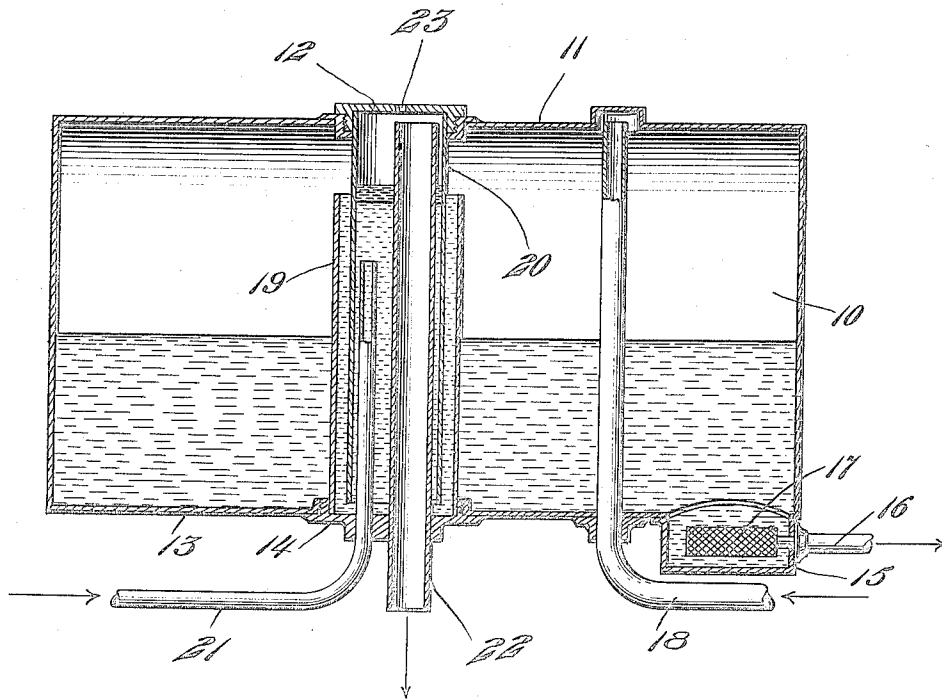


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OIL SEPARATOR.

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1,107,271.

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Witnesses
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UNITED STATES PATENT OFFICE.

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OIL-SEPARATOR.

1,107,271.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ABNER DOBLE, a citizen of the United States, residing at Waltham, Middlesex county, State of Massachusetts, have invented certain new and useful Improvements in Oil-Separators, of which the following is a specification.

This invention relates to oil separators and more particularly to oil separators for use on steam motor vehicles for the purpose of separating oil from the condensed exhaust steam.

The invention has for its objects the provision of a separator which is comparatively inexpensive to manufacture, which may be readily taken apart for the purpose of cleaning or for other purposes and which is adapted to overcome a disadvantage existing in the prior constructions of a similar nature and in which under certain circumstances a portion of the water in the main reservoir is siphoned off through the overflow.

The novel features of the invention will be apparent from the following description taken in connection with the accompanying drawing which shows one form of the invention, the drawing being a central vertical section.

Referring to the drawing, 10 indicates a main reservoir, the top wall 11 of which is provided with a removable plug 12 and the bottom wall 13 is provided with a removable plug 14. The reservoir 10 contains the separated water which is used in the boiler, the reservoir being provided with a bottom extension 15 from which the water is drawn off through a pipe 16, a suitable screen 17 being provided on the end of the pipe to prevent any foreign substances being drawn into the pipe. A supply pipe 18 extends upwardly through the bottom 13 and terminates at the top wall 11.

Secured to the plug 14 is an outer tube 19 which is open at its upper end and otherwise closed from communication with the interior of the reservoir 10. An inner tube 20 is secured to the plug 12 and extends downwardly within the tube 19 to a point adjacent the bottom of the reservoir 10, the lower end of this tube being open. A pipe 21 for the condensed exhaust steam extends through the plug 14 and upwardly within the tube 20 to a point slightly below the upper end of the tube 19. The water supplied through the pipe 21 fills the tubes 19

and 20, as indicated in the drawing, the water overflowing from the upper end of the tube 19 into the reservoir 10. The oil, which is of less specific gravity than the water, will float on the water and accumulate within the tube 20 so that the water which passes out through the bottom of the tube 20 and rises in the annular space between the tubes and then overflows from the top of tube 19 is practically free from all oil.

An overflow tube 22 is secured in the plug 14 and extends upwardly within the tube 20 to a point a slight distance above the upper end of the tube 19. As the oil accumulates on the surface of the water in the tube 20 it will gradually rise in this tube until it overflows in the pipe 22. Also when the water in the reservoir 10 rises above the upper end of the tube 22 the surplus will overflow through the tube 22. In order to prevent the tube 20 from acting as a siphon to draw the water in the reservoir 10 down to the level of the upper end of the tube 19, when the water has risen in the reservoir to a point where it will overflow through the tube 22, I have provided a vent opening 23 in the plug 12. This vent opening establishes communication between the interior of the tube 20 and the external atmosphere.

It will be seen that the tubes 19 and 20 cooperate to form a liquid trap which will cause all water to flow out of the lower end of the tube 20 and rise in the tube 19 before it reaches the reservoir 10 and therefore the oil will be effectively separated from the water.

When it is desired to remove the tubes 19 and 20 for any purpose the plugs 12 and 14 are taken out, the tube 20 being removed with the plug 12 and the tube 19 being removed with the plug 14. The tubes 21 and 22 also go with the plug 14 so that the parts are readily disassembled.

Having thus described the invention what is claimed as new is:

1. In an oil separator, the combination of a main reservoir having top and bottom walls, removable plugs in said walls, an outer tube open at its upper end and having its lower end secured to the plug in the bottom wall, an inner tube having an open lower end arranged within the outer tube and its upper end secured to the plug in the top wall, and an overflow pipe secured in the plug in the bottom wall and extending

within the inner tube to a point above the upper end of the outer tube.

2. In an oil separator, the combination of a main reservoir having top and bottom walls, removable plugs in said walls, an outer tube open at its upper end and having its lower end secured to the plug in the bottom wall, an inner tube having an open lower end arranged within the outer tube and its upper end secured to the plug in the top wall, an overflow pipe secured in the plug in the bottom wall and extending with-

in the inner tube to a point above the upper end of the outer tube, and the plug in the top wall being provided with an opening whereby the interior of the inner tube communicates with the external atmosphere. 15

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

ABNER DOBLE.

Witnesses:

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