April 29, 1952 R. NESSLER 2,595,162

ELECTRIC CAN OPENER

Filed Nov. 6, 1950 2 SHEETS—SHEET 1

Fig. 1

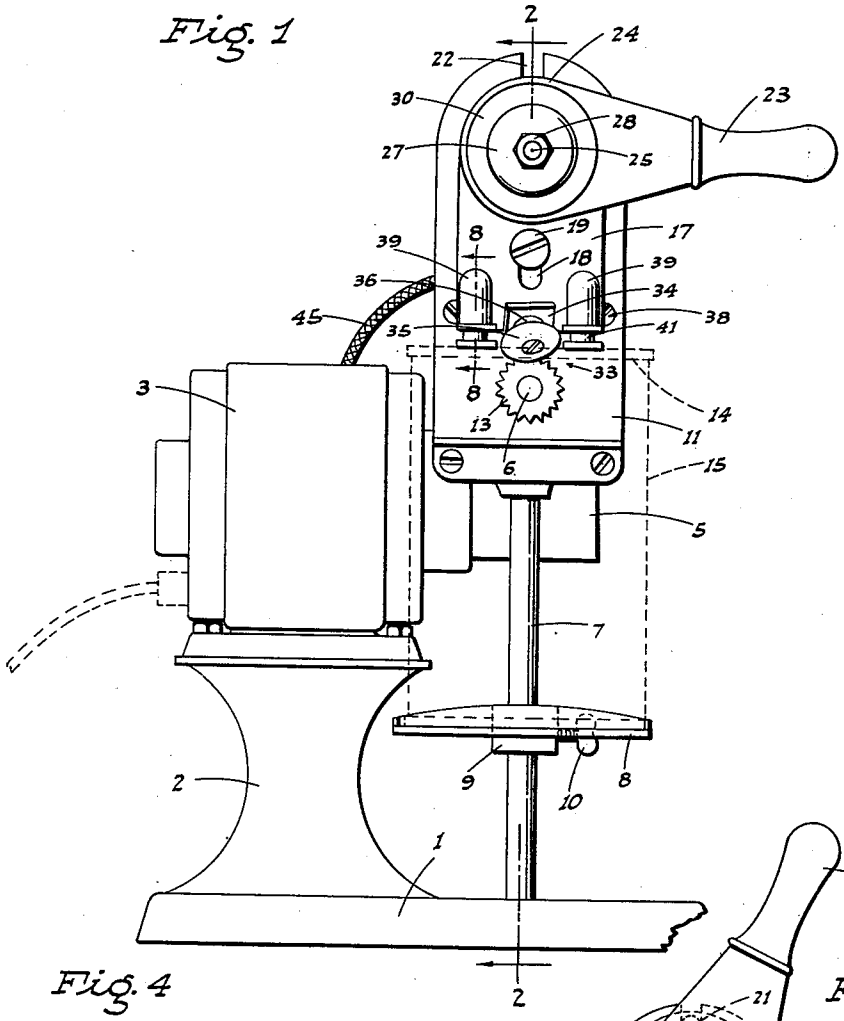


Fig. 4

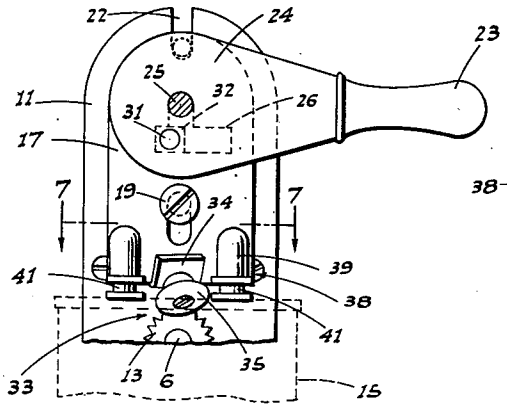
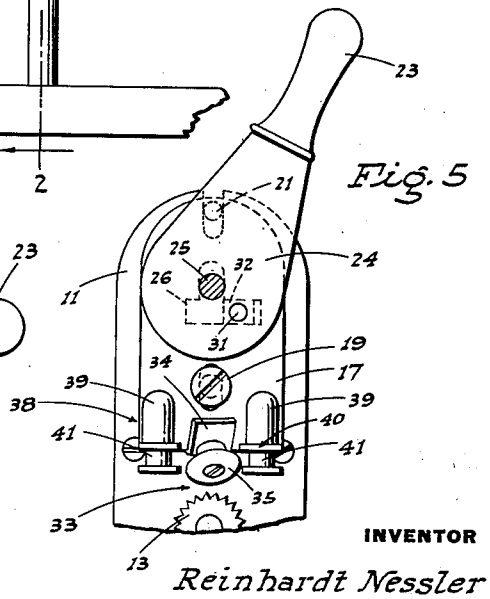


Fig. 5



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Fig. 2

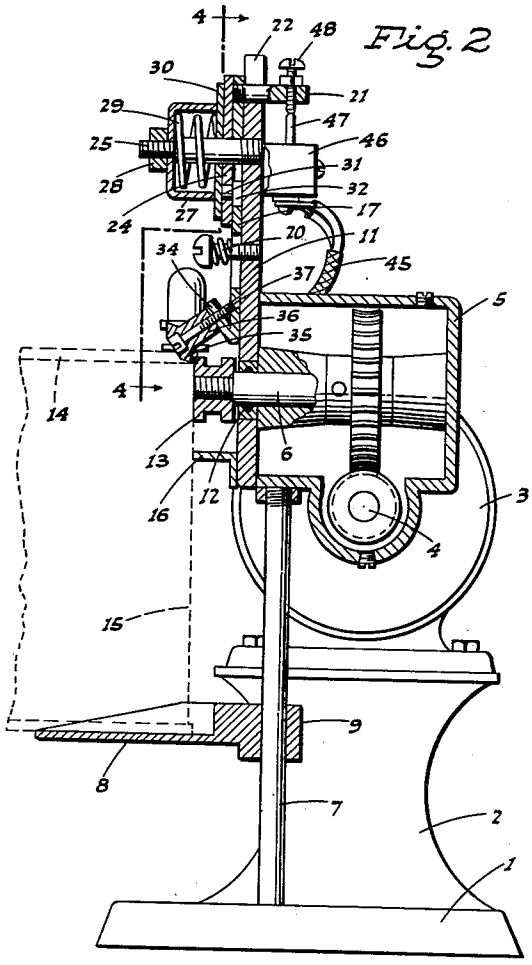


Fig. 3

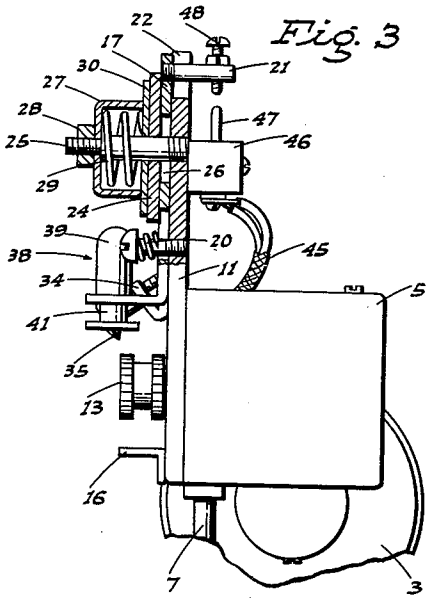


Fig. 6

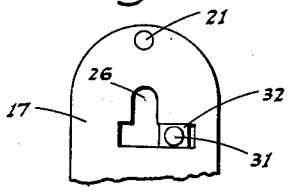


Fig. 7

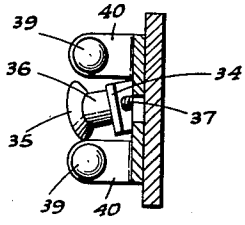
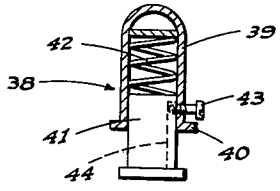


Fig. 8



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ELECTRIC CAN OPENER

Reinhardt Nessler, Stockton, Calif.

Application November 6, 1950, Serial No. 194,296

2 Claims. (Cl. 30—4)

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This invention relates in general to a can opener.

In particular the invention is directed to, and it is a major object to provide, a novel, electric motor driven can opener.

Another important object of the invention is to provide an electric motor driven can opener which includes a novel cutter wheel mount; such mount including a vertically slidable mounting plate arranged in an effective manner for ready and convenient manual adjustment.

An additional object of the invention is to provide an electric can opener, as above, wherein there is a novel assembly of the can cutter, and can hold-down plunger units, carried by the mounting plate.

A further object of the invention is to provide an electric can opener which includes a novel device for automatically starting the electric motor upon lowering of the mounting plate and engagement of the cutter, and hold-down plunger units, with the can.

A still further object of the invention is to provide an effective angle-positioned, bevel-faced cutter operative to positively and cleanly cut, and simultaneously smooth fold, the metal of the can end about the rim of said can.

It is also an object of the invention to provide an electric can opener which is designed for ease and economy of manufacture.

Another object of the invention is to provide a practical and reliable electric can opener, and yet one which will be exceedingly effective for the purpose for which it is designed.

These objects are accomplished by means of such structure and relative arrangement of parts as will fully appear by a perusal of the following specification and claims.

In the drawings:

Fig. 1 is a side elevation of the novel electric motor driven can opener, with the parts in operative position.

Fig. 2 is a sectional elevation on line 2—2 of Fig. 1.

Fig. 3 is a similar view, but fragmentary and with the mounting plate and working parts thereon in raised or starting position.

Fig. 4 is a fragmentary front sectional elevation on line 4—4 of Fig. 2, showing the position of the lever arm and mounting plate, with attached parts, when the can opener is in use.

Fig. 5 is a similar view, but shows such lever arm and mounting plate in its raised or starting position.

Fig. 6 is a fragmentary front elevation of the mounting plate and shifting block which cooperates therewith.

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Fig. 7 is a fragmentary plan view on line 7—7 of Fig. 4.

Fig. 8 is an enlarged sectional elevation of one of the hold-down plunger units.

Referring now more particularly to the characters of reference on the drawings, the novel electric motor driven can opener comprises a base 1 fitted with a pedestal 2; there being an electric motor 3 secured to the pedestal 2, with the motor shaft 4 extending transversely.

The motor shaft 4 drives a reduction gear box 5 fixed in connection with one end of the motor 3, and such reduction gear box includes a horizontal, forwardly projecting output shaft 6; said box being stabilized by a post 7 which upstands from the base 1.

A can supporting cradle 8 projects horizontally forward from the post 7, being secured in connection with the latter, for vertical adjustment, by a hub 9 normally locked in place by a wing bolt 10.

The gear box 5 is fitted, at the front, with a flat, forwardly facing, upstanding backing plate 11 which extends some distance above such box.

The output shaft 6 projects through a bearing 12 in the backing plate 11 and terminates a short distance ahead thereof, with the terminal portion threaded and having a double-ended can feed wheel 13 threaded thereon. The can feed wheel 13 has each working end thereof peripherally serrated, as shown, for driving engagement beneath the bead 14 at the top of a can 15 seated in the cradle 8 and abutting a can stop 16 projecting forwardly from the lower end of said backing plate 11.

The can feed wheel 13 is double-ended so that it may be reversed in use when necessary.

Above the can feed wheel 13 the device includes a vertically slidable mounting plate 17 secured and guided as follows:

Intermediate its ends the mounting plate 11 is formed with a vertically elongated slot 18, and a headed guide screw 19 extends through such slot into the backing plate 11, with a compression spring 20 between the head of screw 19 and plate 17.

At its upper end the mounting plate 17 is fitted with a horizontal, rearwardly projecting pin 21 which extends through a vertically elongated slot 22.

With the above arrangement the mounting plate 17 is guided for perpendicular sliding motion, which motion is accomplished in the hereinafter described manner.

The numeral 23 indicates a lever arm, which lever arm is formed at its inner end with a flat rotary disc 24 which lies flush against the outside

of the mounting plate 17, being maintained in frictional engagement therewith in the following manner:

A horizontal spindle 25 is fixed to the backing plate 11 and projects through the upper portion of an inverted T-slot 26 in the mounting plate 17, and a cap 27 encircles such spindle and is held thereon by a nut 28.

A compression spring 29 surrounds the spindle 25 in the cap 27, bearing against a washer 30, which in turn has frictional, face to face contact with the mounting plate 17. As so secured, the mounting plate 17 may be adjusted up and down, but will remain in either position.

A pin 31 on the rotary disc 24, in radially offset relation to the spindle 25, is fitted with a shifting block or head 32 which rides in the horizontal or lower portion of the inverted T-slot 26. Consequently, upon swinging of the lever arm 23 from an upstanding position, as in Fig. 5, to a lowered or horizontal position, as in Fig. 4, the mounting plate 17 is vertically slid from its raised to its lowered position.

At the lower end thereof the mounting plate 17 is formed with a cutter and hold-down assembly, indicated generally at 33; this cutter assembly embodying the following:

Substantially centrally between the sides, the mounting plate 17 is formed with an upturned bracket finger 34, and a bevel faced rotary cutter 35, including a hub 36 is secured to and projects forwardly from the bracket finger 34 by means of a screw 37. The bracket finger 34 is angled so that the rotary cutter 35 is disposed with its axis at a forward and downward incline and slightly laterally or horizontally canted contra to the direction of rotation of the can 15 under the influence of the can feed wheel 13.

On opposite sides of the rotary cutter 35, the mounting plate 17 is fitted with a hold-down plunger unit 38, each of which includes a perpendicular, cylindrical body 39 fixed to an outturned bracket 40 integral with the lower end of said mounting bracket 17. A plunger 41 works upwardly in each cylindrical body 39 against the resistance of a compression spring 42 in said body; the plunger being held against escape by a screw 43 which runs in a slot 44 in the adjacent side of the plunger.

When the device is in use with a can 15 seated on the cradle 8, the lever arm 23 is first swung to its down position, which causes the rotary cutter 35 to initially cut through the top of the can immediately inside the rim 14. At the same time the hold-down plunger units 38 are placed under pressure, effectively maintaining the can seated on the supporting cradle 8 during the cutting operation.

Thereafter, with the can feed wheel 13 engaged beneath the rim 14, drive of such wheel rotates the can, and the rotary cutter 35 severs the top out of said can. By reason of the particular angled or diagonaled relationship of the cutter 35, it not only effectively cuts the top out of the can, but folds down the raw edge which would otherwise remain on the inner face of the rim 14.

When the lever arm 23 is swung downwardly, as above, and for the purpose of operation of the device, the electric motor 3 is automatically brought into operation. This is by virtue of a control lead 45 which extends from the motor 3 to an "on-off" switch 46 secured to the rear side of the backing plate 11; such switch including an upwardly extending but depressible element 47 which closes the switch. A vertically adjustable

screw 48 is threaded through the rear end of the pin 21 and is set to engage and depress the element 47 when the lever arm 23 is swung down, whereby to close said switch and cause operation of the electric motor 3.

The above described can opener functions in a positive and effective manner, and is arranged for practical and convenient use.

From the foregoing description it will be readily seen that there has been produced such a device as substantially fulfills the objects of the invention, as set forth herein.

While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention, as defined by the appended claims.

Having thus described the invention, the following is claimed as new and useful, and upon which Letters Patent are desired:

1. In a power driven can opener, a flat upstanding backing plate fixedly mounted, a flat upstanding mounting plate flush against the backing plate, means securing the mounting plate to the backing plate for guided vertical sliding motion, manually actuated means to so slide the mounting plate between raised and lowered positions, a driven shaft projecting forwardly and horizontally below the mounting plate, a can feed wheel on the forward end of the shaft, a rotary, can top cutter secured to the lower end of the mounting plate in cooperative relation to but above the can feed wheel, and a pair of separate can hold-down spring-urged plunger units secured to the lower end of the mounting plate with the rotary cutter disposed therebetween.

2. In a can opener, a flat upstanding backing plate fixedly mounted, a flat upstanding mounting plate flush against and terminating above the lower end of the backing plate, means securing the mounting plate to the backing plate for guided vertical movement, a can feed wheel mounted on the backing plate below the mounting plate, a can-top cutter mounted on the lower end of the mounting plate in cooperative relation to and above the can feed wheel, and means to move the mounting plate up and down and comprising a spindle projecting forward from the backing plate, the mounting plate having an inverted T slot therethrough, the spindle projecting through the upper portion of the slot, a rotary member on the spindle in front of the mounting plate, a lever arm radiating from the member, a pin on the member projecting into the bottom portion of the inverted T slot, and a shifting block on the pin and engaged in said bottom portion of the slot for motion therealong.

REINHARDT NESSLER.

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