

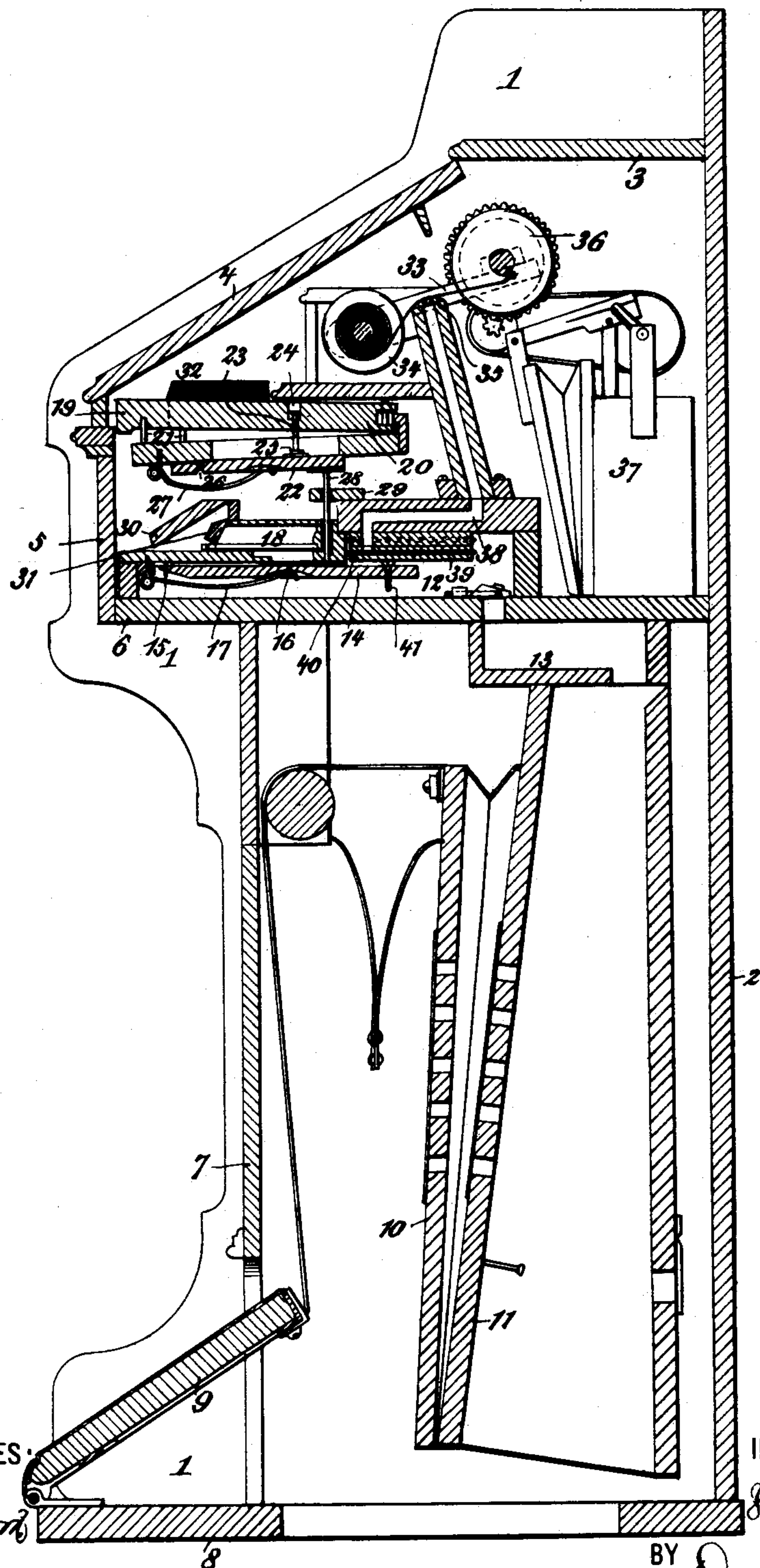
No. 608,252.

Patented Aug. 2, 1898.

J. H. CHASE.  
SELF PLAYING ORGAN.

(Application filed Feb. 5, 1897.)

(No Model.)



WITNESSES:

*R. H. Haynes*  
*H. A. Davis*

INVENTOR

*J. Herbert Chase*

BY

*Davis & Co*  
ATTORNEYS



# UNITED STATES PATENT OFFICE.

JOSEPH HERBERT CHASE, OF MERIDEN, CONNECTICUT.

## SELF-PLAYING ORGAN.

SPECIFICATION forming part of Letters Patent No. 608,252, dated August 2, 1898.

Application filed February 5, 1897. Serial No. 622,211. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH HERBERT CHASE, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented a certain new, useful, and valuable Improvement in Self-Playing Organs, of which the following is a full, clear, and exact description.

This my present invention relates to self-playing organs, and particularly to that class which are adapted to be controlled either by a perforated music-sheet or manually.

Heretofore instruments of the above class, such as the various styles of æolians, have been of such complex and expensive construction as to place them beyond the purchasing capacity of the multitudes of music-lovers, and while this instrument will not supplant such a wonderful instrument as the æolian-grand now in use throughout the world by the comparatively few who are able to invest in such a high-priced instrument, yet it has many advantages which will commend it for the more general use of the music-loving public.

First. Its extreme simplicity of construction, including the employment of a single set of reeds against six sets used in an æolian-grand, enables it to be sold at about one-sixth the price of the latter, and thus places it within the reach of all.

Second. The wonderful tone quality produced from the single set of reeds used in this instrument, owing to its special construction, makes it not only a perfect parlor-organ, but its volume and tone are such as to adapt it for use in small chapels, churches, &c.

Third. Its adaptability to be played either manually as an ordinary organ or through the use of one of an endless variety of perforated music-rolls renders it capable of operation under the fingers of a skilful organist or it may be operated by a child of five years old by the aid of the music-rolls.

Fourth. Its extreme simplicity and perfection of construction renders it far less liable to get out of order than any other form of self-playing or automatic musical instrument.

I attain the advantages aforesaid through the special construction, combination, and arrangement of parts shown in the accompany-

ing drawing, which is a vertical section of my complete instrument and on which I have placed numerals of reference corresponding with those which I will employ in the following detailed description of such parts.

The casing of the instrument is preferably formed of the sides 1, each formed of a single board, the entire back of the single board 2, the top of the shelf-board 3, having the lid 4 hinged thereto, and the front and bottom of the front boards 5, base-board 6, bottom front board 7, and the bottom board 8, all forming a case of particularly economical construction, but neat design. Within said case or casing is located the entire operating mechanism.

That located below the base-board 6 and comprising the foot-pedals 9, the exhausters 10, main bellows 11, together with the connections and accessories for operating the same, I concede to be generally old, and I will not attempt to claim such parts except in combination. The function of said parts, as of old, is to create a pressure of air in or exhaust air from the main chamber 12, which in this instance under the arrangement of exhausters and bellows shown is exhausted by the action of the latter, and I will hereinafter refer to said chamber 12 as the "exhaust" chamber and with which the bellows 11 communicates through the channel 13, as shown.

Arranged within said exhaust-chamber 12 is a lever-valve 14, hinged at the point 15 and held up in position against its valve-seat 16 by the wire spring 17. Said lever-valve 14 whenever depressed out of its normal position against the seat 16 permits an exhaust of air through or by its respective reed 18 and causes the latter to sound during the period of depression of said lever-valve. Said lever-valve is adapted to be depressed either through the action of the perforated music or note sheet, as will be hereinafter fully described, or the manual depression of the regular organ-key 19, pivoted at its rear end 20 and guided at its forward end by the guide-pin 21, all as clearly shown and well known, the novel features being a subkey 22, arranged directly under and in line with its upper member 19 and taking motion from the latter through the screw-pin 23, set in a recess 24 in key 19,



from which it can be adjusted from the top of the key and having a button 25 secured to its lower end and so adjusted that the button will rest upon the subkey 22 when the regular key 19 is in its normal position. Said subkey 22 is hinged at point 26 and supported by the wire spring 27, while its free end is in contact with the upper end of the pitman 28, which passes through the guide-rail 29 and contacts at its lower end with the aforesaid lever-valve, which latter is obviously depressed or opened by the intermediate devices simultaneously with the depression of the regular organ-key 19, thus permitting the organ to be played manually in the regular way, this special arrangement not only providing a mechanism capable of being actuated by the most delicate touch, but leaves an ample space in the front of the key-frame for operating the swells 30 and mutes 31 and for a free and full sounding of the reeds 18. The screw-pin 23 permits of conveniently and quickly leveling the keys 19 (including the sharps 32) from the top without raising or removing said keys to file the pitman, and it also obviates the lever or reed valve 14, supporting the weight of the keys 19, as in most actions of this kind.

Having described the means for operating the lever or reed valve 14 through the manual operation of the regular organ-keys, I will now describe how the said reed-valve is operated by a note-sheet 33 perfectly independent of the said manual mechanism.

The note-sheet 33 is unwound from its delivery-spool 34 and drawn over the tracker-board 35 by the revolution of the take-up roller 36, the latter being driven by any suitable form of motor, such as 37, which parts being of well-known form require no detailed description, and, further, because I contemplate the use of any practical method of opening or closing the several ducts 38, so as to permit the pneumatics 39, each in communication with the lower end of its respective duct 38 to succumb to the influence of the partially-exhausted or vacuum-chamber 12 and be instantly opened whenever a perforation in the note-sheet passes over the upper end or inlet of its duct and to instantly resume its normally-closed position when an imperforate portion of the note-sheet covers its inlet, these constructions and their described functions also being well known, the novel part of this feature of the device is to so arrange the pneumatic 39 as to depress the same reed-valve 14 as independently acted upon by the manual mechanism; and to accomplish this I locate the pneumatic 39 in the exhaust-chamber 12, with the reed-valve 14 hinging the said pneumatic at its rear end and arranging its free end 40 to contact with the top of an adjustment-screw 41, set in the rear end of the reed-valve 14 and obviously acting to depress said reed-valve

whenever said pneumatic opens or becomes inflated, thus causing the reeds to be sounded identically as when the regular keys are depressed manually, and, in fact, it is possible under this arrangement to operate the organ through a note-sheet and at the same time play an accompaniment thereto by a manual operation of the keyboard.

In order to effectively bring about the above operation without unduly lengthening the reed-valves 14 and with a view to arranging the parts as compact as possible, I have formed the tracker-ducts on a broken line, as will be seen in the drawing, the lower portion of the tracker being extended forward for a considerable distance and then directed downward, so as to bring its openings at a point near to the free ends of the reed-valves, so that said valves will be directly and positively acted upon by the pneumatics 39 upon the latter being expanded.

Having now given such a full and clear description of my invention as will enable those skilled in the art to which it appertains to make and use the same, and this specification being prefaced by a recital of its advantages, what I claim, and desire to secure by Letters Patent, is—

1. In a pneumatic musical instrument adapted to be operated either manually or by a note-sheet, the combination with the manual-keys, of a plurality of subkeys hinged at one end and arranged directly below said manual-keys so as to be acted upon thereby, an exhaust-chamber located below the keyboard, reed-valves within the exhaust-chamber, a pin carried by the free end of each subkey, said pins being arranged to act upon the free ends of the reed-valves, a tracker-range located behind the aforesaid keys and having its lower end directed forward and then downward so as to open into said exhaust-chamber at a point near the free end of the reed-valves, pneumatics located within the exhaust-chamber below the tracker-range and controlled by the passage of air through the latter, the free ends of said pneumatics being arranged directly above and overhanging the free ends of the said reed-valves whereby the expansion of the pneumatics operates directly upon the free ends of said valves, substantially as described.

2. In a pneumatic musical instrument adapted to be operated upon either manually or through a note-sheet, the combination with the manual-keys, of a plurality of subkeys arranged below the said manual-keys and actuated thereby, an exhaust-chamber, reed-valves located in said exhaust-chamber, reeds above the reed-valves, pins carried by said subkeys and acting to open the said valves, a tracker-range having its lower end directed forward and then downward so as to open in said exhaust-chamber adjacent to the ends of the reed-valves, pneumatics located



within the exhaust-chamber directly below  
the tracker-openings, the free ends of said  
pneumatics being arranged directly above  
and overhanging the free ends of the reed-  
5 valves so as to make direct contact therewith  
when expanded, and regulating-screws car-  
ried by the reed-valves below the lower face  
of the pneumatics, substantially as described.

In testimony whereof I affix my signature  
in presence of two witnesses.

JOSEPH HERBERT CHASE.

Witnesses:

H. C. BECKWITH,  
WILBUR H. SQUIRE.