Oct. 26, 1948. W. J. KASPAREK 2,452,379

LUBRICATION FAILURE DETECTOR SWITCH

Filed Jan. 15, 1946

FIG. 1

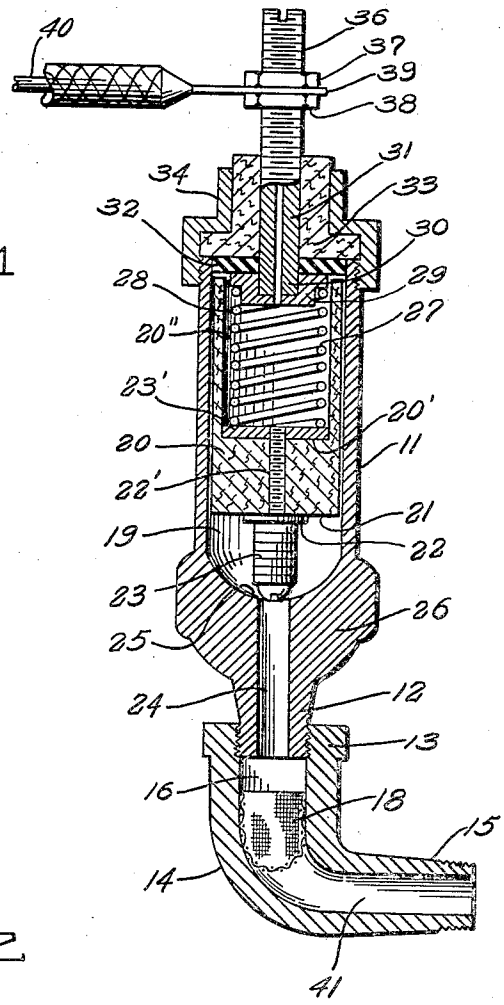
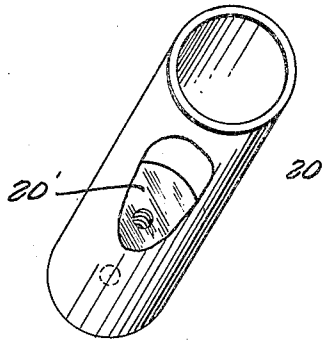


FIG. 2



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LUBRICATION FAILURE DETECTOR SWITCH

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2 Claims. (Cl. 200—82)

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This invention relates to motors and other mechanisms using lubricating oil under pressure and has for its primary object to provide means for positive detection of oil pressure failure.

Another object of the invention is to provide automatic means for stopping a motor upon oil pressure failure.

A further object of the invention is to provide a simple, inexpensive yet positive in action means for grounding an electric ignition circuit upon oil pressure failure.

Other features and advantages will become more readily apparent from the following description and the accompanying illustrative drawings in which:

Figure 1 is a vertical sectional view of my invention, and

Figure 2 is a detail perspective view of a piston.

In the accompanying drawings and in the following specification like characters of reference indicate like parts throughout and in which 10 indicates my oil pressure controlled circuit cut out which consists of a cylinder 11, having a tubular threaded bottom stem 12, adapted to be screwed into the internally threaded upper portion 13 of a nipple 14, which nipple is provided with an externally threaded plug-in terminal 15, which may be right angularly disposed relative to the part 13, or otherwise, and which is adapted to be threaded into an oil system pipe line or other portion thereof. There is seated within the bore 16 of the nipple an oil filter screen 18.

Mounted within the bore 19 of the cylinder 11, is a non-conducting drum piston 20, of a frictionless but close fit. Bolted upon the bottom wall 21 of the piston is a conductor disk 22, having a depending contact 23, to project down for possible engagement with the contact seat 25, in the wall 26, of the steel or other conductive cylinder 11, surrounding the bore 24, and connecting with nipple 14. The conductor member 23 is secured in leak-proof relation to the said wall 21. Disk 22 is connected by a conductor 22', with a conductor disk 23', on the bottom wall 20' of bore 20'' in the piston.

Seated upon the member 23' is a compression spring 27, within the upper convolutions 28 of which is seated a retainer 29, which is of conductive material and is either formed upon the inner end 30, or fixed thereon. A brass or other conductive screw 31 is threaded through a flat circular top plate 32 on said piston 20 on which a rubber plug 33 seats and is held by the cap 34. Clamped upon the outer end 36 of screw 31, by

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means of nuts 37 and 38, is the terminal 39 of an insulated ignition circuit wire 40.

The tension of spring 27 is adjusted by screw 31, to give to a predetermined oil pressure, the oil under said pressure passes through bore 41, in stem 14, and bears against the under surface of wall 21, holding the piston raised against the pressure of the spring 27, and the contact 23, away from seat 25. However, should the oil pressure fall below the predetermined margin of safety the spring 27 forces the piston down, bringing contact 23 into engagement with contact seat 25, and thereby sending ignition current to ground and stopping the engine. It is therefore obvious that the use of this simple little device can be the means for preventing the burning out and destruction of much valuable property.

It is thought that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Changes in shape, size and rearrangement of details and parts such as come within the purview of the invention claimed may be resorted to, in actual practice, if desired.

Having now described my invention that which I claim as new and desire to procure by Letters Patent is:

1. A pressure switch comprising a metallic hollow cylindrical casing securable at one end thereof in pressure-communicative relation to a pressurized fluid system, a piston of insulating material having a bore within said cylinder, a helical spring within said bore, metallic members contacting the inner and outer ends of said spring, a cap closing the outer end of said cylinder, a screw-threaded electrical terminal non-conductively secured in said cap and electrically connected to the said metallic member at the outer end of said piston, and an electrical contact exteriorly secured on the inner end of said piston and conductively connected to the one of said metallic members on the inner end of said spring, said contact being positioned to contact a portion of said cylinder when the pressure on said fluid is insufficient to retract said piston against the action of said spring.

2. A pressure switch comprising a metallic hollow cylindrical casing securable at one end thereof in pressure-communicative relation to a pressurized fluid system, a piston of insulating material having a bore within said cylinder, a helical spring within said bore, metallic members con-

tacting the inner and outer ends of said spring, a cap closing the outer end of said cylinder, a screw-threaded electrical terminal non-conductively secured in said cap and electrically connected to the said metallic member at the outer end of said piston, and an electrical contact exteriorly secured on the inner end of said piston and conductively connected to the one of said metallic members on the inner end of said spring, said contact being positioned to contact a portion of said cylinder when the pressure on said fluid is insufficient to retract said piston against the action of said spring, said contact being arcuate and aligned with a sharp-edged port in said casing leading to said fluid system, thereby concentrating the pressure of said spring on a small area and preventing oil insulation of the said contact.

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