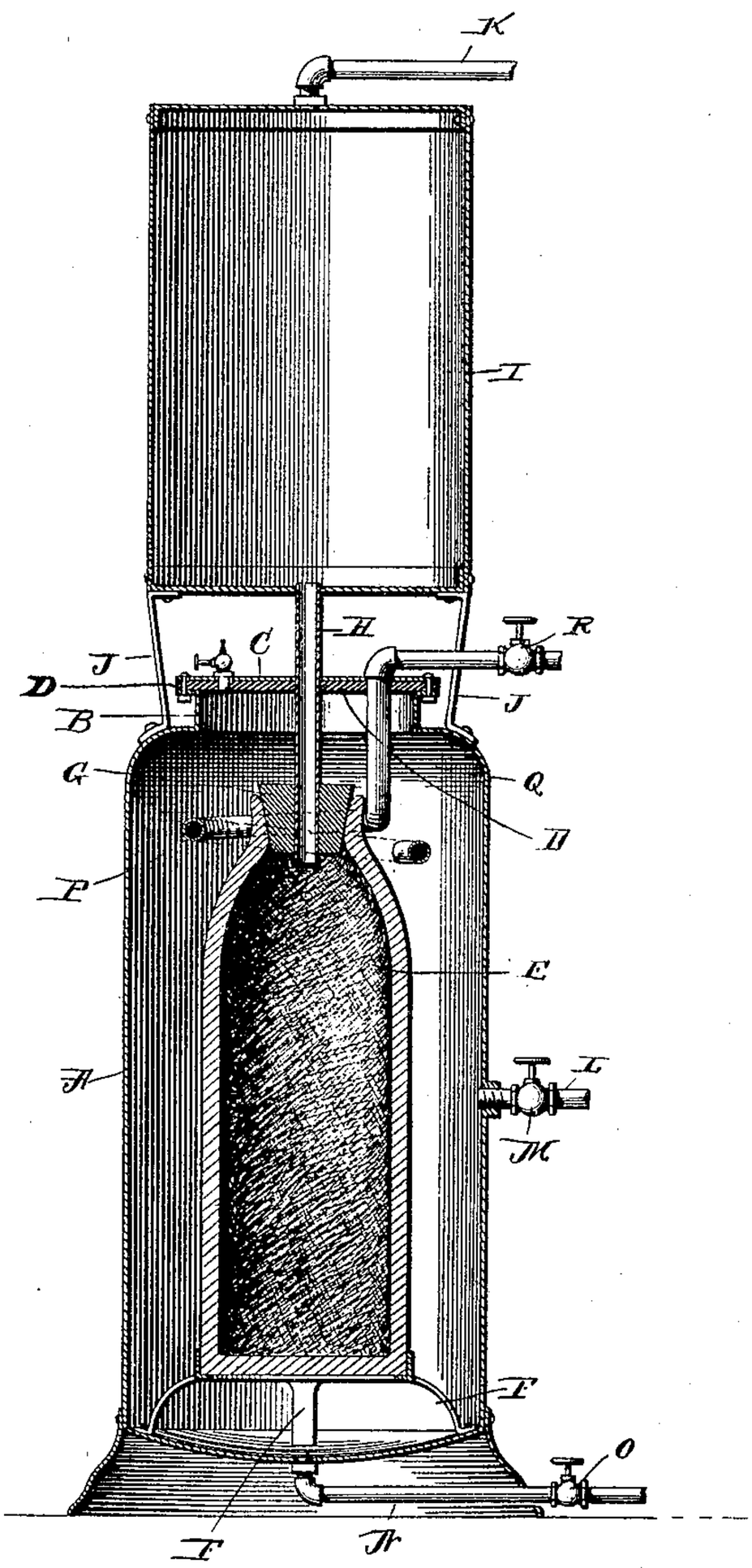
(No Model.)

W. P. ROBERTSON.

WATER FILTER.

No. 589,223. Patented Aug. 31, 1897.



WITNESSES:

E. C. Wurdeman

S. S. Williamson

INVENTOR

William P. Robertson

BY Geo. H. Holgate

ATTORNEY.

UNITED STATES PATENT OFFICE.

WILLIAM P. ROBERTSON, OF ST. LOUIS, MISSOURI.

WATER-FILTER.

SPECIFICATION forming part of Letters Patent No. 589,223, dated August 31, 1897.

Application filed October 19, 1896. Serial No. 609,355. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. ROBERTSON, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented a certain new and useful Improvement in Water-Filters, of which the following is a specification.

My invention relates to a new and useful improvement in pressure-filters, and has for its object to construct a simple, cheap, and effective apparatus by means of which water may be thoroughly cleansed of impurities held in mechanical suspension thereby, as well as clarified and made chemically pure, so as to be hygienic, as though it were sterilized.

Another object of this invention is to provide means for cleansing the filtering-tube by closing the supply-pipe and opening the valve into the drain-pipe and allowing the filtered water in the reservoir to flow back into the filtering-tube and through the walls of the tube into the filtering-tank, which will loosen the mud on the tube, and then by opening the valve to the coil and flushing the outer surface thereof with a shower-bath, thereby removing the accumulation of impurities, which may thereafter be drawn from the filtering-tank by a suitable pipe.

With these ends in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claim.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, its construction and operation will now be described in detail, referring to the accompanying drawing, forming a part of this specification, in which—

A is the filtering-tank, preferably cylindrical in form and having a mouth B of considerable size, which may be closed by the top C, bolted in place and having interposed therebetween and the mouth a rubber gasket D.

A filtering-tube E, of bottle-shape and of a size adapted to pass through the mouth of the filtering-tank, is placed within said tank and supported upon the stand F, and this tube is composed of unglazed earthenware, or it may be made of natural stone or other suitable composition, through which water may percolate when under pressure and which will extract both the mechanical and chemical impurities from the water as well as clarify the same. The mouth of this tube is closed by a stopper G, in which is inserted the tube H, the latter passing upward through the top and entering the reservoir I at the bottom thereof. The reservoir I is also cylindrical in shape and supported upon the brackets J, which are in turn supported by the filtering-tank, and the object of the reservoir-tank is for holding a supply of water after filtration. From the upper end of the reservoir-tank leads a pipe K, to which may be attached a faucet for drawing off the desired quantity of water from this tank. A pipe L leads to the filtering-tank and is provided with a valve M for controlling the inflow of water through this pipe to the tank, and this pipe is connected with the water-supply, and when water is admitted to this pipe through the filtering-tank the tank first becomes filled, after which the pressure of the supply will be maintained therein, and this pressure will cause the water to gradually percolate through the walls of the filtering-tube until said tube has also become filled, when further percolations of the water from the tank will cause the filtered water in the tube to pass upward through the tube H to the reservoir I, after which it may be withdrawn, as before described.

The filtering-tank is provided with a pipe N, leading from the bottom thereof, the passage in which is controlled by the valve O, and this pipe preferably connects with an ordinary drain-pipe, so that the tank may be emptied at any time by the opening of the valve O, and when this has been done said tank may be flushed and the sediment removed therefrom by permitting water to flow therein through the pipe L, and is a further means of cleansing the tank as well as the outer surface of the tube E. While tank A is emptying the filtered water from reservoir is passing in the reverse direction from the way it filters and loosens accumulations, which are washed away by a coil. The coil P, which is arranged around the upper portion of this tube, is provided with a number of perforations so arranged as to project small streams of water upon the tube, and water

is supplied to this coil through the pipe Q, which passes upward through the top C and is provided with a valve R for controlling the inlet of the water. From this it will be obvious that when the filtering-tank has been emptied by the closing of the valve M and the opening of the valve O the surface of the tube E may be thoroughly cleansed from impurities which have accumulated thereon by the action of the shower from the coil and the reverse flow of filtered water from inside of wall of tube through to the outside, thus destroying foundation for mud to cling to, these accumulations passing to the bottom of the tank and from thence through the pipe N to the drain.

At any time, should the filtering-tube E become clogged so that it is not possible to free it by the shower, or should from any cause it become otherwise disarranged, it may be removed from the filtering-tank and another substituted therefor.

It has been found in practice that water passed through a filter of this construction will be both mechanically and chemically pure as well as clarified.

While I have shown but one filtering-tube arranged within the tank it is obvious that any number of these tubes may be used, and for some purposes the increase in the number thereof is desirable.

Having thus fully described my invention, what I claim as new and useful is—

In combination, a tank A, a tube E composed of unglazed earthenware supported within said tank, a tube H inserted within the stopper of the tube E and leading upward therefrom, a top for closing the tank A, a reservoir I with which the tube H communicates, a pipe K for drawing the filtered water from the reservoir, a coil P arranged around the upper portion of the filtering-tube, said coil having small perforations therein for the projection of streams of water against the outer surfaces of the filtering-tube, a pipe Q leading to said coil, a pipe L leading to the interior of the tank, and a pipe N leading from the bottom of said tank, all arranged substantially as and for the purpose set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

WILLIAM P. ROBERTSON.

Witnesses:

S. S. WILLIAMSON,

P. ARTHUR BURKE.