Jan. 9, 1923. 1,441,652.

P. J. ANDRAE ET AL.

CAN OPENER.

FILED NOV. 20, 1919. 2 SHEETS—SHEET 1.

Fig. 1

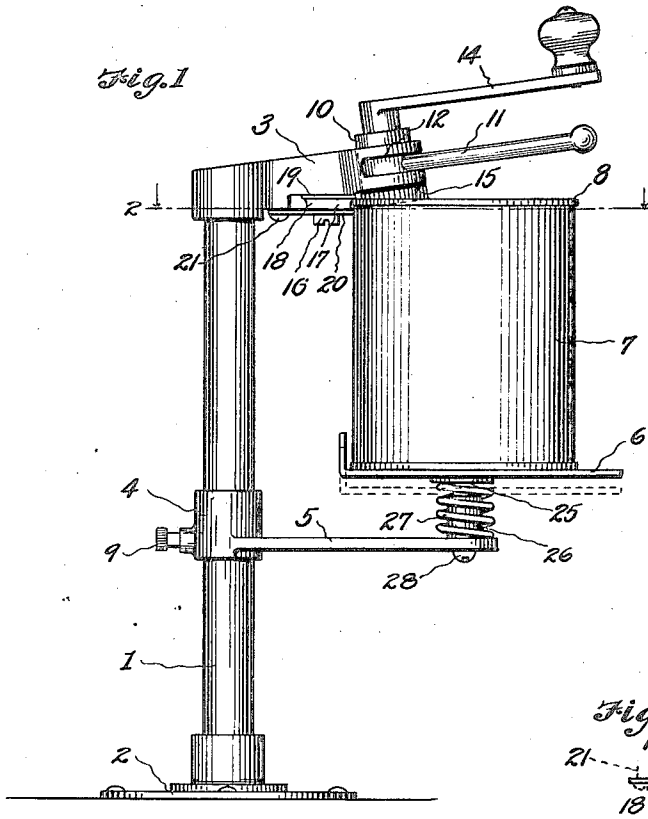


Fig. 5

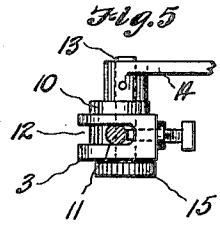


Fig. 4

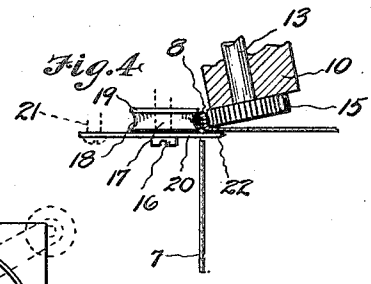


Fig. 2

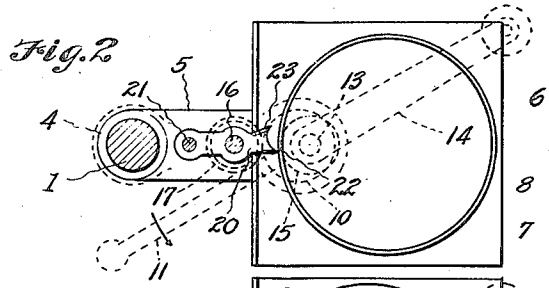
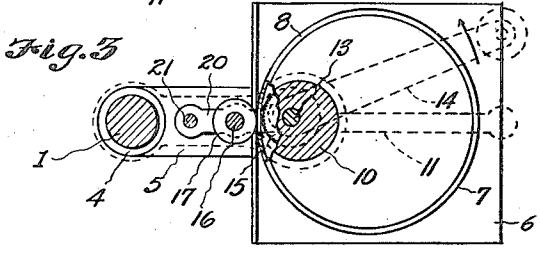


Fig. 3



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2 SHEETS—SHEET 2.

Fig. 8

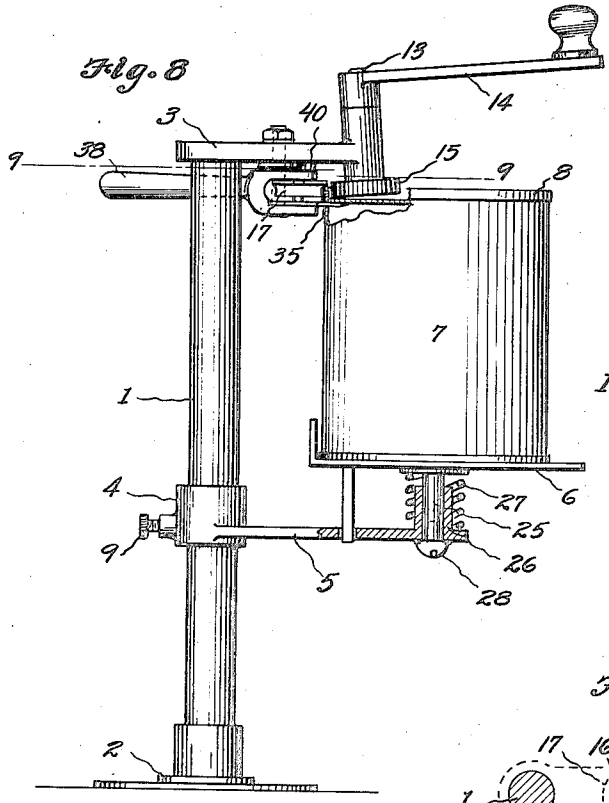


Fig. 6

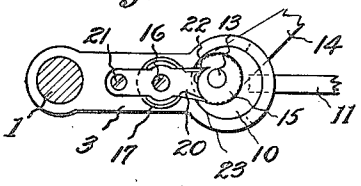


Fig. 7

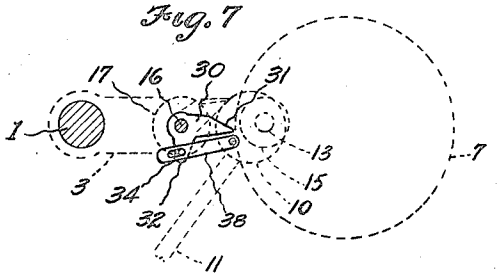
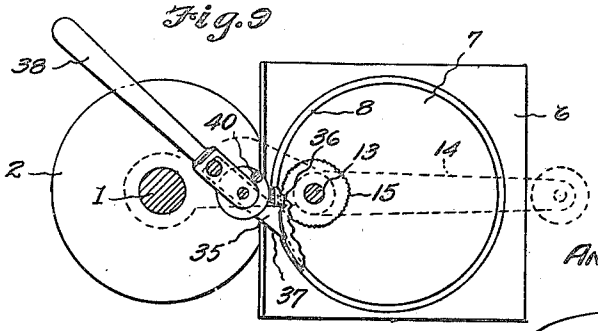


Fig. 9



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Patented Jan. 9, 1923. 1,441,652

UNITED STATES PATENT OFFICE.

PETER J. ANDRAE AND ANDREW W. SWANSON, OF SEATTLE, WASHINGTON; SAID ANDRAE ASSIGNOR TO SAID SWANSON.

CAN OPENER.

Application filed November 20, 1919. Serial No. 339,500.

To all whom it may concern:

Be it known that we, PETER J. ANDRAE and ANDREW W. SWANSON, citizens of the United States, and residents of the city of Seattle, county of King, and State of Washington, have invented certain new and useful Improvements in Can Openers, of which the following is a specification.

Our invention relates to improvements in can openers, and more particularly to can openers of that character, whereby the top may be cut from the body of a can at a point just below the seam which joins the top and side walls together.

The principal object of the invention is to provide a can opening device, whereby the end of a can may be quickly removed and which, in the process, will turn the metal outwardly along the cut, so as to leave the cut edges in such condition that the contents of the can may be removed in a body, as packed.

In accomplishing this object we have provided improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein,

Fig. 1 is a side view of a can opening device constructed according to the present invention, showing a can in position to be opened.

Fig. 2 is a horizontal, sectional view taken substantially on the line 2—2 of Fig. 1, showing the relative positions of the can and opener parts before the cutting knife has pierced the can.

Fig. 3 is a similar view in a slightly higher plane, after the eccentric has been moved to cause the can to be pieced by the cutting knife.

Fig. 4 is an enlarged view of certain parts of the device, illustrating the position of the guide and knurled rollers at opposite sides of the joint flange.

Fig. 5 is an end view of the bracket which carries the eccentric shaft and rollers.

Fig. 6 is an underside view of the cutter mechanism.

Fig. 7 illustrates an alternative construction, wherein the piercing knife is differently mounted and manipulated.

Fig. 8 is a can opener comprising modifications in construction.

Fig. 9 is a horizontal, sectional view, substantially on the line 9—9 of Fig. 7.

Referring more in detail to the several views of the drawings, wherein like reference numerals designate like parts.

1 designates a supporting standard and 2 a flanged base plate, by which the standard may be mounted and rigidly supported in a vertical position from any suitable base or foundation.

At its upper end, the standard is provided with a laterally extending bracket 3, whereon the principal cutting members, presently described, are mounted, and slidably mounted on the standard below the bracket is a collar 4 provided with a laterally extending arm 5 which, at its outer end, supports a table 6 whereupon the cans, as indicated at 7, are placed for opening.

The present device is intended particularly to be used for opening salmon cans, and it is desired that the cans be opened in such a manner that their contents may be removed, for inspection, in a body, the same as it is packed and may, after inspection be placed in new cans in the same condition. A certain type of can for which the device is especially adapted is one wherein the top is secured to the body by a seam joint which forms a sort of projecting flange as is illustrated at 8 in several figures of the drawing.

For the accommodation of cans of different height, the collar 4, which supports the table 6, is slidable along the standard 1 and may be held at any set position by means of a set screw 9 which may be tightened against the standard.

Revolubly mounted within the outer end of the bracket 3 is a short eccentric 10 held in position and adapted to be partially rotated within its mounting by means of a radially extending lever, or arm, 11, which moves within an arcuate slot 12 in the end of the bracket.

Extending longitudinally through the eccentric 10 and revoluble therein, is an eccentrically located shaft 13 which is provided at its upper end with a crank 14 by which it may be revolved and at its lower end with a serrated or knurled roller 15 which revolves therewith.

Revolubly mounted on a screw bolt 16, on the under face of the bracket 3, and closely adjacent the roller 15 is a guide roller 17, provided with a groove 18 and a peripheral flange 19 which will receive the flange 8 of a can 7. Also secured to the under side of

the bracket 3, is a cutter 20 which underlies and extends slightly beyond the roller 17 and is held in place by the bolt 16 and a screw 21 at its inner end.

At its outer end the cutter 20 is provided with a sharpened point 22 and at one side with a forwardly inclined cutting edge 23, as shown best in Fig. 2.

When a can, or a number of cans are to be opened, the first can is placed upon the table 6 and the latter adjusted along the standard so that the can will engage the point 22 and the upper flange of the can will be held on a level with the groove of the roller 17. The set screw 9 is then tightened to hold the table at this adjusted position. In order that succeeding cans of the same size may be placed in position without adjustment of the table we have mounted the table in such a manner that it may be depressed a certain amount which is necessary to permit the flange of the can to be located in proper position for cutting. The means which supports the table in this manner comprises a post 25 which is secured thereto and is vertically slidable in a boss 26 at the end of the arm 5. A coiled spring 27 encloses the boss and post and bears against the arm and table to yieldingly hold the latter at its upper limit, while the head of a screw 28 threaded into the end of the post 25 retains it from displacement.

To open a can, it is placed upon the table so that its upper flanged edge is in line with the groove of the roller 17 and slightly above the point 22 of the cutter. The lever 11 is then moved in a direction as indicated by the arrow thereon in Fig. 2 to partially rotate the eccentric 10 to carry the shaft 11 eccentrically mounted therein, toward the cutting edge 23.

As the eccentric revolves, the roller 15 is carried inwardly and engages the inner face of the flange 8 of the can, which moves the can inwardly and presses the point 22 of the cutter through the can wall just below the flange as is shown in Fig. 4. A further movement of the lever tightens the rollers 15 and 17 against opposite sides of the flange. The handle 14 is then revolved in the direction as shown by the arrow thereon in Fig. 3 so that the knurled edges of the roller 15 grip the flange 8 and revolve the can so that the cutting edge 23 severs the top from the can and, due to the outward incline of the cutting edge, the severed edges will be turned out and not into the can, and the contents can be easily removed.

In Fig. 7, we have illustrated a modified type of cutter 30. This cutter may be mounted on the bolt 16 as previously and has a single point 31 and a laterally turned lever portion 32. A link 33 is pivotally fixed at one end eccentrically to the lower end of the eccentric 10 and at its other end is connected by means of a pin and slot connection as shown at 34 with the outer end of the lever arm 32, in such a manner that when the rollers are in open position to receive a can, the point 31 extends straight forward. When the lever 11 is turned to cause the roller 15 to press the point into the can, the greater part of its movement does not effect the position of the cutter, but during its final movement which clamps the flange between the rollers, the link 33 causes the cutter to be moved pivotally on its mounting to a forwardly inclined direction so that it functions as the inclined edge 23 of the first described cutter.

In Figures 8 and 9 we have illustrated an alternative type of construction wherein the shaft 11 is in a fixed bearing and the roller 15 has no movement toward or from the standard as previously described. A cutter blade 35 having a piercing point 36 and a cutting edge 37 are fixed on a lever arm 38 that is pivotally mounted on the underside of the bracket 3 so that the cutter may be swung into or away from the can. It being apparent that when the lever 38 is swung away from the can, the cutter will be pressed through the can wall and that by revolving the crank 14 as indicated, the can will be revolved against the blade 37 to sever the top therefrom. Movement of the blade inwardly is prevented by a stop 40 fixed in the bracket 3, against which the arm abuts.

Having thus described our invention, what we claim as new therein, and desire to secure by Letters-Patent, is—

1. A can opener of the class described, comprising in combination with a supporting bracket, an eccentric rotatable within the bracket, a shaft extended rotatably through the eccentric, a friction roller fixed at one end of the shaft, a guide roller mounted on the bracket in cooperative relation to the friction roller to receive the flange of a can to be opened between them, a cutter blade fixed to the bracket having a piercing point and a cutting edge extending beyond the periphery of the guide roller and beneath the friction roller, means for rotating the eccentric whereby the said friction roller will engage the flange of the can and cause the can wall to be pressed against the cutting blade and the flange of the can to be clamped between said friction and guide rollers, and means for rotating the shaft to effect the rotation of the can against the cutting blade.

2. The combination with a standard having a can supporting table fixed thereon and a bracket extending laterally from the standard above the table, of a can opening mechanism comprising a grooved guide roller mounted on the under side of the said bracket, an eccentric mounted rotatably within the bracket, a shaft extended rotatably through the eccentric and a friction

roller mounted on the roller end of the shaft in cooperative relation with the guide roller, so that a flange of a can may be clamped between the same, a lever fixed within the eccentric for rotating the latter to effect a clamping operation, a crank fixed to the shaft for rotating the same and the friction roller to effect rotation of the can, a blade fixed to the bracket and extending beneath the guide roller and beyond the periphery thereof to be projected through a can wall by the clamping process and having a cutting edge inclined in such manner as to cause the severed edges of the can wall to be turned outwardly as the can is advanced.

Signed at Seattle, Washington, this 13th day of November, 1919.

PETER J. ANDRAE.
ANDREW W. SWANSON.