

No. 610,938.)

Patented Sept. 20, 1898.

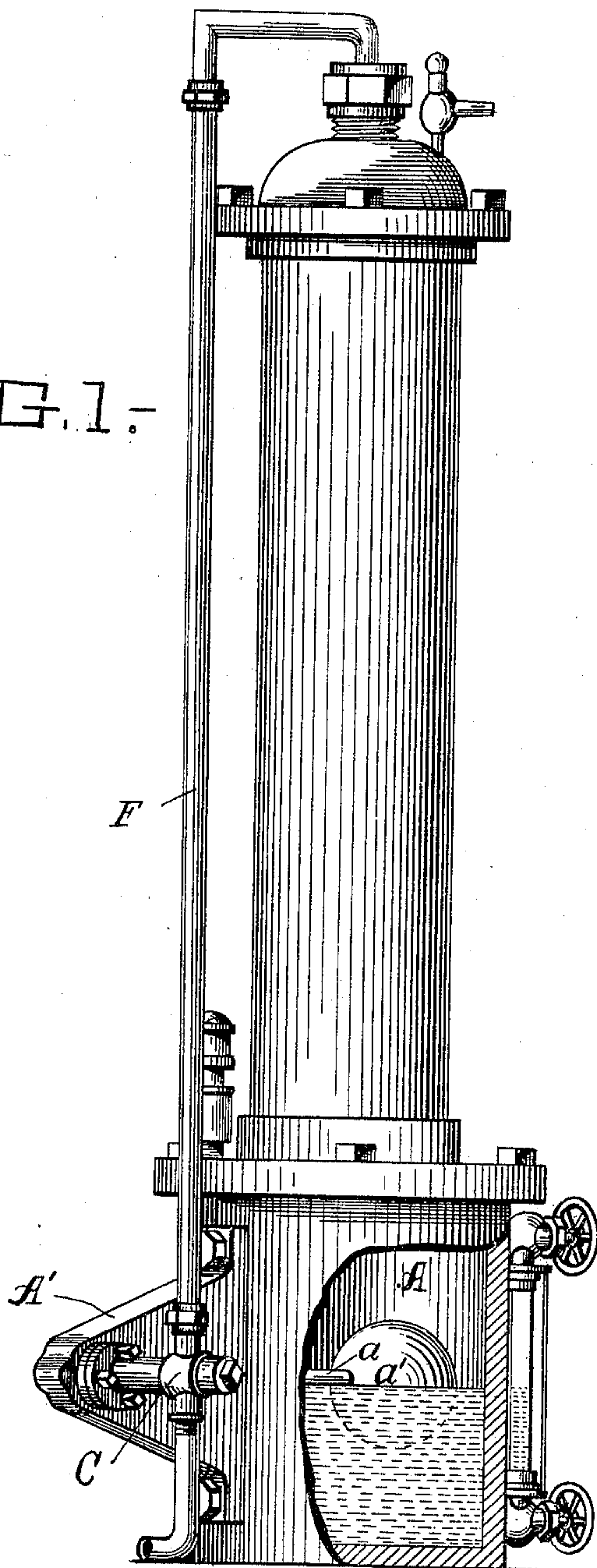
J. H. CHAMP.
REGULATING VALVE DEVICE.

(Application filed May 10, 1897.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



WITNESSES:

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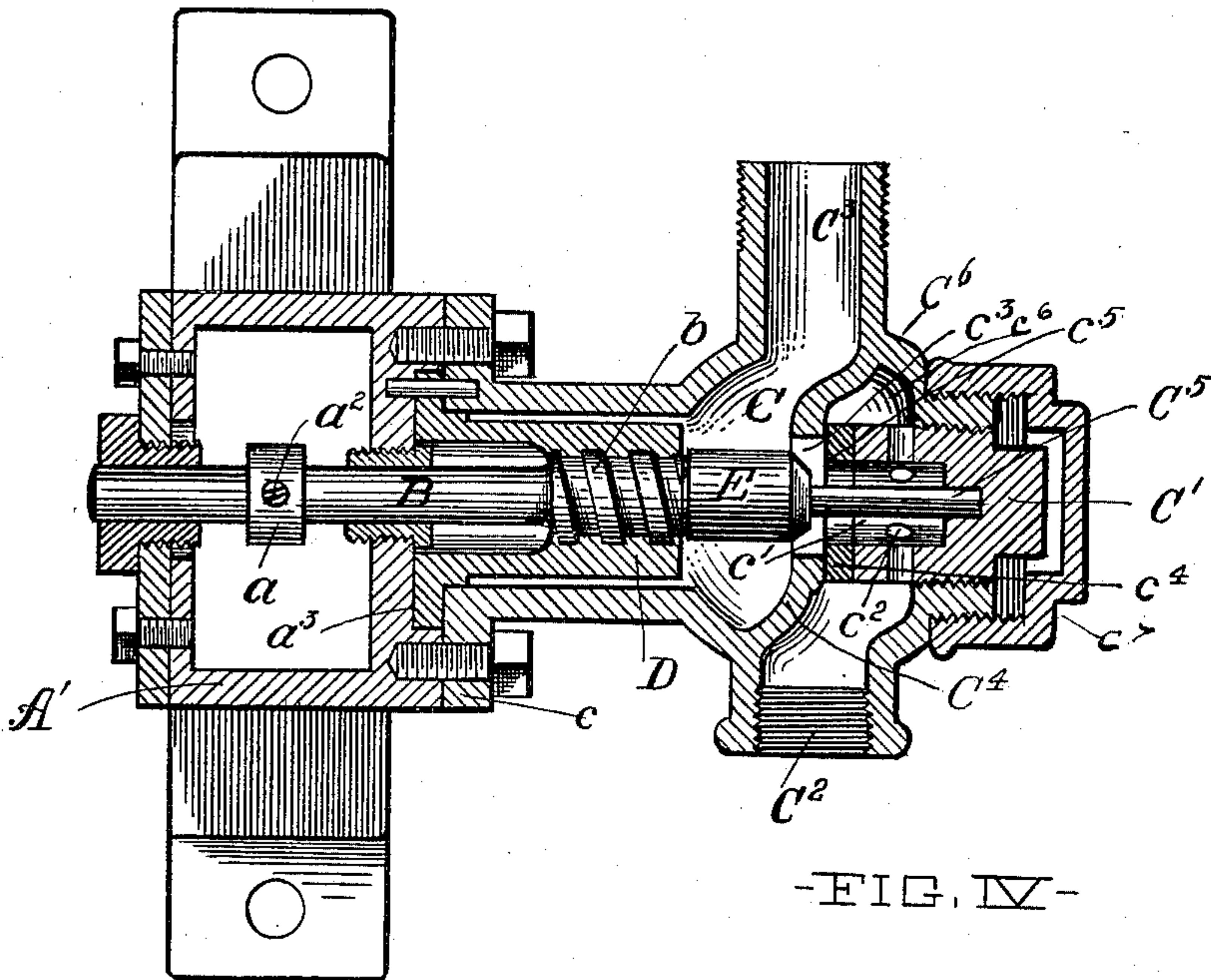
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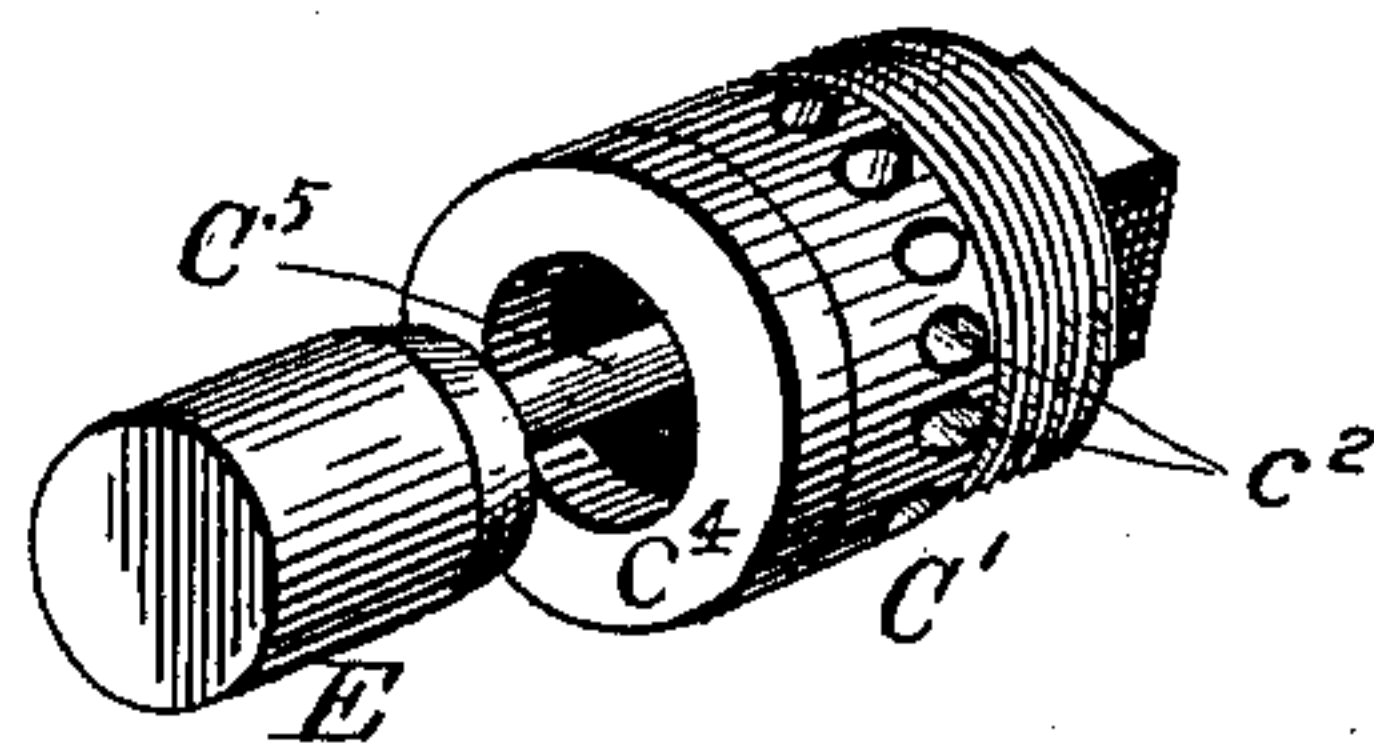
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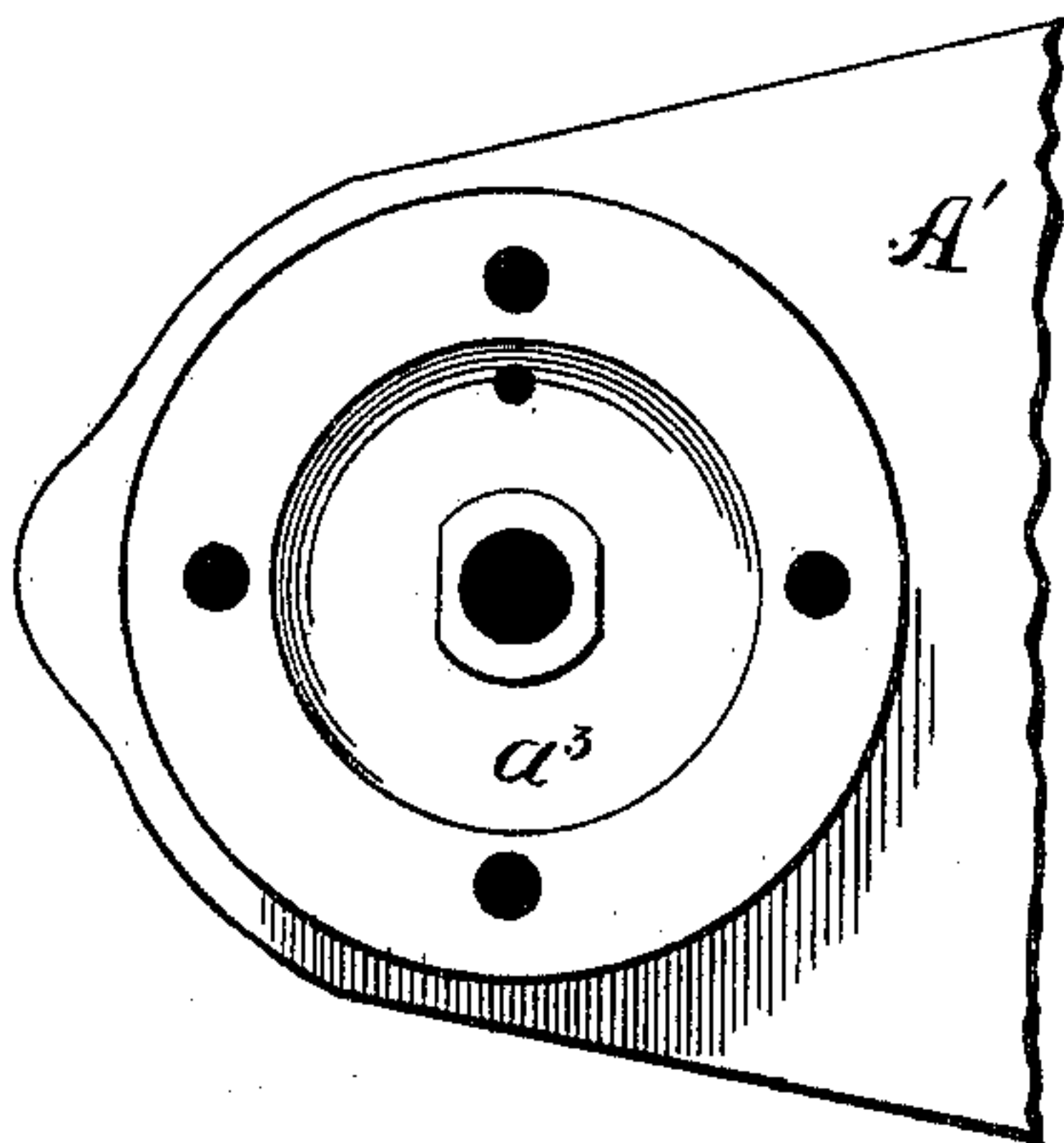
-FIG. II-



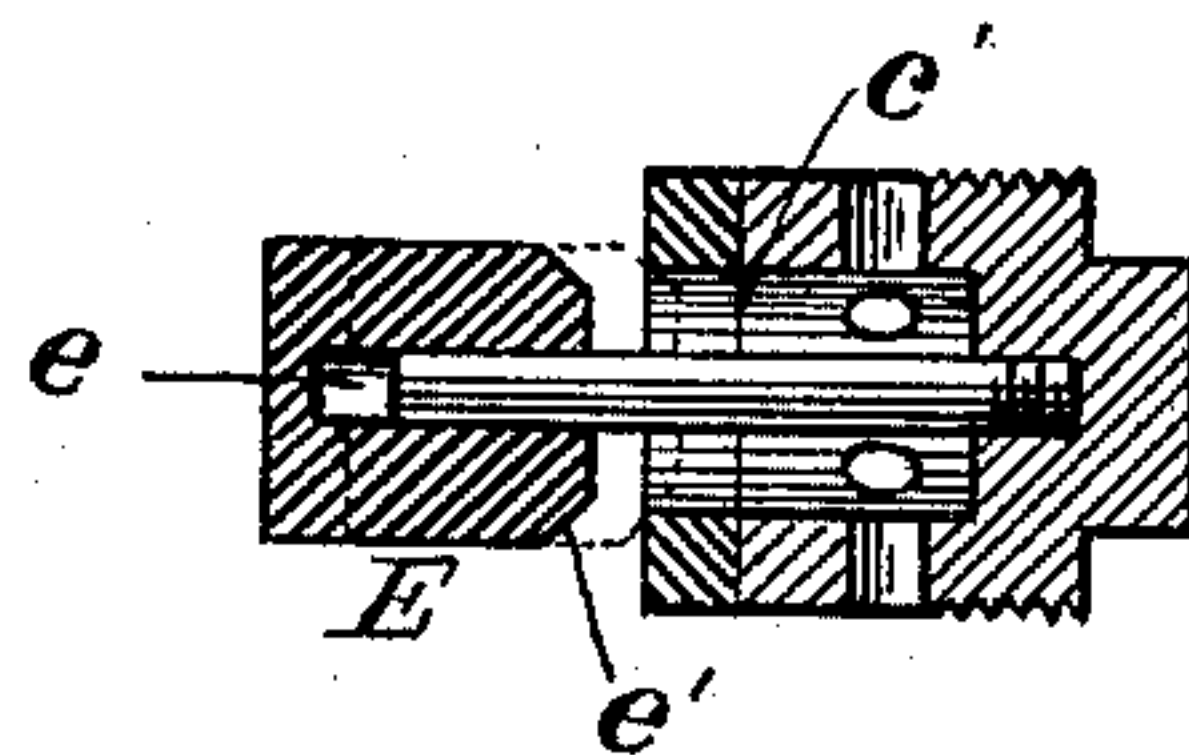
-FIG. IV-



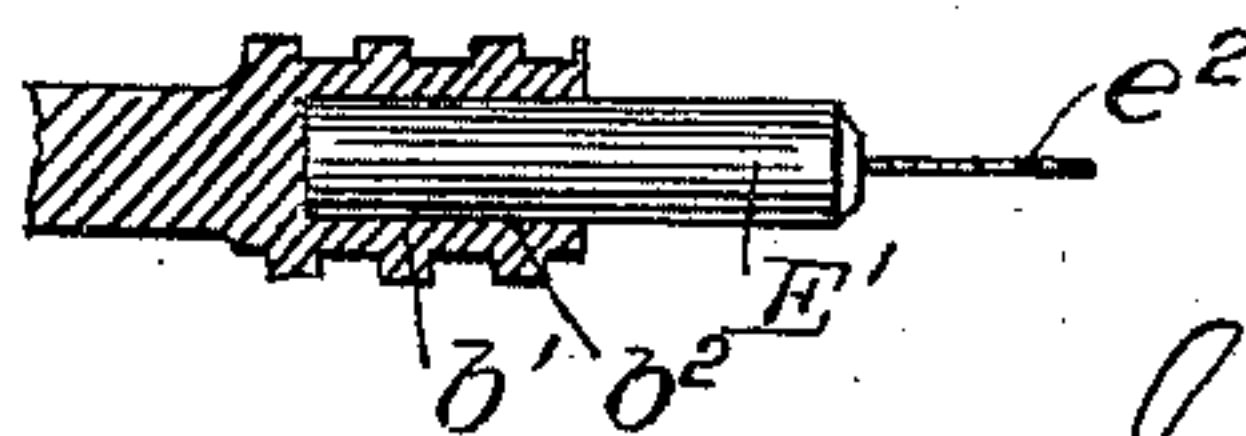
-FIG. III-



-FIG. V-



-FIG. VI-



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UNITED STATES PATENT OFFICE.

JOSEPH H. CHAMP, OF CLEVELAND, OHIO, ASSIGNOR TO THE BISHOP & BABCOCK COMPANY, OF SAME PLACE.

REGULATING-VALVE DEVICE.

SPECIFICATION forming part of Letters Patent No. 610,938, dated September 20, 1898.

Application filed May 10, 1897. Serial No. 635,894. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. CHAMP, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented a new and useful Improvement in Regulating-Valve Devices, of which the following is a specification, the principle of the invention being herein explained and the best mode in which I have contemplated applying that principle, so as to distinguish it from other inventions.

The annexed drawings and the following description set forth in detail certain mechanism embodying the invention, such disclosed means constituting but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings, Figure I represents an elevation of an apparatus, showing my improvement attached thereto and showing a portion of the liquid-chamber broken away to show the float and float-lever. Fig. II represents a vertical longitudinal cross-sectional view of the valve-chamber, valve-seat, valve-stem nut, and a transverse section of the float-lever chamber. Fig. III represents a detail side elevation of the end of the float-lever chamber. Fig. IV represents a detail perspective of the valve and valve-seat. Fig. V represents a vertical longitudinal cross-sectional view of the same, and Fig. VI a second form of valve.

The device is one of the type of regulating devices which is actuated by the liquid-level in a liquid-chamber, thereby regulating the supply of liquid to said chamber.

To the reservoir A is attached a float-lever chamber A', which is traversed by the float-lever a, on the end of which is attached an ordinary float a'. The other end of said lever a is attached, by means of a set-screw a², to a valve-stem B, which is suitably journaled in a water-tight manner in the end of the said lever-chamber A'.

The valve-chamber C is formed with a suitable flange c, whereby it may be bolted to the side of the chamber A'. The said side is formed with a depression a³, adapted to receive the flange d of the valve-stem nut D, which nut is adapted to receive a threaded portion b, formed on the valve-stem B, said

flange d being clamped in said depression a³ by said flange c.

When the float and lever are in their lowest position, the end of the stem B is made to be substantially flush with the end of the nut.

The valve-chamber is provided with a removable valve-seat C', formed with a central bore c' and having perforations c² communicating therewith and with the inlet C², through the medium of which bore and perforations communication may be established between said inlet and the outlet C³. The said valve-seat screws into an opening c⁷ in the valve-chamber opposite the opening c³ and up against the wall C⁴, and the end of the seat is preferably capped with a gutta-percha or vulcanite ring c⁴, having a sharp contact edge c⁵. A guide-pin C⁵ is fastened in the center of the valve-seat C' and projects some distance beyond the wall C⁴. The valve-chamber is formed with wall C⁶, projecting angularly outward from wall C⁴ and forming inlet water-space c⁶ between such two walls, such water-space c⁶ being around the perforations c², opposite to the inlet C², and there communicating by such perforations with said bore c', the opening c⁷ being formed so that the valve-seat has screw-thread engagement with said wall C⁶ and is free from engagement with the valve-chamber between said two walls C⁴ and C⁶.

A valve E, preferably of hard rubber or vulcanite, is formed with a central bore e, extending partially through it, and the bored end is formed with a beveled edge e', adapted to enter the opening c' of the valve-seat. The said valve is placed upon the guide-pin C⁵ and may be reciprocated to and from the seat on said rod. The outlet C³ communicates with the liquid-chamber by suitable piping, such as the pipe F shown in the drawings. The float-lever having been properly adjusted on the valve-stem to give the required height of liquid in the liquid-chamber, the liquid enters through the inlet C² and by its pressure pushes the valve from its seat and against the end of the valve-stem, enters the outlet, and from thence reaches the liquid-chamber. The float rises and in so doing rotates the valve-stem, which is thereupon

moved toward the valve-seat and pushes along with it the valve which it abuts until the said valve reaches its seat and shuts off the supply of water.

5 The form of valve shown in Fig. VI is one which I prefer to use in small valves and in which I form the threaded portion b' of the valve-stem with a central bore b^2 . The small valve E' is made of sufficient length to
10 fit therein and is provided at its end with a small piece of wire e^2 , by which, after the valve-seat has been removed from the valve-chamber in the same way as with the first-mentioned form of valve, the said small valve
15 may be easily extracted from within the valve-chamber. The end b' of said valve-stem thereby forms the guide for the said valve. This does away with the necessity of providing a valve-guide pin such as C^5 in the other
20 form.

Other modes of applying the principle of my invention may be employed instead of the one explained, change being made as regards the mechanism herein disclosed, provided the means covered by any one of the
25 following claims be employed.

I therefore particularly point out and distinctly claim as my invention—

1. The combination of float-lever chamber
30 A' , valve-chamber C fastened to said chamber A' , nut D clamped by and between said two chambers, threaded valve-stem B , valve, valve-seat, substantially as set forth.

2. The combination of float-lever chamber
35 A' , valve-chamber C having flange c , nut D clamped by and between said two chambers, threaded valve-stem B , valve, valve-seat, substantially as set forth.

3. The combination of float-lever chamber

A' having depression a^3 , valve-chamber C 40 having flange c fastened to said chamber A' , nut D having a part clamped in said depression by flange c , threaded valve-stem B , valve, valve-seat, substantially as set forth.

4. The combination of float-lever chamber 45 A' having its side formed with depression a^3 , valve-chamber C having flange c fastened to said chamber A' , nut D having flange d clamped in said depression by said flange c , threaded valve-stem B , valve-seat C' screw-
50 threaded into an opening in said valve-chamber, valve loosely engaging with said valve-stem, substantially as set forth.

5. The combination of float-lever chamber
55 A' having its side formed with depression a^3 , valve-chamber C having flange c bolted to said chamber A' , nut D having flange clamped in said depression by said flange c , rotary valve-stem B threaded in said nut, valve-chamber C having inlet C^2 and outlet C^3 and
60 intermediate valve-opening c^3 bounded by wall C^4 , valve-seat C' screwed into opening c^7 and against said wall C^4 and having central inner end bore c' and peripheral perforations c^2 communicating with said bore and
65 with said inlet C^2 , guide-pin C^5 fastened to the center of said valve-seat and projecting longitudinally through said bore, valve E having central bore e in which said guide-pin is loosely fitted, said valve having free
70 end engagement with said valve-stem and being smaller than said openings c^3 and c^7 , substantially as set forth.

Signed by me this 27th day of April, 1897.
JOSEPH H. CHAMP.

Attested by—

DAVID T. DAVIES,
A. E. MERKEL.