April 15, 1941. E. J. TIFFANY 2,238,379

LOCK FOR CONTAINER LIDS

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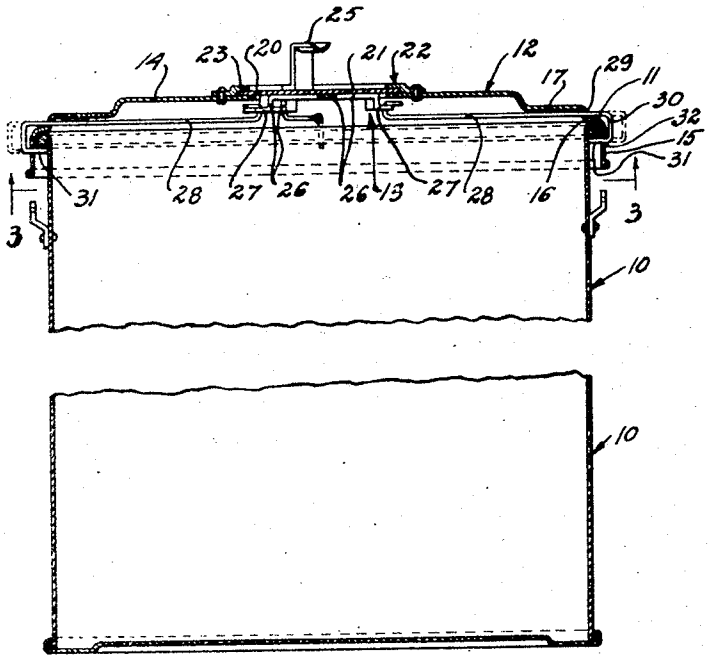


Fig. 1.

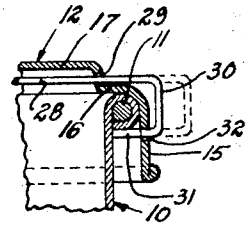


Fig. 1a.

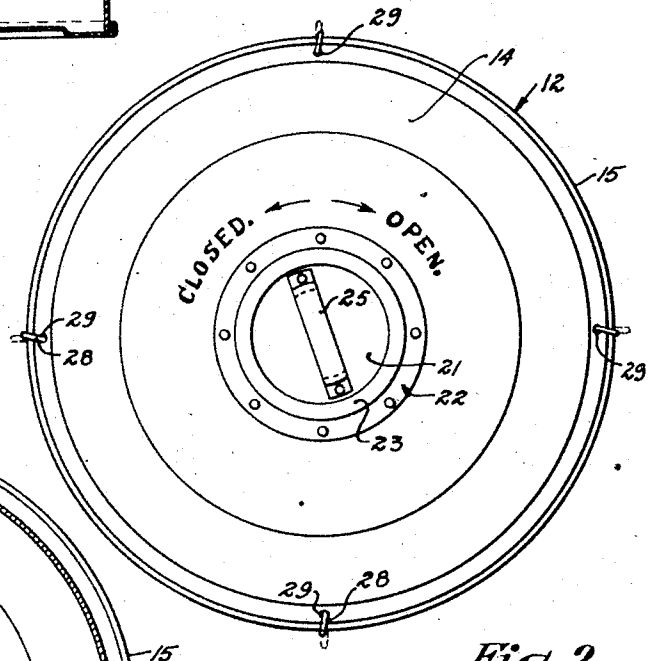


Fig. 2.

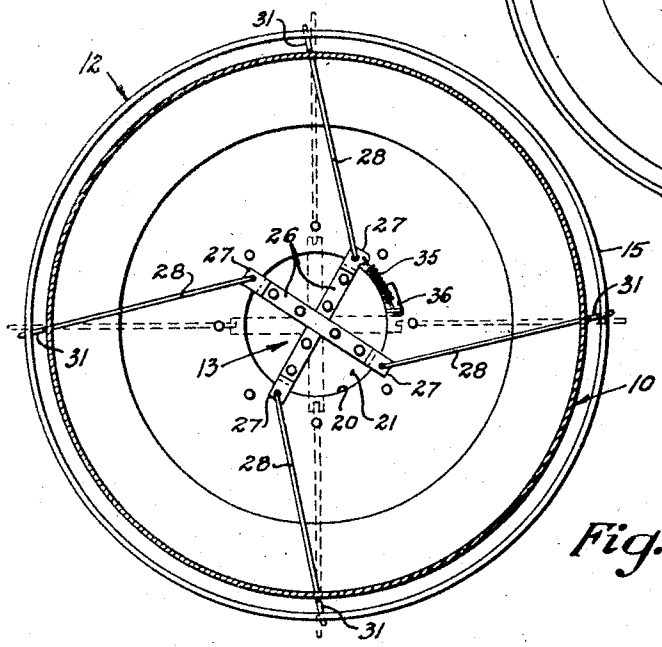


Fig. 3.

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LOCK FOR CONTAINER LIDS

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3 Claims. (Cl. 220—55)

This invention relates generally to locking devices for container lids, and more particularly to locking devices for container lids such as garbage can lids. While the present invention is capable of various applications, it has been specifically designed as a simple and effective lock for garbage can lids and is therefore particularly disclosed in that connection, though without implied limitation thereto.

The conventional garbage can lid is applied to the can with a frictional fit, so that the lid will not be liable to be knocked off or to fall off in the event the can should be overturned. It is a matter of common experience, however, that while the frictional fit may be sufficiently tight that it is bothersome to remove and replace, nevertheless, the lid is frequently knocked or pried off by animals, or, in the event it is not placed securely on the can, will fall off if the can should be overturned.

It is accordingly a primary object of the present invention to provide an improved garbage can lid having a simple and easily operable locking device.

A further object of the invention is the provision of a locking device for a garbage can lid which is easily operable by one hand, while a still further and more specific object of the invention is to provide a locking device which is easily and conveniently operable by a simple movement of a handle corresponding to the usual garbage can lid handle.

The improved container lid lock provided by the present invention is characterized, in a specific and illustrative embodiment, by the provision of a plurality of links having hooked ends which are engageable over the usual external bead at the upper rim of the container, these links being operable between locking and unlocking position by a simple rotation of a handle member rotatably mounted on the lid. A preferred form of the invention is characterized by the elimination of the usual frictional fit between the lid and container, the locking device being relied upon exclusively to hold the lid in place. By virtue of this arrangement, the lid is very easily placed on and removed from the container, requiring only a simple manipulation of the lock-controlling handle to move the locking links to disengaged position, whereupon the lid is freely removable from, or movable back onto, the upper end of the container.

Additional features of novelty and of advantage provided by the invention will appear and be understood from a consideration of the following detailed description of a present preferred embodiment thereof, reference for this purpose being had to the accompanying drawing, in which:

Fig. 1 is a vertical medial section through a garbage can and lid in accordance with the present invention;

Fig. 1*a* is an enlarged detail of a portion of Fig. 1;

Fig. 2 is a top plan view of the lid as shown in Fig. 1; and

Fig. 3 is a transverse section taken as indicated by line 3—3 of Fig. 1.

In the drawing, numeral 10 designates generally a garbage can or container, provided at the top with a usual external rim or bead 11, while numeral 12 designates generally the container lid provided with locking device 13 in accordance with the invention.

Lid 12 may be, generally speaking, of a conventional type, being here shown as comprising top 14 and a downwardly turned annular flange portion 15 adapted to fit over bead 11, in the manner illustrated. Preferably, bead 11 is received within flange 15 with comparative freedom, that is, without tight frictional fit, so that the lid is easily placed on or removed from the container. Of course, if such should for any reason be desired, a frictional fit between flange 15 and the upper portion of the container may be provided, though I prefer, and it is a feature of the present invention, that any friction in the fit between lid and container be avoided, to the desirable end that the lid may be placed on and removed from the container with a minimum of difficulty.

In the construction here shown for illustrative purposes, top 14 has, at its juncture with flange 15, a reentrant formation providing a horizontal annular portion 16 adapted to seat on bead 11, and an outwardly and somewhat angularly disposed portion 17, through which certain later described locking links are extended. Top portion 14 is provided with a central annular aperture 20, closed by a relatively rotatable disk 21 which is of somewhat larger diameter than said aperture and overlaps a marginal portion of top 14 around the aperture, as illustrated. This disk 21 is confined and relatively rotatable within a ring member 22 secured to top 14 and provided with a flange portion 23 overlying a marginal portion of disk 21. A handle member 25, typically of the type usually employed on garbage can lids, is secured to disk 21 inside flange 23. This handle 25 serves not only as the handle for

the lid, but also as the operating means for the locking device.

Secured to the underside of rotatable disk 21 are radially extending arms 26, in the present instance, four in number, each having a terminal portion 27 spaced somewhat below the central portion of top 14, and extending radially outward, in the manner clearly indicated in the drawing. Pivotally connected to these terminal portions 27 of arms 26 are links 28, which extend outwardly, in a substantially horizontal plane, and project through guide apertures 29 in the aforementioned wall portion 17. The outer end portions of these links 28 are bent downwardly, as at 30, and then inwardly, as at 31, the last mentioned portions projecting through apertures 32 in flange 15, and being adapted to engage under the bead 11 on the upper portion of the container. Thus links 28 may be regarded as operatively connected at their inner ends to rotatable disk 21, and as having at their outer ends, hooked portions engageable directly under the bead or exterior projecting part 11 on the upper end portion of the container.

When handle 25 and arm carrying disk 21 are in such a position that links 28 extend radially from the center of the lid (dotted line position in Fig. 3), the hook ends of links 28 are in the position indicated in dotted lines in the drawing, being removed from below bead 11, though not completely withdrawn through apertures 32. In this position, the hook ends of the links therefore clear bead 11, and the lid may readily be removed from or placed back on the container. Rotation of handle 25 and disk 21 to the full line position illustrated in the drawing draws links 28 inwardly, causing their outer hook ends to engage under bead 11, and therefore to lock the lid securely to the container.

Preferably, a yielding means is provided for urging the locking device to locking position, and while this may be accomplished in various ways, I here show for this purpose a tension spring 35 connected between the extremity 27 of one of the radial arms and a lug 36 secured to the underside of top 14. This lug 36 also serves as a stop, being engageable by the adjacent arm extremity 27 when the locking device is in unlocked position. When handle 25 is released, this spring 35 acts to rotate the locking mechanism from the dotted line unlocked position to the full line locked position, all as will be clear from inspection of Fig. 3.

From the foregoing description it will be understood that I have provided a very simple and effective locking device for garbage can or other container lids, one which is not only most conveniently operated, but which provides positive assurance that the lid cannot be dislodged except by proper unlocking manipulation of the lock controlling handle. If the can should become bent so that one of the links will fail to move into locking engagement with the can, the remaining links will nevertheless continue to operate and will lock the lid securely in position. The can with the lid locked in place may be overturned or jostled about without liability of displacement of the lid. A feature of the device is that a can equipped therewith may be either opened or closed by a simple twist of either hand, leaving one hand free to empty the contents of a pan. This feature, namely, a handle member which is effective not only as a means by which the lid may be lifted, but also as a means by which the locking device is manipulated, is stressed as an important feature and characteristic of my invention.

It will be understood the drawing and description are to be considered as merely illustrative of and not restrictive on the invention considered in its broader aspects, since various changes in design, structure and arrangement may be made without departing from the spirit and scope of the invention or of the appended claims.

I claim:

1. A locking device for a container lid having a downwardly turned marginal flange adapted to receive the upper end portion of a container which is provided at its upper end with an external bead, comprising a manually rotatable member rotatably mounted on and at the center of said lid, a handle on said rotatable member above said lid, a locking link operatively connected at its inner end to said rotatable member at a point offset from its axis of rotation, said locking link extending from said operative connection in an outward direction, a guide aperture in said lid through which said outwardly extending link projects, said guide aperture forming a slide bearing for said link and a hook on the outer end of said link engageable under said container bead, said container flange having a second aperture spaced below said first mentioned aperture, and said hook extending around the outside of the portion of said flange that is between said two apertures and thence inwardly through the lower of said apertures to engage directly under said bead.

2. A container lid having a downturned marginal flange adapted to receive the upper end portion of a container which is provided at its upper end with an external bead, a central aperture formed in said lid, means forming an annular inwardly facing groove around said aperture, a disk rotatably mounted in said groove so as to close said aperture, a handle on the upper side of said disk, a plurality of locking links below said lid operatively connected at their inner ends to said disk at circularly spaced points offset from its center of rotation, said locking links extending horizontally outwardly from said operative connections, circularly spaced guide apertures in said lid through which said outwardly extending links project and work, said apertures forming slide bearings for said links, and hooks on the outer ends of said links engageable under said container bead, said flange having apertures spaced below said first mentioned apertures through which the hook ends of said links project to engage directly under said bead.

3. A container lid having a downturned marginal flange adapted to receive the upper end portion of a container which is provided at its upper end with an external bead, a central aperture formed in said lid, a central rotatable disk adapted to close said aperture, means on said lid forming an inwardly facing guideway for the periphery of the disk, a handle on the upper side of said disk, a plurality of locking links below said lid operatively connected at their inner ends to said disk at circularly spaced points offset from its center of rotation, said locking links extending outwardly from said operative connections, circularly spaced guide apertures in said lid through which said outwardly extending links project and work, and downturned hook ends on the outer end portions of said links engageable under said bead.

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