(No Model.)

H. C. STIFEL.

WATER FILTER.

No. 582,440. Patented May 11, 1897.

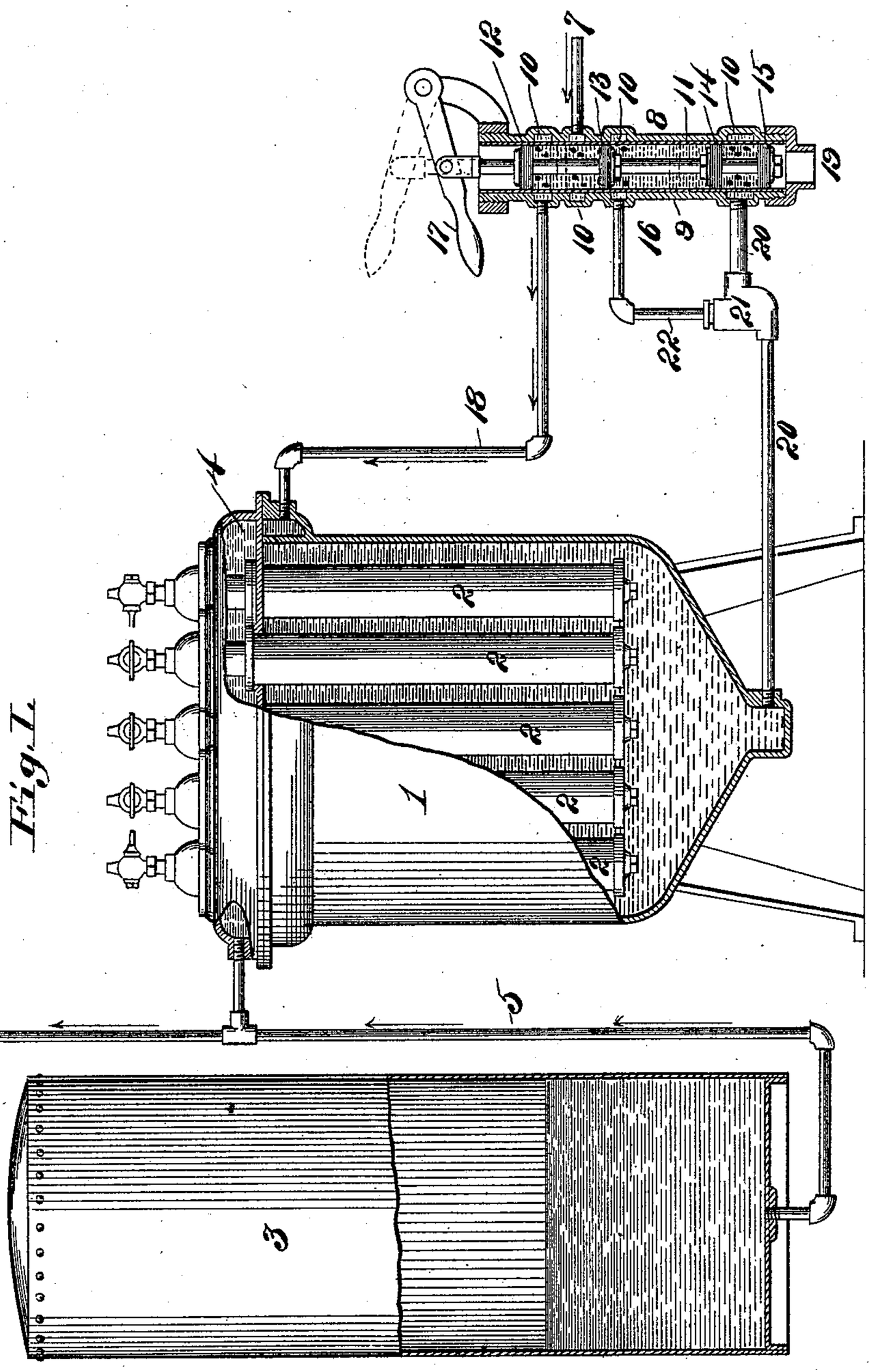

Fig. I.

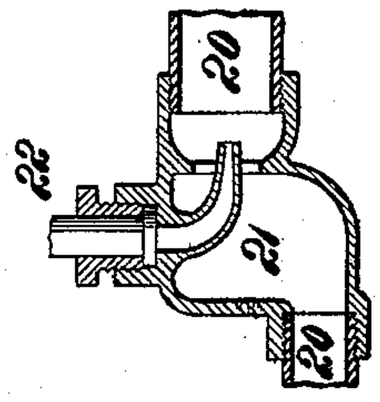

Fig. II.

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UNITED STATES PATENT OFFICE.

HERMAN C. STIFEL, OF ST. LOUIS, MISSOURI, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE AMERICAN TRIPOLI COMPANY, OF CARTHAGE, MISSOURI.

WATER-FILTER.

SPECIFICATION forming part of Letters Patent No. 582,440, dated May 11, 1897.

Application filed December 3, 1894. Serial No. 530,731. (No model.)

To all whom it may concern:

Be it known that I, HERMAN C. STIFEL, of the city of St. Louis, in the State of Missouri, have 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 part of this specification.

This invention relates to the class of water-filters for which I have made several applications for patents—that is, filters in which a reverse flow of filtered water is caused to pass through the stones or filtering materials to clean them, this flow being induced by the city or other pressure in the supply-pipe. The device differs from those of my other applications in that the supply-pipe force for cleaning is applied on the receiving side of the filtering-tank instead of on the discharging side, as in said applications, and the construction is such that a cylinder provided with a piston for containing the washing-water may be dispensed with.

This invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Figure I illustrates my invention, part in side view and part in vertical section. Fig. II is an enlarged sectional view of the ejector.

Referring to the drawings, 1 represents the filtering-tank, within which are the stones 2, through which the water passes and is filtered.

3 is the storage-tank, connecting with the clear-water chamber 4 of the filtering-tank through means of a pipe 5, having an extension 6 leading to the building or place of use.

7 is the supply-pipe, that conducts the water from the city-main or other source.

8 is a valve device consisting of a cylinder 9, having interior grooves 10, and within which is a tube 11, having perforations opposite said grooves. Within the tube are valves 12, 13, 14, and 15, arranged on a stem 16, that may be operated by a lever 17 or otherwise. The water entering through the supply-pipe 7 passes (when the valve device is in its normal position, shown by full lines in Fig. I) to the filtering-tank through an inlet-pipe 18.

19 is a waste-pipe located beneath the valve device 8, and 20 is a sediment-pipe forming (when the valve device is in its normal position) a communication between the bottom of the filtering-tank and the chamber that lies between the valves 14 and 15.

The parts thus far described are the same as the corresponding parts set forth in some of my other applications, and no invention is here claimed in them *per se*.

21 is an ejector, which is of ordinary construction, located in the pipe 20.

22 is a pipe forming a communication between the ejector and the valve device beneath the valve 13. The manner of connecting up the ejector is illustrated in Fig. II.

It will be seen that when the valves 12, 13, 14, and 15 are moved to the position shown by dotted lines, Fig. I, that a communication will be established between the supply-pipe 7 and the pipe 22, for the valve 13 will be above the pipe 7, and a communication will at this time be also established between the pipe 20 and the waste-pipe 19 because the valve 15 will be above the pipe 20. Water will now pass, under the supply-pressure, from the pipe 7, through the pipe 22 and ejector 21, into the waste-pipe 19, which, by virtue of the ejector, draws or sucks the water from the filtering-tank and will draw clear water outwardly through the stones or other filtering material, causing them to be freed of dirt and sediment, and this force may be augmented by pressure created on the delivery side of the filtering-tank. By this arrangement I accomplish the desirable result of cleaning the filter by utilizing the water-supply force, which can be depended upon to be always present in sufficient degree for the purpose, and this principle is applied in an inexpensive and effective manner on the receiving side of the filter, which can sometimes be more conveniently done than to apply it on the discharging side.

It is evident that instead of using such a valve device as I have shown and described other forms might be used, or ordinary globe-valves for controlling the different communications might be used, and such would come within my meaning of the expression "valve device."

I claim as my invention—

A filter provided with a supply-pipe and a sediment-pipe, a suction device located in the sediment-pipe and a valve device communicating with the supply-pipe and suction device and movable to bring these parts into communication whereby the hydrostatic pressure in the supply-pipe may be utilized to remove deposits from the filtering-body by means of a reverse flow of clear water under suction; substantially as set forth.

HERMAN C. STIFEL.

In presence of—
E. S. KNIGHT,
A. C. BROWN.