H. BRADLEY.

FAUCET.

No. 188,577. Patented March 20, 1877.

FIG. 1.

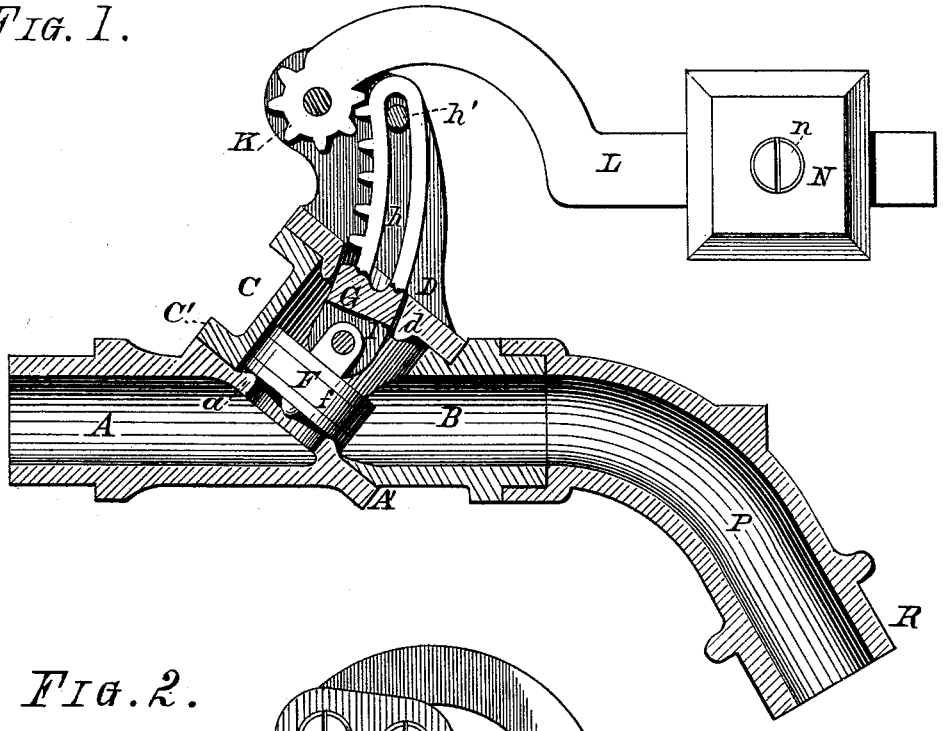
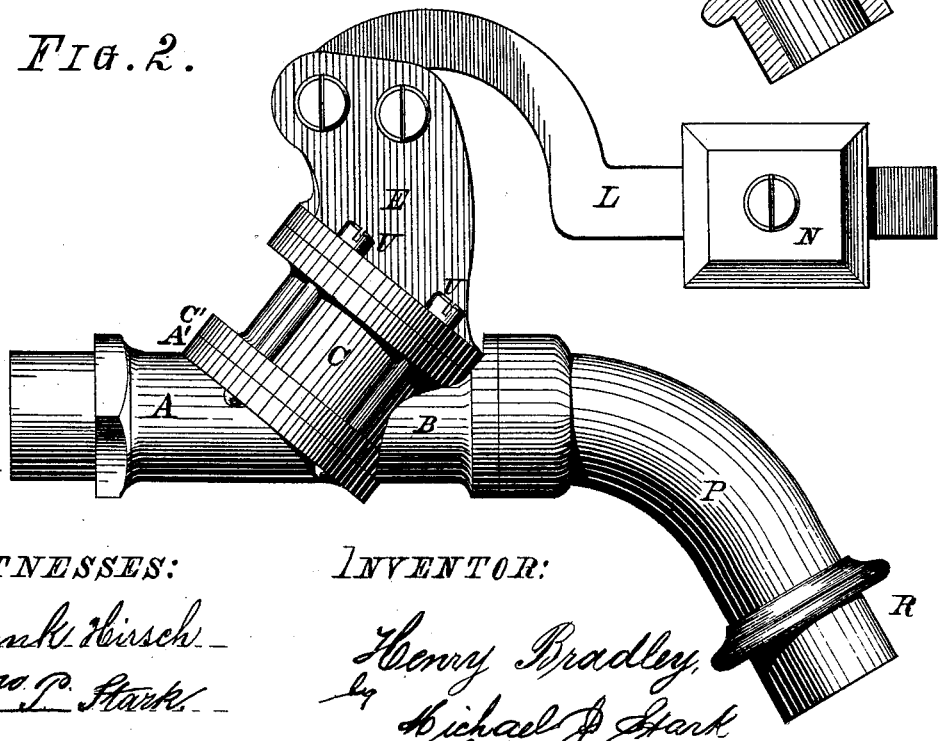


FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

HENRY BRADLEY, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO JOSEPH SCHERER, OF SAME PLACE.

IMPROVEMENT IN FAUCETS.

Specification forming part of Letters Patent No. **188,577**, dated March 20, 1877; application filed January 3, 1877.

To all whom it may concern:

Be it known that I, HENRY BRADLEY, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on a Faucet; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates in general to faucets; and it consists in the arrangement of parts and details of construction, as hereinafter fully described, and pointed out in the claim.

In the drawings, Figure 1 is a longitudinal vertical section, and Fig. 2 a longitudinal elevation, of a hose-bib embodying my improvements.

Corresponding parts are designated by like letters of reference in both figures.

A is the shank of my improved faucet, provided with the usual screw-thread to secure it to a pipe-socket, &c., or with a soldering-shank for attachment to lead pipes, &c. This shank A has a flange, A′, obliquely to the axis of shank A, provided with an annular V-shaped projection, *a*, serving as a valve-seat. C is a casing or chamber, provided with a flange, C′, corresponding to that of the shank A, and with a side branch, B, forming a continuation of the shank A. The casing C is closed by a cap, D, having on its lower face an annular V-shaped projection, *d*, corresponding to that of the flange A′, and on its upper side two standards, E. F is the valve, consisting of a metallic disk, *f*, faced on both sides with a yielding or flexible material, such as leather, rubber, lead, or other soft metal. It is operated by a segmental rack, G, hinged to said valve at I, and the pinion K, secured to the lever L, and pivoted within the standards E. The rack G has a curved slot-hole, *h*, wherewith engages a guiding-pin, *h′*. It is hinged to the valve F, in order to allow this to adapt itself to the seats, and make a perfectly-tight joint. N is an adjustable weight, suspended upon lever L, and fixed thereto by the set-screw *n*. P is the nozzle, secured to the branch B, and provided with the usual male part of a hose-coupling.

The body A, casing C, and cap D are secured together by the screws U, as plainly shown in Fig. 2, an elastic washer being placed between the several flanges, to secure tight joints.

The operation of my faucet is as follows: To open the same, lift the lever L. This will cause the pinion K to correspondingly revolve around its axis, and, by means of the segmental rack G, to lift the valve F from its seat, thereby allowing liquid to escape. A reverse operation produces a contrary result.

For the faucet constructed as above described, I claim the following advantages and results: First, all the parts entering into the construction of the faucet being readily cast and finished, the same can be made as cheaply as any other faucet, especially since it is very simple in construction. Second, the faucet, when properly made, is more durable, because it is less liable to get out of order. Third, in case of obstructions of the valve-seats, the cause of such can be readily ascertained and removed by removing either the nozzle P or the casing C. Fourth, in case of repairs, any piece can be easily renewed. Fifth, the faucet acts, in addition to its indicated purpose of a stop-cock, as a safety-valve for the pipe or apparatus wherewith it is used, since, by adjusting the weight N upon the lever L, it can be so set as to exactly counterbalance the maximum pressure to be sustained, so that any surplus pressure will open the faucet and allow liquid to escape. For this reason the faucet is a sure preventive of bursting of pipes, because as soon as the liquid begins to congeal from the outside toward the center of the pipe, and thereby to expand, the surplus water and pressure causes the valve to lift and the water to escape. Sixth, freezing of the faucet itself cannot affect it so long as distortions caused therefrom are not too extended. Seventh, my faucet will prevent the rebounding or cracking noise in water-pipes when it is suddenly closed, because, it being balanced, will allow rebounding water to escape. Eighth, there being no screw-spindles operating the valve, nor plugs to swell, nor

any of the many well-known drawbacks to which common faucets are more or less subject, it is, as heretofore claimed, more durable than those.

It will be observed that the casing is provided with double valve-seats, and that the valve is made correspondingly. Thus, when the faucet is open, the valve will bear against the upper seat, to close communication with the exterior through the opening in the cover for the passage of the segmental rack, while, when it is closed, the valve will be bearing upon the lower seat, as shown in the drawings. This arrangement, however, can be modified so that only the lower valve-seat is required, by closing the sides of the standards, to make the upper part of the cap a continuation of the chamber C, and by using the pinion within and the lever without, a spindle connecting both, passing through a stuffing-box in said casing. Instead of the pinion and rack, I may use a lever and connecting-rod to operate the valve, which will be one of the equivalent devices, and perform its duties perfectly, and in precisely the same manner as said rack and pinion.

It is obvious that my improvements are applicable to all the different faucets and cocks, such as stop and service cocks, &c., without modification.

Having thus described my invention, I desire to secure to me by Letters Patent—

The within-described faucet, consisting of the shank A, having the obliquely-arranged flange and valve-seat A′, casing C, spout B, valve F, and an operating device consisting, substantially as described, of the rack and pinion, or their equivalent, and the lever L, provided with the adjustable weight N, the whole being constructed and arranged to operate in a manner and for the purpose substantially as hereinbefore set forth and stated.

In testimony that I claim the foregoing as my invention I have hereto set my hand and affixed my seal in the presence of two subscribing witnesses.

HENRY BRADLEY. [L. S.]

Attest:
MICHAEL J. STARK,
JOSEPH SCHERER.