

Oct. 22, 1935.

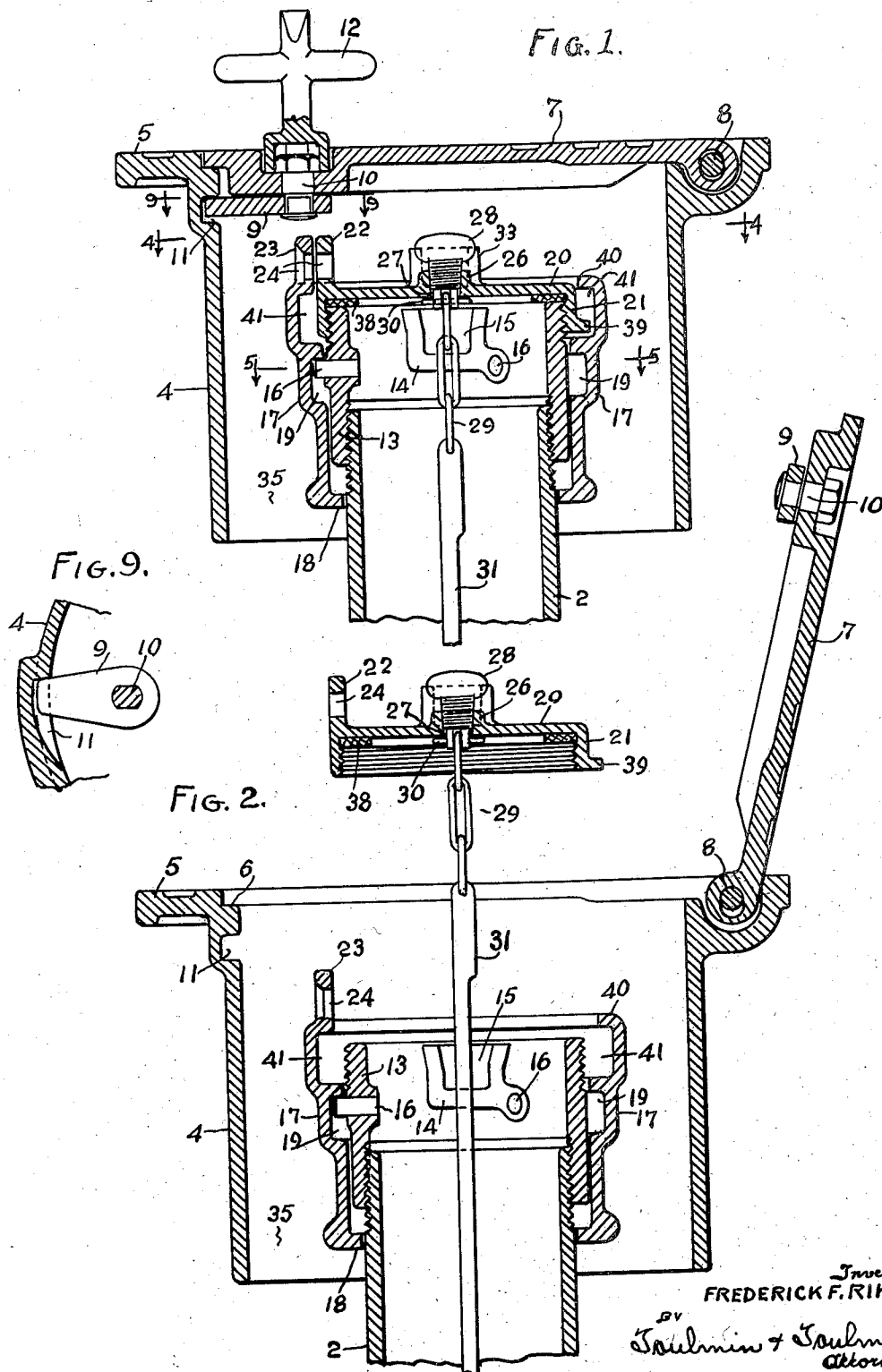
F. F. RIKE

2,018,534

FILL PIPE CAP

Filed May 25, 1934

3 Sheets-Sheet 1



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FILL PIPE CAP

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FIG. 3.

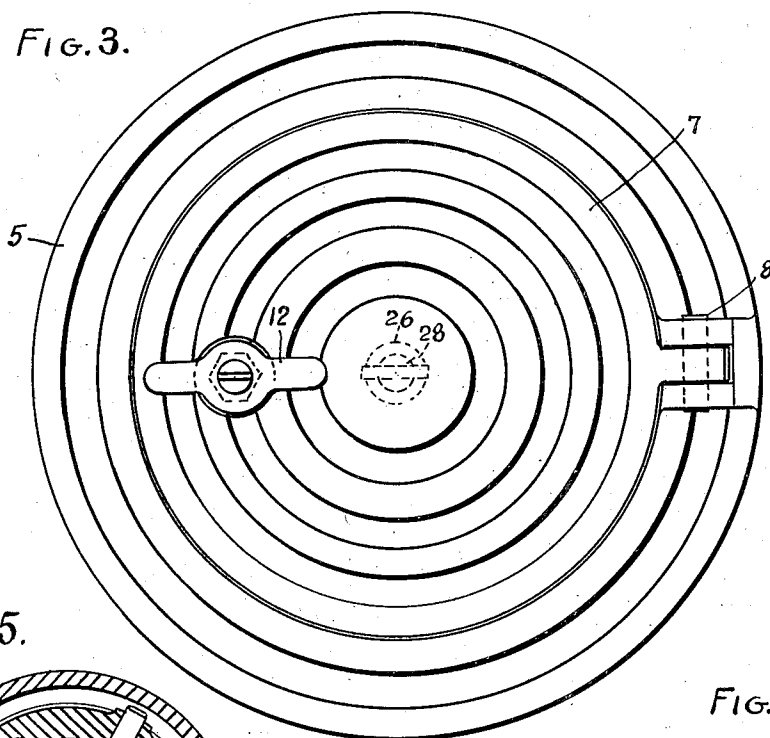


FIG. 5.

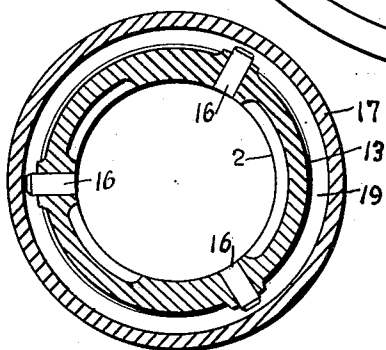


FIG. 4.

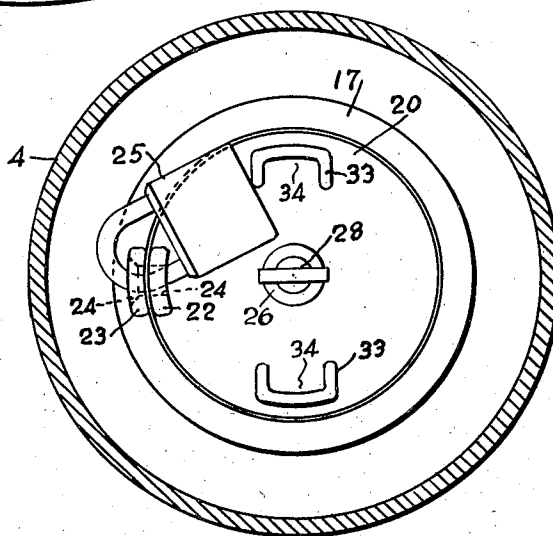
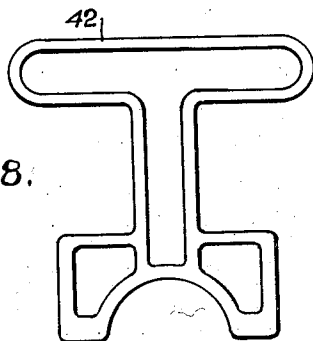


FIG. 8.



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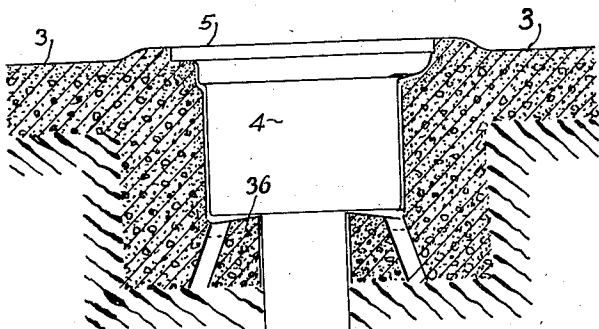


FIG. 6.

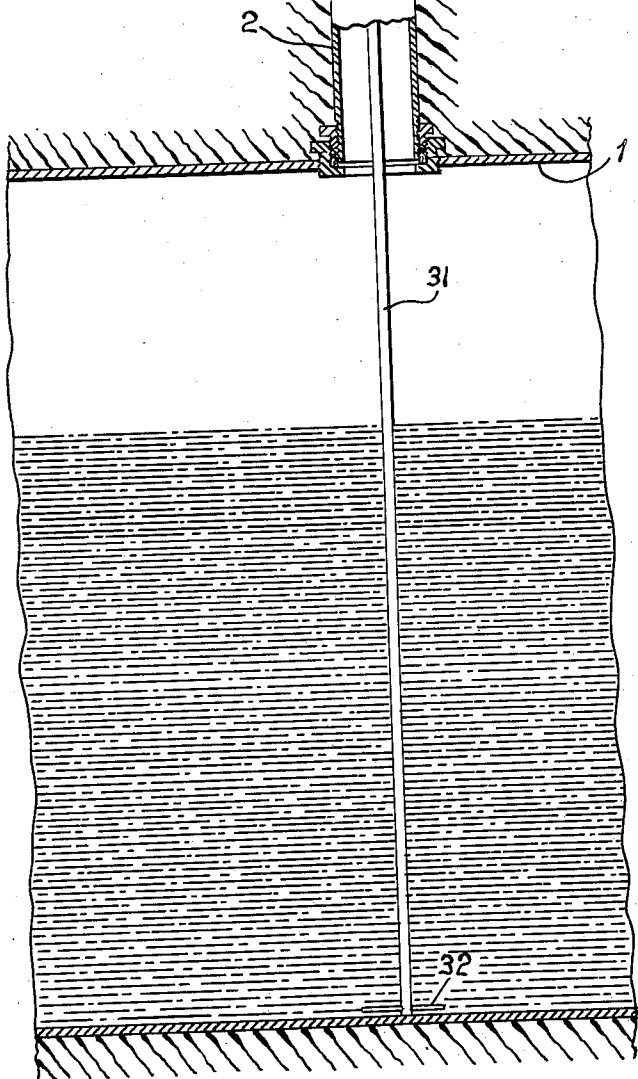
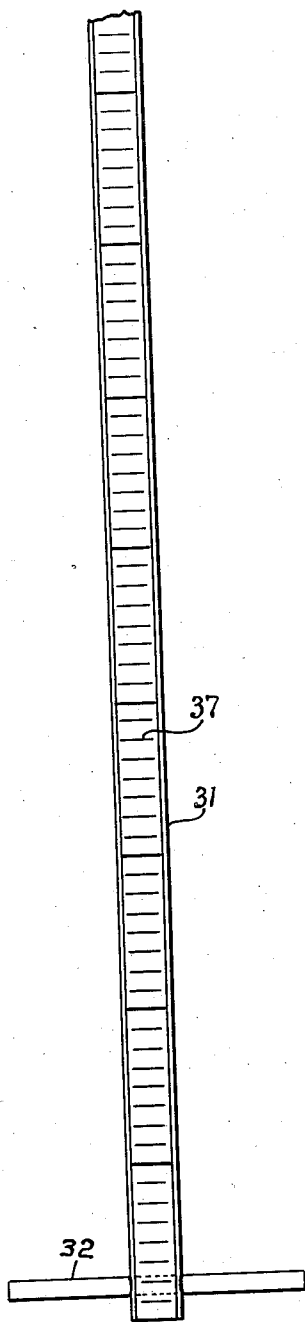


FIG. 7.



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2,018,534

FILL PIPE CAP

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Application May 25, 1934, Serial No. 727,512

9 Claims. (Cl. 220—86)

This invention relates to improvements in closures for spouts, tubes or pipes, and has for its object to provide a closure that cannot be manipulated by an unauthorized person or by a person who has not the implements by which the closure may be opened or closed.

It is particularly the object of this invention to provide a closure for pipes used in connection with the sale of gasoline, and has for its object to provide a closure for such a pipe that cannot be removed except by the person who is to refill or supply gasoline to the tank.

It is an object of this invention to provide, in connection with a gasoline tank inlet pipe, means for closing the end of the pipe, and a protector for the closing means which provides a trap for water so that it may be absorbed by the soil and removed from the pipe closure.

These and other advantages will appear from the following description taken in connection with the drawings.

Referring to the drawings:

Figure 1 is a vertical section through the upper end of the tank pipe and the closure therefor embedded in concrete shown in section.

Figure 2 is a view similar to Figure 1 but with the lid open and the spout closure removed.

Figure 3 is a top plan view of the lid for covering the upper end of the pipe and its closure.

Figure 4 is a section on the line 4—4 of Figure 1.

Figure 5 is a section on the line 5—5 of Figure 1.

Figure 6 is a section showing a part of the tank, the pipe connected thereto, and a gauge rod for determining the quantity of gasoline within the tank.

Figure 7 is a view showing the gauge rod with the markings thereon.

Figure 8 shows a key for removing the cap on the end of the spout or pipe.

Figure 9 is a section on the line 9—9 of Figure 1.

The present cap structure is adapted to be used in connection with various forms of pipes and spouts for closing them, but is shown in use in connection with a gasoline tank, which is indicated by the numeral 1, and has thereon extending upwardly a pipe 2. These two members are embedded in the ground, which has over it a bed of concrete 3, provided with an opening or hole or pit to receive a casing 4 having lateral flanges 5 that rest in a seat provided therefor in the upper surface of the layer of concrete (Figure 6).

The upper end of the casing, which in the

present instance is cylindrical, has a seat 6 for receiving and seating a lid 7 pivoted at one side by means of a pivot 8 (Figure 1). On the side of the lid opposite the pivot is a latch member 9, in the form of a bar, connected at one end to a stem 10 which extends through the lid and is operated by means of a suitable key member 12. The other end of the latch is adapted to fit in a slot 11 formed in the inner surface of the casing. This slot is so formed that by moving the latch in one direction it will engage the casing wall in the slot and be stopped by the material of the casing at one end of the slot.

On the upper end of the pipe or spout a ring 13 is threaded by means of threads on one end of the ring. On the interior of this ring is a pair of oppositely disposed U-shaped ribs 14, which provide seats 15 for receiving a key, such as shown in Figure 8, for rotating the ring to thread it on the upper end of the pipe or thread it off the pipe. This ring has intermediate its ends pins or projections 16 which extend outwardly from the ring and project into a groove 19 formed in a sleeve 17, loosely fitting over the ring and the upper end of the pipe. The ring, in fact, forms the upper removable end of the pipe and for all purposes may be considered a part of the pipe.

The lower end of the sleeve is bent inwardly to form a flange 18, which closely fits around the outer surface of the pipe 2, beneath the ring 13. The upward movement of the sleeve may be limited both by the flange 18 and by the pins 16 engaging the surface of the sleeve at the lower edge of the groove 19. The sleeve and the ring may be formed of cast iron. The pins preferably are made of some non-corrosive material, such as Monel metal. The upper end of the pipe is closed by means of a cap 20, preferably made of brass, and provided with peripheral flanges 21 adapted to be threaded onto the other end of the ring.

On one side of the cap is a perforated lug 22, while on the sleeve there is a perforated lug 23. The perforations or holes in these lugs are indicated by the numeral 24. These holes, by properly positioning the cap and the sleeve, may be in alignment and when so aligned a lock member 25 is adapted to pass through the holes 24 to hold the cap and the sleeve against rotation one with respect to the other.

On the central part of the cap is a boss 26, which has extending through it and the cap a hole 27. For closing this hole there is provided a winged inner threaded plug 28, preferably

made of brass or some other suitable material. To the lower end of this plug one end of a short chain 29 is attached by means of a cotter pin 30. To the lower end of this chain is attached one end of a gauge rod 31, which has on its other or lower end a pin 32 to prevent the gauge rod from being removed from the tank so long as the cap is in position on the spout.

On the upper surface of the cap is a pair of oppositely disposed U-shaped projections 33 which provide seats 34 for receiving a key member, such as shown in Figure 8. This key member is for the purpose of rotating the cap with relation to the tube and ring, and is also used for removing the ring from the pipe or placing the ring upon the pipe. The upper end of the pipe and the closure instrumentalities therefor do not entirely fill the cylindrical casing 4 but leave an annular space 35 (Figure 6) which serves to trap or catch any water that might pass between the lid 7 and the top of the casing 4. The bottom of this space has therein sand or other porous soil 36 so that the water trapped therein may easily escape. By this means the upper end of the spout or pipe is protected from water.

The graduations 37 on the rod 31 (Figure 7) are for the purpose of indicating the amount of liquid, such as gasoline, within the tank. The cap is provided with a gasket 38 adapted to engage the upper surface of the ring to form a close airtight and gas-proof connection so that the gasoline within the tank may not vaporize and escape. The cap opposite the lug 22 is provided with a lug 39 adapted to engage a flange 40 on the upper end of the sleeve 17. This flange forms with the adjacent parts of the sleeve a groove 41 immediately above the groove 19, in which the pins 16 work. The key 42 for moving both the ring and the cap is the same, and is shown in Figure 8.

The key 42 for operating these members is in the possession of the man in charge of the delivery truck tank. No other person is supposed to have one of these keys. By this means the boot-legging of gasoline is prevented. No gasoline can be supplied to the tank except by the person in charge of the key. If the cap be threaded off of the upper end of the pipe or spout it cannot be entirely removed therefrom because of the engagement of the pins with the sleeve and because of the lugs 22 and 23 being locked together, and because of the engagement of the lug 39 with the flange 40. When the lock, which is intended to hold the perforated lugs 22 and 23 together, is removed the cap may be rotated by an instrument such as that shown in Figure 8. This rotation will ultimately remove the cap from the upper end of the tube or spout, and the cap can then be removed from the sleeve 17 by raising the lug side thereof so that the part 39 can pass by the flange 40.

No gasoline can be supplied to the tank through the hole in the cap provided for the plug 28 because, in the first place, this hole is small; just large enough for the chain 29 and the gauge rod 31 to pass through it, and second, because these members can not be removed from the cap, and either the chain, the gauge rod or the plug is always in the hole provided for the plug so it would be impossible to supply any gasoline to the tank through this hole except in a very small quantity, which would be wasteful.

While the upper end of the pipe and the closure instrumentalities therefor are shown beneath the upper surface of the ground or concrete flooring thereon, the pipe may project above the ground

and the same closure instrumentalities be applied thereto. As shown in the drawings, no obstruction is presented to any vehicle passing over the top of the spout or any part of the tank structure.

It will be understood that I desire to comprehend within my invention such modifications as come within the scope of my claims and my invention.

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

1. In combination with a tank, a filler pipe therefor, a cap adapted to close the pipe, a sleeve rotatably mounted on the pipe, means extending between said pipe and the interior only of said sleeve for securing said sleeve against unauthorized removal, and locking means adapted to be attached to the cap to prevent the removal of the cap from the pipe.

2. In combination with a tank, a filler pipe with outwardly directed projections thereon, a cap to close the pipe, an interiorly recessed sleeve rotatably mounted on the pipe, said projections extending between said pipe and the interior of said sleeve for securing said sleeve to said pipe against unauthorized removal therefrom, and locking means adapted to be attached to the cap to prevent the removal of the cap from the pipe.

3. In combination with a tank, a filler pipe therefor, a ring on said pipe, a cap adapted to be threaded on the ring to close it, a sleeve loosely mounted on the pipe and surrounding the ring, means extending between said ring and the interior only of said sleeve for securing said sleeve to said ring against unauthorized removal therefrom, and locking means to attach the cap to the sleeve whereby to prevent the unauthorized removal of the cap from the pipe.

4. In combination with a tank, a filler pipe therefor, a ring on said pipe, a cap adapted to be threaded on the ring to close it, a sleeve loosely mounted on the pipe and surrounding the ring, means extending between said ring and the interior only of said sleeve for securing said sleeve to said ring against unauthorized removal therefrom, and locking means to attach the cap to the sleeve whereby to prevent the unauthorized removal of the cap from the pipe, said ring having projections on the interior thereof adapted to engage an attachment tool for threading said ring onto said pipe.

5. In combination with a tank, a filler pipe therefor, a cap adapted to be threaded on the pipe to close it, a sleeve loosely mounted on the pipe but not removable therefrom, means to lock the cap to the sleeve, and means on the cap opposite the first-named means to prevent the cap from being removed from the pipe so long as the first-named means is in operation.

6. In combination with a filler spout, a sleeve on the spout, means to hold the sleeve on the spout for rotation thereon, said means comprising outwardly directed projections on the spout and an internal recess in the sleeve to receive the projections, said projections being inaccessible from the outside of said sleeve, a cap adapted to close the spout, and means to lock the cap to the sleeve.

7. In combination with a filler spout, a sleeve on the spout, means to hold the sleeve on the spout for rotation thereon, said means comprising projections on the spout and a groove in the sleeve to receive the projections, a cap adapted to close the spout, and means to attach the cap to the sleeve, said last-named means consisting

of a pair of perforated lugs, one on the sleeve and the other on the cap, a lock member in the perforations, a flange on the sleeve and a lug on the cap for engagement with the flange.

8. In combination with a filler spout, a sleeve on the spout, means to hold the sleeve on the spout for rotation thereon, a cap to close the spout, and means to attach the cap to the sleeve, said last-named means consisting of a pair of perforated lugs, one on the sleeve and the other on the cap, a lock member in the perforations, a flange on the sleeve and a lug on the cap opposite

the other lug thereof for engagement with the flange.

9. In combination with a filler spout, a cap for closing the spout, means surrounding the cap and rotatably mounted on the spout for holding the cap on the spout, a casing with a lid for enclosing the cap and the cap end of the spout, said casing forming with the spout a water trap and drain, and key-operated locking means positioned below the outer surface of said lid and arranged to releasably interlock said lid and said casing.

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