I. H. SPENCER.

RESERVOIR AND CONTROLLING VALVE FOR ORGANS.

APPLICATION FILED FEB. 9, 1916.

1,296,872. Patented Mar. 11, 1919.

Fig. 1.

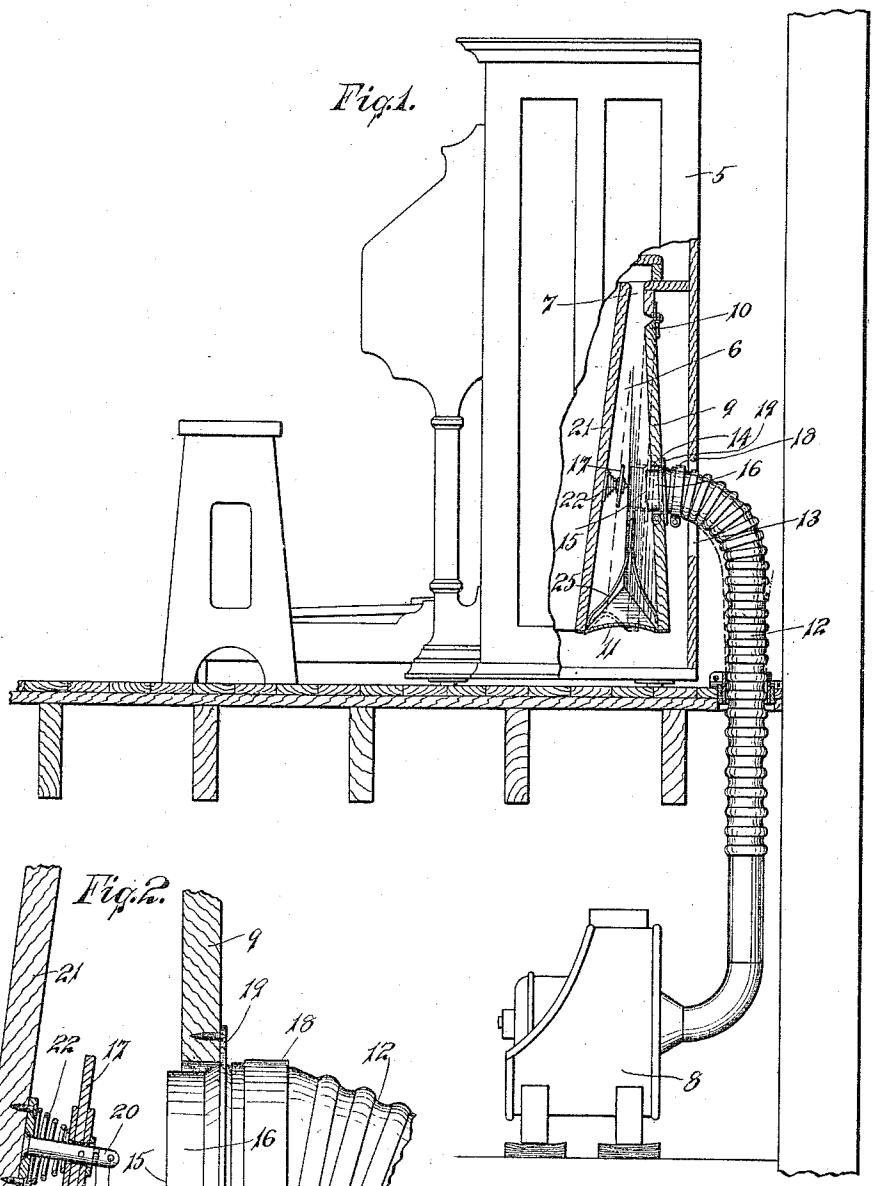


Fig. 2.

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IRA H. SPENCER, OF WEST HARTFORD, CONNECTICUT, ASSIGNOR TO THE SPENCER TURBINE CLEANER COMPANY, OF HARTFORD, CONNECTICUT, A CORPORATION OF CONNECTICUT.

RESERVOIR AND CONTROLLING-VALVE FOR ORGANS.

1,296,872. Specification of Letters Patent. Patented Mar. 11, 1919.

Application filed February 9, 1916. Serial No. 77,193.

To all whom it may concern:

Be it known that I, IRA H. SPENCER, a citizen of the United States, and a resident of West Hartford, in the county of Hartford and State of Connecticut, have invented a new and Improved Reservoir and Controlling-Valve for Organs, of which the following is a specification.

My invention relates to the class of devices above named, and an object of my invention, among others, is to provide an extremely simple and efficient means for regulating the flow of air required for the playing of reed instruments, especially organs.

One form of device embodying my invention and in the construction and use of which the objects herein set out, as well as others, may be attained, is illustrated in the accompanying drawings, in which—

Figure 1 is a view in end elevation of an organ partially cut in section to show my improved controlling device applied thereto, the organ being illustrated as resting upon the floor of a structure and with a compartment underneath in which a pump for operating in connection with the organ is located.

Fig. 2 is a detail view, scale enlarged, showing a portion of the organ bellows with my improved controlling valve attached thereto.

In the accompanying drawings the numeral 5 indicates the case of an organ within which an air reservoir 6 is located, this reservoir having a passage or passages 7 communicating with the reeds and through which passages the air is drawn as by means of a suction pump 8 of any suitable form and construction. This reservoir includes, in its constructions, a movable wall 9 that is pivotally secured at its edge 10, and that is connected with the other wall at its bottom edge, as by means of a flexible connecting piece 11, impervious to air. All of the parts hereinabove described are of old and well known construction, and except in combination with other parts to be hereinafter described, constitute no part of my present invention.

My invention as embodied in the structure shown in the accompanying drawings provides a very simple, inexpensive and reliable means for controlling the flow of air used in operating an organ, the air pipe 12 connected with the suction pump 8 passing through an opening 13 in the back of the organ casing, this opening being of such size as to permit a considerable movement of the air pipe 12, the end of which projects into a hole 14 in the wall 9 to which wall this end of the pipe is secured in any suitable manner. The edge of a mouth piece 16 constitutes a valve seat 15 against which a valve 17 is adapted to be seated, the mouth piece 16, in the construction herein shown, being composed of a tubular piece of metal secured to the end of the air pipe 12 by a clamp 18, a plate 19 attached to the mouth piece and secured to the wall 9 serving as a means for securing this end of the tube 12 to said wall.

A valve supporting pin 20 is secured to and projects from the inner surface of the rigid wall 21 of the reservoir 6, the valve 17 being loosely mounted upon this pin and seated against a valve spring 22. Holes 23 are formed at suitable intervals apart in the pin 20 through which holes a cotter pin 24 or similar fastening member extends to hold the valve in place against the spring 22, said valve having a tipping movement upon the pin in order to enable it to adjust itself to seat squarely against the valve seat 15.

The pump 8 draws the air through the reeds, and through the passage 7 into the reservoir 6 and from the reservoir 6 through the pipe 12 to the pump. When the pump is thus in operation and the organ is not being played and consequently no air is passing through the passage 7 into the reservoir, a partial vacuum will be formed in said reservoir, the amount of this vacuum depending, in a measure, upon the force required to move the wall 9 in opposition to springs 25 interposed between the walls 9 and 21. In the use of my improved device the amount of this vacuum may be regulated by positioning the valve by means of the cotter pins 24, the nearer the valve 17 is placed to the wall 21 the more vacuum will exist in the reservoir when the valve is seated, and the spring 22 prevents injury to the parts if for any reason an undue amount of vacuum should be created within the reservoir 6.

While I have shown and described herein a satisfactory construction of parts embody-

ing my invention, these may be departed from to a greater or lesser degree and yet be within the spirit and intent of the invention.

I claim—

1. In combination in a musical instrument, a reservoir having a movably mounted wall with an opening therein, a valve located in the reservoir opposite said opening, a flexible tube communicating with said opening to conduct air flowing therethrough, and means for creating a flow of air through said tube and opening.

2. In combination in a musical instrument, a reservoir having an opening in one wall, a tube extending into said opening and having its edge formed into a valve seat, a valve located in the reservoir opposite said valve seat, means operated by unbalanced air pressures to move said parts to seat the valve, and means for creating flow of air through said tube.

3. In combination in a musical instrument, an air reservoir having a movable wall with an opening therethrough, a flexible tube communicating with said opening and secured to said wall to conduct air flowing through said opening, a valve located within the reservoir opposite said opening, and means for creating flow of air through said tube.

4. In combination in a musical instrument, a reservoir having a wall with an opening therethrough, a tube communicating with said opening to conduct air flowing through said opening and having its edge formed into a valve seat, a valve located in said reservoir opposite said valve seat, means influenced by atmospheric pressure to press the valve against its seat, and means for creating flow of air through said tube.

5. In combination in a musical instrument, a reservoir having a movable wall with an opening therethrough, a tube secured to said wall and projecting through said opening into the reservoir to form a valve seat therein, a valve located in the reservoir opposite said opening, and means for creating a flow of air through said tube.

6. In combination in a musical instrument, a reservoir having a movable wall, a tube projecting through said wall into the reservoir, the edge of said tube forming a valve seat, a valve located in the reservoir opposite said seat, a spiral spring located opposite the mouth of said tube and against which said valve rests, means for variably determining the position of the valve, and means for creating flow of air through said tube.

7. In combination in a musical instrument, a reservoir having a movable and a fixed wall with an opening in the former, a tube extending from said opening, means for creating flow of air through said tube, a valve pin extending from the fixed wall, a valve supported by said pin opposite said opening, and means for adjustably determining the position of said valve on said pin.

8. In combination in a musical instrument, a reservoir having a fixed and movable wall with an opening through the latter, a flexible tube extending from said opening, means for creating flow of air through said tube, a pin extending from the fixed wall of the reservoir, a valve movably mounted on said pin, a spiral spring surrounding said pin and against which said valve is seated, and means for adjustably determining the open position of the valve on said pin.

9. In combination in a musical instrument, a reservoir having a movable and a fixed wall with an opening in the former, a tube to conduct air flowing through said opening, the end of said tube projecting through said opening and into the reservoir and with its edge forming a valve seat, means for creating flow of air through said tube, a pin projecting from the fixed wall of the reservoir substantially in line with the axis of the mouth of said tube, a spiral spring surrounding said pin, and a plate slidably mounted on said pin and seated on said spring, said plate being larger in size than the opening into said tube and constituting a valve to be seated against the valve seat formed by the edge of said tube.

IRA H. SPENCER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

Correction in Letters Patent No. 1,296,872.

It is hereby certified that the assignee in Letters Patent No. 1,296,872, granted March 11, 1919, upon the application of Ira H. Spencer, of West Hartford, Connecticut, for an improvement in "Reservoir and Controlling-Valves for Organs," was erroneously described and specified as "The Spencer Turbine Cleaner Company," whereas said assignee should have been described and specified as *The Spencer Turbine Company*, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 15th day of April, A. D., 1919.

[SEAL.]

F. W. H. CLAY,

Acting Commissioner of Patents.

Cl. 230—2.