No. 843,991. PATENTED FEB. 12, 1907.

W. BODGE.

FILTER.

APPLICATION FILED MAR. 12, 1906.

Fig. 1.

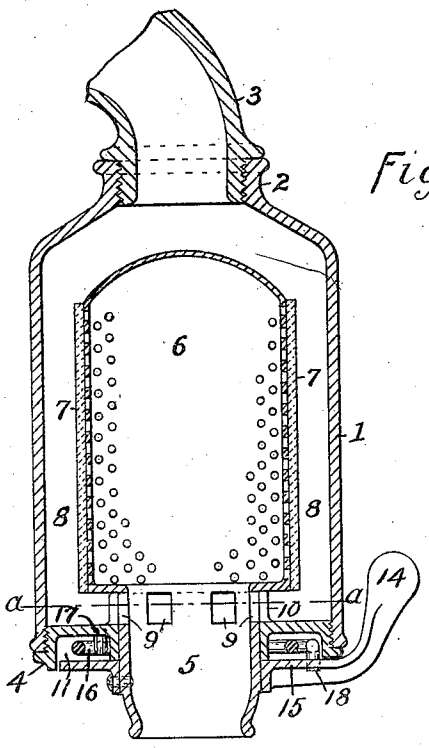


Fig. 2.

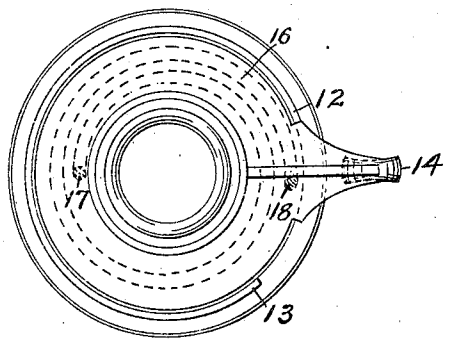
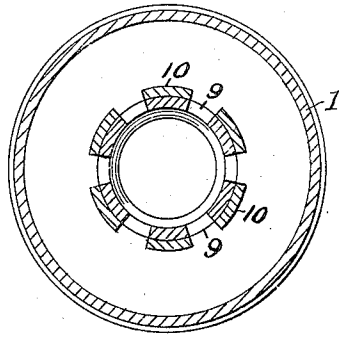


Fig. 3.



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WILLIAM BODGE, OF BROOKLYN, NEW YORK.

FILTER.

No. 843,991. Specification of Letters Patent. Patented Feb. 12, 1907.

Application filed March 12, 1906. Serial No. 305,460.

To all whom it may concern:

Be it known that I, WILLIAM BODGE, citizen of the United States, and resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Filters, of which the following is a specification.

My invention has relation to filters and to means for automatically flushing the same for the removal of the impurities or sediment collected during the process of filtration.

It is particularly adapted for connection to faucets for domestic purposes where the requirement for filtered water is occasional only and represents a small part of the total water used, the main object of the invention being to automatically direct the flow of the raw or unfiltered water not requiring filtration to flush the filtering media, directly removing the previously-collected impurities therefrom to permanently maintain said media in a comparatively clean condition.

Further objects consist in the construction, arrangement, and combination of parts as fully set forth and claimed.

In describing the invention in detail reference is had to the accompanying drawings, wherein like characters of reference indicate like parts throughout the several views, and in which—

Figure 1 represents a vertical section of the filter attached to the nozzle of a faucet; Fig. 2, an exterior bottom view of the same, and Fig. 3 a horizontal cross-section on line *a a*, Fig. 1.

In said drawings the casing 1 is provided at its upper end with the screw-threaded inlet-neck 2 for connection to a faucet or other means of supply, and at the lower end a screw-threaded opening is formed in which detachably engages the screw-cap 4. This screw-cap is provided with a centrally-located perforation in which is rotatably mounted the hollow neck or discharge-nozzle 5, formed on the pervious filtering-chamber 6. To the exterior surface of the filtering-chamber is secured a suitable filtering media 7, arranged within the casing to leave the intermediate space 8 for the passage of the raw water. Extending through the wall of the hollow neck 5, which alternately forms the discharge-passage for the filtrate and the raw flush-water, are the ports 9, which communicate with the passage 8 below the filtering media. On the interior of the screw-cap 4 and contiguous to the neck 5 are formed the upwardly-extending ledges 10 for covering the ports in said neck, which ports may be opened and closed by the rotation of the filtering-chamber. A spring-recess 11 is formed on the exterior of the screw-cap, and along the peripheral edge of the same are arranged the stops 12 and 13, which are engaged by the operating-handle 14 to limit the rotary movement of the filtering-chamber for opening and closing the ports 9. The operating-handle 14 is fixedly secured to neck 5 and is provided with a disk 15 to cover the recess 11 for protecting the retractile spring 16, the latter having one of its ends fixed to the screw-cap at 17, and the opposite end secured to the disk at 18 is adapted to normally urge the operating-handle in contact with stop 12, in which position the ports 9 are open, and the raw water in flowing through the passage 8 washes or flushes the filtering media 7, carrying the impurities collected thereby through the open ports 9 to the discharge-nozzle 5.

When it is required to filter the water, the operating-handle is rotated in contact with stop 13, which motion compresses spring 16 and closes the ports 9, permitting the water to flow through the filtering media to the discharge-nozzle. On releasing the operating-handle it is automatically returned by the spring to its normal position against stop 12.

The filtering-chamber may be readily connected or disconnected from the casing for the inspection or renewal of the filtering media by utilizing the operating-handle as a wrench, which, abutting the stops 12 and 13, serves to detachably secure the screw-cap to the casing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A filter provided with a valve for controlling the flow of liquid therethrough, means for closing said valve to permit the discharge of the filtered liquid and means for automatically opening said valve to cause the free discharge of the raw liquid for flushing the filter, substantially as set forth.

2. A filter comprising a casing having a raw-liquid inlet, a filtering-chamber mounted in said casing and provided with a filtrate-discharge, a valve-controlled raw-liquid outlet leading from the casing, and means for automatically actuating said valve to discharge the raw liquid, substantially as set forth.

3. A filter provided with a valve for con-

trolling the flow of liquid therethrough, means for manually closing said valve to permit the discharge of the filtered liquid and means for automatically opening said valve to cause the free discharge of the raw liquid for flushing the filter, substantially as set forth.

4. A filter comprising a casing having a raw-liquid inlet, a filtering-chamber mounted in said casing and provided with a common discharge-nozzle for both the raw liquid and the filtrate, ports communicating between the interior of the casing and the discharge-nozzle, means for closing said ports and means for automatically opening said ports, substantially as set forth.

5. A filter provided with a common discharge for both the raw liquid and the filtrate, a valve therefor controlling the flow of the liquid therethrough, means for manually closing said valve to permit the discharge of the filtrate and means for automatically opening the valve to cause the free discharge of the raw liquid for flushing the filter, substantially as set forth.

6. A filter comprising a casing having a raw-liquid inlet, a filtering-chamber rotatably mounted in said casing and provided with a common discharge-nozzle for both the raw liquid and the filtrate, ports communicating between the interior of the casing and the discharge-nozzle, manually-operated means for rotating said filtering-chamber to close said ports, and automatically-operated means for rotating said filtering-chamber to open said ports, substantially as set forth.

7. In a filter, the combination with a filter-case provided with a raw-liquid inlet at the upper end thereof, of a screw-cap closing the lower end of said casing, a filtering-chamber mounted in said casing and provided with an outlet-nozzle for the discharge of both the raw liquid and the filtrate, a valve formed on the outlet-nozzle and seating in the screw-cap, means for manually closing said valve to permit the discharge of the filtrate and means for automatically opening said valve to cause the free discharge of the raw liquid for flushing the filter.

8. A filter comprising a casing having a raw-liquid inlet at one end thereof and a screw-cap closing the opposite end, a filtering-chamber rotatably mounted within said casing and provided with a common discharge-nozzle for both the raw liquid and the filtrate, said discharge-nozzle being journaled in said screw-cap and provided with ports communicating with the interior of the casing, projections formed on the screw-cap and adapted to cover said ports, and means for manually closing said ports, and automatic means for opening said ports, substantially as set forth.

9. In a filter, the combination of a casing, having an opening in one end thereof for the introduction of a filtering-chamber, a screw-cap detachably closing said opening, a filtering-chamber rotatably mounted within the casing and provided with a nozzle or neck journaled in said screw-cap and downwardly projecting therefrom, a handle exteriorly secured on said nozzle, and stops formed on the screw-cap and engaged by the handle to detachably secure said filtering-chamber within the casing, substantially as set forth.

10. In a filter, the combination of a casing having an opening in one end thereof for the introduction of a filtering-chamber, a screw-cap detachably closing said opening, a filtering-chamber rotatably mounted within the casing and provided with a nozzle or neck journaled in said screw-cap and downwardly projecting therefrom, ports formed in said nozzle communicating with the interior of the casing, projections formed on the screw-cap to cover the ports, a handle exteriorly secured on said nozzle, and stops formed on the screw-cap to limit the movement of the handle for opening and closing the ports, substantially as set forth.

11. In a filter, the combination with a casing and a filtering-chamber rotatably mounted therein, of an actuating-lever secured to the filtering-chamber, limiting-stops secured to the casing and engaging the lever and a spring engaging the lever to normally contact it with one of said stops, substantially as set forth.

12. In a filter, a spring-actuated valve therefor normally retained in open relation to permit the free discharge of the raw liquid for flushing the filtering media, and means for closing said valve.

13. In a filter, a valve therefor provided with a spring for normally maintaining it in open relation for the passage of unfiltered water and manually-operated means for closing the same to permit the discharge of filtered water.

14. In a filter the combination with a casing, of a filtering-chamber mounted to turn therein, a common outlet-nozzle formed on said filtering-chamber for the alternate discharge of the filtered and unfiltered water, ports communicating between the interior of the casing and the outlet-nozzle for the discharge of the unfiltered water, manual means for turning said filtering-chamber to close said ports to permit the discharge of the filtered water, and automatic means for returning the filtering-chamber to open said ports to permit the free discharge of the unfiltered water.

15. In a filter the combination with a casing, of a filtering-chamber mounted to turn therein, a common outlet-nozzle formed on said filtering-chamber for the alternate discharge of the filtered and unfiltered water, ports communicating between the interior of the casing and the outlet-nozzle for the dis-

charge of the unfiltered water, and means for turning said filtering-chamber to close said ports to permit the discharge of the filtered water, and automatic means for returning the filtering-chamber to open said ports to permit the free discharge of the unfiltered water.

Signed at New York, in the county of New York and State of New York, this 24th day of February, A. D. 1906.

WILLIAM BODGE.

Witnesses:

GEORGE B. LANG,

ARTHUR L. MCNEIL.