

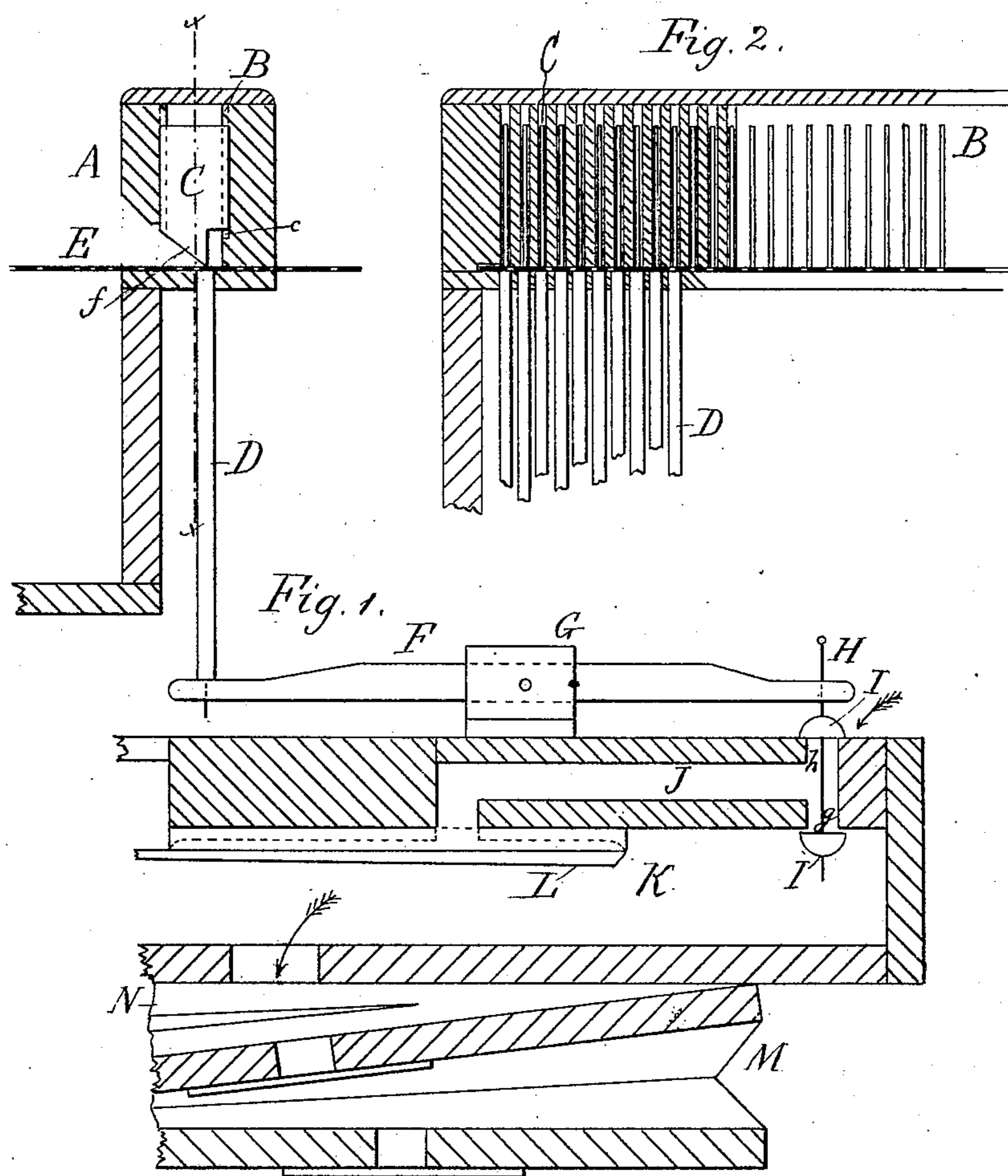
(No Model.)

A. DURKEE.

MECHANICAL MUSICAL INSTRUMENT.

No. 282,179.

Patented July 31, 1883.



WITNESSES:

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MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 282,179, dated July 31, 1883.

Application filed March 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, ALONZO DURKEE, a citizen of the United States, and a resident of the city, county, and State of New York, have invented a new and useful Improvement in Mechanical Musical Instruments, of which the following is a specification.

This invention relates to instruments which are manually operated upon or are mechanically played or controlled by means of one or more strips or sheets of paper or other suitable material perforated to represent the different notes or sounds it is desired to produce, and caused to automatically pass over air-ducts, and thereby control the action of the valves which determine the admission of air to the reeds or pipes of the instrument, whereby said reeds or pipes are made to produce musical sounds. In certain musical instruments of this character the perforated sheets or strips are made to control the action of the valves or keys by means of a series of jacks, levers, or key-moving fingers arranged on one side of said strip or sheet to operate through the perforations of such strip or sheet upon a series of push-pins or key-moving rods arranged on the opposite side of said strip or sheet. In other devices of this character the jacks, levers, or key-moving fingers have been pivoted at their rear ends in a frame above the sounding-board, the front ends of said jacks or levers being provided with downwardly-projecting noses designed to rest upon the music-sheet, so that, as the perforated sheet moves along, the noses of said jacks fall through the perforations and upon the tops of the push-pins and cause the latter to open the valves, admitting air to the sounding devices. In my present construction such pivoted jacks or levers are dispensed with, and the valve-motor rods or push-pins are operated by a series of unpivoted gravity valve-motors consisting of flat oblong pieces of metal, the lower ends whereof are beveled and pointed in such a manner as to easily pass through the perforations in the music-strip in operating the valve-motor rods. These gravity valve-motors are arranged vertically side by side in a valve-motor box mounted upon the instrument, and are held in proper position by grooves cut in the front and back walls of said box, in which

they easily rise and fall independent of each other. By such a construction and arrangement the operating mechanism is simplified and made more accurate in its operation.

In the drawings, Figure 1 is a vertical cross-sectional view of a portion of a mechanical musical instrument with my improved device in position therein; and Fig. 2 is a vertical longitudinal sectional view of the improved gravity-motor box, with the motors and valve-rods, at line *x x*, Fig. 1.

Like letters of reference, wherever they occur, indicate corresponding parts in both figures.

A is the gravity valve-motor box, mounted upon the sounding-board of the instrument.

B are vertical parallel grooves formed in the front and back walls of box A. Within said grooves B are located the gravity valve-motors C, constructed of metal and of sufficient weight to operate by their gravity the valve-motor rods D.

The motion of the perforated music-strip E is from left to right, and when, as it is moved, one of the perforations therein passes beneath a motor, C, the latter will drop therein upon the head of a corresponding motor-rod, D, thereby causing the latter to operate its special valve, and will be raised from the rod D to rest in its normal position on the moving sheet E by the edge of the perforation pressing against the beveled edge *f* of said motor's nose, and thus remove the pressure from the valve-rod D. The limit to which said gravity valve-motor may fall is regulated by the top *c*, the metal striking the bottom of the groove in which the side of the motor plays. The motor-valve rods D are coupled at their lower extremities to back falls, F, pivoted to the balance-rail G, the opposite ends of each back fall bearing a regulating-screw, H, to which are attached button-valves I, above and opposite openings *g h*, respectively, in an air-tube, J. The ordinary exhaust-chamber is represented at K, and L represents a pneumatic lever. M is an air-pump, and N exhaust-bellows. All operating parts are of the usual construction, and consequently require no further description.

I attach importance to the valve-motor box A, having its vertical guides or grooves B and stops *c* in their relations to the gravity-motor

C, which latter embodies the material part of the invention.

Having now fully described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. In an instrument substantially as described, and in combination with the box A, having vertical grooves and stops *c*, a series of gravity-motors having beveled surface *f*, adapted to serve with music-strip E, and valve-rods, as set forth.

2. In a mechanical musical instrument, gravity valve-motor box A, provided with

grooves B and stops *c*, gravity valve-motors C, valve-motor rods D, and perforated music-strip E, the whole combined and arranged to operate, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 12th day of February, 1883.

ALONZO DURKEE.

Witnesses:

JACOB J. STORER,

ALBERT P. MORIARTY.