

No. 754,296.

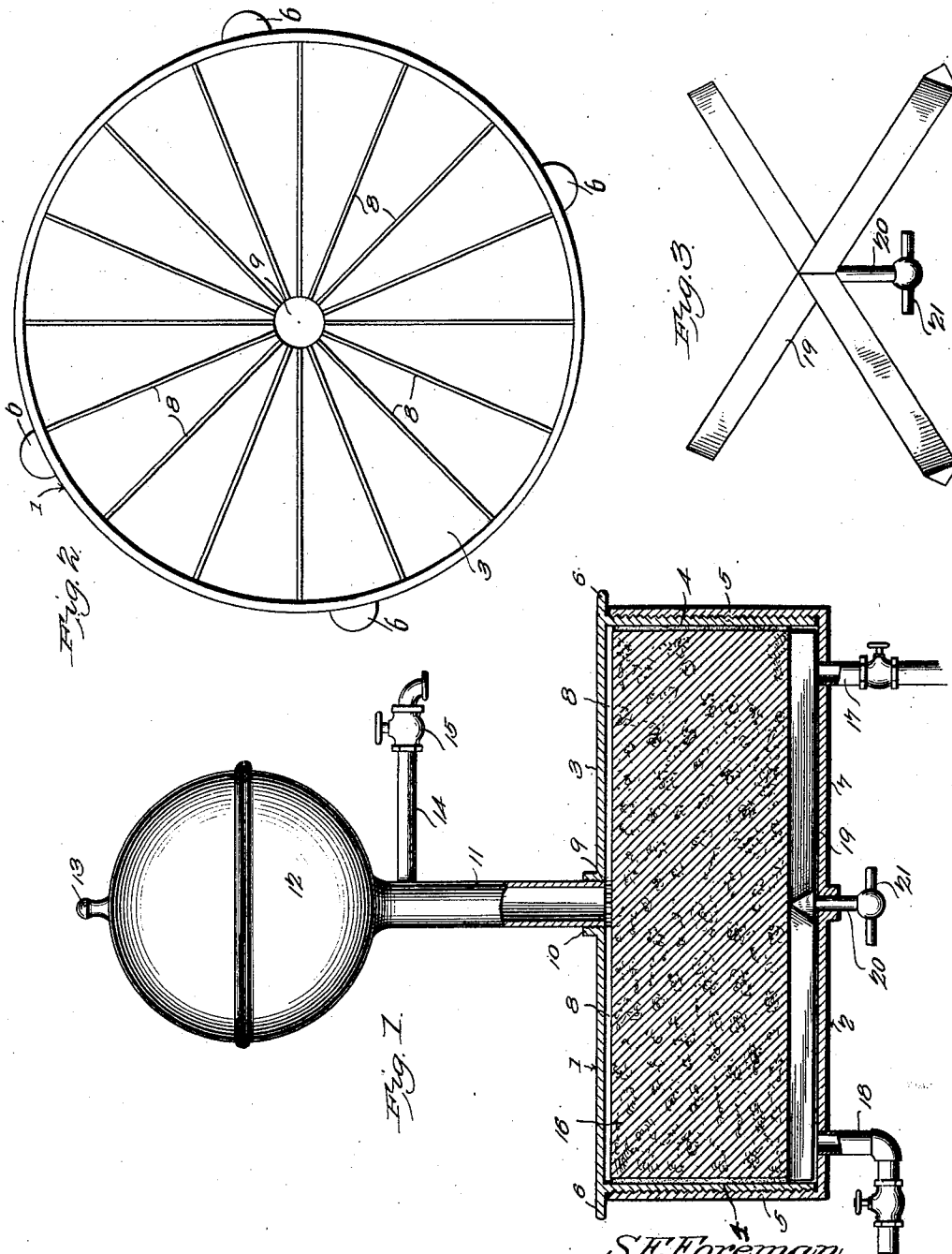
PATENTED MAR. 8, 1904.

S. E. FOREMAN & R. T. LIGHTFOOT.

WATER FILTER.

APPLICATION FILED SEPT. 21, 1901. RENEWED DEC. 22, 1903.

NO MODEL.



Witnesses
E. H. Stewart
Chas. S. Hoyer.

S. E. Foreman
R. T. Lightfoot Inventors
by *Chas. S. Hoyer*
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL E. FOREMAN AND RICHARD T. LIGHTFOOT, OF PADUCAH,
KENTUCKY.

WATER-FILTER.

SPECIFICATION forming part of Letters Patent No. 754,296, dated March 8, 1904.

Application filed September 21, 1901. Renewed December 22, 1903. Serial No. 186,237. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL E. FOREMAN and RICHARD T. LIGHTFOOT, citizens of the United States, residing at Paducah, in the county of McCracken and State of Kentucky, have invented a new and useful Water-Filter, of which the following is a specification.

This invention relates to water-filters.

The object of the invention is to provide a simply-constructed and thoroughly efficient filter of the character employing a stone as a filtering medium in which cleansing of the stone may be effected without necessitating disconnection of any of the parts of the filter-casing and in which the entire superficial area of the filtering-stone shall be utilized for filtering purposes.

With these and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a water-filter, as will be hereinafter fully described and claimed.

In the accompanying drawings, forming a part of this specification, and in which like numerals of reference indicate corresponding parts, there is illustrated one form of embodiment of the invention capable of carrying the same into practical operation, it being understood that the elements therein exhibited may be varied or changed as to shape, proportion, and exact manner of assemblage without departing from the spirit thereof, and in these drawings—

Figure 1 is a view in sectional elevation of a water-filter characterizing the present invention. Fig. 2 is an inverted plan view exhibiting the construction of the under side of the top of the filtering-chamber. Fig. 3 is a perspective detail view of the stone-cleaning attachment.

Referring to the drawings, 1 and 2 designate, respectively, the upper and lower sections of the filtering-chamber, the upper section having a closed top 3 and an open bottom, the exterior surface of the side 4 thereof being threaded to engage with the interiorly-threaded side 5 of the lower section, and by this manner of connecting the sections ready

separation thereof may be effected when desired. The periphery of the upper section is provided with gripping-lugs 6 to facilitate its association with the lower section, which latter has a closed bottom 7.

Both sections will be constructed of suitable metal capable of withstanding any internal pressure to which the filter may be subjected, and the under side of the top of the upper section is provided with a plurality of radiating ribs 8, extending from its side inward to a central opening or outlet 9, the spaces between the ribs constituting water-conveying channels to direct the water to the outlet and the ribs operating to hold the filtering-stone properly spaced from the top of the chamber. The top of the upper section is provided with a centrally-arranged interiorly-threaded collar 10, constituting a continuation of the outlet 9 and providing a means of attachment to the chamber of the lower end of a vertical pipe or conduit 11, the upper end of which is connected with a spherical water-chamber 12, having at its top an air-vent 13. An outlet-pipe 14 is associated with the pipe 11 at a point contiguous to the chamber 12 and is provided with a cock 15, as usual.

Within the filtering-chamber and secured to the side of the upper section is a flat disk-like filtering-stone 16, the upper side of which bears firmly against the ribs 8, the upper and lower sides of the stone being flat and parallel, thus to present the same filtering area at both the intake and outtake sides of the chamber. The stone is of less thickness than the height of the filtering-chamber in order to provide a space into which water is supplied by a valved pipe 17, connecting with a suitable source of supply, the said supply-pipe being connected with the bottom of the lower section near its periphery, thus to give a pronounced a sweep of the water over the bottom of the stone as is practicable. Connecting with the bottom of the lower section at a point opposite the pipe 17 is a discharge-pipe 18, provided with a valve which is normally closed, the latter pipe being employed to carry off sediment from the filter when the same is being cleansed.

In the water-space below the stone is arranged a rotatable scraper or cleaning device comprising in this instance four arms or knives 19, triangular in cross-section and of a length to extend across the stone. The apices of the arms are adapted to be forced against the bottom of the stone and rotated through the agency of a stem 20, suitably bushed in and projecting downwardly beyond the bottom 7 and carrying a hand-grip 21. In the operation of cleansing the filtering-stone the arms 19 are pressed upward against the bottom of the stone, the valve of the supply-pipe 17 having first been closed, and the cleaning attachment is given a single rotation, whereupon the sharp edges of the arms will remove all of the accumulated sediment on the stone without in the least injuring it, the stone being thus left in a smooth condition and free from ridges or depressions which would operate to catch and retain sediment, and thus interfere with the proper operation of the stone. During the cleansing operation the valve of the outlet-pipe 18 is opened to permit the muddy water to escape, and after the scraping procedure is completed the valve of the supply-pipe is opened to permit water to pass into the water-space, and thus permit the cleansing both of the stone and of the chamber. By thus disposing the cleansing attachment within the filtering-chamber and having it operable from without the necessity of removing the stone for the purpose of cleaning is entirely obviated, time is saved, and danger of breaking the stone as by dropping or in replacing it is entirely eliminated. If desired, when the supply-pipe is closed during the cleansing operation the water in the spherical chamber or reservoir may be allowed to enter the water-space, and thus assist in removing particles of sediment that may be occluded in the pores in the under side of the stone.

The filter of this invention is designed for use in hotels, bar-rooms, and other public places, as well as for domestic purposes, and will be found thoroughly efficient for the purpose designed.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a filter, a casing comprising an upper and a lower section having engaging threaded flanges, said upper section being provided on the under side of the top thereof with radial ribs merging into an escape-opening, in combination with a filtering-stone permanently secured in the flanged upper section and spaced from the bottom of the lower section of the casing, an inlet and an exit for unfiltered water in the bottom of said lower casing, and a rotary cleaning device normally supported upon the bottom of said casing and having an operating-stem extending through and bearing in the latter and provided with a handle.

2. In a filter, a casing comprising flanged upper and lower members having threaded connection with each other, said upper member being provided with a water-exit and with ribs directing filtered water toward said exit, a filtering-stone tightly seated in the upper member of said casing and spaced from the bottom of the lower member of the casing, and a rotatable cleaner mounted in the bottom of said lower member of the casing and having arms extending diametrically across the lower face of the filtering-stone and provided with an operating-stem journaled centrally in the bottom of said lower member, the latter being provided with an inlet and an exit for unfiltered water.

3. The herein-described filtering-casing comprising upper and lower flanged members having threaded engagement with each other and the upper member of the casing being provided with radially-extending lugs, in combination with a filtering-stone permanently seated in the upper member of the casing.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

SAMUEL E. FOREMAN.
RICHARD T. LIGHTFOOT.

Witnesses:

W. P. MCCARTNEY,
FRANK A. LUCAS.