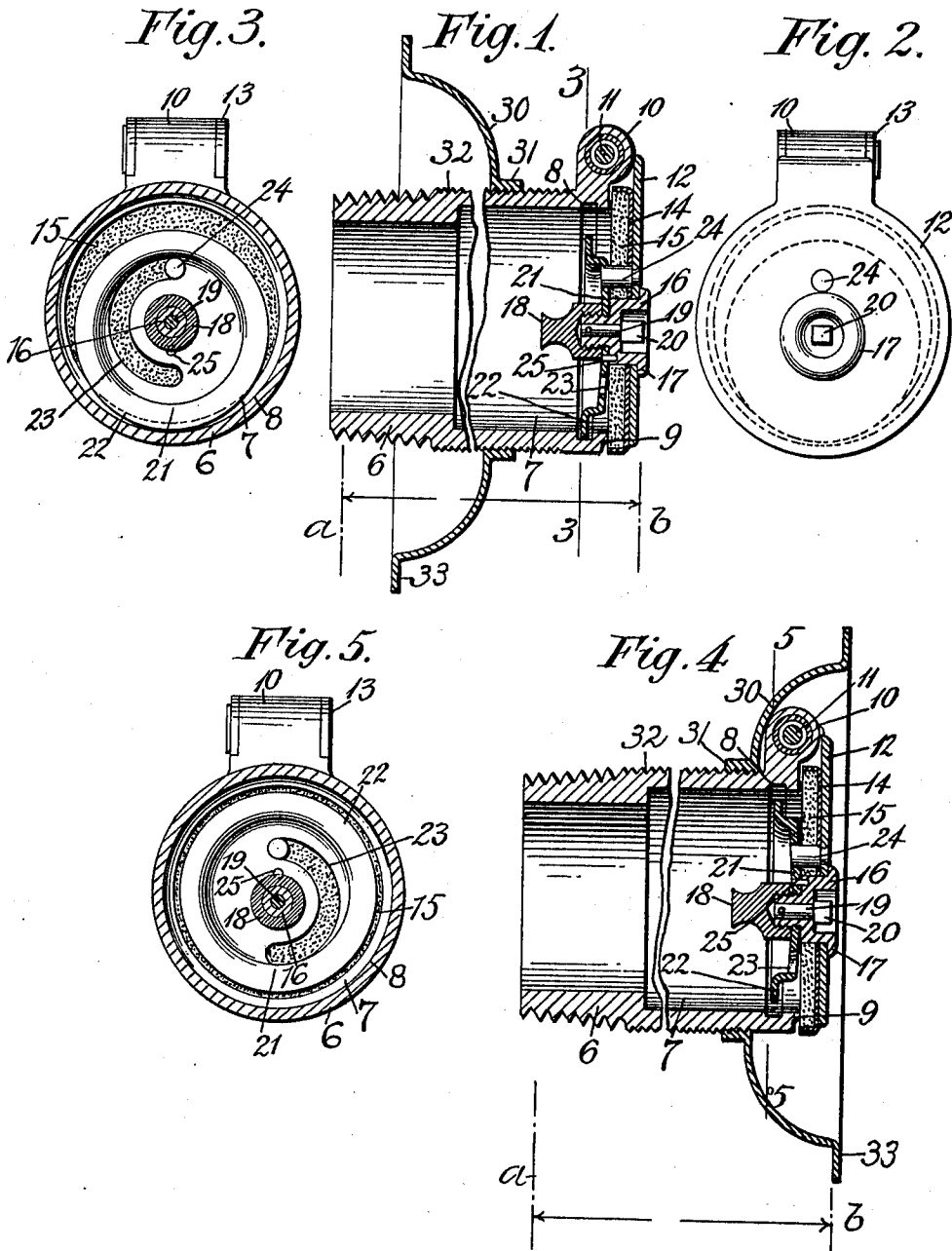


I. H. SPENCER.
VALVE.
APPLICATION FILED OCT. 29, 1909.

1,031,391.

Patented July 2, 1912.
2 SHEETS—SHEET 1.



WITNESSES:
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Fig. 6.

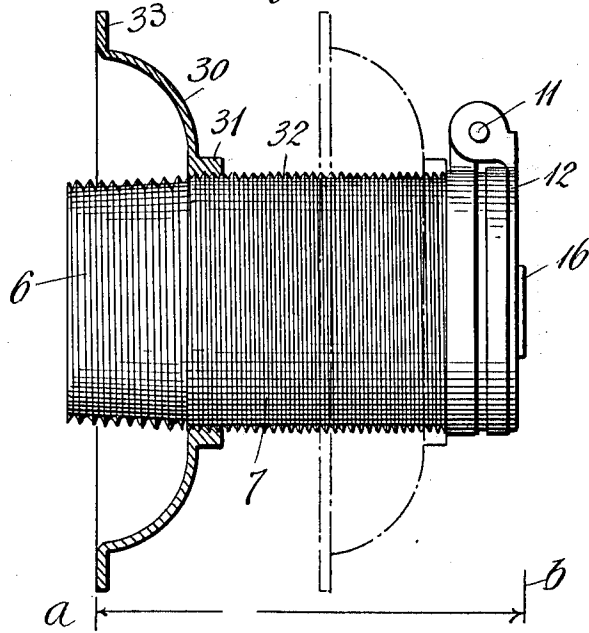
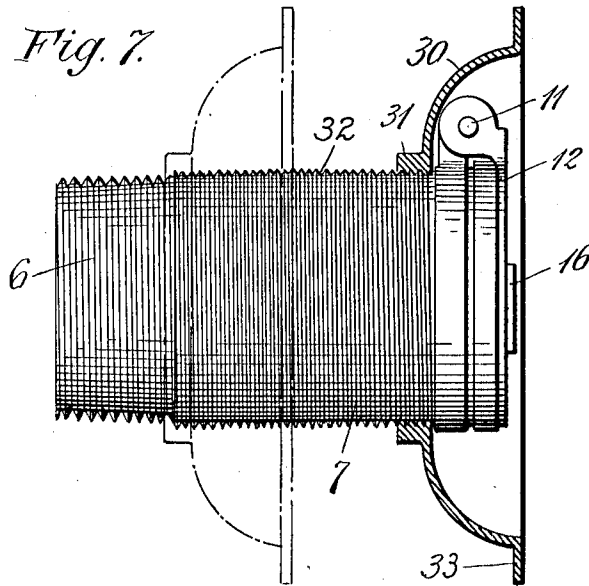


Fig. 7.



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VALVE.

1,031,391.

Specification of Letters Patent.

Patented July 2, 1912.

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To all whom it may concern:

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

My invention relates more especially to that class of valves employed for closing the mouth or opening to the tube of a pneumatic system, and the object of the invention is to provide a device of this class that shall be extremely simple and effective in operation and one that may be produced at a minimum cost of construction.

One form of device in the use of which the objects sought may be attained is illustrated in the accompanying drawings, in which—

Figure 1 is a view in longitudinal section through the intake end of the pipe of a pneumatic system showing my improved valve attached thereto, the nipple being broken. Fig. 2 is a face view of the same. Fig. 3 is a view in cross-section on plane denoted by line 3—3 of Fig. 1. Fig. 4 is a view similar to Fig. 1 but showing the valve in its unlocked position. Fig. 5 is a view in section on plane denoted by line 5—5 of Fig. 4. Figs. 6 and 7 are side views of a nipple illustrating the manner of use of my improved collar.

In valves of the class herein shown and described it is very material that the mouth or inlet to the pipe or tube controlled by the valve shall be effectually sealed when not in use and a valve having means for locking it in its closed position will aid in attaining this result, the means for operating the lock being thus not readily at the hand of unauthorized persons. As a further means of enabling the valve to effectually seal the mouth the valve is provided with a more or less flexible material arranged to rest upon the valve seat, and this packing should also be provided with means to prevent its distortion under the unequal pressures which it sustains, which distortion would cause the packing to wrinkle at the valve seat and thus allow leakage at this point.

The valve herein shown and described is provided with means for overcoming all of these objections and at the same time the valve embodies a minimum number of parts

of simple construction to attain the results desired.

In the accompanying drawings the numeral 6 denotes a mouth-piece or nipple arranged to be secured to the end of a pipe or tube of a pneumatic system in which air is drawn in to the mouth. This mouth-piece has an inlet chamber 7 in which an annular groove 8 is formed. A lip 9 extends about the edge of the opening or mouth to the chamber 7, this lip constituting a valve seat.

A lug 10 projects upward from the mouth-piece, this lug forming a knuckle for the reception of a pintle 11 upon which pintle valve is pivotally mounted. This valve has ears 13 located at the opposite ends of the knuckle 10, which ears receive the ends of the pintle 11.

The valve consists preferably of a plate of proper size and shape to cover the opening into the chamber 7, a cup 14 secured to the inner face of the plate and a packing 15 located within and held by said cup, this packing being disposed to rest against the lip or valve seat 9 to secure the opening into the chamber 7. A bearing stud projects through the valve, this stud consisting of two sections, an outer section 16 having a flange 17 resting against the outer face of the plate 12 and an inner section 18 secured to the outer section as by means of interengaging screw-threads.

A pin 19 is secured within an opening in the outer section 16 of the stud, the outer end 20 of this pin being formed to receive a device for turning the stud in its bearing. The connection between the two sections of the stud may be of any desired construction, and in fact, it is not absolutely essential that this stud shall be formed in sections. When this form of a stud, however, is used the connection between the two sections will be such that a supporting plate 21 is clamped between the two sections. The pin 19 may be secured within the stud in any desired manner. The plate 21 rests against the inner face of the packing 15 and serves to maintain the packing flat and prevent it from distortion under the unequal pressures, the packing being thus retained in place and prevented from wrinkling, which wrinkling would allow the valve to leak.

In order to secure the valve in its closed position a lock is employed, the plate 21

being formed to in part constitute the lock and being in fact a locking and supporting plate. The plate is of circular form to bear against the packing at substantially uniform distances from its outer edge at all points about the edge, and is eccentrically mounted upon the stud. The stud is also eccentrically mounted with respect to the chamber 7 so that as the stud is turned the plate will be moved toward the edge of the valve and caused to engage within the groove 8. While this will throw the plate slightly off from the center of the packing, this movement will not be sufficient to prevent the plate serving its full function as a support for the packing.

Various forms of construction of the plate to enable it to engage within the groove 8 may be employed, in the preferred form of construction an offset flange 22 extending about the edge of the plate being employed. A semi-circular slot 23 is formed in the plate in which a locking pin 24 from the valve projects, the engagement of the pin within the slot limiting the turning movement of the supporting plate and lock. While the mouth-piece is shown and described herein as a separate part it need not necessarily be so formed, as it may constitute the end of a pipe as a whole, and other details of the construction may be departed from to a greater or lesser extent without avoiding the invention. While the plate 21 may be secured to the stud by means of the frictional connection between the two stud sections, yet in order to secure its positive connection with said stud a key 25 extending from one of the stud sections into the plate may be employed. In the construction of devices of this character the nipple or mouth-piece 6 is usually secured to a T or like connection forming a part of a system of pipes located within the wall of a building. In erecting such piping, owing to lack of care or for other reasons the Ts are liable to be located at various distances from the face of the wall. The opening in the wall through which the nipple extends is usually covered around the nipple by a collar. In order to provide for a nipple of minimum length to suit these various conditions as to location of Ts and also to lessen the appearance of undue projection of the nipple I have provided a finish collar 30 which is movable on the nipple. In order to produce the desired result as to adjustment this collar is of substantial cup-shape and has a hub 31 interiorly threaded to fit the threaded surface 32 of the nipple, and a flange 33 is formed to rest against the outer face of the wall through which the nipple projects. When a T is located very close to the face of the wall the collar should be used as shown in Fig. 6, while when the T is located at a considerable distance from the

face of the wall, the collar is to be used as shown in Fig. 7. Under these extreme conditions it will be seen that, with the use of my improved collar, the nipple may be of a minimum length, and that the collar may be placed against the face of a wall and located with respect to the nipple at any point between the lines *a-b*.

In Fig. 7 the nipple terminates with its outer end within the confines of the wall, and it will be seen that by reversing the collar as here shown I am still enabled to use the same to produce a plain smooth-finish closure for the wall opening, the front face of which may be at any point longitudinally of the nipple within the limits of the collar adjustment.

My invention relates more especially to the class of pneumatic systems in which numbers of outlets are employed, such for instance as in the case of pneumatic systems used for suction cleaning and for other similar purposes, but it will be understood that the invention is not limited to use in a pneumatic system designed for any special purpose.

I claim—

1. A mouth-piece having an inlet chamber, a valve movably mounted to close the inlet to said chamber, said valve including a packing secured to its inner face, a locking and supporting plate secured to the valve against said packing, interengaging means between said plate and mouth-piece for holding the valve in position, and means for turning said plate.

2. A mouth-piece, a valve pivotally mounted at one side of said piece to close the inlet thereto, said valve including a packing located on its inner face, a supporting plate secured to the valve against said packing and eccentrically mounted with respect to the inlet chamber, interengaging means between the mouth-piece and plate, and means for turning the plate.

3. A mouth-piece having an inlet, a valve pivotally mounted at one side of the mouth-piece to close the inlet thereto, said valve including a packing secured to its inner face, a supporting plate round in form secured to the valve against said packing, said plate being eccentrically mounted with respect to the inlet chamber, interengaging means between the mouth-piece and plate, and means for rotating the plate.

4. A mouth-piece having a groove in its wall, a valve pivotally mounted at one side of the mouth-piece to close the opening therein, said valve including a packing secured to its inner face, a locking and supporting plate circular in form secured to the inner face of said valve against said packing, said plate being eccentrically mounted with its edge arranged to engage said groove, and means for turning the plate.

5. A mouth-piece having an inlet chamber round in form with a groove in its wall, a valve pivotally mounted at one side of the mouth-piece to close the opening thereinto, said valve including a packing secured to its inner face, a stud mounted on the valve eccentrically to said inlet chamber, a locking and supporting plate eccentrically mounted on said stud, a lip on the edge of said plate arranged to engage said groove, and means for turning the plate.

6. A mouth-piece having an inlet chamber round in form with a groove in its wall, a valve pivotally mounted at one side of the mouth-piece to close the opening into said chamber, said valve including a packing secured to its inner face, a stud secured to the valve and located eccentrically with respect to said inlet chamber, a plate secured on said stud against said packing with its edge adapted to engage said groove upon turning movement of the stud, and means for turning the stud.

7. A mouth-piece having an inlet chamber round in form with a groove on its inner wall, a valve pivotally mounted at one side of the mouth-piece, said valve including a packing secured to its inner face, a stud secured to the valve and located eccentrically to said inlet chamber, a locking and supporting plate secured to said stud against said packing, means for turning the stud, and means for limiting the turning movement of said plate.

8. A mouth-piece having an inlet chamber therein, a valve movably mounted to close the opening to said chamber, said valve including a packing secured to its inner face, a sectional stud extending through the valve and including an outer and an inner section, a plate mounted upon one section of the stud to bear against said packing, and means for connecting the sections of the stud to clamp said plate between them.

9. A mouth-piece having an inlet chamber, a valve movably mounted to close the opening to said chamber, said valve including a packing secured to its inner face, a stud eccentrically mounted with respect to said

chamber in said valve, said stud including two sections, with means for securing them together, a locking and supporting plate clamped between the sections of the stud, interengaging means between the mouth-piece and plate for locking the valve in its closed position, and means for turning the stud.

10. A mouth-piece having an inlet chamber round in form, a valve pivotally mounted at one side of the mouth-piece and including a packing secured to its inner face, a stud section passing through the valve and eccentrically mounted with respect to said chamber and having a reduced inner end, a locking and supporting plate mounted upon said reduced end, a stud section secured to the first-mentioned section and clamping the plate between the two and against said packing, interengaging means between said plate and mouth-piece to lock the valve in its closed position, and means for rotating the stud.

11. In combination with a nipple arranged for the attachment of hose or the like, a collar of material cup-shape to permit access to the end of the nipple when located within said cup, said collar being constructed to be reversed on the nipple, and means for adjusting the collar along the nipple.

12. In combination with a nipple arranged for the flow of fluid and having a valve to close its mouth, a collar of material cup-shape within which said valve may be located, said collar being arranged to be reversed on the nipple, and means for adjusting the collar along the nipple.

13. A mouth piece having an inlet chamber round in form with a shoulder in its inner wall, a valve pivotally mounted on one side of the mouth piece to close the opening thereinto, a stud mounted on the valve, a locking plate secured to said stud and arranged to engage said shoulder, and means for turning the stud.

IRA H. SPENCER.

Witnesses:

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