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RECORDING DEVICE FOR AUTOMOBILES AND THE LIKE

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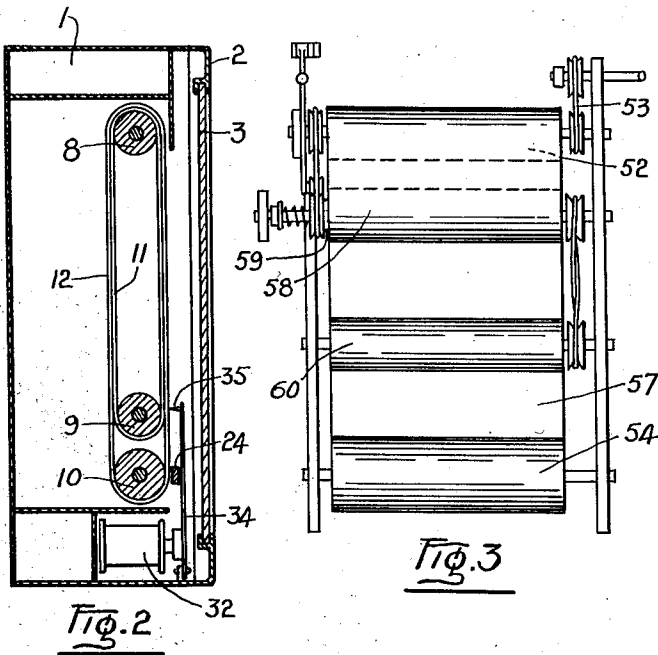
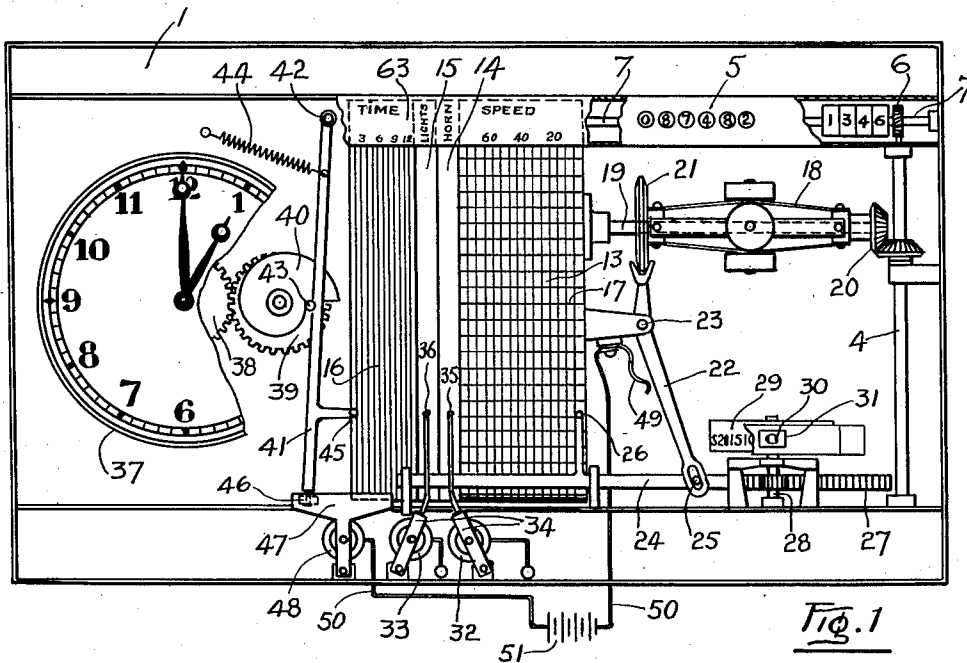
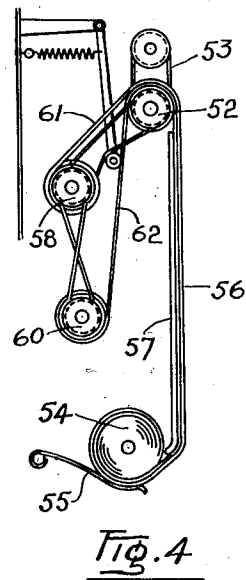


Fig. 3



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RECORDING DEVICE FOR AUTOMOBILES AND THE LIKE.

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My invention relates to improvements in recording devices for automobiles and the like, the objects of which are to provide means whereby automobile owners may have a record of the speed at which they are travelling visibly displayed before them, which record would also indicate the distance travelled in bringing the car driven to a stop, an indication of the time their lights were on and when the horn was sounded. Further objects are to provide means whereby the recording device may be so constructed and arranged for application to trucks or busses, so that the length of time that the vehicle is standing, or when a bus door is opened is recorded, so that a proper check may be kept on the honesty of the drivers. A still further object is to provide such a record that in the event of accident occurring to a vehicle so equipped, the record so taken will form convincing evidence as to the care taken by the driver to avoid such accident.

The invention consists essentially of a recording device having a record strip adapted to move under a plurality of pointers at a speed proportionate to that of the car, said pointers being actuated to record miles per hour travelled, the use of head lights, horn or other desired information concerning the vehicle to which it is fitted, as will be more fully described in the following specification, in which:—

Fig. 1 is a general view of the invention with the cover removed and the clock dial fractionated to show the working parts.

Fig. 2 is a sectional view showing the operation of a continuous record strip capable of showing a record of a few miles only.

Fig. 3 is a front view of the invention adapted for the use of a roll of record strip and a carbon copy thereof.

Fig. 4 is a sectional view of same.

In the drawings like characters of reference indicate corresponding parts in each figure.

The invention will preferably be mounted on the dash of a car in convenient view of the driver.

The numeral 1 indicates a rectangular casing having a removable front 2, see Figure 2, which is provided with a glazed viewing opening 3. The numeral 4 indicates a vertical shaft carried in suitable bearings within the casing and operatively connected to the flexible shaft, not shown,

usually provided for operating the speedometer or mileage recorder of the car and run from the tail shaft or one of the road wheels. From the shaft 4 an odometer 5 of any suitable type is driven by a spiral or other drive gears 6 and the speedometer shaft 7 is extended towards the longitudinal centre of the casing and is operably connected to a record strip roller 8, see Figure 2, which is suitably journaled from the rear wall of the casing 1. Suitably journaled adjacent the lower border of the casing are further rollers 9 and 10, see Figure 2, the roller 9 being slightly less in diameter, and the roller 10 being of equal diameter to the roller 8. An endless strip of paper 11 or other material extends from the roller 8 to the roller 9, which strip is preferably coated on its outer or exposed side with black or some readily discernible colour and is also coated with wax or other material which is somewhat adhesive. An endless strip 12 of transparent material such as thin celluloid is adapted to overlay the strip 11 and to extend between and around the rollers 8 and 10, this strip 12 is printed with vertical columns as follows, 13 indicating mileage per hour travelled, 14 indicating time and position at which the horn was sounded, 15 indicating periods during which the lights were switched on, and 16 indicating the duration and hour of running periods. The columns 13 are divided with horizontal lines 17 defining spaces indicative of distance, preferably miles or fractions thereof. The strips 11 and 12 are adapted to be run at substantially equal speeds and their exposed lengths, viz those visible through the viewing opening 3 will be moved in an upward direction. Since the strip 11 is of dark colour and is rendered adhesive, it will be readily seen that an impression made by a stylus on the strip 12 and through it to the strip 11 will cause the adhesion of one strip to the other at the point of impression, which will render the dark coloured coating at such point to be clearly visible through the transparency of the strip 12, and also that if pressure of the stylus is maintained during the upward movement of the strip the impression will indicate a line extending along the strips, which impression will continue until the strips are separated as they pass individually under the rollers 9 and 10 prior to returning into intimate contact with each

other on their upward movement past the roller 9, when they will again be disposed for receiving a continuance of, or a further impression from the stylus the markings of this endless strip are so spaced and the rate of travel thereof is such as to be coordinated with the movements of the inscribing device and the operation of the clock work.

The numeral 18 indicates a governor of any suitable type mounted upon a shaft 19 and driven by mitre gears 20 from the speedometer shaft 4. Operatively connected to the governor 18 is an endwise movable disc 21 which is adapted to engage the upper end of a lever 22 fulcrumed as at 23. The lower end of the lever 22 is link connected to an endwise movable bar 24 as at 25, which bar is provided adjacent its inner end with a stylus 26 which is in constant engagement with the transparent strip 12 at a variable position within the columns 13 indicating the miles per hour being travelled. At the opposite end of the bar 24 is a rack 27 which engages a vertical shaft 28 to rotate it, having a short cylinder 29 at its upper end bearing figures 30 on its periphery, which are adapted to be exposed through an apertured mask 31 to indicate the miles per hour being travelled.

The numerals 32 and 33 indicate generally electro magnets having one side of their circuits grounded to the casing and to the car, and the other side connected through the source of electrical energy, the circuit of the magnet 32 being led through the horn circuit and that of the magnet 33 through the light circuit so that as either of these accessories are used the respective electromagnet circuits are closed, causing electrical energy to flow therethrough and attract the magnet bar 34 with which they are provided to be attracted. To each of the magnet bars 34 a stylus is secured, that actuated by the magnet 32 being indicated by the numeral 35 and that actuated by the magnet 33 being indicated by the numeral 36.

The numeral 37 indicates a clock having on its hour shaft a gear wheel 38 in mesh with a gear wheel of equal size and indicated by the numeral 39 to which gear a cam 40 is connected. The numeral 41 indicates a crank pivotally mounted as at 42 adjacent the upper edge of the casing 1 which is provided with a roller 43 adapted to bear against the periphery of the cam 40 and is held in engagement therewith by a tension spring 44, extending from the side of the lever is a stylus 45 which is normally out of contact with the strip 12 and is adapted to traverse the column 16 indicative of time according to the position assumed by the cam 40. On the lower extremity of the crank 41 is a roller 46 which is engaged by a T-headed magnet bar 47 actuated by an

electromagnet 48 which is grounded on one side to the casing, the circuit therefore being completed through the lever 22, an insulated spring contact finger 49 electrically connected by wires 50 to and from the battery 51. When the car is stationary the lever 22 is out of contact with the finger 49, leaving the circuit of the magnet 48 open and the stylus 45 out of contact with the strip 12, but as soon as the car starts to travel, the lever 22 comes into contact with the finger 49 thus closing the circuit and causing the magnet 48 to be energized, drawing down the T-headed magnet bar 47 and depressing the crank 41, so that the stylus is brought into bearing contact with the strip to record thereon the time at which the car was started. This contact being maintained throughout the running period will cause the record to be continued until the car is brought to a stop, so that all running periods are definitely indicated in the column 16 and standing periods can be ascertained by the time period indicated at stopping, and the time period indicated at starting.

In the modification shown in Figures 3 and 4 wherein provision is made for taking a continuous record on a roll of paper strip or making it on a carbon coated strip with a second or duplicate strip, the numeral 52 indicates a paper roll driven by a belt 53 or other suitable means which is adapted to draw the paper upwards from a feed roll 54 having a spring tensioned brake 55 for the purpose of supplying sufficient tension to the paper strip 56 extending between the rolls 54 and 52. Behind the strip 56 a metal plate 57 is provided to support the paper in such a manner that proper impressions may be made thereon. The numeral 58 indicates a roller, belt or otherwise driven through a spring tensioned clutch 59, and 60 indicates a further roll driven by suitable means from the roll 58. When a single roll strip 61 of paper is used for the record it will be fed onto the roll 58, but when a carbon copy is to be made, this strip 61 will be carbon coated on the reverse side and a further strip 62 will be wound with it on the roll 54, such strip after receiving its several impressions and passing along the metal plate 57 will be wound upon the roller 60. By providing a friction clutch 59 between the rollers 52 and 58 the drive communicated to the latter will develop an increasing slip as the diameter of the paper roll upon the rollers 58 and 60 increases, the slip being such as will allow the paper fed onto the rolls 58 and 60 to be properly wound but not to impose an undue pulling strain on the strips 61 and 62 as they pass over the roll 52. I may prefer to provide the ends of the rollers 8 and 52 with teeth similar to the feed rollers of a cinematograph projector and to per-

forate the side edges of the paper strips with corresponding marginal perforations or to provide any other means for effecting a positive drive to the strips. Along the upper border of the casing 1 and visible through the viewing opening 3 of the cover 2 a scale 63 bearing indicia corresponding to the columns 13, 14, 15 and 16 of the strips 11, 12, 61 and 62.

It will be obvious that many changes may be made as to the functions recordable on the device, such for instance being, when used for bus or stage line work, a circuit could be carried to the bus door so that the opening of any door could be recorded, which record would be useful in preventing bus drivers from opening the bus doors to take on passengers and receive fares therefrom and not accounting to the owners for the fares so received.

What I claim as my invention is:

In a recording device for automobiles and the like comprising a shaft adapted to be

driven by the vehicle at a speed proportionate to the vehicle speed, an endwise movable record strip adapted to be driven by the shaft, said record strip being in the form of an endless band of transparent material and having index columns extending from one roller to another, a second endless strip underlying said strip and adapted for simultaneous movement with the record strip, said second strip being adhesive and coated with a dark colour, means operable by the shaft for holding a stylus in tracing engagement with strip and causing the adhesion of the second strip along the line traced by the stylus and to render such line visible through the transparent strip, and means for separating the second strip from the record strip subsequent to recording the line.

Dated at Vancouver B. C. this 27th day of July, 1926.

JAMES RUSSELL TISDALE