

A. B. BELLIS.
WATER FILTER.
APPLICATION FILED NOV. 4, 1908.

967,708.

Patented Aug. 16, 1910.

FIG. 1--

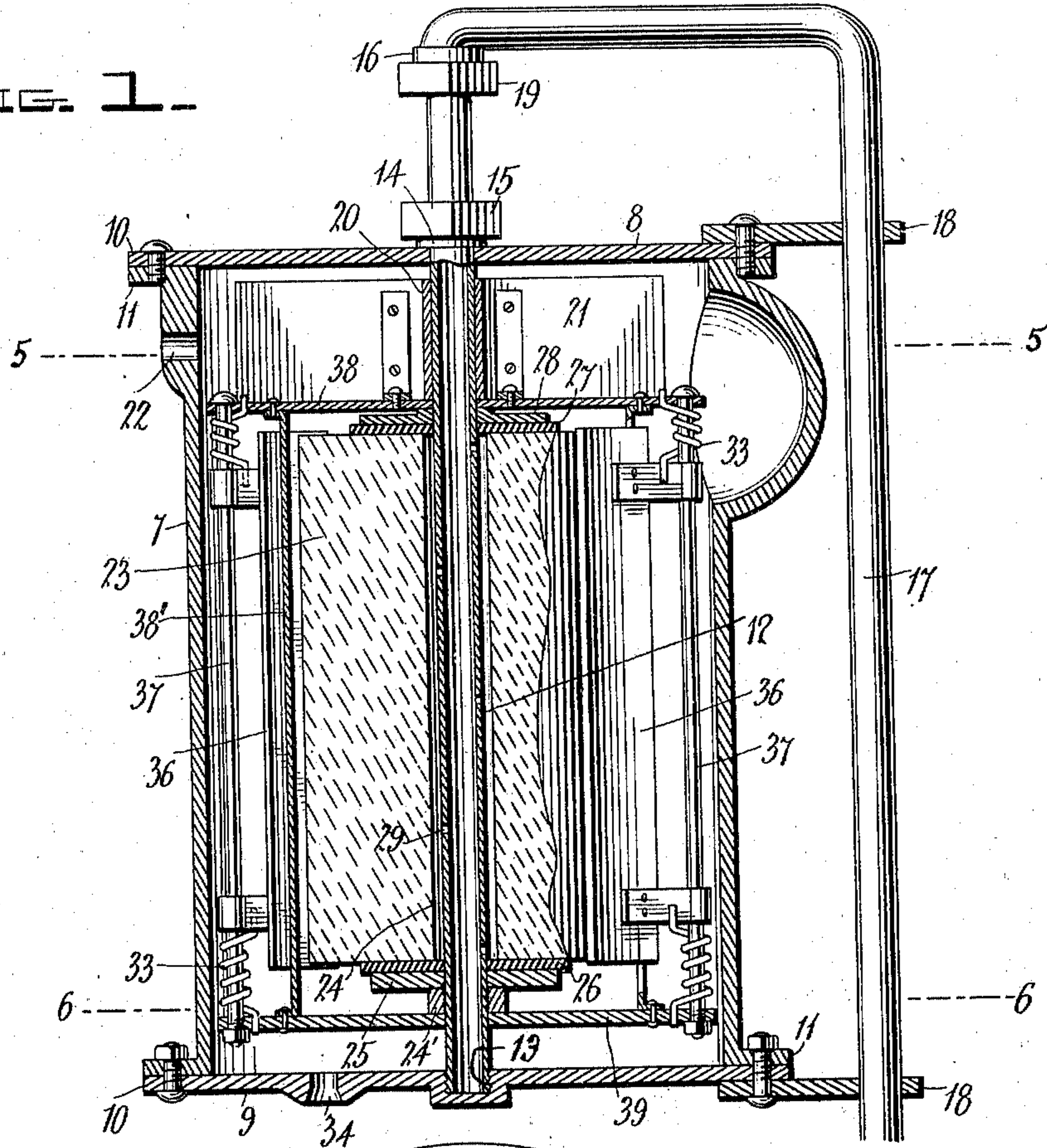
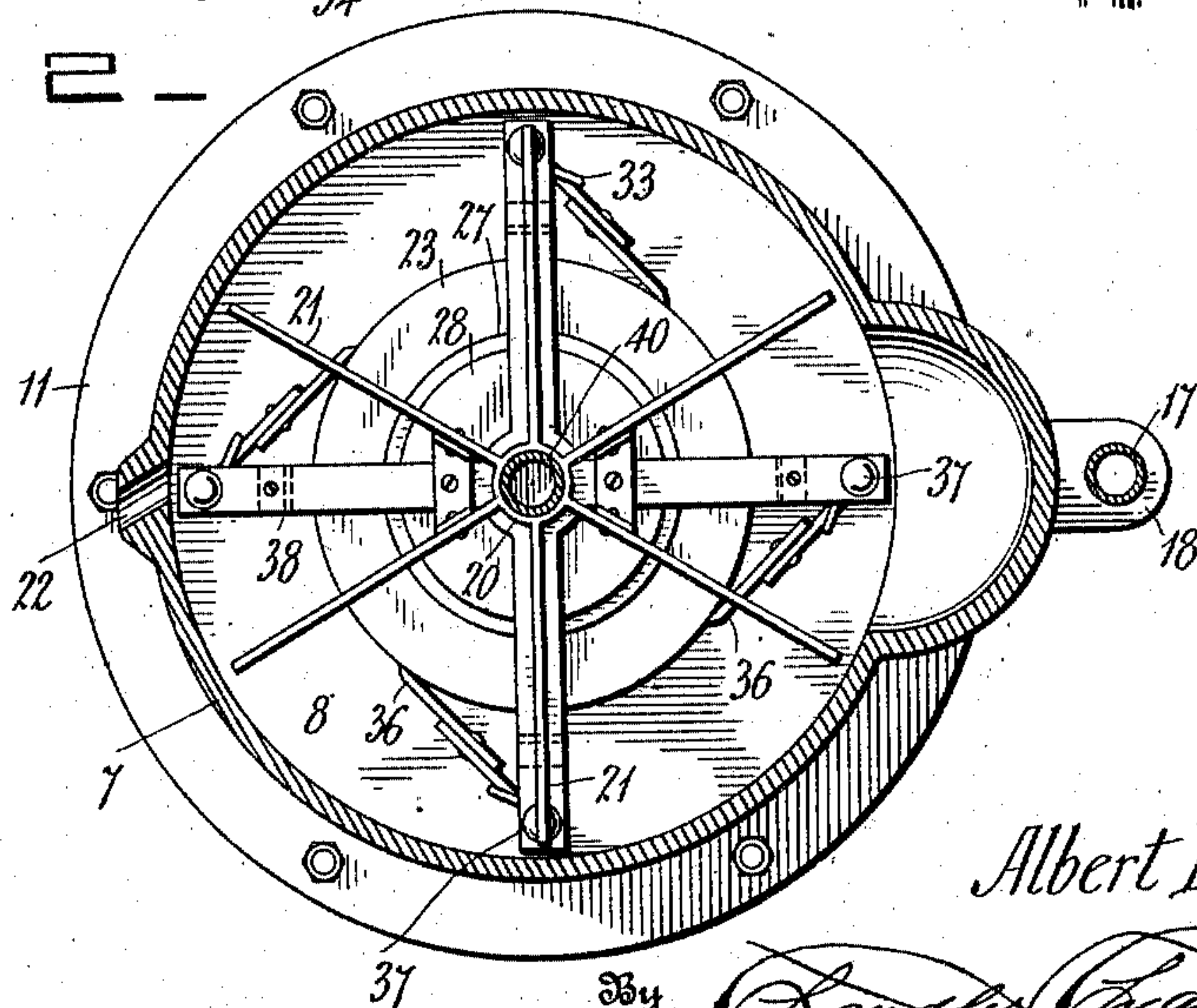


FIG. 2--



Witnesses

H. J. Smith
W. O. Carter

Inventor

Albert B. Bellis

By

Charles Chandler

Attorney

UNITED STATES PATENT OFFICE.

ALBERT B. BELLIS, OF MUSKOGEE, OKLAHOMA.

WATER-FILTER.

967,708.

Specification of Letters Patent. Patented Aug. 16, 1910.

Application filed November 4, 1908. Serial No. 460,998.

To all whom it may concern:

Be it known that I, ALBERT B. BELLIS, a citizen of the United States, residing at Muskogee, in the county of Muskogee, State of Oklahoma, have invented certain new and useful Improvements in Water-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.

The invention relates to water filters and more particularly to the class of self cleaning water filters.

The invention has for its primary object the improvements generally in the construction of the filter and providing scraper means acting upon the filtering cylinder for thoroughly cleansing the same in an efficient and easy manner without the necessity of detaching or removing any of the adjacent parts or elements of the device.

Another object of the invention is the provision of a water filter in which means is employed for thoroughly cleansing the filtering body of the device and means for drawing off or discharging extraneous or foreign matters from the interior of the said device.

The invention for example consists in certain novel features of construction and combination of parts, which to enable those skilled in the art to practice the invention, will be set forth fully in detail in the following description, illustrated in the accompanying drawings and pointed out in the claims succeeding the detailed description.

In the drawings:—Figure 1 is a vertical sectional view of a filter embodying the invention. Fig. 2 is a sectional view on the line 5—5 of Fig. 1.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

Referring to the drawings by numerals 7 designates a main body or shell of the device having removable top and bottom sections 8 and 9 respectively each being provided with flanges 10 and the upper and lower extremities of the shell with flanges 11 through which pass bolt fasteners securing the top and bottom sections to the body or shell of the filter. Arranged centrally within the body or shell 7 and extending through a perforation in the top section 8 is a fixed

hollow pipe or shaft 12 the latter having its lower end threaded in a counterbore 13 formed centrally in the bottom section 9. Rising from the top section circumferentially of the shaft 12 is an annular boss 14 which is engaged by a water tight gland 15 the same also surrounding said shaft. Said shaft 12 has its upper end connected with an elbow extension 16 of a hollow outlet pipe 17 supported by brackets 18 secured in any suitable manner to the top and bottom sections of the filter body. Surrounding the upper end of the shaft 12 and in threaded engagement with the elbow 16 is a packing gland 19 to form a water tight joint between the said extension and shaft.

Within the body or shell 7 contiguous to the top 8 is a water wheel 20 the latter having radial blades or vanes 21 and arranged in the path of movement of the plane of these blades of the water wheel 20 is an inlet water supply port 22 which communicates water to the interior of the body or shell 7 and is adapted to effect the rotation of the water wheel 20.

Immediately below the water wheel 20 and surrounding the shaft 12 is a porous filtering cylinder or body 23 the same having a central bore of greater circumference than the shaft 12 to form a space 24 between the cylinder or body and the said shaft. This cylinder or body 23 is held fast or against movement by a locking nut 24' working in a direction toward a washer 25 between which latter and the lower end of the porous cylinder 23 is interposed a rubber gasket 26. At the upper end of the cylinder 23 is a rubber gasket 27 upon which is superimposed a washer 28 and this rubber gasket serves to close the opposite end of the bore forming the space 24 so as to prevent the filtered water from discharging from said space. The said hollow shaft 12 is provided with a plurality of staggered arranged openings 29 in communication with the space 24 to form inlets for the filtered water after having percolated through the cylinder 23 and the hollow shaft 12 whence it is delivered or discharged into the outlet pipe 17 of the filter.

Surrounding the shaft 12 and bearing against the outer faces of the washer 28 and the nut 24' are spiders 38 and 39 of a revolving frame structure, the said spiders being loosely rotatable or working about the stationary shaft 12 and the upper spiders of the

revolving frame has rigidly fixed thereto the water wheel 20. Passed through the arms of the spiders 38 and 39 near the outer ends are rods 37, the same being in the form of long headed bolts carrying the usual nuts and hinged to these rods are scraper blades 36 the latter being held in constant scraping relation to the outer face of the porous cylinder 23 by means of tension springs 33 coiled about the said rods, each spring being connected at one end to the spiders while the opposite ends engage the hinged connections of the scraper blades 36 with the said rods 37 supporting said blade. The spiders 38 and 39 are united by means of tie rods or bars 38'. The said water wheel 20 is loosely journaled upon the stationary shaft 12 so that the said water wheel will only rotate the revolving frame about the porous body 23 within the filter.

It will be noted that due to the fact of the nut 24' working toward the outer face of the washer 25 and by the revolving frame having its spiders 38 and 39 working against the washer 28 and the nut 24' there will be absolutely no possibility of leakage at either end of the porous body 23 as the rotation of the said frame has a tendency to work the nut 24' in a direction so as to compress the gaskets 26 and 27 between the washers thereby forming a positive water tight closure at opposite ends of the bore in the porous body of the filter.

What is claimed is:—

1. A filter of the class described comprising a casing having an inlet in one side thereof, a perforated pipe located centrally within the casing, a discharge pipe communicating with one end of the perforated pipe, a porous cylinder arranged about the perforated pipe and having a central bore of greater diameter than the latter, disks at opposite ends of the cylinder resilient washers interposed between the ends of the cylinder and the said disks, a jam nut bearing against one of the disks spider frames bearing against the outer disk and said jam nuts, tie rods connecting the frames and spring controlled scraper blades carried by the tie rods and operating upon the cylinder.

2. A filter of the class described comprising a casing having an inlet in one side thereof, a perforated pipe located centrally within the casing, a discharge pipe communicating with one end of the perforated pipe, a porous cylinder arranged about the perforated pipe and having a central bore of greater diameter than the latter, disks at opposite ends of the cylinder resilient washers interposed between the ends of the cylinder and the said disks, a jam nut bearing against one of the disks, spider frames bearing against the other disk and said jam nuts, tie rods connecting the frames, spring controlled scraper blades carried by the tie rods and operating upon the cylinder and a water wheel fixed to one of the spider frames in the path of the side opening in the casing.

3. A filter of the class described comprising a casing and an inlet in one side thereof a perforated pipe located centrally within the cylinder, a discharge pipe leading from one end of the perforated pipe, the opposite end of said perforated pipe being closed by the bottom of the casing a porous cylinder arranged about the perforated pipe and having a central bore of greater diameter than the latter, disks arranged at opposite ends of the cylinder, resilient washers interposed between the ends of the cylinders and the said disks, a jam nut threaded on and working toward one of the disks, to compress the resilient washers between the ends of the cylinder and the washer, spider frames bearing against the other disk, and said jam nut, rods connecting the spider frames, scraper blades hinged on said rods and contacting with the peripheral face of the said cylinder, and tensioned springs coiled about said rods and working against the hinged connections of the scraper blades with the said rods, whereby said blades will be constantly maintained in close contact with said peripheral surface of the porous cylinder.

In testimony whereof, I affix my signature, in presence of two witnesses.

ALBERT B. BELLIS.

Witnesses:

J. A. SCOTT,
JNO. P. PORTER.