May 11, 1954

H. J. SCHERINGER

2,677,882

CONTAINER OPENER

Filed Nov. 27, 1951

Fig. 1

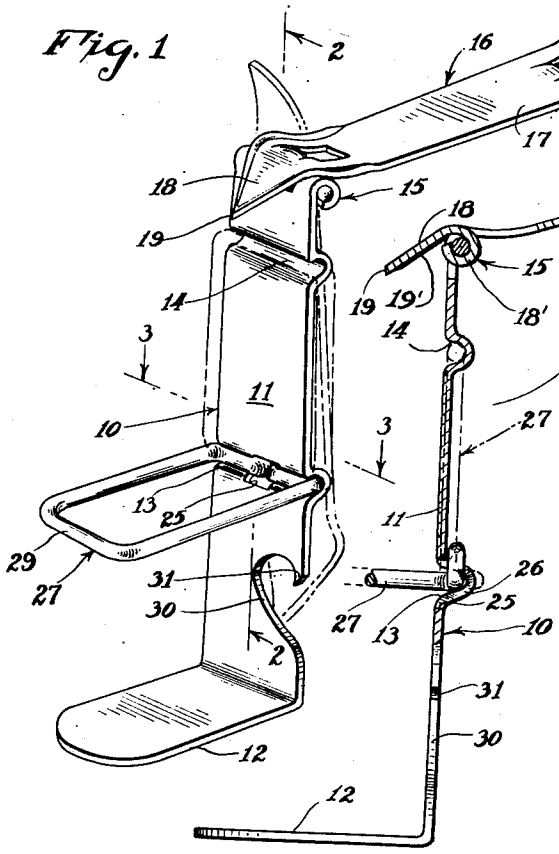


Fig. 2

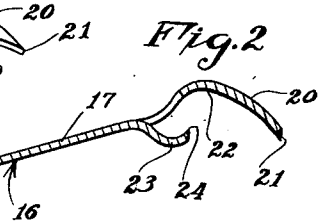


Fig. 3

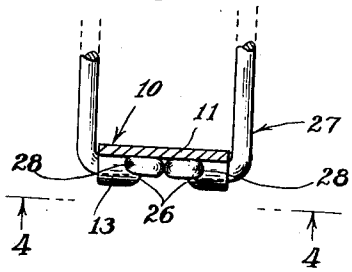


Fig. 4

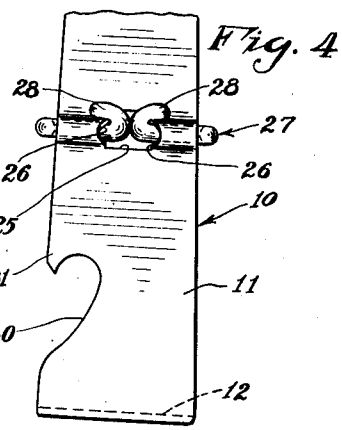


Fig. 5

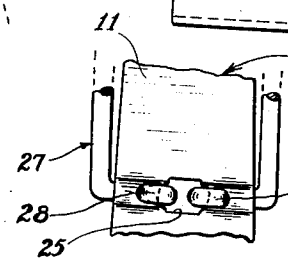
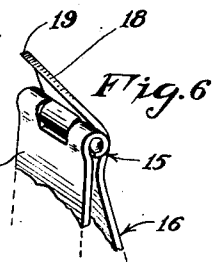


Fig. 6



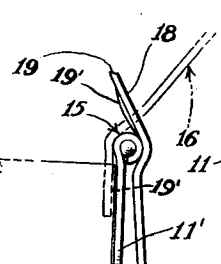
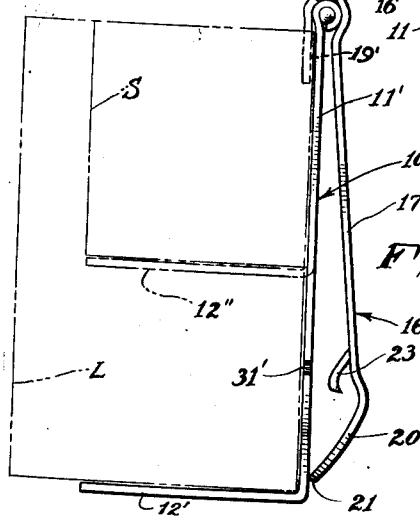


Fig. 7



INVENTOR.
HERBERT J. SCHERINGER
BY

ATTORNEY

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CONTAINER OPENER

Herbert J. Scheringer, Olive Bridge, N. Y.

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7 Claims. (Cl. 30—10)

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This invention relates broadly to devices for opening containers, and particularly to piercing instrumentalities adapted for opening rimless cans, such as used for evaporated or condensed milk, and to a combination with such can piercing instrumentality of auxiliary devices for puncturing rimmed cans and for removing bottle caps.

One of the objects of the the present invention is the provision of a simple, inexpensive, compact and efficient opener for rimless cans, by means of which cans of different height may be pierced to provide smooth pouring openings.

Another object of the present invention is the provision of a piercing device for rimless cans which is designed to not only pierce the top of a can but also to force the pierced portion of the can top against the wall of the can, thereby forming a smooth pouring edge.

Another important object of this invention is the provision of a container piercing device which includes a one-piece bracket consisting of an upright portion and a can-supporting base portion, the latter extending substantially at right angles from the upright portion and facilitating the placement of the device upon a supporting surface, such as a table top, and wherein the upright portion is provided at its top end with a hinge structure for operatively accommodating a piercing member, the latter being adapted to not only puncture and cut the top of a can but to force the cut metal against the wall of the can, and thus towards the inner face of the upright bracket portion, and wherein an auxiliary base is operatively associated with the upright bracket portion and located between the base portion and the top end of the upright portion, and which auxiliary base may be placed into either its operative position for supporting a short can, or to its inoperative, out-of-the-way position, so that it clears the base portion for placing thereon a tall can.

Another object of the present invention is the provision of a piercing member in conjunction with a can accommodating bracket, wherein one end of the piercing member is provided with means for piercing the top of a rimless can, while its other end is adapted for piercing a rimmed can, and wherein the bracket is equipped with additional means for facilitating the removal of bottle caps.

The foregoing and numerous additional objects and advantages of the present invention will become more fully apparent from the following description in conjunction with the accompanying

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drawings, illustrating the presently preferred embodiments of the present invention, and wherein:

Fig. 1 is a perspective view of a combination structure for piercing rimless cans of different height, for opening rimmed cans and for the removal of bottle caps;

Fig. 2 is a section taken along a vertical center plane passing through Fig. 1 and indicated by numerals 2—2;

Fig. 3 is a fragmental section through the device shown in Fig. 1 and taken along line 3—3 thereof, with the auxiliary can support in operative position;

Fig. 4 is a rear view of Fig. 3, seen in the indicated direction 4—4;

Fig. 5 is a similar fragmental view to that shown in Fig. 4 with the auxiliary base in inoperative postion;

Fig. 6 is a fragmental perspective detail view of the hinge structure connecting the top end of the upright bracket portion with the piercing member; and

Fig. 7 illustrates a side elevation of a simplified structure of the device for accommodating a tall can, and indicating in broken lines an optional structure for use with a small can.

The device as illustrated in Figs. 1 to 6 constitutes a one-piece bracket 10 having an upright portion 11 and a base portion 12, forming an integral part of the upright portion and preferably extending substantially at right angles in respect thereto. In the body of upright portion 11 there are provided two spaced recesses, a lower recess 13 and an upper recess 14. At the top of the upright portion there is provided a hinge structure 15, with which is operatively associated a piercing member 16 composed of a handle portion 17, the attached end of which terminates in a relatively short and flat wedge-shaped piercing element 18 having a sharp, downwardly directed piercing point 19, and a bowed-out undersurface 19' adapted to augment compression against the can wall of that portion of the can top engaged and pierced out by element 18. The connection between hinge structure 15 of the upright bracket portion and the handle 17 comprises a pierced-out metal portion 18' which passes around the pin of the hinge structure. At the free end of handle portion 17 a similar but much larger piercing element 20 is provided, also terminating in a sharp point 21, and being curved in the manner indicated at 22. Forced out from the body of the handle portion is a rim-engaging tooth or lug 23 with an upwardly directed point 24 for engaging

the lower edge of a can rim and serving as pivotal point for piercing element 20.

At the center of the lower recess formation 13 in the upright bracket portion there is provided an aperture 25 which divides the recess formation into two symmetrical halves. The interior edges 26 of these halves are beveled or curved inwardly in the general direction transversely to the longitudinal horizontal center plane passing through the recess formation, as clearly indicated in Figs. 3 and 4.

In operative association with recess formation 13 is a substantially rectangularly shaped resilient loop 27, preferably made of spring wire. One short side of the loop is open and its ends are formed into symmetrical hooks 28 disposed substantially at right angles to the longitudinal center plane passing through the body of the loop, the ends of hooks being directed outwardly. Due to the resiliency of the loop material, these hooks tensionally engage with their recessed or interior portions the adjacent interior edges of the two halves of recess formation 13, the open ends of the loop tending to spread apart.

When loop 27 is in its horizontal operative position, shown in Figs. 1 and 2, hooks 28 are forced against one another, due to the convergence of edges 28 toward the body of upright bracket portion 11, and bear with their curved upper ends against the exterior surface of that bracket portion, thus maintaining the loop in a horizontal plane substantially parallel to that of base portion 12.

When the loop is swung upwards into its out-of-the-way or inoperative position, as indicated in broken lines in Figs. 1 and 2 and in full lines in Fig. 5, the outer closed short end 29 of the loop engages and registers with the upper recess formation 14. In that position of the loop, hooks 28 separate and tensionally engage the outwardly bowed portions of beveled edges 26 of the lower recess formation 13, as is clearly shown in Fig. 5. Due to the resiliency of the loop material these hooks are pressed into and maintained in these bowed-out edge portions, thereby holding the loop in its inoperative, out-of-the-way position.

Cut out from the body of upright portion 11 above base portion 12 there is a curved recess 30 so constructed that it forms a hook-shaped point 31 designed as bottle cap remover.

A simplified form of the present device is illustrated in Fig. 7, wherein again a bracket 10' is shown, comprising an upright portion 11' and a base 12', forming integral parts of one another. The upright is again provided with a bottle cap remover 31' and at its upper end there is a hinged formation 15 operatively supporting a piercing member 16 comprising a handle 17, the attached and operative end of which terminates in a relatively short, flat and wedge-shaped piercing element 18 with a downwardly directed puncturing point 19 for rimless cans. The free end of the handle is again equipped with a piercing structure 20 for rimmed cans and having a piercing point 21 and a rim engaging lug 23. Bracket 10', shown in full lines, accommodates a tall rimless can "L," but when the upright bracket portion is shortened to raise the base portion to the broken-line position indicated at 12'', the opener will serve for piercing a short can "S." Obviously when the embodiment of the present device shown in Fig. 7 is to be employed, it will serve for puncturing cans of only one size, thus when short and tall cans are to be handled, separate can openers will have to be employed.

Operation

As is indicated in Fig. 1 in broken lines and in Fig. 7 in full lines, piercing member 17, when in inoperative position, will depend from hinge structure 15 in adjacency with the outer face of upright portion 11, 11' of the brackets. It will be also noted from Figs. 1 and 2 that piercing member 17 must be swung upwardly and away from the upright bracket portion so that piercing element 18 will successively puncture and cut the top of a can and then force the cut material against the can wall, as clearly indicated in broken lines in Fig. 7. It will be also noted from that figure that piercing member 17 must assume a very acute angular position in respect to upright portion 11, 11' in order to fully force the cut top material of the can against the can wall so that a smooth pouring edge is formed.

As stated, the base portions of the bracket (12, 12', and 12'') are intended to be placed upon a supporting surface, such as a table top, and that they in turn are designed to support the bottom of a can. When the embodiment shown in Figs. 1 and 2 is used, it will accommodate either a tall can placed upon base portion 12, or a short can supported by loop 27 when the latter is swung out to its operative position.

From the foregoing description of the present device it will be clearly understood that the construction of the can opener is relatively simple and inexpensive. The embodiment shown in Figs. 1 and 2 moreover is highly practical and effective in use. The fact that not only rimless but also rimmed cans may be opened and that in addition bottle caps may be removed by the present device, its universal usefulness and practicability becomes readily evident.

The brackets, in the form shown either in Figs. 1 and 2 or in Fig. 7, are intended to be stamped out from sheet material of the proper gauge and are preferably shaped so that their upright portions gradually taper, being broader at the base and slim at the top end. The structure illustrated in Figs. 1 and 2 readily facilitates assembly in that the ends of loop 27, when compressed, easily slip through aperture 25 of recess formation 13 and automatically spread and engage edges 26 when released.

While specific embodiments of the present invention are illustrated and described herein, be it understood that changes and improvements may be readily incorporated, without departing from the general scope of the present invention as defined in the annexed claims.

What is claimed as new is:

1. In a combination portable opener for rimmed and rimless cans, a bracket composed of an upright and a substantially horizontal base portion, the latter forming an integral part of the upright portion and being adapted to be placed upon a supporting surface, such as a table top, and serving for the support of a can, a hinge formation at the top end of the upright portion, a can-piercing member having a portion forced out from its body and formed into a hinge loop and being operatively supported at said hinge formation of said upright portion, said can-piercing member comprising a handle portion terminating at its hingedly supported end in a piercing element, having a relatively flat, wedge-shaped body ending in a point, but having a bowed-out surface for engaging and compressing the pierced-out material of a can, said handle portion assuming, when in its inoperative state, a position adjacent the outer surface of

said upright portion, while the piercing element assumes a position at which its point is directed upwardly, and, during a can-piercing operation, said handle portion being adapted to be swung in an upward direction, thus causing the piercing element to swing through an arc downwardly to first pierce the top of a can and then to force the pierced can top portion against the can wall, said upright portion having upper and lower recesses arranged in its body, a loop formation operatively associated with the lower recess and being adapted to be swung to any one of two positions, an operative position, at which the loop assumes a position in a plane substantially parallel with the base portion and serving then for the support of a short can, and an inoperative position, at which two portions of the loop are caused to register with the two recesses, thus facilitating the placement upon said base portion of a tall can.

2. In a combination portable opener for rimmed and rimless cans, a bracket composed of an upright and a substantially horizontal base portion, the latter forming an integral part of the upright portion and being adapted to be placed upon a supporting surface, such as a table top, and serving for the support of a can, a hinge formation at the top end of the upright portion, a can-peircing member having a portion forced out from its body and formed into a hinge loop and being operatively supported at said hinge formation of said upright portion, said can-piercing member comprising a handle portion terminating at its hingedly supported end in a piercing element, having a relatively flat, wedge-shaped body ending in a point, but having a bowed-out surface for engaging and compressing the pierced-out material of a can, said handle portion assuming, when in its inoperative state, a position adjacent the outer surface of said upright portion, while the piercing element assumes a position at which its point is directed upwardly, and, during a can-piercing operation, said handle portion being adapted to be swung in an upward direction, thus causing the piercing element to swing through an arc downwardly to first pierce the top of a can and then to force the pierced can top portion against the can wall, and wherein said bracket has a pair of spaced recesses in its upright portion, a loop formation operatively associated at one of its portions with one of the recesses and being adapted, when in inoperative position, to engage the other recess with another of its portions, said loop formation, when in operative position, being disposed in a plane substantially parallel with said base portion.

3. In a combination portable opener for rimmed and rimless cans, a bracket composed of an upright and a substantially horizontal base portion, the latter forming an integral part of the upright portion and being adapted to be placed upon a supporting surface, such as a table top, and serving for the support of a can, a hinge formation at the top end of the upright portion, a can-piercing member having a portion forced out from its body and formed into a hinge loop and being operatively supported at said hinge formation of said upright portion, said can-piercing member comprising a handle portion terminating at its hingedly supported end in a piercing element, having a relatively flat, wedge-shaped body ending in a point, but having a bowed-out surface for engaging and compressing the pierced-out material of a can, said handle

portion assuming, when in its inoperative state, a position adjacent the outer surface of said upright portion, while the piercing element assumes a position at which its point is directed upwardly, and, during a can-piercing operation, said handle portion being adapted to be swung in an upward direction, thus causing the piercing element to swing through an arc downwardly to first pierce the top of a can and then to force the pierced can top portion against the can wall, and wherein said bracket has a pair of spaced recesses in its upright portion, a loop formation operatively associated at one of its portions with one of the recesses and being adapted, when in inoperative position, to engage the other recess with another of its portions, said loop formation, when in operative position, being disposed in a plane substantially parallel with said base portion, said loop formation comprising a substantially rectangular, continuous, resilient structure open at one of its short sides, its ends at that open short side comprising hooks, an aperture provided in said one recess, said hooks projecting through said aperture and tensionally engaging the edges of the apertured recess.

4. In a combination portable opener for rimmed and rimless cans, a bracket composed of an upright and a substantially horizontal base portion, the latter forming an integral part of the upright portion and being adapted to be placed upon a supporting surface, such as a table top, and serving for the support of a can, a hinge formation at the top end of the upright portion, a can-piercing member having a portion forced out from its body and formed into a hinge loop and being operatively supported at said hinge formation of said upright portion, said can-piercing member comprising a handle portion terminating at its hingedly supported end in a piercing element, having a relatively flat, wedge-shaped body ending in a point, but having a bowed-out surface for engaging and compressing the pierced-out material of a can, said handle portion assuming, when in its inoperative state, a position adjacent the outer surface of said upright portion, while the piercing element assumes a position at which its point is directed upwardly, and, during a can-piercing operation, said handle portion being adapted to be swung in an upward direction, thus causing the piercing element to swing through an arc downwardly to first pierce the top of a can and then to force the pierced can top portion against the can wall, and wherein said bracket has a pair of spaced recesses in its upright portion, a loop formation operatively associated at one of its portions with one of the recesses and being adapted, when in inoperative position, to engage the other recess with another of its portions, said loop formation, when in operative position, being disposed in a plane substantially parallel with said base portion, and wherein said recesses constitute an upper and a lower recess, a central aperture dividing the lower recess into two symmetrical halves, the adjacent, interior edges of the recess halves being beveled; and wherein said loop formation is substantially rectangular in shape and is resilient and is open at one of its short ends, and is operatively associated at that open end with the lower recess, its other short end being adapted to engage and to register with said upper recess when the loop is in inoperative position; the termini of the said open short end of the loop forming hooks disposed at substantially right angles relative to the plane of the loop body, the

ends of the hooks being directed outwardly, said hooks being adapted to tensionally engage the beveled interior edges of the recess halves and to spread apart when the loop is in inoperative position, and to move inwardly and to engage the exterior face of said upright portion when the loop is brought to its operative, substantially horizontal position, parallel with the base portion, said hooks retaining the loop in that position.

5. In a container opener, a one-piece bracket having a base and an upright portion integral with and extending from the base, a container piercing member operatively associated with the top end of the upright portion, the latter portion having a pair of spaced recesses, a support for a short container operatively held at one of its ends within one of the recesses and being adapted to engage the other recess with its other end when in inoperative position, said support, when in operative position, being disposed substantially parallel with the base, said base serving for accommodating a tall container, when said support is in inoperative position.

6. In a container opener according to claim 5, and wherein the recess holding said support is provided with a central aperture.

7. In a container opener according to claim 6 and wherein said support comprises a resilient loop structure having opposite long and short sides, one of the short sides being open and its ends forming hooks disposed in a plane substantially perpendicular to the longitudinal center plane passing through the loop structure, said hooks being adapted to tensionally engage the ends of said aperture and to bear against the outer face of the upright portion when the loop structure is in its container-supporting, operative position.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,046,879	Leppke	July 7, 1936
2,289,701	Engel et al.	July 14, 1942
2,302,170	Basler	Nov. 17, 1942
2,513,605	Vernon	July 4, 1950
2,556,731	Lapierre	June 12, 1951
2,567,457	Weller	Sept. 11, 1951
2,578,462	Codiga	Dec. 11, 1951