

(No Model.)

2 Sheets—Sheet 1.

P. J. DUGGAN.
MECHANICAL ORGANETTE.

No. 253,855.

Patented Feb. 21, 1882.

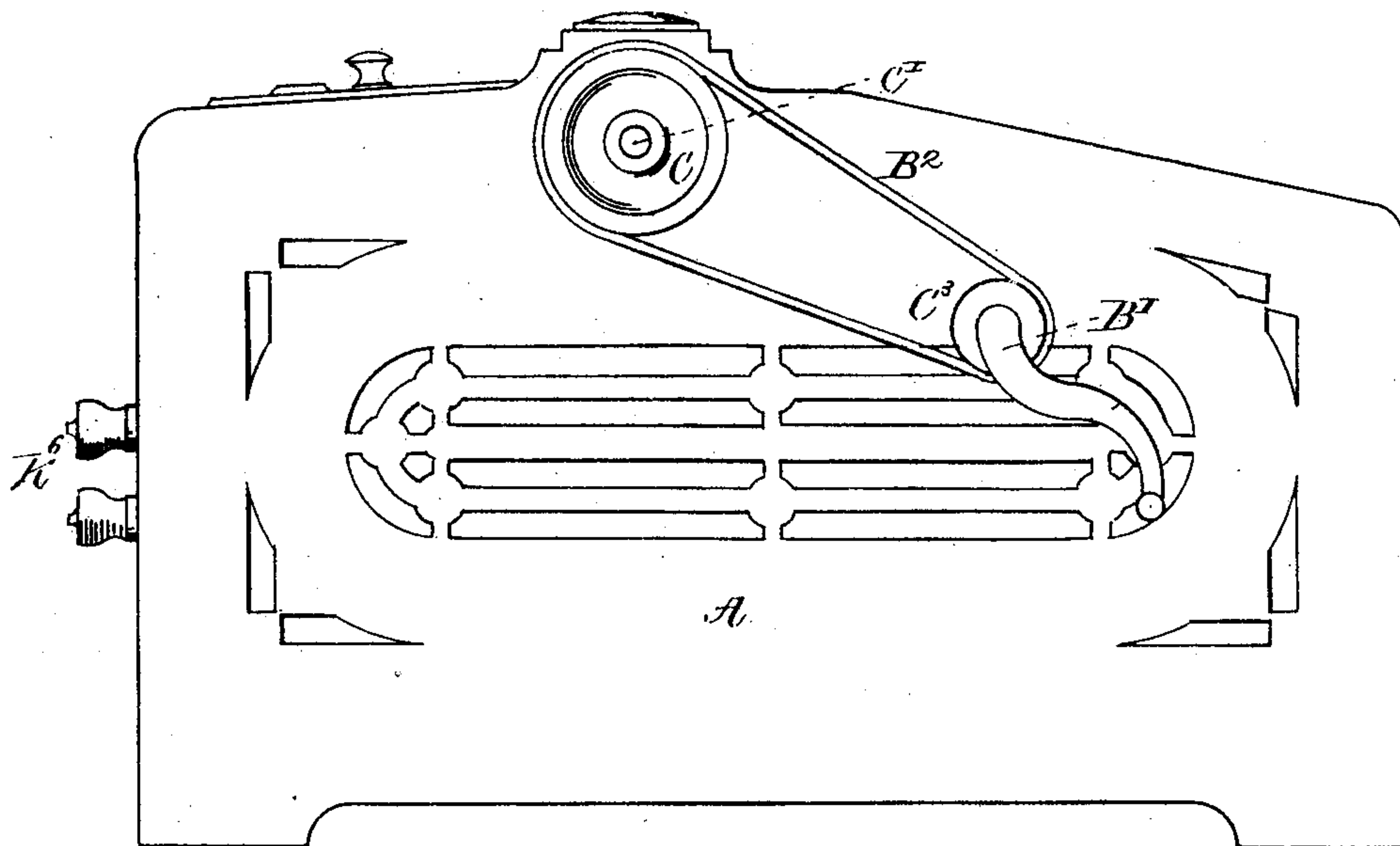


Fig. 1

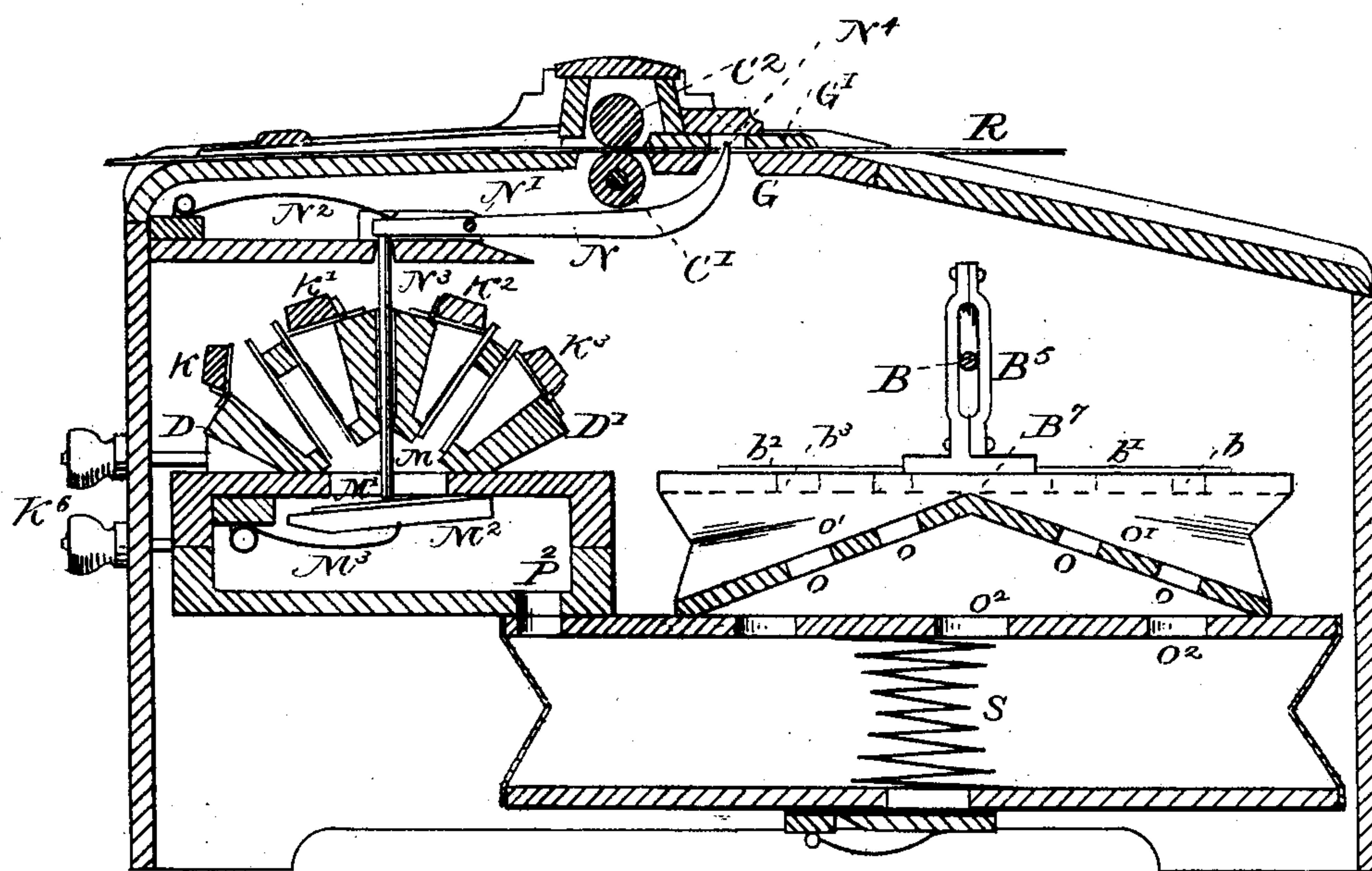


Fig. 2.

WITNESSES
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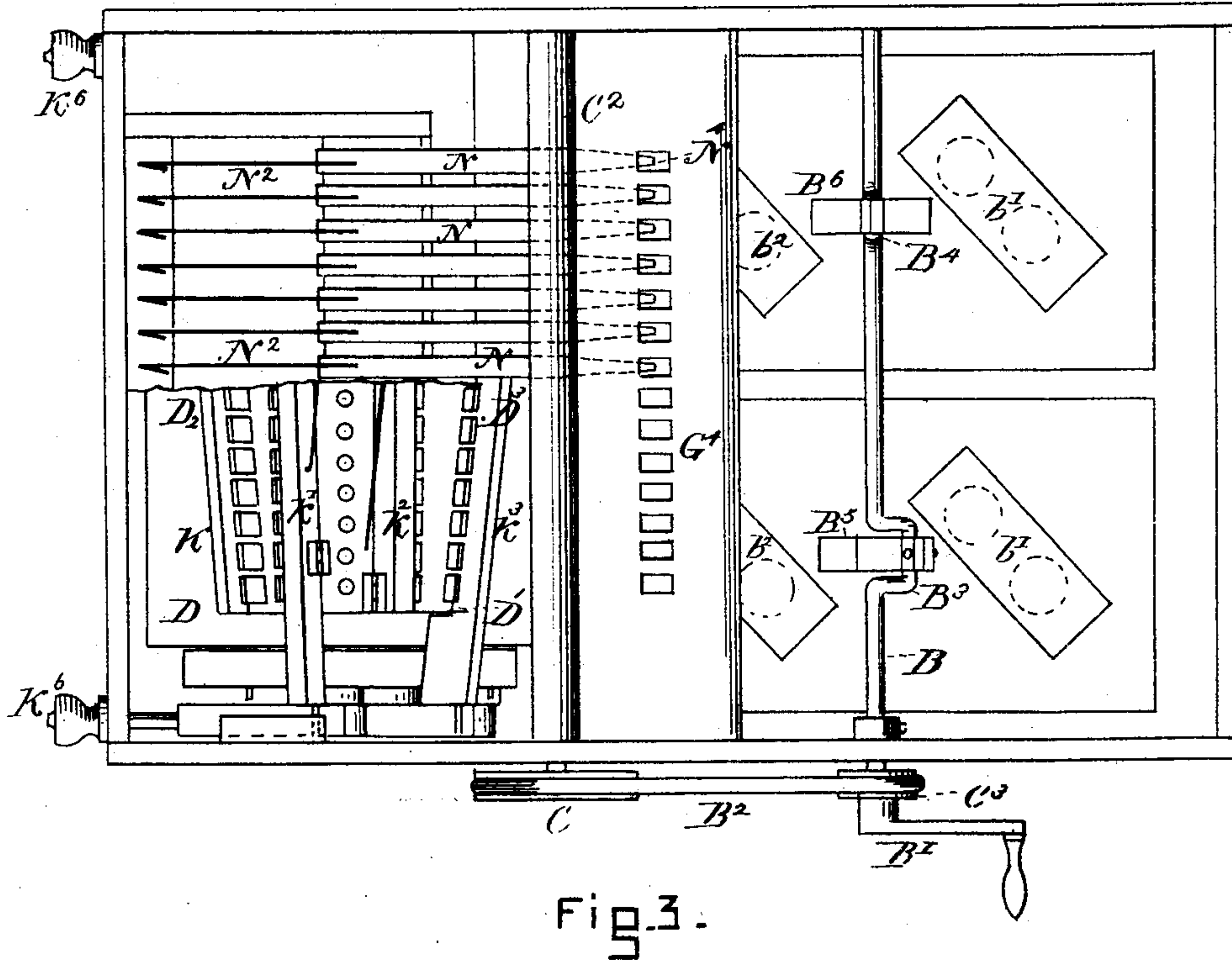


Fig. 3.

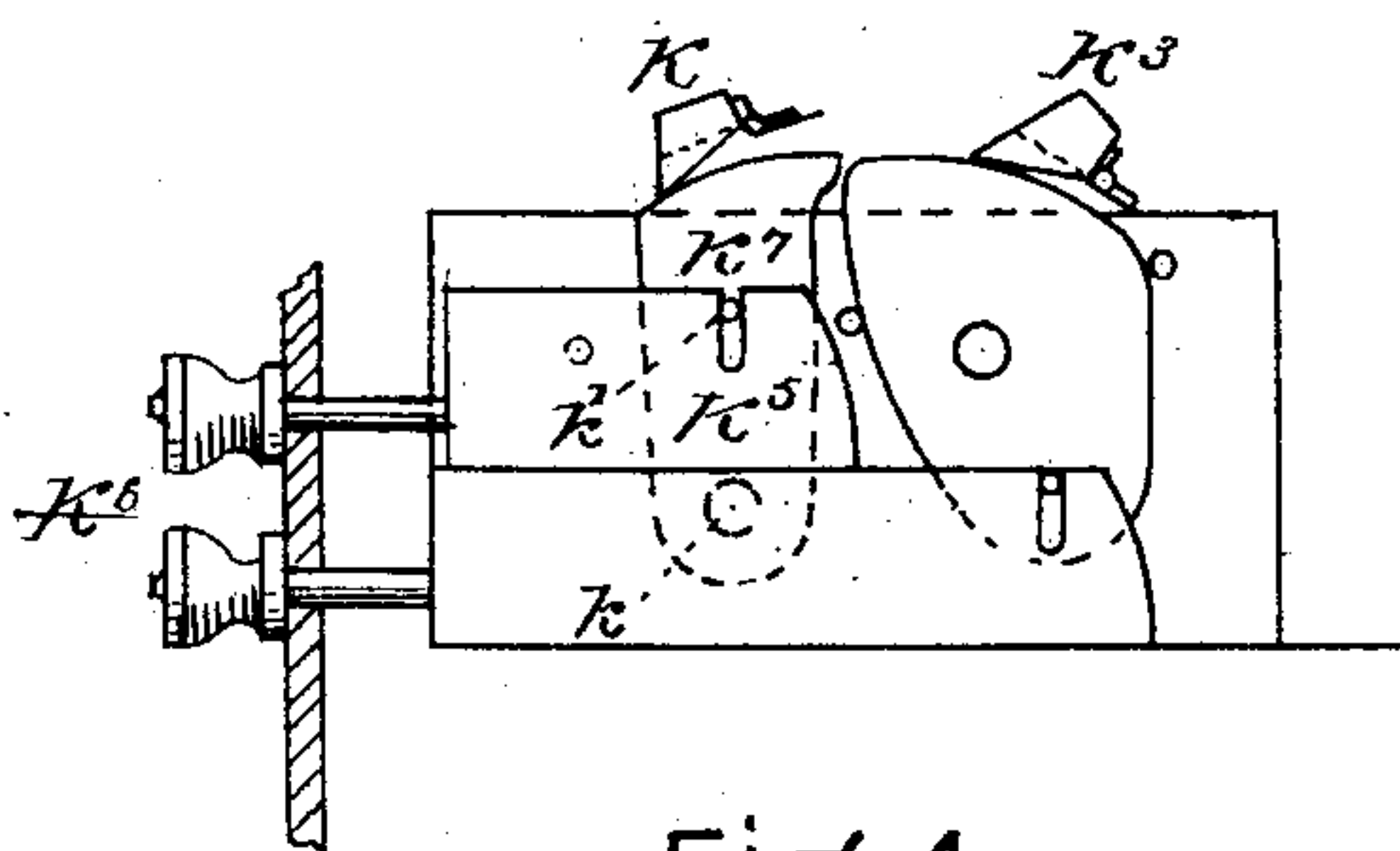


Fig. 4.

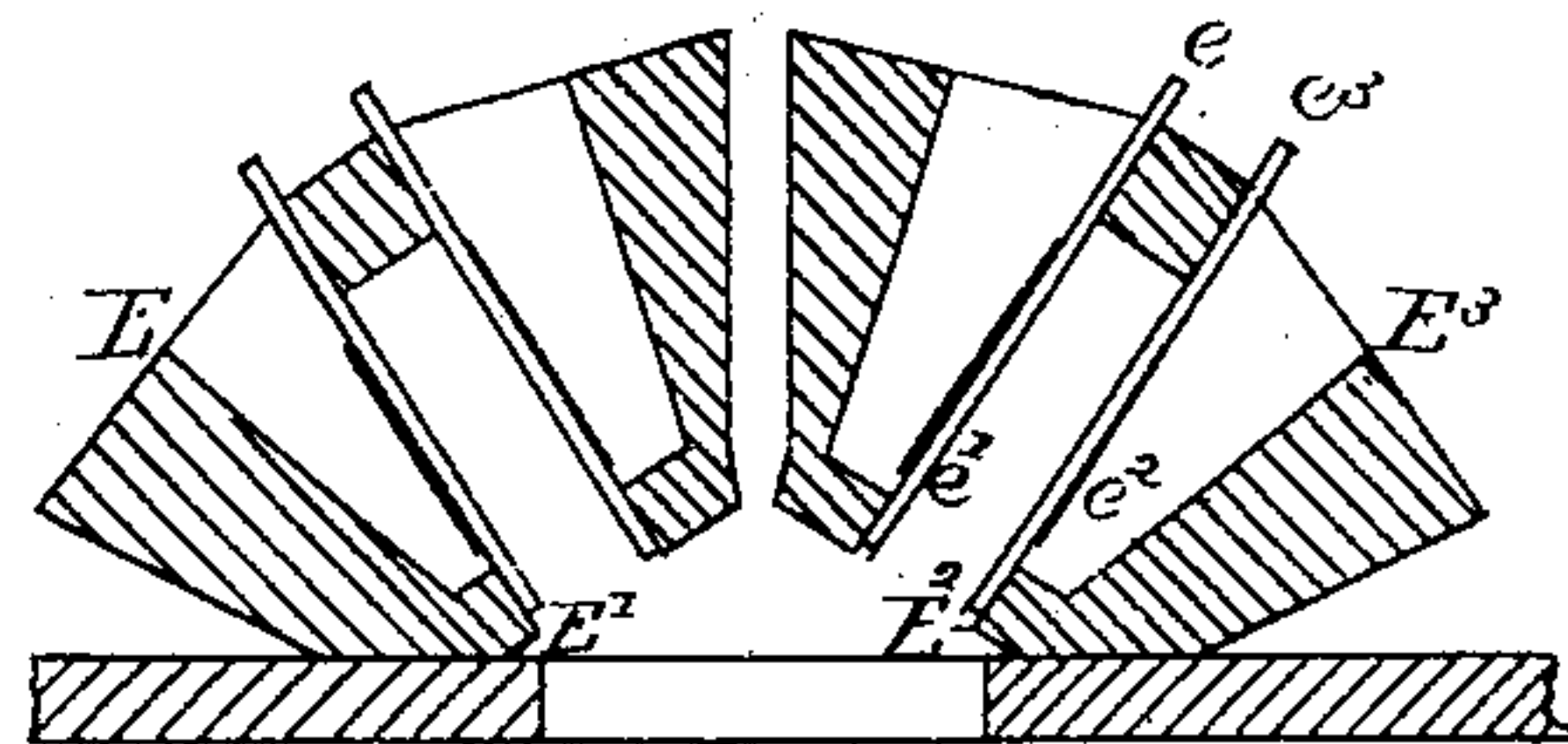


Fig. 5.



Fig. 6.

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UNITED STATES PATENT OFFICE.

PATRICK J. DUGGAN, OF BOSTON, MASSACHUSETTS.

MECHANICAL ORGANETTE.

SPECIFICATION forming part of Letters Patent No. 253,855, dated February 21, 1882.

Application filed August 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, PATRICK J. DUGGAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a certain new and useful Improved Mechanical Organette, of which the following is a specification.

The object of my invention is to improve the mechanical construction and the musical quality and compass of the organette and still retain its compactness and portability. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of my invention. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a plan view, parts being removed, so as to show some of the levers and a part of the reed-board, the reeds, and stops. Fig. 4 is a detail showing the method of operating the stops. Fig. 5 is a section showing one complete division of my reed-board with the two reeds inserted. Fig. 6 is a plan of the parts shown in Fig. 5.

In the drawings, A, Figs. 1, 2, and 3, represents the outside casing of the instrument, of which the part G, Fig. 2, represents the board and base which forms the under support for the perforated music-paper, and G' the upper support, between which two supports G and G' the music-paper R passes.

C' C², Fig. 2, are the two music-propelling rolls, one or both of which may be covered by some elastic material, if desirable.

C, Figs. 1 and 3, is a belt-pulley attached to the lower roll, C', and driven by the belt B², Figs. 1 and 3, which passes round the driving-pulley C³, Figs. 1 and 3, attached to the bellows crank-shaft B, Figs. 1, 2, and 3, B' being the hand-crank for operating the instrument.

The crank-shaft B, Fig. 3, has upon it two cranks, B³ B⁴, set at an angle of about thirty degrees the one to the other.

The bellows B⁷ B⁹, Fig. 3, are made as shown in Fig. 2—that is, double, the lower part of each being stationary, while the upper part or board oscillates or tilts on a transverse axis in the center of its length. To each of these tilting boards, and immediately over the axis, are attached slotted housings for the purpose of connecting the tilting boards respectively of the bellows with the cranks B³ B⁴. These cranks work in the slotted housings B⁵ B⁶,

Figs. 2 and 3, and cause the tilting boards to oscillate or rock. This rocking of the upper board will exhaust air from the vacuum-reservoir P, Fig. 2. This reservoir is provided with a spring, S, to assist in maintaining a vacuum, the rocking motion being produced by the action of the cranks B³ B⁴ on the slotted housings B⁵ B⁶, Fig. 3, the bellows being exhaust-bellows, and being provided with suitable air passages, and valves, b b' O O', &c., as shown in Fig. 2.

N N, Figs. 2 and 3, are a series of levers pivoted at N', each being provided with a spring, N², Figs. 2 and 3. The rear end of each lever N rests on the upper end of a push-pin, N³, Fig. 3, the lower end of which bears against one of the valves, M², Fig. 2, the valve M² being supported by a spring, M³. As the springs N² and M³ act in opposition to each other, it is necessary that the spring N² should exert sufficient force to overcome the action of the spring M³, and thus allow the valve M² to be opened, when the lever N is left free to act, as it will whenever an opening in the paper R is in such a position as to allow the end N⁴ to pass upward beyond the surface of the paper—that is, into the position represented in Fig. 2.

I will now proceed to describe the arrangement of the reed-board and its adjuncts.

I have shown in Fig. 2 a part, D D' D² D³, of a cylinder which may be built up by uniting thin pieces, or it may be first made solid and then mortised out by machinery. This grouping of wind-chambers about a common center may embrace any desired part of a circle, or even the whole.

E E' E² E³, Fig. 5, show a sectional view of a wind-chamber complete, the reed-box e' e e² e³ being located in its center, as shown.

F F' represent two reeds which are toned for unison or harmony, as may be desired.

The openings H H', Figs. 2 and 3, extend in a series the whole length of the reed-holder. Each series of openings are covered by a single continuous stop. (See K K' K² K³, Figs. 2 and 3.) The stop K is represented as open.

A complete division of my system of arrangement consists of the parts shown in Figs. 5 and 6—namely, the wind-chamber E E' E² E³, the reed-box e e' e² e³, and their reeds F F'.

The above complete division constitutes one of a series placed side by side to constitute a longitudinal division which extends the entire length of the device. (See Fig. 3.) The longitudinal divisions are arranged side by side circumferentially to form the whole segment of the reed-board.

I do not confine myself to any limited number of reed-divisions, as I may use one or more, as required.

My method of operating the stops is illustrated by Fig. 4, in which K is one of the stop-valves, and K⁷ is a swinging cam pivoted at k. This swinging cam K⁷ is operated by the slid-

ing piece K⁵ and its pin k', the pull-knob being indicated by K⁶.

Having thus described my invention, what I desire to secure by Letters Patent is—

In a mechanical musical instrument, the combination of the segment reed-board D D' D² D³ and the valves M² with the set of push-pins N³, levers N, and music-paper, all arranged and operating together, substantially as described, and for the purpose set forth.

PATRICK J. DUGGAN.

Witnesses:

HELEN M. FEEGAN,
FRANK G. PARKER.