

No. 767,115.

PATENTED AUG. 9, 1904.

J. A. McCORMICK.  
SODA ARM OR FAUCET.  
APPLICATION FILED DEC. 16, 1903.

NO MODEL.

Fig. 1.

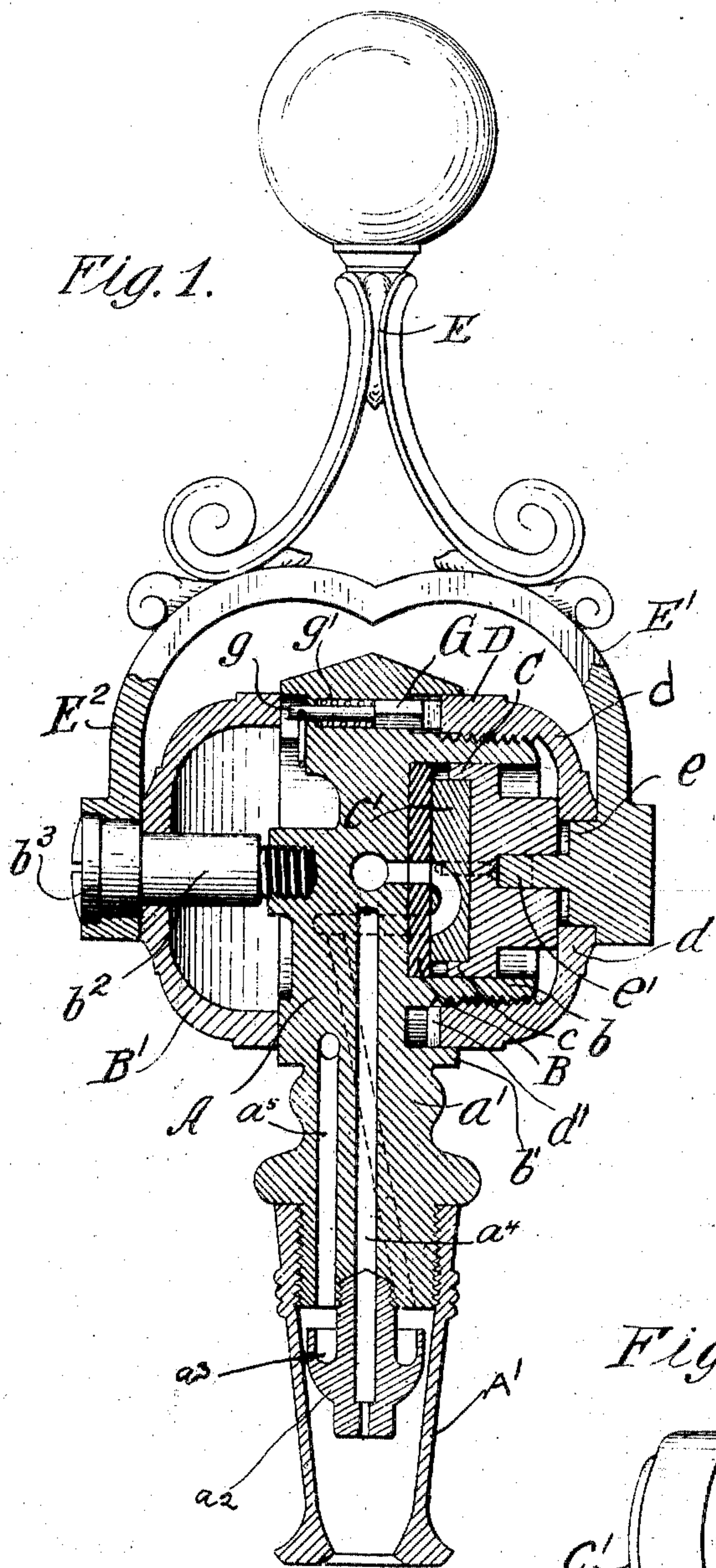


Fig. 2.

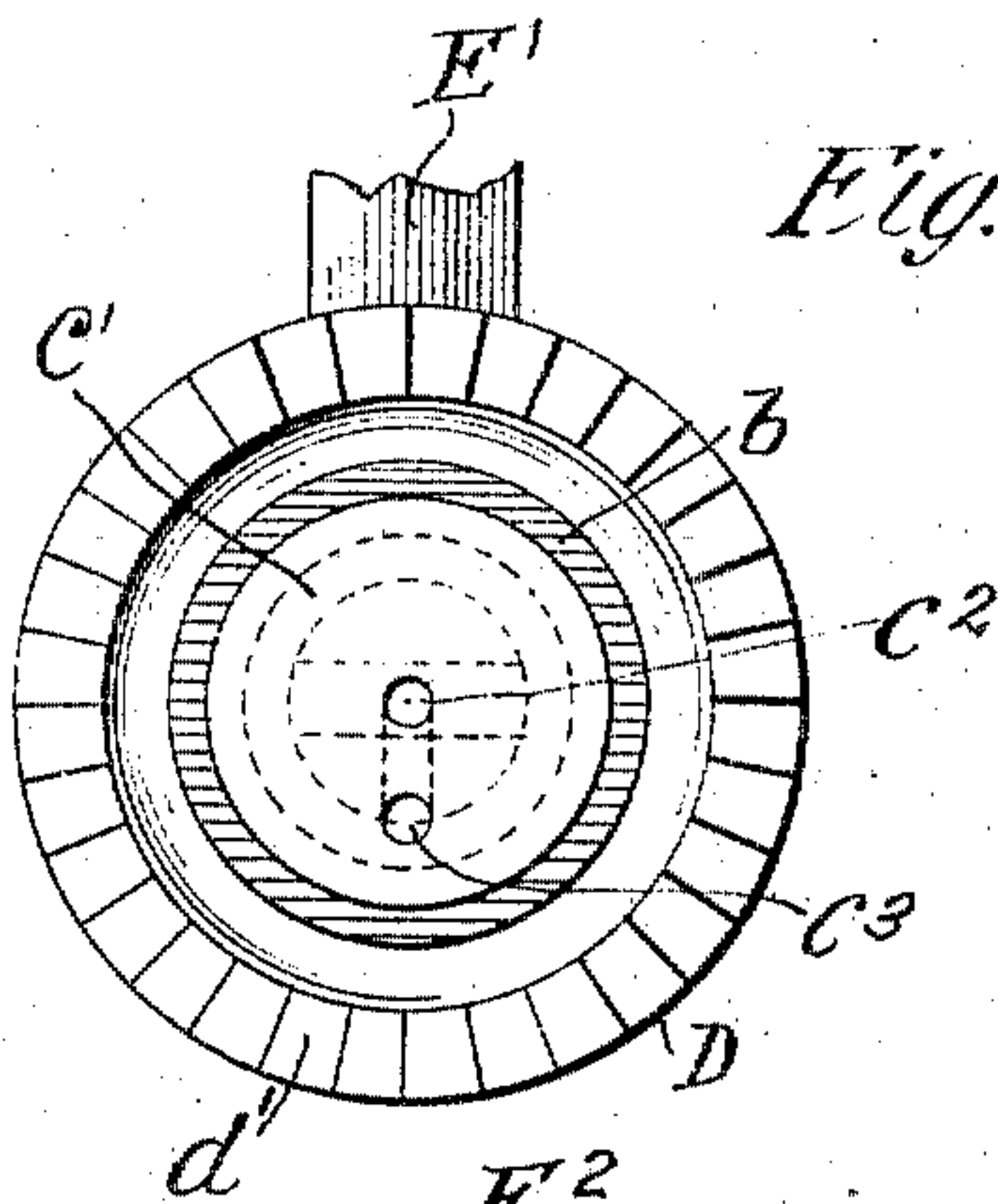


Fig. 3.

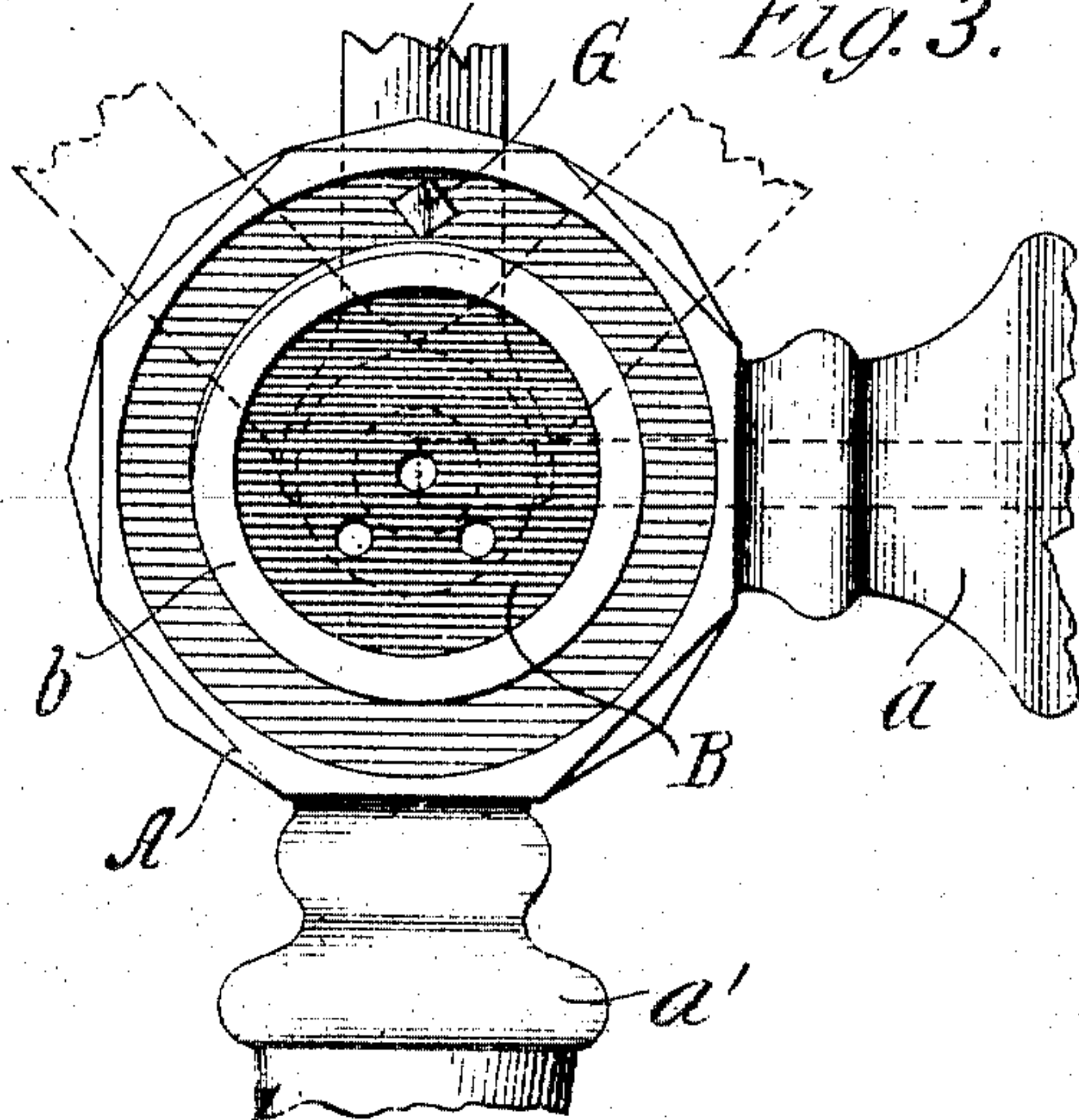


Fig. 4.

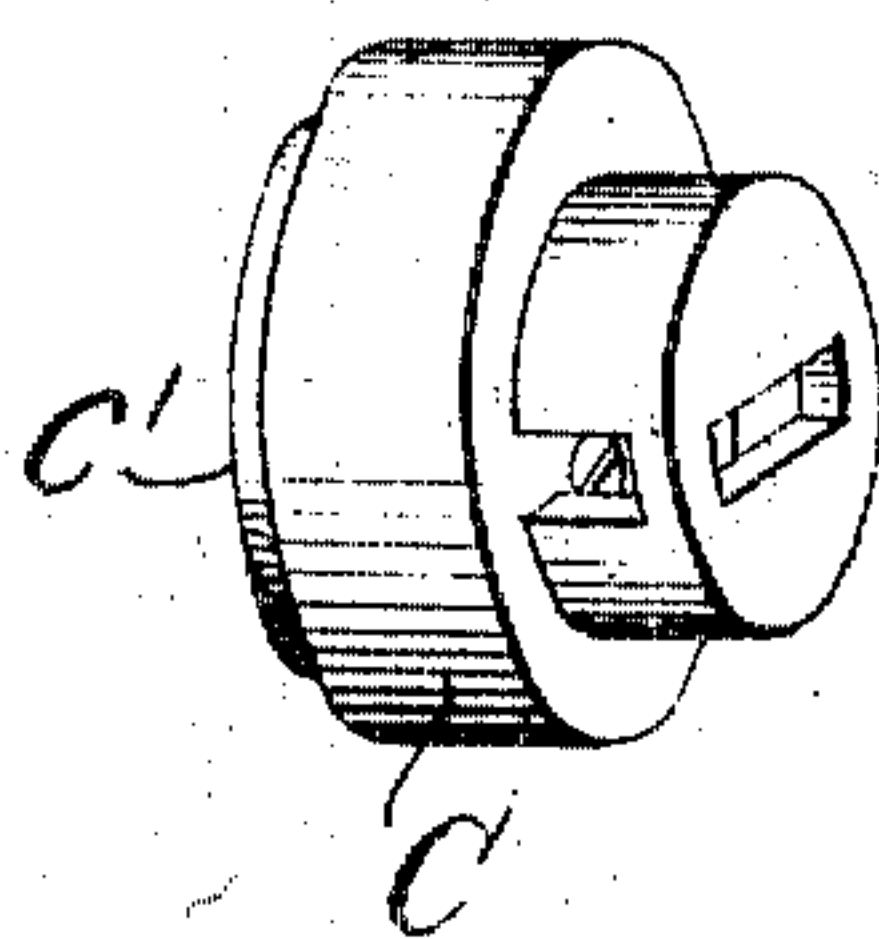
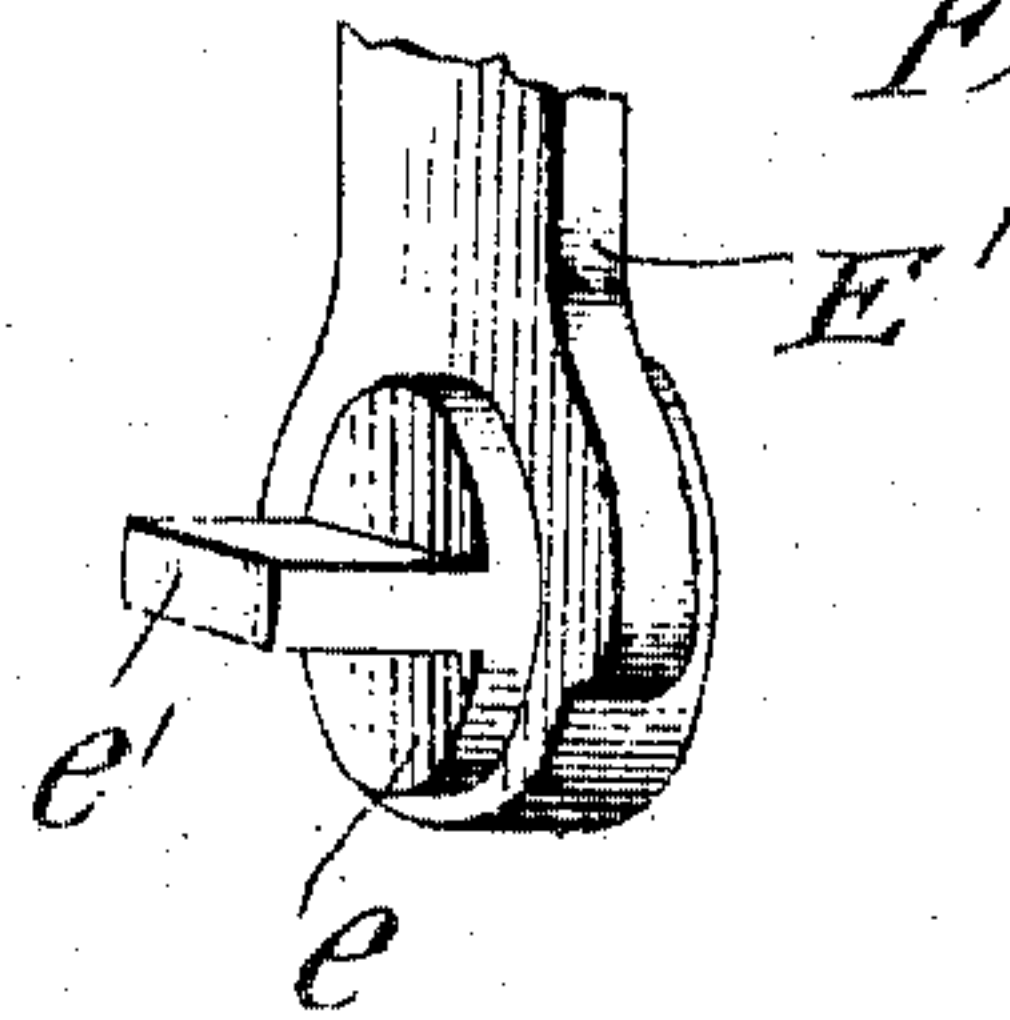


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## SODA ARM OR FAUCET.

SPECIFICATION forming part of Letters Patent No. 767,115, dated August 9, 1904.

Application filed December 16, 1903. Serial No. 185,399. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH A. McCORMICK, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Soda Arms or Faucets; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in soda arms or faucets for soda-water fountains adapted to deliver a liquid charged with gas or partly vaporized or an unvaporized liquid therethrough, dependent upon the adjustment of the operating-lever.

Heretofore it has been difficult to adjust the various parts of the mechanism to prevent leaking, and it has been a common fault that when satisfactorily adjusted the constant operation of the device tends soon to vary the adjustment, with the effect of permitting leakage. The adjustment of the valve upon its seat usually has been accomplished by means of a set-screw which, engaging through one of the lateral arms of the operating-lever, bears against the valve-closure and forces the same upon the seat. When thus constructed, the set-screw having a small bearing upon the valve-closure permits the same if slightly loose or a little worn to be forced away from the seat or slightly tilted by pressure, permitting leakage.

The object of this invention is to provide a strong, simple, and durable device of the class described, provided with adjusting means so constructed as to positively hold and lock the mechanism in adjusted relation after having been adjusted, permitting the adjustment to be varied only to increase the pressure of the valve-closure upon the valve-seat.

It is also an object of the invention to provide a broad bearing upon the valve-closure, insuring approximately even pressure over the entire area thereof and uniform wear upon the moving parts.

The invention consists in the matters here-

inafter described, and more fully pointed out and defined in the appended claims.

In the drawings, Figure 1 is a central transverse section of a device embodying my invention. Fig. 2 is an inner face view of the adjusting-nut and valve-closure therein. Fig. 3 is a fragmentary end elevation of the fixture with the valve-closure and adjusting-nut removed. Fig. 4 is a perspective view of the valve-closure. Fig. 5 is a perspective view of the lever end adapted to engage the valve-closure.

A indicates the main faucet-body rigidly secured on the outer end of a delivery-pipe *a*, leading from the tank, reservoir, or fountain, and which communicates with a central bore in said faucet-body, opening outwardly through the center of the valve-seat. Also integral with the faucet-body is the delivery-pipe *a'*, which may be of any configuration and is provided with a plurality of longitudinal bores in the usual manner, one of which, *a'*, opens centrally through and is restricted in the nozzle *a''*, and the others of which, *a'''*, open laterally of said nozzle, discharging into a deflecting-channel *a'''*, surrounding said nozzle and within the shell *A'*, which extends below said nozzle *a''* and affords an outer nozzle. Said faucet-body on one end thereof is faced to provide a flat valve-seat, in which is secured a washer of indurated fiber, rubber, or other suitable material *B*, through which is provided a central aperture communicating with the central bore of the faucet-body. Adjacent to the center of said washer is provided a plurality of other bores corresponding in number with the number of passages in the delivery-pipe and each of which communicates with one of said passages, which open laterally through said valve-seat. Surrounding said seat and concentric with the faucet-body is a circular flange *b*, which extends longitudinally of said body and is screw-threaded externally and within which fits the valve-closure *C*. Said valve-closure *C* is cylindrical in form and on its inner face is provided with a peripheral flange *c*, in which fits a washer *c'*, of leather, fiber, rubber, or any suitable material, which, as shown, is pro-



vided with a central aperture  $c^2$ , which registers with the passage in the central bore in washer B and also communicates through a passage in the valve-closure with an aperture  $c^3$  therein, positioned to register with either of the laterally-disposed apertures in the valve-seat. It follows that when the valve-closure is turned in one direction to the position indicated in dotted lines in Fig. 3 the passage in the valve-closure registers with the central aperture in the seat and with one of the laterally-disposed apertures, and when turned in the opposite direction at approximately a right angle with the former position it registers with the central aperture in the seat and the other of said laterally-disposed apertures. Means are provided for holding said valve-closure in positive adjustment upon the seat comprising a bur or internally-threaded nut D, which engages the threads of said flange  $b$  and is provided on its outer end with an in-turned flange  $d$ , which bears on the valve-closure near its periphery. Said flange  $d$  provides a reduced circular aperture at the center, as shown in Fig. 1, adapted to receive the cylindric pivot-bearing  $e$  of the arm  $E'$  of an operating-lever E of the usual or any desired type. Extending diametrically across said pivot-bearing is a rectangular projection  $e'$ , adapted to register with a complementary seat in the outer end of the valve-closure, as shown in Fig. 4, and which affords a long bearing for the lever in turning said closure. Said bur or nut D may be of any external conformation or ornamentation and is provided on its inner face with radially-disposed ratchet-teeth or projections  $d'$ . Seated in the body A between the flange  $b$  and an outer flange  $b'$  is a latch or bolt G, which, as shown, is angular at its outer end and which at its end adjacent to said bur is shaped complementally with said teeth or projections to engage the same and, as shown, is angular in cross-section and seated in a socket in said body and provided with a stem  $g$ , which projects outwardly at the opposite end of the body and is provided with a ring or other suitable means for manual engagement to enable the latch to be retracted. As shown, the aperture for said bolt or latch is reduced in size where the end of the stem passes therethrough, and a pushing-spring  $g'$  is secured in the seat and acts normally to hold said latch in position to engage said teeth, thus permitting the nut or bur D to be turned inwardly to produce any desired degree of compression of the valve-closure against the valve-seat, while said bolt or latch G acts to hold said bur or nut from being retracted either by accident or design without first retracting said latch. On the end of said body opposite the bur D is provided a washer B', shaped externally to afford a finish corresponding with that of said bur or nut and of a diameter equal thereto and sufficient when in place between the arm  $E^2$  of the lever E

and the body to cover the inner end of said bolt or latch G. Said washer is provided with a central aperture extending therethrough adapted to receive a bolt  $b^2$ , which is shouldered adjacent its head or outer end and adapted to bear positively against said washer, as shown in Fig. 1, thereby bearing the same firmly against the body. The end of said arm  $E^2$  is apertured to receive the head  $b^3$  of said bolt and is provided with an interior shoulder against which the inner side of the head bears.

The operation is as follows: In assembling the device the valve-closure is seated within the flange  $b$ , and the nut or bur D is screwed downwardly on said flange until the pressure of the inwardly-directed flange  $d$  at the outer end of said bur bears with sufficient pressure upon the outer end of the valve-closure to hold the same firmly to the valve-seat. The latch or bolt G engages behind the teeth or ratchets of said bur or nut and acts to hold the same from retraction or unscrewing. The tongue  $e'$  of the lever end  $E'$  is then inserted in the complementary seat in the valve-closure with the rounded pivot or cylindric bearing  $e$  of said lever end seated in the aperture in the outer end of said nut. The washer B' is now slid into position covering the bolt or latch G, and the bolt  $b^2$  is inserted through the lever end  $E^2$  and said washer and screwed into the faucet-body, as shown in Fig. 1, the inner shoulder of said bolt bearing against the washer, and the friction caused thereby acts to hold said bolt from turning when the lever E is actuated. Having assembled the device and connected the same with a suitable fountain or reservoir by means of the pipe  $a$ , should the device ever require adjustment—as, for instance, in the event of the washers  $b$  or  $c'$  becoming more or less worn—the same may be readily brought into perfect bearing by turning the nut or bur D upon the flange  $d$ , said latch permitting the same to turn only to bring the valve-closure into more positive bearing upon the seat. Should it ever be necessary to renew said washers, it may be readily accomplished by removing the bolts  $b^2$  and washer B', after which the latch or bolt G may be retracted manually and the bur or nut D removed, exposing the valve seat and closure to enable necessary repairs to be made. Obviously as the flange  $d$  bears with uniform pressure on the outer end of the valve-closure near its periphery said valve-closure is at all times held in unvarying relation with the seat, the only movement possible being the partial rotation due to the movements of the lever. In the devices heretofore used also the continued operation of the lever frequently causes the adjusting devices to be more or less loosened. This can obviously never occur with a soda-arm constructed as described, not only for the reason of the frictional bearing of the bur



upon the threaded flange, but also for the reason of said latch holding the same positively in its adjusted position.

While I have described my invention as applicable to a soda arm or faucet, the same is obviously applicable for use in faucets and valves of many other kinds and descriptions, and I do not desire to be limited either to the exact construction or the specific uses herein shown, as many details of construction may be varied without departing from the principles of this invention.

I claim as my invention—

1. In a valve, the combination with a valve-body containing a valve-seat and provided with a plurality of longitudinal passages there-through, of a threaded flange thereon, a valve-closure fitted upon the seat and provided with a passage adapted to communicate with any of said longitudinal passages, a nut threaded upon said flange and provided with inwardly-directed flanges adapted to bear upon the valve-closure, and spring-controlled locking means adapted to permit said nut to be turned freely in one direction but holding the same from movement in the other.

2. A valve comprising a valve-body provided with a valve-seat, a raised flange surrounding the seat and a peripheral recess surrounding the same, a rotatable valve-closure engaged upon the seat in the flange, a nut provided with inwardly-directed projections adapted to bear the valve-closure against the valve-seat, teeth or projections on the inner side of said nut and extending into said recess, a spring-controlled latch acting to engage said teeth and permitting said nut to be turned inwardly on the flange and holding the same from being retracted therefrom and means normally inaccessible adapting the latch to be manually retracted to permit retracting said nut on the flange.

3. In a valve the combination with a valve-body having a recessed valve-seat therein, of a circular, externally-threaded flange surrounding said seat, an outer flange on the body forming a channel between said threaded flange and the same, a rotatable valve-closure seated within the threaded flange, an internally-threaded nut adapted to engage the threaded flange, an inwardly-directed flange on said nut acting to bear said valve-closure onto the seat and apertured to receive the actuating means therethrough, the edge of said

nut fitting between said flanges on the body, teeth on said edge and a spring-controlled latch adapted to engage said teeth and hold said nut from movement in one direction, and means adapted to actuate said closure.

4. The combination in a valve-body having on one side thereof a peripheral circular recess, a spring-latch seated in the bottom thereof, a circular threaded flange on the inner side of said recess, a valve-seat within the flange, a rotatable valve-closure engaged upon the seat and extending outwardly beyond the flange, a threaded nut adapted to engage the threads on said flange, teeth on said nut positioned for engagement by the latch and a flange on the inner side of said nut adapted for positive bearing on the outer end of the valve-closure, and apertured to receive the actuating means for the closure therethrough, and a washer positively engaged on the opposite side of said valve-body and acting to conceal the latch.

5. A valve comprising a central valve-body, an apertured flat seat therein, a closure rotatable on said seat, a nut having threaded engagement with a part on said body and having an inwardly-directed flange thereon adapted to bear on said closure, a washer on the opposite side of said body and secured to the body by a central bolt, a lever provided with a yoked end one arm of which is pivoted on said bolt and the other end of which extends inwardly through said nut and is removably engaged with the closure whereby movement of the lever actuates the valve-closure.

6. In a soda-arm the combination with a valve-body, of a washer on one side of the same and a nut on the other side thereof conforming externally with said washer, and having threaded engagement with said body, a spring-latch holding said nut in adjusted relation with the body, a valve-seat in said body adjacent the nut, a closure therefor, a flange on the nut acting to hold the closure to its seat and a lever pivoted in said nut and engaging said valve-closure and affording operating means therefor.

In testimony whereof I have hereunto subscribed my name in the presence of two subscribing witnesses.

JOSEPH A. McCORMICK.

Witnesses:

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