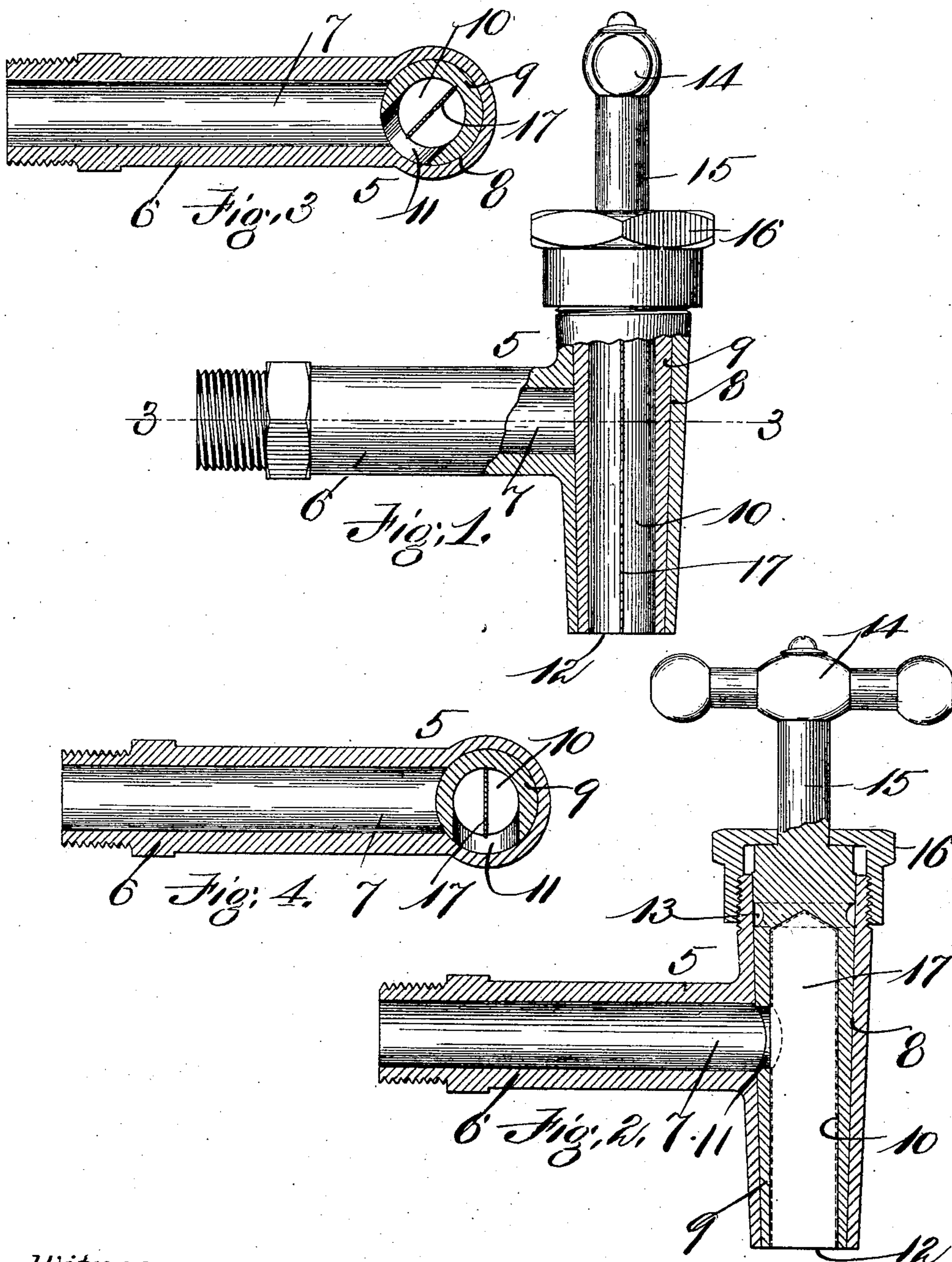


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PATENTED SEPT. 10, 1907.

W. H. SWIFT.
FAUCET.

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UNITED STATES PATENT OFFICE.

WILLIAM H. SWIFT, OF EVERETT, MASSACHUSETTS.

FAUCET.

No. 865,451.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, WILLIAM H. SWIFT, a citizen of the United States, residing at Everett, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Faucets, of which the following is a specification.

The object of this invention is to provide a cheap, simple, and durable faucet which will not get out of order and which will not leak, although the same has no packing provided around the valve stem, and which will deliver a compact and solid stream of water from the outlet orifice thereof, whether the faucet be wide open or only partly open, thus avoiding the objectionable spraying and diverging flow of water common to the different types of faucet now in use.

The invention consists in providing a guide for the water which is located inside the outlet passage of the faucet and extends longitudinally thereof, preferably to a point adjacent to the outlet orifice of said passage. This guide may be varied in formation and extent, as well as in its position in said outlet passage, without departing from the spirit of my invention, but the preferred form consists of a thin partition extending the whole length of said outlet passage, with one edge thereof adjacent to and extending across the port which opens from said outlet passage into the inlet chamber of the faucet.

The invention further consists in the combination and arrangement of parts set forth in the following specification and particularly pointed out in the claims thereof.

Referring to the drawings: Figure 1 is a side elevation of my improved faucet, the same being partly broken away and shown in section, the conical valve being turned to shut off the supply of water. Fig. 2 is a central longitudinal section, partly in elevation, illustrating the valve open. Fig. 3 is a section taken on line 3—3 of Fig. 1 with the valve partly open. Fig. 4 is a section taken on line 3—3 of Fig. 1, the valve being closed.

Like numerals refer to like parts throughout the several views of the drawings.

In the drawings, 5 is a casing consisting of a T-shaped fitting provided with an inlet pipe 6 having an inlet chamber 7 therein and a valve-chamber 8, preferably at right angles to the inlet chamber 7, and of conical form to receive a conical valve 9. The valve 9 is rotatable within the interior of the valve-chamber 8 and is provided with a passage 10 extending longitudinally thereof and having an inlet port 11 which opens from the inlet chamber 7 into the passage 10. The passage 10 has an outlet orifice 12 at the bottom thereof. An annular groove 13 is provided in the periphery of the valve 9, above the port 11. The valve 9 is rotated by means of a handle 14 connected to said valve by a valve-stem 15.

The top of the valve 9 extends slightly above the top of the valve-chamber 8 and a nut 16, having screw-threaded engagement with the upper end of said valve-casing, bears against the projecting upper end of said valve, so that by screwing the nut in the proper direction the valve 9 may be forced downwardly into the chamber 8 and take up any slack or wear between the said valve and the interior walls of said chamber.

The annular groove 13 in the periphery of the valve 9, as will be noted by reference to Fig. 2, is located above the port 11 and the top of the inlet chamber 7. The object of this annular groove in the valve is to prevent any water which may accidentally pass upwardly from the inlet chamber along the periphery of the valve from passing to the top of the valve and leaking out around the casing. This leakage never would happen if the valve were properly adjusted by means of the nut 16, but in case of carelessness, where the user does not screw this nut down, or in case the valve wears after long continued use and the wear is not taken up by the user screwing down said nut, then the annular groove 13 prevents, as hereinbefore stated, the water from passing upwardly from the inlet chamber 7 around the periphery of the valve and leaking out around the nut or around the valve-stem.

A partition 17, preferably formed of thin sheet metal, is located in the interior of the valve passage 10 from the outlet orifice 12 to the top of said passage, said partition extending entirely across said passage and also the port 11.

The operation of my improved faucet is as follows: Assuming the parts to be in the position illustrated in Figs. 1 and 4, it will be seen that the faucet is closed, as the water cannot pass from the inlet chamber 7 to the outlet passage 10. When the valve is turned to the position illustrated in Figs. 2 and 3, the water flows from the inlet chamber 7 through the port 11 and downwardly upon opposite sides of the partition 17 in the outlet passage 10 and through the outlet orifice 12 of said passage. The function performed by the partition 17 is that of a guide which divides the stream of water into two parts and prevents the water as it flows from the inlet chamber 7 into the outlet passage 10 and downwardly through said outlet passage from taking a rotary path, which rotary path results in the water spraying or diverging and spattering when the same emerges from the outlet orifice 12. The partition 17 acts as a guide whether the amount of water passing through the port is large or small, that is, it acts as a guide whether the port is partly opened, as in Fig. 3, or wholly opened, as in Fig. 2, with the result that the stream of water which flows from the outlet orifice of the nozzle, whether the valve be partly open or wide open, is a cylindrical solid mass of water flowing straight downwardly without any tendency to rotary motion or spattering, and by practical experiment

this compact, solid cylindrical stream of water has been found to result whether the valve be partly open and a small cylindrical stream delivered at the outlet orifice or whether said valve be wide open and the cylindrical stream be of the full diameter of the outlet orifice.

In addition to the advantage of a cylindrical compact stream, hereinbefore set forth, my improved faucet possesses the further advantages of extreme simplicity and durability and an absence from the annoying leakage common to faucets now in use, which leakage is due to the leather washers becoming worn out or to some substance becoming lodged upon the valve seat so that the valve cannot make perfect contact with said seat, and consequently these faucets have to be continually mended by replacing the washers thereon, and further they are a source of constant annoyance on account of the leakage around the packing nut and the valve stem. These difficulties are entirely overcome by my improved faucet, the same being perfectly tight at all times without the use of any packing, and this result being obtained by the construction of the conical valve and the means for forcing said conical valve to a seat in the conical valve chamber 8. And further said entire absence of leakage without the use of any packing is due to the annular groove 13, hereinbefore described, whereby an air chamber is provided which prevents the water from passing upwardly and leaking out around the nut, as hereinbefore described.

Having thus described my invention, what I claim and desire by Letters Patent to secure is:

1. A faucet comprising in its construction a casing provided with an inlet chamber, a valve rotatably mounted in said casing and extending transversely across said chamber, and a partition fast to said valve extending longitudinally thereof and rotatable therewith, whereby when said valve is rotated one edge of said partition will be moved across and adjacent to the inner end of said inlet chamber.

2. A faucet comprising in its construction a casing provided with an inlet chamber, a valve rotatably mounted in said casing and extending transversely across said chamber, said valve having a passage extending longitudinally

thereof and having an inlet port opening into said inlet chamber and provided with an orifice opening through the bottom of said valve, a partition fast to said valve and rotatable therewith extending longitudinally of and laterally across said valve passage, the inner edge adjacent to and extending across said port.

3. A faucet comprising in its construction a valve, a casing having a valve chamber therein adapted to receive said valve, said casing provided with an inlet chamber which opens into a passage extending longitudinally of said valve and opening out of one end thereof, and a partition fast to said valve and rotatable therewith extending longitudinally of and laterally across said valve passage.

4. A faucet comprising in its construction a conical valve, a casing having a conical valve chamber therein adapted to receive said valve, said casing provided with an inlet chamber which opens into a passage extending longitudinally of said valve and opening out of one end thereof, means to force said valve longitudinally thereof into said valve chamber, said valve provided in its periphery between said inlet passage and said forcing means with an annular groove, and a partition extending longitudinally of and across said valve passage.

5. A faucet comprising in its construction a casing provided with an inlet chamber, a conical valve extending transversely across said chamber and rotatably mounted in a conical valve chamber provided in said casing, said valve having a passage extending longitudinally thereof and having an inlet port opening into said inlet chamber and provided with an orifice opening through the bottom of said valve, said valve also provided with an annular groove in its periphery between the top thereof and said port, and a partition extending longitudinally of said valve passage and across said port.

6. A faucet comprising in its construction a T-shaped casing, one arm of said T having a conical valve chamber therein, a conical valve fitting in said chamber, said valve having a passage extending longitudinally thereof and having an inlet port therein opening into an inlet chamber provided in the other arm of said T, said passage opening out of the bottom of said valve, and a partition fast to said valve and rotatable therewith extending entirely across and substantially the entire length of said valve passage, one edge of said partition adjacent to and extending across said port.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. SWIFT.

Witnesses:

CHARLES S. GOODING,
ANNIE J. DAILEY.