T. G. COOKE.

VALVE FOR WATER DISTRIBUTION.

APPLICATION FILED JUNE 14, 1911.

1,021,303.

Patented Mar. 26, 1912.

Figure 1

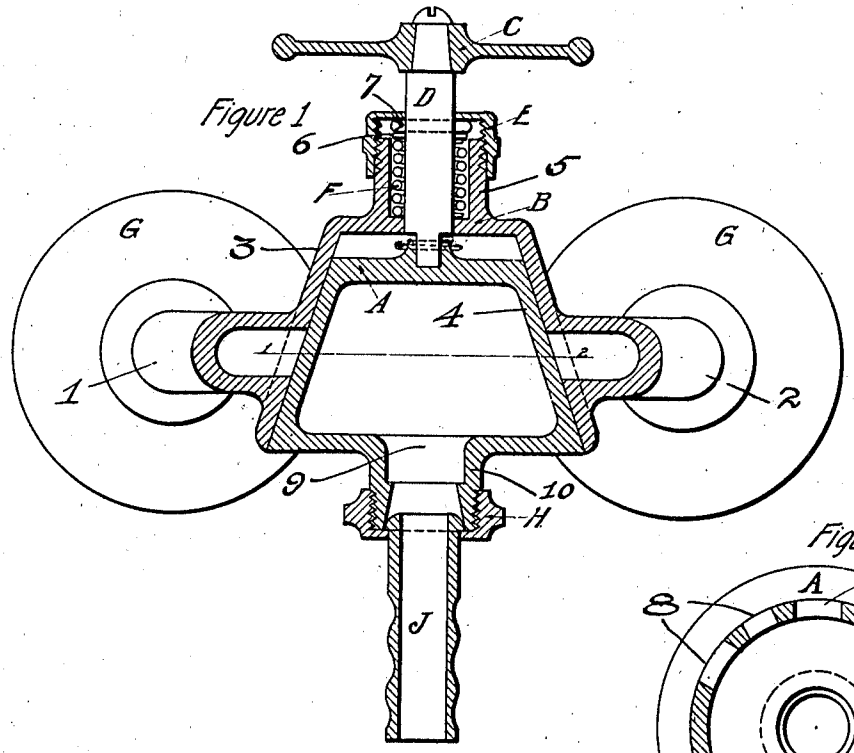


Figure 3

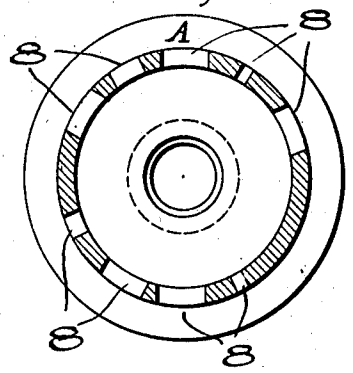
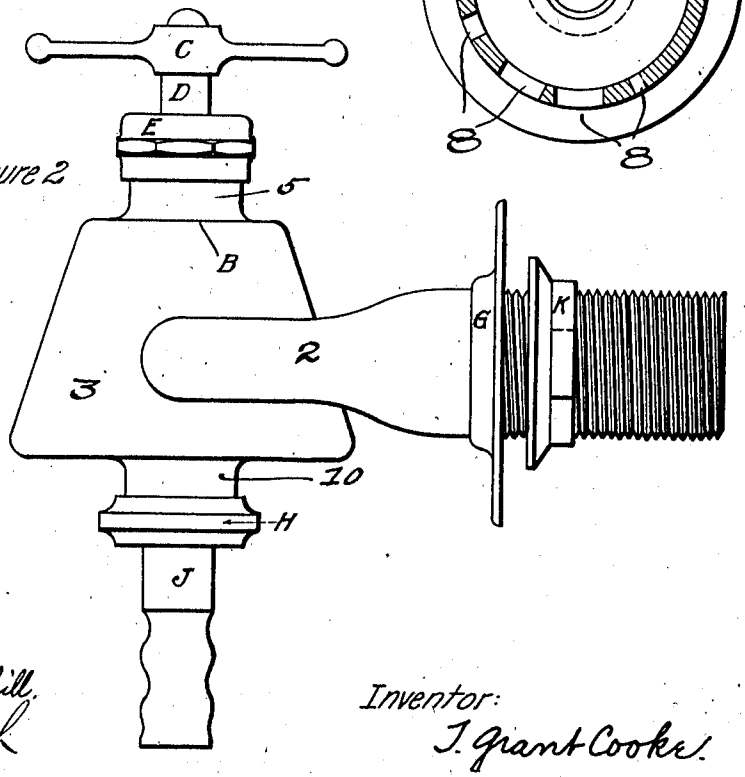


Figure 2



Witnesses:

William Henry Cahill.

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UNITED STATES PATENT OFFICE.

THOMAS GRANT COOKE, OF CHICAGO, ILLINOIS.

VALVE FOR WATER DISTRIBUTION.

1,021,303. Specification of Letters Patent. Patented Mar. 26, 1912.

Application filed June 14, 1911. Serial No. 633,148.

To all whom it may concern:

Be it known that I, THOMAS GRANT COOKE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Valves for Water Distribution, of which the following is a specification.

This invention relates to improvements in valves for water distribution and more particularly to compound faucets.

It is the object of this invention to construct a compound faucet, commonly termed a combination bib, where cold water, hot water, or any desired mixture of the two flows from a single discharge with the parts so arranged that a single valve controls both the cold and hot water, and a mixture of the two of a desired temperature may be accurately produced.

It is a further object of this invention to construct a combination bib in which leakage is prevented without the use of packing nuts, stuffing-boxes, packing or stuffing of any kind and in which all the wear of the movable parts that would tend to produce leakage is automatically taken up.

While the preferred form of this invention is illustrated on the accompanying sheet of drawing yet it is to be understood that minor detail changes may be made without departing from the scope thereof.

Figure 1 is a view in front elevation with parts in section illustrating this invention. Fig. 2 is a view in full side elevation. Fig. 3 is a view in horizontal section of the rotatable valve member taken on the line 1—2 on Fig. 1.

The pipes 1 and 2 leading from the hot and cold water mains are brought together in front and enter on diametrically opposite sides of a valve chamber 3 in the form of a truncated cone. A hollow valve 4 of corresponding shape but of lesser depth is mounted to rotate in the chamber 3. Through a central opening in the top B of the valve chamber 3 a valve stem D passes and is secured to the top A of the conical valve 4. A sleeve 5 integral with the valve chamber 3 extends upward from the top surrounding the valve stem D, and of sufficient inside diameter to allow for a coil spring F about the valve stem D. The spring rests upon the top B of the valve chamber 3 and is held under compression by a washer 6 at the top surrounding the valve stem D and secured thereto by a pin 7. A cap E is placed about the valve stem and secured to the top of the sleeve for protecting the spring and keeping foreign matter from entering the sleeve. The usual hand wheel C is secured to the outer extremity of the valve stem.

As above stated the valve 4 is hollow and in the form of a truncated cone. The water from the hot and cold mains enters through ports 8 in the side of the valve. A central discharge port 9 is formed in the bottom of the valve which is provided with a depending flange or sleeve 10 screw threaded at the bottom to receive a securing nut H for a rotatable discharge nipple J.

The pipes 1 and 2 leading to the hot and cold water mains are provided with flanges G and the extremities are screw threaded and provided with locking nuts K for securing the fixture in place.

As shown in Fig. 3 the conical valve 4 is provided with a plurality of ports 8 which are so arranged that when the valve 4 is in the position shown in Figs. 1 and 3 none of the ports register with either pipe. The ports are so disposed and are in such relation to each other that by continued rotation of the valve 4 the full discharge from one main, three quarters of that main and one quarter of the other, a full discharge from both at once, a quarter of the first and a full discharge of the second, a full discharge of the first and a half discharge of the second will be respectively delivered. The conical valve being retained against the conical valve chamber by the spring upon the outer side at the top of the chamber it is not necessary to use packing of any kind to prevent leakage. The constant rotation of the valve will wear the parts eventually and the spring constantly drawing the valve upward will compensate for such wear. By the arrangement of the ports any desired temperature in the discharge may be produced by turning the valve to the proper position.

What I claim is:

In a combination bib or faucet, a conical valve chamber with sides sloping upward having an open bottom and closed top, pipes leading from opposite sides of the chamber to the mains, a hollow rotatable valve comprising correspondingly shaped walls, a closed top, a closed bottom provided with a small central discharge orifice, and a plu-

rality of ports of varying sizes provided in the valve walls adapted to register with the pipes, a valve stem secured to the top of the valve passing through an orifice in the top of the chamber, an integral sleeve upon the top of the chamber surrounding the valve stem orifice, a spring surrounding the valve stem within the sleeve and secured to the valve stem to exert an upward pressure thereon, a cap surrounding the valve stem and forming a closure for the sleeve, the discharge orifice of the valve provided with a depending flange forming a securing means for a discharge nipple.

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