

No. 639,484.

Patented Dec. 19, 1899.

J. B. WOODWORTH.
FAUCET.

(Application filed Mar. 10, 1899.)

(No Model.)

2 Sheets—Sheet 1.

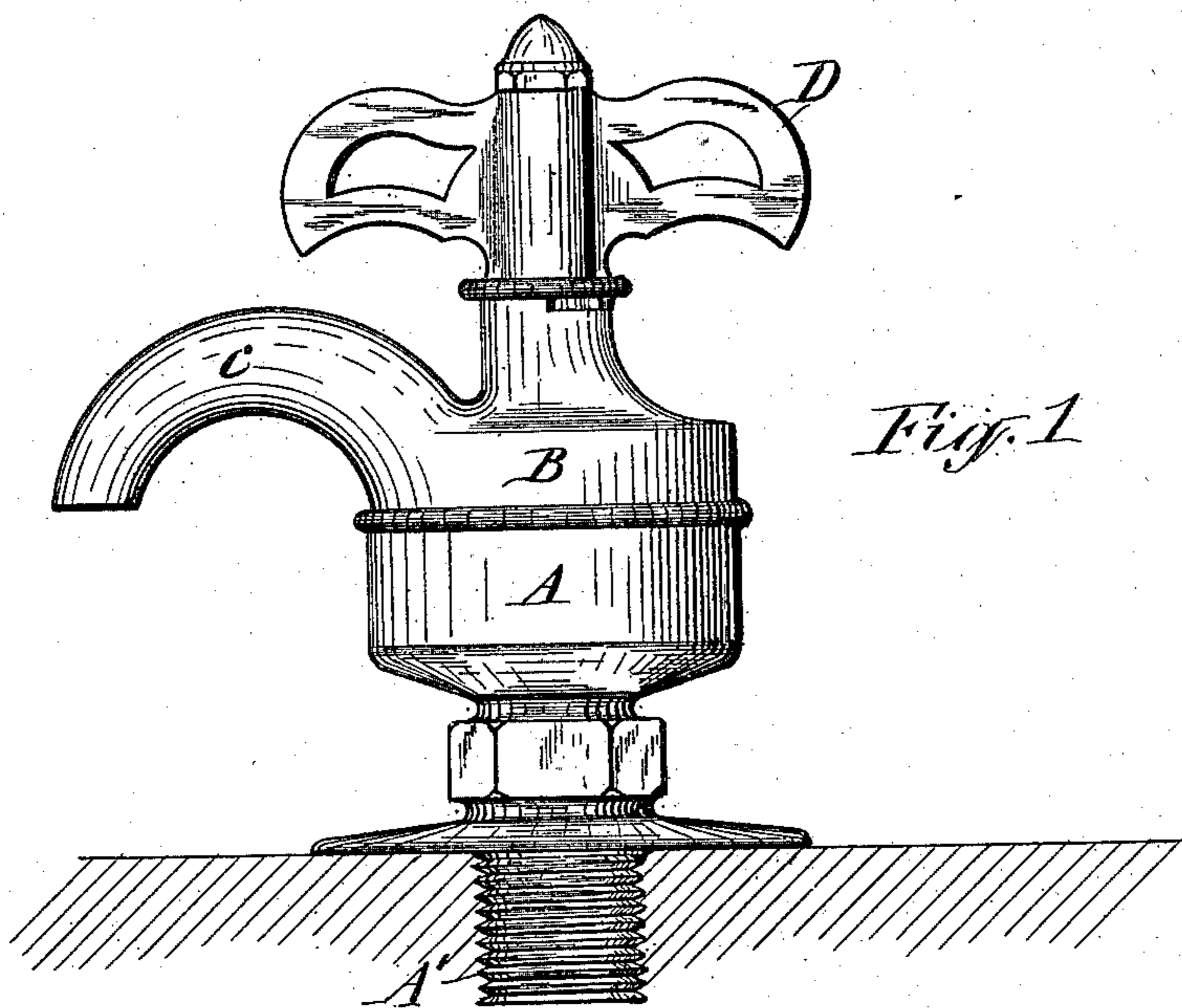


Fig. 1

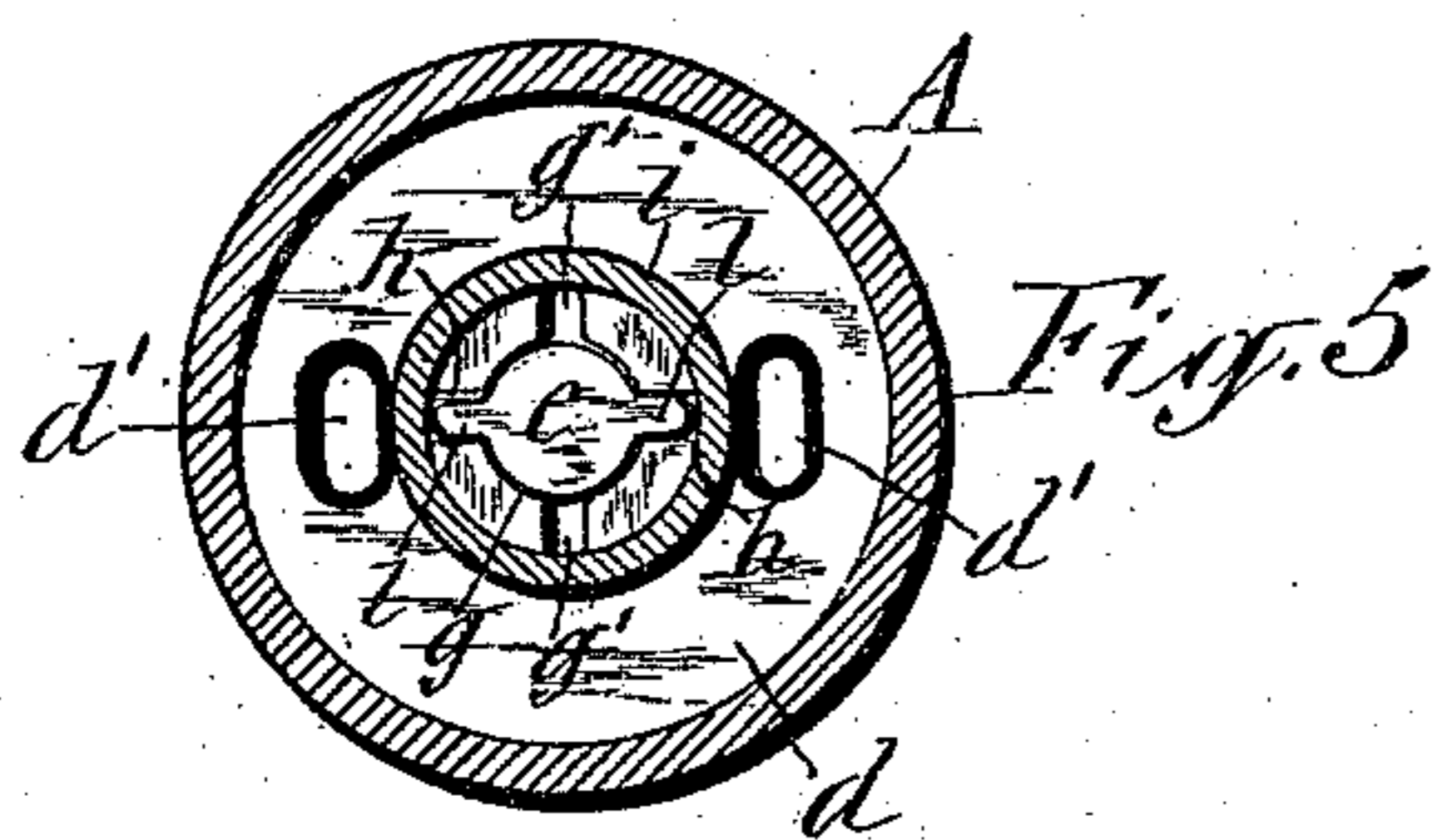


Fig. 5

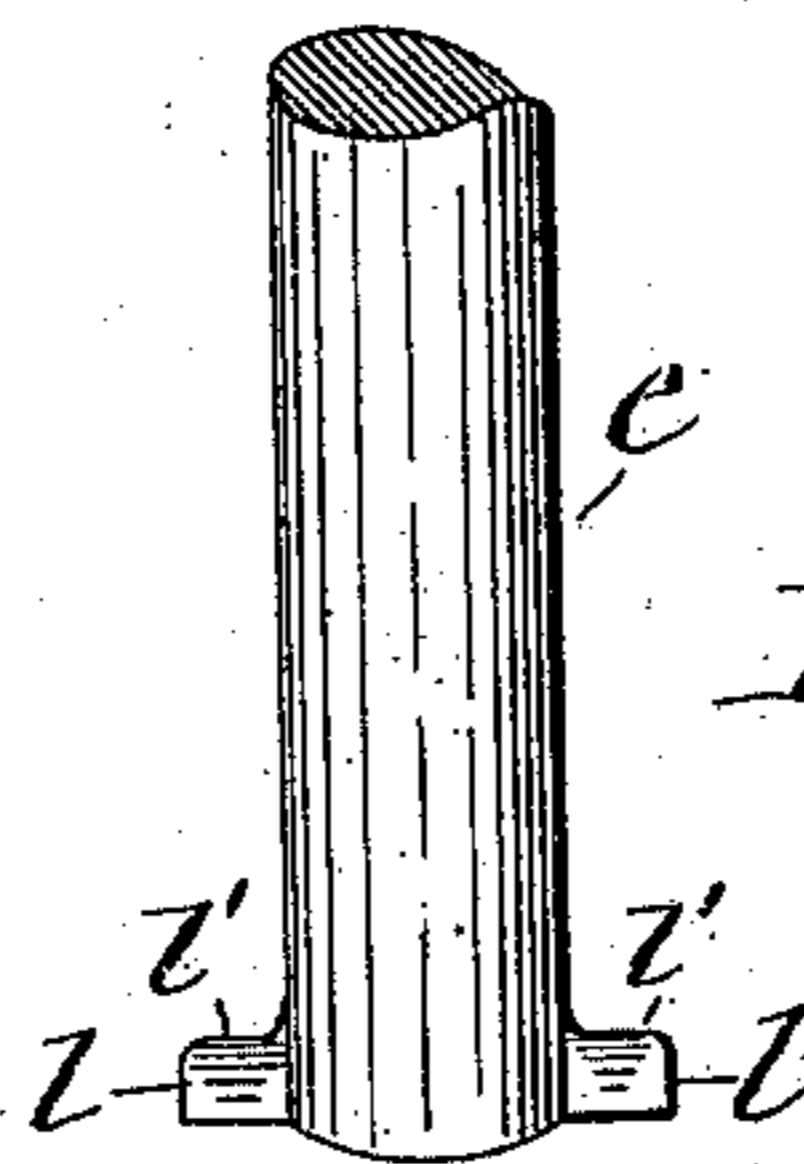


Fig. 8

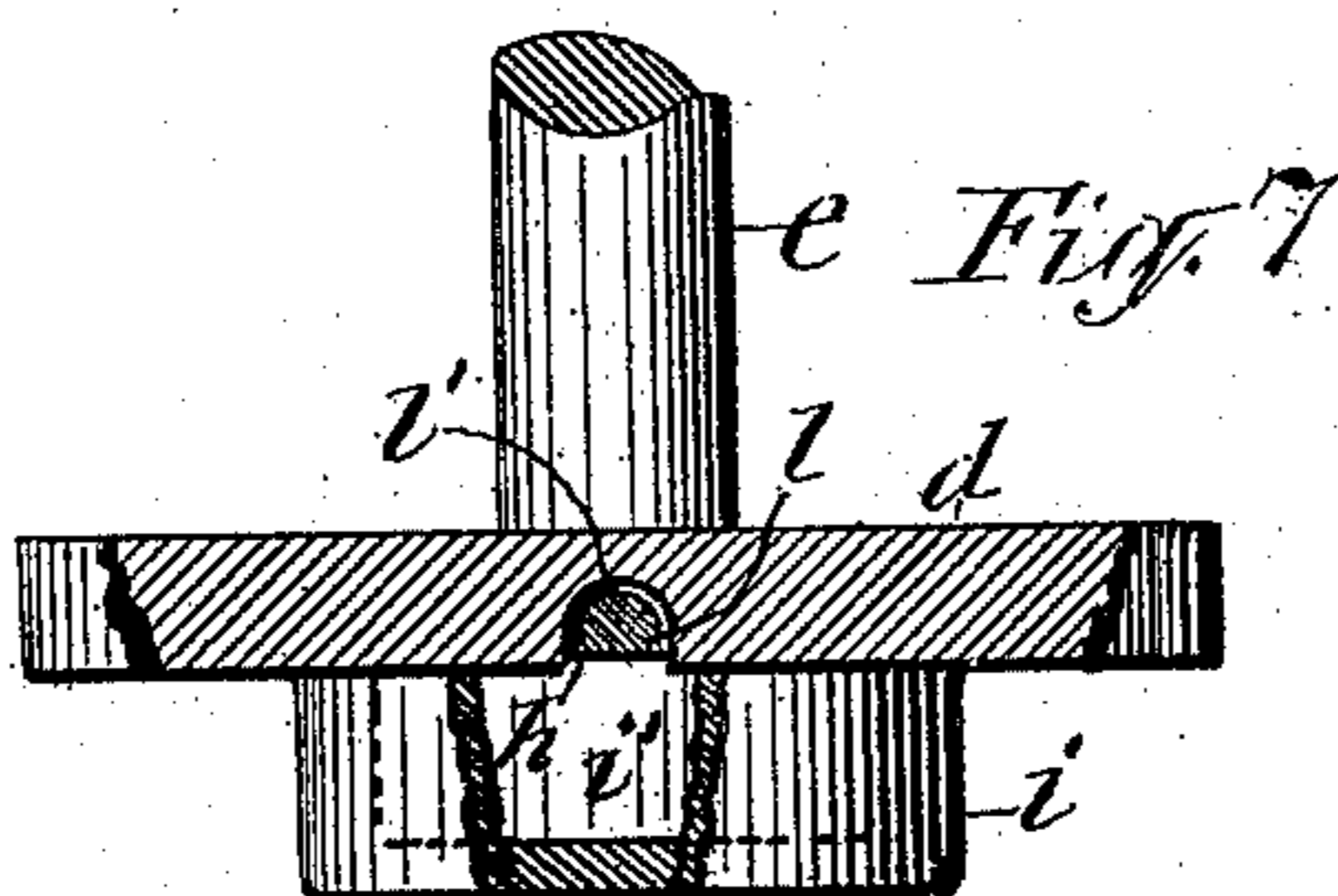


Fig. 7

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN B. WOODWORTH, OF MANLIUS, NEW YORK, ASSIGNOR OF ONE-HALF
TO MORRELL MURPHY, OF SAME PLACE.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 639,484, dated December 19, 1899.

Application filed March 10, 1899. Serial No. 708,487. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. WOODWORTH, a citizen of the United States, and a resident of Manlius, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Faucets, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to the class of faucets in which the valve is disposed with its back toward the liquid-inlet of the faucet, and thus forced onto its seat by the pressure of the liquid.

The invention consists, first, in an improved connection of the valve to the valve-stem which permits the valve to be readily detached from the stem when desired to repair or renew the valve and also allows the valve to rock on the stem sufficiently to conform to the plane of the valve-seat and which also effectually prevents the liquid from escaping through the bore through which the valve-stem passes; and the invention also consists in other novel features of construction, as hereinafter described, and set forth in the claims.

In the accompanying drawings, Figure 1 is a side view of a faucet embodying my invention. Fig. 2 is a longitudinal section of the same. Figs. 3, 4, and 5 are transverse sections on lines X X, Y Y, and z z in Fig. 2, viewed in the directions of the arrows. Fig. 6 is a transverse section on line z z with the valve-stem removed. Fig. 7 is an enlarged sectional view taken on line V V in Fig. 4, and Fig. 8 is a detached perspective view of the inner end portion of the valve-stem.

Similar letters of reference indicate corresponding parts.

A represents the body of the faucet, and B the head of the faucet. Said body is formed with an annular cavity C, the free or front end portion of which is screw-threaded and has secured in it the correspondingly-screw-threaded rear end portion of the head B, as shown in Fig. 2 of the drawings. The opposite or rear end portion of the body A is formed with a screw-threaded nipple A' for attaching the faucet to the barrel or other receptacle containing the liquid to be drawn therefrom. Said nipple is hollow to form the

liquid-inlet C' to the cavity C. The inner face of the head B is formed with an annular flat valve-seat *a*, provided with the eduction-port *b*, which communicates with the discharge-spout *c*, extending from the head B and preferably formed integral therewith.

d denotes the valve, which is of the form of an annular plate provided with a smooth face fitted tightly to the seat *a* and presenting its back toward the liquid-inlet C', so as to be forced onto the seat *a* by the pressure of the liquid from said inlet, and thus rendered self-seating. Said valve is provided with a port *d'*, which by the turning of the valve upon its seat is carried into and out of communication with the port *b*.

In order to prevent sediments or impurities of the liquid or other substances from gathering on the valve-seat in front of the port *d'* and tending to clog the valve, I taper the port *d'* toward the valve-seat, so as to form around the end of said port an acute-angled edge which scrapes the path of the port along the valve-seat during the operation of turning the valve. At the same time the flare of the port from the valve-seat augments the clearance of said port to facilitate the escape of the scrapings from the port.

I preferably provide the valve with two ports *d' d'*, diametrically opposite each other, so that the valve can be opened by turning it in either direction from its closed position.

e represents the valve-stem, which passes through a cylindrical bore *f*, extending through the head B at right angles from the plane of the valve-seat *a*, said bore terminating in a circumferential enlargement *f'* at its outer end for the purpose hereinafter explained. Said valve-stem is detachably secured to the valve to permit ready repairs or renewal of the valve when required. Said connection consists of an orifice *g* in the center of the valve and radial slots *g' g'*, extending from said orifice. The back of the valve is provided with notches *h h*, which are disposed between the slots *g' g'*, as shown more clearly in Figs. 5 and 6 of the drawings. The inner end of the valve-stem *e* passes through the orifice *g* and is provided with radially-projecting lugs *l l*, shaped to pass through the slots *g' g'*, and by turning the

valve-stem said lugs are brought into positions to enter into and become interlocked with the notches *h h*. To permit the valve to rock more freely on the valve-stem, and thus accommodate itself more readily to the valve-seat, I form the interlocking portions of the lugs convex or rounding, as shown at *l'* in Fig. 7 of the drawings.

To retain the valve-stem interlocked, as aforesaid, I place in the enlargement *f'* of the bore *f* a spiral spring *t*, which presses with its outer end on the handle *D*, which is suitably secured to the protruding end of the valve-stem and may be of any desired and suitable shape. Said pressure of the spiral spring forces the valve-stem outward and causes the lugs *l l* to be retained in the notches *h h*.

To effectually guard against escape of liquid through the bore *f*, I form the back of the valve *d* with a cap *i*, which completely houses the orifice *g* and slots *g' g'*, as shown in Figs. 2 and 7 of the drawings. Said cap is formed with a cavity *i'* to allow the valve-stem to pass through the valve *d* sufficiently to permit the valve-stem to be connected to and disconnected from the valve when desired, as hereinbefore stated.

What I claim as my invention is—

1. The combination with the faucet-head provided with the annular flat valve-seat and the cylindrical bore extending through said head and seat, of the valve provided in its center with an orifice, the valve-stem detachably secured in said orifice, a cap on the back of the valve and completely housing the aforesaid orifice and a spring forcing said stem outward and thereby retaining the same in its attachment to the valve as set forth.

2. The combination with the faucet-head provided with the annular flat valve-seat and

with the cylindrical bore extending through said head and seat, of the valve provided in its center with an orifice, radial slots extending from said orifice and notches in the back of the valve and disposed between the aforesaid slots, and a cap on the back of the valve and completely housing the aforesaid orifice and slots, the valve-stem extending through the aforesaid bore and through the orifice in the valve and provided with radially-projecting lugs shaped to pass through the radial slots and interlock with the notches in the valve, and a spring forcing the stem outward and retaining the lugs thereof interlocked with the notches as set forth.

3. The combination of the faucet-head provided with an annular flat valve-seat and with the cylindrical bore extending through said head and terminating with a circumferential enlargement at its outer end, the valve provided with a central orifice, radial slots extending from said orifice and notches on the back of the valve, the valve-stem extending through the aforesaid bore and through the orifice in the valve and provided with radially-projecting lugs shaped to pass through the aforesaid slots and interlock with the notches and having the interlocking portions rounded, a handle attached to the outer end of the valve-stem, and a spiral spring seated in the enlargement of the aforesaid bore and pressing on the handle to force the valve-stem outward and thereby retain the same interlocked with the notches of the valve as set forth.

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Witnesses:

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H. B. SMITH.