(No Model.)

C. WHITTAKER.

FAUCET.

No. 262,632. Patented Aug. 15, 1882.

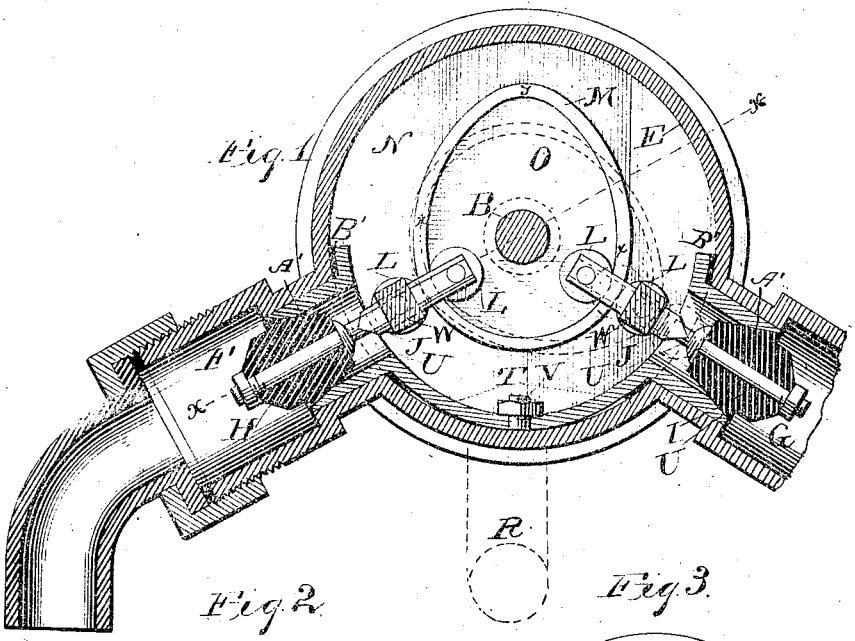


Fig 2

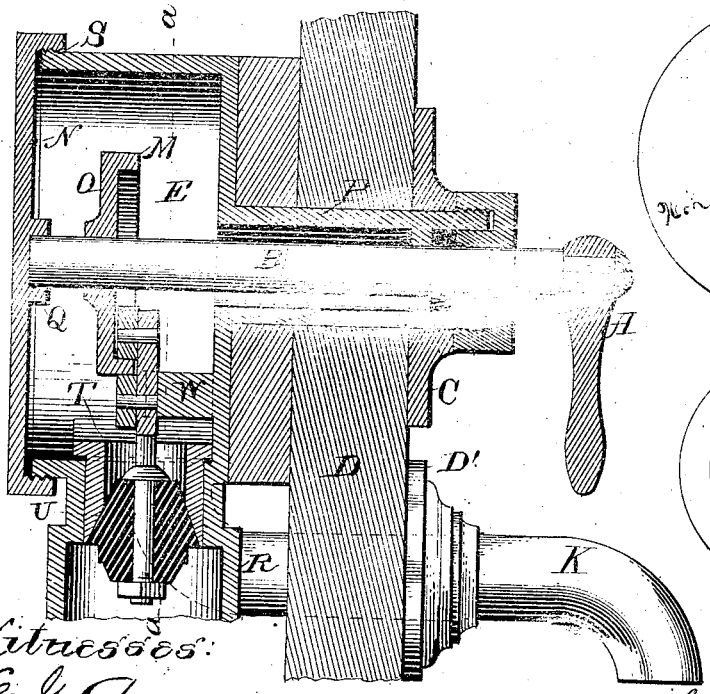
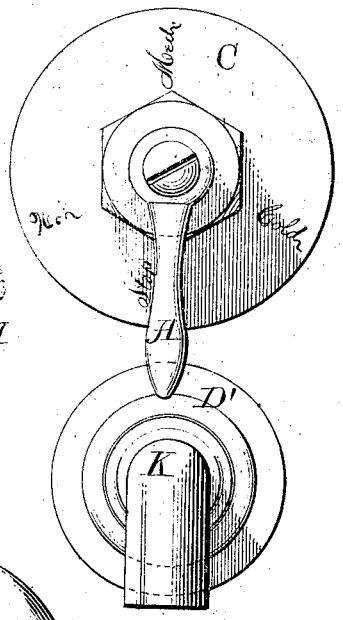


Fig 3.



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UNITED STATES PATENT OFFICE.

CHARLES WHITTAKER, OF CHICAGO, ILLINOIS.

FAUCET.

SPECIFICATION forming part of Letters Patent No. 262,632, dated August 15, 1882.

Application filed October 24, 1881. (No model.)

To all whom it may concern:

Be it known that I, CHARLES WHITTAKER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Faucets; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in that class of faucets for which application for Patent No. 35,232 was filed by me June 8, 1881, and by the Commissioner of Patents allowed June 24, 1881.

The object of my improvement is, first, to adapt said class of faucets to be used in connection with a bath-tub; second, to insert the valves or stoppers from the inside of the case, whereby the necessity of detaching the inlet-ducts from the water-pipes, as heretofore, is avoided.

My invention pertains to the peculiar form and arrangement of the cam by which the valves are operated; in the relative arrangement of said cam to the valve-stem, valve-rods, and inlet-passages; in the detachable valve-seats, and the peculiar arrangement of such seats with the valves and case of the faucet; and the general arrangement and adaptation of the parts to each other, as further explained by reference to the accompanying drawings, in which—

Figure 1 represents a vertical section drawn on line *a a* in Fig. 2. Fig. 2 is a transverse section drawn on line *x x* of Fig. 1. Fig. 3 represents an exterior front view of the handle, index-plate, and spout or outlet, showing their relative arrangement to each other as attached to the end of a bath-tub.

Like parts are represented by the same reference-letters in the several views.

A is the faucet-handle. B is the stem. C is the index-plate. D is the end of the bath-tub. E is the case or water-chamber. F is the hot-water inlet. G is the cold-water inlet. H is a valve or stopper to the hot-water inlet. I is a valve or stopper to the cold-water inlet. J J are valve-rods. K is the outlet or spout. L L L L are anti-friction rollers. O is a plate or disk. M is a circular cam. N is a removable cap.

The inlet-pipes F G are formed on the edge of the chamber E, and radiate outwardly from the stem B, as shown in Fig. 1. The outlet-duct R is also formed on the edge of the case, between said inlet-ducts, and curves downward and forward through the end of the bath-tub, as shown in Fig. 2. The spout K is formed in a separate piece from the duct K, and is attached to said duct by an ordinary screw-joint beneath the cap D′.

The case E, the inlet and outlet ducts, and packing-box P are cast in a single piece.

Cap N is provided with a socket, Q, for supporting the inner end of stem B. Said cap N is attached to the back side of case E with a screw-joint, S.

The valves are both simultaneously and alternately opened and closed, and the hot and cold water admitted separately, simultaneously, or stopped by the action of the cam M as it is revolved with the handle. Cam M is partially circular and partially elliptical in shape. That part between *x x* describes a true circle. That part between *x x* and *y* is elliptical in shape. It is obvious that as the circular part of said cam M passes between the rollers L L, as shown in Fig. 1, the stoppers both remain unmoved in a closed position, and that when the elliptical part of said cam is brought between said rollers the stoppers connected with such rollers are gradually thrown back and the passage opened. When said cam performs a half a revolution, so that the point *y* in said cam is brought midway between said valve-stems, said valves are both thrown half-way open, in which position both hot and cold water is admitted to the case in equal quantities. As said cam is adjusted so that the point at *y* is brought directly on line with one of said stoppers, as indicated by dotted lines in Fig. 1, said valve will be thrown wide open, while the other valve will at the same time have been acted upon by the circular part of said cam, and thereby closed. Thus it is obvious that the handle may be revolved in either direction with like results, and that both or either stopper may be adjusted at any intermediate point

between the open and closed position, and the flow of water may thereby be graduated from cold to hot or from hot to cold, at any temperature desired.

The dial-plate C is provided with the words "hot," "cold," "medium," and "stop," or characters of like import, to indicate the proper place of adjustment of the handle to produce the result thus indicated.

Heretofore it has been common to form the valve-seats in the mouth of the inlet-ducts. The stoppers being larger than said ducts or valve-seats formed therein, it has been necessary in placing said stoppers to insert them from the outside, and when replacing stoppers in faucets already attached to the water-pipes it became necessary to detach said water-pipes from the faucet, in order to remove the old or insert the new stopper. To obviate this difficulty I form the valve-seats A′ A′ in separate pieces from the case or inlet-ducts, and insert said seats and stoppers together from the inside of the case, the stoppers being both placed in position in said seats before said seats are inserted. Thus it is obvious that I am enabled to remove and replace said stoppers without in any way deranging the connections of said faucet with the main inlet-pipes.

B′ B′ are elastic packing-rings, which are drawn over the mouths of the valve-seats before said seats are inserted, and thus interposed between plate T and the case, whereby water is prevented from entering the case around said seats.

V is a screw-bolt provided with a nut. The lower end of bolt V is rigidly connected with the case E. Its upper end projects through the plate T. The plate T and valve-seats are formed in the same piece. Thus by turning down the nut upon said bolt against plate T the valve-seats are rigidly secured in place. For convenience in inserting said seats in a circular valve-chamber, as shown, I prefer to cast them in separate pieces, while for the faucets described in my said previous application both of said seats may be cast in a single piece.

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

1. In faucets, the combination of the partially circular, partially elliptical shaped cam M, valve-stems J J, valves H I, and inlet-ducts F G, said cam being adapted by such shape when revolved to open and close said ducts, both simultaneously and alternately, as set forth.

2. The combination of case E, inlet-ducts F G, valve-rods J J, stoppers H I, and removable valve-seats A′ A′, as set forth.

3. The combination of case E, inlet-ducts F and G, screw-cap N, stem B, provided with handle A, disk O, cam M, valve-rods J J, provided with rollers L, and stoppers H I, with removable valve-seats A′ A′ and index-plate C, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES WHITTAKER.

Witnesses:
JAS. B. ERWIN,
E. G. ASMUS.