3 Sheets—Sheet 1.

A. SEQUEIRA.

WATER-METER.

No. 176,078. Patented April 11, 1876.

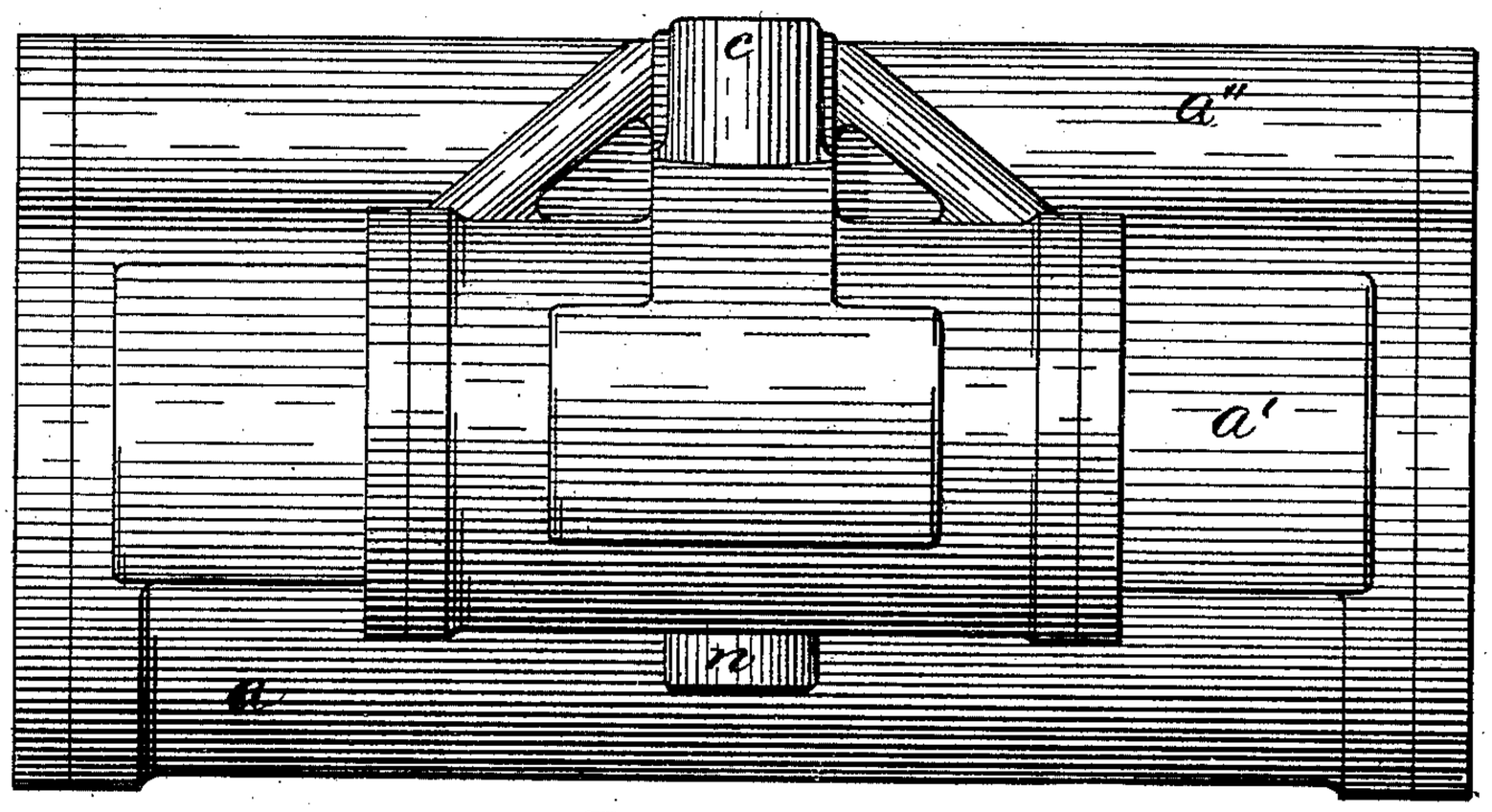

Fig. 1.

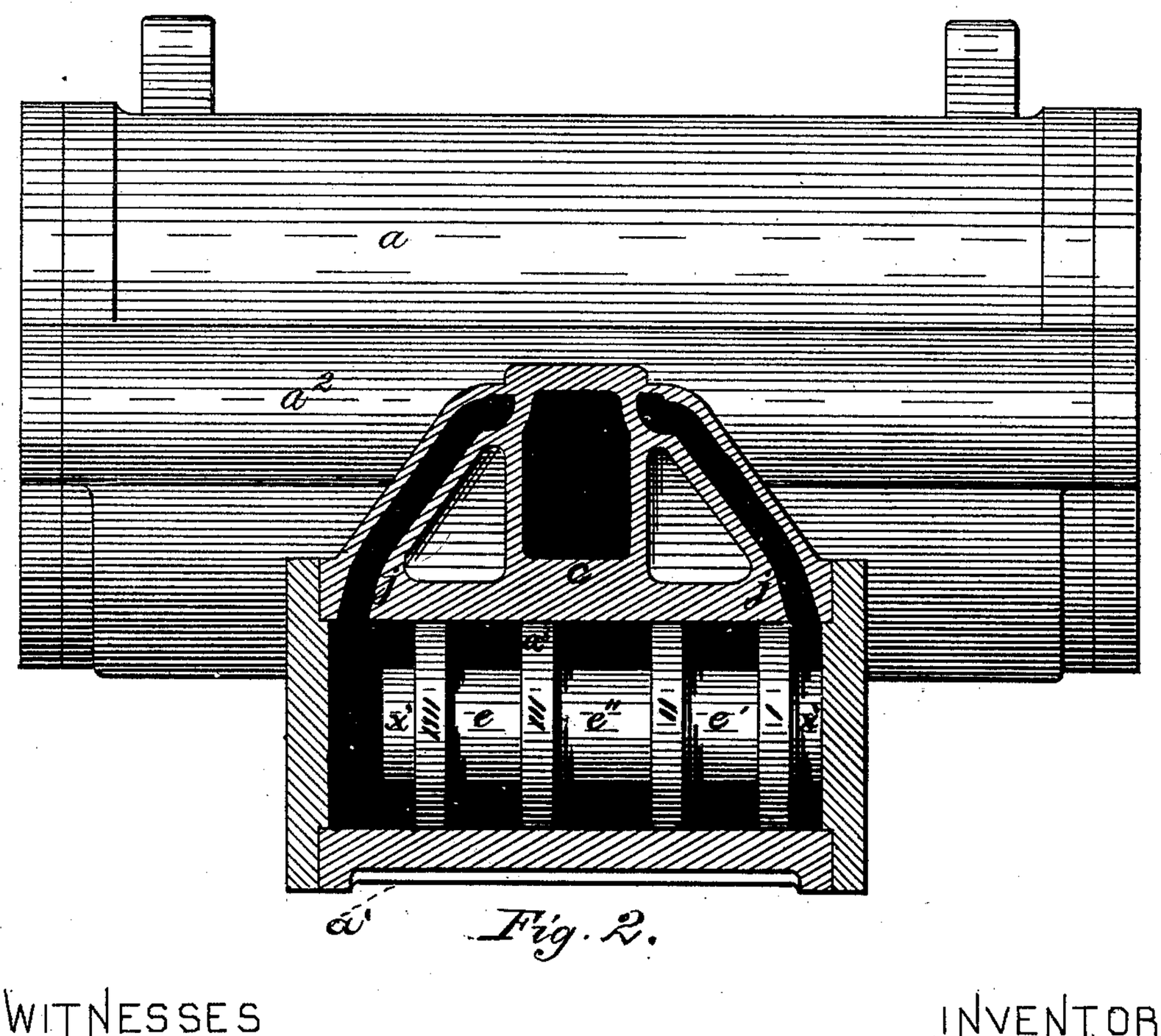

Fig. 2.

WITNESSES

Edward B. Wilder.
Jeremy W. Skyes

INVENTOR

Augustus Sequeira

3 Sheets—Sheet 2.

A. SEQUEIRA.

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Fig. 3.

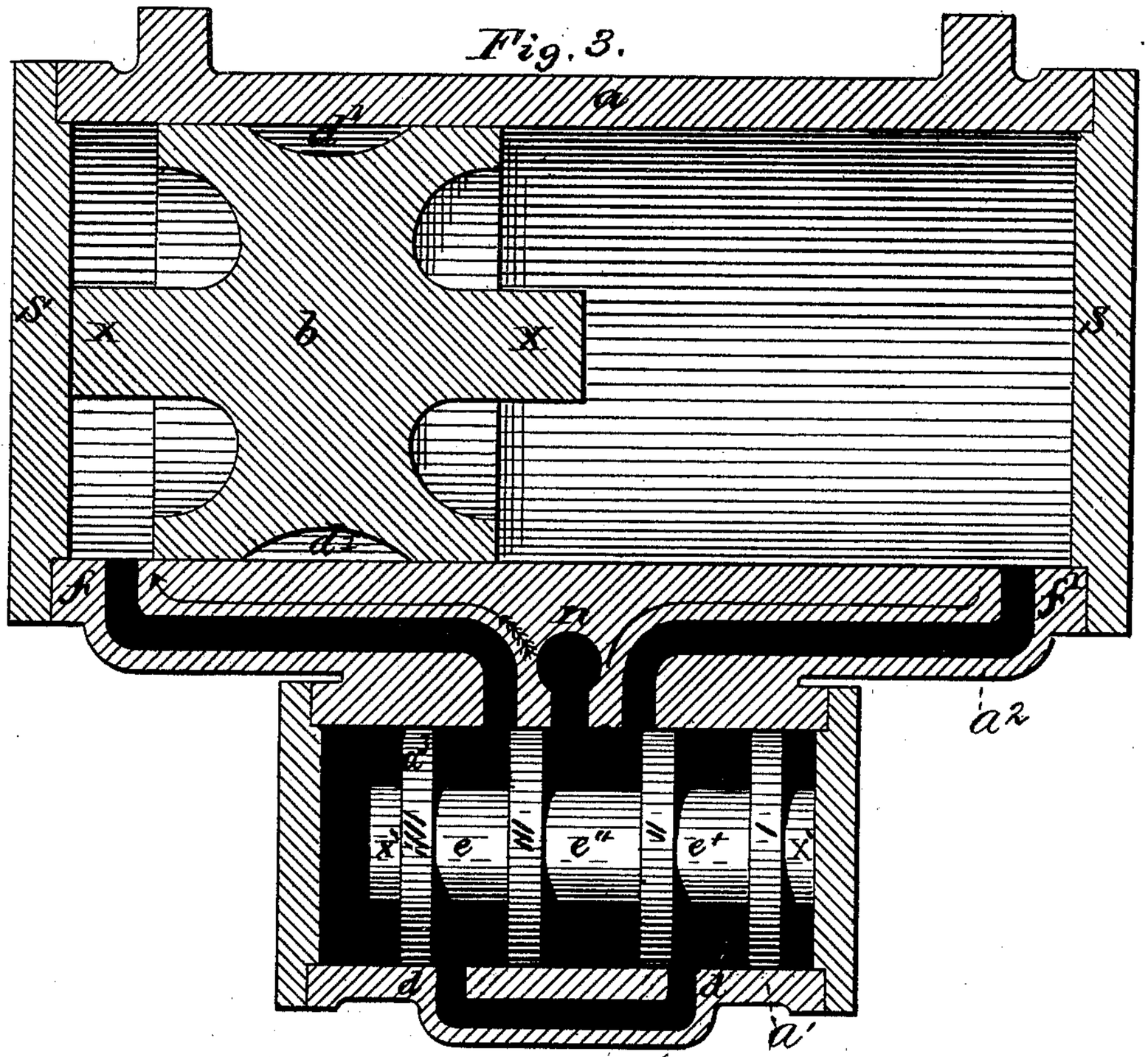
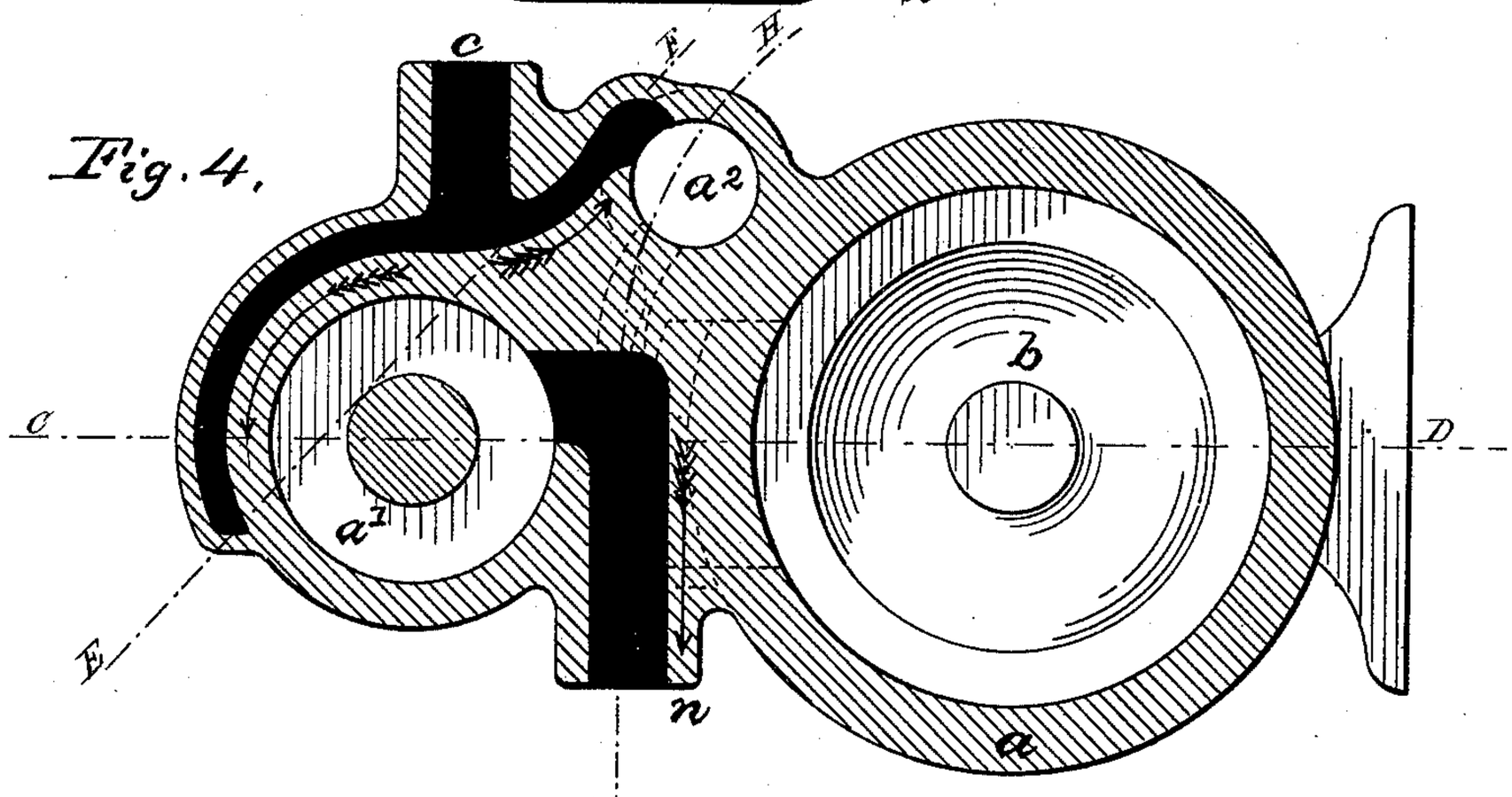


Fig. 4.



WITNESSES

Edward B Wilder.

Jeremy W. Bliss

INVENTOR

Augustus Sequeira

3 Sheets—Sheet 3.

A. SEQUEIRA.

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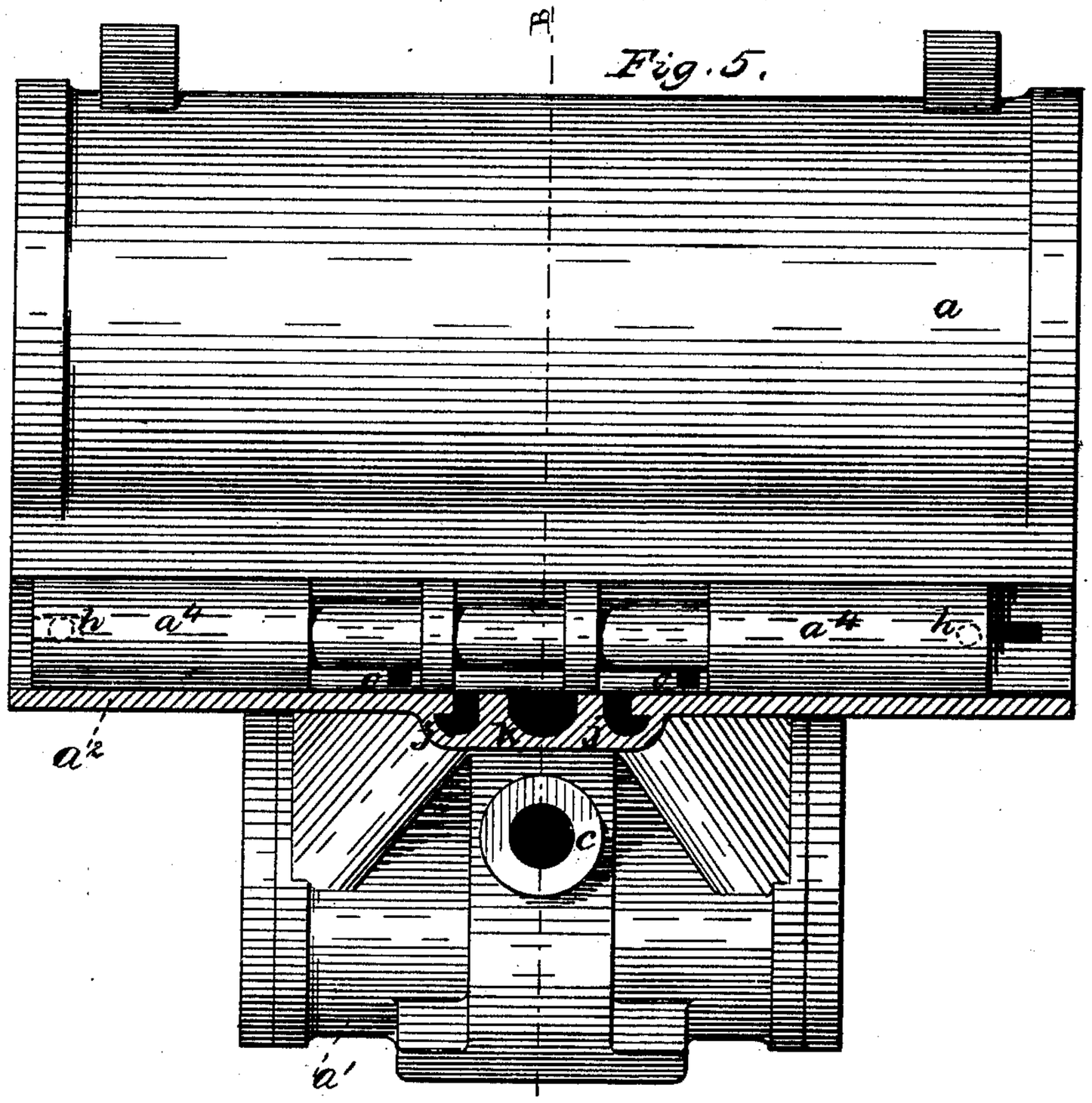
Fig. 5.



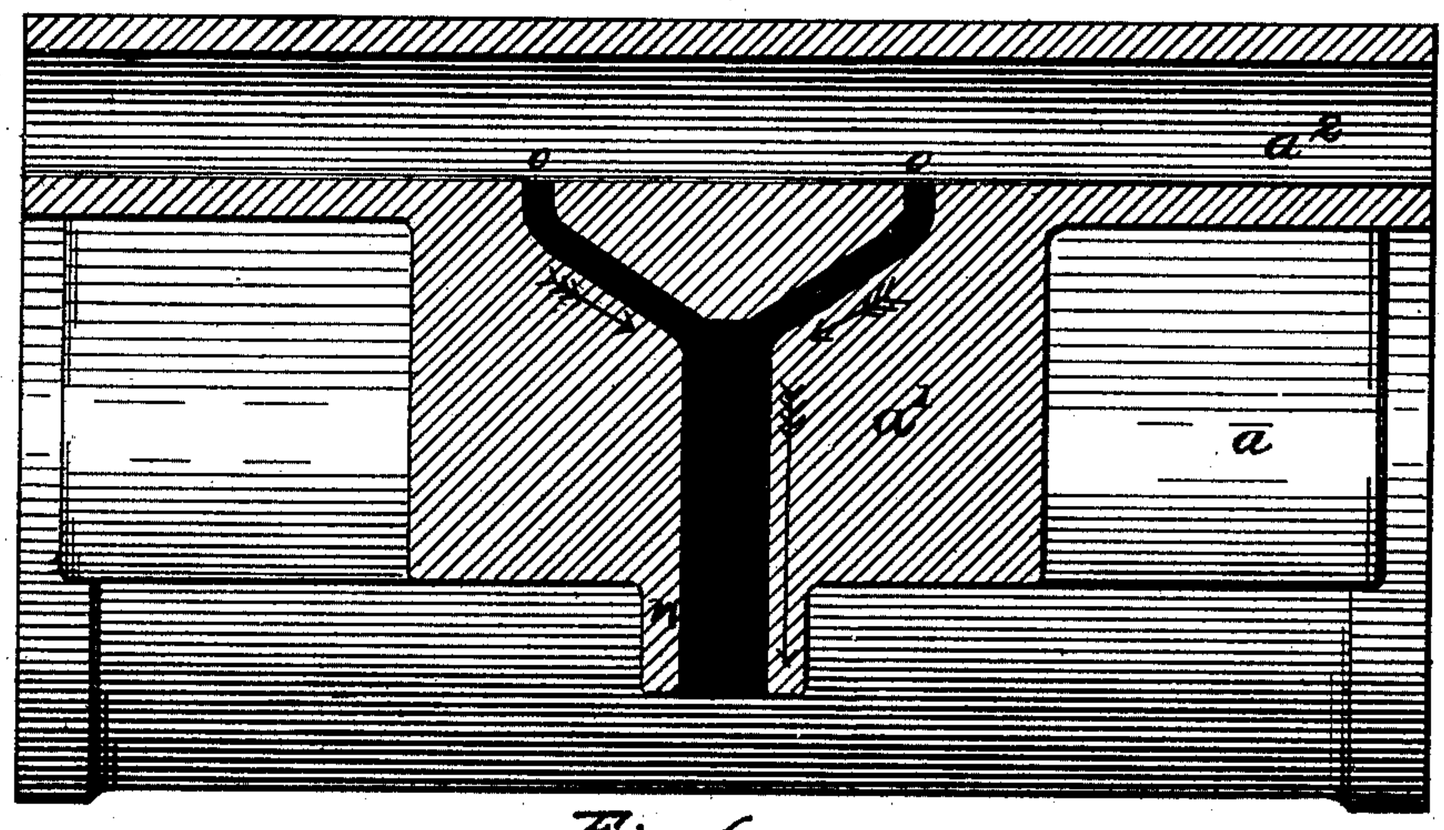


Fig. 6.

WITNESSES

Edward B Wilder.

Jerry W Bliss

INVENTOR

Augustus Sequeira

UNITED STATES PATENT OFFICE.

AUGUSTUS SEQUEIRA, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN WATER-METERS.

Specification forming part of Letters Patent No. **176,078**, dated April 11, 1876; application filed January 24, 1876.

To all whom it may concern:

Be it known that I, AUGUSTUS SEQUEIRA, of the city and county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Water-Meters; and to enable others skilled in the art to make and use the same, I will proceed to describe, referring to the drawings in which the same letters indicate like parts in each of the figures.

This invention relates to certain improvements in water-meters; and consists more particularly in the peculiar construction of the piston having no actuating rod or other fixture attached thereto, and its combination with compound valves in the other chambers of the meter, whereby a regular and automatic action of the device is insured without the intervention of any mechanical motor, all as will now be more specifically and in detail set out and explained.

In the accompanying drawings, on Sheet 1, Figure 1 is a top view of the meter. Fig. 2 is a side view, showing a section through the line E F, on Sheet 2. Fig. 3 is a vertical section through the line C D, on Sheet 2. Fig. 4 is a vertical end section through the line A B, on Sheet 3, showing the end of the piston in its cylinder, and the ends of two valves in their chambers. On Sheet 3, Fig. 5 is a side view, showing one of the valves, its chamber, and ports leading to and from the same. Fig. 6 is a horizontal section through the line G H on Sheet 2.

a is the cylinder, in which the piston *b* vibrates. a^1 and a^2 are valve-chambers, in which the valves a^3 and a^4 are fitted to play closely and freely therein. The piston *b* and valve a^3 are provided with hubs or detents x' on each end, which strike their respective heads each alternate motion, and by which the desired and exact amount of play is regulated, and determine or fix the accurate measurement of fluid. The valve a^4 is provided with lugs *h*, which extend through and play in slits formed in or through the cylinder, directly under the seat of the valve a^4, against which the end of piston *b* strikes, and move it so as to open alternately the ports.

The operation is as follows: The water is first introduced into the meter through the induction-orifice *c*, and upward through properly-formed passages to the top of valve-chamber a^1; thence right and left through ports *d d* into compartment *e*; thence down through passages to port *f*, and into cylinder *a*, between the head of the cylinder and the end of the piston *b*, and by its pressure moves the piston to the opposite end of the cylinder, and in its movement it strikes the lug *h* in the valve a^4, and moves it in the same direction with the piston, and opens the port *k*, which leads into port *j*, and allows the water to pass directly into the valve-chamber between the head and end of the valve a^3, and moves it forward to the opposite end of its chamber, and forces the water from the chamber through passages to the discharge *n*, and in doing so the water enters the compartment e'; thence through the ports f' between the cylinder and piston-heads, and, by the pressure of the water, the piston is reacted to the opposite end and drives the water through port *f* and compartment e'', and through the discharge-passage out at port *n*, and vice versa, a continuous action and steady discharge will be produced.

The dial for registering the measurement of fluid forms no part of this invention.

Having thus described the construction and operation, what I claim, and desire to secure by Letters Patent, is—

1. In a water-meter, the sliding balance-valve a^3, with its heads I II III IIII, and detents x', operating in and combined with chamber a^1, substantially as and for the purposes set forth.

2. The piston *b*, having detents *x*, and operating in chamber *a*, in combination with valve a^4, having lug *h*, substantially as and for the purposes set forth.

3. The combination of cylinder *a*, having piston *b*, provided with detents *x*, and valve-chamber a^2, having the valve a^4, lug *h*, with chamber a^1, having valve a^3, substantially as and for the purpose set forth.

AUGUSTUS SEQUEIRA. [L. S.]

Witnesses:

EDWARD B. WILDER,

JEREMY W. BLISS.