

(No Model.)

2 Sheets—Sheet 1.

L. BRANDEIS.
FILTER.

No. 574,779.

Patented Jan. 5. 1897.

Fig: 1.

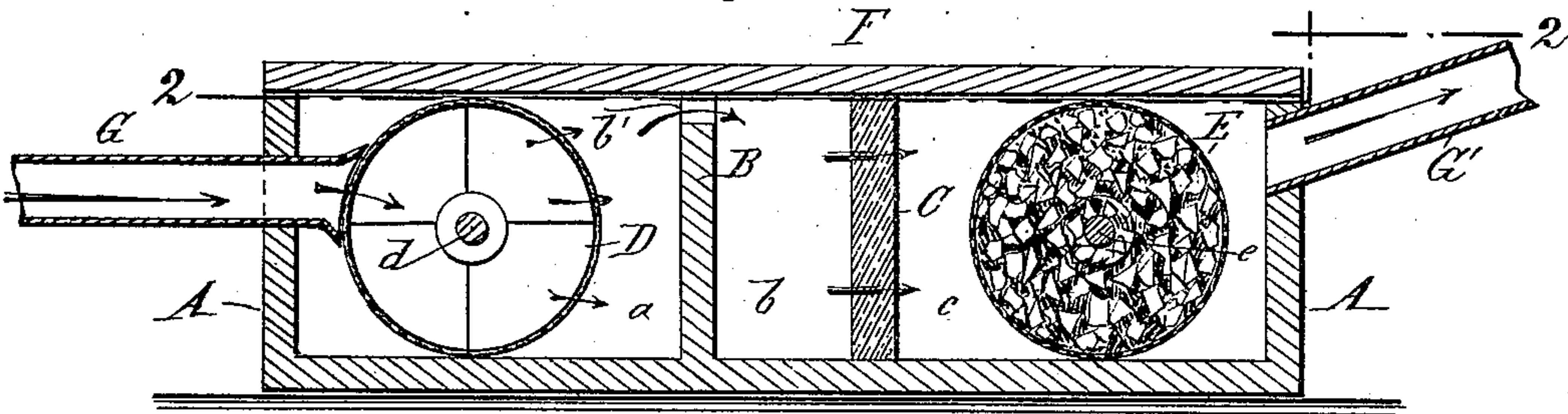
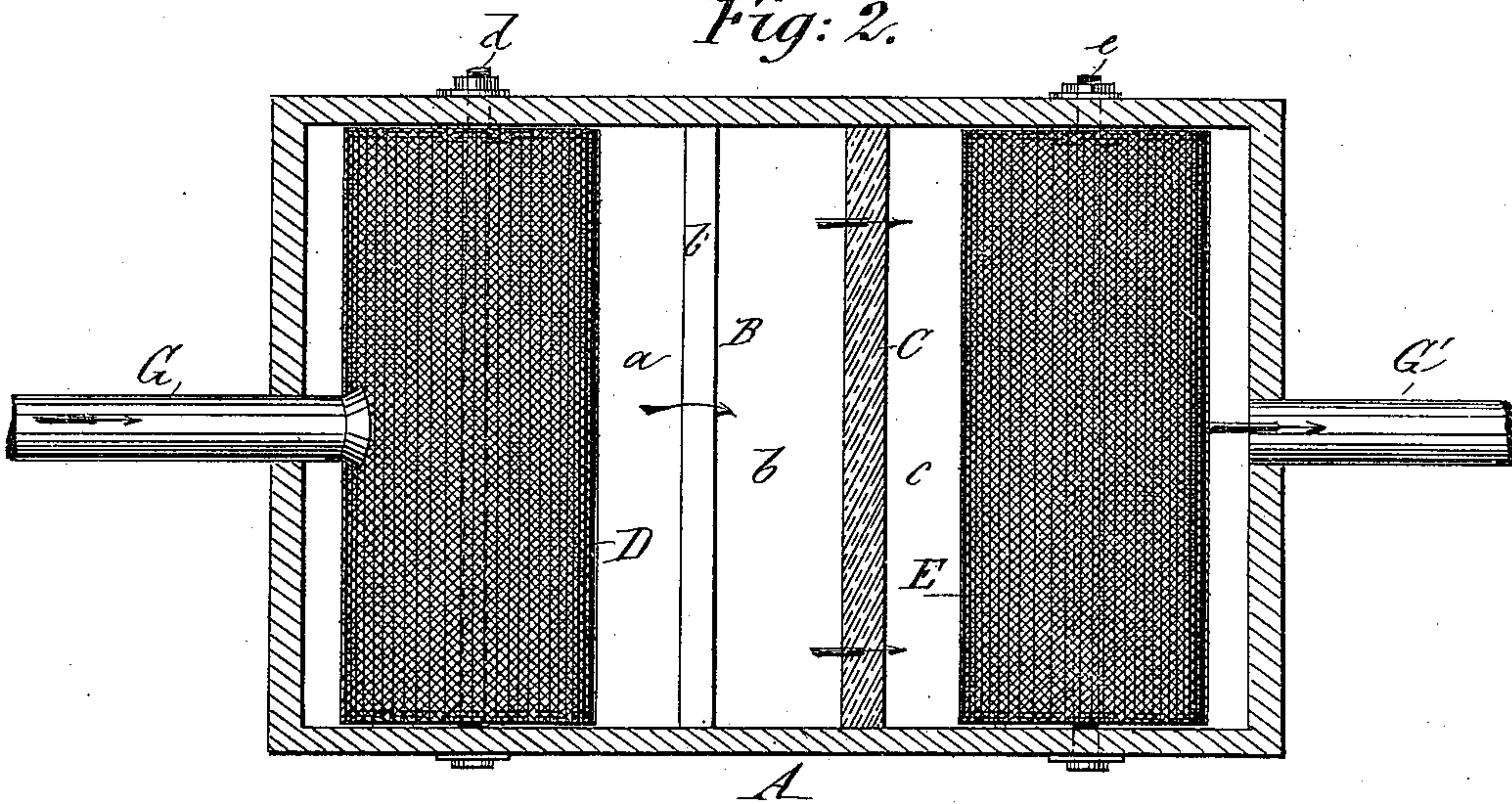


Fig: 2.



WITNESSES:

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INVENTOR

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BY *Charles Kay*
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(No Model.)

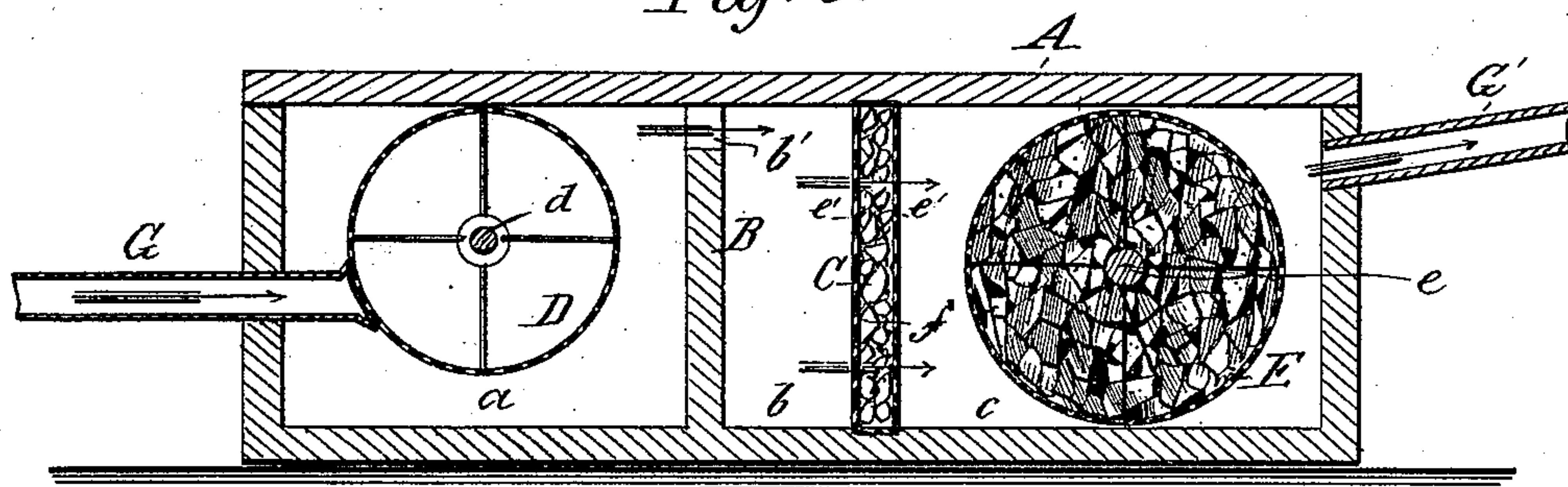
2 Sheets—Sheet 2.

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Fig: 3.



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UNITED STATES PATENT OFFICE.

LOUIS BRANDEIS, OF BROOKLYN, NEW YORK, ASSIGNOR TO FANITA M. BRANDEIS, OF SAME PLACE, AND CHARLES T. STRAUSS, OF NEW YORK, N. Y.

FILTER.

SPECIFICATION forming part of Letters Patent No. 574,779, dated January 5, 1897.

Application filed September 28, 1896. Serial No. 607,248. (No model.)

To all whom it may concern:

Be it known that I, LOUIS BRANDEIS, a citizen of the United States, and a resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Filters, of which the following is a specification.

My invention has reference to improvements in filters used for water-pipes, and has the objects, first, to purify the water conducted through the filter, and, second, to impart to the water by the appliance of suitable chemicals a certain amount of oxygen or a required flavor. This is attained by the construction shown in the accompanying drawings, in which—

Figures 1 and 3 are vertical sections of my filter, and Fig. 2 is a section on line 2 2 of Fig. 1.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a box of metal, artificial stone, or any other material, which is divided into three compartments *a b c* by vertically-traversing partitions B and C, of which the partition B may be integral with the box or may be of any solid material, and the partition C consists of porous natural or artificial stone or of perforated sheets *e' e'* of non-corrosive material and gravel, granulated charcoal, or other filtering material *f*, by which the space between the said perforated sheets is filled up, as shown in Fig. 3.

The partition B has on its top an opening *b'*. In the chambers *a* and *c* wheels or cylinders D and E, respectively, are located, to the ends of the radial blades or wings of which a covering of non-corrosive wire-gauze, perforated sheet metal, or any other perforated material is applied, so that thereby revoluble cylinders are obtained which revolve on their axles or shafts *d* and *e*, having their bearings in the end walls of the box or case.

The wheel or cylinder E is filled with carbonized sponge saturated in any approved manner with oxygen. Instead of the sponge saturated with oxygen any other oxygen-containing materials or chemicals may be used. The box or case of my filter is placed between the ends of the water-conducting pipes *G G'*, so that the inlet-pipe *G* enters the compart-

ment *a*, and the outlet-pipe *G'* is connected with the compartment *c*.

The water in entering the compartment *a* is forced upon the perforated cylinder or wheel D and by its pressure upon the radial blades or wings of the wheel causes the said cylinder or wheel to revolve on its axle or shaft, while the netting or perforated body of the same retains the dirt or other gross particles contained in the water. The rotation of the cylinder or wheel D, which thus acts as a separator, causes such particles to be deposited on the bottom of the compartment, for which purpose a space is left between the wheel or cylinder D and the bottom of the box or case, as shown in Fig. 3, and the water, thus freed from dirt and other gross particles, flows through the top opening *b'* of the partition B into the compartment *b*. From here it is forced by its own pressure through the porous partition C, which retains further noxious ingredients which were not separated from the water by the previous action of the revolving cylindrical separator D, so that the water enters the compartment *c* in a more purified condition. It is a fact that the water conducted through metal pipes loses a certain quantity of its oxygen in solution or suspension therein. To recharge the water with the lost oxygen is the object of the second wheel or cylinder E, which is filled with oxygen-containing ingredients, as said before. The water entering the said chamber *c* passes into and through the perforated cylinder or wheel E and absorbs a certain quantity of oxygen contained in the same, while the chemical contents of the cylinder consume or destroy all spores, bacteria, &c., contained in the water, so that the water enters the outlet-pipe *G'* in a chemically-pure state. The pressure of the water entering the compartment *c* and the suction of the outlet-pipe *G'* also cause the cylinder or wheel E to revolve, and the simultaneous revolutions of both cylinders or wheels D and E create an even flow of the water through the filter.

After a certain time of use of the filter the cover F of the same may be removed and the cylinders or wheels and compartments cleaned for further use.

It is evident that the filter may also be used

for other fluids and the cylinder filled with ingredients to impart to such fluids a certain flavor or perfume.

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

1. A filter consisting of a box having compartments formed by partitions, one partition being provided with a top opening and the other partition being of porous material, and a revoluble wheel or perforated cylinder in the first compartment having the partition with the top opening, in combination with a fluid-conducting inlet and outlet pipe, substantially as set forth.

2. A filter consisting of a box having three compartments formed by partitions, one partition being provided with a top opening and the other being of porous material, a revoluble wheel or perforated cylinder in the compartment having the partition with the top opening, and a revoluble perforated cylinder containing chemicals for the purpose de-

scribed, in the third compartment, in combination with a fluid-conducting inlet and outlet pipe, substantially as set forth.

3. A filter consisting of a box having three compartments formed by partitions, one partition being provided with a top opening and the other partition consisting of perforated sheets filled up with filtering material, a revoluble wheel or perforated cylinder in the first compartment having the partition with the top opening and a revoluble perforated cylinder containing chemicals, for the purpose described, in the third compartment, in combination with fluid-conducting inlet and outlet pipes, substantially as set forth.

Signed at New York, in the county and State of New York, this 12th day of September, A. D. 1896.

LOUIS BRANDEIS.

Witnesses:

CHAS. KARP,
H. B. DAVIES.