

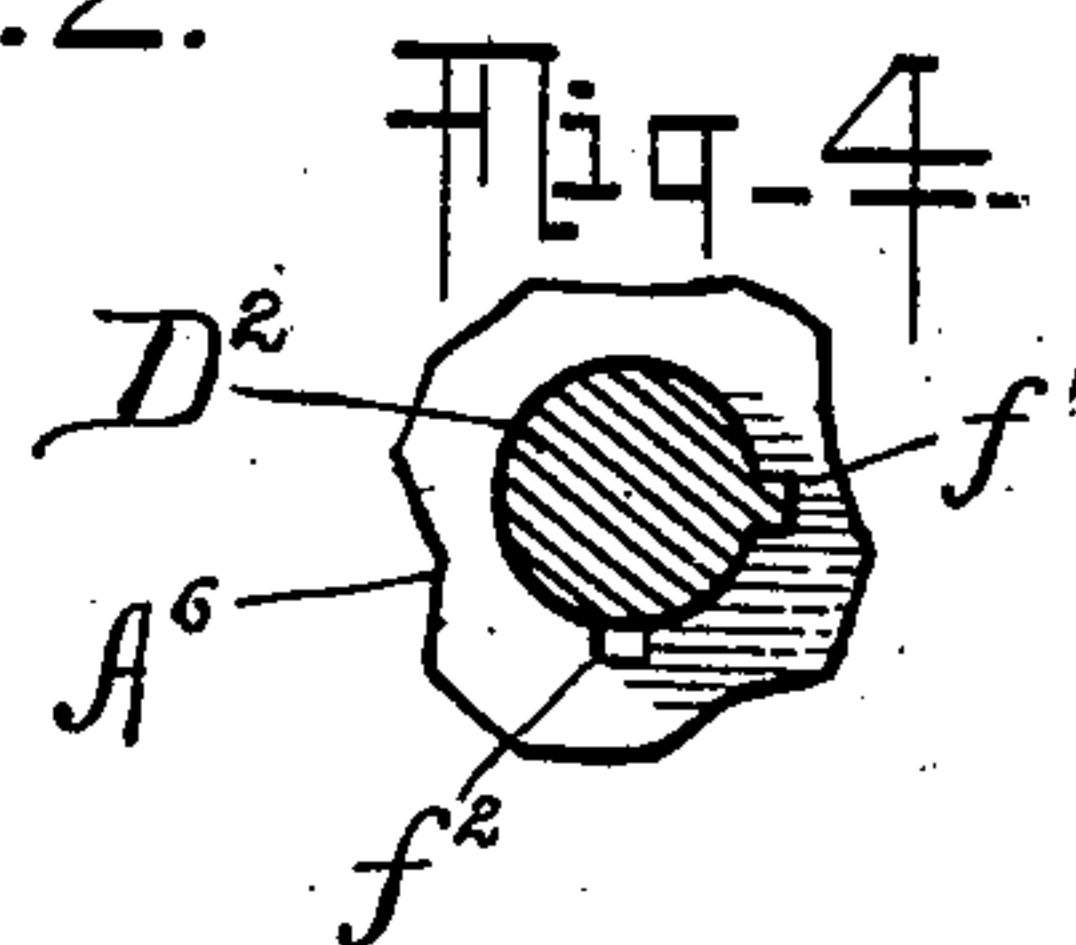
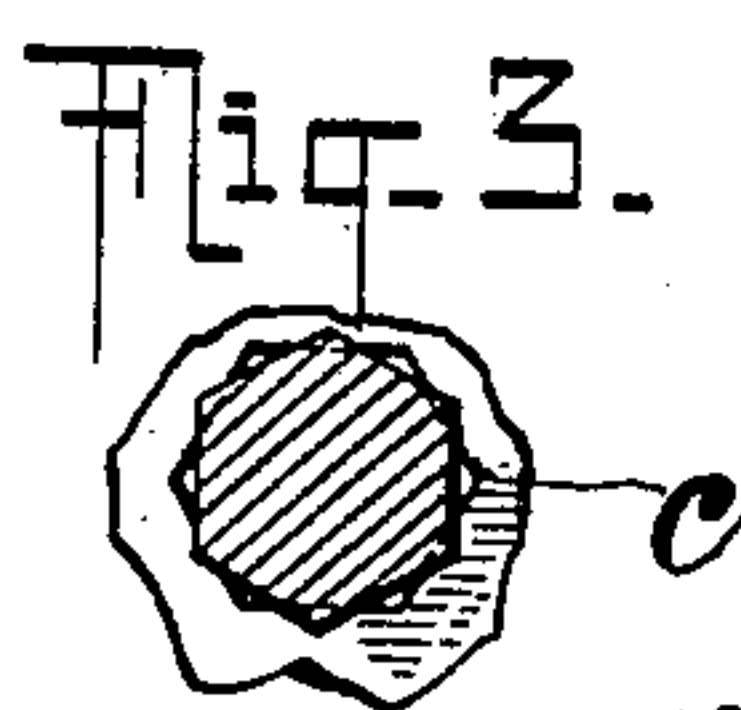
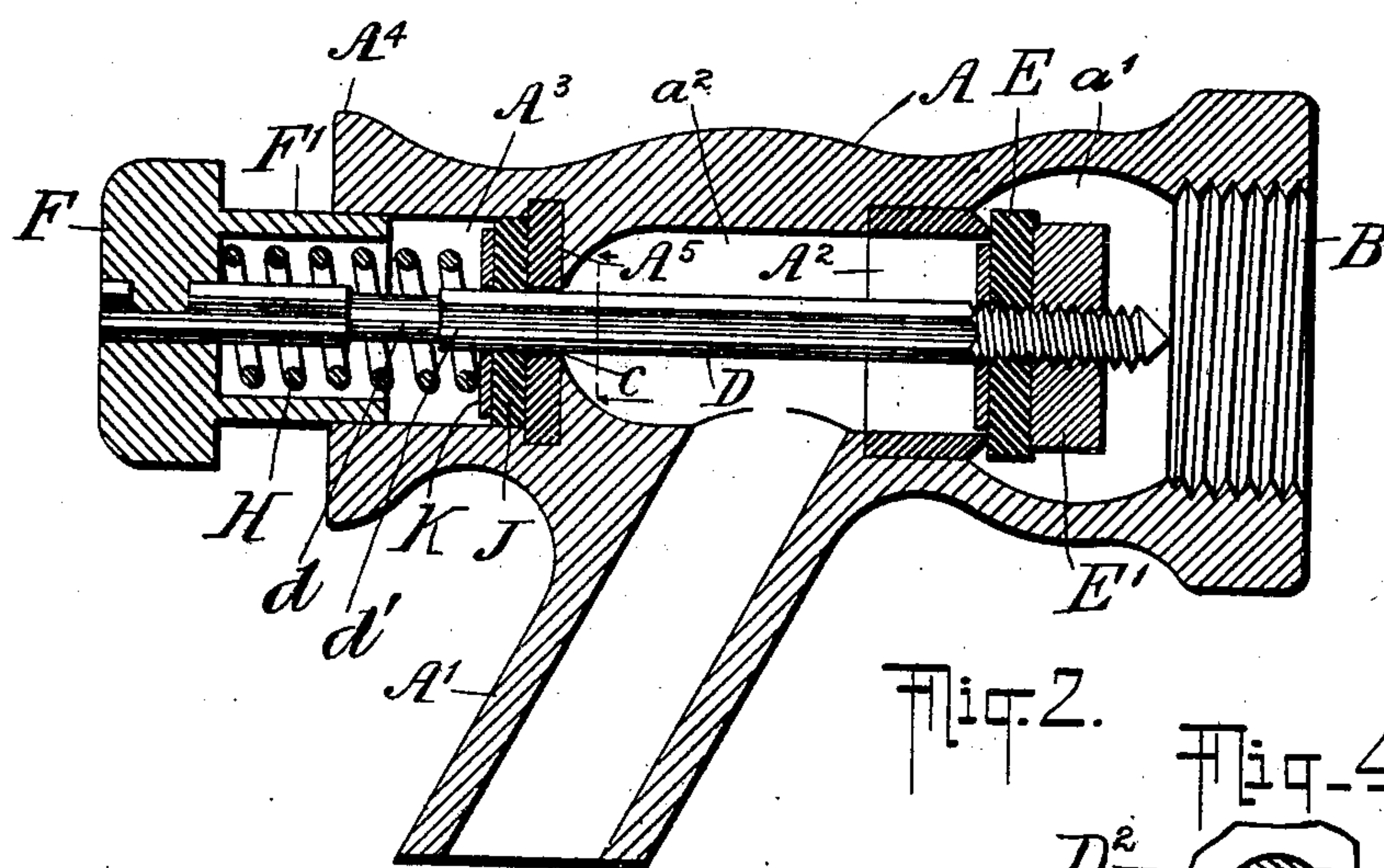
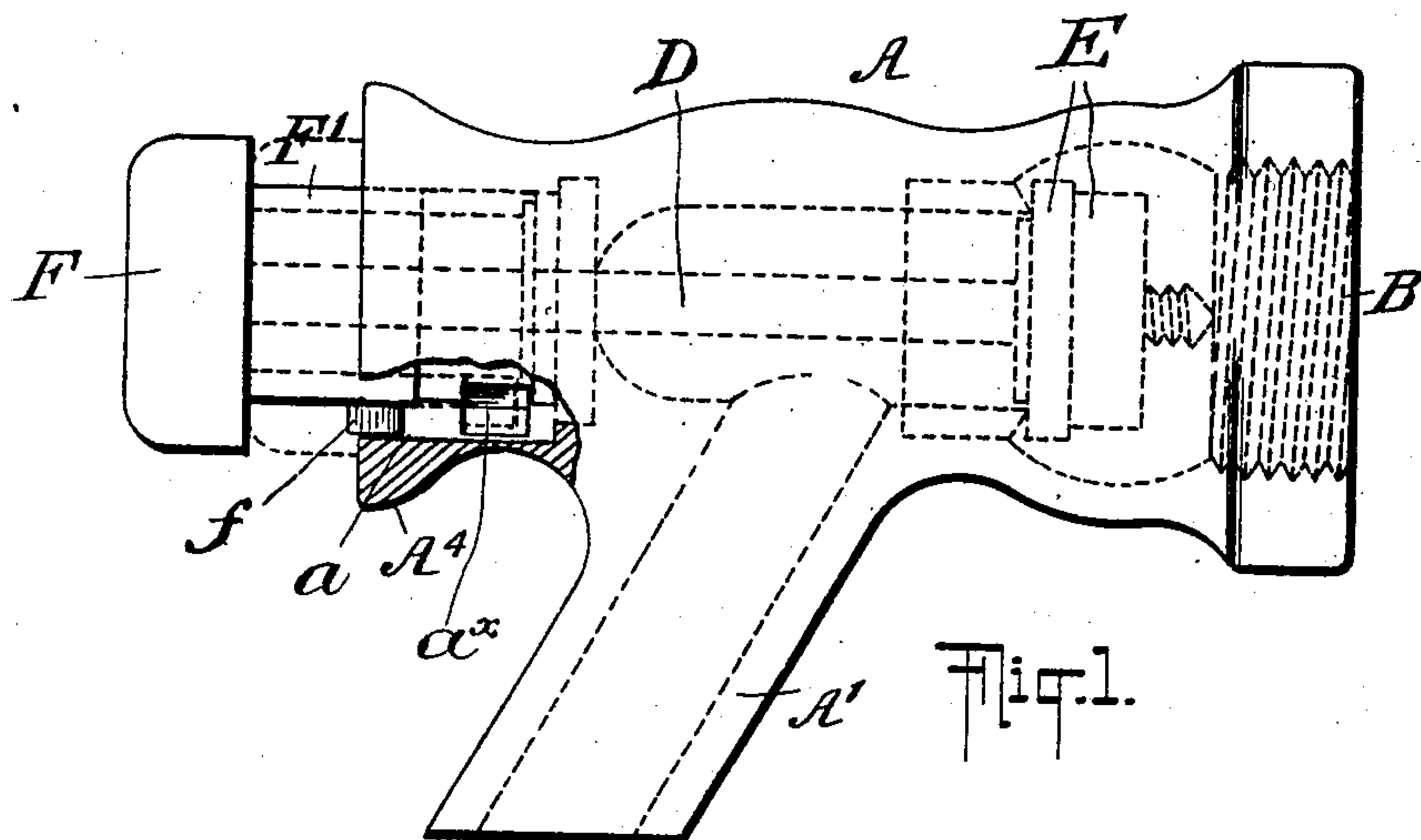
No. 763,263.

PATENTED JUNE 21, 1904.

G. K. COOKE.
FAUCET.

APPLICATION FILED JAN. 16, 1903.

NO MODEL.



WITNESSES:

O. B. Winge.
Chas. J. Clagitt

INVENTOR

George K. Cooke

UNITED STATES PATENT OFFICE.

GEORGE KISSAM COOKE, OF JAMAICA, NEW YORK.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 763,263, dated June 21, 1904.

Application filed January 16, 1903. Serial No. 139,278. (No model.)

To all whom it may concern:

Be it known that I, GEORGE KISSAM COOKE, a citizen of the United States, and a resident of Jamaica, in the borough of Queens, in the city and State of New York, have invented certain new and useful Improvements in Faucets, of which the following is a specification.

The subject of the present invention is an improved faucet, and as disclosed herein is set forth as applied to that class of faucets known as "self-closing," although it also embodies improved provision whereby it may be manipulated to hold its valve in an unseated position for any desired period of time.

There are other novel features and details involved in the improved construction which contribute to secure the best results in a simple and reliable manner.

In the accompanying drawings, forming part of this specification, Figure 1 is a side view, partly in section, of a faucet embodying my invention, the position of certain interior parts and the condition occupied by the finger-pressed button being indicated in two positions by both full and dotted lines. Fig. 2 is a central longitudinal section of a faucet, illustrating a modification of the invention. Fig. 3 is a detail transverse sectional view of the construction illustrated in Fig. 2, the section being taken in the plane illustrated by the broken line in said latter figure and looking in the direction of the arrows. Fig. 4 is a detail sectional view of another modification of a construction which permits the valve to return to its original seating.

Corresponding reference characters are employed to designate similar parts throughout the several figures of the drawings where they occur.

The body A of the faucet, which may be of soft metal, is provided with a watercourse through it, B being the fluid-inlet to the same, while A' is the discharge-nozzle, formed integral with the body.

A² is the rigid tubular valve-seat, of harder metal than the body and arranged to fit immovably therein. I may provide the tubular valve-seat A² by forming the same from a short section of brass or other tubing and casting the same within the body at the ap-

propriate point to form the valve-seat for the valve E.

The waterway in the body of the faucet A is of two diameters, the part a² being smaller than the part a'. The part a² communicates with the opening through the discharge-nozzle A'. The hollow extension A³ from the body of the faucet connects with the interior waterway a² by a small orifice c, through which plays a valve-rod D, to which is rigidly attached at one end the valve E by means of the screw-nut E'. The valve-rod D is strongly and rigidly united at its opposite end to a push-button F, on which is formed a shank or hollow shell F', which telescopes within the extension A³ and moves loosely therein.

In the use of this class of valves the average person is liable to attempt to turn the push-button, the effect of which in the absence of some preventive feature would be objectionable, notably the undesirable unscrewing of the valve from the stem, as well as cutting of the former. With a view of avoiding the difficulties noted I have devised several means, two of which are illustrated in the accompanying drawings.

In Fig. 1 the shell F' of a push-button F is provided with a lower lug f, which plays in a keyway a, formed in the lower side of the extension A³ of the body. The extension at one side is provided with a lateral opening a^x, providing a shoulder adapted to be engaged by the lug f when the shell is pushed inward and the button F is given a partial rotation. This will cause said lug to enter said opening, and thus hold the parts in their inwardly-pressed position against the action of the helical spring employed, which is illustrated more especially in the construction disclosed in Fig. 2 and which will presently be more particularly described. By giving the knob F a reverse turn equal to that previously imparted the lug f will be withdrawn from the opening and brought into line with the key-seat, whereby under the action of the spring the shell and knob will be forced outward and through the medium of the rod connection D (illustrated in dotted lines) the valve E, which was previously unseated and maintained so under the action of

the lug engagement, will be restored to its seat under the same conditions and approximately in the same position that it previously occupied.

5 Referring now to the construction disclosed in Figs. 2 and 3, I have substituted for the lug and opening an arrangement wherein the valve-rod is not round. In the construction disclosed in said figures the rod is represented
10 as being hexagonal in cross-section; but it may be square or of other shapes not round, and the orifice *c* in the piece *A*⁵, through which the rod *D* plays at the forward portion of the faucet, is of corresponding shape and
15 allows said rod to move through it axially, but prevents it being revolved. A convenient arrangement will be to form the piece *A*⁵ of brass or other hard metal separate from the body of the faucet and attach the same
20 in position by casting the faucet-body around the same, said piece being located at the junction of the waterway *a*² and the tubular extension *A*³, as shown. Such piece, however, may be an integral part of the body. The
25 orifice *c* may be made by either boring or punching. Surrounding and fitting snugly on the valve-rod *D* is a leather washer *J*, matching against the surface around the guide-orifice *c*. Bearing against the leather washer is
30 a metal washer *K*, having a central opening slightly larger than the valve-rod, which passes loosely through it. A helical thrust-spring *H* encircles the valve-rod, one end of said spring abutting upon the metal washer *K*, while the
35 other end presses against the interior of the push-button *F*. The normal force of the spring urges the valve *E* to its seat, and the peculiar outline of the guiding-orifice *c*, in connection with the special shape of the rod, prevents the
40 latter from revolving, and thereby prevents the binding-nut *E'* from being unscrewed. I provide an enlarged outer diameter of the body of the faucet in the form of a trumpet end or gracefully-formed flange *A*⁴ to serve as an
45 abutment for the fingers in operating the push-button *F* by the thumb. It also serves to protect by the increased strength and amount of metal the hollow guiding extension *A*³ from injury, this being a part most exposed to damage
50 when the faucet is in position for use. It will be seen that when the push-button *F* is pressed the spiral spring *H* is compressed and the valve-rod *D* is thrown inward, carrying with it the valve *E* and removing it from
55 the valve-seat *A*², 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 on the push-button is relaxed, the spring *H*
60 presses the parts back into their original positions. In the act of closing the valve *E* is pressed upon the valve-seat *A*², and the pressure of water behind, together with the resilience of the coiled spring *H*, forms a water-tight joint. In the usual faucet the valve *E*

requires frequent renewing, owing to its being abraded by being moved or rotated on its seat. This is prevented by the shape of the valve-rod *D* and the guiding-orifice *c*. It will also be desirable at times in the construction
70 disclosed in Figs. 2 and 3 in instances where a somewhat prolonged flow is required to retain the valve unseated independently of any finger-pressure, and to accomplish this the rod *D* is reduced or cut away, as indicated at *d*
75 in Fig. 2, to present a shoulder *d'*. Obviously as thus constituted when the button *F* is pressed to the limit of its inward movement the angular non-rotatable part of the rod will have passed beyond the area of the orifice
80 *c* and the reduced part *d* of the rod occupy the latter. Consequently the button can be turned to rotate the rod to bring the shoulder *d'*, which is now immediately at the rear of the piece *A*⁵, into engagement with
85 one of the angular projections forming the orifice *c*. A slight reverse revolution will disengage said shoulder and permit the reentrance of the non-rotatable part of the rod within said orifice. Instead of the rod being
90 hexagonal it may be generally round in cross-section, but provided with a lower spline or feather *f'*, the opening in the part *A*⁶ being of corresponding outline, while the forward portion of the rod has the spline *f'* removed,
95 so that when the rod *D* is pressed to the limit of its inner movement it can be slightly turned to cause the forward end of the spline to take behind the part *A*⁶, as illustrated in Fig. 4, and thereby maintain the valve unseated. To
100 restore the parts, the rod is reversely turned, so that its spline will register with the keyway *f*² provided therefor, whereupon the rod will be moved outward under the action of the spring which, it is understood, will be employed and the valve consequently resealed in its original position.

It will be observed that in either of the faucets disclosed the provision for normally maintaining the button *F* and its shank *F'* against
110 rotation is interiorly located, as is also the means permitting the turning of the button and shank at the limit of their inward movement to engage said provision with said means. By this arrangement the construction is materially
115 cheapened and rendered more efficient, as the necessity for employing extra and separate parts for the purposes indicated is obviated, and said provision and means are so disposed as to insure the exclusion therefrom of
120 dirt and other foreign matter that might otherwise interfere with the proper functions of such provision and means. The rounding of the extension, particularly contiguous to its intersection with the body of the faucet, besides contributing to provide a proper finger-rest avoids the presence of an angle at the point of such intersection. An angle at this point would tend to weaken the extension connection, particularly as such angle would be
125 130

in immediate proximity to the metal where the piece A^5 is embodied. The improved faucet also presents the novel feature of a body cast in one piece with the spout and containing a comparatively extended part a^2 of the waterway, at the ends of which part are the tubular valve-seat A^2 and perforated piece A^5 , respectively, of separate character and clamped in position by the cast metal, the rod D playing through the piece A^5 and carrying at its inner end the yielding valve coactive with said seat. By this arrangement the properly shaped and constituted section A^2 and piece A^5 can be adjusted in a mold and the body then cast to contain and secure the same, thereby greatly contributing to the production of a cheap, simple, and efficient faucet.

Modifications may be made without departing from the principle or sacrificing the advantages of the invention. The valve-seat A^2 and the metal around the orifice c may be formed integral with the body of the faucet, in which event such parts will be cast in one piece of brass or other suitable metal and machined or finished in the usual way.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a faucet the combination with the cast-metal body containing the waterway part a^2 , communicating with the nozzle, of an unyielding valve-seat and independent perforated piece A^5 , at the respective ends of the part a^2 , said perforated piece being clamped in position by the cast metal, a stem guided through said piece and carrying a yielding valve coactive with said seat, and an operating-head for the stem.

2. In a faucet, the combination with the cast-metal valve-body provided with a nozzle and forward hollow extension, the latter with an inside longitudinal groove and lateral recess beyond the inner termination of said groove, said valve-body containing a waterway part a^2 , communicating with the nozzle, of an unyielding valve-seat and independent perforated piece A^5 , at the respective ends of the part a^2 , said perforated piece being clamped in position by the cast metal, a stem penetrating the body extension guidingly through the piece A^5 , a push-button connected with the

stem and having a shank longitudinally movable within the extension, said shank having a spline normally occupying the extension-groove but adapted at the limit of the inward movement of the shank to clear said groove for permitting the turning of the shank and engagement of the spline within the lateral recess, and a yielding valve carried by the stem and coactive with the valve-seat.

3. In a faucet, the combination of the cast-metal body containing the waterway part a^2 , communicating with the nozzle, separate tubular valve-seat and independent perforated piece A^5 , at the respective ends of the part a^2 , and clamped in position by the cast metal, a stem guided through the piece A^5 , and carrying a yielding valve coactive with said seat, and an operating-head for the stem.

4. In a faucet, the combination of the cast-metal body, integrally presenting the nozzle and forward extension containing the keyway a , tubular metal seat A^2 , and perforated metal piece A^5 , both rigidly clamped within the casting, a valve of flexible material, a valve-stem penetrating the metal piece and extension, and a spring-projected button connected with the stem and having a spline engaging the keyway.

5. In a faucet, the combination of the cast-metal body integrally presenting the nozzle and forward extension, containing an inner keyway a , and having an external rounded depression at its junction with the body proper and also a thickened flaring end, said body comprising parts a' , a^2 , the former being the larger in diameter, a tubular metal seat rigidly clamped within the body with its rear end projecting into the part a^2 , and a perforated metal piece rigidly clamped within the body contiguous to the junction of the extension therewith, a valve of yielding material, a valve-stem penetrating the metal piece and extension, and a spring-projected button having a shank provided with a spline engaging the keyway of the extension.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE KISSAM COOKE.

Witnesses:

WILLIAM PAXTON,
H. E. MAHER.