July 15, 1952 W. J. LANDRY 2,602,991

CAN OPENER

Filed Nov. 23, 1949 3 Sheets-Sheet 1

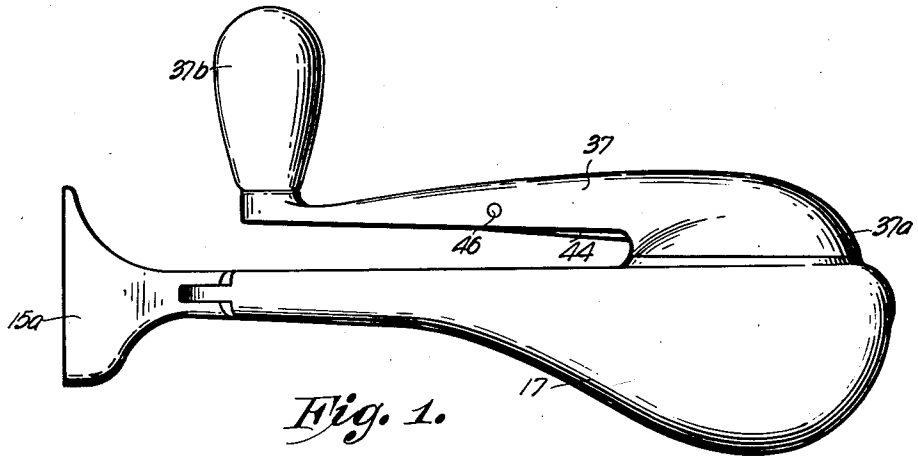


Fig. 1.

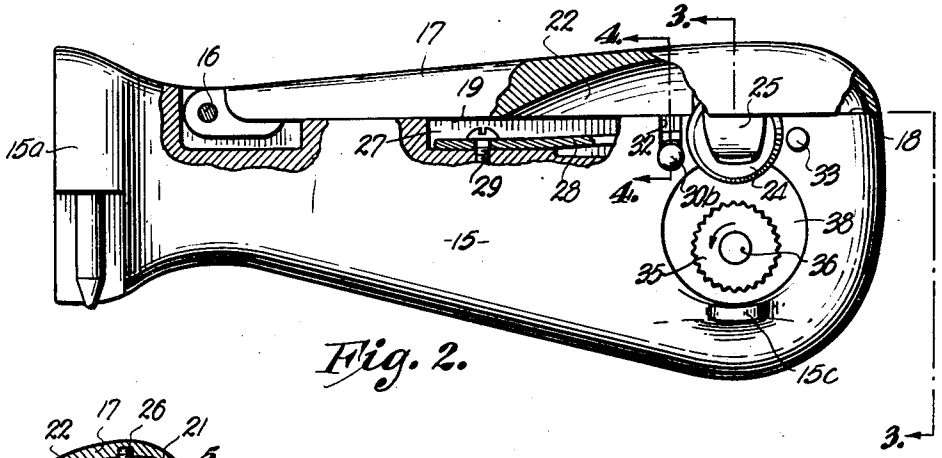


Fig. 2.

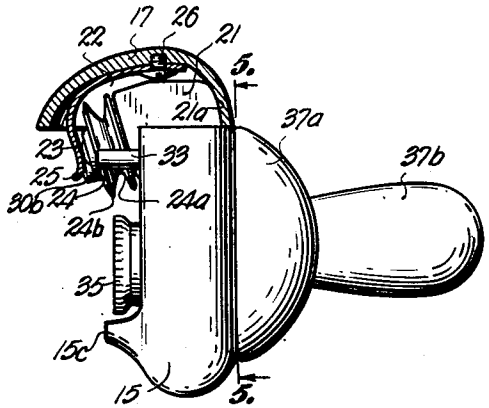


Fig. 3.

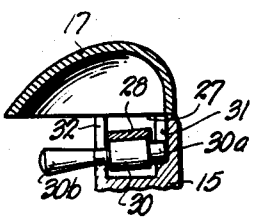


Fig. 4.

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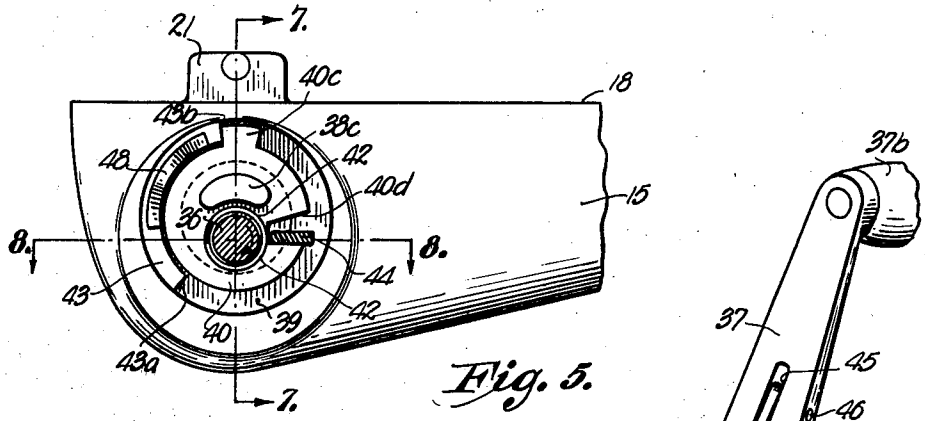


Fig. 5.

Fig. 6.

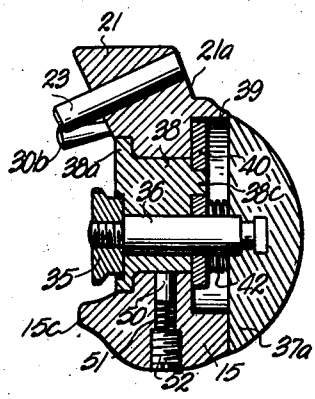


Fig. 7.

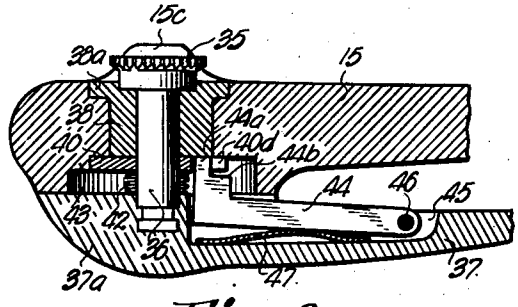


Fig. 8.

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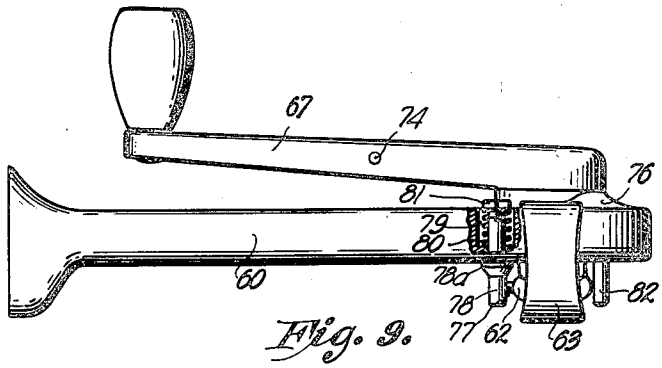


Fig. 9.

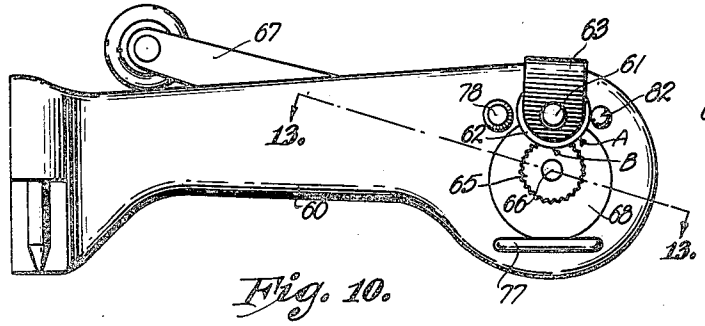


Fig. 10.

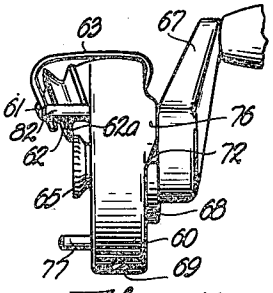


Fig. 11.

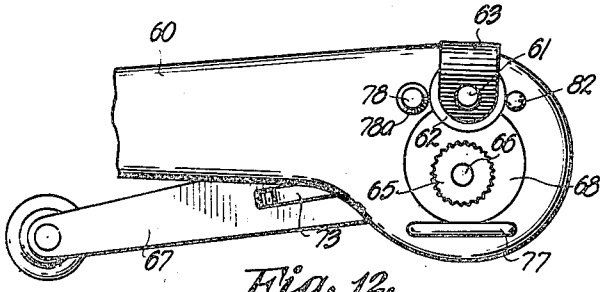


Fig. 12.

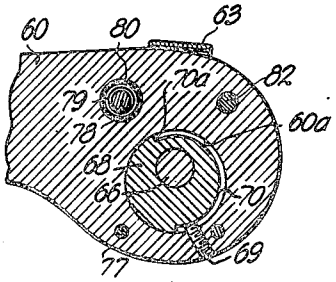


Fig. 14.

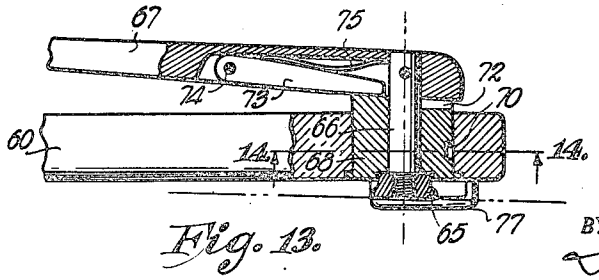


Fig. 13.

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UNITED STATES PATENT OFFICE

2,602,991

CAN OPENER

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

Application November 23, 1949, Serial No. 129,139

12 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.

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 affect 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,

Fig. 5 is a sectional elevation of the main body

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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 shifting

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 21*a*) 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 (30*a*) is seated in a vertical slot 31 formed in one wall of the recess 27, and the opposite end (30*b*) 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 30*b* is free to move up and down about end 30*a* 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 24*a* 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 15*b* which receives the circular plug permits the plug to turn about a horizontal axis and that the bearing aperture 38*b* 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 38*a* 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 38*c* extending a short distance into the latter recess. An enlarged hub 37*a* on the handle covers this recess when the parts are assembled.

A cam plate 40, apertured at 40*a* to receive the tongue 38*c* and at 40*b* 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 40*c* on the cam plate and a raised segmental boss 43 in the recess, the ends 43*a* and 43*b* of the boss serving as stops for the lug.

The cam plate also has a slot 40*d* 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 44*a* adapted to enter the slot 40*d* under the influence of spring 47; the adjacent raised portion 44*b* 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 44*b* 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 37*b* 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 referred 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 40*d* 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 orbit 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 orbit. 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 this brings the upper edge of the feed wheel 35 into the groove 24*a* 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 44*b* begins to lift the dog 44*a* out of slot 40*d*. Thus, at the same time shaft 36 reaches the top of its orbit, dog 44*a* 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 a 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 44*a* will ride harmlessly on the face of plate 40; once in each revolution, however, it will drop momentarily into slot 44*d*, 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 orbit 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 44*a* arrives at the point where it registers with slot 40*d*. There, because surface 44*b* 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 orbital path described hereinbefore to the position shown in the drawings, where lug 40*c*, abutting against the stop shoulder 43*b*, 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 24*a* of the cutter wheel and the edge 24*b* 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 30*b*, 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 15*c* on the main body of my device. The spring biased pin 30*b* 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 attach 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 24*a*, 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 62 is journaled in a circular plug 68 which in turn is journaled in the body 60. The hole 60*a* 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 40*d* 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 ap-

proximately 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 counterclockwise (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 32 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 varied 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 (clockwise, Fig. 10) 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. Subject matter disclosed but not claimed in this application is covered by my copending divisional application Serial No. 157,247, filed April 21, 1950.

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 of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a spindle projecting outwardly therefrom, a member normally carried on the said body in a predetermined position laterally spaced from said spindle but movable away from said position along a path transverse to the axis of the spindle thereby to increase the distance between said member and spindle, said member having an integral spring catch tensioned to engage the free end of said spindle when said member is in said predetermined position, said catch constructed and arranged to resist movement of said member along said path away from said predetermined position when the catch is thus engaged with the free end of the spindle, one of said wheels being disposed on the spindle between the body and catch when the latter is engaged with the end of the spindle, said catch displaceable from the end of said spindle to release the catch and permit movement of said member away from the spindle along said path to an off-normal position wherein said catch is clear of said one wheel, thereby to permit removal of said one wheel from the spindle.

2. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a spindle

projecting outwardly therefrom, a member normally carried on said body in a predetermined position laterally spaced from said spindle but movable away from said position along a path transverse to the axis of the spindle thereby to increase the distance between said member and spindle, said member having an integral spring finger tensioned toward the free end of said spindle and apertured to receive said end when said member is in said predetermined position thereby to hold said member against movement along said path, one of said wheels being disposed on the spindle between the body and said finger when the free end of the spindle is received in said aperture, said finger being deflectable to withdraw same from the free end of the spindle thereby to permit movement of said member away from the spindle along said path to an off-normal position wherein said finger is clear of said one wheel and thus permit removal of said one wheel from the spindle.

3. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a spindle projecting outwardly therefrom, a member normally carried on said body in a predetermined position laterally spaced from said spindle but movable away from said position along a path transverse to the axis of the spindle thereby to increase the distance between said member and spindle, said member having an integral spring finger tensioned toward the free end of said spindle, said finger having a shoulder to engage a longitudinal edge of the spindle adjacent the free end thereof when said member is in said predetermined position thereby to hold said member against movement away from the spindle along said path, one of said wheels being disposed on the spindle between the body and said finger when said shoulder is engaged with the spindle, said finger being deflectable to withdraw said shoulder from said spindle thereby to permit movement of said member away from the spindle along said path to an off-normal position wherein said finger is clear of said one wheel and thus permit removal of said one wheel from the spindle.

4. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a spindle projecting outwardly therefrom, a member pivotally mounted on said body for movement toward and away from said spindle, a spring catch carried on said member to engage the free end of the spindle and prevent movement of the member away from the spindle, one of said wheels disposed on said spindle between the body and said catch when the latter is engaged with the spindle, said catch displaceable away from the spindle to permit pivoting of said member away from the spindle and removal of said one wheel from the spindle.

5. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a spindle projecting outwardly therefrom, a member pivotally mounted on said body for movement toward and away from said spindle, means normally retaining said member in a predetermined position relative said body, said means including a spring finger carried on said member to engage the free end of the spindle and apply a thrust on said member axially of said spindle, and abutting shoulders on said member and body, respectively, resisting said thrust, one of said wheels disposed on said spindle between the body and said finger when the latter is engaged with the spindle, said finger displaceable away from the spindle to permit pivoting of said member away from the spindle and removal of said one wheel from the spindle.

6. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a spindle projecting laterally from the side thereof, one of said wheels disposed on said spindle, a hood normally positioned above said one wheel, said hood having a cavity in its under side to receive the upper portion of said one wheel whereby said one wheel is covered and partly concealed by said hood, a member carried by said hood extending downwardly beside the outer face of said one wheel to prevent removal of said one wheel from the spindle, and means supporting said hood on said body for movement upwardly away from said one wheel thereby to withdraw said member from beside said one wheel and permit removal of the latter from the spindle.

7. A can opener as in claim 6 wherein said member comprises a spring finger tensioned to bear against the end of said spindle.

8. A can opener as in claim 6 wherein said member comprises a spring finger tensioned to bear against the free end of said spindle, said body having a shoulder projecting upwardly into said cavity adjacent one wall thereof to resist lateral displacement of the hood under the influence of said spring.

9. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a horizontally elongated body, an arm normally positioned adjacent the body along the upper edge thereof, one end of the arm being hinged to the body whereby the opposite free end is swingable upwardly from said normal position and away from the body, one of said wheels having a stub spindle projecting laterally from the body in a position spaced below the free end of said arm when the latter is in said normal position, a spring finger projecting downwardly from the free end of said arm with its lower end tensioned to engage the outer extremity of said spindle, thereby to frictionally resist upward swinging of the arm, said finger being freed of the spindle and moved clear of said one wheel upon predetermined upward movement of the arm, and said one wheel being shiftable axially away from the body when said finger is clear thereof, thereby to permit removal of the wheel.

10. A can opener as in claim 9 wherein said spindle is inclined downwardly from said body and the portion of said spring finger engaging the outer end thereof is substantially normal to the axis of the spindle.

11. In a can opener of the type having a cutter wheel and a cooperating feed wheel to engage the flange of the can, a body having a stub spindle projecting outwardly therefrom, one of said wheels being positioned on said spindle between said body and the outer end of the spindle, a member normally carried on said body in a predetermined position spaced laterally from the spindle but movable away from said position along a predetermined path transverse to the axis of the spindle thereby to increase the distance between said member and spindle, said member having an integral leaf spring catch which, when said member is in said predetermined position, overlies the outer face of said

one wheel with its free end tensioned to engage the outer end of the spindle, said outer end of the spindle comprising a surface canted with respect to the direction in which said catch travels upon movement of said member away from said spindle, whereby said surface exerts a camming action on the spring catch which causes the latter normally to resist movement of said member away from said predetermined position, and said member being movable along said path against said resistance of the spring catch, thereby to free same from said spindle and shift the catch to a position clear of said one wheel.

12. A can opener as in claim 10 wherein the longitudinal axis of said spindle is canted relative to said predetermined path of said member, and the outer end of the spindle is substantially normal to the axis thereof.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
2,148,130	Murdock	Feb. 21, 1939
2,456,117	McLean	Apr. 5, 1949
2,573,031	La Forte	Oct. 30, 1951