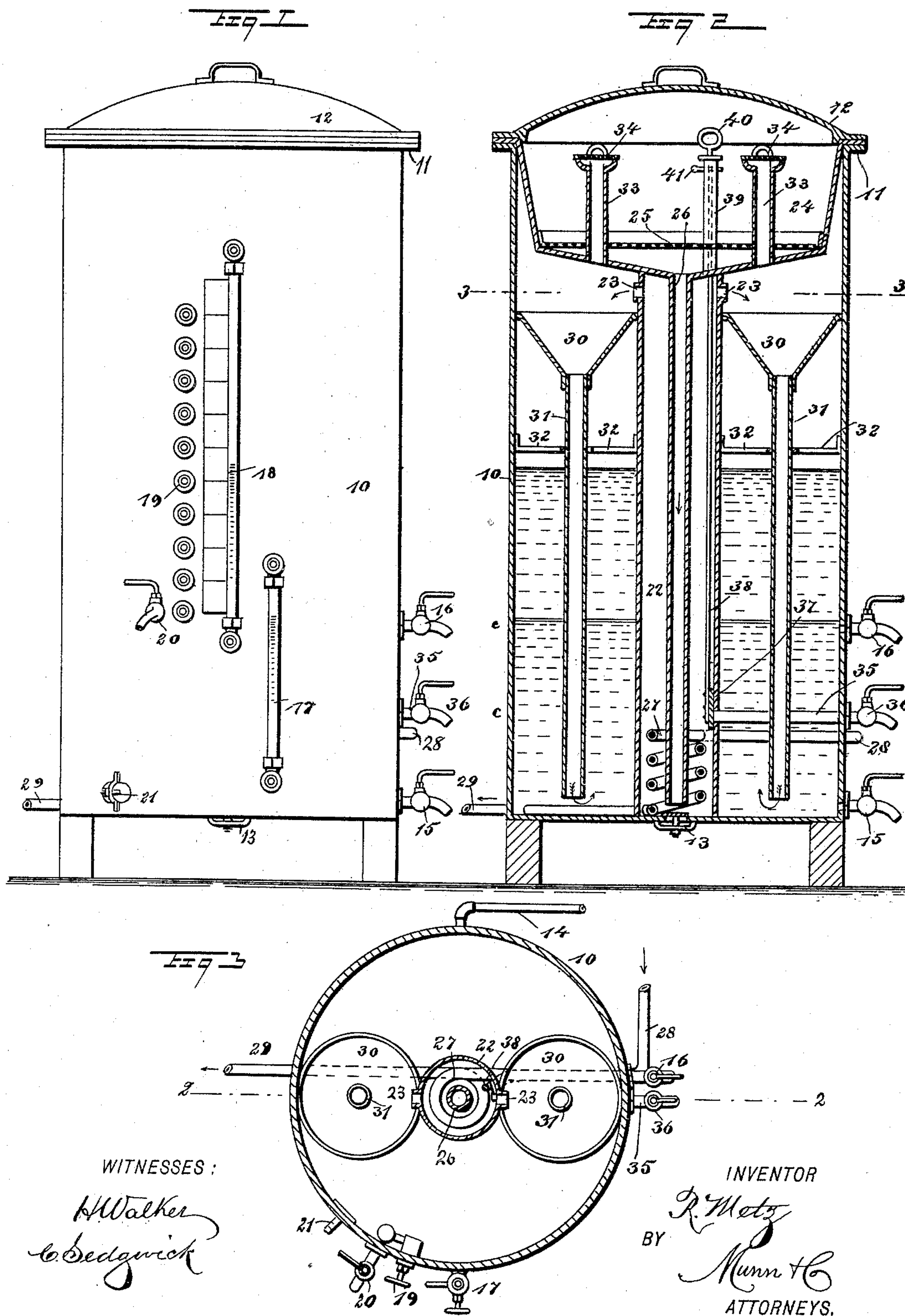


(No Model.)

R. METZ.  
OIL PURIFIER AND RESERVOIR.

No. 482,583.

Patented Sept. 13, 1892.





# UNITED STATES PATENT OFFICE.

RUDOLPH METZ, OF PHILADELPHIA, PENNSYLVANIA.

## OIL PURIFIER AND RESERVOIR.

SPECIFICATION forming part of Letters Patent No. 482,583, dated September 13, 1892.

Application filed May 9, 1892. Serial No. 432,274. (No model.)

*To all whom it may concern:*

Be it known that I, RUDOLPH METZ, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Oil Purifier and Reservoir, of which the following is a full, clear, and exact description.

My invention relates to improvements in devices such as are adapted to purify waste or dirty oil and which is also adapted for use as a reservoir. To thoroughly purify the oil, it is necessary that it be boiled and then passed through a body of water; but where the oil is boiled in the same receptacle in which it is stored the whole body of oil is given a soapy character, which injures its appearance and which consequently makes it less valuable.

The object of my invention is to produce a device of the character described by means of which oil which accumulates in waste and other material may be easily strained and filtered, which is also provided with means for boiling the dirty oil in a separate receptacle from that in which it is finally stored, which is also adapted for use as a receptacle for pure oil, and which, in general, is constructed and arranged so that it will operate effectively and may be conveniently used.

To this end my invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of the apparatus embodying my invention. Fig. 2 is a vertical sectional elevation on the line 2 2 of Fig. 3, and Fig. 3 is a sectional plan on the line 3 3 in Fig. 2.

The tank 10 is provided with a top flange 11 and with a removable cover 12, and has in the center of its bottom a common form of hand-hole plate 13. The lower portion of the tank is adapted to contain water, and to this end it is provided with a suitable water-inlet pipe 14, (shown in Fig. 3,) with an outlet-faucet 15, opening from one side at the bottom, with an overflow-faucet 16, which marks the highest rise of water in the tank, and with a wa-

ter-gage 17, which is arranged outside the tank and opposite the water-holding portion. The tank is also provided with an oil-gage 18 and with an oil-outlet controlled by a series of cocks 19, and a delivering-faucet 20. The tank has also at the bottom and at one side a removable hand-hole plate 21. The above construction is substantially like that shown in Letters Patent of the United States No. 473,326, dated April 19, 1892, and forms no part of the present invention.

In the central portion of the tank is a vertical annular well 22, which extends nearly to the top of the tank and has outlets 23 near the top and on opposite sides. A hopper 24 is sustained in the tank top, the hopper resting upon the upper end of the well 22 and having in its bottom portion a strainer 25, so that when oil holding waste material is thrown into the hopper the oil will ooze downward through the strainer, leaving the refuse above. Opening from the lower middle portion of the hopper is a pipe 26, which extends downward into the well 22 and delivers into the well-bottom. Around the lower end of the pipe 26 is a steam-coil 27, having a suitable inlet-pipe 28, extending through the side of the well and tank, and a similar outlet-pipe 29, the pipes being adapted to connect with any steam-generator in the usual way.

On opposite sides of the well 22 and in the main chamber of the tank are hoppers 30, these being arranged just beneath the outlets 23 of the well, and they have outlet-pipes 31, extending downward and delivered into the water-inlet portion of the tank, as shown in Fig. 2, the pipes extending nearly to the tank bottom. To prevent any derangement of the pipes 31, they are provided with braces 32, the outer ends of which are secured, respectively, to the wall of the main tank and the wall of the well 22.

Arranged within the hopper 24 and just above the hoppers 30 are pipes 33, which open through the bottom of the hoppers 24 and extend upward high enough, so that their upper ends will be above any of the dirty oil in the hopper 24, and for this reason pure oil may be poured into the pipes 33 and allowed to flow downward into the main chamber of the tank 10, which serves the purpose of a reservoir. It will be seen that by this means the



pure oil may be poured in without mingling with the dirt and all the oil in the upper portion of the tank is pure, the dirty oil being purified before reaching this part of the tank, as hereinafter described. The pipes 33 have perforated lids 34, and consequently when the oil is highly heated and a large amount of steam generated the steam may escape through the outlets 23 and pipes 33, so as to prevent any dangerous pressure in the tank.

To provide for cleaning out the well 22 without removing the hand-hole plate 13, the following mechanism is employed: A pipe 35 leads from the lower portion of the well outward through one side of the tank 10 and has a faucet 36 at its outer end. To prevent the pipe from clogging up when the faucet is closed, a sliding plate or valve 37 is held to normally close its inner end, this valve being secured to a long stem or rod 38, which extends upward through a pipe 39 in the hopper 24 and terminates in a handle 40. The rod may be held in a raised or lowered position by means of a pin 41, which extends through the pipe 39 and the rod 38. The perforations in the rod and pipe are not shown in detail; but it is not deemed necessary, as this is the common way of fastening similar devices.

The method of using the apparatus is as follows: The lower portion of the tank is filled with water to a point as high as the overflow-faucet 16, and the correct height can be ascertained by reference to the water-gage 17 or by leaving the faucet open until the water runs out of it and then closing it and shutting off the supply. The dirty oil to be purified is thrown into the hopper 24 and the steam turned on through the coil 27. The oil in the hopper passes downward through the tube 26 and is boiled in the well 22, and it will be observed that while boiling it has no connection with the water or oil outside the well. As the oil rises in the well 22 it will eventually reach the outlets 23 and pass through them into the hoppers 30, and from thence downward into the water at the bottom of the tank, and will rise through the water, and the pure oil will

be held above the water. The oil is then withdrawn by means of the cocks 19 and faucet 20, this arrangement being exactly like that shown in the former patent, referred to above.

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

1. An oil purifier and reservoir comprising a main tank having a water inlet and outlet in its lower portion, a central well having outlets near the top, a hopper held above the well and having an outlet-tube extending downward into the well, a steam-coil arranged in the lower portion of the well, and hoppers arranged beneath the well-outlets and having delivery-tubes extending into the lower portion of the tank, substantially as shown and described.

2. An oil purifier and reservoir comprising a main tank having suitable water inlets and outlets in its lower portion, a central vertical well having a steam-coil in its bottom, a hopper held above the well and having an outlet-tube extending into the lower portion of the well, and the pipes 33, arranged vertically within the hopper, their open upper ends being below the top of the hopper and their lower ends opening through the bottom of the same, whereby the pipes are adapted to receive oil from the upper part of the well and deliver it through the bottom of the hopper into the main tank, substantially as described.

3. The combination, with the main tank, the inner well having outlets near the top, and the hopper arranged above the well and adapted to deliver into the lower portion thereof, of the second set of hoppers arranged beneath the main hopper and adapted to deliver into the bottom portion of the well and pipes extending vertically through the main hopper and adapted to deliver into the second set of hoppers, substantially as described.

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Witnesses:

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