

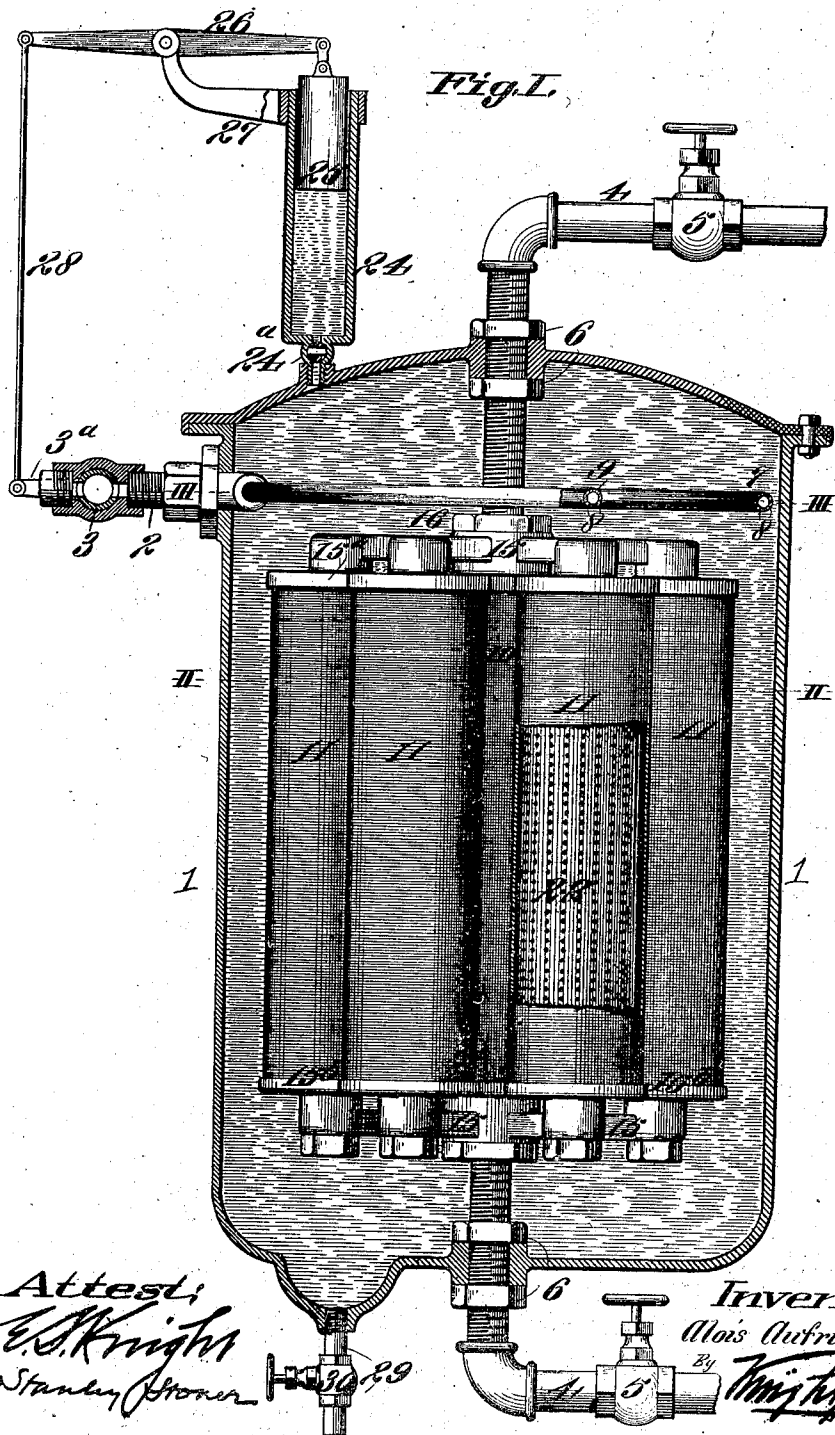
(No Model.)

A. AUFRICHTIG.
WATER FILTER.

2 Sheets—Sheet 1.

No. 585,497.

Patented June 29, 1897.



Attest:

E. S. Knight
Stanley Stoner

Inventor:

Alois Aufrechtig
Thos. H. Burt
Attys

(No Model.)

2 Sheets—Sheet 2.

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Fig. II.

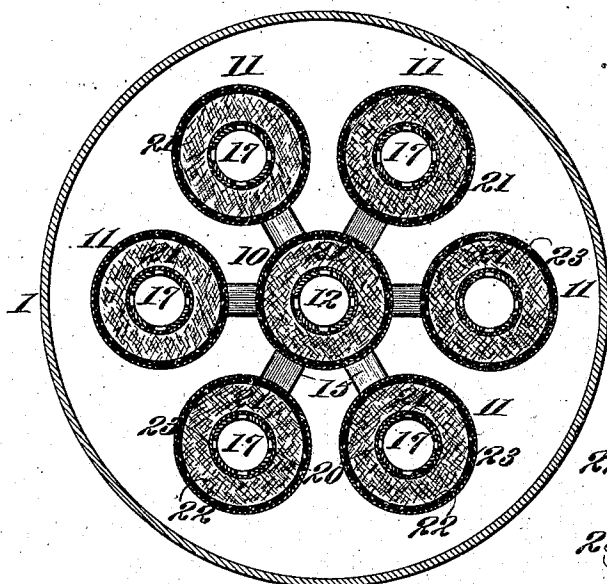


Fig. IV.

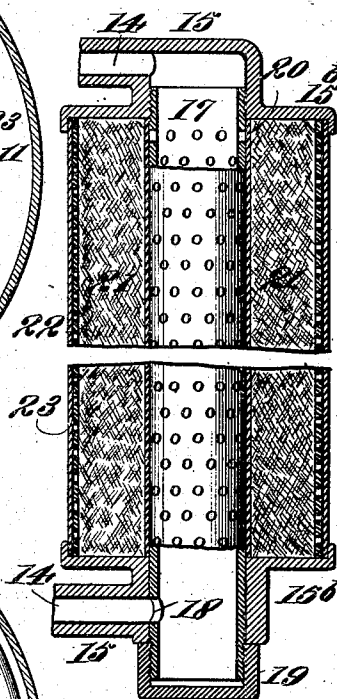


Fig. III.

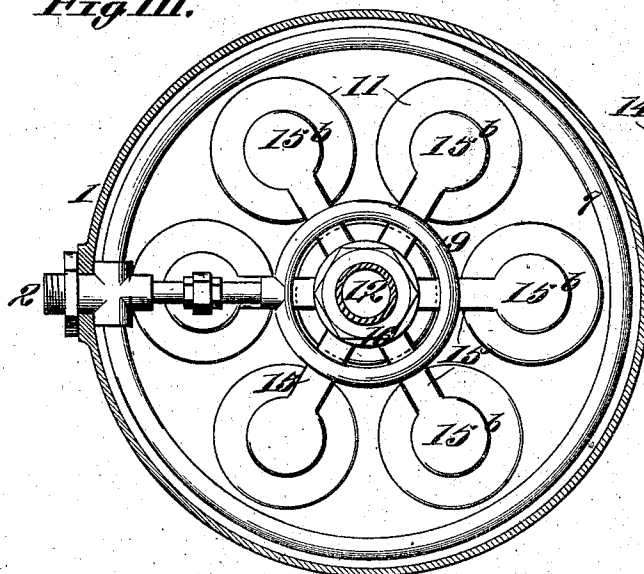
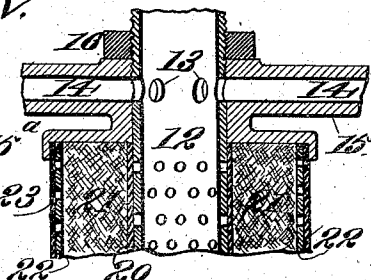


Fig. VI.



Fig. V.



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By *Knight, Bro & Co*

UNITED STATES PATENT OFFICE.

ALOIS AUFRICHTIG, OF ST. LOUIS, MISSOURI.

WATER-FILTER.

SPECIFICATION forming part of Letters Patent No. 585,497, dated June 29, 1897.

Application filed December 24, 1896. Serial No. 616,848. (No model.)

To all whom it may concern:

Be it known that I, ALOIS AUFRICHTIG, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have
5 invented a certain new and useful Improvement in Water-Filters, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

10 My invention relates to that class of water-filters employing perforated filtering-cylinders; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

15 Figure I illustrates a vertical section taken through the shell of the filter and showing the interior structure, part in section and part in elevation. Fig. II illustrates a horizontal section taken on line II II, Fig. I. Fig. III illustrates a horizontal section taken on line III
20 III, Fig. I. Fig. IV illustrates a vertical section taken centrally through one of the outer filtering-cylinders. Fig. V illustrates a vertical section taken centrally through one end
25 of the central filtering-cylinder. Fig. VI illustrates a cross-section of one of the inlet spray water-pipes.

In the drawings, 1 designates the filter-tank, and 2 the supply-pipe, provided with a valve
30 3. Leading from the tank at each end are outlet-pipes 4, provided with valves 5. Portions of the outlet-pipes 4 are screw-threaded where they pass through the tank, and water-tight connection is formed by means of pack-
35 ing-nuts 6.

7 designates an outer inlet spray-pipe connected to the supply-pipe 2 and having rows of obliquely-radial series of perforations 8 in its under side, the perforations of one row
40 permitting a flow of water toward the shell of the filter and the perforations of the other row permitting a flow of water inwardly against the filtering-cylinders.

9 designates an inner perforated spray-pipe, the perforations in said pipe being located in a similar manner to those in the pipe 7. By means of the spray-pipes 7 and 9 I am enabled to direct the flow of water in the filter in downwardly-diverging directions, so that the water
50 reaches all parts of the filtering-cylinders and the shell of the filter.

10 designates the centrally-located filter-

ing-cylinder, and 11 the outer surrounding filtering-cylinders. The central cylinder is provided with a perforated tube 12, having
55 openings 13, leading into the radial channels 14 of spiders 15, located at each end of the cylinders. The tube 12 extends through the center of the spider 15 and is connected to the outlet-pipes 4 at each end of the cylinder
60 10. Close joints between the cups 15^a of the spiders and the filtering-cylinders at each end are accomplished by nuts 16, screw-threaded to the tube 12. The outer ends of the spider-arms are provided with cups 15^b, that receive
65 the ends of the outer filtering-cylinders 11. The arms of the spider 15 at the upper end of the filter are screw-threaded upon the interior of their ends and receive the upper ends of perforated tubes 17. The lower ends of
70 said tubes 17 each contain an opening 18, permitting passage of water from the interior to the radial tubes 17 of the channels of the lower spider, the lower ends of the tubes 17 being closed by cap-nuts 19.

75 The construction of the filtering-cylinders, both central and outer, are similar and are composed of inner sleeves 20 of asbestos cloth or analogous material surrounding the perforated tubes, next to which is a filling 21 of
80 asbestos fiber or analogous material. The filling 21 is surrounded by a perforated sheet-metal sleeve 22, and the whole is incased by a jacket 23 of asbestos cloth or analogous material.

85 The water entering through the supply-pipe 2 is discharged from the spray-pipes 7 and 9 in the interior of the filter, and, percolating through the cylinders 11, flows from the interior of the tubes 17 through the channels 14
90 of the spiders 15, and thus reaches the tubes 12, entering said last-mentioned tubes through the openings 13 therein. The water percolating through the cylinder 10 enters directly into the tube 12. From the tube 12 the filtered water may be drawn off through either
95 of the outlet-pipes 4.

24 designates a reservoir located on top of the filter-tank, in which a float 25 operates. A valve 24^a controls the passage to said reservoir. The upper end of the float 25 is pivoted to one end of a rocking lever 26, supported in a bracket 27. The opposite end of
100 said lever 26 has connected to it one end of

a rod 28, the opposite end of said rod being pivotally connected to the arm 3^a of the supply-pipe valve 3. This float connection with the supply-pipe valve causes the supply-pipe valve to be closed by the float rising when the filter-tank has become filled and the water has raised into the reservoir 24. The object of this arrangement is to prevent the access of air into the filter-tank, which would cause the water to become foul therein. When the supply-pipe valve is closed, the filtration of the water proceeds, but is accomplished merely by gravitation. As soon as the water has escaped to any extent from the filter-tank the supply-pipe valve again opens by the falling of the float actuating it and water is again admitted into the filter-tank.

When it is desired to employ the filter under pressure, the rod 28 is disconnected from the arm 3^a of the valve 3 and the valve 24^a is closed, at which time, with the valve 3 open, the water is free to flow into the filter and out through either of the outlet-pipes 4 after filtration.

With the employment of the perforated inlet-pipes located above the filtering-cylinder and having perforations arranged to permit a flow of water in diverging directions the filter may be readily cleansed, as the diverging streams of water from the inlet-pipe reach the different parts of the filtering-cylinders and the interior of the tank.

29 designates a pipe located in the bottom of the filtering-tank and provided with a valve 30. When it is desired to cleanse the filter, the valve 30 is opened and any accumulations of mud or dirt may be withdrawn from the filter-tank.

I claim as my invention—

1. A water-filter comprising a tank having an inlet-opening, a central perforated outlet-tube formed with upper and lower inlet-openings and extending through the heads of the tank, the upper and lower spiders each having central and end cups and radial channels

connecting the end cups with the inlet-openings of the outlet-tube, the central perforated cylinder and filtering material surrounding the outlet-tube and seated in the central cups, the perforated end tubes connecting the end cups and the perforated cylinders and filtering material surrounding the perforated end tubes and seated in the end cups; substantially as described.

2. A water-filter comprising a tank having a supply-pipe near its upper head, a central perforated outlet-tube formed with upper and lower inlet-openings and extending through the heads of the tank, the upper and lower spiders each having central and end cups and radial channels connecting the end cups with the inlet-openings of the outlet-tube, the central perforated cylinder and filtering material surrounding the outlet-tube and seated in the central cups, the perforated end tubes connecting the end cups, the perforated cylinders and filtering material surrounding the perforated end tubes and seated in the end cups, the outer spray-pipe having oblique series of radial perforations and connected with the supply-pipe, and the inner spray-pipe having oblique series of radial perforations and connected with the outer spray-pipe; substantially as described.

3. The combination of the tank having a supply-pipe, a perforated outlet-pipe extending through the heads of the tank, a filtering device surrounding the outlet-pipe, a valve having an arm and located in the supply-pipe, an open-top reservoir having a bracket and connected through the upper head of the tank, a lever pivoted to the bracket and on which the float is suspended, and a rod connecting the arm of the valve with lever; substantially as described.

ALOIS AUFRICHTIG.

In presence of—

E. S. KNIGHT,

STANLEY STONER.