Sept. 9, 1930. J. L. MORGAN 1,775,318

CLOSURE CAP FOR TANKS

Filed Feb. 8, 1929

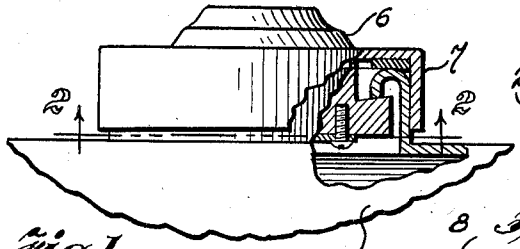


Fig. 1.

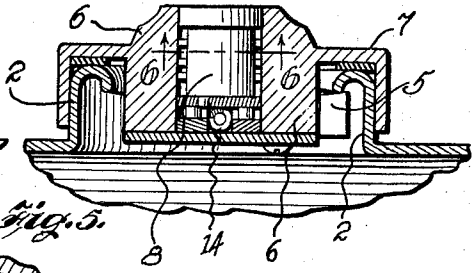


Fig. 5.

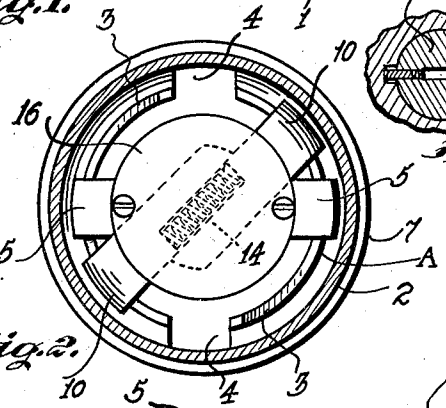


Fig. 2.

Fig. 6.

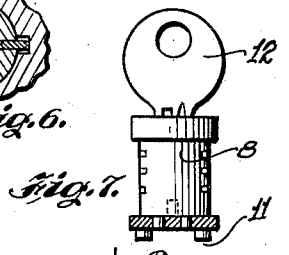


Fig. 7.



Fig. 10.

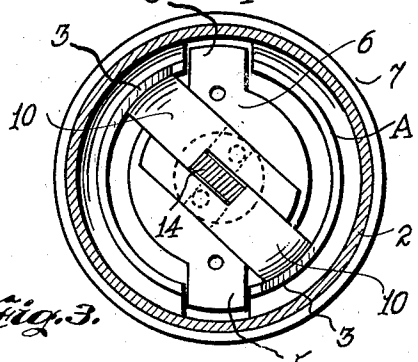


Fig. 3.

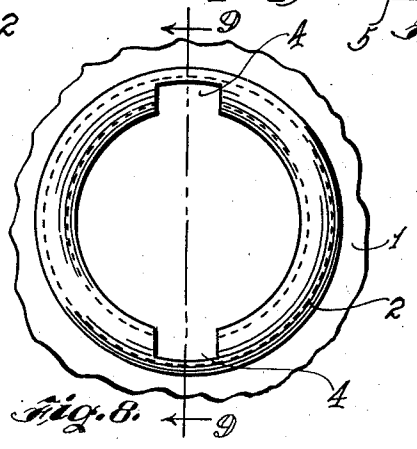


Fig. 8.

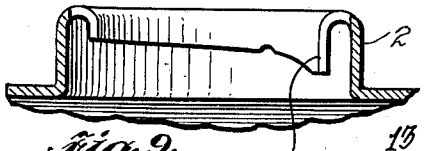


Fig. 9.

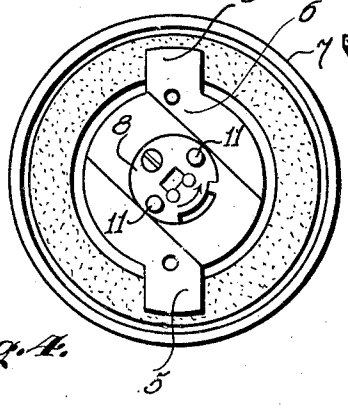


Fig. 4.

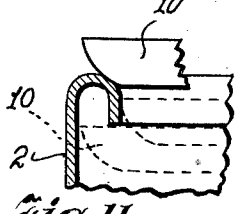


Fig. 11.

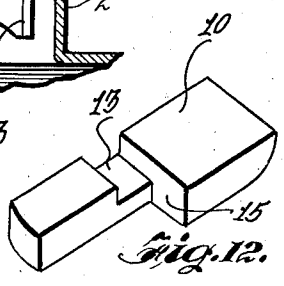


Fig. 12.

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UNITED STATES PATENT OFFICE

JOSEPH L. MORGAN, OF SHREVEPORT, LOUISIANA, ASSIGNOR OF ONE-HALF TO MARY G. CALLAGHAN, OF DALLAS, TEXAS

CLOSURE CAP FOR TANKS

Application filed February 8, 1929. Serial No. 338,353.

This invention relates to improvements in locks, more particularly locks for filler caps for tanks containing liquids.

The primary object of the invention is the provision of a locking arrangement for filler caps for motor vehicle gasoline tanks to prevent unauthorized removal of the fuel; also to prevent filling of the tank in case of attempted theft of the vehicle.

Another object of the invention is to provide a lock of this nature which is simple in construction and inexpensive of manufacture.

The invention will be clearly understood from a perusal of the following detailed description, taken in connection with the accompanying drawings, forming part of this specification, in which:

Figure 1 is a side elevational view of the filler cap, partly broken away, and in position on a fuel tank,

Figure 2 is a horizontal sectional view, taken along the line 2—2 of Figure 1, in the direction of the arrows,

Figure 3 is a view similar to Figure 2, but showing the lugs of the cap in a different position, the bottom plate of the cap removed,

Figure 4 is a bottom view of the cap, the slidable lugs and plate being removed,

Figure 5 is a cross-sectional view of the cap and a part of a tank, illustrating the method of connection of the cap with the tank,

Figure 6 is a horizontal detail sectional view, taken along the line 6—6 of Figure 5,

Figure 7 is a side elevational view of the key post of the locking mechanism of the cover.

Figure 8 is a partial top plan view of a gasoline tank, showing the construction of the neck, Figure 9 being a cross-sectional view thereof, along the line 9—9 of Figure 8,

Figure 10 is a detail sectional view of a modified form of lug of the lock mechanism,

Figure 11 is a fragmentary detail sectional view of the tank neck and one lug, showing the progressive movement of the lug in operation of the lock mechanism of the cap, and

Figure 12 is a perspective view of one of the slidable lugs of the lock mechanism.

Proceeding in accordance with the drawings and wherein numerals are used to denote the various parts, 1 denotes a portion of a gasoline tank and 2 the neck thereof. The neck, as shown in Figure 9, also Figure 2, has an inwardly-turned edge which is gradually sloped to a point 3, as will be hereinafter more particularly described. The neck includes recesses 4 for reception of the lugs 5. These lugs are integrally formed with the central rounded portion 6 of the cap 7. The portion 6 is bored for the purpose of seating the locking mechanism 8.

The tank neck, lock mechanism and lugs are in common use and are described and illustrated merely for the purpose of clearness in description.

The invention comprises the slidable bolts 10 which forms a means for locking the cap in locked position on the neck.

By reference to Figure 4, it will be observed that the key post 8, which forms part of the lock mechanism, includes two pins 11 which, when the key 12 is turned, come into engagement with the recess 13 in the bolts 10. Between the bolts is also disposed a spring 14, the opposite ends of the spring abutting the shoulder 15 of the bolts. A plate 16 is placed over the spring 14 and holds the bolts in position.

The outer ends of the bolts are rounded and bevelled to enable the cap to be more easily inserted in the opening of the neck of the tank, as shown in Figure 11. The full line position of one end of one of the bolts illustrates their position when placing the cap in position on the neck 2. The cap is rotated to the right and slight pressure applied to the cap, inwardly. This will force the bolts inwardly to permit the bolts to come under the inwardly-turned edge of the neck. In the lowest broken-line position of the bolt, as shown in Figure 11, the bolts have passed under the neck.

In the operation of the cap, the lugs 5 are first placed in alinement with the recesses 4, as shown in Figure 3 and the cap pressed inwardly. This will draw the bolts

within the circumference of the bent-over portion A of the neck 2, and bring the lugs 5 below the portion A. The ends of the bolts are then bearing against the part 3 of the inner edge or lip of the rim. The cap is then turned to the right, whereupon the bolts will occupy the position shown in Figure 2, with the lugs and bolts both underneath the lip, the spring 14 forcing the bolts outwardly. In this position, due to the angular relation of the lugs and bolts, it is impossible to remove the cap without the key. If the lugs are brought into alinement with the recesses 4, the bolts are still under the lip, and vice versa.

In Figure 10 is shown a modified form of lug and wherein a spring B is employed to bring a tighter grip of the lugs on the inner portion of the neck.

If an attempt is made to remove the cap without the proper key, the cap will rotate in anti-clockwise direction, whereas the two bolts 10 of Figure 2 will make contact with the two fins 3 of Figure 9, thereby holding the two lugs 5 Figure 2 in position underneath lip of tank neck. This prevents removal of the cap as long as bolts are so engaged, which when disengaged by operation of proper key, bolts 10 Figure 2 will be withdrawn from contact at 3 Figure 9, allowing cap to be further rotated in anti-clockwise direction, until lugs 5 Figure 2 makes contact with fins 3 Figure 9 and in position in aperture 4 Figure 8 when at such time with bolts 10 still withdrawn by operation of key, cap may be lifted from neck of tank. This can be accomplished by one operation of key in turning in anti-clockwise direction withdraws bolts and further turning bringing lugs in position in aperture 4 Figure 9 allowing entire device to be lifted from tank by use of one hand.

What is claimed as new is:

In a locking mechanism for filling tube caps, the combination with a filling tube having an inwardly extending notched flange, a filler cap having a lug so located as to pass through the notched portion of said flange when the lug and notch are brought into registry, and when the cap is in position on the filler neck and rotated from the registry position said lug will be held beneath the said flange, spring means on said lug for insuring frictional engagement with said flange, a pair of bolts carried by the cap extending in opposite directions and permanently angularly removed from said lug, yielding means for normally forcing said bolts apart so as to engage beneath the flange of said filling tube, and means for retracting said bolts so that the cap may be removed from the filler neck on bringing said lug and notch into registry.

In testimony whereof I affix my signature.

JOSEPH L. MORGAN.