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CENTRIFUGAL SWITCH

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Fig. 1.

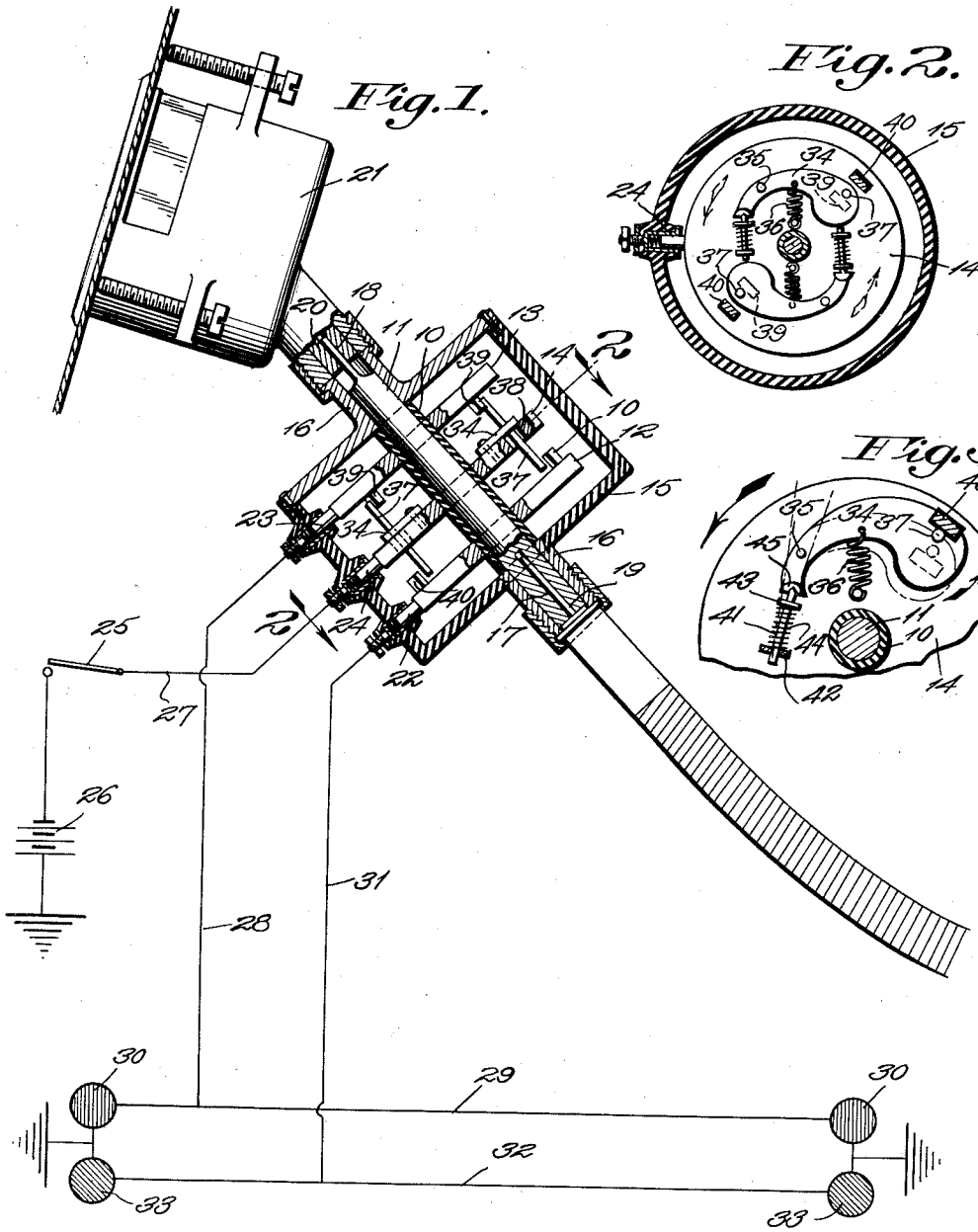


Fig. 2.

Fig. 3.

Robert A. White
William Noble
Nicholas Tumbry
INVENTORS

BY Victor J. Evans & Co.
ATTORNEYS

R. E. Wise
WITNESS

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CENTRIFUGAL SWITCH

Robert A. White, William Noble and Nicholas Tumbry, East Chicago, Ind.

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2 Claims. (Cl. 200—80)

This invention relates to centrifugal switches and has for an object to provide a device including green and red signal lamps controlled by a governor which is automatically operated from the speedometer flexible shaft or transmission in accordance with the speed of the vehicle to cause the red light to glow when the vehicle is stopped and up to a certain speed, and thereafter to cause the green light to glow.

A further object is to provide snap action springs for the governor weights so that the change from a green signal to a red signal or vice versa will be instantaneous and no lag can possibly exist between the extinguishing of one signal lamp and the energizing of the other signal lamp.

A further object of the invention 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 claims 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 longitudinal sectional view through a centrifugal switch constructed in accordance with the invention and applied to a speedometer flexible shaft, the signal lamps and electrical connections therefor being shown diagrammatic.

Figure 2 is a cross sectional view taken on the line 2—2 of Figure 1 showing the governor weights closing the circuit to the red signal lamp.

Figure 3 is a fragmentary view in elevation showing one of the governor weights closing the circuit to the green signal lamp.

Referring now to the drawing in which like characters of reference designate similar parts in the various views, 10 designates a tube of insulating material which is snugly fitted on a shaft 11. Preferably three metal discs are disposed in spaced relation on the tube, one outer disc 12 controlling the green signal lamp and the other outer disc 13 controlling the red signal lamp, while the center disc 14 constitutes a governor disc as will presently be described.

A housing 15 preferably formed of insulating material is provided with hubs 16 in which the ends of the shaft 11 are journaled and in practice it is preferable to provide one end of the shaft with a socket 17 and the opposite end with a prong 18 to connect the shaft with the flexible speedometer driving shaft 19, and at the other end with the driving shaft 20 of the speedometer 21. Thus the shaft 11 turns as a unit with the speedometer actuating shaft.

A plurality of brushes, preferably three in number and indicated at 22, 23, and 24, are mounted in suitable brush holders on the cylindrical wall of the housing and frictionally engage the peripheral edges of the associated discs 12, 13, and 14. The center brush 24 is connected to the light switch 25 and battery 26 by a wire 27 and supplies current to the governor disc 14. The brush 23 is connected by a wire 28 to a circuit wire 29 which supplies current to the red signal lamps 30 disposed at any suitable location on the rear of the vehicle. The brush 22 is connected by a conductor wire 31 to the circuit wire 32 which supplies current to the green signal lamps 33 of the vehicle.

A pair of governor weights 34 are pivoted, as shown at 35, on one side face of the governor disc 14. A helical spring 36 is connected at one end to the disc and at the other end to an associated governor weight for normally holding the associated governor weight rocked inwardly. Each governor weight is provided with a switch contact in the nature of a pin 37 which projects through an opening 38 formed in the disc.

The red signal lamp controlling disc 13 is provided with switch contacts 39 and when the governor weights move inwardly as is the case when the vehicle is parked or is moving at a low speed of, for instance, less than sixteen miles per hour, the switch contacts 37 engage the switch contacts 39, as shown in Figure 2, and close the circuit from the battery through the wire 27, discs 14 and 13, wire 28, and wire 29 to the red signal lamps.

The disc 12 controlling the green lamp circuit is provided with a pair of switch contacts 40 which are engaged by the switch contacts 37 of the governor disc when the governor weights are thrown outwardly by centrifugal force as would be the case when the vehicle is moving at, for instance, above sixteen miles per hour. When the switch contacts 37 engage the switch contacts 40, as shown in Figure 3, a circuit is closed from the battery to the wire 27, discs 14 and 12, and wires 31 and 32, to the green signal lamps 33. The green signal lamps will therefore be energized until the speed of the vehicle again falls below 16 miles per hour at which time the gov-

ernor weights will be moved inwardly by their control springs and again close the circuit from the battery to the red signal lamps.

It is desirable that no lag intervene when one signal lamp is extinguished and the other energized and for this purpose a snap spring device is associated with the pivoted end of each governor weight, the same comprising a pin **41** which is pivotally mounted in a lug **42** that is fixed to the side of the governor disc. The pin is provided with a collar **43** and a helical spring **44** is confined between the collar and the lug tending to move the pin outwardly from the lug. The end of the pin is pointed and projects into a notch **45** formed in the pivoted end of the associated governor weight. The spring assembly just described moves past center with snap action to shift the associated governor weight quickly to engage the switch contacts **37** with either the switch contacts **40** or the switch contacts **39** when the speed of the vehicle arrives at the point where the shift from one signal lamp to the other signal lamp must be made.

The springs **36** and **44** are proportioned so that the change from a red signal to a green signal, or vice versa, at any predetermined vehicle speed, the speed of sixteen miles per hour being given herein by way of example only, may be made.

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:

1. In a signal system for designating a change of speed in motor vehicles, a control switch comprising a casing, a shaft therein responsive to speed variations of the vehicle, spaced discs fixed to the shaft, intermediate and outer brushes on the casing engaging the discs and forming terminals for circuit wires, switch contacts carried by the discs at respectively different distances from the shaft, spring controlled centrifugal governor weights pivoted on one of the discs, and switch contacts carried by the weights and engageable selectively with the switch contacts carried by the discs at predetermined speed limits of the vehicle.

2. In a signal system for designating a change of speed in motor vehicles, a control switch comprising a casing, a shaft therein adapted to be driven by the speedometer chain or differential of the motor vehicle, a pair of outer discs and an intermediate disc fixed to the shaft and insulated therefrom, circuit closers carried by the outer discs at different distances from the shaft, brushes on the casing for conducting circuit wires through the casing to the discs, spring controlled arcuate governor weights pivoted on one side of the intermediate disc at diametrically opposite points on the disc, switch contacts carried by the weighted ends of the governor weights and projecting through the discs to be intercepted by the switch contacts carried by the outer discs at predetermined speed limits of the motor vehicle, there being notches formed in the ends of the weights opposite the weighted ends, lugs on the intermediate disc, pins pivoted in the lugs and having collars thereon, and springs surrounding the pins between the lugs and the collars and normally holding the pins in said notches, said pins being moved past center with a snap by their controlling springs to shift the associated governor weights quickly to engage the switch contacts thereof with the switch contacts carried by the discs.

ROBERT A. WHITE.
WILLIAM NOBLE.
NICHOLAS TUMBRY.