Dec. 27, 1927. 1,654,095

F. F. RIKE

FILL BOX

Filed Jan. 14, 1927 2 Sheets-Sheet 1

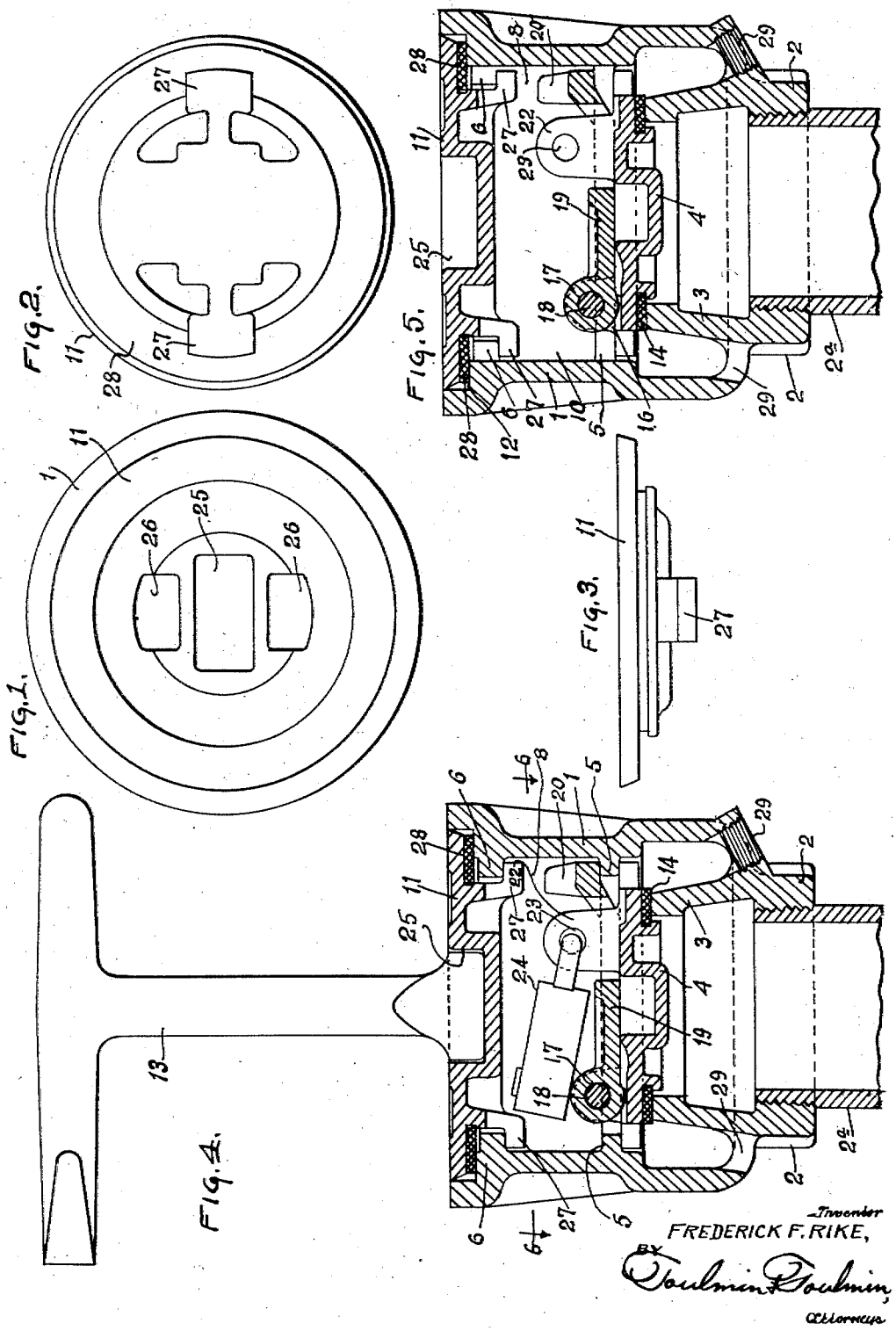

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Fig. 6.

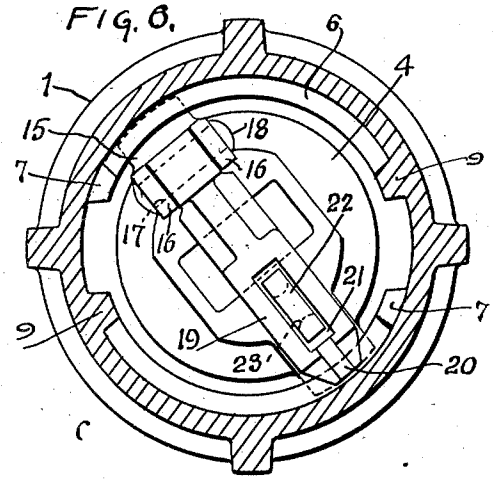


Fig. 7.

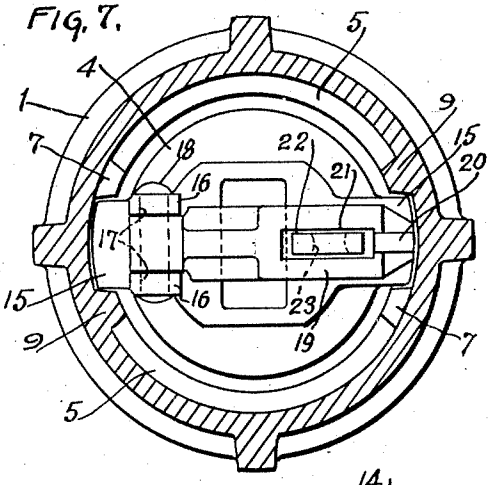


Fig. 8.

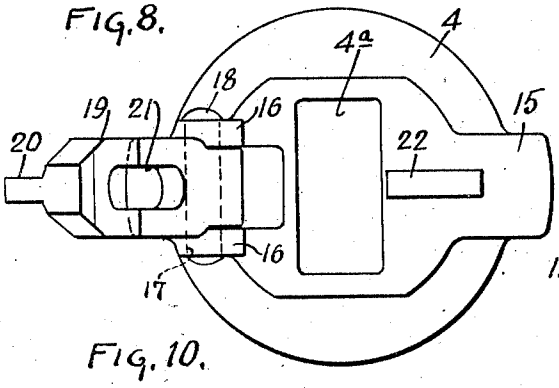


Fig. 9.

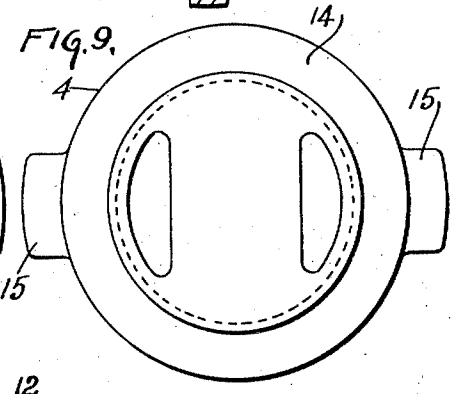


Fig. 10.

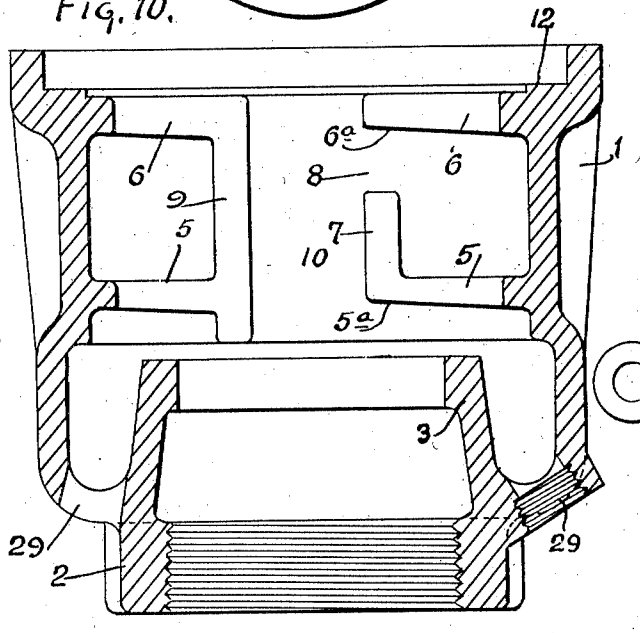
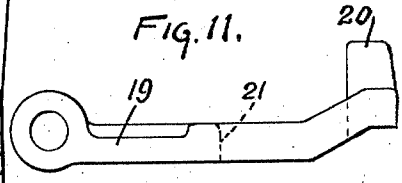


Fig. 11.



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Patented Dec. 27, 192 1,654,095

UNITED STATES PATENT OFFICE.

FREDERICK F. RIKE, OF DAYTON, OHIO, ASSIGNOR TO BUCKEYE IRON AND BRASS WORKS, OF DAYTON, OHIO, A CORPORATION OF OHIO.

FILL BOX.

Application filed January 14, 1927. Serial No. 161,198.

This invention relates to improvements in fill boxes for use in connection with supply tanks for gasoline or other liquids.

The object of the present invention is to provide a fill box of this character with a cover substantially flush with the top of the box so that it will not present any obstruction to the passage of vehicles and a locking member or cap located within the box to prevent access to the tank in case the cover is removed by unauthorized persons.

A further object of the invention is to provide means for making the connection between the cover and the box water tight and a like connection between the interlocking member and the box to prevent the entrance of water into the tank and the vaporization of the contents of the tank.

A further object of the invention is to provide means for draining from the box any water that might enter the box should the cover be inadvertently left off or when it is removed for filling the tank.

In the accompanying drawings:

Figure 1 is a top plan view of my improved fill box;

Figure 2 is a bottom plan view of the cover therefor;

Figure 3 is a side elevation of said cover;

Figure 4 is a vertical sectional view showing the top cover and interior locking device in clamping positions, with the wrench for turning the cover in elevation;

Figure 5 is a like section showing said parts in unclamping positions;

Figure 6 is a cross sectional view, taken on the line 6—6 of Figure 4, showing the locking device in clamping position;

Figure 7 is a like view showing the locking device in unclamped position;

Figure 8 is a top plan view of the interior locking cap;

Figure 9 is a bottom plan view of the same;

Figure 10 is a central vertical section through the casing illustrating the interior construction thereof; and

Figure 11 is a side elevation of the locking bar on the interior cap.

In the drawings, 1 indicates the casing, open at the top and bottom, the lower end being reduced in circumference, as shown at 2, and internally threaded to receive the screw threaded end of a pipe 2^a adapted to deliver liquid to a container located a considerable distance below the surface of the ground. Extending upwardly from the lower reduced portion 2 is an inner wall 3 substantially parallel with the outer casing 1. The wall 3 terminates about midway of the casing and serves as a support for a locking member or cap 4 hereinafter fully described. Above the walls 3 on the interior of the casing 1 are a plurality of horizontal and vertical ribs. Adjacent the wall 3 are two horizontal ribs 5 and above these ribs and adjacent the top of the casing are two horizontal ribs 6. In Figure 10 I have shown adjacent ends of these ribs and it will be understood that the construction of the other ends is identical. Each of these ribs has its under surface cammed, as shown at 5^a and 6^a, respectively, and extending upwardly from one end of each lower rib 5 is a vertical rib 8, terminating at a point sufficiently removed from each upper horizontal rib 6 to provide an opening 8 therebetween. This location of the ribs forms oppositely disposed guideways 10 and stops to limit the movement of portions of the fill box, as will hereinafter appear.

The casing 1 is also provided with an interior flange 12 which provides a seat for a cover 11 being located just far enough from the top of the casing so that when the cover is in position it will be flush with the top edge of the casing.

Referring more particularly to the locking cap 4, it consists of a casting having in its upper surface a groove 4^a adapted to receive a wrench 13 by which the cap may be turned to clamping and unclamping positions, the under surface of the cap being provided with a gasket 14 which rests on the top of the wall 3 and provides a seal between said cap and wall to prevent entrance of water into and vaporization of gasoline from the container, in connection with which my improved fill box is adapted to be used. This cap is further provided with oppositely disposed lips 15 adapted to engage the cam surfaces of the lower horizontal ribs 5 when the cap is moved in a clockwise direction on the support 3 to place it in clamping position ready to be locked against removal by unauthorized persons. The cap 4 is further provided with standards 16 having openings 17 to receive a bolt

18 for hinging a locking bar 19 to the cap. This bar 19 has an upstanding lug 20 at its free end and an elongated opening 21 adapted to pass over a standard 22 on the cap 4, said standard having an opening 23 through which may be passed any suitable lock 24. When the cap is moved to clamping position with the lips 15 in engagement with the cam surface of the ribs 5 the locking bar must be raised or placed at substantially right angles to the cap to permit the wrench 13 to be inserted in the opening 4^a and to prevent the free end of the locking bar from engaging the rib 7 and prohibit the turning of the cap. However, when the cap is in clamping position then the locking bar is lowered until it rests on the cap and held in such position by the lock 24. When thus locked the free end of the locking bar will engage the rib 7 in case an unauthorized person attempts to move the cap to unclamping position.

Referring now to the cover 11 it consists of a casting having a groove 25 in the top thereof to receive the wrench 13 to turn it to clamping and unclamping position when seated on the flange 12. On each side of the center groove 25 is a groove 26 to facilitate handling the cover when inserting or removing it.

Projecting downwardly from the underside of the cover are L-shaped projections 27 oppositely disposed and adapted to pass through the openings 8 and engage the cam surfaces of the ribs 6 to form a wedging fit therebetween when the cover is turned in a clockwise direction to clamping position on its seat 12 and cooperate with the vertical ribs 9 to limit the movement of the cover in the other direction ready for removal. The cover is also provided with a gasket 27 which rests on the flange 12 to form a water tight joint and prevent the entrance of water into the fill box.

However, in case any water should accidentally get into the box, I have provided openings 29 in the lower part of the casing to permit the drainage thereof. It is sometimes desirable to convey any such water to a point removed from the box. To this end one or more of the openings may be screw threaded to receive the screw threaded end of a pipe or coupling.

Assuming that the box is attached to a pipe extending from a gasoline tank to a point near the ground surface, with the top of the casing level with the ground, the locking cap is first inserted by placing its oppositely disposed lips over the passageways 10 and lowering it onto its seat formed by the supporting wall 3. The locking bar is then lifted and the cap turned in a clockwise direction, preferably by the wrench 13, until the lips 15 are wedged against the cam surfaces of the lower horizontal ribs 5. The locking bar is then lowered and the lock 24 passed through the opening 23. When the cap is thus locked, the vertical ribs 7 prevent the cap from being moved to its unclamping position should anyone succeed in loosening the wedging action between the horizontal ribs and lips. After the cap is thus locked the cover 11 may then be inserted and likewise turned to clamping position by the wrench.

From the foregoing description, it will be seen that I have provided a fill box which will offer no interference to the passage of vehicles; which will prevent access to the interior of a supply tank by unauthorized persons; and which will be sealed against the entrance of water and the vaporization of the liquid when in assembled locked position.

It will be understood that I desire to comprehend within my invention such modifications as may be necessary to adapt it to varying conditions of use falling within the scope of the appended claims.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a fill box of the character described, the combination with a casing open at the top and bottom, said casing having an upstanding portion on the interior thereof constituting a supporting wall, and vertical and horizontal ribs on the interior of said casing above said supporting wall, of a cap adapted to be seated on said supporting wall and having lateral extensions to engage the lower surfaces of the horizontal ribs, a standard secured to said cap, a bar hinged at one end to said cap and having an opening to receive said standard, the free end of said bar fashioned to extend above the horizontal ribs when the lateral extensions on the cap are therebeneath and abut against the vertical ribs when in horizontal or locking position, and a lock carried by said standard to maintain the bar in horizontal position, in which position of the parts the horizontal ribs prevent the movement of the cap in one direction beyond a certain point and the vertical ribs prevent the movement of the cap in the opposite direction, thereby preventing the removal of the cap by unauthorized persons.

2. In a fill box of the character described, a sealing cap having lateral projections and a standard extending upwardly therefrom, said standard having an opening to receive a lock, of a bar hinged at one end to said cap and having an opening through which said standard extends, the free end of said bar lying in a plane beyond and above the upper surface of said cap.

3. In a fill box of the character described, a sealing cap having lateral projections and a standard extending upwardly therefrom,

said standard having an opening to receive a lock, of a bar hinged at one end to said cap and having an opening through which said standard extends, the free end of said bar lying in a plane beyond and above the upper surface of said cap, said cap having a recess to receive a tool for turning it.

4. In a fill box of the character described, the combination with a casing open at the top and bottom, a cover for said casing, means for supporting said cover so that the upper surface thereof is substantially flush with the upper edge of the casing, a supporting wall within said casing and formed integral therewith, and vertical and horizontal ribs on the interior of said casing above the supporting wall, of a cap adapted to be positioned on said supporting wall having a standard on the upper face thereof provided with an opening, a locking bar hinged to said cap and having a slot, gaskets for sealing the connection between said casing and supporting wall, projections on said cap for wedgingly engaging the horizontal ribs on the casing adjacent to the supporting wall as the cap is turned to clamping position, the free end of the locking bar fashioned to extend above the horizontal ribs engaged by the extensions on the cap when in horizontal position, and a lock carried by said standard to maintain the parts in sealing condition, the vertical ribs on the interior of the casing serving to limit the movement of the cap, and also forming passageways to guide the cap to and from its seat.

In testimony whereof, I affix my signature.

FREDERICK F. RIKE.