United States Patent

[11] 3,599,224

[72] Inventor George V. Hahn
Smithtown, N.Y.

[21] Appl. No 794,165
[22] Filed Jan. 27, 1969
[45] Patented Aug. 10, 1971
[73] Assignee TEK Bearing Company, Inc.

[54] COMBINED RECORDING DEVICE FOR TRUCKS AND THE LIKE
18 Claims, 7 Drawing Figs.

[52] U.S. Cl. 346/61
[51] Int. Cl. G07c 5/12, G01d 9/30
[50] Field of Search 346/59, 60, 61, 73, 93, 94, 139, 141

[56] References Cited

UNITED STATES PATENTS

2,392,467	1/1946	Engel et al.	346/60 X
2,495,340	1/1950	Milster	346/73 X
2,584,149	2/1952	Moffitt et al	346/49
2,668,094	2/1954	Chelf	346/73
3,104,146	9/1963	Cool et al.	346/18
3,132,916	5/1964	Muller	346/62
3,188,647	6/1965	Davis	346/60
3,200,403	8/1965	Bush	346/61
3,388,404	6/1968	Bush	346/61 X

Primary Examiner—Joseph W. Hartary
Attorney—Mann, Brown, McWilliams & Bradway

ABSTRACT: A compact, primarily automatic recording device for use on trucks, particularly those involved in interstate commerce, for recording time, speed and related matters and other selected conditions in a permanent tamperproof manner to thereby furnish detailed records for truck fleet operator's use or Interstate Commerce Commission use.

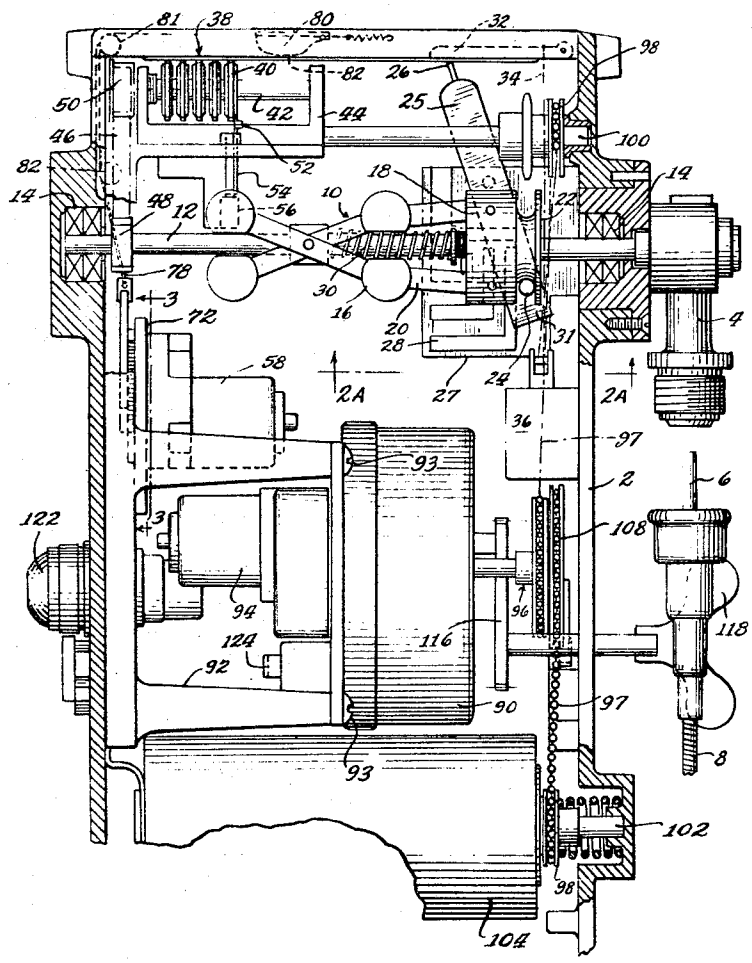
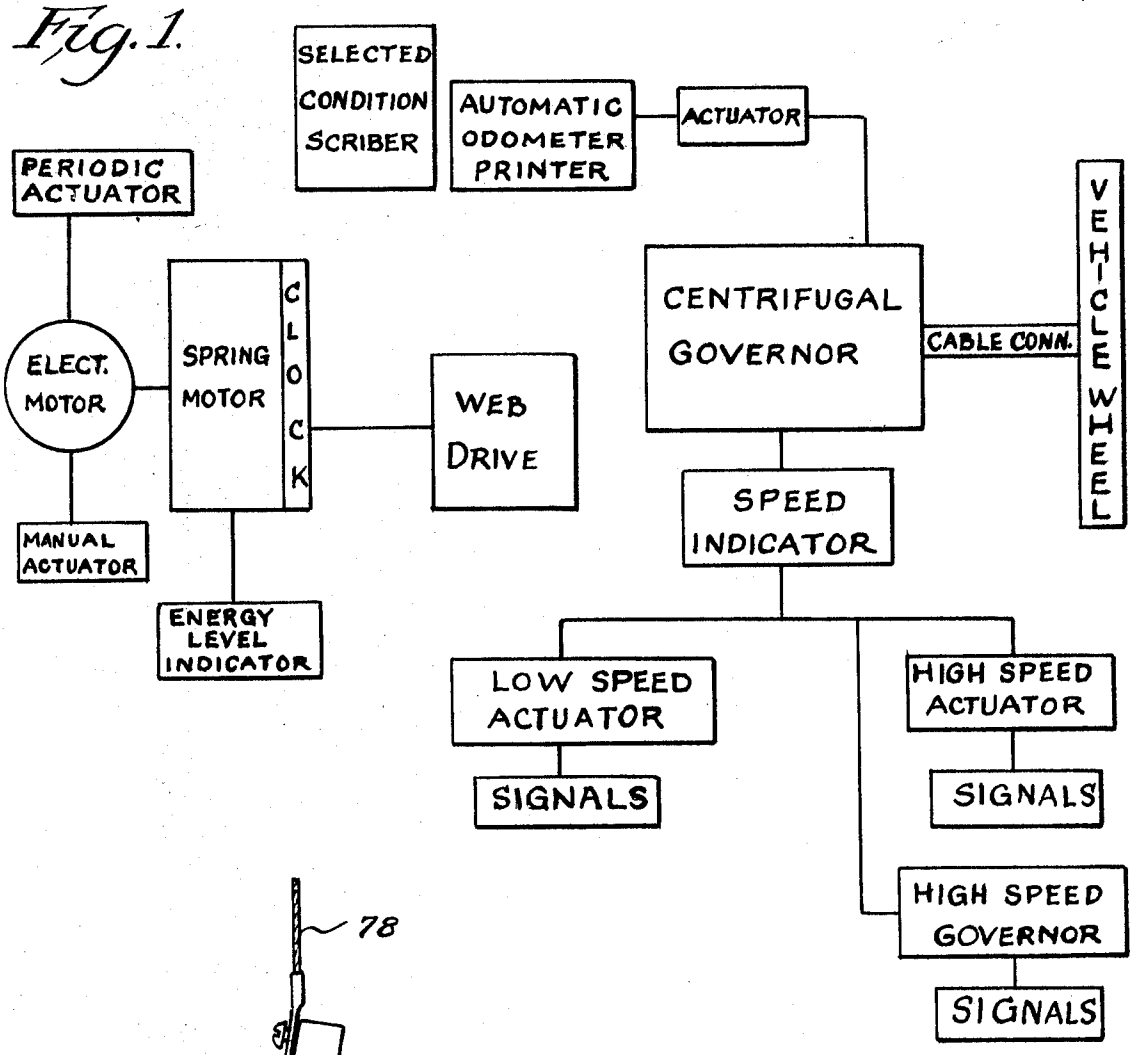


Fig. 1.



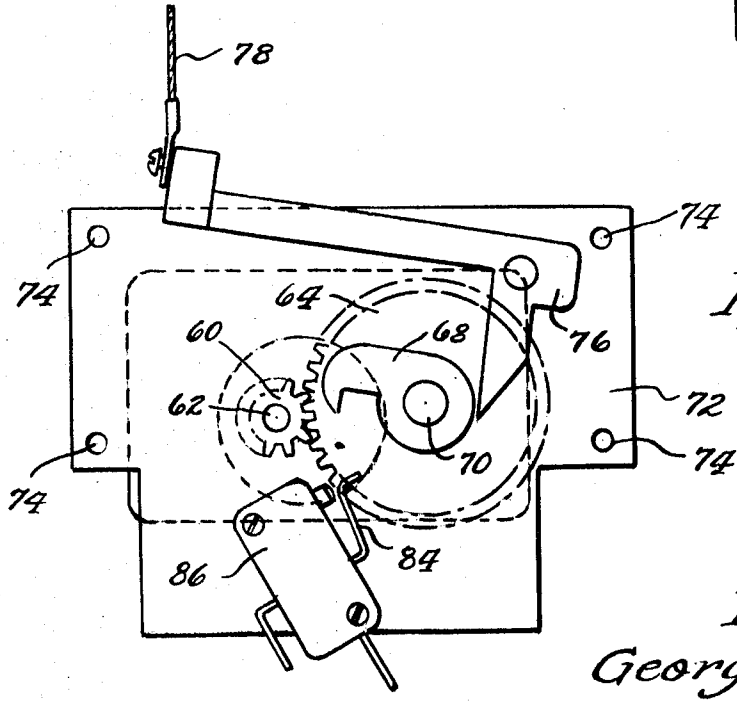


Fig. 3.

Inventor
George V. Hahn

By Mann, Brown & McWilliams
Attys.

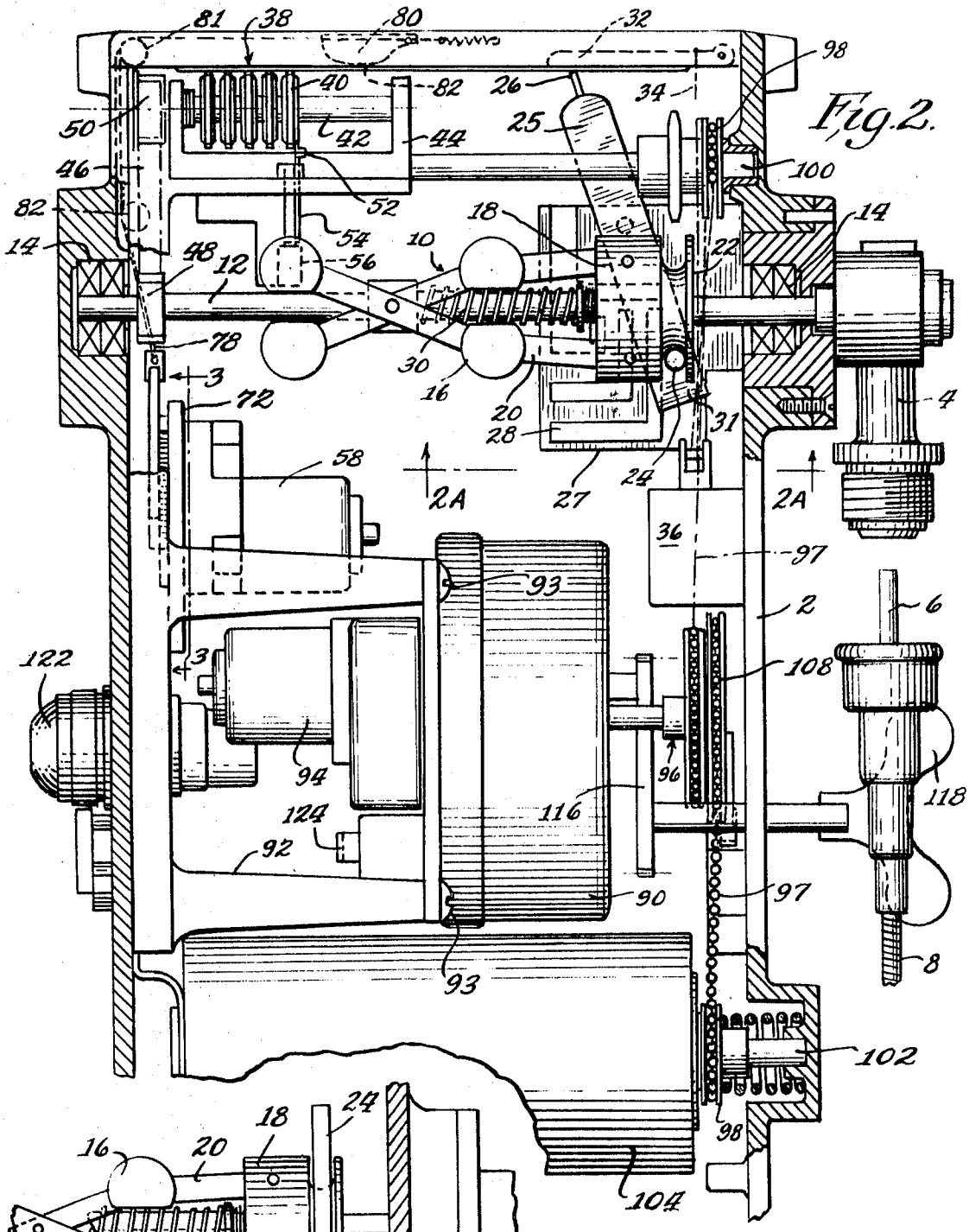


Fig. 2.

Fig. 2A.

Inventor
George V. Hahn
By Mann, Brown & McWilliams
Attys.

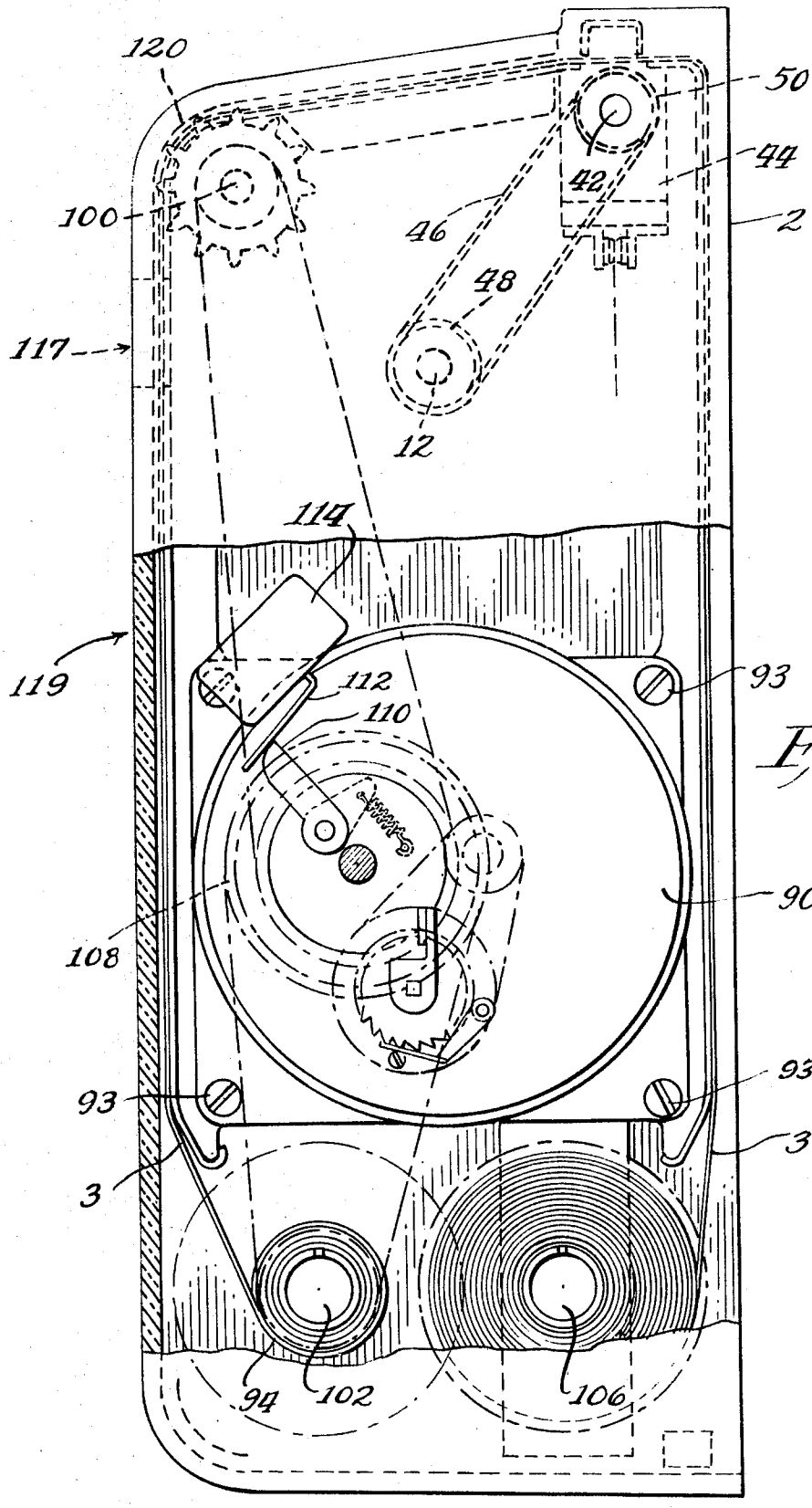

120
50
44
42
100
46
2
48
117
12
114
119
112
93
110
90
108
93
93
3
3
94
102
106

Fig. 4.

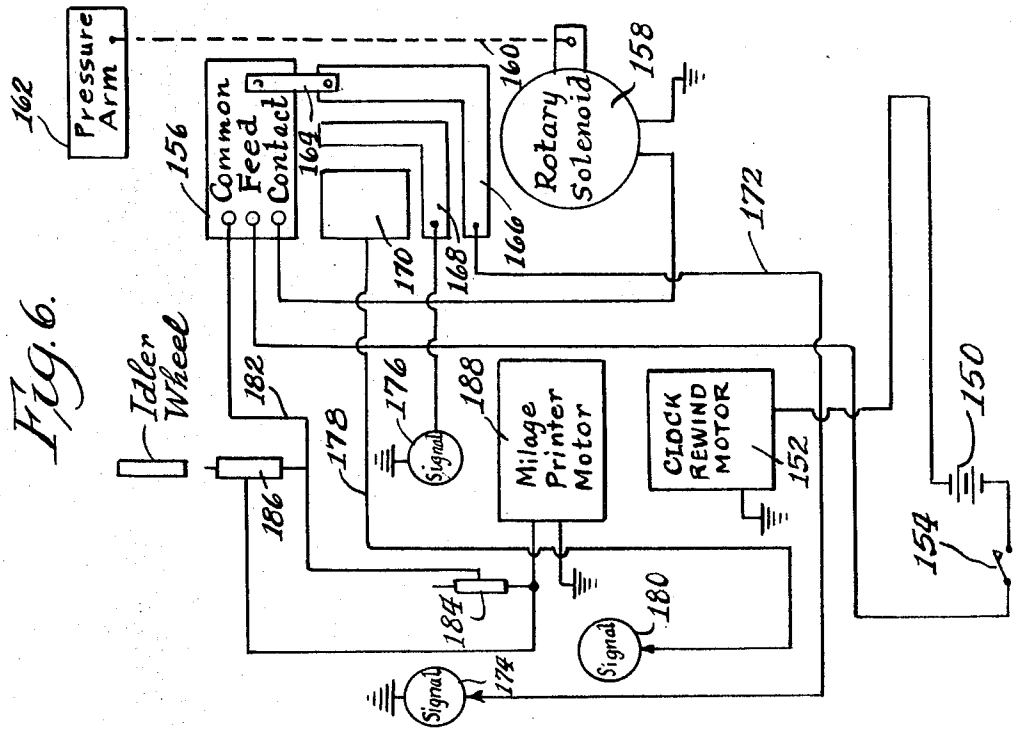


Fig. 6.

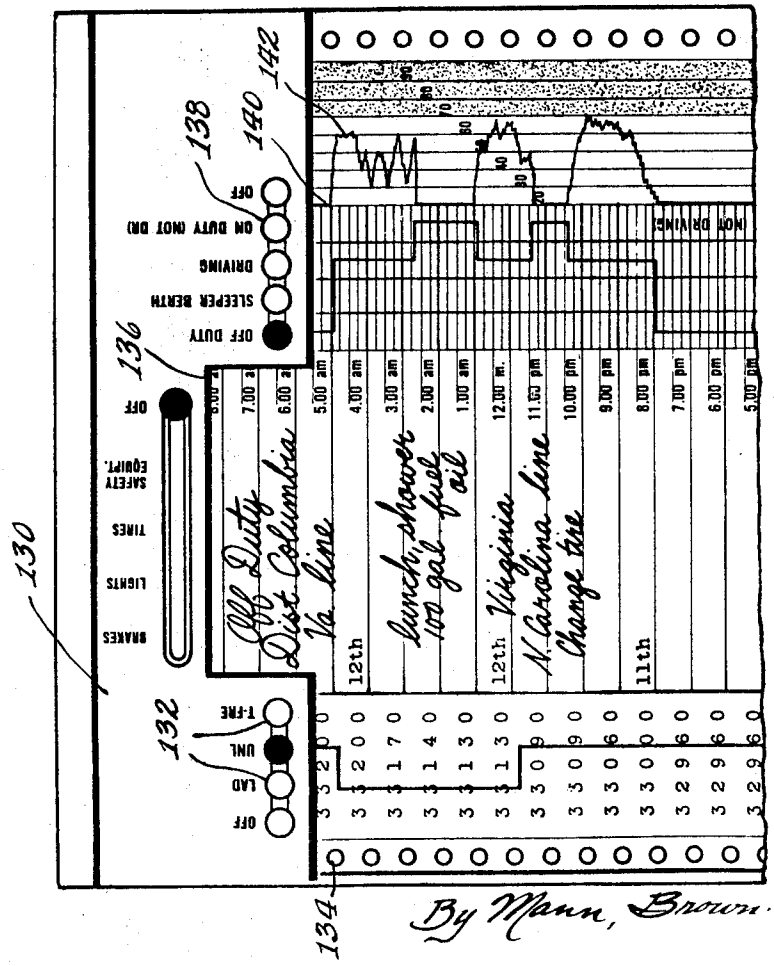


Fig. 5.

Inventor
George V. Hahn.
By Mann, Brown & McWilliams
Attys.

COMBINED RECORDING DEVICE FOR TRUCKS AND THE LIKE

BACKGROUND OF THE INVENTION

This invention pertains to a unique automated recording device for use by truckers and similar shippers utilizing wheeled vehicles such as long-haul trucks and the like. More specifically, the recording apparatus of this invention is designed to improve the information flow between operations, maintenance and bookkeeping departments of large motor transportation systems. With equal accuracy and efficiency, the small individual operator is also served in that his record keeping systems are greatly simplified. The recording devices of this invention provide a practical, positive driver's daily log; provide a better means of controlling the activities of a driver while on duty; provide a means for logging exact miles driven over certain highways as a basis for license fees and the like; and provide other information as an aid to the endeavors and pursuits of the operator. The devices are in themselves an important safety feature for owners, government authorities and drivers concerned with highway safety.

The recording devices of this invention are intended to be mounted on the dashboard of an intrastate or interstate carrier such as a truck in such a manner that it will provide, in automatic and semiautomatic fashion, a complete transcript of a driver's activity and additionally provides a myriad of associated signals and the like, specifically geared to highway safety.

The prior art has, for some time, provided the trucking industry with various types of recording devices. For the most part, these devices have employed disc-type records or charts upon which various information has been recorded. The readability of the various circular charts has detracted from the usefulness of the devices in that concentrated study was required in order to deduce and tabulate data therefrom. Additionally, these prior art devices did not provide accessible areas in which a driver could insert handwritten indicia pertaining to the functioning of his vehicle or events encountered during the motor trip. More often than not, these recorders did no more than provide the scant information of distance traveled and the times involved. In other instances, the devices were not fully automatic in nature and, consequently, were dependent upon periodic actuation such as winding, etc. to make sure that the device was recording when it should be. Many of the prior art devices do not have provisions for supplementing the various vehicle conditions sensed with a safety alarm system to inform the driver of the vehicle of certain specific aspects of vehicle operation.

The invention disclosed herein obviates many of the shortcomings described above and provides for automatic and semiautomatic recording of selected conditions on a chart which is easily read and scanned in order to inspect the activities of the vehicle for several days at a time and provides a compact device easily mounted in a motor vehicle cab in a tamperproof manner. The mileage traveled by the motor vehicle is easily ascertainable from the record in printed form and as long as the primary electrical energy source of the motor vehicle is in a charged state, the recording device will automatically operate without the need to rewind the clock or recording device by hand. These and many other important advantages will become apparent from the herein following commentary taken in conjunction with the drawings.

SUMMARY OF THE INVENTION

Basically, an exemplary embodiment of the invention pertains to a recording device such as a truck or the like. Generally, the device comprises a housing in which a movably mounted length of paper web is supported having a spring means within the housing and operatively connected to at least one of the supports of the paper web to continuously move the web between said supports at a substantially constant rate of speed to continuously wind the paper web on one

of the supports. The paper web is made of a pressure-sensitive-type paper which will reproduce lines and the like in response to pressure from a stylus or equivalent member. Periodically actuated electrical means is also provided which acts on the spring means to restore the energy level therein and to maintain it at a selected level. Operatively associated sensing or recording means, responsive to conditions of the vehicle including the speed thereof, is provided to record same on the paper web and operatively associated odometer means, with a periodically actuated printing means to record the mileage in preselected increments on said paper web, is also provided. The outside housing as well as the paper web are so configured so as to allow the imprinting on the paper web of handwritten indicia and to provide a wide field of vision of the web upon which indicia has been recorded while maintaining the device and the paper web in the recording and operable state.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a simplified schematic illustration of one of the embodiments of the recording device of this invention;

FIG. 2 is a front view of a specific embodiment of the recording device of this invention with the cover and internal wiring removed to better illustrate the internal parts;

FIG. 2A is a view taken along the line 2A–2A of FIG. 2;

FIG. 3 is a view taken along the line 3–3 of FIG. 2 illustrating a specific mechanism for operating the automatic imprinter of the device depicted in FIG. 2;

FIG. 4 is a side view of the recording device of FIG. 2 showing the drive chain of the apparatus and the automatic rewind mechanism for the clock portion with the remainder of the components removed for the sake of clarity;

FIG. 5 is a portion of a paper web or chart illustrating how the device of FIG. 2 operates; and

FIG. 6 is a schematic combines electrical and mechanical diagram illustrating the interrelationship of the various components of the device of FIG. 2.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

FIG. 1 illustrates diagrammatically the basic, functional features of an exemplary device of this invention. It will be seen that a cable connection from the vehicle wheel is operatively connected to a centrifugal governor of prior art design. The function of the governor is to be responsive and directly capable of indicating vehicle speed and, of course, the distance that the vehicle travels. Coupled with the centrifugal governor is a recording stylus that will indicate and record the speed of the vehicle on a pressure-sensitive-type paper web. The motive power to drive the paper web from one spool to another is obtained by a spring motor clock or the like, which may be manually wound, and which is preferably periodically wound by an electric motor which is periodically actuated. Thus, a predetermined energy level is maintained in the paper web drive at all times. As indicated, an odometer reading is obtained which is directly imprinted on the paper web as successive miles traveled. Generally, the imprinting of the mileage is in 10 mile increments but this is a mere matter of choice and any increment may be chosen. Along with the operation of the centrifugal governor, which indicates speed, there are a series of circuits which are actuated depending upon conditions reached. For instance, a high-speed actuator which may be set for a speed of 60 miles per hour will actuate a signal to warn the driver of the vehicle that he is exceeding a certain set speed. In other instances, the attainment of a high speed will automatically actuate a high-speed governor to curtail the sustained speed of the vehicle at that predetermined level. Additionally, the devices of this invention may be adapted to bring these various conditions to the attention of the driver by visual and/or audible means. Likewise, a low speed actuator to indicate to the driver that he is below a predetermined speed usually prescribed by state law is provided with similar signals. The device also contemplates the provision of various styli or other indicia recording means to indicate some characteristics

of the vehicle, as for instance that it is "deadheading" (no load on vehicle returning to home base), fully loaded and other pertinent information of a desired nature. The more detailed commentary hereafter following will indicate how the aforedescribed functions of an exemplary device of this invention are obtained.

Referring to the drawings wherein like numerals of reference designate like elements throughout the several views and specifically referring to FIGS. 2 through 4, the recording device of this invention, in an exemplary form, is shown as comprising housing 2, in generally rectangular configuration, and being provided with appropriate bosses, journalings and the like for securement of various internal components as will be hereinafter described. An appropriate connection 4 is provided to receive the actuating member 6 from a speedometer cable 8 and the connector 4 comprises a threaded member adapted to receive the female connector of the speedometer cable 8. Mounted adjacent connector 4 in operable fashion is centrifugal governor member 10, generally of prior art design, comprising shaft 12 mounted transverse of the housing 2 with appropriate bearings 14 being provided so that shaft 12 may rotate freely upon actuation by means of speedometer cable 8. Centrifugal governor 10 comprises the well-known weighted ball and cross-link members of conventional design with members 16 being specifically adapted in this instance to be coupled to slidable collar member 18 and secured thereto by cross-link members 20. The collar 18 comprises a grooved portion or section 22 adapted to receive an upstanding rod 24 secured in pivotally mounted floating arm member 25 which serves two purposes.

Firstly, floating arm member 25 has a spring loaded stylus 26 at the end thereof that will inscribe a line, the line being made by the pressure of the stylus 26 against the pressure-sensitive paper (FIG. 4) correlative to the speed of the vehicle. The position of stylus 26 is directly related to the rotation of member 25, which is fabricated of electrically insulated material and, hence, position of the weighted balls and linkage of centrifugal governor 10. Secondly, the other purpose served by upstanding rod 24 and floating arm member 25 is to make contact on the various segments 28 of the electrically insulated printed-type circuit board 27 disposed therebelow and thereby complete electrical circuits to indicate the various speeds reached or attained by the vehicle, completion of the circuits being obtained by carbon brushes and conductor plate 31, movement of rod 24 with respect to one of the segments 28 and being put in electrical communication therewith. Thus, in operation the governor 10 is much like that generally known in the art in that as the rod supporting the fly weights rotates, the weighted balls and linkage 16 are urged to compress the spring 30 thereby moving the free floating arm 24 which operates to make certain circuit connections and also inscribes a line indicating vehicle speed on the pressure-sensitive web of graphlike paper. Located in juxtaposition to stylus 26 is platen surface member 32 pivotally mounted in the upper portion of housing 2. Secured to platen surface member 32 is flexible cable 34 having one of its ends terminating in operable fashion with rotary solenoid 36 which is directly energized whenever the ignition switch of the motor vehicle is in the "on" position. Thus, a straight line is formed on the paper web because of member 32 bearing against spring loaded stylus 26 with the paper web 3 therebetween (FIG. 4) when the vehicle is standing still.

Located above and to the left (FIG. 2) of the centrifugal governor 10 is imprinting member 38 comprising a plurality of rotatable annular or wheel members 40 having numeral indicia thereon. Each of the wheels 40 are disposed on shaft 42 secured in housing 2 and support bracket 44. Shaft 42 is driven by timing belt 46 engaging gear 48 mounted on the centrifugal governor axle 12 and gear 50 mounted of shaft 42. The gear ratios are chosen to be such so as to only permit the wheels 40, bearing the numeral indicia thereon, to make 1 revolution for each 10 miles. Upon actuation or curvilinear movement of one of the number wheels 40 of the odometer assembly 38 at the selected time, pinion wheel 52 engages idler gear 54 causing rotation thereof which rotation actuates a microswitch 56 to complete a circuit to energize direct current electric motor 58 to actuate the printing component of the device. This is best seen in FIG. 3 where, upon actuation of the switch 56, the wheel or gear 60 on shaft 62 of motor 58 rotates approximately 1 full revolution to rotate gear 64 and crank 68 secured on shaft 70. The motor 58 and attendant elements being mounted on support 72 secured to the wall of housing 2 as by screws 74. The rotation of crank 68 causes an engagement with arm 76 which is pivotally mounted on support 72, the terminal portion of arm 76 being connected to cable 78 which causes slider block member 80, disposed for lateral movement within the housing 2 of the assembly, to press the pressure-sensitive paper 3 (not shown) against the numerals of each of the wheels 40 of odometer assembly 38. The cable 78 is supported by pulley wheels 81 and is fastened to the furthest end of slider block 80 which is disposed in a groove for proper positioning and biased in the extreme right position, as seen in FIG. 2, and which can be seen as having a protrusion or arcuate-shaped surface 82 to insure proper pressure between numeral wheels 40 and the pressure-sensitive paper. Upon the continued rotation of crank 68, the terminal portion thereof contacts switch member 84 of microswitch 86 thereby shutting off the current to motor 58 driving actuating gear member 60. Because of timing and gear placement, the mechanism is preset and ready for actuation after each successive 10 mile increment.

The clock mechanism 90 with its internal spring motor (not shown) is mounted on bosses 92 extending from housing 2 by screws 93 provided for that purpose. Mounted on the back of clock mechanism 90 in operative relationship is electric motor 94 which is periodically actuated in a manner to be described to rewind the spring motor of clock mechanism 90 to restore the energy level of the main spring to its peak, efficient operating point. The spring drive from clock mechanism 90 is connected through appropriate gearing 96 through bead chains 97, in this instance, to rotate paper web advancers 98 mounted on shafts 100 and 102 journaled in the walls of housing 2. Shaft 102 supports spool member 104 upon which the tape is wound while shaft 106 adjacently mounts a similar spool member 103 which supports the full roll of unused tape or chart web, the phantom lines circumscribing spool 104 indicating the full roll of inscribed paper at the end of 30 or 31 days.

The drive 96 advances the tape, a prescribed distance per unit of time and as the gear member 108 rotates, it will periodically, for instance every 6 hours, cause secured arm 110 (FIG. 4) to make contact with switch member 112 of microswitch 114 to complete a circuit for a predetermined length of time which actuates direct current motor 94 which winds the mainspring of clock mechanism 90 to a predetermined energy level. Clock mechanism 90 is provided with suitable connector 116 by which it can be manually wound as by key 118 should the battery of the motor vehicle be disabled or removed. To support the paper web and to a certain extent obscure the inscribed web from view, during the inscribing process, shield member 120 is provided which may be of an opaque nature so as to obscure from the operator's view the immediate recordation taking place. Obviously, the paper web 3, as it continues advancing, will advance to that position 117 where the outer covering 119 is both transparent and slotted allowing both viewing and writing access to the paper web.

Positioned on the outside of housing 2 may be blinker light means 122 suitably energized as from flasher element 124 having appropriate circuit connections (not shown) from circuit maker segments 28. Obviously, other connection housings may be appropriately positioned in housing 2 in keeping with the desired features of the herein disclosed invention.

Referring to FIG. 5, an exemplary type of chart or paper web that may be used in the practice of the invention as depicted in FIG. 2 is illustrated. It is of the pressure-sensitive-type as heretofore alluded to which means that it is responsive

to pressures such as that caused by styli to produce a discernable line or point thereon. Cover plate **130** is shown as having various indicia thereon and being provided with slots **132** therein to receive various manually manipulated styli. The upper cover plate **130**, of course, forms part of the main cover of the apparatus, the lower cover portion being removed so as to clearly illustrate the various facets of paper web **134**. The left portion of cover **130** is provided with four round slots **132**, each of which, with the exception of the "off" slot, provides access to the paper web **134** therebelow and are adapted to accommodate a stylus or the like which is manually positioned in either one of the slots **132** depending upon the conditions of the vehicle as indicated by the indicia alongside. For instance, if this portion of the apparatus is not to be used, the stylus is positioned in the slot marked "off," which slot, as indicated earlier, is so constructed so as to keep the point of the stylus out of contact with the portion of the paper web **134** therebelow. The adjacent slot is marked for "Laden," next adjacent one "Unladen" and the still next adjacent slot for "tax free vehicle operation." Thus, one or more styli (not shown) may be positioned in one or more of the four slots **132** depending upon the actual existing circumstances. Obviously, other indicia may be substituted for that indicated. In the case of that portion of the web **134** illustrated, the stylus was placed initially in the unladen or "UNL" position thereby forming a straight line under the designation "UNL" indicating unladen. The stylus was then subsequently positioned in the slot designated "LAD" meaning the laden condition and since the paper web **134** moves at a constant rate, the times at which the vehicle has been laden or unladen is quickly discernable and is correlative to dates and times which are printed on the paper web **134**. It will be noted that the extreme left column of web **134** has a series of numbers printed thereon which numbers correspond to the mileage traveled by the vehicle and which imprinting has been accomplished every hour on the hour as opposed to recordation or imprinting each successive 10 miles. It will be recalled that the apparatus depicted in FIG. **2** was earlier described as being adapted to record mileage each 10 miles. Obviously, those skilled in the art will at once recognize that merely by providing a suitable linkage to be actuated each hour, this linkage may actuate the mileage printer assembly as opposed to it being operated at the end of each 10 miles.

In the approximate center of cover plate **130** is a series of indicia indicating "brakes," "lights," "tires," "safety equipment" and "off." Cummulatively, this indicia can be considered as a safety check package and comprises essentially a printer means which is manually actuated and imprints on the paper web positioned therebelow the various designated items such as "brakes," "lights," etc. which reminds the driver that he must check this equipment and which checking is verified by his okaying and signing the paper web attesting to this checking as by means of slot **136** provided for that purpose. The imprinting of the safety check feature is obtained by pressing a movable means (not shown) across the chart paper which is positioned over raised lettering such as letter press type positioned therebelow (not shown) and because the paper is pressure-sensitive, the pressure against the raised type will inscribe the designated or desired images on the web. While it is contemplated that this is manually accomplished, such as at the beginning of each run, it is obvious that this may be automatically provided for as are some of the other features as has been heretofore described. The slot **136** provides an opening in the main cover plate by which means the driver can write in not only his signature as to verify the safety check, but other pertinent information which might be desired on a permanent record of the trip.

On the right of the cover plate **130** are another series of slots **138**, each being adapted to receive a manually placed stylus therein to indicate other circumstances surrounding the trip of the vehicle as indicated by the indicia adjacent each slot. To the right of this portion of the web **134** are a series of spaced segments, each designating increment of 10 miles in speed on which the speed stylus will visually record in permanent fashion the speed of the vehicle on various days and at specific periods of time. It will be seen that the straight portion of the speed indication **140** means that the vehicle was not moving but the ignition switch was on which accounts for the straight line. However, as the vehicle moves, its speed is registered during each period of movement as a curve containing many peaks and valleys such as **142**. Thus, the speed of the motor vehicle, its stops and the time of the day, as well as the day of the month that the recording takes place, is accurately recorded in permanent fashion.

Generally, the paper web or tape will provide a 31 -day supply and need only be changed once a month. Other types of paper webs, blanks thereof, as well as various other indicia are also contemplated. For instance, the higher speeds such as those in the 70—90 miles range may be indicated on the chart by various shading such as red to immediately highlight and point out the excessive speed levels that the motor vehicle had sustained. The paper web, as indicated with the various information thereon, becomes an invaluable addendum to ICC reports, which records can be used to accurately record the crossing of state lines for the computing of various states fuel and mileage taxes and the like matters.

To recap in summation in conjunction with FIG. **5**, it should be remembered that the devices of this invention provide an up-to-date method of keeping an accurate log of a driver's daily and trip activity. It is intended and ordinarily will be used as a major supplement to the printed ICC driver's daily log. Because the paper web or chart is of the pressure-sensitive-type, and is enclosed within a tamperproof case, the recordation cannot be erased or altered. The driver may position a stylus in the proper slot to automatically record pertinent and appropriate information and, of course, this very same information is required on the written ICC drivers' daily log. This facilitates the drivers filling out the required ICC drivers' daily log by simply referring and copying the information from the paper web such as depicted in FIG. **5**. Of course, any change in the drivers' activity can also be recorded automatically by manually shifting the stylus to any one of the activity columns shown, and since the chart or paper web is dated and timed and rotates at a speed of approximately one-fourth inch per hour, all of the information is accurately scribed on the pressure-sensitive web and made available for easy visual ascertainment. The chart or paper web remains in the recorder on the vehicle's dashboard for a month at a time after which the chart is removed and filed for time periods prescribed by the ICC. The devices and ultimately the paper webs used in the devices of this invention become an effective check on the accuracy of the ICC drivers' daily logs.

The paper web or chart is compact and is provided with a semiautomatic drivers's activity chart along with automatic speed recording, automatic time and date recordation, as well as having mileage printed automatically in numerals as opposed to requiring elaborate measuring or deduction techniques as has heretofore been necessary. Some other features of the devices of this invention are that the automatic speed recording will have to correspond with the daily activity log and will show such matters as when the vehicle was standing still, when the driver reported on duty, when he was "not driving," "driving," "off-duty," etc. The chart using shaded areas will also highlight various important items such as continuous excess speed. Because of the write-in provision provided by the construction of the cover, the individual driver or drivers may inscribe desired information as and when required. For instance, when the vehicle safety check indicia is imprinted at the start of a trip this makes it compulsory on the part of the driver to sign for the vehicle's condition at the start of the day or trip and enables him to put into a permanent written report any repairs that may be required during or after the trip. In the event also that more than one driver is necessary on a trip, the burden of proof would be on the drivers to show the proper division of the driving work and they could be required to sign the chart at various times during the day or

night when changing to and from driving. This, of course, puts an important limitation on the total time that a driver is permitted to drive without relief.

As can be seen, the mileage traveled is printed in numeral form and establishes how far the vehicle has traveled during the various tours of duty and may be periodically actuated as by the passage of time or the distance traveled. Ideally, the tamperproof, locked cover of the device is of transparent nature which permits the inspection from up to 52 hours of vehicle operation in interstate or other type of business and commerce without opening the case or removing the chart. An inspector then could stop the vehicle at any time and know exactly how many miles the vehicle had traveled, the average speed, the number of hours spent "driving," "on-duty," not driving, etc. without opening the case or removing the cart.

Because the devices of this invention have an electromechanical chart drive, it is almost impossible to sabotage the automatic recordation of the devices as by the removing or cutting of the battery wires serving the electrical components of the devices. The spring motor of the clock has a 5-day mechanical reserve power supply which obviates the need for electrical power for this period of time. As has been previously alluded to, the devices may also have various signals, both visual and audible to inform the driver or those on the outside of the vehicle of the speed of the vehicle, etc. These and various other attributes will become apparent to those familiar with the interstate shipment of material.

Referring now to FIG. 6, it will be seen that the battery **150** provides the source of electrical energy for the clock rewind motor **152** which is periodically actuated as heretofore pointed out. Upon closing or putting the ignition switch **154** in the "on" position, electrical energy is provided to common feed terminal or contact board **156** which serves as a distributor to energize rotary solenoid **158** which via linkage **160** causes pressure arm **162** to put a pressure bearing surface on the spring loaded stylus **26** mounted on floating arm member **25** with the paper (FIG. 2) therebetween. The spring loaded stylus **26** of arm **25** will inscribe a straight line on the pressure sensitive paper provided the vehicle is standing still with the ignition key in the "on" position. Upon movement of the vehicle, the floating arm **25** will pivot and cause electrical bridge **164** mounted in the arm **25** to make electrical bridge **164** mounted in the arm **25** to make electrical contact between common feed area **156** and contact points or areas as **166**, **168** and **170**. The arm **25** and electrical bridge is shown as being in contact with common feed area **156** and contact point or area **166** which connects via lead wire **172** to a signal such as **174** which, in this instance, would indicate a low speed and would energize a visual flashing signal inside the cab and a visual flashing signal on the rear of the vehicle. Likewise, contact **168**, when its circuit is completed by electrical bridge **164**, will sound or energize a visual signal **176**, in the cab of the vehicle to warn the driver that he has reached a speed greater than is normally considered safe for highway travel and in the event that contact **170**, has its circuit completed, which in this instance would correspond to an excessive high speed, it, via lead wire **178**, would energize element **180** which could, in turn, actuate a high-speed governor and/or sound an audible and/or actuate a visual signal. It will be seen that common feeder **156** by means of lead wire **182** energizes microswitches **184** and **186** for actuation of the mileage printer motor **188** which causes the imprinting of the mileage on the paper web in numeral form. The illustrated schematic electrical and mechanical diagram is to be taken as illustrative only and it is, of course, obvious that various other alternatives are available to fulfill a myriad of desired functions.

Other modifications of the heretofore described invention as it applies to the exemplary apparatuses illustrated also include the provision of an additional centrifical-type governor, as illustrated in the FIG. 2 apparatus. In such an instance, however, it is contemplated that the additional governor member be actuated by a linkage from the motor shaft of the vehicle in order to indicate r.p.m.'s of the motor. In other words, a tachometer reading is obtained and the paper web or graph is so modified so that truckers as, for instance, in the rocky mountain areas of the west coast, will know at what r.p.m.'s they are and were operating. It is obvious that the centrifugal governor along with the upstanding rod and pivot arm, as heretofore illustrated, will provide a similar type of line curve or curves as the centrifical-type governor member provides in recording speed. Additionally, the circuitry may be modified so as to actuate various signals and even cut off the fuel supply should the r.p.m.'s exceed certain prescribed limits.

Installation of a flow meter in the fuel line, another set of numerals and a printing mechanism of the type used to record mileage may be added at some future time to record the amount of fuel used on the pressure sensitive paper which may be actuated at a given time or whenever the mileage recorder is actuated.

Also another set of numbers and slider arm element as previously shown and described to record mileage may be provided to record the number of hours the engine has been in use. The means to accomplish this added feature is fairly apparent, i.e., the clock mechanism periodically actuates an imprinting arm which causes the set of numerals, correlative to hours of engine operation, to imprint the numerals onto the pressure-sensitive paper.

It was previously alluded to hereinbefore that the high speed or excessive speed governor would be actuated at a preselected speed of the motor vehicle. The type of governor contemplated may be one that is actuated by a solenoid or the like, the solenoid being energized by a circuit being completed as heretofore described which would meter fuel so as to decrease the speed of the vehicle, but yet not completely cut off the fuel supply and, hence, the power of the vehicle. Another modification that may also be made is one involving the replacement of the spring-powered clock mechanism by a direct current electric motor or the like which would move the paper web at a constant rate of speed and, in essence, would perform exactly the same function as the spring-powered clock mechanism. In such an instance, it is obvious that it would not be necessary to periodically rewind the power spring as previously described in that a constant current supply would be made available to the direct current motor at all times. These, as well as other modifications, will make themselves obvious to those of ordinary skill in the art and all such matters not departing from the spirit and scope of the invention are intended to covered by the appended claims.

While the specific illustrations herein have been directed to interstate type of recording devices, it should be understood that carriers engaged in interstate activities may also be equipped with the devices of this invention, modifications being made accordingly. Also, the devices of this invention may be used, with little or no modification in such vehicles and other implements as cars, off-the-road equipment, road graders, cranes, tractors and bulldozers to mention but a few.

I claim:

1. A recording device for selectively recording selected conditions of a vehicle such as a truck or the like, including a housing in which a movably mounted length of paper web is supported; motor means within and secured to said housing and being operatively connected to at least one of the supports of said paper web to continuously move the web along between said supports at a substantially constant rate of speed and continuously wind said paper web on said one of said supports; operatively associated recording means responsive to the speed of the vehicle and to record same on said paper web; a pressure platen member movably mounted in the housing on the opposite side of the paper web from said recording means actuated by the ignition switch of the vehicle on to bring the paper web into bearing relationship with the recording means, and operatively associated odometer means and periodically actuated recording means to record mileage in preselected increments on said paper web; said housing and said paper web being adapted and so configured to allow the imprinting

thereon of handwritten indicia and a wide field of vision of said web upon which indicia has been recorded while maintaining said device and paper in the recording and operable state.

2. The recording device in accordance with claim 1 wherein said paper web is of the pressure-sensitive type whereby pressure thereon inscribes a permanent discernable line.

3. The recording device in accordance with claim 1 wherein said supports for said paper web are adapted to carry a length of paper web equivalent to a preselected number of days.

4. The recording device in accordance with claim 3 wherein said supports are mounted in side-by-side relationship and said preselected number of days is at least 3.

5. The recording device in accordance with claim 1 wherein said recording means responsive to the speed of said vehicle includes a centrifugal governor member connected to and actuated by the speedometer cable of said vehicle.

6. The recording device in accordance with claim 5 wherein said centrifugal governor member includes a pivotally mounted member, the arc movement of which is correlative to the speed at which the vehicle is travelling.

7. The recording device in accordance with claim 6 wherein said pivotally mounted member has a stylus portion at one end thereof adapted to bear on said paper web.

8. The recording device in accordance with claim 1 wherein said pressure-platen member is brought into engaging relationship with said paper web by means of a rotary solenoid.

9. The recording device in accordance with claim 1 wherein said pivotally mounted member is adapted to energize one of a plurality of electrical circuits as it travels through its arc length.

10. The recording device in accordance with claim 9 wherein said plurality of electrical circuits are adapted to actuate at least humanly perceptible signals.

11. A recording device for selectively recording selected conditions of a vehicle such as a truck or the like including a housing in which a movably mounted length of paper web is supported; motor means within and secured to said housing and being operatively connected to at least one of the supports of said paper web to continuously move the web along between said supports at a substantially constant rate of speed and continuously wind said paper web on said one of said supports; operatively associated recording means responsive to the speed of the vehicle and to record same on said paper web; operatively associated odometer means; and periodically actuated recording means including a slider block member on the opposite side of the paper web from said odometer means which brings said web into pressure contact with the odometer means to record mileage in preselected increments on said paper web; said housing and said paper web being adapted and so configured to allow the imprinting thereon of handwritten indicia and a wide field of vision of said web upon which indicia has been recorded while maintaining said device and paper in the recording and operable state.

12. The recording device in accordance with claim 11 wherein said slider block member is actuated every 10 miles.

13. The recording device in accordance with claim 12 wherein said slider block is actuated every 60 minutes.

14. The recording device in accordance with claim 12 which additionally includes another centrifugal governor-type member to additionally record tachometer readings of the motor of said vehicle on said paper web.

15. The recording device in accordance with claim 11 wherein said odometer means is actuated from said speedometer cable.

16. The recording device in accordance with claim 15 wherein said slider block member is actuated by an electric motor.

17. The recording device in accordance with claim 16 wherein the actuation of the electric motor is controlled by said odometer means.

18. The recording device in accordance with claim 17 wherein the odometer means intermittently actuates a switch to energize said motor.