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E. J. KROMHOLZ

2,234,309

AUTOMATIC SPEED SIGNAL DEVICE

Filed Aug. 9, 1938

Fig. 2.

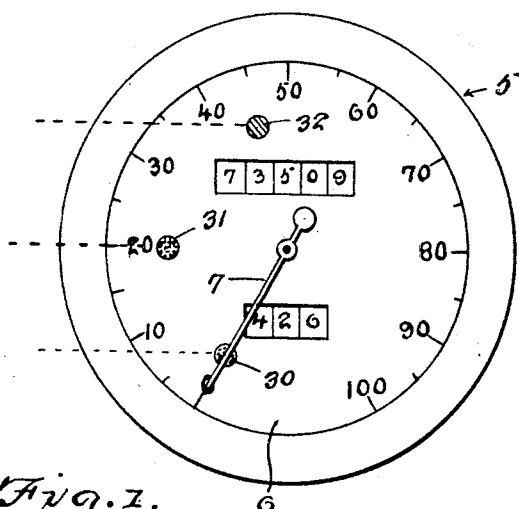


Fig. 1.

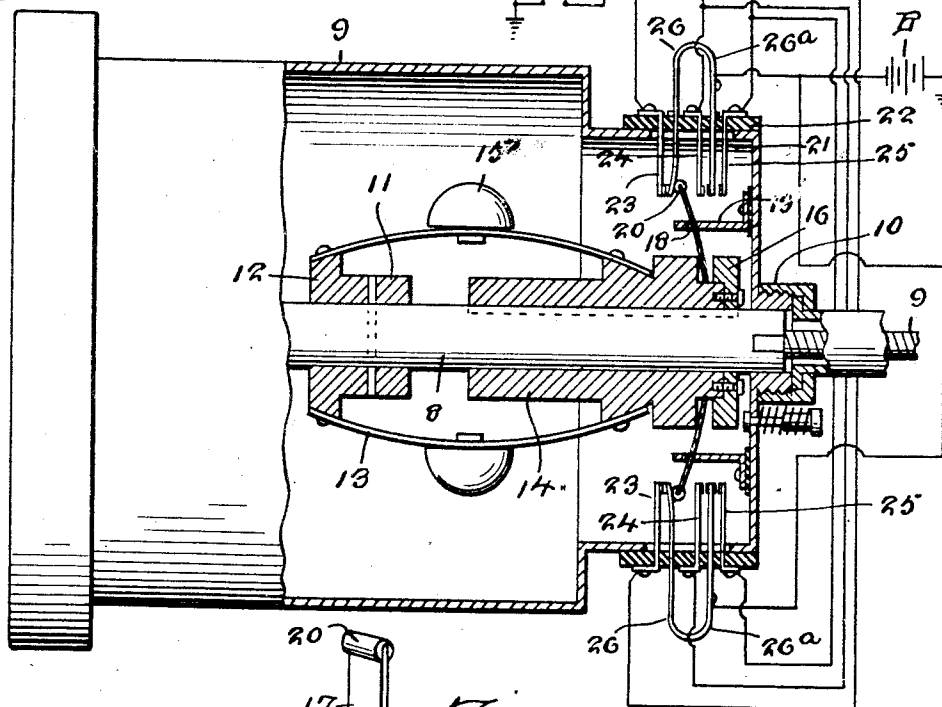


Fig. 4.

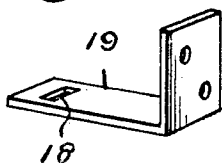
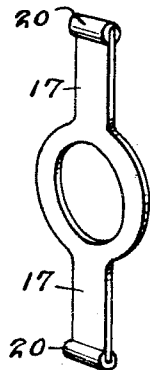


Fig. 5.



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## UNITED STATES PATENT OFFICE

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## AUTOMATIC SPEED SIGNAL DEVICE

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Application August 9, 1938, Serial No. 223,924

1 Claim. (Cl. 200—80)

My invention relates to signalling devices and more particularly to signalling devices adaptable for use on vehicles to indicate the presence and rate of speed the vehicle is traveling.

One of the principal objects of my invention is to provide a vehicle signalling device so constructed and arranged as to indicate the presence and speed of a vehicle on a highway or the like.

Another object of my invention is to provide a device of the above described character, equipped with means for indicating different ranges of speed of the said vehicle to enable others to approximate the speed of said vehicle.

A further object of my invention is to provide a device of the above described character, which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claim and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is a longitudinal sectional view of my invention illustrating the same as applied to the speedometer of a vehicle or the like.

Figure 2 is a front elevation of a speedometer illustrating my invention applied thereto.

Figure 3 is a detail sectional view illustrating the position of the switch blades at maximum speed.

Figure 4 is a detail perspective view of one of the brackets for supporting the member for actuating the switch blade.

Figure 5 is a perspective view of the member for actuating the switch blades.

In practicing my invention, I provide a speedometer 5 equipped with a speed indicating dial 6 and speed indicating hand 7, the latter connected in the usual manner to a drive shaft 8 extending longitudinally through a speedometer housing 9 for connection with the keyed end of a flexible drive shaft 9a at the rear end of said housing as indicated at 10.

Fixed on the drive shaft 8 is a sleeve 11 fashioned with a collar 12 having connected thereto the ends of a pair of resilient arms 13, the opposite ends of said arms being connected to a sleeve 14 slidably mounted on the shaft 8 and keyed thereto for rotation therewith and said arms 13 are provided with centrifugally actuated weights 15 whereby to actuate the sleeve 14 towards or away from the sleeve 11 depending upon the speed of rotation of the shaft 8, and said sleeves, arms

and weights are constituting a centrifugally actuated speed governor. The rear end of the sleeve 14 is reduced and has secured thereon a collar 16 to provide a circumferentially extending groove out the rear end of said sleeve. Mounted on the rear end of said sleeve, and within said groove, is a ring fashioned with a pair of oppositely extending resilient arms 17 extending through a guide slot 18 formed in horizontally disposed section brackets 19 secured to the inner face of the rear wall of the housing 9. The outer ends of the arms 17 are fashioned with enlarged sections 20 for engagement with switch blades as hereinafter set forth.

The upper and lower walls of the housing 9 adjacent the rear end of said housing is fashioned with longitudinally extending slots 21 covered by insulated switch blocks or plates 22 secured to the outer faces of said upper and lower walls. Each of the switch blocks 22 has mounted thereon and extending therethrough switch blades 23, 24, 25, 26 and 26a, and said blades 23, 24, and 25 are insulated and spaced from each other and the blades 26 and 26a.

The blades 26 and 26a are integrally connected at the outer ends thereof and the blade 24 interposes the latter blade while the blades 23 and 24 embrace the blades 26 and 26a adjacent the respective sides thereof. All of said blades extend from the respective blocks 22 into the housing of the respective slots 21 and are fashioned on the inner ends thereof with contact points.

The outer ends of the arms 17 extend between the blades 26 and 24 adjacent the contact points thereof.

Arranged within the dial 6, is a tier of colored electric lamps, for instance purple, green and yellow 30, 31 and 32 respectively, and also arranged within a casing 33 equipped with a lens 34 in a similar number of lamps, the latter being colored purple, green and yellow 30a, 31a and 32a respectively. The lamps of each color are arranged in circuit with each other for simultaneous operation as hereinafter set forth. The casing is adapted to be disposed on the exterior of a motor vehicle in a position readily definable by pedestrians and other motorists.

As illustrated in Figure 1 of the drawing, the purple lamps are connected by electric wiring to the switch blade 23 and to the ground side of a battery B, while the green and yellow lamps are connected to the switch blades 24 and 25 respectively and said ground side of the battery. The blades 26 and 26a are connected to the opposite

side of the battery and adapted to effect connection with the other blades upon actuation of the arms 17 as hereinafter set forth.

In operation, when a motor vehicle is parked, the sleeve 15 of the governor is in extreme extended position from the sleeve 11 thereby disposing the arms 17 through the brackets 19 in a manner that the ends of said arms engage the blades 25 and effect contact between said blades 25 and blade 23 and thereby complete the circuit through the battery to illuminate the purple lights 30 and 30a, which in the present instance denotes that the motor vehicle is either parked or traveling at a speed not exceeding 5 miles per hour. Thus, when the motor vehicle is being operated the governor on the shaft 8 is also operated and effects movement of the sleeve 14 towards the sleeve 11 and thereby actuates the arm 17 away from the blade 23 causing the blade 26 to likewise move with the arms due to their resiliency, thereby breaking contact with the blade 23 and interrupting the circuit to extinguish the purple lights when said vehicle exceeds said speed of 5 miles per hour. Continued increase in the speed of the motor vehicle, for instance from 5 miles per hour to 20 miles per hour, permits the arm 17 to idle between the blade 26 and blade 24 and during this idling period all of the lamps are in extinguished condition due to non-contact between the switch blades 26 and 26a and the other blades. However, it is to be understood that the motor vehicle is equipped with the ordinary red tail light and thus said red tail light being the only signal light illuminated will indicate that the vehicle is traveling in a speed range from 5 to 20 miles per hour. When the motor vehicle speed obtains 20 miles per hour, the sleeve 14 of the governor will have moved a sufficient distance towards the sleeve 11 to actuate the ends of the arm 17 into engagement with blade 24 to effect a contact with the latter with the ends of the blade 26a and thereby close the circuit to the yellow lamps 31 and 31a and which in the present instance denote a speed range of approximately 20 to 40

miles per hour. Due to the spacing of the blade 26a relative to the blade 25, contact between the blades 26a and 25 will not be effected until the speed of the motor vehicle has been increased to approximately 40 miles per hour to dispose the sleeve 14 closer to the sleeve 11 and thereby actuate the arm 17 a further distance towards the blade 25 to effect said contact. Upon effecting contact between the blades 26a and 25 the circuit thereof will be closed to effect illumination of the green lamps 32 and 32a and which closing of said circuit serves to operate a circuit breaker 50 for breaking the circuit between the yellow lamps and the blade 24 thereby extinguishing the yellow lamps, said green lamps being indicative of a speed range of over 40 miles per hour. Deceleration of the motor vehicle effects a reverse operation of the circuits as heretofore described.

From the foregoing it will be apparent that I have provided a signalling device adapted to be attached to motor vehicles and the like and which will indicate when said vehicle is in the parked condition and also indicate an approximate speed of said vehicle when the same is traveling on the highway and thus enable other motorists to judge the speed thereof in passing said vehicle or crossing the highway.

What is claimed is:

In combination, a housing, a driven shaft mounted within said housing, a plurality of switch blades mounted on said housing and insulated therefrom, said switch blades insulated and spaced relative to each other, a governor mounted on said shaft and responsive to the speed of the latter, a switch blade actuating member carried by the governor and operated thereby for selective engagement with said switch blades whereby to close and break electric circuits, and a bracket fixed to said housing and formed with a slot slidably receiving said member and coacting with the latter to preclude rotation of said member with respect to said blades when actuated by said governor.

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