

May 1, 1956

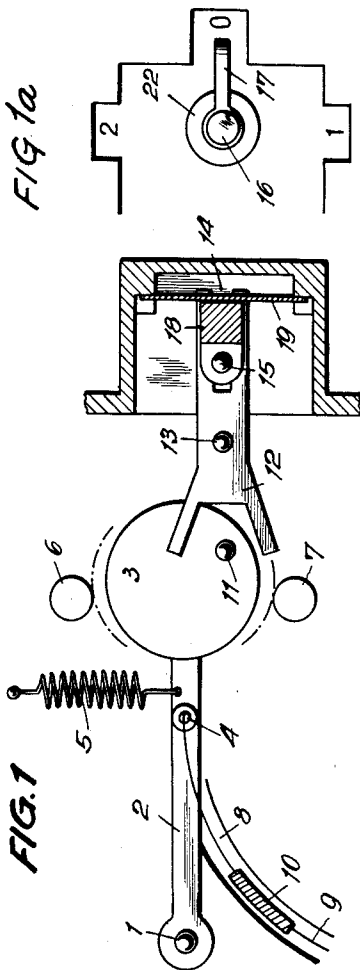
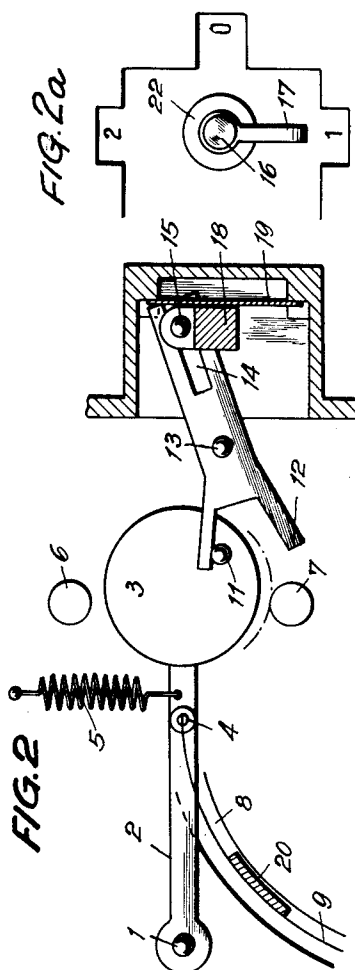
K. MEER

2,743,987

RECORDING DEVICES FOR VEHICLES

Filed June 28, 1952

2 Sheets-Sheet 1



INVENTOR:

KARL MEER

BY *Michael J. [Signature]*

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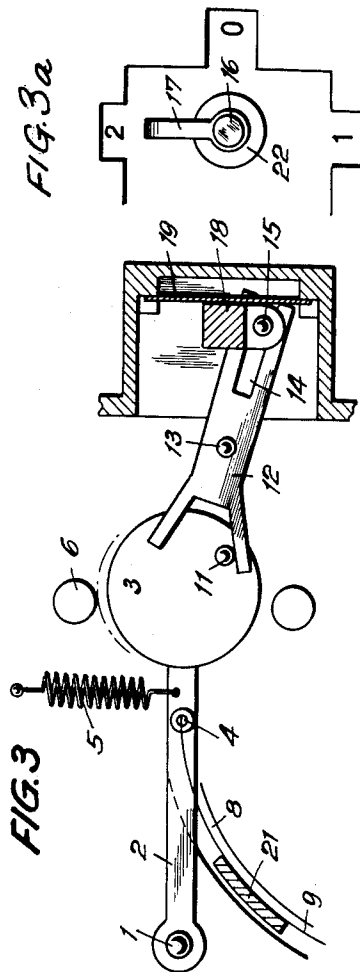
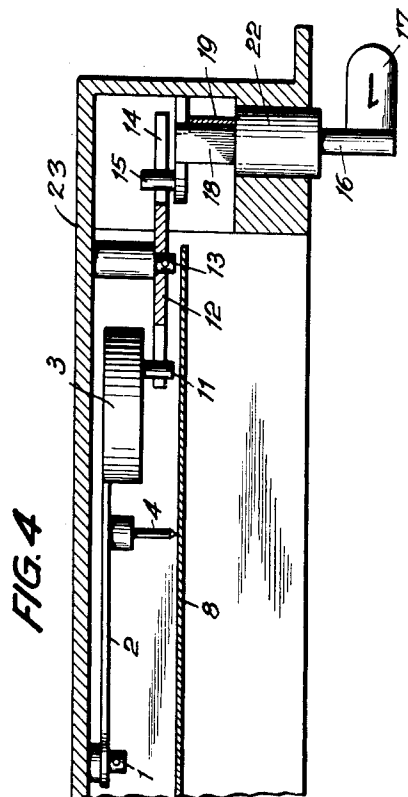
K. MEER

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2 Sheets-Sheet 2



INVENTOR:

KARL MEER

BY *Undell* *986*

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RECORDING DEVICES FOR VEHICLES

Karl Meer, Villingen, Black Forest, Germany, assignor to Kienzle Apparate G. m. b. H., Villingen, Black Forest, Germany, a company of Germany

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7 Claims. (Cl. 346—64)

This invention relates to recording devices for vehicles. Motor vehicles are sometimes provided with recording or indicating devices for recording the driving speed, the distance covered, and the driving and stopping periods of the vehicle, the conditions being recorded on a rotating diagram disc by writing members.

However it may be desirable to record other driving conditions also which are important on the diagram disc by means of an auxiliary device.

The present invention shows, by simple means, how a mechanical oscillating pendulum, which records in the first instance the driving and stopping periods of the motor vehicle by means of its writing member, can be influenced externally by manual operation, so that, if necessary, three further driving conditions can readily be recorded on the diagram, such as for instance when driving alone, when driving with driver A at the steering wheel, or when driving with driver B at the steering wheel.

The auxiliary device can be secured against improper use by means of a safety lock operated by different keys.

Further characteristics and details of the invention will become apparent from the following description and also from the accompanying drawings.

Figures 1-3 show the effect on the oscillating pendulum and its writing member of the auxiliary device in three switch positions "0" (solo driving), "1" (driver A at the wheel) and "2" (driver B at the wheel); Figs. 1a, 2a, and 3a represent respectively front elevational views of Figs. 1, 2 and 3; and Figure 4 is a cross section illustrating the construction of the recording device.

On a stud 1, arranged in the housing 23 of the recording device, is carried an oscillating pendulum 2 having a weight 3 and a style or pen 4, the pendulum being held in unstable equilibrium by a coil spring 5, when the vehicle is stationary, and is operated by the vibrations of the vehicle when the vehicle is moving. The movements of the pendulum are limited by abutment studs 6 and 7 as shown in Figures 1 to 3.

The weight 3 of the pendulum is provided with a pin 11 for operation thereof by the auxiliary device. The auxiliary device consists of a forked double lever 12 carried by a stud 13, the lever having a slit 14 into which extends an adjusting pin 15 mounted on a shaft 16 operable by a switch lever 17. The shaft 16 is held in position in the known manner by means of a square piece 18 and a leaf spring 19.

When the switch lever 17 is in the position "0" (Figure 1) which stands, for instance, for solo drive, the lever 12 does not in any way interfere with the oscillating movement of the pendulum. As already described the movements of the pendulum are limited only by the abutments 6 and 7.

As shown in Figure 1, the style 4 of the oscillating pendulum will inscribe on a diagram disc 8, which is, for instance driven by a clock-work motor, to coincide with the time in an anti-clockwise direction, a thin circular line 9 when the vehicle is stationary or a broad line 10 when the vehicle is moving. If the switch lever 17 of

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the shaft 16 is manually moved into position 1 (Figure 2) which, for instance, stands for Driver A at the wheel, then the pin 15 in the slot 14 alters the position of the lever 12, and the upper arm of the fork of this lever rests against the pin 11 of the oscillating pendulum. In this position the oscillating pendulum can no longer swing its full course during the drive. The style 4 of the oscillating pendulum then draws, as shown in Figure 2, a thin circular line 9 when the vehicle is stationary, and a thick line 20 below the circular line when the vehicle is moving. The straight line during travel is only half as wide as in the switch position 0.

If the switch lever 17 of the shaft 16 is manually switched to the position 2 (Figure 3), which, for instance, indicates driver B at the wheel, the pin 15 in the slit 14 again alters the position of the lever 12 and the lower fork of this lever rests against the pin 11 of the oscillating pendulum. In this switch position the oscillating pendulum is again prevented during moving of the vehicle from swinging its full course. As shown in Figure 3, the style 4 of the oscillating pendulum again writes the thin circular line 9 when the vehicle is stationary, and a broad line 21 above the circular line when the vehicle is moving.

Thus it is possible with this auxiliary device to record three further driving processes, for instance:

Solo drive:

Switch position 0—broad central line.

Drive with driver A at the wheel:

Switch position 1—broad line below.

Drive with driver B at the wheel:

Switch position 2—broad line above.

If necessary, the adjusting device of the auxiliary arrangement can be protected by means of a lock 22 (Figure 4) of known construction, against improper use. The adjusting device can only be operated manually with the aid of different keys.

The key of the driver A allows only a switching from position 0 to position 1 whilst the key of driver B allows only a switching from position 0 to position 2.

The lock 22 is designed so that the keys can be withdrawn in position 0 only. The key, once inserted, cannot fall out during the drive, and shows automatically by its position the switched position on the scale underneath.

What I claim is:

1. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movements; marking means mounted in said casing for oscillation relative to and in contact with said sheet means for marking on the same, said marking means being oscillated within a range of oscillation by the movement of the vehicle; stop means for limiting the range of oscillation of said marking means; and manually operable means mounted on said casing for selectively confining the oscillation of said marking means to different portions of said range of oscillation and with respect to said sheet means, whereby the conditions of operation of the vehicle by different operators may be indicated by the marking made on said sheet means by said oscillating marking means.

2. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movement; marking means mounted in said casing for oscillation relative to and in contact with said sheet means for marking on the same, said marking means being oscillated by the movement of the vehicle within a range of oscillation, said marking means

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comprising an elongated member pivoted on said casing at one end and having a stop at its other end, said stop traveling along a predetermined path extending between two end points; and manually operable means mounted on said casing having abutment means extending across at least one part of said predetermined path for selectively confining the oscillation of said marking means to different portions of said range of oscillation with respect to said sheet means, whereby the conditions of operation of the vehicle by different operators may be indicated by the markings made on said sheet means by said oscillating marking means.

3. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movement; marking means mounted in said casing for oscillation relative to and in contact with said sheet means for marking on the same, said marking means being oscillated by the movement of the vehicle within a range of oscillation, said marking means comprising an elongated member pivoted on said casing at one end and having stop means at its other end; lever means pivotally mounted in said casing for turning into a plurality of predetermined positions, said lever means having a forked portion at one end forming spaced opposite abutment surfaces, said surfaces being adapted upon turning of said lever means to different predetermined positions to selectively engage said stop means of said marking means for selectively confining the oscillation of said marking means to different portions of said range of oscillation and with respect to said sheet means; and manually operable means mounted on said casing and engaging the opposite end of said lever means for selectively turning the same into said plurality of predetermined positions and holding the same therein, whereby the conditions of operation of the vehicle by different operators may be indicated by the markings made on said sheet means by said oscillating marking means.

4. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movement; marking means mounted in said casing for oscillation relative to and in contact with said sheet means for marking on the same, said marking means being oscillated by the movement of the vehicle within a range of oscillation, said marking means comprising an elongated member pivoted on said casing at one end and having stop means at its other end; lever means pivotally mounted in said casing for turning into a plurality of predetermined positions, said lever means having a forked portion at one end forming spaced opposite abutment surfaces, said surfaces being adapted upon turning of said lever means to different predetermined positions to selectively engage said stop means of said marking means for selectively confining the oscillation of said marking means to different portions of said range of oscillation and with respect to said sheet means; operating means mounted on said casing and engaging the opposite end of said lever means for selectively turning the same into said plurality of predetermined positions and holding the same therein; and locking means operatively associated with said operating means for locking said lever means in a predetermined position into which it is turned, whereby the conditions of operation of the vehicle by different operators may be indicated by the markings made on said sheet means by said oscillating marking means.

5. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movement; marking means mounted in said casing for oscillation relative to and in contact

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with said sheet means for marking on the same, said marking means being oscillated by the movement of the vehicle within a range of oscillation, said marking means comprising an elongated member pivoted on said casing at one end and having stop means at its other end; lever means pivotally mounted in said casing for turning into a plurality of predetermined positions said lever means having a forked portion at one end forming spaced opposite abutment surfaces, said surfaces being adapted upon turning of said lever means to different predetermined positions to selectively engage said stop means of said marking means for selectively confining the oscillation of said marking means to different portions of said range of oscillation with respect to said sheet means; operating means mounted on said casing and engaging the opposite end of said lever means for selectively turning the same into said plurality of predetermined positions and holding the same therein; lock means operatively associated with said operating means for locking said lever means in a predetermined position into which it is turned; and a plurality of different keys each adapted to be inserted into and to actuate said lock means and thereby said operating member for selectively and exclusively turning said lever means into a predetermined position for locking the same therein, whereby the conditions of operation of the vehicle by different operators may be indicated by the markings made on said sheet means by said oscillating marking means.

6. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movement; marking means mounted in said casing for oscillation relative to and in contact with said sheet means for marking on the same, said marking means being oscillated by the movement of the vehicle within a range of oscillation, said marking means comprising an elongated member pivoted on said casing at one end and having stop means at its other end; lever means pivotally mounted in said casing for turning into a plurality of predetermined positions, said lever means having a forked portion at one end forming spaced opposite abutment surfaces, said surfaces being adapted upon turning of said lever means to different predetermined positions to selectively engage said stop means of said marking means, and having a slot in its other end extending longitudinally thereof, for selectively confining the oscillation of said marking means to different portions of said range of oscillation with respect to said sheet means; and manually operable means mounted on said casing including shaft means turnable about an axis parallel to the pivot axis of said lever means and having an eccentric portion at its end projecting into and slidable along said slot of said lever means for selectively turning the same into said plurality of predetermined positions and holding the same therein, whereby the conditions of operation of the vehicle by different operators may be indicated by the markings made on said sheet means by said oscillating marking means.

7. A recording device for a vehicle, comprising, in combination, a casing adapted to be mounted in the vehicle; sheet means mounted for movement in said casing and adapted to continuously receive markings thereon during its movement; marking means mounted in said casing for oscillation relative to and in contact with said sheet means for marking on the same, said marking means being oscillated by the movement of the vehicle within a range of oscillation, said marking means comprising an elongated member pivoted on said casing at one end and having stop means at its other end; lever means pivotally mounted in said casing for turning into a plurality of predetermined positions, said lever means having a forked portion at one end forming spaced opposite abutment surfaces, said surfaces being adapted

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upon turning of said lever means to different predetermined positions to selectively engage said stop means of said marking means, and having a slot in its other end extending longitudinally thereof for selectively confining the oscillation of said marking means to different portions of said range of oscillation with respect to said sheet means; manually operable means mounted on said casing including shaft means turnable about an axis parallel to the pivot axis of said lever means and having an eccentric portion at its end projecting into and slidable along said slot of said lever means for selectively turning the same into said plurality of predetermined positions, said shaft means having a portion thereof of polygonal cross section; and resilient means bearing against a surface of said polygonal portion of said shaft means for holding said lever means in the predetermined

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position to which it is turned, whereby the conditions of operation of the vehicle by different operators may be indicated by the markings made on said sheet means by said oscillating marking means.

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