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THEFT PREVENTION DEVICE FOR MOTOR VEHICLES

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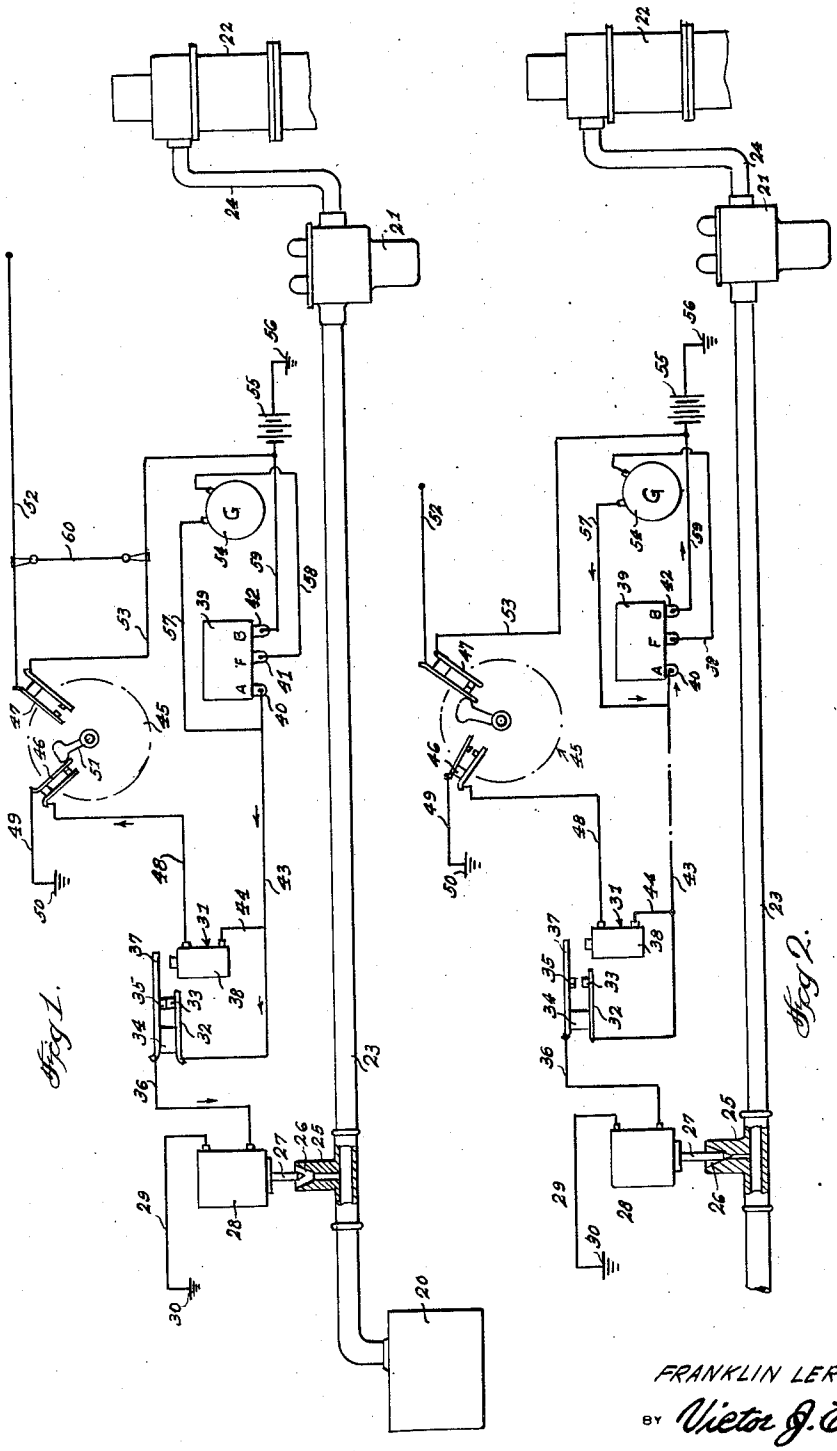

Fig 1.

Fig 2.

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THEFT PREVENTION DEVICE FOR MOTOR VEHICLES

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1 Claim. (Cl. 180—82)

This invention relates to a vehicle such as an automobile, and more particularly to a theft prevention device or mechanism for such a vehicle.

The object of the invention is to provide a device which is adapted to be connected into the vehicle electrical system in such a manner that in the event that a thief attempts to steal the vehicle by connecting a jumper wire between the ignition coil conductor and the conductor leading from the ignition switch, then a solenoid actuated valve will be energized to prevent any further fuel from being pumped from the gas tank to the carburetor so that continued movement of the vehicle is prevented.

Another object of the invention is to provide a vehicle safety device which includes a valve mechanism that will be actuated in the event that a thief attempts to steal the vehicle so that no fuel can be pumped into the carburetor whereby the vehicle cannot run or move even though the jumper wire has been connected in place by the thief, and wherein when the rightful owner of the vehicle places the proper key in the ignition switch, the vehicle can be operated in the usual manner for normal driving.

A further object of the invention is to provide a vehicle safety device which is extremely simple and inexpensive to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings, forming a part of this application, and in which like numerals are used to designate like parts throughout the same:

Figure 1 is a schematic view showing the parts in one position.

Figure 2 is a view similar to Figure 1, but showing the parts in a different position.

Referring in detail to the drawings, there is shown the usual gas or fuel tank **20** for the vehicle, while the numeral **21** indicates the usual fuel pump and the numeral **22** indicates the vehicle carburetor. The numeral **23** indicates the fuel line or conduit which extends between the gas tank **20** and the fuel pump **21**, and a line **24** extends from the pump **21** to the carburetor **22**. The conduit **23** is modified according to the present invention by installing or connecting therein a T-fitting **25**, and the fitting **25** is provided with a valve seat **26**. The numeral **27** indicates a needle valve which is mounted for movement into and out of opening and closing relation with respect to the valve seat **26**, and a solenoid **28** is provided for actuating the needle valve **27** so that the needle valve **27** can be moved into and out of closing relation with respect to the valve seat **26**. The numeral **29** indicates a first conductor which extends between the solenoid **28** and a ground connection **30**.

The numeral **31** indicates a circuit breaker which includes a stationary base **32** that has a contact member **33** secured thereto, and extending from the base **32** and connected thereto is a support member **34** which has an arm **37** connected thereto. The arm **37** is movable,

and the arm **37** carries a contact member **35** which is mounted for movement into and out of engagement with the contact member **33** on the stationary base **32**. A second conductor **36** extends from the arm **37** to the solenoid **28**. The numeral **38** includes an electromagnet which is adapted to be used for moving the arm **37** to a position so that the contact member **35** can engage the stationary contact member **33**.

The vehicle further includes the usual voltage regulator **39** which includes an armature terminal **40**, a field terminal **41**, and a battery terminal **42**. A third conductor **43** extends between the armature terminal **40** and the base **32**, and a fourth conductor **44** extends between the electromagnet **38** and the conductor **43**.

The vehicle further includes an ignition switch which is indicated generally by the numeral **45**, and the switch **45** includes first and second contact switch elements **46** and **47**. A fifth conductor **48** extends between the electromagnet **38** and the first contact switch element **46**. A sixth conductor or wire **49** leads from the first contact switch element **46** and is adapted to be grounded as at **50**. The ignition switch **45** further includes the usual movable key element **51** which is mounted for movement into and out of engagement with the first and second contact switch elements **46** and **47**. The numeral **52** indicates a seventh conductor which leads from the contact switch element **47** to the vehicle ignition coil. An eighth conductor **53** leads from the contact switch element **47**, and the numeral **54** indicates the vehicle generator, while the numeral **55** indicates the vehicle battery which may be grounded at as **56**. There is further provided a ninth conductor **57** which extends between the generator **54** and the third conductor **43**. As shown in the drawings, a tenth conductor **58** leads from the field terminal **41** of the voltage regulator **39**, to the generator **54**. The numeral **59** indicates an eleventh conductor which extends from the terminal **42** of the voltage regulator to the battery **55**, and to the eighth conductor **53**.

From the foregoing, it is apparent that there has been provided a mechanism which is adapted to be used for preventing a thief from stealing a car or vehicle. It is to be noted that when the vehicle is parked, the movable key element **51** of the ignition switch **45** is in the position shown in Figure 1 so that the element **51** is out of engagement with the contact switch element **47**. Thus, when a thief attempts to steal the car, he will connect a jumper wire **60** between the ignition coil conductor **52** and the conductor **53**. When this happens, with the device of the present invention mounted in the vehicle, and with the ignition key removed and the contact switch elements **46** in engagement with each other, Fig. 1, the circuit to the electro-magnet **38** will be completed after the engine has been started and the generator has closed the circuit through the voltage regulator. Thus the electromagnet **38** will be energized to thereby attract the arm **37** which moves the contact member **35** into engagement with the contact member **33** so that electrical energy can flow from the conductor **43** through the base **32**, then through the conductor members **33** and **35**, and then through the arm **37**, and then through the conductor **36** to energize the solenoid **28**. With the solenoid **28** energized, the needle valve **27** is raised so that the valve seat **26** is open as shown in Fig. 1 whereby suction or vacuum in the conduit **23** will be broken. With the vacuum pressure released from the conduit **23**, it will be seen that even though the fuel pump **21** is operating, the gasoline or fuel cannot be sucked up or pumped through the conduit **23** so that the thief cannot drive the vehicle beyond the point that is permitted by the small amount of fuel which is in the carburetor **22**. Thus, with the present invention the thief will only be able to move the vehicle a few feet or a short

distance, and then the vehicle will stop moving so that the thief can be more easily apprehended, and at any rate theft of the vehicle is prevented so that the vehicle can be easily recovered, even though it has been moved a short distance.

The foregoing has described the operation which occurs when a thief attempts to steal the vehicle by connecting the jumper wire 60 between the conductors 52 and 53. However, when the driver of the vehicle inserts the proper key in the ignition switch 45, the movable key element 51 is moved from the position shown in Fig. 1 to the starting position shown in Fig. 2 so that the vehicle can be driven or operated in the usual manner. This is possible because when the key element 51 moves from the position shown in Fig. 1 to the position shown in Fig. 2, the electrical circuit to the electromagnet 38 is broken whereby the resiliency of the circuit breaker 31 will cause the arm 37 to move away from the base 32 so that the contact member 35 will be out of engagement with the contact member 33. This has the practical effect of breaking the circuit to the solenoid 28 so that the needle valve 27 will remain in closing relationship with respect to the valve seat 26 so that there is no interference with vacuum pressure in the conduit 23 whereby the fuel pump 21 can pump the gasoline or fuel from the tank 20 to the carburetor 22 in the usual manner.

The jumper can be used at any point under the dashboard, for example, tinfoil could be inserted in the ignition lock in order to jump the current and even if a professionel car thief knew where the device was located on the car and had a blue print of its operation, he could still not steal the car because cutting the wires or even removing the device from the car causes the needle valve to open and render the car inoperative. The device is inexpensive to make and install, rugged in construction and completely effective. Once an attempt is made to steal a car equipped with the device, the owner does not have to make any repairs to get the car back in operating condition since he simply removes the jumper wire which is the only method by which a thief can start a car without a key, and then by using the ignition key, the valve is reset and the car operates normally.

As shown in Fig. 1, with the circuit breaker points 35 and 33 closed, when the car is started by means of the jumper wire 60, the solenoid 28 pulls the valve 27 up from the seat 26 which lets air in the fuel line 23 so that the car will only run until the gas is used from the carburetor. When the car is started by the switch key as shown in Fig. 2, the circuit breaker 31 opens so that the car can operate normally. The present invention is actually a disabling unit, since the car will only go a short distance and will then stop. The car will go far enough to permit current to move from the generator 54 causing the solenoid to open so as to cause the fuel pump to cease operations. Thus, the net result is that the car will stop when the carburetor is dry.

Furthermore, the apparatus is small and can be easily hidden inside the underframe of the car and this is again an element of surprise since a car thief would not think that the car is thief proofed. The apparatus uses conventional parts which can be easily assembled and the entire unit requires very little space. Furthermore, the device does not require the redesigning or reconstruction of any part of existing automobiles except for a cutting of the gas line 23 between the fuel pump and the gas tank and the installation of a T-connection in the same. Furthermore, in the event of any difficulty, the owner of the car being familiar with the unit, can make the unit inoperative by removing the lead wire from the generator.

I claim:

In a vehicle having a fuel conduit, a theft preventing device comprising: a fitting arranged in said conduit and said fitting having a valve seat therein, a needle valve mounted for movement into and out of opening and closing relation with respect to said valve seat, a solenoid for actuating said needle valve, a first conductor extending from said solenoid and leading to a ground connection, a circuit breaker spaced from said solenoid and said circuit breaker including a base having a contact member thereon, a support member extending from said base, an arm connected to said support member and having a contact member mounted for movement towards and away from the contact member on said base, a second conductor extending between said solenoid and said arm, an electromagnet for actuating said arm, a voltage regulator spaced from said circuit breaker and said voltage regulator including armature, field and battery terminals, a third conductor extending between the armature terminal and the arm of said circuit breaker, a fourth conductor extending between said electromagnet and said third conductor, an ignition switch including a first and second contact switch element, a fifth conductor extending between said electromagnet and said first contact switch element, a sixth conductor having one end connected to said first contact switch element and its other end adapted to be grounded, said ignition switch further including a movable key element mounted for movement into and out of engagement with said first and second contact switch elements, a seventh conductor leading from said second contact switch element to the vehicle ignition coil, an eighth conductor connected to said second contact switch element, a generator and battery spaced from said voltage regulator, a ninth conductor extending between said third conductor and said generator, a tenth conductor extending between the field terminal of said voltage regulator and said generator, and an eleventh conductor connecting the battery terminal of the voltage regulator to the eighth conductor and to the vehicle battery.

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