March 4, 1969 L. JOSEPH 3,430,468

LOCKING MECHANISM FOR CONTAINER LID

Filed April 27, 1967

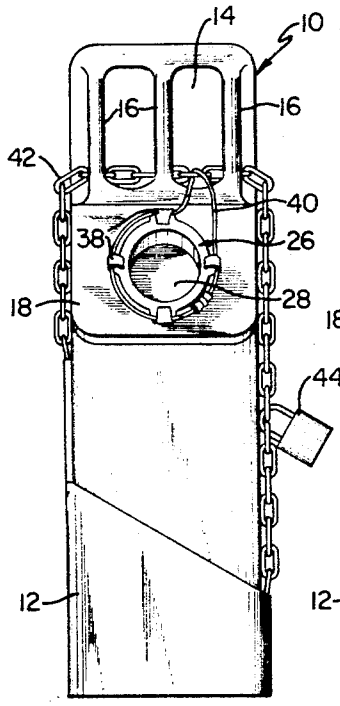

FIG. 1

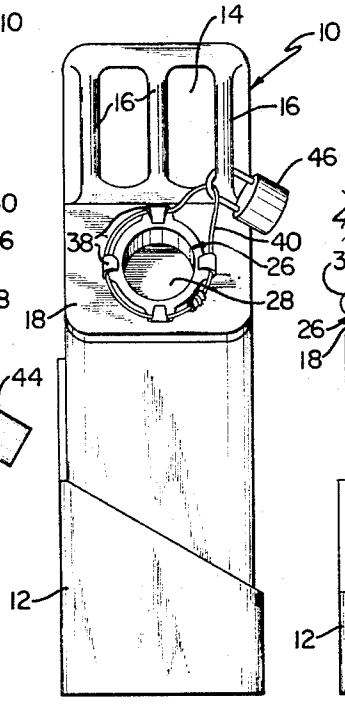

FIG. 2

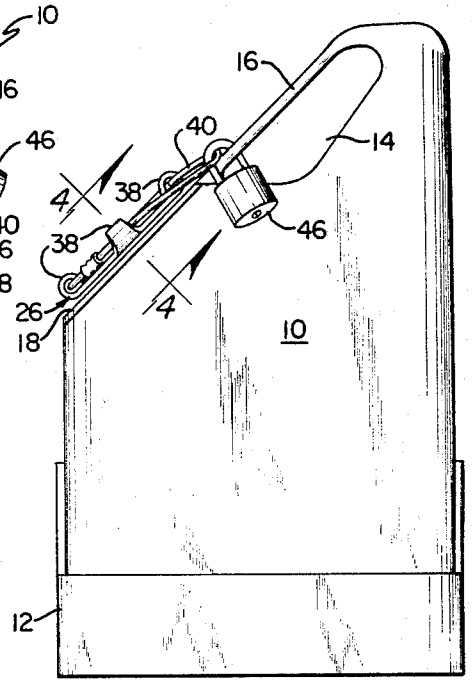

FIG. 3

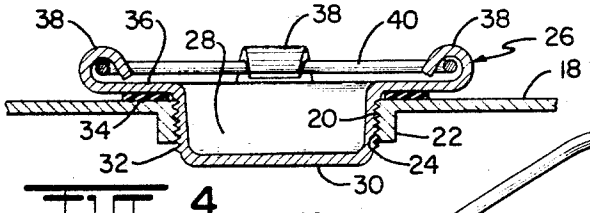

FIG. 4

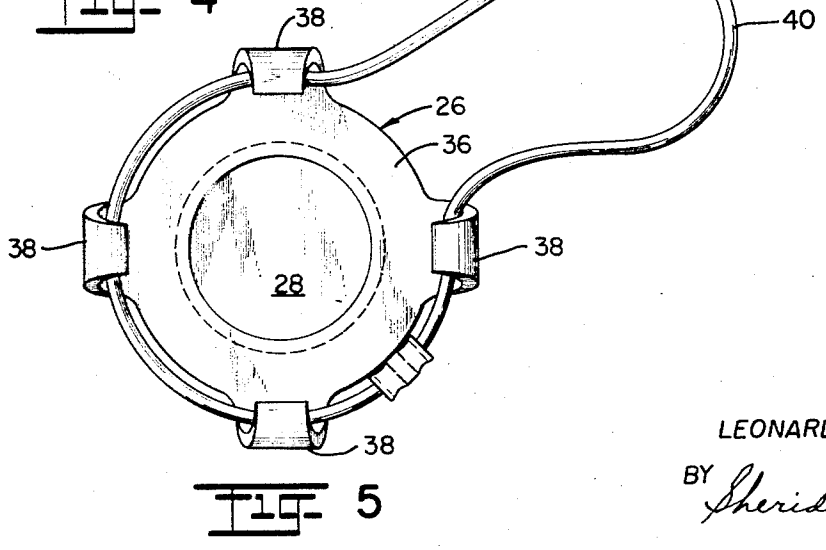

FIG. 5

INVENTOR
LEONARD JOSEPH
BY Sheridan and Ross
ATTORNEYS

United States Patent Office 3,430,468
Patented Mar. 4, 1969

3,430,468

LOCKING MECHANISM FOR CONTAINER LID

Leonard Joseph, 128 Ash, Denver, Colo. 80220

Filed Apr. 27, 1967, Ser. No. 634,315
U.S. Cl. 70—164 2 Claims
Int. Cl. B65d 55/12, 55/14

ABSTRACT OF THE DISCLOSURE

The objective of the invention is to provide a means for locking a container lid adapted to be threadably attached to the container, on the container so that it can not be removed to permit removal of the contents of the container, the invention comprising the modification of the container lid to provide channels on its periphery and a flexible cable passing through the channels, the construction permitting securing the lid in any radial position against rotation by locking the flexible cable to a stationary member on the can.

This invention relates to locking mechanism for container lids, more particularly, it relates to locking mechanism for locking against rotation a can lid which is threadably or otherwise secured in the outlet in the can by rotation.

There are many types of containers for liquids and other materials having their outlets closed by lids threadably attached to the outlets or otherwise adapted to be secured in the outlet by relative rotation between the lid and the can. Use of such cans for storing gasoline and other liquids requires some means for locking the lids against removal from the outlet to prevent theft of the contents of the can, or for other reasons.

Among other expedients used to lock can lids are locks built into the can and lid; however, these devices in themselves are so expensive that their use on inexpensive containers is prohibitive. Other locking means are cooperating hasps on lid and can through which a padlock is inserted to lock the lid when it is in one radial position only. A disadvantage of these prior art locking devices, and others, is the fact that they will lock the lid in only one fixed radial position with respect to the container. This is undesirable because it is impossible to construct cooperating threads on the lid and the opening of all cans so that the lid is fully closed with the cooperating hasps or lock members juxtaposed in every case so that locking can be effected. For example, it is often necessary to leave the lid only partially screwed down and not in fully closed position because the cooperating hasp or locking elements on can and lid must be adjacent so locking can be effected. The result is that volatile liquids like gasoline, kerosene, etc. evaporate or even leak out of the partially closed lid.

Accordingly, it is a principal object of this invention, as applied to a container lid adapted to be attached in an outlet opening in a container by relative rotation with respect to the container, to provide means for locking the lid against rotation in any position in which it reaches the fully closed condition.

It is another object of this inventon to provide a locking means as stated which is inexpensive, and simple in operation.

It is a further object of this invention to provide a locking means for a container lid as stated which can be readily adapted to already manufactured containers.

The above and other objects are accomplished by affixing channel means to the container lid, and passing through the channel means a flexible cable which can be locked to a stationary portion of the container after the lid has reached the fully closed position, so that rotation of the lid to remove it is prevented.

The invention will be described in connection with the accompanying drawing hereby made a part of this specification, and wherein:

FIG. 1 is a top perspective view of a G.I. can equipped with locking mechanism of the invention and showing the locking cable attached to a chain affixing the can to a rack;

FIG. 2 is a top perspective view as in FIG. 1 showing the locking cable locked to a handle of the can;

FIG. 3 is a side view of the G.I can of FIG. 1;

FIG. 4 is a partial sectional view taken through the area in which the lid is attached to the can, and

FIG. 5 is a top view of the lid of a G.I. can showing the structure by which the locking cable is slidably connected to the can lid.

The container lid locking mechanism of the invention will be described in connection with a G.I. can; however, it is not limited to this application as it can be used to lock against rotation any type can lid for any type container which is attached to the outlet of the container by relative rotation between the lid and the container.

Referring to the figures, the numeral **10** represents a conventional G.I. can used for the storage of gasoline, milk, water, etc. and other liquids. The can in the showing of FIGS. 1, 2 and 3 is seated in a carrier or rack **12** which is in turn attached to a vehicle or some stationary support. The can is constructed with the usual depressed area **14** to accommodate the usual handles **16**. The top **18** of the can is constructed with a circular outlet **20** as shown in FIG. 4. The outlet **20** has a circular boss **22** depending therefrom which is provided with threads **24**.

The outlet **20** is closed with a lid **26** of metal or other suitable material constructed with a central depression **28** forming a depending boss **30** provided with external threads **32** which mate with the threads **24** of outlet boss **22** when the lid is in closed position in the outlet. A circular gasket **34** provided with a central opening to accommodate boss **30** is seated beneath flange **36** of the lid **26** to seal the lid over the opening.

The lid **26** is provided with channel members **38** circumferentially spaced around its periphery for the purpose of receiving flexible cable **40**. The channel members **38** are constructed from straps or extensions protruding outwardly around the periphery of the can lid, the straps being bent in the form of loops. These channel members or loops are made integral with the can lid, however, obviously, other equivalent types of channel members may be used for receiving the flexible cable **40**. It can be seen from the described construction, that the flexible cable is slidable with respect to the loops **38** and can be adjustably moved relative thereto. The flexible locking cable **40** is preferably made of braided metal strands or other sturdy material which cannot be easily broken; however, it can be made of strong plastic, fiber glass or other high strength material. In the construction shown in FIG. 1, a chain **42** secures the can **10** to the rack **12**, its ends being padlocked together by padlock **44**. The chain **42** passes through the loop in flexible locking cable **40** thus securing lid **26** against rotation. In the construction shown in FIG. 2, the hasp of padlock **46** passes through the loop in flexible cable **40** and secures it to handle **16**, thus again securing the lid **26** against radial movement.

In operation, the lid **26** is screwed into the outlet **20** to the fully closed position, the flexible cable pulled through the loops until it is tight and padlocked to one of the handles **16** by means of padlock **46**. An alternative arrangement is that shown in FIG. 1 in which the locking chain **42** passes through the loop in the flexible locking cable **40**. When locked in this position, the lid can be rotated only slightly, if at all, and is locked against removal. It will be apparent that the lid **26** can be locked

in the fashion described regardless of the radial orientation of the loops or channels with respect to the can when the lid reaches its fully closed position. In other words, the lid can be locked against radial movement in any radial orientation in which it reaches a closed position. This is in contrast to prior art locking arrangements wherein the lid was not necessarily in a fully closed position when cooperating locking elements on lid and can were in the locking positions. By the arrangement described herein, the lid is always locked against radial movement when it is in fully closed position against the gasket **34**, thus preventing leakage of vapors, liquids and other contents of the can.

The channel members **38** are merely illustrative of one type which can be used. Obviously, other type channel members can be used and they can be located in other positions than on the periphery of the lid.

The invention has been described in its application to a lid which is threadedly attached to an outlet in a container by rotation; however, it is equally applicable to a lid which is secured to an outlet in a container by a corresponding tongue and slot arrangement or other type arrangements in which the lid is secured to the container by rotation.

The cable described and shown in the drawings is a continuous flexible cable; however, it need not be continuous, as a non-continuous flexible cable could be used with loops in each end and locked to a handle with the hasp of the padlock extending through the loops and around the handle. Other equivalent modifications of the locking cable are obviously within the scope of the invention.

It is seen from the above description of the construction and operation of the invention that locking means have been provided for a container lid adapted to be attached to the container outlet by rotation, by which the container lid may be locked against removal regardless of its radial orientation with respect to the can when it reaches the fully closed position. The invention is simple in construction and operation, inexpensively manufactured, and is comprised of a minimum of parts. The locking mechanism can be readily adapted to existing can lids merely by the attachment of channel members to the lid and the incorporation therein of a flexible locking cable.

Although the invention has been illustrated and described with reference to the preferred embodiments thereof, it is to be understood that it is in no way limited to the details of such embodiments, but is capable of numerous modifications within the scope of the appended claims.

I claim:

1. In a container having a lid constructed to be attached in an outlet opening in the container by relative rotation with respect to the container, the improvement providing for locking the lid against rotation, which comprises: a plurality of circumferentially spaced channel means on the periphery of said lid, and a continuous flexible cable means passing through said channel means and movable therethrough; whereby said cable means may be locked by locking means to secure the lid against rotation.

2. A lid mechanism constructed to be attached in an opening in a container by relative rotation with respect to the container and to be locked against rotation comprising: a lid; a plurality of circumferentially spaced channel means on the periphery of said lid, and a continuous flexible cable in said channel means movable with respect thereto.

References Cited

UNITED STATES PATENTS

2,267,754	12/1941	Schroeder	222—153
2,426,134	8/1947	Wilson	220—39

MARVIN CHAMPION, *Primary Examiner.*

ROBERT L. WOLFE, *Assistant Examiner.*

U.S. Cl. X.R.

70—212