

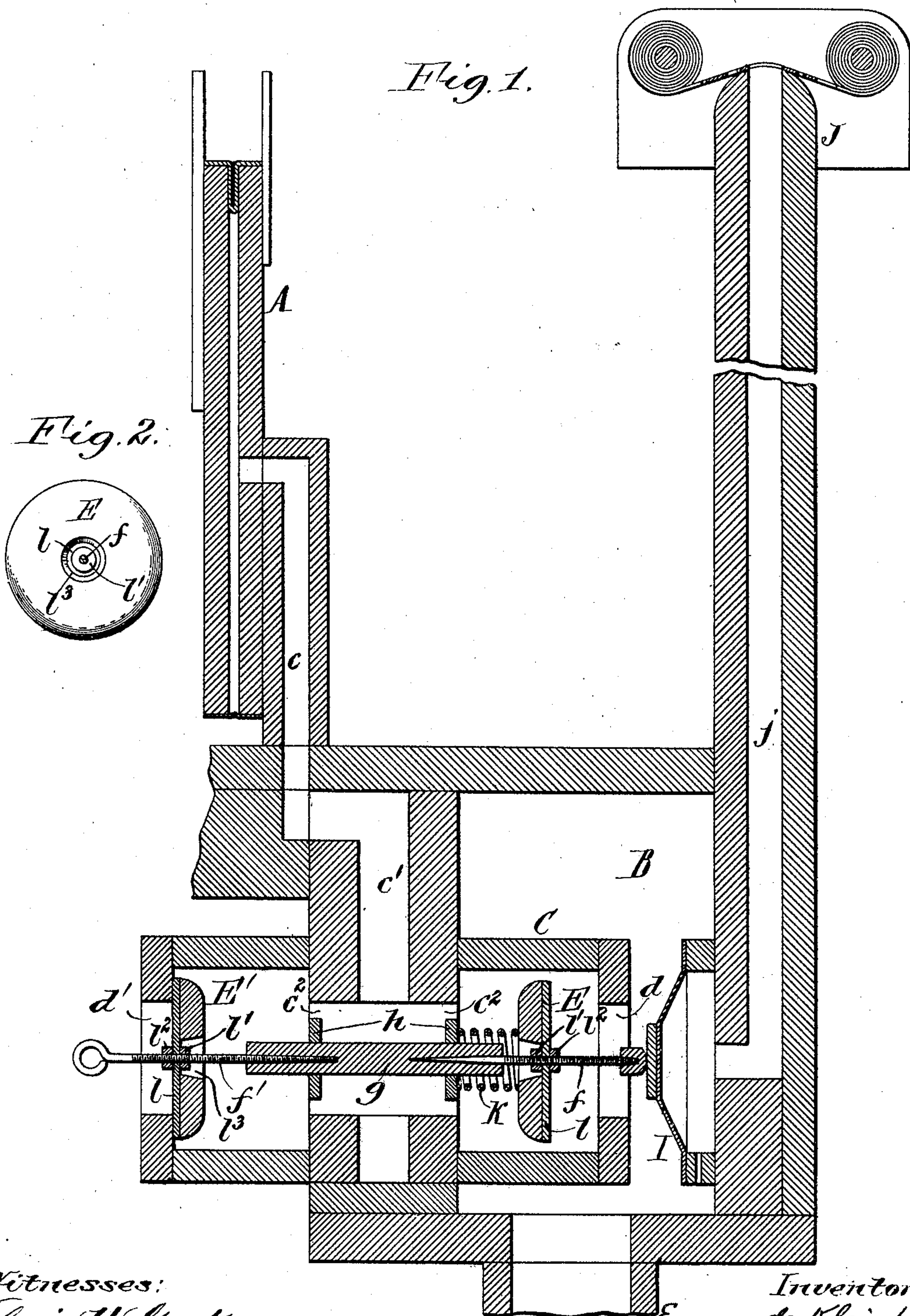
No. 794,674.

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E. DE KLEIST.

VALVE FOR PNEUMATIC MUSICAL INSTRUMENTS.

APPLICATION FILED SEPT. 1, 1904.



Witnesses:

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EUGENE DE KLEIST, OF NORTH TONAWANDA, NEW YORK.

VALVE FOR PNEUMATIC MUSICAL INSTRUMENTS.

SPECIFICATION forming part of Letters Patent No. 794,674, dated July 11, 1905.

Original application filed February 6, 1903, Serial No. 142,198. Divided and this application filed September 1, 1904. Serial No. 222,924.

To all whom it may concern:

Be it known that I, EUGENE DE KLEIST, a citizen of the United States, residing at North Tonawanda, in the county of Niagara and State of New York, have invented new and useful Improvements in Valves for Pneumatic Musical Instruments, of which the following is a specification.

This invention relates more particularly to valves for pneumatic musical instruments, such as piano-players and automatic pianos, and is a part of the subject-matter of Letters Patent of the United States No. 770,862, granted to me September 27, 1904, upon an application filed February 6, 1903, of which the present is a divisional application.

The object of my invention is the provision of a simple valve for pneumatic actions which is capable of a universal angular movement on its stem, so that it can freely accommodate itself to any irregularities of its seat.

In the accompanying drawings, Figure 1 is a fragmentary vertical section of the pneumatic action of an automatic piano-player containing my improved valve. Fig. 2 is a rear view of the valve.

Similar letters of reference indicate corresponding parts in both views.

The action illustrated in the drawings is of the class shown and described in Letters Patent of the United States No. 726,701, granted to me April 28, 1903, and as the action itself forms no part of my present invention only enough of the same is herein shown to illustrate one of the uses of the improved valve.

A indicates one of the motor-pneumatics for operating one of the keys or levers of the piano-player.

B is the main wind or exhaust chest, and C one of the valve-chambers with which the corresponding motor-pneumatic is connected by channels *c c'* and ports *c²*. This valve-chamber is provided in opposite ends with ports *d d'*, which communicate with the exhaust-chest B and the atmosphere, respectively, and which are controlled by exhaust and vent valves E E', preferably arranged within the chamber.

In the construction shown in the drawings the valves are mounted on screw-stems *f f'*, carried by a sliding rod *g*, which is preferably

square or of other flat-sided form, and guided in corresponding openings formed in supporting-bars *h*, which extend across the ports *c²*.

I indicates the usual diaphragm or pneumatic for opening the exhaust-valve E and closing the companion vent-valve E'. *j* is the channel of the tracker-board J, leading to said pneumatic, and *k* is a spiral spring surrounding the stem *f* between the exhaust-valve and the opposing guide-bar *h* and serving to promptly close said valve and open the vent-valve. Each of these valves consists of a button or disk, of wood or other rigid material, which is provided with the customary facing *l* of leather or other suitable flexible material. This facing has a central opening just large enough to receive the stem of the valve, and the valve is held against longitudinal displacement on its stem by stops *l' l²*, consisting, preferably, of clamping-nuts, which engage with the screw-threaded valve-stem and bear against opposite sides of the flexible facing *l*, but not against the rigid body or button of the valve. The body of the valve is provided with a central opening *l³*, which receives the rear clamping-nut *l'* and which is sufficiently larger than the nut to allow the valve to rock or swivel freely on its stem, thus permitting the valve to seat squarely against the end wall of the valve-chamber and insuring its proper closure, even if said wall should not be perfectly true or at right angles to the valve-stem. The clamping-nuts, while holding the valve in place on its stem, permit the same to be conveniently adjusted lengthwise of the stem as required.

I do not wish to claim in this application the adjusting means of the exhaust and vent valves nor the spring *k*, as those features form the subject of the pending application hereinbefore referred to.

I claim as my invention—

1. A swiveling valve, comprising a rigid button having a central opening, a flexible facing secured to said button, a stem passing through said facing and the opening of said button, and stops applied to said stem on opposite sides of said facing and bearing only against the latter, the opening of the button being sufficiently larger than the stop within

the same to permit a universal angular movement of the valve on the stem, substantially as set forth.

2. A swiveling valve for a pneumatic musical instrument, comprising a rigid button having a central opening, a flexible facing applied to said button, a screw-threaded stem passing through said facing and the opening of said button, and clamping-nuts applied to
5 said stem and bearing against opposite sides of said facing, the opening in said button be-

ing sufficiently larger than the nut within the same to permit a universal angular movement of the valve on the stem, substantially as set forth.

Witness my hand this 29th day of August,
1904.

EUGENE DE KLEIST.

Witnesses:

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