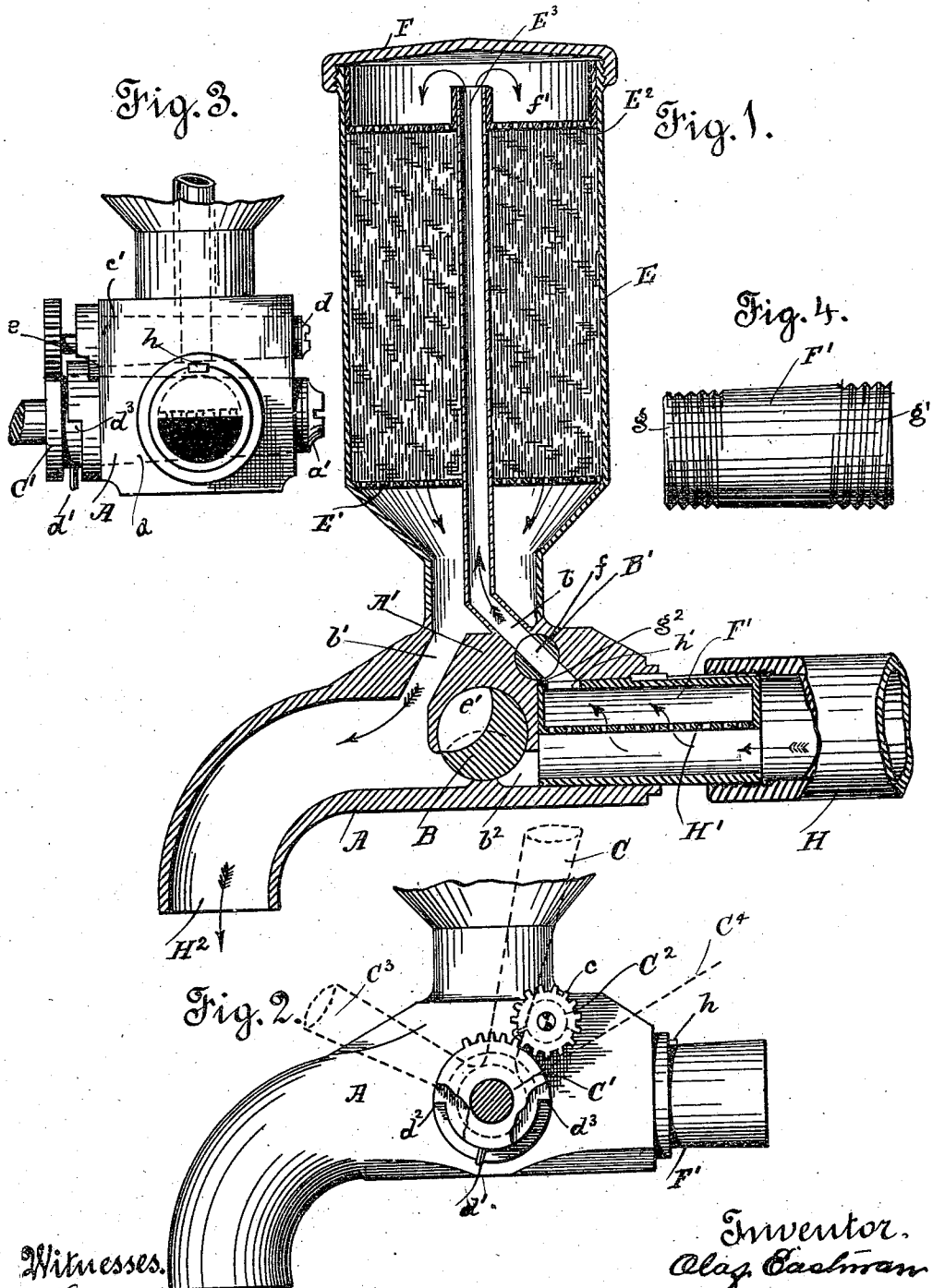


(No Model.)

O. EASTMAN.
WATER FILTER.

No. 478,157.

Patented July 5, 1892.



Witnesses.
Steffens
J. A. Casey

Inventor.
Olag Eastman
By *Charles*
att.

UNITED STATES PATENT OFFICE.

OLAF EASTMAN, OF SAN FRANCISCO, CALIFORNIA.

WATER-FILTER.

SPECIFICATION forming part of Letters Patent No. 478,157, dated July 5, 1892.

Application filed January 13, 1892. Serial No. 417,916. (No model.)

To all whom it may concern:

Be it known that I, OLAF EASTMAN, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Water-Filters; and I do hereby declare the following to be a full, clear, and exact description of said invention, such as will enable others skilled in the art to which it most nearly appertains to make, use, and practice the same.

My invention has relation to certain new and useful improvements in water-filters, as will be hereinafter more fully set forth in the drawings and described and pointed out in the specification.

The object of my invention is to provide a filter adapted to be secured to the ordinary water or supply pipe, which shall permit a double filtration to be given to the water prior to its discharge from the faucet, the first or primary of which shall extract from the water all coarse or heavy foreign ingredients or material contained therein, while the second or secondary filtration serves to free the water of all impurities contained therein after passing through the primary filter or strainer; in so constructing the faucet as to permit of the water being drawn in a filtered or unfiltered condition without change or manipulation of the filter, and, further, in providing a filter which shall be more effectual in operation, more durable, and easier cleaned than any of a similar nature heretofore known to me.

Referring to the drawings forming a part of this specification, wherein similar letters of reference are used to represent corresponding parts throughout the entire specification and several views, Figure 1 is a vertical sectional side view, in elevation, showing the filter secured to the ordinary supply-pipe. Fig. 2 is a side elevation of the faucet with filtering-chamber removed, showing coupling or uniting joint in position to be secured within supply-pipe; Fig. 3, rear elevation of Fig. 2, and Fig. 4 detail view of the coupling or uniting joint for faucet and supply-pipe.

The letter A is used to indicate the faucet, which is provided with the inner wall or diaphragm A'. Within this diaphragm or wall I provide the inlet, outlet, and central pas-

sages b b' b^2 , which are controlled by the rotatable valves B B'. The valve B controls the central passage b^2 and is secured within the opening a of the faucet by means of nut or screw a' , as shown in Fig. 3. The outer projecting end of this rotatable valve is provided with the operating-handle C and segmental gear C', the teeth of which engage with teeth c of gear C², secured to outer projecting end of valve B', which is secured within opening c' of the faucet by means of nut d , Fig. 3. In order to limit the rotation of valve B, I provide the stop pin or lug d' , which, when the valve has turned its full distance to open or close, contacts with faucet-shoulder d^2 d^3 during the rotation of the valve. The upper valve B' is also provided with a depending pin or lug (not shown) which, when the valve has rotated its full distance, contacts with shoulder or wall e , Fig. 3, and thus limits its movement. The lower valve is cut away, as shown at e' , so that when rotated to the position shown in dotted lines, Fig. 1, the central passage b^2 will be opened, while valve B' is provided with the central opening f .

To the top of the faucet is secured the filter E, which has secured therein the upper and lower sieve E' E², the space intermediate thereof being filled with charcoal or other suitable filtering material. Through this material passes the pipe E³, which forms a continuation of the inlet-passage b . To the top of the filter is secured the removable cap F, thus forming an upper chamber f' to the filter and into which pipe E³ extends.

In order to secure the filter and faucet to the supply-pipe, I provide the coupling or uniting joint F', which is provided with the screw-threads g g' , as shown in Fig. 4. This coupling is screwed into the inner open end of the faucet until the end thereof abuts with wall g^2 , when the opening h' , formed in the top wall thereof, will be in communication with passage b . The outer end of the coupling is then screwed into the supply-pipe H, as shown in Fig. 1, thus securing the filter and faucet to said pipe.

In order to prevent liability of the filter and faucet turning, I provide the key h , which is secured between the walls of the faucet

and coupling, as shown in the drawings. Within this coupling is secured the strainer or sieve H' , which is made removable and serves to prevent heavy or coarse material
 5 contained in the water from passing into passage b , consequently keeping same from entering into the filter E . Thus the coupling or uniting joint is made to act as a primary filter, which causes the heavy or coarse ingredients contained within the water to settle
 10 within the coupling instead of passing into the filter or passage b .

By reference to Fig. 3, dotted lines, it will be noticed that valves B B' are made upon a
 15 taper. Consequently as the same become worn by use they may easily be tightened by turning nuts or screws a' d' , thus preventing leakage. The upper valve is controlled and operated by rotation of valve B , inasmuch as
 20 segmental gear C' meshes with gear C^2 . Consequently as valve B is opened or closed valve B' is turned or rotated in an opposite direction. Therefore when valve B is opened
 25 valve B' is closed. When the valve B is opened, the flow of water is direct through central passage b^2 and out of open end H^2 of the faucet in an unfiltered condition, the valve B' being turned so as to close passage-way
 30 b . However, by turning valve B so as to close passage-way b^2 , valve B' is rotated so as to open passage-way b , as shown in Fig. 1, and the flow of water is then through strainer
 35 located in the coupling into the passage-way b , passing through the open valve into pipe E , from whence it is discharged into chamber f' , and from thence the water passes downward through the filtering material into passage-way
 40 b' , and is finally discharged from open end H^2 of the faucet in a filtered condition, the water being purified as it percolates through the charcoal contained within the filter. As before stated, the water receives a
 45 primary filtration by passing through the strainer or sieve located within the coupling. The sediment deposited within the coupling may easily be removed by opening valve B and closing valve B' which gives a direct
 50 flow through passage-way b^2 , and thus carries away all deposit contained within the coupling.

In order to thoroughly clean my filter, the cap F is removed, also key h , and the filter and faucet turned upside down. Then by the operator placing hand over opening H^2
 55 and opening valve B the flow of water will be through passage-way b^2 , down passage b' , and thence downward through the filtering material, causing the accumulated sediment to be washed therefrom. After the material
 60 has been thoroughly cleaned the valve B is closed and valve B' opened, which causes a flow of water through strainer H' , passage b , valve-opening f , and pipe E^3 , thus washing out these parts, if found necessary.

65 It will be noticed by reference to Fig. 2 that

the teeth of segmental gear C^2 and gear C' do not always intermesh, but only do so when it is desired to open one and close the other. When the handle is thrown to position indicated by C^4 , the valve B' is opened and valve
 70 B closed, inasmuch as the gear-teeth intermesh when valves are rotated, while when handle is thrown to position indicated by C , then both valves will be closed. By the forward down movement C^3 the lower valve B
 75 is opened and valve B' remains closed or undisturbed by such movement. It will thus be observed that by the movement of the handle I can open only B , so as to give a direct flow through the faucet proper or by its move-
 80 ment may open one valve and close the other, or cause both valves to close, and thus completely stop flow of water.

Having thus described my invention, what I claim as new, and desire to secure protection
 85 in by Letters Patent of the United States, is—

1. The combination, with the faucet having one end forming an inlet and the other forming an outlet, the passage b , leading upward from the inlet, the passage b^2 , leading directly
 90 from the inlet to the outlet, and the passage b' , leading from the top of the faucet to the outlet, of valves mounted in the passages b b^2 , and a filter secured on the faucet and communicating with the passages b b' .
 95

2. The combination, with the supply-pipe, of a faucet having a plurality of water-passages, a filter secured on the faucet, a coupling connecting the faucet and the supply-pipe and provided with a longitudinal strainer,
 100 and valves mounted in the water-passages and adapted to force the water through the filter or directly through the faucet.

3. The combination of the faucet having passages b b' b^2 , a supply-pipe, a coupling connecting the supply-pipe and the faucet and
 105 provided with a longitudinal strainer, valves mounted in the passages b b^2 , and a filter secured on the faucet and having a central pipe forming a continuation of the passage b .
 110

4. The combination, with the faucet provided with water-passages, filter secured thereto, removable cap secured to the filter, pipe passing through the filtering material and
 115 having its discharge in a chamber thereabove, said pipe forming a continuation of the filter-passage of the faucet, rotatable valves secured within the faucet and controlling the water-passages, said valves connected so that
 120 the opening of one closes the other, and a coupling forming connection between the faucet and supply-pipe and of the strainer located therein, as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

OLAF EASTMAN.

Witnesses:

EDWARD D. STODDER,
 N. A. ACKER.