



US 20070257037A1

(19) **United States**

(12) **Patent Application Publication**
Scarborough

(10) **Pub. No.: US 2007/0257037 A1**

(43) **Pub. Date: Nov. 8, 2007**

(54) **SODA CAN RESEALING DEVICE**

(52) **U.S. Cl. 220/269**

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(57) **ABSTRACT**

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A beverage can sealing machine engineered to reseal the drinking hole of a beverage can with means of stopping the leakage of liquid and emission of carbon gas. The device has a main inflexible body 10 with a bonded flexible plate 12 lining its bottom surface with means of conforming to the top surface of a can. The inflexible body 10 has two bores through its top surface. A modified metallic rod 2 is bent in a "U" form to accommodate these bores with its end portion accommodating the bore 24 near the main body's rear and its threaded portion going through the bore 24 near the front of the main body 10 then descending below the bottom surface of the flexible plate 12 to be connected to a pivotal beam, which is configured to engage the ceiling of a beverage can. Between the pivotal beam and flexible plate 12 is a sealing system aiding in the sealing process. A fastening component 6 is to engage the threaded portion 4 of the "U" formed rod 2 above the plastic body 10 to lift pivotal beam while turning it clockwise to seal a beverage can.

(21) **Appl. No.: 11/708,156**

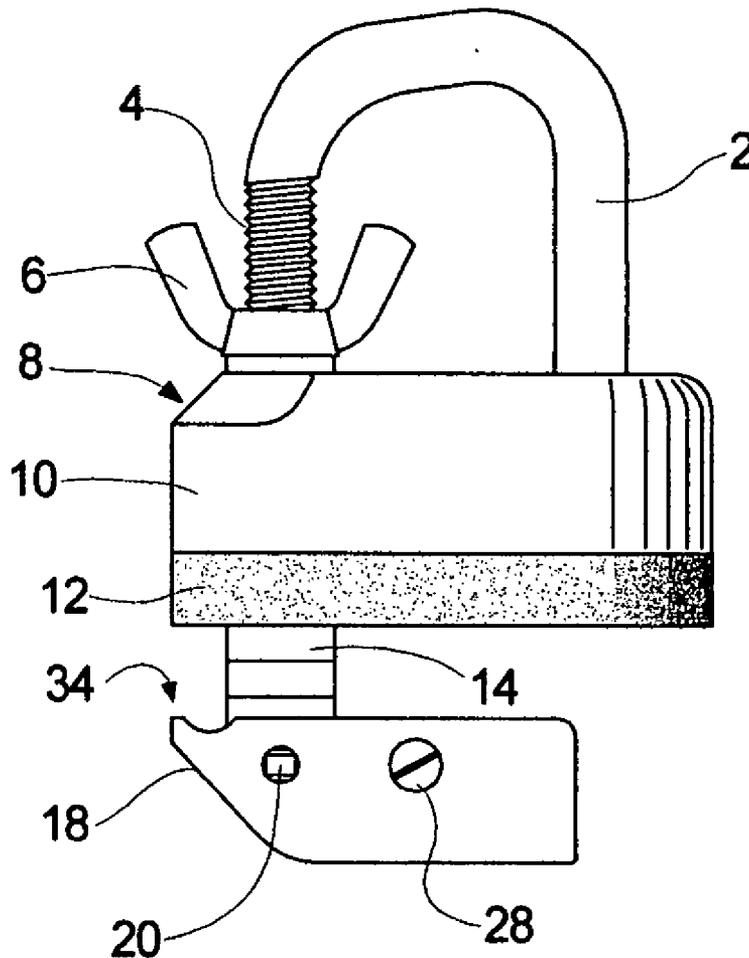
(22) **Filed: Feb. 2, 2007**

Related U.S. Application Data

(60) **Provisional application No. 60/796,947, filed on May 3, 2006.**

Publication Classification

(51) **Int. Cl.**
B65D 17/34 (2006.01)



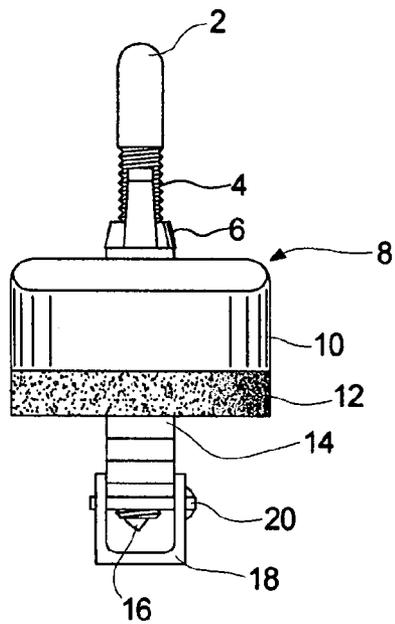


FIG. 2

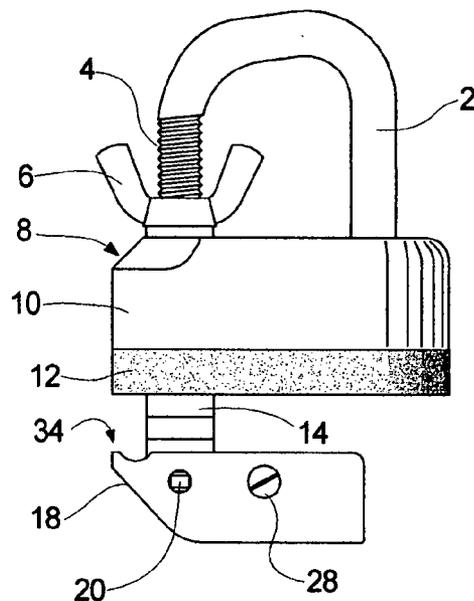


FIG. 1

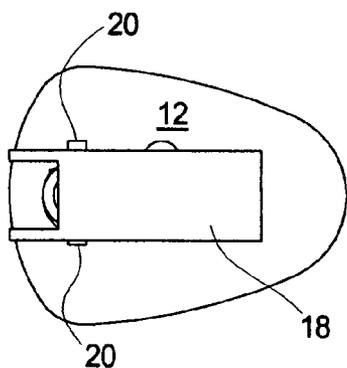


FIG. 4

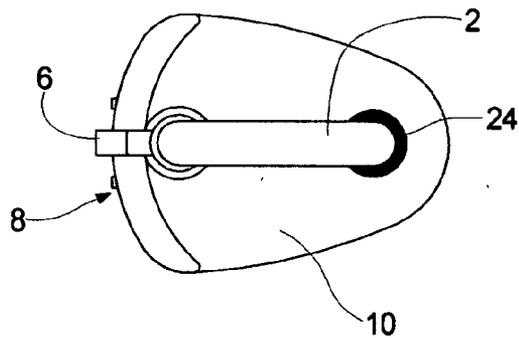
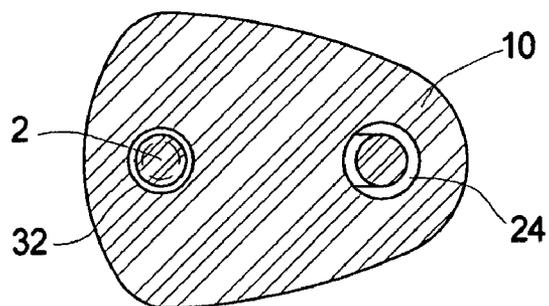
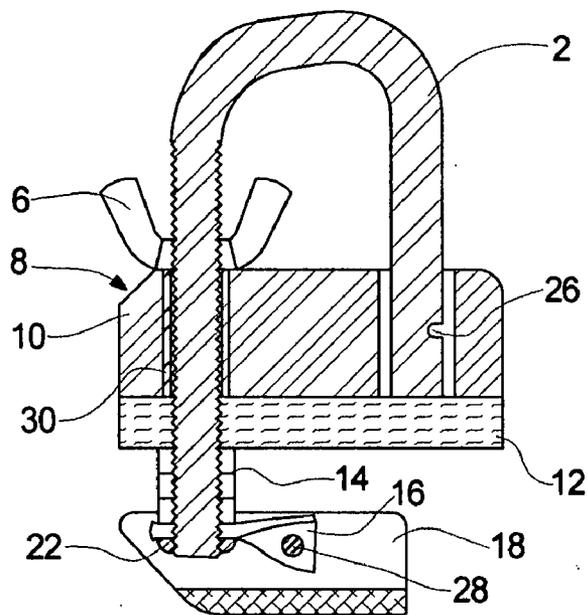


FIG. 3



SECTION AA

FIG. 5



SECTION BB

FIG. 6

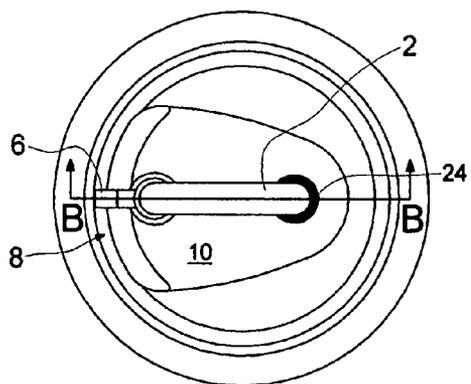


FIG. 7A

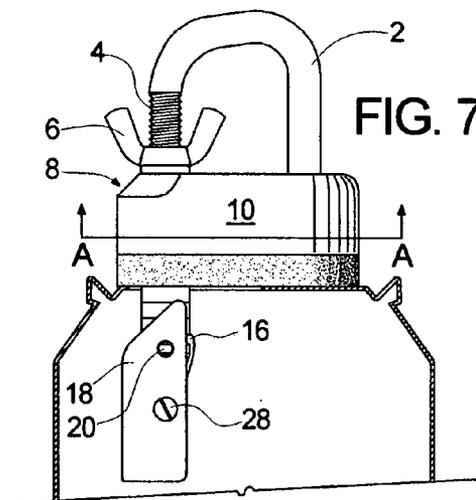


FIG. 7

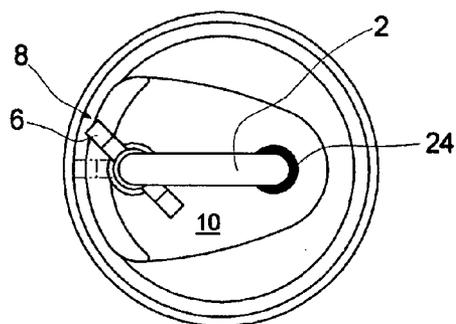


FIG. 8A

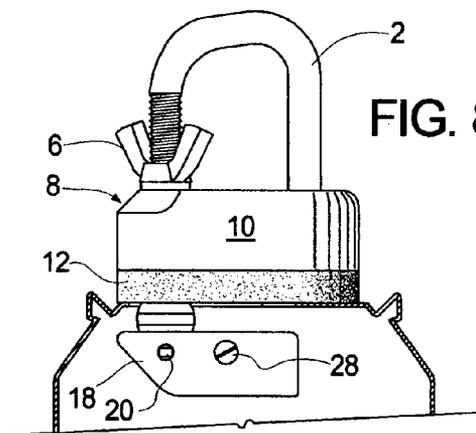


FIG. 8

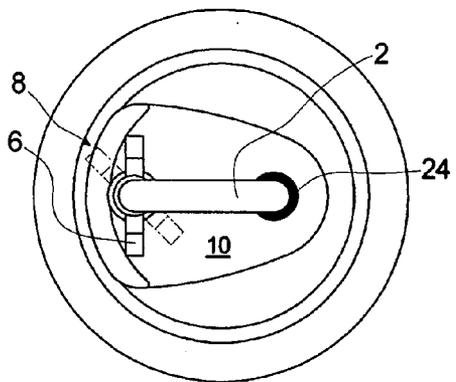


FIG. 9A

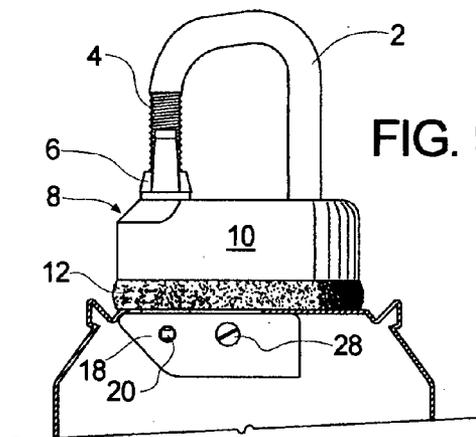


FIG. 9

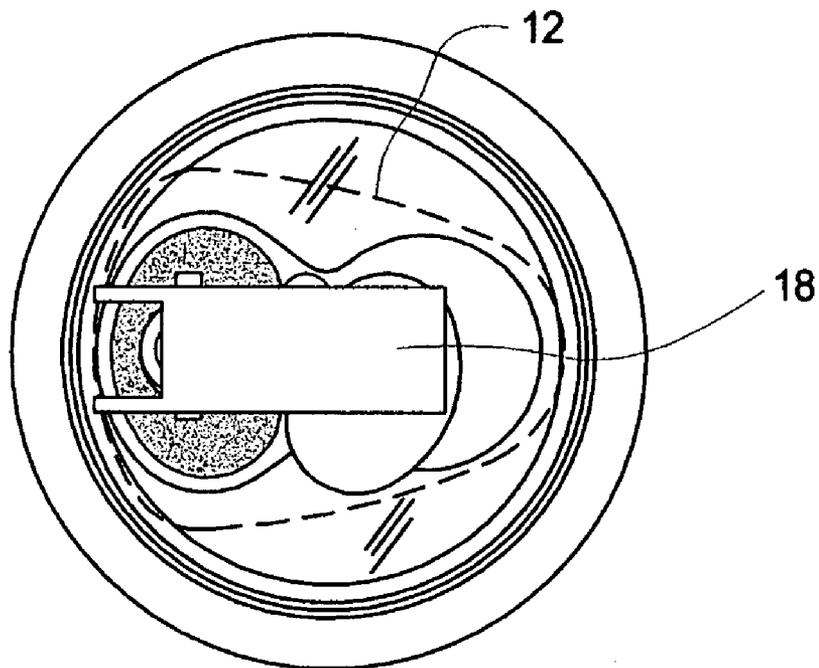


FIG. 10

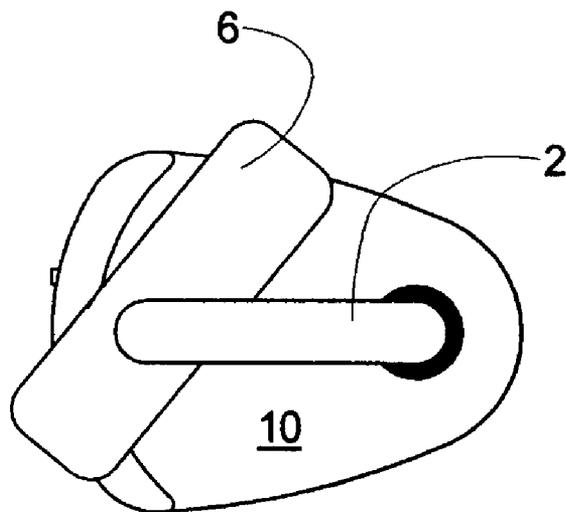


FIG. 11

SODA CAN RESEALING DEVICE

[0001] This application is a Continuation-In-Part application of Ser. No. 60/796,947, currently pending filed on May 3, 2006.

BACKGROUND OF THE INVENTION

[0002] 1. Field of Invention

[0003] This invention relates to devices designed to reseal canned beverage containers retaining a liquid or carbonated drink after they have been opened.

[0004] 2. Background of the Invention

[0005] Many retail stores around the world sell carbonated drinks in cans that can be opened by pulling a tab, which results in an opening near the edge of the can to drink the beverage. But these cans cannot be resealed for convenience or emergency situations. There are currently many inventions categorized as beverage can sealing devices that have the potential for achieving their purpose, but have not flourished in the market place. The reason for such a lack of a convenient device in the market place may have to do with the prior arts versatility and quality.

[0006] There are a multitude of beverage cans in the market place having different sizes and shapes. Notably, most drinking holes made after its lever like tab has been pulled have different oval shapes. Much of the prior art in this field lack the versatility to fit into the most commonly used oval shaped drinking holes in cans used today. U.S. Pat. No. 4,804,103 to Goldberg reveals a diamond shaped horizontal portion that is sustained below the apparatus from its center, with the ability to rigidly pivot with an upper cam lever component used to lift the diamond shaped cross member and compress the sealing body of the can sealer around the opening of a beverage can. Currently, many drinking holes are designed so that its distance from right to left, is longer than its distance from front to back. According to his patent, the diamond shaped portion and the post member, which protrudes through the sealing rubber from its inflexible upper horizontal body is designed to fit in drinking holes having a longer distance from front of back, than its distance from right to left. So such a device in principle would be restricted to those parameters.

[0007] In the market place most current beverage cans have drinking holes that are close to the edge of the can. So having a vertical component that pulls the engaging member to the ceiling of a can that is centrally located through a circular sealing body would place the flexible portion over the rim of the beverage can making it hard to seal the drinking hole. Such an example could be found in the U.S. Pat. No. 3,982,656 awarded to Kusmierski. The CIP of the soda can resealing device (60/796,947) has its vertical pulling member near the front edge of the sealing assembly, which allows the flexible component to be placed over and around the drinking hole while still being within the rim of the can.

[0008] Other carbonated can fastening devices are designed to latch on to the rim of a beverage can to seal the opening of the drinking hole, however they have their limitations. Since many of the beverage cans in the market place don't have the same rim diameter because of specified volume capacity and form, can sealing devices which are configured to snap onto the rim of a particular rim diameter are limited to beverage cans with that particular rim diam-

eter. Such an example of this kind of can sealing device can be found in the U.S. Pat. No. 6,478,179 B1 awarded to Alexander and U.S. Pat. No. 6,053,347 awarded to Fullin. The soda can resealing device of the present application is adaptable to a multitude of carbonated cans having various rim diameters and thus would provide a greater application for consumers.

[0009] In situations where the resealed canned beverage may need to be placed in an environment where a liquid leak would be disastrous like a suit case or a purse, the option of increasing the contact pressure between the flexible sealing body and top surface of a can would be attractive. A concealed beverage in this environment would have a change in temperature and the shaking of the carbonated drink may occur due to the carrying of such hand baggage. The two latter mentioned prior devices don't have this option to adapt to environmental change. The downward potential action of each cam formed into their levers is apparently set to a specific pressure gauge. The soda can resealing device's sealing assembly can be forced downwards on the top surface of a can, while the edges of its aluminum pivotal beam is pulled upwards to engage the under surface of the can's top layer due to the wedging upward of the vertical thread on the modified u-bolt. This wedging upwards of the u-bolt is accomplished by turning the fastening component engaged to its outer threads in a clockwise motion. This mechanism gives the consumer the customized option to apply more downward pressure of the soda can resealing device to the top surface of a can.

BACKGROUND OF INVENTION—OBJECTS AND ADVANTAGES

[0010] Accordingly, besides the objects and advantages of the soda can resealing device clarified in this patent, a number of objects and advantages of the present invention are:

[0011] (a) The soda can resealing device would be appealing to companies wanting to use it as a promotional product. On the front upper surface of the device is a beveled space, allowing companies to put their trademark or website address on its surface for marketing purposes. This is very visible after being applied to a soda can because of its approximate 45 degree angle.

[0012] (b) The soda can resealing device is sizable enough to fit in a consumer's pocket and its size would make an excellent key chain device. Furthermore, because many canned beverages are bought in vending machines, a soda can resealing device with mobile abilities would be convenient for travel and circumstances where a canned beverage would have to be resealed for hand baggage transport.

SUMMARY

[0013] According to the information presented, the soda can resealing device is composed of a plastic like body with silicone rubber as its' base sealing body, having three silicone washers between the sealing body and silicone belt, while positioned around the thread portion of an u-bolt. The three silicone washers prevent carbon from leaking through the front bore. The threaded portion of the u-bolt allows the surface around the drinking hole of a canned beverage to be sealed with customized pressure according to the consumers wishes to stop carbon leakage. This pressure is optimized by the downward screwing of the wing nut, which can be

engaged to the threaded portion of the u-bolt with an upward twisting motion or downward twisting motion

DRAWING—FIGURES

[0014] FIG. 1 shows a left side view of the soda can resealing device.

[0015] FIG. 2 shows a front view of the soda can resealing device.

[0016] FIG. 3 shows a top view of the soda can resealing device.

[0017] FIG. 4 shows a bottom view of the soda can resealing device.

[0018] FIG. 5 shows a horizontal cut away section of the plastic body 10, exposing two sections of the u-bolt 2.

[0019] FIG. 6 shows a vertical cut away section of the plastic body 10 exposing the mechanical configuration of the u-bolt 2, fastening component 6, the width of the bores in the solid plastic body 10, the retractable belt 16, the structure of the silicone sealing component 12 and how the u-bolt 2 interacts with the assembly of components.

[0020] FIG. 7 to FIG. 9 illustrates how the soda can resealing device engages a canned beverage when manually operated.

[0021] FIG. 7A to 9A illustrates what direction to rotate the fastening component for sealing a canned beverage.

[0022] FIG. 10 shows how the soda can resealing device engages the ceiling of a cans top layer for resealing a drinking hole.

[0023] FIG. 11 shows an alternative embodiment of the soda can resealing device with a pivotal lever having a tapped bore and the threaded u-bolt as its fulcrum for more tightening leverage.

DRAWINGS—REFERENCE NUMERALS

[0024]

2	modified u-bolt	22	frontal bore
4	thread	20	fulcrum component
6	fastening component	18	aluminum beam
8	advertisement space	24	rear bore
10	plastic body	26	stop line
12	flexible plate	28	machine screw
14	air sealing device	30	metal spacer
16	retractable belt	32	washer
		34	hook points

DETAILED DESCRIPTION—FIGS. 1 to 6—PREFERRED EMBODIMENT

[0025] A preferred embodiment of the invention is illustrated in FIG. 1 left profile, FIG. 2 front profile and FIG. 3 top profile. The main body 10 of the soda can resealing device is made out of an inflexible hardened mixture of epoxy materials. The main body's 10 side contours are shaped to cover the drinking holes and surrounding stamped metal surfaces of most canned beverages. Permanently glued to the under flat surface of the main body 10 is a layer of silicone 12 with edges flush with the contoured edges of the plastic body 10. This layer of silicone 12 has the ability to conform to the top surface of different beverage cans. Three layers of silicone washers 14 with semi-tight connection have small holes stamped through them. The diameters of their holes are smaller than the outer diameters of the

thread 4 of the modified u-bolt 2. When the washers 14 are assembled around the thread 4, a limited air tight barrier is created between the areas of contact. A silicone belt 16 is further mashed between the three silicone layers 14 and the fulcrum component 20 after the fulcrum component is applied as a fastener to the threaded portion 4 of the modified u-bolt 2. The top surface of the silicone washer and the bottom surface of the silicone plate 12 do not always have an air tight barrier between them. The air tight barrier occurs only, when the aluminum beam 18 is contacting the ceiling of a can or the bottom surface of the silicone plate 12, after the fastening component 20 is screwed in a clockwise manner until the stop line 26 is visible.

[0026] The fulcrum component 20 has two extended edges from opposite sides of its circumference, which occupy separate member bores in opposite sides of the aluminum beam 18. This assembly allows the beam 18 to pivot at this connection. The beam 18 has an inner surface that is almost "U" shaped, which accommodate the diameter of the silicone washers 14. The outer surface has right angle corners, which are 0.50" apart. The length of the beam 18 is approximately 1.50". A second pair of bores through opposite walls of the beam 18 are occupied by a machine screw 28 that is screwed tightly into place. These bores are located behind the bores accommodating the fulcrum 20. The frontal portion of the beam 18 have walls that are slanted forward from the bottom edge with the upper frontal edge formed vertically. The frontal edges slopes backwards from the top the vertical edge in a form that sets the lowest angle approximately 0.50" behind the top front angle for preventing the lower frontal edge from conflicting with the edge of a drinking hole during the insertion of the beam 18. A small curve is formed in the frontal top edges of each wall of the beam 18 in order to form a hook like 34 tip that enables the soda can resealing device to securely grab the edge of a drinking hole.

[0027] The machine screw 28 occupies a hole stamped through the end of the silicone belt 16, while the other end of the belt is connected to the vertical thread 4 of the u-bolt 2 by means of the thread 4 occupying a second hole through the belts 16 frontal end. The belt 16 maintains a light tension between these two connections, thus sustaining the pivotal beam member 18 in a horizontal position while providing it with the means of being pivoted in a vertical position for easy insertion into a can hole. Once the beam 18 is released, the silicone belt 16 will retract back to its original length while pulling the beam 18 back to its original horizontal position. Near the base of the u-bolt's 2 rear vertical portion is a groove 26 cut in its rear surface as an indication that the drinking hole is sealed after this groove 26 has been elevated above the surface of the plastic body 10 and the that the rotation of the fastener 6 engaging the outer thread 4 of the u-bolt 2 should cease.

[0028] The fastening component 6 is assembled to engage the threaded portion 4 of the u-bolt. Between fastening component 6 and the plastic body 10 is a metal washer 32 which is positioned around the thread to protect the plastic body 10 from the rotational wear of the fastening component 6 and to reduce the friction of its rotation.

[0029] In FIG. 6 section BB exposes the cut away section of the plastic body 10, which exposes the walls of a steel cylinder 30 between the plastic body 10 and thread of the u-bolt 4. The metal wall 30 reduces the friction of the steel thread 4 against a softer inflexible material 10 and prevents

the plastic bore 22 from being worn by repeated usage. The top and bottom edges of the metal cylinder 30 in flush with the surface of the plastic body 10 and is glued in place.

Operation—FIGS. 7 to 9, 7A to 9A and 10

[0030] The manner of using the soda can resealing device is unique when compared to prior art. Firstly, after opening a canned beverage, the lever like tab should be removed by bending it back and forth approximately three to four times. Then aluminum beam 18 should be pivoted to a vertical position and inserted into the hole of the can. After the rear portion of the beam 18 is in the hole about 1/2", the beam 18 should be released to let the silicone belt 16 reposition the beam 18 towards a horizontal position. The plastic body 10 should be moved back in a slight downward slope to insert the front portion of the pivotal beam 18 into the drinking hole. The plastic body 10 should then be moved forward so that the silicone plate 12 edge is in front of the frontal edge of the drinking hole and its bottom surface is lying flat on the top surface of the can over the drinking hole. This also positions the frontal edge of the aluminum beam 18 to engage the frontal ceiling edge of the drinking hole. A right handed person would take the left hand and grasp the upper horizontal portion of the modified u-bolt 2 with the index finger and thumb. Then take the right hand using the index finger and thumb to rotate the fastening component 6 in a clockwise motion. This action should continue until the stop line 26 cut in the rear vertical portion of the u-bolt 2 rises above the rear bore 24 in the main body 10. This stop line 26 would be calibrated to stop liquid and carbon emissions from escaping the sealed canned drink. However, the consumer will have the choice of applying more sealing pressure by screwing the fastener 6 further downwards in order to prepare the canned beverage for certain environmental circumstances. The consumer can then unseal the beverage by screwing the fastening component 6 in a counter clockwise motion and removing the soda can resealing device.

[0031] Although the device described above have many specifications, these should not be considered the absolute form and material make up of the invention. It might be more preferable to use Food and Drug Administration approved latex rubber instead of soft silicone. The steel rod may replace by an aluminum rod instead and wing nut may be replaced with a fastening component providing more leverage. Therefore, the range of the device should be

determined by the independent claims accommodating device configurations falling within their definition, rather than the examples stated.

I claim:

1. A beverage can sealing machine engineered to stop the leakage of liquid and carbon gas from an opened canned beverage comprising:

- an inflexible horizontal body formed to compress a flexible flat material around the surface of a beverage can hole with at least one vertical bore through its surface;
- a flexible plate lined to the bottom surface of said inflexible horizontal body with a vertical bore through its surface aligned to the vertical bore of said inflexible horizontal body, while having means to conform to the top surface of a can;
- a first inflexible linear member that occupies the bores of said inflexible and flexible assembly, while a portion of said first inflexible linear member's outer surface is threaded;
- a fastening component with a threaded bore meshed around the threaded portion of said first inflexible linear member with means to move it vertically up or down with rotational mechanical force;
- a second inflexible linear member connected near the base of said first inflexible linear member that extends in opposite directions from this connection, while both extended portions of the second inflexible linear member have means of engaging the ceiling of a beverage can.

2. The beverage can sealing machine of claim 1 wherein the second inflexible linear member is comprised of a fulcrum component suspended at or near the base of said first inflexible linear member, while an inflexible beam is connected to the fulcrum component with pivotal ability.

3. The beverage can sealing machine of claim 2, wherein said inflexible beam is sustained in a horizontal position with the means of being pivoted vertically manually and pulled back automatically to its horizontal position once released.

5. The beverage can sealing machine of claim 1 wherein the first inflexible linear member has means of preventing the inflexible horizontal body and flexible layer from pivoting with the rotation of said fastening component.

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