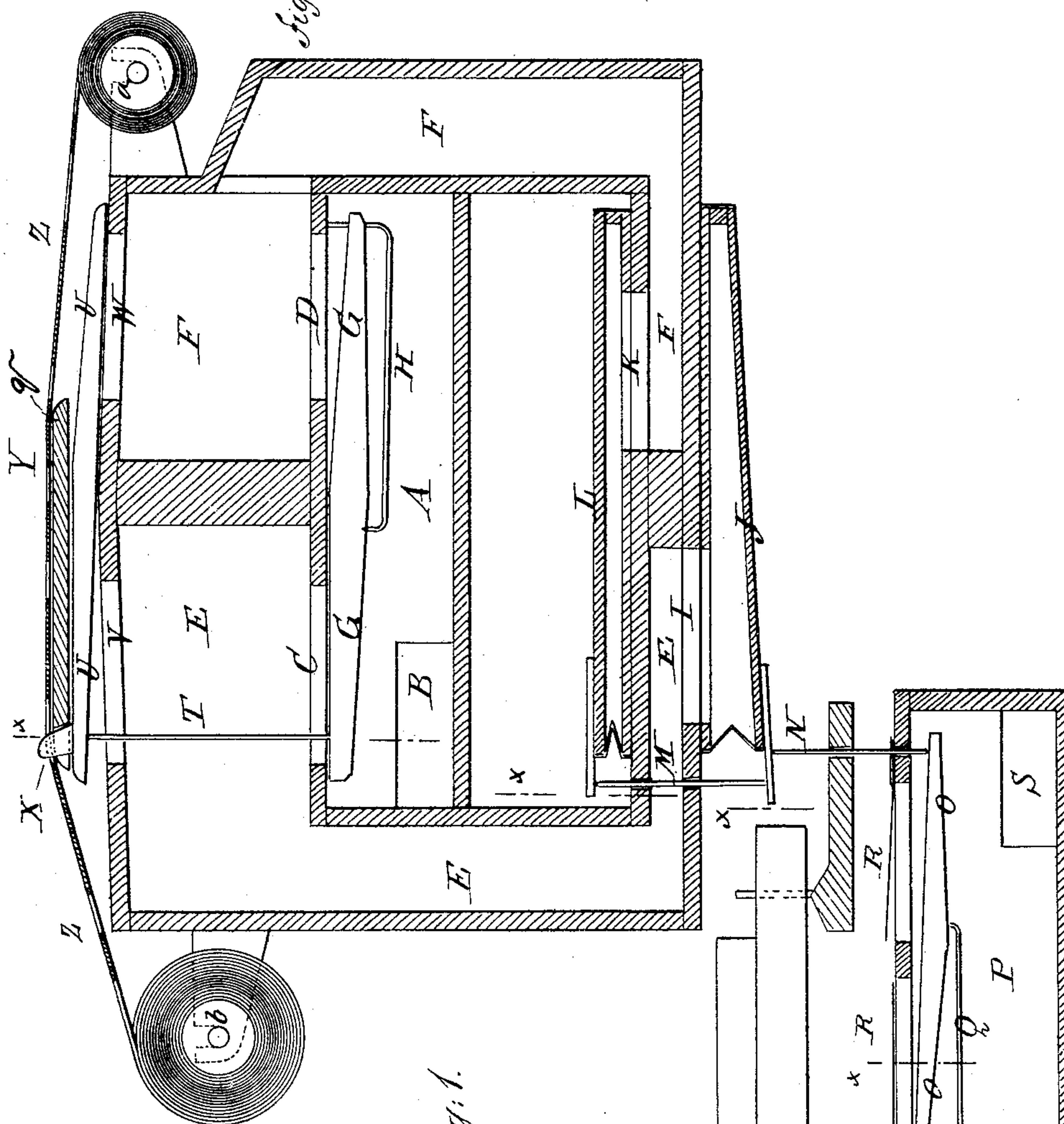
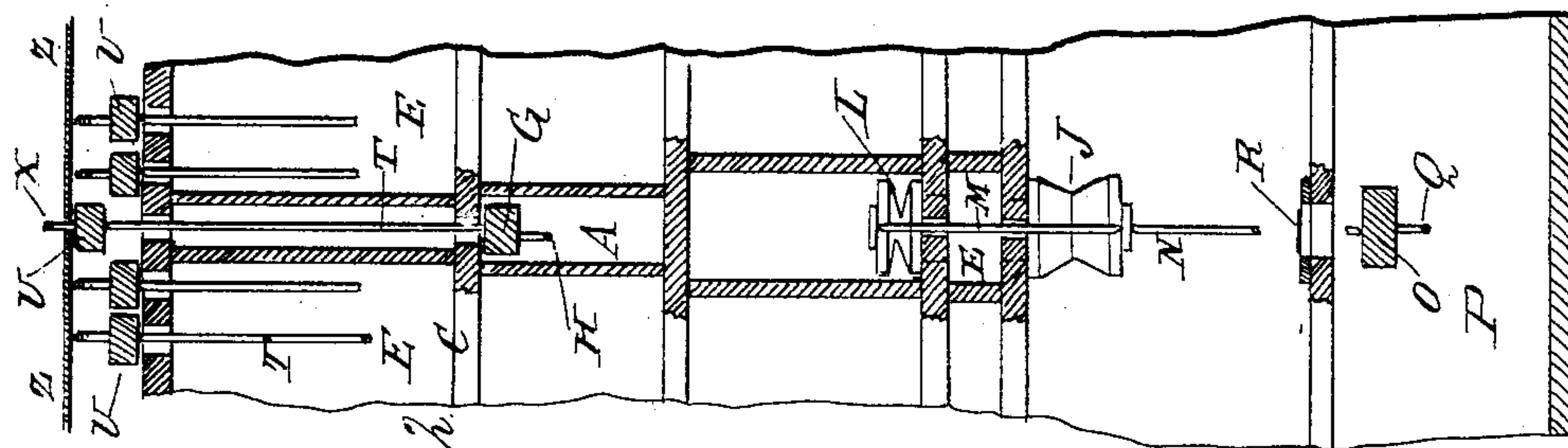


(No Model.)

G. W. VAN DUSEN.
MECHANICAL MUSICAL INSTRUMENT.

No. 258,508.

Patented May 23, 1882.



WITNESSES:

Chas. Nida
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UNITED STATES PATENT OFFICE.

GEORGE W. VAN DUSEN, OF BROOKLYN, NEW YORK.

MECHANICAL MUSICAL INSTRUMENT.

SPECIFICATION forming part of Letters Patent No. 258,508, dated May 23, 1882.

Application filed March 9, 1882. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. VAN DUSEN, of Brooklyn, E. D., Kings county, New York, have invented a new and useful Improvement in Mechanical Musical Instruments, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional side elevation of my improvement; and Fig. 2 is a sectional front elevation of the same, taken through the broken line *x x x x x*, Fig. 1.

The object of this invention is to secure promptness in the operation of mechanical musical instruments, and thus give an animation to the music produced by such instruments hitherto unattained.

The invention consists in a mechanical musical instrument constructed with balanced double valves connected by a rod, balanced bellows connected by a rod, a reed-valve and reeds, and the air-chambers and air-passages; and also in the combination, with the perforated music-sheet and the reed-valve, of balanced double valves and balanced double bellows, whereby the valves are operated by the pressure of the said music-sheet and by air-pressure, as will be hereinafter fully described.

A is the air-chamber of the instrument, from which the air is exhausted through the opening B by an ordinary exhaust-bellows. The exhaust-bellows is not shown in the drawings.

In the top wall of the chamber A are formed two openings, C D, leading into the air-passages E F, and which are closed alternately by the double valve G, which is pivoted at a point a little in front of its center to a spring-support, H, so that the said spring-support will exert a slight pressure to keep the forward parts of the valves closed. The passage E is provided with an opening, I, leading into the bellows J, and the passage F is provided with an opening, K, leading into the bellows L. The bellows J L are connected by a rod, M, so that one will open and close as the other closes and opens. With the bellows J is connected by a rod, N, the reed-valve O, which is placed in an air-chamber, P, and is pivoted at one

side of its center to a spring-support, Q, so that the said valve will be closed by the pressure of its spring-support. Air to vibrate the reeds R may be blown into or exhausted from the chamber P through the opening S.

With the forward end of the double valve G is connected by a rod, T, the double valve U, the opposite ends of which successively close the openings V W, leading into the passages E F, and opening into the open air.

Upon the upper side of the forward end of the double valve U is formed, or to it is attached, a nose, X, the rear side of which is inclined or rounded, as shown in Fig. 1. The nose X projects through slots in an apron, secured to the frame or case of the instrument for the perforated music-sheet Z to pass over as it is unwound from the roller *a* and wound upon the roller *b*. The roller *b* is revolved to wind up the perforated music-sheet Z by means of a crank operated by the hand, or by a treadle and connected gearing. The driving mechanism for the said roller is not shown in the drawings, as there is nothing new in its construction. With this construction, as the perforated music-sheet Z is drawn forward it presses against the nose X and forces down valves U and G, closing the opening V and uncovering the opening C, so that the outside air cannot enter, and the air from the bellows J will be drawn through the passage E into the exhaust-chamber A and out through the exhaust-opening B, closing the bellows J and allowing the reed-valve O to close. At the same time the closing of the forward part of the valve U and the opening of the forward part of the valve G opens the rear part of the said valve U and closes the rear part of the said valve G, so that the outside air will enter through the opening W, and will pass through the passage F and enter the bellows L, so that the said bellows L will be easily opened by the closing of the bellows J. As a perforation of the music-sheet Z comes over the nose X the forward end of the valve U will be opened, and the forward end of the valve G will be closed by atmospheric pressure upon the rear ends of the said valves, so that outside air will enter the bellows J, and the air will be exhausted from the bellows L, which movement opens the reed-valve O and allows the air to act upon the

reeds R. The forward end of the valve U, when raised, is held up by the action of the spring-support H until again pressed down by the music-sheet Z. By this construction the valves
5 U G and the bellows J L are balanced, so that they will be very easily moved, and their movements will consequently be prompt, and the music will thus be given with more animation than has heretofore been practicable with this
10 class of instruments. With this construction, also, the music-sheet Z is made to act as a power to operate the valve U and close the opening V, so that the top action heretofore required is no longer necessary, and the construction of the instrument is greatly simplified and
15 cheapened.

The instrument may be provided with keys *d* and push-pins *e* for operating the reed-valve O by hand when desired.

20 Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A mechanical musical instrument constructed substantially as herein shown and described, and consisting of the double balanced valves U G, connected by a rod, T, the balanced bellows J L, connected by a rod, M, the reed-valve O, connecting-rod N, the reeds R, the air-chambers A P, and the air-passages E F, as set forth. 25

2. In a mechanical musical instrument, the combination, with the perforated music-sheet Z and the reed-valve O, of the balanced double valves U G, and the balanced bellows J L, substantially as herein shown and described, whereby the valves are operated by the pressure of the said perforated music-sheet and by air-pressure, as set forth. 30 35

GEORGE W. VAN DUSEN.

Witnesses:

JAMES T. GRAHAM,
C. SEDGWICK.