J. B. KIMPFLIN.

ELECTRIC SPEED SIGNAL.

APPLICATION FILED OCT. 17, 1914.

1,199,388.

Patented Sept. 26, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

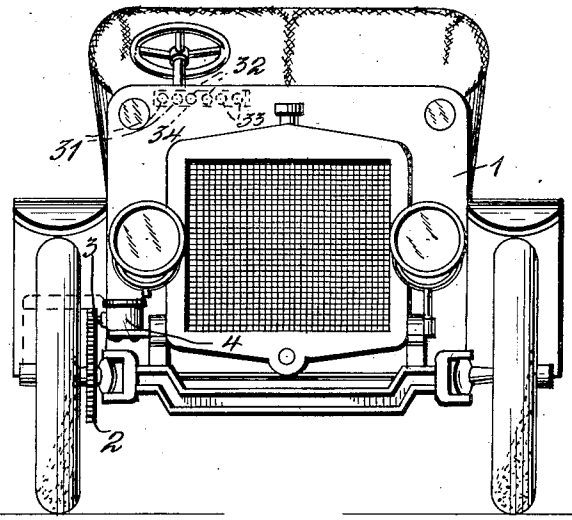


Fig. 5.

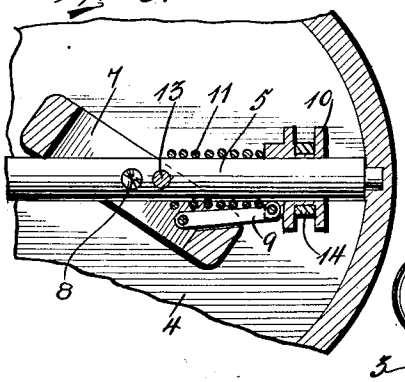


Fig. 3.

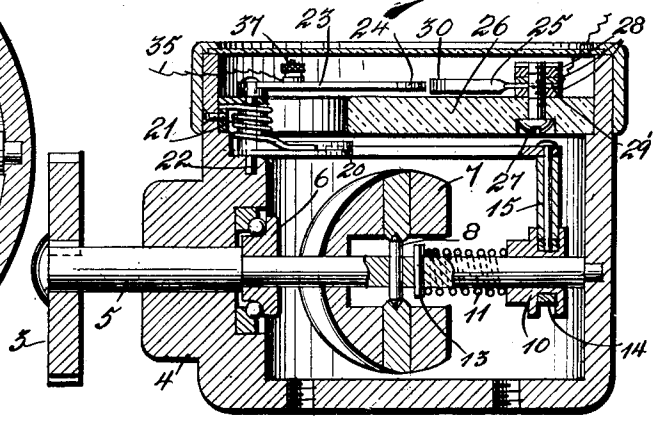


Fig. 10.

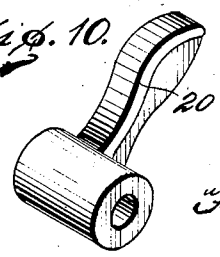


Fig. 11.

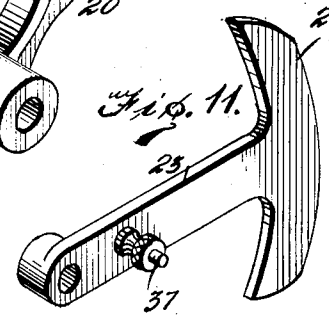


Fig. 12.

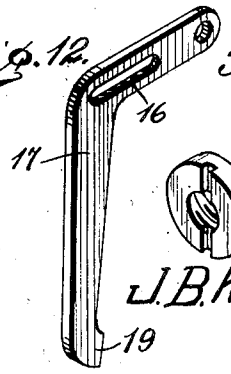
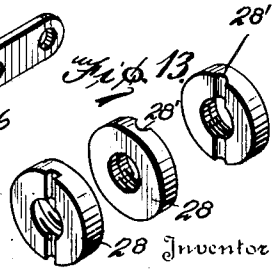


Fig. 13.



Witnesses

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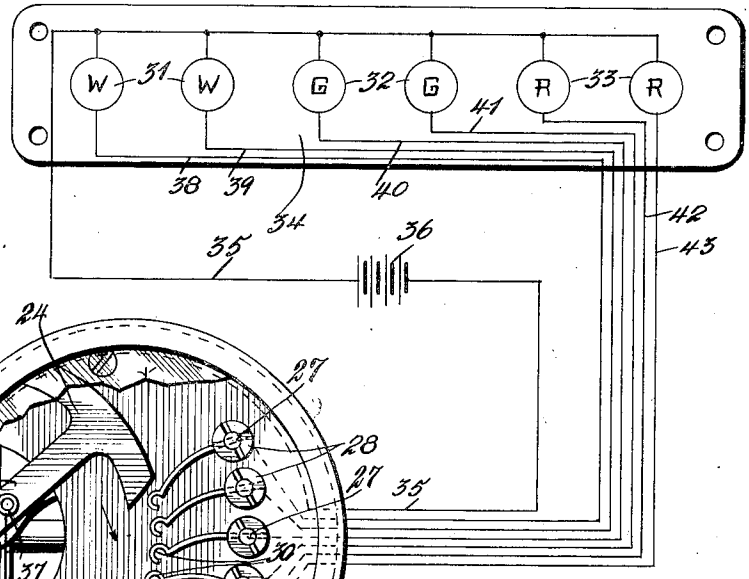
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2 SHEETS—SHEET 2.

Fig. 2.



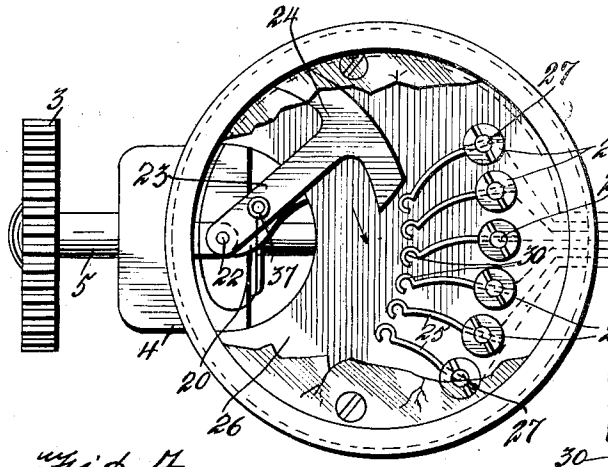


Fig. 7.

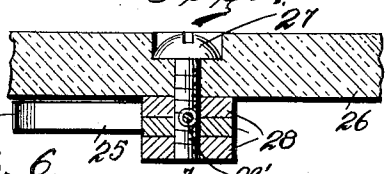


Fig. 4.

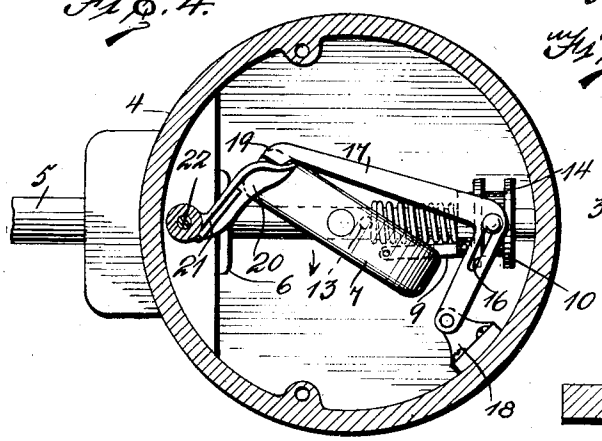


Fig. 6.

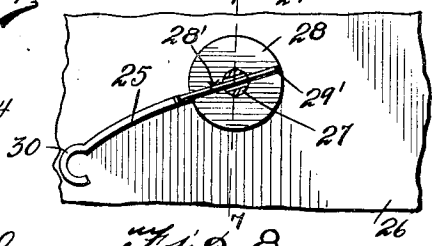


Fig. 8.

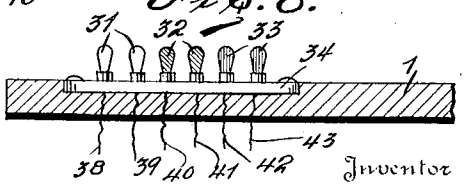


Fig. 9



Witnesses

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ELECTRIC SPEED-SIGNAL.

1,199,388. Specification of Letters Patent. Patented Sept. 26, 1916.

Application filed October 17, 1914. Serial No. 867,133.

To all whom it may concern:

Be it known that I, JOSEPH B. KIMPFLIN, a citizen of the United States of America, residing at Akron, in the county of Summit and State of Ohio, have invented certain new and useful Improvements in Electric Speed-Signals, of which the following is a specification, reference being had to the accompanying drawing.

This invention relates to speed indicators especially to be used in connection with automobiles and the like, and has for its object the production of an efficient indicator wherein different colored lights will be indicated upon the automobile or machine at any desired point for the purpose of observation by the public, or for the observation of the driver of the machine in order to enable him to determine as to the approximate speed at which the automobile is traveling.

Another object of this invention is the production of a simple and efficient circuit closure which is used in connection with the present speed indicator for actuating the indicator in order to advise the driver of the machine or other person as to the approximate speed at which the automobile or vehicle is traveling.

With these and other objects in view this invention consists of certain novel combinations, constructions, and arrangements of parts as will be hereinafter fully described and claimed.

In the accompanying drawings: Figure 1 is a front elevation of the automobile. Fig. 2 is a front elevation of the contact or circuit closure showing the electrical wiring in diagram. Fig. 3 is a central longitudinal sectional view through the circuit closure and speedometer. Fig. 4 is a central horizontal section through the speedometer casing. Fig. 5 is a sectional view through the governor showing the manner in which the same is connected to the sliding collar carried by the governor shaft. Fig. 6 is a front elevation of one of the contact figures supported within the speedometer casing. Fig. 7 is a section taken on line 7—7, of Fig. 6. Fig. 8 is a longitudinal section through a portion of the dashboard of the vehicle showing the manner in which the bank of lamps is supported in engagement therewith. Fig. 9 is a perspective view of one of the contact fingers used in connection with the present invention. Fig. 10 is a perspective view of the spring pressed shoe adapted to engage the collar actuating lever for holding the lever in an inactive position. Fig. 11 is a perspective view of the closure closing shoe. Fig. 12 is a perspective view of the sliding collar operating crank arm. Fig. 13 is a perspective view of a series of washers used in connection with locking the contact arms in engagement with the binding posts carried by the speedometer casing.

By referring to the drawings it will be seen that 1 designates the vehicle which carries a driving gear 2 upon one axle thereof, which meshes with a gear 3 carried by the speedometer casing 4. The gear 3 is supported by a shaft 5, which shaft passes through the speedometer casing 4 as above described, and this shaft 5 carries a ball-bearing journal 6 for the purpose of facilitating the free rotation of the shaft 5 within the casing 4. It should be understood that the casing 4 may be supported in any desired manner upon the vehicle.

As is clearly illustrated in Fig. 3, the shaft 5 carries a governor 7 which is pivotally mounted thereon by means of a journal pin 8. This governor 7 constitutes a ring which straddles the shaft 5 and is adapted to be swung outwardly according to the speed at which the shaft 5 is rotating. The governor 7 carries a link 9, and this link 9 is secured to a collar 10, which collar is slidably mounted upon the shaft 5. A coil spring 11 engages the rear face of the collar 10 and normally urges the collar 10 outwardly. The rear end of the spring 11 engages a transversely extending pin 13 as is illustrated in Fig. 5.

A band 14 is loosely mounted upon the sliding collar 10, and this band carries a laterally extending pin 15 over which fits the elongated slot 16 of the lever arm 17. This lever arm 17 is pivotally mounted on a bracket 18 as clearly illustrated in Fig. 4, and the lever arm 17 is provided with a shoe engaging knob 19 at one end thereof for the purpose of engaging the shoe 20 which is normally forced outwardly by means of a spring 21. The spring 21 is so mounted as to urge the shoe 20 outwardly as illustrated in full lines in Fig. 4 and normally holds the lever arm 17 in an inactive position. The shoe 20 is keyed to a shaft 22, which shaft 22 also carries on its opposite end a contact shoe 23 as clearly illustrated in Figs. 2 and 3. This contact shoe 23 is provided with a T-shaped head 24 as illustrated in detail

in Fig. 11, and the T-shaped head 24 is adapted to engage the spring contacts 25 mounted upon the face plate 26 of the speedometer casing 4. It should be understood that the face plate 26 may be formed of porcelain or other suitable insulating material.

A plurality of binding screws or posts 27 are secured to the face plate 26, and these screws 27 carry a plurality of washers 28, which carry or support the spring contact members 25. These spring contact members 25 are provided with rolled contact ends 30 which are adapted to facilitate the sliding of the contact shoe 23 over the contact points 25.

By referring to Fig. 2 it will be seen that a plurality of lamps 31, 32 and 33 are mounted upon a bank 34, which bank is adapted to be supported upon the dashboard of the vehicle or any other suitable or convenient place to be viewed by the operator of the machine. If desired the bank lamps may be placed in another portion of the machine to be viewed by some one other than the operator, such as for instance upon the front or rear of the machine so as to be viewed by a person upon the side of the road or by a person whom the machine is passing.

For the purpose of indicating the speed at which the machine or automobile is traveling, two white lights are employed which are indicated by the numeral 31, two green lights indicated by the numeral 32, and two red lights indicated by the numeral 33. The white lights 31 are connected to a wire 35, which wire is connected to a battery or other suitable source of electric supply 36. The wire 35 is connected directly to a binding post 37 carried by the contact shoe 23. Each of the white lights 31 are connected to the two adjacent contact shoes 25 by means of the respective conductor wires 38 and 39 as clearly illustrated in Fig. 2. The two green lights 32 are also connected to the wire 35 and are connected to the two contact fingers 25 by means of the respective wires 40 and 41. The red lights 33 are also connected to the wire 35 and are connected to the last two contact points 25 by means of the respective wires 42 and 43. It will, therefore, be seen that as the speed of the indicator increases, the respective lights will be lighted in their order so as to allow the operator of the machine to readily determine the speed at which the machine is traveling.

From the foregoing description it will be seen that the operation is as follows: The shaft 5 is driven by means of the gear 2 and as the speed of rotation of the shaft 5 increases, the governor ring 7 will move substantially at right angles to the shaft 5 and swing the lever arm 17 inwardly due to the fact that the collar 10 is pulled downwardly by means of the link 9. This will cause the shoe 20 to move in the direction indicated by the arrow in Fig. 4 and will at the same time rotate the shaft 22 and swing the contact shoe 23 in the direction indicated by the arrow in Fig. 2 and close the circuit between the contact members 25 and light the respective lights 31, 32 and 33, thereby lighting the desired signals.

By carefully considering Fig. 13 it will be seen that the washers 28 are provided with suitable grooves 28′ for the purpose of receiving the inner round ends 29′ of the spring contacts 29, thereby firmly holding the contact members in engagement with the washers 28.

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

1. A device of the class described comprising a casing, a governor shaft, means for driving said governor shaft, a governor ring carried by said shaft, a collar slidably mounted upon said shaft, means for connecting said collar to said ring, a lever pivotally supported upon said casing and engaging said collar, a contact shoe, a shaft supporting said contact shoe, a spring pressed shoe engaging said shaft and also engaging said lever whereby said contact shoe will be swung as said collar is reciprocated upon said shaft, contact devices adapted to be engaged by said contact shoe, indicating lights, and means connecting said indicating lights to said contact device whereby the same will be successively lighted as said contact shoe is swung.

2. A device of the class described comprising a casing, a governor shaft, means for driving said governor shaft, a governor ring carried by said governor shaft, a collar slidably mounted thereon, means for connecting said collar to said governor shaft, a lever connected to said collar, said lever being pivotally mounted upon said casing, a spring pressed shoe engaging one end of said lever, a shaft fixedly secured to said spring pressed shoe, a contact shoe connected to said last mentioned shaft, a plurality of spring contact devices carried by said casing, indicating lights, and means for electrically connecting said indicating lights with said contact device.

3. A device of the class described comprising a casing, a governor shaft, means for driving the same, a sliding collar mounted upon said shaft, means for reciprocating said collar upon said shaft, a lever pivotally mounted upon said casing, said collar provided with a laterally extending pin, said lever provided with a longitudinally extending slot to facilitate the swinging of said lever as said collar is reciprocated upon said shaft, a spring pressed shoe engaging said lever, a shaft keyed to said spring

pressed shoe, a contact shoe keyed to said shaft, a plurality of contact devices carried by said casing and provided with curved ends to facilitate the passing of said contact shoe over said contact devices, indicating lights, and means for electrically connecting said indicating lights to said contact devices for successively lighting said lights as said contact shoe is swung.

4. A device of the class described comprising a casing, a governor shaft, means for driving said governor shaft, a governor ring carried by said governor shaft, a collar carried thereon, means for connecting said collar to said governor shaft, a lever connected to said collar, a shoe engaging one end of said lever, a shaft secured to said shoe, a contact shoe connected to said last mentioned shaft, a plurality of contact devices carried by said casing, indicating lights, and means for electrically connecting said indicating lights with said contact device.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

JOSEPH B. KIMPFLIN.

Witnesses:
G. J. SEIBERT,
FREDERIC W. ROBSON.