

PUBLISHED
MAY 11, 1943.
BY A. P. C.

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LUBRICATION DEVICES
Filed Feb. 12, 1941

Serial No.
378,640

Fig. 1

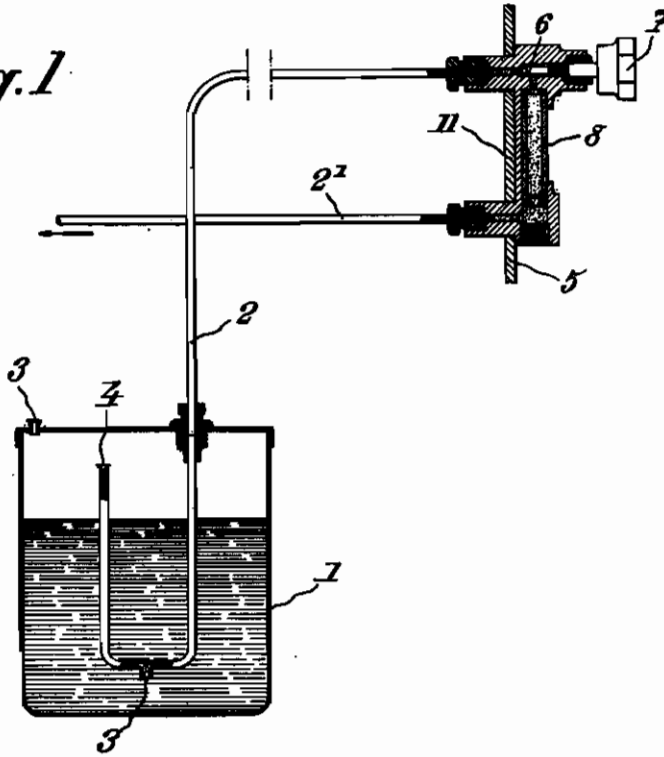


Fig. 2

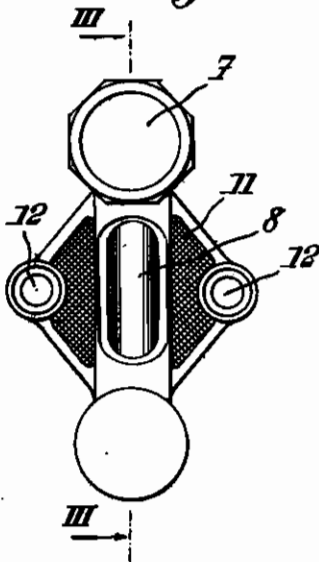
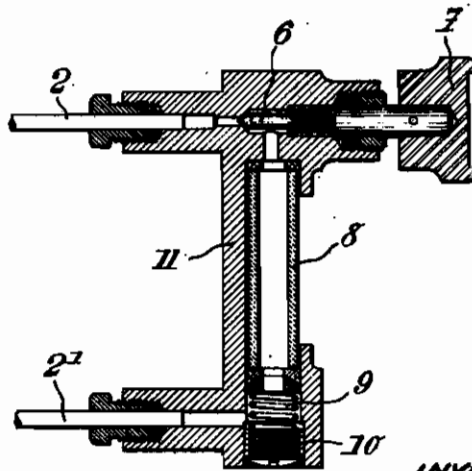


Fig. 3



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ALIEN PROPERTY CUSTODIAN

LUBRICATION DEVICES

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Application filed February 12, 1941

The present invention relates to lubrication devices and it is more especially, although not exclusively concerned, among these devices, with those for lubricating the parts, and especially the cylinders, of internal combustion engines.

The chief object of the present invention is to provide a device of this type which is better adapted to meet the requirements of practice than those used for the same purpose up to the present time.

According to an important feature of the present invention, concerning more especially the devices of this kind in which the lubricant is fed to the surfaces to be lubricated in the form of an emulsion, these devices are designed in such manner that the air intended to form the emulsion is introduced into the lubricant at a point located in the immediate vicinity of the reservoir containing said lubricant.

The emulsified matter is then preferably led, through suitable conduits, to a place where said matter can be examined, and eventually where its rate of flow can be adjusted, after which the emulsion is fed to the surfaces to be lubricated.

According to another feature of the invention, which relates to the case of internal combustion engines fed with "dry" fuels, such for instance as producer gas, town gas, alcohol, etc., the cylinders, or cylinder tops of these engines are lubricated by means of emulsion lubricating devices, and in particular devices of the kind above described.

Other features of the present invention will result from the following detailed description of some specific embodiments thereof.

Preferred embodiments of the present invention will be hereinafter described, with reference to the accompanying drawings, given merely by way of example, and in which:

Fig. 1 is a diagrammatic vertical sectional view of a lubricating apparatus of the type forming an oil emulsion to be used in an internal combustion engine, this apparatus being made according to the present invention;

Fig. 2 is an elevational view showing separately, on an enlarged scale, the means for examining and adjusting the composition of the emulsion, as included in the apparatus illustrated by Fig. 1, according to the invention;

Fig. 3 is a vertical sectional view corresponding to Fig. 2.

In the following description, it will be supposed that the invention is applied to the lubrication of an explosion engine for an automobile vehicle, and, more especially, that this engine is fed with

a dry fuel, such for instance as producer gas, town gas, alcohol and so on.

Experience has taught that, in engines fed with such fuels, an abnormal wear of the cylinders and the valves takes place as a consequence of the nature of these fuels.

In order to avoid this drawback, according to the present invention, we provide, on this engine, a lubricating device of the oil emulsion type, such as was already utilized, in the case of engines fed with the usual fuels for obtaining a super-lubrication. Such a device, when used in connection with an engine fed with a dry fuel, plays a much more important part since it is necessary to prevent a wear which, as taught by experience, has proved to be very quick (streaks formed in the cylinders, pitting of the valves, and so on).

As for the particular arrangement of this lubrication device, it is preferable to make it as follows:

We provide, in the known manner, a reserve of oil in a container such as 1, which container is for instance mounted on the inside of the hood of the motor vehicle.

This container is connected, through at least one conduit, with a portion of the engine subjected to the suction produced during the inlet stroke of the pistons, for instance with the fuel intake conduit, according to an arrangement which is also known in itself.

As for the means for ensuring the formation of the emulsion, they are devised in such manner that the air necessary for this purpose, or at least a portion of this air, is introduced into the lubricant at a point in close proximity to this container.

For instance, according to an embodiment which seems to be advantageous, conduit 2 is partly immersed in the container. For instance, this conduit is in the form of a U-shaped tube in which is provided, on the one hand, at least one calibrated orifice 3, for the inflow of oil for instance at the lower part of the U, and, on the other hand, at the end of said tube which projects upwardly from the surface of the liquid, a calibrated orifice 4, for the inflow of air.

Of course, other air inlets may be provided at other places.

The orifices, such as 3 and 4, may be adjustable, possibly from a distance.

With such an arrangement, under the effect of the suction produced by the engine, a mixture of air and oil, in substantially constant proportions, is formed in the apparatus and fed toward the engine. We may provide a device of the uni-

form level type capable of ensuring a constant static height of liquid acting on point 3.

Of course, an air inlet is provided in the wall of the container, for instance at 13.

On the other hand, means must be provided for adjusting the rate of flow of emulsified liquid fed to the engine.

These means are preferably carried by the instrument board 5 and they consist for instance essentially of a needle valve 6, operated by means of a knob 7, this needle valve controlling the outlet of conduit 2 into a chamber provided on said instrument board and from which starts another conduit 2', leading to the engine.

Advantageously, this needle valve is combined with a device capable of enabling the driver visually to check the composition of the emulsion and the rate at which it is being fed. This device consists for instance essentially of a glass tube 8, advantageously mounted in a removable manner, being for instance held in position by a spring 9 inserted between the lower end of the tube and a screw plug 10 fitting in a frame 11. This frame can easily be secured to the instrument board 5, for instance by means of screws extending through holes such as 12 (Fig. 2).

Whatever be the particular embodiment of the invention that is chosen, its operation results sufficiently clearly from the above description for making it unnecessary to enter into further explanations.

Apparatus according to the invention have, over similar apparatus known prior to this invention, several advantages among which the following can be cited;

First, it is possible to improve the working of the engine, despite the dry nature of the fuel that is employed;

Then, it is possible to to adjust the emulsion in an accurate manner;

Finally, the system is very simple and therefore inexpensive.

In a general manner, while we have, in the above description, disclosed what we deem to be practical and efficient embodiments of the present invention, it should be well understood that we do not wish to be limited thereto as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of the present invention.

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