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Can piercing device for rapid beverage consumption

Abstract

A can piercing device for facilitating rapid beverage consumption from a can features a spring-loaded cam with a claw extending therefrom, which is activated by pulling the trigger of a toy revolver gun. A simulated projectile aligned with the barrel and the hammer of the toy gun activates a release mechanism, causing the claw to emerge from the front end of the device, puncture, and tear an opening in the beverage can for entertainment purposes of the user.

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Background/Summary

BACKGROUND

[0001] Without limiting the scope of the invention, its background is described in connection with can piercing devices. More particularly, the invention describes a can piercing device adapted to facilitate rapid beverage consumption from the can.

[0002] Consuming a beverage from a beverage can may be transformed into a game or enhanced with a variety of entertainment effects. One example of such an entertainment effect is referred to as “shotgunning a beer”, which is a method of consuming a canned beer very quickly, typically in a social setting and for entertainment purposes. The process begins with holding a can of beer horizontally and then piercing a small hole near the bottom edge of the can. This hole is typically made with a sharp object like a key or a knife. Once the hole is created, the drinker places their mouth over it, ensuring a tight seal. Next, while still holding the can with the hole facing upwards, the drinker pulls the tab at the top of the can to open it. This action releases the pressure inside the can, causing the beer to flow rapidly out of the hole due to gravity and pressure differences. The drinker then tilts their head back and drinks the beer as quickly as possible directly from the hole. The goal is to empty the can in as little time as possible, typically a few seconds. This method is popular in party environments and is often associated with a festive, competitive spirit among participants. It requires some skill and practice to do it efficiently without spilling the beer.

[0003] Shotgunning a beer, while often viewed as a fun and competitive drinking game, carries several shortcomings and risks: [0004] Risk of Injury: The process of making a hole in the can with a sharp object like a key or a knife can lead to accidental cuts or injuries, especially if the person is already impaired by alcohol, [0005] Spillage and Waste: Often, in the haste piercing the can quickly and by hand, a significant amount of beer is spilled, leading to wastage and mess, [0006] Sanitation Concerns: The act of piercing the can with a non-sterile object like a key or knife can introduce bacteria or other contaminants into the beer, posing a risk of infection.

[0007] These considerations gave rise to the market availability of specialized devices, each designed to enhance the experience but also carrying distinct advantages and disadvantages.

[0008] One common tool is the shotgun keychain tool. This compact, portable device is specifically designed for safely and efficiently piercing a beer can. Its small size makes it convenient to carry, often attached to a keychain. The major advantage is the reduced risk of injury compared to using improvised sharp objects. However, despite its safety features, it still encourages rapid alcohol consumption with all its associated risks, and due to its small size, it can be easily misplaced.

[0009] Another popular device is the can piercing tool combined with a funnel. This setup allows for a more controlled flow of beer, as the beer flows through the funnel once the can is pierced. The advantages include a reduced risk of choking and the ability for multiple people to use it (with proper cleaning). However, it is bulkier, less portable, and requires regular cleaning for hygiene.

[0010] The beer bong, while not exclusively for shotgunning, is another device used for a similar purpose. It typically consists of a funnel attached to a tube. The main advantage is the communal aspect of its use in party settings. However, it's cumbersome and challenging to clean, and its use can lead to even quicker intoxication and increased choking risks.

[0011] Some enthusiasts opt for automated shotgunning devices. These advanced gadgets automate the can-piercing process and control the beer's flow, providing a consistent and efficient experience. The major advantage is ease of use and reduced risk of injury. However, they can be expensive, have limited entertainment value, and may not function reliably at all times. The need exists, therefore, for a better can piercing device that addresses the issues listed above and provides a good experience for the users.

[0012] There is also a need for a more broadly used tool that allows the piercing of a can containing a variety of beverages, both carbonated and non-carbonated.

SUMMARY

[0013] Accordingly, it is an object of the present invention to overcome these and other drawbacks of the prior art by providing a novel can piercing device capable of safely and consistently piercing a beverage can.

[0014] It is another object of the present invention to provide a novel can piercing device that facilitates playing games and provides entertainment to enhance a beverage consumption experience.

[0015] The novel can piercing device of the invention may include a housing with a front end equipped with a spring-loaded cam. The cam may be rotatably supported inside the front end of the housing and feature a claw protruding therefrom. The claw may be shaped and sized to first pierce and then tear the can upon engaging therewith, thereby making an opening that is large enough to allow consuming the beverage from the can.

[0016] The cam may be supported to allow its rotation so as to move the claw between a retracted position and an extended position. In the retracted position, the claw may be stored inside the housing, while in the extended position, the claw may protrude outside the front end of the housing.

[0017] Furthermore, the front end of the housing may feature a cam spring configured to urge the cam to move the claw from the retracted position to the extended position. Upon being released by a release mechanism supported by the housing, the cam spring may be configured to push on the cam to cause the claw to move outside the front end of the housing.

[0018] In use, the act of disengaging the release mechanism from the cam liberates the cam to rotate the claw from the retracted position to the extended position as urged by the cam spring, causing the claw to pierce and tear the can upon engaging therewith.

[0019] In further embodiments, the housing may include a back end with a spring-loaded hammer movable between a first position and a second position, similar to a toy revolver gun. A hammer spring may be provided and configured to urge the hammer to move from the first position to the second position. The back end may further include a trigger configured to release the hammer from the first position upon pulling thereon, and a rotatable cylinder with a plurality of projectile positions, each position is configured to accept a simulated projectile therein.

[0020] The simulated projectile may include an elongated hollow body sized to fit within any of the projectile positions of the cylinder. The elongated hollow body may slidably support a spring-loaded internal pin extending from the elongated hollow body on both ends thereof.

[0021] In use of the can piercing device, if the simulated projectile is present in the projectile position of the cylinder, which is aligned with the hammer, releasing the hammer by pulling the trigger activates a mechanical transmission configured to release the claw from the retracted position and cause the claw to pierce the can. At the same time, if the simulated projectile is not present in the projectile position of the cylinder, which is aligned with the hammer, releasing the hammer by pulling the trigger does not activate the mechanical transmission, thereby not causing the claw to pierce the can.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] Subject matter is particularly pointed out and distinctly claimed in the concluding portion of the specification. The foregoing and other features of the present disclosure will become more fully apparent from the following description and appended claims, taken in conjunction with the accompanying drawings. Understanding that these drawings depict only several embodiments in accordance with the disclosure and are, therefore, not to be considered limiting of its scope, the disclosure will be described with additional specificity and detail through use of the accompanying drawings, in which:

[0023] FIG. 1 is a side view of the novel can piercing device,

[0024] FIG. 2 is a top view of the same,

[0025] FIG. 3 is a front view of the same,

[0026] FIG. 4 is a side view of the simulated projectile for the can piercing device,

[0027] FIG. 5 is a cross-sectional side view of the simulated projectile of FIG. 4,

[0028] FIG. 6 is a front view of the same as in FIG. 4,

[0029] FIG. 7 is an exploded view of the same as in FIG. 4,

[0030] FIG. **8** is a side view of the can piercing device showing the details of the front end thereof with the claw in the extended position,
[0031] FIG. **9** is a partial cross-sectional view of the same as in FIG. **8**,
[0032] FIG. **10** is a side view of the can piercing device showing the details of the front end thereof with the claw in the retracted position,
[0033] FIG. **11** is a partial cross-sectional view of the same as in FIG. **10**,
[0034] FIG. **12** is an exploded view of the front end components of the can piercing device,
[0035] FIG. **13** is a partial cross-sectional view of the back end of the can piercing device showing the full cylinder and the hammer in the second position,
[0036] FIG. **14** is the same as in FIG. **13** but showing a simulated projected in the projectile position aligned with the hammer,
[0037] FIG. **15** is the same as in FIG. **13**, but with the hammer in its first position,
[0038] FIG. **16** is the same as in FIG. **14**, but with the hammer in its first position,
[0039] FIG. **17** is a cross-sectional view showing the details of the mechanical transmission and release mechanism with the claw in the retracted position,
[0040] FIG. **18** is the same as in FIG. **17**, but with the claw in the extended position,
[0041] FIG. **19** is a partial cross-sectional view of the front end of the can piercing device while engaging with a beverage can,
[0042] FIG. **20** is the same while positioning the front end next to a side wall of the beverage can,
[0043] FIG. **21** is the same after the claw has pierced and torn the beverage can, and
[0044] FIG. **22** shows a removal of the device from the pierced beverage can.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

[0045] The following description sets forth various examples along with specific details to provide a thorough understanding of claimed subject matter. It will be understood by those skilled in the art, however, that claimed subject matter may be practiced without one or more of the specific details disclosed herein. Further, in some circumstances, well-known methods, procedures, systems, components and/or circuits have not been described in detail in order to avoid unnecessarily obscuring claimed subject matter. In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates otherwise. The illustrative embodiments described in the detailed description, drawings, and claims are not meant to be limiting. Other embodiments may be utilized, and other changes may be made, without departing from the spirit or scope of the subject matter presented here. It will be readily understood that the aspects of the present disclosure, as generally described herein, and illustrated in the figures, can be arranged, substituted, combined, and designed in a wide variety of different configurations, all of which are explicitly contemplated and make part of this disclosure.

[0046] FIGS. **1-3** show a general view of the can piercing device of the present invention. In some embodiments, the device **100** may be shaped like a toy gun, as seen in the drawings. However, the invention is not limited in this regard, as the can piercing device may be shaped differently depending on the preferences of the consumers. Continuing with the illustrations in the figures, the device **100** may generally define a housing with a front end **110** and a back end **111**. The front end **110** may be adapted to engage with the beverage can, while the back end **111** may include a trigger and other operating components that activate the piercing function at the front end **110**.

[0047] The details of the front end **110** of the device housing are best seen in FIG. **8** through FIG. **12**. In some embodiments, the device **100** may comprise a conventional toy gun **160** acting as a back end **111** and an attachment assembly forming together the front end **110**, as seen in FIG. **12**. In other embodiments, the can piercing device may be formed by individual dedicated components and not require the use of a conventional toy gun **160**, as the invention is not limited in this regard.

[0048] The front end **110** of the device housing may broadly consist of a pair of symmetrical shell parts **114** and **116** that can form together the structural base for other components of the front end

110 to be attached to and supported by. The front end of the housing may include an optional can keeper configured when engaged with the can to retain the can adjacent to the front end of the housing. A variety of can keeper designs may be used with the can piercing device of the present invention, such as a ring sized to surround the can, a strap configured to envelop the cap, a cup sized to place the can inside thereof, and a C-shaped arm sized to have the can positioned inside thereof, all sized and configured to position the can adjacent to the front end of the housing. In other embodiments, there may be no can keeper component at all, as the can may be manually held next to the front end of the housing to facilitate the can piercing function thereof.

[0049] A conventional beverage can may define a bottom end with a circular rim, a side wall, and a top end containing a can opening tab. In this case, the can keeper may be shaped as a hook **112** configured to engage with or disengage from the circular rim of the bottom end of the can, while the front end is placed along the side wall of the can, as explained below in greater detail.

[0050] An axle pin **127** may be placed between the shell parts **114** and **116** to rotatably support a cam **120** placed thereon. The cam **120** may have a claw **122** extending therefrom. The claw **122** may have a sharp tip **123** and one or more sharp edges leading thereto. The claw **122** may be configured to pierce the beverage can with the sharp tip **123** and then tear a larger opening in the beverage can by the sharp edges cutting through the wall of the can as a result of the cam **120** rotation and the claw **122** entering deeper into the can.

[0051] The cam **120** may be rotatably supported by the axle pin **127** and allowed to turn so as to move the claw **122** between a retracted position (seen in FIGS. **10** and **11**) and an extended position (seen in FIGS. **8** and **9**). An axial portion **128** of the cam **120** may protrude on one side of the front end **110** through an opening in the shell part **116**. A key handle **129** may be affixed to the axial portion **128** so as to allow manual rotation of the cam **120** from outside the front end **110**. The key handle **129** may also be used as a visual indicator of the position of the cam **120** inside the front end **110**.

[0052] A torsion cam spring **126** may also reside on the same axle pin in a concentric arrangement with the cam **120**. One end of the cam spring **126** may be affixed to the front end, while the other end may be affixed to the cam **120**. This allows compression of the cam spring **126** when the cam **120** is turned from the extended position of the claw **122** to the retracted position of the claw **122**. As can be appreciated by a person skilled in the art, other spring-loading designs may be used for the same purpose, as the invention is not limited in this regard. The cam spring **126** may be selected to impart sufficient torque on the cam **120** to allow reliable and consistent piercing of the beverage can by the sharp tip **123**. In embodiments, the stiffness of the cam spring **126** may be selected to be at least 1 N-mm/Degree, at least 1.5 N-mm/Degree, at least 2 N-mm/Degree, or at least 2.5 N-mm/Degree. A stopper **121** may be placed in the front end **110** to limit the rotation of the cam **120** when released and ensure it stops at the designated extended position of the claw **122**.

[0053] Retention of the cam **120** in the retracted position of the claw may be facilitated by the release mechanism of the front end **110**. Various designs of such mechanisms may be deployed. One example is seen in FIG. **12** and includes a release arm **130** pivotally supported at the front end **110** of the housing by the release axle **134**. The release arm **130** may feature a front end **132** configured to engage with the cam **120** to hold thereof in the retracted position of the claw **122**. To achieve this, the cam **120** may have a groove **124** (see FIGS. **17** and **18**) configured to engage with the front end **132** of the release arm **130** when the claw **122** is in the retracted position. In use, pivoting the release arm **130** about the release axle **134** causes the front end **132** thereof to disengage from the groove **124** of the cam **120** and liberate thereof to rotate the claw **122** from the retracted position to the extended position using the force of the cam spring **126**. A torsion release spring **136** may also reside on the release axle **134** and continuously urge the release arm to engage with the cam **120**. The release spring **136** may be selected to apply a low torque to the release arm **130** to keep the front end **132** thereof in continuous contact with the cam **120**. The stiffness of the release spring **136** may be sufficient to discourage an unintended release of the cam **120** but, at the

same time, does not substantially increase the force needed to pivot the release arm **130** during the operation of the release mechanism.

[0054] The extended position of the claw **122** is seen in better detail in FIGS. **8**, **9**, and **18**. The claw **122** protrudes in this position outside the opening in the front end **110** such that when in use and placed next to the beverage can (as explained in greater detail below), the claw **122** pierces and tears an opening in the can. The key handle **129** may be pointed forward, coinciding with the position of the claw **122**.

[0055] The can piercing device **100** of the invention is seen in FIGS. **10**, **11**, and **17** in the retracted position of the claw **122**. This is accomplished by rotating the key handle **129** to move the claw to the retracted position. The cam **120** may be held in the retracted position of the claw **122** by the front end **132** of the release arm **130** engaging with the cam **120**, and, more specifically, falling into the cam groove **124** see FIG. **17**. The key handle **129** shows the “live” position of the claw **122**, as seen in FIG. **10**, indicating its readiness to be used for can piercing purposes.

[0056] In further embodiments, the cam **120** may be optionally rotated to be placed into a third, “safe” position by turning the key handle **129** until it coincides with the “safe” position indicator on the front end **110**. In this position, the claw is fully prevented from deployment, and no action of the trigger may cause the claw to emerge from the front end **110** of the device housing.

[0057] The exemplary design of the back end **111** of the device housing is now described in greater detail with reference to FIGS. **13-16**. A toy revolver gun **160**, while simplifying the complexity of a real firearm, embodies a design that may mimic the basic parts and operation of its real counterpart in a playful, safe manner. The main parts of a toy revolver gun **160** include a barrel **162**, a cylinder **164**, a trigger **168**, a hammer **166**, and a grip **113**.

[0058] The barrel **162** is the front part of the toy gun **160** through which a simulated projectile **200**, as described below, activated a mechanical transmission configured to release the claw **122** from the retracted position and cause the claw **122** to pierce the can. The back end **133** of the release arm **130** may be positioned inside the barrel **162** with the ability to have the release arm **130** to pivot about the release axis **134**.

[0059] Most components of the toy gun **160**, as well as the front end **110**, may be made of lightweight plastic, with the exception of various springs, which may be typically made of metal. Central to the toy revolver's design is the cylinder **164**, a rotating part that features multiple parallel projectile positions. This component mimics the revolver's real-life mechanism, allowing the toy gun **160** to “fire” one or several shots without needing to reload after each one. The cylinder **164** may be configured to rotate each time the toy gun **160** is cocked and “fired,” aligning a new projectile position with the barrel **162**.

[0060] The trigger **168**, when pulled, initiates the “firing mechanism” configured to release a spring-loaded hammer **166** to advance from the first position to the second position as urged by the hammer spring **167**. The trigger's pull may be designed to be light and easy.

[0061] Lastly, the grip **113** of the toy revolver **160** may be designed to be held comfortably in the hand. It is often also made from plastic, with ergonomics that allow for easy handling and operation by its intended user group. In embodiments, the grip **113** may also house a compartment for additional projectiles (not shown in the drawings).

[0062] The present invention further features at least one simulated projectile **200**, as seen in FIGS. **4-7**. The simulated projectile **200** may include a hollow elongated body **210** sized to fit within any of the projectile positions of the cylinder **164**, the hollow elongated body **164** slidably supports a spring-loaded internal pin **220** extending from the elongated hollow body on both ends thereof. To achieve this, the elongated hollow body **210** may have an endcap **240** on one end thereof, the endcap having a central cap opening **242**.

[0063] The other end of the elongated hollow body **210** may have a body opening **214**. The internal pin **220** may have a front end **222** protruding through the body opening **214** and a back end **224** protruding through the endcap opening **242**. An enlarged central portion **226** of the internal pin **220**

may be configured to abut the internal pin spring **230** positioned within the elongated hollow body with the other end of the internal pin spring **230** located against the body opening **214**. The internal pin spring **230** may be configured to push the enlarged central portion **226** of the internal pin **220** towards the endcap **240** so as to urge the back end **224** to protrude therethrough. The length of the internal pin **220** may be selected to be greater than the length of the elongated hollow body **210** so as to allow activation of the mechanical transmission, as explained in the description below. At the same time, the length of the internal pin **220** may not be longer than the length of any of the projectile positions in the cylinder **164**, so as to not interfere with the rotation of the cylinder to advance the next projectile position to be in alignment with the hammer **166** and the barrel **162**. [0064] In addition to the simulated projectile **200** described above, the can piercing device of the invention may be provided with one or more blank projectiles. A blank projectile may have the same external dimensions and even have the same visual appearance as the simulated projectile **200** but without the sliding internal pin **220**. In one embodiment, the blank projectile may be made entirely as a solid piece.

[0065] Operation of the toy revolver **160** begins with loading one or more simulated projectiles **200** into the cylinder **164**. Each simulated projectile **200** is inserted until its endcap **240** abuts the cylinder **164**. Once the toy gun **160** is loaded, the user may cock the gun by pulling back the hammer **166**. This action rotates the cylinder **164**, positioning the simulated projectile **200** (if present) in line with the barrel **162**. At the same time, the key handle **129** may be rotated to position the claw **122** to the retracted position and compress the cam spring **126**.

[0066] The can piercing device **100** may then be located next to the side wall and adjacent to the circular rim of the bottom of the beverage can, as seen in FIG. **19**. The hook **112** may be engaged with the circular rim, and the front end **110** of the device housing may be placed firmly against the side wall of the can—see FIG. **20**. Positions of all internal components of the can piercing device **100** at that moment is seen in FIG. **17**.

[0067] When the trigger **168** is pulled, the mechanism inside the toy gun **160** releases the hammer **166** to cause it to strike the back end **224** of the internal pin **220**, which propels the internal pin **220** forward and toward the front end **110**. The internal pin **220** then strikes the back end **133** of the release arm **130** causing the release arm to pivot about the release axis **134**—see FIG. **18**. This action, in turn, causes the front end **132** of the release arm **130** to disengage from the groove **124** in the cam **120**, thereby releasing the cam **120** to rotate in the direction of the arrow seen in FIG. **18**. The claw **122** is therefore rotated from the retracted position to the extended position and emerges from the front end **110** to pierce and tear an opening in the can—see FIG. **21**. The action of the can piercing device **100** at this point is complete and the entire device **100** may be removed from the can by rotating it upward around the hook **112** and around the circular rim of the can. Once the device **100** is disengaged, it can be removed from the can, as seen in FIG. **22**.

[0068] The operation of the can piercing device **100** may then be repeated by following the same steps as described above. As can be appreciated by the person skilled in the art, if no simulated projectile is present in the cylinder (or if a blank projectile is present) at the time of pulling the trigger, the entire chain of events would not happen, and the claw **122** would not be released.

[0069] The presence of the cylinder **164** allows for using the can piercing device **100** with additional entertainment value, namely when the user inserts only one or two simulated projectiles in the cylinder **164**, each firing of the hammer **166** becomes uncertain, similar to a famous “Russian roulette” game. Uncertainty as to which pull of the trigger **168** would actually cause the piercing of the beverage can, adds further entertainment value to the present invention.

[0070] It is contemplated that any embodiment discussed in this specification can be implemented with respect to any method of the invention, and vice versa. It will be also understood that particular embodiments described herein are shown by way of illustration and not as limitations of the invention. The principal features of this invention can be employed in various embodiments without departing from the scope of the invention. Those skilled in the art will recognize, or be able

to ascertain using no more than routine experimentation, numerous equivalents to the specific procedures described herein. Such equivalents are considered to be within the scope of this invention and are covered by the claims.

[0071] All publications and patent applications mentioned in the specification are indicative of the level of skill of those skilled in the art to which this invention pertains. All publications and patent applications are herein incorporated by reference to the same extent as if each individual publication or patent application was specifically and individually indicated to be incorporated by reference. Incorporation by reference is limited such that no subject matter is incorporated that is contrary to the explicit disclosure herein, no claims included in the documents are incorporated by reference herein, and any definitions provided in the documents are not incorporated by reference herein unless expressly included herein.

[0072] The use of the word “a” or “an” when used in conjunction with the term “comprising” in the claims and/or the specification may mean “one,” but it is also consistent with the meaning of “one or more,” “at least one,” and “one or more than one.” The use of the term “or” in the claims is used to mean “and/or” unless explicitly indicated to refer to alternatives only or the alternatives are mutually exclusive, although the disclosure supports a definition that refers to only alternatives and “and/or.” Throughout this application, the term “about” is used to indicate that a value includes the inherent variation of error for the device, the method being employed to determine the value, or the variation that exists among the study subjects.

[0073] As used in this specification and claim(s), the words “comprising” (and any form of comprising, such as “comprise” and “comprises”), “having” (and any form of having, such as “have” and “has”), “including” (and any form of including, such as “includes” and “include”) or “containing” (and any form of containing, such as “contains” and “contain”) are inclusive or open-ended and do not exclude additional, unrecited elements or method steps. In embodiments of any of the compositions and methods provided herein, “comprising” may be replaced with “consisting essentially of” or “consisting of”. As used herein, the phrase “consisting essentially of” requires the specified integer(s) or steps as well as those that do not materially affect the character or function of the claimed invention. As used herein, the term “consisting” is used to indicate the presence of the recited integer (e.g., a feature, an element, a characteristic, a property, a method/process step or a limitation) or group of integers (e.g., feature(s), element(s), characteristic(s), propertie(s), method/process steps or limitation(s)) only.

[0074] The term “or combinations thereof” as used herein refers to all permutations and combinations of the listed items preceding the term. For example, “A, B, C, or combinations thereof” is intended to include at least one of: A, B, C, AB, AC, BC, or ABC, and if order is important in a particular context, also BA, CA, CB, CBA, BCA, ACB, BAC, or CAB. Continuing with this example, expressly included are combinations that contain repeats of one or more item or term, such as BB, AAA, AB, BBC, AAABCCCC, CBBAAA, CABABB, and so forth. The skilled artisan will understand that typically there is no limit on the number of items or terms in any combination, unless otherwise apparent from the context.

[0075] As used herein, words of approximation such as, without limitation, “about”, “substantial” or “substantially” refers to a condition that when so modified is understood to not necessarily be absolute or perfect but would be considered close enough to those of ordinary skill in the art to warrant designating the condition as being present. The extent to which the description may vary will depend on how great a change can be instituted and still have one of ordinary skilled in the art recognize the modified feature as still having the required characteristics and capabilities of the unmodified feature. In general, but subject to the preceding discussion, a numerical value herein that is modified by a word of approximation such as “about” may vary from the stated value by at least 1, 2, 3, 4, 5, 6, 7, 10, 12, 15, 20 or 25%.

[0076] All of the devices and/or methods disclosed and claimed herein can be made and executed without undue experimentation in light of the present disclosure. While the devices and methods of

this invention have been described in terms of preferred embodiments, it will be apparent to those of skill in the art that variations may be applied to the devices and/or methods and in the steps or in the sequence of steps of the method described herein without departing from the concept, spirit and scope of the invention. All such similar substitutes and modifications apparent to those skilled in the art are deemed to be within the spirit, scope and concept of the invention as defined by the appended claims.

Claims

1. A can piercing device for facilitating rapid beverage consumption from a can, the can piercing device comprises: a housing with a front end equipped with a spring-loaded cam rotatably supported inside thereof, the cam is equipped with a claw protruding therefrom and configured to pierce and tear the can upon engaging therewith, the cam is rotatable to move the claw between a retracted position and an extended position with the claw protruding outside the front end of the housing, wherein the front end of the housing further comprises a cam spring configured to urge the cam to rotate the claw from the retracted position to the extended position upon being released by a release mechanism supported by the housing, wherein the release mechanism is configured to hold the claw in the retracted position by engaging with the cam, whereby disengaging the release mechanism from the cam liberates the cam to rotate the claw from the retracted position to the extended position as urged by the cam spring, causing the claw to pierce and tear the can upon engaging therewith.
2. The can piercing device, as in claim 1, wherein the front end of the housing further comprises a can keeper configured when engaged with the can to retain the can adjacent to the front end of the housing.
3. The can piercing device, as in claim 2, wherein the can keeper is selected from a group consisting of a ring, a strap, a cup, and a C-shaped arm, all sized and configured to position the can inside thereof and adjacent to the front end of the housing.
4. The can piercing device, as in claim 2, wherein the can comprises a bottom end with a circular rim, a side wall, and a top end containing a can opening tab, and wherein the can keeper comprises a hook configured to engage with the circular rim of the bottom end of the can while the front end is placed along the side wall of the can.
5. The can piercing device, as in claim 4, wherein the hook is configured to allow tilting the front end of the housing around the circular rim to withdraw the claw from the can while in the extended position.
6. The can piercing device, as in claim 1, wherein the claw in the retracted position is stored inside the front end of the housing.
7. The can piercing device, as in claim 1, wherein the release mechanism comprises a release arm pivotally supported within the housing, the release arm having a front end configured to engage with the cam.
8. The can piercing device, as in claim 7, wherein the cam comprises a groove configured to engage with the front end of the release arm when the claw is in the retracted position, whereby pivoting the release arm causes the front end thereof to disengage from the groove of the cam and liberate thereof to move the claw from the retracted position to the extended position.
9. A can piercing device for facilitating rapid beverage consumption from a can, the can piercing device comprises: a housing with a front end equipped with a spring-loaded claw movable between a retracted position and an extended position with the claw protruding outside the front end of the housing, wherein the housing further comprises a claw spring configured to urge the claw to move from the retracted position to the extended position, wherein the housing further comprises a back end with a spring-loaded hammer movable between a first position and a second position, a hammer spring configured to urge the hammer to move from the first position to the second

position, a trigger configured to release the hammer from the first position upon pulling thereon, and a rotatable cylinder with a plurality of projectile positions, each position is configured to accept a simulated projectile therein, wherein if the simulated projectile is present in the projectile position of the cylinder which is aligned with the hammer, releasing the hammer by pulling the trigger activates a mechanical transmission configured to release the claw from the retracted position and cause the claw to pierce the can, wherein if the simulated projectile is not present in the projectile position of the cylinder which is aligned with the hammer, releasing the hammer by pulling the trigger does not activate the mechanical transmission, thereby not causing the claw to pierce the can.

10. The can piercing device, as in claim 9, wherein the simulated projectile comprises a hollow elongated body sized to fit within any of the projectile positions of the cylinder, the hollow elongated body slidingly supports a spring-loaded internal pin extending from the elongated hollow body on both ends thereof.

11. The can piercing device, as in claim 9, further comprising at least one blank projectile shaped as a copy of the simulated projectile but made without the sliding internal pin, whereby when the blank projectile is present in the projectile position of the cylinder which is aligned with the hammer, releasing the hammer by pulling the trigger does not activate the mechanical transmission, thereby not causing the claw to pierce the can.
