

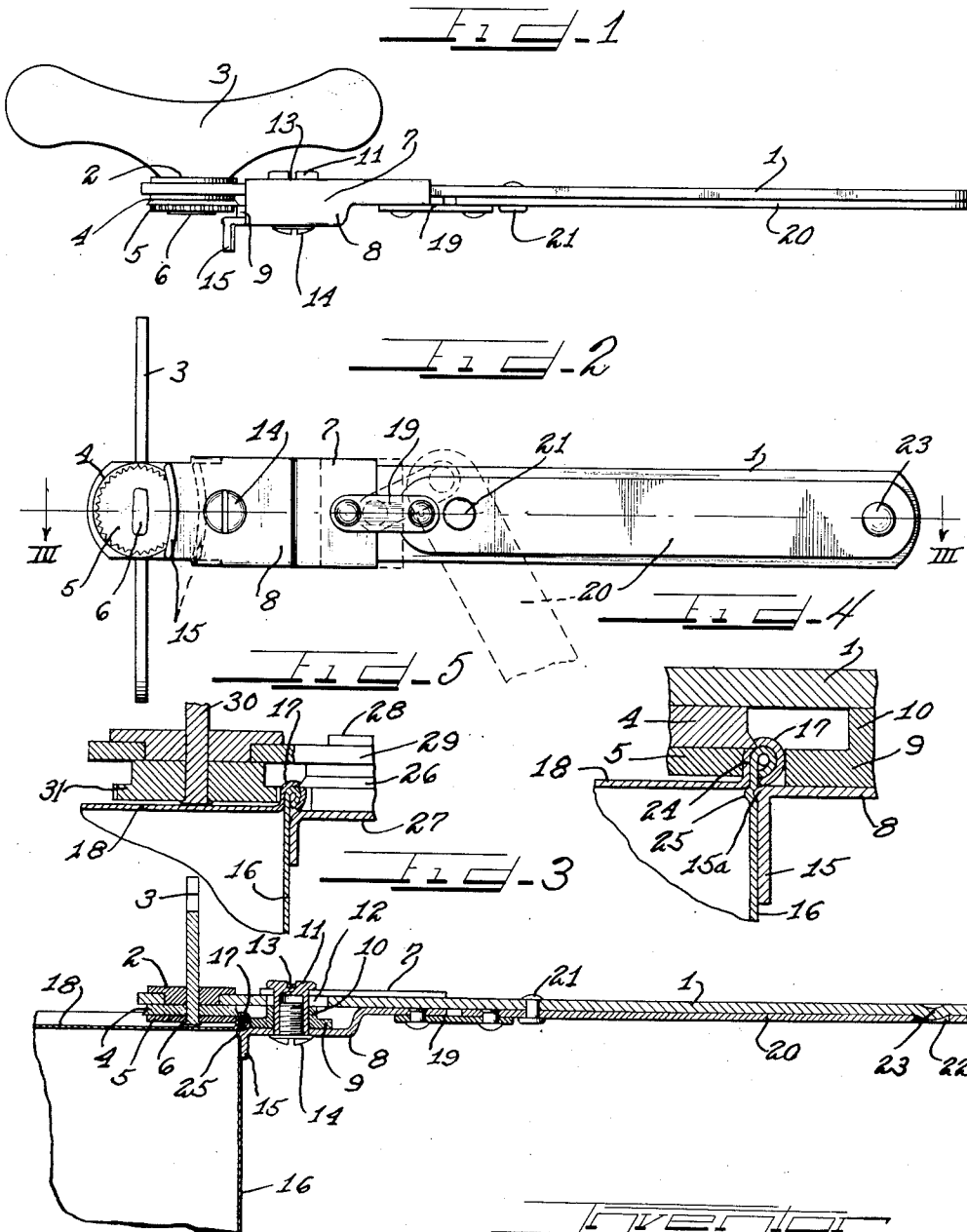
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CAN OPENER

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CAN OPENER

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2 Claims. (Cl. 30-3)

This invention relates to an improved and simplified type of a combination right and left hand can opener having a cutter so positioned that when the can opener is used the cutter will cut into the can cover bead to release the can cover without permitting the cutter to project into the can or come into contact with the can contents.

It is an object of this invention to provide a simplified and inexpensive type of can opener for removing a can cover without permitting the cutter to project into the can or come into contact with the contents of the can.

It is also an object of this invention to provide a left and right hand can opener constructed to permit the cutter member thereof to cut into the can cover bead to release the cover without having the cutter member project into the can or the material holding compartment thereof, thereby affording a sanitary can opener.

It is a further object of this invention to provide an improved type of simplified can opener adapted to cut into the cover supporting bead to release the cover without having the cutting member come into contact with the contents of the can, said can opener also acting during a can opening operation to cause an inner shoulder or bead to be formed in the upper portion of the body of the can to serve as a stop to prevent the cut can cover from dropping into the opened can.

It is an important object of this invention to provide an improved type of can opener including a combination feed wheel and cutter mounted on a main handle on which an auxiliary cutter and a clamping shoe are slidably mounted to be operated by means of an auxiliary handle mechanism to permit the can opener when operated as either a right or left hand can opener to simultaneously cause the can cover bead to be cut and a can cover stop bead to be formed in the can without permitting the cutter to come into contact with the contents of the can.

Other and further important objects of this invention will be apparent from the disclosures in the specification and the accompanying drawing.

The invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Figure 1 is a side elevation of the improved can opener embodying the principles of this invention.

Figure 2 is a bottom plan view of the can open-

er in closed position and illustrating the released position of parts in dotted lines.

Figure 3 is a longitudinal detail section of the can opener taken on line III-III of Figure 2, with the can opener applied to a can a fragmentary sectional portion of which is shown.

Figure 4 is an enlarged fragmentary detail section illustrating portions of the can opener and the can to cover an exaggerated showing of the cutter and the cover stop bead forming means.

Figure 5 is a fragmentary detail section similar to Fig. 4, but covering a modified form of can opener which cuts into the can bead from the outer side thereof.

As shown on the drawing:

The reference numeral 1 indicates a main handle or bar having an opening near one end thereof in which a bearing member 2 is rotatably engaged. Projecting through a rectangular opening in the bearing member 2 is the shank end of a wing handle or finger piece 3. Engaged on the shank end of the wing handle 3 adjacent one side of the handle bar 1 is a main circular cutter or disc knife 4. Mounted on the wing handle shank to the outside of the main cutter 4 is a knurled or toothed feed wheel or gear member 5. The main cutter 4 and the gear feed wheel 5 are tightly clamped against the inner end of the bearing member 2 as clearly illustrated in Figure 3, by upsetting the end of the wing handle shank to form a retaining head 6 to form a rotatable cutter and feed unit rotatable by means of the wing handle 3 in the end of the main handle bar 1.

Slidably mounted on the main handle bar 1 is a shoe or sleeve 7 one side of which is offset to form a casing or housing 8 within which a secondary or auxiliary cutter disc or wheel 9 is rotatably mounted. The secondary or auxiliary cutter disc 9 is provided with an integral spacing washer or sleeve 10 for properly holding the secondary cutter disc 9 spaced from one side of the main handle bar 1, as clearly illustrated in Figure 3. The secondary cutter wheel or disc 9 is engaged on a bolt sleeve 11 which projects through an opening in the slidable sleeve 7 and through a slot 12 formed longitudinally in the main handle bar 1. One end of the bolt sleeve 11 is formed to afford a flange head which is provided with a diametrical groove or slot 13. Projecting through an opening in the housing portion 8 of the slidable sleeve is a retaining screw 14, the threaded shank of which threads into the internally threaded bolt sleeve 11 as clearly illus-

trated in Figure 3. The bolt member comprising the sleeve 11 and the screw 14 projects through the main handle bar slot 12 and serves as a guide for the slidable sleeve 7 as well as acting as a support for the secondary cutter 9.

Integrally formed or rigidly secured on the end of the bottom plate of the housing 8 is an outwardly directed arcuate or concave clamping flange 15 having a bead former 15—*a* adapted, when the can opener is in use, to be moved into clamping engagement with the outer surface of a can 16 directly beneath the can cover rim or bead 17 forming part of the can cover 18.

For the purpose of slidably moving the sleeve 7 into and out of clamping position on a can, is one pivoted end of an operating link 19. The outer end of the link 19 is pivotally connected to the inner end of an auxiliary or secondary handle or lever 20 which is pivotally supported at 21 on the underside of the main handle bar 1. An aperture or hole 22 is provided near the outer end of the auxiliary or operating handle 20. The hole 22 is provided to serve as a catch or latch opening for receiving a latching detent 23 which is struck downwardly from the outer end of the main handle bar 1 as clearly illustrated in Figure 3, for the purpose of holding the auxiliary handle 20 locked in closed parallel relationship with the main handle bar 1. When the cutting mechanisms of the can opener are clamped in position on the end of a can 16 ready to permit the can cover to be cut from the can by rotating the main cutter 4 either in a clockwise or counterclockwise direction by means of the wing handle 3.

The improved can opener is adapted to be applied to a can in a position similar to that illustrated in Figure 3 when the slide sleeve 7 is retracted to the dotted line position of Figure 2 by swinging the auxiliary lever or handle 20 from the full line position of Figure 2 into the dotted line position. With the slide sleeve retracted one end of the main handle bar 1 is positioned to seat upon the can rim or bead 17 with the main cutter 4 positioned in contact with the inner side of the can cover bead 17 and with the feed wheel or gear 5 also positioned to be moved into gripping engagement with the inner side of the can cover bead 17 directly beneath the main cutter 4.

With the can opener engaged on a can, as illustrated in Figure 3, the operating lever or gripping handle 20 is pivotally swung from the dotted line position of Figure 2 into the full line position thereby causing the link 19 to slidably move the sleeve 7 outwardly on the main handle bar 1 to move the auxiliary cutter or backing disc 9 into contact with the outer side of the can cover bead 17 and simultaneously move the clamping flange 15 into gripping contact with the outer surface of the can 16 directly beneath the can cover bead 17.

With the clamping flange 15 tightly clamped against the outer side of the body of the can the main cutter 4 is forced to cut into the inner side of the can cover bead 17 while the toothed or irregular peripheral surface of the feed wheel or gear 5 is moved into gripping engagement with the inner side of the can cover bead 17 directly beneath the point of contact of the main cutter 4 with the can cover bead. With the can opener gripped on the can as illustrated in Figure 3, the can opener may be used as either a right hand or a left hand can opener by holding the two parallelly positioned handles 1 and 20 by means

of one hand of an operator while the operator's other hand is used to rotate the wing handle 3 in either a clockwise or counterclockwise direction depending upon whether the person using the can opener is right handed or left handed.

As the main cutter 4 is rotated the cutting edge thereof cuts outwardly through the inner side of the can cover bead 17 while the feed wheel or gear 5 grips the inner side of the can cover bead 17 thereby causing the can to rotate with respect to the can opener during an opening operation of the can. Due to the clamping position of the auxiliary cutter or backing disc 9 against the outer side of the can cover bead 17 and due to the clamping engagement of the flange 15 against the side of the can directly beneath the can rim or bead the main cutter 4 when rotated not only cuts outwardly through the can cover bead 17 but also acts to bend or deflect the outer portion of the bead 17 outwardly as illustrated in Figure 4 a slight distance sufficient to permit the outer portion of the cut bead 17 to clear the upper cut edge of the inner portion of the bead 17 which forms the can cover flange 24. It will thus be noted that during the rotation of the main cutter 4, the cutting edge of the cutter cuts outwardly through the inner side of the can cover rim or bead 17 to cut the cover from the can without projecting the cutting edge of the cutter 4 into the body of the can or through the can cover proper so that the cutter is not brought into contact with the contents of the can. This outward cutting of the cutter through the can rim or bead 17 thereby affords a sanitary arrangement whereby the main cutter 4 is adapted to be kept clean.

Another important feature of the can opener is that during the cutting operation of the main cutter 4 outwardly through the inner side of the can rim or bead 17 the can cover is gradually cut from the can while the bead forming rib 15—*a* of the clamping flange 15 presses inwardly against the wall of the can directly beneath the can bead and acts to inwardly deflect the can wall to form an inner peripheral stop bead or shoulder rim 25 which acts as a stop to prevent the cut can cover 18 from dropping into the can when the can cover is completely cut from the can.

When the can opener is gripped in position upon a can for a can opening operation, the slidable sleeve 17 is prevented from accidentally being moved out of gripping position by the latching arrangement which is provided between the main handle bar 1 and the operating lever or handle 20, said latching mechanism comprising the detent 23 which is adapted to latchingly snap into the opening 22 of the lever or operating handle 20 when the handle members 1 and 20 are positioned in substantially parallel relation as illustrated in Figure 2.

To release the can opener from a can after a can opening operation the auxiliary lever or handle 20 may be pivotally swung from the full line position of Figure 2 either to the right or to the left to cause the link 19 to retract the slidable sleeve 7 to move the stop disc 9 and the clamping flange 15 out of contact with the outer side of the can.

The improved can opener is thus adapted to be used to cut a cover from a can without bringing the cutter disc into contact with the contents of the can thereby keeping the cutter in a clean sanitary condition and obviating contamination of the contents of the can by the cutter member.

The improved can opener is adapted to be used

as either a right hand or a left hand can opener to cut a cover from a can without projecting the cutter into the can as the bead forming rib 15—a of the flange 15 acts to restrict the open end of the can by slightly deflecting the wall of the can beneath the can rim to form the internal stop bead or ring rib 25 which serves as a means for preventing the cut can cover from dropping into the can.

10 Figure 5 illustrates a fragmentary portion of a modified form of can opener adapted to cut into the outer side of a can rim or bead. In the modified construction a main cutter 26 is mounted within the housing section 27 of a slidable sleeve 15 28. The sleeve 28 is slidably engaged on a main handle bar 29 similar to the construction shown in Figure 3. A wing handle 30 is rotatably supported on the handle bar 29 and carries a feed wheel or gear member 31 which is adapted to be 20 positioned to grip against the inner side of the can cover bead or rim 17. The modified can opener is similar to the can opener shown in Figures 1 to 4 inclusive, but has the main cutter 26 positioned to engage against the outer side of 25 a can rim or bead leaving the feed wheel or gear 31 to grip against the inner side of the can rim or bead to serve as a backing member or auxiliary cutter for the main cutter 26.

The sleeve 28 is adapted to be operated by an 30 auxiliary handle and link mechanism, similar to that illustrated in Fig. 2, to permit the main cutter 26 to be moved to cut into the outer side of the can rim or bead 17. With the can opener engaged on a can, as shown in Fig. 5, the wing 35 handle 30 is rotated to cause rotation of the feed wheel 31 thereby rotating the can with the main cutter 26 cutting into the can bead 17 to cut the cover 18 from the can without projecting the cutter into the can. The can rim or bead 17 is so 40 cut that an outwardly curled flange or bead is left on the can cover to support the cut can cover on

the upper edge of the can body 16 to prevent the cut cover from dropping into the opened can. The modified form of can opener may be used as either a right hand or a left hand opener, and affords a sanitary device since the cutter is prevented from coming into contact with the contents of the can.

It will of course be understood that various details of construction may be varied through a wide range without departing from the principles of this invention, and it is therefore not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A can opener comprising a main handle, an auxiliary handle rotatably supported on said main handle, a cutter and a feed wheel connected with the auxiliary handle to be rotated thereby, said cutter and feed wheel adapted to be positioned to contact the inner side of the can rim, a clamping and bead forming means slidably mounted on said main handle, a rotatable backing member therein for contacting the outer side of the can rim, and an operating device on said main handle connected to actuate said means to clamp the can opener on the can and form a can cover stop bead in the can when the can opener is operated to cut through the can rim.

2. A can opener comprising a main handle, an auxiliary handle rotatably supported on said main handle, a cutter and a feed wheel connected with the auxiliary handle to be rotated thereby, said cutter and feed wheel adapted to be positioned to contact the can rim, a clamping and bead forming means slidably mounted on said main handle, a cutter backing member rotatably mounted therein, a link pivotally connected to said means, and an operating handle pivoted on said main handle and pivotally connected with said link.

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