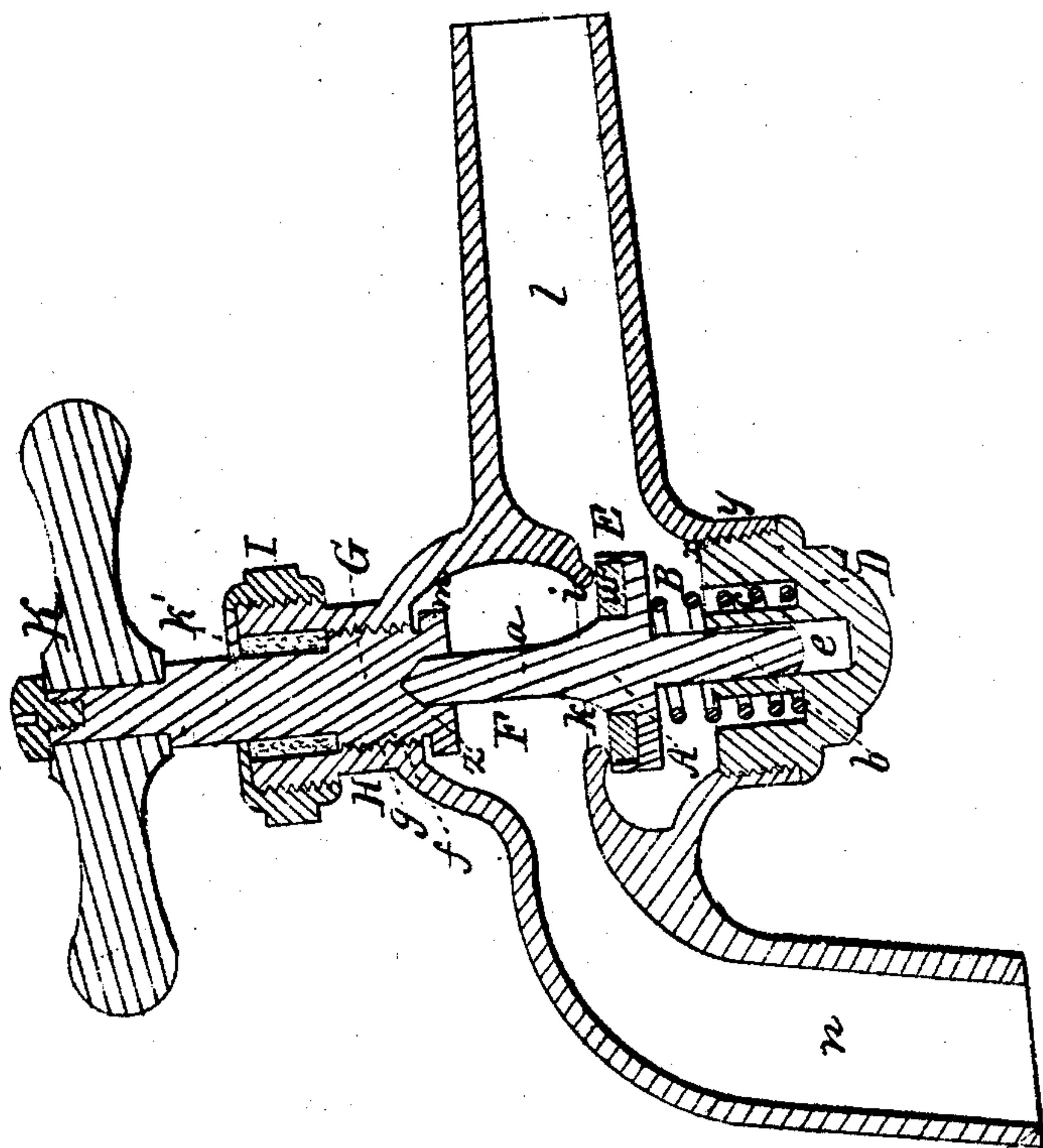


No 55,784,



Witnesses  
J. Curtis  
George Andrews

Inventor  
Francis Roach  
by his Attorney  
R. H. Eddy

# UNITED STATES PATENT OFFICE.

FRANCIS ROACH, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF  
AND JOSEPH ZANE, OF SAME PLACE.

## IMPROVEMENT IN STOP-COCKS.

Specification forming part of Letters Patent No. 55,784, dated June 19, 1866.

*To all whom it may concern:*

Be it known that I, FRANCIS ROACH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Faucets; and I do hereby declare the same to be fully described in the following specification, and represented in the accompanying drawing, which denotes a longitudinal section of a valve-cock or faucet provided with my improvement.

In this faucet the valve is arranged in the induction-chamber, and is pressed up to its seat by the conjoint action of a spring and the fluid that is allowed under pressure to enter the said chamber while the faucet may be in use. The valve does not revolve with the key by which it is forced off its seat, but the key is actuated by a screw and revolves independently of the valve, and operates it by means of a pivot or spindle extending up from the valve. This pivot and a guide, projecting down from the valve and into a socket in the screw-cap of the valve-chamber, serve to support and guide the valve in its vertical movements toward and off its seat.

In the drawing, A denotes the valve, which in this case is a disk provided with an elastic washer, *w*, arranged concentrically in its upper surface, and so as to operate against the valve-seat *i*, which is formed in the upper part of the induction-chamber E, in which the valve is placed.

A pipe, *l*, leads into the chamber E, which at its top has an opening, *k*, leading from it into the eduction-chamber F.

A screw-cap, D, screws into an opening, *x*, made in the lower part or neck *y* of the chamber E, and is formed with a cylindrical socket, *e*, to receive a guide or short stem, *b*, extending down from the valve A. A helical spring, B, circumscribes the guide *b*, and rests in an annular socket, *c*, made in the cap D, and presses the valve upward against its seat.

The valve is provided with an auxiliary stem or pivot, *a*, which is circular in horizontal section, and rises from the valve and through the opening *k*, and in the eduction-chamber F, and enters a socket, *z*, formed in the lower part of a key, G.

A male screw, *f*, is made on the key, and so as to enter a corresponding female screw, *g*, cut in the neck H of the eduction-chamber F. The key is also furnished with a shoulder, *m*, to arrest its upward movement. Such key also has a handle, K, and its stem is encompassed by a packing, *k'*, arranged on the neck H, and kept in place thereon by a cap-screw, I, screwed on such neck.

A pipe or spout, *n*, leads out of the eduction-chamber F, and so as to discharge therefrom any fluid which may pass into it.

By revolving the key G, so as to cause it to descend in the neck H, the valve A will be forced off its seat, so as to allow a fluid, when in the valve-chamber, to pass therefrom into the eduction-chamber.

On reversing the motion of the key the spring B and the pressure of the fluid in the valve-chamber will operate to raise the valve and press it upon its seat.

The valve is free to revolve a little occasionally, but by being separate from the key it cannot be forced down and ground upon its seat by the pressure of the key, or the part *a*, or any equivalent therefor, and as the valve is forced upon its seat by the pressure of the fluid in part, it will be very likely to preserve a close joint with its seat.

In the place of the valve A, made of metal, a ball of vulcanized india-rubber may be substituted, it being to fit to the valve-seat. It makes an excellent valve, and by its inherent elasticity operates to good advantage in making a tight joint at the seat.

I claim—

The arrangement and combination of the socket *e*, the guide *b*, the valve A, the spring B, the valve-seat *i*, the induction-chamber E, the eduction-chamber F, the pivot *a*, the key G, the neck H, the screws *f g*, and the induction and eduction passages or pipes *l m*, the whole being as specified.

FRANCIS ROACH.

Witnesses:

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