

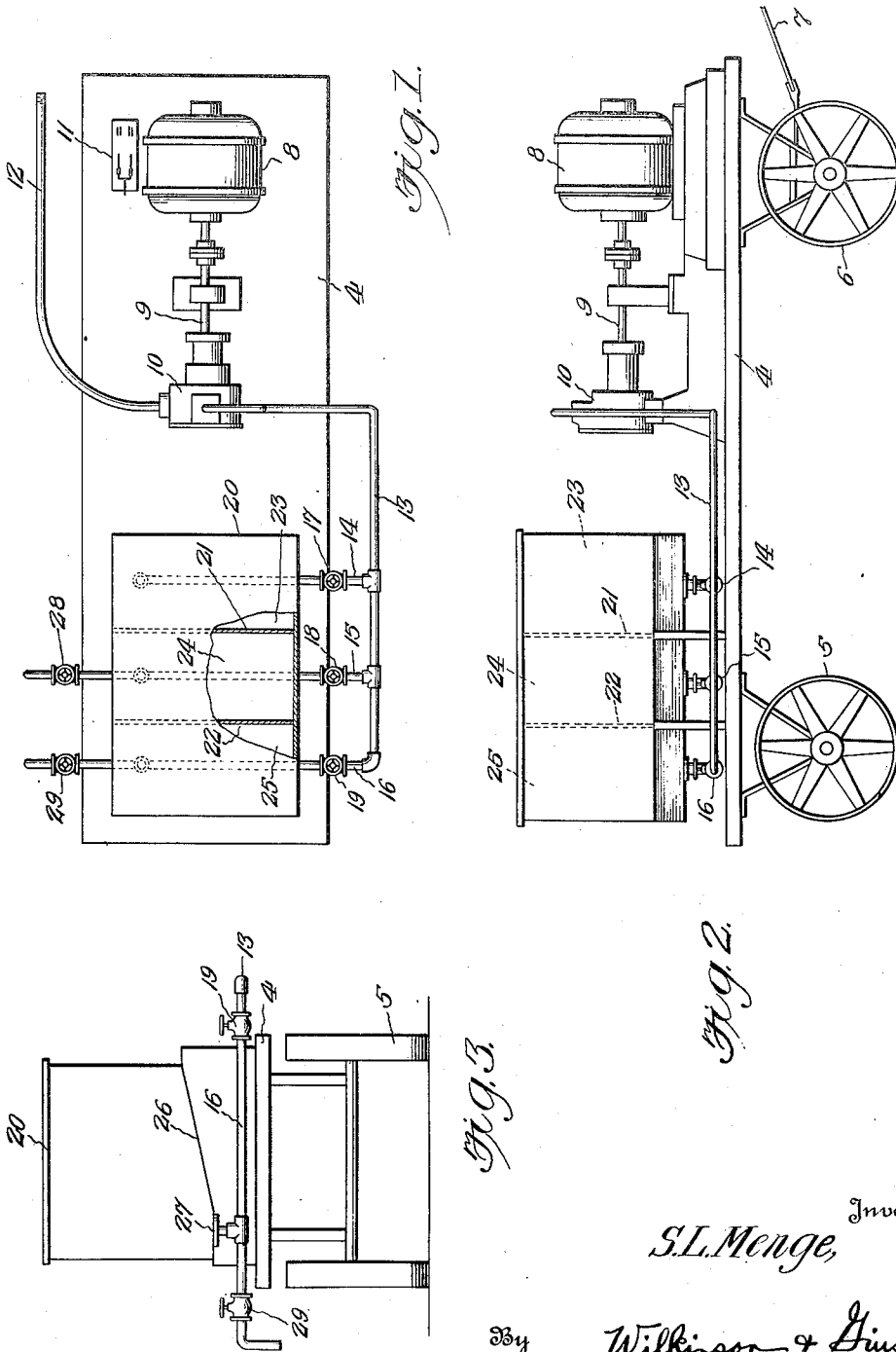
June 10, 1924.

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1,497,575

PUMP APPARATUS

Filed Dec. 15, 1923



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PUMP APPARATUS.

Application filed December 15, 1923. Serial No. 680,997.

To all whom it may concern:

Be it known that I, SIDNEY L. MENGE, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Pump Apparatus; 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 present invention relates to improvements in pump apparatus and more particularly consists in the provision of an apparatus for use in connection with the crank cases of automobiles and other motors wherein a three fold operation is had; first in draining the waste oil from the crank case, secondly to inject into the crank case a washing oil which is subsequently removed, and thirdly to replenish the crank case with fresh lubricating oil.

An object of the invention is to secure this three-fold result in a compact portable apparatus particularly useful in connection with the service stations at which automobiles secure gasoline, lubricating oils and accessories.

Other objects of the invention are to provide an apparatus which will rapidly drain, clean and introduce fresh oil into the crank case in a short space of time without involving the tedious and troublesome present method of getting beneath the vehicle to remove the drain plug; to provide a single hose connection adapted to fit through the filling neck of the crank case for drawing out the oil, and also for introducing and removing the wash oil and for subsequently supplying the fresh lubricating oil.

With the foregoing and other objects in view the invention will be more fully described hereinafter, and will be particularly pointed out in the claims appended hereto.

In the drawings, wherein like symbols refer to like or corresponding parts throughout the several views,

Figure 1 is a top plan view, with parts broken away, showing a pump apparatus constructed according to the present invention.

Figure 2 is a side view thereof, and

Figure 3 is a rear view of the apparatus.

Referring more particularly to the drawings, 4 designates a platform or carriage

supported on the rear wheels 5 and the front wheels 6, there being a tongue or other appropriate device 7 by which the front wheels may be guided and the vehicle moved to the location desired; for instance, to a point proximate to the engine or vehicle from which the oil is to be drained and new oil supplied after cleaning the crank case.

Upon the platform are assembled in any desired relative locations the various units comprising the apparatus. In the embodiment shown an electric motor 8 constitutes the source of power, and this motor is installed at the front of the platform or the carriage, being connected through the shaft 9 journaled in appropriate bearings to the pump 10, which may be of any suitable type, for instance, a rotary reversible pump. The electric motor 8 is also of the reversible type, and is controlled through a double throw switch 11 mounted adjacent thereto or in a position convenient to the hand of the operator. The electrical connections are not shown as they form no part of the present invention, and it will be clear to those skilled in the art that the switch 11 in one position will cause the motor 8 to be driven in one rotary direction, for instance, in a clockwise direction, while the other position of the switch causes the electric motor to rotate in a counter clockwise direction, the pump 10 being driven accordingly. The pump 10 at one side is connected with a flexible hose 12 which may be introduced at its open free end into the crank case of the engine either through the drain plug or through the top filling neck. For this purpose the breather cap is, of course, first removed from the filling neck, and the end of the hose, which will be of a suitable length for this purpose, may be pushed down to a low point in the crank case so as to draw all of the used or waste oil therefrom.

The pump at its other side is connected to a manifold pipe 13 having the three branches 14, 15 and 16, each provided with a valve 17, 18 and 19 respectively. The pipes run beneath a tank 20 divided by the two partitions 21 and 22 into three compartments 23, 24 and 25. The manner of connecting the several pipes 14, 15 and 16 with the compartments is shown in Figure 3, the compartments being provided with sloping bottoms 26 and the pipes being connected to the bottoms at the lowest points thereof by the con-

nections 27. The pipes 15 and 16 extend out beyond the connections 27 on to the other side of the tank or carriage, and are provided with downturned ends and with valves 28 and 29.

Of course, separate tanks may be used instead of a single tank with the partitions, the tank or tanks being supported at an elevation from the platform as indicated in Figure 2 to admit the pipe branches therebeneath.

In the use of the device, the tank or compartment 23 is charged with fresh lubricating oil; the tank or compartment 24 with a light lubricating wash oil, and a third tank or compartment 25 is initially empty. The apparatus is moved up to a motor and the hose 12 is connected either with the drain or introduced through the filling neck as above indicated. The valves 17 and 18 are closed and the valve 19 is opened, the drain valves 28 and 29 being, of course, closed. The motor 8 is then put into operation by closing the switch 11 in such wise that the pump 10 will be driven as a suction pump to draw the used oil out of the crank case through the hose 12 and force this used oil through the pipe 13 and the branch pipe 16 into the empty compartment or tank 25. When all of the oil has thus been removed from the crank case, the motor is stopped, the valve 19 closed, and the valve 18 opened. The switch 11 is then thrown to the opposite position to cause the motor and pump to rotate in a reverse direction. The wash oil is thus drawn from the center compartment or tank 24 and injected into the crank case. After a suitable quantity of the wash oil is circulated in the crank case, and possibly the motor run for a short while with the wash oil in said crank case, the motor and pump may be again reversed to cause removal of this wash oil from the crank case and the wash oil is preferably delivered to the tank or compartment 25 by opening the valve 19 and closing the valve 18 during this stage of the operation. Preferably two or more charges of the wash oil are circulated through the crank case in the manner just described, and after the last charge has been removed, the valves 18 and 19 are closed, and the valve 17 is opened, the motor and pump being so driven through the control of the switch 11 as to cause the fresh lubricating oil in the tank or compartment 23 to be pumped into the crank case in a suitable quantity depending upon the capacity of the crank case.

The valves 28 and 29 are only opened when it is desired to drain the tanks or compartments 24 and 25. When the tank 25 is filled with the thin used oil, the valve 29 may be opened and this oil drained out into a suitable container used for lubricating springs or for other purposes for which it is

suitable or it may be discarded. The various valves are preferably quick opening valves of any suitable type in order to facilitate the operation as it is very important to be able to take care of the customer without any delay.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:

1. A pump apparatus comprising a reversible pump, means for reversibly driving said pump, a connection to said pump adapted to be inserted in the crank case of an engine, separate sources of wash liquid and fresh lubricating oil in independent communication with said pump, means to separately connect either sources with said pump, and a tank also connected to said pump for receiving waste engine oil.

2. A pump apparatus comprising a reversible pump, a motor for reversibly driving said pump, sources of wash fluid and fresh lubricating oil connected to said pump, valves for independently controlling the communication of said sources with the pump, a tank for waste oil also having communication with the pump through the same connection, a valve for separately controlling the communication between said tank and pump, and a hose connected to either side of the pump and adapted to be immersed in an oil body.

3. A pump apparatus comprising a movable platform, three tanks thereon, one tank containing wash oil, a second tank fresh lubricating oil, and a third tank being initially empty, branch pipes having individual communication with the tanks through the bottoms thereof, valves in said branch pipes, a trunk pipe connecting said branch pipes, a pump connected at one side with the trunk pipe, a hose connected to the other side of the pump and adapted to fit into the crank case of a motor, and means for reversibly driving said pump.

4. A pump apparatus comprising an initially empty tank for receiving waste oil, a tank containing wash oil, a tank containing fresh lubricating oil, separate branch pipes connected individually with said tanks and having control valves therein, a trunk pipe connecting all of said branch pipes, a pump coupled at one side to said trunk pipe, a hose connected to the other side of the pump and adapted to fit into the crank case of a motor, an electric motor coupled to drive said pump, and a reversible switch for controlling the said motor.

5. A pump apparatus comprising three

tanks, one of said tanks being initially empty and adapted to receive waste oil and the other tanks containing respectively wash oil and fresh lubricating oil, the bottoms of said tanks being inclined, connections at the lower portions of the bottoms of said tanks, branch pipes separately connected to said connections, valves in said branch pipes, drains for the first two mentioned tanks, a trunk pipe connecting said branch pipes, a rotary reversible pump coupled at one side to said trunk pipe, and a reversible electric motor for driving said pump, a double throw switch for controlling the direction of movement of said electric motor, a flexible hose coupled to the other side of said pump and adapted to fit into the crank case of a motor, and a wheeled carriage for carrying said tanks, pump and motor and the various pipe connections. 15

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