(No Model.)

W. BOHRER.

TRANSPOSITION KEY BOARD FOR MUSICAL INSTRUMENTS.

No. 297,222. Patented Apr. 22, 1884.

Fig. 1

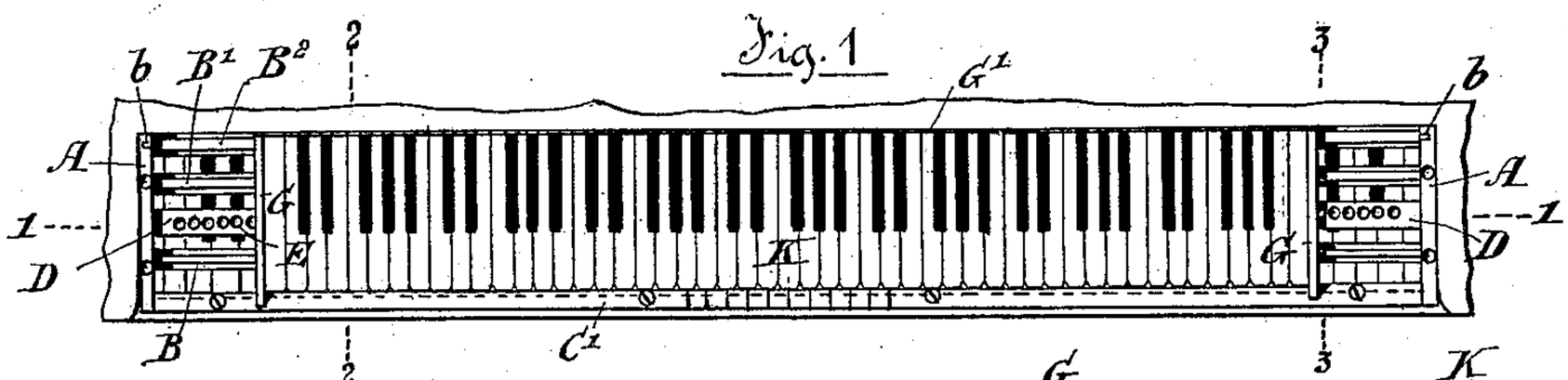


Fig. 2

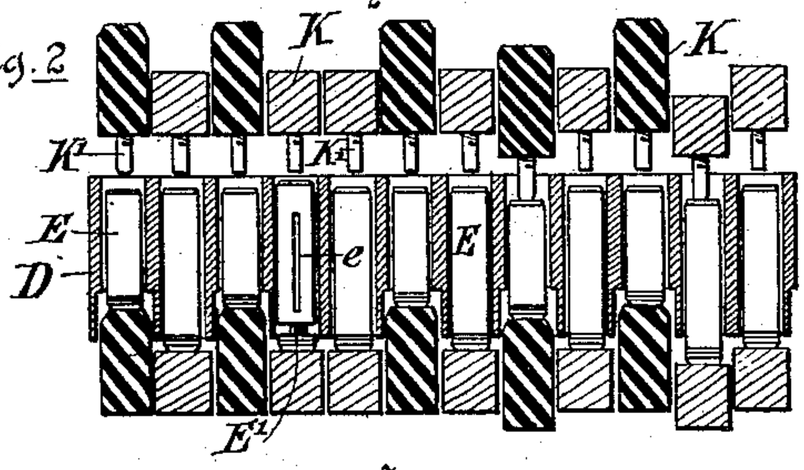


Fig. 3

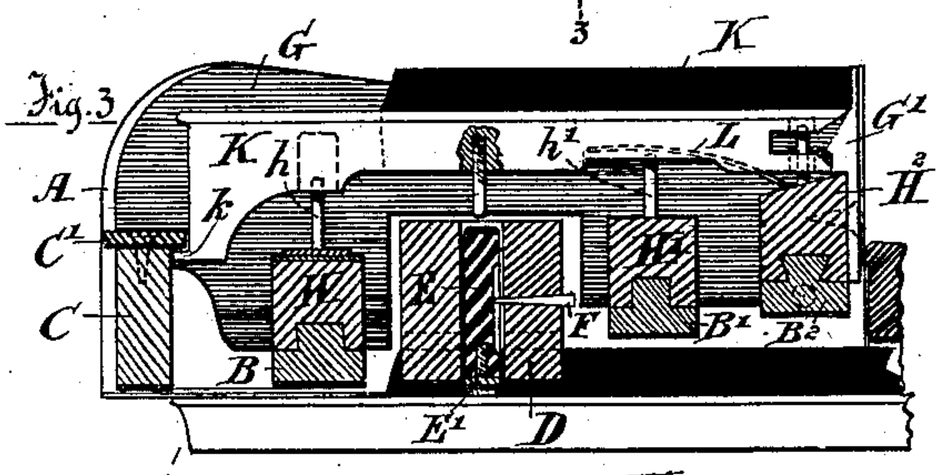


Fig. 6

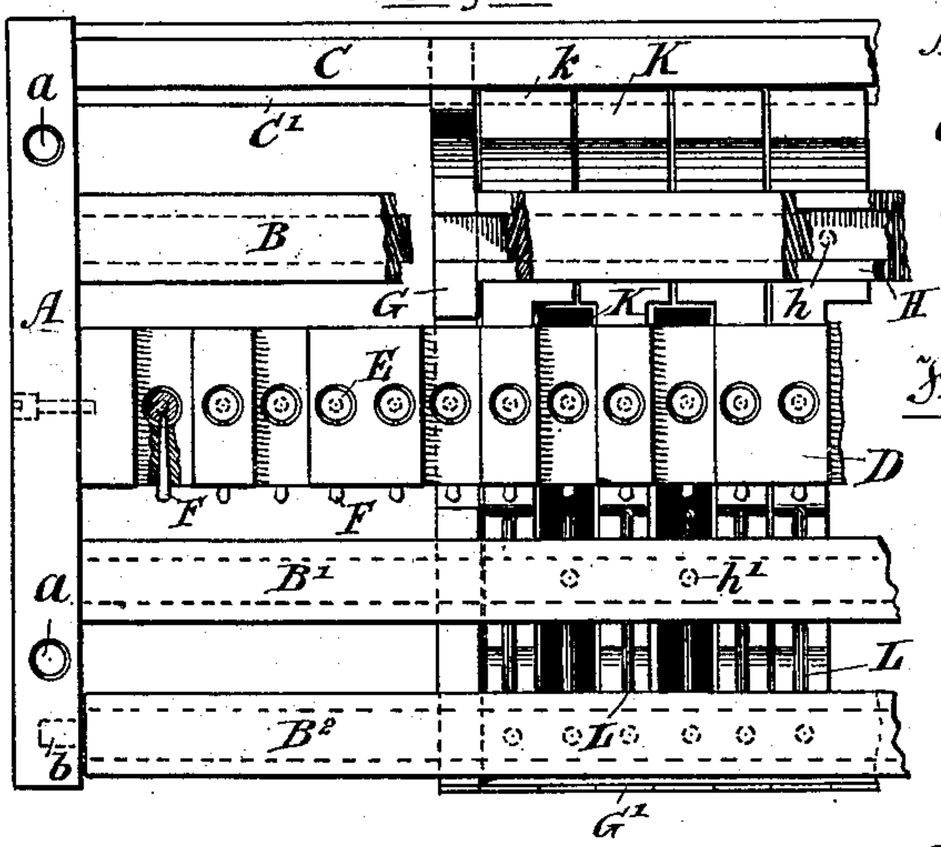


Fig. 4

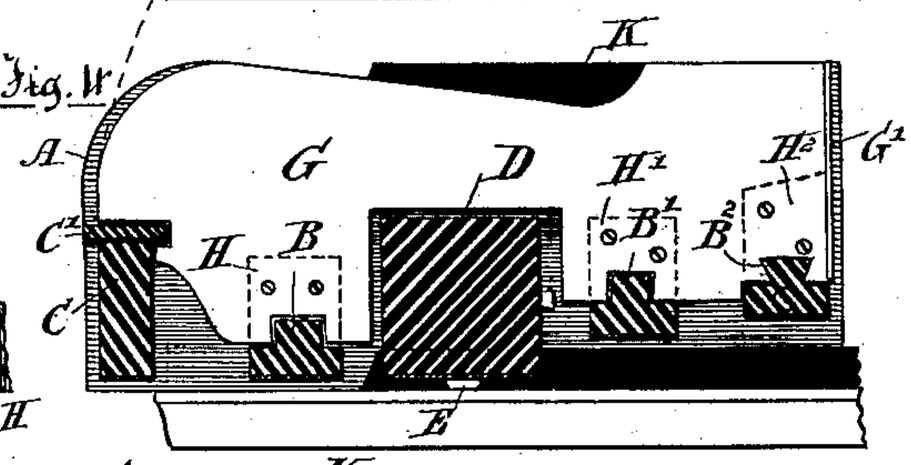


Fig. 5

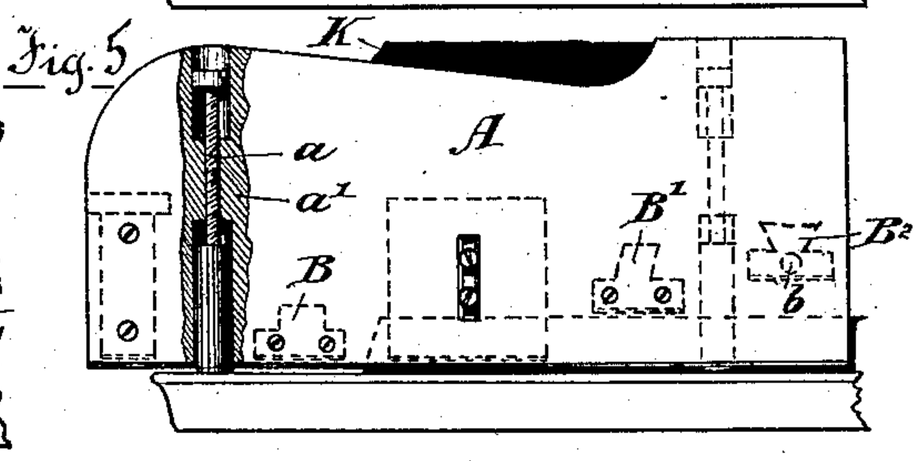
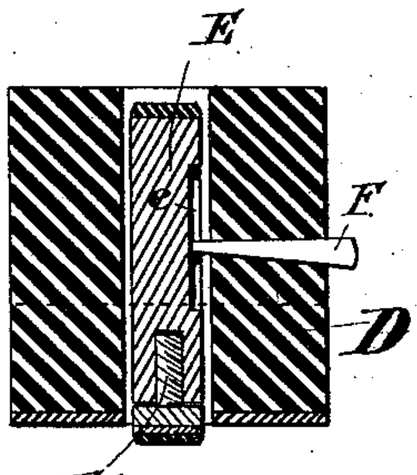


Fig. 7



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UNITED STATES PATENT OFFICE.

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TRANSPOSITION KEY-BOARD FOR MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 297,222, dated April 22, 1884.

Application filed September 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM BOHRER, of the city of Montreal, in the District of Montreal and Province of Quebec, Canada, have invented a certain new and useful Transposition Key-Board for Pianos and Organs; and I do hereby declare that the following is a full, clear, and exact description of the same.

The purpose of my invention is to enable a player, either on the piano or organ, to transpose by mechanical means the air or melody being played from one key to another, so that such music may be played in different keys while the player apparently strikes the notes set down in the original. It requires no special construction of key-board of the instrument to which it is applied nor alteration therein, and is equally applicable to all kinds of pianos or organs. My transposition key-board may be briefly described as consisting, first, of a frame which is set over the key-board of the instrument and instantaneously lifted off or put in place without any fastening being needed. In this frame is carried a bar in which are suspended pins or bolts of different lengths, corresponding in number and position to the keys of the piano or organ below them when the frame is in place, resting upon such keys and giving a smooth, even surface on the upper side of such bar. In the ends of this stationary frame are also carried guide-bars along and upon which slides a frame carrying a bench of keys, so that the position of these keys relatively to the pins or bolts carried in the bar in the stationary frame, and consequently to the key-board proper, may be varied at will. The stationary and sliding frames are so connected that the latter can be turned back for the adjustment of the parts.

For full comprehension, however, of my invention, reference must be had to the annexed drawings, in which—

Figure 1 is a plan view of my key-board in position; Fig. 2, a part longitudinal sectional elevation on line 1 1, Fig. 1; Fig. 3, a transverse sectional elevation on line 2 2, Fig. 1; Fig. 4, a similar view on line 3 3, Fig. 1; Fig. 5, an end view; Fig. 6, a part plan view of under side, and Fig. 7 a detail of bolt or pin.

Similar letters of reference indicate like parts.

The stationary frame is composed of the two ends A A, connected by a bar, D, presently to be described, and by bars B, B′, and B^2, these having projections on their upper surfaces and serving as ways for the sliding frame to move upon. The bars B B′ are carried rigidly in the ends A A, and the bar B^2 secured to these ends A by gudgeons or pivot-pins *b*, for the purpose hereinafter to be described. C is the front piece, secured to ends A A, having cap C′, covered, if desired, to match the keys, and upon this is marked a scale indicating the relative positions of the sliding and stationary key-boards. The stationary frame above described covers the whole of the key-board of the instrument to which it is applied, resting on the first and last keys of the key-board.

The bar D is perforated to hold the pins or bolts E, (shown in Figs. 3, 6, and 7,) which correspond to the keys of the piano, and are so placed as to be over their respective centers. These pins or bolts are preferably made in two parts, connected by a screw, E′, so as to allow of adjustment in length, and are muffled on their upper and lower surfaces with either felt, cork, or rubber, or any combination of these. When my transposition key-board is in place on the piano, these pins rest on the surface of the keys; but when it is lifted off, they are held in position by pins F, passing through bar D and entering slots *e*, or in any other suitable way. In this case the bar D is shown with its under surface corresponding in outline to the black and white keys of the piano, and the pins E are of two different lengths, according as their positions are on white or black keys. The top of the bar D presents an even surface, to allow the sliding frame to move easily over it, and at the same time to insure certain action of the keys, presently to be described, of the sliding frame. The bar D may, however, be made with even and straight under surface, the pins or bolts for the white keys only projecting below it; but it must be understood that in all cases when the frame is in position, the tops of the pins or bolts E are all on the same level—viz., that of the top surface of the bar.

G G are the ends of the sliding frame, to which are secured guide-pieces or longitudinal bars H, H′, and H^2, corresponding to and mov-

ing on the ways B, B′, and B². Upon the upper surface of the bar H² rest the rear ends of the keys K K, which are held up by springs L under each, and have small front lips, *k*, which go under the cap C′. In the rear of the keys K are pieces G′, which are screwed to bar H² and serve to retain the keys in position, which are also regulated by the pins *h h′*, projecting up from the slide-bars H H′, and acting, respectively, on the white and black keys. Pins K′, projecting downward from the under surfaces of the keys K, act, when these are struck, upon the key-board of the piano or organ through the transmitting pins or bolts E.

It will be seen that by sliding the frame in which the keys K are carried along the stationary frame these keys can be brought over a higher or lower part of the register of the key-board of the piano or organ, the pins K′ being just sufficiently distant from the top of the bar D as not to touch it while the frame is being slid along, and at the same time so close that the slightest touch on the keys K will be communicated through the transmitting-pins E to the key-board of the piano, and that therefore by playing on these keys K K (when the sliding frame is moved in either direction from the center) the music as set down its transposition to a higher or lower key will be effected, the difference in tone being adjusted by means of the indicator placed on C′, and the mark denoting the center of the keys K K, the divisions usually answering to semi-tones.

I have already stated that the pins E are made adjustable in length, the pins K′, projecting from the under surface of the keys K, being also susceptible of adjustment in length by screwing them into the keys. I in addition to this propose to render my invention still more applicable to different kinds of pianos by constructing the ends of the stationary frame so as to be adjustable in height by means of set-screws *a a*, working in blocks *a′ a′*, muffled or cushioned at the bottom, upon which the ends rest, the bar D being also secured to the ends A A by set-screws working in a slot, so that its height with relation to these ends can be easily and readily adjusted.

The sliding frame, with the bar B², can be turned up on the pivot *b*, to allow the length of the pins K′ to be adjusted, without removing the key from the bench, and for the purpose of verifying the evenness of the heads of the bolts with the upper surface of the bar D.

The devices above described for adjustment will usually only need to be employed when my transposition key-board is first applied to a piano, and when the exact relative position of the key-board and the several parts has been ascertained, my invention may be removed and replaced at will without requiring further adjustment in any way.

I am aware that key-boards have been devised for the purpose of mechanically transposing music to a lower or higher key than that in which it was originally written; but in all these cases a special construction of key-board of the piano or organ is required and described. I therefore disclaim all such devices for the purpose, what I claim being as follows:

1. In a transposition key-board, the combination of a stationary frame set over the key-board of the piano or organ, and carrying pins or bolts corresponding to the keys of same, and a sliding frame carrying keys acting, when struck, through said transmitting-pins in the stationary frame upon the keys of the key-board proper, all substantially as herein set forth, and for the purposes described.

2. In a transposition key-board, a bar carried in a frame separate from the key-board proper and set over it, said bar having even and level upper surface and carrying transmitting-pins normally not in contact with the keys of the sliding frame, all substantially as herein set forth, and for the purposes described.

3. In a transposition key-board, the combination, with a rigid frame set over the same and separable therefrom, in which is carried intermediate transmitting mechanism, of a sliding bank of keys pivoted to a back piece or pieces attached to rear of such stationary frame, as and for the purposes set forth.

Montreal, September 22, A. D. 1883.

WILLIAM BOHRER.

Witnesses:

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OWEN V. EVANS.