M. R. GOLZ.

AUTOMOBILE LOCK.

APPLICATION FILED MAR. 7, 1916.

1,221,044.

Patented Apr. 3, 1917.

2 SHEETS—SHEET 1.

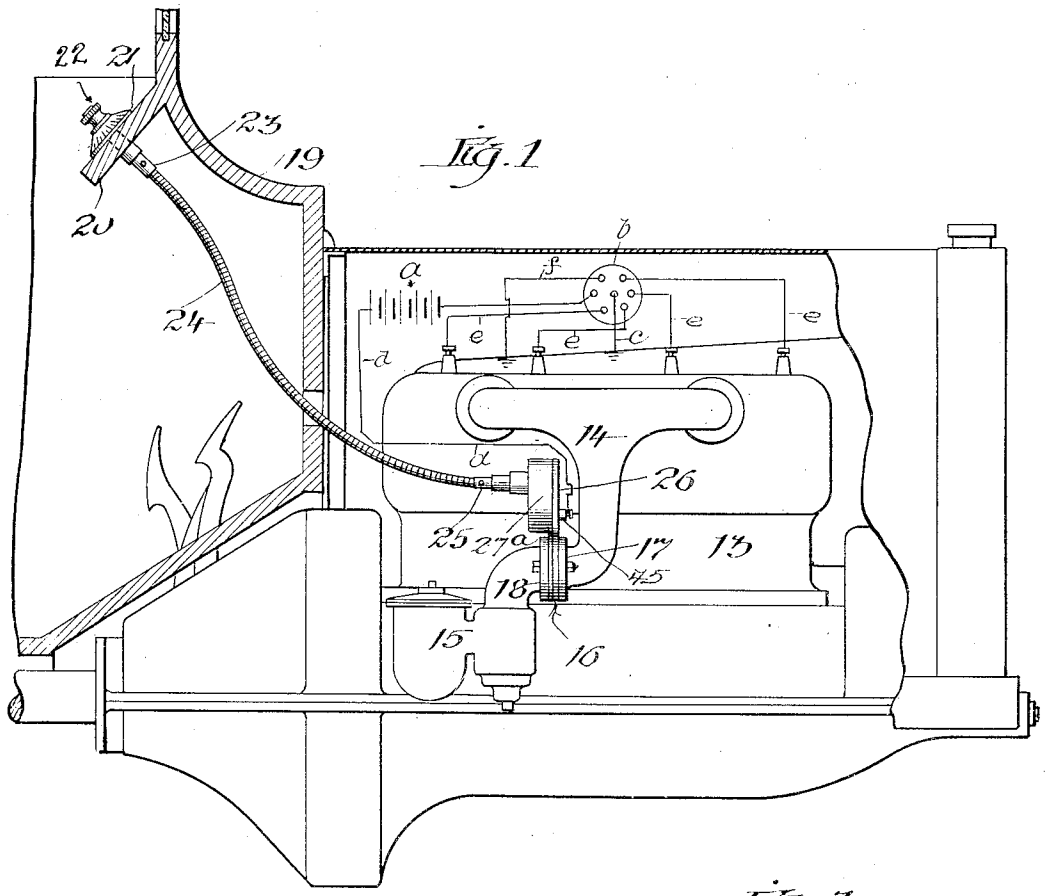
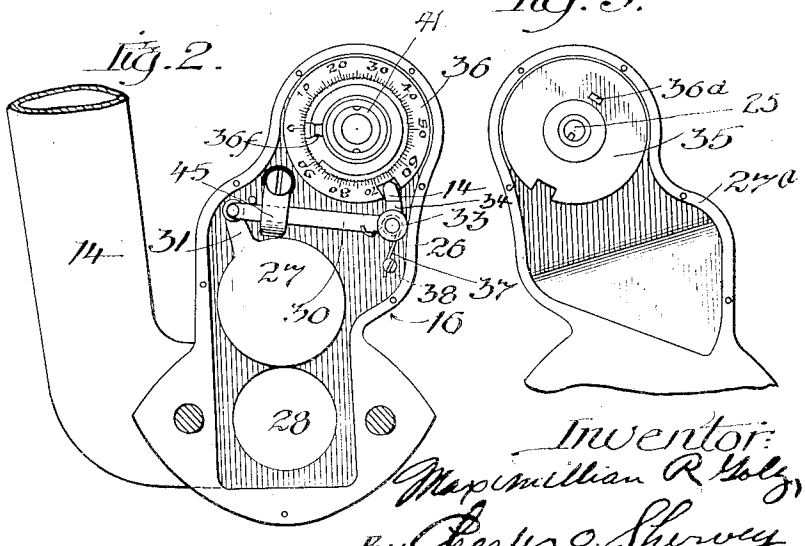


Fig. 1.

Fig. 3.

Fig. 2.



Witness

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2 SHEETS—SHEET 2.

Fig. 4.

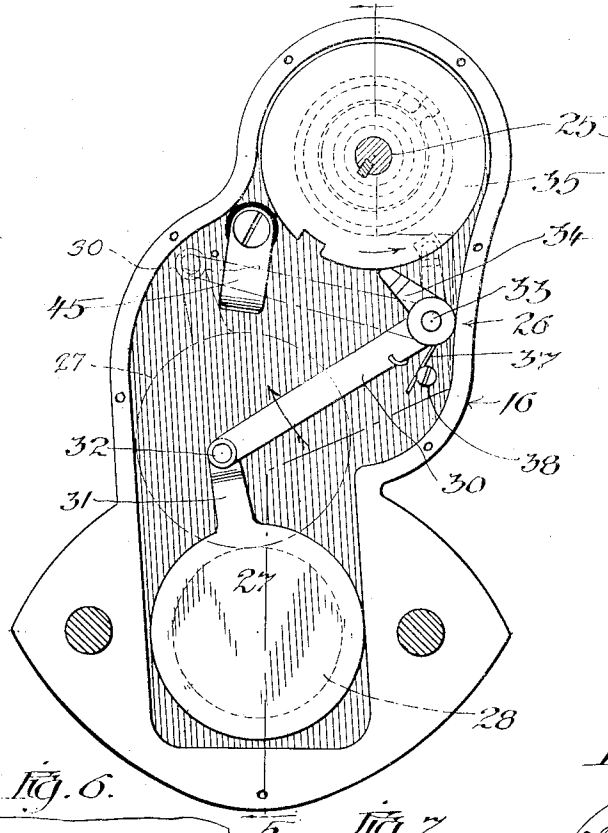


Fig. 5.

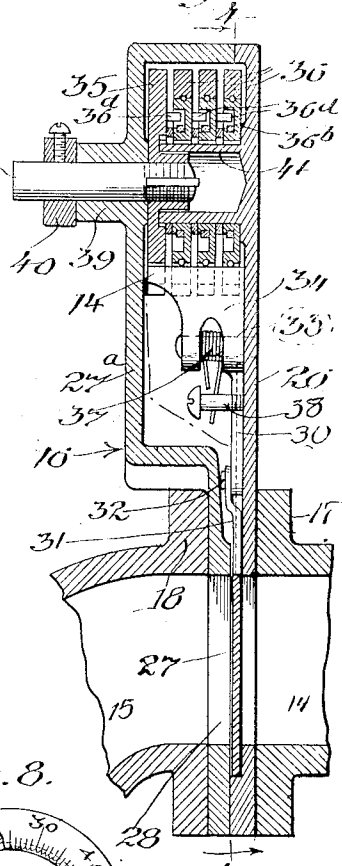


Fig. 6.

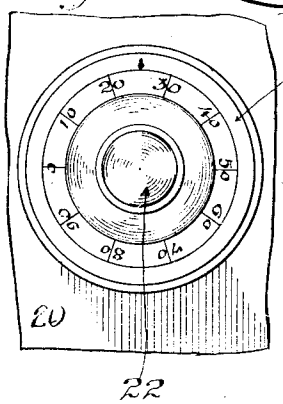


Fig. 7.

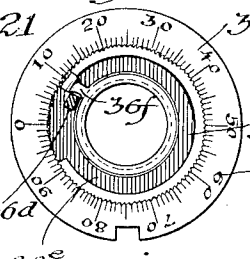


Fig. 8.

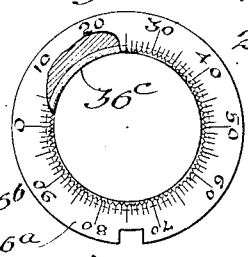


Fig. 11

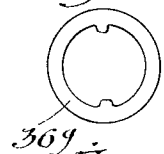


Fig. 9.

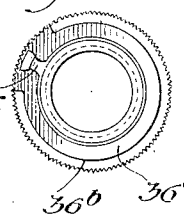


Fig. 10.

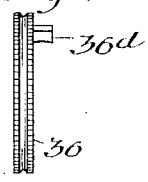
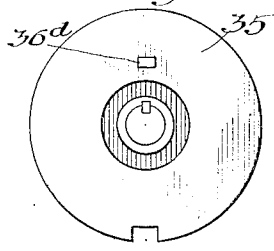


Fig. 12.



Witness

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UNITED STATES PATENT OFFICE.

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AUTOMOBILE-LOCK.

1,221,044. Specification of Letters Patent. Patented Apr. 3, 1917.

Application filed March 7, 1916. Serial No. 82,648.

To all whom it may concern:

Be it known that I, MAXIMILLIAN R. GOLZ, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Automobile-Locks, of which the following is declared to be a full, clear, and exact description.

This invention relates to automobile locks, and its primary object is to provide a lock-controlled valve of simple and improved construction arranged to be interposed in the passage between the carbureter and motor, whereby the valve may be moved across said passage and locked in such position to prevent the gaseous mixture from passing to the motor from the carbureter. Another object is to provide a combination lock in connection with a spring-pressed valve actuating device wherein the tumblers, valve actuating device and valve are located in the valve case of the device.

Other objects and advantages will appear in the course of this specification and with all of said objects and advantages in view this invention consists in the several novel features hereinafter set forth and claimed.

The invention is clearly illustrated in the accompanying drawing in which:—

Figure 1 is a view partly in side elevation and partly in longitudinal section, of an automobile motor, its carbureter and a fragment of the automobile body, with a simple form of the present invention installed in place; Fig. 2 is an inner face view of one section of the valve case of the lock and the parts contained therein; Fig. 3 is an inside face view of the other section of the lock case; Fig. 4, is a face view of the valve case, looking in the direction of the arrow 4, in Fig. 5, with one section of the case removed and a certain tumbler actuating shaft shown in section; Fig. 5 is a cross section taken on line 5—5 of Fig. 4; Fig. 6 is a face view of the dial-ring, dial and its knob; Fig. 7 is a detail face view of a certain tumbler; Fig. 8 is a face view of one section of said tumbler; Fig. 9 is a face view of the other section of said tumbler; Fig. 10 is an edge view of the member seen in Fig. 9; Fig. 11 is a face view of a washer which spaces the tumblers apart and Fig. 12 is a face view of the valve actuating tumbler which is the one that is fast on the actuating shaft.

Referring to said drawing and first to Fig. 1, the reference numeral 13, designates the motor of an automobile which may comprise an internal combustion engine, 14 indicates the intake manifold, 15 the carbureter and 16 the valve case of the lock, which as shown is interposed between the intake manifold and carbureter and bolted to the flanges 17, 18 of the intake manifold and carbureter. 19 designates the body of the automobile, and 20 the instrument board, upon which is secured the dial ring 21, of the locking device. The knob with its dial 22 is rotatively mounted on the dial ring 21, and it has a stud shaft 23 extending through the instrument board to which stud shaft is secured a flexible shaft 24, that extends to the stud shaft 25, which actuates the tumblers. It is to be observed that the flexible shaft permits of a variety of locations of the valve case with respect to the dial and knob, so that the locking mechanism is adapted for practically all situations in motor car constructions.

The valve case 16, has two sections 26, 27ª, in which is a chamber or wide space for the tumblers and associated parts, and a thin space for the valve 27. The thin portion of the two sections 26 and 27ª has a port 28 therethrough, which registers with the discharge opening of the carbureter and the inlet opening of the inlet manifold, and through which port the gaseous mixture freely passes from the carbureter to the motor through the intake manifold when the valve 27 is withdrawn from said opening. When, however, the valve is moved across said opening, the passage therethrough is closed and the gaseous mixture does not pass the valve.

Said valve 27, is shown in the form of a disk, and it is connected to a valve actuating lever 30, as for instance by a stem 31, extending out from the valve 27, which stem and lever 31, are pivotally connected by a pin 32. The lever 30, is fulcrumed to the case section 26, on a pin 33, and has an arm 34, which is held in contact with the edges of the driving wheel 35, and tumblers 36, the bearing edge of said arm 34 being long enough to extend across the edges of the driving wheel and all the tumblers (see Fig. 5). A coiled compression spring 37 encircles the pin 33, and one of its ends engages the long arm of the lever 30, and the other engages a pin 38 secured to the section 26; said spring acts to hold the arm 34 in

contact with the tumblers, and also to swing the lever 30 in the direction of the arrow thereon in Fig. 4, when permitted by the tumblers to thereby withdraw the valve 27 from the opening 28 and thus establish communication between the carbureter and motor.

The driving wheel 35 is keyed fast on the stud shaft 25, which shaft extends out through a boss 39, formed on the section 27^a of the valve case, and a collar 40 secured on the stud shaft behind the boss which preferably has a ground fit against the boss, prevents air leakage at this point. The tumblers 36, are rotatively mounted on a hollow stud shaft or arbor 41, formed on the valve case 26 in coaxial alinement with the stud shaft 25. A driving wheel and each of the tumblers has a notch in its periphery or edge which when brought into register with each other and with the bearing edge of the lever arm 34, will permit the end of the arm 34 to enter the registering notches, whereby the lever 30 may be swung by the spring 37 in the direction indicated by the arrow thereon in Fig. 4, to uncover the opening between the carbureter and intake manifold.

The tumblers may be of the common and well known forms of tumblers used in combination locks, having pin and slot connections whereby all may be set by properly manipulating the knob and dial, but I have illustrated a particular type giving wider range of changes than with the ordinary tumblers, approximately eleven thousand changes may be had with the use of said tumblers. In Figs. 7 to 12 inclusive 36^a is a ring having a dial on its face and the notches corresponding therewith in its internal edge. Removably seated in the opening of said ring is a smaller ring 36^b having teeth in its edge arranged to engage the notches in the internal edge of the ring 36^a, a ring 36^c seated in registering annular grooves in the rings 36^a 36^b serves to detachably secure the two rings together. Each tumbler has a pin 36^d projecting therefrom which travels in a slot 36^e of the next adjacent ring 36^b, and strikes against a stop or lug 36^f of said ring to impart rotation to said next adjacent tumbler. Washers 36^g interposed between the adjacent tumblers prevent accidental rotation.

Secured to the case section 26 but insulated therefrom is a contact piece 45 which lies in the path of the lever 30, and with which it makes electric contact whenever said lever is moved to uncover the port between the carbureter and intake manifold. Said contact piece 45, and lever 30, make and break the ignition circuit for the spark plugs of the motor, so that when the valve 27 is closed the ignition circuit is broken, and when the valve is opened the ignition circuit is closed. For the purpose of illustration, I have shown diagrammatically a battery at *a*, a coil at *b*, in circuit with the battery, the wire *c*, of the coil being grounded on the motor body and the ground wire *d*, of the battery running to the contact piece 45, the wires *e*, run to the plugs from the coil and the wire *f*, is grounded on the motor body as is customary. Obviously the break may be in one of the wires of the magneto circuit, as well, or in any suitable wire.

In operation, the knob 22 is properly manipulated, by one having the combination, for unlocking the valve, the result being that all of the notches in the driving wheel and tumblers are brought into register with the end of arm 34 of the lever 30 while said arm and lever are in the position seen in full lines in Fig. 4, wherein the valve 27 closes the port 28. Movement of the knob, and therewith movement of the driving wheel 35 in the direction of the arrow thereon in Fig. 4, will aid the spring 37 in swinging the lever 30, 34, from the position seen in full lines in Fig. 4 to that shown in dotted lines, and that shown in full lines in Fig. 2, or if the knob is released when the combination has been set, the spring will automatically throw the lever into the notches of the driving wheel and tumblers and swing the lever in the direction of the arrow in Fig. 4, thus uncovering the port and establishing electric connection between the terminals of the ignition circuit. In this position of the tumblers, lever and valve, the motor may be started and operated. To temporarily lock the valve closed, and break the ignition circuit, the knob may be turned in the direction opposite to the arrow (Fig. 4) far enough to move the lever back and disengage the notch of the driving wheel 35 from the end of the lever arm 34 without throwing out the combination. This may be done when it is desired to stop the motor temporarily, and also to lock the valve closed because an unauthorized person not knowing the condition of the lock would most likely, upon taking hold of the knob to operate the tumblers, disturb the tumblers and throw the combination.

One of the particular advantages of this device consists in the fact that the locking tumblers, spring operated valve actuating lever and valve are located in the valve case which is interposed between the carbureter and motor. The tumblers cannot be properly manipulated by any one if the shaft 24 is cut, because the dial is on the instrument board; consequently an unauthorized person cannot set the tumblers properly except from the dial and only then when he has knowledge of the proper combination. Another advantage is that the valve cuts off the gaseous mixture supply from the motor instead of cutting off the gasolene supply to

the carbureter. Another advantage consists in the fact that the tumbler actuating knob acts as a knob or handle of an electric switch which switch is located in the valve casing so that when the user turns the knob to open the switch the valve is automatically closed, or if the knob is turned far enough to close the valve with or without throwing the combination, the switch is automatically opened. Conversely so long as the combination is thrown, the switch cannot be closed, but when the knob has been properly manipulated to set the combination, the valve is automatically opened by the action of the spring and the switch is automatically closed. Another advantage consists in the fact that a single shaft is employed for turning the tumblers, opening the port between the carbureter and engine, and closing the ignition circuit. Furthermore, when the tumblers have been properly manipulated to bring the notches opposite the arms 34, of the lever the spring automatically acts to swing the lever in the direction to close the ignition circuit and move the valve away from the port.

I am aware that various alterations and modifications of this device are possible without departing from the spirit of this invention, and I desire therefore not to limit myself to the exact form of the invention set forth, but intend in the following claims to point out all of the invention disclosed herein.

I claim as new and desire to secure by Letters Patent:—

1. Locking mechanism for internal combustion engines, comprising a valve case adapted to be secured between a carbureter and intake manifold of an internal combustion engine, and having a port for establishing communication between said carbureter and intake manifold, a valve in said case movable across said port, a combination lock driving wheel and tumblers rotatively mounted in said case, a shaft for turning said driving wheel, and a valve actuating lever coöperating with said tumblers, said lever operating to automatically actuate the valve and uncover the port.

2. Locking mechanism for internal combustion engines, comprising a valve case adapted to be secured between a carbureter and intake manifold of an internal combustion engine and having a port for establishing communication between said carbureter and manifold, and valve sliding in said case and arranged to be moved across said port, combination lock driving wheel and tumblers rotatively mounted in said case, a shaft connected to said driving wheel whereby said driving wheel and tumblers may be turned and a spring-pressed lever pivotally mounted in said casing and having one end connected to said valve and the other adapted to coöperate with the tumblers and driving wheel.

3. Locking mechanism for internal combustion engines, comprising a valve case adapted to be secured between a carbureter and an intake manifold of an internal combustion engine, and having a port for establishing communication between the carbureter and intake manifold, a valve slidably mounted in said case and movable across said port, combination lock tumblers rotatively mounted in said case, each having a notch in its periphery and a valve actuated lever pivotally mounted in said case, one end of said lever being connected to the valve and the other end arranged to bear against the peripheries of the tumbler, and a spring, one end of which engages said lever and acts to move one arm thereof into the notches of the tumblers whenever said notches register with said arm of the lever.

4. Locking mechanism for internal combustion engines, comprising a valve case, having a port for establishing communication between the carbureter and intake manifold of an internal combustion engine, a valve in said case for covering and uncovering said port, combination lock driving wheel and tumblers rotatively mounted in said case and an automatically operating valve actuating device coöperating with said tumblers, said device forming one terminal of an ignition circuit, and a second terminal arranged for contact with said valve actuating device whenever the latter is moved to position opening the port.

5. Locking mechanism for internal combustion engines, comprising a valve case having a port for establishing communication between the carbureter and intake manifold of an internal combustion engine, a valve in said case for covering and uncovering said port, combination lock driving wheel and tumblers in said case, operation connections between said tumblers and said valve for actuating the valve, a distantly located knob and dial, a shaft connecting the driving wheel with said knob and ignition circuit closing means controlled by said driving wheel and tumblers.

6. Locking mechanism for internal combustion engines, comprising a valve case adapted to be secured between and having a port for establishing communication between the carbureter and intake manifold of an internal combustion engine, a valve in said case for opening and closing said port, combination lock driving wheel and tumblers in said case, independent operative connections between said driving wheel and tumblers and said valve for actuating the valve, a distantly located knob and dial, and a flexible shaft connection between said tumbler and knob.

7. Locking mechanism for internal com-

bustion engines, comprising a valve case arranged to be secured between, and having a port for establishing communication between the carbureter and intake manifold of an internal combustion engine, a valve in said case movable across said port, a bell crank lever in said case one end of which is pivotally secured to said valve, combination lock driving wheel and tumblers rotatively mounted in said case, each having a notch in its periphery adapted to be brought into register with the other arm of said bell crank lever, a spring for moving said arm into said notches when in register with said arm, a distantly located knob and dial and connections between said driving wheel and knob.

MAXIMILLIAN R. GOLZ.