2 Sheets—Sheet 1.

M. J. MATTHEWS.

Reed-Organ.

No. 196,984. **Patented Nov. 13, 1877.**

Fig. 1.

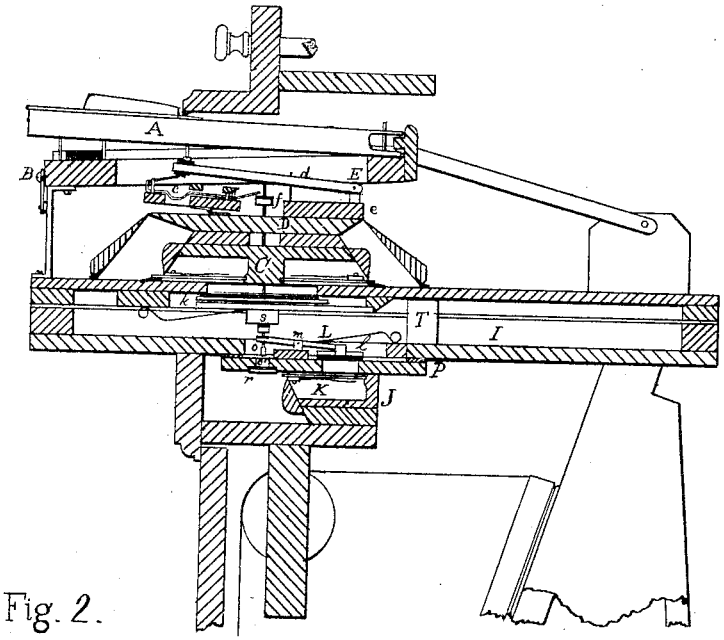
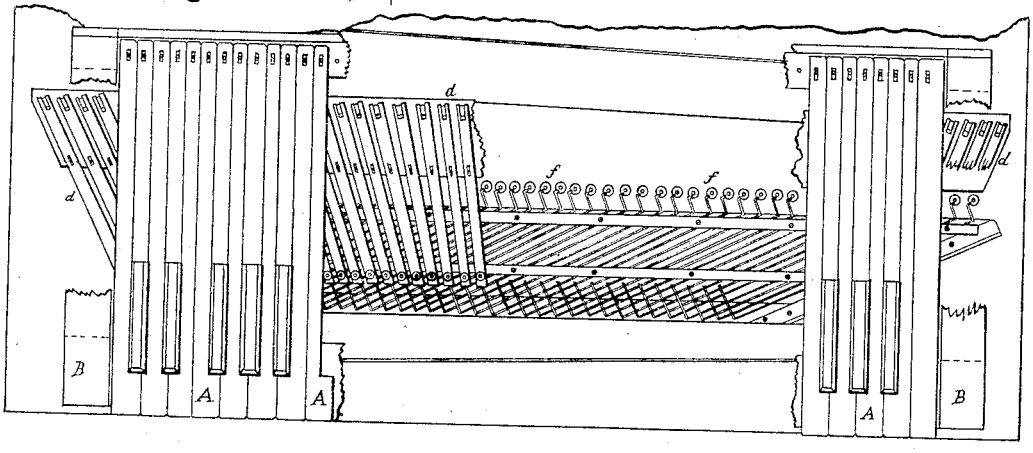


Fig. 2.



WITNESSES.

Philippe Mabille
Chas. E. Holman.

INVENTOR.

Mason J. Matthews.

M. J. MATTHEWS.
Reed-Organ.

No. 196,984. Patented Nov. 13, 1877.

Fig. 3.

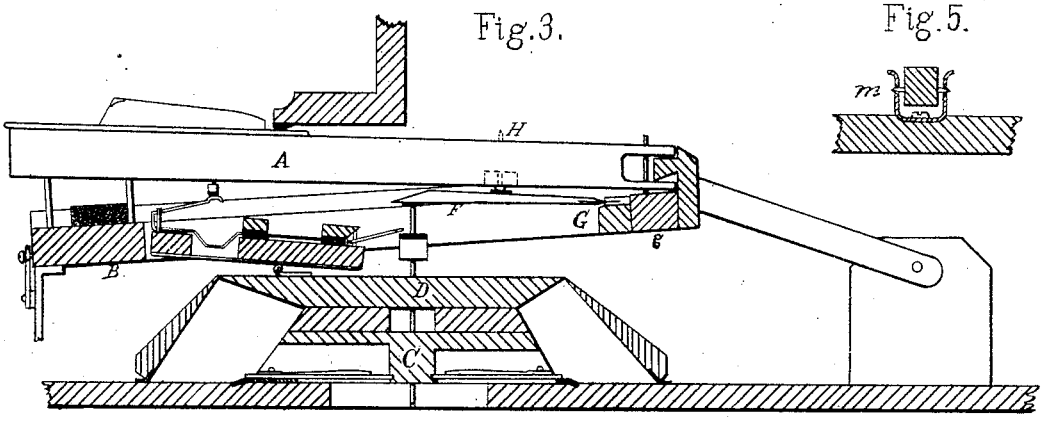
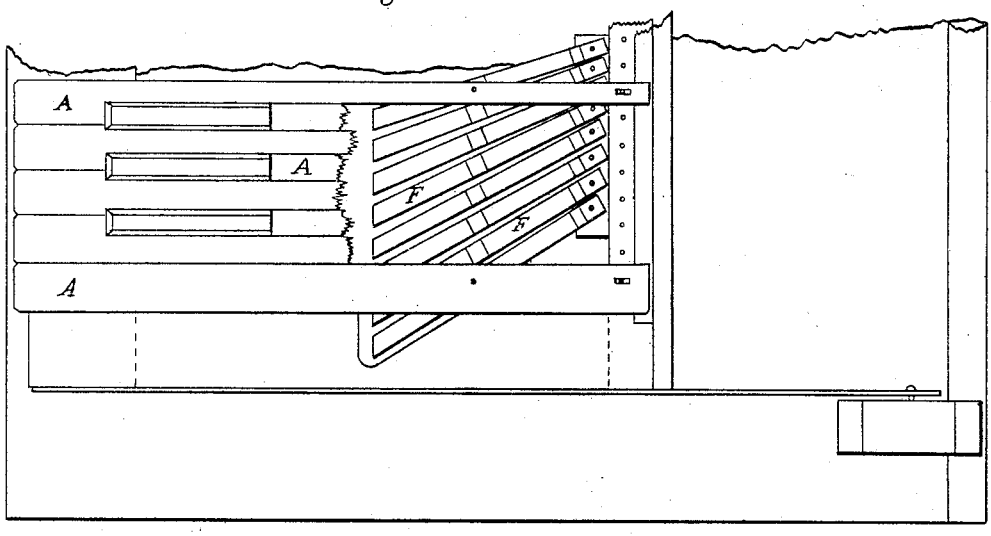


Fig. 5.

Fig. 4.



WITNESSES.

Philippe Mabille

Chas. E. Holman

INVENTOR.

Mason J. Matthews

UNITED STATES PATENT OFFICE.

MASON J. MATTHEWS, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO MASON & HAMLIN ORGAN COMPANY, OF SAME PLACE.

IMPROVEMENT IN REED-ORGANS.

Specification forming part of Letters Patent No. **196,984**, dated November 13, 1877; application filed June 27, 1877.

To all whom it may concern:

Be it known that I, MASON J. MATTHEWS, of Boston, in the State of Massachusetts, have invented certain Improvements in Reed-Organs, of which the following is a specification:

My invention relates to reed-organs of the class known as "cabinet-organs," having exhaust-bellows.

It consists of an enlarged and peculiarly-proportioned scale of resonating-tubes, pallet-openings, and reeds, in connection with novel means to operate them.

The first object of my invention is to provide, by the simplest possible method, capacity for combined delicacy, elasticity, and volume of tone-power far beyond anything that has hitherto been obtained from reeds of ordinary construction under ordinary conditions.

The second object of my invention is to provide the greatest possible margin between the two extremes of tone-power without the tendency to blow out of tune.

The reeds of all ordinary and most approved cabinet-organs are situated below the keys, and are mounted in tubes arranged at distances apart corresponding to the scale of these keys, so that each reed-pallet can be operated by a direct action from the key connected with it. This is a convenient but imperfect condition, inasmuch as it involves the employment of a disproportioned scale of reeds having defective lower registers, especially so that the middle and bass part of the instrument is weak and emasculated, affording but a small margin between its softest and loudest effect, and lacking the vim and strength necessary to resist the varying wind-pressure of the bellows without sounding disagreeably out of tune, or, when the highest pressure is applied, refusing to speak altogether.

It is impossible to make an agreeable disposal of the defects above named when the ordinary or key-board scale of reeds and tubes are employed.

The instrument constructed according to my invention is about three times the power of any ordinary cabinet-organ having an equal number of sets of reeds. Its margin between the softest and loudest effect is proportioned to its power. Its bass and treble are balanced, so that there is no disagreeable preponderance of either over the other. It is essentially superior to ordinary instruments also in its general character of tone, which is full, deep, elastic, and pipe-like.

The following specification, with explanatory drawings, sets forth in detail the nature and manner of construction of my invention.

Figure 1 is a sectional elevation, representing the principal parts of an instrument embodying my invention. Fig. 2 is a plan view, showing extension-levers and octave-coupler, some of the levers and keys being removed. Fig. 3 represents, in sectional elevation, a modification of extension-levers mounted on the back of the key-frame. Fig. 4 is a broken-off plan view of modification extension-levers, octave-coupler being removed. Fig. 5 represents, in cross-section, a ventrillo-lever with flange joint. Figs. 3, 4, and 5 are drawn on a larger scale than Figs. 1 and 2.

A represents the keys, B the key-frame, C the tube-board, and D the swell-cap, all of which are of ordinary construction, and differ from the parts answering to them in other instruments only in the matter of proportions and size. Mounted on the swell-cap D is a series of extension-levers, *d*. These are hinged to the flanges E, which are glued into the rail *e* on the swell-cap D. The levers *d*, at their front ends, are arranged at distances apart corresponding to the scale of the keys A. The push-pins *f* extend beyond the scale of the keys A. The levers *d* spread out toward the back, as shown in Fig. 2, so that they rest on the push-pins *f*, which they are to operate. The keys A operate the push-pins *f* through the medium of the extension-levers *d*, and not directly, as in ordinary cases. The octave-coupler *c* is operated also by the keys A through the medium of these levers *d*.

In Figs. 3 and 4 another kind of extension-levers, F, is represented as mounted on a strip, G, which is fastened to the back rail *g* of the key-frame B. These levers F are parchment-jointed, and are arranged so that their respective keys shall operate them at a point most desirable for securing the proper opening of

the pallets which they are intended to affect.

The proper dip of the keys A is obtained by the regulating-screws H.

When the levers F are employed the octave-coupler *c* is operated directly by the key A, as shown in Fig. 3.

Mounted on the under side of the wind-chest I is a tube-chest or ventrillo-chest, J, containing a set of reeds, K. This set of reeds K is operated by the keys A through the medium of extension-levers *d* or F, push-pins *f*, valves *k*, and levers and valves L *l*. Each lever L is provided with a regulating-screw, *o*. Below each regulating-screw *o* is a hole, *o'*, through the mortise-board P, upon which the tube-board J is fastened. A groove is made along the mortise-board P, in which a leather-covered strip of wood, *r*, is inserted.

To regulate the action of ventrillo-chest J, the strip *r* is removed and the regulating-screws *o* turned by means of a suitable key—a key made to fit the regulating-screw *o*—until a proper relation is made between the block *s* and the wooden or leather head of the regulating-screw *o*. The lever L being mounted in a metallic flange-joint, as shown in Fig. 5, the regulating-key may be pressed up against the regulating-screw *o*, so that the key A may be made to wink. Without this provision the process of regulation would be exceedingly difficult.

Instead of the double-pointed center-pin working in impressions made in the metallic flange *m*, it might be pivoted and work in holes made through the flange. Any joint that might be disturbed in process of regulation is objectionable.

A block, T, is inserted between the upper and lower board of the wind-chest I, to prevent any maladjustment of the action which might be caused by the exhaust force of the bellows drawing the parts together.

The ventrillo-chest with enlarged scale of reeds may be mounted on the under side of the wind-chest I, while the other parts of the instrument are of ordinary construction, both as to action and scale of reeds, in which case the levers L would have to radiate and be set apart at distances corresponding to the compass of the keys, and also to the enlarged scale of reed-tubes. This arrangement is simplified by the employment of the flange-joint *m*.

I claim as my invention—

1. An enlarged scale of reeds extending laterally beyond the compass of the keys of the manual, and combined therewith by intermediate levers, arranged to operate the valves *k* through the medium of the push-pins *f*, substantially as described.

2. In combination with a series of intermediate levers, arranged to operate the valves *k* through the medium of the push-pins *f*, and connecting the keys of the manual with an enlarged scale of reeds, a coupling mechanism, arranged to operate substantially as described.

3. The lever L, having a metallic flange-joint mounted on the ventrillo-chest J P, in connection with the operating reed-valves of a cabinet-organ, substantially as and for the purpose set forth.

4. The combination of the regulating-screw *o* in the lever L, the opening *o'*, and strip *r* with the operating reed-valves of a cabinet-organ, substantially as set forth.

In testimony whereof I have herewith set my hand this 25th day of June in the presence of two subscribing witnesses.

MASON J. MATTHEWS.

Witnesses:
SEWALL D. SAMSON,
C. FRANK SOUTHACK.