

(No Model.)

E. HOMAN.

SELF CLOSING FAUCET.

No. 362,277.

Patented May 3, 1887.

Fig. 2.

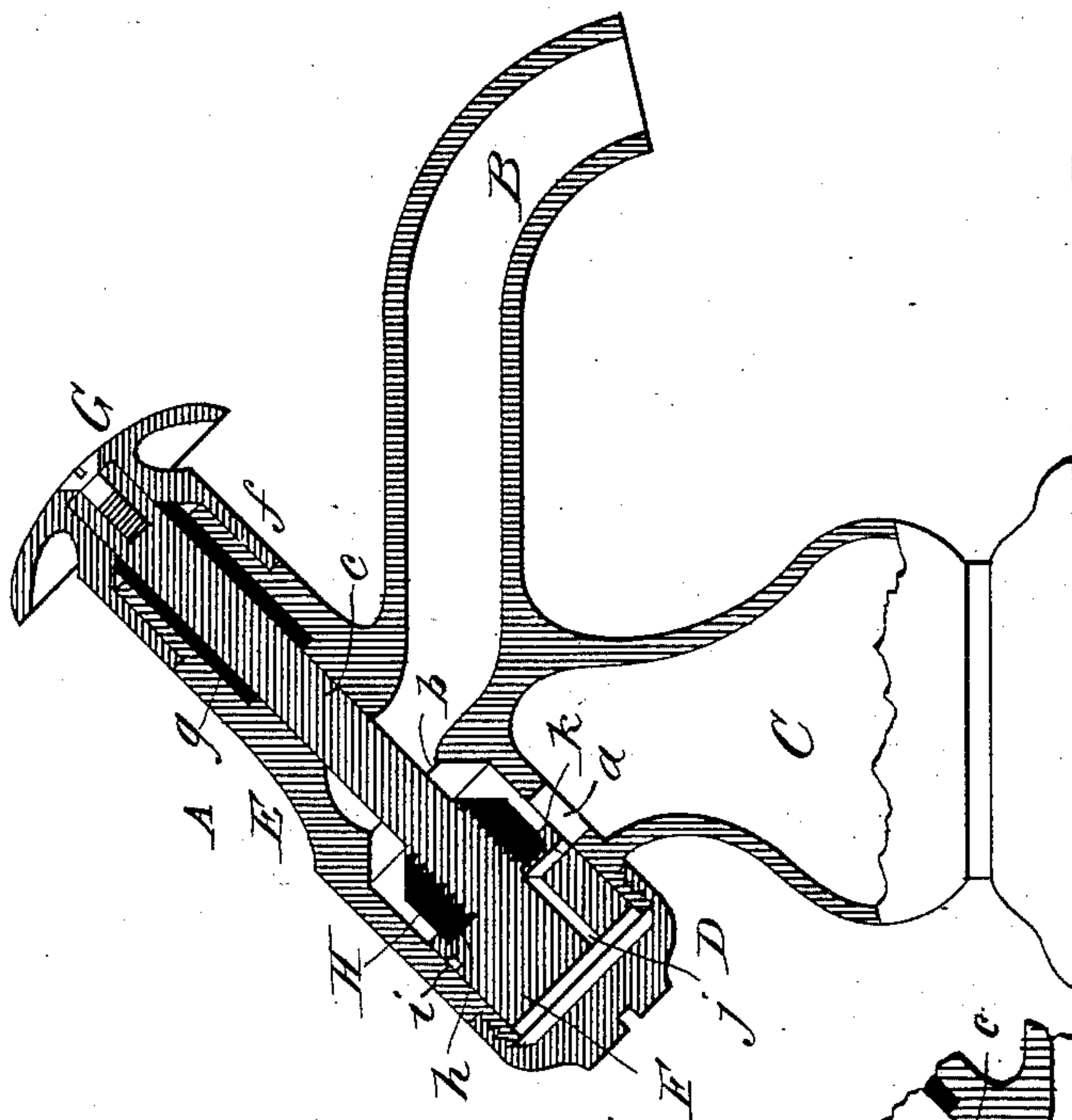


Fig. 1.

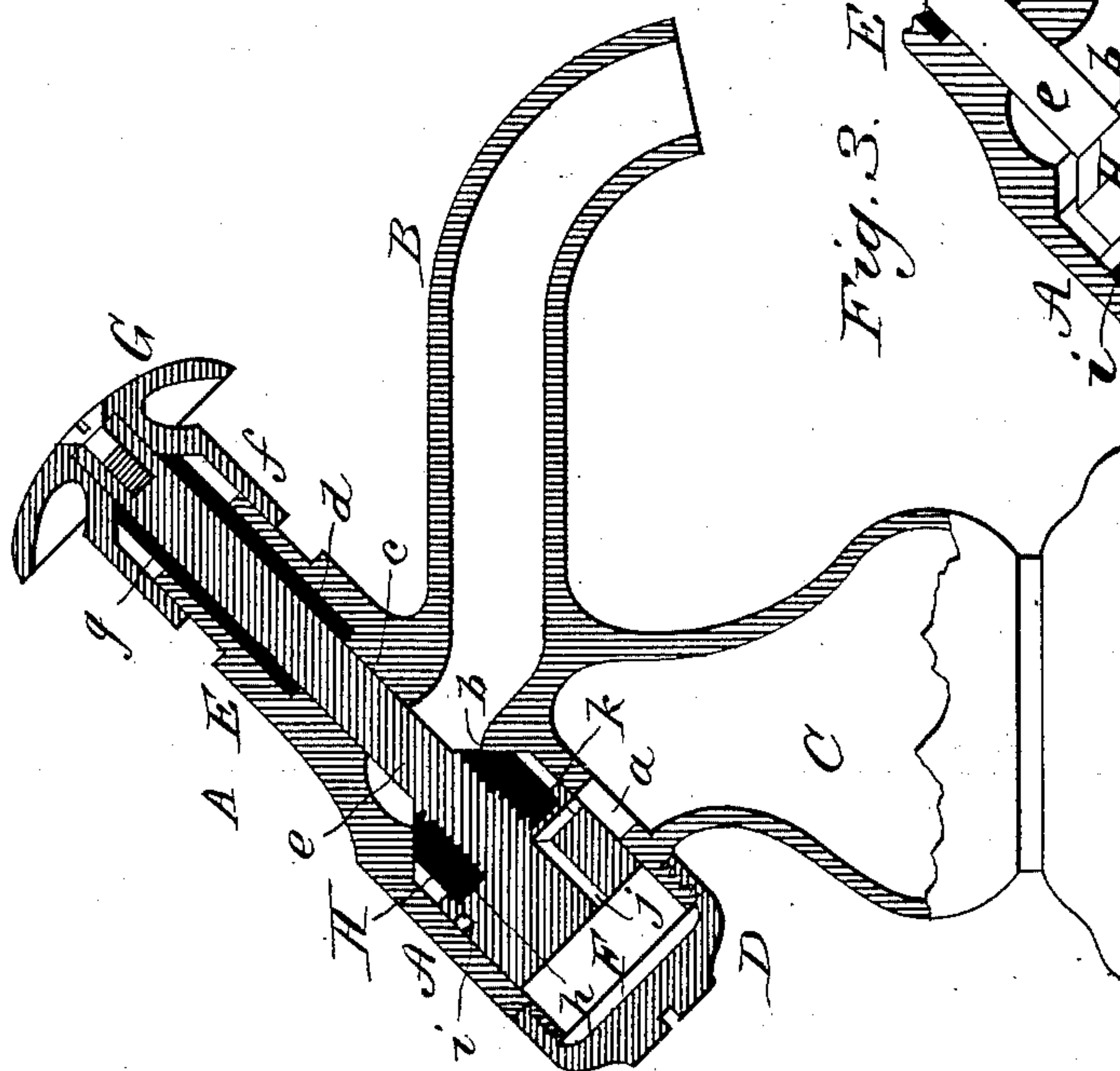
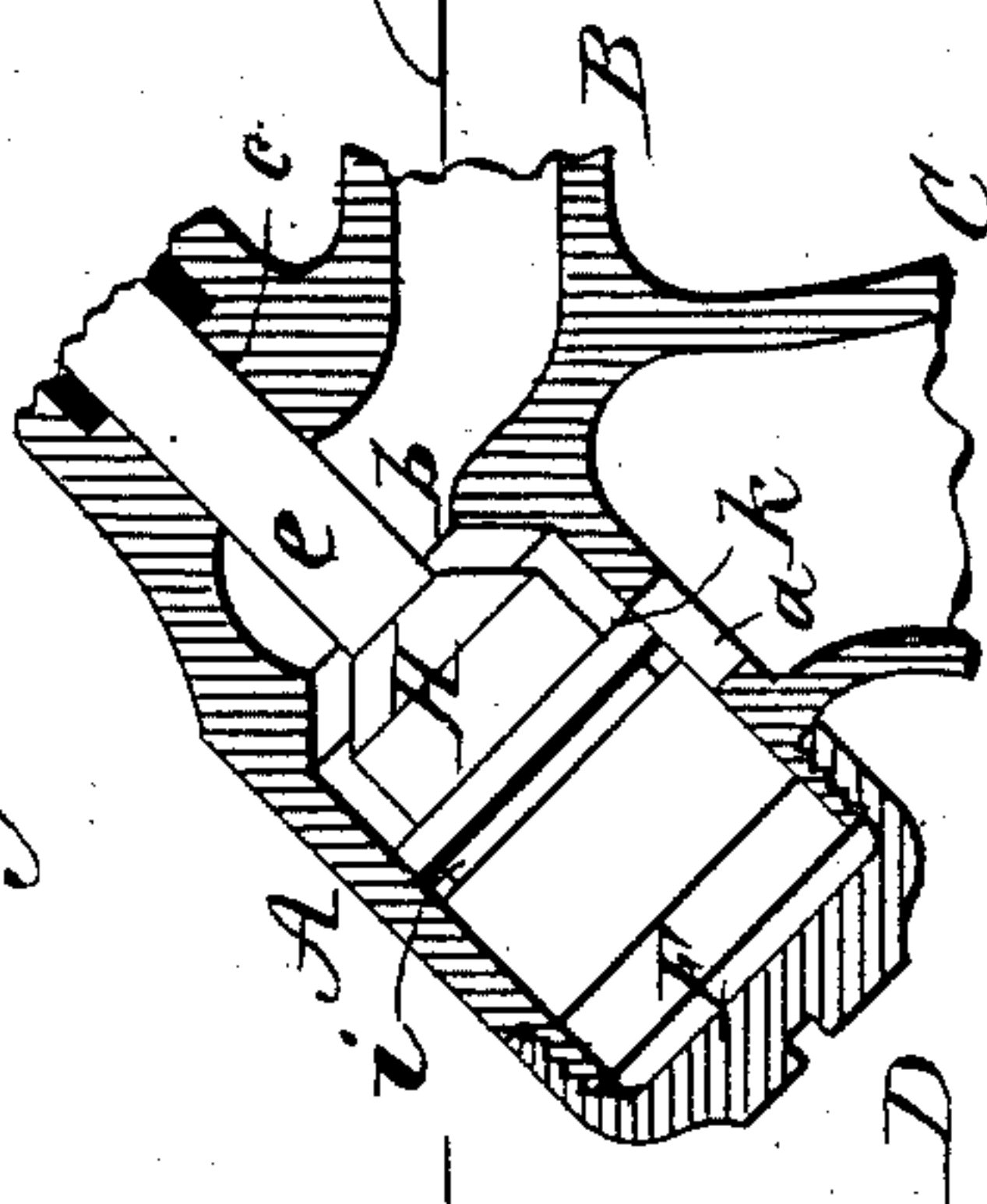


Fig. 3. E



WITNESSES:

John A. Ellis.
C. Sedgwick

INVENTOR:

E. Homan

BY

Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EUGENE HOMAN, OF NEW YORK, N. Y.

SELF-CLOSING FAUCET.

SPECIFICATION forming part of Letters Patent No. 362,277, dated May 3, 1887.

Application filed September 8, 1886. Serial No. 212,998. (No model.)

To all whom it may concern:

Be it known that I, EUGENE HOMAN, of the city, county, and State of New York, have invented a new and Improved Self-Closing Faucet, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a central vertical section showing the faucet closed. Fig. 2 is a central vertical section showing the faucet open; and Fig. 3 is a detail sectional view showing the valve partly closed and the water shut off by the piston.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a faucet for wash-basins and similar uses, requiring no glands or springs, and which will be closed automatically by the pressure of the water; also, to provide means for readily examining and cleaning the interior of the faucet.

The invention consists of the various combinations of parts, including their construction, substantially as hereinafter set forth, and pointed out in the claims.

The cylinder A and the spout B of the faucet are preferably formed integrally with the standard C, the cylinder A being inclined at an angle of about forty-five degrees with the axis of the standard C. The cylinder A communicates with the standard C through the passage *a*, and also communicates with the spout B through the valve-seat *b*. The lower end of the cylinder is closed by a screw-cap, D, which may be readily removed when it is desired to gain access to the interior of the cylinder.

Upon the open end of the cylinder A, and above its connection with the spout B, is formed a sleeve, E, axially in line with the cylinder A, the said sleeve being bored in two diameters, *c d*. In the cylinder A is placed a solid piston, F, formed integrally with the rod *e*, which is fitted to the smaller diameter, *c*, of the sleeve E, and extends beyond the top of the sleeve to receive the knob G. The knob G carries a sleeve, *f*, which fits over the upper end of the sleeve E. In the larger diameter of the bore of the sleeve E is placed an elastic packing-tube, *g*, which renders the joint between the rod *e* and the sleeve E water-tight.

In the upper surface of the piston F is formed an annular groove, *h*, in which is received the lower end of the elastic valve H, the upper end of which is fitted to the valve-seat *b*.

The piston F is provided with a circumferential groove, *i*, near its upper end, which communicates through a passage, *j*, with the space below the piston. The groove *i* is located in the piston so that a portion of it is always opposite the opening *a*, thus insuring a constant communication between the water-supply and the space below the piston. When the parts are in the position shown in Fig. 1, the pressure of the water exerted upon the under surface of the piston F forces the valve H into contact with the valve-seat *b* and closes the passage between the hollow standard C and the spout B. When the valve is opened, by pushing the piston F downward into the position shown in Fig. 2, and against the pressure of the water behind the piston, the water passes from the hollow standard C, through the opening *a*, through the valve-seat *b* to the spout B. When the knob G is released, the pressure upon the under surface of the piston F being greater than that upon the upper surface thereof, the piston is forced upward by the water entering the space under the piston through the passage *j* until the valve H is brought into contact with the valve-seat *b*, thus closing communication between the standard C and the spout B. While the piston F is carrying the valve H to its seat its upper edge, *k*, closes the water-supply passage *a* before the valve H reaches its seat, thus shutting off the water-supply and preventing the jar which would occur if the valve were allowed to go directly to, under the full water-pressure.

The advantages claimed for my invention are that the valve requires no packing; that it does not depend on springs or screws for its action; that it is self-closing, and is readily accessible for cleaning or repairs.

By inclining the cylinder A, as shown, the knob G is supported in the most convenient position for handling. This position of the cylinder also facilitates the passage of water into the cylinder from the standard C and out of the cylinder to the spout B. It also avoids the accumulation of dirt on the working-surfaces of the cylinder, allowing it to gravitate

to the cap D, which retains it, and from which it may be readily removed after unscrewing the cap from the end of the cylinder.

I am aware that it is not new to employ a
5 main valve having an auxiliary valve and a number of passages, one connecting the auxiliary valve-chamber with the supply-pipe and the other connecting said chamber with a chamber above the main valve, said main
10 valve also having an outlet-pipe applied to its lower end for the escape of the water from the chamber above the main valve as the latter is opened, while the auxiliary valve closes the inner end of said outlet-pipe to prevent the
15 escape of the water admitted to the main valve, which water is thereby directed to the chamber above the main valve and whose pressure is utilized to seat or close the main valve.

Having thus fully described my invention, I
20 claim as new, and desire to secure by Letters Patent—

1. In a faucet, the combination, with the cylinder provided with a valve-seat at one end and a water-supply passage in one side, of
25 a piston carrying a valve and having a single continuous passage with one end opening into a water-chamber in the bottom of the cylinder and its other end opening through the side of the piston, in alignment with the water-sup-
30 ply passage of the cylinder, whereby the water forming the cushion or pressure for seating the piston-valve is admitted to said cylinder in closing the valve, and the said water is discharged from the cylinder, in opening the
35 valve, through one and the same source, substantially as set forth.

2. In a self-closing faucet, the combination, with the cylinder provided with a valve-seat at one end and having a water-supply passage
40 in the side thereof, of a piston and valve in-

closed by the said cylinder, the valve and piston being arranged relative to the valve-seat and water-supply passage, as herein described, so that the water-supply passage will be closed by the piston before the valve is seated, sub-
45 stantially as and for the purpose specified.

3. In a self-closing faucet, the combination of the cylinder A, provided with the valve-seat *b*, the piston F, having the water-passage *j*, the valve-rod *e*, the valve H, carried by the
50 piston F, and the cap D, closing the end of the cylinder A, substantially as specified.

4. In a self-closing faucet, the combination, with the standard C, inclined cylinder A, sleeve E, and the spout B, formed integrally
55 in one piece, of the piston F, provided with the inverted - Z-shaped passage *j*, opening through the side and one end thereof and connecting with the water-supply passage and a chamber in the lower end of the cylinder, the
60 piston-rod *e*, the cap D, closing the end of the cylinder A, the valve H, carried by the piston, the elastic packing *g*, surrounding the rod *e*, and the knob G, carrying the sleeve *f*, substantially as specified.
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5. As an improved article of manufacture, a faucet formed of the hollow standard C, the inclined cylinder A, provided with the valve-seat *b* and spout B, made integrally in one
70 piece, the cap D, applied to the end of the cylinder, the piston F, fitted to the cylinder and provided with the passage *j*, annular groove *h*, and rod *e*, the elastic valve H, carried by the piston, the elastic packing *g*, and the knob G, provided with the sleeve *f*, fitting over
75 the sleeve E, substantially as specified.

EUGENE HOMAN.

Witnesses:

C. SEDGWICK,
E. M. CLARK.