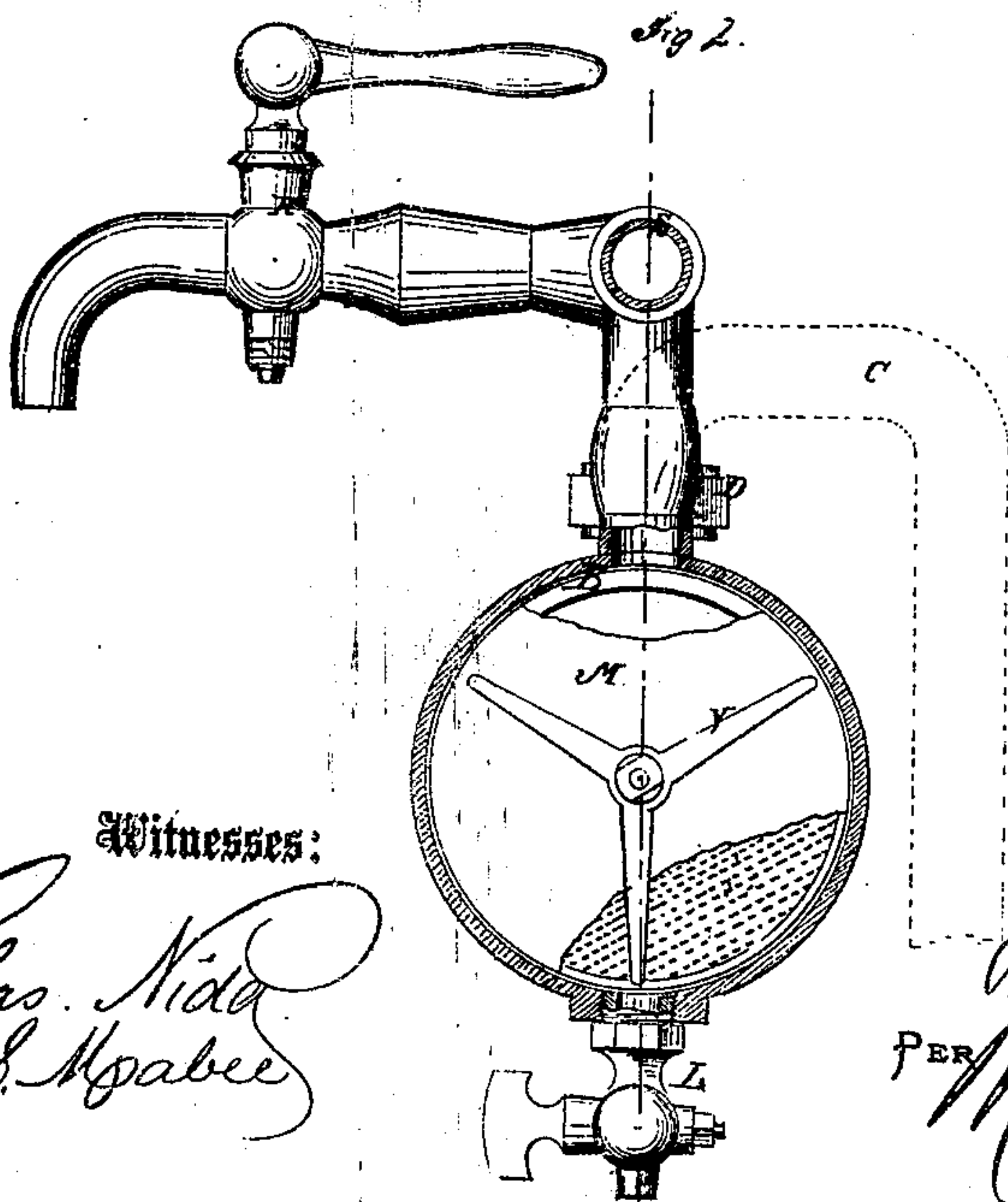
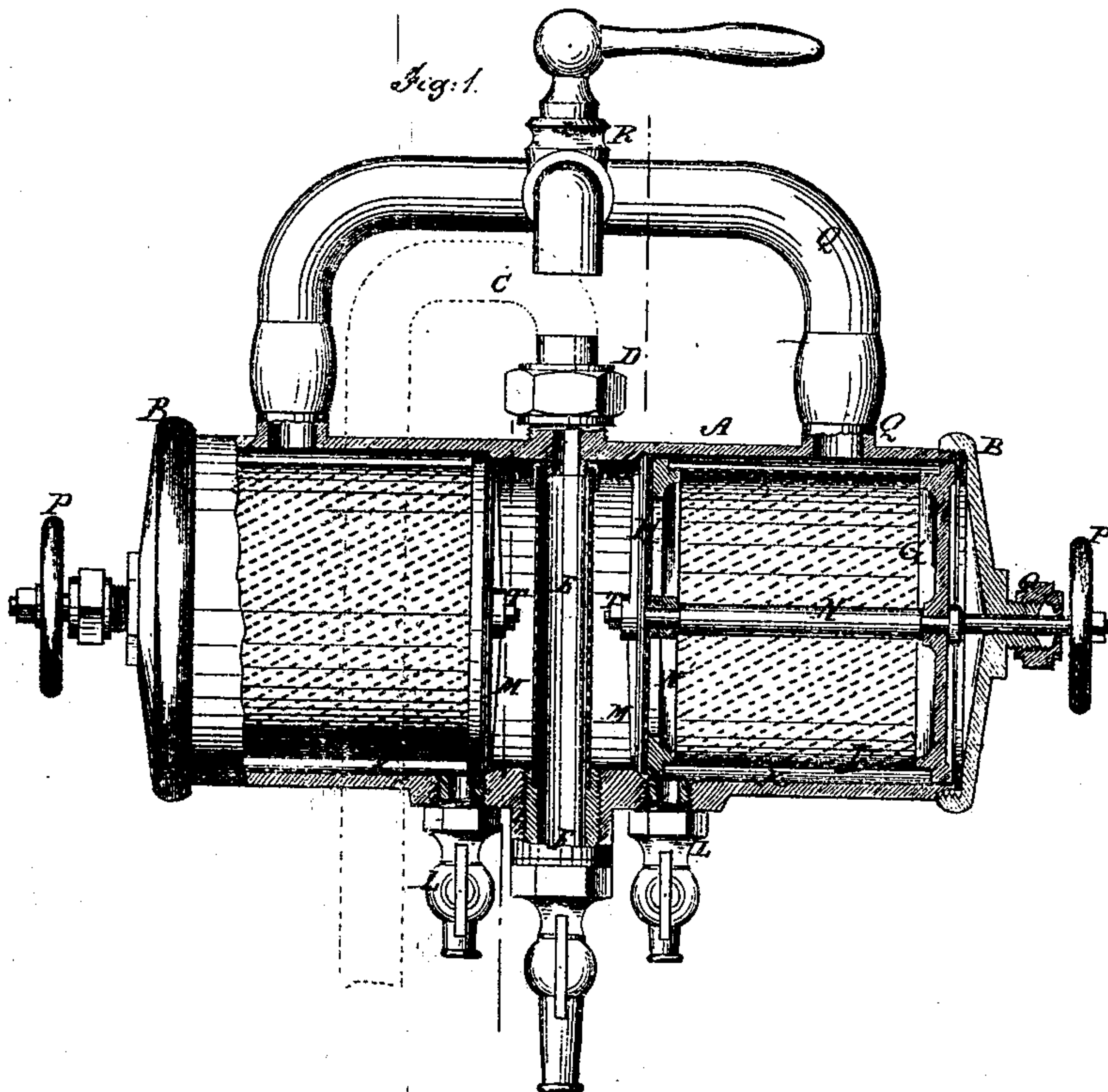


*J. W. Dougherty,*

*Filter.*

*No. 110217.*

*Patented Dec. 20. 1870.*



Witnesses:

*Chas. Nida*  
*L. S. Hooper*

Inventor:

*Joseph W. Dougherty*  
PER *Wm. H. W.*  
Attorneys.



# United States Patent Office.

JOSEPH W. DOUGHERTY, OF CHICAGO, ILLINOIS.

Letters Patent No. 110,217, dated December 20, 1870.

## IMPROVEMENT IN WATER-FILTERS.

The Schedule referred to in these Letters Patent and making part of the same.

*To all whom it may concern:*

Be it known that I, JOHN W. DOUGHERTY, of Chicago, in the county of Cook and State of Illinois, have invented a new and improved Water-Filter; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in that class of water-filters which are designed for attachment to the water supply-pipes, to filter the water as it is drawn therefrom.

It consists in the improved construction and arrangement hereinafter described, having for its object mainly to provide for readily cleaning or washing out the collections of matter separated from the water by the water flowing into it from the source, and by that which has passed through and is contained in the conducting-pipes above.

Figure 1 is a longitudinal sectional elevation of my improved filter, and

Figure 2 is a transverse section of the same.

Similar letters of reference indicate corresponding parts.

A is a short hollow cylinder or pipe, with screw-caps B fitting the ends snugly, to which (being preferably arranged horizontally) I attach the water supply-pipe C at the top D, where an opening is made through the shell into a perforated pipe E, which traverses the cylinder and connects with a discharging-nozzle, F, on the under side of the cylinder, having a stop-cock.

G represents cylindrical fitting-cases, having perforated inner ends H and sides I, which are inserted one at each end of cylinder A and extend to within a short distance from the pipe E.

They are smaller in diameter (except at the ends, which fit snugly) than the interior of cylinder A, whereby spaces K are provided within the perforated sides and the interior walls of said cylinder.

From these spaces discharging-nozzles L, with cocks, are arranged, to let the water flow out when required.

The inner ends of the cases G are covered with flannel, felt, or other substance, M, suitable for felting, and the interior spaces are to be filled with powdered charcoal or other substance.

These cases have central shafts N projecting through stuffing-boxes O in the ends, and provided with hand-wheels P; or it may be cranks or other devices for turning them, to shift the cases from time to time, to change the relation of the different parts with the discharge-pipes Q, to prevent the water being acted on by part only of the contents of the cases.

The said discharge-pipes lead from the upper side of the cylinder to the cock R and the conducting-pipe S, the latter for conveying it to other parts of the house.

The water entering the perforated pipe E will pass through it, the filtering cloths M, and the filtering substances in the cases G to the spaces K, from which it will escape to the pipe Q.

The matter accumulating in the pipe E and spaces I may be drawn or washed out at any time by opening the cocks of discharge-nozzles F L and allowing the water to flow directly through them under the force due to the height of the source.

But the matter accumulating in the space between pipe E and the cases G, also some of that deposited in the cases, may be washed out by shutting off the water in the supply-pipe and allowing the water in the pipes Q S to flow back through nozzle F.

The cases G may be taken out at any time, for inspection or repairs, by removing the screw-caps B, and they may be opened for renewing the filtering material by removing the perforated ends H and the pieces of cloth or felt M, which are secured to the shafts N and rings N' by the nuts T and forked washers V.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

1. The improved water-filter, consisting of the hollow cylinder A, perforated pipe E, fitting-cases G, the supply and exhaust-pipe connections, and the nozzles F and L, all combined, substantially as specified.

2. The cases G, and hollow cylinder A, arranged for removing and turning the cases, substantially as specified.

The above specification of my invention signed by me this 30th day of September, 1870.

JOSEPH W. DOUGHERTY.

Witnesses:

GEO. W. MABEE,  
T. B. MOSHER.