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S. L. MENGE

PUMP APPARATUS

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2 Sheets-Sheet 1

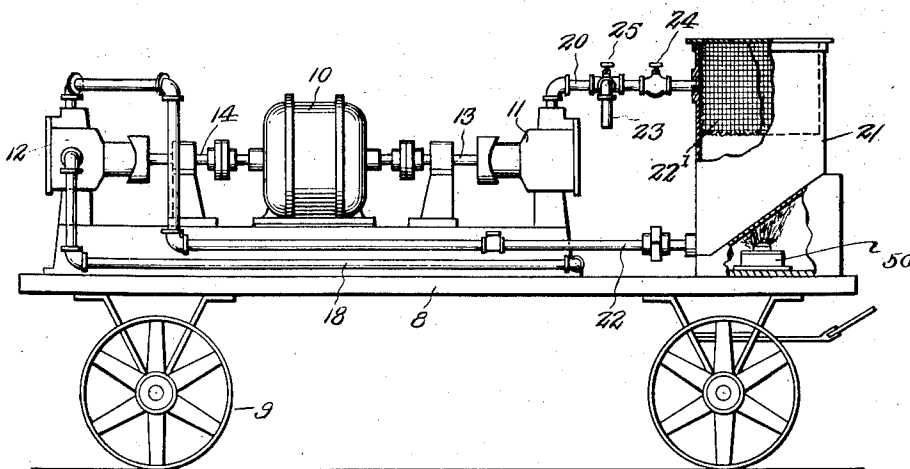
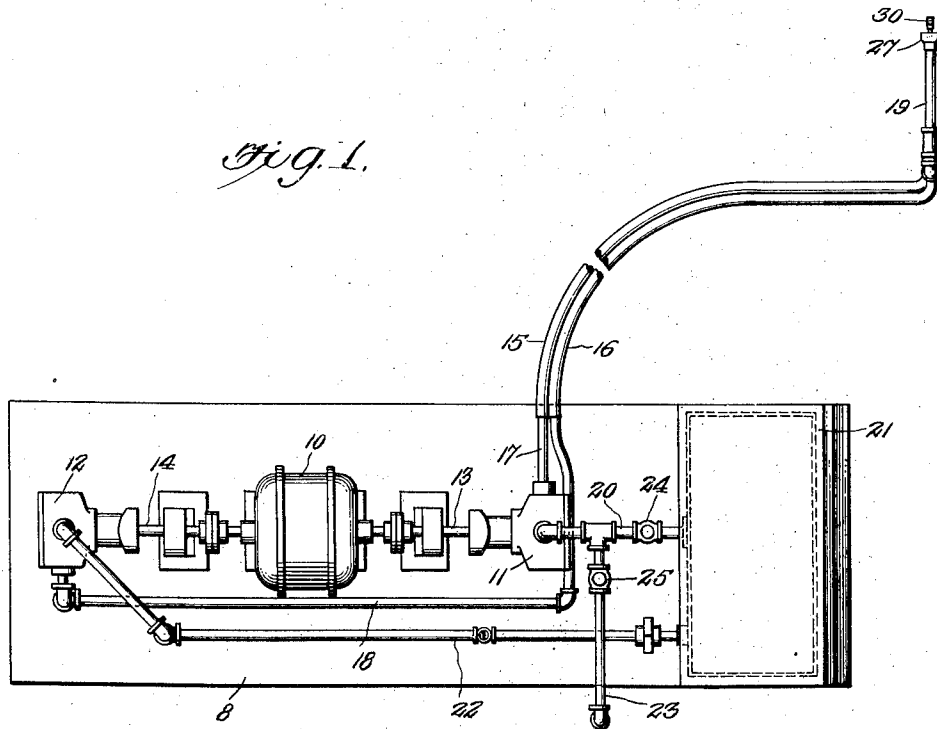


Fig. 2.

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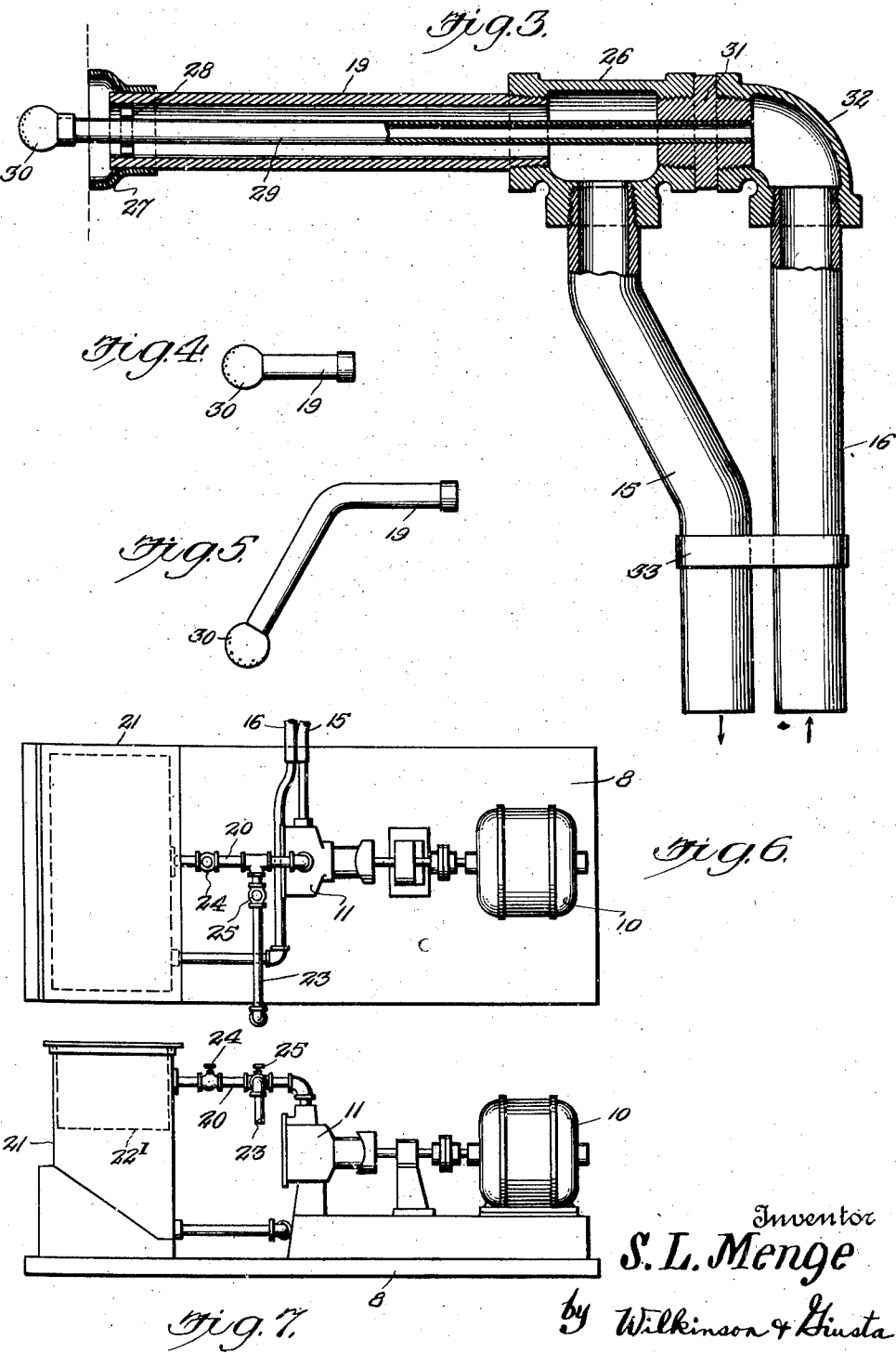
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UNITED STATES PATENT OFFICE.

SIDNEY LAWRENCE MENGE, OF NEW ORLEANS, LOUISIANA.

PUMP APPARATUS.

Application filed September 22, 1924. Serial No. 739,225.

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 to a device for cleaning the crank cases of internal combustion engines.

An object of the invention is to provide a portable apparatus adapted for rapid connection to and disconnection from the drain opening or other inlet part of a motor crank case in order to withdraw the used lubricating oil and to circulate for any length of time desired a cleaning oil, provision being made for heating the cleaning oil as it is circulated.

Another object of the invention contemplates the provision in an apparatus of the character referred to of means whereby the crank case may be replenished with oil or the oil may be simply poured into the filling neck in the usual manner.

With the foregoing and other objects in view, the invention will be more fully described hereinafter, and will be more 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 of an apparatus constructed according to the present invention.

Figure 2 is a side elevation with parts broken away.

Figure 3 is an enlarged view partly in section of the nozzle.

Figure 4 is a plan view of a modified form of nozzle.

Figure 5 is also a plan view of a still further modified form of nozzle.

Figure 6 is a plan view of the modified form of the apparatus, and

Figure 7 is a side elevation thereof.

Referring more particularly to the drawings 8 designates a platform or vehicle body preferably mounted for movement upon the

wheels 9 in order that the apparatus may be shifted about an automobile service station to bring it to the required position for connection to the motor base.

Upon the apparatus is installed a motor 10, for instance an electric motor and a pair of pumps 11 and 12 of suitable character, the pumps being shown to be in line with the motor and coupled thereto by the shafts 13 and 14, it being understood that appropriate bearings are provided for the shafts and pedestals and supports for the pumps.

The inlet side of the pump 11 is coupled to a hose 15 and the discharge side of the pump 12 is in like manner coupled to a hose 16 parallel with the hose 15. Pipes 17 and 18 extend along the platform or body 8 to a mutually adjacent point for the connection of the two pieces of hose whereby these hose sections may be carried in close relation to permit the nozzle 19 at the outer ends thereof to be shifted through a rather large range.

The outlet side of the pump 11 is coupled by the pipe 20 to the upper part of the tank 21 and in which is carried the screen or strainer 22'. The lower part of the tank is adapted to receive an appropriate heater for the cleaned oil which descends through the strainer. The lower portion of the tank 21 into which this clean oil descends is coupled by the pipe 22 to the inlet side of the other pump 12.

The pipe 20 is provided with the drain 23 interposed between the pump 11 and the tank 21 and while the pipe 20 carries the valve 24 in the location shown the drain pipe 23 carries a valve 25. The nozzle is shown more particularly in Figure 3 and comprises a tubular part which has been previously numbered 19 and screwed or otherwise secured in the T-head 26 into which the hose 15 or hose nipple is threaded or otherwise secured. The outer end of the nozzle 19 carries the molded rubber or other form of gasket 27 adapted to fit tightly about the drain opening of the crank case.

In the outer portion of the nozzle 19 is a perforated disc or support 28 for holding the spray pipe 29 which is of lesser diameter as compared with the nozzle 19. This spray pipe extends beyond the nozzle and beyond the gasket 27 and it supports on its outer end the spray head 30. The inner end of the pipe is supported in, and extends through the coupling 31 which joins the el-

bow 32 to the T-head 26. The pipe 16 or nipple thereof is threaded into the elbow 32 and near the nozzle is the clip 33 for holding the two hose sections together.

5 In the use of the device the threaded plug is removed from the base of the crank case and the oil drained in the usual manner; or promptly on removing the drain plug, the nozzle may be applied beneath the crank
10 case by fitting the molded rubber gasket 27 about the drain opening. The motor 10 is set in operation and the pump 11 will withdraw the oil effectually and completely through the nozzle 19 and hose 15. During
15 this time the valve 24 may be closed and the valve 25 opened so as to eject the old oil through the drain 23 or the drain may be kept closed and the valve 24 opened so that the oil will be discharged through the strainer
20 22 and into the tank 21. This oil will get into the lower part of the container 21 where it will be heated and circulated through the pipe 22 to the other pump 12. A heater is indicated at 50 in Figure 2.
25 This latter pump will force this heated oil through the hose 16 into the sprayer pipe 29 and sprayer head 30 by which it will be sprayed into all parts of the crank case.

After the old oil is removed the cleaning
30 oil may be circulated in the manner just described through the engine and this action kept up for as long a period as desired.

The nozzle may be changed to the constructions shown in Figures 4 and 5 or may
35 be made of any other shape in order to suit the conditions of use or the necessity for getting around adjacent parts.

In Figures 6 and 7 there is shown a modified form of the device employing only a
40 single pump corresponding to the pump 11 and so numbered. The similar parts and connections in this form of the invention are so numbered. The oil is drawn into the pump 11 through the pipe 15 and driven out
45 of the drain or into the strainer. The heated oil in the bottom of the tank is either allowed to flow by gravity to the crank case or is driven therein by the force of the circulatory action of the pump.

50 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
55 thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed:—

60 1. A pump apparatus comprising a support, a pump thereon, means to drive the pump, a strainer in connection with the discharge side of the pump, a nozzle in connec-

tion with the inlet side of the pump adapted for connection to the crank case of an internal combustion engine, and a connection
65 from said strainer through the nozzle to the crank case.

2. A pump apparatus comprising a support, a pump thereon, a motor to drive the pump, a nozzle adapted for attachment to the crank case of an automobile being coupled to the inlet side of the pump, a strainer coupled to the discharge side of the pump, a drain coupled between said pump and said
75 strainer, and a connection between said strainer and the nozzle for circulating the strained oil to the crank case.

3. A pump apparatus comprising a support, pumps thereon, a motor for driving said pumps, a tank having heated means in the lower part and a strainer in the upper
80 part, a nozzle having independent passages in connection respectively with the intake side of one pump and the discharge side of the other pump, one of said pumps having its discharge side in connection with the strainer and the other pump having its inlet in connection with the side of heated
85 strained oil in the tank.

4. A pump apparatus comprising a
90 wheeled support, pumps thereon, a motor for driving the pumps, a nozzle adapted to be applied to the crank case of an internal combustion engine having spray passages, a spray head connected to one of said passages
95 and adapted to extend into the crank case, a connection between said spray head passage and the discharge side of one of the pumps, a connection between the inlet side of said same pump and a source of heated
100 oil supply, a connection between said nozzle and the inlet side of the other pump, and a drain for the discharge end of said last mentioned pump.

5. A pump apparatus comprising a nozzle,
105 a gasket on the end of said nozzle adapted to fit about the drain opening in the crank case of a motor, a hose connection to said nozzle, an independent spray pipe through the nozzle, a spray head on the pipe adapted to extend into the crank case, a hose
110 connection to said spray pipe, a wheeled platform, a motor thereon, pumps coupled to said motor, a tank on the platform having a strainer in its upper part, said spray hose
115 coupled to the discharge side of one pump, the inlet side of the same pump being coupled to said tank near the base thereof, the nozzle hose being coupled to the inlet side of the other pump, the outlet of said
120 other pump being coupled to the upper portion of the tank.

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