(No Model.)

2 Sheets—Sheet 1.

# J. W. TRAINER.

## Reed Organ Stop Action.

No. 241,757. Patented May 17, 1881.

*Fig. 1*

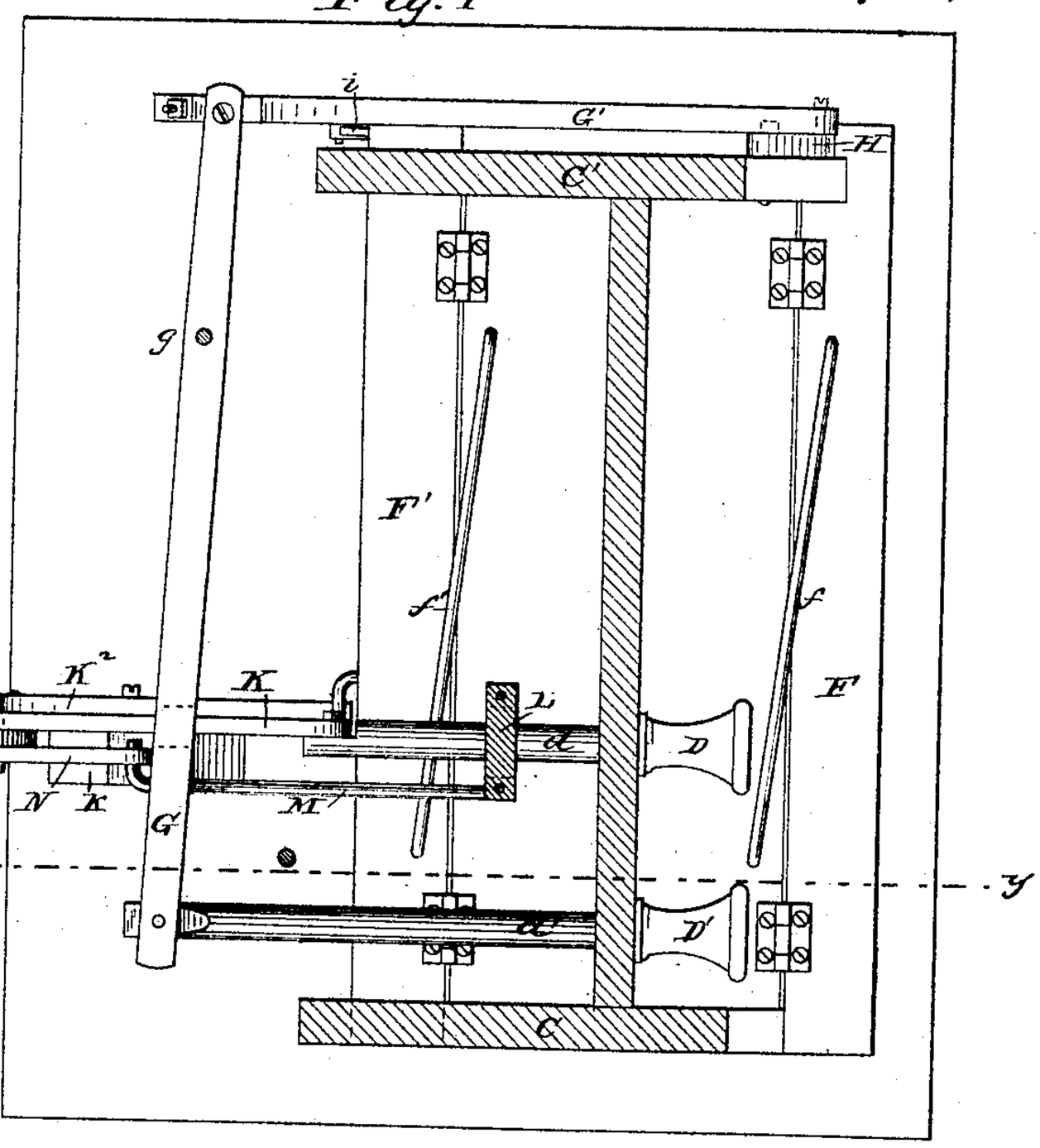
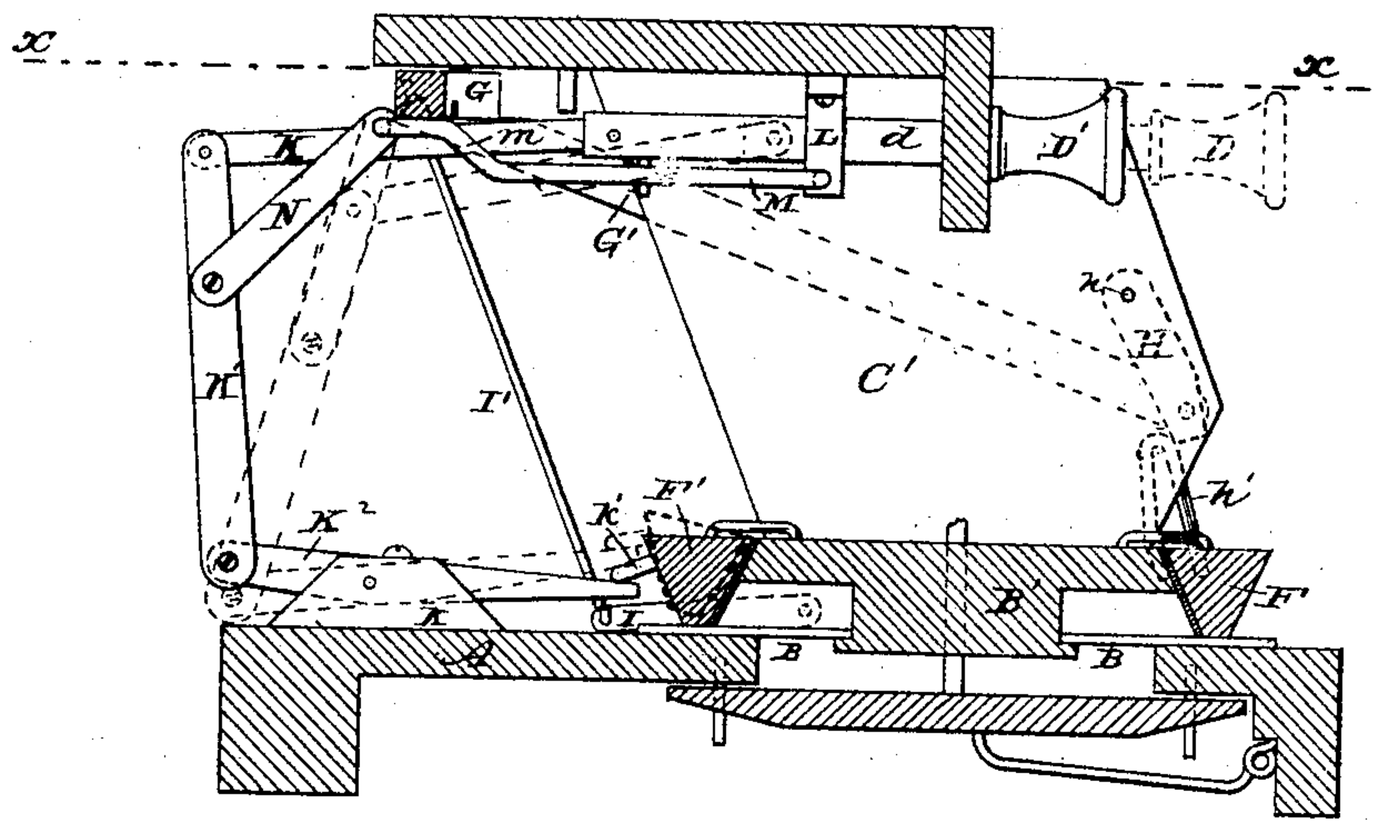



*Fig. 2*




Witnesses:

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J. S. Barker

Inventor:

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attys

(No Model.)

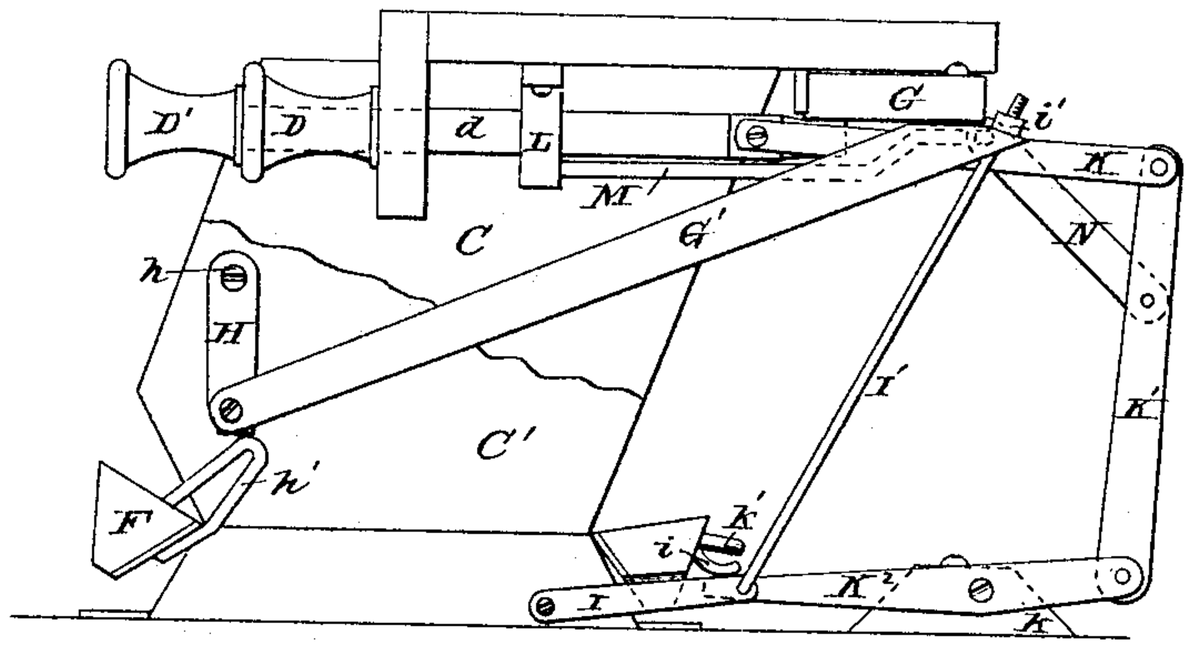
2 Sheets—Sheet 2.

# J. W. TRAINER.

## Reed Organ Stop Action.

No. 241,757. Patented May 17, 1881.

*Fig. 3.*

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# UNITED STATES PATENT OFFICE.

JOHN W. TRAINER, OF FORT WAYNE, INDIANA.

## REED-ORGAN STOP-ACTION.

SPECIFICATION forming part of Letters Patent No. 241,757, dated May 17, 1881.

Application filed February 12, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. TRAINER, a citizen of the United States, residing at Fort Wayne, in the county of Allen and State of Indiana, have invented certain new and useful Improvements in Stop-Actions for Organs; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a section on line *x x*, Fig. 2, of so much of an organ as is necessary to illustrate my invention. Fig. 2 is a sectional view of the same portion on line *y y*, Fig. 1. Fig. 3 is an end view.

In the drawings, A represents a reed-board of an organ-action.

B B are the reeds; B′, the cell-board, and C C′, standards or end pieces, which parts may be of any preferred character.

D D′ represent knobs attached to reciprocating rods *d d′*.

The sets of reeds to which my invention is shown as applied are placed opposite, one being in rear of the other. The front set of reeds has a stop-valve, F, and the rear set a similar valve, F′, said valves being held to their seats by springs *f f′* when not intentionally removed from said seats.

Reciprocating-rod *d′* is at its rear end pivoted to a lever, G, which lies transverse to the rod *d′* and is pivoted to the frame at *g*. At the other end this lever G is hinged to a rod, G′, which inclines somewhat toward the front stop-valve, F.

H is a short lever, pivoted to the frame at *h*, and pivoted also to the rod G′. At its lower end it is arranged to loosely engage with the stop-valve F by means of an arm, *h′*, attached to and projecting from the stop-valve.

When the knob D′ is pulled out it (through lever G, rod G′, and lever H) opens the stop-valve F and gives voice to the set of reeds governed by said stop-valve. But by means of the same knob D′ the other stop-valve, F′, can be also opened partially, whereby I can produce the "vox-humana" tone. In order to raise the stop-valve F′ thus by the knob D′, I combine with the rod *d′*, the lever G, and the rod G′ the following devices: I is a lever, situated beneath the damper F′, and pivoted at one end to the frame. At the other end it is pivoted to a rod, I′, which at its upper end is adjustably connected to the rod G′. When the knob D′ is pulled out the end of lever G opposite to the knob is thrown backward, which lifts the rod I′ and lever I, and the latter partially opens the stop-valve F′ by bearing against an arm, *i*, projecting therefrom. Generally the stop-valve F′ should be opened about one-fourth (see Fig. 3) to produce the most pleasing tone; but, as it may be desired under some circumstances to vary the character of the tone and to regulate the vibration, I combine with the rod I′ an adjusting device by which the damper can be opened more or less, and thus I avoid the filing or cutting of any of the parts, as is necessary in those constructions heretofore used, which have sliding cams to operate the stop-valves. The lever I and the rod I′ are adjusted by a nut, *i′*, engaging with a thread on the upper end of the rod I′ and bearing against the rod G′.

I will now describe the devices for opening entirely the stop-valve F′, which controls the "melodia" set of reeds.

The reciprocating rod *d* is at its rear end hinged to a link, K, which, in turn, is hinged to a second link, K′.

$K^2$ is a lever pivoted to the link K′, and also to a standard, *k*, in rear of the stop-valve F′. This lever $K^2$ extends forward and engages with the stop-valve by means of an arm or projection, *k′*, attached to the valve.

L is a bracket secured to the stop-frame and arranged to provide bearings for the reciprocating rod *d*.

M is a rocking lever, the outer end of which is pivoted in the bracket L. It extends backward to a point behind the lever G, and is formed with a cam or raised portion, *m*, which bears against the under side of the lever G whenever both of the stops D D′ are back to the farthest point.

N is a link pivoted at its rear end to the vertical link K′, and at its forward end pivoted to the rocking lever M.

By an examination of the drawings it will

be seen that if the knob D be pulled out when the knob D′ is in the lever $K^2$ is rocked on its pivot, so that it opens the stop-valve F′ to the full extent, the parts K and K′ being prevented from rising because the link N bears against the rocking lever M, and the lever M bears against the lever G. On the other hand, if knob D′ be pulled out the end of lever G is swung so far forward that the cam part *m* of the rocking lever M cannot bear against it; and, therefore, if the knob D be pulled out at this time, or if it be already out, it will be seen that the force exerted through the parts K K′ $K^2$ upon spring *f*′ will cause the parts K′ and N to rise without rocking the lever $K^2$, and hence without lifting the stop-valve F′.

The vox-humana stop is operated by knob D′ and the melodia by knob D.

By means of the devices described I am enabled to draw out a stop while another stop is out without necessitating that the first stop shall be returned or pushed in. If both the stops are out and the vox humana be pushed back, the full power of the melodia will be obtained. If the melodia stop is out and the vox-humana stop be afterward drawn out, the melodia stop will remain out and the tone of the vox humana will be produced. If the vox humana is out and the melodia be afterward drawn out, it will not interfere with the vox humana.

By means of a screw-threaded connection I am enabled to provide a very delicate adjustment for the stop-valve of the melodia.

The stop-valves F and F′ extend beyond the ends of the respective cell-boards. This construction of these parts enables me to connect the lifting devices therewith very advantageously by means of the arms *h*′ and *k*′.

In the claims hereinafter set forth, by the words "melodia stop" I mean a stop whereby a valve can be opened entirely to give the full tone of the set of reeds governed by said valve, and by "vox-humana stop" I mean a stop whereby the last said valve shall be partly opened, and whereby another valve shall be at the same time entirely opened.

I am aware that stop-actions have been heretofore arranged to permit one valve to be partly opened while another valve is entirely opened. I am also aware that the tone thus produced has been called the "voix celeste;" but I believe myself to be the first to have employed with such stops mechanism of substantially the character described for operating them.

By means of my devices the operator is relieved of many of the movements and operations rendered necessary by the organs heretofore constructed.

What I claim is—

1. The combination, with the valves F and F′, of the vertically-swinging pivoted levers H and I, the horizontally-swinging pivoted lever G, the rods I′ and G′, situated above the valves, and the reciprocating rod *d*′, as set forth.

2. The combination, with the stop-valves F and F′, and the mechanism for opening them, respectively, of the link N and the lever M, provided with a cam part, *m*, interposed between the mechanisms for operating the stop-valves, substantially as set forth.

3. The combination, with the stop-valves F F′, the reciprocating rod *d*′, the levers G and H, and the rods G′ and I′, of adjusting mechanism for regulating the distance to which the stop-valve F′ shall be opened.

4. In an organ, the combination, with the vox-humana stop, which opens entirely the valve of one set of reeds, and opens partially the valve of another, and the melodia stop, which is adapted to open the latter aforesaid valve entirely, of mechanism, substantially such as set forth, whereby, if the vox-humana stop be drawn out while the melodia stop is out, the melodia stop will be held out, but the melodia valve will be partially closed, as set forth.

5. In an organ, the combination, with the vox-humana stop, which opens entirely the valve of one set of reeds and opens partially the valve of another, and the melodia stop, which is adapted to open entirely the latter aforesaid valve, of mechanism, substantially such as described, whereby, if the said melodia stop be drawn out while the said vox-humana stop is out, there will be no interference with the vox-humana tone produced, as aforesaid, by opening one valve entirely and the other valve partially, substantially as set forth.

6. In an organ, the combination, with the vox-humana stop, which opens entirely the valve of one set of reeds and opens partially the valve of another set, and the melodia stop, which is adapted to open entirely the latter last aforesaid valve of mechanism, substantially such as described, whereby, if the said melodia stop be out and the said vox-humana stop be afterward drawn out, the first of said valves will be entirely opened and the last said valve will be partially closed, and whereby, if the vox-humana stop be pushed back, the last said valve will be again entirely opened without moving the melodia stop, substantially as set forth.

7. In an organ, the combination of an adjusting screw or nut to regulate the character of the vibrations with the herein-described elements, namely: valve F adapted to be entirely opened, and valve F′ adapted to be partially opened by means of a single stop-rod, *d*, the levers G, H, and I, the connecting-rod G′, and the rod I′, carrying said screw and nut, substantially as set forth.

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

JOHN W. TRAINER.

Witnesses:
C. J. TAYLOR,
J. Q. STRATTON.