J. T. PEDERSEN.

LUBRICATING APPARATUS.

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1,173,734.

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Fig. 1

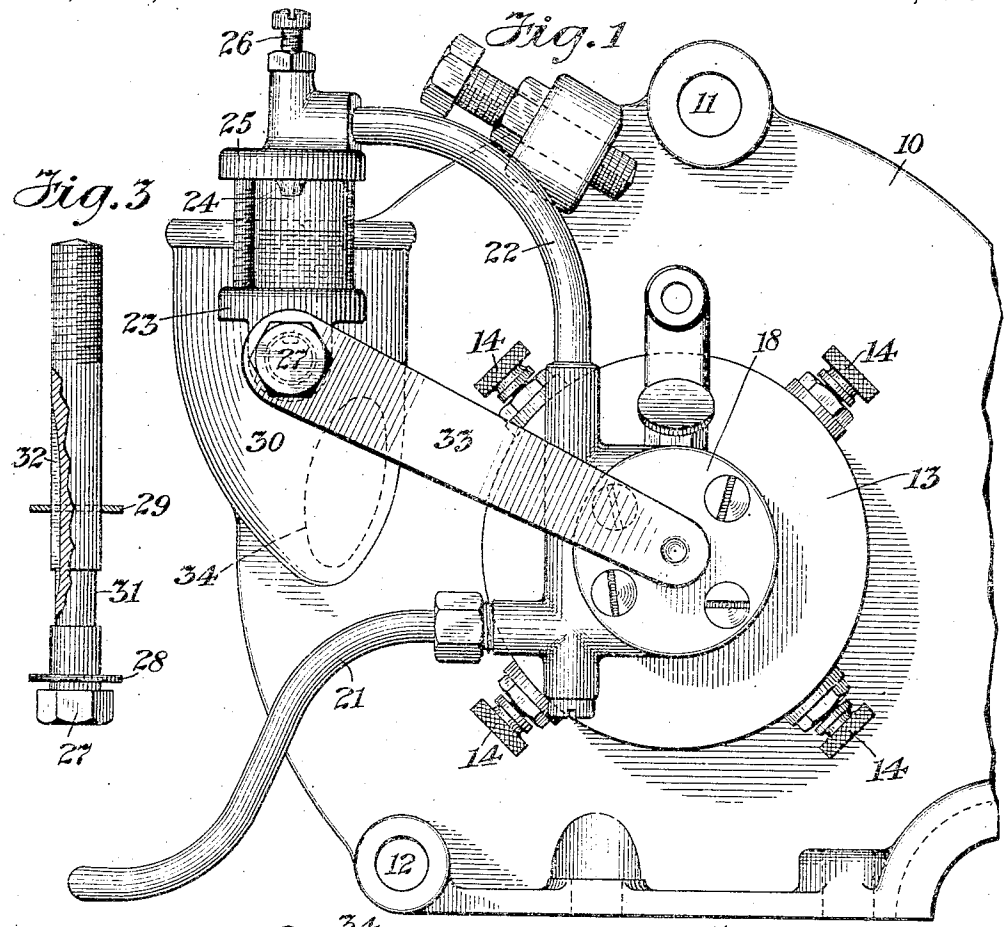


Fig. 3

Fig. 2

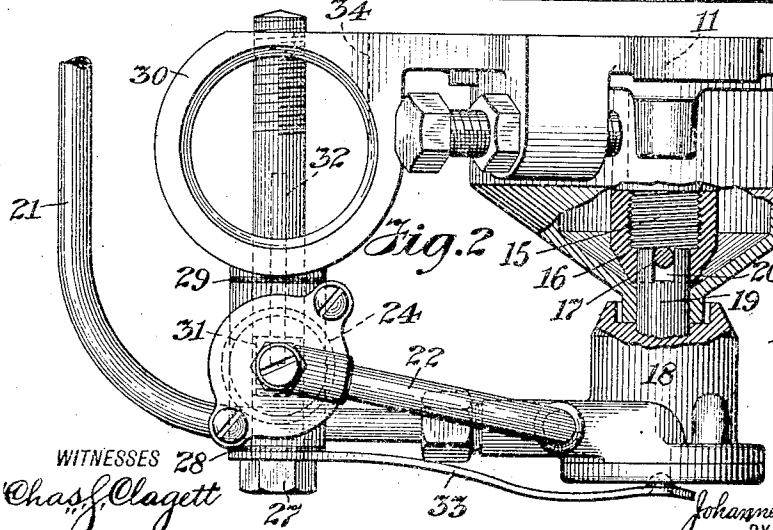
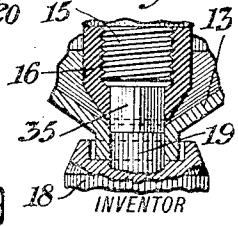


Fig. 4



WITNESSES

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LUBRICATING APPARATUS.

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To all whom it may concern:

Be it known that I, JOHANNES THEODOR PEDERSÉN, a citizen of the United States, residing at Flushing, in the borough of Queens, city and State of New York, have invented an Improvement in Lubricating Apparatus, of which the following is a specification.

My present invention relates to a lubricating apparatus, particularly adapted for lubricating gasolene engines, of a predetermined type, and used in conjunction with the cam shaft for operating the valves and an ignition timer operated by the cam shaft as employed in such engines.

Heretofore, in the use of lubricating devices, as applied to gas engines in motor carriages, it has been usual to employ one or more sight feed devices arranged in view of the driver on the dash board or placed otherwise so that they may be readily seen, together with apparatus for forcing the oil to the sight feed devices and conveying the same away from these devices to the parts to be lubricated. This, as will be understood, necessitated relatively long lengths of pipe and consequently increased the cost of the lubricating apparatus and its operation, as well as the liability of the same to become deranged.

The object of my present invention is to provide a lubricating apparatus associated with the casing of the engine, with which the same is employed, in such a manner that the lubricant is preferably forced by a pump, or similar device actuated from the cam shaft, into a sight feed from which the oil is conveyed to the engine parts to be lubricated through a means for securing the oil cup in position on the engine casing; and also to provide a simple and positive connection between the cam shaft and the pump shaft so that these parts may be readily separated.

The design of engine for which my improved lubricating apparatus is particularly adapted is a type employed in the Ford motor cars, and the construction of the apparatus will be hereinafter more particularly described.

In the drawing, Figure 1 is an elevation of my improved lubricating apparatus. Fig. 2 is a plan and partial section of the same, Fig. 3 is an elevation and partial section of the bolt employed to secure the sight feed cup in position, and by which the lubricant is conveyed from the cup to the parts of the engine to be lubricated, and Fig. 4 is a partial section and plan showing a modified manner of connecting the cam shaft to the pump shaft.

In the drawing, 10 indicates the head of the engine casing, which, on its periphery, is provided with series of bolt holes through which bolts are passed to secure the head in position, two of these bolt holes being shown at 11 and 12.

13 indicates the shell of an ignition timer device, and 14 the terminals thereof. The ignition timer is associated with the cam shaft which is provided with suitable contacts for making connection successively with the terminals 14, and from the same to the spark plugs of the several cylinders of the engine.

The end of the cam shaft is indicated at 15. This, as shown, is screw threaded, and thus adapted to receive a nut 16. This nut is preferably provided with a beveled end, extending across the bore of which, as shown in Fig. 2, there is a pin 17.

18 indicates a rotary pump, of any desired construction, the shaft of which is indicated at 19, and at its inner extremity is slotted at 20, in order to receive the pin 17 of the nut 16. The supply pipe 21, leading from a suitable reservoir, is connected to the suction end of the pump 18 and a discharge pipe 22 is connected at one end to the discharge or outlet end of the pump 18, and at its opposite end to the sight feed or oil cup device, which preferably comprises a base 23, a glass cylinder 24, and a cap 25, the discharge pipe 22 leading into the cap 25 in a suitable manner to discharge the oil or other lubricant to the interior of the sight feed device, and, as will also be understood, this discharge may be controlled by a suitable valve regulated by an adjusting screw 26, or otherwise.

The sight feed cup is secured in position on the head 10 by means of a bolt 27. This bolt passes through an aperture provided therefor on one end of an arm 33, through an oil well 30, provided on and preferably made integral with the head 10, and also through a bolt hole in the head 10, and is turned down into a tapped opening provided therefor in the casing, to which the head is secured. The base of the sight feed cup is preferably cylindrical, and at the opposite ends thereof there are washers 28 and 29, in order to insure making tight joints be-

tween the arm 33 and the boss on the oil well and the cylindrical base of the sight feed cup.

In a predetermined position, the bolt 27 is of reduced diameter, as indicated at 31, this reduced portion coming immediately below the central outlet or discharge port in the sight feed cup, and the bolt is also recessed longitudinally, as indicated at 32, so that the oil passing from the cup may run into the recessed portion 31 and through the groove 32, irrespective of the position which the bolt may assume after the same has been turned to place, in order to permit the oil or other lubricant to be supplied from the cup through the recess and groove in the bolt to the oil well and through an aperture 34 in the head 10 to the parts of the engine to be lubricated.

Referring to Fig. 4, it will be seen that instead of employing the connection hereinbefore described, between the cam shaft and the pump shaft, I may make the inner end of the pump shaft square, as indicated at 35, or of any number of sides, as will be apparent, and make an aperture in the end of the nut 16 to receive the square or other shaped end of the pump shaft in order that these parts may be positively connected and yet easily separated.

I claim as my invention:

1. In a gas engine and in combination with the head of the casing thereof and an ignition timer, a shaft for operating the engine valves and the timer, a pump driven by the shaft, an oil cup, a connection between the discharge of the pump and the said oil cup, and a device for securing the said oil cup in position, by which the oil is conveyed therefrom to the parts to be lubricated.

2. In a gas engine and in combination with the head of the casing thereof and an ignition timer, a cam shaft for operating the engine valves and ignition timer, an oil pump, a connection between the cam shaft and the pump shaft, whereby the pump is driven from the cam shaft, an oil cup, a connection from the pump discharge to the oil cup, and a device for securing the oil cup in position and conveying the oil therefrom to the parts to be lubricated.

3. In a gas engine and in combination with the head of the casing thereof and an ignition timer, a cam shaft for operating the engine valves and the ignition timer, an oil pump, a shaft therefor extending into the timer case, and at its end slotted therein, a nut secured on the end of the cam shaft, a pin fixed transversely in the end of the said nut and adapted to receive the slotted end of the pump shaft, an oil cup, a connection between the discharge of the pump and the said oil cup, and a device for securing the oil cup in position and conveying the oil therefrom to the parts to be lubricated.

4. In a gas engine and in combination with the head of the casing thereof and an ignition timer, a shaft for said ignition timer, an oil pump, a shaft therefor extending into the timer case, and at its end slotted therein, a nut secured on the end of the timer shaft, a pin fixed transversely in the end of the said nut and adapted to receive the slotted end of the pump shaft, an oil cup, a connection between the discharge of the pump and the said oil cup, a bolt passing through the base of the oil cup and secured in the said head of the engine casing to maintain the oil cup in position, the said bolt being provided with a circumferentially grooved section and also with a longitudinal groove, whereby the oil from the cup may be conveyed therefrom by the bolt to the parts to be lubricated, irrespective of the position assumed by the bolt when turned down to place.

Signed by me this 10th day of February, 1915.

JOHANNES TH. PEDERSEN.

Witnesses:
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