

L. D. PERRY.  
 VALVE FOR PNEUMATIC MUSICAL INSTRUMENT PLAYERS.  
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907,642.

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Fig. 1.

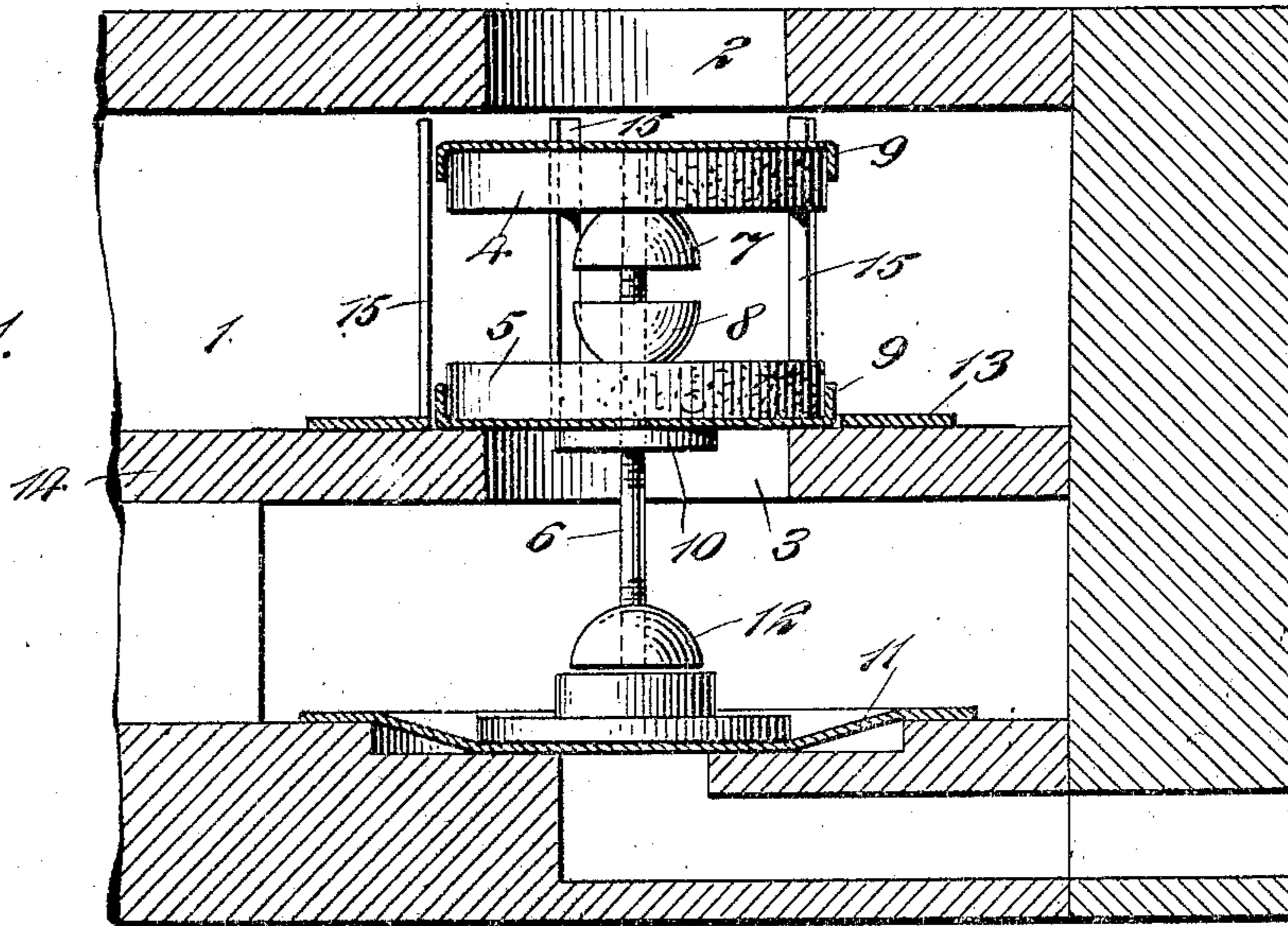


Fig. 2.

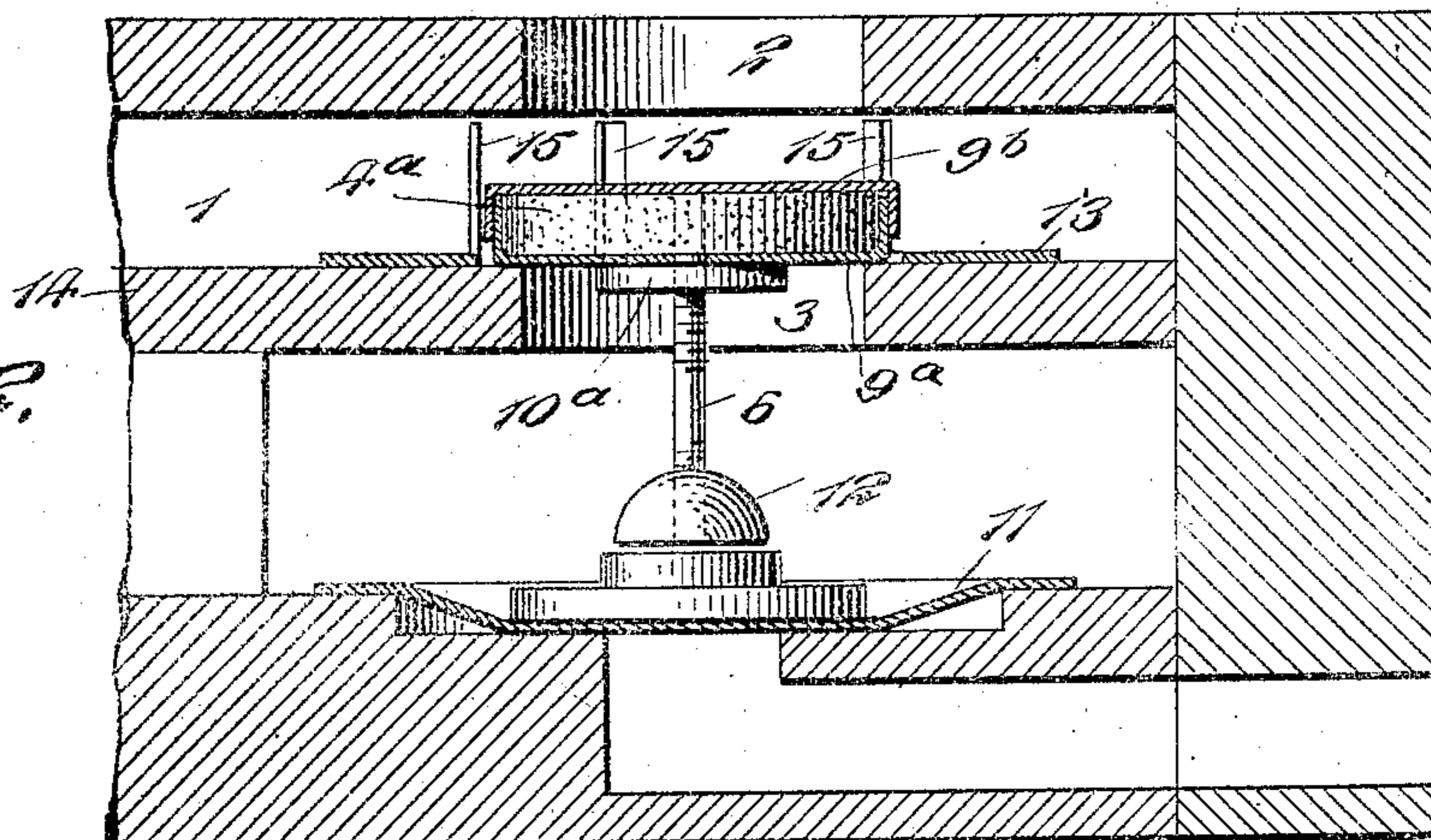
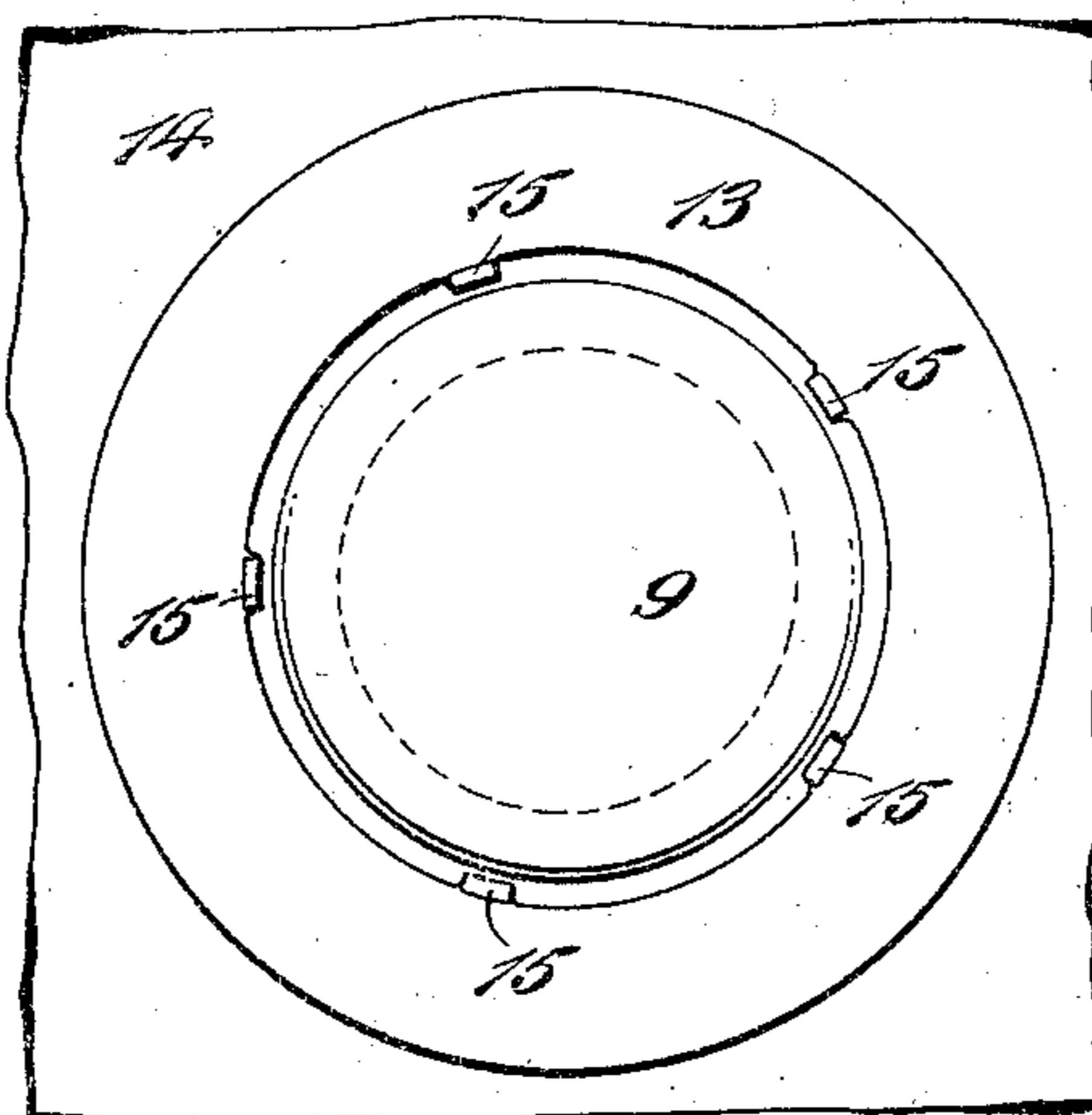


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## VALVE FOR PNEUMATIC MUSICAL-INSTRUMENT PLAYERS.

No. 907,642.

Specification of Letters Patent.

Patented Dec. 22, 1908.

Application filed June 8, 1908. Serial No. 437,230.

*To all whom it may concern:*

Be it known that I, LYCUS D. PERRY, a citizen of the United States, residing at the borough of Bronx, in the city, county, and State of New York, have invented certain new and useful Improvements in Valves for Pneumatic Musical-Instrument Players, of which the following, in connection with the accompanying drawings and the reference characters marked thereon, is a full, clear, and exact specification, sufficient to enable others skilled in the art to make my improvements and practice my invention.

This invention has relation to an improved valve for pneumatic actions such as are employed in mechanical piano players, mechanical organ players and in other mechanical musical instruments.

The principal object of my present invention is to provide or produce a valve for the above named mechanisms or for others of like character, which valve has perfect seating capacities as well as being noiseless in action and which will leave the suction seat promptly, smoothly and perfectly and return to the same without friction.

A further or subordinate object is to simplify and improve the construction of the valve so that it shall be composed of a less number of parts than are ordinarily employed in valves of this character.

To accomplish all of the foregoing and to secure other and further advantages in the operation and manufacture of the valve, my improvements involve certain new and useful arrangements or combinations of parts and peculiarities of construction, as will be herein first fully explained and then pointed out in the claims.

In the accompanying drawings which form part of this specification, Figure 1 is a vertical view, partly in section and partly in elevation, showing my improved valve in two sections, one section being arranged to close against its seat, while the other section remains open or away from its seat, the two sections being connected so as to be simultaneously moved. Fig. 2 is a similar view, but showing the valve undivided. Fig. 3 is a top or plan view showing the valve and the means for maintaining or guiding it in its working position relative to its seats.

In all these figures like reference characters, wherever they occur, are employed to indicate corresponding parts.

The valve is in the general form of a puppet valve and is shown in operating position.

1 represents a chamber of any suitable size or shape, such as may be used in a pneumatically operated mechanical musical instrument player.

2 represents a port leading to the chamber 1 for the admission of air thereto from the exterior, and 3 represents a port leading from this chamber and into another chamber from which air may be exhausted. The improved valve is located between these two ports and serves to open and close them both according to its position. The valve itself is of peculiar construction. It may be made in two parts or divisions, adjustable one with respect to the other, as in Fig. 1, to adapt the valve for operation in chambers or compartments of different heights. In this form two valve disks are employed, as 4 and 5. While I do not wish to confine myself to any particular material these disks are made of a comparatively soft, yielding material and are applied on a threaded stem, as 6, the stem being supplied with threaded buttons, as 7 and 8, by which the distance of the two disks from each other may be regulated, as will be apparent.

The valve disks are covered on their seating sides with a tight-fitting, soft leather, as 9, which is glued to the disk around its edges, no glue or cement being permitted on the bearing part of the leather, whereby it always maintains its soft-seating capacity and entirely noiseless quality.

At 10 is a disk made of a rigid material, such as fiber or some other suitable substance, and this disk is glued fast to the leather covering at or near the central part of the valve. This holds the adjacent disk firmly with respect to the central stem 6 and does not interfere with the noiseless and perfect seating of the valve, the disk 10 being small in comparison with the port 3. The upper disk, 4, might also be supplied with a similar comparatively hard and small disk, but at this point such an application is unnecessary.

When one part or division of this valve is seated, the other part is withdrawn from its seat, as will be observed.

The stem 6 may be operated to move the valve in either direction by any suitable means. In the form shown, it is operated by a diaphragm, as 11, which is fitted to rise and

fall or move according to the degree of air pressure or the extent of exhaustion on its upper or under face, as is usual in this class of devices.

5 When the valve is undivided, as in Fig. 2, the disk, 4<sup>a</sup>, of soft yielding material, has an under cover of leather, as at 9<sup>a</sup>, and an upper leather cover, as at 9<sup>b</sup>, the former being turned up at the edge all around and glued in  
10 place against the margin of the disk and the latter being turned down and overlapping the edge of the former and being glued upon it, no glue being allowed upon the bearing portion of either leather cover. This disk is  
15 mounted upon a threaded stem, 6, and is held in place at the proper point thereon by a comparatively hard or unyielding disk, 10<sup>a</sup>, the same being smaller than the port 3. This valve is or may be operated by a diaphragm  
20 as 11, the same as the previously described form of the valve and for like purposes.

To keep the valve in its proper position with respect to the ports which it governs and to avoid unnecessary friction and loss of  
25 power as well as to obviate sticking, it is surrounded by a sort of cage which prevents it from becoming displaced or disarranged and yet does not interfere with its free movements.

30 13 represents a flat disk of metal which is to be secured in place upon the board or partition 14. This disk is cut away at its central part to provide fingers or pickets, 15, 15, and these are turned up at right angles with  
35 the face of the disk and they thus form the pickets of a fence or cage around the valve. If the valve hits one of these pickets, the soft leather cover with which the valve disk is provided operates to prevent friction and to  
40 insure the requisite smooth and noiseless movement. It will be observed that this method of holding the valve to its proper

path is one which permits sufficient play between the valve and fence to obviate friction; and the pickets are of sufficient width  
45 and number to hold the valve at all times in its true position while the air is perfectly free to pass between the pickets without friction.

In other constructions known to the art, 50 these valves are usually held in place by a stem which passes through the center of the valve and engages with guides at each end of the stem. Such a construction causes more or less friction and loss of power which are  
55 entirely obviated by my form of construction.

For the manufacture of the valve, a perfectly hard disk might be employed, but in such case it would be necessary to place a  
60 felt disk of sufficient thickness between the hard disk and the soft leather cover, in order to secure the advantages of my invention.

Having now fully described my invention, what I claim as new herein and desire to se-  
65 cure by Letters Patent, is:

1. In pneumatic musical instrument players, a puppet valve having a disk with its two faces covered with leather or other suitable material, the coverings extending over  
70 the edge of the disk, turned or bent, and the edge of one covering lapping over and being glued to the turned portion of the other covering, substantially as shown and described.

2. In a pneumatic action for mechanical 75 musical instrument players, a puppet valve and a ring circumscribing the same, said ring being provided with portions projecting at right angles to its face, substantially as and for the purposes set forth.

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Witnesses:

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