

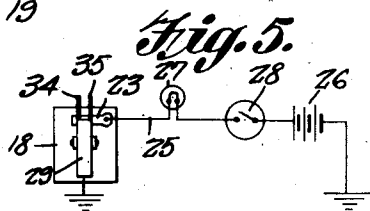
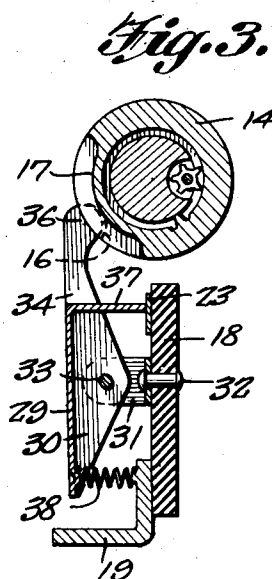
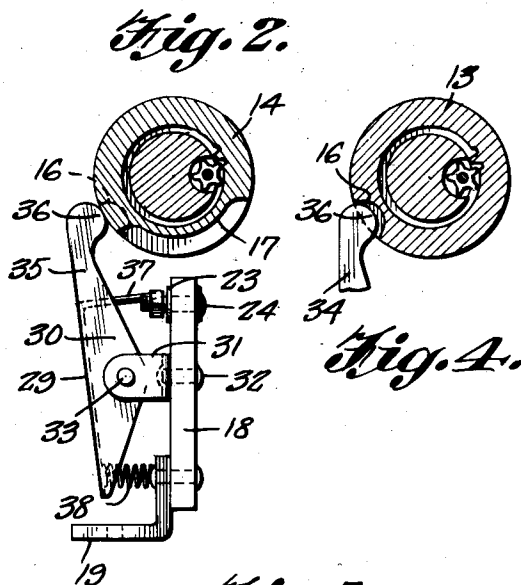
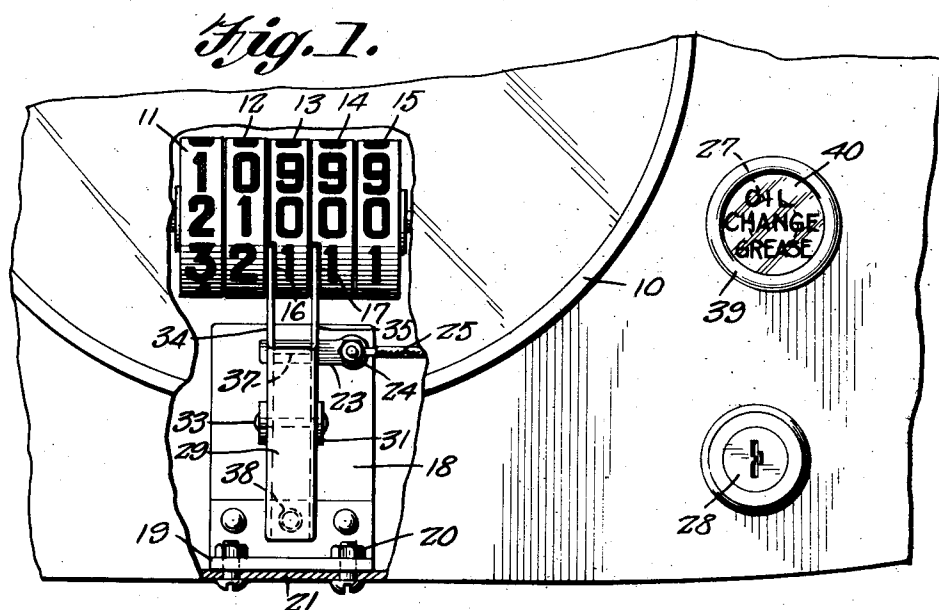
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2,130,290

CIRCUIT CLOSER

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WITNESS

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CIRCUIT CLOSER

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1 Claim. (Cl. 200—56)

This invention relates to circuit closers and has for an object a circuit closer for a signal device operable by certain of the reels of speedometer to remind a motor vehicle driver at the end of a predetermined period, for example, each 1,000 or 2,000 miles that the oil should be changed and the chassis lubricated.

A further object is to provide a device of this character which will embody a novel circuit closer including fingers engageable in grooves in the periphery of two reels of the speedometer to close a circuit to a signal lamp at the end of a predetermined mileage period.

A further object is to provide a device of this character which will be formed of a few strong simple and durable parts, which will be inexpensive to manufacture, and which will not easily get out of order.

With the above and other objects in view the invention consists of certain novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be resorted to within the scope of the appended claim without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawing forming part of this specification,

Figure 1 is a front elevation of a circuit closer for a signal constructed in accordance with the invention.

Figure 2 is an edge elevation of the circuit closer in open circuit position.

Figure 3 is a longitudinal sectional view through the circuit closer in circuit closing position.

Figure 4 is a fragmentary detail view showing one finger of the circuit closer in a short slot in one of the counting reels when the circuit closer is in circuit closing position.

Figure 5 is a diagrammatic view showing the electrical connections of the device.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a speedometer having the usual counting reel 11 denoting ten of thousands, 12 denoting thousands, 13 denoting one hundreds, 14 denoting tens, and 15 denoting mile units, each reel being actuated a step at the end of each complete revolution of the next adjacent reel to the right.

In carrying out the invention a short slot 16 is formed in the periphery of the reel 13, the slot being equal in length to one of the numbers on the reel. A long slot 17 is formed in the reel

14, this slot being equal in length to a plurality of the numbers on the reel, for instance, equal in length to five numbers. The purpose of the difference in length of these slots is to permit the circuit closer, in circuit closing position, to maintain the signal circuit closed for a predetermined time period, such as for example, in the present instance, fifty miles since the long slot corresponds in length of five numbers on the tens reel.

The circuit closer comprises a base 18 of non-conducting material which is provided with an angle bracket 19 that may be bolted as shown at 20 to the ledge 21 of the instrument board 22 underneath the speedometer reels. The base projects through the speedometer casing and a switch contact 23 is secured to the upper end of the base by a binding post 24 to which a conductor wire 25 is secured. The conductor wire supplies current from the battery 26 to a signal lamp 27 mounted on the instrument board. Flow of current from the battery to the wire 25 is controlled by the ignition switch 28 as best shown in Figure 5.

A lever 29, formed of sheet metal, is provided on one side with hinge ears 30 through which and similar hinge ears 31, riveted to the base as shown at 32, a pivot pin 33 is passed, to pivotally mount the lever between its ends on the base. The hinge ears are elongated to provide parallel fingers 34 and 35 which are of equal length as best shown in Figure 1, and terminate in rounded extremities 36 as best shown in Figures 2 and 4.

Between the fingers the lever is deformed to provide a switch contact 27 best shown in Figures 2 and 3, which extends substantially at a right angle to the lever and is adapted to engage the stationary switch contact 23 on the base 18 to close the signal circuit when the fingers drop into the slots in the speedometer reels.

A helical spring 38 is interposed between the angle bracket 19 and that end of the lever opposite the fingers. The spring exerts a pressure upon the lever to maintain the fingers in wiping contact with the peripheries of the reels 13 and 14 and urge the rounded extremities of the fingers to the bottom of the slots 16 and 17 when both slots advance simultaneously underneath the extremities of the fingers.

A lamp housing 39 is disposed on the instrument board 22 and is provided with a glass closure 40 which displays the legend "Oil change grease" which when illuminated by the signal lamp will remind the driver to change the oil and lubricate the chassis.

In the present embodiment of the invention the reel 13 has the short slot 16 beginning at the numeral 1 on the reel, and the reel 14 has the long slot 17 also beginning at the numeral 1 on the reel 14. As shown in Figure 1 the speedometer reels are in that position which is assumed when an even 1,000 miles is recorded, that is, the unit reel 15 is in position to start count on the next 1,000 miles. In this position of the parts it will be seen that the lever 29 has been rocked by its controlling spring 38 to engage both fingers 34 and 35 in the short slot 16 and long slot 17 and close the signal circuit at the switch contacts 37 and 23 as shown in Figure 3. Since the long slot 17 is equal in length to the length of the numerals 1 to 5 on the tens reel 14 the finger 35 will ride in the long slot through a time interval equal to a distance of 50 miles indicated by the tens reel. It is, of course, obvious that the one hundreds reel 13 will not move until the tens reel completes a revolution so that the one hundreds reel remains stationary and the finger 35 remains seated in the short slot 16 thereof while the tens reel 14 is making one half a complete revolution and advancing the long slot 17 past the finger 35 seated therein. When the tens reel 14 has turned to indicate 50 miles the end of the long slot will have arrived at the finger 35 and swung the lever against the tension of its controlling spring 38 thus moving the switch contact 37 out of contact with the stationary switch contact 23 and breaking the signal circuit. Thus the signal lamp will be energized for a time period equal to 50 miles travel of the vehicle so that the driver will have plenty of time to arrive at a greasing station.

The slots 16 and 17 may be in practice disposed at different places on the reels than as above described, depending upon whether the owner desires to have the signal displayed at the end of even thousands or at other points

on the reel. Moreover, the length of the long slot may be varied at will to suit the desire of the owner, for example, if the slot is the length of five numbers the signal will be energized for 50 miles, but if the length of the slot were equal to two numbers the signal would remain energized for 20 miles.

From the above description it is thought that the construction and operation of the invention will be fully understood without further explanation.

What is claimed is:

A circuit closer comprising a speedometer including a tens counting reel and a hundreds counting reel, the hundreds counting reel having a short slot equal in length to the length of one of the numerals on the reel, the tens counting reel having a long slot equal in length to the space occupied by a plurality of numbers thereon, a support, a circuit closing switch contact lever hinged intermediate its ends on said support and having integral parallel fingers of equal length terminating in rounded extremities, a spring confined under tension between said support and the end of the lever opposite the fingers and tending constantly to hold said rounded ends riding on the reels and urging the rounded ends on the bottom of respective ones of the slots when both slots advance simultaneously underneath the extremities of the fingers, said lever having a portion extending between the fingers and angularly disposed with respect to the lever to form a movable switch contact, and a fixed switch contact on said support engageable by said movable switch contact when said rounded extremities drop into said slots to close said signal circuit for a time period corresponding to the length of said long slot in the hundreds counting reel.

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