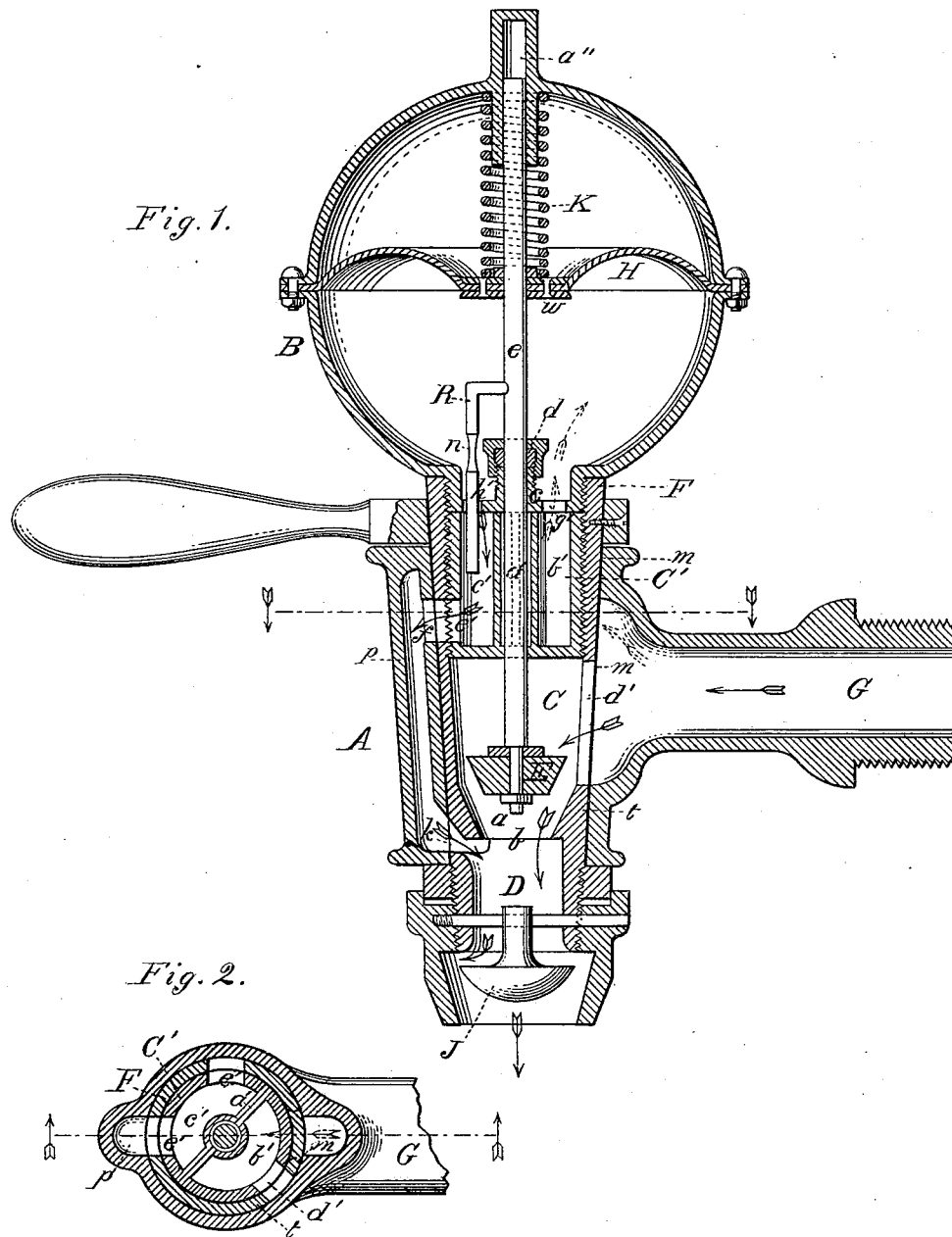


(No Model.)

T. LANSTON.
FAUCET.

No. 266,484.

Patented Oct. 24, 1882.



WITNESSES
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UNITED STATES PATENT OFFICE.

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FAUCET.

SPECIFICATION forming part of Letters Patent No. 266,484, dated October 24, 1882.

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To all whom it may concern:

Be it known that I, TOLBERT LANSTON, a citizen of the United States, and a resident of Washington, in the District of Columbia, have invented a new and valuable Improvement in Faucets; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of this invention in a longitudinal section. Fig. 2 is a detail cross-section.

The object of this invention is to provide a faucet which cannot be left in condition to waste; and it consists, first, in providing a faucet with an automatic cut-off or stop beyond the control of the operator; secondly, in the construction and novel arrangement, in connection with a water-chamber diaphragm and reciprocating valve, of an outlet-passage leading from said chamber and an inlet-passage leading thereto from the seat of the turning or hand valve; thirdly, in the combination, with an automatically-operated stop-valve in the main water-way of the faucet, of the independent hand or turning valve; fourthly, in the combination, with the diaphragm-chamber and the reciprocating stop-valve, of the main water-passage from the seat of the operating-valve through the seat of the stop-valve and the secondary water-passages leading to and from the diaphragm-chamber, and independent of the water-way through the stop valve seat; fifthly, in the relative arrangement of the main water-passage and the secondary water-passage with reference to the water-way through the turning valve; sixthly, in the accelerating drip-slide in the outlet-passage from the diaphragm-chamber; and, finally, in the general combination, all as hereinafter set forth.

In the accompanying drawings, the letter A designates the body of the faucet, and B a closed chamber arranged at the upper part of the same. Below the chamber B is made in the faucet a valve-chamber, C, usually located in the turning valve or plug F, which is arranged in the seat *m*. In the lower portion of the chamber C is formed a valve-seat, *a*, surrounding the opening *b*, which leads from the valve-chamber into the spout or discharging end D of the faucet. The valve-chamber is provided with a top, *c*, having a packed bearing, *d*, for

the stem *e* of the stop-valve E, which is ground or covered with rubber to fit the valve-seat *a*. In the upper part of the turning valve F is located a partitioned box, C', or double way, which is usually threaded exteriorly to engage an interior thread of the plug F, and is thereby made adjustable. The partition *a'* separates the box C' into two water-ways, *b'* and *c'*, whereof the former, being the inlet-way, is provided with the inlet-opening *d'* in its side, and the latter, being the outlet-passage, is provided with the outlet opening or openings *e'*. Through the top *c* are made the openings *g'* and *h'*, whereby the ways *b'* and *c'* communicate with the upper closed chamber, B.

G represents the inlet end of the faucet, whose passage communicates with the turning valve, and is made of sufficient size through the seat *m* of said valve to accommodate the opening *d'* of the way *b'*, and the main opening *d* of the turning valve, which is arranged below but not in line with said opening *d'*.

Transversely arranged in the chamber B is a diaphragm, H, of flexible material, having a center connection, *w*, whereby it is attached to the stem *e* of the stop-valve. In the upper part of the chamber a guideway, *a''*, is provided for the stem *e*, and around said stem a spring, K, may be arranged, its tension serving to assist in pressing the stop-valve downward to its seat; or the upper portion of the chamber may be made air-tight, and the stop-valve, being seated under slight pressure, may be operated by the compression of the air or by the combined action of the air and an auxiliary spring.

In the wall of the faucet is formed a passage, *p*, which is provided with an inlet-opening, *f*, near its upper end and an outlet, *k*, at its lower end, which communicates with the spout end D of the faucet. The inlet *f* of this passage is arranged to register with the outlet opening or openings *e'* of the water-way *c'* when the hand-valve F is sufficiently turned for this purpose. When this plug or hand-valve F is operated to let the water flow communication will be first established through the opening *g'* and the way *b'* with the chamber B, and the water will flow into said chamber, raising the diaphragm H and the stop-valve E, the stem of which is attached thereto. The valve F being further turned, the opening *d'* will be closed, and the main water-way through the valve will be opened, admit-

ting the water into the chamber C, whence it passes out of the faucet through the valve-opening *b* and the spout D. In order to cut the water-flow off, the plug F should be turned sufficiently to bring one of its stop-walls *t* in position to close the main opening through the valve end *m*. Should this, however, not be done, and the water-way be left partially or wholly open, the flow will be stopped automatically after a limited time by means now to be described.

To the valve-stem *e* is connected a check-rod, R, which extends through the opening *h'* of the outlet-way *e'*. This check-rod is parallel to the valve-stem and reciprocates therewith. The check rod or slide R moves through the opening *h'*, which is of but little larger diameter than the rod, being so constructed in order that the water from the chamber B shall pass through it in a slow and gradual manner. The upper portion or neck *n* of the check-rod is of smaller diameter, and is designed to allow the water to pass more freely as the valve E approaches its seat. The accelerated movement of the water is also designed to facilitate clearing the check-rod of any sediment that may have gathered around it. The diameter of the check-rod with relation to the opening *h'*, through which it moves, and the plug of the diaphragm H should be arranged to provide for a flow of water of the duration which will be required for ordinary purposes. At the end of this time the flow is stopped by the engagement of the stop-valve E, with its seat *a*, whether the operating-valve be turned to cut off the flow or not.

Below the valve E in the spout D a guard, J, may be arranged to prevent access being had to the valve from the mouth of the spout; or the spout may have a bend below the valve for the same purpose.

Sometimes it may be desirable to arrange the stop-valve so that it shall be independent of the turning valve and at a short distance therefrom. Then the chamber of the stop-valve and the water-passages leading to and from the chamber B can be formed in the wall of the faucet and the size of the turning plug can be very much reduced. The construction of these faucets can be otherwise varied by those skilled in the manufacture of such articles.

In the construction illustrated it will be observed that the inlet-opening *d'* of the partitioned box C' and the outlet-openings *e'* thereof are so arranged that no two of them can come into action at the same time, and one of the outlets *e'* is arranged to act concurrently with the opening *d* of the main water-way through the plug, so as to relieve the diaphragm at once when the water is fully turned on. When the plug F by means of the operating-handle has been turned sufficiently to allow a flow from the inlet to the discharge opening of the faucet the opening *d'* will be moved around leeway from the inlet G, and the upward passage of water to the chamber B will be pre-

vented. As the passage *b'* is closed, no more water can rise to the said chamber until the operating-handle is again turned; but the water within this chamber, as before described, will pass slowly out of the opening *h'* through the passage *e'*, which in a limited time will allow the valve to drop to its seat and close the discharge-opening.

From the foregoing description it will be readily seen that when the liquid enters at the inlet G, it must necessarily first rise to the chamber B in sufficient quantity against the diaphragm therein to raise the same, which will simultaneously raise the valve E and open the way from the said inlet to the discharge D, and as the rod R is attached to the valve-stem its neck will be raised above the opening *h'* and will partly close the same. When the faucet is open in full, or nearly so, the opening D of the plug F will register with the inlet G; but should the faucet be left open or partly closed, through negligence or otherwise, by the operator the chamber B will, by the dripping through the opening *h* for a reasonable time, become entirely empty and allow the stop-valve to drop to its seat and close the discharge-way.

Having described this invention, what I claim and desire to secure by Letters Patent, is—

1. A faucet having, in connection with a water-chamber, a diaphragm therein, and a check-valve connected to said diaphragm, an outlet-passage leading from said chamber and an inlet-passage leading thereto from the seat of the turning or hand valve, substantially as specified.

2. A faucet having a main water passage or outlet and a secondary independent water-passage, combined with the diaphragm-chamber and the stop-valve, the secondary water-passage connecting said diaphragm-chamber with the main water-way beyond the seat of the stop-valve, substantially as set forth.

3. In a faucet, the combination, with the chamber B, diaphragm H, and reciprocating stop-valve E, of the hand-valve F, valve-chamber C, water-passages, and the slide-check R, substantially as specified.

4. A faucet having independent of the main water-way a secondary water-way through a diaphragm chamber, and an accelerating drip-check rod in the outlet from said chamber connected to the stem of a stop-valve which is attached to the diaphragm in said diaphragm-chamber, substantially as specified.

5. A faucet having a positive automatic cut-off or stop for the flow arranged in the main water-way, and inclosed so as to be beyond the control of the operator, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

TOLBERT LANSTON.

Witnesses:

C. HICKOX,
THOS. EXEL.