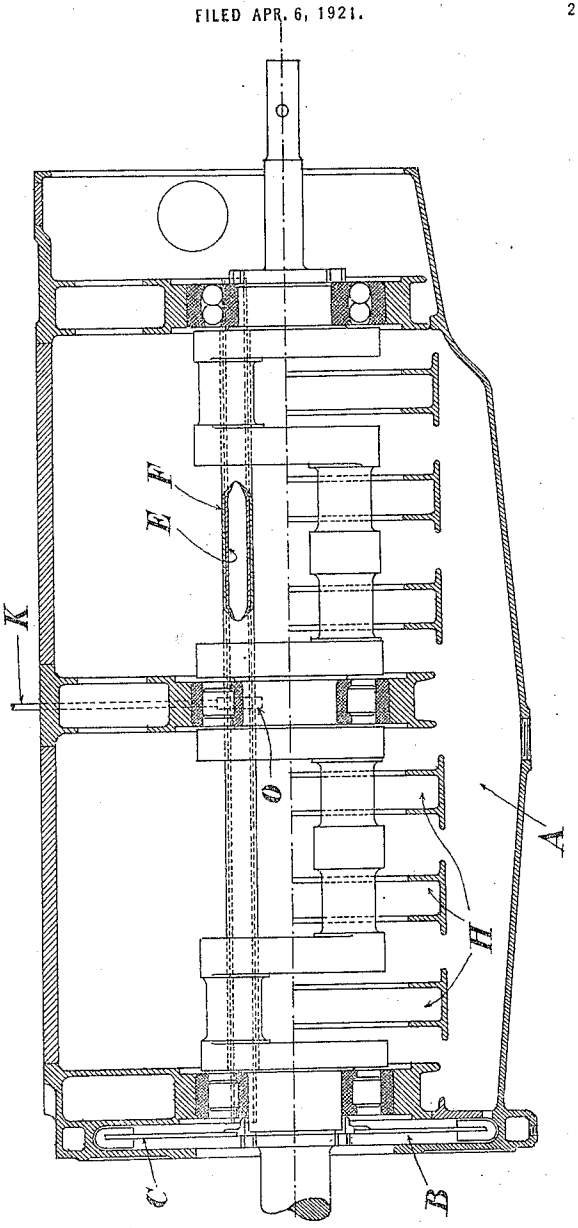
Dec. 26, 1922. 1,440,094.

E. MONGERMON.

LUBRICATING ARRANGEMENT FOR INTERNAL COMBUSTION ENGINES.

FILED APR. 6, 1921. 2 SHEETS—SHEET 1.

Fig. 1



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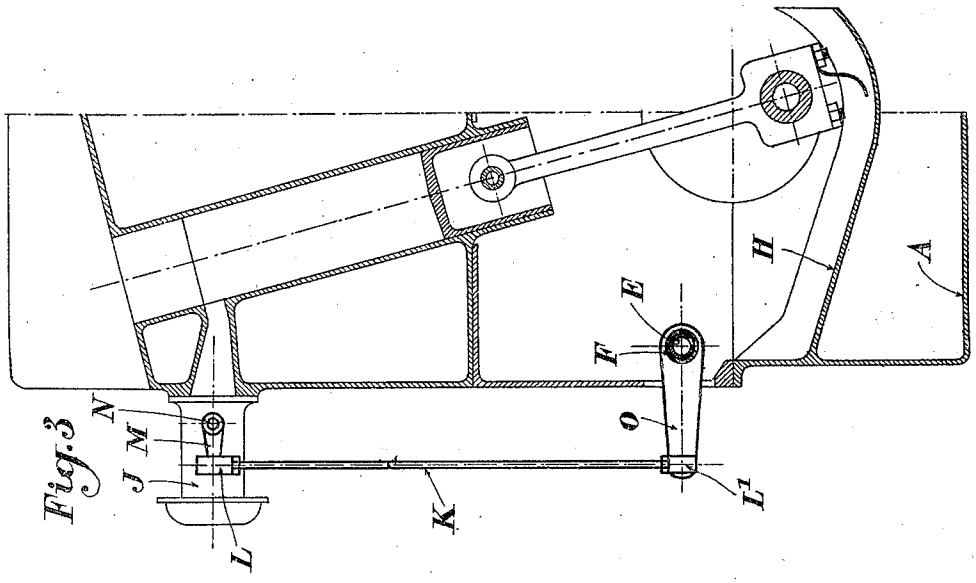


Fig. 3

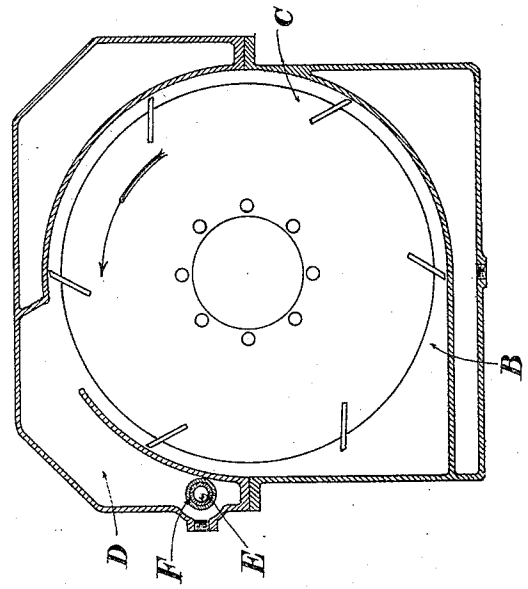


Fig. 2

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Patented Dec. 26, 1922. 1,440,094

UNITED STATES PATENT OFFICE.

EUGÈNE MONGERMON, OF PARIS, FRANCE, ASSIGNOR TO SOCIETE ANONYME DES AEROPLANES G. VOISIN, OF PARIS, FRANCE.

LUBRICATING ARRANGEMENT FOR INTERNAL-COMBUSTION ENGINES.

Application filed April 6, 1921. Serial No. 459,127.

To all whom it may concern:

Be it known that I, EUGÈNE MONGERMON, citizen of the French Republic, residing at Paris, in the Republic of France, have invented new and useful Improvements in Lubricating Arrangements for Internal-Combustion Engines, of which the following is a specification.

The lubrication of the parts of an internal combustion engine is usually obtained by a circulation of oil carried out by pressure, or by mere splashing.

In the case of circulation under pressure, the oil is usually drawn from the bottom of the lower crank-case by means of a pump, which by suitable connections distributes it to the different parts of the engine, whence it falls again into the lower crank case; this device has the advantage of permitting the distribution of oil wherever it is necessary, but has an inconvenience in that it has a very variable working, with the wear of the mechanical parts which compose it.

The splashing device does not present the same inconvenience as the preceding method, for it remains constant irrespectively of the wear or the parts of the engine, but on the contrary it is not well adapted to the distribution of the oil.

The device which forms the object of the present invention is intended to unite the advantages of the two systems above mentioned. It consists in principle in the use of a paddle wheel disposed between two partitions of the crank case; the space between these two partitions forms a chamber which is connected at its lower part with the bottom of the crank case forming a basin containing a reserve supply of oil. By reason of the connection, the same level is attained in the basin and in the chamber of the paddle wheel; this latter by its rotation draws along a stream of oil which rises and is collected in a chamber provided in the upper casing. Subsequently, by the simple action of gravity, the oil thus raised is distributed to the oil troughs, having the scoops of the connecting rods dipping therein, as well as the different parts to be lubricated.

In order to introduce at each instant into the troughs or containers a quantity of oil which is proportional to the power furnished by the engine, the oil is brought to each of these through the intermediary of two concentric tubes, rotating one within the other, one of which acts in the same manner as the body of a cock, and the other as the plug; the oil is brought by the inner tube provided with an orifice opposite each container to be supplied, while the outer tube is provided at this place with an aperture of suitable shape whereby its rotation about the first tube shall cause a variation in the section of passage. The actuating device effecting the rotation of this outer tube is connected with the actuating device used for opening the throttle of the carburetting apparatus, and thus provides for the increase in feed to the containers in accordance with the power of the engine.

The accompanying drawing shows by way of example a construction for the lubrication of an engine, by means of a circulation obtained according to the principle of the invention.

Fig. 1 is a longitudinal section of the crank case of this engine.

Fig. 2 is a cross section through the chamber having the paddle wheel rotating therein.

Fig. 3 is a transverse section of the engine, showing in side elevation the controlling device of the lubrication.

In the drawing:

A is the basin containing the reserve supply of oil.

B is the chamber having the paddle wheel rotating therein.

C is the paddle wheel.

D is the chamber, wherein the wheel C elevates and projects the oil.

E—F are the concentric tubes for the distribution of the oil, H the containers having dipping therein the scoops of the connecting rods.

The wheel C secured to the crank-shaft rotates with this latter, and it rotates within a chamber B which is separated from the rest of the crank case of the motor, being only in communication at the lower part with the basin A; the oil contained in the basin thus enters the chamber B at the same level, this latter being so adjusted that the paddles of the wheel C are caused to dip into the oil by a certain amount, drawing this oil along in their rotation, and thus form a liquid stream which then empties into the chamber D. The oil then passes into the tube E; the tube F being controlled at the same time as the throttle

of the carburetting apparatus as it will be seen hereinafter, uncovers in its rotation the apertures of the tube E situated opposite the containers H.

In order to control the outer tube F, at the same time as the throttle valve of the carburetter J, a lever O is secured on said outer tube at a point situated substantially in vertical alignment with the carburetter; said lever O is connected to the throttle valve of the carburetter by means of a rod K and of a small lever M, the latter being secured on one trunnion N of the throttle valve which is also actuated by any other well known means for the control of the carburetter by the accelerator. The rod K is articulated on the levers M and O by means of two ball and socket joints L and L^1 respectively.

In the containers H the scoops I of the connecting rods are caused to dip, and the oil which is thus scattered will lubricate the different parts of the engine, descending thence into the basin A whence it passes into the chamber B and is again elevated by the paddle wheel.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A lubricating arrangement for internal combustion engines comprising in combination a crank case, an oil chamber in communication with said crank case at its bottom part, a rotary shaft, a paddle wheel on said shaft adapted to dip into the oil chamber, an upper storage chamber into which the oil may be raised by the paddle wheel, two concentrically arranged tubes provided with ports opposite the parts to be lubricated, one of said tubes being in communication with the said storage chamber and means for rotating one of the tubes with respect to the other.

2. A lubricating arrangement for internal combustion engines comprising in combination a crank case, an oil chamber in communication with said crank case at its bottom part, a rotary shaft, a paddle wheel on said shaft adapted to dip into the oil chamber, an upper storage chamber into which the oil may be raised by the paddle wheel, two concentrically arranged tubes provided with ports opposite the parts to be lubricated, one of said tubes being in communication with the said storage chamber, an operating member for rotating one of the tubes with respect to the other and means for connecting said operating member to the controlling member for the throttle valve of the carburetter, whereby the flow of oil will vary according to the speed of the engine.

3. A lubricating arrangement for internal combustion engines comprising in combination a crank case, an oil chamber in communication with said crank case at its bottom part, a rotary shaft, a paddle wheel on said shaft adapted to dip into the oil chamber, an upper storage chamber into which the oil may be raised by the paddle wheel, two concentrically arranged tubes provided with ports, one of said tubes being in communication with the said storage chamber, means for rotating one of the tubes with respect to the other and oil containers in vertical alignment with said ports and below the same and into which the scoops of the connecting rods are adapted to dip.

In testimony whereof I have signed my name to this specification.

EUGÈNE MONGERMON.