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MARSHALL BURNETT.
Faucets.

No. 121,487.

Patented Dec. 5, 1871.

Fig. 1.

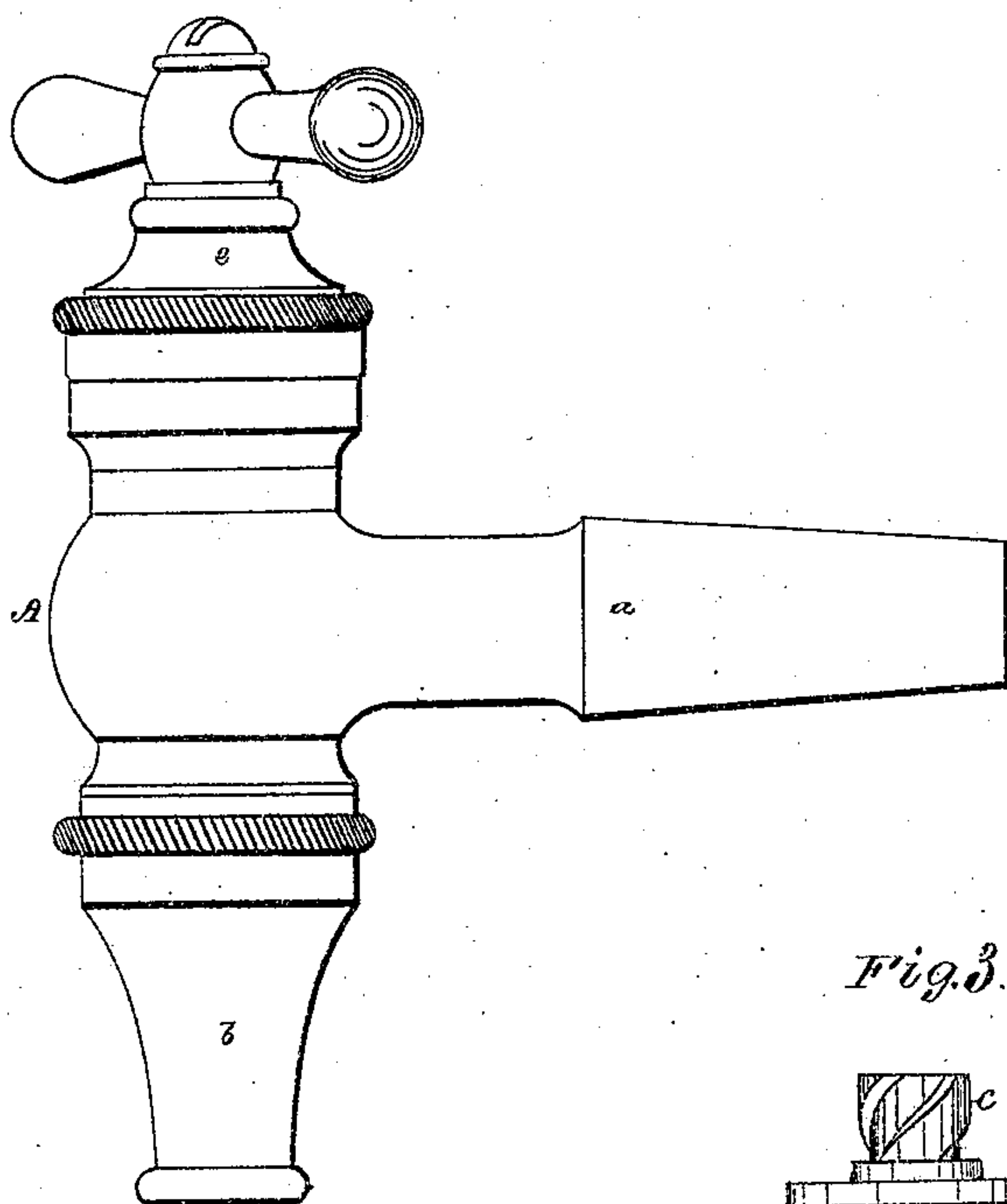


Fig. 3.

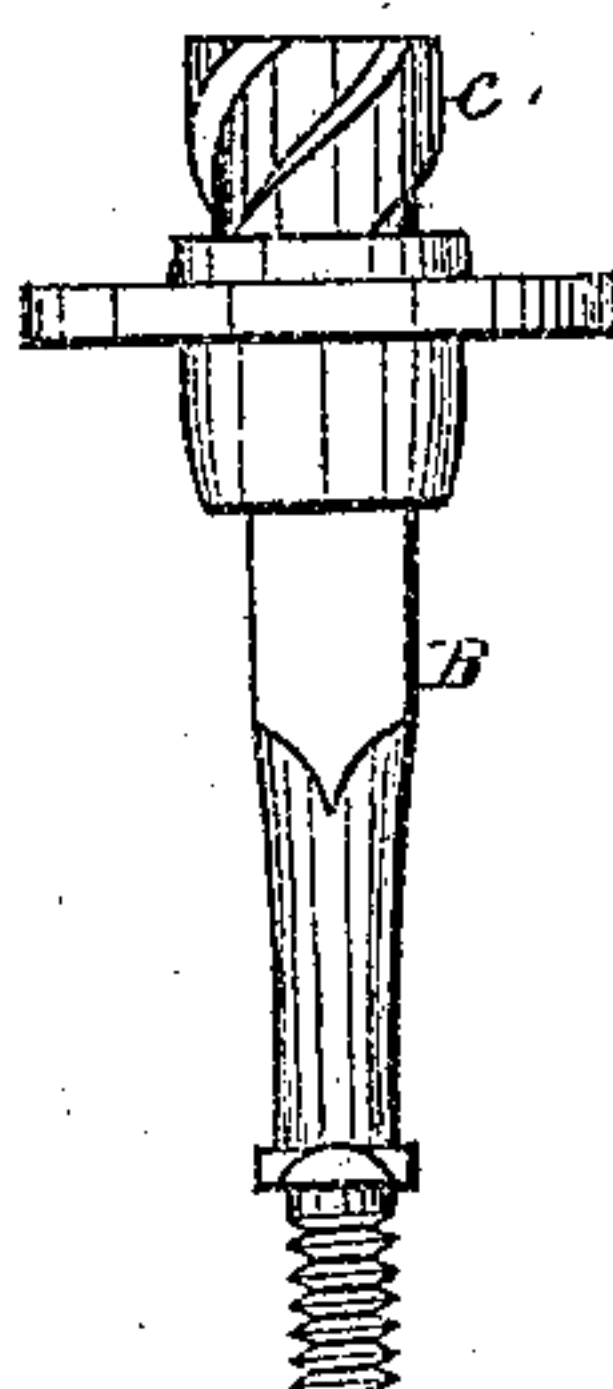
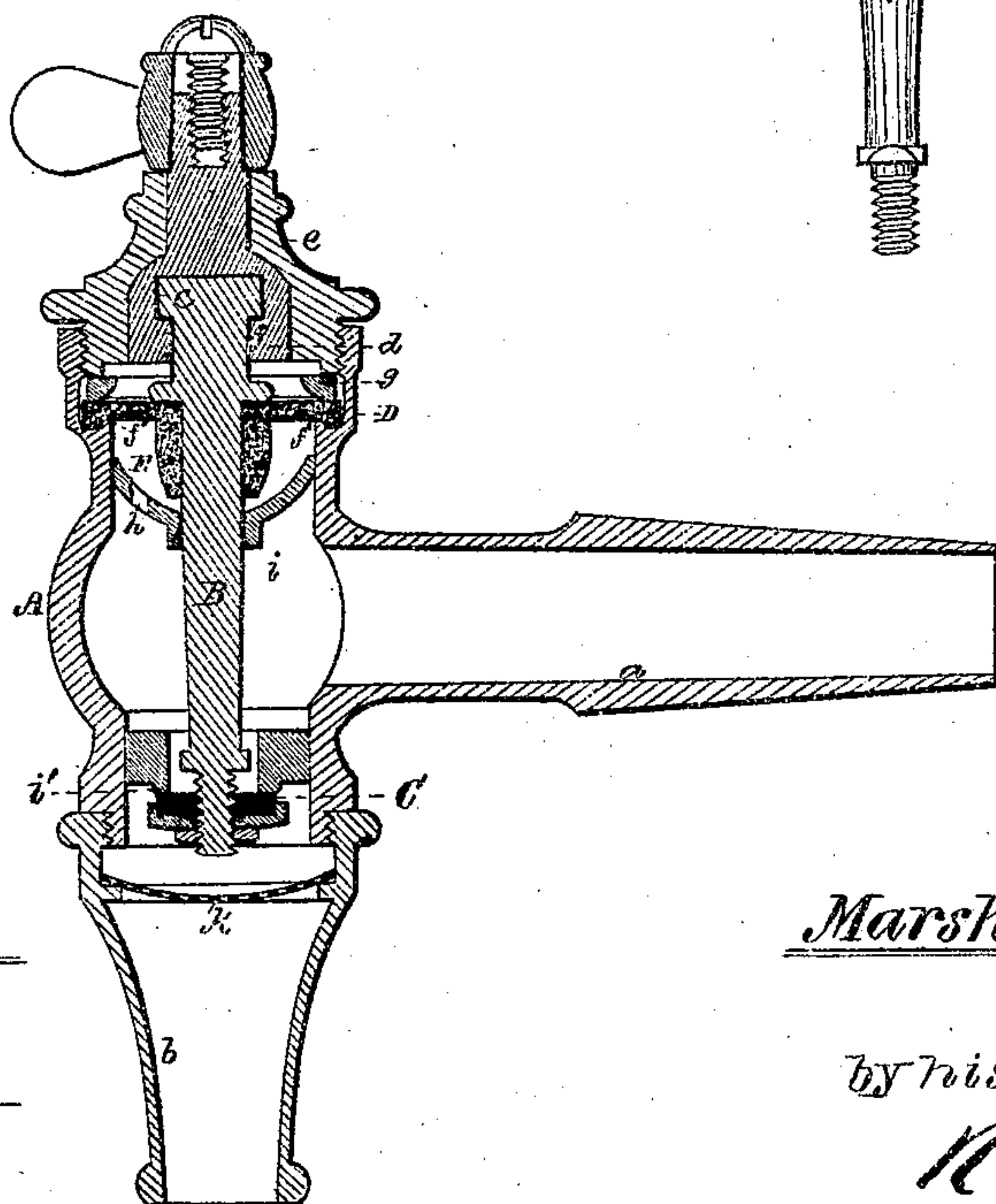


Fig. 2.



Witnesses.

S. H. Piper
L. N. Möller.

Marshall Burnett

by his attorney.

N. W. Wadsworth

UNITED STATES PATENT OFFICE.

MARSHALL BURNETT, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN FAUCETS.

Specification forming part of Letters Patent No. 121,487, dated December 5, 1871.

To all whom it may concern:

Be it known that I, MARSHALL BURNETT, of Boston, of the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Faucets; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a side view, and Fig. 2 a longitudinal section of a faucet provided with my invention. Fig. 3 is an elevation of the valve, its stem, and elastic diaphragm, as removed from the body of the faucet.

The said faucet is what is termed a self-closing faucet, it being opened by turning its screw-key by hand, and closed when the hand is removed from the key by pressure of the liquid that may be at the time within such faucet.

In other self-closing faucets a spring is used to effect the closing of the valve, but in my faucet there is applied to the valve-stem and case an elastic or flexible diaphragm having a diameter greater than that of the valve or the discharge-opening of its seat. This diaphragm not only stops any water from escaping upward through the cap or top of the case, but admits of the necessary vertical movements of the valve, which, while in the act of being closed, is drawn upward to its seat. There is also beneath the diaphragm and around the valve-stem a chamber provided with a small hole through its bottom, such chamber and hole being for the purpose of causing the valve to close gradually rather than suddenly upon its seat. The faucet may or may not be provided with a filter or strainer arranged below the valve-seat in manner as shown in the drawing.

In such drawing, the body or valve-case of the faucet is shown at A as formed or provided with an induction-tube, *a*, a valve-seat, *i*, and an educt, *b*, arranged as represented. The valve-stem B is disposed vertically in the body A, and at its lower end it is provided with the valve C and at its upper part with a screw, *e*, of long pitch, to work in a corresponding female screw, *f*, formed in the key *d*. The said key is so combined with a cap, *e*, screwed into the top of the body A as to be capable of being revolved within such cap and upon the upper screw of the valve-stem. The elastic diaphragm shown at D rests on an angular ridge or seat, *f'*, and is sur-

mounted by a ring, *g*, which is forced down upon the diaphragm by the cap *e* while screwed into the case. Below the diaphragm, and having a prismatic hole, *i*, through its bottom to receive the valve-stem and prevent it from being revolved by the key while the latter may be in the act of being turned either way, is the chamber E, hereinbefore mentioned, the hole in its bottom being shown at *h*. While the valve is being depressed or opened by the key the elastic diaphragm will be forced downward into the chamber E and will expel therefrom, through the hole *h*, any liquid that may be in such chamber. On the key being set free the water or liquid under pressure below the diaphragm-chamber will gradually be forced through the hole *h* into the chamber, and, pressing against the diaphragm with a force greater than what is exerted on the valve will force up the diaphragm and raise the valve up to its seat. Were it not for the chamber E and its hole *h* the valve would be closed suddenly, whereby the momentum of the fluid moving toward the faucet might be caused to damage or burst the conduit leading into the faucet. The strainer or filter is shown at *k* as arranged in the upper part of educt *b*.

The value and advantage of my faucet relatively to those self-closing faucets in which the valve is closed by a spring will be easily appreciated by plumbers and others.

I am aware of the faucets shown and described in the United States patents 66,579, 117,908, and make no claim to any thing, arrangement, or combination described in either.

My faucet differs from that shown in either of such patents, inasmuch as the induct of my said faucet is between the valve-seat and the elastic diaphragm and the latter has exposed to the upward pressure of the water a surface greater in area than that of the opening of the valve-seat, in consequence of which arrangement and construction of parts the valve is raised up and closed upon its seat by the greater pressure against the diaphragm and not by the elastic power of a spring or by such and the pressure of the water, as is the case in the faucets shown in such patents, the valve in each of such faucets being in the induction-tube, whereas the valve of my faucet is in the nozzle or educt.

In neither of the patented faucets is there an elastic diaphragm, a short tube of India rub-

ber being employed as a spring to raise the valve-stem and form a close joint or joints to prevent escape of water out of the upper part of the valve-case. Neither elastic tube operates like the elastic diaphragm of my faucet, which, by its inherent elasticity and the pressure of the water, raises the valve up to its seat against the pressure of the water tending to force it off its seat. In the patented faucets the elastic tube operates in no respect to raise the valve against any pressure of water tending to force it off its seat. Consequently,

I claim—

The combination and arrangement of the chamber B and its hole *h* with the valve C, the stem B, the valve-seat *i*, the elastic diaphragm D, and body A, and induct *a* of the faucet, all being substantially and to operate as described.

MARSHALL BURNETT.

Witnesses:

R. H. EDDY,
J. R. SNOW.

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