Oct. 16, 1928. 1,687,601

J. E. WHITLEY

LOCKING CAP FOR FUEL TANKS

Filed June 13, 1927

Fig. 1.

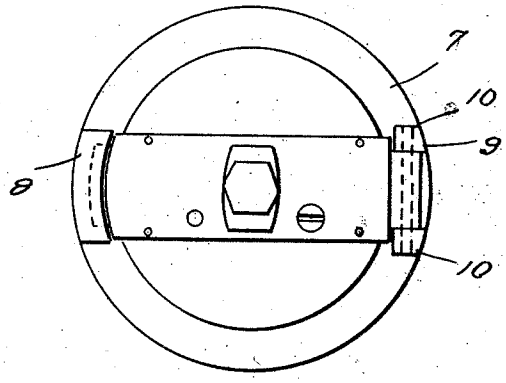



Fig. 2.

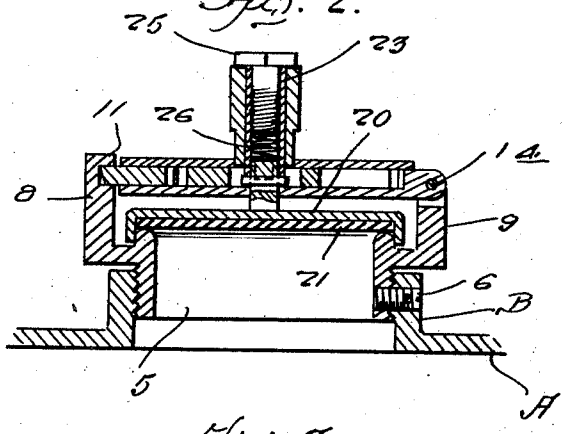
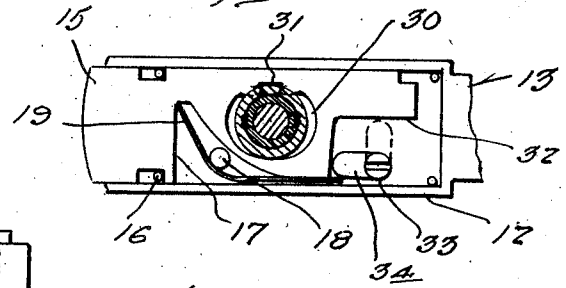



Fig. 3.



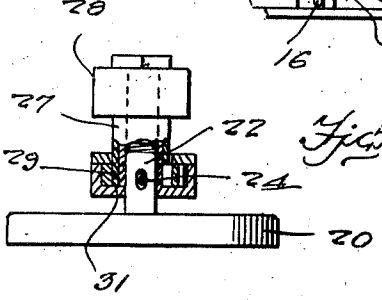




Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## LOCKING CAP FOR FUEL TANKS.

Application filed June 13, 1927. Serial No. 198,586.

This invention relates to new and useful improvements in caps for fuel tanks such as those used on automobiles, and aims to provide a highly novel, simple, and easily detachable cap for the filler necks of fuel tanks that is so constructed as to permit the cap to be positively locked in closed position, so that the contents of the tank cannot be drained by unauthorized parties.

Generally the cap consists of a member for threaded engagement with the filler neck of a tank, after which the same is positively secured thereto, there being associated with said member a swinging cap that is constructed for locking engagement with the member, a hand knob being provided to permit the unlocking of the cap, after a latch unit has been released by a proper key in the possession of the operator.

In the drawing, wherein for the purpose of illustration is shown the preferred embodiment of the invention,

Figure 1 is a top plan view of my improved locking cap.

Figure 2 is a detail longitudinal section thereof.

Figure 3 is an enlarged plan view of the sliding latch bolt casing, the top plate thereof being removed, and the operating means for releasing the latch bolt being disclosed in cross section, and

Figure 4 is a transverse section of the latch bolt casing, the bolt operating means being partially disclosed in cross section while the cap member per se is disclosed in edge elevation, this view more clearly disclosing the manner of association of the cap per se, with the casing and the bolt actuating means.

Now having particular reference to the drawing, in Figure 2, A designates fragmentarily a fuel tank provided with the usual circular filler neck B, which in the present instance is disclosed as being threaded internally. My improved device consists of an externally threaded collar 5, threaded within the neck B, after which it is securely fastened thereto, by a pin locked set screw 6. Directly beneath the upper edge of this collar 5 the same is formed externally with a lateral flange 7, formed at its outer edge and at diametrically opposed points with vertically extending prongs 8 and 9, the prong 9 being slightly shorter than the prong 8 and being formed at its opposite ends with upstanding hinge knuckles 10—10. The tongue 8 is curved to conform to the curvature of the flange 7 and is formed at its inner side and adjacent its upper end with a latch bolt receiving notch 11.

The invention further consists of a relatively narrow and flat like latch bolt casing 12, open at its top side and forward end and formed at its inner end with a tongue 13, for disposition within the knuckles 10—10 of the collar tongue 9, so that the same may be pivoted therebetween, as at 14. Slidable longitudinally within this casing 12 is a flat like latch bolt 15, the outer end of which is rounded, as indicated in Figure 3, while this rounded edge is tapered as indicated in Figure 2, in order that it may spring into the notch 11 in the collar tongue 8, when the cap unit is dropped, or forced into closed position. This latch bolt 15 is limited in its sliding movement by reason of pin and notch connections 16, between the latch bolt and the casing 12, as indicated in Figure 3. One edge of this latch bolt is formed with an enlarged inwardly extending notch 17, the rear edge of which is of curvilinear formation, as in Figure 3. Projecting upwardly through this notch is a pin 18, rigidly associated with the bottom of the casing 12. Bent around the outer side of this pin 18 and engaging at one end within the inner end of the notch 17, and at its opposite end along the outer edge of the latch bolt is a leaf spring 19, provided to normally force the outer edge of the latch bolt through the casing 12, so that the same will engage in the notch 11 of said hollow tongue 8.

Arranged upon the top side of this casing 12 is a closure plate 20, rigidly secured thereto, by pins or rivets as suggested in Figure 1.

The invention further consists of a circular flanged top member, 20, within which is a suitable packing disc 21. Upon the top side of this cap 20 and at the center thereof is an upstanding pin 22, that is loosely arranged through an opening in the bottom wall of the latch bolt housing 12. Extending upwardly from the bottom wall of this latch bolt casing 12 is a hollow pin 23, within which a pin 22 extends, the pin 22 being connected to the hollow pin 23 by cross pin 24, passing through registering openings in the hollow casing pin 23 and a widened slot in the cap pin 22, this widened slot being for the purpose of permitting movement between the cap 20 and the casing 12, so that the cap will prop-

erly engage the upper edge of the collar 5, when the device is closed.

The upper end of the latch bolt casing pin 23 is threaded internally for receiving a headed and threaded screw 25, the lower end of which bears against an expansible coil spring 26, located within this hollow pin for the purpose of normally pressing against the cap pin 22, to maintain the same in tight engagement with the collar 5.

Loosely mounted upon the hollow pin 23 is a sleeve 27, equipped at its upper end with a thumb knob 28, and the lower end of this sleeve 28 being formed with a lug 29 as indicated in Figure 4 and suggested by the dotted lines in Figure 2.

The latch bolt 15 is formed intermediate its ends with an opening 30, through which the cap pin 22 and casing pin 23 extend, this opening being of a dimension suitable to allow of the longitudinal sliding movement of the bolt within the said casing. The edge of this opening 30 adjacent the lug 29 of the sleeve 27 is formed with a notch 31 within which this lug is arranged, so that when the thumb member 28 of the sleeve is turned in one direction, the bolt 15 will be slid inwardly against the action of the spring 19 and thus be retracted from the notch 11 in the collar tongue 8. However, in order to prevent such a turning of this sleeve 28, and the consequent movement of the bolt 15, the inner end of the bolt is formed with a notch 32, while mounted for movement within the casing 12 in back of the forward end of this notch is a pin 33, equipped with a lateral cam lug 34, which, when the pin is turned, to the position indicated in Figure 3, will engage the forward edge of the said notch 32, to prevent the inward sliding movement of the latch bolt 15. The upper end of this pin 33 extends through an opening in the top plate 20 of the latch casing and is so formed as to permit of its turning by a suitable key.

It will thus be seen that I have provided a highly novel, simple and efficiently operating locking cap for fuel tank that is well adapted for all of the purposes heretofore designated, and even though I have herein shown and described the invention as consisting of certain detail structural elements, it is nevertheless to be understood that some changes may be made therein without affecting the spirit and scope of the appending claims.

Having thus described my invention, what I claim as new is:

1. In a latch for tank closures wherein the closure is formed with an internal shoulder, a cap for said closure for disposition against said shoulder, an upstanding member on said cap, a hollow bar hingedly connected at one end to the closure, a bolt slidable within the bar, the outer end of the bolt being engageable within a socket formed in the closure, means within the hollow bar for effecting a tension against the upstanding member of the cap, said bolt being formed with an intermediate opening and having an offset notch, a rotatable member projecting within the hollow bar and having its inner end disposed within the opening of the bolt, said member being provided with a lug engageable with the notch whereby the rotary movement thereof will cause the inward movement of the bolt within the hollow bar.

2. In a latch for tank closures wherein the closure is of annular shape and formed with an internal shoulder, a cap for said closure and adapted for disposition against the said shoulder, an upstanding member on said cap, the hollow bar hingedly connected at one end to the closure, a bolt slidable within the bar, the outer end of the bolt being engageable within a socket formed in the closure, said bolt being formed with an intermediate opening and having an offset notch, a tube extending within the hollow bar and terminating within the opening of the bolt, a slidable connection between the upstanding member of the cap and the tube, spring means within the tube for urging the upstanding member downwardly, a sleeve disposed around said tube, and projecting within the hollow bar, said sleeve being provided with a lug engageable within the notch of the bolt, so that when the same is properly rotated, the bolt will be retracted.

In testimony whereof I affix my signature.

JAMES E. WHITLEY.