May 31, 1949. F. E. WOOD 2,471,666

ANNUNCIATOR

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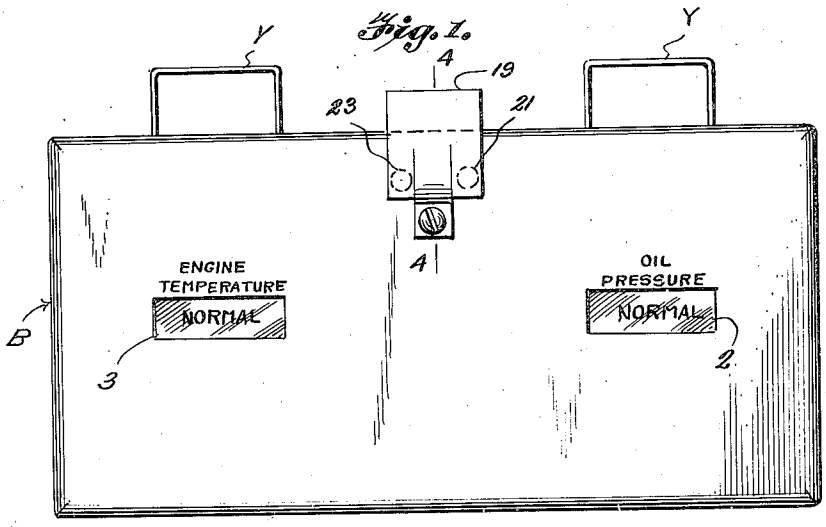
Fig. 1.



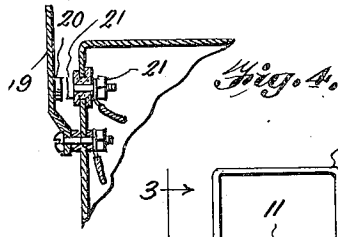


Fig. 4.

Fig. 2.

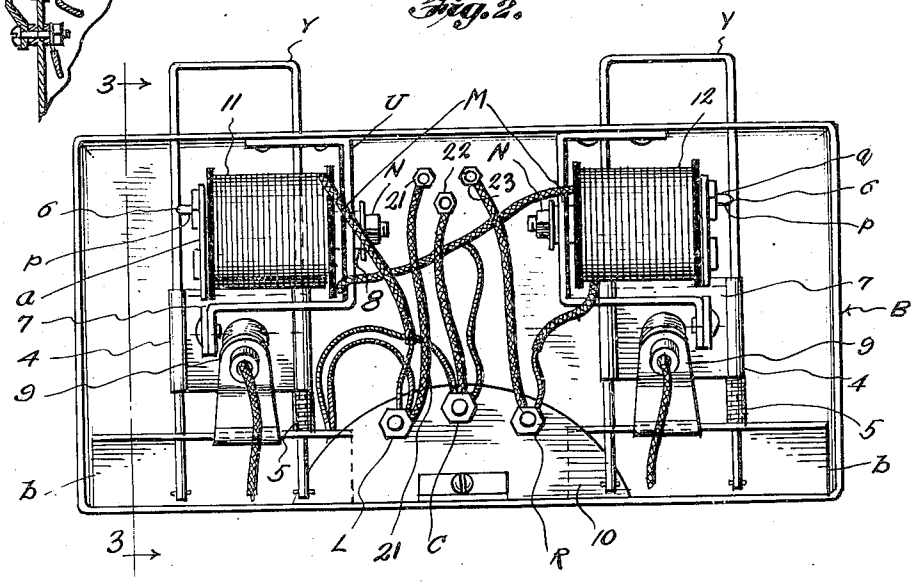


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Fig. 3.

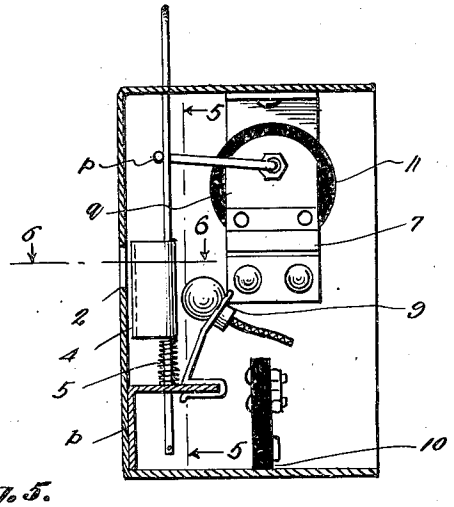

Fig. 5.

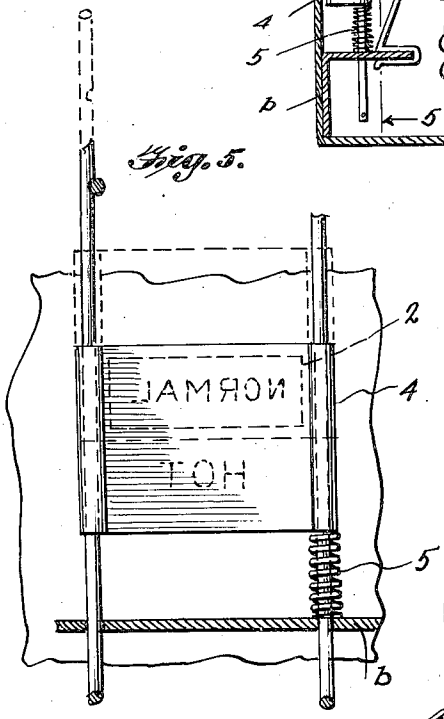

Fig. 6.

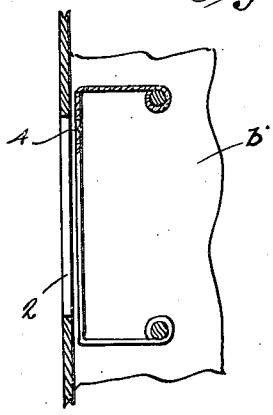

Fig. 7.

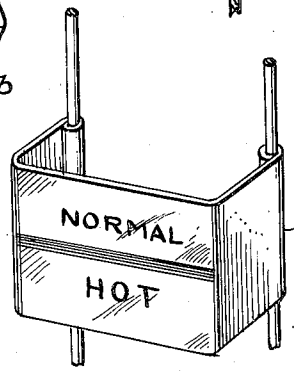

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Fig. 8.

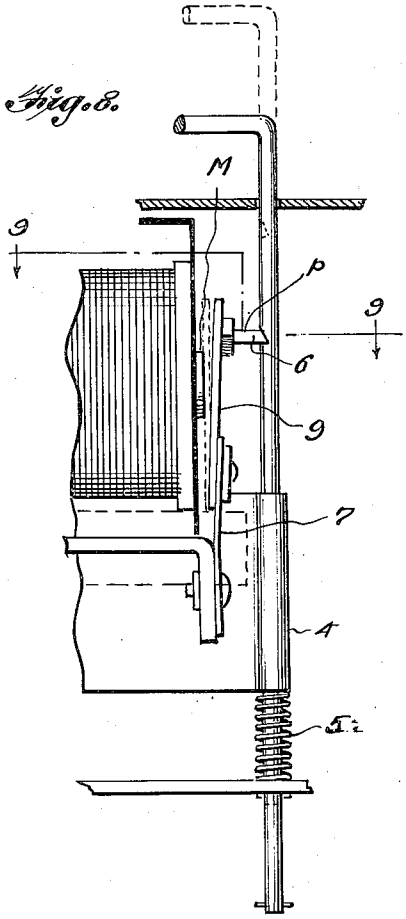


Fig. 9.

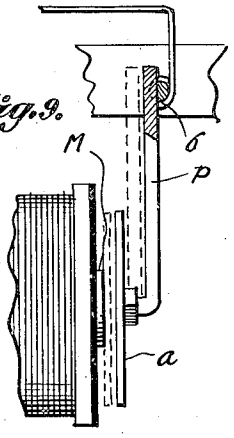
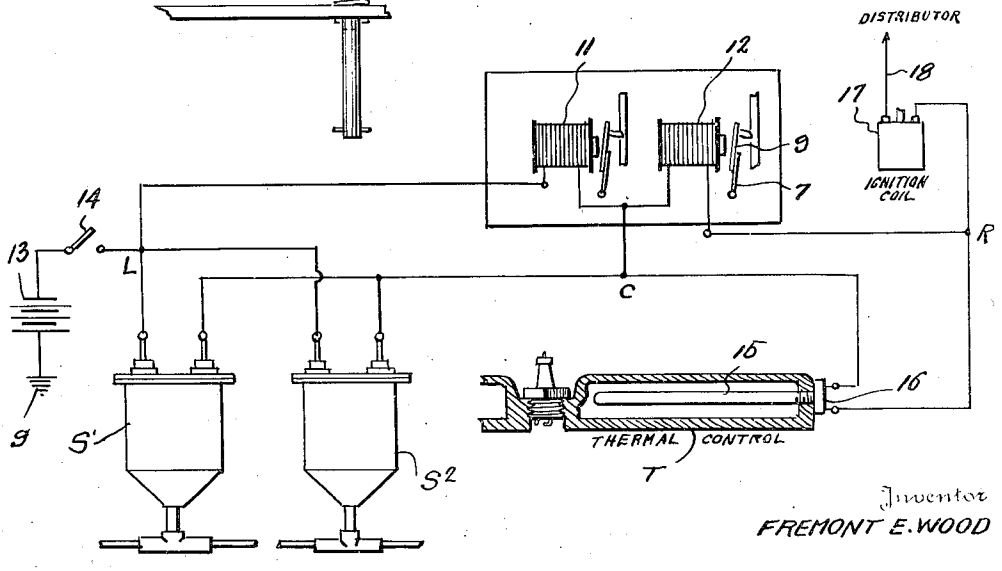


Fig. 10.



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Patented May 31, 1949 2,471,666

UNITED STATES PATENT OFFICE

2,471,666

ANNUNCIATOR

Fremont E. Wood, Long Beach, Calif.

Application February 9, 1945, Serial No. 577,094

1 Claim. (Cl. 177—329)

1

This invention relates to a dash board signal panel used in conjunction with automotive oil pressure safety control (patent applied for May 6, 1943. Serial No. 485,918, now Patent No. 2,418,536) and motor ignition control (patent applied for May 27, 1943. Serial No. 488,731, now Patent No. 2,389,103).

Instead of using a globe as in either of the two inventions a coil is used with sufficiently high electrical resistance so that the ignition coil will not function when current is flowing through it, but the signal coil will release a pawl and let a spring loaded sign change positions from "Normal" to "Hot" (or similar legends) on the motor ignition control and from "Normal" to "None" (or similar legends) on the automotive pressure safety control in the event that either changes from the normal condition.

The signal coil is in a shunt circuit with the contacts of each device and contains an electro-magnet which disengages a pawl from a yoke carrying the sign. The latter remains in the "Hot" or "None" position until it is manually reset to "Normal," thus giving the operator warning of the unusual condition.

Other important objects and advantages of my invention will be apparent from a reading of the following description of the appended drawings, wherein for purposes of illustration, a preferred embodiment of my invention is shown.

In the drawings:

Figure 1 is a front view of the panel signaling the engine temperature and oil pressure as normal;

Figure 2 is a rear elevation of the panel;

Figure 3 is a transverse section on line 3—3 of Figure 2;

Figure 4 is a vertical view of an emergency switch;

Figure 5 is a detail section on line 5—5 of Figure 3;

Figure 6 is a detail section on line 6—6 of Figure 3;

Figure 7 is a perspective view of the temperature indicator;

Figure 8 is a detail view of a pawl engaging one leg of the signal carrying yoke, the dotted lines indicating the position of the pawl when disengaged from the yoke by the attraction of an electro-magnet.

Figure 9 is a detail section on line 9—9 of Figure 8;

Figure 10 is a wiring diagram including a thermal control and two diaphragm switches.

B indicates a box which may be open at the

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rear and which has in its front wall two windows 2, 3, one for indicating the engine temperature and the other for indicating the oil pressure as pointed out by legends above these windows. Behind the front wall and in vertical alignment with each window is a sign 4 which in the case of the engine temperature window bears the inscriptions "Normal" and beneath the latter "Hot." The sign of the oil pressure window bears an appropriate inscription such as "None" in addition to and beneath the top inscription "Normal." Each of these signs is fastened to the parallel vertically disposed legs of a yoke Y the bight portion of which is always above the top wall of the box and the legs of which are guided in apertures in such wall and in the horizontal leg of a bracket *b*, the vertical leg of which is affixed to the rear side of the front wall of the box. A spring 5 encircling a yoke leg bears with its lower end against the top surface of the horizontal bracket *b* leg and with its upper end against the lower edge of the sign carried by the yoke. The outer leg of each yoke has a notch 6 on its inner side in which the forward end of a substantially horizontally disposed pawl arm *p* carried at its rear end by an armature *a* extending downwardly and secured at its lower end by a spring 7 to the vertical end portion of a U-shaped bracket U the upper leg of which is secured to the lower surface of the top wall. The two armatures shown are held by resilient members 7 so as to be normally in such a position that each of their arms occupies a notch described and thereby holds the yoke in a depressed position (Figure 2) in which the inscription appearing behind each window reads "Normal" and in which the springs 5 are compressed (Figures 2, 3, 7, 8).

In the midpoint of the bight portion of each U-bracket is a hole through which extends the threaded end of an electro-magnet M which carries a nut N upon its extreme end bearing against a washer 8 which in turn bears against the bracket supporting the magnet M, coil 11 or 12, and armature *a*.

An electric lamp 9 is carried by the horizontal leg of each bracket.

To the bottom is secured a segmental member 10 on which three binding posts L, C, R are mounted.

From the central binding post C a wire goes to the wire connecting the ends of the coils (Figures 2, 10). Each of the other binding posts is connected to the other end of a coil.

In Figure 10 is an oil pressure diaphragm switch

S1 which is closed at normal oil pressure and which will open at abnormally low pressure and is connected to the oil conduit which conducts the oil from the pump to the oil pressure gauge. A vacuum diaphragm switch S2 is connected to the manifold and opens only when the motor is operating and forming a suction on the manifold. Each of these switches has a pair of contacts normally disconnected and adapted to be connected by the distortion of the diaphragm. One contact of either switch is connected to the left-hand binding post L (Figures 2, 10) and thereby to one end of the oil pressure coil 11 and the other contact of either switch is connected to the middle binding post C.

Referring to Figure 10 a battery 13 is grounded at one side and the other side connected to a wire containing a switch 14; the wire is connected to the left binding post L (Figures 2, 10).

The engine thermal T control comprises a member 15 in the engine head connected to a bimetallic member 16 which will open the normally closed switch of which it forms a part. One side of this thermostatic switch is connected to the central binding post C and the other side to the binding post R to the right to which also the ignition coil 17 is connected (Figure 10). From the latter a wire 18 goes to the distributor.

The emergency switch of Figure 4 comprises a spring member 19 attached with its lower end to the front wall of the box and carrying a contact 20 normally spaced from two contacts 21, 23 on the box each of which is connected by binding posts indicated by the same numeral to one of the outer binding posts L, R.

Whenever the oil pressure falls below normal, the oil switch will open and a current will go through the oil pressure coil 11 and the magnet therein will disengage the pawl arm from the yoke so that the latter snaps upward exhibiting the legend "None," thus giving warning to the operator of the unusual condition.

Should the temperature rise to an undesired level the thermostatic switch will open and the electro-magnet of the temperature coil 12 will cause the sign to rise and exhibit the inscription: "Hot."

In case that the protective devices function while the vehicle is in a dangerous position, e. g. a railroad track on which a fast train is approaching, the operator can close the emergency switch of Figure 3 and reestablish the ignition circuit and run the car to a safe location.

This panel or dashboard signal can either replace the conventional oil pressure and engine temperature instruments used on automobiles or it can be placed in or on a car as an auxiliary device. Also either or both the oil and temperature indicators can be used together or singly. If the device is used to replace the conventional indicator mounted upon a dashboard, the re-set yoke and perhaps the size and shape of the device would require alterations in shape and location without departing from the spirit of the invention.

Although I have shown and described herein, a preferred embodiment of my invention, it is to be understood that numerous changes of the shape, size and materials may be resorted to without departing from the spirit and scope of the invention as claimed hereinafter.

What is claimed as new is:

A motor condition indicator comprising a case having a front wall formed with an opening, a bracket mounted against the inner surface of the front wall and projecting therefrom inwardly of the case below the opening, a yoke having arms extending vertically through the bracket and the top wall of the casing and slidable vertically therethrough, a sign carried by the arms of said yoke back of the opening in the front wall of the casing and bearing legends disposed one above the other and individually displayed through the opening by vertical shifting movement of the yoke, a spring about one arm of said yoke having its lower end resting upon the bracket and its upper end abutting the sign and being normally expanded to display the lower one of the legends through the opening, the other arm of the yoke being formed with a notch, U-shaped bracket disposed in the upper portion of the case and having an upper arm secured to the top wall of the case and a lower arm provided with a depending lip, an electro-magnet disposed horizontally and secured at one end to the U-shaped bracket between the arms thereof, a resilient armature for said magnet carried by a depending resilient plate having its lower end secured to the lip of the bracket and normally holding the armature spaced from the magnet, and a pawl carried by the armature and projecting therefrom and normally engaged in the notch of the yoke to hold the yoke depressed and the upper legend displayed through the opening in the case, the pawl being withdrawn from the notch to permit upward movement of the yoke and the sign by action of said spring when the magnet is energized.

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