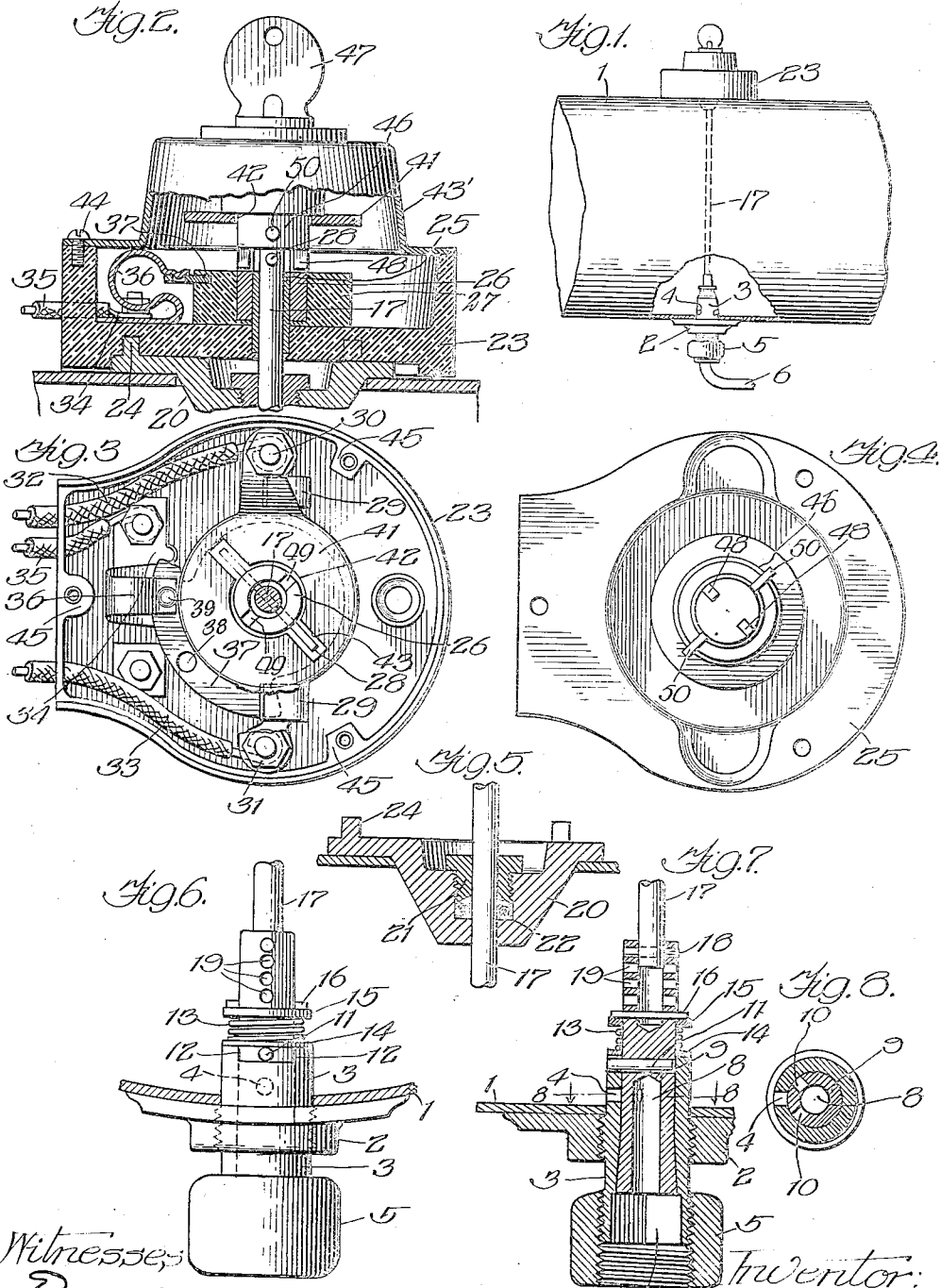


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COMBINED FUEL VALVE AND SWITCH LOCK.
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Att.

UNITED STATES PATENT OFFICE.

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COMBINED FUEL-VALVE AND SWITCH-LOCK.

1,230,108.

Specification of Letters Patent. Patented June 19, 1917.

Application filed March 15, 1916. Serial No. 84,269.

To all whom it may concern:

Be it known that I, GUSTAVE BURKHARDT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Combined Fuel-Valves and Switch-Locks, of which the following is a specification.

This invention relates to a combined fuel valve and switch lock particularly adapted for use in connection with motor-driven vehicles.

Theft and unauthorized use of motor-driven vehicles is a common occurrence and has reached such proportions that insurance is refused on certain well-known types of vehicles which are not readily identified. Numerous devices have been offered to the public which are designed to prevent this evil, including means for separately locking the fuel supply and electric switch. These devices, however, frequently fail, owing to the ease with which the pipes or wires may be cut and again connected around the valve or switch, and are undesirable owing to the necessity of manipulating two separate locks.

It is an object of my invention to provide a locking valve and operating means therefor so arranged with respect to the fuel container that fuel can not be obtained except through the valve which can only be operated by a key of definite configuration.

A further object of my invention is the provision of means for simultaneously controlling the fuel supply and electric circuit of a motor-driven vehicle and for locking the controlling means whereby unauthorized operation thereof is effectually prevented.

Other objects and advantages of my invention will be apparent as it is better understood by reference to the following specification when read in connection with the accompanying drawing, illustrating the preferred embodiment thereof, in which—

Figure 1 is an elevation partially in section illustrating the application of my invention to a fuel container;

Fig. 2 is an elevation partially in section of the lock cylinder and circuit-controlling switch;

Fig. 3 is a plan view of the switch mechanism.

Fig. 4 is a plan view of the interior of the lock mechanism;

Fig. 5 is a vertical section through the

means for securing the switch mechanism to the fuel container and preventing access of the fuel to the switch;

Fig. 6 is an elevation partially in section of the outlet from the container and the means for controlling the flow of fuel therefrom;

Fig. 7 is a vertical section on the line 7—7 of Fig. 6, and

Fig. 8 is a horizontal section on the line 8—8 of Fig. 7.

Referring to the drawings 1 indicates a suitable closed container which may be, for example, a cylindrical tank. Secured to the under-side of the container 1 in any suitable manner is a member 2 internally threaded to receive a member 3 having an opening near the upper end thereof and forming the outlet from the container 1. The member 3 is threaded to receive a coupling 5 whereby the pipe 6, leading to the carbureter (not shown), may be secured in proper relation to the outlet. The member 3 is squared internally at 7 to receive a suitable tool (not shown), whereby the member 3 may be assembled with the member 2, and is provided with a valve seat 8 to receive a hollow valve plug 9 provided with two openings 10 adapted to register with the opening 4 when the valve plug 9 is rotated. A pin 11, secured to the valve plug 9, limits the rotation thereof by engagement with shoulders 12 formed on the member 3 at the upper end thereof. A spring 13, disposed between a washer 14 resting against the upper end of the member 3 and a washer 15 resting against the pin 16 disposed in a suitable opening in the valve plug 9, retains the valve plug 9 in engagement with the seat 8.

A rod 17 is adjustably connected to the valve plug 9 by means of a pin 18 disposed therethrough and through a suitable opening 19, a plurality of which are provided in the upper end of the valve plug 9. The rod 17 extends through the container 1 and a member 20 secured to the container 1 opposite the outlet. A packing nut 21 surrounds the rod 17 and threadedly engages the member 20, retaining the packing material 22 in place to prevent the escape of combustible material about the rod 17. Mounted on the container 1 above the member 20 is a switch base 23, preferably of insulating material, which is held against rotary movement by pins 24 on the member 20 engaging any suitable openings in the switch base 23. A hol-

low cylindrical bearing member 25 is secured to the switch base 23 to receive the rod 17 and to support a metallic collar 26 to which the rotary switch member 27 is secured. The rod 17 is secured to the collar 26 by a pin 28 extending therethrough.

Mounted upon the switch base 23 are a plurality of clips 29 connected to the binding posts 30 and 31 to which the wires 32 and 33 leading to the magneto and battery (not shown); respectively, may be secured. A plate 34 is mounted on the switch base 23 and may be connected by a wire 35 to both the magneto and battery. A clip 36 is supported by the plate 34 and is adapted to be continually engaged by a knife blade 37 secured to the rotatable switch member 27 which, when rotated, causes the knife blade 37 to engage either of the clips 29 to close either the magneto or battery circuit or the knife blade 37 may be disposed in neutral position in which position it engages neither of the clips 29, both circuits being then opened. When in neutral position an opening 38 in the knife blade 37 is engaged by a depressed portion 39 on the clip 36 which prevents accidental movement of the knife blade 37.

Supported on the binding post 31 and insulated therefrom by suitable collars 40 is a bridge 41 having a central opening 42 and openings 43 radiating therefrom. A lock casing 43' is adapted to be secured to the switch base 23 by means of screws 44 engaging lugs 45 on the switch base 23 and supports a lock cylinder 46 operable by a key 47 and normally prevented from rotation by suitable tumblers (not shown). At its lower end the lock cylinder 46 is provided with lugs 48 adapted to engage suitable slots 49 in the collar 26, whereby the latter is rotated with the cylinder 46. A pair of radially extending arms 50 are secured to the lock cylinder 46 and when the lock cylinder is in predetermined angular position it may be assembled with the switch base 23, the arms 50 passing through the radial openings 43 to a position beneath the bridge 41, so that when the lock cylinder is turned the arms 50 engage the under-side of the bridge 41 and effectually prevent removal of the lock casing 43' and the lock cylinder 46 until the lock cylinder 46 has again been turned to the predetermined position.

The operation of my combined fuel valve and switch lock will be readily understood from the following brief description. The parts being assembled in the positions indicated in Fig. 1, when the lock cylinder 46 is disposed in neutral position, the openings 10 in the valve plug 9 will be disposed as indicated in Fig. 8 out of register with the opening 4 and hence flow of fuel from the container 1 is prevented. The knife blade 37

will be out of contact with either of the clips 29 and consequently flow of current from either the battery or magneto is prevented. In this position the arms 50 on the lock cylinder 46 are engaged beneath the bridge 41 out of register with the openings 43 and hence the lock casing 43' and the lock cylinder 46 can not be removed from the switch base 23 even though the screws 44 are removed. Inasmuch as the valve plug 9 is within the container 1 it can not be operated other than through the medium of the key 47 nor can the pipe 6 be cut and reconnected about the valve as is possible with locking valves disposed in the fuel pipe at points remote from the fuel container. Access to the switch is likewise prevented without the aid of the key 47 and hence the vehicle can not be moved under its power.

To permit the flow of fuel from the container 1 and simultaneously close either the battery or magneto circuit it is necessary merely to insert the key 47 and rotate the lock cylinder 46 in either direction until one or the other of the openings 10 in the valve plug 9 registers with the opening 4 in the member 3 and the knife blade 37 engages one or the other of the clips 29. The closing of the circuit occurs simultaneously with the opening of the fuel outlet and it will be noted that one key serves to control both the fuel valve and the switch.

It will be readily understood from the foregoing that I have perfected a locking device for motor-driven vehicles which will effectually prevent theft and unauthorized use of such vehicles and which should, therefore, permit insurance companies to assume risks on vehicles equipped with my device.

It will be apparent that various changes may be made in the form, construction and arrangement of the parts without departing from the spirit and scope of the invention, or sacrificing any of its material advantages, the forms hereinbefore described being merely preferred embodiments thereof.

I claim:

1. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, rotatable means held against longitudinal movement in said outlet to control the flow of fuel from said container, rigid means connected to said rotatable means and extending through said container, whereby said rotatable means may be actuated to open and close said outlet, and key-controlled means operatively connected to said rigid means to prevent rotation of said rotatable means when said outlet is closed.

2. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, rotatable means held against longitudinal movement in said out-

let to control the flow of fuel from said container, rigid means connected to said rotatable means, and extending through said container whereby said rotatable means may be actuated to open and close said outlet, a rotatable cylinder secured to said container opposite said outlet and operatively connected to said rigid means, and key-controlled means to normally prevent rotation of said cylinder.

3. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, rotatable means held against longitudinal movement in said outlet to control the flow of fuel from said container, a rod connected to said rotatable means and extending diametrically through said container, whereby said rotatable means may be actuated to open and close said outlet, and a cylinder lock secured to said container opposite said outlet and operatively connected to said rod.

4. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, rotatable means held against longitudinal movement in said outlet to control the flow of fuel from said container, a rod connected to said rotatable means and extending through said container, whereby said rotatable means may be actuated to open and close said outlet, a member secured to said container opposite said outlet, a cylinder lock operatively connected to said rod, and means for securing said lock to said member.

5. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, a rotatable valve plug in said outlet to control the flow of fuel from said container, a rod connected to said valve plug and extending through said container, whereby said valve plug may be rotated to open and close said outlet, a member secured to said container opposite said outlet, a rotatable lock cylinder operatively connected to said rod, key-controlled means to normally prevent rotation of said cylinder, and means for securing said cylinder to said member and for preventing removal of said cylinder except when the latter is in a predetermined angular position.

6. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, a valve seat in said outlet, a valve plug held against longitudinal movement in said valve seat, means within said container to resiliently maintain said valve plug against said seat, a rod secured to said valve plug and extending diametrically through said container, rotatable means secured to said rod at the side of said container opposite said outlet, whereby said valve plug may be rotated to open and close said outlet, and key-con-

trolled means to prevent rotation of said rotatable means when said outlet is closed.

7. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, a valve seat in said outlet, a rotatable valve plug held against longitudinal movement in said valve seat, means within said container to resiliently maintain said valve plug against said seat, a rod secured to said valve plug and extending diametrically through said container, a rotatable cylinder secured to said container opposite said outlet and operatively connected to said rod, and key-controlled means to normally prevent rotation of said cylinder.

8. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, a threaded bushing in said outlet, and a valve comprising a member threaded externally at one end to engage said bushing and at the other end to receive a coupling and provided with an internal valve seat, a hollow valve plug engaging said seat, and openings in said member and valve plug adapted to register as said valve plug is rotated.

9. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, a threaded bushing in said outlet, a valve comprising a member threaded externally at one end to engage said bushing and at the other end to receive a coupling and provided with an internal valve seat, a hollow valve plug engaging said seat and openings in said member and valve plug adapted to register as said valve plug is rotated, and means extending through said container to the side thereof opposite said outlet, whereby said valve plug may be rotated to open and close said outlet.

10. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, a threaded bushing in said outlet, a valve comprising a member threaded externally at one end to engage said bushing and at the other end to receive a coupling and provided with an internal valve seat, a hollow valve plug engaging said seat and openings in said member and valve plug adapted to register as said valve plug is rotated, means extending through said container to the side thereof opposite said outlet, whereby said valve plug may be rotated to open and close said outlet, and key-controlled means to normally prevent rotation of said valve plug.

11. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, rotatable means held against longitudinal movement for controlling said outlet, a rigid member connected to said outlet-controlling means and extending through said container, circuit-controlling means connected to said member, means 14

for simultaneously actuating said outlet and circuit-controlling means, and key-controlled means to normally lock said actuating means.

12. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, means for controlling said outlet, including a valve seat and a rotatable valve plug held against longitudinal movement in said seat, a member connected to said valve plug and extending diametrically through said container, circuit-controlling means connected to said member at the side of said container opposite said outlet, a rotatable lock cylinder secured to said container and connected to said member, and key-controlled means to normally prevent rotation of said lock cylinder.

13. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, means for controlling said outlet, including a valve seat and a rotatable valve plug held against longitudinal movement in said seat, a member connected to said valve plug and extending diametrically through said container, circuit-controlling means at the side of said container opposite said outlet including a rotatable switch element secured to said member and fixed switch elements adapted to be engaged by said rotatable element, and means for simultaneously actuating said valve plug and rotatable switch element including a key-controlled lock cylinder.

14. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, means for controlling said outlet including a valve seat and a rotatable valve plug held against longitudinal movement in said seat, a member connected to said valve plug and extending diametrically through said container, circuit-controlling means at the side of said container opposite said outlet including a rotatable switch element secured to said member and fixed switch elements adapted to be engaged by said rotatable element, means to prevent access of the fuel in said container to said circuit-controlling means, and means for simultaneously actuating said valve plug and rotatable switch element including a key-controlled lock cylinder.

15. In a device of the character described, the combination of a closed fuel container, an outlet therefrom, means for controlling said outlet including a valve seat and a rotatable valve plug engaging said seat, a rod connected to said valve plug and extending

through said container, circuit controlling means secured to the side of said container opposite said outlet including a base and cooperating switch elements one of which is secured to said rod, a lock casing, a key-controlled rotatable lock cylinder supported by said casing and operatively connected to said rod, and means on said base cooperating with said lock cylinder to prevent removal of said lock casing except when said lock cylinder is disposed in a predetermined angular position.

16. In a device of the character described, the combination of a tank, an outlet therefrom, a valve seat in said outlet, a valve plug cooperating therewith, a lock cylinder secured to the opposite side of said tank, means extending through said tank to connect said lock cylinder and valve plug, and means on said tank cooperating with a portion of said lock cylinder to prevent removal of the latter except when said lock cylinder is disposed in a predetermined angular position.

17. In a device of the character described, the combination of a tank, an outlet therefrom, a valve seat in said outlet, a valve plug cooperating therewith, a lock secured to the opposite side of said tank comprising a casing, a rotatable cylinder and key-controlled means to normally prevent rotation thereof, means extending through said tank to operatively connect said cylinder and valve plug, and means on said tank cooperating with said cylinder to prevent removal of the latter except when said cylinder is disposed in a predetermined angular position.

18. In a device of the character described, the combination of a tank, an outlet therefrom, a valve seat in said outlet, a valve plug cooperating with said seat, a lock mounted in the opposite side of said tank comprising a casing, a rotatable cylinder therein and key-controlled means to normally prevent rotation thereof, a rod extending through said tank to operatively connect said cylinder and valve plug, a bridge secured to said tank, and means on said cylinder cooperating with said bridge to prevent removal of said cylinder except when the latter is disposed in a predetermined angular position.

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