(No Model.)

N. R. MARSHMAN.

FLUTE ORGAN.

No. 264,891. Patented Sept. 26, 1882.

Fig. 3.

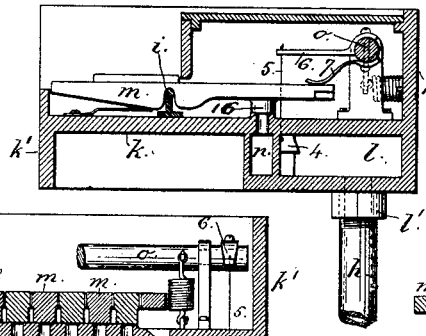


Fig. 2

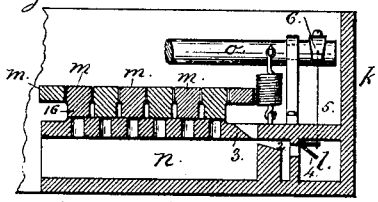


Fig. 5.

Fig. 4.

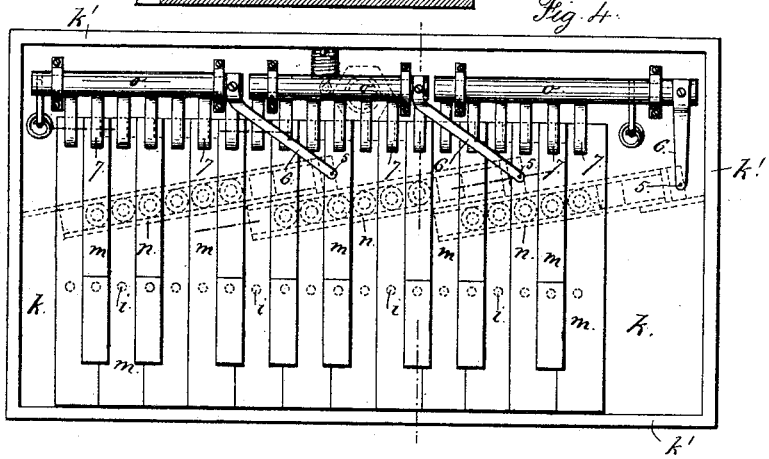
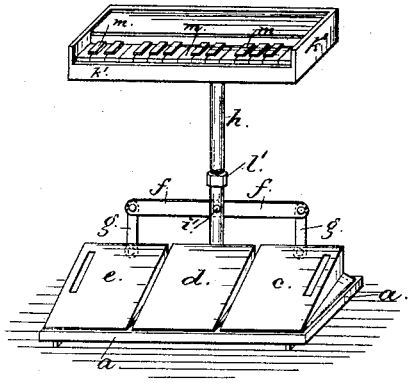


Fig. 1.



Witnesses

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NEWMAN R. MARSHMAN, OF NEW YORK, N. Y.

FLUTE-ORGAN.

SPECIFICATION forming part of Letters Patent No. 264,891, dated September 26, 1882.

Application filed December 28, 1881. (No model.)

To all whom it may concern:

Be it known that I, NEWMAN R. MARSHMAN, of the city and State of New York, have invented an Improvement in Flute-Organs and Melodeon Instruments, of which the following is a specification.

This invention is for simplifying the melodeon instrument and rendering the same portable and cheap, and for employing a flute or flageolet with keys and valves in such a manner that the special note corresponding with the key that is depressed will be sounded.

In the drawings, Figure 1 is a perspective view of the instrument complete. Fig. 2 is a section of some of the inner ends of the keys and pipe longitudinally. Fig. 3 is a transverse section of such key-board and pipe. Fig. 4 is a plan of the key-board with the cover removed, and Fig. 5 is a section of the back ends of an octave of keys.

The bellows are upon a base-board, *a*, and are composed of the three parts *c d e*, the part *c* being operated by the right foot and *e* by the left foot, and *d* is the intermediate supply-bellows. If the instrument is operated by exhausting the air, there will be a spring to raise the hinged board of the central bellows, *d;* but if compressed air is used, the spring will be made so as to draw down into the hinged board of *d*.

The bellows *c* and *e* are provided with passage-ways and valves between the air-chamber *d* and the air-spaces in *c* and *e*, all of which parts are well known in the manufacture of bellows.

The lever *f* is pivoted at *i'*, and provided with connecting-rods *g* from its ends to the upper or moving edges of the foot-boards of the bellows *c* and *e*. This insures the downward movement of one foot-board as the other one is coming up, thus preventing both foot-boards being depressed simultaneously and rendering the action of the air from the bellows unequal.

If the bellows are exhaust-bellows, they will be raised to draw in air by pressure on the other bellows moving the lever *f*, and if the bellows compress the air the lever *f* will be raising one bellows to draw in air by the action of the foot in depressing the other bellows to expel the air. This construction renders it unnecessary to employ springs in the bellows *c e* and lessens the power required to operate them.

The standard *h* extends from the base *a* to the wind-chest, or to the key-board base *k*, and this standard is tubular and made in sections, with one or two slip or screw joints, as at *l'*, so that the standard can be taken apart for packing; but when put together it will support the key-board firmly and render any other support unnecessary. This standard *h* forms the air-tube that conveys air to the wind-chest *l* of the melodeon or similar wind-instrument, or from which the air is drawn through the tubular standard to the exhausting-bellows.

The keys *m* are upon fulcrum-pins *i* above the base *k*, and there is any suitable inclosure or case, *k'*, for the parts of the musical instrument itself.

The flute or flageolet *n* is placed below the range of keys. At one end is the vibrating lip 3, to give the initial tone, and the mouth 2 is connected with the wind-chest, and there is a valve, 4, to which a rod, 5, is connected.

The rock-shaft *o* is supported in the case *k'* and provided with an arm, 6, to which the rod 5 is connected; and there are fingers 7 above the inner ends of the keys *m*, so that when any key is depressed the rock-shaft will be moved and the valve 4 opened to allow air to blow into the instrument from the wind-chest *l* and give the initial sound.

Along the flute or flageolet *n* there are the usual holes for the notes, and the flute or other pipe is of a length to contain all the notes of the instrument; or there may be two such flutes or other pipe-instruments, either placed in line with each other, or preferably at a sufficient inclination to allow the mouth-piece of one instrument to lap past the open end of the other instrument, as shown in the plan view, Fig. 4.

Each hole in the pipe has a valve, 16, and its appropriate key to move the same; but as the initial note of the pipe is given with all the holes closed, I use one blank key without a valve, 6, to simply move the rock-shaft and open the valve 4, that admits air to the pipe. This blank key will be the last key toward the base working with the particular pipe or flute, so that by depressing this note the air is admitted and the pipe gives its initial and low-

est note; then the next key opens the lowest hole, and so on the scale can be run up to the highest or treble note of the pipe or flute. It is, however, necessary in most all wind-instruments—such as flutes and flageolets—to hold open the notes below the one sounded in order to get the true note in the scale. The keys could not be held down by hand to provide for this requirement. I therefore place at the back end of each key a lifter, 8, that underlies the next key to the left, so that when the outer end of one key is depressed and the inner end lifted the key does not move the higher keys to the right, but the lifter 8 raises the inner ends of all the notes to the left of the key struck, so as to open simultaneously all the holes below the particular key struck, in order that the tone of that note may sound correctly by the simultaneous opening of its own hole and all the holes below the particular note struck.

A separate flute or flageolet pipe may be provided for each octave or half-octave, so that bass and treble chords may be played simultaneously, and so that only four or five keys may operate with each pipe. Care, however, must be exercised in toning the pipes, so that the initial sound of one pipe will be a tone or half-tone, as the case may be, higher than the highest note of the next lower pipe.

The tubular standard may be round or polygonal. In the latter case the parts will slip into each other.

Organ-pipes have been made with valves to the openings in the pipes for obtaining more than one tone from one pipe.

I claim as my invention—

1. The combination, with the base-board *a* and bellows *c e*, placed thereon, and against which the feet act directly, of the intermediate supply-bellows, *d*, and the lever *f* and links *g* at its respective ends, connecting with the bellows *c e*, for the purposes and as set forth.

2. The combination, with the base-board *a*, of the two bellows *c e*, intermediate wind-chest, *d*, tubular standard *h* for the air, the wind-chest *l*, flute or flageolet *n*, key-board base and case, keys, and valves, substantially as set forth.

3. The combination, with the pipe or flute, of the keys *m*, having valves for the holes of the pipes, the rock-shaft having fingers to be acted upon by the keys, the arm 6, and valve for admitting air to the pipe, substantially as set forth.

4. In combination with the pipe having a lip for producing a primary tone and holes for the other notes or tones, a valve to admit air, keys, and valves for closing the holes in the pipes, the lifters on the keys that act to the left to raise the lower valves from the holes of the pipe, substantially as set forth.

Signed by me this 22d day of December, A. D. 1881.

NEWMAN R. MARSHMAN.

Witnesses:
GEO. T. PINCKNEY,
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