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PATENTED NOV. 22, 1904.

R. K. WILLIAMS.

OIL FILTER.

APPLICATION FILED MAY 26, 1904.

NO MODEL.

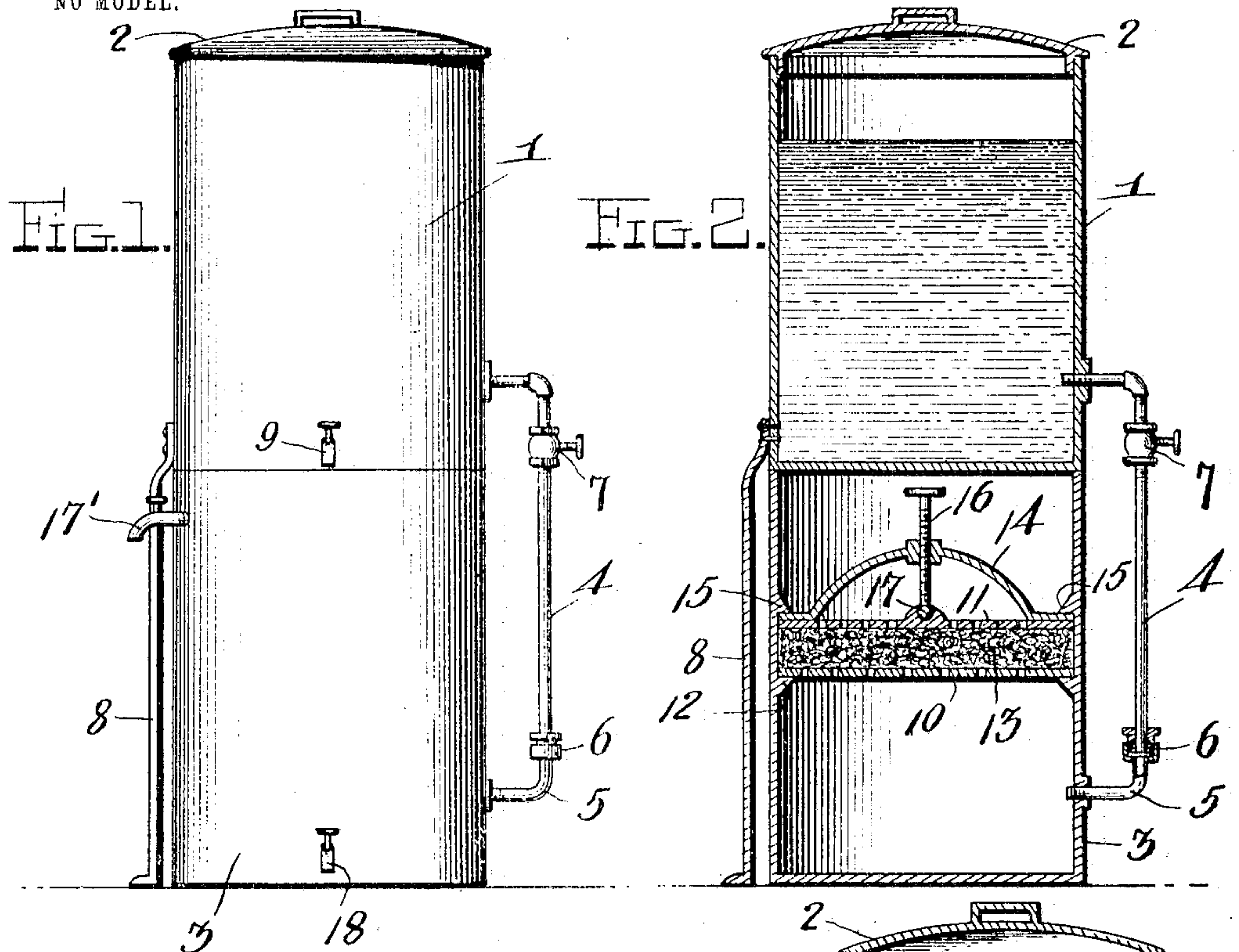
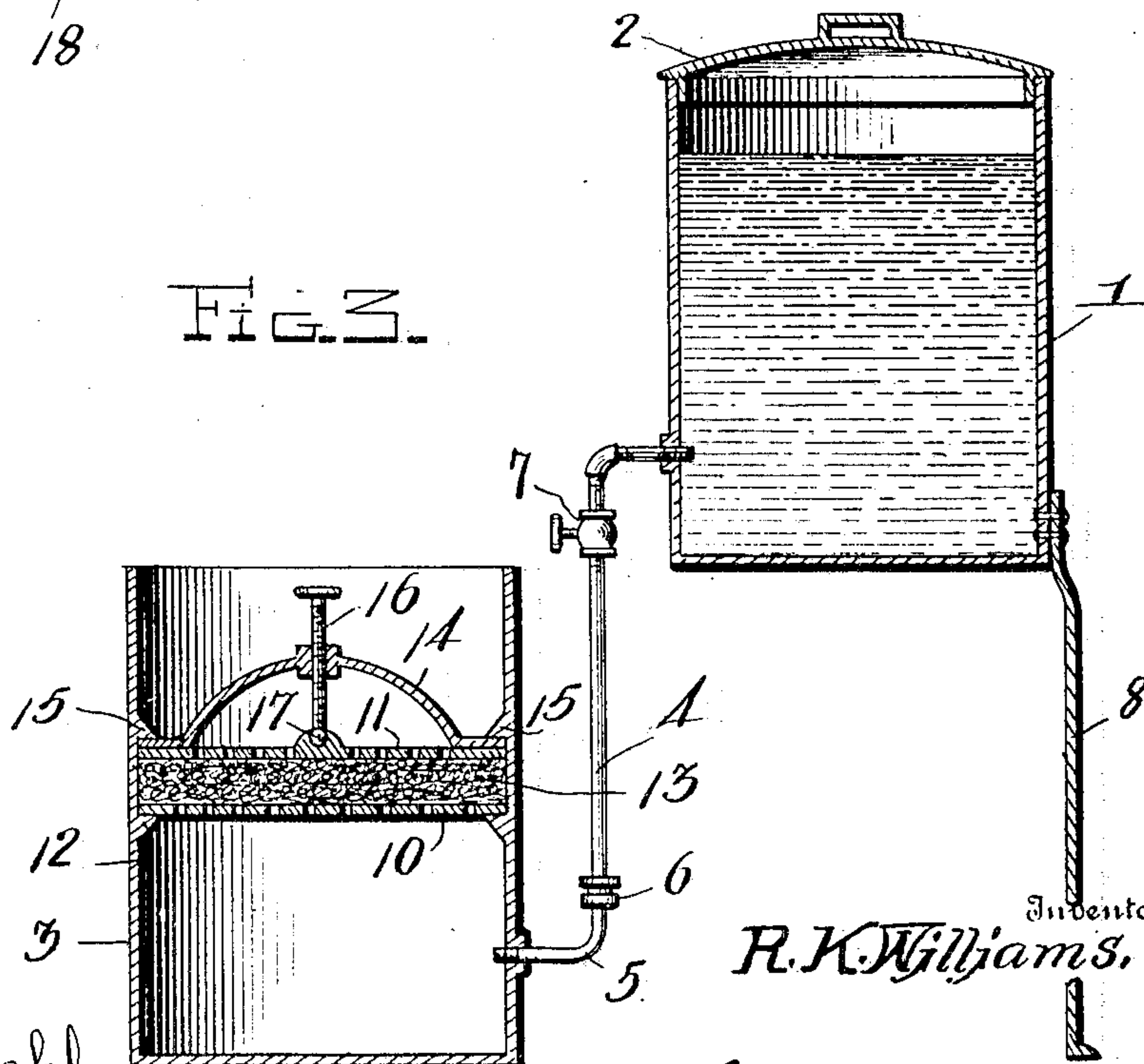


FIG. 3.



Witnesses

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OIL-FILTER.

SPECIFICATION forming part of Letters Patent No. 775,323, dated November 22, 1904.

Application filed May 26, 1904. Serial No. 209,900. (No model.)

To all whom it may concern:

Be it known that I, REES K. WILLIAMS, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Oil-Filters; and I do 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.

This invention relates to improvements in oil-filtering devices.

The object of my invention is to provide a filtering device whereby dirt, water, and all foreign matter may be removed from the oil.

A further object is to provide a device of this character which will be simple in construction, reliable and efficient in operation, and well adapted for the purpose for which it is designed.

With these and other objects in view the invention consists of certain novel features of construction, combination, and arrangement of parts, as will be more fully described, and particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of the device complete, showing the parts in closed position. Fig. 2 is a vertical sectional view of the same. Fig. 3 is a similar view showing the parts open and in position for cleaning.

In the embodiment of the invention I provide two tanks or containers arranged one above the other, as shown. The upper tank or container consists of a receptacle 1, which may be of any desired shape and which is here shown as a cylindrical can closed at its upper end with a removable cover 2. The lower tank or container consists of a similar-shaped receptacle 3, which is normally adapted to lie immediately below the receptacle 1 and is connected with the same by means of a vertically-disposed pipe 4. The upper end of the pipe 4 is connected to the receptacle 1 at a point some distance above the bottom of the same. The lower end of the pipe 4 is seated in an elbow 5, which projects from and is in

communication with the lower receptacle 3 at a point above the bottom of the same. The elbow 5 is provided with a stuffing-box for a packed gland, whereby a fluid-tight connection is formed between said pipe 4 and elbow 5. This connection permits the receptacle 3 to be swung out from beneath the upper receptacle 1 in the position shown in Fig. 3, thereby permitting access to the same for cleaning purposes. The pipe 4 is further provided near its upper end with a valve 7, whereby communication between the receptacles may be cut off.

On the side of the receptacle 1 opposite to that to which the pipe 4 is attached is fixed the upper end of a leg or supporting-bar 8. The tank 1 is further provided near its lower end with a draw-off cock 9.

Within the lower receptacle 3, about midway between the upper and lower ends of the same, is arranged a filtering device. Said filtering device consists of two perforated plates or disks 10 and 11, which fit in the receptacle 3. The lower disk or plate 10 is supported upon an annular flange 12, secured to the sides of the receptacle 3. Between the plates 10 and 11 is disposed a filtering medium 13, which may be of any suitable material, but which is preferably formed of cotton wadding. Above the plate 11 is arranged a compression device consisting of a spider 14, the ends of the arms of which are engaged beneath lugs 15, secured to the inner side of the receptacle 3. In the center of the spider 14 is formed a threaded aperture, through which works a clamping-screw 16. The lower end of said clamping-screw is provided with a swiveled head 17, which is adapted to bear upon the upper perforated plate 11, so that when said clamping-screw is screwed downwardly the filtering medium 13 will be more or less tightly compressed, thereby making the same more or less dense, which will permit the oil to pass more or less freely through the same.

Near its upper end the receptacle 3 is provided with an overflow-cock 17', through which the filtered oil passes. Near its lower end

said receptacle is provided with a draw-off cock 18, through which water and sediment may be drawn.

In operation the crude oil is placed in the upper tank or receptacle 1, where the water and heavier foreign matter will settle to the bottom of the receptacle. The cock 7 is now turned on, and the oil above the point of communication of pipe 4 will pass through said pipe and into the lower portion of the receptacle 3, where it will percolate or filter upwardly through the filtering material 13 and into the upper portion of the receptacle, where it overflows through the cock 17 into a suitable receptacle. The water and sediment which has settled in the bottom of the receptacles 1 and 3 may be drawn off when desired through the draw-off cocks 9 and 18, as hereinbefore described.

When the receptacle 3 is swung to the position shown in Fig. 3, the leg or bar 8 will support the upper receptacle 1 on the one side and the receptacle 3, through the pipe 4, will support the same on the opposite side.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. In an oil-filter, the combination with an upper settling tank or receptacle, of a lower filtering-tank arranged below said upper tank, a valved oil-conducting pipe, connected at its

upper end to said settling-tank and at its lower end to said filtering-tank, a pivotal joint in said pipe to permit the lower tank to swing from beneath the upper tank, a filtering device arranged in said lower tank, said device consisting of a lower perforated plate or disk supported in said lower receptacle, a filtering medium arranged on said lower plate, an upper plate resting on said medium, a clamping-frame or spider, the ends of the arms of which engage lugs fixed on the inner sides of said lower receptacle above said upper plate, and a clamping-screw mounted in said spider to engage said upper plate and force the same downwardly, thereby compressing said filtering material, substantially as described.

2. In an oil-filter, the combination with an upper settling tank or receptacle, of a lower filtering-tank, arranged below said upper tank, a valved oil-conducting pipe connected at its upper end to said settling-tank above the bottom of the same, an elbow connected to said lower tank above the bottom thereof, a packed gland or joint pivotally connecting the lower end of said pipe with said elbow, to permit said lower tank to be swung from beneath said upper tank, a leg for supporting said upper tank when the lower tank is swung from beneath it, a filtering device arranged in said lower tank, an overflow-cock arranged in the latter above said filtering device, and draw-off cocks arranged near the lower ends of said upper and lower tanks, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

R. K. WILLIAMS.

Witnesses:

ROBT. L. MILLER,
BENJ. E. COWL.