

(No Model.)

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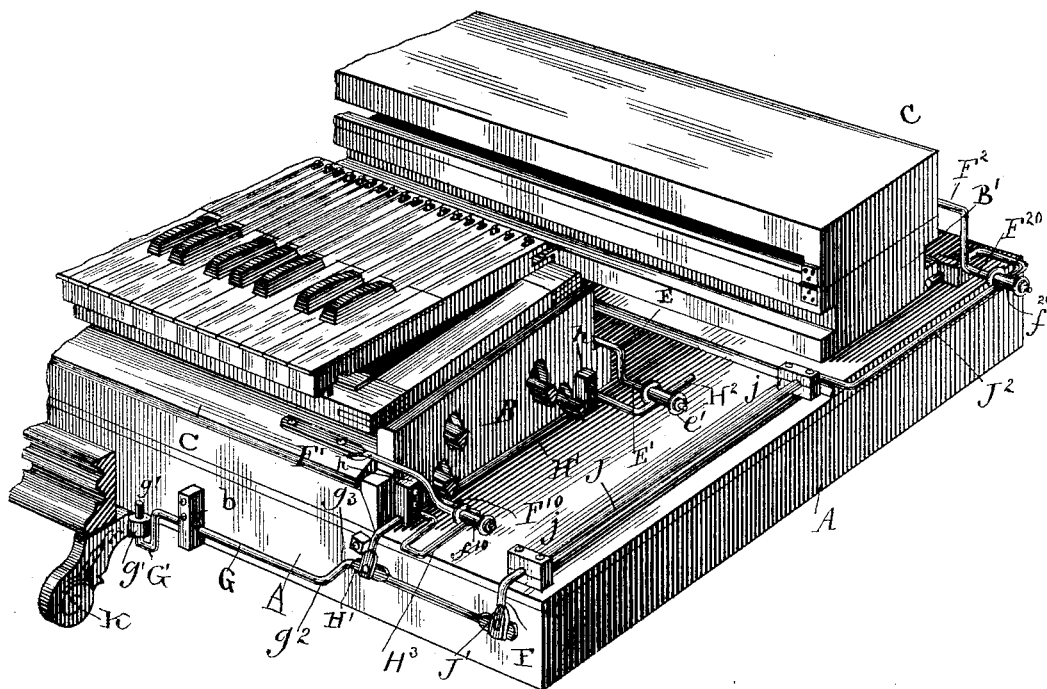
M. CLARK.

REED ORGAN.

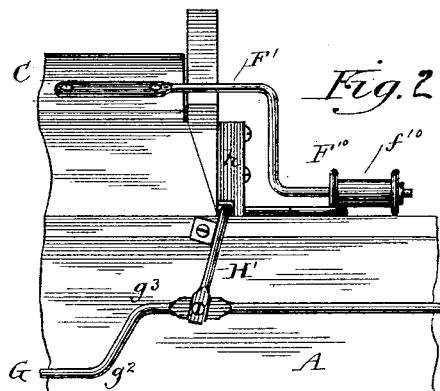
No. 384,609.

Patented June 19, 1888.

*Fig. 1.*



*Fig. 2.*



*Witnesses:*

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N. S. Clark.

*Inventor:*

McVill Clark

By *Wm. Lloyd Garrison*  
Attorney.

(No Model.)

2. Sheets—Sheet 2.

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*Fig. 3.*

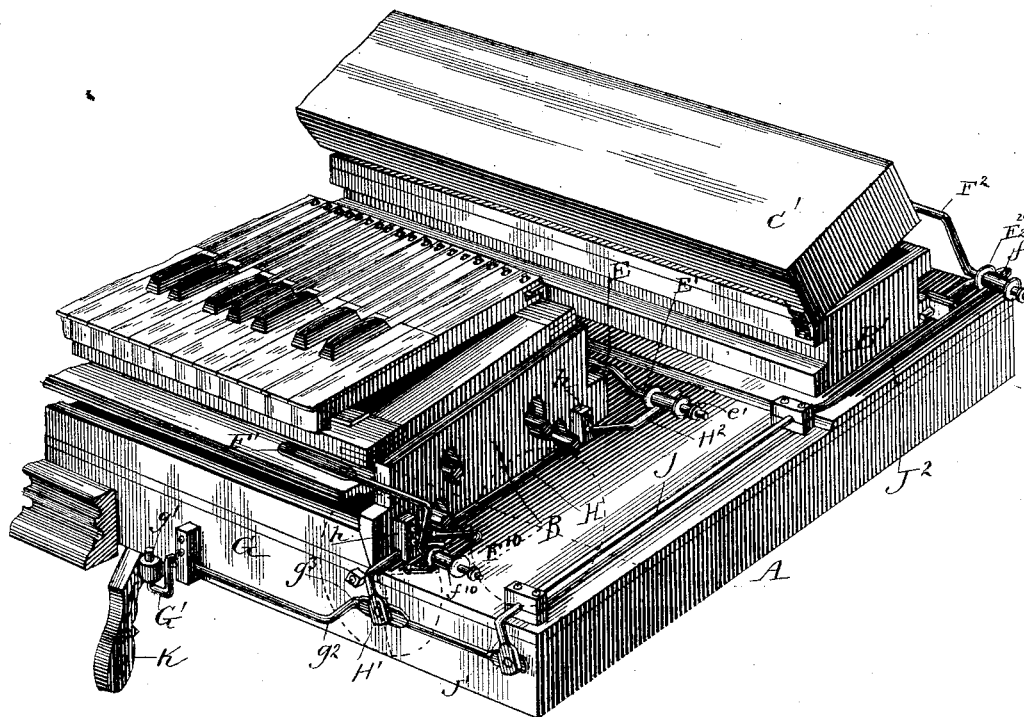
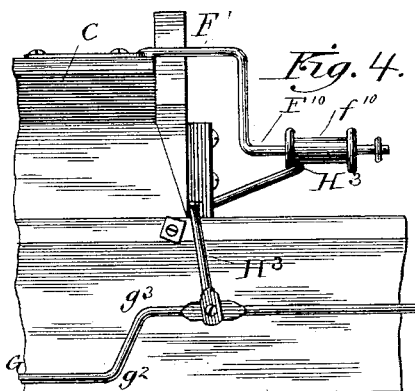


Fig. 4.



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# UNITED STATES PATENT OFFICE.

MELVILLE CLARK, OF CHICAGO, ILLINOIS.

## REED-ORGAN.

SPECIFICATION forming part of Letters Patent No. 384,609, dated June 19, 1888.

Application filed June 17, 1887. Serial No. 241,644. (No model.)

*To all whom it may concern:*

Be it known that I, MELVILLE CLARK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Reed-Organ; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in reed-organs, and more particularly to the mechanism by which the knee-swell lever operates the swells.

Reference will be made to the accompanying drawings, in which Figure 1 is a perspective of a portion of an organ with the case removed, the parts being represented in the positions which they occupy when the swells are closed. Fig. 2 is a front elevation of certain details of the mechanism for operating the swells. Figs. 3 and 4 are views similar, respectively, to Figs. 1 and 2, but showing the swells open and the different parts of the swell-operating mechanism in the corresponding positions.

A represents the wind-chest; B B', the reed-boxes; C C', the valves which cover the boxes to admit or exclude air and serve the purpose of swells.

E represents the mute-stem of the reeds in the forward reed-box, B.

F' F" are cranked arms attached to the swells C C', respectively, said arms extending out from the end of said swells a short distance, and being then bent to form crank-wrists F'<sup>10</sup> F"<sup>20</sup>, upon which are loosely journaled anti-friction rollers f'<sup>10</sup> f"<sup>20</sup>, said rollers being shorter than said crank-wrists, so that there is room for longitudinal movement of the rollers on the wrists. These rollers are flanged at both ends, for a purpose that will be hereinafter explained.

G is a slide-bar, which is supported in a bearing formed by the block b, secured to the front side of the wind-chest. Said slide-bar is further supported by being pivoted to the crank-arms H' and J' of two rock-shafts, H and J. The rock-shaft H is journaled in bearing-blocks h, which are secured to the end of the forward reed-box, B, and extends from front to rear along the end of said reed-box, the said crank-arm H' being formed at its for-

ward end in front of the forward end of the wind-chest A. At the rear end said rock-shaft H is bent to form the crank-wrist H<sup>2</sup>, and toward the forward part, but rearward from the crank-arm H', it is doubly cranked to form the wrist H<sup>3</sup>, said wrists and said rock-shaft being all in the same plane. Upon the forward wrist, H<sup>3</sup>, when it is in its normal position, the roller f'<sup>10</sup> rests, and upon the crank-wrist H<sup>2</sup> rests a similar roller, c', journaled upon the cranked wrist E' of the mute-stem E. At the left of the bearing-block b the bar G is bent to form a U-shaped portion, G', and upon the extremity of the said bar, forming one of the vertical sides of said U-shaped part, there is journaled an anti-friction roller, g', which contacts with the knee-swell lever K.

The rock-shaft J is journaled upon the top of the wind-chest A in suitable journal-boxes, j, and in addition to the crank-arm J', which is bent down in front of the wind-chest and pivoted, as stated, to the bar G, said shaft J is cranked to form the long crank-wrist J<sup>2</sup> at the rear part. The roller f"<sup>20</sup>, journaled on the crank-wrist F"<sup>20</sup> of the arm F", attached to the rear swell, C', rests upon the wrist F"<sup>20</sup> when the parts are in normal position, as shown in Fig. 1.

The operation of this device is as follows: When it is desired to swell the tones or increase the volume of tone, the player, by pressing the knee-swell lever K, causes that lever, by its contact with the roller g' on the bar G, to slide that bar outward and thereby rock the shafts H and J by means of the crank-arms H' and J', pivoted to said bar G. The movement of the said crank-arms H' and J' in the arcs of circles about their respective shafts will tend to raise slightly the bar G, and in order that this may be accomplished without any wrenching of the bar or its bearings it is cranked, as shown at g<sup>2</sup> and g<sup>3</sup>, so that when the described motion occurs the said bar rocks slightly in its bearing in the block G, thus accommodating itself to the motion of the cranks H' and J'. As the shaft H is thus rocked by the sliding of the bar G, the wrist H<sup>3</sup>, swinging upward in the arc of a circle about the axis of its shaft, and being in contact with the roller f'<sup>10</sup> on the crank-wrist f' of the arm F, attached to the swell C, lifts said swell by means of its said arm, and said swell, being hinged at its

rear edge, in being thus lifted, moves and causes the arm F', and therefore the roller  $f^{10}$ , to move in the arc of a circle about the pivot of the hinge of said swell. This motion is forward, and in thus moving the roller travels forward on the wrist H<sup>3</sup>. The motion of said wrist being inward as well as upward causes it to draw the roller inward on the wrist F<sup>10</sup>, which it does by engaging the flange of said roller. The position of the parts when thus actuated is shown in Figs. 3 and 4, and the wrist H<sup>3</sup> is made of such length as to allow the forward movement of the wrist F<sup>10</sup> as the swell C swings on its hinge, and the length of the wrist F<sup>10</sup> is such as to allow for the longitudinal sliding of the roller  $f^{10}$  caused by the inward movement of the wrist H<sup>3</sup>.

A precisely similar action to that above described occurs with respect to the roller  $e'$  on the wrist E' and over the wrist H<sup>2</sup>, the motion there caused having the effect to open the mutes in the same manner as the motion of the arm F opens the swell C. Precisely similar, also, is the movement which takes place at the contact of the roller  $f^{20}$  on the wrist F<sup>20</sup>, and with respect to the wrist J<sup>2</sup>, the shaft J being rocked, as described, at the same time, in the same manner, and by the same means as the rock-shaft H. The position of the swell C' and its actuating mechanism, when operated as described, is also shown in Fig. 3.

I claim—

1. In combination with the knee-swell lever K, the slide-bar G, rock-shaft H, journaled transversely to the direction of the length of said bar and having a crank-arm pivoted to said bar, the said rock-shaft having the crank-

wrist H<sup>3</sup> and the swell C hinged at one edge to the reed-box, and having the crank-arm F secured to it and bent to form the crank-wrist F<sup>10</sup>, and the anti-friction roller  $f^{10}$ , loosely journaled on said wrist and shorter than the same and flanged, as described, whereby it travels over the wrist H<sup>3</sup>, and is by said wrist moved lengthwise on the wrist F<sup>10</sup>, substantially as set forth.

2. In a reed-organ, in combination with the knee-swell lever, the two reed-boxes C and C', one in the rear of the other, their swells respectively hinged thereto and provided with rigid cranked arms, flanged rollers loosely journaled and adapted to slide lengthwise on the cranked wrists of said cranked arms, rock-shafts extending from front to rear, and having crank-wrists in position to contact with the said rollers and further provided with crank-arms at their forward ends, and a slide-bar, as G, pivoted to said crank-arms and adapted to be longitudinally actuated by the knee-swell lever, substantially as and for the purpose set forth.

3. In a reed-organ, the combination, with the swells, of a slide-bar, G, and mechanism which connects it with the swells, said slide-bar being bent to form the vertical portion G', and provided with an anti-friction roller on said portion, and the knee-swell lever contacting with said roller, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

MELVILLE CLARK.

Witnesses:

M. J. CLAGETT,  
HOWARD C. CLAGETT.