(22) Date de dépôt/Filing Date: 2009/10/05
(41) Mise à la disp. pub./Open to Public Insp.: 2010/08/11
(45) Date de délivrance/issue Date: 2014/06/03
(30) Priorité/Priority: 2009/02/11 (US12/369,515)

(51) Cl.Int./Int.Cl. B65D 45/00 (2006.01), B65D 45/32 (2006.01), B65F 1/16 (2006.01)

(72) Inventeurs/Inventors:
SHARMA, RAJNEESH, CA;
SHARMA, ALICIA, CA

(73) Propriétaires/Owners:
SHARMA, RAJNEESH, CA;
SHARMA, ALICIA, CA

(74) Agent: NA

(54) Titre : DISPOSITIF SERVANT À FIXER UN COUVERCLE SUR UN BAC EN POSITION FERMÉE
(54) Title: APPARATUS FOR SECURING A LID TO A BIN IN A CLOSED POSITION

(57) Abrégé/Abstract:
A securing assembly for fastening a container lid to an open topped container, the container having a pair of container fixture elements at opposed positions. The securing assembly is a strap having a pair of strap spans. Each strap span extends between one of a pair of strap fixture elements and one of a pair of buckle members, the buckle members engageable to buckle the strap spans together. The container fixture elements engage with respective strap fixture elements for fixing the buckled strap spans so that the lid is held against the container top. A loop is attached to and extends from one anchor location on the first strap span to another anchor location on the second strap span, the loop position at each anchor location being adjustable, so as to alter the length of the loop and to correspondingly alter the length of the respective strap span.
ABSTRACT OF THE DISCLOSURE

APPARATUS FOR SECURING A LID TO A BIN IN A CLOSED POSITION

A securing assembly for fastening a container lid to an open topped container, the container having a pair of container fixture elements at opposed positions. The securing assembly is a strap having a pair of strap spans. Each strap span extends between one of a pair of strap fixture elements and one of a pair of buckle members, the buckle members engageable to buckle the strap spans together. The container fixture elements engage with respective strap fixture elements for fixing the buckled strap spans so that the lid is held against the container top. A loop is attached to and extends from one anchor location on the first strap span to another anchor location on the second strap span, the loop position at each anchor location being adjustable, so as to alter the length of the loop and to correspondingly alter the length of the respective strap span.
APPARATUS FOR SECURING A LID TO A BIN IN A CLOSED POSITION

FIELD OF THE INVENTION

This invention relates to apparatus for securing a container lid to a base of a container such as a garbage bin. The purpose of the invention is to prevent opening or separating the lid altogether from the base container by wind, or by domestic or wild animals such as dogs, raccoons, bears etc. until the apparatus is manually disengaged.

DESCRIPTION OF RELATED ART

The problem of raccoon attack is well known to urban dwellers and garbage collectors alike and there have been many attempts to solve the problem. One scheme uses bungee cords or like ties which are stretched between hooks which are often found either on the bin or the bin lid and which can be manipulated to fix the lid to the bin. Both the hooks and the bungee cord can be readily defeated by the determined raccoon as bungee cords can be stretched. In addition, the bungee can be somewhat dangerous if it becomes dislodged inadvertently from its hook while the bin and the bungee are being handled during the course of filling or emptying the bin.

United States Patent Serial No. 6,902,081 (Walker) discloses an alternative arrangement using straps. As described, a securing system has a snap lock mechanism provided on one side of the lid and can and a second snap lock mechanism provided on the other side of the lid and can. Each snap lock mechanism has a male snap buckle and a female snap buckle which are engaged for buckling and disengaged for unbuckling. One of the male and female snap buckles of each snap lock mechanism is coupled to the garbage can and the other of the male and female snap buckles of each snap lock mechanism is coupled to the lid. At least 3 screws need to be drilled into the garbage can to install such an assembly. In use when buckling or unbuckling, first one snap lock mechanism and then the other is operated. A simpler mechanism both in terms of materials and operation is desirable.
SUMMARY OF THE INVENTION

According to one aspect of the invention, there is provided a securing assembly for a bin and lid combination, the bin lid combination having handles at opposed sides, the securing assembly comprising a strap, a fixture means at respective ends of the strap for fixing at respective handles, a loop in the strap, the loop having a first loop end attached to a first buckle member of a buckle mechanism and a second loop end attached to a second buckle member of the buckle mechanism, the strap position being adjustable at the first buckle member whereby to alter the length of the loop and to correspondingly alter the length of a strap span extending between the buckle mechanism and one of the fixture means.

Preferably, the second loop end is looped around a retaining element of the second buckle member and fixed to itself to fix the relative position of the second loop end and the second buckle member along the length of the strap.

The buckle can be any of a side release buckle, a cam buckle, a ratchet buckle, a dual adjusting side release buckle or other comparable snap lock action buckle. The fixture means are typically hooks which are tailored to fit bar elements on respective ones of the handles.

For convenience and aesthetics, the assembly can include a keeper loop and/or a retainer element for fixing the assembly to the bin lid. The keeper loop is dimensioned to permit the loop to be folded and stored out of the way when the lid is secured by the assembly to the bin.

According to another aspect of the invention, there is provided an arrangement of a bin and lid combination, the bin and lid combination having handles, the securing assembly applied to the bin lid combination by fixing of the fixture means at the handles. Such an arrangement is preferably configurable between an assembly released condition to permit removal of the lid from the bin and an assembly applied condition to secure the lid to the bin. The handles are preferably attached to or integral with the bin.
For a bin and lid which are generally circular in configuration, the handles can be located at generally, diametrically opposed positions. The bin and lid can alternatively be of generally polygonal form with the handles being located on generally opposed sides. The present invention will also work on bins with no handles but where the rim of the base container is indented such that the hooks of the apparatus can be latched on to the rim.

BRIEF DESCRIPTION OF THE DRAWINGS

For simplicity and clarity of illustration, elements illustrated in the following figures are not drawn to common scale. For example, the dimensions of some of the elements are exaggerated relative to other elements for clarity. Advantages, features and characteristics of the present invention, as well as methods, operation and functions of related elements of structure, and the combinations of parts and economies of manufacture, will become apparent upon consideration of the following description and claims with reference to the accompanying drawings, all of which form a part of the specification, wherein like reference numerals designate corresponding parts in the various figures, and wherein:

FIG. 1 is a perspective view of a securing assembly according to one embodiment of the invention;

FIG. 2 is a front perspective view of the securing assembly of FIG. 1 when applied to a bin;

FIG. 3 is a side perspective view of the securing assembly of FIG. 1 when applied to a bin;

FIG. 4 is top view of the securing assembly of FIG. 1 when applied to a bin;

FIG. 5 is a detail view of buckle members of a side release buckle for use in an embodiment of the invention;
FIG. 6 is a plan view of one form of hook for use in a securing assembly according to an embodiment of the invention;

FIG. 7 is a sectional view of the hook of FIG. 6.

DETAILS DESCRIPTION OF THE INVENTION INCLUDING THE PRESENTLY PREFERRED EMBODIMENTS

FIG. 1 is a perspective view of a securing assembly forming one embodiment of the present invention. The securing assembly has a non-stretch strap 1, a side release buckle mechanism 2, two hooks 3, and a keeper loop 4 with a metal ring 5. The strap 1 is folded through apertures of hooks 3 and stitched at anchor points 11. At a male member 7 of the side release buckle 2, the strap is looped from bottom to top around link element 9 and then looped from top to bottom around link element 10. The strap 1 is then is looped from top to bottom around link element 8 and then stitched to itself at anchor point 12 also forming a strap loop 13 between link element 8 and link element 10. The strap extends from the anchor point 12 through the keeper loop 4 which has a hole 5 provided with metal ring reinforcement. The end of the strap is looped from top to bottom through an aperture in the left hook 3 and then stitched to itself at anchor point 11. In this way, there is a fixed length of strap 1 extending between the anchor point 12 and the hook 3 to the left shown at left in FIG. 1 and an adjustable length of strap extending between the male member 7 of the side release buckle and the hook 3 to the right.

FIGs. 2, 3 and 4 shows the application of the adjustable securing assembly of FIG. 1 when used with a garbage bin lid combination. As shown in FIG. 2, garbage bin 14 is of rectangular shape with a lid 15 hinged to the bin. Curved hooks 3 are custom made to fit to handles 18 of the bin.

In operation, to secure the lid to the bin with the lid in the closed position, the curved hooks 3 are first lodged into position over the handles 18 and then the buckle mechanism is applied.
RS001CA

by inserting the male buckle member 7 into the female buckle member 6 until the buckle members 6 and 7 snap lock together. Provided the span of the strap extending from the hooks 3 is of appropriate length, strap 1 can be tightened over the lid 15 by pulling the strap outward from the link element 10 of the side release buckle until the strap cannot be pulled anymore and the lid is tightly secured to the bin. The strap loop 13 is folded and stored in the keeper loop 4.

In operation, to release the lid from the bin, the buckle mechanism is operated to release the male member 7 from the female member 6. This loosens the strap 1 and enables an operator to remove the hooks 3 from the handles 18. The securing assembly can then be removed and stored out of the way until next required for use.

Although not required in terms of securing the lid to the bin, the securing assembly can be attached permanently to the lid 15. For example, an attachment can be achieved using a nut-and-bolt fastener through the hole 5 on the keeper loop 4 or a strong cord can be run through the hole 5 and tied to lift handle 16 of the bin.

It should be noted that the present invention is not limited to the use of a side release buckle as a mechanism to tighten the strap 1. Comparable results can be achieved using an alternative type of buckle mechanism such as a cam buckle, a ratchet buckle or a dual adjusting side release buckle. If a dual adjusting side release buckle is used, there is no need to stitch strap 1 to itself at anchor point 12.

It should also be noted that this invention is not limited to the use of curved hooks which are just one form of fixture means that can be used to attach the strap to a bin handle. Clearly, garbage bins come with different handle shapes and configurations. The fixture means are therefore of such a form as will permit easy application to the handle and which will provide effective locking of the securing assembly to the bin lid combination when the buckle mechanism is applied. Conventional forms of bin handle will generally permit effective securing with hooks that are curved, flat or S-shaped.
RS001CA

The material of the strap 1 preferably comprises a flexible, non-stretch, elongate material. Preferred materials include woven webbing of synthetic materials such as nylon, polypropylene and the like and are commercially available in various widths.

The invention has been described with reference to preferred embodiments. While various changes may be made in detailed construction, it is understood that such changes would be in the spirit of the present invention as it is defined in the appended claims.

The embodiments of the invention described and illustrated are adapted to be applied between two handles on opposed sides of the bin lid combination. It will be understood that the principles of the invention can be used with a bin lid combination with more than two handles. For example, a bin can have three handles distributed around the perimeter of the bin. In such an arrangement, for example, spans of strap from two of the handles to a first buckle member can be fixed and a span of strap from the third of the handles can have an adjusting loop such as the loop 13 therein, with one end of the loop adjustably attached to the second buckle member and the other end of the loop fixedly attached to the first buckle member. Even with bins (with or without handles) where the rim of the base container is indented such that hooks can be latched on to the rim, this invention can be used to secure its lid in a closed position.

The embodiments of the invention described and illustrated are adapted for easy manufacture in that the strap 1 comprises a single piece of material. It will be appreciated, however, that the strap 1 can be made up of multiple lengths. For example, in contrast with the FIG. 1 arrangement where the loop length is taken through the buckle retainer bar and then stitched or otherwise fixed back on itself at the anchor point 12, a first strap span from the left hook 3 can be stitch retained to the buckle member 6 and then a second separate span, from the right hook 3 can be taken through the buckle member 7, configured with the loop 13, and then stitched or otherwise fixed at the anchor point 12.

Handles between which the securing assembly is applied will generally be part of or mounted on the bin. However, the principles of the invention can be achieved by a different arrangement in which a handle forms part of or is mounted on the lid. In such an
arrangement, the lid is placed on the bin and the handle is actuated to provide an initial retention of the lid to the bin. The application of the strap securing assembly between spaced handles and actuation of the buckle mechanism then locks the lid in place.

Other variations and modifications will be apparent to those skilled in the art. The embodiments of the invention described and illustrated are not intended to be limiting and the principles of the invention contemplate many alternatives having advantages and properties evident in the exemplary embodiments.
CLAIMS

1. A non-stretch, flexible securing strap for fastening a container lid to an open topped container having a pair of container fixture elements at opposed positions at the top of the container, the securing strap comprising a first strap span having a first part extending from one of a pair of strap fixture elements to a first strap adjustment means being a sole means of altering the length of the first part, the first strap adjustment means combined with a first buckle member, a second strap span having a second part extending from the other of the pair of strap fixture elements to a second strap adjustment means being a sole means of adjusting the length of the second part, the second strap adjustment means combined with a second buckle member, an extension loop extending between the first strap adjustment means and the second strap adjustment means, the first and second buckle members releasably engageable to buckle the first strap span to the second strap span, the strap fixture elements for engagement with respective ones of the container fixture elements for fixing the buckled strap to the container with the lid held thereby against the container top, the first strap length adjustment means permitting adjustment to alter the length of the extension loop and to correspondingly alter the length of the first part.

2. A securing strap as claimed in claim 1, the strap fixture elements comprising hooks and the container fixture elements comprising bars.

3. A securing strap as claimed in claim 1, the container fixture elements comprising protruding side handles on the container, the strap fixture elements having a detent part for engaging under respective ones of the protruding side handles.

4. An arrangement comprising the securing strap of claim 1, the securing strap applied to the container lid combination by engagement of the container fixture elements with the strap fixture elements.

5. An arrangement as claimed in claim 4, the arrangement configurable between a released condition to permit opening of the lid and an applied condition to secure the lid in a closed position.
6. An arrangement as claimed in claim 4, the container and lid being generally round, the container fixture elements being handles located at diametrically opposed positions.

7. An arrangement as claimed in claim 4, the container and lid being generally polygonal, the container fixture elements being handles located on generally opposed sides of the container.

8. An arrangement as claimed in claim 4, the lid being fully detachable from the container.

9. An arrangement as claimed in claim 4, the lid being attached to the container by a hinge.