Dec. 28, 1937. A. E. FRANEY 2,103,941

ELECTRICAL SWITCH

Original Filed March 1, 1935

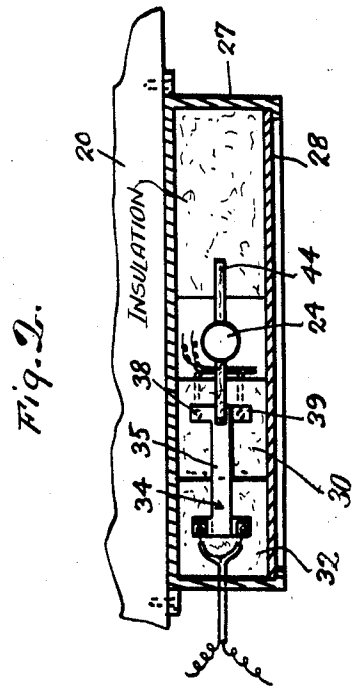


Fig. 2.

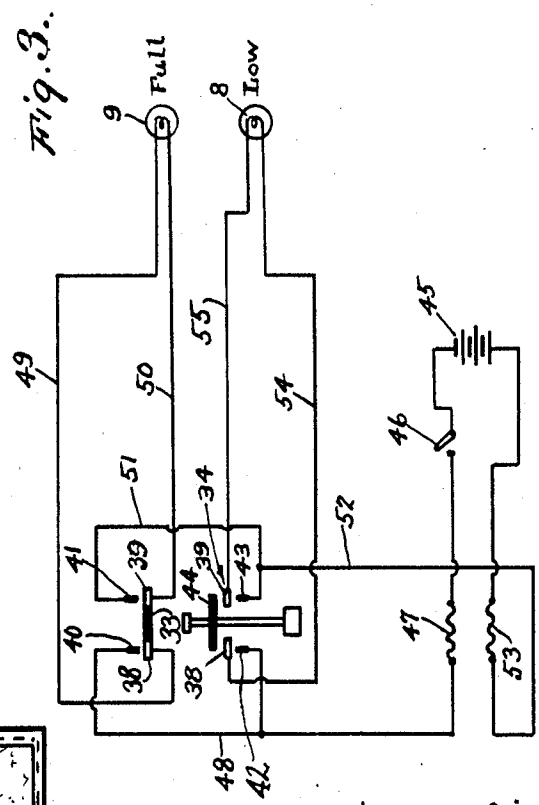


Fig. 3.

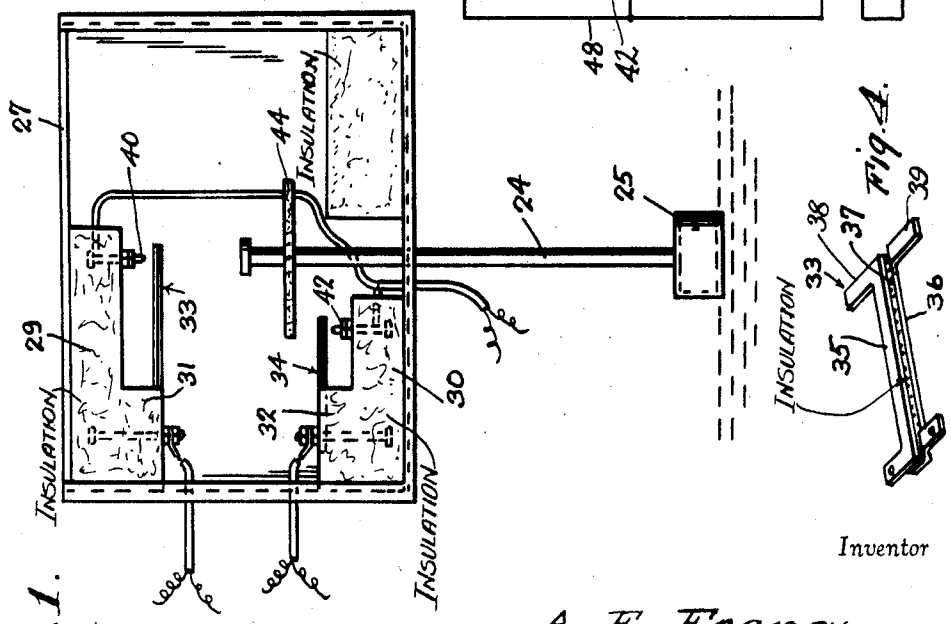


Fig. 1.

Fig. 4.

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ELECTRICAL SWITCH

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1 Claim. (Cl. 200—84)

This invention appertains to new and useful improvements in electrical switches.

An important object of the invention is to provide a float controlled switch for internal combustion engine crankcases operative to control an indicator for warning the driver when his oil level in the crankcase is low.

This and other various important objects and advantages of the invention will become apparent to the reader of the following specification.

In the drawing:

Figure 1 represents a side elevational view of the switch and float means with the cover of the housing removed.

Figure 2 represents a horizontal sectional view taken substantially on the line 2—2 of Figure 1.

Figure 3 represents a diagrammatic view disclosing the electrical connection between the electrical devices involved.

Figure 4 represents a perspective view of one of the contact assemblies.

Referring to the drawing wherein like numerals designate like parts, it can be seen in Figure 3, that numerals 8 and 9 represent indicating lights which may be located on the instrument board of a vehicle to indicate low and high oil levels in the crankcase.

Mounted within the housing 27 are the vertical spaced di-electric blocks 29—30. The block 29 is provided with a depending portion 31 while the block 30 is provided with an upstanding portion 32. A pair of switch units generally referred to by numerals 33—34 are provided on the portions 31—32 respectively. The contactors 33—34 each consist of a pair of U-shaped conductor strips 35—36, arranged with their intermediate portions in superimposed relation, but separated by a di-electric strip 37. These U-shaped conductor strips 35—36 have their leg portions disposed in opposite directions. The outer leg portions 38—39 of the contacts 35—36 respectively, are adapted for engagement with the contact members 40—41 respectively located on the block 29, while the leg portions 38—39 of the contactor 34 are engageable with the contacts 42—43 respectively, on the di-electric block 30.

It can be seen in Figure 2 that the upper end portion of the float stem 24 is provided with a di-electric block 44 which operates between the contactors 33—34. When the float 25 is in a high position, the upper end of the rod 24 engages the upper contactor 33 and pushes the same against the contacts 40—41 with the result that current is applied from the battery 45 by way of the switch 46 through the fuse 47 and along the conductor 48 to the contact 40 and on to the jumper 49 from the contact 38 of the contactor unit 33 to reach the bulb 9 the return side being by way of the jumper 50 to the opposite side of the contactor 33, namely the contact strip 39 to the pin contact 41 and from there by way of the jumper 51 to the negative wire 52 which also includes a fuse 53. This negative wire 52 is also connected to the contact 43. The above operation takes care of the indicating light 9 when the crank case is full of oil. However, when the oil drops to a dangerous level, the float 25 recedes and the di-electric block 44 lowers against the contactor unit 34 and pushes the same downwardly so that it engages the contacts 42—43 in which instance, current is supplied by way of the wire 48 to the contact 42 and across this to the contact 38 of the contactor 34 and from there by way of the jumper 54 to the low oil indicating lamp 8. The return conductor is denoted by numeral 55 and connects with the contact 39 of the contactor 34 which is now engaging the contact 43 and this in turn connecting with the negative wire 52.

Thus indication of the condition of the oil is made and the driver is prompted to replenish his supply if necessary.

While the foregoing specification sets forth the invention in specific terms, it is to be understood that numerous changes in the shape, size and materials may be resorted to without departing from the spirit or scope of the invention as claimed hereinafter.

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

In a switch structure of the character described, a contactor assembly, said assembly consisting of a pair of elongated flat spring conductor members, said conductor members being provided with a strip of insulation between the same for insulating the same, a pair of leg members projecting laterally in opposite directions from the assembly at one end thereof, one leg member projecting from each of the conductor members, a pair of contact fingers projecting laterally from the opposite end of the assembly, one finger projecting from each of the conductor members, a pair of stationary contacts in opposed relation to the said contact fingers, and actuating means for urging the said contact finger ends of the assembly toward and against the said stationary contacts.

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