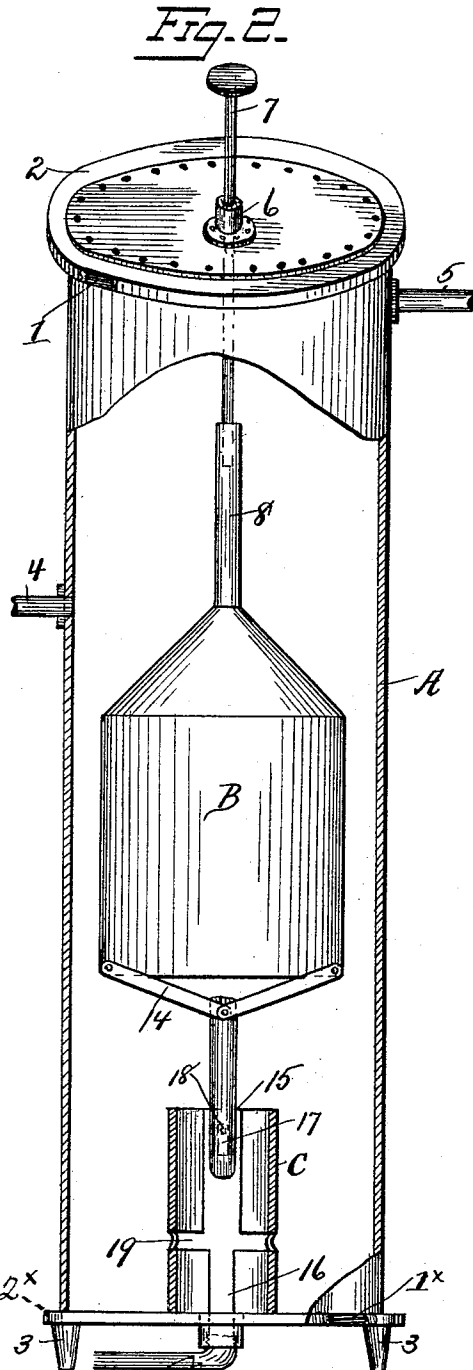
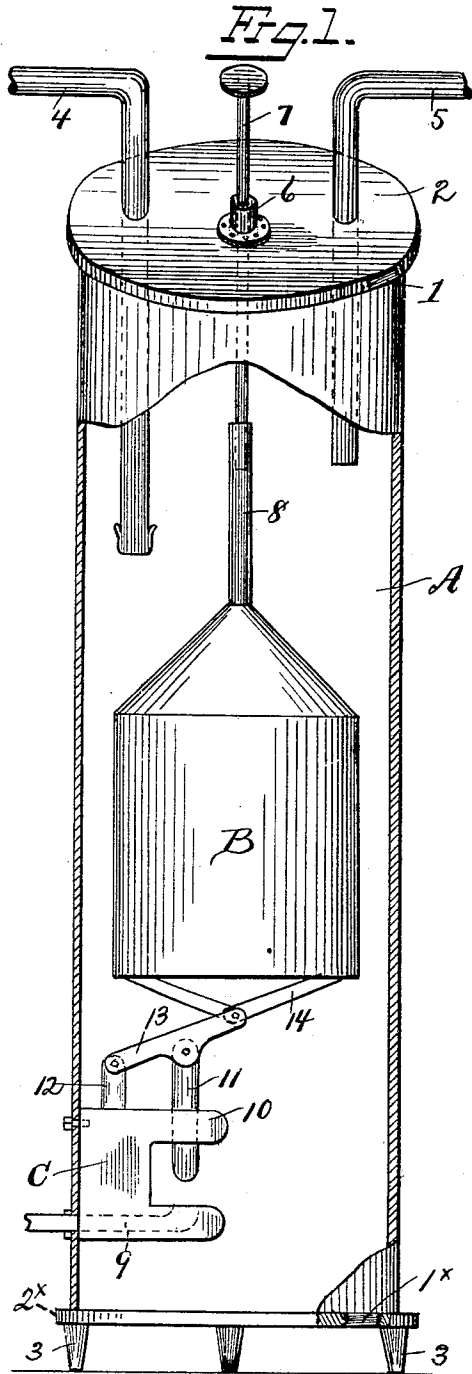


(No Model.)

A. P. McBRIDE,
GAS, OIL, AND WATER SEPARATOR.

No. 569,345.

Patented Oct. 13, 1896.



Witnesses.

Albert Popkine.

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Albert P. McBride Inventor
By [Signature]

Attorney

UNITED STATES PATENT OFFICE.

ALBERT P. MCBRIDE, OF INDEPENDENCE, KANSAS.

GAS, OIL, AND WATER SEPARATOR.

SPECIFICATION forming part of Letters Patent No. 569,345, dated October 13, 1896.

Application filed May 9, 1896. Serial No. 590,819. (No model.)

To all whom it may concern:

Be it known that I, ALBERT P. MCBRIDE, a citizen of the United States, residing at Independence, in the county of Montgomery and State of Kansas, have invented certain new and useful Improvements in Gas, Oil, and Water Separators; 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.

My invention has relation to improvements in gas, oil, and water separators, and the object is to provide certain improved means whereby the water associated with the olefant material will be automatically discharged from the containing vessel at the bottom thereof and the surplus oil or gas discharged at the upper portion of the vessel.

I have fully and clearly illustrated the invention in the accompanying drawings, wherein—

Figure 1 is a vertical sectional view of a tank or vessel with my improvements applied therein. Fig. 2 is a vertical central sectional view of a tank or vessel with my improvements applied, the construction and connections of the valve mechanism being shown in a modified form.

A designates a suitable tank or vessel made of metal, preferably cylindrical, and of such size and capacity as to serve the purpose intended. The respective ends of the cylindrical vessel are provided with screw-threads 1 1^x, and are securely closed by top and bottom caps 2 2^x, the vertical rim-flanges of which are provided with interior screw-threads to engage with the threads on the ends of the vessel and hold the parts firmly and safely together, as indicated in the drawings.

The cover or cap 2 may consist of a flanged ring having an open center closed by a disk, the edge of which overlaps the ring and is secured thereto by bolts or rivets, as shown in Fig. 2 of the drawings.

The bottom of the vessel may be provided with legs 3 to make room for conveniently attaching the water-discharge pipe, if that pipe opens from the bottom.

At a point above the line to which the water may rise is secured an inlet-pipe 4, open-

ing into the vessel, and through which the material finds entrance. This pipe may be inserted through the top of the vessel, as shown in Fig. 1, and extend a sufficient distance down therein, or it may open directly into the vessel at the desired point, as shown in Fig. 2 of the drawings.

At the top of the vessel is let in an outlet-pipe 5 for the escape and discharge of the gas or oil, the pipe being let through and extending down into the vessel or leading therefrom, substantially as shown.

In the top or cover of the vessel is arranged and secured a guide-box 6. Rising therefrom and in the vertical passage in the guide-box is fitted to slide a bar or rod 7, the rod being to guide and maintain the verticality of the stem 8 of the float B. This float B consists of a suitable cylindrical metal shell of proper dimensions, having a closed top and open bottom, and of such length as to meet the purpose of operating the discharge-valve with which it is connected.

In the vessel A is mounted and secured a valve-chamber shell C, formed with an outlet-port 9, through which the accumulated and surplus water is discharged. In the body of the shell C is formed a vertical valve-way 10, in which is a vertically-arranged and reciprocable valve 11, the lower end of which is adapted to close the mouth of the port 9 when moved down into engagement therewith. On the chamber C is formed a lug 12, to which is pivotally connected a lever 13, having the valve 11 suitably connected thereto and having the outer end pivotally connected to the middle of a cross-bar 14, secured centrally across the end of the float B, substantially as shown in the drawings.

In Fig. 2 of the drawings the valve-chamber C is centrally located in the vessel and is made with a central valve core or seat 15, extending for a proper distance down in the body of the shell and from thence extended through the shell and made of smaller diameter than the upper portion, as shown at 16, so that when the valve is moved down into the shell the end will be seated on the shoulder between the upper and lower parts and thus close the seat and shut off the discharge.

The valve in this instance is formed with a lug 17, which engages in a vertical slot 18, made in the valve-shell, so that the valve will not be drawn entirely out of the shell.

5 In the valve-chamber is formed, at the junction of the parts 15 and 16, a radial port 19, extended diametrically through the chamber and opening into the valve-seat at the top of the smaller section 16, so that when the valve
10 is lifted above the port 19 the water will be free to enter the port and be discharged. The discharge-pipe for the water is properly secured to the valve-chamber, opening through the bottom of the vessel, substantially as shown in Fig. 2. The upper end of
15 the valve-stem is in this instance secured directly to the cross-piece on the end of the float.

It will be perceived from the foregoing description, taken in connection with the drawings, that when the mixed material is delivered into the vessel the separation of the constituent elements will be naturally effected, the water assuming the lower position in the
25 vessel with the gas and oil occupying the upper portion, and that if the water accumulates to such an extent as to enter the chamber of the float, and thus compress the air contained therein, to create an upward movement thereof, the valve will thereby be
30 opened and the surplus water discharged until the float descends and closes the valve. In the meantime the oil or gas is discharged

continuously through the outlet-pipe at the upper part of the vessel.

Having thus described my invention and stated its objects and functions, what I claim, and desire to secure by Letters Patent, is—

A separator of the kind named, comprising a cylindrical vessel provided with exterior
40 screw-threads at its respective ends, top and bottom caps 2, 2^x, formed with rim-flanges having interior screw-threads to engage the threads on the ends of the vessel, an inlet-pipe, an outlet-pipe, said pipes being located
45 at the upper portion of the vessel, a vertically-arranged guide-rod projected centrally through the upper cap of the vessel, a cylindrical float in the vessel, having a closed top and open bottom, a hollow vertical stem pro-
50 jected upward from the top of the float and adapted to telescope with the said guide-rod, a valve-chamber mounted in the bottom of the vessel and formed with a valve-seat and an opening to admit water, a valve in the
55 said chamber, a rod extending across the open bottom of the float and connected to the stem of the valve, and an outlet-pipe leading from the valve-chamber.

In testimony whereof I affix my signature 60 in presence of two witnesses.

ALBERT P. McBRIDE.

Witnesses:

M. F. WOOD,
C. L. KIMBLE.