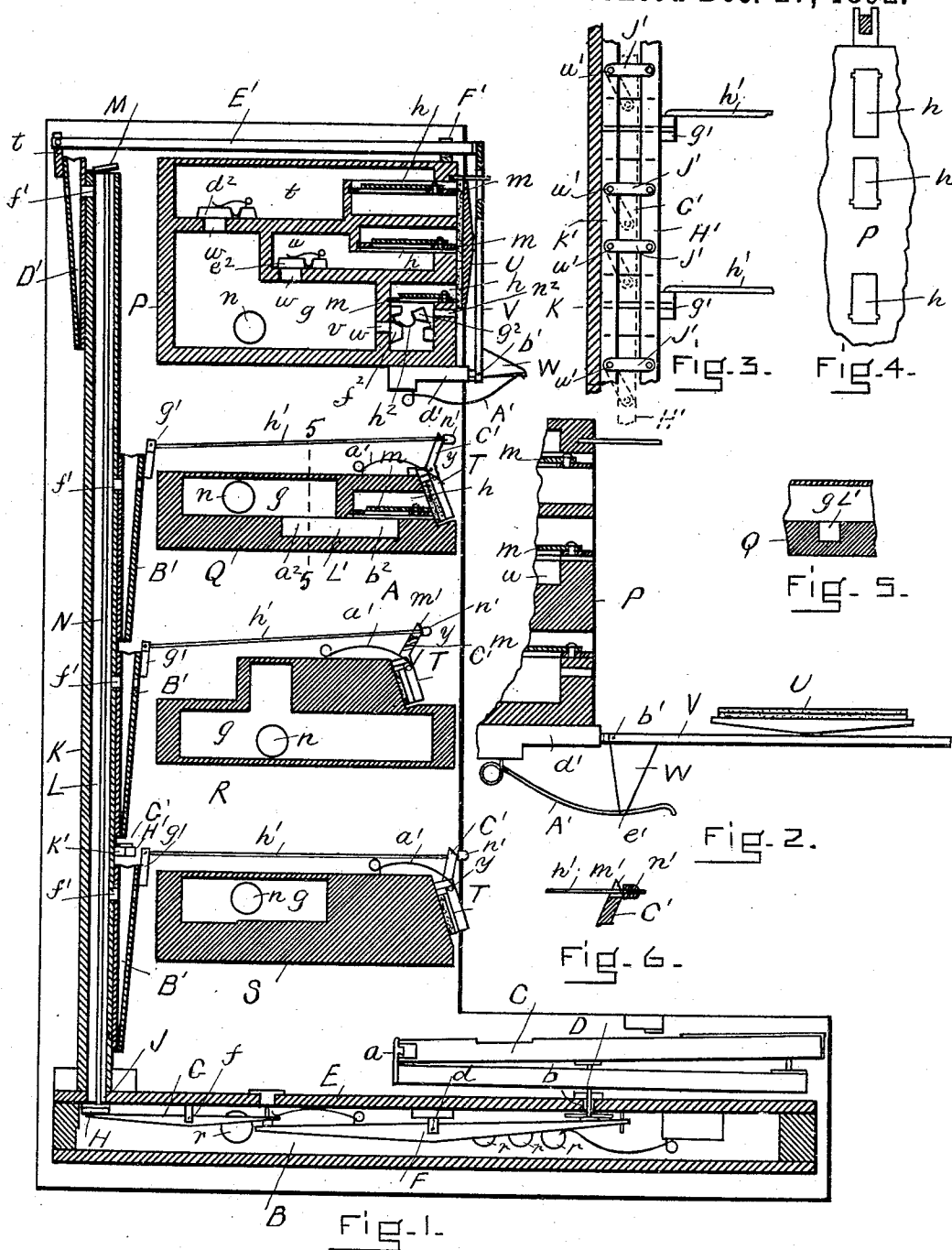


(No Model.)

G. B. KELLY.
REED ORGAN.

No. 488,820.

Patented Dec. 27, 1892.



WITNESSES

George H. Littlefield
Lena C. Chino

INVENTOR

George B. Kelly
Per Edwin W. Brown
Attorney.

UNITED STATES PATENT OFFICE.

GEORGE B. KELLY, OF BOSTON, MASSACHUSETTS.

REED-ORGAN.

SPECIFICATION forming part of Letters Patent No. 488,820, dated December 27, 1892.

Application filed September 24, 1892. Serial No. 446,844. (No model.)

To all whom it may concern:

Be it known that I, GEORGE B. KELLY, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Reed - Organs, of which the following is a full, clear, and exact description.

This invention relates to improvements in reed organs and the invention consists in an organ of a novel arrangement of a series of reed chambers, their reeds, and valves, a vertical air tube or passage communicating with the wind chest having a series of pneumatic bellows communicating therewith and each connected to a valve for operation thereof all substantially as hereinafter fully described; and the invention also consists of novel means for preventing the opening of the valves all substantially as hereinafter fully described; and the invention also consists of a novel manner of constructing and arranging a valve for supplying air to the pneumatic bellows at certain times; and the invention also consists of a novel manner of constructing the air passage leading from the reed chamber to its cell, all substantially as hereinafter fully described reference being had to the accompanying sheet of drawings in which is illustrated the present invention.

Figure 1 is a vertical central section of a reed organ constructed in accordance with this invention: Fig. 2, a detail vertical section with one of the parts in different position and enlarged, Fig. 3, is a detail plan view: Fig. 4, a detail front view: Fig. 5, a detail cross section on line 5, 5 Fig. 1. Fig. 6, a detail section to be hereinafter referred to.

In the drawings A represents a vertical frame work supporting the various parts.

B is a wind chest, which is exhausted of air by the usual exhaust bellows and in the usual manner of reed organs and needing no particular description herein.

C is the key pivoted or hinged at *a*, and it has a pin D which passes freely down through an opening *b*, in the top board E of the wind chest and rests upon one end of a valve F in the wind chest pivoted at *d*, to an arm of the board E and having resting on its other end a lever G pivoted at *f*, to an arm of the board, E, which lever G has a valve H on its other end adapted

to fit and close an opening J in the board. Connected to the board and frame is an upright K having a vertical air passage L in it which communicates at its lower end with the wind chest through the opening J and on its upper end is a small valve M which is arranged to fit over and close the upper open end of the vertical passage L. Within this vertical air passage L, is a rope or wire N, which rests on the valve H in the wind chest, and is of such a length that when the valve is closed the wire or rod will project a short distance above the upper end of the tube, on which the small valve M at the upper end will rest and thus be held open.

P, Q, R, and S, are horizontal reed boards, one above the other in the same vertical plane and secured to the frame-work, and each has a reed chamber *g*, a reed cell *h*, and a reed *m*, arranged and located therein, as usual in reed organs, the reed chambers communicating by openings *n*, with a suitable air passage or chamber which in turn through proper openings *r*, communicates with the wind chest.

The upper reed board P has three separate reed chambers *t*, *u*, and *v*, reed cells and reeds as shown; the main air chamber *g*, of this board has communication with the three reed chambers by openings *w*, in the partitions. The three reed chambers to the three lower reeds each has a valve T each pivoted as at *y*, and extending down over the opening to the reed cell which valves are held to their seats by springs *a'* and atmospheric pressure as usual in reed organs. The three reed cells in the upper board P are closed at their openings by one long valve U pivoted at *b'* to an arm of the board P. The strip V to which this valve is attached, has at its lower end near its hinge an arm W which projects therefrom and against the under side in a longitudinal groove bears the free end of a spring A' secured to the arm *d'* by which the valve is held to its seat, over the three openings *h*, to the reeds, and when desirous of getting at the reeds in these cells for any purpose, by taking hold of the upper end of the valve strip, and pulling it forward and down, it will swing into the position shown in Fig. 2, the spring sliding along the groove in the under side of the arm to and over the end *e'* in which

there is a groove to insure its hold as shown, and holding the valve in such open position. On the side of the vertical standard toward the three lower reed boards are secured one
 5 above the other, as shown, pneumatic bellows B' as they are called, each of which communicates by air passages with the vertical air passage L and its movable board has attached to it an upwardly extending arm g' to which
 10 the valve of the reed cell in line therewith is secured, by a rod h' pivoted to said arm, its other end lying in a groove m' in the upper end of an arm C' attached to the valve, and having a screw nut n' screwing on its end by
 15 which the length of the rod can be regulated, to adjust its connection between the pneumatic bellows and valve. The upper pneumatic bellows D' is on the opposite side of the standard K and it has communication
 20 with the tube air passage L by an opening f' its movable board being connected by an arm t attached thereto, by a rod E' which extends along to the front and passes freely through a guide post F' of the reed board P in position
 25 for its end to abut against the valve strip V of the valve U . All these connecting rods are adjusted as to their length so that when the pneumatic bellows are open their respective valves will be closed.
 30 The operation of the instrument is as follows: The air being exhausted from the wind chest as usual in reed organs; to sound a particular reed the register which controls the air communication between the wind chest
 35 and the reed chamber to such set of reeds is first opened, and then the key is pressed down and in its downward movement, the movements of the levers F, G , open the valve H making communication between the vertical air
 40 passage L and wind chest B which immediately exhausts the pneumatic bellows connected to the valve to the reed desired to be sounded, causing its movable board to close upon the other and thus open its valves its reed
 45 being sounded by the air passing in at the opening as usual. As the valve is opened the rod or wire N follows it down dropping low enough for the small valve M at upper end of the tube to also fall and close the air passage L by atmospheric pressure to which closing of the passage to the entrance of air thereat insures the proper exhaustion of the pneumatic bellows.
 50 The instant the key is allowed to rise the valve H closes the opening J raising the rod or wire N , which raises and opens the small valve M allowing air to enter at the upper end of the tube to supply air to the pneumatic bellows that has been operated, to insure its opening and thus close the valve promptly to
 55 the reed connected thereto that has been sounded. To stop any series of pneumatic bellows from being operated by the air in the tube connected therewith, a stop is arranged as shown at G' Fig. 1, and in plan in Fig. 3.
 60 This consists of a strip H' over the upper ends of the pneumatic bellows back of the arm g' connected by parallel links pivoted at

u' to a support K' on the upright K the operation is as follows:—The strip H' is connected in any suitable manner to the register
 70 or stop of the organ and in its normal position the strip will be in the position shown in Fig. 3, that is moved out against the arms g' of the pneumatic bellows, which abutting thereagainst, the bellows are prevented from
 75 being closed and the valves connected thereto will not be opened and consequently the reeds of such valves will not be sounded, but when desirous of having any set of reeds in condition to be sounded, the register or stop con-
 80 nected to the slide of the pneumatic bellows to the valves of such reeds is pulled out which swings the strip longitudinally and backward on its pivots in to the position shown in dotted lines Fig. 3, moving it back close to the
 85 other strip or support and leaving room enough for the arms g' of the pneumatic bellows to move so that they can close to operate their respective valve, and when desirous of shutting off the set of reeds, the register or
 90 stop is pushed in, which moves outward the strip H' preventing by the abutment of the arms g' of the pneumatic bellows against it their moving to operate their respective valves.

Although only one series of reed chambers
 95 reed valves &c. in one vertical plane are shown, it is well understood that each reed board has its full complement of reeds, cells, &c. as used in reed organs for each, the strip to hold the bellows from movement extending
 100 along over the series of pneumatic bellows in the same plane.

The passage L' leading from the air chamber g of the lower three reed boards, to each reed is narrow in cross section as shown in
 105 Fig. 5, or of a width substantially corresponding to the width of the reed, it is below the bottom of the air chamber, one end a^2 opening into said chamber and the other b^2 under and opening to the reed, so that the air as it
 110 passes down through the reed into the end b^2 of the passage L' passes along it and then up into the air chamber at its other end.

In the upper reed board (P) is a general air chamber g opening as described and shown
 115 in to the separate reed chambers t, w, v and to each opening w is a valve d^2, e^2, f^2 , respectively to close such opening, so that each set of reeds can be used either alone or with each other, and in such case the valves are each
 120 connected to a separate register or stop so that the valves can be opened when it is desired to use either set of reeds, as usual.

In the reed chamber v , in which the smallest reeds are used which are apt to cipher, a
 125 small passage n^2 from the outside opens thereto which is closed by a valve g^2 having an arm h^2 which extends therefrom and in position for its free end—to be in the path of the valve
 130 f^2 , as it opens and shuts, so that when the valve f^2 is closed it allows this valve g^2 to open which lets in sufficient air below the reed to counterbalance whatever might leak in through the reed cell opening, by which the

reed is prevented from ciphering or sounding. As the valve f^2 is opened to allow the reed to sound in its movement outward it will act upon the arm h^2 to close the valve g^2 for the proper speaking of the reed at such time.

Having thus described my invention what I claim is:

1. In a reed organ a wind chest, a series of reed boards arranged in a vertical plane one above another, each having a reed chamber, a reed cell and a valve to such cell, a standard or upright having a vertical air passage, communicating with the wind chest pneumatic bellows secured to said standard and having communication with its air passage, and each connected to a valve to a reed cell.

2. In a reed organ a wind chest, a series of reed boards arranged in a vertical plane one above another, each having a reed chamber, a reed cell and a valve to such cell, a standard or upright having a vertical air passage communicating with the wind chest, a valve to said vertical air passage in the wind chest operated by the key, pneumatic bellows secured to said standard and having communication with its air passage, and each connected to a valve to a reed cell, a valve on the upper end of said vertical air passage, a rod or wire to said passage extending from said upper valve and resting on the valve in the wind chest, and said upper valve resting on said rod.

3. In a reed organ a pneumatic bellows connected to a reed valve a projection or arm on the moving board of said pneumatic bellows, a bar between same arm and a suitable stop, and connected to a support by links, in such manner that as the bar is moved on its links it will abut against said bellows arm.

4. A valve to a reed cell, pivoted to a suitable support, a projecting arm near said pivot, and a spring secured to a suitable support and adapted to bear against said arm at the side and on its end when the valve is swung outward.

5. In a reed organ, a wind chest, a standard or upright, a vertical air passage in said standard, a pneumatic bellows communicating with said vertical air passage and a reed valve connected to said bellows.

6. In a reed organ, a wind chest, a standard or upright a vertical air passage in said standard, a series of pneumatic bellows, in the same vertical plane communicating with the vertical air passage and a reed valve connected to each pneumatic bellows.

7. In a reed organ, a reed board, an air chamber in said reed board a reed cell, a reed therein and an air passage communicating by one end with the reed cell and extending back and by its other end with the air chamber, said passage being of narrow width or substantially of the width of the reed tongue.

8. In a reed organ, in combination a reed chamber, an opening thereto from an air chamber, a valve to such opening, an opening to the outside of said reed chamber, a valve to such opening, and an arm to such latter valve, extending into position to be operated by the former valve.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

GEORGE B. KELLY.

Witnesses:

EDWIN W. BROWN,
LEONA C. ARNO.