J. MUIRHEAD.

WATER-CLOSET VALVES.

No. 193,271. Patented July 17, 1877.

Fig. 1.

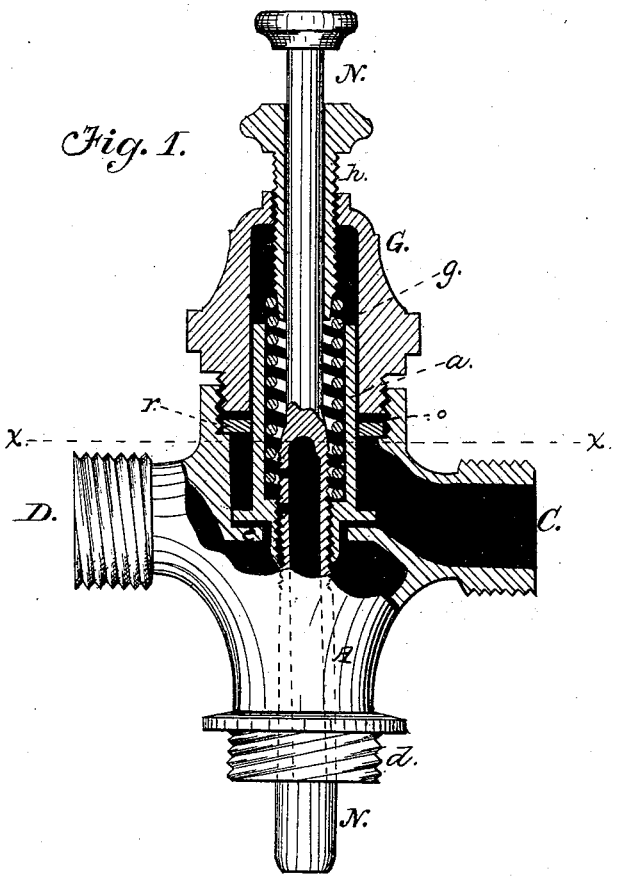
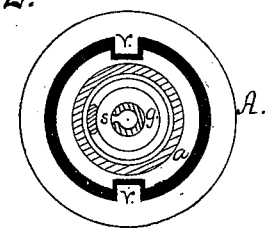


Fig. 2.



WITNESSES

L. P. Arnold

James E. Arnold

INVENTOR

James Muirhead.

By Benj Arnold

ATTORNEY

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES MUIRHEAD, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN WATER-CLOSET VALVES.

Specification forming part of Letters Patent No. **193,271**, dated July 17, 1877; application filed March 7, 1877.

To all whom it may concern:

Be it known that I, JAMES MUIRHEAD, of the city and county of Providence, and State of Rhode Island, have invented certain Improvements in Valves for Water-Closets, fully set forth and described in the following specification and drawing accompanying the same.

The object of this invention is to make a valve for water-closets by which it shall be easier to regulate the supply of water; and it consists in putting a screw-plug over the spring that presses down the valve-plunger, whereby the pressure on the valve may be increased or diminished, as may be required; also, in putting the valve-stem through the valve with a screw-thread, so that by screwing it down the lower portion of the stem will be lengthened, and the valve raised higher by its lever.

Figure 1 shows an elevation of the valve with part shown in section. Fig. 2 is a horizontal section taken through the dotted line *x x*, Fig. 1.

A is the body of the valve, to be attached to the chamber of the water-closet by the screw *d*. C is the supply-pipe; D, the pipe that connects with the basin. *a* is the valve-plunger, the lower end of which forms the valve proper, resting on the seat *e*. G is the cap, which is made with a chamber to receive the plunger *a*. *g* is a spring, placed inside of the plunger *a*, and resting on the bottom of its chamber. *h* is a screw-plug, fitted into the top of the cap G, and having its lower end resting on spring *g*. *r* is a flat ring fitted to the plunger *a*, and resting on the bottom of the recess made for the cap-screw, so that a suitable packing, *o*, placed between the ring *r* and the cap, shall serve to pack both the entrance of the plunger into its chamber, and the screw-joint of the cap with the body of the valve. N is the valve-stem, made with a screw-thread on it where it passes through the valve proper, which is also furnished with a screw-thread in which the stem works, so that by turning the stem by the milled head on its upper end it can be screwed down through the valve, so as to lengthen the portion below the valve, and cause the operating-lever to raise the valve higher, and vice versa.

To prevent the valve from turning with its stem, which would prevent the action of the screw, two projecting ridges, *v v*, are made on the sides of the chamber, (see Fig. 2,) which fit into notches in the outer edge of the valve.

The lower portion of the stem N is made hollow. Two openings, *s s*, are made into it in that part in the plunger, so that any water that may be forced by the screw into the spring-chamber will run down through the stem into the closet-chamber when the valve is shut.

In operation it is often necessary, on account of more or less friction in the packing, and greater or lesser pressure on the water in the supply-pipe, to increase or diminish the pressure of the spring *g* on the valve, to make it close sooner or later. This is done by screwing the plug *h* down or up by its milled head, as the case may require, to compress or release the spring *g*, and by turning the valve-stem N by its milled head the height to which the lever will lift, the valve may be increased or lessened. Both of these milled heads are accessible without opening any part of the valve or other parts of the closet-chamber.

What I claim as my invention, and desir to secure by Letters Patent, is—

1. The combination of the valve-plunger *a*, spring *g*, screw-plug *h*, with the cap G, and valve-body A, when constructed and operating substantially as and for the purpose set forth.

2. The valve *a* and stem N, the latter made to screw through the valve, and extend out through the cap, for the purpose of adjustment, in combination with the cap G and valve-body A, substantially as described, and for the purpose specified.

JAMES MUIRHEAD.

Witnesses:

JOHN C. PURKIS,

GILMAN E. JOPP.