F. J. McCALMONT.

LOCKING VALVE.

APPLICATION FILED SEPT. 25, 1920.

1,400,615. **Patented Dec. 20, 1921.**

2 SHEETS—SHEET 1.

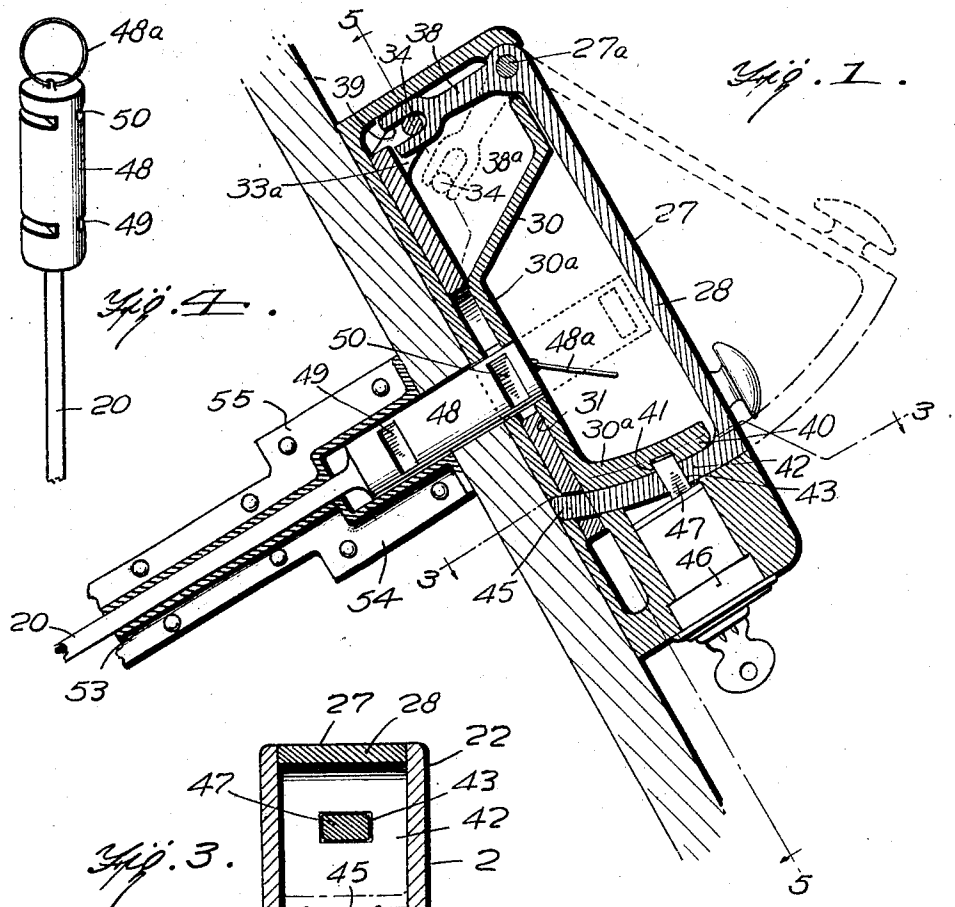


Fig. 1.

Fig. 4.

Fig. 3.

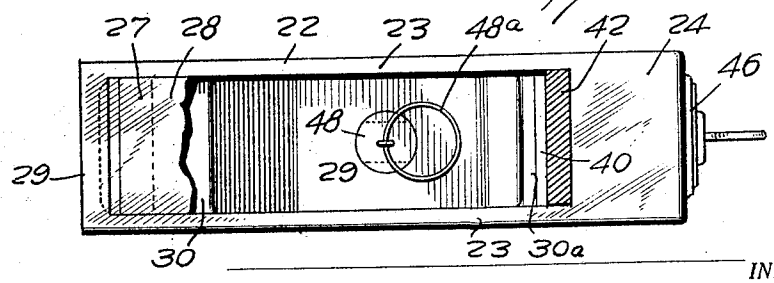


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 5.

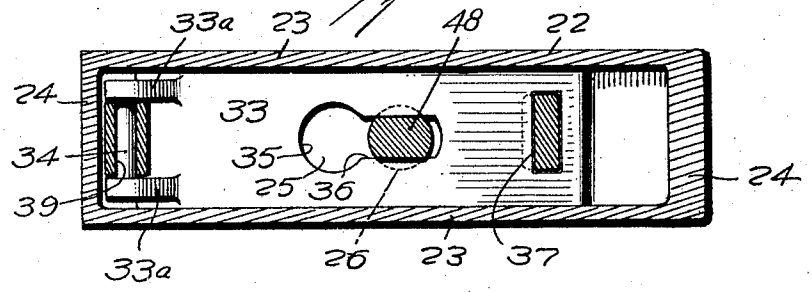


Fig. 6.

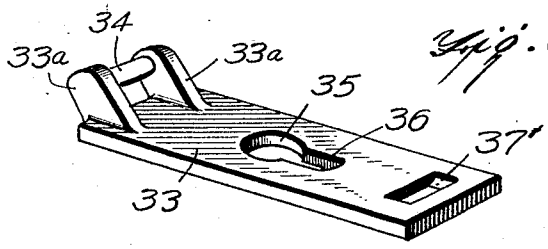


Fig. 7.

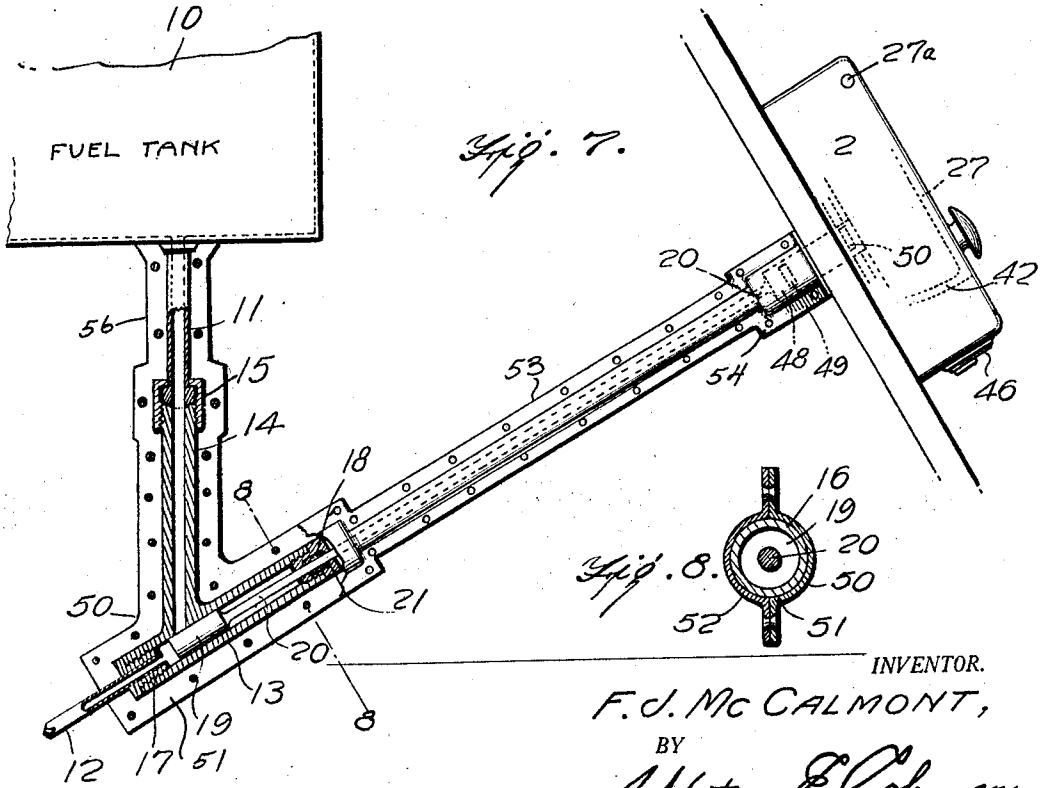


Fig. 8.

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FREDERICK J. McCALMONT, OF DE SMET, SOUTH DAKOTA.

LOCKING-VALVE.

1,400,615. Specification of Letters Patent. Patented Dec. 20, 1921.

Application filed September 25, 1920. Serial No. 412,720.

To all whom it may concern:

Be it known that I, FREDERICK J. McCALMONT, a citizen of the United States, residing at De Smet, in the county of Kingsbury and State of South Dakota, have invented certain new and useful Improvements in Locking-Valves, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in locking valves for the fuel lines of automobiles.

An important object of the invention is to provide a device of this character which is simple in construction and which, when locked, effectually prevents the flow of fuel through the service line.

A further object of the invention is to provide a locking means for valve stems embodying a casing and a shiftable cover for the casing having mechanism connected therewith whereby when the casing is closed the valve stem is locked against movement, the locking of the cover being such that destruction of the cover will not permit shifting of the mechanism to release the valve until the lock is open.

Further objects and advantages of the invention will become apparent throughout the course of the following description.

In the accompanying drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein like reference characters designate like parts throughout:

Figure 1 is a side elevation of a valve lock constructed in accordance with my invention.

Fig. 2 is a plan view thereof, the cover being partly broken away.

Fig. 3 is a section taken on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the valve stem and head.

Fig. 5 is a section taken on the line 5—5 of Fig. 1.

Fig. 6 is a perspective of the locking bar.

Fig. 7 is a side elevation partly in section, showing the construction and arrangement of the valve proper and its associated mechanism, and

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

Referring now more particularly to the drawings the numeral 10 indicates a tank or other source of liquid supply having an outlet pipe 11. The numeral 12 designates the service line which is continued when considered in connection with an automobile to the carbureter.

In accordance with my invention I provide a Y connection 13 having one branch 14 adapted to be removably connected with the outlet pipe 11 of the tank as at 15 and the other branch 16 adapted to be removably connected with the service line 12 as at 17. These connections may take any desired form being either in the shape of a coupling 15 or a threaded connection as illustrated at 17. The point of connection of branch 14 with the branch 16 is intermediate the ends of the branch 16 and the branch 16 has the opposite end thereof from that connected with the service line 12 closed by a plug 18. Slidably mounted in the branch 16 is a cut off valve 19 fitting the bore of the branch 16 slidably. The valve 19 is provided with a stem 20 slidably fitting a bore 21 formed in the plug 18.

A casing 22 is provided having side walls 23 and end walls 24 one of which is relatively thickened for a purpose hereinafter to appear. The casing likewise is provided with a bottom 25 having a bore 26 provided therein. It will be seen that the casing is provided with bottom, side and end walls and normally has an open top. A cover 27 having the form of a bell crank lever, one arm of which 28 forms the cover, is pivotally connected adjacent one end of the casing and adjacent the top thereof intermediate the side walls 23 as at 27^a. This arm 28 forms a closure for the open side of the casing.

Within the casing is mounted a slideway forming member 29 having arms 30 and 30^a extending adjacent the top of the casing, the arm 30 being disposed adjacent the pivot point of the bell crank lever 27. The intermediate portion of the member 29 extends adjacent the bottom of the casing and is spaced therefrom to form a slideway 31 and is provided with an opening 32 alined with the opening 26 formed in the bottom of the casing.

Mounted in this slideway is a member 33 provided at one end thereof with upstanding arms 33^a connected by a cross piece 34. This member is provided with an opening 35 alinable with the opening and of the same breadth as 26 and 32 and this opening 35 communicates with a reduced slot 36 extending longitudinally of the member. The

member is provided adjacent the opposite end thereof from the arms 33ª with an opening 37 for a purpose presently to appear. This member will hereinafter be referred to as the locking bar.

The arm 38 of the bell crank lever 27 projects downwardly into a pocket 38ª formed by the extension 30 and is slotted as at 39 to receive the cross bar 34 of the locking bar 33. It will be seen that when the lever or cover is shifted the locking bar 33 is likewise shifted. The connection between the cover to the locking bar is such that when the cover is fully opened the opening 35 of the locking bar alines with the opening 26 of the bottom of the casing 22. When, however, the cover member is closed the restricted slot 36 is alined with this opening. In fact, this restricted slot comes into alinement with the opening 26 before the casing is completely closed for a purpose presently to appear.

Secured to the upwardly extending portion 30ª of the guideway forming member 29 upon the outer side thereof or upon that side thereof disposed toward the adjacent end of the casing is a member 40 provided with an opening 41. This member is secured to the extension 30ª and the opening thereof combines with the extension 30ª to form a recess for a purpose presently to appear. The free end of the arm 28 of the bell crank lever 27 or of the cover of the casing 22 is provided with a downwardly bent arcuately curved portion 42 adapted to enter the space formed intermediate the member 40 to the end 24 of the casing. This arcuately bent end is provided with an opening 43 which is when the casing is fully closed alined with the recess formed by the opening 41.

The bottom 25 of the casing is provided with an opening 44 alined with the space formed intermediate the member 40 and the adjacent end 24 of the casing. Formed upon the lower end of the arcuate extension 42 is a reduced portion 45 adapted to extend through this opening when the cover is in the closed position. When the cover assumes the closed position the locking bar 33 has the opening 37 alined with the opening 34 and the extension 45 accordingly passes through the opening 37 and through the opening 44 locking the locking bar against movement. In the adjacent end 24 of the casing is jointed a lock 46 embodying a key operated member 47 which when in the locked position extends through the opening 43 of the extension 42 into the recess formed by the opening 41 thus locking the extension against vertical movement. It will be seen that when the cover member is in locked position if the cover member be cut so as to separate it from the extension 43 thereof such cutting will not destroy the locking of the locking bar 33 because of the fact that the extension 45 will remain in engagement with the openings 37 and 44. It will therefore be seen that the only means for releasing the locking bar for shifting are unlocking of the lock or destroying the key operated member 47 thereof.

The stem 20 is provided upon the upper end thereof with a head 48 adapted to extend through the openings 26 and 32 of the casing and be shiftable therein when the opening 35 of the locking bar is alined with these openings. This head is provided upon the upper end thereof with an enlarged ring 48ª by means of which it may be shifted, the ring being preferably of larger size than the head for the purpose of preventing shifting of the head downwardly to such an extent as to prevent its access within the casing. This head is provided with upper and lower grooves 50 and 49, which grooves are so spaced that when the lower groove 49 is alined with the locking bar the valve 19 is positioned to permit flow of liquid from the tank to the service line and when the upper groove 50 is alined with the locking bar 33 such flow is prevented. The valve 19 is, however, not in its lowermost position when the groove 50 is alined with the locking bar for a purpose hereinafter to appear. These grooves form reductions of the head 48 which are sufficiently small in size to be received by the restricted slot 36 of the locking arm.

In order to prevent destruction of the efficiency of my device by cutting of the fuel lines within the Y 13 or by tampering with the stem 20 of the valve 19 I provide a casing 50 formed of some extremely hard substance such as case hardened metal or nickel chrome steel. This casing is formed in two sections 51 and 52 each embodying one half of a socket adapted to receive the Y therein, the sections being provided with flanges which may be secured together in any desired manner, as by riveting. The upper end of the casing 50 is provided with an extension 53 forming a slideway for the valve stem 20 and this extension preferably terminates in an enlarged head 54 engaging the bottom of the casing 22 and provided with an enlarged slideway 55 for the reception of the head 48 of the valve stem 20. The casing 50 is provided with a second extension 56 inclosing the pipe 11 to the tank 10.

In attaching my device to an automobile the casing 20 is preferably placed upon the dash board thereof or some other point convenient to the driver of the vehicle. The Y 13 is connected in the fuel line as thereinbefore described. In the operation of the device when it is desired to drive the vehicle the casing is unlocked and the cover 28 thereof elevated when the ring 48 may be engaged by the fingers to shift the valve to bring the

slot 49 thereof into alinement with the locking bar 33. The casing is now closed causing the metal at the sides of the restricted slot 36 of the locking arm to engage in the groove 49 holding the valve against movement. The casing may be then completely closed and locked if desired. In leaving the vehicle the cover is again elevated to shift the locking bar so that the opening 35 thereof alines with the opening 26 and 32 and after the valve is depressed to aline the groove 50 thereof with the locking bar, the cover may be closed and locked. As hereinbefore explained, cutting of the cover 28 will not in any wise affect the locking of the bar 33 and the extension 30 of the slideway forming member effectually prevents access to the end of the key operated portion member 47 of the lock. The extension 30 of the slideway forming member 29 prevents tampering with the arm 38 of the bell crank 27. It will be seen that when the valve is in the locked position the thickness of the metal of the head 48 above the groove 50 is the same as that of the metal of the slideway forming member and that accordingly the top of the valve is flush with this slideway forming member and thus prevents gripping of the valve. If an attempt is made to open the gas line by forcing the valve head 48 downwardly this will merely result in dropping of the valve still farther downwardly in the bore of the section 16 of the Y 13 still more effectually preventing flow of liquid fuel. The ring 48 is so constructed that sufficient pressure may not be brought to bear thereon to destroy the metal of the locking bar 33 to permit shifting of the valve.

It will also be obvious that the casing 50 and its extension 53 will effectually prevent any tampering with the mechanism exteriorly of the casing.

As many changes in the shape, size, and arrangement of the various parts hereinbefore shown and described might obviously be made without in any manner departing from the scope or spirit of my invention, I do not limit myself to such construction except as so limited by the subjoined claims.

Having now described my invention, what I claim is:

1. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein and a member connected with said cover to be shifted thereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed.

2. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein and a member connected with said cover to be shifted hereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed and to release the valve for movement when the cover is opened.

3. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein a member connected with said cover to be shifted hereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed and to release the valve for movement when the cover is opened and means carried by the cover for locking said member against movement when the cover is closed.

4. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein a member connected with said cover to be shifted thereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed and to release the valve for movement when the cover is opened and means for locking said cover in closed position and means carried by said cover and engaging said member when the cover is in closed position for locking said member against shifting.

5. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein a member connected with said cover to be shifted thereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed and to release the valve for movement when the cover is opened and means for locking said cover in closed position and means carried by said cover and engaging said member when the cover is in closed position for locking said member against shifting, said means carried by the cover being unremovable when the cover is locked in closed position.

6. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein a member connected with

said cover to be shifted thereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed and to release the valve for movement when the cover is opened, said member having an opening formed therein, and an extension carried by said cover and adapted to engage in said opening and lock the member against shifting when the cover is in closed position.

7. In a locking valve the combination with a valve embodying an operating stem adapted when shifted in one direction to close the valve, of a casing having one open side and a shiftable cover, said valve stem extending within said casing and being shiftable therein a member connected with said cover to be shifted thereby and adapted to engage said valve stem to prevent movement thereof in either direction when the cover is closed and to release the valve for movement when the cover is opened, said member having an opening formed therein, an extension carried by said cover and adapted to engage in said opening and lock the member against shifting when the cover is in closed position and a locking member for said cover adapted to engage said extension.

8. The combination with a valve adapted to be shifted to opened and closed positions and a stem for said valve, of a casing into which the end of said stem slidably extends, said casing being provided with one open side, a pivotally mounted closure for the open side of said casing a bar shiftable within the casing and adapted to engage the stem of said valve to prevent shifting thereof when in one position and to free the valve to permit shifting thereof when in the other position, means connecting said bar and closure whereby said bar is moved to the first named position when the closure is closed and to the second named position when the cover is opened and means for locking said closure in closed position.

9. The combination with a valve adapted to be shifted to opened and closed positions and a stem for said valve, of a casing into which the end of said stem slidably extends, said casing being provided with one open side, a closure for the open side of said casing, a closure actuated member adapted to engage said stem to prevent shifting thereof when the closure is in the closed position and to release the stem for movement when the closure is opened, a locking part adapted to engage the cover to prevent movement thereof when in closed position and a member carried by said cover adapted to engage said closure operated member to prevent shifting thereof when said locking part is engaged with said cover.

10. The combination with a valve adapted to be shifted to open and closed positions of a casing having a cover adapted to be shifted to opened and closed positions, means operatively connecting said cover and said valve for locking the valve in open or closed position when the cover is in the closed position, and means for locking said cover in closed position.

11. The combination with a valve adapted to be shifted to open and closed positions of a casing having a cover adapted to be shifted to opened and closed positions, means operatively connecting said cover and said valve for locking the valve against shifting when the cover is in the closed position, including a portion of said cover adapted to be engaged by said locking means, said portion being adapted to engage the means operatively connecting said cover and valve to prevent operation thereof while said portion is engaged by said locking means.

In testimony whereof I hereunto affix my signature.

FREDERICK J. McCALMONT.