

Sept. 25, 1951

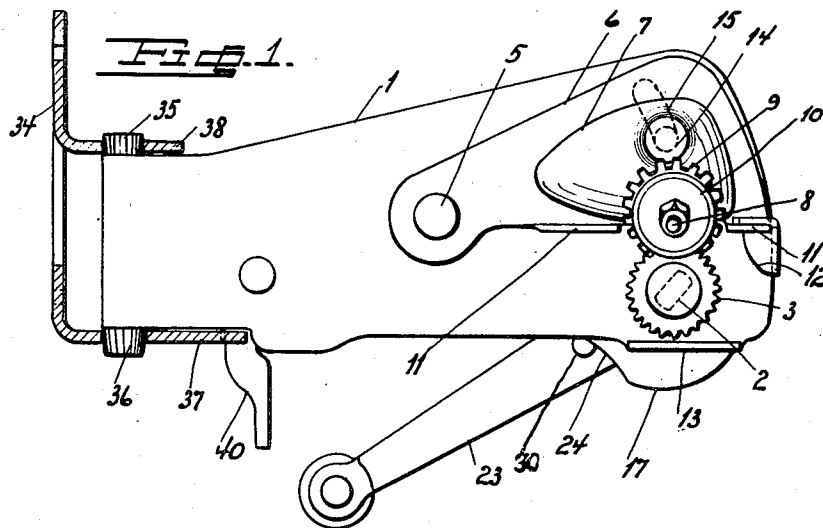
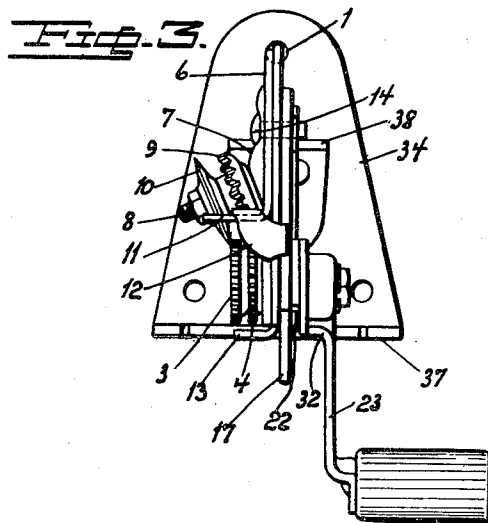
H. W. LINDAHL

2,568,962

CAN OPENER

Filed April 11, 1949

2 Sheets-Sheet 1



Inventor:
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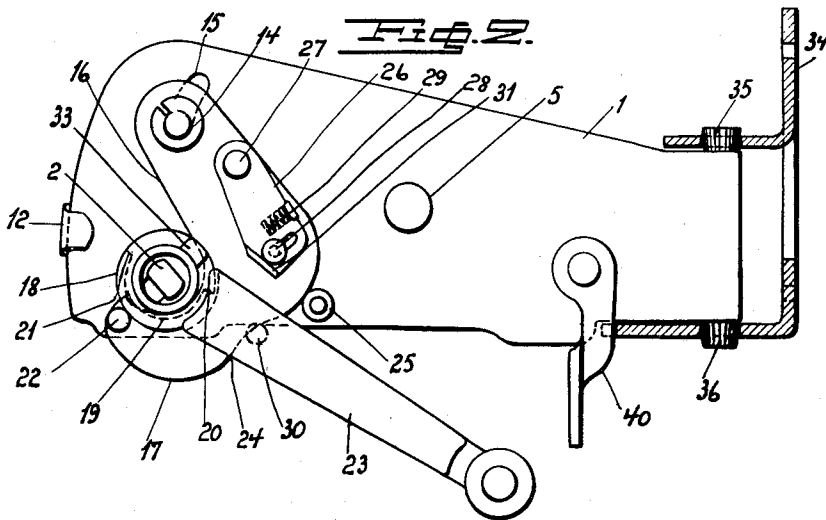
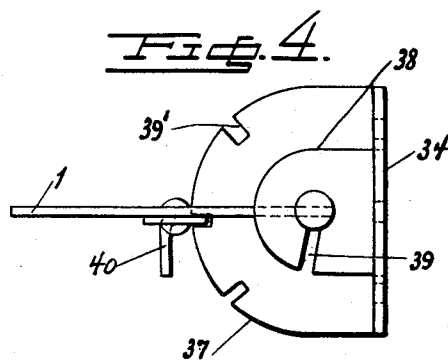
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Inventor:
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UNITED STATES PATENT OFFICE

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CAN OPENER

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2 Claims. (Cl. 30—9)

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This invention concerns a can opener, which is attachable to a bracket mounted on a fixed support, and which is equipped with a vertically movable knife cutter that may be rotated by means of a crank and a gear transmission, and with a feeding wheel, against which the flange of the can rests while the can is cut open. One object of the invention is to provide a can opener which is equipped with a coupling member, which transforms the rotating movement of the crank to an up and down motion of the knife cutter according to which direction the crank is turned. Another object is to provide a can opener with means for keeping the can motionless while the knife cutter is being raised after completion of the opening operation in order to avoid waste from the can due to splashing, etc. Other objects and features of the invention will become apparent from the following description relating to the accompanying drawings, which show a preferred form of the invention.

Figs. 1 and 2 are side elevational views of the can opener in accordance with the invention, showing the cutter side respectively the crank handle side of the opener. Fig. 3 is a front end view, and Fig. 4 shows details of the bracket and parts of the can opener proper in a top view.

On a support base 1, which carries the moving parts and which preferably consists of a metal plate, a crank shaft 2 is journaled, on which a toothed feeding wheel 3 and a gear wheel 4 are rigidly attached, preferably by having the crank shaft flat on one part of the circumference while the feeding wheel and the gear wheel have correspondingly shaped center holes. An arm 6 is mounted rotatable around a stud 5, and the free end of the arm is formed with a blister 7 that is convexly raised from the surface of the arm. A shaft 8 is secured to the underside of the blister, so that the shaft occupies an inclined position relatively to the support. A gear wheel 9, which, while the can is cut open, meshes with the gear wheel 4, and a disc cutter 10 are rigidly attached to the shaft 8. The inclined position of the cutter makes the cutting operation easier and makes it possible to cut open polygonal or similarly shaped cans. The lower edge of the arm 6 is equipped with flanges 11, 12 for guiding the can, and the support plate is provided with a guiding projection 13.

Fastened to the blister 7, above the shaft 8 and extending in a direction perpendicular to the plane of the support plate, is a pin 14, that

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extends through an arcuate slot 15 in the support plate. The stud 5 is the center of rotation of the edges of the slot 15. The pin 14 is on the crank side of the support plate attached to a coupling member 16, 17 in the form of an angle piece with unequal legs, which partly surrounds the shaft 2 and which can be rotated as well as raised and lowered. This coupling member changes the rotating motion of the crank into an up and down motion of the cutter. The circumference of a disc 18, rigidly attached to the shaft 2, is interrupted by a sector shaped cut-out 19, the ends of which form lugs 20, 21. On the shorter leg 17 of the angle piece there is a stud 22, which, when it by means later to be described, is brought into the path of the lugs 20, 21 is carried on by one of these when the crank 23 is turned. An intermediate part 24 of the coupling member has an arc-shaped edge, which rides on a stud 25 provided with a rotatable disc. Attached to the long leg 16 is a short secondary arm 26, which is pivoted on a rivet 27, secured to the leg 16. The motion of the arm 26 is limited by a stud 28, secured to the long leg 16, and which glides in a slot formed in the arm 26. A spring 29 is arranged in a cut-out in the leg 16, and a lug protruding from the edge of the secondary arm 26 bears against the end of the spring, which thus strives to keep the secondary arm 26 in the position shown in Fig. 2. A stud 30 is secured to the crank 23, and the secondary arm 26 has a flange 31. The flange is in a sloping position with respect to the path of motion of the stud 30. The crank handle 23 is mounted for free rotation on a bushing attached to the shaft 2. Close to the flat attachment piece of the crank handle for the crank shaft 2, the handle is bent at approximately right angles to the attachment piece in order to form a lug or edge 32, whereupon the handle again is bent to make it parallel with the plane of the support plate. To the shaft 2 a disc with a protruding lug 33 is rigidly secured, which lug is long enough to reach into the path of the edge 32.

When the crank is turned clockwise as seen from the cutter side of the device from the position it occupies in Fig. 1, the stud 30 glides on the spring-urged flange 31, whereby the coupling member 16, 17 is swung upwards and away from the crank shaft 2, so that the lug 21 engages the stud 22 to carry it along, whereupon the rotating motion of the coupling member and the upward motion of the pin 14 in the slot 15, with the intermediate edge portion 24 gliding on

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the stud 25, continues until the coupling member is clamped between the lug 21, which engages the stud 22, and the stud 25. Now the cutter is raised, away from the feeding wheel 3, so that the bead of the can may be inserted in the thus formed gap. When the crank then is turned counter-clockwise as seen from the cutter side, the lug 20 will engage the stud 22, whereupon the coupling member 16, 17 will swing towards the crank shaft 2, and at the same time will be moved downwardly, whereby the cutter edge will be forced into the top portion of the can, and the gears 4 and 9 will mesh. The edge 32 of the crank handle carries with it the lug 33, so that the feeding wheel feeds the can along as the cutter cuts the can open. During the cranking, the stud 30 on the crank handle glides over the flange 31, which yields under spring tension while simultaneously moving the coupling member towards the crankshaft, so that the lug 20 is brought out of engagement with the lug 22 on the coupling member. When the top portion of the can is severed, the crank is again turned in a clockwise direction as seen from the cutter side, whereby the cutter is raised and the can may be released. On this last clockwise turning of the crank, the edge 32, is freed from engagement with the lug 33. The feeding wheel and the can will therefore not move during this cranking operation.

In order to attach the can opener to a bracket secured to a fixed support, there are provided two co-axial hinge-pins 35, 36 on the base plate 1. The hinge-pins are preferably slightly conical in shape and the lower one 36 is somewhat longer than the other one 35, which simplifies the attaching of the opener to the bracket 34. This consists of a metal plate, the lower part of which is bent at right angles to the upper part to form a flange 37. Another flange 38 is stamped out of the upper part of the plate. The flanges 37, 38 have concentric holes in which the hinge-pins 35, 36 fit. The upper flange 38 has a radial slot 39, which reaches from the center hole to the edge of the flange. The support plate 1 is inserted into the bracket through the slot 39, and the hinge-pins are received in the holes in the flanges 37, 38. In order to fix

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the support plate in a position most suited to local conditions, the lower flange 37 is provided with radial slots along its outer edge. A locking bar 40 is pivoted on the support plate so that it may be inserted in any one of the slots 39', whereby the can opener may be fixed in the most suitable position.

I claim:

1. In a can opener the combination of a base plate, a crank shaft provided with a feeding wheel and a gear wheel, the shaft journaled in the base plate, a rotatably mounted arm, to which a cutter and a gear wheel adapted for meshing engagement with the above mentioned gear wheel are attached, a pin that passes through an arcuate slot in the base plate, and which on one side of the base plate is attached to the arm and on the other side to a rotatably mounted coupling member capable of being raised and lowered, and which has the form of an angle piece with unequal legs and which partly surrounds the crank shaft, a stud on the short leg of the coupling member, a disc with a sector shaped cut-out portion along its periphery secured to the crank shaft, the corners of the cut-out portion forming lugs, and a pivoted spring-urged secondary arm mounted on the long leg of the coupling member, the secondary arm being provided with a flange in an inclined position in the path of motion of a stud on the crank handle.

2. A can opener in accordance with claim 1 above, characterized thereby that the crank handle is mounted for free rotation on the crank shaft and is provided with a lug-forming shoulder, and that a disc rigidly secured to the crank shaft is provided with a lug arranged for co-action with the shoulder by being positioned in the path of motion of the shoulder.

HENNING WALDEMAR LINDAHL.

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