Sept. 9, 1941. C. A. ARNESEN 2,255,641

CAN OPENER

Original Filed May 4, 1936 2 Sheets-Sheet 1

Fig. 1.

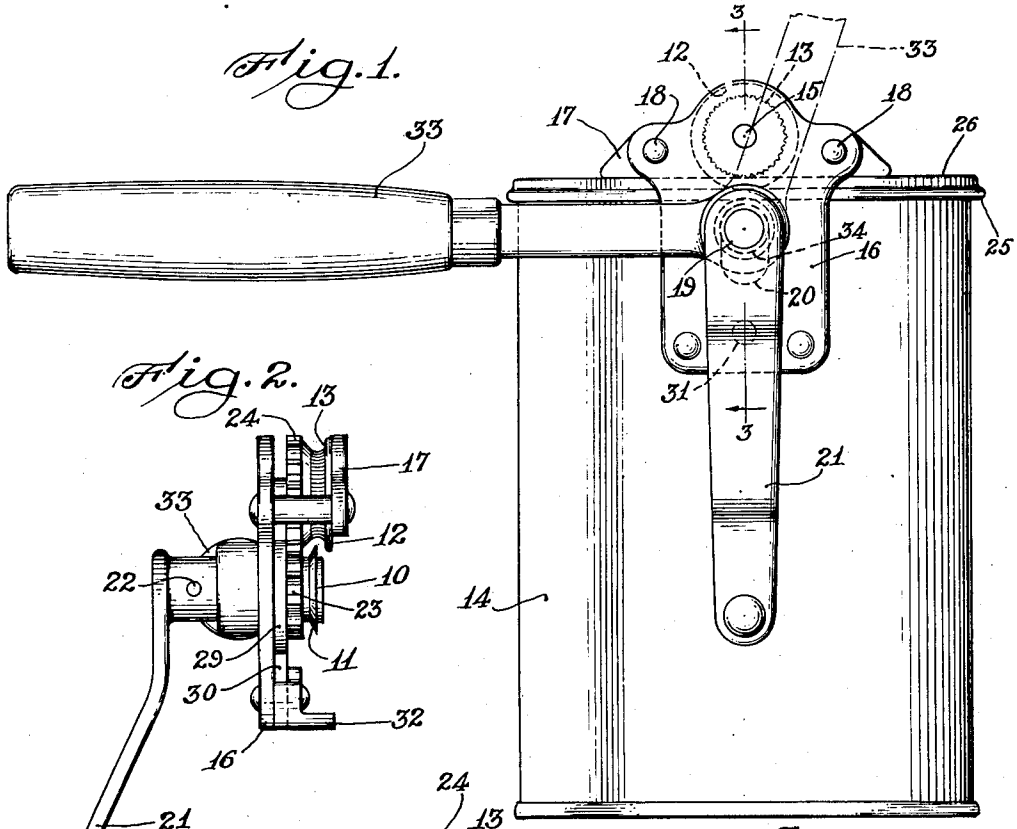


Fig. 2.

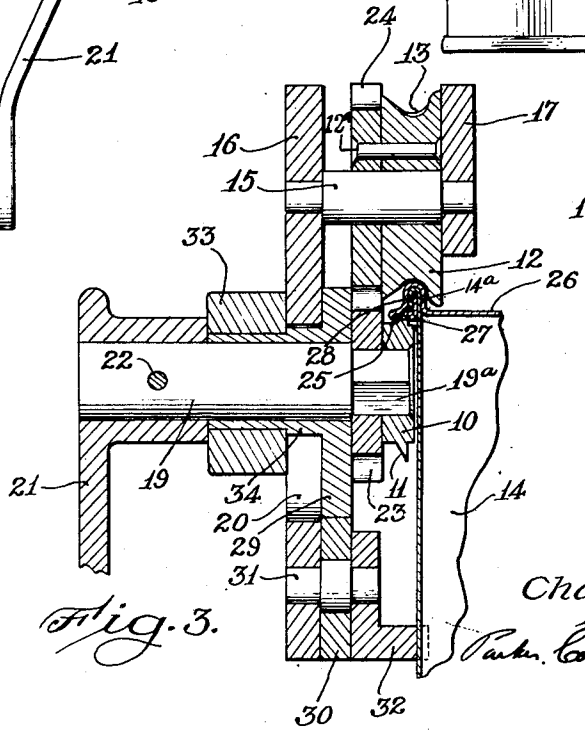


Fig. 3.

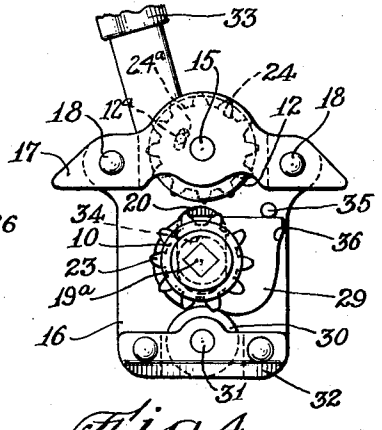


Fig. 4.

Inventor
Charlotte A. Arnesen
BY
Parker, Carlson, Pelton & Hubbard
Attorneys.

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Fig. 5.

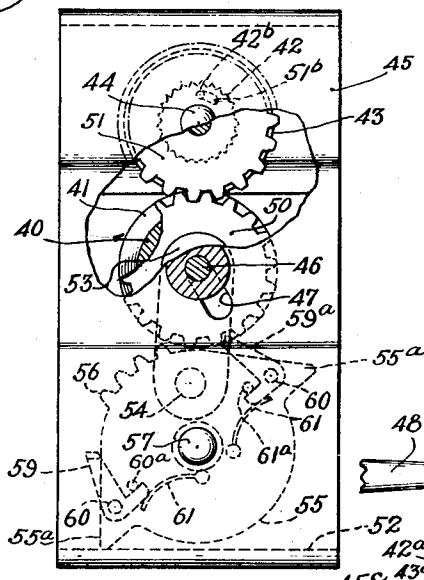


Fig. 6.

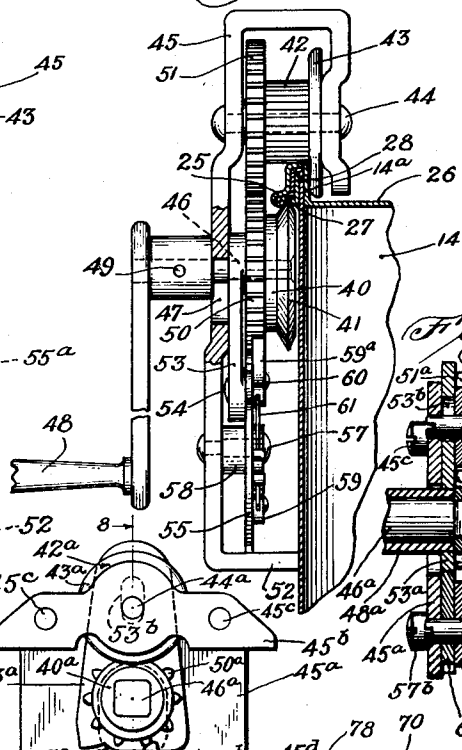


Fig. 8.

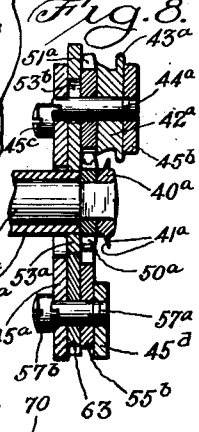
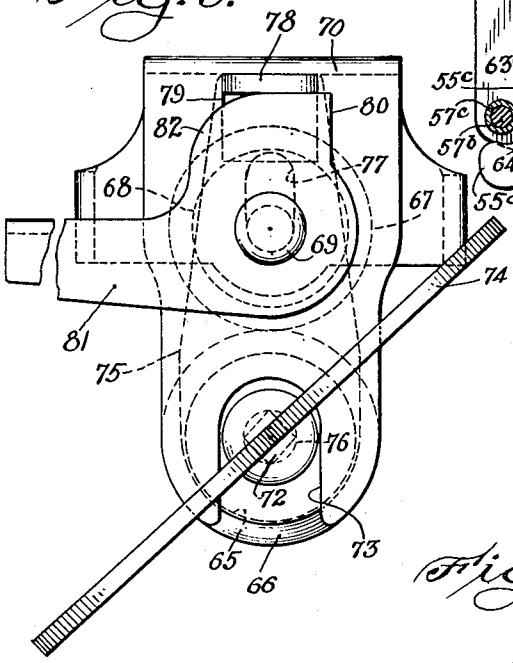


Fig. 7.

Fig. 9.



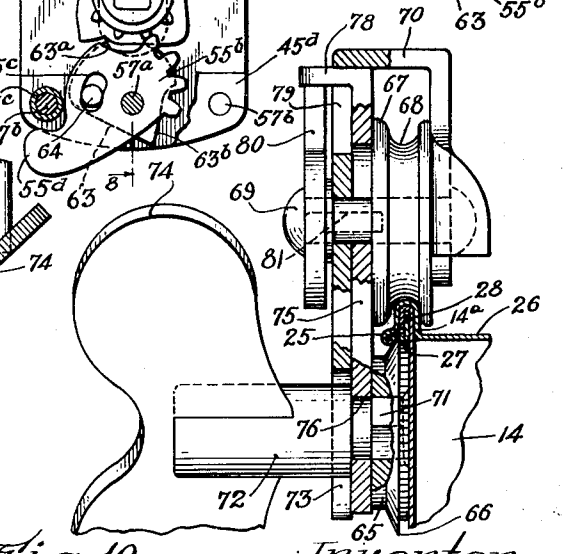


Fig. 10.

Inventor
Charlotte A. Arnesen
By
Parker Carlson, Pitzner & Hubbard
Attorneys.

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UNITED STATES PATENT OFFICE

2,255,641

CAN OPENER

Charlotte A. Arnesen, Chicago, Ill.

Application May 4, 1936, Serial No. 77,778
Renewed June 24, 1938

10 Claims. (Cl. 30—13)

The invention relates to devices for opening sheet metal cans used as containers for food products and other commodities and more particularly to can openers for circumferentially severing the end member from the can body.

Can openers made in accordance with this invention are especially adapted for use in opening cans of the general type described and claimed in my copending application Serial No. 58,089 filed January 8, 1936. Cans of this general type are provided with an end member secured to a can body by an improved form of double seam in which an annular bead is formed exteriorly of the side wall of the can that is adapted for penetration by a cutting implement in such manner that the severed end member may subsequently be used as a lid for the can.

The primary object of the invention is to provide an improved can opener adapted to circumferentially sever the end member from a can of the type described in such manner that the severed end member forms a smooth edged tight fitting lid for the can.

More specifically, it is an object of the invention to provide an improved can opener adapted for use in opening cans having an end member provided with a vertical annular shoulder and a hollow peripheral bead, the can opener including means for supporting the same on the annular shoulder and a cutter element relatively movable with respect to the supporting means into a position to penetrate the bead and to circumferentially sever the end member from the can, the cutter element being also adapted to fold the severed edges into the open space in the bead so as to form smooth telescopingly engageable surfaces on the can and severed end member.

Further objects and advantages of the invention will become apparent as the following description proceeds and the features of novelty which characterize the invention are pointed out with particularity in the claims annexed to and forming a part of this specification.

For a better understanding of the invention, reference may be had to the accompanying drawings in which,

Figure 1 is a side elevation of a can with a can opener positioned thereon, embodying the invention.

Fig. 2 is an end elevation of the can opener shown in Fig. 1.

Fig. 3 is an enlarged vertical section along the line 3—3 in Fig. 1 of the can opener and a portion of the can shown in Fig. 1.

Fig. 4 is a rear view of the can opener shown in Fig. 1, the cutter disk thereof being shown in its disengaged or retracted position.

Fig. 5 is a side elevation of a modified form of can opener embodying the invention, a portion of the can opener being broken away in order to better illustrate the parts thereof.

Fig. 6 is an end elevation partly in section of the can opener shown in Fig. 5, the can opener being positioned on a can.

Fig. 7 is a rear elevation of a can opener similar to that shown in Figs. 5 and 6 but of somewhat simplified construction.

Fig. 8 is a vertical section along the line 8—8 of Fig. 7.

Fig. 9 is a side elevation of another modified form of can opener embodying the invention, and

Fig. 10 is a side elevation partly in section of the can opener shown in Fig. 9, the can opener being positioned on a can.

Can openers made in accordance with the invention include as their principal elements a support adapted to engage an annular vertical shoulder formed on the end of a can, and a cutter element adapted to penetrate a peripheral laterally projecting portion of the can upon relative movement between the support and the cutter element, as well as means for moving the cutter element circumferentially of the can when so engaged with the laterally projecting portion thereof.

In the exemplary form shown in Figs. 1 to 4 of the drawings the invention is embodied in a can opener particularly designed for use with cans of the general type described in my copending application Serial No. 58,089, referred to above. This can opener includes as its principal working elements a disk-shaped cutter or cutting element 10 having a peripheral cutting edge and a cooperating supporting member in the form of a roller 12 provided with a peripheral groove 13 adapted to bear against the inner face 14a of a vertical annular shoulder formed on the end member. The bottom of the groove 13 is preferably knurled in order that it will frictionally engage the upper edge of the shoulder. The roller 12 is rotatably mounted on a pin 15, the reduced end portions of the pin 15 being journaled respectively in a base plate 16 and in a plate 17, which is rigidly supported in spaced relation with respect to the upper portion of the base plate 16 by pins 18. The cutter disk 10 is in turn loosely mounted on the base plate 16, being rigidly secured to the squared end portion 19a of an operating shaft 19 which is slidably mounted in a vertically extending slot 20 formed in the base plate.

The shaft 19 is rotated by a manual operating member shown in the form of a crank 21, which is rigidly secured to the outer end thereof by a pin 22. Cooperating gears 23 and 24 mounted on the shaft 19 and on the pin 15 respectively serve to impart rotation from the shaft 19 to the roller 12 when the gears are in mesh.

The gear 24 is preferably connected to the roller 12 by a lost motion connection so that a small amount of relative rotative movement therebetween is permitted. In the device illustrated, this lost motion connection includes a pin 12a mounted on the roller 12 and disposed in an arcuate slot 24a formed in the gear 24 (Fig. 4). Thus, when the gear 23 is moved into contact with the gear 24, a small amount of movement is permitted to the latter gear even though the roller is held against rotation so that the teeth of the cooperating gears may be readily brought into meshing registration.

When the can opener is first positioned on the can, the shaft 19 is located at the bottom of the slot 20 so that the cutter disk 10 is positioned below the laterally extending portion 25 of the can lid or end member 26. An arrangement has been provided for moving the cutter disk 10 upwardly from this position so that the peripheral cutting edge thereof penetrates the portion 25 of the can lid 26, thus severing an inner portion 27 thereof, which is gripped between the wall of the can and a downwardly extending flange 28 formed thereon. In the device illustrated this arrangement includes a peripheral cam 29 loosely journaled on the shaft 19, and which bears against a cooperating disk or cam 30. The disk 30 is rigidly secured to the lower portion of the base plate 16 by a pin 31 which also serves to hold a spacer 32 in position on the lower portion of the base plate 16. The inner end of the spacer 32 bears against the adjacent side of the can 14 and maintains the cutter disk 10 in a substantially vertical plane as best shown in Fig. 3. A laterally extending manual operating handle 33 is rigidly secured to a cylindrical extension 34 formed on the outer face of the cam 29 and loosely surrounding the shaft 19.

Upon movement of the operating handle 33 to its uppermost position, shown in Fig. 4 and in dot-dash lines in Fig. 1, the cam 29 is rotated to a position in which it engages a stop pin 35 mounted on the base plate 16. In this position, the gears 23 and 24 are out of mesh and the cutter disk 10 is positioned below the laterally extending portion 25 of the can lid 26. Then as the operating handle 33 is moved in a clockwise direction, as viewed in Fig. 4, the contour of the cam 29 causes the shaft 19 to move upwardly through the slot 20 thus bringing the gears 23 and 24 into mesh and at the same time causing the edge 11 of the cutter disk 10 to pierce the portion 25 of the can lid so that the cutter disk occupies the position shown in Fig. 3.

The heel 36 on the edge of the cam 29 engages the disk 30 when the shaft 19 is positioned at the top of the slot 20 so that any further downward pressure on the handle 33 will not result in relative movement of the cutter disk 10 and roller 12, but will simply hold them firmly in their operative position. The operating crank 21 is then rotated, causing the roller 12 to roll along the upper edge of the can while the cutter disk 10 rolls along the laterally extending portion 25 of the lid 26, thus severing the lid from the can.

It will be noted that the cutting edge of the cutter disk 10 is provided with an angularly disposed side face 11. This face or side portion of the disk engages the adjacent severed edge of the portion 25 of the lid and folds it inwardly into the annular space formed by the hollow bead of the double seam between the lid and the can. At the same time the opposite face of the cutting edge folds the adjacent severed edge of the portion 27 of the lid back against the can body. As a result smooth edges are formed on both the lid and the can so that the severed lid may subsequently be used as a removable cover for the can. This is of particular advantage in case the can is used to store coffee or other commodities that should be protected from the air as the telescoping fit of the severed lid on the can provides an effective closure.

In Figs. 5 and 6, a modified form of can opener embodying the invention has been shown, which is also especially adapted for use with cans of the type described. This can opener includes as its principal elements a cutter in the form of a disk 40 having a peripheral cutting edge and a cooperating roller type support 42 having a knurled surface, which is arranged to roll along the upper edge of the can as shown in Fig. 6. The roller 42 is provided with a flange 43 adapted to bear against the inner side of the upstanding edge formed on the top of the can, thus aiding in maintaining the can opener in position thereon. A pin 44 rotatably supports the roller 42 within the U-shaped upper end of a base plate 45 which forms a housing for the roller. The cutter disk 40 is, in turn, loosely mounted on the base plate 45 by a rotatable shaft 46 which passes through an angularly disposed slot 47 extending in a generally vertical direction and formed in the center portion of the base plate.

The shaft 46 is rotated by a suitable manual operating handle or crank 48 secured to the outer end of the shaft 46 by a pin 49. Rotary motion is transmitted from the shaft 46 to the roller 43 by a pair of meshing gears 50 and 51, which are respectively mounted on the shaft 46 and pin 44.

A horizontally extending lower end portion 52 of the base plate 45 bears against the side wall of the can 14 and serves to hold the cutter disk 40 in a vertical position when the can opener is positioned on a can as shown in Fig. 6. This can opener differs from that shown in Figs. 1 to 4, inclusive, and described above in that it is provided with an improved arrangement utilizing the main operating crank 48 to move the cutter disk 40 upwardly into engagement with the laterally projecting portion 25 of the can lid 26. In the device illustrated this arrangement includes a link 53, the upper end of which is loosely journaled on the shaft 46. The lower end of the link 53 is pivotally connected by a pin 54 to a mutilated gear or sector 55 having teeth 56 extending along only a small portion of the periphery thereof. The mutilated gear 55 is pivotally supported on the base plate 45 by a pin 57, a spacer 58 being interposed between the base plate and the mutilated gear to maintain the latter in alinement with the gears 50 and 51.

When the shaft 46 is positioned at the bottom of the slot 47 with the cutter disk 40 out of engagement with the laterally extending edge of the can lid, the mutilated gear 55 is in a position approximately 90° from that shown in Fig. 5. It should be noted that the gear 50 is out of mesh with the gear 51 when the shaft 46 is in this lowermost position. Then as the operating crank 48 is rotated in a clockwise direction, as viewed in Fig. 5, the teeth of the gear 50 engage the end

of a pawl 59, pivotally connected to the mutilated gear 55 by a pin 60, press the same against a stop pin 60ª thus moving the mutilated gear 55 in a counter-clockwise direction until the teeth 56 thereof mesh with the teeth of the gear 50. Then further clockwise rotation of the gear 50 when in mesh with the mutilated gear 55 causes the latter to be rotated still further in a counterclockwise direction, thus moving the link 53 upwardly and consequently forcing the shaft 46 to the upper end of the slot 47.

When the gear 50 is thus moved upwardly by the link 53 it is brought into mesh with the gear 51 attached to the roller support 42. The number of teeth on the mutilated gear 55 is so determined that it will be moved out of mesh with the gear 50 just at the completion of the upward movement of the latter. A second pawl 59ª then contacts the gear 50 but the spring 61 permits it to be moved aside by the gear teeth. The upward movement of the gear 50 not only brings it into mesh with the gear 51 but the upward movement of the cutter disk 40 on the shaft 46 causes it in turn to pierce the portion 25 of the can lid 26. Continued clockwise rotation of the operating crank 48 thus causes the roller 42 and cutter disk 40 to roll around the edge of the can, resulting in a complete severance of the lid therefrom. The faces 41 of the cutting edge of the cutter disk are angularly disposed so as to fold back the severed edges of the lid as described above.

A pin 42ᵇ on the roller 42 is positioned in a slot 51ᵇ in the gear 51 so as to form a lost motion connection therebetween. As a consequence, the gear 51 may be rotated slightly upon contact thereof by the gear 50 to bring the teeth on the respective gears into register.

After the can lid 26 has thus been severed from the can 14, the cutter disk 40 is moved out of operative engagement with the can lid by a reverse or counterclockwise movement of the operating crank 48. Such movement of the crank rotates the gear 50 in a counterclockwise direction bringing the teeth thereof into contact with the outer end portion of a pawl 59ª which is pivotally mounted by a pin 60ª on the mutilated gear 55. The pawl 59ª is maintained in operative position with respect to the teeth of the gear 50 by a stop-pin 61ª. Upon contact between the pawl 59ª and the teeth of the gear 50, the pawl and its attached mutilated gear are moved in a clockwise direction as viewed in Fig. 5 until the teeth 56 mesh with the teeth of the gear 50. The continued rotation of the gear 50 in a counterclockwise direction then rotates the mutilated gear 55 in a clockwise direction, thus swinging the lower end of the link 53 to the right. As a consequence, the shaft 46 is moved downwardly in the slot 47 by the link 53 and the cutter disk 40 is disengaged from the edge of the can lid. Projections 55ª formed on the mutilated gear 55 contact with the projection 52 in the base plate 45 and limit the extent of rotative movement thereof so that the pawl 59 or pawl 59ª will not be moved out of contact with the gear 50 at the respective extremities of movement of the mutilated gear 55.

Figs. 7 and 8 illustrate a can opener which is in general similar to that shown in Figs. 5 and 6 described above, but differs therefrom in that a somewhat more simplified arrangement has been provided for effecting relative movement between the cutting element and the supporting element to bring the cutting element into penetrating engagement with a laterally extending portion of the can upon actuation of a single operating member which also serves to move the cutting element circumferentially about the can.

The device shown in Figs. 7 and 8 includes as its principal elements a cutter element in the form of a disk 40ª having a peripheral cutting edge with angularly disposed lateral faces 41ª, and a roller type supporting member 42ª having a flange 43ª adapted to bear against the inner face of an annular shoulder formed on the end of a can. The members 40ª and 42ª are substantially identical with the cutter and supporting roller 40 and 42, respectively, shown in Figs. 5 and 6. The cutter disk 40ª and supporting roller 42ª are similarly provided with gears 50ª and 51ª connected thereto and adapted to be moved into and out of meshing engagement. The supporting roller 42ª is journaled on a screw or shaft 44ª extending between a vertical base plate 45ª and a cooperating upper supporting plate 45ᵇ, maintained in spaced relation with respect to the plate 45ª by screws 45ᶜ and suitable spacers. The cutter disk 40ª is loosely mounted on the base plate 45ª, being rigidly secured to the squared inner end of a rotatable shaft 46ª. A manual operating member (not shown) is secured to the shaft 46ª by a sleeve portion 48ª and serves to rotate the same.

An arrangement has been provided for utilizing the first portion of the rotary movement of the operating member to move the cutter disk 40ª into penetrating engagement with the laterally extending portion of a can and also to bring the gears 50ª and 51ª into mesh. This arrangement is similar to that shown in Figs. 5 and 6 in that a mutilated gear 55ᵇ is rotated by the gear 50ª in its initial rotation to aid in effecting the desired movement. The mutilated gear 55ᵇ is loosely journaled on a screw or shaft 57ª extending between the base plate 45ª and a lower supporting plate 45ᵈ. The latter plate 45ᵈ is maintained in spaced relation with respect to the plate 45ª by screws 57ᵇ and suitable spacing bushings 57ᶜ.

A peripheral cam 63 is also loosely journaled on the shaft 57ª and is connected to the mutilated gear 55ᵇ by a lost motion connection including a pin 64 rigidly mounted on the cam and passing through a slot 55ᶜ in the gear 55ᵇ. The cam 63 bears against the contoured lower end of a vertically slidable link 53ª in which the shaft 46ª is journaled. When in the position shown in Fig. 7 a projection 63ª on the cam 63 engages an indentation on the lower end of the link 53ª preventing further movement of the cam and maintaining the link 53ª in its uppermost position with the cutter disk 40ª in operative position and the gears 50ª and 51ª in mesh. The link 53ª is provided with a vertically extending slot 53ᵇ through which the shaft 44ª of the roller 42ª extends thus guiding the link for vertical sliding movement.

In the operation of this device it is positioned on the side of a can with roller 42ª on a vertical annular shoulder formed on the end of the can, the cutter disk 40ª being in its lowermost position. In such case the mutilated gear 55ᵇ occupies a position displaced about 90° to the left of that shown in Fig. 7 so that the short radius portion 63ᵇ of the cam 63 engages the link 53ª allowing it to slide down to its lowermost position. Then upon rotation of the operating shaft 46ª in a counterclockwise direction (as viewed in Fig. 7) the mutilated gear 55ᵇ is caused to rotate in a clockwise direction, the extreme right hand tooth thereof being initially in mesh with

the gear 50a. This rotation of the mutilated gear 55b causes a similar rotative movement of the cam 63 so that the latter moves the link 53a upwardly to the position shown in Fig. 7. The lost motion connection between the cam 63 and mutilated gear 55b permits the gear 50a to move the gear 55b out of mesh therewith to the position shown in Fig. 7 while the cam 63 still maintains the link 53a in its raised position. This upward movement of the link 53a moves the cutter 40a into penetrating engagement with a laterally extending portion of the can.

Upon further counterclockwise rotation of the operating shaft 46a the cutter disk 40a and supporting roller 42a are moved about the can thus circumferentially severing the end member therefrom. Angularly disposed face portions 41a of the peripheral cutting edge on the cutter disk 40a serve to fold back the severed edges of the end member of the can as described above so that the severed end member of the can may be used as a telescopingly fitting closure or lid for the can.

After the end member has been completely severed from the can the operating shaft 46a is simply rotated a short distance in a reverse or clockwise direction (as viewed in Fig. 7) to release the can opener from the can. Upon such reverse rotation of the operating shaft and its attached gear 50a the weighted portion 55d of the mutilated gear 55b brings the latter into mesh with the gear 50a. The mutilated gear 55b is thus rotated in a counterclockwise direction as is the attached cam 63 so that the link 53a is allowed to slide downwardly due to gravity. The gears 50a and 51a are consequently moved out of mesh and the cutter disk 40a moved to its lowered or inoperative position so that the can opener may be readily lifted from the can.

The modified can opener shown in Figs. 9 and 10 is similar in its general structure to that shown in Figs. 1 to 4, inclusive, and described above, in that a cam arrangement, actuated by a separate operating lever is utilized to move the cutter element of the can opener into and out of engagement with the can. The construction is, however, somewhat more compact and simpler than that shown in Figs. 1 to 4, inclusive. In general, the can opener shown in Figs. 9 and 10 includes as its principal elements a cutter in the form of a disk 65 having a peripheral cutting edge and a cooperating supporting roller 67 having a peripheral groove 68. The roller 67 is rotatably mounted on a pin 69 extending between the adjacent side walls of the upper U-shaped end of a base plate 70. The cutter disk 65 is loosely mounted on the base plate 70, the cutter being secured to the squared end portion 71 of a shaft 72, which extends through an open ended slot or notch 73 formed in the lower end portion of the base plate. The shaft 72 is provided with a wing-shaped manual operating member or handle 74.

A simple cam arrangement has been provided for moving the cutter disk 65 into and out of engagement with the laterally extending portion 25 of the can lid 26. This arrangement includes a vertically extending link 75 positioned on the inner face of the base plate 70 and having a hole 76 in the lower portion thereof, which loosely surrounds the shaft 72. The upper portion of the link 75 is provided with a vertically extending slot 77 therein, which loosely surrounds the pin 69. The forwardly extending upper end 78 of the link 75 projects through a rectangular aperture 79 formed in the upper portion of the base plate 70. An upwardly projecting peripheral cam 80 rotatably mounted on the pin 69 is adapted to engage the projection 78 on the link 75. The cam 80 is provided with a laterally extending operating member or handle 81.

When the handle 81 is rotated in a clockwise direction from the position shown in Fig. 9, the curved portion 82 of the surface of the cam 80 permits the link 75 to move downwardly so that the cutter disk 65 is spaced a maximum distance from the roller 67. The can opener is then positioned on the edge of a can to be opened and the operating arm 81 is rotated in a counterclockwise direction, as viewed in Fig. 9, until it occupies the position shown therein. The cam 80 thus moves the link 75 upwardly. Since the shaft 72 is secured to the link 75, the cutter disk 65 is also moved upwardly and pierces the laterally extending portion 25 of the can lid 26. Then, upon rotation of the cutter disk 65 by the manual operating handle 74, the cutter disk 65 and cooperating roller 67 are rolled about the upper edge of the can, thus severing the can lid therefrom. The angularly disposed face 66 of the peripheral cutting edge of the cutter disk 65 folds back the severed edges of the end member of the can so that a tight fitting removable lid is formed for the can. After the can lid has been completely severed from the can the operating lever 81 is again moved in a clockwise direction, thus permitting the link 75 to move downwardly so that the cutter disk 65 is disengaged from the can lid.

Although several specific embodiments of the invention have been illustrated and described for purposes of exemplification it should be understood that it is not intended to thereby limit the invention to these particular constructions but on the other hand the appended claims are intended to cover all modifications within the spirit and scope of the invention.

I claim as my invention:

1. A can opener comprising, in combination, a vertical base plate, a supporting roller rotatably mounted on said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk loosely mounted on said base plate and having a peripheral cutting edge presented toward said supporting roller, cooperating alined gears connected for rotation with said roller and said cutter disk, a peripheral oscillatable cam operatively connected to said cutter disk and contacting a cam surface carried by said base plate, a manual operating handle for oscillating said first named cam to move said cutter disk into penetrating engagement with a laterally projecting portion of the can and for simultaneously moving said gears into mesh, and a manual operating member for rotating said cutter disk and said roller through the medium of said gears to circumferentially sever the laterally extending portion of the can.

2. A can opener comprising, in combination, a vertical base plate, a supporting roller rotatably mounted on said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk having a peripheral cutting edge presented toward said supporting roller, means including a link slidably carried by said base plate for supporting said cutter disk loosely on said base plate for limited

movement toward and away from said supporting roller, said link having a lateral projection thereon, means including a cam provided with a manual operating handle and mounted on said base plate in contacting relation with said projection for moving said link and attached cutter disk toward said roller to bring the disk into penetrating engagement with a laterally projecting portion of the can, means for rotating said cutter disk, and means including cooperating gears connected for rotation with said roller and said cutter disk for transmitting rotative movement to said roller to move the base plate and its attached cutter disk circumferentially about the can.

3. A can opener comprising, in combination, a vertical base plate, a supporting roller rotatably mounted in said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk having a peripheral cutting edge presented toward said supporting roller, means including a link slidably carried by said base plate for supporting said cutter disk loosely on said base plate for limited movement toward and away from said supporting roller, means including a peripheral cam rockably mounted on said base plate in contacting engagement with said link for moving said link and attached cutter disk toward said roller to bring the disk into penetrating engagement with a laterally projecting portion of the can, means for rotating said cutter disk, and means including cooperating gears rotatable with said roller and said cutter disk for transmitting rotative movement to said roller to move the base plate and its attached cutter disk circumferentially about the can.

4. A can opener comprising, in combination, a vertical base plate, a supporting roller rotatably mounted on said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk having a peripheral cutting roller, means for movably supporting said cutter disk on said base plate, cooperating gears rigid with said cutter disk and said roller and movable into and out of mesh upon movement of said cutter disk toward and away from said roller, operating means for rotating said cutter disk, and means including a mutilated gear carried by said base plate and adapted to mesh with said gear connected to said cutter disk for moving said cutter disk toward said supporting roller as an incident to the initial movement of said operating means.

5. A can opener comprising, in combination, a vertical base plate, a supporting roller rotatably mounted on said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk having a peripheral cutting edge presented toward said supporting roller, means including a link vertically slidable on said base plate for supporting said cutter disk, cooperating gears rigid with said cutter disk and roller and movable into and out of mesh upon movement of said cutter disk toward and away from said roller, operating means for rotating said cutter disk, a cam rockably mounted on said base plate and contacting with said link to move said cutter disk toward and away from said roller, and means including a mutilated gear having a lost motion connection with said cam and adapted to mesh with the gear connected to said cutter disk for moving said cutter disk toward said supporting roller as an incident to the initial movement of said operating means.

6. A can opener adapted for use in removing an end member provided with a vertical annular shoulder and united to a can body by a double seam providing an annular enclosed space externally of the can body, comprising, a base, a supporting roller carried by said base having a flange thereon provided with a lateral face adapted to bear against the inner side of the annular shoulder, a revoluble cutter disk having a peripheral cutting edge mounted for rotation about an axis parallel with the axis of said roller and movable radially toward said roller and into penetrating engagement with said seam with the peripheral cutting edge of said disk in said annular space, said cutter disk having a generally unobstructed inner lateral face adapted to lie closely adjacent to the can wall, whereby the peripheral edge of the cutter disk is positioned sufficiently close to the can wall to penetrate the seam, and means for rotating said cutter disk when so engaged to circumferentially sever the end member from the can body, the peripheral cutting edge of said disk being provided with angularly disposed face portions adapted to fold the severed edges of the seam inwardly of the annular space.

7. A can opener adapted for use in removing an end member provided with a vertical annular shoulder and united to a can body by a double seam providing an annular enclosed space externally of the can body, comprising, a base, a supporting roller carried by said base having a flange thereon adapted to engage the inner side of the annular shoulder, a revoluble cutter disk having a peripheral cutting edge mounted for rotation about an axis parallel with the axis of said roller and movable radially toward said roller and into penetrating engagement with said seam with the peripheral cutting edge of said disk disposed in said annular space, said cutter disk having a generally unobstructed inner lateral face adapted to lie closely adjacent the can wall, whereby the peripheral edge of the cutter disk is positioned sufficiently close to the can wall to penetrate the bead, and means for rotating said cutter disk when so engaged to circumferentially sever the end member from the can body.

8. A can opener comprising, in combination, a vertical base plate, a supporting roller mounted on said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk having a peripheral cutting edge presented toward said supporting roller and mounted on said base plate, cooperating gears operatively connected to said roller and said cutter disk, means for moving said gears into and out of mesh and for simultaneously effecting limited relative vertical movement between said roller and cutter disk to bring said cutting edge into and out of penetrating engagement with a laterally projecting portion of the can, said cutter disk having a generally unobstructed inner lateral face adapted to lie closely adjacent the can wall, whereby the peripheral edge of the cutter disk is positioned sufficiently close to the can wall to penetrate the bead, and means for rotating said cutter disk to circumferentially sever the laterally projecting portion of the can, said gears serving to transmit the rotary motion from said disk to said roller.

9. A can opener comprising, in combination, a vertical base plate, a supporting roller rotatably mounted on said base plate and having a flange adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a revoluble cutter disk loosely mounted on said base plate and having a peripheral cutting edge presented toward said supporting roller, said cutter disk having a generally unobstructed inner lateral face adapted to lie closely adjacent the can wall, whereby the peripheral edge of the cutter disk is positioned sufficiently close to the can wall to penetrate the bead, cooperating alined gears rigid with said roller and said cutter disk, means including a manually operable cam for moving said gears into and out of mesh and for simultaneously moving said cutter disk into and out of penetrating engagement with a laterally projecting portion of the can, and means for rotating said cutter disk to circumferentially sever the laterally projecting portion of the can, said gears serving to transmit the rotary motion from said disk to said roller.

10. A can opener comprising, in combination, a vertical base plate, a support mounted on said base plate and having an extended portion arranged substantially parallel with said base plate and adapted to bear against the inner side of a vertical annular shoulder formed on the end of a can, a cutter disk having a peripheral cutting edge presented toward said support, said cutter disk having a generally unobstructed inner lateral face adapted to lie closely adjacent the can wall, whereby the peripheral edge of the cutter disk is positioned sufficiently close to the can wall to penetrate the bead, means including a shaft slidably mounted in a generally vertically disposed slot in said base plate for rotatably supporting said cutter disk, means for moving said shaft upwardly in said slot to move said cutting edge into penetrating engagement with a laterally projecting portion of the can, and means for moving the base plate with its attached support and cutter circumferentially about the can.

CHARLOTTE A. ARNESEN.