(No Model.)

J. BUCKLEY.

WATER CLOSET VALVE REGULATOR.

No. 444,528. Patented Jan. 13, 1891.

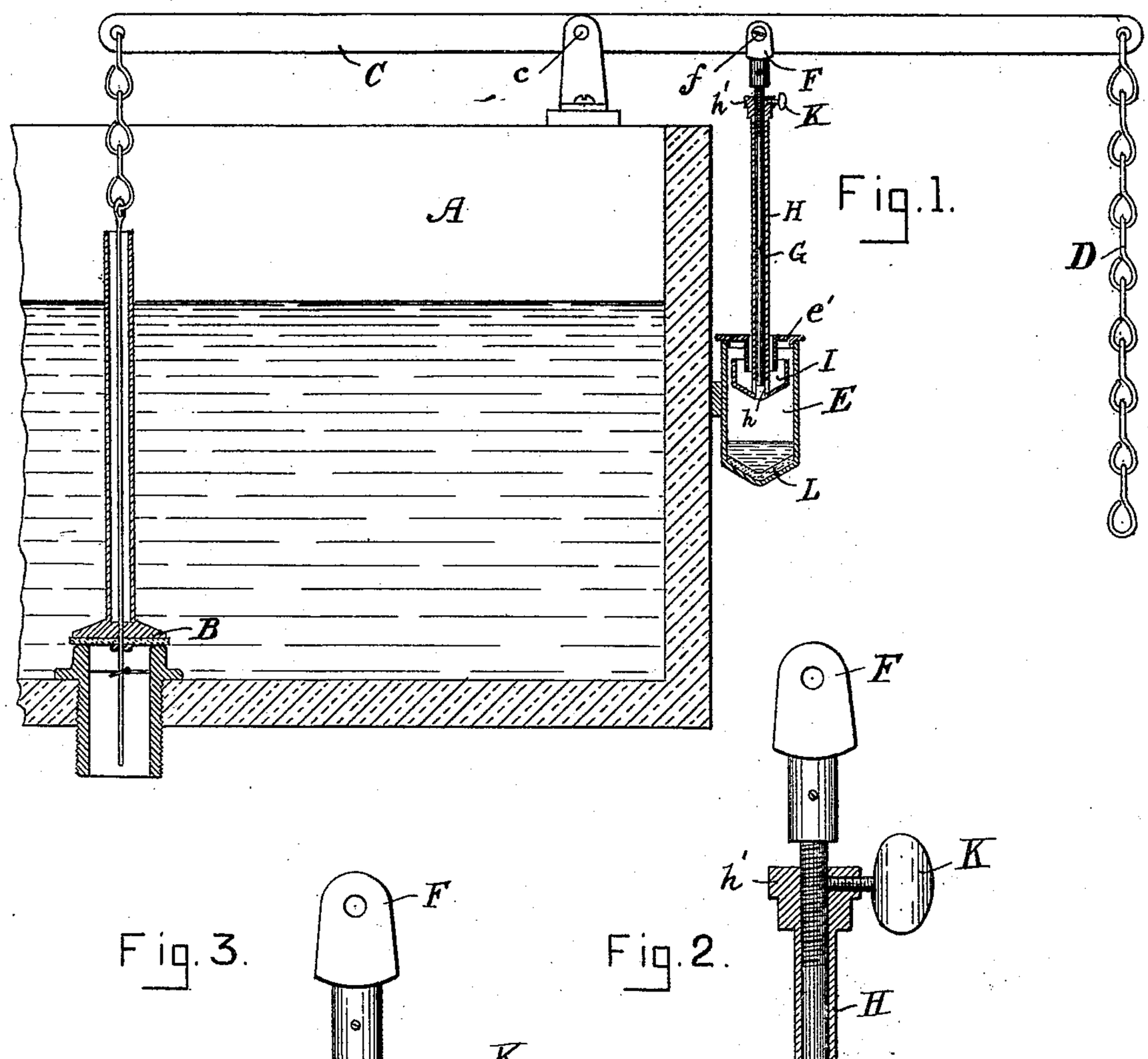

Fig. 1.

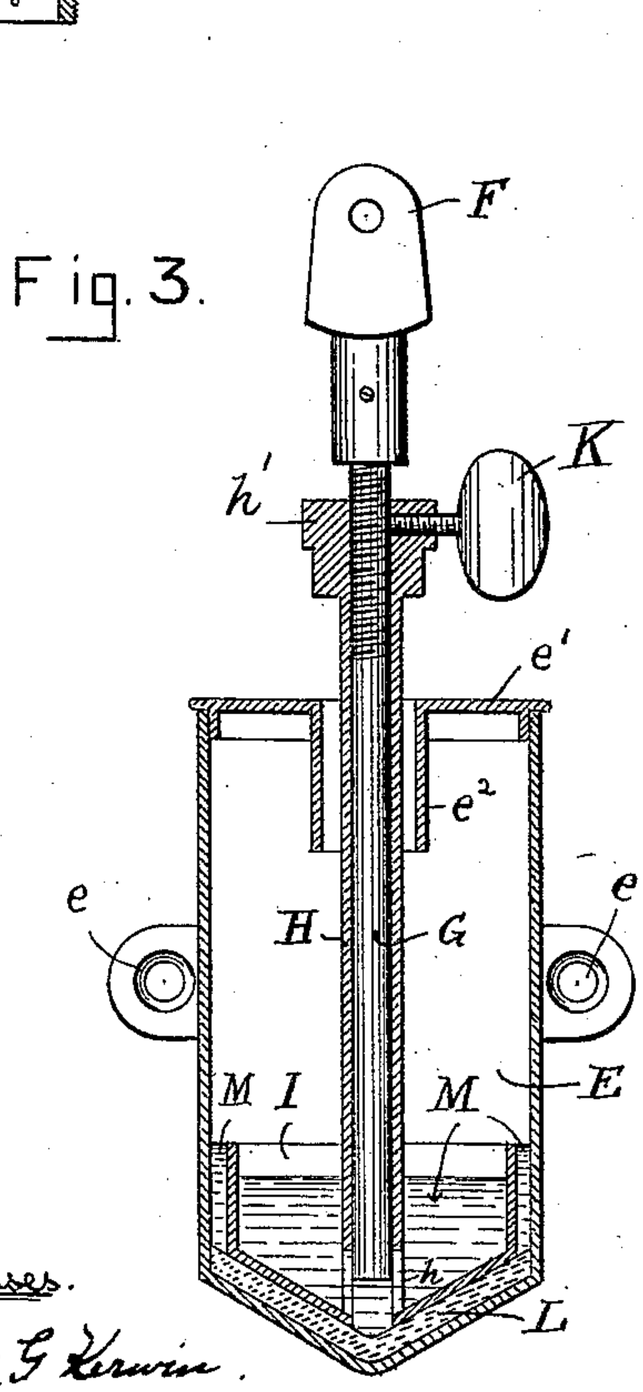

Fig. 3.

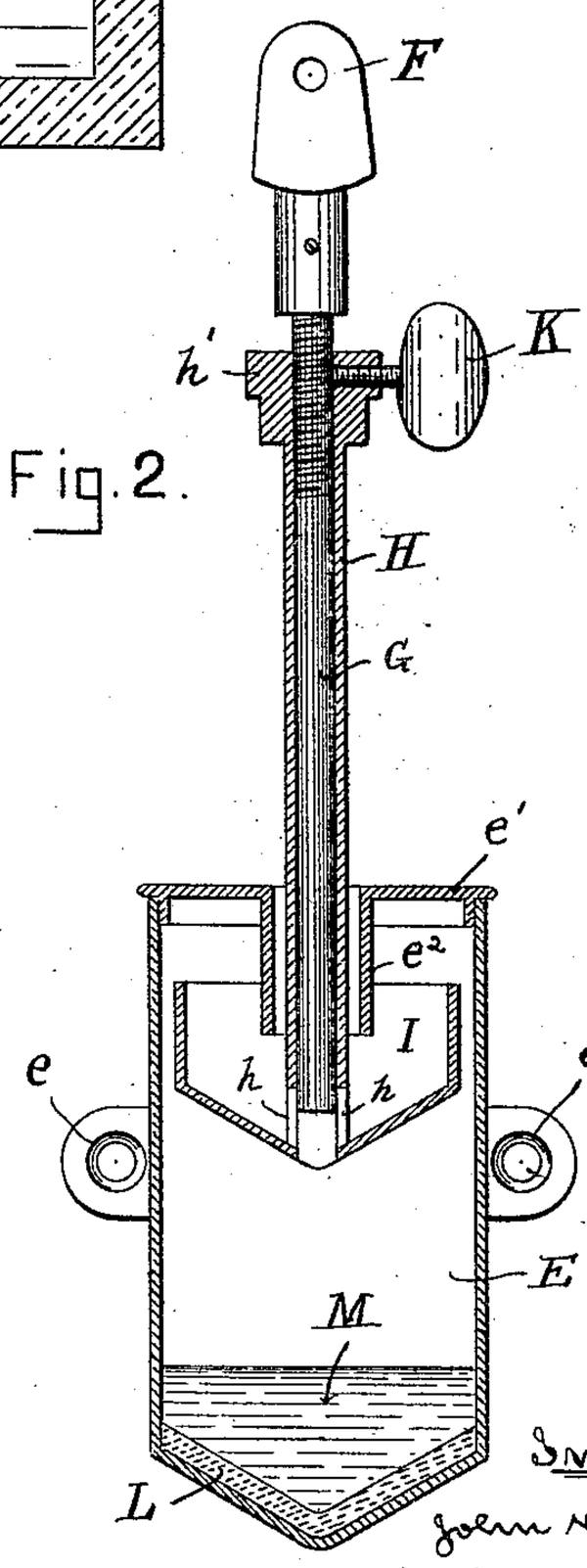

Fig. 2.

Witnesses.
Winfield G. Kerwin.
John J. Moore.

Inventor.
John Buckley
by Edwin Bianta
attorney.

UNITED STATES PATENT OFFICE.

JOHN BUCKLEY, OF BOSTON, MASSACHUSETTS.

WATER-CLOSET-VALVE REGULATOR.

SPECIFICATION forming part of Letters Patent No. 444,528, dated January 13, 1891.

Application filed June 6, 1890. Serial No. 354,460. (No model.)

To all whom it may concern:

Be it known that I, JOHN BUCKLEY, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Water-Closet-Valve Regulators, of which the following, taken in connection with the accompanying drawings, is a specification.

The object of my invention is to produce a valve-regulator that can be secured to the outside of cisterns of water-closets, whereby the valves, after having been opened, will be prevented from closing for a certain space of time, so that sufficient water will escape from the cistern to properly flush the basin.

The invention consists of certain details of construction, as hereinafter fully described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 represents a vertical section through a water-closet cistern fitted with a valve-regulator embodying my invention. Fig. 2 is a vertical section through a valve-regulator embodying my invention, showing the rod and bucket in its normal position when the valve is closed. Fig. 3 is a similar view showing the rod and bucket in the position when the valve is open.

A represents a water-closet cistern; B, the valve; C, the lever fulcrumed at *c*, and D the pull, which may all be of ordinary construction.

E is a cylindrical vessel secured to the outside of the cistern by lugs *e* or other suitable means. The bottom of this cylinder is preferably of a cone shape, as shown, and the upper or open end is closed by a cover e', the center of which is fitted with a tube e^2, that extends down a short distance into the cylinder E.

F is a saddle-shaped piece that embraces the lever C and is fulcrumed to the same at *f*. To the lower end of this piece F is secured a rod G, the upper end of which is screw-threaded.

H is a tube provided at its lower end with a bucket I, that is open at the bottom. The size of the diameter of the tube H, which is at its lower end provided with two or more openings *h*. To the upper end of the tube H is secured a screw-threaded nut h'. The tube H fits over the rod G, as shown, the screw on the upper end of same fitting the screw-thread on the upper end of the rod G, so that by turning the tube H upon the rod G the openings *h* at the lower end of the tube will be opened or closed more or less by the end of the rod G, as may be desired. After the tube has been adjusted upon the rod to the required position it is secured by the set-screw K.

L is a layer of rubber or other elastic material secured in the bottom of the cylinder E, and M represents mercury or other fluid which flows into the bucket I (when the same is lowered) through the openings *h* and over the upper edge of the bucket. Sufficient mercury is employed to counterbalance the weight of the valve B.

In applying the valve-regulator, the saddle-piece F is secured to the lever C and the cylinder E secured to the outside of the cistern A in such a position that when the pull D is drawn down the bottom of the bucket I will come in contact with the elastic material L in the bottom of the cylinder E. When the pull D is drawn down, the valve B is opened and allows the water to flow out of the cistern to the basin and the bucket I is forced down to the bottom of the cylinder, the mercury flowing into it through the holes *h* and over its upper edge. If the pull D be now released, the valve B has a tendency to close; but the fluid in the bucket I acts as a counter-weight and prevents it from so closing, and it will not close until sufficient of the fluid has passed out of the bucket I through the openings *h* into the cylinder E, so that the valve B is heavier than the bucket, when the valve closes and prevents the further flow of water.

What I claim as my invention is—

1. A valve-regulator for water-closets, consisting of a cylinder adapted to be secured to the side of the cistern, a rod connected to valve-lever, a tube having a bucket at its lower end, provided with central openings and adjustably secured upon the said rod, and a fluid, such as mercury, in the bottom of the cylinder, substantially as set forth.

2. A valve-regulator for water-closets, consisting of a cylinder E, closed by a cover e', a layer of elastic material L in the bottom of said cylinder, and fluid M, in combination

with a rod G, screw-threaded at its upper end, the saddle F, and the tube H, having a nut h' at its upper end and a bucket I at its lower end, provided with openings h and adjustably secured on the rod G, substantially as shown and described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 2d day of June, A. D. 1890.

JOHN BUCKLEY.

Witnesses:
CHAS. STEERE,
EDWIN PLANTA.