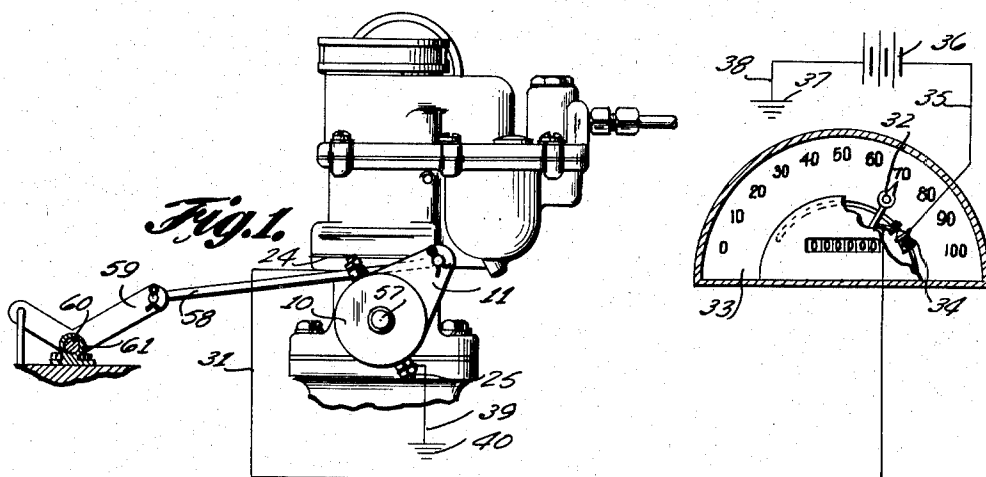
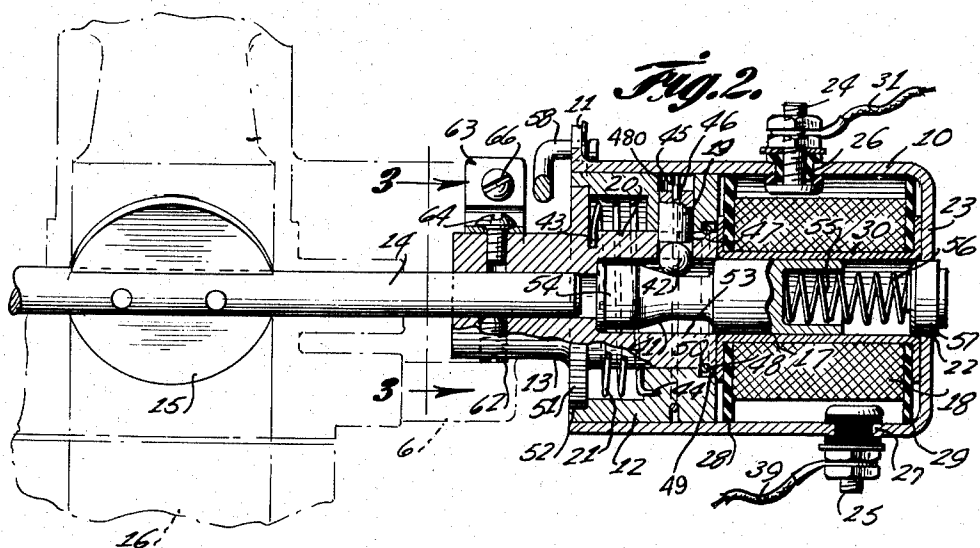
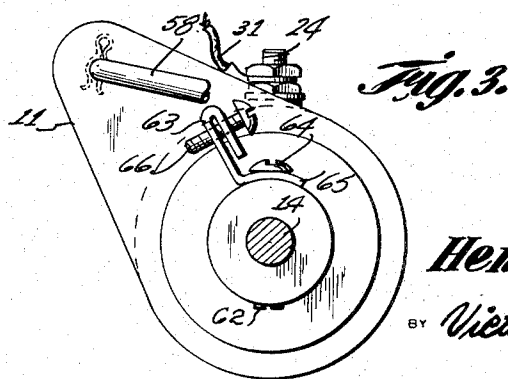


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SPEED GOVERNOR

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SPEED GOVERNOR

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1 Claim. (Cl. 192—90)

This invention relates to devices for checking excessive speeds of motor vehicles, and in particular a device adapted to be mounted directly on the end of the shaft of the accelerator valve of a carburetor and connected to the accelerator pedal of the vehicle whereby the butterfly or accelerator valve is actuated in the conventional manner until the speed of the vehicle reaches a predetermined amount at which time a circuit is completed by the needle of a speedometer of the vehicle whereby a solenoid in the speed control device is actuated to move a latching pin to such a position that the butterfly valve of the carburetor is closed by a spring in the control device.

The purpose of this invention is to provide a speed control device for motor vehicles that is reset by a combination of springs therein as the speed of the vehicle is reduced.

Various types of speed controls or governing devices have been provided for motor vehicles, however, such devices are operated by the drive shaft or other moving parts of the vehicle and after the operation of such devices, which are located in substantially inaccessible positions, it is difficult to release the conventional accelerating means of the vehicle and it is also difficult to reset devices of this type. With this thought in mind this invention contemplates a device having solenoid actuated releasing means therein in which the device is adapted to be installed on the butterfly valve shaft of a carburetor and connected to the accelerator pedal of a vehicle whereby the position of the butterfly valve is actuated by the accelerator pedal in the conventional manner and wherein upon the vehicle reaching a predetermined speed a circuit is completed to the solenoid which breaks the connection through the device whereby a spring therein returns the butterfly valve to a closed position.

The object of this invention is, therefore, to provide means for reducing the fuel supply to an engine of a vehicle when the speed of the vehicle reaches a predetermined degree.

Another object of the invention is to provide a solenoid actuated control device for reducing the fuel supply of a vehicle as the speed of the vehicle reaches a predetermined amount in which the device is automatically reset after the speed of the vehicle is reduced.

A further object of the invention is to provide a speed control device in which operating parts are released by a solenoid actuated pin when contact points are engaged in a speedometer of the vehicle in which the device is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a cylindrical housing having an arm extended from the outer surface which is adapted to be connected to the accelerator pedal of a motor vehicle and also having a hub extended from one end by means of which the device is adapted to be mounted on the shaft of the control valve of the carburetor of the engine, and wherein movement of the hub in relation to the

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housing is controlled by a solenoid actuated latching pin whereby springs in the housing close the butterfly valve and wherein upon reduction of the speed of the vehicle another spring in the housing resets the latching pin.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

Figure 1 is a front elevational view of a carburetor showing the speed control device on the shaft of the butterfly valve thereof with an arm of the housing of the device connected to the accelerator pedal of the vehicle through a suitable lever and also showing diagrammatically, a circuit extended from the device to the speedometer of the vehicle in which the carburetor is installed.

Figure 2 is a longitudinal section through the speed control device with the parts shown on an enlarged scale, and with a portion of a carburetor shown on the butterfly valve shaft in broken lines.

Figure 3 is a section taken on line 3—3 of Fig. 2 showing an end elevational view of the control device.

Referring now to the drawing wherein like reference characters denote corresponding parts the improved speed control device of this invention includes a cup-shaped housing 10 having an arm 11 extended from one end, a bushing 12 positioned in the housing, a hub 13 extended from one end of the housing and adapted to be secured to the extended end of a shaft 14 of the butterfly valve 15 of a carburetor as indicated by the numeral 16, a pin 17 of magnetic material extended through the core of a solenoid 18, a latching pin 19 positioned to coact with a sleeve 20 extended from the hub 13 for retaining the sleeve in the bushing 12 and a spring 21 for rotating the sleeve 20 and the hub 13 when the hub is released by outward movement of the latching pin 19 whereby the valve 15 is closed.

As illustrated in Fig. 2, the cup-shaped housing 10 is provided with an opening 22 in an end wall 23 and terminals 24 and 25 are positioned in openings 26 and 27, respectively. The terminals are connected to opposite ends of the coil of the solenoid 18, the coil being positioned between insulating washers 28 and 29 on a sleeve 30.

A wire 31 extended from the terminal 24 is connected to a needle 32 of a speedometer 33 and a terminal 34 mounted in the speedometer and positioned to be engaged by the needle 32 is connected by a wire 35 to a battery 36 and the battery is connected to a ground 37 by a wire 38. The opposite terminal 25 of the solenoid is connected by a wire 39 to a ground 40.

The solenoid influences the pin 17 whereby a tapering surface 41 of the pin drives a ball 42 against the latching pin 19 whereby the latching pin is moved outwardly until the inner end surface thereof is in registering relation with the peripheral surface of the sleeve 20 whereby the sleeve and hub 13 are free to be rotated by the spring 21. One end of the spring 21 is secured in an opening 43 of the sleeve 20 and the other in an opening 44 of the bushing 12.

The latching pin 19 is urged inwardly by a spring ring 45 which is positioned in an annular recess 46 in the bushing 12 whereby the pin 19 is resiliently urged against the ball 42 and as the hub 13 is rotated by the spring 21 the end surface of the latching pin 19 rides against the outer surface of the sleeve and upon return movement of the housing by actuating the accelerator pedal of the vehicle the pin 19 is returned to registering relation with an opening 47 in the sleeve 20, at which point the spring 45 slides the pin 19 into the opening 47. The pin 19 is slidably mounted in an opening 48 in the bushing 12, as shown in Fig. 2.

The hub 13 is retained in position in the bushing of

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the housing 10 with a spring ring 48 that is positioned in an annular recess 49 in the bushing 12 and also in a similar recess 50 in the sleeve 20 whereby the hub is retained in the bushing, the extended end of the sleeve 20 being provided with an annular bead positioned at the outer edge of the recess 50. The hub 13 is also provided with a flange 51, the peripheral edge of which nests in an annular recess 52 in the end of the bushing 12.

The inner end of the sleeve 20 of the hub 13 is provided with a bore 53 into which an end 54 of the pin 17 extends and the opposite end of the pin 17 is provided with a bore, as indicated by the numeral 55 into which a spring 56 extends the spring being positioned in a bore extended through the solenoid and being retained in position by a plug 57.

With the parts arranged in this manner and with the parts in the position illustrated in Fig. 2 upon rotation of the housing 10, the bushing 12 being rigidly secured in the housing, the latching pin 19 locking the hub 13 and sleeve 20 in the bushing 12, whereby the parts rotate as a unit until the pointer or needle 32 engages the contact 34 at which time the solenoid is energized and the core 17 drawn toward the plug 57. At this time the tapering portion 41 forces the ball 42 outwardly until the latching pin 19 moves sufficiently to permit the inner end surface to register with the peripheral surface of the sleeve 20 whereby the sleeve is free to be rotated by the spring 21 to actuate the valve 15 to the closed position. At this time the supply of fuel to the vehicle is reduced whereby the speed of the vehicle will be reduced and as the needle 32 moves away from the terminal 34 the solenoid is deenergized with the spring 56 moving the core 17 toward the position shown in Fig. 2 whereby the pin 19 and ball 42 are moved inwardly by the spring 45.

As the housing 10 is actuated by the accelerator pedal the pin 19 is moved to registering relation with the opening 47 and as the pin drops into the opening the housing is locked to the shaft 14 of the butterfly valve whereby the butterfly valve is again controlled by the accelerator pedal of the vehicle.

The arm 11 is connected directly to the accelerator pedal with a rod 58, however, the rod may be connected to a bell crank 59 rotatably mounted by a pin 60 in a bearing 61 or to other suitable means for actuating the arm and housing 10 by the accelerator pedal.

The hub 13 is also provided with a set screw 62 by which the device is secured on the shaft 14 and the hub may also be provided with a clip 63 which is attached to the hub with a screw 64 that extends through a flange 65. An upper U-shaped portion 63 of the clip is provided with a screw 66 which is positioned to engage a

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stop 6 extended from the carburetor, as indicated by the broken lines in Figure 2. The screw 66 provides means for adjusting the full open position of the butterfly valve of the carburetor.

Owing to the different varieties of motor vehicles and engines it will be appreciated that other means may be provided for attaching the parts to the operating elements of the engine.

It will be understood that other modifications, within the scope of the appended claim, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

A speed control element for use on motor vehicles comprising a cup-shaped housing, a bushing having an annular recess therein positioned in one end of said housing, a hub having an annular flange thereon that is positioned in the annular recess in said bushing, a shaft extended into said hub, means in the hub for connecting said shaft to said hub, a sleeve extended from the hub into the housing and positioned in the bushing, a reciprocating latching pin mounted in the bushing for engagement with the sleeve to retain the sleeve against relative rotation with respect to the bushing, said hub having a single bore therein for engagement with said latching pin so that latching can occur in only one relative position of the hub, a plunger having a tapered surface thereon slidably mounted in the housing, a ball mounted in the housing for engagement with said latching pin and the tapered surface of said plunger, a spring positioned in the housing in circumjacent relation to said sleeve and connected to said sleeve and said bushing for rotating the sleeve and hub with respect to the bushing, a solenoid in the housing, a core slidably mounted in the solenoid for moving said plunger to cause said ball to move said latching pin out of engagement with said sleeve so that said sleeve and said hub can be rotated.

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