Sept. 14, 1926. 1,600,050

J. H. KESSLER

LOCKING VALVE FOR GASOLINE ENGINES

Filed June 4, 1923 2 Sheets-Sheet 1

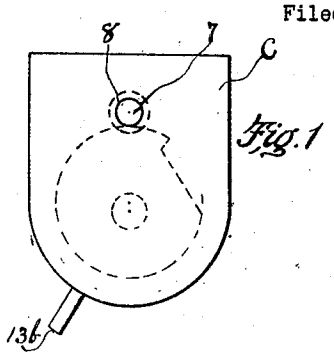


Fig. 1

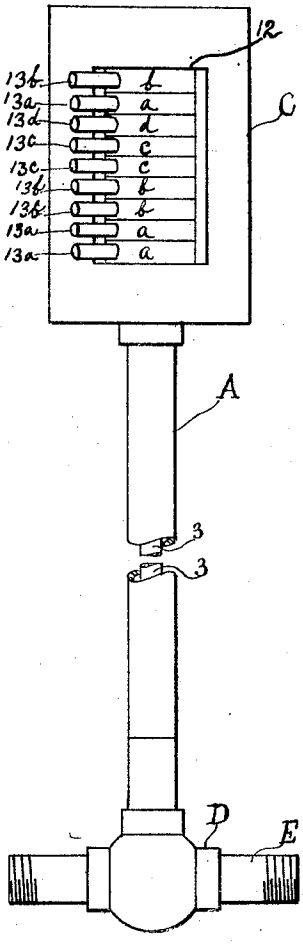


Fig. 2

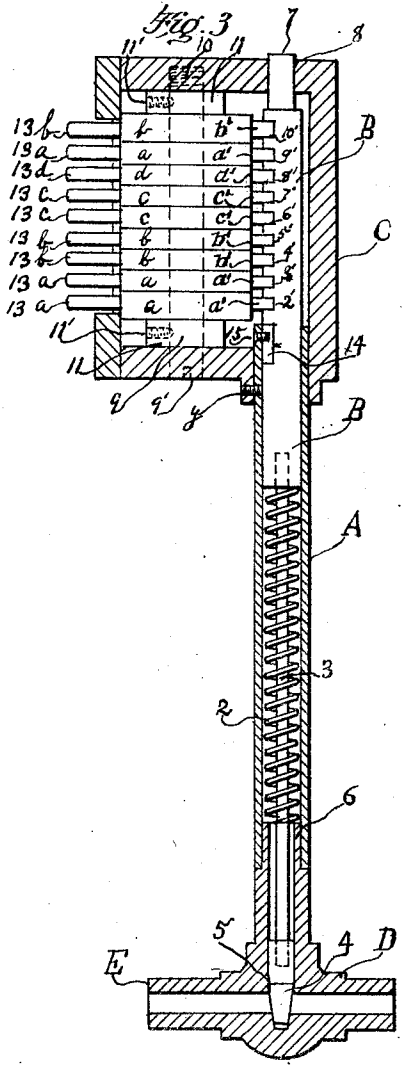


Fig. 3

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Fig. 4

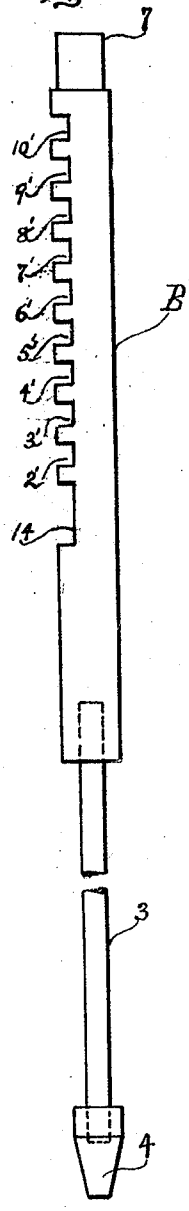


Fig. 5

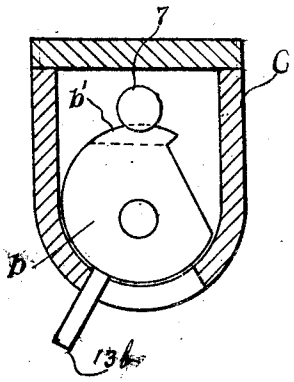


Fig. 6

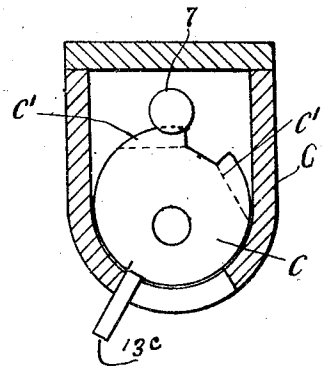


Fig. 7

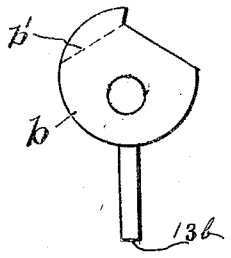


Fig. 8

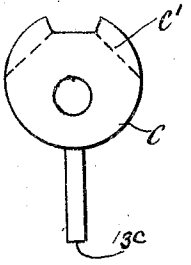


Fig. 9

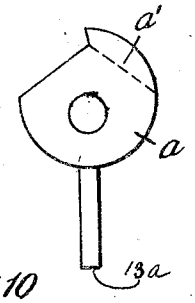
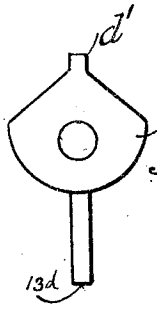


Fig. 10



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Patented Sept. 14, 1926. 1,600,050

UNITED STATES PATENT OFFICE.

JOHN H. KESSLER, OF BINGHAMTON, NEW YORK.

LOCKING VALVE FOR GASOLINE ENGINES.

Application filed June 4, 1923. Serial No. 643,429.

My invention relates to improvements in locks for internal combustion motors and for gasoline engines to control the flow of the gasoline in the mechanism and to provide a simply constructed, operated and accurately effective device for controlling the fuel circuit which furnishes fuel for the motor and which will effectually prevent unauthorized removal of an automobile or the like.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts as will be hereinafter fully described and pointed out in the claims, reference being had to the accompanying drawings in which:

Fig. 1 is a plan view of my device,
Fig. 2 is a front elevation of my device,
Fig. 3 is a vertical section of my device,
Fig. 4 is a front elevation of part of my device,
Fig. 5 is a cross section of my device,
Fig. 6 is a cross section of my device,
Fig. 7 is a plan view of part of my device,
Fig. 8 is a plan view of part of my device,
Fig. 9 is a plan view of part of my device, and
Fig. 10 is a plan view of part of my device.

The same reference characters denote like parts in each of the several figures of the drawings.

In carrying out my invention, I provide a tubular casing A, in which is removably and slidably mounted the lock shaft B and the compression spring 2, contacting with and supporting the shaft. The tubular casing A is surmounted by the tumbler box or chamber C. Mounted in the lower end of shaft B, I have the plunger rod 3 and mounted on its lower end, I have the gate 4, adapted to be seated in the valve D, mounted at any convenient point in the gasoline conduit or tube E. At the base of the interior of casing A, I have a shelf 6, and between shaft B and shelf 6 and surrounding the plunger rod 3, I have the coiled spring 2, resting at its lower end on shelf 6. In the upper portion of shaft B and on the inner side thereof, I have the series of recesses 2′, 3′, 4′, 5′, 6′, 7′, 8′, 9′, and 10′. Mounted on said casing A, as before described, I have the tumbler box or chamber C, held in position by set screw y in casing C. The upper end of shaft B is slidably mounted in chamber C, its upper end at 7 may be reduced in size or not and has slidable connection thru the opening 8 in the top of chamber C. On the inner side of shaft B I have the recess 14 for governing the sliding movement of the shaft B and in casing A, I have countersunk the screw 15 entering recess 14. Removably mounted in chamber C, I have the shaft 9, having the screw cap 9′ and threaded end 10 and mounted on the upper and lower ends of shaft 9, I have the washers 11.11 in which are mounted the set screws 11′.11′. Within the interior of chamber C, I have pivotally mounted on shaft 9, a series of tumblers, a, a, a, b, b, b and c, c and d, plan views of which are shown in Figs. 5, 6, 7, 8, 9 and 10 and projecting from the inner edge of the same, I have the series of tumbler lugs a', a', a', b', b', b', c', c' and d', as shown in Fig. 3, adapted to removably enter the recesses 2′ to 10′ in the side of shaft B. Projecting from the outer edge of each of the tumblers, I have the operating handle 13. This designation has also the letter mark of its tumbler, such as "13^a", "13^b" etc. It is to be noted that these tumblers are of right, left neutral and pivot variety, as shown in Figs. 5, 6, 7, 8, 9 and 10, the right hand tumblers shown in Fig. 9, the left-hand tumbler shown in Fig. 7 and the neutral tumbler shown in Fig. 8, also the pivot tumbler shown in Fig. 10. The pivot tumbler shown in Fig. 10 on its inner edge has a projecting lug formed by cutting away the tumbler edge on each side of lug in slanting alinement, forming a clearance space on each side of lug, the tumbler having on its outer edge a projecting key handle 13^d. In my invention I have mounted a plurality of right-hand tumblers designated by a, a, a and left-hand tumblers designated by b, b, b and neutral tumblers designated by c, c and pivot tumbler d. The number of each, vary according to the combinations to be made. These tumblers are equal in thickness and diameter and thus are interchangeable so as to permit of a great variety of combinations. In the chamber or tumbler box C, I have the face opening 12 and projecting from each tumbler, I have the operating handle 13, designated in the groups of tumblers in Fig. 2 and Fig. 3 "as operating handles" 13^a, 13^a, 13^a, 13^b, 13^b, 13^b, 13^c, 13^c, 13^c, and 13^d, which said operating handles being positioned to project in alinement thru opening 12 in chamber C, as shown in Fig. 2 and I there

designate the right-hand operating handles as 13^a, 13^a and the left-hand operating handles as 13^b, 13^b, while the neutral operating handles are designated as 13^c, 13^c, and pivot operating handle as 13^d. At any convenient point in the gasoline conduit E, I mount the valve D, having therein the valve seat 5, adapted to receive and seat the gate 4. In tumbler chamber C on the opposite side from the opening for the operating handles I may or may not have an open face and in mounting my device, it may be attached in any convenient manner to the body of an automobile or other structure, where the same is to be used, in convenient position for operating the keys 13^a and etc., while casing A extends down to and is securely mounted in the valve casing D.

In the operation of my device, the tumbler chamber and connecting valve casing C being securely mounted in valve D on gasoline conduit E, I arrange my combination of tumblers as I desire, by unscrewing and removing shaft pin 9 in the tumbler chamber and removing the tumblers from the chamber or case. Having arranged the group of tumblers as desired for the combination, I replace them on pin 9 in chamber C and fasten pin 9 in place. The tumblers are so mounted and fitted, that by turning the right-hand tumblers to the right and the left-hand tumblers to the left, the lugs a', a', b', b', c', c', a', b' are removed from the recesses $2'$ to $10'$ in shaft B, now held in locked position with gate 4 in seat 5. By turning the tumbler lugs out of engagement with recesses in shaft B the compression coil spring 2 being thereby released from pressure of the lugs it expands and raises shaft B and with it gate 4 and shaft head 7, and the conduit is open and is held open by the expanded spring 2. By again turning or moving the key tumblers, any one or more of the lugs a', a', b', b', c', c', a', b' of the tumblers enter the corresponding opposite recess in shaft B and are in engagement with the shaft and the shaft thus is locked in raised and open position and held open by the engagement of the lugs a', a', b', b', c', c', a', b'. When I desire to close the valve and lock it, I again grasp the operating handles and turn the tumbler lugs out of engagement with the recesses and then press down on shaft head 7 until the gate 4 is in its seat 5 and I then again turn in the tumbler lugs by moving the operating handles 13^a, 13^a, etc. and thereby place the tumbler lugs in engagement with the recesses $2'$ to $10'$ in shaft B and lock it and the valve in closed position. Assuming that the valve is locked, to unlock it, it is necessary to turn a portion of the tumblers to the right-hand side, a portion of the tumblers to the left-hand side and a portion to the center of the key opening 12, thru which the operating handles project and the released coil spring raises the gate 4 into open position. The number of handles to be turned to the right, left or center would be governed by the combination that the lock was set to, for example: Assume a combination of tumblers in which a and a to be turned to left, b to the right, b to the right, c and c to the center, d to right or left, a to the left and b to the right; I move operating handles 13^a, 13^a to the left, 13^b, 13^b to right 13^c, 13^c to center and turn 13^d to left or right and 13^a to left, and 13^b to right, in which position the lock will open. Being in that position, by this combination, the recesses in shaft B are free of tumbler lugs, the pressure on spring 2 being released, its expansion will force shaft 3 upward and raise gate 4 of the valve 5, thereby allowing a free flow of gasoline in the gas line E. To close and lock the valve, I press down with the finger on shaft head 7 of the lock shaft B, thereby closing gate 4 of valve D; I then throw the tumbler keys to either side in any manner whatsoever and the valve gate 4 is held in closed, locked position in valve D, thereby completely stopping the flow of gas in conduit E, beyond or ahead of the valve D. Thus it is observed that any person can close the valve and lock it. Now, assuming that the valve is open, to hold it locked in an open condition and to guard against promiscuous closing of the valve D, I turn the tumbler keys in any position which will cause one or more lugs to be in mesh in the recess in the lock shaft B, thereby locking the valve open and thereby preventing any person, not familiar with the combination, from closing the valve. Thus it will be seen that the valve is controlled by the lock shaft in both open and closed position. Thus it will be seen too, that a large variety of combinations can be formed for controlling the locking and unlocking of the valve D. To arrange a new combination, I remove the set screw y in casing C, contacting with side of shaft B and remove the lock casing C and then loosen and remove the tumbler pin or shaft 9, the tumblers being interchangeable and thus being free to change in any manner desired; the right-hand tumblers can be made left-hand tumblers by turning them over and mounting them again on pin 9 and thereby reversing the position of the tumbler lugs, also neutral tumblers can be moved to any position up and down on pin 9 or brought together in a group or separated by a right or left tumbler between them up and down on pin 9, the line of assemblage, thus concealing the exact location of the neutral tumblers.

Having thus described my invention, what I claim as new and for which I desire Letters Patent is as follows:

1. In a lock for gasoline engines the combination of a chamber having a side opening therein, oppositely disposed openings in the top and bottom of the chamber, an open tubular casing mounted in the floor opening of the chamber, and projecting downward, a lock shaft slidably mounted in the casing and projecting upward through the chamber and into sliding engagement with the opening in the top of chamber, the locking shaft having recesses within the chamber, a series of tumblers inter-changeably mounted on a central pivot in the chamber in superposed relation to each other, each tumbler having an operating handle projecting from its outer edge, and the opposite edge projecting in lug formation adapted to be moved into and out of engagement with the adjacent shaft recess, and resilient means supporting the shaft in operative position.

2. In a lock for gasoline engines the combination of a chamber having a side opening therein, oppositely disposed openings in the top and bottom of the chamber, an open tubular casing mounted in the floor opening of the chamber and projected downward, a locking shaft slidably mounted in the casing and projecting upward, through the chamber and into sliding engagement with the opening in the top of the chamber, the shaft having recesses within the chamber, a series of superposed tumblers mounted on a central pivot in the chamber, each tumbler having a sector in its inner edge, reduced in thickness by an under recess and the tumbler edge cut away in diagonal line, forming a clearance space, and thereby producing a projecting curved lug adapted to engage the adjacent recess in the shaft on turning the tumbler to the right, and disengaging from the recess on turning the tumbler to the left, each tumbler having an operating handle projecting from its outer edge through the side opening in the chamber, and a compression spring in the casing supporting the shaft in operative position.

3. In a lock for gasoline engines the combination of a chamber having a side opening therein, oppositely disposed openings in the top and bottom of the chamber, an open tubular casing mounted in the floor opening of the chamber and projecting downward, a locking shaft slidably mounted in the casing and projecting upward through the chamber and into the sliding engagement with the opening in the top of the chamber, the shaft having recesses within the chamber, superposed tumblers pivotally mounted on a central pivot in the chamber, a plurality of said tumblers each having a recess clearance opening in the inner edge thereof, a sector of the tumbler, on each side of the opening reduced in thickness by an under side recess having a base diagonal alinement, and thereby forming projecting lugs adapted to engage an adjacent recess in the shaft on turning the tumbler to the right, or left, and be out of engagement when in central position, and one or more tumblers each having a sector in its inner edge reduced in thickness by an under recess, a diagonal clearance recess let in the inner edge of the tumbler, forming a lug projection adapted to engage the adjacent recess in the shaft, on turning the tumbler to the left, and one or more tumblers each having a sector in its inner edge reduced in thickness, a diagonal clearance recess in the edge of the tumbler producing a lug formation, adapted to engage the adjacent recess in the shaft, when turned to the right, and one or more tumblers each having a projecting lug formation in its inner edge, the lug having sloping sides forming a clearance space, the lug being adapted to engage the adjacent recess in the shaft on turning the tumbler into central alinement with the opening in the chamber, and out of engagement on turning the tumbler to the right or left of said alinement, each tumbler having an operating handle projecting from its outer edge, through the opening in the chamber, and resilient means for supporting the shaft in operative position, within the casing.

In testimony whereof I have affixed my signature.

JOHN H. KESSLER.