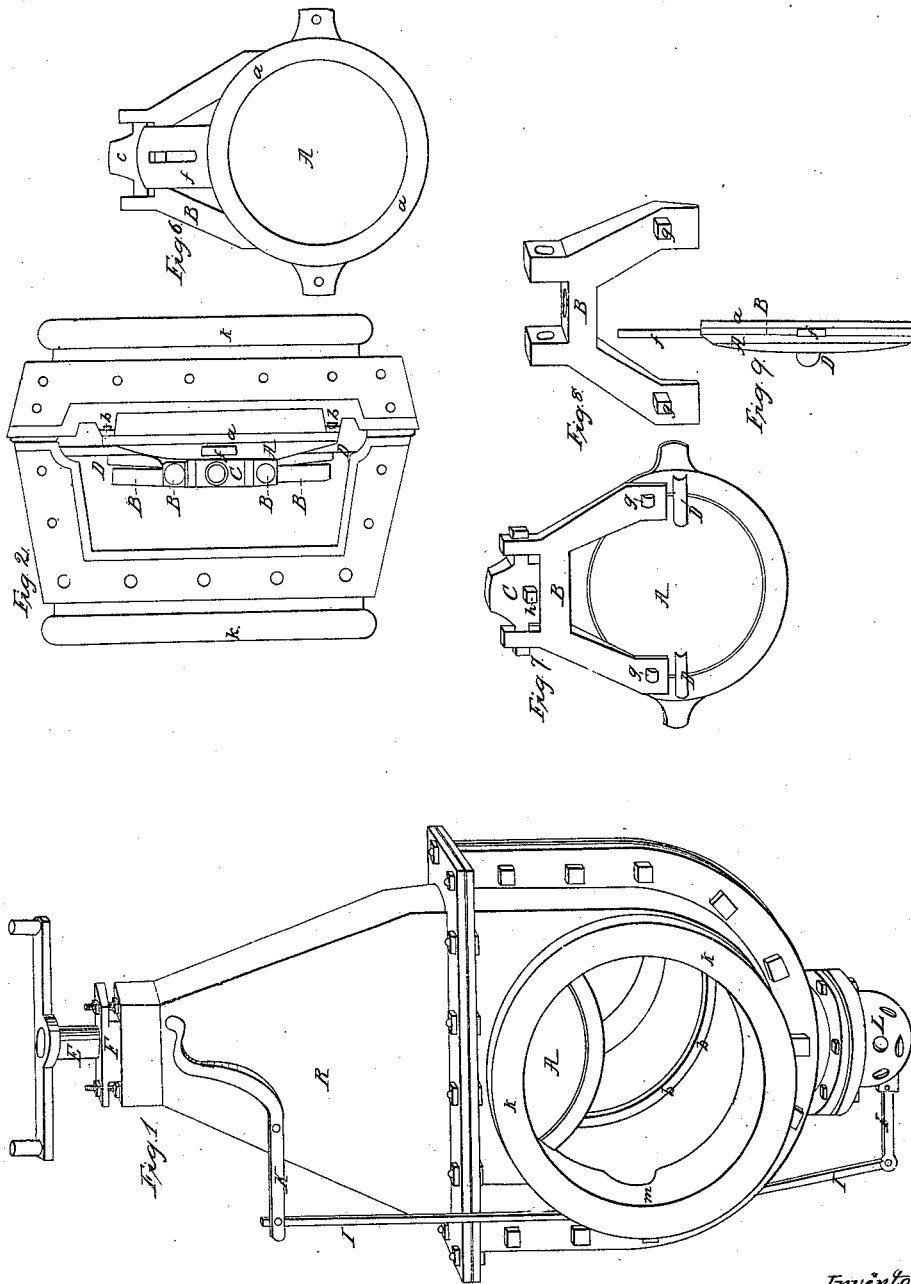


J. Robertson,
Stop Cock.

N^o 1,583.

Patented May 8, 1840.



Witnesses:
James F. Warren
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Inventor:
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UNITED STATES PATENT OFFICE.

JAMES ROBERTSON, OF NEW YORK, N. Y.

CONSTRUCTION OF STOP-COCKS.

Specification of Letters Patent No. 1,583, dated May 8, 1840.

To all whom it may concern:

Be it known that I, JAMES ROBERTSON, of the city, county, and State of New York, have invented a new and useful Improvement in Stop-Cocks for Water and Gas Pipes; and I do hereby declare that the following is a full and exact description.

This invention is called "Robertson's improved stop-cock."

The chief improvements consist in simplifying it, rendering it easy to open and shut without danger as in ordinary stop cocks of breaking, and facilitating the repairing of it when injured without taking up or breaking the pipes.

To enable others to make and use my improvements I proceed to describe its construction and operation, reference being had to the annexed drawings which make part of this specification.

The box containing the works consists of three pieces, two sides and the top piece or cap. A representation of the whole put together is shown at Figure 1, Plate I. It is of cast iron and the pieces are connected by bolts with nuts and screws the whole made air tight by lead run into the joints and packed.

In the drawings hereunto annexed the figures are made to a scale of three inches to a foot of the ordinary size for a pipe of twelve inches diameter.

The lower part of the two sides is much like the ordinary stop-cock in use except the valve and its apparatus at the bottom. The sides have flanges by which they are connected, and there is a flange around the top of them by which the top piece is fastened on. The shape of the lower part at its top, as seen before the top piece is put on, is shown in Fig. 2, which is a view of the lower part from the top. The hubs (*h*) are constructed to admit the pipes inside, as will be seen by Fig. 4, Plate II.

On the pipe inside the sliding valve (*A*) rests against a smooth edge or face generally made of brass and polished, called the valve seat. The face of the sliding valve has also a ring of brass (turned true and polished) on its face to fit to the face of the pipe. For the face of the sliding valve see Fig. 6. It (the valve) is made round, except for a projection on each side and an ear or piece *f* at top containing a slot. It is made of cast iron, except upon the face where there is a ring of brass. There are two projections

—D—on a line with the projections at the side edges. An edge view is seen at Fig. 9—another also at Fig. 2.

The wedge *B*, Figs. 5, 6, 7, 8, is made of wrought iron or cast iron—the former is preferable. It is connected to the valve by a small pin which enters into the slot. It is made of the shape shown at Fig. 8. The brass nut for the main screw *E* is secured in the top part of this wedge by journals in the upper projections. Upon the lower part of the wedge upon each leg of it is a small knob or elevation *g*. The wedge may be seen in the drawing at Figs. 4, 5, 6, 7, 8.

The main screw, *E*, Fig. 4, Pl. II. This is made of brass or iron—the former is preferable, as in the situation in which it is placed it is liable to rust. It runs in the brass nut, *C*, and through the top of the wedge *B*. It always retains the same position in the box at top and is made with a shoulder just above the screw to retain it in position. The screw extends down to a guide *P* Fig. 4 which is inserted in one of the sides—just above the inner face of the pipe. This guide keeps the screw in its place and prevents vibration.

The independent wedge *B* is made of a peculiar shape. It is a double wedge, that is, it is divided so as to act on each side. The two wedges are connected so as to make but one piece. The nut *C* is made to fit into the top of the piece *B* between two points or studs projecting upward and there hinged by journals or pivots on *C*. The knobs *g* on the back of the wedges serve to hold it against the valve above the projection *D*, as seen, Fig. 5.

The escape valve *H*, Fig. 4, at the bottom is for letting off the dirt, &c., which may accumulate in the basin, formed by the hollow part immediately above it. To get rid of the dirt the valve is raised by means of the compound lever *I* and *K*, Fig. 1. The basin is merely a depression of the interior at the bottom, by which a cavity is formed, over which cavity the water flows in its passage through the pipe, depositing the sediments there.

The cap piece, *R*, Figs. 1 and 3, is made tapering toward the top, being at the bottom as broad as the main box, a form of which is seen at Fig. 2. Upon the bottom of this cap is a flange all around to fit and join with the flange seen at Fig. 2. This cap is one of the chief improvements in the

stop cock. In all that have heretofore been made there was no means of repairing them but by breaking one or two lengths of the pipe and melting out the lead, &c., but by this cap all difficulty is remedied. The cap is taken off and the whole interior readily laid open without damaging any part.

When it is required to shut down the sliding valve A to close the pipe, the valve being in the position seen at Fig. 5, the screw E is turned back by means of the crank G and the valve and wedge descend together, the valve being forced down, when its own weight will not carry it by the wedge the feet of which rest against the projections D and are prevented from slipping off by the knobs *g* which rest against the inside of the box above the pipe and keep it in place. But when the sliding valve is thus pushed down, the knobs reach a notch *m* (shown in Fig. 1) cut in each side of the inner edge of the pipe and slip off the projections D, and sliding down a short space upon the top of it, wedge it firmly to the face of the pipe, that is, bring the brass ring, *a*, of the sliding valve firm upon the ring, *b*, on the inner face of the pipe.

When the valve is to be raised to admit the water through, the screw is turned and the wedge first drawn out, which is easily done, as the distance to be drawn is very short. The relative position of the wedge and the disk, A, when the latter is shut down, are seen at Fig. 4. Their relative positions when drawn up are seen at Figs. 7 and 5.

A clearer and fuller explanation will now be given by immediate reference to the drawings.

Figure 1, a perspective view; Fig. 2, section at the dividing point between the cap and the body; Fig. 3, a side view; Fig. 4, a vertical section showing the edge of the

sliding valve wedge, &c.; Fig. 5, vertical section showing the back part of the disk or sliding valve A and the face of the pipe *b*; Fig. 6, the face of the sliding valve and its connection with the wedge; Fig. 7, the back of the same with the wedge and the brass nut C; Fig. 8, the wedge in perspective; Fig. 9, edge of the sliding valve.

The same letters refer to the same things in all the figures.

A the sliding valve, *a* the brass ring upon its face, B the wedge, *b* the face of the pipe inside, C the nut in which plays the main screw, D the projection on the back of the disk A, E the main screw, F the stuffing box and follower at top, *f* the ear and slat upon the disk A, G the crank, *g* the knobs upon the wedge, H the escape valve, I the compound lever, K the handle to it, *h* the hub, L the box for the escape valve, *m* a notch in the inside face of the pipe opposite to the face *b*, P the guide for steadying the lower end of the screw E, R the upper part of the whole called the cap or cap piece. It is cast in one piece and arranged to be taken off at pleasure to get at the interior works. S the chambers at the bottom.

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

1. Making the valve A fit more firmly in its seat by means of the independent wedge constructed and operating as above described.

2. I claim the mode of cleansing the chamber S from any dirt that may accumulate in it, by means of the escape valve H arranged and operating as above set forth.

In witness whereof I have hereunto set my hand this twelfth day of August 1839.

JAMES ROBERTSON.

Witnesses:

ENOS WILDER,

OWEN G. WARREN.