(No Model.) 2 Sheets—Sheet 1.

F. BARDEZ.

FAUCET FILTER.

No. 427,029. Patented Apr. 29, 1890.

Fig. 1.

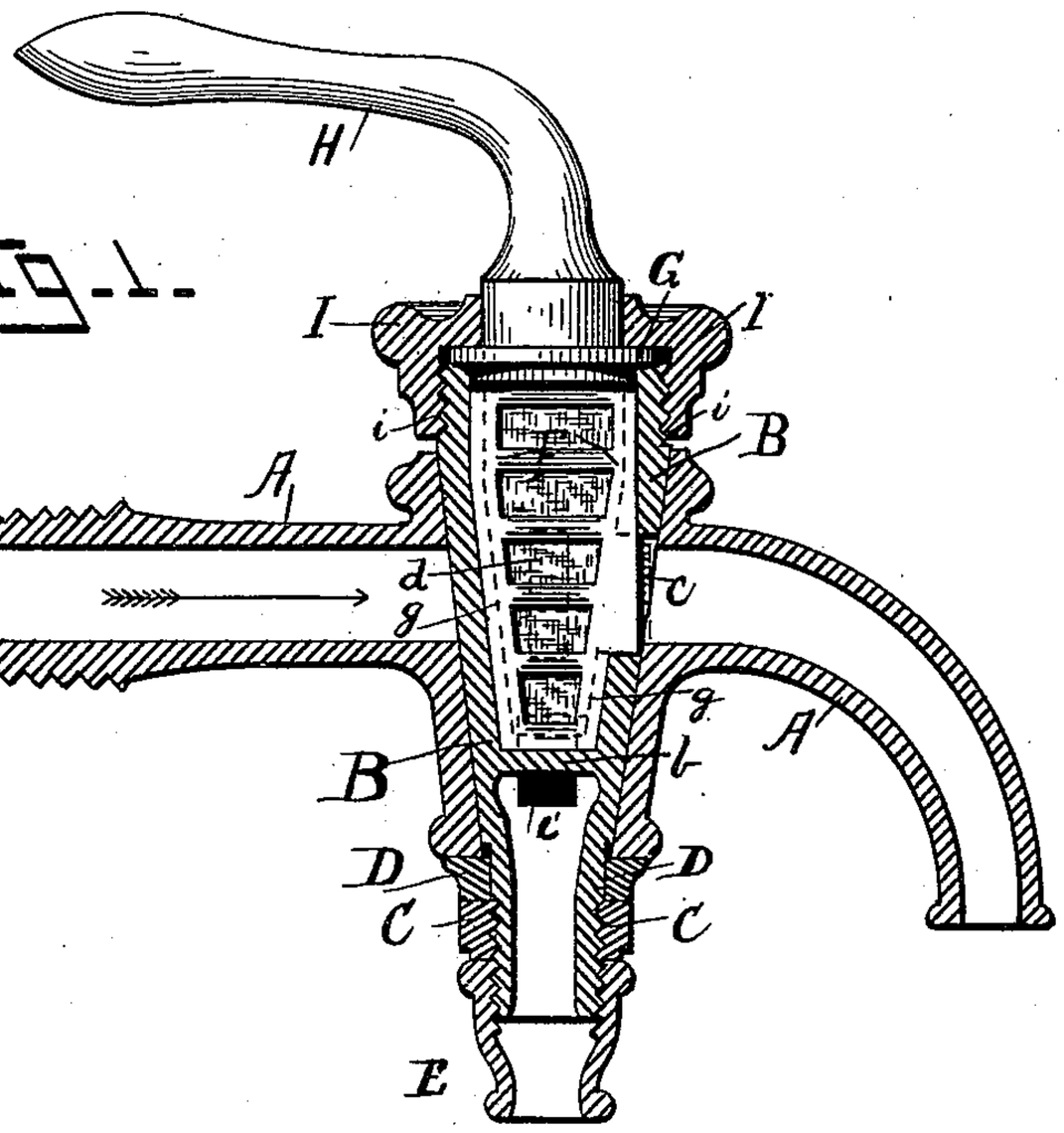
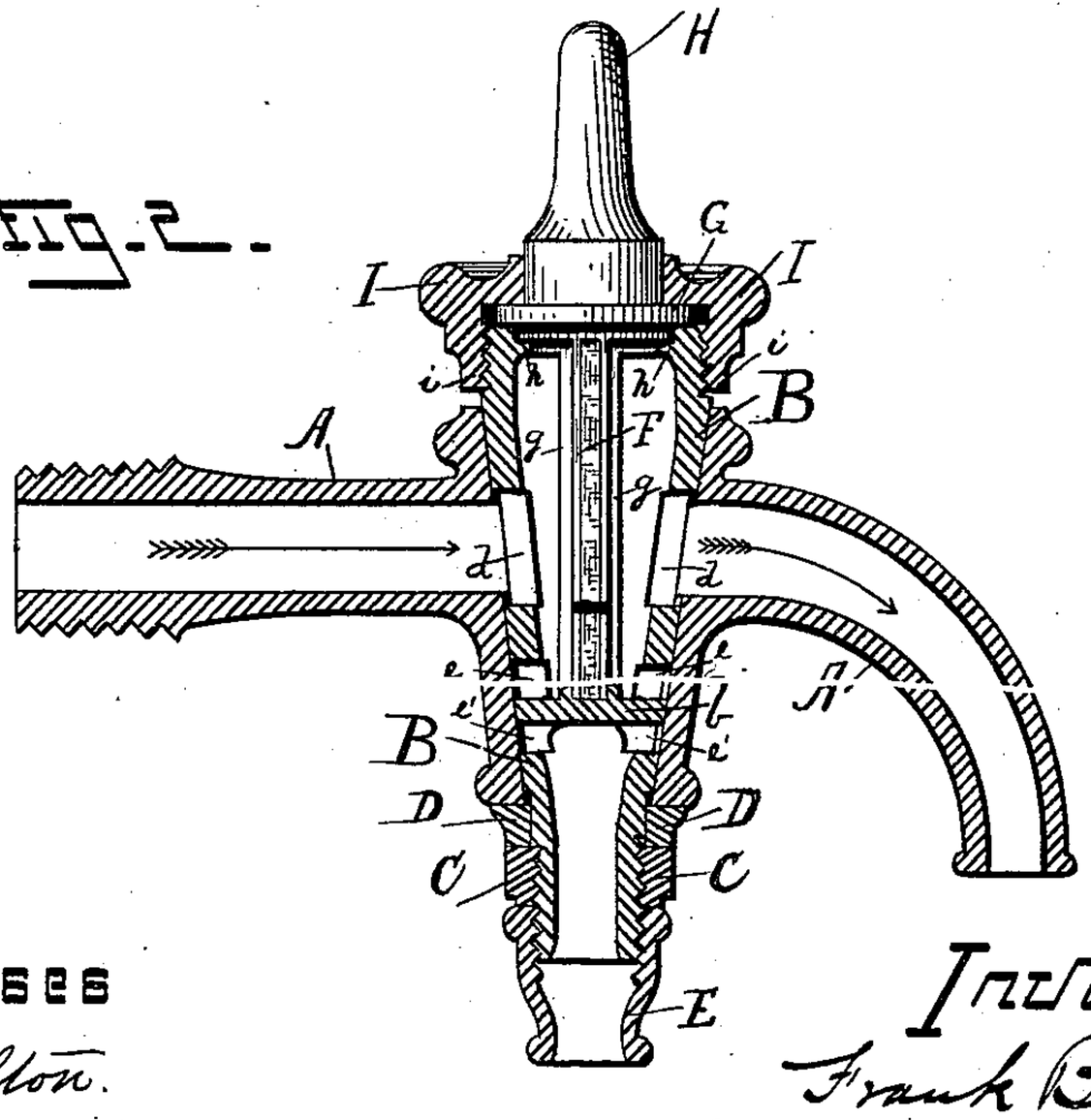


Fig. 2.



Witnesses
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(No Model.) 2 Sheets—Sheet 2.

F. BARDEZ.

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Fig. 3.

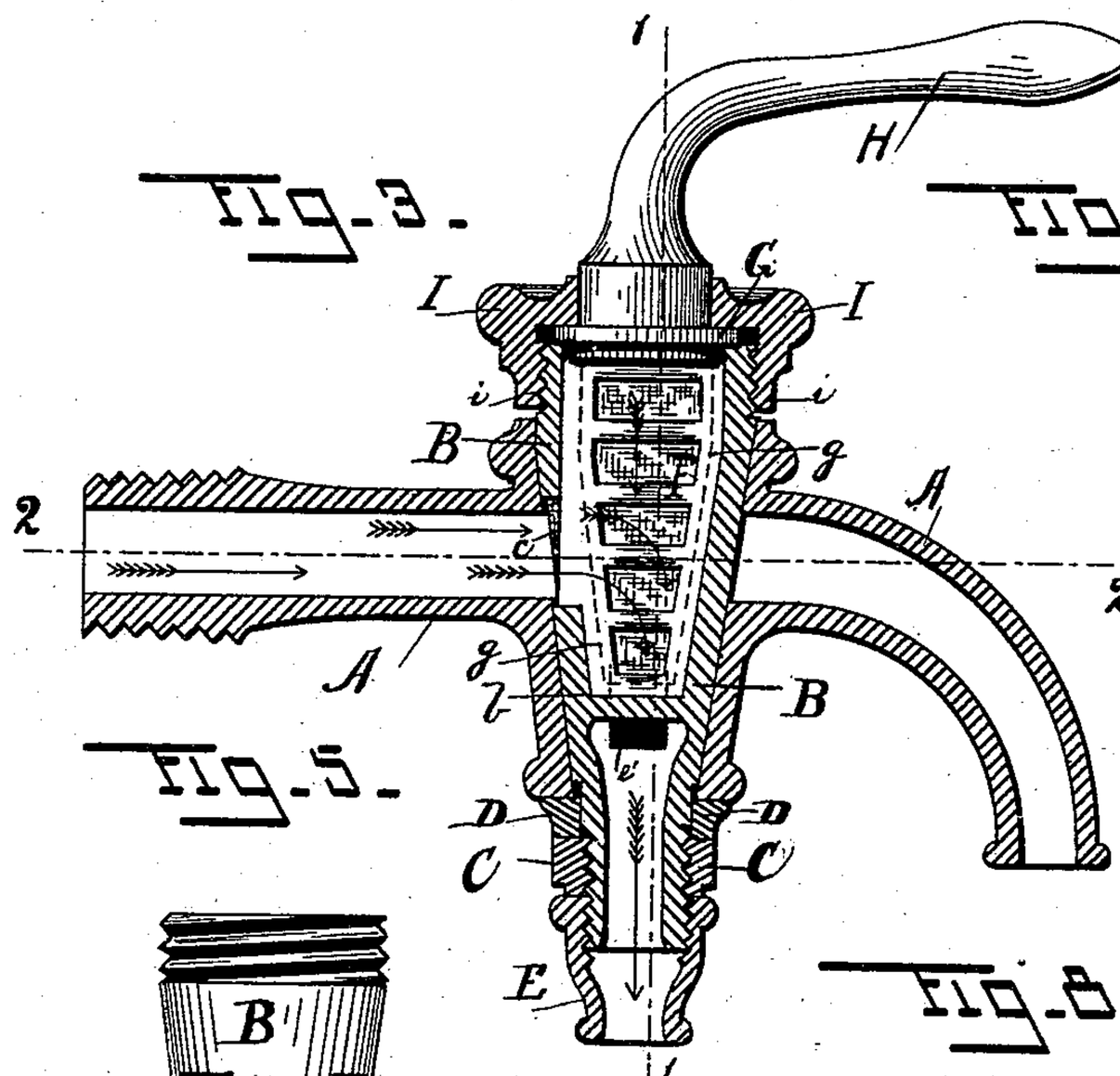


Fig. 4.

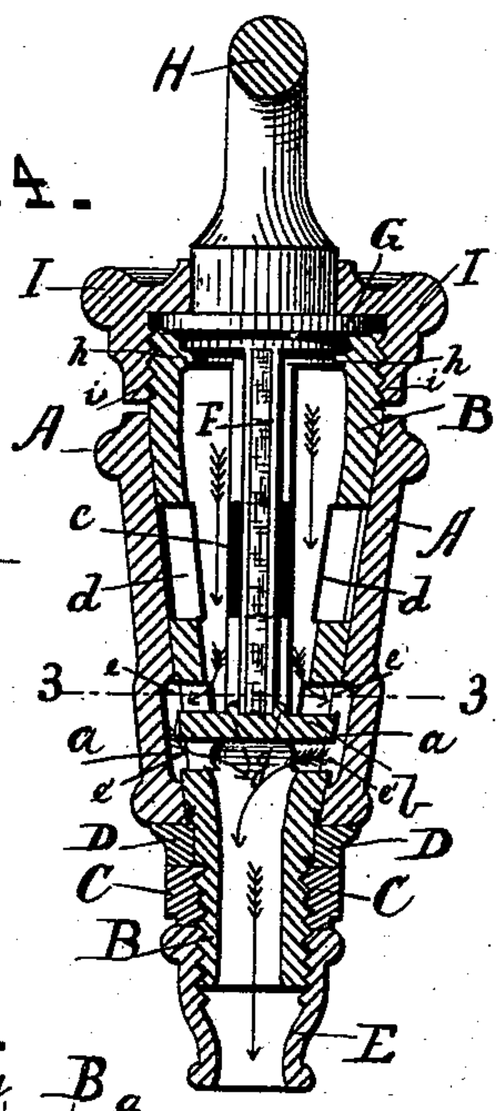


Fig. 5.

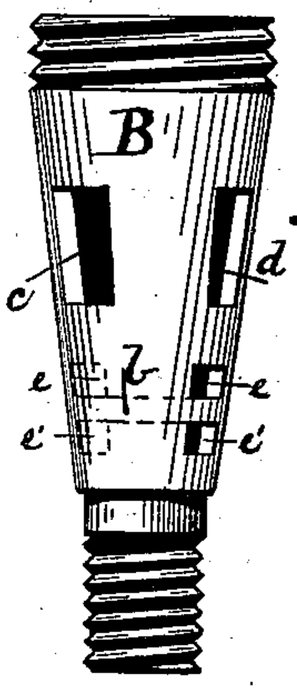


Fig. 6.

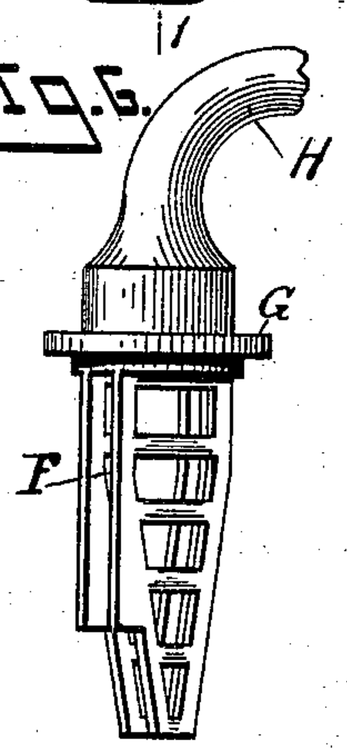


Fig. 8.

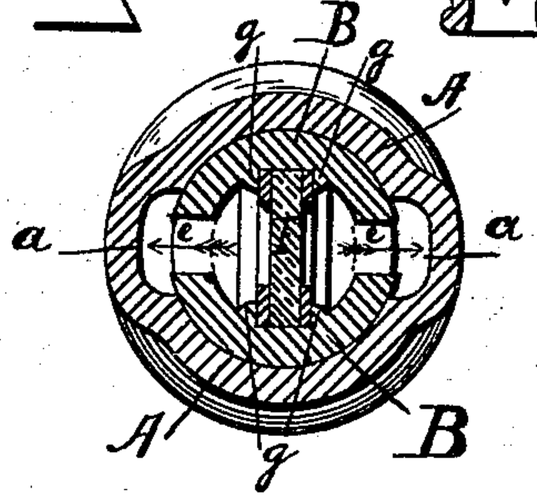


Fig. 9.

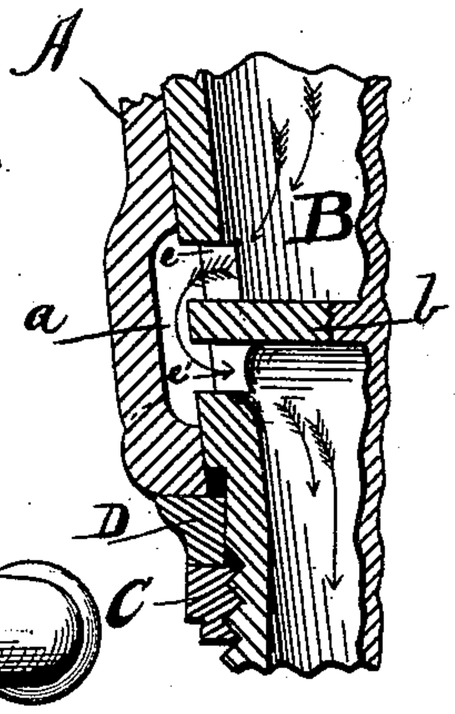
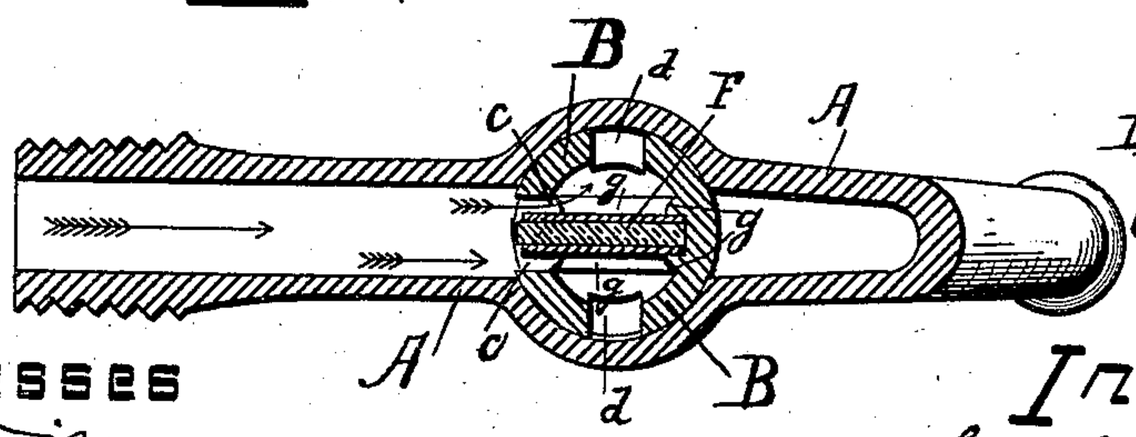


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

FRANK BARDEZ, OF SAN FRANCISCO, CALIFORNIA.

FAUCET-FILTER.

SPECIFICATION forming part of Letters Patent No. 427,029, dated April 29, 1890.

Application filed May 16, 1889. Serial No. 311,024. (No model.)

To all whom it may concern:

Be it known that I, FRANK BARDEZ, a citizen of France, residing at San Francisco, in the county of San Francisco and State of California, have invented a new and useful Faucet-Filter, of which the following is a specification.

The objects of my invention are to provide a faucet of simple construction, compact form, low cost of manufacture, and at the same time an effective, self-cleansing, and easily-renovated water-filter.

The nature of my improvements is fully set forth in the following description, reference being had to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my faucet as it appears when the water is shut off, the inside parts being shown in elevation; Fig. 2, a like view, showing how the plug is rotated in order to obtain filtered water; Fig. 3, also a similar view, showing how the filter is cleansed; Fig. 4, a cross-section taken on line 1 1, Fig. 3, looking from the front; Fig. 5, a side elevation of the faucet-plug; Fig. 6, a perspective view of the diaphragm or filtering apparatus; Fig. 7, a horizontal section taken on line 2 2, Fig. 3, looking from the top; Fig. 8, a horizontal section taken on line 3 3, Fig. 4, looking downward; and Fig. 9, a broken vertical cross-section giving an enlarged view of part of the plug and plug-chamber.

Similar letters of reference indicate corresponding parts throughout all the views.

A represents the faucet-body; *a*, recesses within the plug-chamber; B, tapering tubular plug; *b*, floor or partition within the plug; *c*, opening in the plug; *d*, water-ports; *e e'*, apertures above and below the plug-partition; C, nut; D, washer; E, check-nut and tip; *g g*, guides within the plug; F, filtering-frame; *h h*, segmental flanges within the plug; G, cap or plug; H, handle; I, tap-ring; *i*, flange of same.

The body of the faucet A, comprising the shank, the plug chamber or barrel, and the bib, is of the usual construction, except that the barrel is tapering and has inner recesses *a*, the purpose of which will be better understood when the operation of my device is explained.

The plug consists of a tapering shell or tube open at the top and bottom and divided into two parts by a horizontal partition or floor *b*. Open water-ports *d* are provided on opposite sides of the plug, corresponding with the water-channels of the faucet-body. A similar but larger opening *c* is located about midway between the water-ports in another face of the plug, the opposite face remaining unperforated. Below the water-ports and in the same plane are situated other apertures *e e'*—two above and two below the floor *b*. The plug fits snugly in the barrel, within which it is held by means of a nut C engaging its threaded foot, the washer D preventing any leakage at the bottom. The ornamental tip E serves also as a check-nut. The upper inner portion of the plug has on opposite sides two sets of guides *g g*, between which is inserted the diaphragm or filtering apparatus F.

This filter is composed of a light frame or double grating inclosing a slab of pumice-stone, a piece of felt, or other filtering material. The frame is made tapering to conform with the plug, except that part of one side runs down straight and is cut so as to rest upon the lower edge of the opening *c*. This construction is preferable to a wholly tapering frame, as will be explained hereinafter.

The filter-frame corresponds in length to the height of the guides *g*—that is to say, reaches from the floor *b* up to the segmental flanges *h h*, upon which the cap G is seated. The latter is surmounted by a handle H, by means of which the plug is rotated.

The frame F, cap G, and handle H, I usually cast of a single piece; but it is obvious that the sides of the frame may be made detachable without altering the effectiveness of my device. They could, for instance, be hinged to the under side of the cap G, and have their lower ends united by a clasp, thus presenting as much firmness as when cast solid with the rest. Such a construction might afford an easier means of replacing the filtering material when worn out.

The filter-frame is held within the plug by means of a ring I, slipped over the handle,

the screw-threaded flange *i* of the ring engaging the screw-thread at the upper end of the plug. The cap G and handle are of course held down by this same ring.

The parts above described are put up together and operated as follows:

The plug B having been dropped into its chamber in the position shown in Fig. 1, the tapering shank of the faucet-body is joined to a water-pipe in the ordinary manner. The filter is then inserted within the plug, being let in between the guides, so that its broader sides face the water-ports *d* and its straight edge abuts on the lower border of the opening *c*. Care is also taken to have the filtering material project out somewhat of the center of this opening. The filtering apparatus with surmounting cap and handle being in position, the ring I is slipped over the whole and binds the several parts together.

When the plug is situated as shown in Fig. 1, it will be seen that the unperforated side of the plug lies opposite the water-inlet, and the water is consequently cut off. Now, if filtered water is wanted, the handle and parts depending therefrom are given a quarter-rotation and the plug thereby equally revolved. This, as shown in Fig. 2, brings the water-ports *d* in a line with the passages of the faucet-body and the water is let into the plug, within which it encounters the filter, where it is rid of its impurities, coming off through the bib in a clear state. It might be noticed that if the filter-frame were wholly tapering some water would escape unfiltered, as the frame is of less breadth than the width of the opening *c*, to which it presents one edge. The filter necessarily retards the flow, and as the water rushes into the plug it fills up its interior, seeking every outlet. Thus a portion of it is carried toward the opening *c*, and were it not for the shape I give to the filtering apparatus a small quantity of unclean water would find its way around its edge at this spot and mingle with the purified water; but by making that edge of the frame F straight for the greater part of its length and causing it, as well as the filtering material within, to project into the opening *c*, as already described, this inconvenience is avoided and a tighter fit of the plug within the barrel insured.

Should it be desired to clean the filter, all there is to do is to give the handle a half-rotation. In that case the water follows a quite different course. (Indicated by the arrows in Figs. 3, 4, 7, 8, and 9.) It is then let into the plug through the opening *c*, striking the filter edgewise and washing off all the impurities that may have collected upon its posterior face. As the bib-channel has been stopped by the half-turn given to the handle and dependent parts, (see Figs. 3 and 7,) the only outlet is through the apertures *e*. The water consequently passes through the latter into the recesses *a* of the plug-chamber, re-enters the plug through the apertures *e'*, and finally comes off unfiltered and loaded with gathered impurities at the lower end of the faucet, as illustrated by arrows in Figs. 3, 4, and 9.

From the above description it may be seen that my faucet is composed of but few pieces, easily constructed, of small bulk and little weight, and a thorough self-cleaning filter. It also possesses this great advantage that the filtering material may be renovated at will and in a moment without shutting the water from the mains, as the filter, although contained within the plug, is wholly independent and detachable from it.

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

1. The combination, in a faucet, of a tubular rotative plug, a horizontal partition dividing the same, vertical guides rising from said partition to the upper end of said plug, a removable filter engaged between said guides, segmental flanges uniting said guides on each side of said filter, a cap for said plug seated upon said flanges, a handle secured to said cap, and a ring to bind said plug, filter, cap, and handle together, substantially as set forth.

2. The combination, in a faucet, of a plug-chamber, a water-inlet connected therewith, a tubular rotative plug fitted in said chamber, an opening in said plug adapted to face said inlet, a filter placed edgewise to said opening, a floor in said plug beneath said filter, apertures above said floor, recesses within said plug-chamber connected with said apertures, and an outlet below said floor connected with said recesses, substantially as described.

3. A tubular rotative faucet-plug open at both ends and horizontally divided by a floor, having in the upper part oppositely-placed water-ports *d*, through which water may pass in a straight course, and an opening *c* midway between said ports, adapted, in connection with other apertures *e e'* above and below said floor, to change the direction of the water and let it first into the upper end of said plug, then into and out of the lower end of the same, substantially as shown, for the purposes specified.

In witness whereof I have hereunto set my hand and affixed my seal.

FRANK BARDEZ. [L. S.]

Witnesses:
CASIBE TAUREGNE,
JOSEPH PETITHOMME.