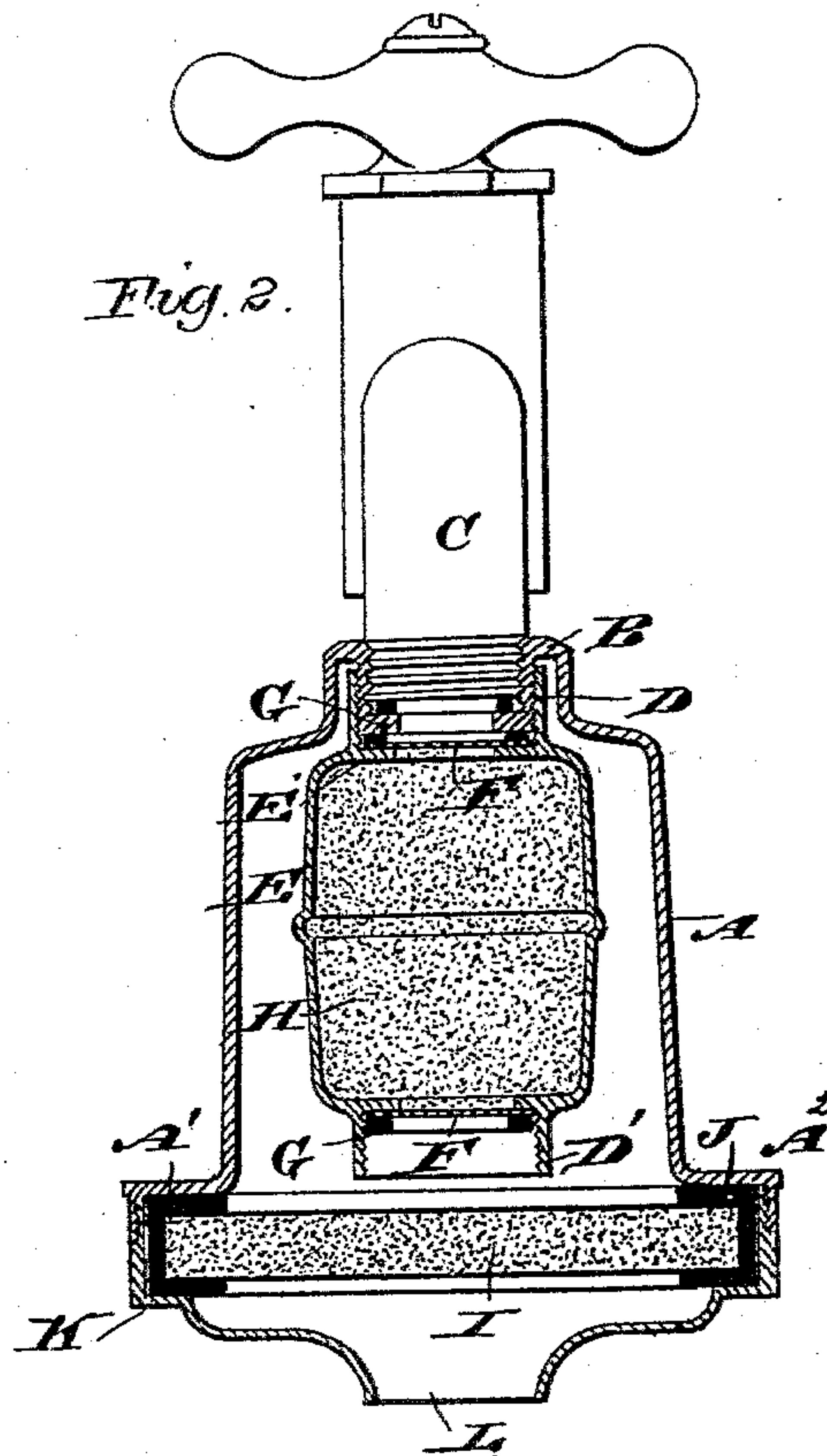
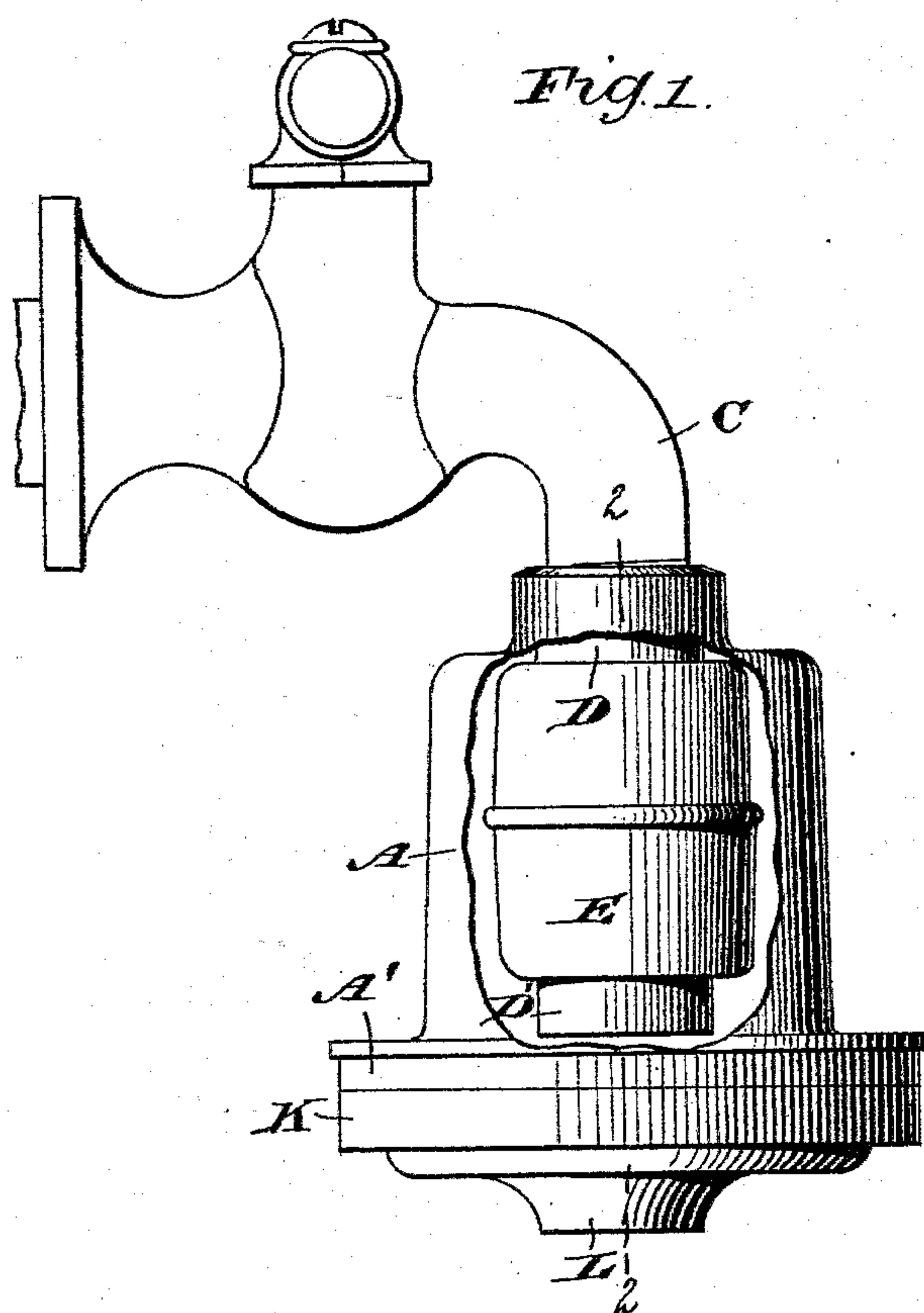


(No Model.)

J. H. BELLAMY.  
FILTER.

No. 494,837.

Patented Apr. 4, 1893.



WITNESSES:

*Paul J. Schatz*  
*C. Sedgewick*

INVENTOR

*J. H. Bellamy*  
BY *Munn & Co*

ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JOHN HENRY BELLAMY, OF NEW YORK, N. Y.

## FILTER.

SPECIFICATION forming part of Letters Patent No. 494,837, dated April 4, 1893.

Application filed May 2, 1892. Serial No. 431,407. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN HENRY BELLAMY, of New York city, in the county and State of New York, have invented a new and Improved Filter, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved filter which is simple and durable in construction, very effective in operation, more especially designed for domestic use, and arranged for convenient attachment to the water service, adapted to retain all impurities contained in the water and permit of readily cleaning the interior parts of the filter.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a side elevation of the improvement as applied and with parts broken out. Fig. 2 is a sectional front view of the same on the line 2—2 in Fig. 1.

The improved filter is provided with a casing A, preferably made of metal and formed at its upper end with an inwardly extending neck B, having interior and exterior screw threads, of which the interior threads are adapted to engage corresponding threads on the faucet C, of the water service. The exterior thread of the neck B is adapted to be engaged by a threaded neck D or D', formed at the ends of a filtering vessel E, of suitable size and extending into a compartment of the casing A.

In each of the necks D or D' of the vessel E is arranged a strainer F, seated on annular flanges E', formed in the top and bottom of the vessel E, and held in place on said flanges by rubber rings or gaskets G, fitted into the corresponding neck D or D'. The vessel E is filled between the flanges E' with a suitable filtering material H, preferably sand, charcoal, black oxide of iron, felt, or their equivalents.

The vessel E, forms a preliminary or primary filter, and is contained within the secondary or completory filter formed by the casing A, the porous stone I, and screw-cap

K. The said casing, A, is much larger than the filter, E, so that a large annular water-chamber is formed around the latter. The lower end of the casing diverges laterally as indicated at A and has a pendent flange A<sup>2</sup>, which is screw-threaded to adapt it for attachment of the removable screw-cap K, having the outlet L. The stone, I, is confined between such lateral extension of the casing, A, and screw-cap, K, a strip of india-rubber being interposed to form a water-tight joint. The width of the exposed surfaces of the stone, I, equals the interior diameter of the casing, A, and hence greatly exceeds that of the primary filter, E. This difference of dimension is necessary in order to obtain duly rapid filtration. In other words, the permeability of the stone, I, being less than that of said primary filter, its area requires to be correspondingly greater. When the faucet C is opened, the water from the water service passes into the preliminary filter held in the casing A by first passing through the top strainer F, then through the filtering material H and through the lower strainer F into and through the lower neck D', to be discharged into the compartment in the casing A and of which compartment the stone I is the bottom. The discharge of the water from the neck D' is directly above the stone I, and the water accumulating under pressure in the said compartment, filters through the said stone disk I into the cap K, to discharge from the latter through the opening L into the vessel intended to receive the filtered water. Thus it will be seen that the coarser impurities contained in the water from the water service are retained in the preliminary or primary filter, and this partially filtered water then filters through the stone disk I which latter prevents the passage of any germs, bacteria, or other finer impurities contained in the water. By thus retaining the coarser impurities in the preliminary filter and only filtering this partially filtered water through the disk I, the latter is not liable to clog up quickly, as would otherwise be the case if the coarser impurities should pass directly upon the disk I.

It is apparent that the casing, A, with the porous stone, I, and screw-cap K, constitutes a filter whose function is a completory one, as



related to the inner filter E. By detaching the screw-cap, K, the stone, I, may be readily removed and cleaned. When removed, the lower end of the casing is open, and the space  
5 between it and the filter E, allows ready access to the latter, which may be then easily unscrewed and reversed in position for the purpose of cleaning it—as is well understood.

Having thus described my invention, I  
10 claim as new and desire to secure by Letters Patent—

1. In a filter, the combination with a casing formed at its upper end with a neck for connection with the water supply, of a filtering  
15 stone forming the bottom for the said casing and a vessel containing a filtering material and open at both ends either of which is adapted to screw on the said neck to suspend the said vessel within the said casing at the  
20 same time connecting the vessel with the water supply whereby the entering water first filters through the vessel into the casing and then the partly filtered water filters finally through the stone, substantially as described.

25 2. In a filter, the combination with a casing provided at one end with a neck for connection with the water supply and at its other

end carrying an apertured cap, of an interior filtering vessel open at both ends and adapted to be secured with either end on the said neck  
30 within the said casing and a filtering stone held in the said cap and forming with the said casing a preliminary filtering compartment into which discharges the said filtering vessel, substantially as shown and described. 35

3. The combination with the reversible, open-ended, primary filtering vessel, E, having a screw-neck at each end, of the inclosing, complementary filter composed of the enlarged casing A, having the inwardly-projecting  
40 screw-neck at its upper end and the laterally-divergent portion A' and pendent flange A<sup>2</sup> at its lower end, the detachable screw-cap K, and removable porous stone I, having an exposed upper surface which coincides with the diameter of the enlarged casing  
45 and thus exceeds the diameter of the primary filter, as shown and described, for the purpose specified.

JOHN HENRY BELLAMY.

Witnesses:

THEO. G. HOSTER,  
C. SEDGWICK.