S. K. EVANS.

SPEED CONTROL FOR MOTOR CARS.

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1,083,525. Patented Jan. 6, 1914.

Fig. 1.

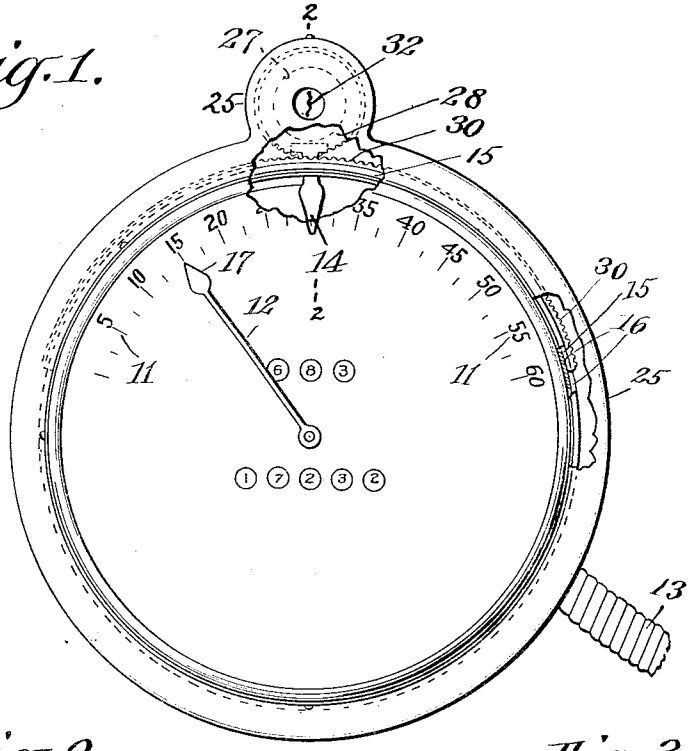


Fig. 2.

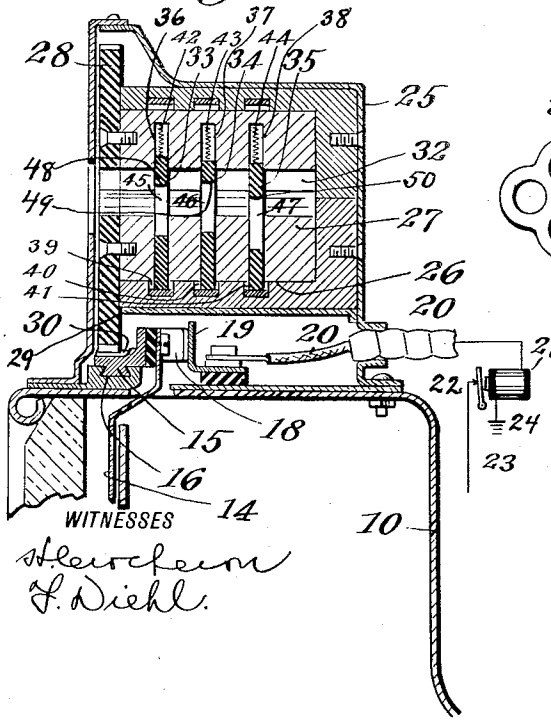
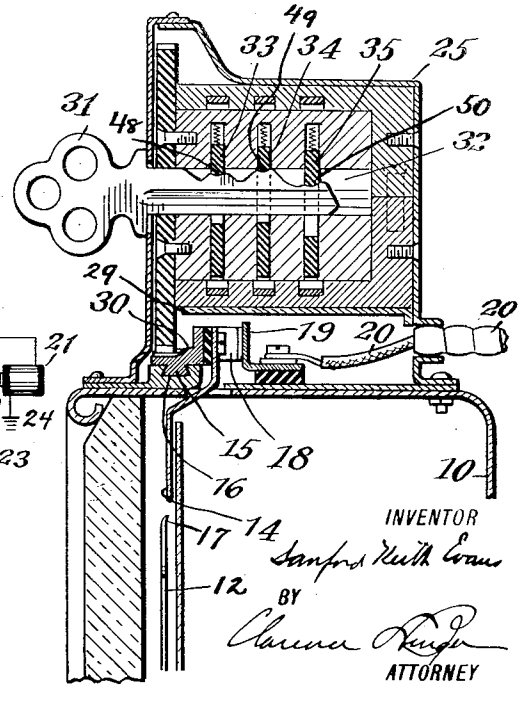


Fig. 3.



WITNESSES

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SPEED CONTROL FOR MOTOR-CARS.

1,083,525. Specification of Letters Patent. Patented Jan. 6, 1914.

Application filed March 26, 1913. Serial No. 756,901.

To all whom it may concern:

Be it known that I, SANFORD KEITH EVANS, a citizen of the United States, residing at Elmsford, in the county of Westchester and State of New York, have invented a new and useful Improvement in Speed Control for Motor-Cars, of which the following is a specification.

My invention relates particularly to speed controls for motor cars in which an electric contact, adjustable in the path of a corresponding contact moving with the index of a speedometer, is arranged, through an electric controlling circuit, to stop the motor when the car reaches the speed at which the adjustable contact is set.

In a prior application for patent filed by me August 16, 1912, Serial No. 715,340, I have broadly claimed a locking device for the adjustable contact, operated by a key, so that the owner of a car may release and set the adjustable contact to stop the motor at any desired speed and can then lock the same against unauthorized displacement or tampering. The specific form of contact locking device I showed and described in my said prior application consisted of a cover for the contact-holding case, which carried a contact-locking device with it, so that when it was opened the contact was released and could be freely adjusted, and when the cover was closed and locked by the key, the contact was thereby also locked by the key.

My present application is designed to show and claim another form of contact adjusting and locking device invented by me at the same time as that described and claimed in my said prior application.

It consists briefly of a gearing or other convenient means for moving the adjustable contact along its path, and a key for adjusting through said means the contact, as well as locking and releasing it.

In order that my invention may be fully understood I shall first describe in detail the mode in which I carry my invention into practice and then particularly claim the same.

Reference is to be had to the accompanying drawings forming part of this specification in which like parts are designated by the same numbers in all the figures.

Figure 1 is a face view of a speedometer provided with a speed control embodying my invention. Fig. 2 is a sectional view of the same on the line 22, Fig. 1, showing the adjustable contact and its moving means locked against intentional or accidental displacement. Fig. 3 is a similar sectional view showing the adjustable contact and its moving means unlocked and in position to be adjusted by the key.

In the drawings, 10 is the case of a speedometer of ordinary form; 11 is its segmental speed scale, and 12 its index which is caused through the usual flexible shaft 13 geared to the wheel of the motor, to move in accordance with and indicate on the speed scale 11 the speed of the car. In this embodiment of my invention, I fix and insulate the adjustable electric contact 14 on a segmental carrier 15 which is mounted to slide rotatably around the axis of the index 12, inside the speedometer case, in a segmental groove 16 acting as a guide, so that when the carrier 15 is moved circumferentially in the guide 16 the adjustable contact 14 will be adjusted therewith along the speed scale 11, in the path of the index 12.

The index 12 is preferably grounded electrically through the body of the car, as in my prior application heretofore referred to, and a part moving therewith, in this case the end of the index, is adapted to form a contact 17, which when it meets the adjustable contact 14, will make electrical connection therewith.

The adjustable contact 14, insulated as before described on its segmental carrier 15, is electrically connected with a spring contacting strip 18 also insulated on the carrier 15, and said contacting strip 18 is in every adjustment in contact with a segmental contacting strip 19 fixed on and insulated from the speedometer case.

The contact 19 is by preference electrically connected by an armored wire 20 with one terminal 21 of an electric magnetic circuit breaker 22, the other terminal 24 of which is preferably grounded like the index-contact 17, through the body of the car.

The circuit breaker 22 acts as in my prior application before referred to, to break the motor ignition circuit 23 (or the motor actuating circuit in the case of an electric car) and stop the motor, when the electric circuit described is closed by the index-contact 17 meeting the adjustable contact 14 at the speed at which the latter is set on the scale 11.

For adjusting and locking the adjustable

circuit-controlling contact 14, I, in this embodiment of my invention, mount on the speedometer case 10 an auxiliary case 25, the interior of which in this instance, incloses and forms a cylindrical bearing 26 for a key-locking barrel 27 to rotate therein.

On the axis of the rotary barrel 27 is fixed a pinion gear 28, which projects through a slot 29 in the case 25, into mesh with a segmental rack gear 30 fixed on the segmental contact carrier 15, so that by turning the barrel 27, the adjustable contact may be moved to any desired position along the speed scale 11, and when the barrel 27 is locked in any position the adjustable contact is likewise locked in its corresponding position on the scale.

For releasing, turning and locking the barrel 27, I employ a key 31, to fit a, preferably, zig-zag axial key channel 32 in the barrel 27, and arrange key-actuated tumblers 33, 34 and 35 preferably in the barrel, to engage the case 25 in any position of the barrel and lock the barrel to the case when the key is removed. In this embodiment of my invention, I make the locking tumblers 33, 34 and 35 in the form of pins, to work transversely in corresponding sockets 36, 37 and 38 in the barrel and engage any of corresponding circular series of locking teeth 39, 40 and 41, formed in the cylindrical bearing 26 around the respective paths of the respective tumblers 33, 34 and 35. The tumbler-pins are normally pressed radially outward to engage the locking teeth 39, 40 and 41 by corresponding springs 42, 43 and 44 seated in the barrel 27, and are drawn inward to free the barrel 27 from its case by the key 31 passing in its channel 32 through corresponding slots 45, 46 and 47 in the tumbler-pins, and the variable bits of the key engaging and acting on the correspondingly varied bearings 48, 49 and 50 at the ends of the slots 45, 46 and 47, to retract all the tumbler pins from their engagement with the locking-teeth 39, 40 and 41. By then turning the key 31, the barrel 27 will be turned by and with it, and the adjustable contact 14, through the moving gears 28 and 30, set to any desired speed on the scale, to stop the motor at that speed as before described. By then simply withdrawing the key 31, the tumbler-pins will be all projected by their springs into the fixed locking teeth 39, 40 and 41 facing them in that position, and the barrel 27 and the adjustable contact 14 thus securely locked against displacement or tampering.

As in the case of ordinary locks, the form, number and arrangement of the key bits and of the key channel in the barrel, and of the tumbler pins and their locking teeth may be varied indefinitely to avoid duplication and picking of the lock.

This invention, by enabling the circuit-controlling contact to be released, adjusted and locked again by simply inserting, turning and withdrawing the key, makes the operation as well as the construction a very simple and convenient one.

It is evident that instead of arranging the segmental gear 30, its carrier 15 and guide 16, and contacts 18 and 19 in the part of the attached auxiliary case 25 surrounding the speedometer case 10, said parts may all be arranged within the speedometer case itself, the gear 28 projecting through a slot therein as it does through the slot 29.

I claim as my invention:

1. The combination, with a speedometer, a contact moving with the speedometer index, and an electric circuit-controlling contact adjustable along the path of said moving contact, of a member adjustable with the adjustable contact, a member relative to which the said adjustable member moves, a lock consisting of a member mounted upon one of the relatively movable members and a series of stops to secure said relatively movable members together in any relative position, and a key to operate said lock.

2. The combination, with a speedometer, a contact moving with the speedometer index, and an electric circuit-controlling contact adjustable along the path of said moving contact, of a rotary contact-adjusting member, a fixed member relative to which the rotary member turns, a lock consisting of a movable lock member and a series of stops to engage said rotary adjusting member and fixed member together in any relative position, and a key to operate said lock.

3. The combination, with a speedometer, a contact moving with the speedometer index and an electric-circuit-controlling contact adjustable along the path of said moving contact, of a movable member connected to move the adjustable contact, a locking device for said movable member, and a key to engage and move said movable member and operate its locking device.

4. The combination, with a speedometer, a contact moving with the speedometer index and an electric circuit-controlling contact adjustable along the path of said moving contact, of a lock comprising a movable member connected to move the adjustable contact along said path, a stationary member, and means for locking the movable member to the stationary member, and a key to fit the movable lock member, free it from the stationary member, move the movable member and the contact, and lock the movable member to the stationary member.

5. The combination, with a speedometer, a contact moving with the speedometer index and an electric circuit-controlling contact adjustable along the path of said moving contact, of a lock for said adjustable contact having a movable member connected to move

the adjustable contact along said path and a key to fit and move said movable member.

6. The combination, with a speedometer, a contact moving with the speedometer index and an electric circuit-controlling contact adjustable along the path of said moving contact, of a lock for the adjustable contact having a rotary member connected to move the adjustable contact along said path, and a key to fit and turn said rotary member.

SANFORD KEITH EVANS.

In presence of—
CLARENCE L. BURGER,
CHARLES A. LEBETT.