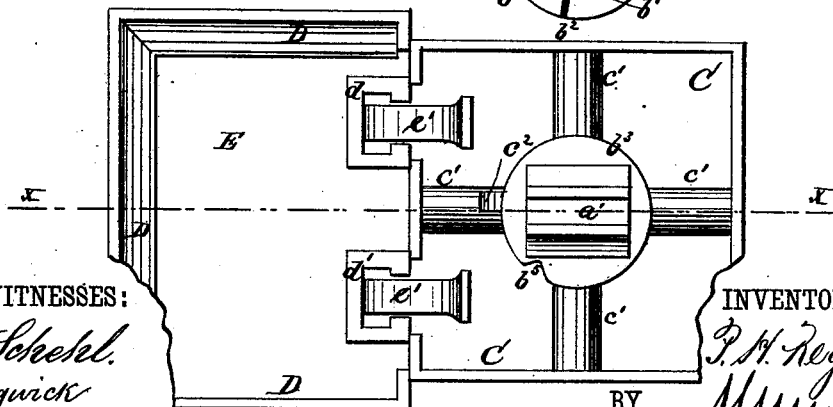
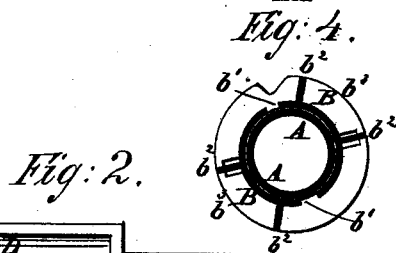
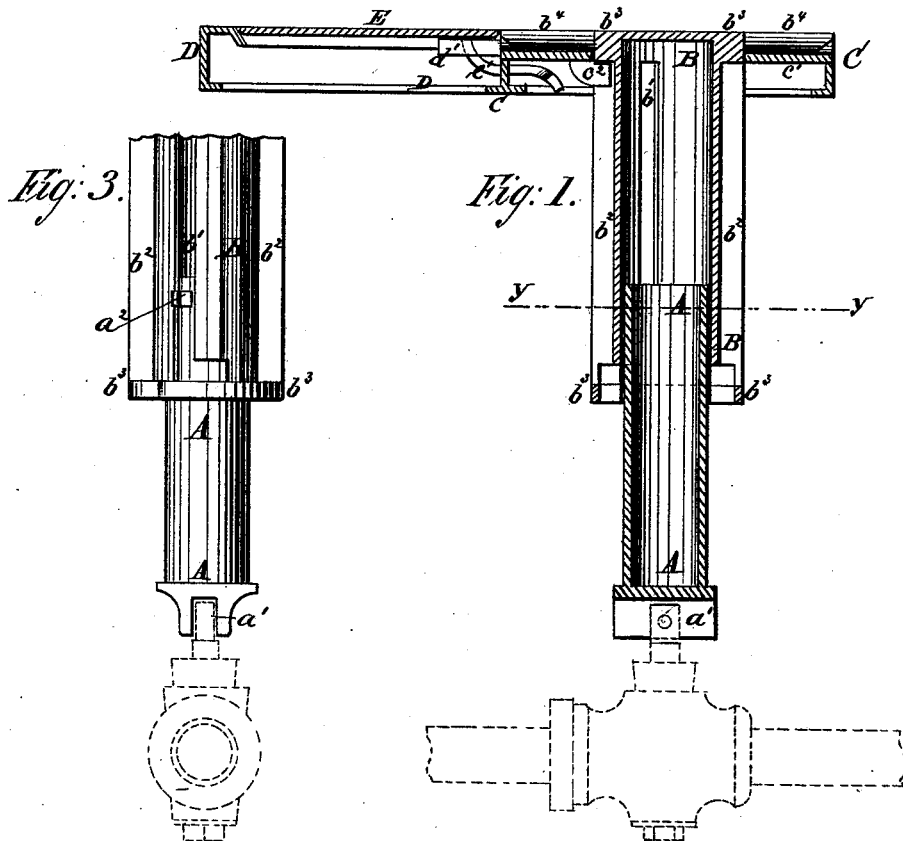


P. H. REGAN.
Extension Water-Cock Key.

No. 221,610.

Patented Nov. 11, 1879.



WITNESSES:
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UNITED STATES PATENT OFFICE.

PATRICK H. REGAN, OF NASHVILLE, TENNESSEE.

IMPROVEMENT IN EXTENSION WATER-COCK KEYS.

Specification forming part of Letters Patent No. **221,610**, dated November 11, 1879; application filed May 15, 1879.

To all whom it may concern:

Be it known that I, PATRICK H. REGAN, of Nashville, in the county of Davidson and State of Tennessee, have invented a new and useful Improvement in Extension Water-Cock Keys, of which the following is a specification.

Figure 1 is a vertical section of my improved key, taken through the line *x x*, Fig. 2. Fig. 2 is a bottom view of the same. Fig. 3 is a detail side view of the lower part of the same. Fig. 4 is a cross-section of the same, taken through the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved key for opening and closing the cocks of water-pipes, gas-pipes, &c., when placed below the surface of the ground, and which shall be so constructed that they may be extended and contracted, as the depth of the pipe may require, and which shall be strong and durable, simple in construction, and convenient in use, allowing the water to be shut off and let on very quickly.

The invention consists in the lower tube provided with a cross-notch in its lower end and lugs upon the opposite sides of its upper end, the upper tube provided with longitudinal slots in its opposite sides, with strengthening-flanges upon its sides and ends, and an equal-armed cross made with half-round arms and beveled ends upon its upper end, and the plate provided with the half-round grooves in its upper side, in combination with each other; and in the combination of the cover provided with the curved cross-head arms with the frame provided with the slotted lugs, and formed upon the plate of the extension-key, as hereinafter fully described.

A is a cast-iron tube, of any convenient length and size, and which has a cross-notch, *a'*, formed in its lower end to receive and be attached to the cross-head of the cock-stem.

Upon the opposite sides of the upper end of the tube A are formed lugs *a²* to enter longitudinal slots *b'* in the opposite sides of the cast-iron tube B, which is made of such a size as to receive and fit upon the lower tube, A. The slots *b'* are made with an offset at their lower ends, as shown in Fig. 3, so that the lower tube, A, may be lowered and raised by and

with the upper tube, B, and so that the two tubes may be readily separated when desired.

The slotted tube B is strengthened by longitudinal flanges *b²* upon its sides and ring flanges *b³* around its ends. Upon the upper end of the tube B is formed an equal-armed cross, *b⁴*, the upper sides of the arms of which are made flat and flush with the end of the said tube B.

The lower sides of the arms of the equal-armed cross *b⁴* are made half-round to fit into the half-round grooves *c'* in the upper side of the plate C, which grooves *c'* are made of such a depth that the upper surfaces of the arms *b⁴* may be flush with the upper surface of the said plate C.

The ends of the arms of the equal-armed cross *b⁴* are beveled upon their lower sides, so that the fingers can be readily inserted to raise the said cross-head from the grooves of the plate C, to allow the key to be turned one-quarter around to open or close the cock.

A stop, *c²*, may be formed upon the lower side of the plate C to project into such a position that the flanges *b²* of the tube B may strike against it to prevent the key from being turned more than a quarter of a revolution in either direction.

A notch, *b⁵*, is formed in the lower ring-flange, *b³*, to allow the tubes A B to be inserted and withdrawn past the stop *c²* when required.

The plate C is designed to be attached to the top of a box which incloses the key and extends down to the water-pipe in such a way that the upper surface of the said plate C may be flush with the surface of the pavement.

In case a sprinkler be used, the plate C has a frame, D, formed upon or attached to one side, the opening of which is closed by a cover, E.

Upon one edge of the cover E are formed arms *e'*, which are curved rearward and downward and have cross-heads formed upon their ends. The arms *e'* are passed through slots in lugs *d'*, formed upon one side of the frame D, so that the said curved arms *e'* and slotted lugs *d'* may serve as hinges for the cover E. The forward parts of the slots in the lugs *d'* are widened, as shown in Fig. 2, so that the arms *e'* may be inserted and withdrawn when required.

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

1. The lower tube, A, provided with a cross-notch, a' , in its lower end and lugs a^2 upon the opposite sides of its upper end, the upper tube, B, provided with longitudinal slots b' in its opposite sides, with strengthening-flanges b^2 b^3 upon its sides and ends, and an equal-armed cross, b^4 , made with half-round arms and beveled ends upon its upper end, and the plate C, provided with the half-round grooves in its

upper side, in combination with each other, substantially as herein shown and described.

2. The combination of the cover E, provided with the curved cross-head arms e' , with the frame D, provided with the slotted lugs d' , and formed upon the plate C of the extension-key, substantially as herein shown and described.

PATRICK HENNERY REGAN.

Witnesses:

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