2 Sheets—Sheet 1.

G. B. KELLY & A. K. HEBARD.

REED-ORGAN SWELLS.

No. 191,532. Patented June 5, 1877.

FIG. 1.

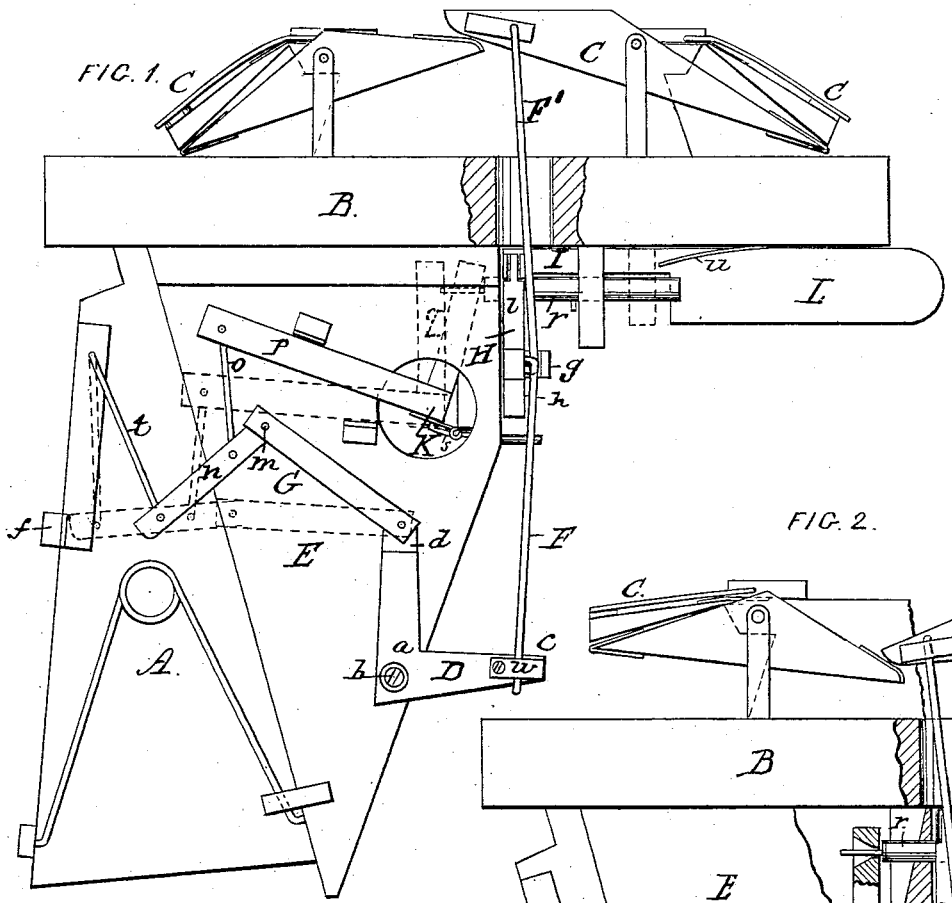


FIG. 2.

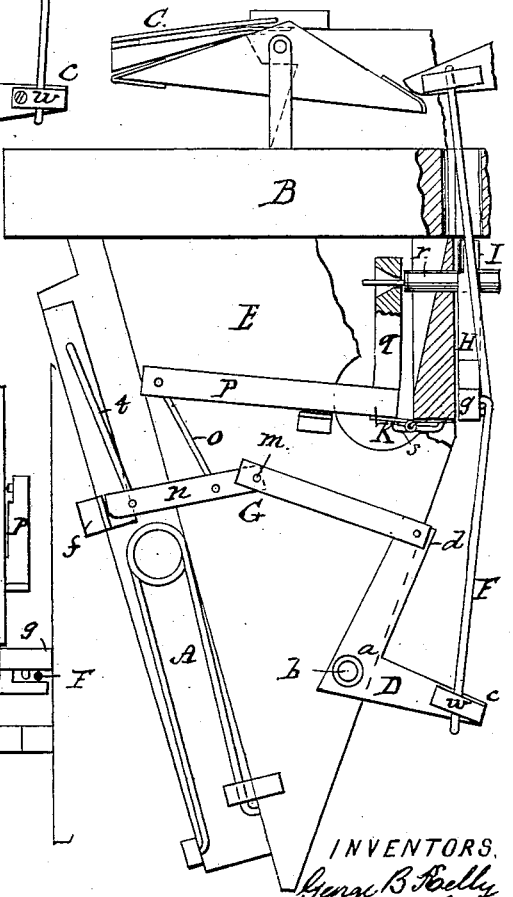
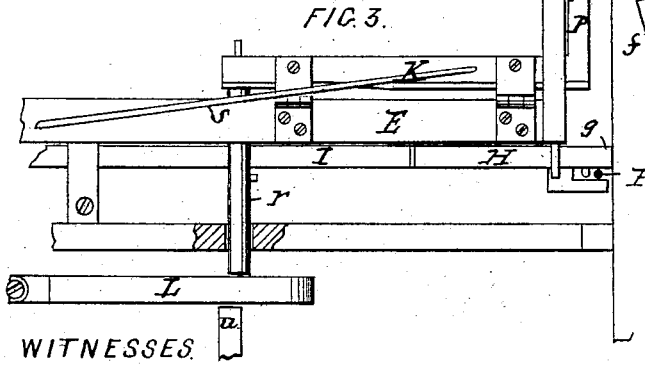


FIG. 3.



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2 Sheets—Sheet 2.

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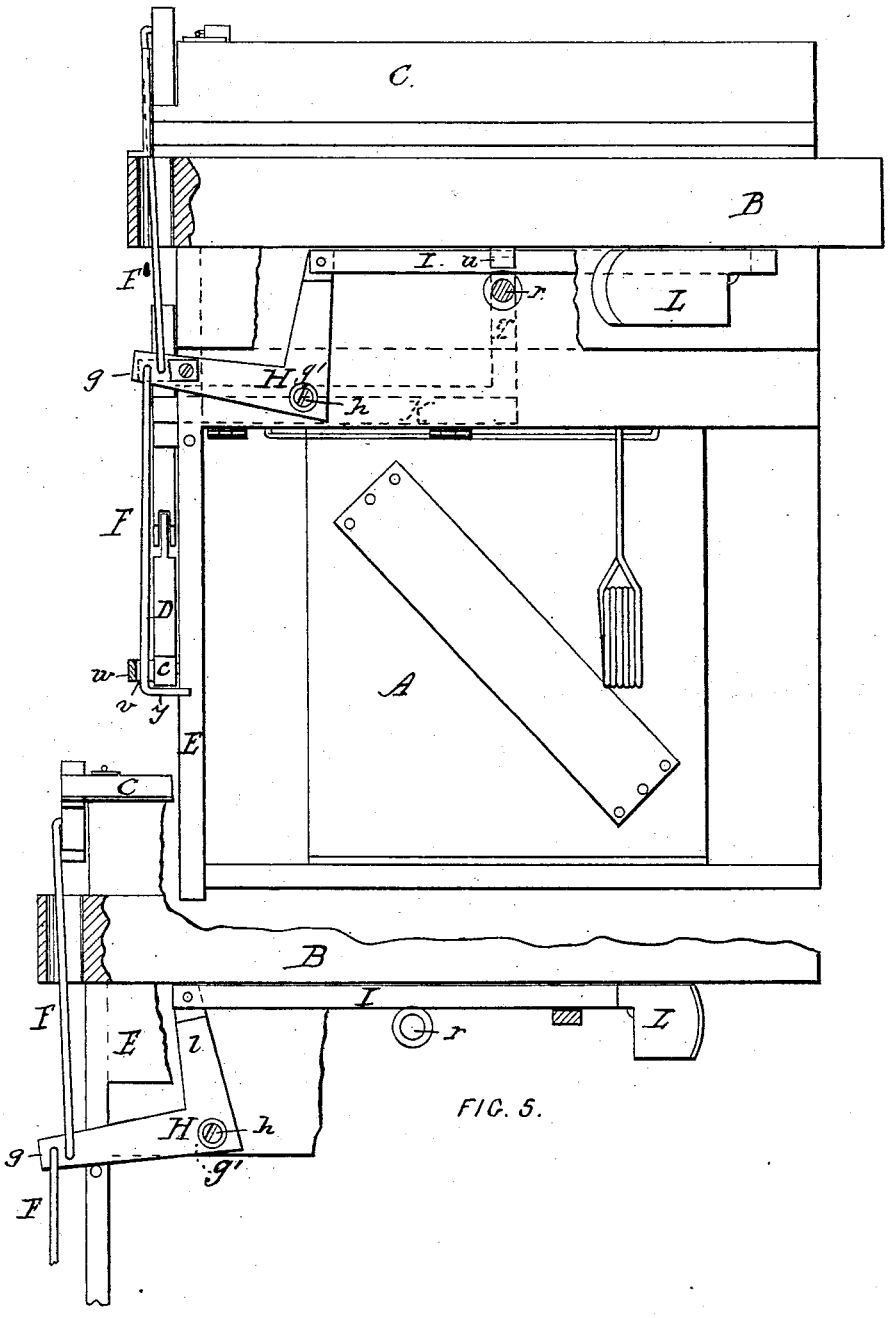

FIG. 4.

FIG. 5.

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UNITED STATES PATENT OFFICE.

GEORGE B. KELLY, OF BOSTON, AND ALBERT K. HEBARD, OF CAMBRIDGE, MASSACHUSETTS.

IMPROVEMENT IN REED-ORGAN SWELLS.

Specification forming part of Letters Patent No. **191,532**, dated June 5, 1877; application filed June 2, 1876.

To all whom it may concern:

Be it known that we, GEORGE B. KELLY, of Boston, in the county of Suffolk, and ALBERT K. HEBARD, of Cambridge, in the county of Middlesex, both in the State of Massachusetts, have invented an Improvement in Reed-Organs, of which the following is a specification:

This invention relates to reed-organs in which the swell is operated by and through the movement of the bellows; and it consists, mainly, in an arrangement of the levers between the bellows and the swell, substantially as hereinafter described, whereby the bellows can be connected with the swell or disconnected therefrom, at pleasure, by the performer.

In Plate 1, Figure 1 is a view, in elevation, at one end of the bellows and swell of a reed-organ, showing our improved arrangement of levers for connecting and disconnecting the bellows and swell. Fig. 2 is a similar view to Fig. 1, with the swell opened instead of closed, and the connection between the bellows and swell established instead of broken, as shown in Fig. 1, although by dotted lines in said Fig. 1 the bellows and swell are shown as connected. Fig. 3 is a plan view of the under side of a valve-chest. In Plate 2, Fig. 4 is a front elevation of the bellows and swell; and Fig. 5, a front elevation, in part, as will hereinafter appear.

In the drawings, A represents the bellows, B the valve-chest, and C the swell, of a reed-organ, all constructed and arranged together as ordinarily in reed-organs, and, therefore, needing no particular description herein.

The swell is connected to the bellows, so as to be operated therefrom, and for all the purposes of the present invention this connection is made as follows: D, an angle-lever, which turns at its angle *a* on a fulcrum, *b*, of the fixed frame E; F, a pitman-rod, which connects one arm, *c*, of the angle-lever D with the swell C; and G, a rod which is, at one end, hung to an arm, *d*, of the angle-lever D, and at its other end can abut against the projection *f* on the bellows, all as shown more particularly in Fig. 2, and also in Fig. 1 by dotted lines. The pitman-rod F F′ is in two parts, and these two parts are connected by the arm *g* of a crank-lever, H, which, at its angle *g*, turns on a fulcrum, *h*, of the fixed frame E, and at its arm *l* is connected to a rod, I, arranged to slide against the under side of the valve-chest. The rod G is in two parts, which are pivoted together at *m*, making of the rod a toggle-lever. One arm, *n*, of this lever G is hung, by the rod *o*, to the arm P of a rocker-shaft, K, which is arranged to turn upon the frame E, and to be rocked in one direction by pressing upon its arm *q* through a stem, *r*, guided in the frame E, and adapted to be pressed upon by the lever L, arranged upon the under side of the valve-chest B, and to be rocked in the other direction by a bent spring, *s*, when the pressure thereon through the lever L is released, this lever L being the same as the lever ordinarily used upon organs for operating the swell by the knee of the performer, as will hereinafter appear. The arm *n* of the toggle-lever G, near its outer end, is hung by a rod, *t*, to the bellows A.

The several parts, disposed and arranged together as above described, and shown in the drawings, enable the bellows and swell to be connected to, and disconnected from, each other. For illustration, suppose the bellows and swell to be disconnected, as shown in Fig. 1; to connect them, press the lever L against the stem *r*, which rocks the rocker-shaft K, and thus forces the toggle-lever G into the position shown by dotted lines, Fig. 1, which is, with its end, against the projection *f* of bellows A; this establishes the connection desired, to maintain which we fix the lever L against accidental moving by a spring-catch, *u*.

To disconnect the bellows and swell, release the lever L, when the bent spring *s* on rocker-shaft K rocks the said shaft in proper direction to lift the toggle-lever G into the position shown in Fig. 1.

With the parts arranged as described, if the swell and bellows be disconnected, the swell can be operated directly from the knee-swell lever L by swinging it around so that its end presses against the slide I, and, through this slide, swings the angle-lever H, connected by pitman-rod F to the swell. To permit of this movement of the pitman-rod without effect on the togge-lever connection with the

angle-lever D, the connection between the pitman-rod F and the angle-lever D is made by a slot, *v*, formed in block *w* on the lever-arm D, through which the rod can freely play up and down; but to operate the rod with the angle-lever D the rod F is made with a bend, *y*, against which the angle-lever presses when actuated by the bellows.

It is apparent from the foregoing description that the mechanical connection between the bellows and the swell is not dependent in its operation upon the mechanical connection between the swell and the knee-swell lever, and vice versa; and, furthermore, while a combination of the two swells, substantially as herein described, is advantageous in a reed or other organ, it is not intended to limit the present invention thereto.

In lieu of operating the connection between the bellows and swell by means of the knee-swell lever, as herein described, an independent lever may be arranged therefor; but the arrangement specified is convenient and compact, and therefore desirable.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The toggle-lever G, rocker-shaft K, angle-lever D, and rod F, all arranged together substantially as described, and interposed between the bellows A and the swell C, so that the toggle-lever can be put into and out of connection with the bellows, to connect or disconnect the bellows and swell, substantially as and for the purpose specified.

2. The slot *v* in angle-lever D, in combination with shoulder or bend *y* of the rod F F′, which is connected to the swell through angle-lever H, substantially as described, for the purpose specified.

3. The toggle-lever G, rock-shaft K, angle-lever D, and rod F, in combination with the bellows A, swell C, and a knee-swell lever, substantially as described.

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