Oct. 4, 1960 J. SCHILLINGER 2,954,705

VEHICLE ENGINE CONTROL

Filed May 15, 1959

FIG. 1

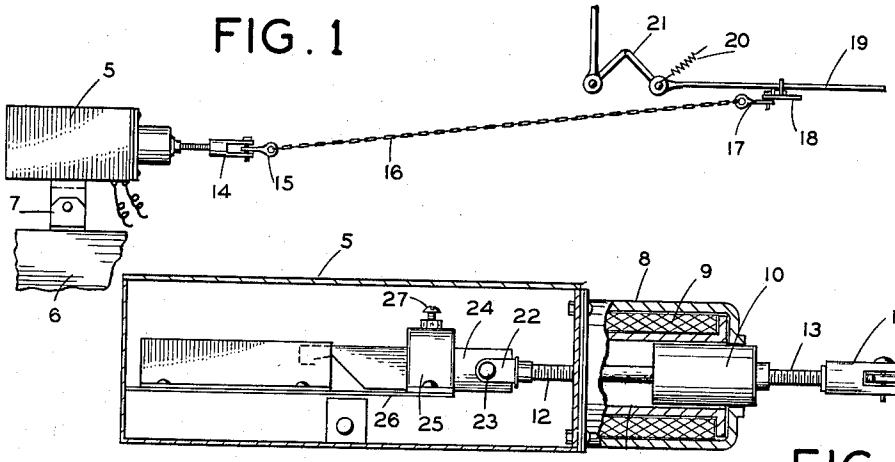


FIG. 2

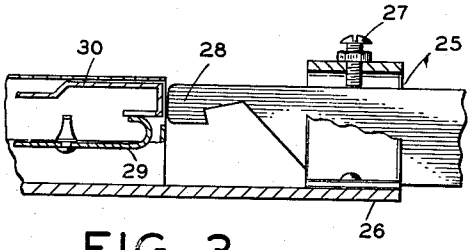


FIG. 3

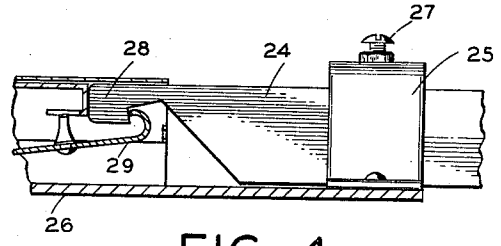


FIG. 4

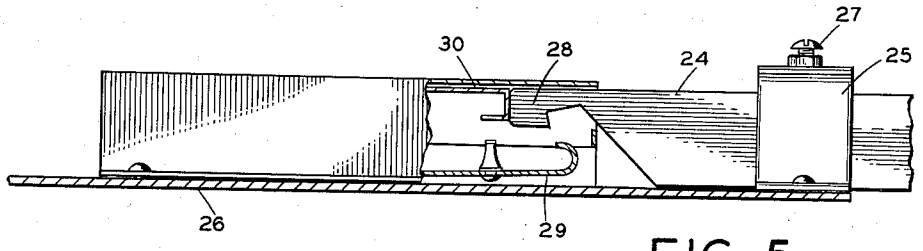


FIG. 5

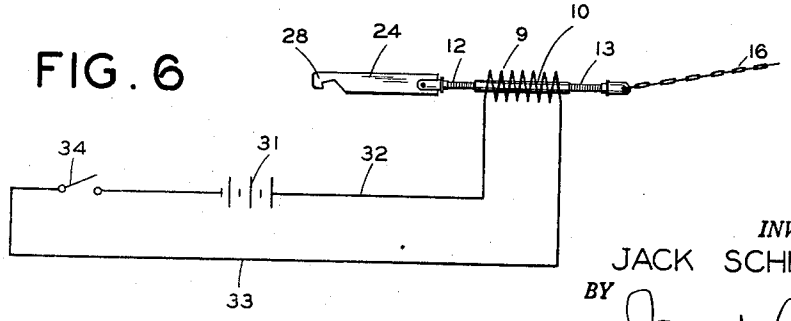


FIG. 6

INVENTOR.
JACK SCHILLINGER
BY James H. Lyles
ATTORNEY

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VEHICLE ENGINE CONTROL

Jack Schillinger, 1225 NE. 93rd St., Miami, Fla.

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3 Claims. (Cl. 74—482)

This invention relates to a remote control device for accelerating and decelerating automotive engines.

Dispensing trucks of the type commonly known as tank trucks for the dispensing of volatile liquids, oil or the like usually comprises a dispensing pump and a dispensing hose within a rear compartment of the truck and it becomes necessary, that when the dispensing of the fluids is desired, the hose is connected to a receiving tank or the like and then, the operator must accelerate the engine to a predetermined specific speed, since the engine is usually connected with the pump and the acceleration is necessary to speed up the operation of the pump during the pumping action. It has been necessary heretofore that the operator accelerate the engine through the usual accelerator mechanism guessing at the speed and also has required that the operator then actuate the throttle mechanism to decelerate the engine after the pumping has been completed. This requires an unnecessary loss of time. The purpose of this invention is to provide a novel means associated with the engine and connected to the accelerator rod and it is operable from the rear end of the truck to both accelerate and decelerate the engine from a common control element thus permitting the operator to immediately decelerate the engine when the pumping has been completed and without the necessity of walking around to the front of the truck to perform such action.

The device embodies a housing that is rigidly connected to the accelerator side of the vehicle and that is connected to the accelerator rod for moving the accelerator in one direction for an initial operation of the device and to again release the mechanism whereby the accelerator mechanism will assume its normal idling position when the device is again actuated. The device embodies a solenoid having a core and with the core at one end being extended to adjustably receive a flexible element to the accelerator rod and at its opposite end to actuate the latch bar that engages a conventional latch mechanism and with the latch being operable upon the initial energization of the solenoid to hold the latch bar in a latched position that pulls the accelerator rod to a position for accelerating the engine and, when the solenoid is again energized, a further and like movement of the latch bar functions to release the latch bar from the latch mechanism.

Novel features of construction and operation of the device will be more clearly apparent during the course of the following description, reference being had to the accompanying drawings wherein has been illustrated a preferred form of the device and wherein like characters of reference are employed to denote like parts throughout the several figures.

Referring specifically to the drawings:

Figure 1 is a side elevation of a device constructed in accordance with the invention and showing the same connected to an accelerator rod and associated mechanism of the engine,

Figure 2 is a view partly in section and partly in elevation showing the control mechanism,

Figure 3 is a fragmentary sectional view illustrating the

latch bar and an associated latch mechanism in the inoperative or initial operation,

Figure 4 is a similar view, but showing the latch bar in the latched position with respect to the latch mechanism,

Figure 5 is a view similar to Figure 4 but illustrating the latch mechanism in a position for release of the latch bar when the latch bar has been biased in the same direction and,

Figure 6 is a diagrammatic illustration of a circuit for controlling the control mechanism.

Referring specifically to the drawings, the numeral 5 designates a generally rectangular casing that is preferably formed square in cross section. The casing 5 is rigidly fixed with respect to a portion of the engine 6, by bracket 7. Fixed upon one end of the casing 5, is a solenoid casing 8, housing a solenoid winding 9. The winding 9 actuates a cylindrical core 10. The core 10 is provided with axially and oppositely extending threaded rods 12 and 13. The rod 13 adjustably receives a fork member 14 that has linked connection at 15, with a flexible device 16, such as a conventional chain. The chain 16 at its opposite end is connected through the medium of a link 17, to a clamp 18, adjustably fixed upon an accelerator rod 19 of the engine. The rod 19 is biased in one direction by a spring 20, as is customary in linkage control mechanism for actuating the throttle control of the engine. The rod 19 is connected to the usual bell crank 21. The rod 19 as will be clearly understood is controllable in one direction against the tension of the spring 20 by the usual and well known accelerator pedal and whereby to actuate the throttle control mechanism for accelerating the engine and with the rod 19 being returned to a normal position when the engine is decelerated, by the spring 20.

Adjustably connected to the free end of the rod 12, is a fork member 22, having pivotal connection at 23 with a flat latch bar 24. The latch bar extends through a fixed guide yoke 25. The latch bar is slidable upon a horizontally disposed partition plate 26, fixed with respect to the casing 5. A suitable adjusting screw 27 passes through the yoke 25 to maintain the latch bar 24 in an accurate sliding movement upon the plate 26. The latch bar at its free end is cut away to form a hook 28 that is adapted to have a latching engagement with a latch member 29, forming a part of a latch mechanism illustrated in United States Patent No. 2,637,576. The latch 29 is actuated by a shiftable striker bar 30 that controls the shifting movement of the latch 29 to and from a latched position. The bar 30 is disposed in the path of movement of the end portion of the hook 28. The solenoid winding 9 is energized from a source of electrical energy 31, such representing the conventional storage battery carried by the vehicle. An electrical conductor 32 leads from one side of the battery 31 to one side of the winding of the solenoid 9 and from the opposite side of the winding 9 through an electrical conductor 33. The conductor 33 is connected with a suitable actuating circuit closer 34 and the opposite side of the circuit closer is connected at the opposite side of the battery 31. As previously stated, the circuit closer 34 is located at a point at the rear of the vehicle adjacent to the conventional fuel pumping controls.

In the use of the device, with the parts assembled as shown in Figure 1, the length of the chain 16 is such that the vehicle engine may be accelerated or decelerated in a conventional manner by the usual accelerator pedal. Now, when fuel or other fluid is to be pumped from the truck, the operator first extends the feed hose to the point of discharge. The engine is presently operating in an idling condition. It then becomes necessary that the engine, since it serves as the drive means for the pump must be accelerated to increase the pumping action of the pump during the pumping of the fuel. This speed must

be controlled so that the pump cannot be over speeded causing it to fail. The operator then actuates the circuit closer 34, energizing the solenoid 9 and pulling the core 10 inwardly, such movement shifting the latch bar 24 to a point of engagement with the bar 30, such action shifting the bar inwardly and releasing the latch 29. In such position the latch 29 will engage the hook 28, shown in Figure 4, and retain the core 10 in the inner position. The movement of the core inwardly, pulls upon the chain 16 and shifts the accelerator rod 19 forwardly against the tension of the spring 20 to rock the bell crank 21 and actuate the throttle mechanism in the carburetor to accelerate the speed of the engine thus, likewise increasing the pumping action of the pump. The latch mechanism will maintain the latch bar 24 with the latch member 29 in the accelerating position under the influence of the latch 29. The circuit closer 34 is thus only closed momentarily to energize the solenoid 9, with sufficient time interval to permit the inward movement of the core 10 to connect the latch bar 24 with the latch 29. It will therefore be apparent, that the actuation of the solenoid is only momentary and, upon release of the circuit closer 34, the solenoid is deenergized, thus avoiding any heating of the winding. When the pumping has been completed, the operator again closes the circuit closer 34, again moving the core 10 inwardly and further shifting the bar 30 of the latch device, such movement automatically releasing the latch 29, at such time the latch 29 will drop downwardly to its original position shown in Figure 3, releasing the latch bar 24 and permitting the core 10 to project outwardly and to relieve the chain 16, permitting the spring 20 to shift the accelerator mechanism back to its normal idling position. The latch mechanism including the latch 29 and the bar 30 are clearly illustrated in the patent above referred to and forms no part of the present invention other than to provide a latch device that is actuated to a latching and release position under the forward movement of the latch bar 24. It is believed, that it is unnecessary to fully illustrate the complete latching mechanism as disclosed in the patent noted and only requires that a latch device operable under the influence of the bar 24 be fragmentarily illustrated.

It will be apparent from the foregoing that a very novel remote control mechanism has been provided for accelerating and decelerating the vehicle engine. The mechanism permits the circuit closer to be located at a convenient point adjacent to the operating valves, meter and controls normally disposed in a rear compartment of the vehicle and permits the operator to control the speed of the pump without the necessity of actuating the usual control elements for the carburetor, presently manually controlled and sometimes disposed within the driving compartment of the vehicle. The device is simple in construction, is strong, durable, economical to manufacture and install and functions as a very desirable means for remotely controlling speed of the engine and thus the pumping speed of the pump.

It is to be understood that the invention is not limited to the precise construction shown, but that changes are contemplated as readily fall within the spirit of the invention as shall be determined by the scope of the subjoined claims.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A remote control device for accelerating and decelerating the vehicle engine carried by dispensing type fuel trucks and with the fuel truck being of the type that has a rear compartment for a meter, a hose reel, and controls, a pump that is driven from the engine and a dispensing hose that is connected with the pump, the control device embodying a housing that is fixedly supported to the engine, the housing supporting a solenoid winding having a movable core that is biased outwardly by a spring, oppositely extending rods carried by the core, one rod having connection with spring control linkage of the accelerating mechanism of the vehicle engine, the connecting means between the rod and the accelerating linkage being flexible, a latch bar carried by the other rod, an electrical circuit for energizing the solenoid from the battery of the vehicle, a circuit closer that is disposed in the rear compartment of the vehicle on a control panel, the solenoid when energized actuating the core inwardly to shift the rods and to actuate the accelerator linkage against the tension of the accelerator spring, the movement of the core also shifting the latch bar, latch means disposed within the housing and that is engaged by the end of the latch bar, the said solenoid when initially energized shifting the latch bar to a latched position with respect to the latch mechanism and whereby to maintain the accelerator linkage in a position for accelerating the speed of the engine, the latch bar and associated mechanism being held against a reverse movement when the solenoid is de-energized and to maintain the linkage in the accelerating position, the said circuit closer when again actuated to again energize the solenoid, additionally moving the core against the tension of the spring in the same direction for an automatic release of the latch mechanism and whereby the core is biased outwardly to release the linkage for a return to the decelerated position for the engine.

2. The structure according to claim 1 wherein the latch bar is adjustably connected with respect to one rod of the core, the latch bar at its free end being notched to form a hook, the latch mechanism embodying an actuating bar and a latching tongue, the latch bar when shifted in a longitudinal direction under the influence of the solenoid actuating the bar of the latch mechanism to cause the latching tongue to engage within the notch of the latch bar, the said latch bar when again longitudinally shifted by the solenoid in the same direction actuating the bar of the latch mechanism to release the latch tongue and whereby to permit the core 10 to be projected outwardly by the spring.

3. The structure according to claim 1 wherein the connecting means between one rod and the accelerator linkage is a chain, the chain being connected to the associated rod by an adjustable fork, the chain at the opposite end being adjustably connected by a clamp device to the linkage of the accelerator, the latch bar being flat and a guide bracket carried within the housing for the slidable movement of the bar.

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