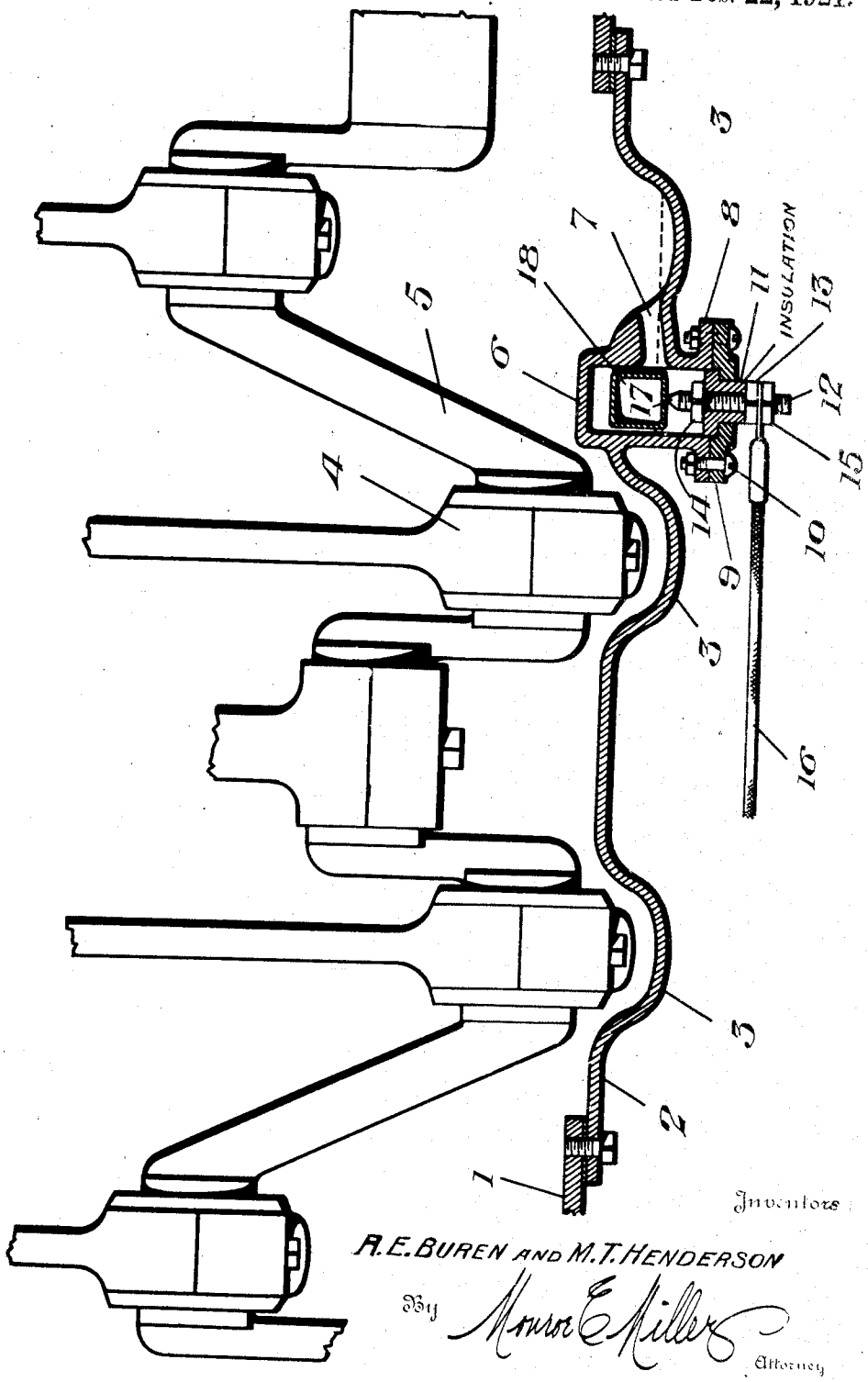
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LUBRICATING ALARM FOR ENGINES.

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1,369,321.

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LUBRICATING-ALARM FOR ENGINES.

1,369,321. Specification of Letters Patent. Patented Feb. 22, 1921.

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To all whom it may concern:

Be it known that we, ALBERT E. BUREN and MELVILLE T. HENDERSON, citizens of the United States, residing at Sedalia, in the county of Pettis and State of Missouri, have invented certain new and useful Improvements in Lubricating-Alarms for Engines, of which the following is a specification, reference being had therein to the accompanying drawing.

The present invention relates to a device designed for use in the crank case or oil pan of an internal combustion engine for the purpose of controlling an electrical circuit, in order to stop the engine or give an alarm signal when the lubricating oil has been exhausted in the troughs or depressions from which the oil is splashed, thereby warning the operator that the lubricating system is out of order so that same can be remedied before the bearings, cylinder walls and other parts become dry and damaged due to friction and heating.

The object of the invention is the provision of a novel and improved, yet simple and inexpensive device adapted to be installed in the crank case or oil pan for controlling an electrical circuit when the oil level in the corresponding oil trough or depression lowers to a dangerous amount, such as by the stoppage of the conduit or tube which supplies the oil, or the like, and either stopping the engine or giving an alarm signal, to call attention to the defect before the engine becomes overheated or damaged.

A further object is the provision of such a device including a float chamber adjacent to the oil trough or depression in communication therewith, and containing a circuit-closing or controlling float, and a terminal of an electrical circuit extending within said chamber for the engagement of the float to close an electrical circuit.

With the foregoing and other objects in view, which will be apparent as the description proceeds, the invention resides in the construction and arrangement of parts hereinafter described and claimed, it being understood that changes can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein the figure is a longitudinal section of the oil pan of the crank case showing the present device embodied therein, portions being shown in elevation and a fragmentary portion of the engine crank shaft and connecting rods being shown.

The present invention is designed particularly for engines using the splash system of lubrication, and in the construction shown, the crank case or oil pan 1 has the bottom cover plate 2 detachably secured thereto, and provided with the troughs or depressions 3 for holding oil therein into which the connecting rod bearings 4 dip during the rotation of the crank shaft 5, for splashing the oil to the bearings and upwardly into the engine cylinders. The foregoing structure is typical of engines using the splash system, and should the supply of oil be stopped, such as by the exhaustion of oil or the stoppage of the supply conduit, the oil in the depressions 3 will become exhausted, resulting in the heating of the bearings, cylinder walls, pistons and the like, with possible burning out of the bearings, scoring of the cylinders and pistons, and other damage.

In carrying out the invention, the plate 2 of the oil pan is provided with a vertical chamber 6, and as shown, this chamber is integral with the plate 2, although it can be a separate part assembled in any suitable manner with said plate, such as by welding, soldering or the like. This chamber 6 is disposed adjacent to the depression or trough 3 with which the device is used, and one of the present devices can be used with each trough or depression if desired, being a mere duplication.

The chamber 6 and trough or depression have a common side wall provided with a port 7 opening into the trough at one side thereof and into the chamber laterally thereof between the upper and lower ends of said chamber, whereby the oil flows from the trough into the chamber, and in order that the lowering of the oil level in the trough will also result in the lowering of the oil level in the chamber, especially when the oil is practically exhausted from the trough.

The chamber 6 has its lower end open and provided with an outturned annular flange 8 to which a cover plate or cap 9 is secured by means of bolts 10 or the like, and a bushing 11 of insulating material is fitted downwardly within a central hole in the cap 9 and is seated on said cap within the lower end of the chamber 6. A binding post 12 ex-

tends through the bushing 11, being secured thereto by means of nuts 13 and 14, threaded on said binding post and bearing against the lower and upper ends of the bushing, respectively, and a nut 15 on the outer terminal of the binding post is used for securing the terminal of electrical conductor or wire 16 to said binding post. The upper terminal of the binding post projects upwardly within the chamber, and is pointed to provide a contact 17 for a hollow metal float 18, or the like, which is buoyant in oil, and which is a conductor of electrical energy, so that when it seats on the contact 17 of the binding post and bears against one side of the chamber, said float will bridge the gap between the binding post and crank casing, to close the electrical circuit.

Thus, when there is a sufficient supply of oil in the trough, the oil in flowing into the chamber will raise the float off of the contact 17, thereby opening the circuit, but should the supply of oil cease and the oil in the trough become exhausted, this will result in the oil flowing back from the chamber through the port 7 into the trough, permitting the float 18 to seat on the contact 17 and thus closing the electrical circuit. The electrical circuit can be used in several different ways. For example, the wire 16 can be connected to the ignition system so that when the float 18 closes the circuit, it will short circuit the ignition system for stopping the engine automatically when the oil is exhausted in the trough or depression. Or, the circuit can control a signal lamp or the like, giving a warning to the operator. In fact, the circuit can control the ignition system, various signals and the like, as well understood and within the province of a mechanic.

The device can also be used in a similar relation for other purposes, to control an electrical circuit by the change in level of the liquid in a trough or depression with which the device is used as above described.

Having thus described the invention, what is claimed as new is:—

1. A device of the character described comprising a trough, a casing at one side thereof, said trough and casing having a common side wall with a port establishing communication between one side of the trough and one side of the chamber between the upper and lower ends thereof, a circuit-controlling float movable within the chamber, and a contact within the chamber for the engagement of said float for controlling a circuit.

2. A device of the character described comprising a plate having a trough and a chamber at one side of the trough, with a port establishing communication between said trough and chamber, a cap for the lower end of the chamber below said plate, a circuit controlling float in said chamber, and an insulated binding post extending through said cap for the contact of the float with the upper end thereof for controlling a circuit.

In testimony whereof we have hereunto affixed our signatures.

BERT E. BUREN.
MEL. T. HENDERSON.