No. 630,184. Patented Aug. 1, 1899.

G. K. COOKE.

SELF CLOSING FAUCET.

(Application filed Aug. 6, 1898.)

(No Model.)

Fig. 1.

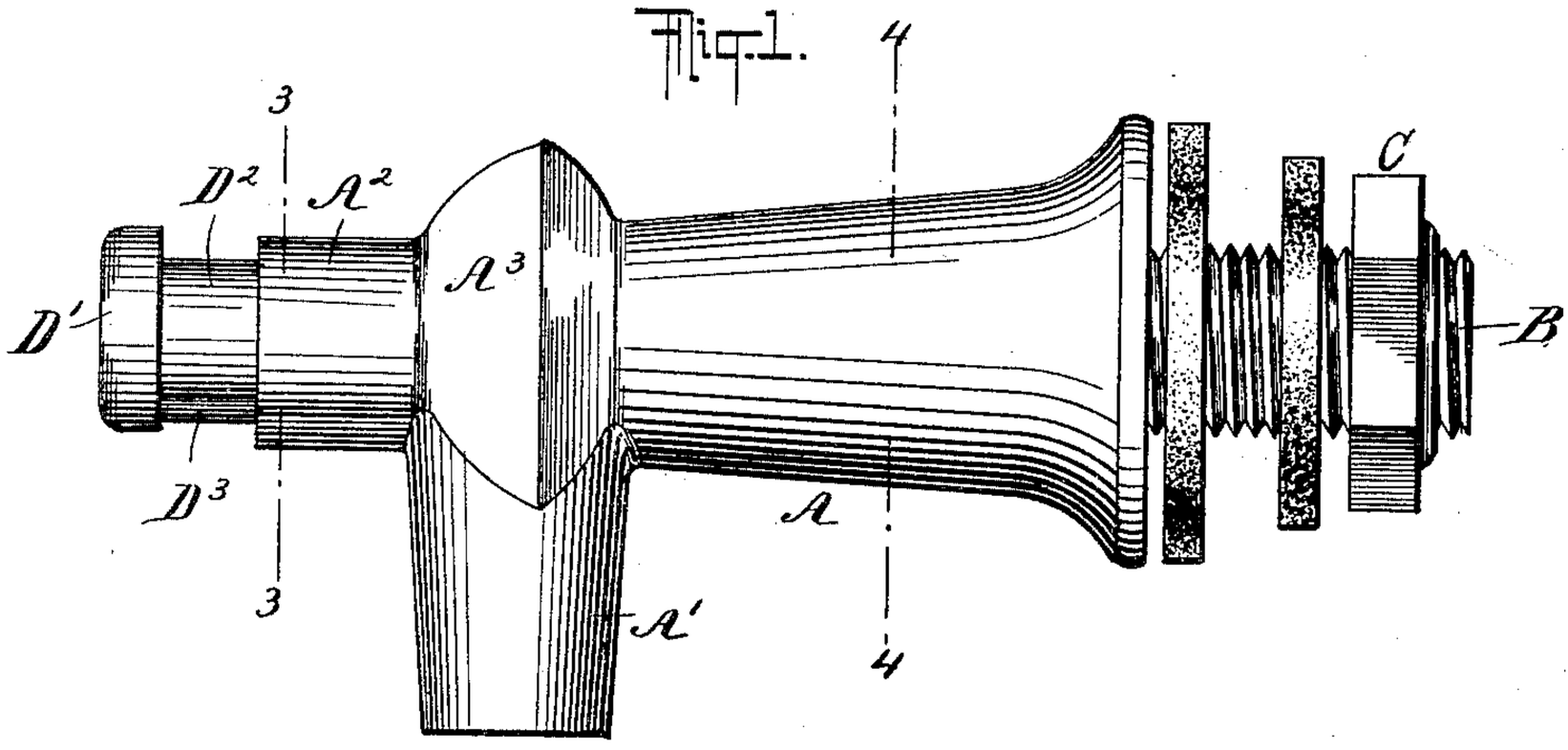


Fig. 2.

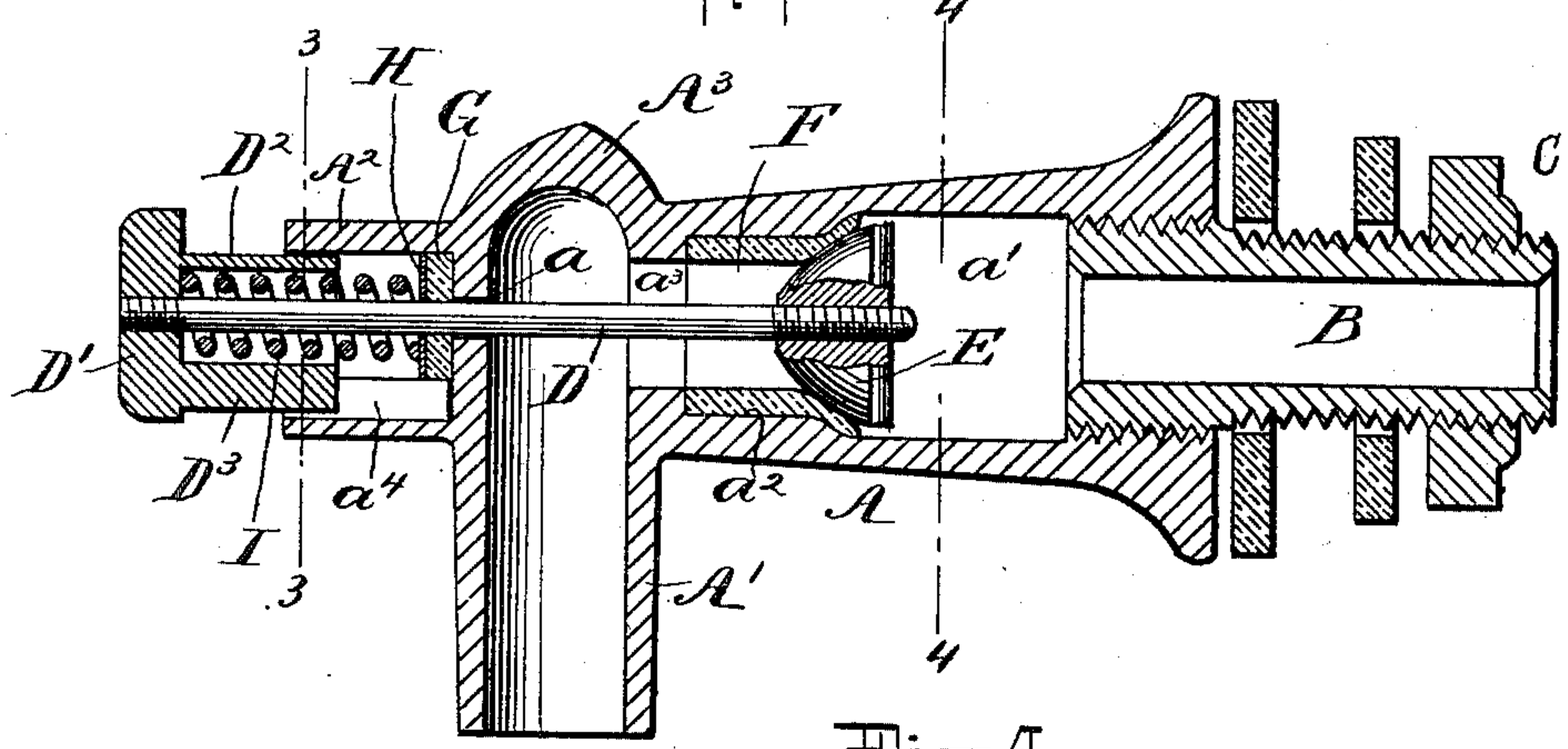
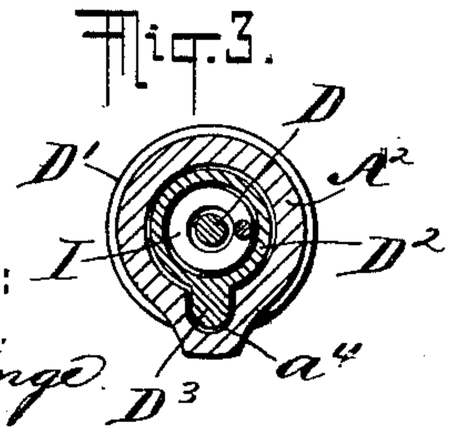
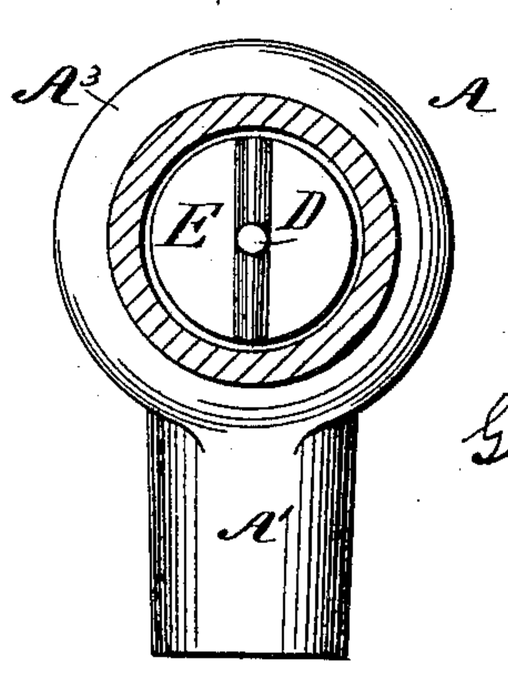


Fig. 4.

Fig. 3.





WITNESSES:

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SELF-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 630,184, dated August 1, 1899.

Application filed August 6, 1898. Serial No. 687,948. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KISSAM COOKE, a citizen of the United States, residing at New York, (Jamaica,) in the borough of Queens, State of New York, have invented a certain new and useful Improvement in Self-Closing Faucets, of which the following is a specification.

This invention pertains to improvements in that class of faucets known as "self-closing" to secure the best results in a simple and reliable manner; and it consists in the construction and arrangement of parts, fully set forth below and pointed out in the claims.

The accompanying drawings form a part of this specification and represent what I consider the best means of carrying out the invention.

Figure 1 is a general side view of the faucet. Fig. 2 is a central longitudinal section of the same. Fig. 3 is a cross-section on the line 2 2 in Figs. 1 and 2; and Fig. 4, a cross-section on the line 4 4 in Figs. 1 and 2, viewed from the left.

Similar letters of reference apply to all the drawings.

A is the body of the faucet, which is provided with a peculiar water-course through it.

B is a hollow stem or supply connection which is removably attached to the body A by screwing firmly into the same and is provided with a threaded end and nut and elastic washers.

A′ is the discharge-nozzle, formed integral with the body.

The waterway in the body of the faucet A is of different diameters, the part a^2 being of less diameter than the part a' and the part a^3 being less than either. The part a^3 connects with the opening through the discharge-nozzle A′. A hollow extension A^2 from the body of the faucet connects with the interior a^3 by a small orifice a, through which plays a rod D, screwed tightly into a puppet-valve E. A short length of tubing F, made of the best vulcanized rubber, is tightly fitted in the portion a^2 of the faucet-body, abutting against the offset made by the smaller portion a^3, forming a tubular flexible valve-seat open at both ends and extending a short distance into the larger portion a', which latter is tapered, leaving a conical space b^3 around the rim of the rubber seat, adapted to match the seat yieldingly and tightly to the valve.

The valve-rod D is fixed at its opposite end to a push-button D′, on which is cast a hollow shell D^2, having a longitudinal ridge or feather D^3 along its lower side, which telescopes with the extension A^2 and moves loosely therein, the latter having an internal groove a^4, which receives the feather D^3 and allows the rod and valve to move endwise, but forbids their revolving.

Surrounding and fitting snugly on the valve-rod D is a leather washer G, matching against the surface around the hole a. Pressing against the leather washer is a metal washer H, having a central opening h slightly larger than the valve-rod D, which passes through it. A spiral spring I encircles the valve-rod, one end abutting upon the metal washer H and the other end pressing against the interior of the push-button D′. The gentle force of this spring urges the valve E to its seat and the telescoping construction hides the spring from view and protects and guides the parts.

I provide a finger clutch or bearing A^3, consisting of an enlarged outer diameter of the body of the faucet at the connection of the discharge-nozzle A′ with the faucet-body A, to form an abutment for the fingers in operating the push-button.

It will be seen that when the push-button D′ is pressed the spiral spring I is compressed and the valve-rod D is thrown inward, carrying with it the valve E and removing it from the valve-seat F, thus allowing a free passage for a flow of liquid through the waterway, past the valve E, and out through the discharge-nozzle A′. When the pressure of the thumb on the push-button is relaxed, the spring I presses the parts back to the original position. In the act of closing, the valve E is pressed into the flexible valve-seat F, distending that end and forcing it outward and against the conical interior of the body of the faucet, thus seating the valve E in a watertight seat of the same configuration as the outer form of the valve E. The flexible packing-washer G is held firmly in position around the valve-rod D in the hollow extension A^2 by

the pressure of the spiral spring I on the metal washer H. This packs the leather washer G against the metal around the valve-rod and against the metal around the orifice *a*, forming a water-tight joint. This is especially important in case a pipe or filter is attached to the nozzle, so as to create a pressure of the fluid in this part of the interior. The metal washer H assists in holding the flexible washer in place and in guiding the valve-rod D and valve E centrally when in motion. A clamping-nut C is shown in Fig. 1 screwed to the stem B to attach the stem firmly to the usual opening in a liquid-receptacle. A plain stem can be substituted when it is required to solder the same to a can or other vessel or to plumbing-work.

The removable stem B allows the assembling of the interior parts of the faucet, which could not be otherwise reached for that purpose when constructed as shown.

The removable stem can be attached to a receptacle without the body of the faucet being attached to it, thus securing a saving in size of package, freight, &c., and damage to the faucet in transit.

The valve E and valve-seat F are constructed with a view to prevent leaking and to secure a perfect seating of the valve in its flexible seat with a comparatively weak spring and without the need of using undue force to that end. The pressure of the liquid upon the valve E assists materially in seating it securely. This result is secured by the construction and arrangement of the parts as hereinbefore described.

The fin or ridge projection D^3, in combination with the groove a^4, prevents the parts from becoming injured or detached when the faucet is used and operated by unskilled operators.

The projecting portion of the faucet-body at A^3 forms a convenient and needed clutch and rest for the fingers when operating the push-button D′.

I claim as my invention—

1. In a faucet, a body portion having the large passage a', the smaller passage a^2 and the still smaller passage a^3 in line as shown, a seat F of yielding material matched in the intermediate size a^2 and resting against an offset, a valve of rigid material adapted to bear within and expand a portion of the seating in the larger portion a', and valve-operating means D D′ I, substantially as herein specified.

2. In a faucet, a body portion having the parts a', a^2, of the waterway of varying diameters and presenting the rounded offset, a cylindrical seat of yielding material within the part a^2, and extending freely within the part a', in combination with a valve of rigid material adapted to bear within and expand the free portion of the seating, and valve-operating means, substantially as herein specified.

3. In a self-closing faucet, the combination with a body portion having an integral tubular projection communicating with the nozzle-passage and provided with an internal longitudinal groove, of a valve-operating button having a tubular extension playing within said projection and provided with a spline engaging the groove thereof, an interposed expansion-spring within both the projection and the extension, a rod connected to the button, extending through the projection across the nozzle into the waterway beyond and carrying a valve thereat, substantially as specified.

4. In a faucet, the combination with the body having the large rear and smaller intermediate and nozzle portions, of a spring-actuated rod having its threaded end extending to the larger rear portion, a valve on said end, a tubular seat F of yielding material, coöperating with said valve, and a removable stem adapted for detachment from the larger end of the body, substantially as herein specified.

5. In a self-closing faucet, the combination with a body portion having an integral tubular projection communicating with the nozzle-passage through an opening *a* in a partition, said projection being provided with an internal longitudinal groove, a yielding washer G within the projection seated against the partition and faced by a rigid washer H, having a larger perforation, a valve-operating button having a tubular extension playing within said projection and having a spline engaging the groove thereof, an interposed expansion-spring within both the projection and the extension, a rod connected to the button, extending through the projecting washer and partition across the nozzle into the waterway beyond and carrying a valve thereat, substantially as herein specified.

6. In a self-closing faucet, the combination with the body portion having an integral tubular projection communicating with the nozzle-passage, the external portion of the arch of which projects to constitute a finger rest or bearing, said tubular projection being provided with an internal longitudinal groove, of a valve-operating button having a tubular extension playing within said projection and having a spline engaging the groove thereof, an independent expanding-spring within both the tubular projection and the extension, a rod connected to the button extending through the projection across the nozzle into the waterway beyond and carrying a valve thereat, substantially as specified.

7. In a self-closing faucet, the body or casing A, having a nozzle A′ and provided with a tubular projection A^2 grooved as described, a button having a tubular extension carrying a rib playing in said groove, an interposed expansion-spring, a cylindrical seating of flexible material, a valve-rod extending from the button through an opening *h*, and carrying a valve adapted to enter and expand the

elastic cylindrical seating within a gradually-enlarged portion of the body, rigid and yielding washers H, I, located contiguous to the opening *h*, in combination with an independent section B, removably attached to the larger end, all combined and arranged to serve substantially as herein specified.

In testimony that I claim the invention above set forth I affix my signature in presence of two witnesses.

GEORGE KISSAM COOKE.

Witnesses:

M. F. BOYLE,

J. B. CLAUTICE.