No. 859,159. PATENTED JULY 2, 1907.

G. E. WHITNEY.

AUTOMATIC MULTIPLE OILER FOR MOTOR VEHICLES.

APPLICATION FILED OCT. 6, 1902. RENEWED DEC. 4, 1906.

2 SHEETS—SHEET 1.

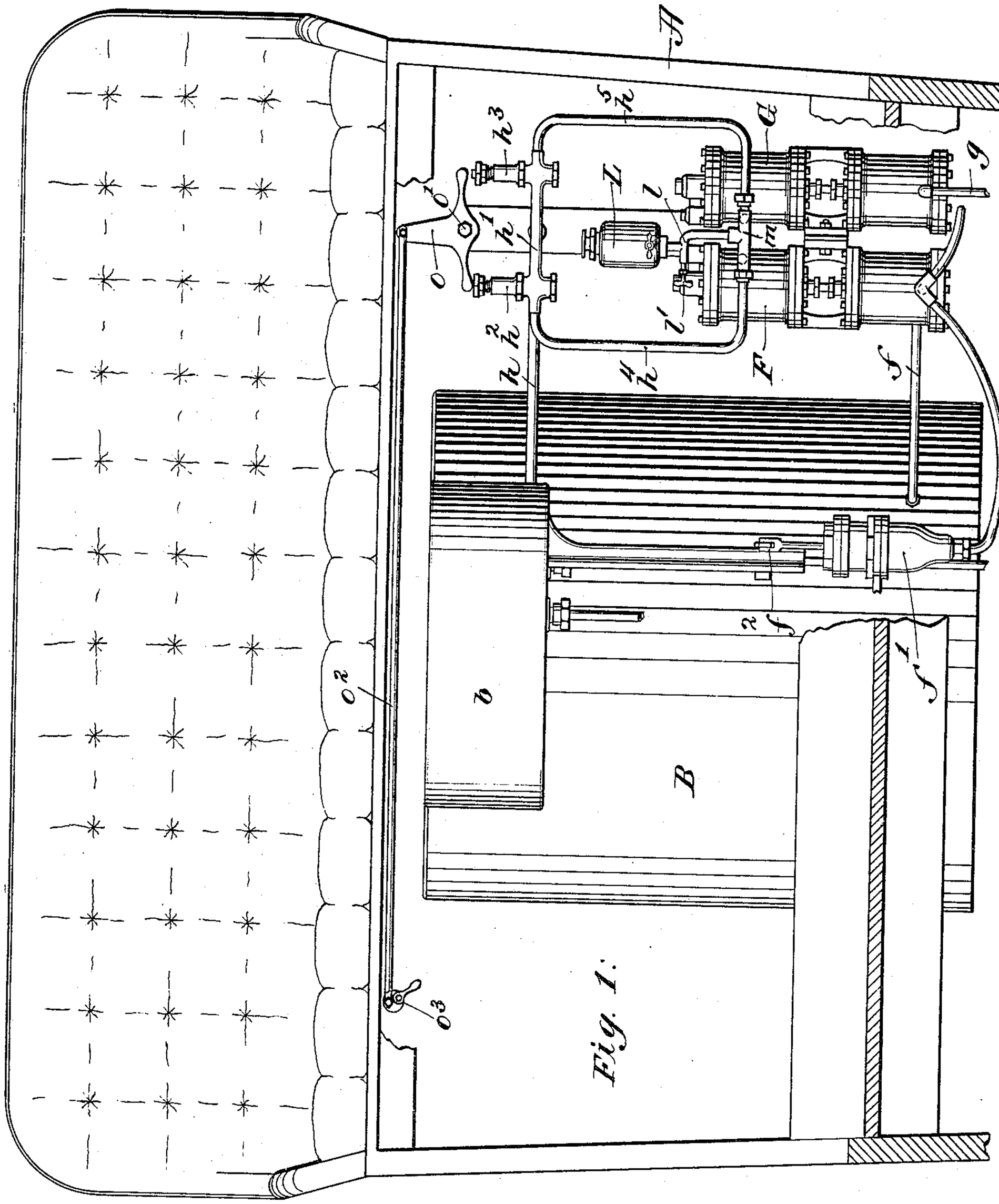

Fig. 1.

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Fig. 2:

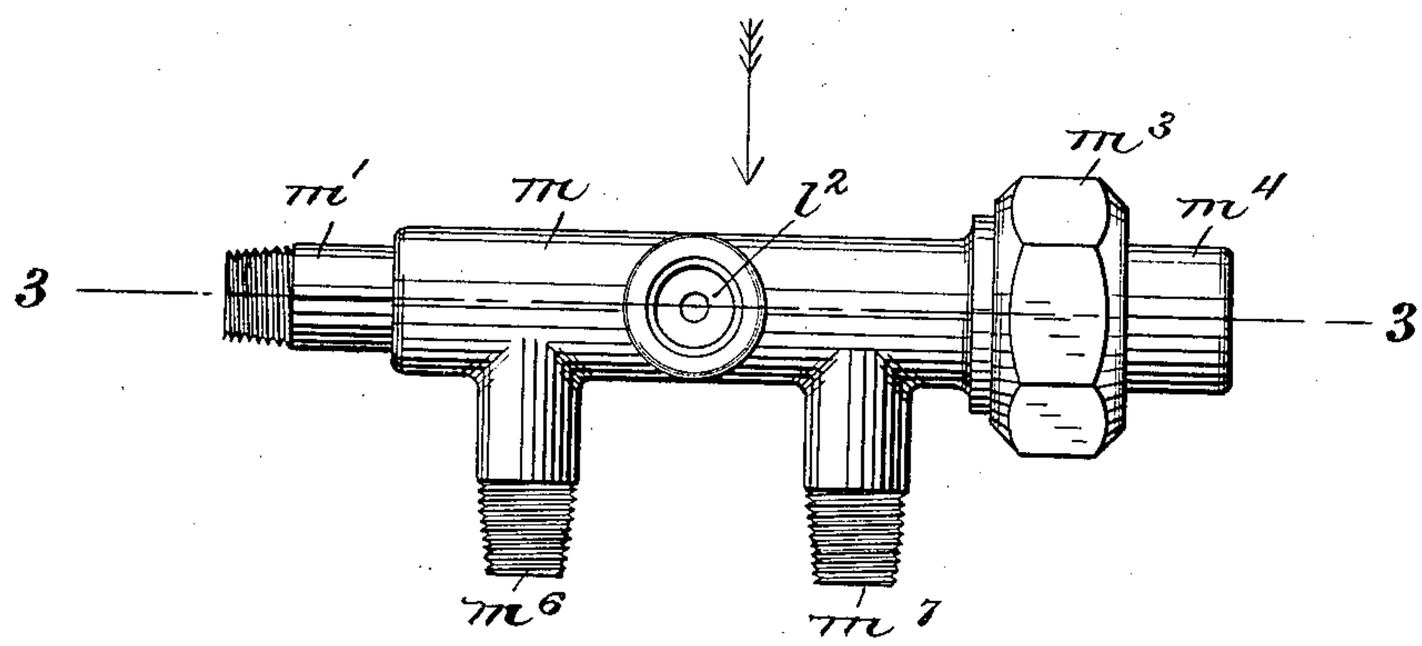


Fig. 3:

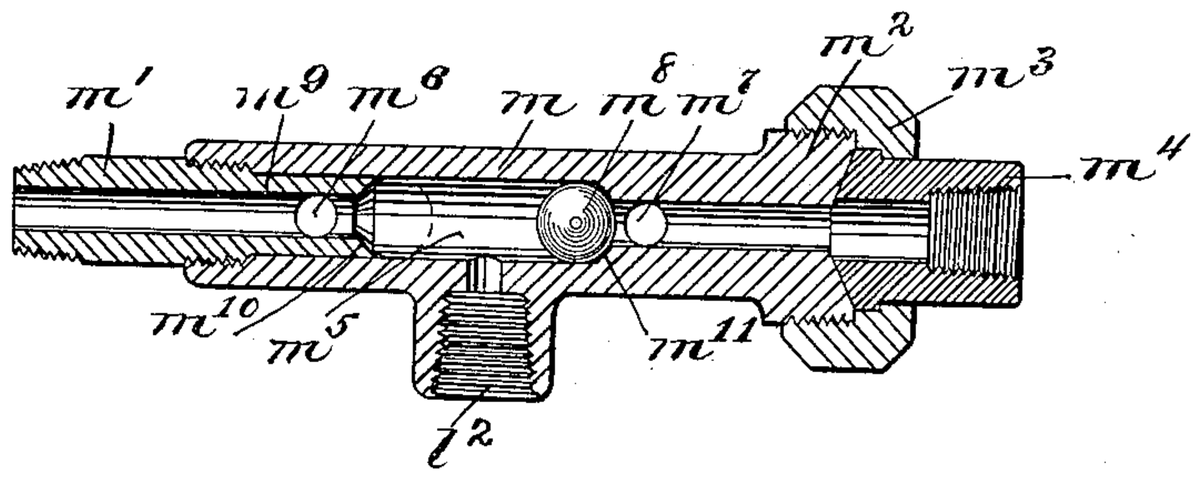
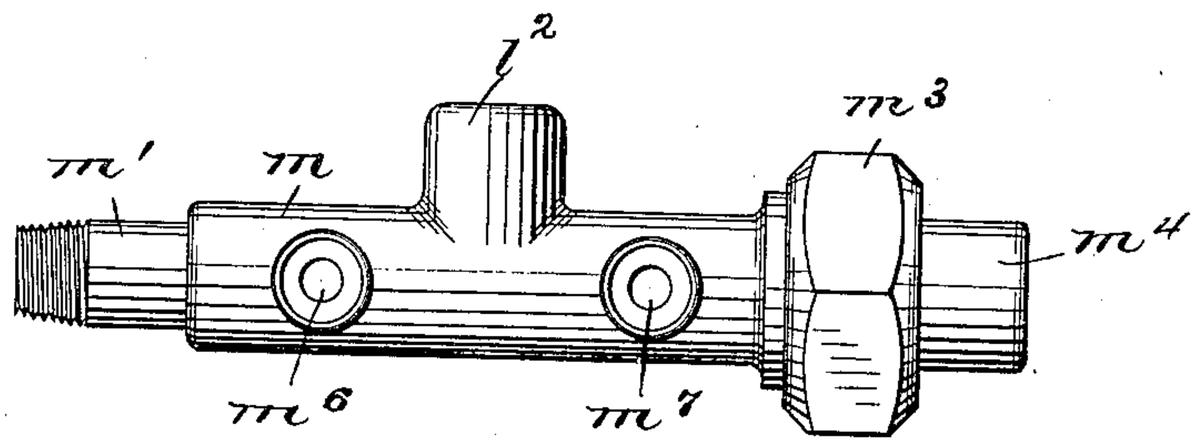


Fig. 4:



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UNITED STATES PATENT OFFICE.

GEORGE E. WHITNEY, OF BOSTON, MASSACHUSETTS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO STANLEY MOTOR CARRIAGE COMPANY, A CORPORATION OF MASSACHUSETTS.

AUTOMATIC MULTIPLE OILER FOR MOTOR-VEHICLES.

No. 859,159. Specification of Letters Patent. Patented July 2, 1907.

Application filed October 6, 1902. Renewed December 4, 1906. Serial No. 346,333.

To all whom it may concern:

Be it known that I, GEORGE E. WHITNEY, a citizen of the United States, residing at Boston, in the county of Suffolk and Commonwealth of Massachusetts, have invented an Improvement in Automatic Multiple Oilers for Motor-Vehicles, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In steam automobiles there are frequently provided two steam pumps, one, for instance, to renew the air supply used to force the liquid fuel to the burner, and the other used to fill the boiler, the latter being more frequently an auxiliary pump to be used only in the event of the disabling of the main power pump commonly operated from the crosshead of the engine. Some means is usually provided for lubricating the steam cylinders of these pumps, each cylinder commonly having its separate lubricator. To avoid the expense attending the use of separate lubricators, and, at the same time, to economize in the use of the lubricant, my present invention comprehends means for supplying lubricant to both cylinders from a single lubricating device, also means for admitting lubricant to the piston, for the time being in operation, and cutting it off from the inoperative piston.

To enable my invention to be understood, I refer to the accompanying drawings, wherein,—

Figure 1 illustrates in vertical cross section partially broken away a portion of a motor vehicle equipped with means illustrating my invention; Fig. 2, a plan view of the pressure actuated controlling device; Fig. 3, a longitudinal section on the dotted line, 3—3, Fig. 2 showing the controlling device in an inverted position; and, Fig. 4, a side view of the device, Fig. 2, viewed from the rear.

Referring to the drawings, in the particular embodiment of my invention there shown, A represents the body of a motor vehicle equipped with a boiler, B, to which is connected an engine, herein shown with its cylinders in a bay window or jacket, *b*, on the boiler, said engine being adapted for the operation of the vehicle in the usual manner.

F and G indicate the steam cylinders of two direct acting pumps, the former being a boiler feed pump delivering through a suitable feed pipe, *f*, into the boiler, and supplementing the pump, *f'*, operated by a lever, f^2, adapted to be connected with the crosshead of the engine, the pump G, being an air pump, its delivery pipe, *g*, leading to a suitable air receiver, not shown, for supplying the hydrocarbon or other fuel to the burner by which the boiler is heated.

Steam for the two pumps is taken from the boiler through a supply pipe, *h*, which enters a twin fitting, h', provided with two controlling valves, indicated respectively at h^2 and h^3. From the valves h^2, h^3, lead respectively the pipes, h^4, h^5, which enter opposite ends of the controlling device, *m*, shown separately in Figs. 2 to 4, inclusive. This controller, *m*, see Fig. 3, at one end, as at the left is internally threaded to receive the nipple, *m'*, to the outer end of which the pipe, h^5, is attached by a suitable union, while at its opposite end said controller is threaded at m^2 to receive a union, m^3, holding the nipple, m^4, to which the pipe, h^4, may be attached. Within the controller is a longitudinal passage, m^5, from which lead two outlets, m^6, m^7, which lead respectively to the two steam cylinders, G, F, to supply the same with steam for the operation of the usual pistons therein.

The longitudinal passage, m^5, contains a ball valve, m^8, adapted to roll back and forth therein and to be seated at one end, at the left, as viewed in Fig. 3, against a seat, m^{10}, formed in the end of the extension, m^9, on the nipple, *m'*, and at the opposite end, at the right, against the seat, m^{11}, formed in the wall of said passage. The lubricator is indicated at L, Fig. 1, its lubricating pipe, *l*, under the control of the valve, *l'*, entering the controller at l^2, between the outlets m^6 and m^7 therefrom.

Referring again to Fig. 1, the valves h^2 and h^3, are controlled by a single T-shaped device, *o*, pivoted at *o'*, and connected by a rod, o^2, with the operating lever, o^3. When the operating lever is in the position, Fig. 1, the stem of the valve h^2, is depressed to admit steam past said valve through the pipe h^4, to the controller, *m*, thence through the outlet, m^7, to the cylinder, F, to operate the piston therein. The action of the steam thus admitted to the controller will move the ball valve m^8 to the right, as viewed in Fig. 1; or, as in Fig. 3, to the left, against its seat, m^{10}, as shown in dotted lines, to prevent the passage of steam to the outlet, m^6, and to the cylinder G, and also to prevent the flow of lubricant from the lubricator to the said pipe, m^6, and cylinder G. So long as the valve m^8 is in its position, Fig. 3, the lubricant will enter the cylinder F only, so that no lubricant is wasted by escaping to a cylinder in which the piston is not in operation. When, however, the operating device, o^3, is reversed, and the stem of the valve, h^3, is depressed to admit steam through the pipe h^5, to the cylinder, G, the ball valve, m^8, will be moved to the left, as viewed in Fig. 1; or, to the right, into its full line position, as viewed in Fig. 3; against the seat m^{11}, thereby preventing steam from entering the cylinder F, also cutting off the supply of lubricant thereto. So long as the ball valve remains in its full line position, Fig. 3, lubricant will flow to the cylinder G only.

The lubricator, L, may be of any suitable or usual type but preferably of the well-known condensation displacement type, relying upon the admission of steam under pressure to its reservoir to cause oil to be fed therefrom, this type being preferable because it feeds the oil only when pressure is on. Thus, when both the valves, h^2, and h^3 are closed, and no steam admitted to either pump cylinder, there will be no pressure upon the lubricator no flow of oil therefrom; and admission of steam to either cylinder will operate to start the feed of oil from the lubricator, which, by means of the ball controlling valve described, will pass only to that cylinder the piston of which is operating, and the instant the pressure is cut off to stop the operation of said piston, the flow of oil likewise stops. Any other suitable or equivalent lubricator may, however, be used, and when arranged according to my invention, suffices for a plurality of cylinders supplying oil to the cylinder only which is for the time being in use. Such working devices as the two pumps herein described, I have termed differentially operating devices; that is to say, they are subject to individual operation lacking co-incidence either in time or rate or both, the several devices being operated, for example, at separate times, or for periods which are neither co-extensive or coincident, or at unlike and variable rates.

My invention is not limited to the particular embodiment thereof here shown and described, and obviously it may be used in connection with any other group of differentially operating working devices than the particular devices, viz., steam pumps, herein shown and described.

Claim.

1. The combination with a plurality of differentially operating working devices to be oiled, means to supply fluid under pressure to each, and pressure responsive oiling means common to said working devices, for oiling one only of the said operating devices at a time.

2. The combination with a plurality of differentially operating working devices to be oiled, of oiling means for the said devices, and automatic pressure responsive means to admit oil from a single source to the respective devices.

3. The combination with a plurality of differentially operating working devices to be oiled, of a single oil supply means for all of said devices and automatic means for admitting oil to each device when that device is in operation.

4. The combination with a plurality of differentially operating working devices to be oiled, of oil supply means therefor, and means governed by the operation of one of said devices for cutting off the oil supply to the other.

5. The combination with a plurality of differentially operating working devices to be oiled, of a single oil supply means for said devices, and pressure responsive means to direct the oil to either of said devices, according to the particular device being operated.

6. The combination with a plurality of differentially operating cylinders, means to admit pressure alternately thereto, lubricant supply means for and common to said cylinders, and pressure responsive means to admit said lubricant to the particular cylinder only which is being operated for the time being.

7. The combination with a plurality of differentially operating cylinders of means to supply working pressure to each, alternately operable controlling valves, lubricant supply means, and means operated by the pressure admitted to a cylinder to supply lubricant to that cylinder.

8. In a motor vehicle, the combination with a steam boiler feed pump and an air pump, of a single lubricator for and communicating with both said pumps, means to admit operating pressure to said pumps and controlling means actuated by operating pressure when admitted to either pump for admitting lubricant to that pump.

9. In a steam motor vehicle, a plurality of differentially operating pumps, a single outlet from the boiler for supplying steam to, and for operating said pumps, means to govern the admission of steam to the said pumps, lubricating means common to both pumps, and means controlled by the pressure admitted to each pump for admitting lubricant to that pump.

10. The combination with a plurality of differentially operating working devices to be oiled, of a single oiling device for the several working devices, said oiling device being constructed to operate only when a working device is in operation, and automatic means to direct oil from said oiling device to the particular working device for the time being in operation.

11. The combination with a plurality of differentially operating working devices to be oiled of single pressure controlled oiling means and pressure responsive controlling means to automatically direct the oil to the working device being operated.

12. The combination with a plurality of differentially operated working devices to be oiled, of means to supply fluid under pressure to each, pressure responsive oiling devices common to said working devices, and means controlled by the varying pressure of said operating devices to distribute oil thereto in accordance with the pressure variations in each.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

GEORGE E. WHITNEY.

Witnesses:
EVERETT S. EMERY,
SUSAN E. HAYNES.