ITEM COUNTING DEVICE FOR CONTAINER LID

Inventors: Jeffrey Wayne Thielke, Benson, MN (US); Bruce Norris Moen, Benson, MN (US)

Correspondence Address:
QUICKPATENTS, INC.
32861 CALLE PERFECTO, SUITE A
SAN JUAN CAPISTRANO, CA 92675 (US)

Appl. No.: 12/053,581
Filed: Mar. 22, 2008

Related U.S. Application Data
Provisional application No. 60/919,586, filed on Mar. 23, 2007.

Publication Classification
Int. Cl. B65D 41/36 (2006.01)

ABSTRACT

A container closure that counts items inserted into the container is disclosed. The closure includes a lid structure that has a container sealing means around a perimeter thereof and an aperture traversing the lid structure. A flap is adapted to substantially seal the aperture and is fixed with a hinge at one edge thereof to a bottom side of the lid structure. A counting mechanism is fixed to the lid structure and includes an actuating lever having an actuator linkage fixed to the flap. The counting mechanism is adapted to increment a counter of the counting mechanism when the flap is moved from a closed position towards an open position. Preferably the actuator linkage is a coil spring such that the flap only needs to travel a short distance towards its open position to actuate the actuating lever. Thereafter, once the actuator linkage has pulled the actuating lever into its actuating position and the counter has been incremented, the coil spring expands as necessary to permit the item to traverse the aperture between the flap and the lid structure.
ITEM COUNTING DEVICE FOR CONTAINER LID

CROSS-REFERENCE TO RELATED APPLICATIONS


STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT

[0002] Not Applicable.

FIELD OF THE INVENTION

[0003] This invention relates to containers, and more particularly to a container closure with an item counting function.

DISCUSSION OF RELATED ART

[0004] While fishing, it is often convenient to store caught fish in a container, and towards that end containers with easily opened lids or easily opened apertures in lids have been devised. For example, U.S. Pat. No. 6,460,287 to Louie on Oct. 8, 2002 teaches a lid having a small tackle box function as well as a hinged cover for an aperture for receiving fish. U.S. Pat. No. 7,017,297 to Ward on Mar. 28, 2006; U.S. Pat. No. 7,342,600 to Pas et al. on May 23, 2000; U.S. Pat. No. 4,008,540 to Brower on Feb. 22, 1977; and U.S. Pat. No. D532,860 to Richardson et al. on Nov. 28, 2006 all teach similar containers designed to hold fish and each having a closable aperture in the lids thereof. When fishing, and particularly on a good fishing day, it is often easy to lose count of the number of fish caught over a period of time. These types of prior-art container devices, however, must be opened and quite often the fish must be handled within the container in order to accurately count the number of fish therein if one has forgotten the number of fish that have been caught. As such, a container that includes a counting function would be desirable while fishing. U.S. Pat. No. 5,156,291 to Mielke on Oct. 20, 1992 teaches such a device. A biased flap is operable by inserting a fish through an aperture in the lid of such a device, and a manually actuable counter may then be adjusted. However, with such a device it is easy to forget to advance the counter, or to forget if one has already advanced the counter, after placing a fish into the container. As such, the counter of such a device may not accurately reflect the number of fish in the container. Further, the lid and biased flap of such a device is integrally formed with the container, preventing its use on other containers that may be more appropriate to the size or number of fish being caught. U.S. Pat. No. 5,941,016 to Welcher on Aug. 24, 1999 teaches an insulated cooler having an opening in a lid thereof, the opening covered by a biased flap that is operable connected to a counting device that increments the counter when an object is inserted into the container through the opening. Such a device suffers from the drawback that the particular container to which it is attached must be used, such as the insulated cooler shown in FIG. 1. The lid of such a device cannot be used with alternate containers that may be more appropriate to the size or number of fish being caught.

[0005] As fishing often requires long periods of time sitting, fishermen often bring portable chairs in addition to tackle boxes, fish pails, and other fishing gear. Certain containers, such as the common five-gallon or six-gallon bucket used by painters, are tall enough to also serve as a seat, albeit an uncomfortable seat. U.S. Pat. No. 5,586,805 to Rinehart on Dec. 24, 1996 teaches a combination seat and container, allowing such a container to also be used as a cushioned seat. However, such a device requires one to raise a seat cushion of such a device in order to gain access to the container, which means one must stand before being able to introduce items into the container.

[0006] Therefore, there is a need for a device that can be used with the common five or six gallon bucket, and which allows a user to introduce fish into the bucket while remaining seated. Such a device would automatically count the number of items introduced into the bucket accurately, and would further allow different containers to be used therewith based on changing needs of the user. Such a needed device would also provide means for carrying a small amount of fishing tackle, and would allow the device to be easily carried by the handle of the bucket once selectively attached thereto. The present invention accomplishes these objectives.

SUMMARY OF THE INVENTION

[0007] The present device is a closure for a container, such as a standard five-gallon or six-gallon paint bucket, or the like. The closure includes a lid structure that has a container sealing means around a perimeter thereof. The lid structure includes a top side, a bottom side, and an aperture traversing the lid structure. A flap is adapted to substantially seal the aperture and is fixed with a hinge at one edge thereof to the bottom side of the lid structure. The flap is pivotable between an open position and a closed position.

[0008] A counting mechanism is fixed to the lid structure and includes an actuating lever having an actuator linkage fixed thereto at a top end thereof. The actuator linkage is fixed at a bottom end thereof to the flap and preferably urges the flap into its closed position. The counting mechanism is adapted to increment a counter of the counting mechanism by actuating the actuating lever when the flap is moved from its closed position to its open position.

[0009] Preferably the actuator linkage is a coil spring such that the flap only needs to travel a short distance towards its open position to actuate the actuating lever. Thereafter, once the actuator linkage has pulled the actuating lever into its actuating position and the counter has been incremented, the coil spring expands as necessary to permit the item to traverse the aperture between the flap and the lid structure. The counting mechanism preferably further includes a reset button that, when pressed or otherwise actuated, resets the counter to zero.

[0010] A seat may be fixed to the top side of the lid structure, so that items such as fish, for instance, may be easily dropped between the legs of the user into the container and thereby counted with the closure. Further, a small container may be included on the top side of the lid structure for holding small items, such as fishing tackle, or the like. Still further, a water-impermeable cover may be included and selectively positionable in a covering position around the counting mechanism or in a disengaged position away from the counting mechanism.

[0011] The present invention is a device that can be used with the commonly-known five or six gallon bucket. The present device allows the user to introduce fish into the bucket while remaining seated. Further, the present invention automatically and accurately counts the number of items intro-
duced into the bucket, and may be used with a variety of
different containers as appropriate for the changing needs of
the user. The present invention also provides means for
carrying fishing tackle and may be easily carried by a handle of
the bucket once selectively attached to the bucket. Other
features and advantages of the present invention will become
apparent from the following more detailed description, taken
in conjunction with the accompanying drawings, which illustr-
ate, by way of example, the principles of the invention.

DESCRIPTION OF THE DRAWINGS

[0012] FIG. 1 is a perspective top view of a closure for a
container lid;

[0013] FIG. 2 is a perspective bottom-side view of the
invention;

[0014] FIG. 3 is a left-side elevational view of the
invention, illustrating a flap of the invention in a closed position;

[0015] FIG. 4 is a left-side elevational view of the inven-
tion, illustrating the flap of the invention in an open position;

and

[0016] FIG. 5 is a perspective view of the invention in use.

DETAILED DESCRIPTION OF THE PREFERRED
EMBODIMENT

[0017] FIGS. 1 and 5 illustrate a closure 10 for a container
20, such as a standard five-gallon paint bucket, or the like. The
closure 10 includes a lid structure 40 that has a container
sealing means 50 around a perimeter 45 thereof (FIG. 2). The
lid structure 40 is preferably molded from a rigid plastic
material, but may also be a formed metal material or other
suitably rigid material.

[0018] The sealing means 50 preferably includes a plurality
of mechanical snaps 170 for selectively holding the closure
10 to the container 20. The lid structure 40 includes a top side
46, a bottom side 44, and an aperture 60 traversing the lid
structure 40 from the top side 46 to the bottom side 44.

[0019] A flap 70 is adapted to substantially seal the aperture
60 and is fixed with a hinge 80 at one edge 75 thereof to the
bottom side 44 of the lid structure 40. The flap 70 is pivota-
able between an open position (FIG. 4) and a closed position
100 (FIG. 3), and is preferably made from a rigid plastic material.
The hinge 80 may further include a spring 85 for urging the
flap 70 into its closed position 100. In one embodiment, the
flap 70 is made from a transparent or translucent plastic, such
as acrylic or polycarbonate, such that a user 230 may observe
the contents of the container 20 without having to remove the
closure 10 or open the flap 70.

[0020] A counting mechanism 110 is fixed to the lid struc-
ture 40 and includes an actuating lever 120 having an actuator
linkage 130 fixed thereto at a top end 136 thereof. The ac-
tuator linkage 130 is fixed at a bottom end 134 thereof to the flap
70 and preferably urges the flap 70 into its closed position
100. The counting mechanism 110 is adapted to increment a
counter 140 by actuating the actuating lever 120 when the flap
70 is moved from its closed position 100 towards its open
position 90. The actuating lever 120 is of the type having a
normal position (FIG. 3) and an actuated position (FIG. 4),
and is normally urged into the normal position.

[0021] Preferably the actuator linkage 130 is a coil spring
150, as illustrated, such that the flap 70 only needs to travel a
short distance towards its open position 90 to actuate the
actuating lever 120 (FIGS. 3 and 4), the coil spring 150 having
a greater spring force than that urging the actuating lever 120
into its normal position. Thereafter, once the actuator linkage
130 has pulled the actuating lever 120 into its actuating posi-
tion and the counter 140 has been incremented, the coil spring
150 expands as necessary to permit the item 30 to traverse the
aperture 60 between the flap 70 and the lid structure 40. The
counting mechanism 110 preferably further includes a reset
button 160 that, when pressed or otherwise actuated, resets the
counter 140 to zero.

[0022] A seat 180 may be fixed to the top side 46 of the lid
structure 40, such that a user 230 may be seated therein,
supported above the top side 46 of the lid structure 40 by the
seat 180, lid structure 40, and container 20. As such, the items
30, such as fish, may be easily dropped between the legs of the
user 230 into the container 20 and thereby counted with the
closure 10. Further, a small container 190 may be included on
the top side 46 of the lid structure 40 for holding small items
35, such as fishing tackle, or the like. Still further, a water-
impervious cover 200 (FIG. 4) may be included and selec-
tively positionable in a covering position 210 around the
counting mechanism 110 or in a disengaged position 220
away from the counting mechanism. Such a cover 200 may
be made from a transparent or translucent material, such as
acrylic or the like, to allow the user 230 an unobstructed view
of the counter 140.

[0023] While a particular form of the invention has been
illustrated and described, it will be apparent that various
modifications can be made without departing from the spirit
and scope of the invention. For example, the counter 140 may
be a mechanically-incremented display or an electronic dis-
play, as is known in the art. Accordingly, it is not intended that
the invention be limited, except as by the appended claims.

What is claimed is:

1. A closure for a container that counts items, comprising:
a lid structure having a container sealing means around a
perimeter thereof, a top side, a bottom side, and an
aperture traversing the lid structure from the top side
to the bottom side;
a flap adapted to substantially seal the aperture and fixed
with a hinge at one edge thereof to the bottom side of the
lid structure, the flap pivotable between an open and
closed position;
a counting mechanism fixed to the lid structure, the mecha-
nism including an actuating lever having an actuator
linkage fixed thereto at a top end, the actuator linkage
fixed at a bottom end to the flap and urging the flap into
its closed position, the counting mechanism adapted to
increment a counter when the flap is moved from its
closed position towards its open position.
2. The closure of claim 1 wherein the actuator linkage is a
coil spring.
3. The closure of claim 1 wherein the counting mechanism
further includes a reset button for resetting the counter to zero.
4. The closure of claim 1 wherein the container sealing
means includes mechanical snaps for selectively holding the
closure to the container.
5. The closure of claim 1 further including a seat fixed to
the top side thereof.
6. The closure of claim 1 further including a container for
small items fixed to the top side thereof.
7. The closure of claim 1 wherein the counting mechanism
further includes a water-impervious cover that is selectively
positionable in a covering position around the counting
mechanism or in a disengaged position away from the coun-
ting mechanism.
8. The closure of claim 1 wherein the flap is additionally
biased into its closed position by a spring fixed to the hinge.

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