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M. FISHER

LOCK AND FUEL SAVER FOR EXPLOSION ENGINES

Filed May 16, 1922

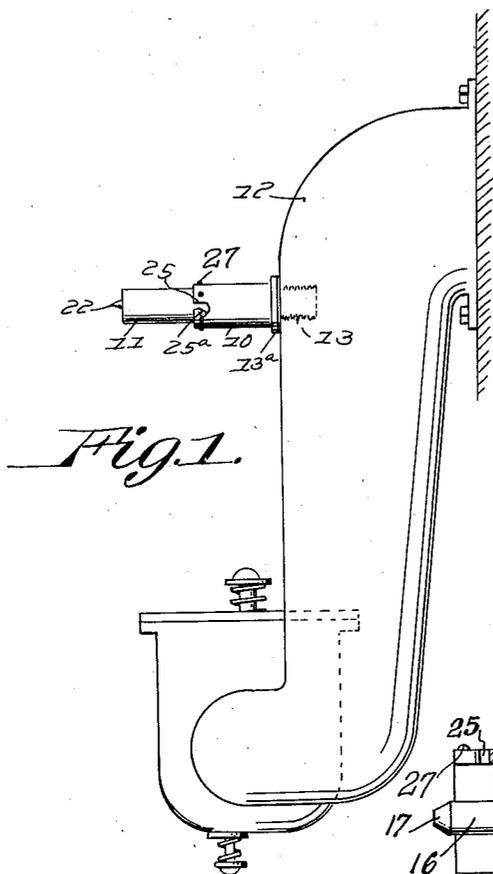


Fig. 1.

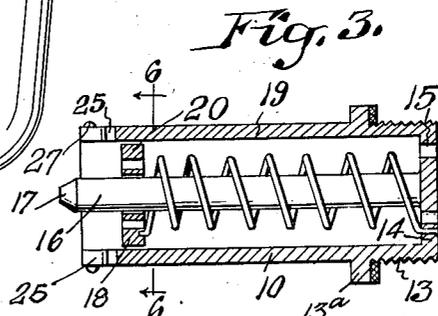


Fig. 3.

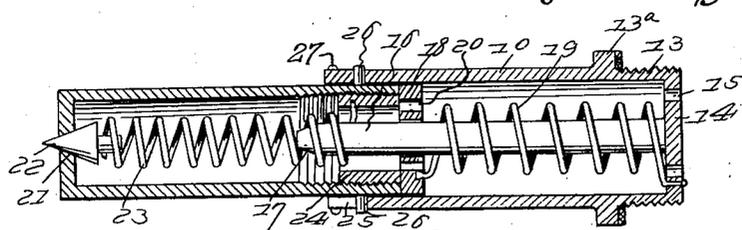


Fig. 2.

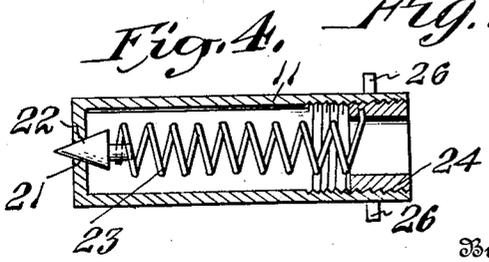


Fig. 4.

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LOCK AND FUEL SAVER FOR EXPLOSION ENGINES.

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To all whom it may concern:

Be it known that MOSE FISHER, a citizen of the United States of America, residing at Plain, in the county of Quay and State of New Mexico, has invented new and useful Improvements in Locks and Fuel Savers for Explosion Engines, of which the following is a specification.

The object of the invention is to provide a simple and efficient means for attachment to an explosion engine of the gasoline or similar type such as are used in connection with automobiles and similar motor-driven vehicles as a means of economizing in the use of fuel by providing an increased supply of air to the mixture as the speed of the engine increases and in that connection to provide a construction of gas saving device which will serve as a lock to prevent the starting of the engine when it has been parked, and has a means of dispensing with the implement or other mechanical forms of car locking devices applied to the wheels or other elements of the vehicle; and with these objects in view the invention consists in a construction and combination of parts of which a preferred embodiment is shown in the accompanying drawings, wherein:—

Figure 1 is a side view of a device embodying the invention applied in the operative position to the intake manifold of an internal combustion engine.

Figure 2 is a longitudinal sectional view of the same with the parts in their normal or operative positions.

Figures 3 and 4 are detail sectional views of the members of the device separated as when the car is locked against operation.

The apparatus embodies essentially two complementary telescoping members 10 and 11 of tubular construction of which the former constitutes a supplemental air inlet adapted to be arranged in communication with the intake manifold 12 of a gasoline or other explosion engine and the latter constitutes a key member detachable from the air inlet member and being of such dimensions as readily to be carried in the pocket of the car driver or operator. For convenience of attachment the air inlet member is exteriorly threaded at one end as shown at 13 for engagement with a suitable opening which may be formed in the intake manifold, a fixed collar 13^a carried exteriorly by the

member being adapted to be brought into contact with the wall of the manifold to insure a gas tight connection. The inner end or head 14 of the supply member is perforated as indicated at 15 to provide for a free passage of air from the interior thereof into the intake manifold.

Carried by the head 14 of the stationary or air supply member and extending axially therethrough and beyond the outer end thereof is a pin 16 which may have a slightly reduced outer extremity 17 as illustrated, and mounted in said member in surrounding relation with the pin is a follower ring 18 carried by an expansion spring 19 which is interposed between the ring of the follower and the head 14 and is attached to both so as to support the follower in a floating relation within the air supply member without, however, obstructing the passage of air therethrough, and to this end the opening in the follower ring is made of a larger diameter than the pin 16, or said follower is provided with perforations 20, or both, as illustrated in the drawing. When the key member of the device is removed the follower is supported for free reciprocatory movement in the inlet member subject to the yielding restraint afforded by the supporting spring 19.

The key member which is also of tubular form as above noted is provided at its outer end with an air inlet port 21 forming a seat for a tapered valve 22 yieldingly held in seated position by a spring 23 which bears at its inner end against a collar 24 threaded in the inner end of the member 11 and also of larger diameter than the pin 16 over which the inner end of the spring 23 passes as indicated in Figure 2 when the members of the device are engaged. In the wall of the stationary or inlet member 10 at its outer end are formed bayonet slots 25 for engagement by lateral studs 26 projecting from the inner end of the key member, so that in positioning the latter with relation to the former it is only necessary to register the same and then force the key member into the stationary member with the studs 26 in alignment with the slots 25, to thereby repress the follower until a turning movement of the key member will engage said studs with the offset portions of the bayonet slots. These

offset portions 25^a of the slots are inclined or directed toward the outer end of the member 10 so that the possibility of disengagement by reason of vibration of the device may be eliminated.

Thus the key member may be attached and detached by a simple turning or rotary movement through a portion of a revolution and a longitudinal movement sufficient to properly seat the inner end of the key member in the stationary member or unseat the same as indicated, the insertion of the key members serving to repress the follower ring 18 from the position which it normally occupies when the key member is displaced.

The function of the follower ring and the pin 16 is to interfere with the introduction into the end of the stationary or air inlet member of the device of any plug or stopper which will serve to close the same and thereby prevent the free influx of air which when the key member is unseated is sufficient to break any suction which may be incident to the movement of the engine pistons and thereby prevent the introduction of fuel from the carburetter or other source of supply to the engine and consequently prevent the starting of the engine. The projection of the pin terminally beyond the outer end of the inlet member and the floating support of the follower serve jointly to interfere with the arrangement of any temporary or improvised plugging means which would destroy the efficiency of the locking device, and as a further precaution, to prevent the arrangement of any cap or like device exteriorly upon the outer or inlet end of the stationary member, knobs or projections 27 are located at intervals thereon.

When the key member is seated in the stationary or air inlet member and located in place as above described the introduction of air therethrough is regulated by the valve 22 which is held seated in resistance to the suction in the intake manifold so that the supply of fuel to the cylinders may be permitted in the ordinary way and under normal conditions. Obviously when the speed of the engine exceeds a predetermined rate which may be determined by the adjustment of the collar 24 with relation to the key member in which it is threaded to vary the tension of the spring 23 and hence the resistance of the valve to unseating position, the said valve will permit of the entrance of an amount of air sufficient to modify the richness of the mixture incident to the functioning of the normal means of supply of fuel and air to the intake manifold.

Thus while the device with its parts assembled will permit of normal operation of an engine of the type indicated with the

modification that a supplemental supply of air is afforded under certain conditions to economize in the use of the fuel and derive the maximum benefit from the required expenditure thereof; the removal of the key member from the stationary member of the device will permit of an influx of air which is sufficient to break any suction which may be produced in the intake manifold by the operation of the pistons and thereby prevent the induction of fuel to form an explosive mixture. Therefore with the key member of the device removed the engine is in a condition preventing the starting thereof surreptitiously or by an unauthorized person not provided with the necessary complementary member of the device and unable to supply or improvise a substitute for the same by reason of the means provided for preventing the plugging or stopping of the inlet end of the stationary member of the device.

Moreover this locking means is adapted to meet those municipal provisions which require that while a vehicle of the motor-driven type may be locked, the means of locking must not be such as to prevent the movement of the car to permit of its displacement to avoid obstruction in the event of fire or in the carrying out of other police regulations. With the device described the car is free to be moved upon the release of the ordinary brake mechanism but the starting of the engine is prevented by reason of the fact that the suction necessary for the induction of an operative mixture is precluded by an excessive supply of air to the intake manifold.

Having described the invention, what is claimed as new and useful is:—

1. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, the said members being of telescoping construction and the first-named member being provided with an axial pin for obstructing the introduction of a substitute plugging means.

2. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, the said members being of telescoping construction and the first-named member being provided with an axial pin for obstructing the intro-

duction of a substitute plugging means, said pin being terminally extended beyond the outer end of said member.

3. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, said first-named member being provided with an interior yieldingly supported floating follower.

4. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, said first-named member being provided with an interior perforated spring supported floating follower.

5. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, said first-named member being provided with an axial pin and an annular yieldingly supported floating follower.

6. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, the first-named member being provided with an axial pin and an annular yieldingly supported follower ring and the second-named member having a valve controlled air inlet port,

a valve seating spring, and tensioning means for the spring.

7. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder pistons, and the other constitutes a means of controlling the influx of air through the first-named member, the first-named member being provided with an axial pin and an annular yieldingly supported follower ring and the second-named member having a valve controlled air inlet port, a valve seating spring, and tensioning means for the spring consisting of a sleeve having threaded engagement with the wall of said member.

8. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder piston, and the other constitutes a means for controlling the influx of the air through the first-named members, said members being provided with interlocking means and the first-named member having exteriorly and interiorly obstructing means to prevent its being closed by a plug or cap when the second-named member is detached.

9. A motor car locking device having complementary stationary and removable members of which the former is adapted for attachment to the intake manifold of the vehicle engine to permit of an admission of air sufficient to supply the suction to the cylinder piston, and the other constitutes a means for controlling the influx of the air through the first-named members, said members being provided with interlocking means and the first-named member being provided on its periphery with spaced projections located at intervals thereon to preclude air-tight connection of a cap when the second named member is detached.

In testimony whereof he affixes his signature.

MOSE FISHER.