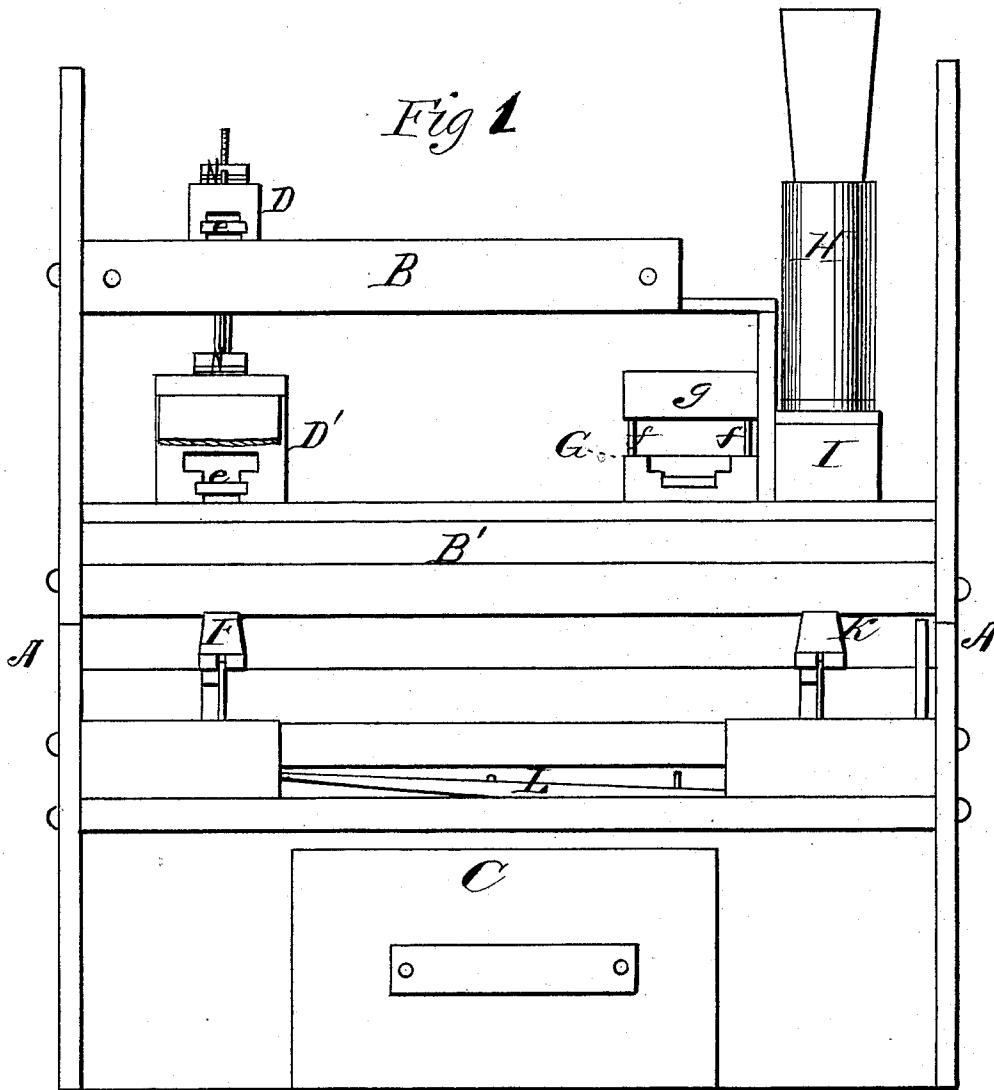


C. AUSTIN.
REED-ORGAN.

No. 176,574.

Patented April 25, 1876.



WITNESSES
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Walter C. Masi

INVENTOR,
Charles Austin.
Gilbert & Co.
ATTORNEYS

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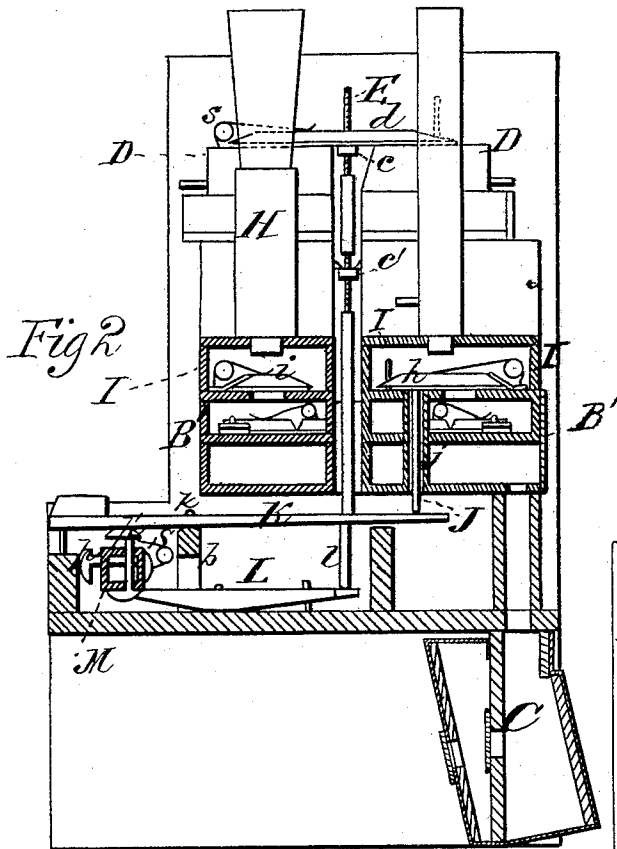
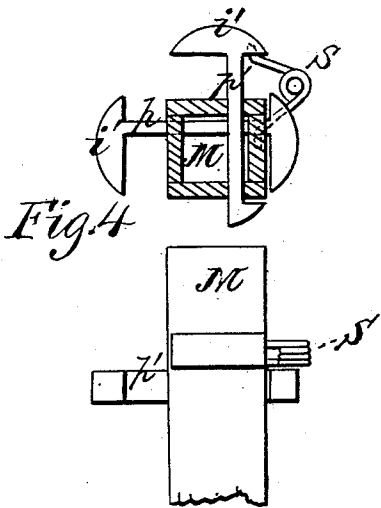
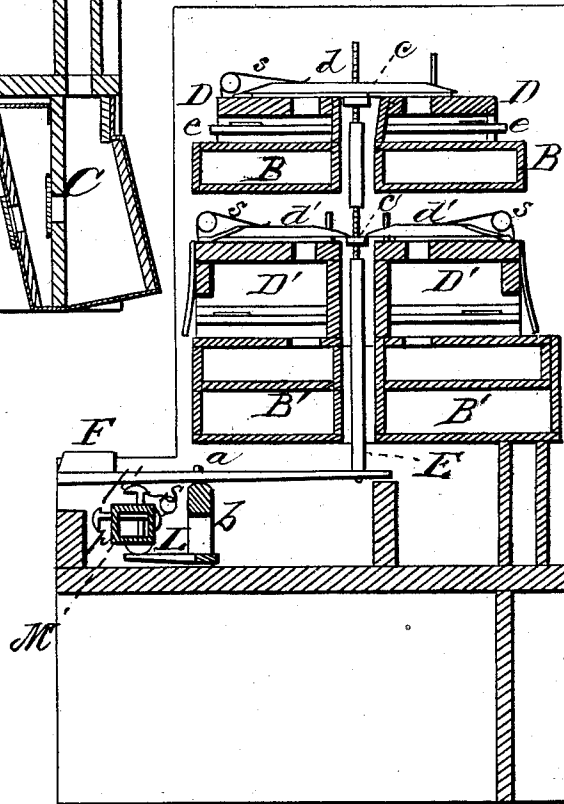


Fig 3



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CHARLES AUSTIN, OF LOWELL, MASSACHUSETTS.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. **176,574**, dated April 25, 1876; application filed January 29, 1876.

To all whom it may concern:

Be it known that I, CHARLES AUSTIN, of Lowell, in the county of Middlesex and State of Massachusetts, have invented a new and valuable Improvement in Organs; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a front view of my improved organ, and Figs. 2 and 3 are vertical sectional views of the same. Figs. 4 are sectional detail views thereof.

This invention has relation to improvements in organs.

The object of the invention is to provide means whereby the "reeds" and their operating mechanisms may be got at for repairs and tuning without opening the wind-chest, or detaching the latter from its position above the key-board. It also consists in an equalizing-spring, so arranged in connection with a rotating coupling-shaft that when one or more octaves are coupled, the effort required to operate them shall be neither greater nor less than that necessary to operate a single key. It also consists in certain minor improvements, whereby very useful results are obtained in facilitating the operation of the mechanical parts of the organ, as will be hereinafter more fully explained and claimed.

In the annexed drawings, the letter A designates the frame of my improved organ. B B' are wind-chests, arranged one above the other, and communicating the one with the other, and with an exhaust-bellows, C, by means of suitable "trunks." The reeds of this organ are designed to be sounded by means of an exhaust-bellows on the American system, arranged in any suitable situation in relation to the frame, and are secured on top the wind-chests in reed-boxes D D'. These wind-chests are sectional, as shown in Fig. 2, a certain interval being left between them for the reception of a tracker-rod, E, which is operated in the usual manner by means of the key-lever F, having its fulcrum at *a* in a longitudinal strip, *b*, shown in Fig. 3. This rod is provided

with adjustable collars *c c'*, the first of which operates vertically a vibrating valve, *d*, on top of the upper reed-boxes D, which contain reeds *e*, differing in no essential particulars from those in common use, and the second vertically-vibrating valves *d'*, which close the openings in the tops of the lower reed-boxes D'. When the key-lever F is depressed, tracker rod E will be raised, and valves *d d'* actuated to open reed-boxes D D', and if, now, the exhaust-bellows C be operated, the reeds within the said boxes will be sounded simultaneously, producing a unison of remarkable richness, the notes of which agree in pitch but differ in timbre or quality of tone. It is evident that by increasing the number of chests, arranged the one above the other, the number of reeds may also be increased at pleasure, and the richness of the tone obtained from a single key or stop increased by the new combinations with the fundamental note. It will also be evident that the tracker-rods, being exterior to the wind-chests and entirely disconnected therefrom, may be readily got at to repair any injury which may have occurred without opening the chests, and that being separate therefrom and not passing through the said chests, all liability of their causing the same to leak is effectually done away with. The reed-boxes being upon the top of the wind-chests, and the reeds being readily detached therefrom, the latter may also be readily reached without removing the said boxes from the chests. In practice, in order to improve the quality of the tone I shall employ a supplementary reed, G, on the wind chests, above which will be supported, by means of rod *f*, a resonance-chamber, *g*. When this qualification is requisite, a valve in the wind-chest will be opened by a suitable stop, thus establishing a communication between the chest and the said reed, when the exhaustive action of the bellows will draw the air between the reed and chamber, causing the latter to be sounded.

When pipes, as for instance the hautboy H, are designed to be used they will be mounted in a supplementary box, I, either in a vertical or horizontal position, as the shape of the organ-case will permit, which box will communicate with the wind-chest, and will be

sounded, when necessary, by opening a valve, *i*, by means of a suitable stop; or I may use a coupler, which, when operated, will open the said valve *h*, and cause the reed at the base of the pipe to be sounded by the actuation of the key, and the operation of the exhaust-bellows. This effect will be accomplished by means of a tracker-rod, *J*, passing through a tubular sleeve, *j*, passing through and forming an air-tight joint with the wind-chest, by means of which leakage is prevented. Rod *J* rests upon the power end of a key-lever, *K*, having its fulcrum at *k* in strip *b*, before alluded to.

This lever may be operated independently by the finger of the operator, or it may be operated simultaneously with key-lever *F* by means of a diagonally-arranged vertically-vibratory coupling-lever, *L*, the power end of which is provided with a rod, *l*, the upper end of which is in contact with key-lever *K*.

Lever *L* is operated to effect a coupling in the following manner, to wit: A preferably-rectangular bar, *M*, is arranged in bearings under the key-board of my improved organ, and is provided with endwise-movable and cross-headed pins *p p'*, arranged at right angles to each other through the said bar, as shown in Fig. 4. When bar *M* is caused to rotate by means of a lever, *m*, arranged at one end, pin *p* will be thrown into a vertical position, its cam-shaped head *i'* being under key-lever *F*, and its lower end resting upon the coupling-bar *L*. If the said key-lever *F* be now operated pin *p* will be thrust through bar *M*, and will actuate the latter to open valve *h* through the medium of tracker-rod *J* and rod *l*. When the finger is removed from lever *F* springs *s*, which close valves *d d'*, will return it to its normal position in the key-board; but if the coupling-bar *M* be reversed pin *p* will be turned at right angles to its former position, and pin *p'* will assume the position vacated by it, when an uncoupling will be effected. In this position the cam-shaped or rounded head of pin *p'* will be under lever *F*, and if the latter be now depressed an equalizing-spring, *S*, secured by one end to the bar *M*, and having the other under head *i'*, will be compressed.

This spring is of such strength that the power required to depress the key-lever *F* will be the same whether the said lever be coupled

or not, and a similar spring being arranged under each lever of the key-board, or under so many as are designed to be coupled with others, the effort required to operate a key-lever will be the same under any circumstances, whether it be coupled with another or not, and equal to that required to operate any other key of the bank. The effect of this is to render the performance of the organ regular and even, and to produce a degree of harmony unattainable by any other means, because of the regularity of touch required to sound any note.

In practice, reed-boxes *D D'* will be open in front for the purpose of allowing the reed to be readily inserted or removed therefrom, and this opening will be automatically closed, when the valves *d d'* are raised, and the bellows worked by, preferably, leather clappers, which are drawn in over the said openings by the suction of air.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a spaced sectional wind-chest, *B B'*, and an intermediate tracker-rod, *E*, substantially as specified, and for the purpose set forth.

2. In combination with the pipe-box *I*, having valve *h*, the wind-chest *B'*, having tubular sleeve *j*, adapted to receive a tracker-rod, *J*, for operating the said valve, substantially as specified.

3. In combination with the reeds of an organ the supplementary reed *G*, having a resonance-chamber, *g*, suspended above it, substantially as specified.

4. In combination with the wind-chests *B B'*, the reed-boxes *D D'*, arranged on top of the same, substantially as specified.

5. In combination with the tracker-rod *E* the spaced horizontal wind-chests *B B'*, reed-boxes *D*, and valve *d*, closing both reed-boxes, substantially as specified.

6. In combination with the key *F* the endwise-movable pin *p'* and a compensating-spring, *S*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

CHARLES AUSTIN.

Witnesses:

J. F. HASKELL,

C. J. EASTMAN.