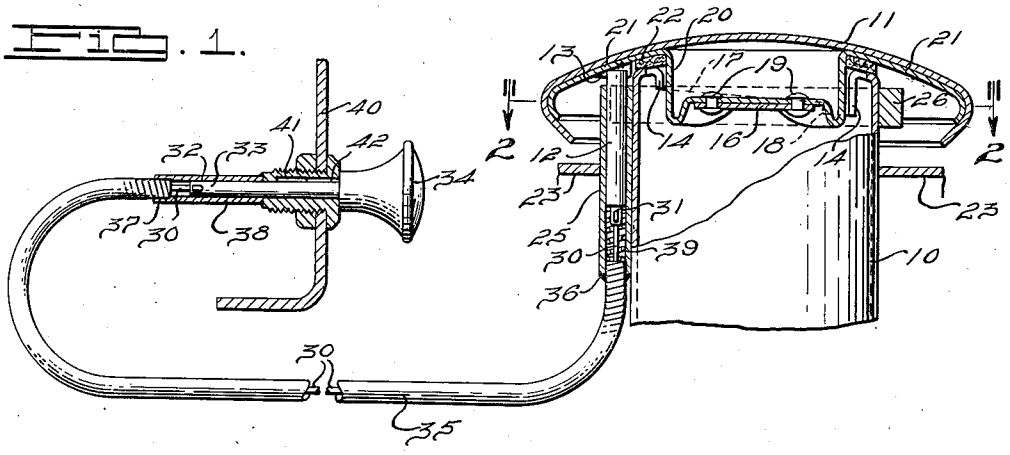
Dec. 7, 1937. T. SCHELLINGER 2,101,348

RADIATOR OR GAS TANK CAP LOCK

Filed May 20, 1935

Fig. 1.



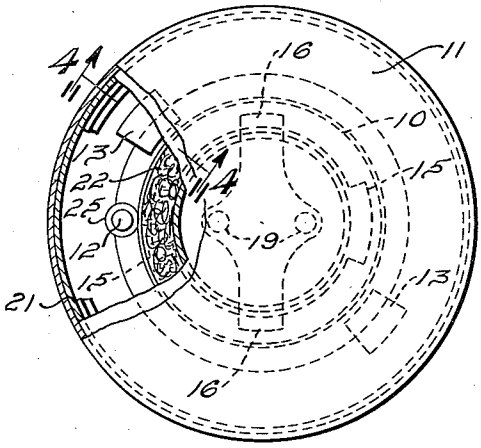


Fig. 3.

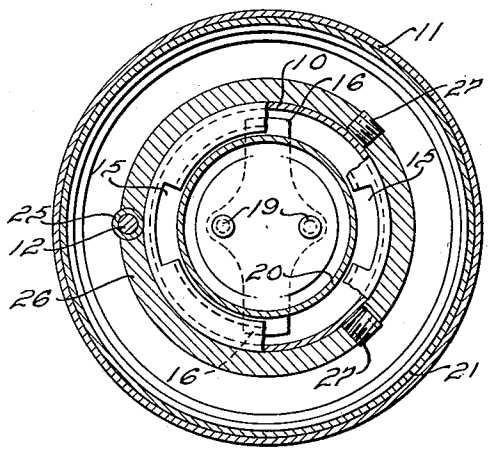


Fig. 2.

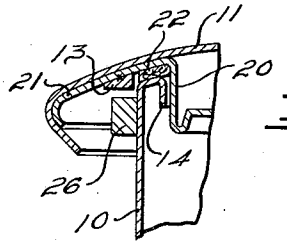


Fig. 4.

INVENTOR.
Theodor Schellinger.
BY
Harness, Dickey, Pierce & Hann.
ATTORNEYS.

Patented Dec. 7, 1937

2,101,348

UNITED STATES PATENT OFFICE

2,101,348

RADIATOR OR GAS TANK CAP LOCK

Theodor Schellinger, Detroit, Mich., assignor to C. H. Oshei, Detroit, Mich.

Application May 20, 1935, Serial No. 22,323

2 Claims. (Cl. 220—55)

The present invention relates to locking mechanism for container caps, and more particularly to locking mechanism for the caps of vehicle fuel tanks or radiators, or the like.

It is an object of the present invention to provide a cap lock for containers, which may be remotely controlled, and in which the locking mechanism is not visible or accessible from the exterior.

It is also an object of the present invention to provide a cap lock for containers which may readily be applied to existing spout and cap constructions.

It is also an object of the present invention to provide a cap lock for containers which permits the cap to be applied regardless of whether the lock parts are in locked or unlocked positions.

It is also an object of the present invention to provide a cap lock for containers comprising a bolt supported on the spout and slidable along the longitudinal axis thereof, and positioned to cooperate with one or more lugs positioned on the inside of the cap.

It is also an object of the present invention to provide a cap lock of the last mentioned type in which a plurality of lugs are positioned within the cap, permitting the cap to be installed and locked in any of a plurality of rotative positions with respect to the spout.

It is also an object of the present invention to provide a cap lock for containers in which the bolt is secured to the spout by a member which encircles and may be fitted to existing spout constructions.

It is also an object of the present invention to provide a cap lock of the above mentioned type, in which the locking mechanism is rendered effective upon an initial rotative movement of the cap with respect to the spout.

It is also an object of the present invention to provide a cap lock for containers, embodying features of the above mentioned types, and which may be conveniently controlled from the interior of a vehicle.

Other objects and advantages of the present construction appear in the following description and in the appended claims.

In the drawing:

Figure 1 is a view in side elevation, with certain of the parts shown in section, of a locking mechanism embodying the present invention;

Fig. 2 is a view in horizontal section, taken on the line 2—2 of Fig. 1;

Fig. 3 is a top plan view, with certain of the parts shown in sections, of certain of the elements shown in Fig. 1; and,

Fig. 4 is a view in vertical section, taken on the line 4—4 of Fig. 3.

Automobile gas tank caps and radiator caps are illustrative of the use which may be made of the present invention. These constructions commonly comprise a cylindrical spout upon which a cap may be rotatably secured. In certain constructions, the cap is threaded onto the spout. In other constructions fingers are secured to the interior of the cap, and cooperate with camming surfaces formed on the interior or exterior of the spout. As the cap is turned, the fingers ride along the camming surfaces, drawing the cap securely into engagement with the spout.

In accordance with the present invention, a lock bolt is slidably supported on the spout, and is normally biased to a position in the path of a cooperating lug attached to the underside of the cap. Preferably a plurality of such lugs are provided, permitting the cap to be applied in any one of a plurality of positions with respect to the spout. If desired, the lugs and bolt may have a camming relationship so that upon rotation of the cap in a direction to secure it to the spout, a lug passes over the bolt. Upon rotation of the cap in the opposite direction, however, the bolt engages a cooperating lug and limits such rotation. The arrangement is preferably such that the bolt is rendered effective to lock the cap after a small amount of rotation of the latter in a direction to secure it to the spout. With this arrangement it is not necessary to the locking action that the cap be turned to its limiting position with respect to the spout.

In accordance with the usual present construction of automobiles, the gas tank and radiator spouts are substantially concealed by cooperating aprons. The gas tank and radiator caps are commonly provided with shoulders which extend beyond the cooperating spouts, so that, upon application of the cap, the spout is substantially concealed. With this construction, and in accordance with the present invention, the bolt may be positioned on the outside of the spout, between the spout and the cooperating apron, without requiring alteration therein. The lugs may be positioned in the cap shoulder portions of the cooperating cap in a relatively simple manner. As will be apparent from later descriptions, when assembled in this manner the parts may be entirely concealed and inaccessible.

In accordance with the present invention, also, the lock bolt may be positioned for actuation by a

remotely located member, which preferably takes the form of a handle conveniently positioned with respect to the dash or instrument panel, and is connected to the bolt through a sheathed flexible member.

Referring to the drawing, the assembly comprises generally a hollow cylindrical spout 10, associated with a container (not shown) in any conventional manner; a cooperating cap designated generally 11; and locking structure comprising a bolt 12 and cooperating lugs 13.

In accordance with conventional construction, the upper end of spout 10 may be turned in to form an annular channel 14. As best shown in Fig. 2, the horizontal surface of channel 14 and the inner vertical surface thereof are cut away at diametrically opposite points 15, to form openings to receive the fingers 16 associated with cap 11, and later described. As shown at 17, in Fig. 1, the lower edges of the inner vertical surfaces of channel 14 are angularly disposed, and include vertical stop sections 18.

The symmetrically disposed fingers 16 may be secured in any suitable manner, as by rivets 19, to a cylindrical member 20, having sloping shoulder portions 21, and which is permanently secured to cap 11 in any suitable manner as by welding, brazing or riveting.

When cap 11 and spout 10 are in assembled relationship, a packing ring 22, suitably secured to member 20 bears against the upper surface of channel 14, and provides a hydraulically tight joint. A tight joint is also promoted by making the outside diameter of member 20 just slightly less than the inside diameter of channel 14. When in applied position, cap 11 is slightly spaced from an illustrative apron 23, which surrounds and conceals the remainder of spout 10.

As will be understood, in applying cap 11 to spout 10, it is turned so that the fingers 16 register with opening 15, and is thereafter turned, causing the upper edges of fingers 16 to ride along the sloping surfaces 17. The sloping character of surfaces 17, cams cap 11 downwardly, bringing packing ring 22 solidly into engagement with channel 14. With the construction illustrated and as viewed in Figs. 1 and 2, a clockwise rotation of cap 11 is required. As will be obvious, the parts may be oppositely related. In removing cap 11, it is turned in the opposite direction until fingers 16 register with openings 15, at which time cap 11 may be freely removed. It will be noted that fingers 16 are symmetrically disposed and as previously described, the diametrically opposed parts of channel 14 are symmetrically constructed. With this arrangement, it will be understood that cap 11 may be initially applied from either of two positions spaced 180 degrees apart.

The parts thus far described are conventional, and are illustrative of any spout and cap construction in which the cap is applied by rotating it about the spout.

In accordance with the illustrated embodiment of the present invention, bolt 12 is slidably guided in a sleeve 25, which passes through apron 23, and may be permanently secured to a ring 26 in any suitable manner, as by brazing, welding or otherwise. Ring 26 fits freely over the end of spout 10, and may be secured thereto by set screws 27.

When in projected position, as shown in Fig. 1, bolt 12 extends into the path of one or the other of two diametrically opposed lugs 13, which are secured to the underside of cap 11 in any suitable manner. As will be understood, one lug 13 cooperates with bolt 12 when cap 11 is applied from one position, and the other lug 13 cooperates with bolt 12 when cap 11 is applied from the other position. As previously mentioned, the undersides of lugs 13 may be sloping, so that upon rotation of cap 11 in a clockwise direction, with reference to Fig. 2 or 3, they are permitted to pass freely over bolt 12. Upon rotation of cap 11 in the opposite direction, however, bolt 12 is engaged by the vertical forward face of a lug 13. This engagement prevents rotation of cap 11 to a position in which fingers 16 register with openings 15. Lugs 13 are preferably positioned within cap 11 so that only a limited amount of rotation of cap 11 from the released position is required to move a lug 13 beyond the position of bolt 12. With this arrangement, the lock is rendered effective even though cap 11 is not turned to the extreme position with respect to spout 10.

As illustrated, the actuating means for bolt 12 comprises a steel wire 30 which is looped through a lug 31 formed in bolt 12, and through a similar lug 32 formed in the shank 33 of an operating handle 34. Wire 30 is preferably sheathed in a flexible conduit 35. Conduit 35 is suitably secured to sleeve 25 by soldering or welding, for example, at the point 36, and is similarly secured at point 37 to a sleeve 38 within which shank 33 is slidably received. A spring 39 is seated between the end of bolt 12 and the end of conduit 35, and biases bolt 12 to the extended or locking position.

Sleeve 38 may be threaded into any convenient supporting surface 40, preferably associated with the automobile dash or instrument panel, and is provided with an interior key-way 41 which receives a cooperating key 42 formed integrally with shank 33. As will be understood, withdrawal of handle 34 from sleeve 38 draws bolt 12 inwardly against the force of spring 39, unlocking cap 12, and also moves key 42 out of key-way 41. When in the withdrawn position, handle 34 may be rotated slightly, moving key 42 out of registration with key-way 41. When handle 34 is in the rotated position, key 42 thus maintains bolt 12 in the retracted position.

If handle 34 is returned to the original position, with key 42 in registration with key-way 41, spring 39 is rendered effective to force bolt 12 to the extended position, and to return handle 34 to the illustrated position in which it bears against the forward face of sleeve 33.

From the foregoing it is seen that the locking structure comprising bolt 12 and the cooperating lugs 13 may be applied to an existing conventional construction without substantial modification of the latter. The ring 26, which supports bolt 12, may be conveniently secured to the spout 10 by means which are readily accessible when cap 11 is removed, but are inaccessible when the latter is applied to spout 10. The effectiveness of the locking action does not require accurate positioning of lug 13, and by suitably forming lugs 13, cap 11 may be applied while bolt 12 is in either the extended or retracted position. The use of a plurality of lugs 13 permits the cap to be applied from a corresponding plurality of positions. Key-way 41 and key 42 associated with handle 34, or functionally equivalent construction, permit the locking mechanism to be rendered effective and ineffective at will.

Although a specific embodiment of the present invention has been described, it will be evident that various modifications may be made in the form, number and arrangement of parts without departing from the spirit and scope thereof. The described embodiment accordingly is to be con-

sidered in an illustrative and not in a limiting sense.

What is claimed is:

1. The combination with a container spout and a cap securable over the end thereof, said cap having a skirt portion which projects outwardly from and in spaced relation to said spout with a marginal skirt portion lying closely adjacent said spout, of a locking keeper positioned within said cap, a retractable bolt associated with said keeper, and means for slidably supporting said bolt on said spout for movement into and out of the path of said keeper, comprising a member disposed to surround said spout and positioned within said skirt portion, and a connection between said member and said spout.

2. The combination with a container spout and a cap securable over the end thereof, said cap having a skirt portion which projects outwardly from and in spaced relation to said spout with a marginal skirt portion lying closely adjacent said spout, of a bolt slidably supported on the exterior of said spout, a keeper positioned within the skirt portion of said cap for cooperation with said bolt to lock said cap in place, and means concealed within said skirt portion of said cap for supporting said bolt upon said spout.

THEODOR SCHELLINGER.