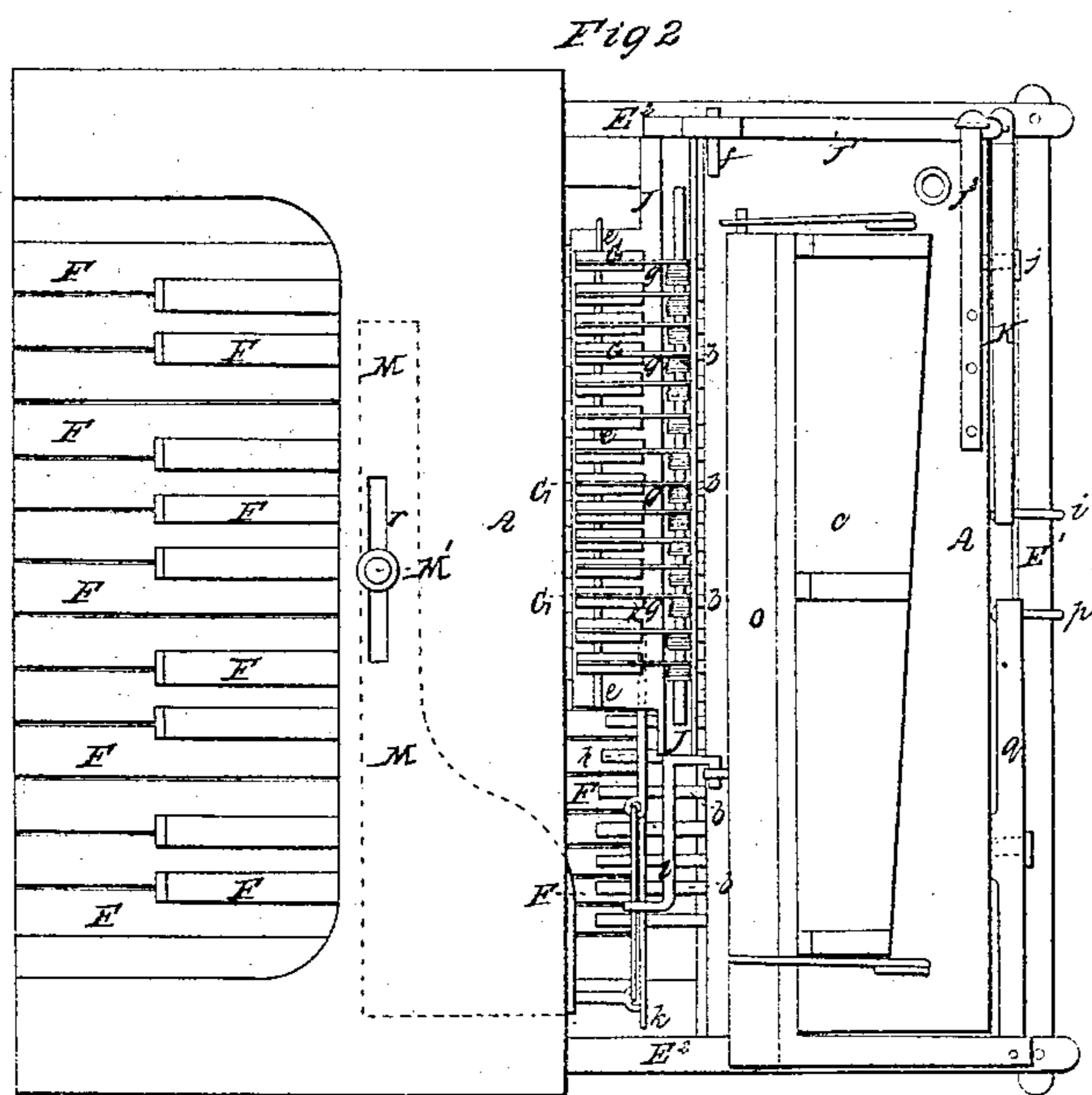
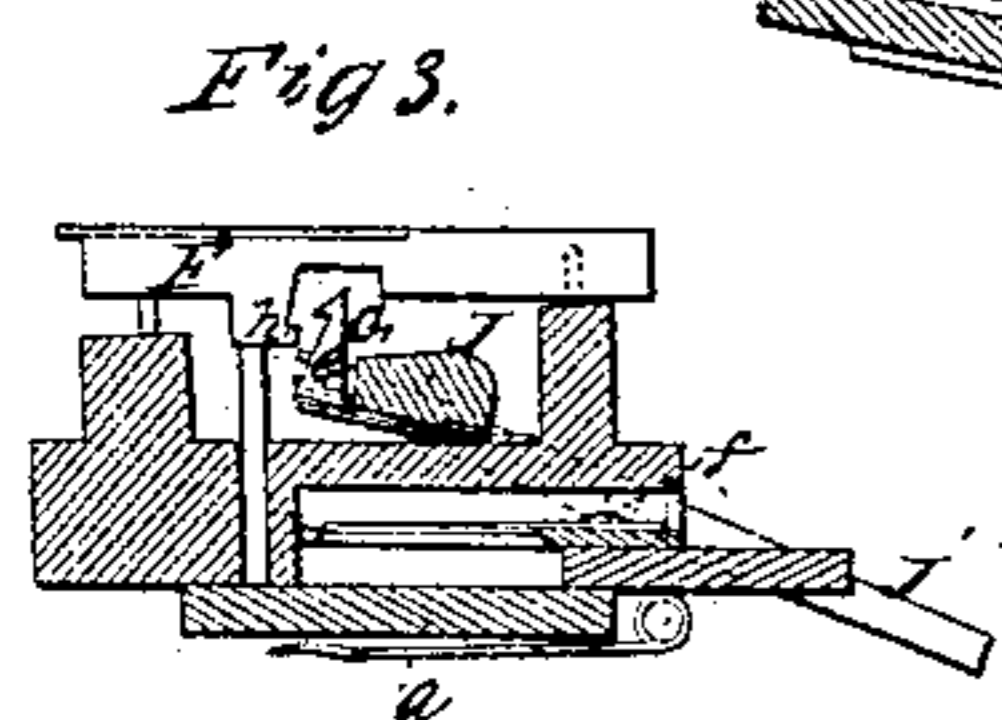
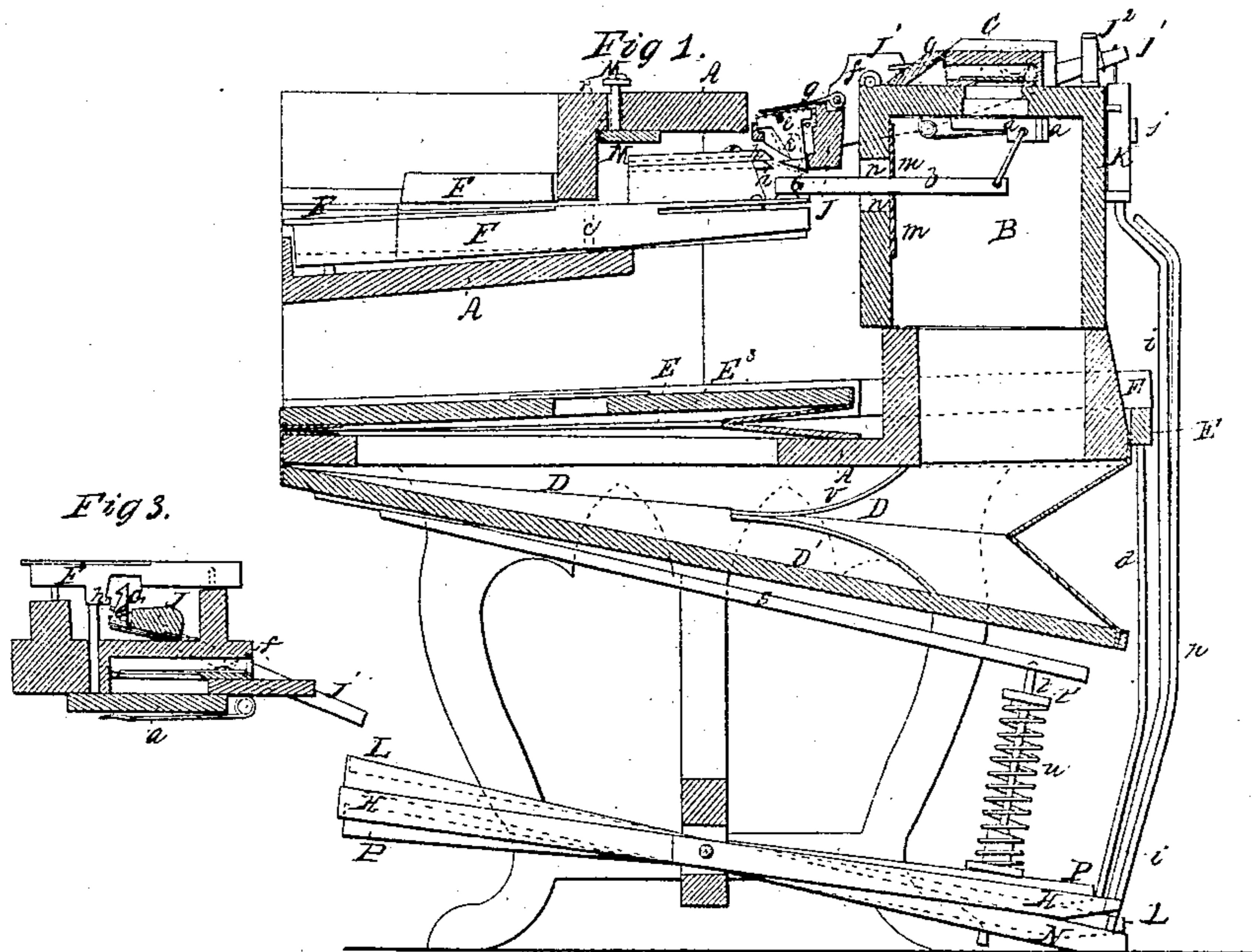


W. H. Bigelow, Organ Action.

N^o 33,180.

Patented Sep. 3, 1861.



Witnesses:
J. C. Combs
W. F. Fuchs

Inventor:
W. H. Bigelow
by M. M. Co.
att_{ys}

UNITED STATES PATENT OFFICE.

WILLIAM H. BIGELOW, OF SOUTH FRAMINGHAM, MASSACHUSETTS.

IMPROVEMENT IN MELODEONS.

Specification forming part of Letters Patent No. 33,180, dated September 31, 1861.

To all whom it may concern:

Be it known that I, WILLIAM H. BIGELOW, of South Framingham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Melodeons and other Reed Musical Instruments; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section of a melodeon with my improvements. Fig. 2 is a plan of the same. Fig. 3 is a vertical sectional view of a modification of my invention.

Similar letters of reference indicate corresponding parts in all the figures.

My first invention consists in the employment, in combination with any desirable number of the playing-keys of a melodeon or other reed instrument of similar character, of a system of hooks controlled by a pedal for the purpose of keeping the keys depressed and prolonging the tones of the reeds for as long a time as desired after the removal of the fingers of the player from the keys.

It also consists in operating the reed-valves by means of levers connected with the air-chest by means of an air-tight fulcrum, substantially as hereinafter specified; and it further consists in an improved device operated by a pedal in combination with the receiving-chamber of the bellows to reduce its capacity and have the effect of a soft swell on the tone of the reeds.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is the case of the instrument.

B is the air-chest, on the top of which is placed the reed-board C, and within which are arranged the reed-valves *a a*.

D is the receiving-chamber of the bellows communicating with the air-chest B, and E is the exhausting chamber or pump.

H is the pedal by which E is worked, acting through a rod *d* on a cross-bar *E'*, connecting the two side levers *E²*, which are secured to the upper board *E³*.

F F are the keys working in the usual manner on pins *c c* and operating on the valves through levers *b b*, applied in a manner to

be presently described, and G G are the hooks by which the keys are detained. These hooks may be applied to any number of the keys; but I propose generally to apply them to the keys of all the bass-notes. The said hooks are all hung opposite to their respective keys on a pin *e*, or on separate pins arranged in line with each other in a frame J, which is arranged to swing on horizontal pivots *f f*. Each hook G has applied to it a spring *g*, which tends to throw its point forward to the position shown in red in Fig. 1, to enable it to catch a hook *h*, provided on the opposite key F, when the frame J is swung forward to a suitable position by means of a pedal L, provided for the purpose, the said pedal being connected by a rod *i* with one end of a lever K, which works on a fulcrum *j* at the back of the case, and whose other end is connected with an arm J', rigidly secured to one end of the said frame. The said arm J' has also applied to it a spring J², which, when the pedal L is left free, draws back the frame J to a position in which its hooks G G will not interfere with the hooks *h* on the keys.

M is a slide working at the back of the keyboard lengthwise of the instrument and having connected with it a rod *k*, which is arranged to work through guides in the frame J and through a separate guide *l*, attached to the said frame, and under the tops of the hooks G G in such a manner as to throw back to the position shown in black outline in Fig. 1 as many of the said hooks as it reaches, commencing at the hook farthest from the bass end of the key-board. The slide M is operated by a knob M', working through a slot *r*, so that the player may bring the rod *k* over as many of the hooks G G as he may desire to render inoperative.

When the pedal L is left free by the player, no matter what be the position of the slide M and rod *k*, none of the hooks G G will interfere with the hooks *h h*, and all the keys will operate in the usual manner; but when the pedal is depressed to throw the frame J forward, which is the condition represented in Fig. 1, as many of the hooks G G as are uncovered by the rod *k* occupy the position shown in red outline in that figure, and when the playing end of one of the keys opposite to such hooks is depressed its hook *h* is raised

past its respective hook *G* and caused to be caught by the latter and locked so as to keep open its respective valve and cause a prolongation of the note till the player liberates the pedal *L*. The springs *g g* allow the hooks *G G* to be moved back by the hooks *h h* as the latter pass in contact with them in an upward direction and throw the hooks *G G* under *h h* after the latter have passed them. In the modification of this part of my invention represented in Fig. 1 the hooks *G G* and *h h* are arranged under the front parts of the keys. The same letters of reference being used in that figure as in Figs. 1 and 2 enables the said modification to be understood. Other modifications may be made to suit the arrangement of the several parts of the instrument, but the operation will in all cases be substantially the same as described.

The levers *b b*, before mentioned, through which the keys represented in Figs. 1 and 2 operate upon their respective reed-valves, are substituted for the push-pins commonly employed to prevent any air passing to the air-chest *B* in any other way than through the reeds, and thus not only to obtain a smoother tone, but to reduce the size of and labor of working the bellows. The said levers pass through slots *n n* in the front of the air-chest *B* and through holes in a sheet *m* of india-rubber cloth or other suitable flexible material, which is tightly stretched over and secured air-tight around the edges of the slots *n*, and the said levers are secured in the said holes by suitable cement or by some other means which will prevent any leakage of air around them. The said sheet *m* then constitutes an air-tight fulcrum for the several levers *b b*.

N is the loud-swell pedal, operating in a well-known manner through a rod *p* and lever *q* upon a damper *O*.

P, Fig. 1, is the soft-swell pedal.

s is a board or bar.

t is a rod, and *u* is a spring, constituting my improved device for operating on the bellows to produce the soft swell. The said bar or board *s* is hinged at its rear end to the lower board *D'* of the receiving-chamber *D*, near to and parallel with the axis of oscillation of the said board itself. The rod *t* works freely through the pedal *P*, and is made with a col-

lar *t'*, below which the spring *u* is coiled around it, the bottom of the said spring always bearing upon the pedal *P*, the collar *t'* always bearing upon the spring *u*, and the bar *s* always resting upon the top of the rod *t*. When the pedal *P* is at rest, the bar *s* rests upon the spring *u*, which remains in its normal condition and permits the bellows to be operated by the pedal *H* in the usual manner, the bar *s* being in the meantime in a state of rest; but when the player's foot is pressed upon the pedal *P* the said pedal is caused to press upward the spring *u*, and the said spring caused to press upward through the rod *t* against the bar *s*, which is then caused to press against the board *s*. The spring *u* is then caused in a greater or less degree, according to the amount of depression given to the pedal, to counteract the pressure of the spring *u*, which is applied within the chamber *D* to expand it, and the expanding movement of the said chamber is so far interfered with that the draft through the reeds is made very weak, and the tone thereby rendered soft.

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

1. The employment, in combination with any number of the playing-keys of a melodeon or other instrument having reeds and keys of similar character, of a series of hooks *G G* or other catches or stops operating, substantially as described, to lock the keys after the depression and produce the effect herein set forth.

2. The employment, in combination with the series of hooks *G G*, of a sliding stop-bar *k*, operating substantially as and for the purposes herein specified.

3. The transmitting of the movements of the keys to the reed-valves by means of levers *b b*, working through the air-chest on air-tight fulcrum, substantially as herein specified.

4. The combination of the pedal *P*, the spring *u*, and the board or bar *s*, the whole applied to operate substantially as herein described, in combination with the receiving-chamber *E* of the bellows, for the purpose set forth.

WILLIAM H. BIGELOW.

Witnesses:

ANDREW J. PERRY,
EDWIN L. PERRY.