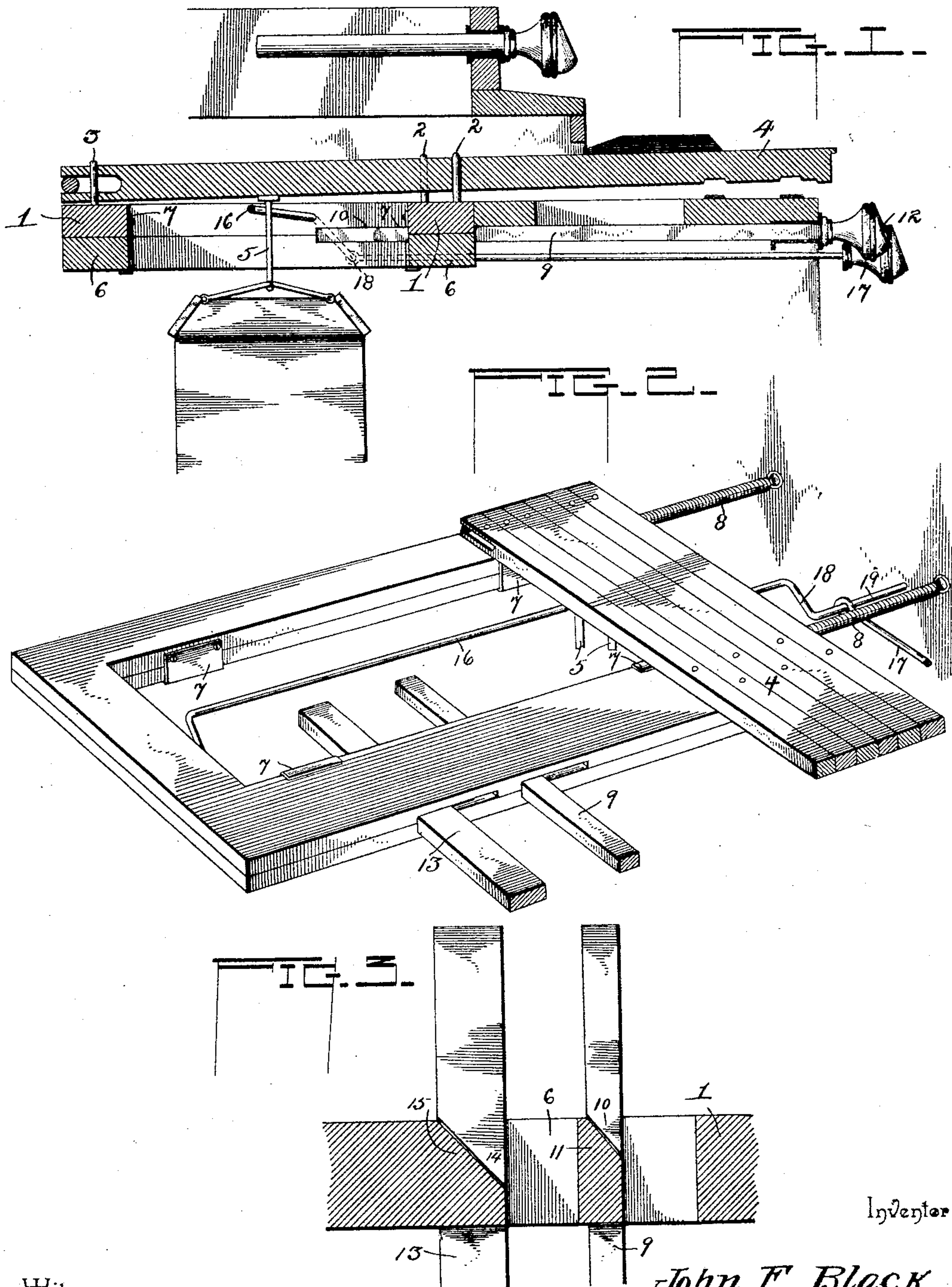


(No Model.)

J. F. BLACK.  
KEYBOARD.

No. 572,953.

Patented Dec. 15, 1896.



Inventor

John F. Black,

Witnesses

Milton O'Connell, By his Attorneys,  
*[Signature]*

*Ca Snow & Co.*



# UNITED STATES PATENT OFFICE.

JOHN FRANKLIN BLACK, OF CARL JUNCTION, MISSOURI.

## KEYBOARD.

SPECIFICATION forming part of Letters Patent No. 572,953, dated December 15, 1896.

Application filed April 9, 1896. Serial No. 586,871. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN FRANKLIN BLACK, a citizen of the United States, residing at Carl Junction, in the county of Jasper and State of Missouri, have invented a new and useful Keyboard, of which the following is a specification.

My invention relates to keyboards for organs and similar instruments; and the object in view is to provide means whereby the pitch of the instrument may be varied in half-tone steps to provide for the accommodation of the instrument to the pitch of a voice or instrument with which the former is to be used, said change of pitch being accomplished by a relative rearrangement of the keyboard with relation to the portions of the action of the instrument with which the keys coöperate.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a central vertical section of a keyboard constructed in accordance with my invention. Fig. 2 is a perspective view of the keyboard-frame and attachments, showing portions of keys arranged thereon. Fig. 3 is a detail sectional view to show the means for imparting longitudinal movement to the frame.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The keyboard embodies in its construction a laterally-movable frame 1, which may be provided with front and rear guide-pins 2 and 3, upon which the keys 4 are mounted, said keys being arranged at intermediate points in operative relation with the usual pegs 5 for communicating motion to the air-valves. Any suitable means for guiding this movable frame may be employed, the construction illustrated in the drawings embodying a stationary open frame 6, secured by means of retaining-screws or their equivalents to the frame of the instrument, the movable frame being provided with clips 7, which are fitted to slide upon the front and rear parallel bars of the stationary guide-frame 6.

In practice I prefer to employ means for automatically returning the movable frame

to a normal position, such means, for instance, as springs 8, whereby when released the movable frame, and hence the keyboard, will be returned to a predetermined position to give what may be termed the "normal pitch" of the instrument, and also in connection with this movable frame I employ means for imparting motion thereto against the tension of the said returning devices, consisting of the above-described springs or their equivalents.

In the drawings I have illustrated a slide 9, mounted for movement in the stationary guide-frame 6 transverse to the direction of movement of the keyboard-frame 1, and provided with a beveled or cam face 10 to coöperate with a similar beveled or cam face 11 on the keyboard-frame, whereby when the slide is moved forwardly, as by drawing a stop 12, to which it is adapted to be connected, the frame will be moved to the left or against the tension of the returning devices to bring the keys opposite or in operative relation with different air-valve pegs. Also I may, when it is desired to provide a still greater variety of pitches, employ an auxiliary slide 13, mounted as described in connection with the slide 9, but provided with a beveled or cam face 14, of greater length than the corresponding part of the slide 9, to coöperate with a beveled or cam face 15 on the movable frame, whereby when the stop connected with the auxiliary slide is drawn the frame will be moved through a distance equal, for instance, to twice the distance accomplished by the operation of the slide 9. Hence the returning devices may be arranged to normally hold the keyboard-frame in a position in which the pitch of the instrument will be a semitone above concert pitch. The movement of the slide 9 will actuate the keyboard-frame to bring the keys, respectively, into operative relation with the next lower air-valve pegs to arrange the instrument at concert pitch, and the operation of the auxiliary slide will still further move the keyboard-frame to the left, and hence lower the pitch of the instrument to a semitone below concert pitch. In the same way other slides, mounted as above described, may be employed to give any desired variety of pitch to the instrument.

In order to avoid interference between the keys and the air-valve pegs during the move-



ment of the keyboard frame from one position to another, I preferably employ a lift or trip, which in the construction illustrated consists of a crank-shaft 16, mounted in the end bars of the movable frame and extending transversely under the keys, whereby when turned the keys will be lifted above the plane of the extremities of the pegs. Any suitable means for operating this trip may be employed, such as a stop 17, connected with a crank-arm 18 on the crank-shaft, said crank-arm being provided with an elongated wrist-pin 19 to allow adjustment of the keyboard-frame without disconnection of the crank-shaft from the operating-stop 17.

In practice I prefer to employ draw-stops or handles, such as those shown in the drawings, and independent connections between the same and the keyboard, whereby the manipulation of the several stops will move the keyboard through different distances, and thus to different pitches, and by the peculiar arrangement of connections which I have illustrated, the same consisting of parallel-sided slides having beveled or cam faces to cooperate with corresponding faces on the keyboard-frame, it is obvious that when a stop has been drawn through a distance exceeding the length of its beveled or cam face it will serve as a lock to hold the keyboard at that adjustment against the tension of the yielding devices employed for returning the keyboard to its normal position when released. This is clearly illustrated in Fig. 3, wherein the cut-away portion of the keyboard-frame, forming the interval between the beveled or cam face 15 and the contiguous beveled or cam face 11, is sufficient to receive the slide 13, and thus arrange the parallel sides of the slide in the path of the cam-face 15.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A keyed instrument having sound-producing devices, a laterally-movable keyboard, yielding means for returning the keyboard, when released, to its normal position, a plurality of exposed draw-stops, and independent connections between the different draw-stops and the keyboard for moving the latter,

respectively, through intervals of different lengths in opposition to the tension of said yielding means, each connection also serving to hold the keyboard in its adjusted position during the extension of the draw-stop by which said connection is operated.

2. A keyed instrument having sound-producing devices, a laterally-movable keyboard including a frame, yielding means for returning the frame to its normal position when released, and operating devices for moving the frame against said yielding means, the same consisting of spaced slides mounted for movement transverse to the frame and provided with bevel or cam faces to cooperate with corresponding faces on the frame, the inclination of the several cam-faces varying to produce a movement of the frame through different intervals, said slides being adapted to be actuated by exposed stops or handles, substantially as specified.

3. A keyed instrument having sound-producing devices, a laterally-movable keyboard including a sliding frame, yielding devices for returning the frame when released to its normal position, and an operating device for moving the frame against said yielding devices, the same consisting of a slide mounted for movement transverse to the frame and provided with a beveled or cam face to cooperate with a corresponding face on said frame, substantially as specified.

4. A keyed instrument having sound-producing devices including pegs, a laterally-movable keyboard including a sliding frame and having keys arranged respectively in operative relation with said pegs, means for communicating motion to the frame to arrange the keys in operative relation with different pegs, and a trip or lifting device including a crank-shaft extending continuously under the keys and adapted to elevate the same out of operative relation with said pegs, and means as an exposed handle for actuating the trip or lifting device, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN FRANKLIN BLACK.

Witnesses:

M. B. METZLER,  
W. H. PHILLIPS.