

G. B. KELLY.
Reed-Organ Couplers.

No. 153,832

Patented Aug. 4, 1874.

FIG. 1.

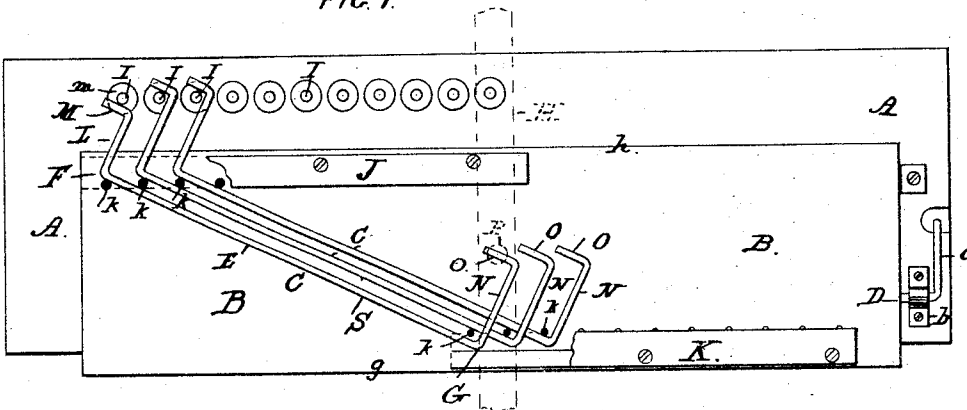


FIG. 2.

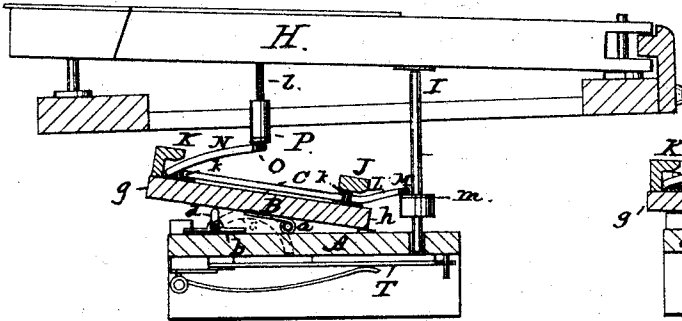


FIG. 3.

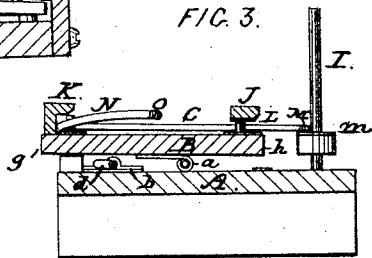
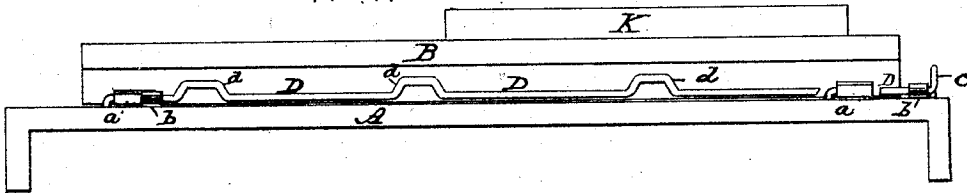


FIG. 4.



WITNESSES.

J. M. Chaff
Robert H. Harris

INVENTOR.

G. B. Kelly
Per Brown Brothers
Attorneys

UNITED STATES PATENT OFFICE.

GEORGE B. KELLY, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN REED-ORGAN COUPLERS.

Specification forming part of Letters Patent No. **153,832**, dated August 4, 1874; application filed March 9, 1874.

To all whom it may concern:

Be it known that I, GEORGE B. KELLY, of Boston, Suffolk county, State of Massachusetts, have invented an Improvement in Couplers for Reed-Organs, &c., of which the following is a specification:

This invention relates to the arrangement of a coupling device in reed-organs or other similar musical instruments for the purpose of coupling any key, when pressed down on the instrument, with any valve or valves representing the interval desired to be sounded, in connection with the valve belonging to the key played or pressed down; and the invention consists in the manner of hinging the support or platform, upon which are arranged diagonally a series of the above coupling-rods, whereby, in its operation to throw the couplers into position for action, a tilting or swinging motion is given to the support, rendering less movement necessary than in coupling devices as at present constructed, and also enabling it to be operated with greater ease and facility.

In the accompanying plate of drawings my invention is illustrated, Figure 1 being a plan view of the support, showing the coupling-rods in position upon it; Fig. 2, vertical transverse section with a key in position and the support and coupling rods in connection for operation; Fig. 3, vertical transverse section with the coupling device out of connection; Fig. 4, a front view of support and action-board.

A, in the drawings, represents the valve or action-board; B, the support, on which are arranged the coupling-rods C. This support B is suspended on hinges *a* upon its under side, at or about the middle of its width, to the action-board A. Under the support B, and turning in bearings *b* on action-board A, is a rod or wire, D, extending the length of support B, the rod being operated by the cranks *c*. On this rod D are cams or eccentrics *d*, in the present instance formed by bending the wire D, as shown. Pressing the crank *c* downward turns the cams *d*, which elevate the front edge *g* of support B, and by the tilting movement of the board depresses the back edge *h* correspondingly. The crank *c* can be connected to a stop or register at the front of the instrument to operate it, as is

usual in such instruments. By hanging the support B as above described, by which the tilting or swinging movement is imparted to it, simplifies the working parts necessary to operate it, renders it easier of action, and requires less power. The coupling-rods C, one for each key, in the present instance are formed from one piece of wire, arranged side by side diagonally to the length of and on the support B, extending in the present instance from near the front end of each key to a valve belonging to its octave-key. The coupling-rod C has a straight or middle portion, E, which is arranged on the support B so that it can turn or roll in bearings formed of pins *k* at its sides, and kept in place by the bars J and K over the pins *k*, secured to the support B by screws, retaining each coupling-rod C in its seat between the pins *k*, but leaving sufficient space for the free rolling movement of the coupling-rod in its operation. At the end F it is bent at or about right angles to its middle portion E, forming a lever, L, and at the end of this lever L it is bent so that the portion M is in a line parallel to the middle portion E. At the other end, G, the wire is bent in a similar way and in the same general plane, excepting that the lever portion N is slightly arched vertically, so that in its movements it will not interfere with the next coupling-rod. H, a key; I, the push-pin, through which, by pressing the key H down, the valve T is opened, as is common in all reed-organs. The dotted lines in Fig. 1 represent the position of the key as above the support-board B. P, a button extending downward from the bottom of key H, and regulated as to its distance from the key H by the screw *l*. This button is placed directly over the part O of coupling-rod. The corresponding part M, at the other end of coupling-rod, is over and bears upon a shoulder or flange, *m*, on push-pin I. The coupling-rods are brought into and put out of connection with the keys and the push-pins to the valves to be operated upon as follows: Pressing down the crank *c*, the support B, as above described, is swung into position, as shown in Fig. 2, bringing the coupling-rods in connection with the keys and valves. Now, pressing down the key H through its button P, bearing on the part O, the lever

N is forced down, turning in its bearings the middle portion E, and carrying down the lever L, which forces down push-pin I by the part M, and opening the valve connected therewith. Letting go of the key, the coupling-rod C assumes its natural position by the upward pressure of the valve through its spring, ready for operation, as above described, a second time. The parts O and M of the coupling-rods C are both cylindrical, and in their contact and action upon the surfaces of the button P and flange *m* to push-pin I, have a rolling motion, and the line of action of the parts O and M when operated is not changed in relation to their fulcrum in the middle portion E, but is parallel and concentric to and with the axis of the coupling-rod, the power in operating it being the same from the commencement to the end of its movement—an object very desirable in the nicety and delicacy of touch required in all musical instruments of similar nature. The part M of coupling-rod S is shown as front of the push-pin I, and the others at the back. Although it can be used in either place, it is preferable to use it as shown in coupling-rod S. The various parts bearing or moving one upon another are all covered with woolen cloth or similar mate-

rial to prevent noise or rattling. The parts O and M of coupling-rods can be bent to the right, if desired, instead of, as shown, to the left.

It is obvious that the above coupling device can be constructed and arranged to connect any valve with any key when other intervals besides the octave, as herein described, are desired to be sounded by the reeds.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The support B, carrying the coupling-rods C, and hinged at its middle on the action-board A, so that a swinging or tilting motion is given to it for operating the coupling-rods, all being combined and arranged substantially as described, for the object specified.

2. In combination with the support B, the cams *d*, rod D, and crank *c*, all constructed and arranged to operate substantially as herein described.

GEO. B. KELLY.

Witnesses:

EDWIN W. BROWN,
J. P. McELROY.