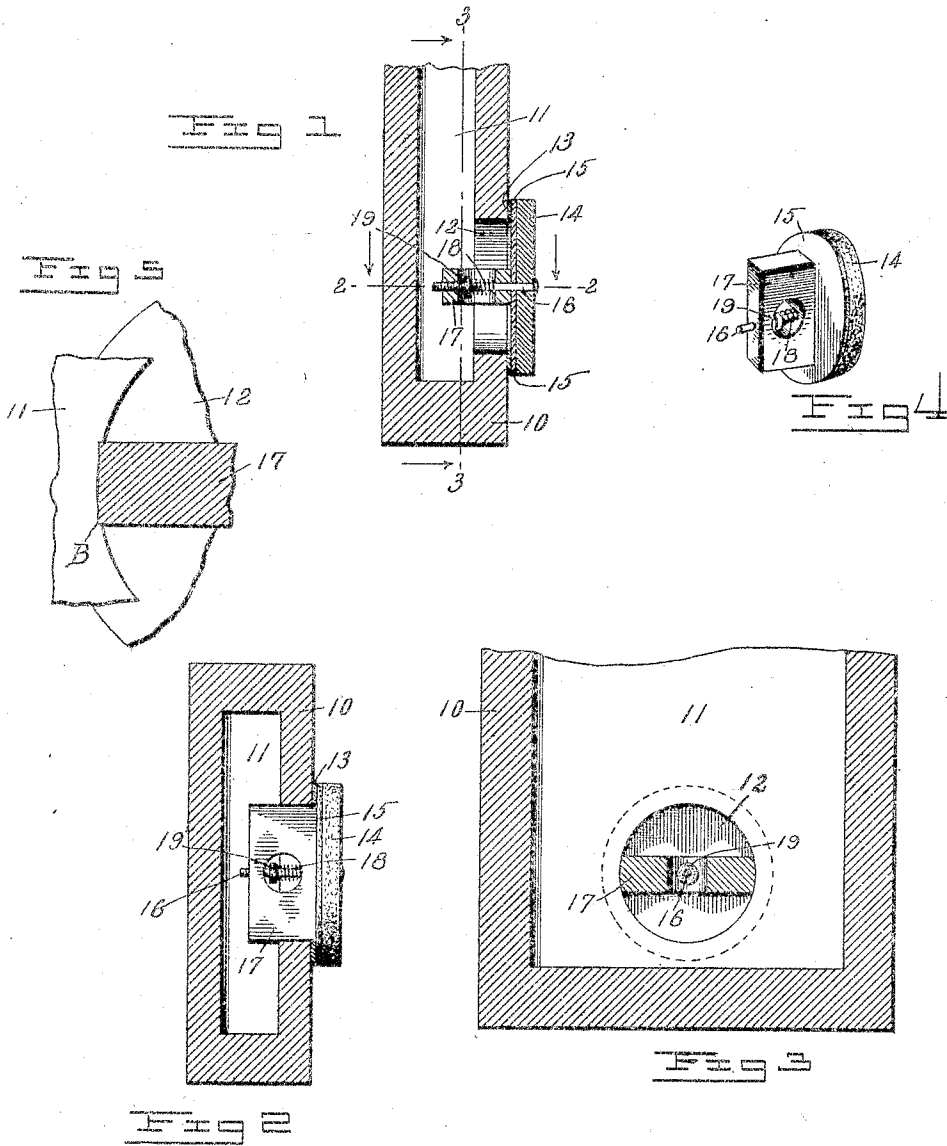


G. S. WILLIAMS.
VALVE FOR PNEUMATIC MUSICAL INSTRUMENTS.
APPLICATION FILED APR. 15, 1909.

949,250.

Patented Feb. 15, 1910.



Witnesses
H. C. Robinson
J. J. Garbo

Inventor
George S. Williams

By *Meyers Cushman & Co*
Attorney

UNITED STATES PATENT OFFICE.

GEORGE S. WILLIAMS, OF NORFOLK, VIRGINIA, ASSIGNOR TO AMERICAN PIANO
PLAYER COMPANY, OF NORFOLK, VIRGINIA, A CORPORATION OF VIRGINIA.

VALVE FOR PNEUMATIC MUSICAL INSTRUMENTS.

949,250.

Specification of Letters Patent.

Patented Feb. 15, 1910.

Application filed April 15, 1909. Serial No. 490,174.

To all whom it may concern:

Be it known that I, GEORGE S. WILLIAMS, a citizen of the United States, residing at Norfolk, in the county of Norfolk and State of Virginia, have invented new and useful Improvements in Valves for Pneumatic Musical Instruments, of which the following is a specification.

My invention is an improved valve construction for pneumatic musical instruments.

The principal object of my invention is to produce a valve particularly adapted to pneumatic musical instruments in that it is extremely light and compact and very quick in action while at the same time the valve is capable of being disassembled at will and without the use of special tools of any sort, the valve disk and its support or guide being entirely removable from the valve seat and chamber.

My invention will be particularly described with reference to the accompanying sheet of drawings, and its novel features specifically pointed out in the annexed claims.

On the accompanying sheet of drawing,— Figure 1 is a sectional side view of my valve construction showing the valve support in one plane. Fig. 2 is a sectional view taken on a plane at right angles to that of Fig. 1, that is along line 2, 2 looking in the direction of the arrows, and Fig. 3 is a sectional view taken on the line 3, 3, and looking in the direction of the arrows. Fig. 4 is a perspective view of the valve disk and its attached support, and Fig. 5 is a sectional view similar to that of Fig. 3 shewing a slightly modified form of guide support.

10 represents a section of the body of the valve board of a pneumatic musical instrument: 11 is the duct within this board, and 12 is one of a plurality of valve openings in this board. The surface of the board immediately surrounding the valve opening is provided with a seat 13 faced with suitable material, such as soft leather, and co-operating with the valve seat is a valve disk 14, which may also be provided with a facing 15 of suitable material, such as soft leather.

The valve disk 14 is provided with a stem 16 which passes through a supporting and guiding block 17. This block is substantially rectangular and makes a close fit

within the valve opening, being held therein either by the friction of the edges of the block upon the side walls of the valve opening, or by a light glue or gum applied to the engaging surfaces of the block and the valve opening. By making the corners of the block very sharp or cutting the ends off squarely, instead of rounding them to conform to the walls of the valve opening, I may secure a firmer hold for the block within the valve opening, the sharp corners of the edges of the block biting into the walls of the opening and holding the block firmly in place, and preventing rotative as well as endwise movement. This construction is very clearly shown in Fig. 4 wherein the block is shown slightly tapering and the edges are square cut. Fig. 5 clearly shows this form of block. The ends of the block may be tapered or not depending upon the tightness with which it is desired the block shall be held within the opening.

A central transverse aperture is formed in the block 17 and within this aperture and on the stem 16 of the valve is placed a coil spring 18 for yieldingly holding the valve disk on its seat. The tension of this spring may be adjusted by turning the nut 19 which is screw-threaded on the stem 16 and serves in addition to adjusting the tension of the spring, to hold the valve disk 14 and its supporting block or guide 17 together. In assembling, the valve stem, which may or may not be previously attached to the disk, is entered in the block until its end projects a small distance into the central aperture in the block, when the spring 18 is placed on it and followed by the nut 19 as the stem is passed through the central aperture.

It will be observed that I have produced a valve construction in which the valve disk is attached to a guide or support which is removable by pulling or prying from its engagement with the walls of the valve seat opening. These parts may, therefore, be moved collectively and with ease from the valve seat and chamber, thus giving free access to them. Besides providing free access to the valve seat and chamber by this ready removal of the valve disk and support, free access is also had to the coil spring 18 and nut 19 for the purpose of adjusting the tension of the coil spring, and therefore the pressure of the valve disk 15 upon its seat, thus enables one to quickly and accurately

adjust the valve to obtain any desired action within its range. Besides these advantages, my valve construction is such that the valve disk and the attached parts may be made up in large quantities to be used interchangeably on valve boards as desired.

It will be apparent that a skilled mechanic may make many changes in the specific embodiment of my invention without departing from the spirit thereof. While I have described the best form of my invention now known to me, I desire to cover in the annexed claims all modifications which may come within its scope.

What I claim is,—

1. In a valve for pneumatic musical instruments, a valve board provided with a valve seat and opening, a valve disk and stem, and a support therefor, comprising a substantially rectangular block fitting within the valve seat opening, and means on the stem for preventing the ready removal of the valve disk from the support.

2. In a valve for pneumatic musical instruments, a valve board provided with a valve seat and port, a valve disk and stem, and a support therefor consisting of an apertured block located within the valve port the valve stem passing through the said block and being attached to it by means on the stem and within the aperture.

3. A valve mechanism for pneumatic musical instruments comprising a valve board provided with a valve seat and port, a valve disk and stem, and a support therefor consisting of an apertured block located within the valve port, the valve stem passing through said block and being yieldingly at-

tached to it by means on the stem and within the aperture.

4. A valve mechanism for pneumatic musical instruments, comprising a valve board, a valve seat and opening in said board, a valve disk and stem therefor, and a support for the same comprising an apertured block through which the valve stem passes, and to which it is yieldingly attached by means on the stem and within the aperture, said apertured block being held by frictional engagement within the valve opening.

5. A valve mechanism for pneumatic musical instruments, comprising a valve board, a valve seat and opening in said valve board, a valve disk and stem therefor, and a support for the same comprising a rectangular apertured block within the valve opening and held therein by frictional engagement with the walls thereof, the stem of the valve disk passing through the block and through the aperture therein, and being provided with means for preventing the ready removal of the valve disk from the block.

6. As an article of manufacture, a valve disk for pneumatic musical instruments provided with a stem, a substantially rectangular guide on said stem and of a length less than the diameter of the valve disk, and means on said stem for preventing the ready removal of said stem from said guide.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE S. WILLIAMS

Witnesses:

T. L. VAUGHAN,
J. V. BASSETT.