Oct. 9, 1945. R. E. McLEAN 2,386,490

ROTARY TYPE CAN OPENER

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Fig. 1.

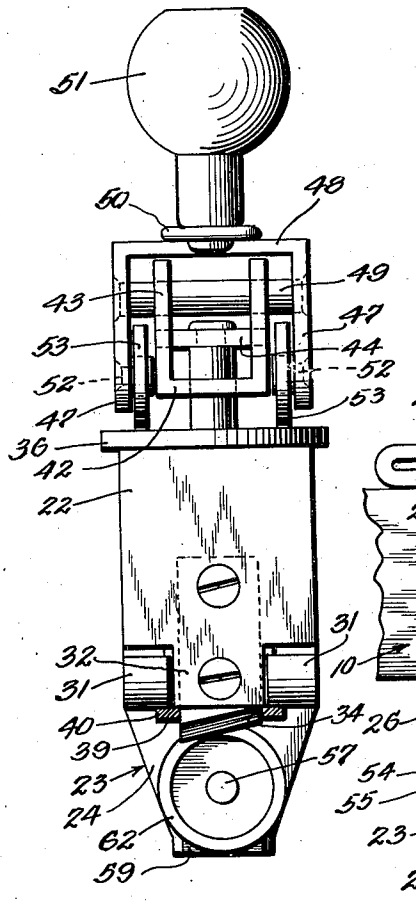


Fig. 2.

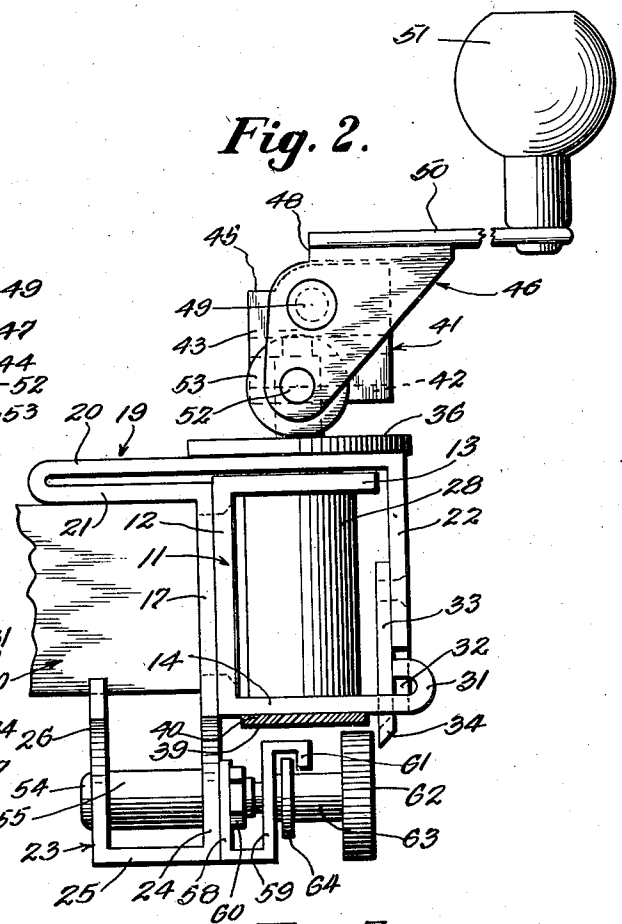


Fig. 3.

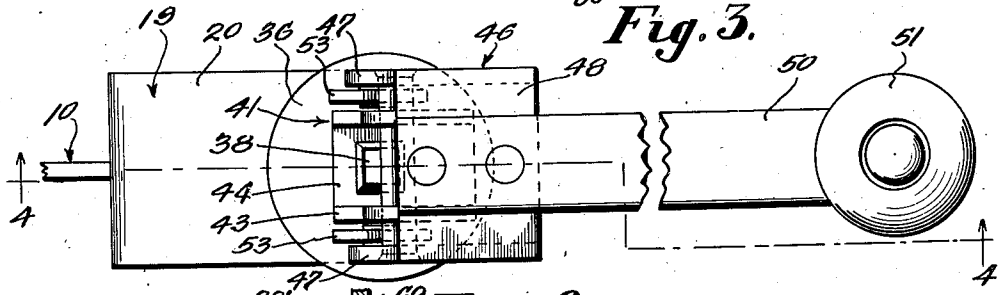
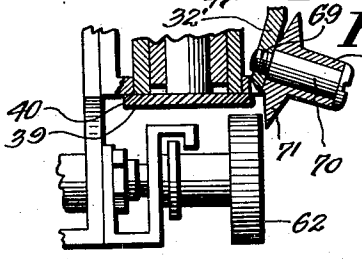


Fig. 8.



Inventor

Robert E. McLean

By *Wilfred E. Lawson*

Attorney

Oct. 9, 1945. R. E. McLEAN 2,386,490

ROTARY TYPE CAN OPENER

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Fig. 4.

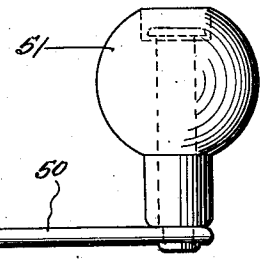


Fig. 5.

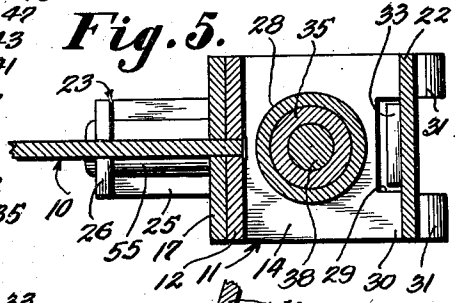


Fig. 6.

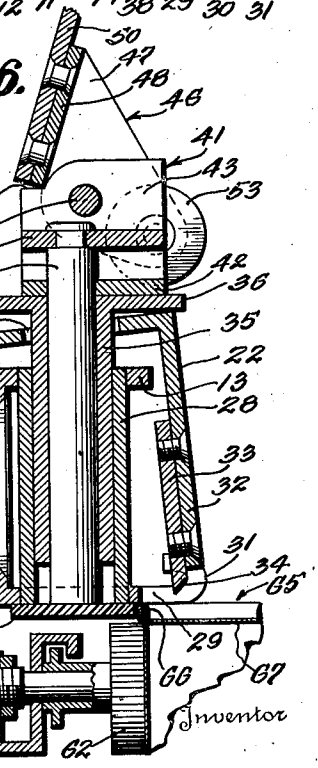
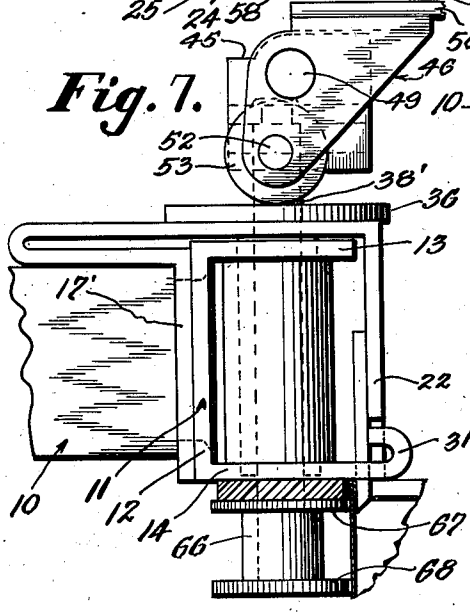


Fig. 7.



Inventor

Robert E. McLean

By Wilfred E. Lawson

Attorney

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2,386,490

ROTARY TYPE CAN OPENER

Robert E. McLean, Fort Benning, Ga.

Application February 13, 1945, Serial No. 577,598

23 Claims. (Cl. 30—8)

This invention relates generally to the class of cutlery and pertains particularly to improvements in can opening devices and more especially such devices of the rotary type.

An object of the present invention is to provide a rotary type can opener having a single manipulating handle which is adapted for both oscillating and rotating motion whereby to accomplish the sequential operations of forcing a cutting knife through a can head and simultaneously gripping the can rim or bead between such knife and a driving wheel, and rotating the can with respect to the knife by means of such driving wheel, to effect the clean removal of the head from the can.

Another object of the invention is to provide in a rotary type can opener, cooperating parts including a cutter and a pair of wheel members, wherein the cutter is shiftable relative to the inner side of the can bead or rim to clamp such bead or rim between the cutter and a rotary driving wheel while another wheel engages the underside of the rim or bead to effect the desired support of the can.

Another object of the invention is to provide a rotary can opener of the character stated, wherein the cutter element is supported by an oscillatable spring member and release of the can from the opener is effected by oscillation of the operating handle which permits the spring carried cutter to shift automatically from can engaging position.

A still further object of the invention is to provide in a rotary can opener, a can rim engaging driving wheel which engages the lateral or outer portion of the rim or bead of the can and which carries diagonal engaging teeth which are designed to impart an upward thrust to the can in addition to effecting the rotation thereof, so that the can is lifted toward the cutting mechanism as it is rotated.

Still another object of the invention is to provide a rotary can opener of the character stated which is so designed as to obtain both simplicity and sturdiness of construction, durability and exceptional ease and simplicity of operation.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming a part of the specification, with the understanding, however, that the invention is not confined to a strict conformity with the showing of the drawings but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawings:

Figure 1 is a view in front elevation of an opener constructed in accordance with the present invention.

Figure 2 is a view in side elevation, the operating handle, which is shown in down or operating position, being broken away and shortened.

Figure 3 is a view in top plan of the device.

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 3.

Figure 5 is a horizontal section taken on the line 5—5 of Figure 4.

Figure 6 is a sectional view corresponding to Figure 4 but showing the handle in raised or upwardly oscillated position, the outer end portion of the handle being removed.

Figure 7 is a view in side elevation of a silghtly modified form or embodiment of the invention, the major portion of the handle being removed.

Figure 8 is a view illustrating a modified cutter mechanism, the cutter being shown in operative relation with the can driving wheel and the supporting wheel.

Referring now more particularly to the drawings, the numeral 10 generally designates the outer end of a rigid supporting arm or bracket upon which the present opener device is secured. The inner end portion of this bracket arm is not shown but it is to be understood that any suitable means may be employed for attaching it to a suitable supporting structure such, for example, as the supporting bracket illustrated in my U. S. Patent No. 2,351,531 of June 13, 1944, or the brackets illustrated in my pending applications Serial Nos. 509,303; 540,848; and 549,722.

In accordance with the present invention there is provided the fixed substantially U-shaped body 11 which comprises the back plate 12 and the top and bottom arm plates 13 and 14 respectively.

The back plate 12 of the body is provided with a suitable vertical slot 15 to receive the tongue extension 16 forming a part of the bracket arm 10. The end edges of this extension tongue 16 are suitably swaged to bind the body in position upon the end of the bracket arm after the spring plate 17 has been placed in position upon the tongue behind the plate 12 of the body in the manner illustrated particularly in Figures 4 and 6.

The spring plate 17 is of materially greater length than the body 11 and it is provided with a slot 18 to receive the tongue extension of the

bracket arm, as shown particularly in Figures 4 and 6.

At its top end the spring plate 17 is integrally coupled with the relatively broad substantially U-shaped spring 19 which comprises the upper and lower arms 20 and 21, the lower arm 21 forming a right angle, rearward extension of the upper end of the spring plate and resting upon the top edge of the bracket arm 10 as shown.

The upper arm 20 of the spring is of sufficient length to extend forwardly across the top plate 13 of the body where it joins the upper end of the downwardly extending or depending cutter element supporting plate 22. This plate 22 is of sufficient length to extend to the plane of the bottom surface of the body lower arm 14, as shown in Figure 4, when the spring 19 is flexed or compressed into working position.

In the inoperative position of the spring 19 the top spring arm 20 is raised from the top of the body and extends in divergent relation with the under-arm 21. Consequently, when the spring is in its inoperative position the cutter element supporting plate 22 is moved upwardly and outwardly away from the front side of the body 11, as shown in Figure 6.

The lower portion of the spring plate 17 in the embodiment of the invention illustrated in Figures 1 to 6 inclusive and 8, extends a substantial distance below the lower edge of the bracket arm 10 to form a bearing frame which is generally designated 23 and which comprises the vertical front side 24 which actually forms a downward continuation of the plate 17, but is cut inwardly at its sides to a reduced width as shown in Figure 1, the horizontal rearwardly extending part 25 and the vertical terminal portion 26 which is substantially parallel with the side 24 and which at its upper end is notched or recessed as indicated at 27, to receive the lower edge of the arm 10. The particular function of this bearing frame is hereinafter more specifically described.

The upper and lower arm portions of the body 11 are suitably apertured to receive the ends of a guide sleeve 28, which ends are firmly secured to the body arms so that the sleeve is held against movement.

The lower arm 14 of the body has its forward edge centrally cut out or recessed as indicated at 29 and the portions of the outer ends of the two spaced parallel parts 30, which are formed by the cutting of the recess 29, are turned upwardly and backwardly or inwardly to form the guides 31.

The cutter carrying plate 22 does not extend in its full width to the lower arm of the body but only at its central portion as shown in Figure 1 and this central portion forms a tongue 32 which is of a width to pass between the guides 31 and which, in the form of the invention shown in Figures 1 to 7 inclusive, carries upon its inner side the cutter or knife 33. The lower end of this knife extends below the tongue 32 and is cut obliquely and suitably beveled to form the cutting edge or blade 34.

Extending into and through the major extent of the guide sleeve 28, is a bearing sleeve 35, the upper end of which has the disc head 36. This bearing sleeve 35 extends through the opening 37 in the upper spring arm 20 so that the disc head 36 rests upon the top of the spring arm 20.

Extending through the bearing sleeve 35 is the driving wheel shaft 38. This shaft extends entirely through both the guide sleeve and the bearing sleeve and has fixed to its lower end the can rim or flange engaging driving wheel 39 which has the oblique or diagonal teeth 40 formed around the periphery thereof.

Disposed over the disc head 36 is an upright substantially U-shaped frame 41 which comprises the horizontal bottom portion 42 and the spaced vertical or upright arms 43. The upper end of the drive wheel shaft 38 passes through the bottom portion 42 of this frame and is secured in the cross piece 44 which is mounted between the two vertical side portions 43, as is most clearly illustrated in Figures 4 and 6.

Each of the side portions 43 has the top edge cut down slightly at the back of the frame to form the lowered stop shoulders 45. These shoulders limit the swinging movement of the hereinafter described operating handle.

Disposed over and enclosing the frame 41 is the handle yoke 46. This yoke comprises the side leg portions 47 and the cross top portion 48. As shown in Figure 1, the yoke 46 is of materially greater width than the frame 41 and the legs 47 of the yoke have the frame disposed midway therebetween and are connected with the side members of the frame by the pivot pin 49 which passes through the side members 43 and is fixed at its ends to the legs 47. Thus the yoke 46 oscillates on the vertical members of the frame and this oscillation is effected through the medium of the hand crank 50, one end of which is secured to the cross portion 48 of the yoke while the opposite end carries the grip or knob 51.

The top or cross portion 48 of the yoke 46 is set forwardly slightly with respect to the pivot pin 49 so that when the hand crank 50 is in horizontal position the back edge of the portion 48 will be a substantial distance forwardly of the stop shoulders 45, as shown in Figures 2 and 4, but when the handle is oscillated upwardly and rearwardly the back edge of the portion 48 will swing down into engagement with the shoulders 45 and thus limit the forward movement of the lower ends of the legs 47, as is shown in Figure 6.

Each leg 47 of the yoke carries a pivot pin 52 which projects from its inner side toward, but is spaced from, the adjacent vertical portion 43 of the frame 41. Each of these pivot pins 52 carries a bearing wheel 53, the periphery of which has constant contact with the underlying top surface of the disc head 36, when the hand crank 50 is in its down, horizontal or operative position as shown in Figures 1, 2 and 4. When the handle is raised to its inoperative position the anti-friction wheels or rollers 53 are free of contact with the disc head, as shown in Figure 6, and the upper spring arm 20 is free to rise and lift the bearing sleeve on the drive wheel shaft. When so lifted the top of the disc head 36 comes into contact with the bottom cross piece 42 of the U frame 41.

The bearing frame 23 is designed to support the arbor 54 which passes through suitable openings formed in the parts 24 and 26 of this frame. Between these parts the arbor carries the spacer sleeve 55.

At its forward end the arbor 54 is screw threaded as indicated at 56 and such forward end merges with the integral pivot stem extension 57 which lies directly below the center of the drive wheel and drive wheel shaft.

The threaded forward end of arbor 54 passes through and may be threaded in the vertical tailpiece 58 of a vertical spring bracket plate 59 through which the stem 57 passes. This plate 59

is in spaced relation with the tail-piece 58, with which it is integrally connected, and there is threaded on the forward end of the arbor between the tail-piece 58 and the plate 59, the securing nut 60 which bears against the tail-piece and maintains it firmly in position against the front side of the bearing frame 23.

The resilient bracket plate 59 has the pivot stem extended therethrough and from the upper end of this plate extends the forwardly and downwardly turned finger 61 which performs the function of retaining in position upon the pivot stem, the can rim supporting wheel 62. This wheel 62 is rotatably supported upon the outer end of the stem 57 and it has a broad peripheral face which lies in close proximity to the underside of the can rim engaging, driving wheel 39 and extends across the edge of such wheel upon the side adjacent to the knife 33.

The wheel 62 has the relatively long hub portion 63 which is encircled, near its inner end, by the collar 64. This collar is located between the bracket plate 59 and the downturned finger 61 and the finger and collar coact to prevent the wheel 62 moving outwardly on the pivot stem 57.

In the operation of the opener, the can, generally designated 65, is positioned with the rim or edge bead 66 thereof having its under edge upon the top of the supporting wheel 62 and the outer face against the toothed edge of the driving wheel 39, when the handle or crank 50 is in raised position so that the knife 33 will be lifted and move outwardly away from the periphery of the driving wheel, as shown in Figure 6.

The hand lever or crank is then oscillated forwardly and downwardly to the horizontal position in which it is shown in Figures 1, 2 and 4. This will cause the bearing wheels 53 to be forced down against the disc head 36, thus forcing the bearing sleeve 35 downwardly on the driving wheel shaft and also extending the arm 20 of the spring down to the horizontal position in which it is shown in Figures 2 and 4. This motion brings the cutting edge of the knife down against the top 67 of the can and causes the edge to cut through the can top and at the same time move out toward the can bead so as to press the bead firmly against the toothed periphery of the driving wheel. This position of the knife, the wheels and the can bead is most clearly illustrated in Figure 4. It will thus be seen that the can bead will be firmly engaged between the inner face of the knife and the periphery of the driving wheel and at the same time it will be supported upon the underlying wheel 62 so that all possibility of the can escaping from position, is eliminated.

After the parts of the opener have been positioned as stated, rotary motion is imparted to the driving wheel by turning the crank so that the driving wheel will impart the desired turning motion to the can in the correct direction to turn the can top toward the cutting edge of the knife.

Due to the inclination of the engaging teeth of the driving wheel a slight upward thrust will be given against the can rim which tends to lift the head or top of the can toward the cutting edge of a knife.

In Figure 7 there is illustrated a slight modification of that part of the opener which engages the side of the can below the driving wheel. The modification in this construction relates to the bearing frame and the can rim supporting wheel. In this construction the spring plate, here designated 17', is terminated in the plane of the under face of the lower arm 14 forming a part of the body 11 and the driving wheel shaft which is designated 38', is extended downwardly beyond the can rim or bead engaging driving wheel and has secured thereon the sleeve 66, around the upper and lower ends of which are formed the wheels 67 and 68 respectively. These wheels 67 and 68 contact the side wall of the can and they are, in addition, of a diameter slightly greater than the diameter of the can rim engaging driving wheel so that the upper wheel 67, in addition to contacting the side wall of the can, has the under edge of the can rim resting thereon and thus functions to support the can in the same manner as the wheel 62.

Figure 8 illustrates a modified embodiment of the cutter mechanism. This cutter mechanism may be used in association with the supporting wheel structure 62 or the modified embodiment thereof which is shown in Figure 7.

In the modified embodiment of the cutter, the tongue which is formed at the lower end of the plate 22 and which, in Figure 8, is designated 32', is bent inwardly slightly toward the guide sleeve 26.

Secured in this tongue portion, to extend outwardly from the outer side thereof, is the threaded inner end portion 69 of a pivot or bearing screw 70.

Rotatably mounted upon the bearing screw 70 is a cutter wheel 71, from the outer side of which extends the relatively long hub 72.

By providing the relatively long bearing screw and hub 72, extreme stability is given to the cutter wheel 71, avoiding any relative movement between the edge thereof and the adjacent driving wheel, and supporting wheel, when the cutter is moved inwardly toward its operating position.

From the foregoing it will be readily apparent that in the rotary can opener structure herein disclosed the single hand crank is employed to effect the tensioning of the spring 19 and the movement of the cutter element into and out of operating positions and to also impart the necessary rotary motion to the can through the can driving wheel. The swinging of the hand crank into operative position forces the knife blade firmly against the inner side of the can rim or bead and compresses the same between the knife and the can driving wheel. As soon as the hand crank is raised the spring 19 reacts to lift the cutter element away from the can so that the latter may be immediately removed from the opener device.

The tension of the vertical spring bracket plate 59 is such as to assure maintaining of the can rim supporting wheel under the can rim, but such tension is insufficient to interfere with the inward pressure of the cutter when the can rim or bead is firmly compressed between the cutter and the can driving wheel.

The axis of the pivot pin 49 is slightly forward of the extended axis of the can driving wheel shaft, when the handle 50 is in the position illustrated in Figures 3 and 4, so as to prevent any accidental upswinging of the said handle 50.

It will be seen that the wheels or rollers 53 roll freely in a straight plane when the handle 50 is swung upwardly or downwardly. It will also be seen that the axes of the pivot pins 52 for the wheels or rollers 53 are in line with each other and that this axis also intersects the axis of the can driving wheel shaft so that the wheels or rollers 53 roll upon the disc 36 anti-frictionally when the handle 50 is rotated. By the use of

these anti-frictional wheels or rollers and by forming the teeth 40 on the can driving wheel at a predetermined degree of angularity, it will be seen that longitudinal friction can be reduced to a minimum and that comparatively little downward thrust will be imparted by the can against the can supporting wheel or roller while the can driving wheel shaft is being rotated. This materially reduces the amount of effort required to operate the device.

The diagonal or helical teeth of the can driving wheel provide for continuous circumferential tooth contact of the can driving wheel with the rim of the can, inasmuch as the teeth overlap and the can rim remains the same distance from the axis of the can driving wheel during rotation, assuring smooth operation and increased strength for the teeth of the can driving wheel.

The method of pivoting the crank to the can driving wheel shaft for swinging movement assures adequate strength and maximum durability.

I claim:

1. A rotary type can opener, comprising a body portion designed to be disposed adjacent to the top of a can rim bead, a pair of wheels operatively coupled with the body for rotation and having a relative position whereby one may be operatively engaged against the outer side of the bead while the other is operatively engaged against the underside of the bead, a cutter carried by the body for movement relative to the said one wheel to secure the bead between the said one wheel and the cutter, means for moving the cutter relatively to the said one wheel, and means for rotating the said one wheel, the other wheel in its engagement with the under edge of the bead, functioning as a support for the can.

2. A rotary type can opener as set forth in claim 1, in which the said means for moving the cutter toward the one wheel and for turning the said one wheel, comprises a single hand crank.

3. A rotary type can opener, comprising a body portion designed to be disposed adjacent to the top of a can rim bead, a pair of rotary elements operatively coupled with the body and supported for rotation, one of said rotary elements comprising a driving wheel adapted to engage the outer side of the rim bead, the other rotary element being positioned for engagement against the under edge of the bead to support the can, a portion of the said other rotary element being arranged to contact the side of a can at a distance below the bead, a cutter element supported by the body for movement toward and away from the periphery of said wheel, and means for effecting the movement of the cutter element relative to the periphery of the wheel, the cutter element when moved to a predetermined position with respect to the periphery of the wheel for the penetration of a can head, functioning to secure the rim bead against the periphery of said wheel, said means further being operatively coupled to the wheel for effecting the rotation thereof.

4. A rotary type can opener as set forth in claim 3, wherein the said means for moving the cutter relative to said wheel, comprises a single hand crank supported for rotary movement on the axis of rotation of the wheel and for oscillatory movement transversely of said axis for effecting movement of the cutter toward the wheel.

5. A rotary type can opener as set forth in claim 3, with a spring member forming the connecting means between the cutter and the body, the spring member having a shiftable portion to which the cutter is attached, and the said means for turning said wheel and for moving the cutter toward the wheel periphery, comprising a single hand crank coupled with the wheel to turn on the rotary axis thereof and supported for oscillatory movement transversely of said axis, the hand crank when oscillated in one direction effecting the compression of the spring and the movement of the cutter toward the wheel periphery.

6. A rotary type can opener, comprising a body designed to be mounted in a fixed position, a guide carried by the body, a shaft passing through said guide and supported for rotation, a driving wheel supported upon one end of the shaft and adapted to have peripheral contact with the outer side of a can rim bead, a crank operatively coupled with the other end of the shaft for imparting rotation to the shaft, the crank being adapted for oscillatory movement on an axis perpendicular to the shaft, means coupled with the body for engaging the under edge of the can rim bead to assist in maintaining the can in position, a cutter, means carrying the cutter and movable to shift the cutter into can head penetrating position, said last means normally acting to urge movement of the cutter away from such position, and means operatively coupled with the crank for effecting the movement of the cutter into the stated position, the cutter when in the can head penetrating position functioning to maintain said bead in operative contact with the periphery of the driving wheel.

7. A rotary type can opener, comprising a body having two spaced portions, a tubular guide connecting and opening at its ends through said portions, means for supporting the body with said portions one above the other, a substantially U-shaped spring having one side fixed and having its other side extending across the top of the upper one of said portions and biased to separate from its fixed side, the said other side of the spring including an angular extension directed toward the plane of the lower portion, a shaft extending through said guide and through said upper side of the spring, a crank connected with the upper end of the shaft for oscillation on an axis extending transversely of the shaft, the shaft being rotatable by the crank, means coupled with the crank for imposing a down thrust upon said spring upper part upon oscillation of the crank in one direction, a can rim bead engaging driving wheel carried upon the lower end of said shaft, means adjacent to said wheel for engaging the underside of the can rim bead, and a cutter carried upon the lower end of the said angular extension in position to be moved into cooperative relation with said driving wheel by the application of down thrust to the said spring upper side.

8. A rotary type can opener as set forth in claim 7, in which the said means for engaging the underside of the can rim bead comprises a wheel located beneath the first wheel and supported for rotation on an axis perpendicular to said shaft.

9. A rotary type can opener of the character stated in claim 7, in which the said means for engaging the underside of the can rim bead, comprises a rotatable element which in addition to its engagement of the can rim bead is constructed and arranged to engage the side

of a can at a substantial distance below the bead.

10. A rotary type can opener of the character stated in claim 7, in which the said means for engaging the underside of the can rim bead, comprises an arbor supported beneath the body to extend perpendicular to the shaft and having a free end portion forming a pivot stem, and a relatively wide rimmed wheel rotatably supported upon the stem and having the periphery of the rim in close proximity to the underside of the first wheel and extending part way beyond the periphery of the first wheel.

11. A rotary type can opener as set forth in claim 7, in which the said means for engaging the underside of the can rim bead comprises an arbor supported in perpendicular relation with the shaft and having a reduced pivot stem portion intersecting the axis of the shaft, a wheel having a relatively long hub mounted upon said pivot stem, the peripheral surface of the last wheel being in relatively close proximity to the underside of the first wheel and extending part way beyond the periphery of the first wheel, said hub having an encircling collar, and means engaging over said collar for limiting the movement of the hub and the wheel forming a part thereof axially upon the stem.

12. A rotary type can opener of the character stated in claim 7, in which said shaft is extended below the driving wheel and the said means for engaging the underside of the can rim bead comprises a sleeve upon the extended lower end of the shaft and a wheel attached to and concentric with the sleeve and having a diameter greater than the driving wheel.

13. A rotary type can opener as stated in claim 7, in which said shaft is extended below the driving wheel and the said means for engaging the underside of the can rim bead comprises a sleeve mounted upon the extended lower end of the shaft and two spaced wheels carried by and concentric with the sleeve and of a diameter greater than the diameter of the driving wheel.

14. A rotary type can opener, comprising a substantially U-shaped body having a plate portion and two spaced arm portions, means connected with the plate portion for supporting the body with the arms one above the other, a tubular guide secured between and opening at its ends through said arms, the lower one of said arms having its end edge provided with a recess forming spaced side members, said side members being turned back to form guides, a substantially U-shaped spring having two joined side portions normally disposed in divergent relation, one of said side portions of the spring being fixed against the plate of the body and the other side portion extending across the top arm of the body and joining a downwardly directed extension, the lower end of said extension terminating in a tongue adapted to enter said recess, a cutter member carried upon said tongue, a shaft extending through said guide, a can rim bead engaging driving wheel carried upon the lower end of the shaft below the lower arm of the body, a hand crank connected with the upper end of the shaft for oscillation on an axis perpendicular to the shaft, the shaft being rotatable by the hand crank, means coupled with the hand crank for imposing a down thrust upon the upper arm of said spring to swing the extension and the cutter inwardly and downwardly to puncture the end of a can and to bring the cutter into cooperative relation with said driving wheel and upon the inner side of a can rim bead having contact at its outer side with the driving wheel, and means for engaging and supplying support for the under edge of the bead.

15. A rotary type can opener of the character set forth in claim 14, in which the said means for imposing down thrust upon the spring arms, comprises an inverted substantially U-shaped yoke and a pair of bearing wheels carried by opposite sides of the yoke and through which the downward thrust is transmitted to the adjacent spring arm.

16. A rotary type can opener of the character stated in claim 14, including a bearing sleeve encircling the shaft and extending into and through the major extent of the guide sleeve, said bearing sleeve having a flat head upon its upper end overlying and engaging the top spring arm, and the said means for imposing a down thrust upon the spring top arm comprising an inverted substantially U-shaped yoke joined to the crank arm, a second U-shaped yoke secured to the upper end of the shaft and having the first yoke in straddling relation therewith and pivotally connected thereto, and a pair of bearing wheels carried by the yoke and engaging the top surface of the plate upon opposite sides of the shaft upon the oscillation of the hand crank in the said one direction.

17. A rotary type can opener, comprising a supporting arm, a substantially U-shaped body member having a back plate secured to the end of the arm and having spaced upper and lower arms, a spring plate secured to the end of the supporting arm and having an upper portion formed to provide a substantially horizontally disposed U-shaped spring having two normally divergent sides arranged one above the other, the upper one of the spring sides extending across the upper arm of the body and terminating in an angularly extending downwardly directed portion, said spring plate being extended below the supporting arm and formed to provide a bearing frame having two spaced side portions, one of the side portions having an upper edge coupled with the lower edge of the supporting arm, an arbor supported between the side portions of the bearing frame and having a forwardly directed portion forming a pivot stem disposed below the lower arm of the body, a tubular guide connecting the arms of the body and opening at its ends through the arms, the upper portion of the spring having an opening aligning with the opening of the guide, a bearing sleeve extending into said guide and having a head plate upon its upper end overlying and resting upon the top portion of the spring, a shaft extending through the bearing sleeve, a can rim engaging driving wheel carried upon the lower end of the shaft, the axes of the shaft and the stem intersecting, a hand crank, a pivotal coupling between one end of the hand crank and the upper end of the shaft by which the hand crank may be oscillated on an axis perpendicular to the shaft, means connected with the pivoted end of the hand crank for engaging said head plate and imposing a downward thrust thereon and upon the upper portion of the spring upon oscillation of the hand crank to a predetermined position, the hand crank when in the said predetermined position being operable for rotating the shaft, a wheel rotatably supported upon said pivot stem and having its peripheral face adjacent to the periphery of the driving wheel and

adapted to engage the underside of a can rim bead to support the can, and a can head penetrating cutter carried upon the free end of the angular extension of the upper spring portion to be moved into close cooperating relation with the periphery of the can rim bead engaging driving wheel by and upon the said imposition of down thrust by the hand crank.

18. A rotary type can opener, comprising a shaft, means for supporting said shaft vertically for rotation, said supporting means including a bearing sleeve encircling the shaft and having reciprocal movement thereon, a can rim bead engaging driving wheel secured to the lower end of the shaft, a hand crank coupled with the upper end of the shaft for vertical oscillation upon an axis extending perpendicular to the shaft, resilient means connected with said bearing sleeve and normally urging movement of the sleeve upwardly, means coupled with the pivoted end of the hand crank for applying downward thrust against the bearing sleeve and against the tension of said spring upon oscillation of the hand crank into a predetermined position, the hand crank when in said position being rotatable for the turning of the shaft and said wheel, a cutter connected with said resilient means and arranged to be moved downwardly into cooperative relation with the periphery of the driving wheel upon the imposition of said down thrust and to be raised to an inoperative position with respect to the driving wheel with the resilient means upon release of the down thrust, and means arranged for cooperative action with said driving wheel to engage the under edge of a can rim bead for the support of the latter.

19. A rotary type can opener of the character stated in claim 18, in which the last mentioned means comprises a wheel supported for rotation on an axis perpendicular to the shaft and intersecting the axis of the shaft, said wheel having a relatively wide periphery in close proximity to the undersurface of the driving wheel and extending beyond the periphery of the latter.

20. A rotary type can opener of the character stated in claim 18, in which the last mentioned means comprises a wheel supported for rotation on an axis perpendicular to the shaft and intersecting the axis of the shaft, the last mentioned wheel having a relatively wide periphery in close proximity to the underface of the driving wheel and extending beyond the periphery of the latter, the second mentioned wheel being supported for axial movement, and means for limiting the axial movement of the second mentioned wheel.

21. A rotary type can opener of the character stated in claim 18, in which said driving wheel has the periphery thereof provded with diagonal teeth arranged to impart an upward thrust against a can rim bead in engagement therewith.

22. A rotary type can opener of the character stated in claim 18, in which the last mentioned means comprises a wheel of larger diameter than the can rim bead engaging driving wheel and disposed below and concentric with the driving wheel.

23. A rotary type can opener of the character stated in claim 18, in which the last mentioned means comprises two vertically spaced concentrically arranged wheels of greater diameter than the can rim bead engaging driving wheel and disposed below and concentric with the driving wheel, the uppermost one of the said two wheels being positioned against the underside of the driving wheel.

ROBERT E. McLEAN.