N. UPHAM.

STOP-COCK.

No. 170,648. Patented Nov. 30, 1875.

Fig. 1

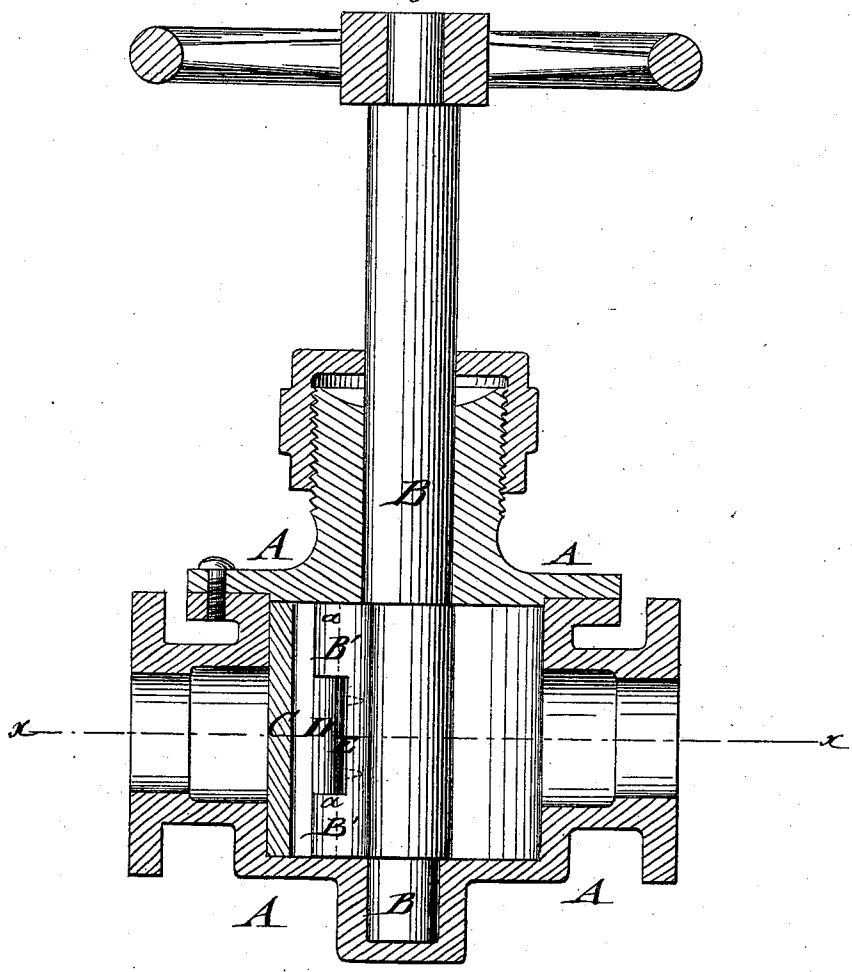
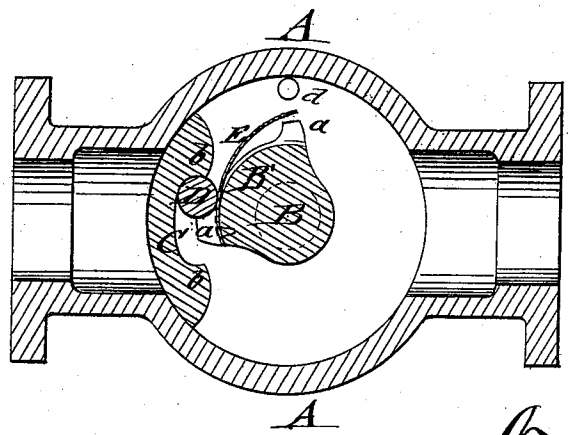


Fig. 2



WITNESSES:

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NEHEMIAH UPHAM, OF ATHOL, MASSACHUSETTS.

IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. **170,648**, dated November 30, 1875; application filed October 2, 1875.

To all whom it may concern:

Be it known that I, NEHEMIAH UPHAM, of Athol, in the county of Worcester and State of Massachusetts, have invented a new and Improved Valve, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of my improved valve; Fig. 2, a horizontal section of the same on the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

My invention relates to an improved valve for water and steam pipes, that may be opened easily with little friction, and manufactured in a convenient yet reliable manner.

The invention consists of a valve-case with sliding valve segment, operated by a pronged and raised spindle and intermediate friction-roller, which is retained in place by a spring or its equivalent, when the valve is partially open.

In the drawing, A represents the valve-case, which is turned to a true circle, and B the spindle, which is placed slightly out of center to the same. The section of the spindle between the top and bottom of the valve-case is provided with a sector-shaped enlargement, B′, that is milled out at its circumference on a true circle to the center of the spindle, so as to form projecting shoulders or prongs *a* at the ends.

A segment-shaped valve, C, is turned on its face to fit exactly the case, a central portion of its inner or rear side being also milled out concentric to the case to produce raised parts or shoulders *b* at both ends.

A friction-roller, D, of a diameter equal to the distance between the milled or grooved central parts of spindle and valve, at the narrowest space of the same, is placed between spindle and valve, and fills up the space between the same. If the spindle is turned to open the valve, the roller D is first moved from one end shoulder of the valve to the other shoulder of the same, the outer prong of the spindle taking then hold of roller and valve and moving the latter into open position intermediately between the case-openings.

The friction-roller bears in the closed position of the valve with heavy pressure on the same, as the space between valve and spindle is completely filled up by the same, preventing, by the eccentricity of the sector, any moving of the valve beyond the closed position, and locking thus the same rigidly, to close the valve-aperture. When the spindle is turned so that the roller will bear without moving the valve on the opposite shoulders or prongs of valve and spindle, the valve is relieved from all pressure, and may be moved with the slightest power possible, avoiding thereby the breaking of the spindle and other difficulties produced by the corrosion of the valves, and furnishing a valve that is always reliable in case of fire or other emergencies.

The middle part of the spindle-sector B′ is recessed in lateral direction, and a band-spring, E, attached at one end into the recess, bearing with the free end on the roller to hold the same in position when the valve is partially open. The same effect may be accomplished by means of teeth cut in the central part of the roller and at the inner part of the valve.

An aperture, *d*, at the bottom of the valve-case, allows the water to drain off from portions of pipes or hydrants in underground valves when there is any liability of freezing.

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

1. A valve, constructed of a valve-casing, a sector-shaped and pronged spindle slightly eccentric thereto, a sliding and pronged segment-valve, and an intermediate friction-roller between valve and spindle, arranged and operated substantially in the manner and for the purpose set forth.

2. The spindle-extension, having lateral recess, and a spring or equivalent device for retaining the roller and sliding valve in partially open position, substantially as set forth.

NEHEMIAH UPHAM.

Witnesses:
ALBERT WILLIAMS,
HYLON N. PERRY.