No. 671,190. Patented Apr. 2, 1901.

S. HAIGH.

VALVE.

(Application filed Aug. 5, 1899.)

(No Model.)

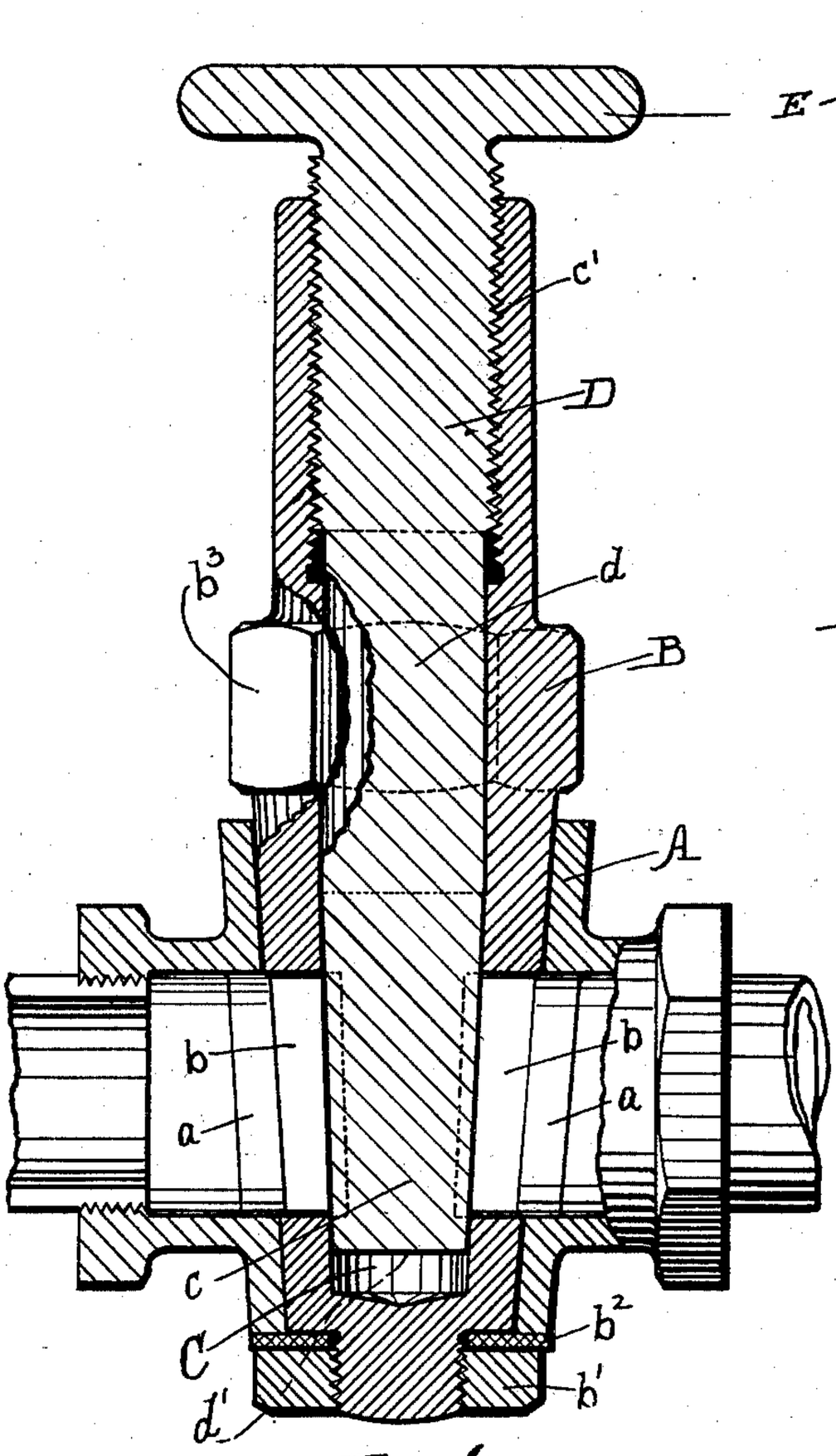

Fig. 1.

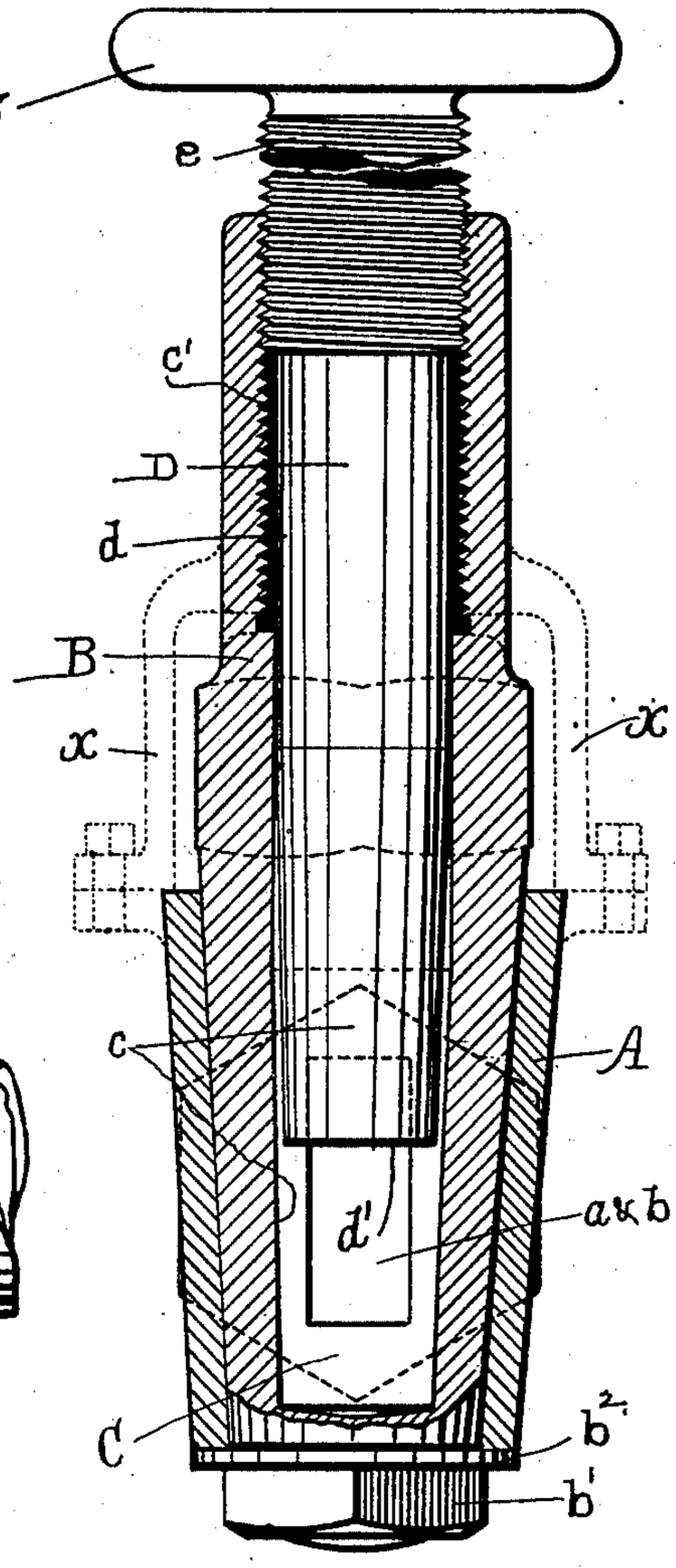

Fig. 2.

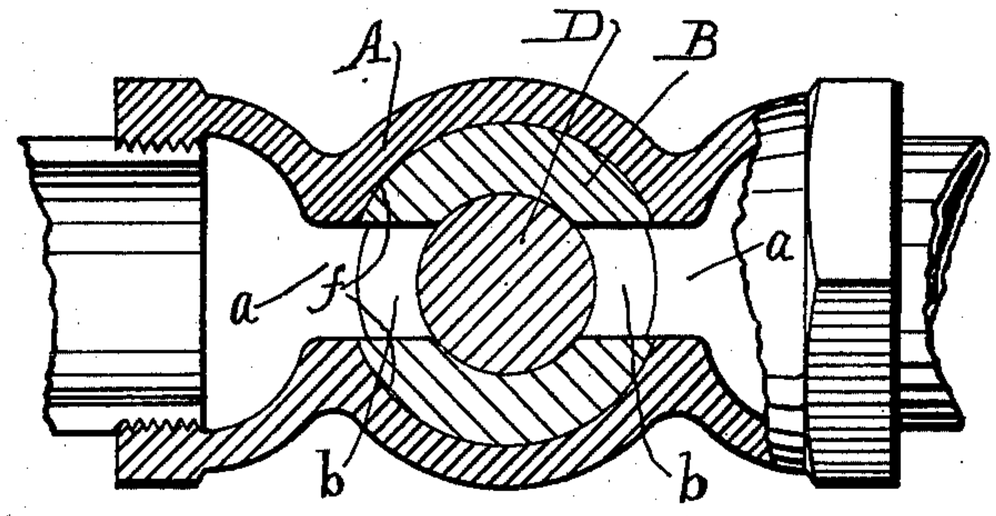

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

SAMUEL HAIGH, OF CINCINNATI, OHIO.

VALVE.

SPECIFICATION forming part of Letters Patent No. 671,190, dated April 2, 1901.

Application filed August 5, 1899. Serial No. 726,324. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL HAIGH, a citizen of the United States, residing at Cincinnati, Ohio, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention pertains to valves with a casing having a seat in which is placed a plug, the casing and plug having relatively constructed inlet and outlet passages.

The object of my improvement is to eliminate the wear on surfaces subject to exposure during the transmission of fluids or other materials through the valve-passages, thereby improving both their efficiency and durability.

The construction hereinafter set forth is an improvement on a valve for which I have been granted Letters Patent numbered 599,059, dated February 15, 1898, and my invention is fully illustrated in the accompanying drawings, in which—

Figure 1 is an axial sectional elevation taken in the line of transmission. Fig. 2 is a similar section taken across the line of transmission, and Fig. 3 is a horizontal cross-section of my improved valve.

Referring now to the drawings, in which similar characters designate corresponding parts, A represents the outer casing of a valve provided with a taper seat intersecting the transmission-passages *a a*, into which seat the plug B is fitted and held within the casing A by nut and washer b' and b^2. The transmission-passages *b b* through plug B are located so that they register with the openings *a a* of the casing A. At b^3 is shown the place where a wrench may be applied to rotate plug B. The plug B is provided with a longitudinal recess C across its transmission-passages *b b* and has a diameter greater than the width of passages *b b*. The upper end of said recess C is threaded at c', while the lower end *c* is slightly tapered across and beyond the transmission-passages *b b*. Within recess C is fitted the piston or plunger D, threaded at one end *e* to engage thread c' of B, and is straight or cylindrical in form at the middle portion *d* and slightly taper at the other end *c*.

While the portion of piston D shown at *c* is slightly tapered, it may be a cylindrical continuation of the piston-body at *d* and effect the same result.

The enlarged end E of piston D is merely shown as a means for rotating the plug D.

In valves of ordinary construction the liquid flows as soon as the ports begin to open, and the circular surface *f* thus exposed during the act of opening is gradually abraded, which destroys the perfect fit required to prevent leakage.

The operation of my valve is as follows: With the piston D down, covering the port-openings *b b* in plug B, a wrench is applied to the plug B at b^3 and the plug B is turned so that the port-openings *a a* and *b b* coincide or register. The parts then will have assumed the position as shown in Figs. 1 and 3. The piston D, intervening between the inlet and outlet passages, prevents the discharge of any liquid or material during the act of turning the plug B until piston D is elevated by its screw-thread and handle E, as shown in Fig. 2. The degree of elevation of piston D will limit the flow of liquid or material and confine all wear or abrading to the under surface and edges of piston D at d'.

In regard to the elevation of the piston D by means of the screw-thread of the same engaging the thread in the extension of plug B I do not wish to be restricted to the form here shown, because the same results may be obtained by having the thread of the piston D mounted in an extension of the outer casing A, as indicated by dotted lines *x x* in Fig. 2.

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

1. In a valve of the character described, having an outer casing A, with inlet and outlet passages, the combination of a rotatable plug B seated in casing A; the longitudinal recess C of a larger diameter than, and intersected by the passages *b b;* and the rotating elevating-piston D seated and threaded in said recess C, substantially as described and for the purpose specified.

2. In a valve of the character indicated, the combination of an outer casing and a rotatable plug, both of which are laterally and vertically perforated; an auxiliary rotating elevating-piston seated and threaded in the lon-

gitudinal perforation and controlling the lateral perforation in said rotatable plug, substantially as specified.

3. In a valve, the combination of an outer casing with lateral and vertical perforations; the rotatable perforated plug seated in said outer casing; an extension of the outer casing threaded to receive similarly-threaded rotating auxiliary piston fitted in the longitudinal perforation and controlling the lateral perforation of the rotatable plug, substantially as described and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

SAMUEL HAIGH.

Witnesses:
JOHN W. GRACE,
JOHN SOFGE.