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MEANS FOR CONTROLLING THE ESCAPE OF FLUID FROM TANKS.

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1,069,427. Patented Aug. 5, 1913.

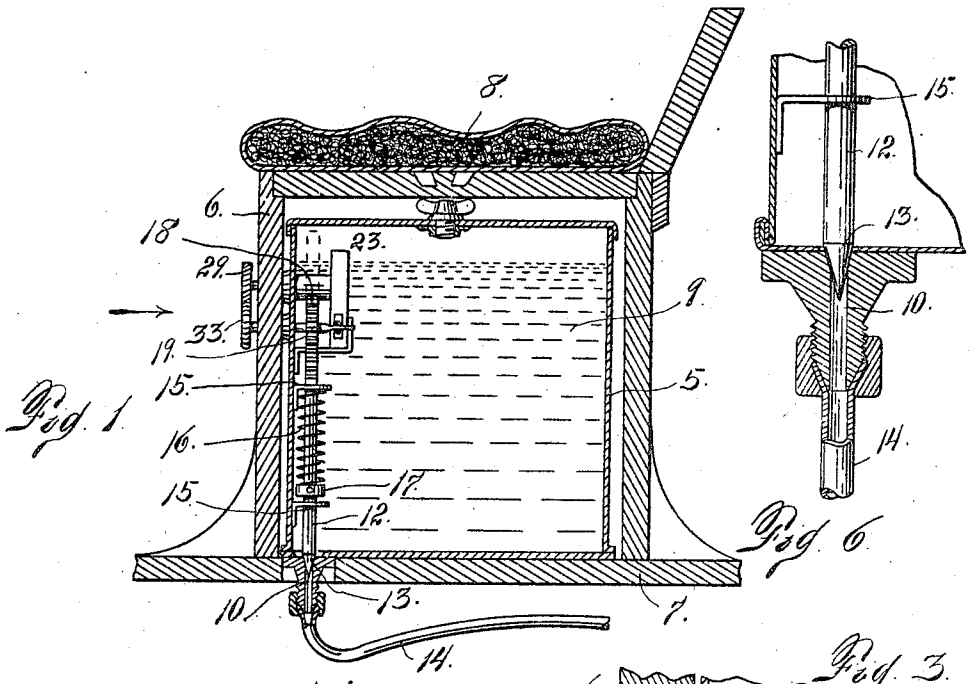

Fig. 1

Fig. 6

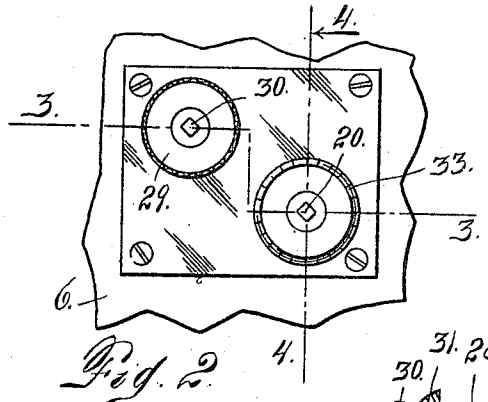

Fig. 2

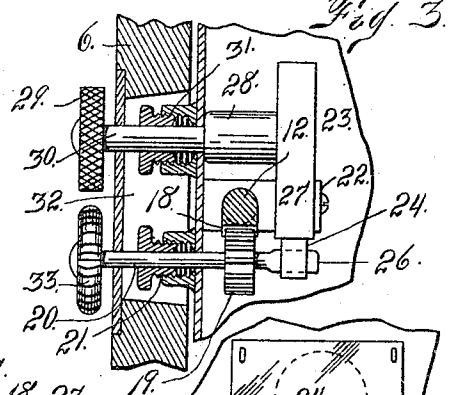

Fig. 3.

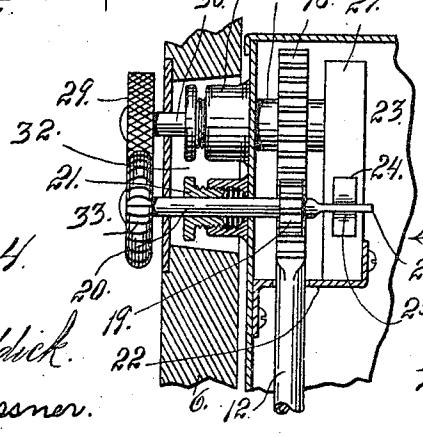

Fig. 4.

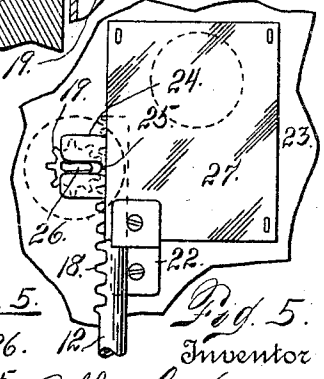

Fig. 5.

Witnesses

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MEANS FOR CONTROLLING THE ESCAPE OF FLUID FROM TANKS.

1,069,427. Specification of Letters Patent. Patented Aug. 5, 1913.

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To all whom it may concern:

Be it known that I, ALLAN G. HURDMAN, a subject of Great Britain, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Means for Controlling the Escape of Fluid from Tanks; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in means for controlling the escape of fluid from tanks, and is more especially intended for use in connection with the gasolene tank of automobiles, my object being to make it practically impossible after stopping the machine, for an unauthorized person to start it, by reason of the fact that the valve regulating the flow of gasolene to the carbureter is locked in the closed position by means of a lock which cannot be opened except by an authorized person. I prefer to employ a keyless combination lock, the knob of which is exposed, and can be readily manipulated by a person who understands the combination.

The object of this invention is the same as that set forth in my previous application, Serial Number 527,735, filed November 12th, 1909. The specific construction, however, is different and may be considered an improvement over the construction disclosed in the aforesaid application.

Having briefly outlined my improved construction, I will proceed to describe the same in detail, reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing: Figure 1 is a vertical cross section taken through the gasolene tank of an automobile, the tank as illustrated in this view being located underneath one of the seats of the machine. Fig. 2 is a fragmentary front view looking in the direction of the arrow in Fig. 1, the parts being shown on a larger scale. Fig. 3 is a horizontal section taken on the dotted line 3—3, Fig. 2, the section being taken at two different levels. Fig. 4 is a vertical section taken on the line 4—4, Fig. 2, looking in the direction of the arrow adjacent said line. Fig. 5 is a fragmentary view taken from the interior of the tank, being a view looking in the direction of arrow 5, Fig. 4. Fig. 6 is a fragmentary sectional view taken vertically through one corner of the tank cutting the valve seat through which the fluid escapes from the tank, the parts being shown on a larger scale than in Fig. 1.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate a gasolene tank, which as shown in the drawing is surrounded by an outer casing 6 resting on a platform 7 of the machine, and forming a support for a seat 8 thereon. It is evident, however, that the tank may be located on any desired part of the machine. This tank contains a quantity of gasolene 9 adapted to escape from the tank through an outlet opening 10 controlled by a needle valve 12, whose lower extremity is cone-shaped as shown at 13. The liquid after leaving the tank, enters a pipe 14, from which it passes to the carbureter (not shown).

The valve or rod engages openings formed in guide brackets 15 secured to the inner wall of the tank on one side. A coil spring 16 surrounds the rod, its upper extremity engaging one of the brackets 15, while its lower extremity bears against a stop 17 vertically adjustable on the rod for regulating the tension of the spring, which normally acts to hold the valve in its seated position. The upper portion of the valve rod is toothed or cogged as shown at 18, and with this toothed portion meshes a pinion 19 fast on a spindle 20 which passes through an opening formed in the wall of the tank and through a stuffing box 21 forming a fluid-tight joint around the spindle whereby the escape of liquid from the tank is prevented.

When the spindle 20 is free to rotate, the valve rod may be raised and lowered at pleasure. The object of my invention, however, as heretofore outlined, is to lock this rod against movement when the valve is in the closed position, to prevent an unauthorized person from using the machine, by reason of his inability to supply the carbureter with gasolene.

Mounted upon an angle bracket 22 projecting into the tank, is a lock 23 having a

bolt 24 whose outer extremity is slotted as shown at 25 to engage the flattened extension 26 with which the spindle 20 is provided. This extension of the spindle protrudes into the tank sufficiently to lie within the path of the bolt 24 when the latter is thrown to the locking position.

The mechanism within the casing 27 of the lock may be of any suitable construction. It is assumed, however, that this mechanism is controlled by the tumblers of a suitable combination lock 28 adapted to be manipulated by a knob 29 protruding beyond the outer casing 6 surrounding the gasolene tank. If we assume that the valve is seated to prevent the escape of gasolene from the tank, it may be assumed that the valve rod is in the position shown in Figs. 1 and 5. In this event the valve rod is in its lowermost position and the person in charge of the machine, will operate the knob 29 to throw the bolt 24 into engagement with the flattened extension 26 of the valve-operating spindle 20. He will then throw off the combination by manipulating the knob in the usual manner. In this event it will be impossible for an unauthorized person to open the valve, since this can only be accomplished by rotating the spindle 20, but this is locked against rotation since the bolt 24 when thrown to the locking position causes the flattened extension 26 to closely engage the slot 25 in the protruding extremity of the bolt. Hence an evilly disposed person is prevented from stealing the machine because he cannot operate it.

Attention is called to the fact that the spindle 30 upon which the knob 29 is mounted, passes through a stuffing box 31 located in a recess 32 formed in the outer casing 6 surrounding the tank 5. This stuffing box as well as the stuffing box 21 through which the spindle 20 passes, makes the tank absolutely fluid tight where the combination lock spindle passes through its wall.

In order to open the valve, it will be first necessary for the person who knows the combination to the lock, to operate the combination by properly manipulating the knob, and then withdraw the bolt 24 into the casing whereby the flattened extension 26 of the spindle 20 is released. The valve may then be opened by turning the spindle 20 which is equipped with an exposed operating head 33, until the valve is raised above its seat. During this operation the spring 16 is placed under tension and has a tendency to return the valve to its seat. However, as soon as the valve is opened, the knob 29 is manipulated to throw the bolt 24 into engagement with the flattened extension 26, whereby the valve is locked in the open position.

An important feature of my present construction consists in the fact that the locking mechanism is located entirely within the tank, thus making it impossible for an evilly disposed person to gain access thereto for purposes of manipulation, without practically destroying the tank.

Having thus described my invention, what I claim is:

1. The combination with a tank, of a valve concealed therein for controlling the liquid escape opening with which the tank is provided, the said valve being provided with a stem having a toothed portion, a spindle carrying a pinion engaging the teeth of the said stem, the spindle having an exposed portion for manipulating purposes, and means located within the tank, but operable from the outside thereof, for locking the spindle against turning when the valve is properly adjusted, substantially as described.

2. The combination with a liquid-containing tank having an escape opening, a valve for controlling the said opening, the valve having a stem having a toothed portion within the tank, a pinion engaging the teeth of the stem, a spindle upon which the said pinion is mounted, the spindle having a manipulating head protruding beyond the tank, and a lock located within the tank, but operable from the outside thereof, for securing the spindle against turning when the valve is properly adjusted substantially as described.

3. The combination with a tank having an escape opening, of a valve adapted to close the opening of said tank, a valve-operating device within the tank having an exposed portion protruding beyond the tank, and a lock located within the tank, but operable from the outside thereof, for securing the valve-operating device against movement when the valve is properly adjusted, substantially as described.

4. The combination with a fluid-containing tank having an escape opening, a valve for controlling the escape of fluid from said opening, the valve having a stem provided with teeth within the tank, a spindle having a pinion fast thereon engaging the teeth of the stem, a part of the spindle protruding from the tank for manipulating purposes, a lock located within the tank and provided with a bolt, the spindle having a portion lying within the path of the bolt when thrown to the locking position, and means operable from the outside of the tank for manipulating the bolt to throw the latter into engagement with the spindle to prevent the movement of the latter when the valve is properly adjusted, substantially as described.

5. The combination with a fluid-containing tank having an escape opening, of a valve for controlling said opening, the valve being provided with a toothed rod within the tank, a spindle having a pinion fast

thereon engaging the teeth of the rod, the spindle being operable from the outside of the tank, a lock located within the tank and having a bolt whose free extremity is slotted, the spindle having a flattened extension lying in the path of the slot of the bolt when the latter is thrown to the locking position, and means operable from the outside of the tank for manipulating the bolt, substantially as described.

6. The combination with a tank having an escape opening, of a valve adapted to close said opening, a valve operating device within the tank, and a lock within the tank, but operable from the outside thereof for securing the valve operating device against movement.

7. The combination with a tank having an escape opening, of a valve adapted to close the opening in the tank, and a lock located within the tank and connected in operative relation with the valve, the lock being operable from the outside of the tank.

In testimony whereof I affix my signature in presence of two witnesses.

ALLAN G. HURDMAN.

Witnesses:
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