Sept. 9, 1958 C. E. DODD ET AL 2,850,799

LOCKING MECHANISM FOR POWER OPERATED CAN OPENER

Filed Feb. 21, 1957

Fig. 1

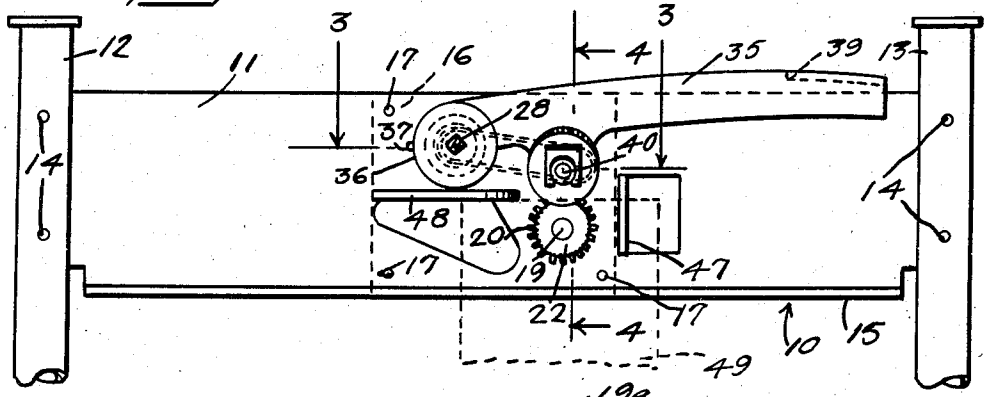


Fig. 2

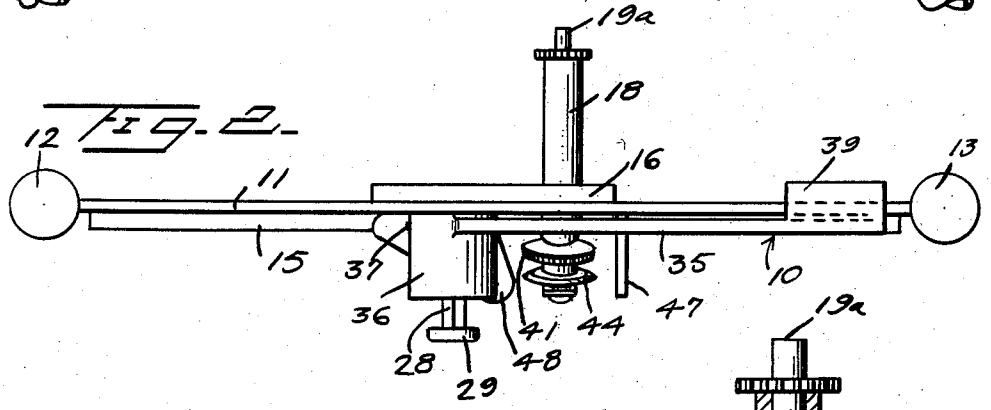


Fig. 4

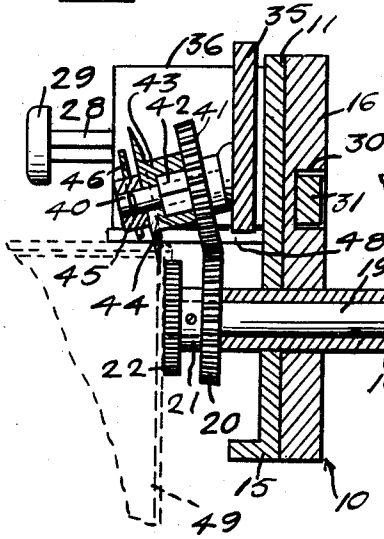
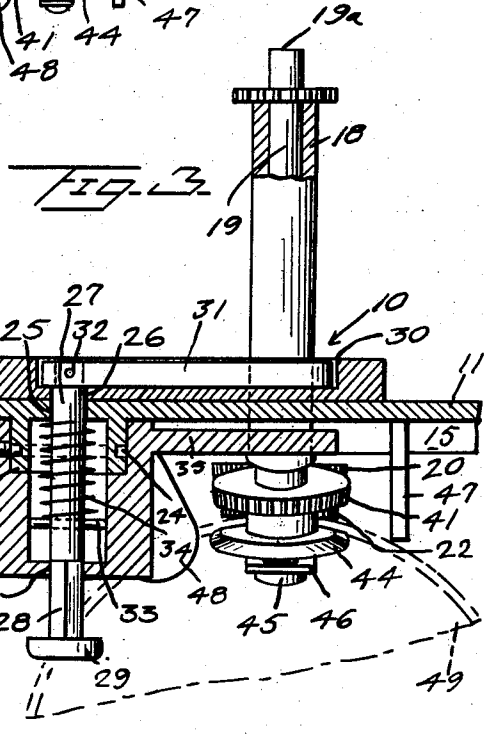


Fig. 3



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LOCKING MECHANISM FOR POWER OPERATED CAN OPENER

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5 Claims. (Cl. 30—4)

The present invention relates to a locking device for power operated can openers, and more particularly to a device for locking the can opener in can opening position.

The primary object of the invention is to provide a power operated can opener with means for releasably locking the can opener when in can opening position.

Another object of the invention is to provide a locking mechanism for power operated can openers which is inexpensive to manufacture, simple to use and which will effectively lock the can opener in opening position on a can.

A further object of the invention is to provide a power operated can opener having means for locking the drive gears thereof in driving engagement during the opening of a can.

Other objects and advantages will become apparent in the following specification when considered in the light of the attached drawings, in which:

Figure 1 is a fragmentary front elevation.

Figure 2 is a top plan view of the invention.

Figure 3 is an enlarged fragmentary horizontal cross-section taken along the line 3—3 of Figure 1, looking in the direction of the arrows.

Figure 4 is an enlarged fragmentary vertical cross-section taken along the line 4—4 of Figure 1, looking in the direction of the arrows.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral **10** indicates generally a power operated can opener constructed in accordance with the invention.

The can opener **10** includes an elongated generally rectangular upright plate **11** secured at its opposite ends to standards **12** and **13**, respectively, by securing elements **14**. The plate **11** is provided at its lower edge with a forwardly extending strengthening flange **15** integrally formed therewith.

A generally rectangular locking plate **16** is positioned against the face of the plate **11** opposite the flange **15** intermediate the standards **12** and **13** and secured thereto by means of securing elements **17**. The locking plate **16** extends from the top to the bottom of the plate **11**, as can be seen in Figure 4.

A tubular bushing **18** extends perpendicularly through the plate **11** and the locking plate **16** and extends beyond each side thereof. A shaft **19** is journalled in the bushing **18** and has one end **19***a* extending therebeyond for reasons to be assigned. A drive gear **20** is positioned on the opposite end of the shaft **19** and has an integrally formed collar **21** extending axially thereof.

A can drive cog **22** is integrally formed with the collar **21** in spaced parallel relation to the drive gear **20** and positioned outwardly thereof with relation to the shaft **19**. The end portion **19***a* of the shaft **19** is adapted to be connected to the power unit of a food mixer, or other power drive mechanism, so as to revolve the shaft **19**, the drive gear **20**, and the can drive cog **22**.

The plate **11** is provided with a boss **23** extending

oppositely of the lock plate **16** and being of generally cylindrical form. The boss **23** is provided with a peripheral groove **24** adjacent the outer end thereof. The plate **11** is provided with a bore **25** extending therethrough in axial alignment with the bore **23**. The locking plate **16** is provided with a bore **26** axially aligned with the bore **25**. A shaft **27** is journalled in the bores **25** and **26** and is provided with a square shank outer end portion **28** terminating in a knob **29**, as best seen in Figure 3.

The locking plate **16** is provided with a generally horizontal slot **30** extending thereacross and into which the bore **26** opens. A bar **31** is secured to the end of the shaft **27** by means of a securing element **32**. The bar **31** has a dimension such that it is seated within the slot **30** in one position, and can be moved out of the slot **30** by axial movement of the shaft **27**.

The shaft **27** adjacent the square shank portion **28** thereof is provided with a cross pin **33** and has a coil spring **34** positioned thereabout between the plate **11** and the cross pin **33** to normally bias the shaft **27** in a direction to seat the bar **31** in the slot **30**.

A lever **35** is provided with an enlarged end portion **36** journalled on the boss **23** and secured thereon by means of a set screw **37** engaging in the annular groove **24**. The enlarged portion **36** on the end of the lever **35** is provided with an axial square hole **38** through which the square shank **28** extends to lock the shaft **27** to the lever **35** with respect to rotational movement of the shaft **27** about its own axis. The lever **35**, at the end thereof opposite the enlarged portion **36**, is provided with a laterally extending offset handle member **39** providing means for moving the lever **35** about the boss **23**.

A shaft **40** is fixedly secured to the lever **35** at a point adjacent to but spaced from the enlarged portion **36** with the shaft **40** sloping downwardly at an angle to the horizontal. A gear **41** is journalled on the shaft **40** in position thereon to mesh with the gear **20** with the lever **35** in the position illustrated in Figures 1, 3 and 4.

The gear **41** has a square shank portion **42** extending laterally therefrom on which is mounted a square socketed shank **43** of a cutter blade **44**. The square shank **42** and the square socketed shank **43** lock the gear **41** and the cutter blade **44** together for rotation on the shaft **40**. A collar **45** is secured to the outer end of the shaft **40** by means of a spring clip **46** to secure the cutter **44** and gear **41** on the shaft **40**.

The plate **11** has a vertical guide **47** struck outwardly therefrom, and a horizontal guide **48** struck upwardly therefrom, as can be seen in Figures 1 and 2.

As can be seen in Figures 1, 3 and 4, the guides **47** and **48** assist in positioning a can, shown in dotted lines at **49**, in the can opener **10** for opening thereby.

In the use and operation of the invention, the knob **29** is pressed inwardly moving the bar **31** out of the slot **30** and permitting the lever **35** to be moved upwardly disengaging the gear **41** from the gear **20**, and the cutter blade **44** from the can **49**.

A can **49** with cover intact is then positioned in engagement with the cog **22** and the guides **47** and **48**, and the lever **35** is moved downwardly to cause the cutter **44** to pierce the can **49** and the gear **41** to engage the gear **20**.

When the gears **20** and **41** have meshed, the bar **31** will have become aligned with the slot **30** and the spring **34** will move the bar **31** into locking engagement within the slot **30**, thus locking the can opener in opening position. Obviously, the power mechanism (not shown) connected to the end **19***a* of the shaft **19** will then be operated to rotate the cutter **44** and open the can **49**.

Having thus described the preferred embodiment of the invention, it should be understood that numerous

structural modifications and adaptations may be resorted to without departing from the scope of the appended claims.

What is claimed is:

1. In a power operated can opener an upright plate, a lever pivotally mounted on said plate, a cutting mechanism mounted on said lever, means on said plate for supporting and rotating a can in engagement with said cutting mechanism, a locking plate fixed to said upright plate on the side thereof opposite said lever and a movable lock mounted on said lever for releasable locking connection with said locking plate.

2. A device as claimed in claim 1 wherein means are provided engaging said upright plate and said lock for normally biasing said lock into locking position.

3. A power operated can opener comprising a vertical plate, a drive gear journalled on said plate and having means associated therewith for effecting rotation thereof, means connected to said drive gear for supporting and rotating a can, a lever pivotally mounted on said plate, cutting means journalled on said lever and engageable with said drive gear and adapted for cutting engagement with a can supported on said can supporting and rotating means, a locking shaft keyed to said lever and extending through said plate, a locking plate mounted on said first named plate oppositely of said lever, said locking plate having a slot formed therein, a locking bar mounted on said locking shaft engageable in said slot for releasably locking said lever to said locking plate against rotation with respect thereto.

4. A device as claimed in claim 3 wherein said locking shaft is normally biased in a direction to engage said locking bar in said slot.

5. A device as claimed in claim 3 wherein a coil spring is engaged over said locking shaft and normally biases said locking shaft in a direction to seat said locking bar in said slot.

No references cited.