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J. H. NIENHUSER

1,965,854

LOCK CAN COVER

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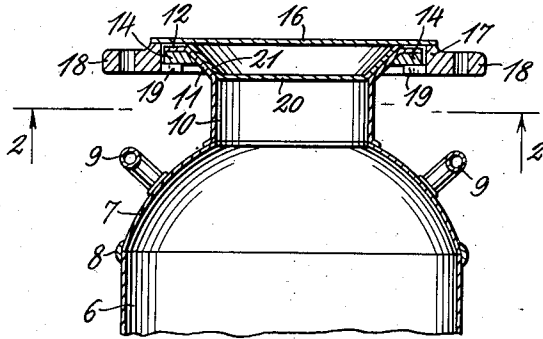


Fig. 1.

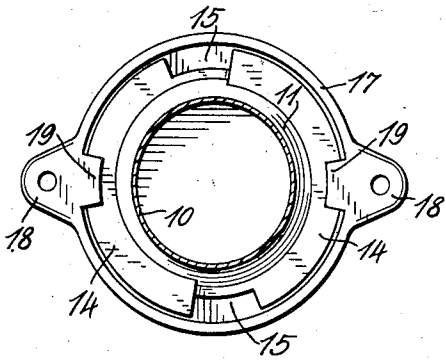


Fig. 2.

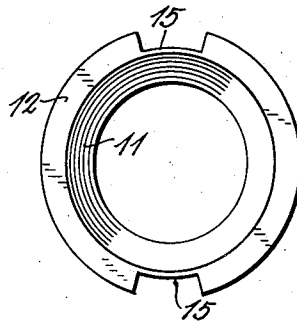


Fig. 3.

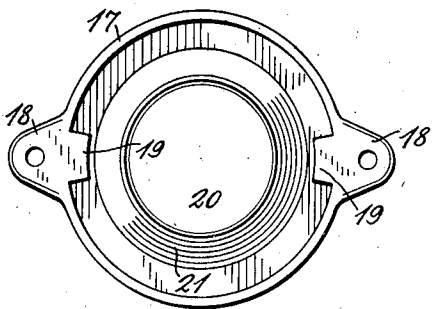


Fig. 5.

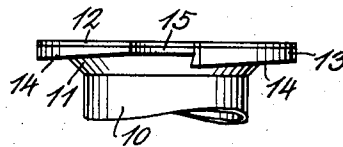


Fig. 4.

Inventor

John H. Nienkuser.

34 *A. J. O'Brien*

Attorney

UNITED STATES PATENT OFFICE

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LOCK CAN COVER

John H. Nienhuser, Greeley, Colo.

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2 Claims. (Cl. 220—55)

This invention relates to improvements in closures for milk cans and the like.

In the transportation of milk and other liquids, such as petroleum oils and water, it is customary to employ cans of the required capacity which are provided at their upper ends with a neck of somewhat smaller diameter than the can and the upper end of which is formed by a frusto-conical portion that is upwardly and outwardly inclined, and which terminates in an outwardly extending flange. Cooperating with the neck is a cover which has a cylindrical portion that extends into the cylindrical portion of the neck and also a frusto-conical portion that contacts with the inner surface of the frusto-conical portion of the neck. Such covers are very difficult to remove and can often not be removed without the use of great force, such as employing a hammer, and for this reason the covers very quickly become bent and destroyed.

It is an object of this invention to produce a cover which shall be held in position by means of interengaging cams and lugs so that the cover can be easily removed by merely rotating it through a comparatively small angle, and which, when in position will hold the frusto-conical surfaces in firm contact so as to prevent leakage if the can should be accidentally overturned.

This invention, briefly described, consists of providing the under surface of the flange at the upper end of the frusto-conical portion of the neck with two or more cam surfaces on its under side. The cover is provided with a sealing portion having a frusto-conical surface that engages the frusto-conical portion of the neck and is also provided with lugs that project underneath the cam surfaces and engage the latter when the cover is turned in one direction so as to force the sealing surfaces towards each other. The flange is provided with openings through which the lugs may pass.

Having thus briefly described the invention, the same will now be described in detail, and for this purpose reference will be had to the accompanying drawing in which the preferred embodiment of the invention has been illustrated, and in which:

Fig. 1 is a diametrical vertical section through the upper end of a milk can provided with my improved cover and locking device;

Fig. 2 is a section taken on line 2—2, Fig. 1, and shows the relationship of the cam surfaces and the lugs;

Fig. 3 is a top plan view of the upper end of the can showing the frusto-conical surface, the

outwardly extending flange and the openings for the lugs;

Fig. 4 is a side view looking upwardly in Fig. 3; and

Fig. 5 is a bottom plan view of the cover.

In the drawing reference numeral 6 designates the cylindrical portion of the can and 7 the convex breast portion thereof. The two parts 6 and 7 are secured together in any suitable way, but have been shown as connected by means of a ring 8 that is soldered to both of the parts. The can is provided with two or more handles 9 that are preferably riveted or welded to the breast portion 7. The neck consists of a cylindrical portion 10, whose upper end is flared outwardly so as to form a frusto-conical portion 11 and the upper end of this frusto-conical portion is turned outwardly to form a flange 12. Secured to the under side of flange 12 is a ring 13 that is provided with two or more cam surfaces 14. The flange and the ring are provided with openings 15 through which the lugs on the cover can pass when applying and removing the cover as will appear hereinafter. The ring 13 can be soldered to the flange 12 or secured to it by means of screws or rivets and when the article is produced in large numbers, the cam surfaces are formed from the material of flange 12 during the forming operation.

The cover consists of a flat plate 16 to the outer edge of which a ring 17 is secured by solder or other suitable means. Ring 17 is provided with two or more handles 18 that are employed in applying and removing the cover. Ring 17 is provided with two or more lugs 19 that are adapted to pass through the openings 15 and when turned in one direction will engage the under surfaces of the cams as shown most clearly in Figs. 1 and 2. Secured to the under side of the flat portion 16 of the cover is a sealing device which is preferably formed from sheet metal and which is provided with a flat bottom portion 20 and an upwardly extending frusto-conical rim 21 that is inclined so as to fit against the inner surface of the frusto-conical portion 11. The sealing member is secured to the cover by solder or by being welded or riveted in place. When the cover is in position and has been turned until the lugs 19 engage the cam surfaces and exert the desired amount of pressure, the sealing surfaces will be forced together as clearly shown in the drawing, and since the sealing surfaces are inclined at the same angle, they will form a very effective seal for the can. When the cover is to be removed, the operator grasps the handles 18 and ro-

tates the cover towards the thin ends of the cams, whereby it is loosened from the can and when the lugs reach the openings 15, the cover can be removed.

5 When the cover is in position it is held quite firmly in adjusted position so that there is no danger of the cover becoming accidentally displaced.

Owing to the ease with which this cover can be removed the danger of dirt and dust falling into the can when the cover is removed is reduced to a negligible quantity and therefore cans provided with covers made in accordance with this invention are more sanitary than the usual type.

10 It is possible to make the sealing part 20 and 21 integral with the top of the cover in which case the frusto-conical portion 21 will merely extend outwardly a sufficient distance to come into contact with the ring 17. This construction leaves a depression in the top of the cover which may accumulate dirt and water and is not as well adapted to be kept clean as the one shown, although when looked upon merely from the point of forming a seal, it would be equally as effective.

From the above description it will be seen that the sealing means shown and described is very simple and can be easily constructed and that when the cover is in place, it will be held secure by the interlocking action of the lugs 19 and the cam surfaces.

Having described the invention what is claimed as new is:

1. In a can of the type employed for transporting milk or the like and having a neck formed in part by a cylindrical portion and in part by a frusto-conical portion, means forming a readily releasable closure and locking device comprising a flange extending outwardly from the upper end of the frusto-conical portion of the neck, the flange lying in a plane perpendicular to the axis

of the frusto-conical surface, the flange having a plurality of notches in its edge, inclined cam surfaces on the under surface of the flange and located between the notches, and a cover having a frusto-conical surface inclined to fit against the frusto-conical surface of the neck to form a seal, the cover having an annular flange which projects over the flange at the top of the neck and a plurality of lugs attached to the under surface of the flange on the cover, there being one lug for each notch, the lugs extending inwardly towards the center of the cover and so positioned that they will cooperate with the cam surfaces to clamp to frusto-conical surfaces in sealing position.

2. In a can of the type employed for transporting milk or the like and having a neck formed in part by a cylindrical portion and in part by a frusto-conical portion, means forming a readily releasable closure and locking device comprising a flange extending outwardly from the upper end of the frusto-conical portion of the neck, the flange lying in a plane perpendicular to the axis of the frusto-conical surface, the flange having a plurality of notches in its edge, a metal ring secured to the under surface of the flange, the ring having notches positioned to register with the notches in the flange, the under surface of the ring having a cam surface between each pair of notches, a cover having a substantially flat bottom and a frusto-conical wall of the proper size and inclination to engage the frusto-conical surface of the neck to form a seal, the cover having an annular flange about its upper end, and a ring secured to the under side of the flange and provided with a plurality of lugs, there being one lug for each notch, the lugs being adapted to engage the cam surfaces to force the sealing surfaces together.

JOHN H. NIENHUSER.