, E, or other mechanism. The sliding frame D carries a key-board of white keys F and black keys G, which are spaced and arranged precisely like those of the main key-board.

In the frame C are pivoted a series of levers, H H, which carry fingers I I directly above the keys A B of the main key-board. These fingers serve to transmit the motion of the keys F G to the keys A B, so that if a key, F, is depressed the corresponding key A is acted upon, and the corresponding hammer set in motion. Now, in order to transpose, it is only necessary to slide the frame D, and with it the keys F G, laterally as far as desired. Thus, if a piece of music written in C major is to be played in F major it is only necessary to move the slide D so far as to bring the key F, which represents the note C, in line with the key A, which represents the note F. The player can then play on the movable key-board without regard to transposition, yet the music produced will be transposed.

The fingers I I are made of varying lengths, as shown in Fig. 3, those being longest which are placed above the white keys, and those shortest which are over the black keys, of the permanent key-board. Suitable springs *a a* hold the levers H H in contact with the keys F G, so as to have all the parts in position for use, as in Fig. 1.

When the frame D is to be moved laterally it is first lowered to carry the keys F G away from the levers H H. To this end I support the inner part of the frame D (that which is nearest the permanent key-board) on a wedge-shaped slide, J, which, when slid in one direction, will elevate the frame D, as in Fig. 1, and when slid in the other direction will lower it. Contact between the movable keys and the levers H H being thus interrupted, the frame D may be moved laterally, and after its new position has been properly obtained it is again elevated to bring its keys F G in contact with the levers H H. Instead of a wedge, J, any other device for raising and lowering the frame D may be used. Instead of raising and lowering the frame D, suitable means may be provided for raising the levers H off the keys F G preparatory to sliding the frame D.

The same principle of invention is applicable to the devices shown in Figs. 4, 5, and 6. Thus, in Fig. 4, the laterally-movable key-board L is combined with a system of levers, M N, which act on the hammers O. In this instance the levers M take the place of the ordinary permanent key-board.

In Fig. 5 the laterally-movable key-board P is placed over the ordinary key-board Q instead of in front thereof, as in Fig. 1. In this example, Fig. 5, the keys P reach the keys Q by means of vertically-sliding rods R, which are held in a fixed board, S.

In Fig. 6 the movable key-board T is in front of the ordinary key-board U, the same as in Fig. 1, with only this difference, that the keys

U are made shorter, and not provided with the ivory and ebony finger-pieces.

In the examples shown in Figs. 4 and 6 my improved apparatus must be a constant part of the instrument; but in the other examples shown it may be a removable attachment.

The modifications shown in Figs. 4, 5, and 6 do not illustrate the mechanism J for lateral, nor the mechanism E for longitudinal, adjustment of the movable frame; but I desire it to be particularly understood that these modifications can and are only to be used in conjunction with such double-adjusting mechanism, the modifications being introduced for the sole purpose of showing different forms of apparatus to which my invention is applicable.

I claim as my invention—

1. The combination of the laterally-movable key-board on a key-board instrument with the mechanism for entirely breaking contact between the keys of the movable key-board and those of the permanent key-board preparatory to sliding the movable key-board, substantially as specified.

2. The combination of the frame C, sliding frame D, and supplemental key-board F G with the levers H and fingers I, of different lengths, for use in front of the key-board of a key-instrument, substantially as specified.

3. The combination, in a key-instrument having key-board A B, of the attachment-frame C, carrying levers H and fingers I, with the slide D, carrying supplemental keys F G, and with mechanism E for lateral, and mechanism J for vertical, displacement of the slide D, so that said displacement will not affect said levers, substantially as specified.

HENRY HEUBACH.

Witnesses:

A. V. BRIESEN,  
T. B. MOSHER.

*1,500 words.*