June 24, 1952 W. J. LANDRY 2,601,303

CAN OPENER

Original Filed Nov. 23, 1949 3 Sheets-Sheet 1

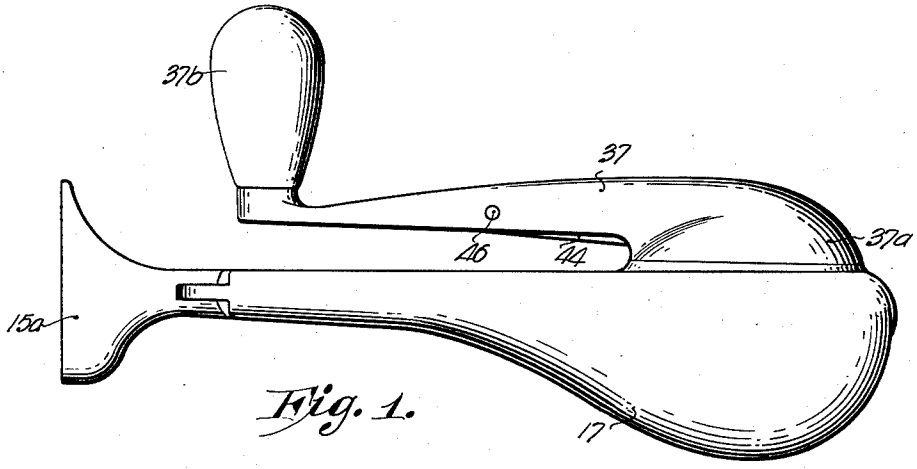

Fig. 1.

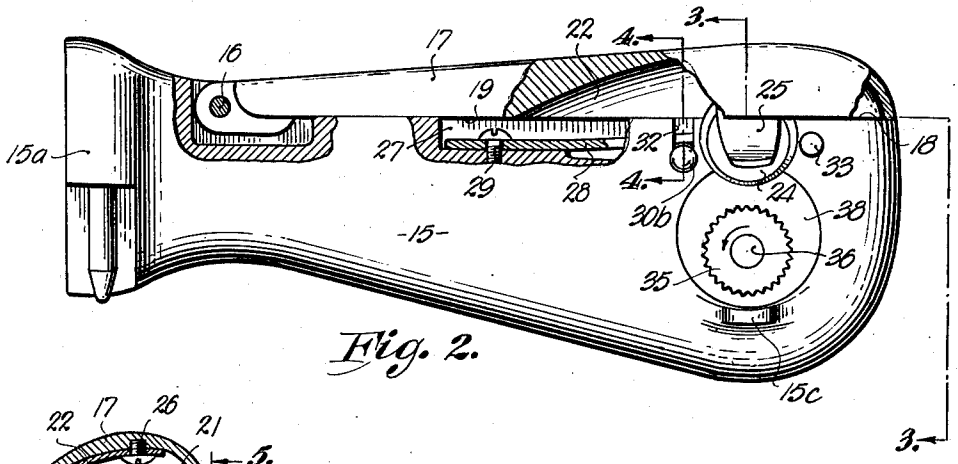

Fig. 2.

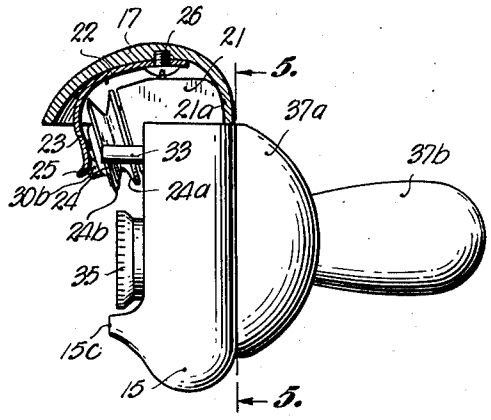

Fig. 3.

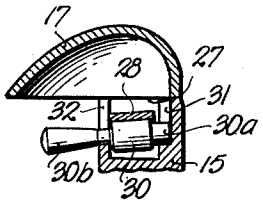

Fig. 4.

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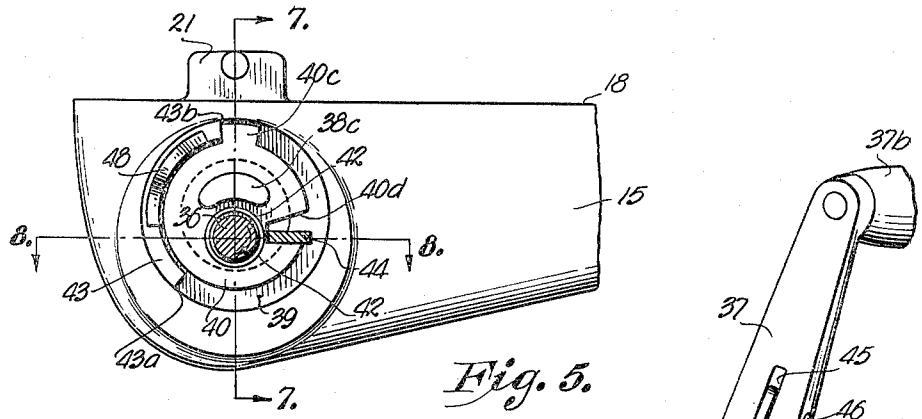

Fig. 5.

Fig. 6.

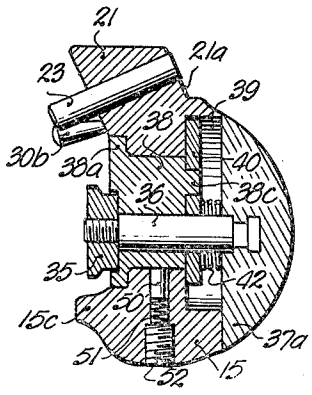

Fig. 7.

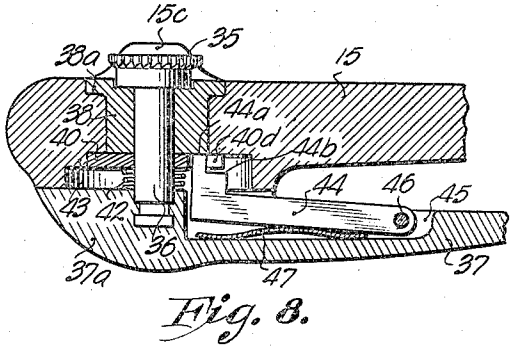

Fig. 8.

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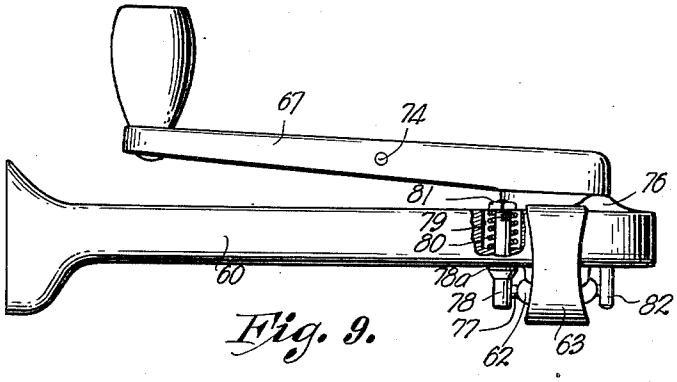

Fig. 9.

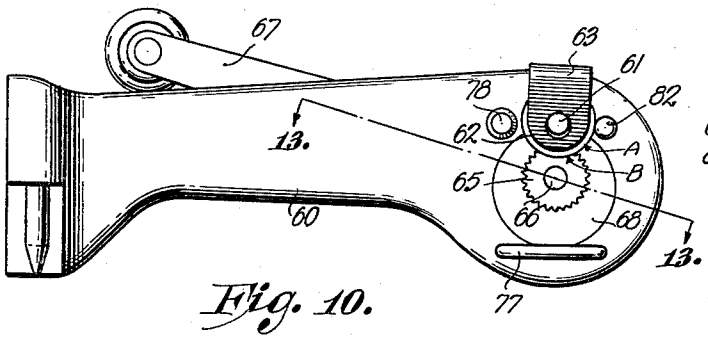

Fig. 10.

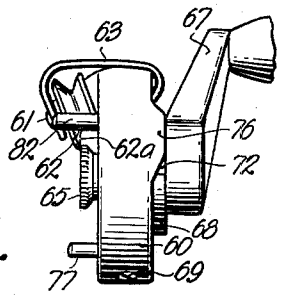

Fig. 11.

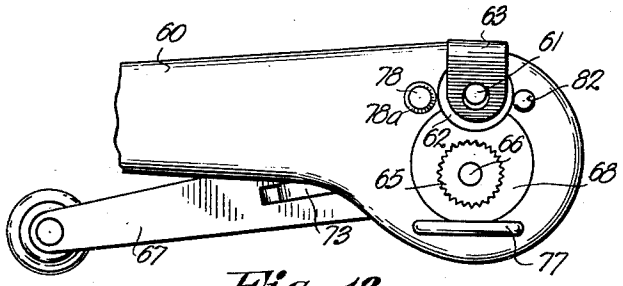

Fig. 12.

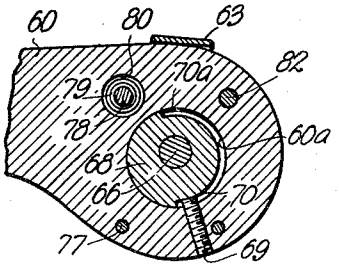

Fig. 14.

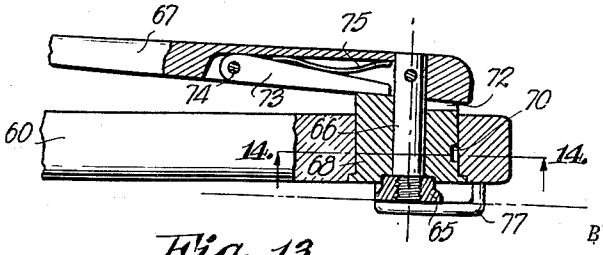

Fig. 13.

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UNITED STATES PATENT OFFICE

2,601,303

CAN OPENER

William J. Landry, Blue Springs, Mo., assignor to John C. Hockery, Kansas City, Mo., trustee

Original application November 23, 1949, Serial No. 129,139. Divided and this application April 21, 1950, Serial No. 157,247

31 Claims. (Cl. 30—9)

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The present invention relates in general to can openers, and it deals more particularly with can openers of the type utilizing a cutter wheel for removing the top of the can together with a feed gear for driving the can relative to the cutter wheel during such removal. This application is a division of my co-pending application Serial No. 129,139, filed November 23, 1949.

It is an object of the invention to provide a can opener of this type wherein the cutter wheel is readily removable for cleaning or replacement.

Another object is to provide a can opener having an improved mechanism for bringing the cutter wheel and feed gear into and out of operative relationship. An important feature resides in the simplicity and ruggedness of this mechanism and the economy of its manufacture.

A further object is to provide a can opener having improved arrangements for compensating for irregularities in the portion of the can being cut (such as are caused, for example, by seams in the can) whereby these irregularities induce little or no resistance to the cutting action, require no greater work on the part of the operator, impose no strain on the mechanism, and in no way adversely effect the cutting action.

Still another object is to provide novel means for holding the can in proper relation to the cutter wheel for best cutting action and most uniform cut. An important feature in this connection resides in the relative disposition of the cutter wheel and feed wheel and the arrangement by which this disposition is brought about.

Another feature resides in my improved arrangement for holding the bead and flange firmly engaged with the feed gear during the cutting operation.

Other objects and features will appear in the course of the following description of the invention.

In the accompanying drawings which form a part of the specification and are to be read in conjunction therewith, and in which like reference numerals are employed to indicate like parts of the various views,

Fig. 1 is a plan view of one form of can opener embodying my invention,

Fig. 2 is a side elevational view of the same, parts being broken away for purposes of illustration,

Fig. 3 is a sectional elevation taken along the line 3—3 of Fig. 2 in the direction of the arrows,

Fig. 4 is a fragmentary vertical cross section taken along the line 4—4 of Fig. 2 in the direction of the arrows,

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Fig. 5 is a sectional elevation of the main body of the can opener taken along the line 5—5 of Fig. 3 in the direction of the arrows,

Fig. 6 is an exploded perspective view of the mechanism of the same can opener,

Fig. 7 is a vertical cross section taken along the line 7—7 of Fig. 5 in the direction of the arrows,

Fig. 8 is a cross section taken along the line 8—8 of Fig. 5 in the direction of the arrows,

Fig. 9 is a plan view of a modified form of can opener embodying the invention, part being broken away for purposes of illustration,

Figs. 10 and 11 are side and end elevational views respectively of the can opener shown in Fig. 9,

Fig. 12 is a fragmentary side elevational view corresponding to Fig. 10 but showing the parts in a different position,

Fig. 13 is a fragmentary cross sectional view taken along the line 13—13 of Fig. 10 in the direction of the arrows, and

Fig. 14 is a vertical cross section taken along the line 14—14 of Fig. 13 in the direction of the arrows.

Referring now more particularly to the can opener shown in Figs. 1 to 8 inclusive, the numeral 15 identifies the main body of my device. The end 15*a* which, for convenience, will be referred to as the rear end of the can opener, is adapted to be mounted on a wall or similar vertical surface by means of a bracket, not shown, it being understood that the body 15 projects horizontally outward or forward from the supporting surface.

Along the upper edge of the main body and hinged thereto at 16 is cover member 17. These two parts have flat mating surfaces 18 and 19 which come together along a horizontal plane; near the forward end of the can opener, however, the upper surface of the body 15 has an integral stud 21 which extends above this plane and is received in a hollowed out cavity 22 on the underside of the cover member 17. In the stud is a fixed spindle 23 which projects laterally at a downwardly inclined angle as shown in Fig. 7. A freely rotating cutter wheel 24 mounted on this spindle is held in place by a spring 25 which is secured to the cover member, in the cavity, by a screw 26.

The forward portion of the cover member is flared outwardly to shelter and partly conceal the cutter wheel and, as may best be appreciated from Fig. 3, spring 25 draws the opposite inner wall of cavity 22 tightly against the face 21*a* of stud 21 thereby definitely preventing lateral shift-

ing of the forward end of the cover member even though some slight looseness may be present in the hinge 16.

In order to remove the cutter wheel from the spindle it is necessary only to swing the cover member upwardly about its hinge, which draws the retaining spring 25 clear of the wheel and permits the latter to be slipped off the end of the spindle. The cutter wheel thus may be cleaned easily after which it is replaced on the spindle and the cover member swung back down to the position shown; as this is done, the spring 25 again snaps across and slightly under the end of the spindle, not only serving to hold the cutter wheel in place but also latching the cover member against accidental upward displacement and orienting it laterally in proper relation to the main body 15 (by drawing it snugly against the surface 21a) to insure that the body and cover are matched as to their exterior surfaces and thus present a neat appearance.

In the horizontal upper surface of body 15 is a shallow recess 27 which is covered and concealed by the cover member 17 when the latter is down in its normal position as shown. A flat tension spring 28 is disposed in the recess, one end thereof being anchored to the bottom of the recess by a screw 29. The free end of the spring is tensioned downwardly and rides on the enlarged intermediate portion of a cross pin 30. One end of the pin (30a) is seated in a vertical slot 31 formed in one wall of the recess 27, and the opposite end (30b) projects out of the recess through a vertical slot 32; both of these slots extend downwardly from the upper edge of body 15. The end 30b is free to move up and down about end 30a as a hinge, always being biased downwardly, however, by spring 28. It will be noted that the free end of the pin is tapered slightly so that its underside presents a downwardly inclined abutment surface, the purpose of which will be made clear presently.

Forwardly of the cutter wheel a second pin 33 is fixedly secured to the body 15. This, as indicated in Fig. 3 projects horizontally, and is at substantially the same level as the base of the annular groove 24a in the underside of the cutter wheel; the free end of pin 30 is at a slightly lower level.

Cooperating with the cutter wheel is a serrated feed wheel or gear 35; this is screw threadedly secured to one end of a rotatable shaft 36, a crank handle 37 being secured to the opposite end of the shaft for turning same. The shaft 36 is journaled in a circular plug 38 which in turn is journaled in the main body 15 of the can opener. It will be noted that the bearing aperture 15b which receives the circular plug permits the plug to turn about a horizontal axis and that the bearing aperture 38b in the plug which receives the shaft holds the latter parallel to the plug's axis but radially spaced therefrom so the feed gear 35 is disposed eccentrically against the face of the plug.

The end of the plug adjacent the feed gear is formed with an annular flange 38a which seats in a circular recess provided in one side of the body 15, the face of the plug being flush with the side of the body. The opposite end of the plug is flush with the bottom of an enlarged recess 39 in the opposite side of body 15 but has an arcuate tongue 38c extending a short distance into the latter recess. An enlarged hub 37a on the handle covers this recess when the parts are assembled.

A cam plate having an abutment surface 40, apertured at 40a to receive the tongue 38c and at 40b to receive the shaft 36, is disposed in the recess 39 and held against the bottom thereof by a coiled compression spring 42 encircling the shaft. As assembled, it will be obvious that the plate and the plug 38 must always turn together as a unit. The angle through which they may turn is limited by a radially projecting lug 40c on the cam plate and a raised segmental boss 43 in the recess, the ends 43a and 43b of the boss serving as stops for the lug.

The cam plate also has a slot 40d extending inwardly from the periphery with its edges substantially radial to the axis of shaft 36. Cooperating with this slot is a dog carried by the crank handle 37; as best seen in Figs. 6 and 8, this comprises a flat lever 44 lying in an elongated slot 45 on the underside of the handle, one end of the lever being secured to the handle by a pivot pin 46 and the free end being urged outwardly from the handle by a bowed spring 47 confined in the recess below the lever. The free end of the lever is formed into a stepped dog having a portion 44a adapted to enter the slot 40d under the influence of spring 47; the adjacent raised portion 44b is adapted to clear the boss 43 under this condition. On the boss, however, there is a stationary camming surface 48 in the path of portion 44b the purpose of which will be made clear presently. This surface lies in a short arc close to the margin of the plate 40, its highest elevation being approximately at the center of the arc with the surface sloping downwardly from the center in both directions so that both ends of the arc are at the level of the surface of boss 43.

To understand the operation of my can opener, let it be assumed that all parts of the mechanism are positioned as shown in Figs. 1, 2, 3, 5, 7 and 8, attention being directed to the fact that under these circumstances the upper edge of feed gear 35 is spaced below the lower edge of the cutter wheel 24. Now let it be assumed that the operator by means of knob 37b swings the crank downwardly and thus turns shaft 36 in the direction indicated by the arrows in Figs. 2 and 5, which for convenience will be preferred to as the forward direction.

Referring to Fig. 5 it will be seen that the rotation of the crank causes dog 44 by bearing against the lower edge of slot 40d to turn cam plate 40 and the circular plug 38 as a unit about the axis of the latter.

As the plug 38 turns with the crank, it carries shaft 36 in an arcuate path forwardly and upwardly until the axis of the shaft is on the same level as the axis of the plug; continuing its rotation, the plug carries the shaft rearwardly but still upwardly until the shaft finally reaches the top of its arcuate path. Plug 38 now has turned 180° from its starting position, the direction of its rotation being clockwise as seen in Fig. 5, counter-clockwise as seen in Fig 2; and thus brings the upper edge of the feed wheel 35 into the groove 24a of cutter wheel 24.

The 180° rotation also brings the free end of lever 44 over the inclined camming surface 48 which, by engaging the surface 44b begins to lift the dog 44a out of slot 40d. Thus, at the same time shaft 36 reaches the top of its arcuate path, dog 44a is lifted clear and the continued rotation of the crank in the same direction will turn the feed gear 36 but will have no further effect on plug 38. As seen in Fig. 7, a friction

plug 50 urged against the periphery of cylinder 38 by a spring 51 acts as a brake and prevents coasting of the cylinder past the position at which the dog is lifted clear. The friction plug and spring are housed in a small radial bore, the outer end of which is closed by a retaining screw 52.

The operator may now continue to turn crank 37 in the forward direction any number of complete revolutions desired, and, during the major portion of such rotation, dog 44a will ride harmlessly on the face of plate 40; once in each revolution, however, it will drop momentarily into slot 44d, but before it can advance the plate 40 further, it is again lifted out of the slot by camming surface 48. Accordingly, shaft 36 remains at the top of its arcuate path but is revolved by the crank in that position, turning the feed wheel 35.

Now let it be supposed that the direction of rotation of the crank is reversed. Regardless of the position occupied by the crank when such reversal is instituted, it will simply turn shaft 36 and feed gear 35 in the reverse direction until dog 44a arrives at the point where it registers with slot 40d. There, because surface 44b is descending on the slope of camming member 48, the dog is permitted to enter and remain in the slot so, during the ensuing 180° rotation of the crank, plate 40 and the circular plug 38 turn with the crank. This causes shaft 36 to return over the same path described hereinbefore to the position shown in the drawings, where lug 40c, abutting against the stop shoulder 43b, halts the rotation of all parts.

It is thought that the operation of the can opener to remove the top of a can will be comparatively obvious from the foregoing, and hence this will be described but briefly. With parts positioned as shown in Figs. 2 and 3, the bead or flange about the rim of the can is inserted between the top edge of feed gear 35 and the bottom edge of cutter wheel 24. Crank 37 then is swung downwardly, i. e., rotated in a forward direction, the first 180° of such rotation being effective to raise the feed wheel as described above, whereupon, the feed wheel, by its engagement with the underside of the can bead or flange, raises the can, causing the bead of the can to enter groove 24a of the cutter wheel and the edge 24b to pierce the top just inside the bead. The upward thrust of the feed wheel also brings the upper edge of the can into contact with pins 33 and 30b, forcing the latter pin slightly upward against the tension of spring 28, so the bead is securely engaged by the pins on the top and by the feed wheel on the bottom.

Continued rotation of the crank in the forward direction now causes the gear 35 to feed the bead of the can past the cutter wheel thereby severing the top. During this portion of the operation, the side wall of the can is supported by a boss 15c on the main body of my device. The spring biased pin 30b applies a downward pressure on the bead, and thus always maintains good contact between the bead and feed gear. The taper on the end of this pin is such as to draw the portion of the bead leaving the cutter wheel in toward the body 15 of the can opener, which maintains the advancing bead at the correct angle of attachment relative the cutter wheel. Irregularities in the bead (as presented, for example, by a seam in the can) are compensated for by the yieldable spring loading of pin 30. Also, the cutter wheel 24 can move axially outwardly along spindle 23 against the tension of spring 25 as a vertical seam passes between the face of feed gear 35 and the inner face of cutting edge 24a, so there is no resistance to the passage of the seam and this imposes no harmful strain on the parts.

When the lid has been completely severed, the operator simply reverses the direction of rotation of crank 37, which lowers the feed gear as described above and frees the bead so that the can may be removed from the can opener.

Figs. 9 to 14 inclusive show a modified form of my can opener. This has a body 60, the rear end of which is mounted on a wall or the like in the same fashion as was the body of the can opener previously discussed. Near its forward end, body 60 carries an inclined stationary spindle 61 and a freely rotatable cutter wheel 62 similar to those described above, the cutter being held on the spindle, however, by a U spring 63 which has one end apertured to receive the spindle and the other end hooked over the opposite side of body 60. The two legs of the spring are tensioned toward one another, but by manually forcing them apart, the spring may be removed to permit removal of the cutter wheel from the spindle for cleaning purposes or replacement.

Cooperating with the cutter wheel, is a serrated feed wheel or gear 65. This is screw threadedly secured to one end of a rotatable shaft 66, a crank handle 67 being secured to the opposite end for turning same. The shaft 66 is journaled in a circular plug 68 which in turn is journaled in the body 60. The hole 60a occupied by the rotatable plug extends completely through the body from one side thereof to the other, and the plug is held against axial displacement in the hole by a retaining screw 69 which projects into a circumferential groove 70 extending part way around the plug. As will be seen plainly from Fig. 14 the recess is of a length which limits the rotation of the plug to a little over one-half turn.

As was true in the can opener heretofore described, shaft 66 is disposed eccentrically relative the axis of the plug 68, but whereas the two axes were parallel in my other device, it will be noted from Fig. 13 that in the present unit shaft 66 is canted very slightly in such a fashion as to give the feed gear when it is positioned as shown in Fig. 10 a compound angle relative the cutter wheel 62. The purpose of this will be explained presently.

Handle 67 bears against one face of the plug, which face lies in a plane perpendicular to the axis of shaft 66. In this face there is radial to the shaft 66 a slot 72 which corresponds to and is shaped like the slot 40d of the other can opener. Cooperating with the slot is a dog 73 pivoted in the handle at 74, the free end of the dog being urged by a bowed spring 75 toward the face of the plug 68. Adjacent the plug in a position to be engaged by the shank of the dog, the can opener body 60 has a raised boss 76 providing a sloped camming surface similar to camming member 48 previously described.

The operation of this form of my can opener is fundamentally the same as that of the other device. That is to say, the normal position of parts is as shown in Fig. 12, the flange of the can being inserted between the bottom of the cutter wheel 62 and the top of the feed gear 65 while they are thus separated. Bracket 77 supports the side wall of the can. Crank 67 now is turned counter-clockwise whereupon dog 73,

falling into slot 72, turns the circular plug 68 through approximately 180° bringing the feed gear to the position shown in Figs. 10 and 11.

At this point the camming boss 76 lifts the dog out of a slot 72 so that continued rotation of the crank simply turns the feed gear 65 counter-clockwise (Fig. 10) while it remains meshed with the cutter wheel. This advances the can relative the cutter, severing the top thereof, and is continued until the top is completely or nearly completely detached, as desired. As the vertical seam of the can passes between the outer face of feed gear 65 and the inner face 62*a* of the cutter wheel, the cutter wheel moves axially outward along spindle 61 against the tension of spring 63, so there is little or no resistance to such passage and no harmful strain is imposed on the mechanism.

During the cutting operation, pins 78 and 82 engage the upper rim of the can, preventing it from tilting and applying a downward force thereon which maintains the flange of the can tightly engaged with the feed wheel. Free to swivel slightly, pin 78 has a shoulder 78*a* which is urged toward the face of body 60 by a coiled compression spring 80 encircling the shank of the pin in recess 79; this tends to maintain the projecting portion of the pin normal to said face of body 60 but engagement with a can during the opening thereof tilts the projecting end slightly upward whereby the engaged portion of the can is subjected to the downward restoring force of the spring. The spring loading of the pin compensates for irregularities in the rim of the can, and this loading can, of course, be carried by adjusting nut 81 inwardly or outwardly along the threaded shank of the pin.

When the cutting operation is completed crank 67 is turned in the opposite direction and it will be seen from Fig. 11 that as the dog descends along the sloped face of boss 76 it reseats in slot 72 so that plug 68 now turns with the handle bringing the feed gear 65 back to the position shown in Fig. 12. When it reaches that position, shoulder 70*a* abuts against retaining screw 69 and halts the rotation of all parts. The can may now, of course, be removed from the can opener.

As may best be appreciated from Fig. 11, the inner face 62*a* of the cutter wheel is an essentially conical surface. Due to the inclination of the spindle 61, the axis of this conical surface is inclined in such a fashion that a narrow segment of the surface disposed directly below the spindle is plumb; strictly speaking, the plumb segment may be defined as that portion of the conical surface below the spindle which would be intersected by a vertical plane passing through the axis of the cone. Considering the line of intersection between this plane and the cone surface and imagining a second vertical plane passing through the same line perpendicular to the first mentioned plane, it will be clear that while a conical surface lies tangent to the latter plane along the line of intersection it slopes away from the tangent plane on either side of this line.

As a can is being turned by the feed gear 65 in the course of severing the top, the edge of the cutter wheel initially breaks through the advancing lid approximately at the point A (Fig. 10); cutting then continues from the point A to point B and is essentially complete at the latter point. It has been discovered that most satisfactory overall operation is achieved if the face of the feed gear 65 is canted slightly as shown in Fig. 13 to conform with the generally canted disposition of the inner surface 62*a* of the cutter wheel in the critical operating region between points A and B. This angular disposition of the feed gear relative the cutter wheel permits the latter to lie close to the flange of the can top and cut close up to the flange. Also it insures that the cut is parallel to the flange and defeats the tendency which otherwise would be present, for the cut to progress away from the flange toward the center of the can top.

The latter tendency is present, of course, in the can opener construction shown in Figs. 1 to 8 where the cutter wheel is not canted, but it is overcome there by the taper on pin 30*b* which, by drawing the edge of the can engaged by the pin toward the body of the can opener, insures that the cutting edge of wheel 24 cuts the can top close to the flange. (In the construction shown in Figs. 9 to 14 the canted disposition of the feed gear makes it unnecessary to taper the end of pin 78 in similar fashion.) It will be appreciated therefore that the feed gear 35 and its shaft 36 can be canted in the fashion shown in Fig. 13 and that if this were done pin 30*b* would not be tapered; otherwise the construction would be substantially as shown.

From the foregoing it will be seen that this invention is one well adapted to attain all of the ends and objects hereinbefore set forth together with other advantages which are obvious and which are inherent to the apparatus.

It will be understood that certain features and subcombinations are of utility and may be employed without reference to other features and subcombinations. This is contemplated by and is within the scope of the claims.

Inasmuch as various modifications of the invention may be made without departing from the scope thereof, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:

1. In a can opener, a stationary body, a rotatable plug journaled in the body, a rotatable shaft journaled in the plug, the axes of the plug and shaft being laterally spaced from one another, a cutter wheel and a cooperating feed wheel for engagement with the flange of the can, one of said wheels mounted on said body and the other secured on one end of said shaft to turn therewith, a crank connected to the other end of the shaft for turning same, a dog carried by the crank and movable adjacent the shaft toward and away from the end of the plug, means urging said dog toward said end of the plug, said plug being provided at said end with an abutment surface on which the dog is adapted to ride with a recess in said surface to register with and receive the dog when the crank is in a predetermined angular position relative to the plug, said dog when received in said recess causing the plug to turn with the crank, and a camming means on the body engaged by the dog to maintain the dog above the level of said abutment surface whenever the crank is in a predetermined angular position relative the body.

2. In a can opener, a stationary body, a rotatable plug journaled in the body, a friction brake between said body and plug normally holding the plug stationary relative the body, a rotatable shaft journaled in the plug, the axes of the plug and shaft being laterally spaced from

one another, a cutter wheel and a cooperating feed wheel for engagement with the flange of the can, one of said wheels mounted on said body and the other secured to one end of the shaft to turn therewith, a crank connected to the other end of the shaft for turning same, a dog carried by said crank and movable adjacent the shaft toward and away from the plug, means urging the dog toward said end of the plug, said plug being provided at said end with an abutment surface on which the dog is adapted to ride with a recess in said surface to register with and receive the dog when the crank is turned to a predetermined angular position relative the plug, said dog when received in said recess causing the plug to turn with the crank, and a camming means on the body engaged by the dog to raise the dog above the level of said abutment surface whenever the crank is in a predetermined angular position relative the body.

3. In a can opener, a stationary body, a rotatable plug journaled in the body, a rotatable shaft journaled in the plug, the axes of the plug and shaft being laterally spaced from one another, a cutter wheel and a cooperating feed wheel for engagement with the flange of the can, one of said wheels mounted on said body and the other secured to one end of the shaft to turn therewith, a crank connected to the other end of the shaft for turning same, a lever carried by and pivoted to the crank with its free end over the end of the said plug, means urging the free end of the lever toward said end of the plug, said plug having at said end an abutment surface on which the lever is adapted to ride with a recess in said surface to register with and receive the free end of the lever when the crank is in a predetermined angular position relative the plug, and a camming means on the body engaged by the lever to raise same above the level of said abutment surface whenever the crank is in a predetermined angular position relative the body.

4. A can opener as in claim 3 wherein the width of said recess in a circumferential direction is substantially double the thickness of the free end of the lever in a corresponding direction.

5. In a can opener, a stationary body, a cutter carried thereby, a cooperating feed wheel adapted to engage the can to drive same relative to the cutter, said wheel supported on said body for rotation about a substantially horizontal axis and movement in a plane normal to said axis to vary the distance between said wheel and cutter, a thrust member having operative connection with said body and also having operative connection with said wheel for imparting movement to the latter in said plane, a crank member connected to said wheel for turning same about said axis, said members positioned side by side along said axis, a dog movably mounted on one of said members, guide means restricting the movement of said dog relative said one member to movement along a path substantially paralleling said axis, yieldable spring means urging said dog along said path toward the other member, and a shoulder on said other member for intermittent connection with said dog upon turning of said crank member to effect actuation of the thrust member for moving said wheel in said plane to vary the distance between said wheel and cutter.

6. In a can opener, a stationary body, a cutter wheel and a cooperating feed wheel adapted to engage the can to drive same, one of said wheels mounted on said body and the other supported on the body for movement relative to said one wheel to change the spacing between said wheels, a thrust member having operative connection with said body and also having operative connection with said other wheel for imparting movement to the latter relative to said one wheel, a crank member connected to said other wheel for turning same, said members positioned side by side along the axis of said other wheel, a dog movably mounted on one of said members, guide means restricting the movement of said dog relative said one member to movement along a path substantially paralleling the axis of said other wheel, said path spaced laterally from said axis, a shoulder on said other member positioned to be engaged by said dog upon movement of the dog along said path toward said other member, thereby to couple said members together for actuation of the thrust member upon turning of the crank member, and means on said stationary body having operative connection with said dog for controlling the movement of same along said path away from said other member upon predetermined partial rotation of the crank member, thereby to disengage said dog from said shoulder and thus uncouple said members to permit continued rotation of the crank member free of the thrust member.

7. A can opener as in claim 5 wherein said thrust member comprises an eccentric having a bearing on a fixed surface carried by said body.

8. In a can opener, a stationary body, a cutter wheel and a cooperating feed wheel adapted to engage the can to drive same, one of said wheels mounted on said body and the other supported on the body for movement relative to said one wheel to change the spacing between said wheels, a thrust member having operative connection with the body and also having operative connection with said other wheel for imparting movement to the latter relative to said one wheel, a crank member connected to said other wheel for turning same, said members positioned side by side along the axis of said other wheel, a dog movably mounted on one of said members for movement toward and away from the other member along a path substantially paralleling the axis of rotation of said other wheel, said path spaced laterally from said axis, a shoulder on said other member for connection with said dog upon turning of the crank member to effect actuation of the thrust member for moving said other wheel relative said one wheel, and means on the body coacting with said dog to disengage same from said shoulder after a predetermined rotation of said crank member.

9. In a can opener, a stationary body, a cutter carried thereby, a cooperating feed wheel adapted to engage the can to drive same relative to the cutter, said feed wheel supported on said body for rotation about a substantially horizontal axis and movement in a plane normal to said axis to vary the distance between said wheel and cutter, a thrust member having operative connection with said body and also having operative connection with said wheel for imparting movement to the latter in said plane, a crank member connected to said wheel for turning same about said axis, said members positioned side by side along said axis, a dog movably mounted on one of said members, guide means restricting the movement of said

dog relative said one member to a movement along a path substantially paralleling said axis, yieldable means urging said dog along said path toward the other member, a shoulder carried by said other member to rotate therewith for connection with said dog upon turning of the crank member to effect actuation of the thrust member for moving said wheel toward said cutter, means on the body coacting with said dog to disengage same from said shoulder after a predetermined rotation of said crank member, a fixed bearing shoulder on said body engageable with the can rim forwardly of the point of action of said cutter, and a yieldable bearing shoulder on the body arranged to engage the can rim rearwardly of the point of action of said cutter to act downwardly on the can to hold same in pressure engagement with the feed wheel.

10. A can opener as in claim 9 wherein said last shoulder is laterally inclined to exert an obliquely directed force on the can.

11. In a can opener of the type having a cutter wheel and a cooperating drive wheel to engage the can, a stationary body having an opening therethrough, a shaft extending through said opening, an eccentric sleeve member encircling said shaft and supporting same, said sleeve member disposed in said opening and supported by said body, one of said wheels carried by said body and the other mounted on said shaft to turn therewith, a crank member connected to said shaft to turn the same, said crank member positioned adjacent the end of said sleeve member, a dog movably mounted on one of said members in a position spaced laterally from said shaft, guide means restricting the movement of said dog relative said one member to movement along a path substantially paralleling said shaft, a shoulder on said other member positioned to be engaged by said dog upon movement of the dog along said path toward said other member, thereby to couple said members together for rotation of the sleeve member upon turning of the crank member, and means on said stationary body having operative connection with said dog for controlling the movement of same along said path away from said other member upon predetermined partial rotation of the crank member, thereby to disengage said dog from said shoulder and uncouple said members to permit continued rotation of the crank member free of the sleeve member.

12. In a can opener as in claim 11, a fixed bearing shoulder on said body engageable with the can rim forwardly of the point of action of said cutter wheel, and a yieldable bearing shoulder on the body arranged to engage the can rim rearwardly of the point of action of the cutter wheel to act downwardly on the can to hold same in pressure engagement with the drive wheel.

13. In a can opener of the type having a cutter wheel and a cooperating drive wheel to engage the can, a stationary body having an opening therethrough, a shaft extending through said opening, an eccentric sleeve member encircling said shaft and supporting same, said sleeve member disposed in said opening and supported by said body, one of said wheels carried by said body and the other mounted on said shaft to turn therewith, a crank member connected to said shaft to turn same, said crank member positioned adjacent the end of said sleeve member, a dog movably mounted on one of said members in a position spaced laterally from said shaft, guide means restricting the movement of said dog relative said one member to movement along a path substantially paralleling said shaft, yieldable means urging said dog along said path toward the other member, a shoulder on said other member for connection with said dog upon turning of the crank to effect rotation of the eccentric sleeve member for moving said shaft and other wheel relative said one wheel, and means on said body coacting with said dog to disengage same from said shoulder after a predetermined rotation of the sleeve.

14. In a can opener, a stationary body of appreciable thickness having a recess in one face thereof with a circular hole reduced in size extending from the bottom of the recess through the body to the other side thereof, a cylindrical plug journaled for rotation in said hole, a plate disposed in said recess and connected to said plug for rotation therewith, said plug and plate having aligned holes whose axes are spaced laterally from the axis of the plug, a shaft journaled for rotation in said last holes, a cutter wheel and a cooperating feed wheel to engage with the flange of the can, one of said wheels mounted on said body and the other secured to one end of said shaft to turn therewith, a crank connected to the other end of the shaft for turning same, said crank having an enlarged hub covering said recess, a movable dog in the hub of the crank, said plate having a shoulder engaged by said dog upon turning of the crank to transmit the rotation of the crank to said plug and thus shift said other wheel relative said one wheel, and camming means on the body to engage said dog and shift same out of engagement with said shoulder after predetermined rotation of the crank.

15. In a can opener, a stationary body of appreciable thickness having a recess in one face thereof with a circular hole of reduced size extending from the bottom of the recess through the body to the other side thereof, a cylindrical plug journaled for rotation in said hole, a plate disposed in said recess and connected to said plug for rotation therewith, said plug and plate having aligned holes whose axes are spaced laterally from the axis of the plug, a shaft journaled for rotation in said last holes, a cutter wheel and a cooperating feed wheel to engage with the flange of the can, one of said wheels mounted on said body and the other secured to one end of said shaft to turn therewith, a crank connected to the other end of the shaft for turning same, said crank having an enlarged hub covering said recess, a dog carried by the crank and movable adjacent the shaft toward and away from said plate, means urging the dog toward the plate whereby it normally rides on the face thereof, said plate having a recess arranged to register with and receive said dog upon rotation of the crank thereby to transmit the crank's rotation to the plug and thus shift said other wheel relative said one wheel, and camming means on the body to engage said dog and lift same out of said last recess after predetermined rotation of the crank.

16. In a can opener, a stationary body, a cutter wheel and a cooperating feed wheel adapted to engage the can to drive same, one of said wheels mounted on said body and the other supported on the body for movement relative to

said one wheel to change the spacing between said wheels, a thrust member having operative connection with said body and also having operative connection with said other wheel for imparting movement to the latter relative to said one wheel, a crank member connected to said other wheel for turning same, said members positioned side by side along the axis of rotation of said other wheel and having confronting faces substantially normal to said axis, one of said members containing a socket extending inwardly from said face thereof, a dog carried by said one member in said socket and movable in the socket parallel to said axis, a shoulder on said confronting face of the other member positioned for engagement with said dog upon movement of the dog in said socket toward said other member, thereby to couple said members together for actuation of said thrust member upon turning of the crank member, and means on said stationary body having operative connection with said dog for controlling the movement of same in said socket away from said other member upon predetermined partial rotation of the crank member, thereby to disengage said dog from said shoulder and uncouple said members to permit continued rotation of the crank member free of the thrust member.

17. In a can opener of the type having a cutter wheel and a cooperating drive wheel to engage the can, a stationary body having an opening therethrough, a shaft extending through said opening, an eccentric sleeve member encircling said shaft and supporting same, said said sleeve member disposed in said opening and supported by said body, one of said wheels carried by said body and the other mounted on said shaft to turn therewith, a crank member connected to said shaft to turn the same, said crank member positioned adjacent the end of said sleeve member whereby the end of the sleeve member and the hub of said crank form confronting faces, one of said members containing a socket extending inwardly from said face thereof, a dog carried by said one member in said socket and movable in the socket toward and away from the confronting face of the other member, a shoulder on said confronting face of the other member for engagement with said dog upon movement of the dog in said socket toward said other member, thereby to couple said members together for rotation of said sleeve member upon turning of said crank member, and means on said body having operative connection with said dog for controlling the movement of same in said socket away from said other member upon predetermined partial rotation of the crank member, thereby to disengage said dog from said shoulder and uncouple said members to permit continued rotation of the crank member free of the sleeve member.

18. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the can, a stationary body having an opening therethrough, a shaft extending through said opening, an eccentric sleeve member encircling said shaft and supporting same, said sleeve member disposed in said opening and supported by said body, one of said wheels carried by said body and the other mounted on said shaft to turn therewith, a crank member connected to said shaft to turn the same, said crank member positioned adjacent the end of said sleeve member whereby the end of the sleeve member and the hub of said crank form confronting faces, one of said members containing a socket extending inwardly from said face thereof, a dog carried by said one member in said socket and movable in the socket toward and away from the confronting face of the other member, yieldable means urging said dog toward said other member, said other member containing a notch for receiving said dog thereby to latch the two members together to turn as a unit, and means for moving said dog out of said notch upon rotation of said crank member through a predetermined angle thereby to unlatch said members for continued rotation of the crank member independently of the sleeve member.

19. A can opener as in claim 18 wherein said last means comprises a cam fixedly positioned on said body in the path of said dog.

20. In a can opener, a stationary body, a rotatable plug member journaled in the body, a rotatable shaft journaled in the plug, the axes of said plug member and shaft being laterally spaced from one another whereby rotation of the plug member causes said shaft to travel in an arcuate path, mutually engageable stops on said body and plug member for limiting the rotary movement of the latter in either direction and consequently limiting the arcuate travel of said shaft, a cutter wheel and a cooperating feed wheel for engagement with the can, one of said wheels secured to one end of said shaft to turn therewith about the axis of the shaft and to travel therewith in said arcuate path, the other of said wheels mounted on said body adjacent the position occupied by said one wheel when it is at one limit of its arcuate path, a crank member connected to the other end of said shaft to turn same, said crank member and said plug member positioned side by side along said shaft, a dog movably mounted on one of said members, guide means restricting the movement of said dog to movement along a path substantially paralleling said shaft but spaced laterally therefrom, spring means urging said dog along said last path toward the other member, said other member containing a notch for receiving said dog thereby to connect the two members together to turn as a unit during a predetermined partial rotation of the crank member, and means acting on said dog to move same along said last path against the force of said spring at the end of said predetermined rotation, thereby to retract the dog from said notch and thus disconnect said members for continued rotation of the crank member independently of the plug member.

21. A can opener as in claim 20 wherein said last means comprises a cam fixedly positioned on said body.

22. In a can opener, a stationary body, a rotatable plug member journaled in the body, a rotatable shaft journaled in the plug, the axes of said plug member and shaft being laterally spaced from one another whereby rotation of the plug member causes said shaft to travel in an arcuate path, mutually engageable stops on said body and plug member for limiting the rotary movement of the latter in either direction and consequently limiting the arcuate travel of said shaft, a cutter wheel and a cooperating feed wheel for engagement with the can, one of said wheels secured to one end of said shaft to turn therewith about the axis of the shaft and to travel therewith in said arcuate path, the other of said wheels mounted on said body adjacent the position occupied by said one wheel when it is at one limit of its arcuate path, a crank member connected

to the other end of said shaft to turn same, said crank member and said plug member positioned side by side along said shaft, one of said members carrying a dog constructed and arranged for substantially rectilinear movement in the direction of the axis of the shaft and for movement along an arcuate path with said one member upon rotation of the latter, the other of said members having a notch into which said dog is adapted to enter upon rectilinear movement thereof toward said other member and out of which the dog is adapted to shift upon rectilinear movement away from said other member, thereby to couple and uncouple said members for rotation together or alone, a spring urging said dog toward said other member, and stationary camming means on said body in the arcuate path of said dog, said camming means acting on said dog to control the rectilinear movement of the dog for uncoupling said members after a predetermined partial rotation of the crank member.

23. A can opener comprising a body having an opening extending therethrough from one side wall to the other, a cutting member mounted on one side wall of the body adjacent said opening, a rotatable unit journaled in said opening, a shaft journaled in said rotatable unit eccentrically with respect to the axis of said rotatable unit and projecting beyond opposite walls of said body, mutually engageable stops on the body and rotatable unit for limiting rotary movement of the latter in either direction, a driving wheel on said shaft adjacent said one side wall, a crank unit carried on the other end of said shaft, a clutch including a notch in one of said units and a latch carried by the other unit for movement parallel to the axis of rotation of said rotatable unit for engagement with said notch to drivingly connect said units, a spring urging said latch into said notch, and means for moving said latch out of the notch for relative rotation of said units upon rotation of said crank unit through a predetermined rotational movement thereof and when said rotatable unit is in one limit position.

24. A can opener comprising a body having an opening extending therethrough from one side wall to the other, a cutting member mounted on said one side wall of the body adjacent said opening, a rotatable unit in said opening, a shaft journaled in said rotatable unit eccentrically with respect to the axis of said rotatable unit and projecting beyond opposite side walls of said body, mutually engageable stops on the body and rotatable unit for limiting rotary movement of the latter in either direction, a driving wheel on said shaft adjacent said one side wall, a crank unit carried on the other end of said shaft, a clutch including a notch in one of said units and a latch carried by the other unit for movement parallel to the axis of rotation of said rotatable unit for engagement with said notch to drivingly connect said units, said clutch adapted to drivingly connect said units through a predetermined rotational movement of said crank unit, and means acting on said latch upon the completion of said predetermined rotational movement and when said rotatable unit is in one limit position to move the latch out of said notch to permit continued rotation of said crank unit independently of said rotatable unit.

25. A can opener as in claim 11 wherein the axis of said shaft is canted with respect to the axis of said eccentric sleeve.

26. A can opener as in claim 17 wherein the axis of said shaft is canted with respect to the axis of said eccentric sleeve.

27. A can opener as in claim 18 wherein the axis of said shaft is canted with respect to the axis of said eccentric sleeve.

28. A can opener as in claim 22 wherein the axis of said shaft is canted with respect to the axis of said plug member.

29. A can opener as in claim 24 wherein the axis of said shaft is canted with respect to the axis of said rotatable unit.

30. In a can opener, a cutter and a cooperating feed wheel adapted to engage the can to drive same, a stationary body, a member rotatably mounted on said body, stop means limiting the rotation of said member relative to said body to approximately one-half revolution in either direction, a shaft journaled in said member, said shaft being spaced laterally from the axis of rotation of said member throughout its entire length and being canted relative thereto, said feed wheel being mounted on said shaft to turn therewith and said cutter being mounted on said body at a point such that its cutting edge overlaps the margin of said feed wheel when said rotatable member is at one limit of its rotation but not when said member is at its opposite limit and a crank member connected to said shaft for turning same.

31. In a can opener, a stationary body, a cutter wheel and a cooperating feed wheel adapted to engage the can to drive same, said cutter wheel mounted on said body for rotation about a fixed axis which lies in a vertical plane but is inclined from horizontal, said cutter wheel having a frusto-conical face tapered at such an angle that the portion thereof intersected by said vertical plane lies tangent to a second vertical plane which is normal to said first plane, means supporting said feed wheel on said body for movement along a path parallel to said second plane from a first position in which the margin of the feed wheel is spaced away from the margin of the cutter wheel to a second position in which the margin of the feed wheel overlaps the margin of the cutter wheel, the axis of said feed wheel being canted horizontally when said wheel is in said second position.

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