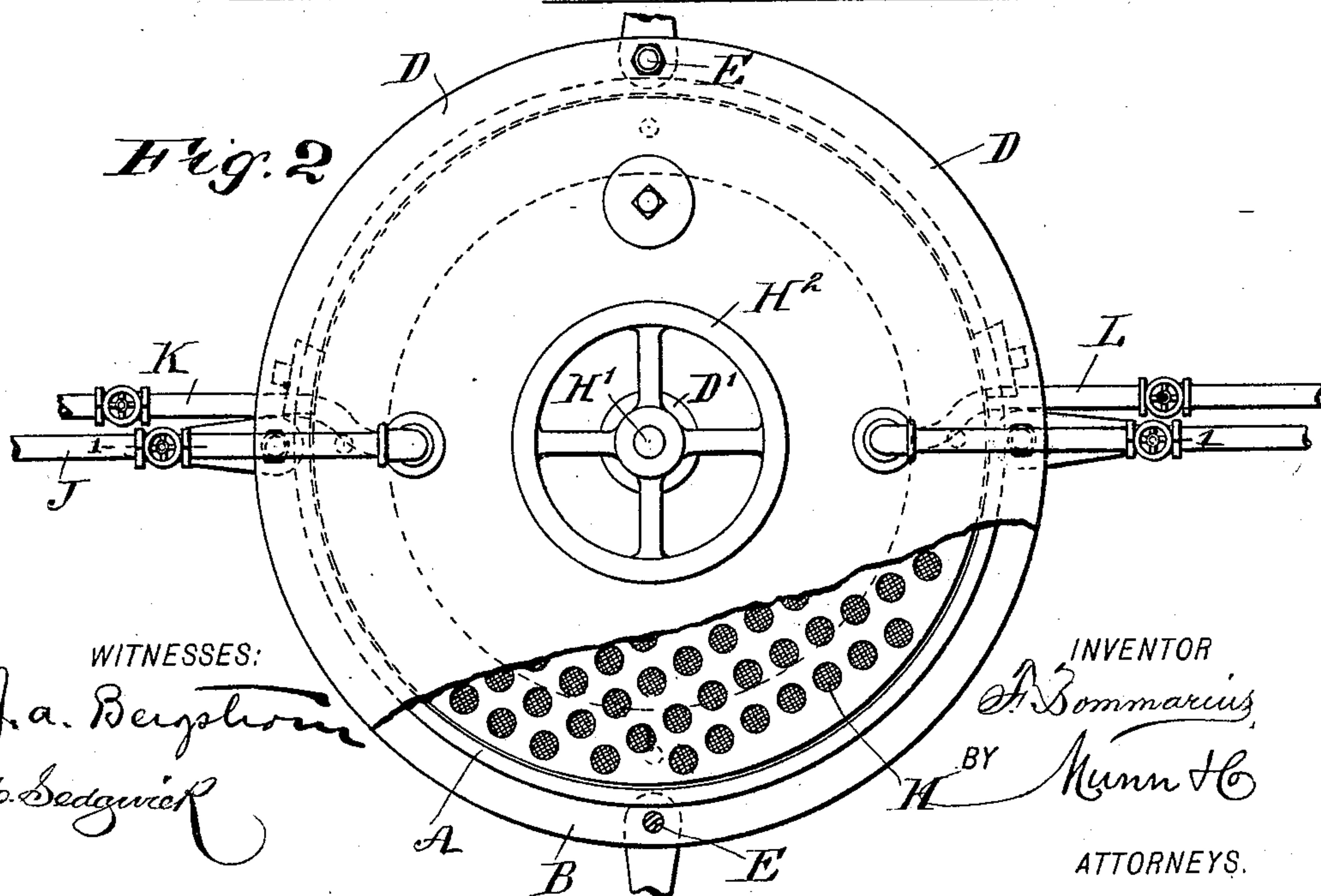
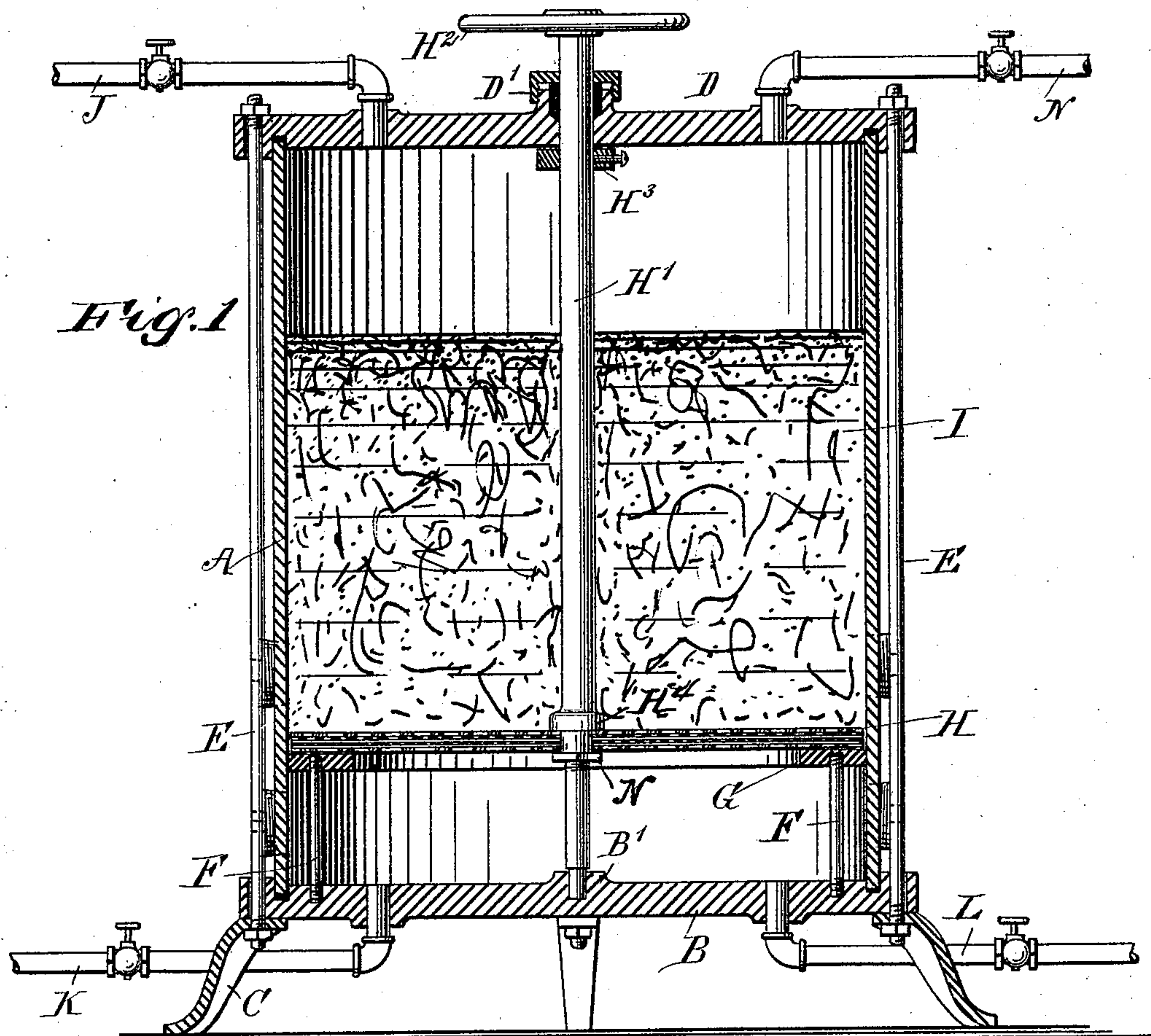


(No Model.)

F. BOMMARIUS.
FILTER.

No. 519,565.

Patented May 8, 1894.



WITNESSES:

J. A. Bergstrom
C. Sedgwick

INVENTOR

F. Bommarius

BY Kunn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

FREDERICK BOMMARIUS, OF NEW ORLEANS, LOUISIANA.

FILTER.

SPECIFICATION forming part of Letters Patent No. 519,565, dated May 8, 1894.

Application filed August 25, 1893. Serial No. 484,028. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK BOMMARIUS, of New Orleans, in the parish of Orleans and State of Louisiana, 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, designed for high or low liquor pressure, more especially designed for filtering water used for drinking and other purposes, and arranged to permit of conveniently and thoroughly cleaning the filtering material whenever necessary.

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

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 sectional side elevation of the improvement on the line 1—1 of Fig. 2; and Fig. 2 is a plan view of the same, with parts broken out.

The improved filter is provided with a casing A, preferably made cylindrical and closed at its lower end by a head B, provided with legs C for conveniently supporting the filter on a table or other suitable support. The upper end of the casing A is closed by a head D connected by screw bolts E within the lower head B, so as to hold the heads securely to the casing.

On the lower head B are secured upwardly-extending rods F, carrying at their upper ends a ring G arranged a suitable distance above the head B within the casing A and at the interior surface thereof. On this ring G is seated a revoluble screen H, preferably made of two perforated plates with a wire netting between the same. The screen H is secured on a shaft H', arranged centrally within the casing A and mounted to turn with its lower end in a step B' formed on the upper surface of the lower head D. The screen H may be removed from the shaft, as it is held between a collar H⁴ formed on the shaft, and a jam nut N engaging a screw-threaded portion of the shaft. The upper end of the shaft

H' extends through a suitable stuffing box D', arranged on the upper head D, and on the outer end of the said shaft H' is secured a hand wheel H² for conveniently turning the said shaft and the screen H secured to the shaft. On the shaft H' is also secured, by a set screw, a collar H³, abutting against the under side of the upper head B, so as to prevent the screen H from being unseated on the ring G, in case of an upward pressure on the under side of the screen. The filtering material I is placed in the upper part of the casing A so as to rest on the screen H, as plainly shown in the drawings. The water to be filtered is passed through a valved pipe J, into the upper end of the casing A, the said pipe passing through the head D; a valved pipe K leading from the lower head B serves to withdraw the filtered water from that part of the casing extending between the head B and the ring G and screen H. In order to clean the filtering material, I provide a valved pipe L, leading into the lower part of the casing A, through the head B, and a valved pipe N leads from the upper part of the said casing and is connected with the head D. When the several parts are in the position shown in the drawings, and the valves in the pipes L and N are closed and the valves in the pipes J and K are open, then the water to be filtered, flows through the pipe J into the casing A and filters through the material I and the screen H into the lower part of the casing A, to finally pass, in a filtered condition, out of the casing through the pipe K. When the filtering material I becomes filled with impurities and it is necessary to wash the filter, then the valves in the pipes J and K are closed and the filtering process is temporarily interrupted. The pipes L and N are then opened so that the water flows through the pipe L into the lower part of the casing A through the screen H and filtering material I, to finally pass out through the pipe N, carrying along the impurities contained in the filtering material. In order to agitate the filtering material I while this process of washing is going on, the operator turns the hand wheel H² so as to revolve the screen H, thereby causing the loosening of the filtering material I and the breaking up of the germs previously formed during the process of filtering

the water. By this arrangement the entire filtering material will be broken up so that the water can readily wash the filtering material and remove the impurities which will flow out with the water through the pipe N. When the filtering material has been sufficiently cleaned, the valves in the pipes L and N are again closed, so that the filtering material again settles in the casing A, resting on the screen H. When the valves in the pipes J and K are again opened, then the process of filtering the water again proceeds, as above described.

It will be seen that the operator can conveniently and readily agitate the filtering material during the process of washing by revolving the screen H, so that all the impurities are rapidly removed and the filter is properly cleaned.

Having thus described my invention, I

claim as new and desire to secure by Letters Patent—

A filter, comprising a casing provided with inlets and outlets, a shaft journaled in bearings at the top and bottom of the casing, and provided with a collar and a screw-threaded portion, a screen adapted to removably fit on the shaft, a jam nut adapted to engage the threaded portion of the shaft to press the screen against the collar so as to compel the screen to rotate with the shaft, and a stationary ring held in the casing a suitable distance above the bottom to form a seat on which the marginal portion of the screen is adapted to slide during its rotation, substantially as described.

FREDERICK BOMMARIUS.

Witnesses:

JNO. J. WARD,
CHAS. M. HERO.