J. H. CLARK.

FILTER.

APPLICATION FILED OCT. 4, 1909.

969,245. **Patented Sept. 6, 1910.**

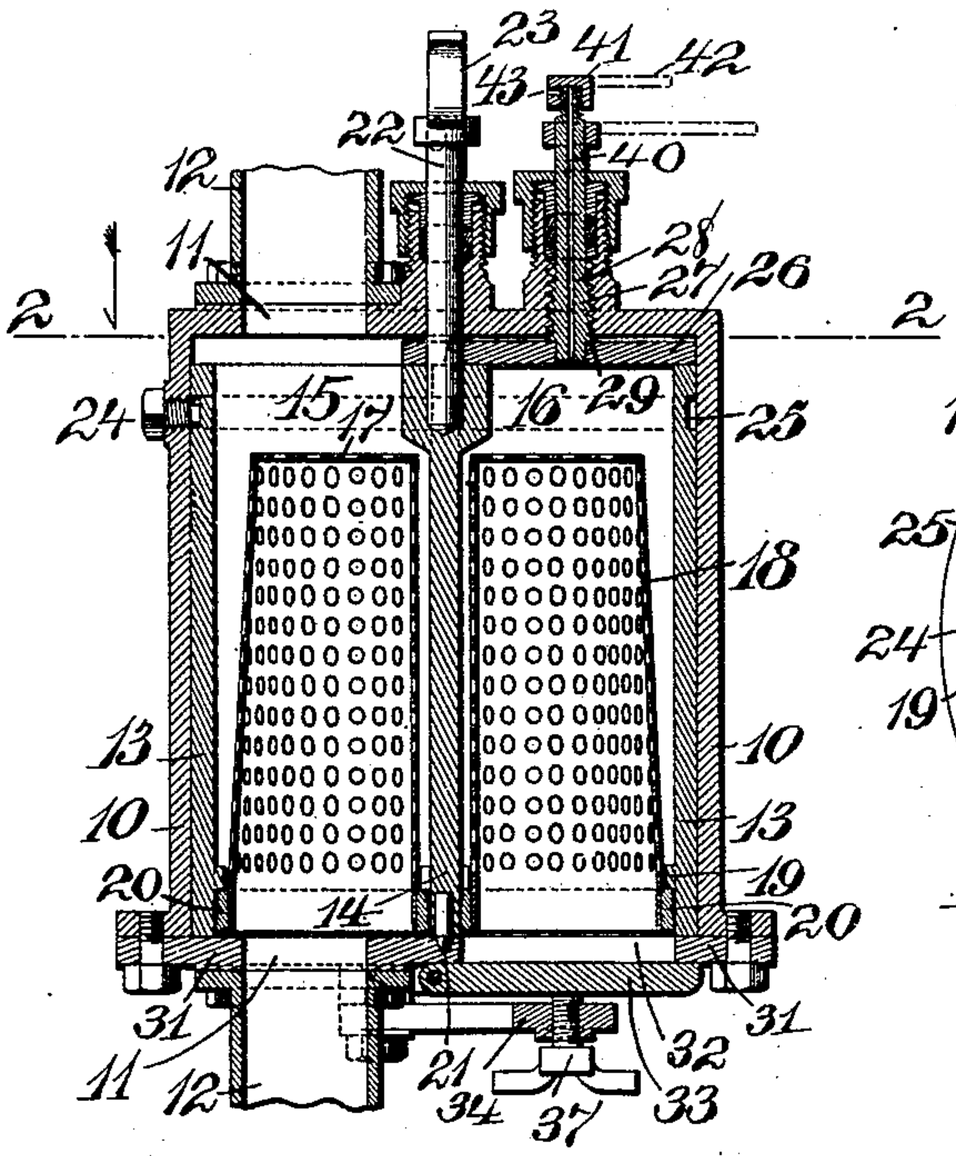

Fig. 1

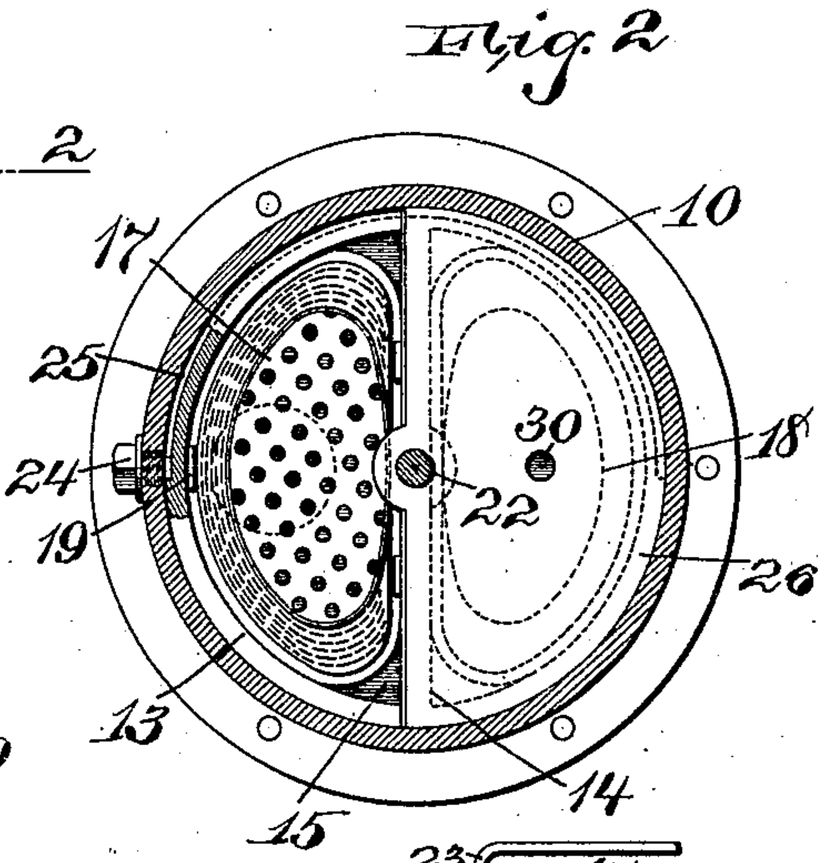

Fig. 2

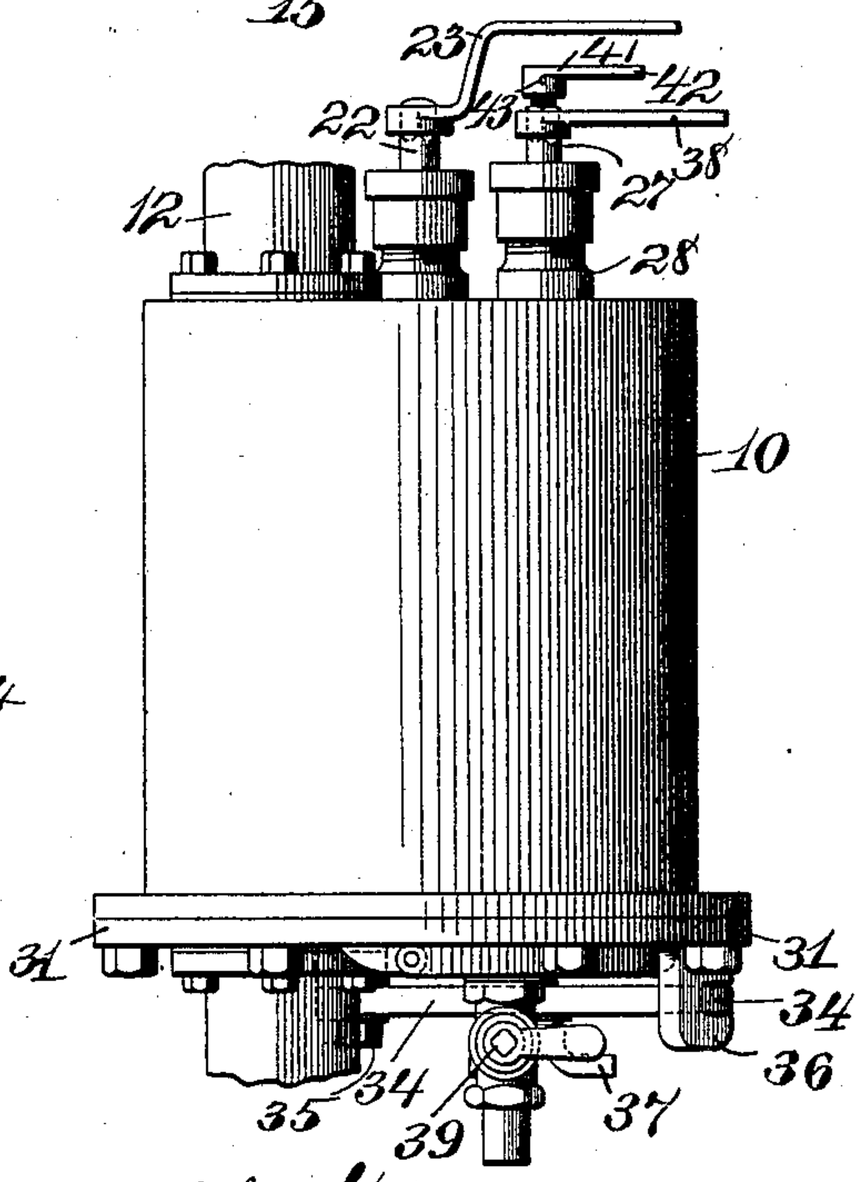

Fig. 4

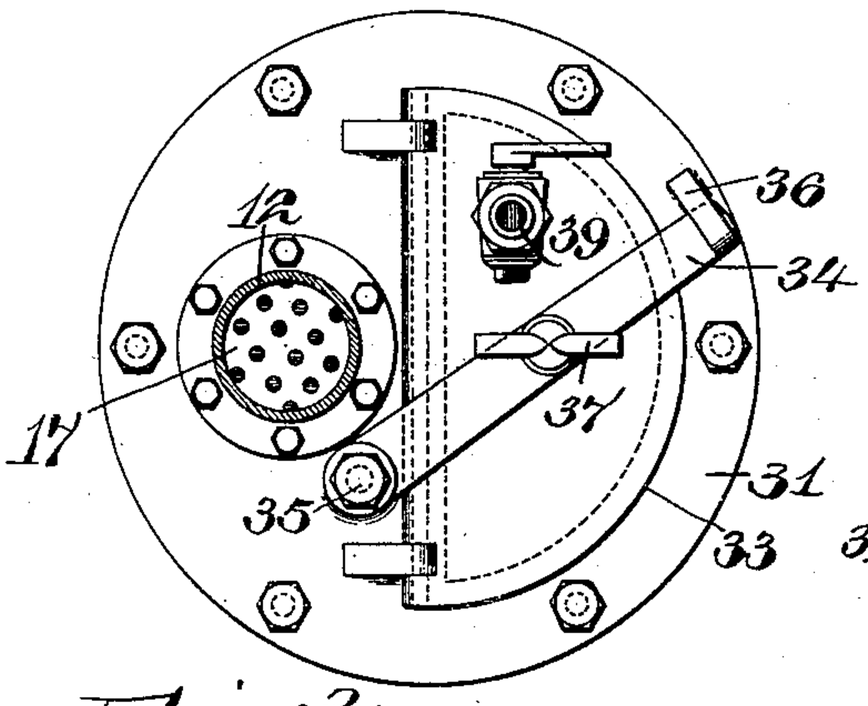

Fig. 3

WITNESSES:

E. A. Pell

M. A. Johnson.

INVENTOR

Joseph H. Clark,

BY

Wm H Caulfield.

ATTORNEY

UNITED STATES PATENT OFFICE.

JOSEPH H. CLARK, OF NEWARK, NEW JERSEY.

FILTER.

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To all whom it may concern:

Be it known that I, JOSEPH H. CLARK, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Filters; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to a filter that can be cleaned without shutting off the water from the line of pipe in which the filter is situated, and provides a revolving basket-holder so that the baskets used for filtering, or any other similar device used for filtering, can be successively placed in the current of fluid passing through the pipe line, and when removed from this current they are shut off therefrom so that they can be cleaned without interrupting the flow of fluid.

The device comprises a casing in which the revolving basket-holder or sleeve is mounted, the casing having external means for revolving the basket-holder, and also embodies means for closing the compartment, in which the basket when in the current of the fluid is placed, from the fluid itself whereby it can be drained and then opened and cleaned of any accumulated deposits from the water or other fluid passing through the filter.

The invention is illustrated in the accompanying drawing, in which—

Figure 1 is a vertical section of a filter of my improved construction connected to a line of pipe. Fig. 2 is a section on line 2, 2, in Fig. 1. Fig. 3 is a bottom view of the filter, and Fig. 4 is a side view of the same.

The filter consists of a cylindrical casing 10 which is provided at one side with openings 11 which are preferably in line and are adapted to be connected to the pipe 12 by bolting a flange pipe to the casing, or by any other means. Within the casing is a sleeve 13 which fits in the casing 10 and is rotatably arranged therein, and is divided diametrically by a partition 14 to form two chambers 15 and 16, each of which contains its respective basket 17 and 18, these baskets being perforated or of any usual style adapted to filter the water or other fluid passing from one pipe 12 to the other and through the filter. In the drawing the basket 17 is arranged between the pipes 12 and is the one that is engaged in the filtration, the other basket 18 being in a position to have the chamber 16 emptied and opened to allow the basket to be thoroughly cleaned. The baskets are substantially semi-cylindrical and fit on one side against the partition 14 and on the other side against the outer edge of the sleeve 13, the sleeve having lugs 19 to engage the flanges 20 on the rims of the baskets to limit the inward movement of the baskets in the chambers of the sleeve. A pin 21 is arranged in the bottom of the partition 14 to form a bearing for the sleeve, and the sleeve is provided with a stem 22 to which is attached a handle 23 whereby the sleeve can be swung around. The rotation of the sleeve 13 is limited by the screw 24 which projects through the casing and fits into a slot 25 shown more particularly in Fig. 2, which slot extends half way around the sleeve, and when either of its ends engages the screw 24 the partition 14 is in a position to place one of the chambers, with its basket, in line with the pipes 12.

On the opposite side of the casing from the pipes 12 is a plate 26 which is semi-circular in shape and fits over one chamber of the sleeve 13 so that when the screw 27 is screwed down through the stuffing box 28, the shoulder 29 bears on the perforation 30 in the plate 26 and the plate is forced down on the top edge of the sleeve 13, which in turn tightly forces the sleeve itself down against the bottom plate 31 so as to shut off all water or other fluid passing from one pipe 12 to the other and through the chamber 15 so that none of it can pass into the chamber 16 or vice versa, if the sleeve is turned around for a half turn. In the bottom plate, and on the same side of the casing as the top plate 26, is an opening 32, and the bottom plate 31 has a cover 33 arranged to be placed over the opening 32. The cover can be held in place by a number of different mechanical expedients, but I prefer to use a bar 34 pivoted at 35 to the bottom plate and being adapted to be swung into and out of engagement with a hook 36 on the bottom plate, and a screw 37 passes through the bar 34 and can be screwed up tight against the

cover 33 to make the same water tight. Suitable gaskets can be employed if necessary.

If the basket in use is to be cleaned the screw 28 is unloosened, by reason of its handle 38 being turned, which relieves the pressure from the plate 26 in the top of the sleeve, and the handle 23 is swung to bring the basket that has been used around over the opening 32 and the basket previously not in use is placed where it will receive the current passing from one of the pipes 12 to the other. The handle 38 is again turned to clamp the plate 26 down on the top of the sleeve, and the basket previously used is now cut off from the current of fluid, but is filled with the fluid. To drain the chamber with the basket to be cleaned therein, I provide a valve 39 which permits the fluid to run out and it can be conducted by a pipe to any suitable point, or it can be caught in a proper receptacle underneath the filter. To permit the emptying of the chamber through the outlet valve 39 I provide a vent 40 by placing a perforation from one end of the screw 28 to the other, whereby one end of it opens into the chamber under the plate 26, and the other end is covered by a cap 41 having a handle 42 thereon and being perforated as at 43 so that when the handle 42 is swung around the venting of the chamber underneath the plate 26 is permitted and the flow of the fluid from the chamber begins. When the chamber is empty of fluid the screw 37 is unloosened and then the bar 34 is swung so as to permit the cover 33 to be opened and the basket can be thoroughly cleaned, it being possible to remove the basket from the chamber, if necessary, to thoroughly air and dry the same and subject it to a complete washing. It will be seen that at no time is it necessary to shut off the fluid supply, and the baskets can be changed to place them in and out of service without in the least interfering with the supply passing through the pipes 12.

I illustrate two baskets in the casing, and it is thought that that number is sufficient, but it will be understood that I may use more baskets by supplying each with a corresponding number of chambers and arranging to place them into or out of register with the pipes in the system.

Having thus described my invention, what I claim is:—

1. A filter comprising a casing having pipe openings on one side, a sleeve arranged to rotate in the casing, a partition in the sleeve forming chambers, a basket in each chamber, means for rotating the sleeve, a plate for the sleeve except for the portion containing the basket to receive the current between the pipe openings, means for forcing the plate on the sleeve from the exterior of the casing, the casing having an opening to uncover a basket in the chamber closed by the plate, and a cover for the opening.

2. A filter comprising a casing having pipe openings on one side, a sleeve arranged in the casing, a partition in the sleeve, baskets in the partitions, a plate, means for forcing the plate onto the sleeve and for relaxing the pressure thereon, a rod projecting from the sleeve through the casing, means on the rod for its manual manipulation, the casing having an opening through which a basket can be withdrawn, a lid for the last mentioned opening, means for securing the lid, and an outlet valve for draining the chamber closed by the lid.

3. A filter comprising a casing, a sleeve arranged to rotate in the casing, a partition in the sleeve to divide the sleeve into chambers, baskets arranged in the chambers, the casing having pipe openings on one side, a plate on the side of the sleeve opposite the pipe openings, manually operated means on the exterior of the casing for preventing the rotation of the plate and to force the same toward the sleeve, the forcing means having a vent passing through, means for operating the sleeve from the exterior of the casing to rotate the sleeve, the casing having an opening beneath the plate, a cover for the opening, means for securing the cover, and an outlet valve for draining the chamber confined between the cover and the plate.

4. A filter comprising a casing having pipe openings on one side, a sleeve rotatably arranged in the casing, a rod projecting from the sleeve and through the casing for rotating the sleeve, a partition in the sleeve to form chambers, baskets in the chambers, a plate to fit on the sleeve to cover the sleeve except for the basket adapted to receive the current between the pipe openings, the plate having a perforation therein, a screw in screw-threaded engagement with the casing having a shoulder to fit on the plate and a reduced portion to fit the perforation in the plate, the screw having a longitudinal vent, a cover for the vent, a handle for rotating the screw, the casing having an opening in its bottom beneath the plate, a cover for the last mentioned opening, a bar pivoted to the casing adapted to swing thereon, a hook for receiving the end of the swinging bar, a screw on the bar adapted to bear on the cover, and an outlet valve in the cover.

In testimony, that I claim the foregoing, I have hereunto set my hand this 2nd day of October 1909.

JOSEPH H. CLARK.

Witnesses:
E. A. Pell,
Wm. H. Camfield.