July 1, 1958 O. J. MULLICH 2,840,899

SANITARY CAN OPENER APPARATUS

Filed Sept. 30, 1957 4 Sheets-Sheet 1

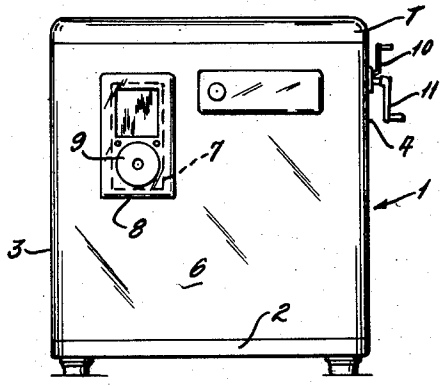


FIG. 1

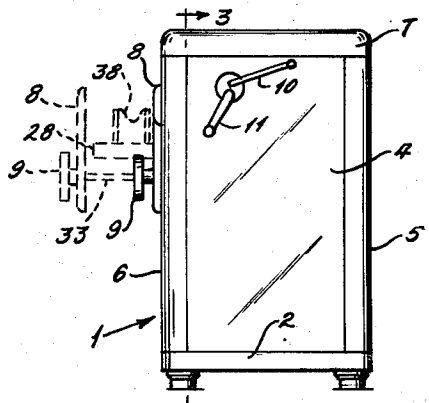


FIG. 2

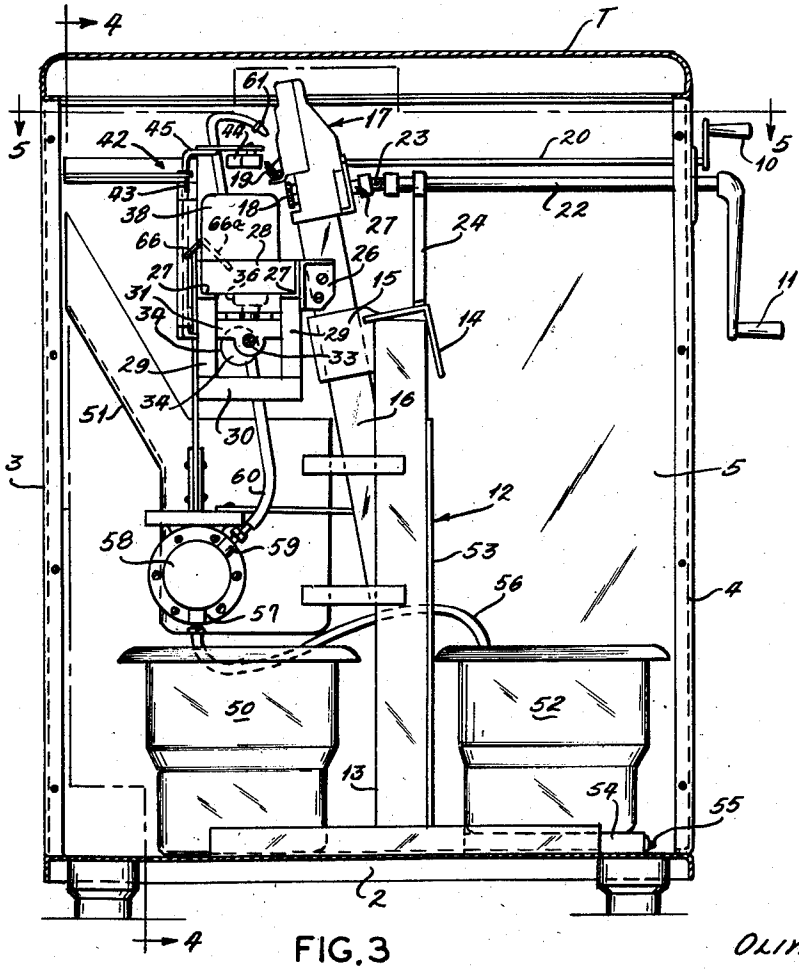


FIG. 3

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SANITARY CAN OPENER APPARATUS

Filed Sept. 30, 1957 4 Sheets-Sheet 2

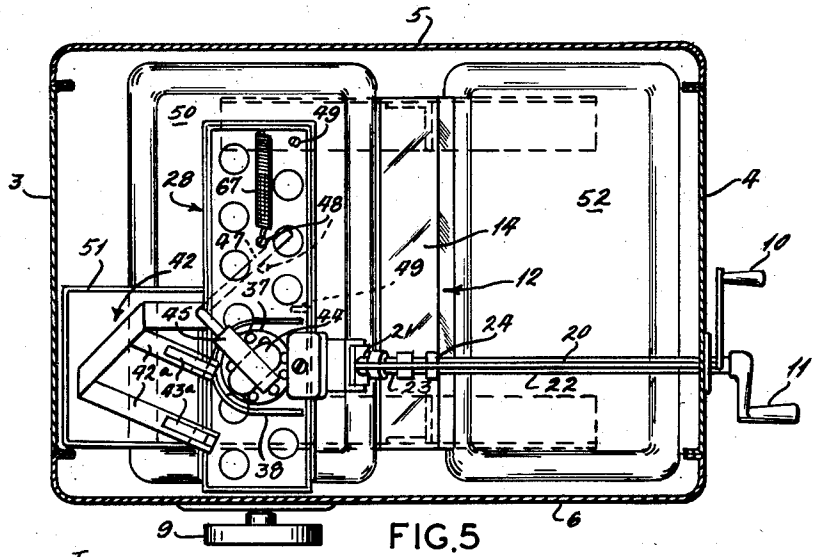


FIG.5

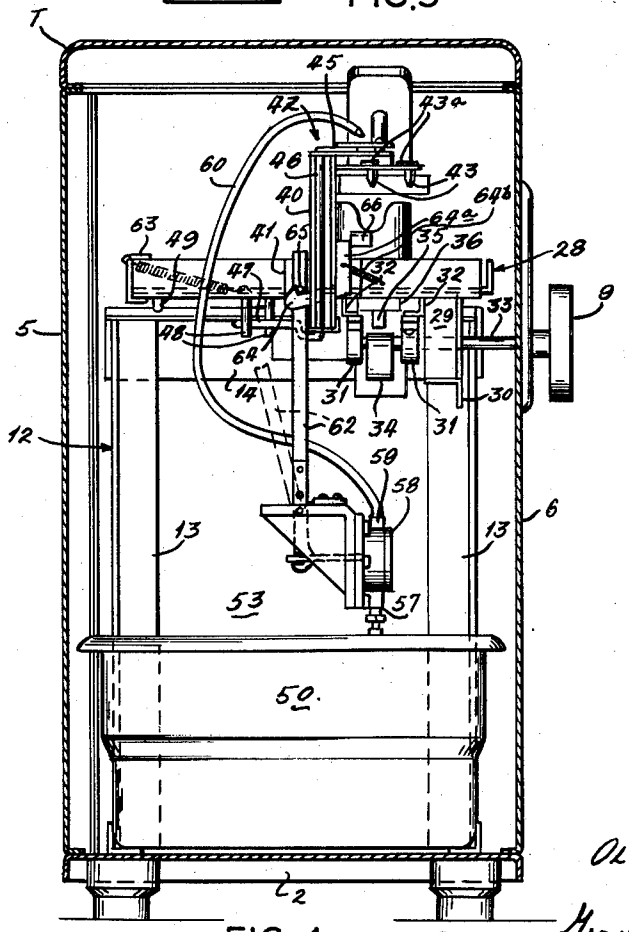


FIG.4

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July 1, 1958 O. J. MULLICH 2,840,899

SANITARY CAN OPENER APPARATUS

Filed Sept. 30, 1957 4 Sheets-Sheet 3

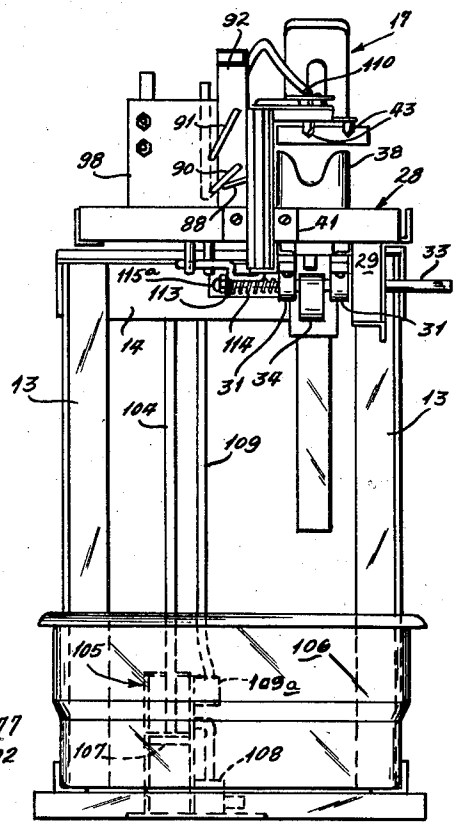


FIG.7

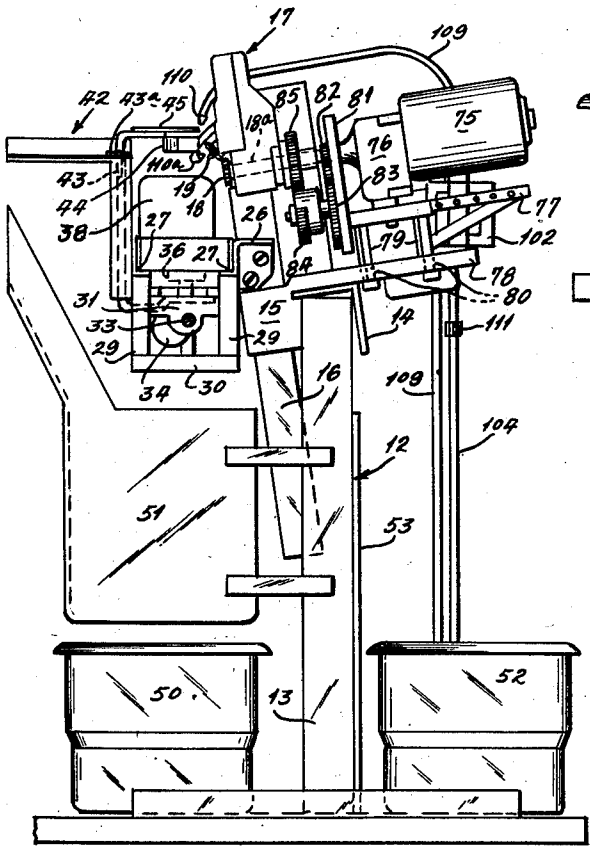


FIG.6

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July 1, 1958 O. J. MULLICH 2,840,899

SANITARY CAN OPENER APPARATUS

Filed Sept. 30, 1957 4 Sheets-Sheet 4

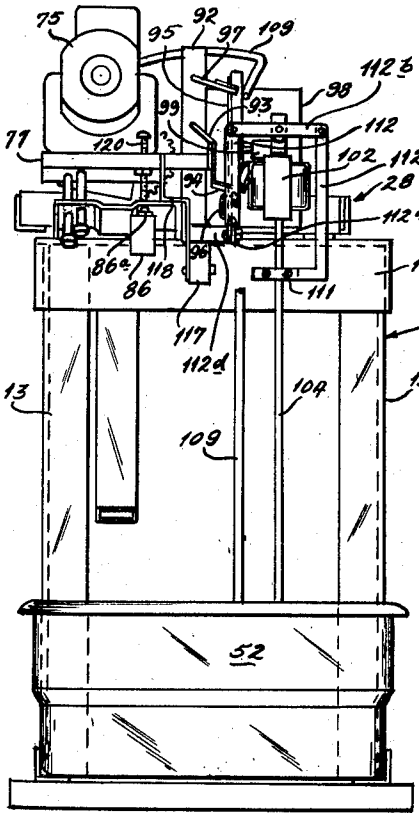


FIG.8

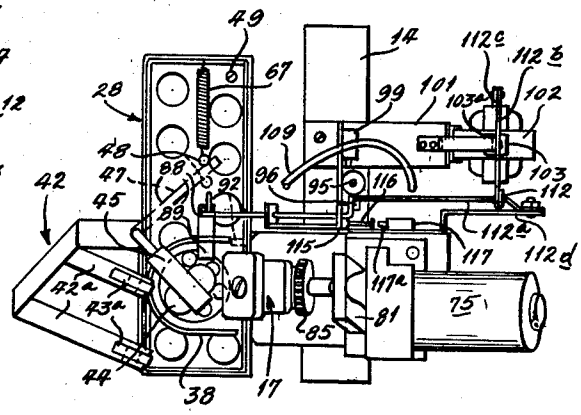


FIG.9

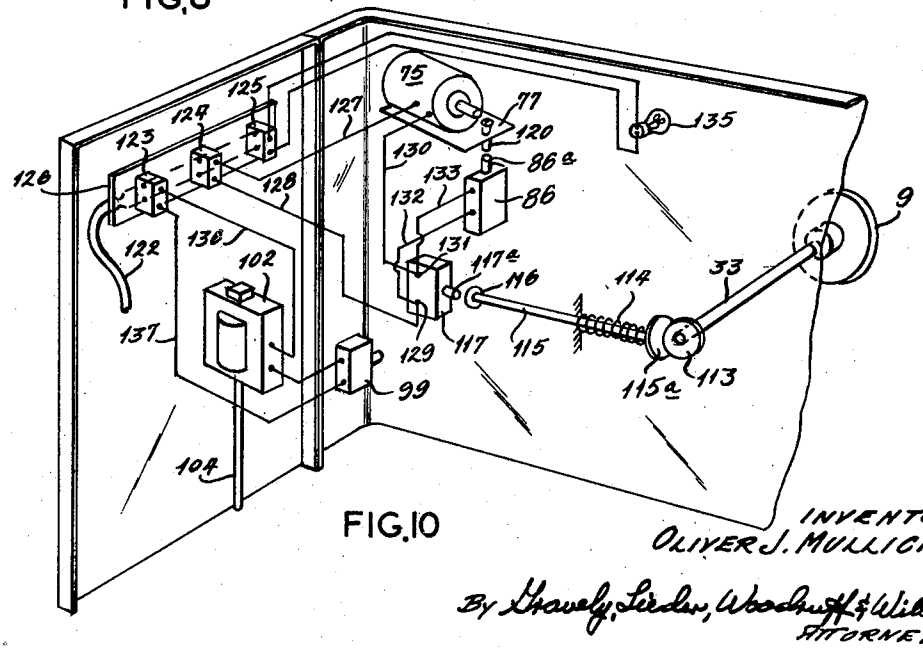


FIG.10

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SANITARY CAN OPENER APPARATUS

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Application September 30, 1957, Serial No. 687,128

14 Claims. (Cl. 30—4)

This invention relates to improvements in can opener apparatus having a sterilizing fluid spray system adapted to render the apparatus safely usable by the public in conjunction with food vending machines.

It has long been known that the sale of sealed food containers through vending machines has been retarded in its widespread use by the lack of sanitary container opening apparatus that could be used by the purchasers of the food without constant attention or the presence of an attendant to look after the sanitary condition of the opener apparatus. At the present time sanitation regulations have held back the unsupervised use of opener apparatus which is as it should be for the safety and protection of the public.

The principal aim and object of this invention is to provide apparatus for opening sealed food containers which may be easily and automatically rendered safe and sanitary for extended periods of use and to avid the objections heretofore found.

Furthermore, it is an object of the invention to provide an inexpensive and easily operated can opening apparatus that can be used in the vicinity of food vending machines by the buying public without need for constant supervision.

Another object of the invention is to provide opening apparatus for sealed cans which will permit the sale through vending machines of warmed or heated food, thereby extending the advantages and convenience to the public of having readily available warm or hot food in public places and overcoming the required constant supervision of an attendant which can be impractical and sometimes not readily available.

Still another object of the invention is found in the improved construction and operation of can opener apparatus which will satisfy the sanitation regulations and be of great public benefit generally.

Further objects and advantages will be apparent or will be specifically pointed out in the following description of preferred embodiments of the apparatus which have been shown in the accompanying drawings.

The invention, according to the embodiments herein disclosed, consists of a suitable cabinet to house the apparatus, and an arrangement of the apparatus within the cabinet so that the warmed or heated can does not have to be handled during opening operation. The apparatus includes an automatic motor operated or a crank operated opener device and means to flush the working parts of the opener with sanitizing fluid after each use, with convenient provision for heating the sanitizing fluid and for collecting the waste fluid and container lids.

The invention consists also of the parts and elements hereinafter shown and described in connection with the selected embodiments.

In the drawings:

Fig. 1 is a front elevational view of a cabinet provided for the can opener apparatus embodying the invention;

Fig. 2 is a side elevational view of the cabinet of Fig. 1;

Fig. 3 is an enlarged front elevational view of the can opener apparatus with portions of the cabinet removed to reveal its details, the view being taken at line 3—3 in Fig. 2;

Fig. 4 is a side view of the apparatus as taken along lin 4—4 in Fig. 3;

Fig. 5 is a top plan view of the apparatus as seen along line 5—5 in Fig. 3;

Fig. 6 is a front elevational view of a modified can opened apparatus adapted to be housed in the cabinet of Fig. 1;

Fig. 7 is a side elevational view of the apparatus of Fig. 6;

Fig. 8 is a side elevational view of the apparatus of Fig. 6, as seen from the side opposite Fig. 7;

Fig. 9 is a top plan view of the apparatus shown in Fig. 6; and

Fig. 10 is a schematic wiring diagram for the control system employed with the apparatus in Fig. 6.

In Fig. 1 the cabinet 1 is constructed of suitable sheet material and includes a base 2, side walls 3 and 4, rear wall panel 5 and a front wall panel 6. The front wall 6 is formed with an opening 7 adapted to be closed by a pull out door 8 having the operating handle or knob 9. The cabinet has a top T which, with the rear wall 5 of the cabinet (Fig. 2), is removable for access to the apparatus and other parts to be described hereinafter. The side wall 4 of the cabinet (Figs. 1 and 2) is suitably apertured to permit the exterior location of a pair of operating cranks 10 and 11, the crank 10 operating the usual container clamping and puncturing means, and the crank 11 operating the can lid severing means to be later described.

The base 2 (Figs. 2 and 3) for cabinet 1 supports a frame 12 including the spaced uprights 13 and a bridge member 14 by which the apparatus is supported. A collar bracket 15 on the member 14 is provided to adjustably support the stem 16 of a can opener device 17 having the usual knurled feed wheel 18 and the cutting wheel 19. The can opener device 17, per se, is of known construction and its internal mechanism is not per se a part of this invention. It will be sufficient, however, to understand that the knurled wheel 18 is shifted toward and away from the cutting wheel 19 by rotating drive shaft 20 through crank 10 in the proper direction to engage the knurled wheel 18 under the container rim and raise the container into the cutting wheel 19 for the initial lid puncturing action. Thereafter, the knurled wheel 18 is driven or rotated through the drive shaft 12 which is connected to shaft 22 and crank 11 by a suitable universal 23. Shaft 22 is supported near its inner end in a bracket 24 fixed to bridge member 14.

It has been pointed out that the can opening device 17 is adjustably mounted on a stem 16 so that the device 17 may be adjusted in a generally vertical direction relative to the collar bracket 15 and, hence, the location of the can opener device 17 can be adjusted to take care of manufacturing tolerances in the location of the access opening 7 in the front wall of the cabinet 1. A pair of brackets 26 connected (one on each side) to the stem 16 support a slide frame for a food can holding slide and cooperating mechanism. This assembly (Fig. 3) includes a pair of angle members 27 which are arranged in facing relation to form a slideway for a push-pull type tray 28. The members 27 are held in fixed relation by a suitable frame, including legs 29 and a cross connecting piece 30. The frame parts 29 and 30 extend downwardly in the relative arrangement shown in Fig. 3 so that an opening is provided below the position occupied by the slide tray 28 to receive front and rear spaced bearings 31 (Fig. 4) attached to angle brackets 32. The bearings 31

carry a shaft 33 on which the control knob 9, as previously pointed out, is secured. The bearings 31 and the shaft 33 are connected to the underside of the tray 28 by brackets 32, as is indicated in Fig. 4. Shaft 33 supports a cam 34 disposed between the bearings 31, such cam being operative upon rotation of knob 9 to engage a cam follower 35 which is, in turn, slidably operative in a follower guide sleeve 36 fixed to the underside of the tray 28. The upper end of follower 35 carries a can supporting and elevating platform 37 (see Fig. 5). The platform 37 is located within tray 28 near the front portion thereof and in a position adjacent the can opening device 17 when the tray is in its inner position as shown in Fig. 4.

The tray 28 is provided with a suitable can positioning and holder frame 38. This frame is fixed within the tray to partly surround the movable platform 37, and is adapted to hold the container to be opened in proper position during in and out movement of the tray 28. Frame 38 also guides the container during the raising and lowering thereof through action of the platform 37 under control of external knob 9.

One of the side angle members 27 of the slideway for the tray 28 is provided with a suitable post 40 located by a bracket 41 (Fig. 4) at the side of the adjacent member 27 which is opposite to the can opener device 17. The post 40 extends in a generally vertical direction and supports at its upper end an outrigger frame 42 (Figs. 3 and 5) which includes a pair of arms 42*a* arranged in spaced relation and directed angularly toward the tray 28. Each of the arms 42*a* has a free end provided with a one way, free hanging, flipper element 43 as clearly shown in Figs. 4 and 5. The arms 42*a* and pivoted flipper elements 43 operate to trap the container lids which have been completely removed by the can opener device 17 and subsequently eject such lids from the area where the frame 38 locates other containers.

In order that the elements 43 may trap and eject can lids while assuming a relatively fixed position with respect to the frame 38 and tray 28, a magnetic lid retrieving means 44 is carried by a controllable supporting arm 45 having a vertical shaft 46 suitably supported in the post 40. The arm 45 is adapted to swing the magnetic lid retrieving element 44 clockwise from the position above the platform 37 to a position between and slightly above the arms 42*a* of the lid ejector (see Fig. 5). The magnet element 44 is initially adjusted so that the lid magnetically held thereby is caused to move to a position below the arms 42*a* while the element 44 moves between these arms, and in so doing the lid causes the flipper elements 43 to pivot inwardly, in the direction of lid movement, until the lid has assumed a position free of the flippers, whereupon the flippers return by gravity to their normal hanging position. The flippers are prevented from pivoting outwardly by means of the arms 43*a* which prevent this action.

The lid retriever 44 removes the severed container lid from the area adjacent the can opener device 17 so that there is no interference with the next operation which involves discharging a suitable sanitizing fluid upon the device 17. The removing, trapping and ejecting operation of the lid is subject to movement of the tray 28 outwardly to expose the opened container for removal and then movement inwardly to dispose the cabinet pull-out door over opening 7. Swinging movement of the supporting arm 45 is obtained in timed relation with the in and out longitudinal displacement of the tray 28 by the provision of an operating arm 47 (Figs. 4 and 5) formed on the lower end of the vertical shaft 46. The arm 47 is suitably formed and directed to extend below the tray 28 where it passes between a pair of pins 48 carried by the tray and which trap the arm 47 and cause it to swing in response to movement of the tray. A stop pin 49 is also provided at the rearward end of the tray 28 to prevent complete removal of the tray 28 except for servicing operations.

Referring to Figs. 3 and 4, the apparatus is seen to include a waste collecting receptacle 50 located below the slide tray 28, with a suitable waste chute 51 disposed thereabove to direct container lids and the sanitizing fluid into the receptacle. A fluid reservoir 52 is located adjacent the receptacle 50, but separated by a suitable wall 53. A heater unit 54 supports reservoir 52 and a control 55 is provided for the heater unit.

The fluid spraying system, as seen in Figs. 3 and 4, includes a suction conduit 56 extending to the intake valve 57 of a pump 58. The pump is of known type, having a diaphragm or equivalent flexible means (not shown) for exerting the pumping action required to force fluid from the intake 57 through the discharge valve 59 to a conduit 60 and a nozzle 61 directed at the cutting wheel 19 and feed wheel 18. The pump 58 is provided with an operating member 62 which oscillates in one direction by a suitable spring (not shown) upon the pumping discharge stroke (dotted position in Fig. 4). The cocked position of the member 62 is obtained by the reset finger 63 carried on the inner end of the tray 28. Since the tray 28 has a push-pull motion, the member 62 is caused to follow the finger 63 to a position (full line) where the hook 64 engages the pin 65 to hold member 62 in cocked position with the pump chamber filled and ready to be discharged. The can holder 38 (Figs. 3 and 4) has a pump trigger 66 on its side wall, with an inner element 66*a* which is displaced by a can to extend the normally heavier trigger 66 to a position where it strikes the release arm 64*a* of the hook 64 and knocks the hook off of pin 65.

Operation of the apparatus shown in Figs. 2, 3, 4, and 5 is obtained in the following manner: The knob 9 on shaft 33 is pulled outwardly (dotted outline in Fig. 2) to withdraw the closure 8 and open aperture 7, whereupon the slide tray 28 is drawn out to expose the container holder 38. A container is placed in the holder 38 upon the elevating platform 37 and the tray is returned to its in position (Fig. 4) by a return spring 67. Knob 9 is next rotated (clockwise as seen in Fig. 1) to raise the container into the opener device 17 so the lip engages the feed wheel 18. Obviously the crank 10 must be operated to lower the wheel 18 to accept the container lip and must then be reversely operated to perform the initial puncturing of the container. Thereafter the crank 11 is operated to drive the wheel 18 for severing the lid of the container. During the first out and in movement of the slide tray 28, the pump 58 is charged with fluid due to the member 62 being moved into its full line position of Fig. 4 where it is held by hook 64 under the action of the spring 64*b*. As the lid is severed, it is retrieved by the magnet 44 and lifted slightly above the container. The platform 37 is then lowered by turning knob 9 reversely to the previous direction and the tray is again pulled out to remove the now open container. Removal of the can allows the trigger 66 to rise to set position so that return of the empty tray, under the tension of spring 67, operates the hook 64 and, hence, releases cocked arm 62 so that the pump 58 forcibly discharges fluid from nozzle 61. This operation of the pump 58 is timed to take place as the aperture 7 is closed so that the fluid cannot splash outwardly and is kept within the cabinet to drain down through chute 51 to the waste receptacle 50.

During the outward travel of tray 28 for removal of the container the magnet 44 with the severed lid is swung outwardly, with the lid moving under the arms 42*a* and past the flipper elements 43 where the lid will thereby be trapped against return. The magnet 44 fits between arms 42*a* and, as the tray is returned, it will swing away to release the lid. The lid may then drop down into chute 51 and be collected in the receptacle 50.

The embodiment of the apparatus shown in Figs. 6

to 9, inclusive, is adapted to be assembled in cabinet **1** upon the frame **12** therein. It will be, therefore, unnecessary to again describe those parts of the cabinet and frame structure above disclosed, and similar parts will be designated by the same reference numerals. Fig. 10 is the circuit diagram for the apparatus of Fig. 6 and will be described hereinafter.

In Figs. 6 to 9, the can opener **17**, instead of being subject to operation of cranks **10** and **11** as in the apparatus of Fig. 3, is operated by a motor **75** connected to a reduction gear unit **76** which is carried on a base plate **77**. The base plate **77** is spaced from a fixed platform **78** which is carried by the collar **15** on the bridge member **14**. The plate **77** and platform **78** are interengaged by guide posts **79**, such posts **79** being fixed in plate **77** and fitting loosely in suitable guide openings (not shown) in platform **78** so that these parts **77** and **78** are held together, as in Fig. 6, but may shift vertically and rock angularly. The plate **77** has a bearing wall **81** which supports a drive shaft **18***a* from the reduction gear, the shaft being connected to drive the wheel **18** as well as a pinion gear **82** which, in turn, drives an idler pinion gear **83**. Gear **83** rotates a mutilated gear member **84** which at predetermined times pick up a drive gear **85** mounted on an eccentric rotor member (not shown) in the body of the opener **17**. The eccentric carries drive shaft **18***a* and moves it angularly in space so that wheel **18** closes and opens relative to cutter **19**, this action being described in Gundlefinger et al. Patent 2,794,245 issued June 4, 1957. The mutilated gear **84** is so formed that a certain arc of its tooth circle is devoid of gear teeth to permit it to disengage gear **85** during a time when the wheel **18** is lowered to release one can lip and receive the lip of another can. The toothed portion of the arc of the gear **84** is adapted to raise wheel **18** and hold this wheel up for the full circumference of a can and then lower wheel **18** before reaching the mutilated portion. During the lowering of wheel **18** the motion of the eccentric (not shown) causes the motor **75** and unit **76** on the plate **77** to move relative to platform **78**, thereby producing an angular shift in plate **77** which is utilized to open a motor cut off switch **86** (Figs. 8 and 10) later described. The motor drive and the gear drive for the can opener **17** is not, per se, a part of this invention, but its adaption is useful to this apparatus.

In Figs. 7 and 9, the can holder frame **38** is provided with an actuator element **88** pivoted upon the wall thereof with a finger **89** projecting into the frame **38** at about a right angle to element **88**. This angular relation between element **88** and finger **89** is such that when no can is in frame **38** the element **88** will fall and thereby raise the finger **89**, but when a can is placed in frame **38** it will displace finger **89** downwardly against the wall of the frame and raise the element **88**. The elevation and descent of element **88** is accomplished when the slide tray **28** is pulled out to extract an opened can or to insert a can which is to be opened. As the tray **28** returns to its home position (Fig. 7) the element **88** will strike one of two trigger elements **90** or **91** pivotally mounted in a channel-shaped bracket **92** fixed to the bridge **14** rearwardly of the can opener **17**, as seen in Fig. 9. Trigger element **90** actuates a crank arm **93** behind the bracket **92** and the crank arm **93** is connected to a kicker member **94** which has a position adjacent a drag link **95** to be engaged by a cam loop **96** fixed to the lower end portion of drag link **95**. The upper trigger element **91** actuates a crank arm **97** at the rear of bracket **92**, and the arm **97** is connected to the upper end portion of the drag link **95** to raise this link. A wall plate **98** (Figs. 7, 8 and 9) is fixed to the bracket **92** above bridge **14** and is adapted to support a switch **99** in position with its actuating arm **100** adjacent the cam loop **96**.

The bridge **14** supports an angle bracket **101** (Fig. 9) upon which is fixed a solenoid type motor **102** (Figs. 8 and 9). The motor **102** has its armature **103** connected to a pump rod **104** which extends down to a pump **105** (Fig. 7) positioned in a reservoir **106** containing the sterilizing fluid for flushing the operating wheels **18** and **19** of the opener **17**. The pump **105** has a plunger **107** which draws in fluid at intake valve **108** when the rod **104** drops upon deenergization of the motor **102**, and forces it on the up stroke through the supply conduit **109**, by way of an outlet valve (not shown) similar to valve **108**, to the discharge nozzles **110** and **110***a* (Fig. 6) adjacent wheels **18** and **19**. The pump rod **104** carries a bracket **111** below the motor **102** (Fig. 8) and operates links **112**, **112***b* and **112***c* which, in turn actuate a pump control switch arm **112***a*. Specifically, the link **112** moves down upon arm **112***a*, after some lost motion, by reason of its being carried at one end of the rocker link **112***b* pivoted above the solenoid motor **102** (see Fig. 8). The rocker link is actuated by the link **112***c* which is connected to the bracket **111**. Thus, motor operation on its pumping stroke causes positive opening of the switch **99** to complete each pumping operating cycle.

The foregoing apparatus is responsive (see Figs. 7 and 10) to a control cam **113** on the end of the rod **33** which is rotated by knob **9**. Essential portions of the system have been shown schematically in Fig. 10. The rod **33** is normally returned to its off position by a torsion spring **114** (Fig. 7). The control cam **113**, when the tray **28** is in its home position of Fig. 7, is adjacent an angularly related push rod **115** supported beneath the bridge **14** in position to have its remote end **116** (Fig. 9) adjacent a starting switch **117** mounted on a bracket **118** carried by the plate **77** (Fig. 8). The push button **117***a* of this switch **117** is normally aligned with the end **116** of the push rod **115**, especially when the motor **75** is stopped in position for the can opener **17** to receive a can. At this time the cam **113** can strike abutment **115***a* and actuate push rod **115** to force end **116** to engage the switch button **117***a* and energize the motor **75** to cause one operating cycle of the opener **17**. The motion of plate **77** will cause the switch **117** to shift and lose contact with push rod end **116**, so that it can now move to its normally open position. Motor **75** does not stop because a holding circuit is set up through the stop switch **86** to run the motor unitl the end of the cycle is reached, at which time the normally closed stop switch **84** is opened, thereby cutting off the current to motor **75**.

The operation of the apparatus of Figs. 6 to 9 will now be described, and frequent reference will be made to Fig. 10 wherein a schematic wiring diagram is shown in relation to the operating parts and switches heretofore disclosed. A can to be opened (not shown) is placed in the holder **38** upon the lifting platform **37** after the tray **28** has been pulled out to open position by drawing on control knob **9** attached to shaft **33**. The spring **67** returns tray **28** to the closed position so that turning knob **9** will lift the can into the wheels **18** and **19**. At the same time, the cam **113** on shaft **33** engages the abutment **115***a* on the push rod **115** and moves this rod into the push button **117***a* of switch **117** which starts motor **75**. The electrical power for motor **75** is obtained from a suitable source **122** which is connected to three jack plugs **123**, **124**, and **125** mounted on a plug board **126** in the cabinet. The plug **124** has lead **127** connected to motor **75** and lead **128** connected to a terminal **129** on switch **117**. The other side of motor **75** has a lead **130** connected to a terminal **131** on switch **117**. Thus when normally open switch **117** is closed the motor **75** will operate, but due to the motion of the motor and plate **77**, the switch button **117***a* will lose contact with the end **116** of push rod **115** and drop out switch **117** to thereby open the circuit. The resulting drop out of switch **117** does not stop motor operation, but it runs to complete its established cycle

because the same motion of plate **77** is utilized to close the normally open motor cut-off switch **86** and set up a motor holding circuit around switch **117** through leads **132** and **133** connected to terminals **129** and **131** respectively. The switch **86** is mounted on fixed platform **78** and has its button **86***a* actuated by an adjustable striker **120** on the movable plate **77**. Upon completion of the motor operating cycle to sever the can lid and move wheel **18** away to release the can, the plate **77** will move the striker **120** to engage and open switch **86**, thus stopping the motor. However, since switch button **117***a* has lost contact with the end **116** of push rod **115**, it will not reengage until the cam **113** has been withdrawn from its position in Fig. 10, as by opening tray **28**, to allow the push rod to clear the switch **117** and take up its normal actuating position.

The cabinet may be provided with a suitable light **135** wired into jack plug **125** at board **126**. Also, the pump solenoid **102** is wired into jack plug **123** by leads **136** and **137**. The lead **137** includes the control switch **99**.

When a can is first placed in the holder **38** it depresses finger **89** which elevates the element **88** into a position to strike trigger **91** which operates the crank arm **97** to lift drag link **95** and the cam loop **96** to a position in front of the switch **99**. Nothing happens to the pump motor **102** at this time, since the arm **97** has merely elevated or cocked the cam loop **96** to a position adjacent switch **99** where it can be effective at a later time. Removal of the can from holder **38** will allow finger **89** to rise as the element **88** falls into a position to strike trigger **90**. Return to home position of the tray **28** will now allow element **88** to effect operation of element **90** and movement of its crank arm **93** to cause kicker member **94** to hit the cam **96** and close switch **99**. This action gives the solenoid **102** an impulse to drive a squirt of fluid from nozzles **110** and **110***a*. The motion of rod **104** actuates the pump **105** and also actuates a switch cut-out link **112** which moves down on link **112***a* to return the cam loop **96** to its down position, thereby releasing switch **99**. This completes a cycle in which a can lid is severed, the can is removed and the can opener wheels **18** and **19** are squirted down with sanitizing fluid from nozzles **110** and **110***a*.

The trigger elements **90** and **91**, together with element **88**, effectively guard the apparatus so that it will not squirt fluid into an open can, since a second can if put into the holder **38** while the tray is held open from the previous can opening operation will position member **88** to miss trigger element **90** which operates the pump switch **99**. Trigger **90** is the one element which actually sets off the pump solenoid **102** and this will function only if the tray **28** is allowed to close without a can in the holder **38** so that member **88** is in its lowered attitude to abut trigger **90**.

The foregoing description has been given in connection with certain preferred examples of this invention, and the details of the description for these examples is not to be understood to limit the scope of the improvements or restricted the same to the exact components thereof. Variations in arrangement and equivalent components are to be considered in the scope of the present invention, so far as the same is within the spirit of the annexed claims.

What is claimed is:

1. Apparatus for opening sealed food cans comprising, a can opener device, a support for the cans movable to a position adjacent the can opener and to a position away from the can opener so a sealed can may be placed upon the support for opening and thereafter removed from the support, fluid discharge means adjacent the can opener, pressure supply means connected to said discharge means to supply sanitizing fluid upon the can opener, operating lever means disposed between said pressure supply means and said support and responsive to said support reaching its position adjacent the can opener to render said pressure supply means opeartive to supply sanitizing fluid, can lid retrieving means disposed adjacent the can opener and operatively connected to said support to move a can lid from a previous can away from the can opener upon said support moving to its first named position, and means to urge said support into said first named position to cause operation of said pressure supply means to sanitize the can opener.

2. Apparatus for opening sealed food cans and for rendering the opening device sanitary comprising a cabinet having an access opening, a can supporting means movable through said cabinet opening between an interior and an exterior position, a can opener in said cabinet adjacent the interior position of said supporting means to receive and open a can, a can lid retriever movably mounted adjacent said can opener, an operating connection between said support means and said lid retriever to cause the latter to move away from said can opener taking a retrieved lid with it, and a sanitizing system for said can opener including a discharge device directed upon said can opener, pressure generating means connected to said device, and operation initiating means in said system responsive to movement of said support means to its interior position to cause operation of said generating means.

3. Apparatus for opening sealed food cans and for rendering the opening device sanitary comprising a cabinet having an access opening, can supporting means movable through said access door from a normal position interiorly of said cabinet to an exterior can receiving position, fluid discharging means in said cabinet arranged and adapted to spray a sanitizing fluid, a can opener in said cabinet located in the path of the fluid spray and adjacent the interior position of said supporting means, and means on said supporting means effective in said normal interior position thereof to initiate operation of said fluid discharging means.

4. Apparatus for opening sealed food cans and for rendering the apparatus sanitary comprising an enclosure having an access opening, can supporting means movable through said access opening from a normal inner position to an outer can receiving position, panel means on said supporting means adapted to close the access opening in the normal inner position thereof, a can opener adjacent the normal inner position of said supporting means, means connected to said can opener to effect operation thereof, and a fluid spray system in said enclosure adapted to sanitize said can opener including a pump and other means on said supporting means to initiate pump operation.

5. Apparatus for opening closed containers, including an opener device having a cutting wheel and a feed wheel cooperatively disposed to puncture and sever the container closure; means operatively connected to said opener device to actuate said cutting and feed wheels; a sanitizing system for said opener device having a source of sanitizing fluid and a pump adapted to transfer the fluid from said source to said opener device to sanitize the latter; and control means to regulate the operation of said pump, said control means comprising an element adjacent said opener device to detect the presence of a container to be opened, said element assuming a first position in the presence of a container and a second position upon withdrawal of a container, and actuator means operatively connected to said pump to effect its operation, said actuator means being operated by said element when in its second position.

6. Apparatus for opening closed containers, including an opener device having cooperatively disposed cutting and feed wheels adapted to puncture and sever the container closure; means operatively connected to said opener device to actuate said cutting and feed wheels; a fluid spray system for sanitizing said opener device including a pump

for moving fluid from a source thereof to a spray nozzle adjacent said opener device; and controllable means to operate said pump comprising a pump motor, a normally open motor start switch, an actuator for said switch and a control element adjacent said opener device to detect the presence of a container to be opened in a first position and to detect the absence of a container in a second position, said element in said second position being adapted to engage said actuator for said normally open start switch.

7. Apparatus for sanitizing food container lid opening devices, said apparatus including movable means adapted to support a container in opening position, an element pivoted upon said support to move out of a first position in response to the placement of a container in opening position on said support and assume a second position, said element moving with said support, container opening means adjacent said movable support, a fluid pump, conduit means connected to said pump and extending to said opening means, and pump operation initiating means movably positioned adjacent said movable support to lie in the path of movement of said element with said element in said second position.

8. The apparatus set forth in claim 7, wherein the apparatus also includes a movable magnetic container lid holding member, mechanism operably connected to said magnetic lid holding member and to said movable support to swing said magnetic lid holding member away from said opening means with movement of said support and said element to said second position, and means to remove a lid from said member at the latter position.

9. Apparatus for sanitizing container lid opening devices comprising, in combination, a frame; a container supporting slide movable on said frame between an open position, selectively to receive an unopened container and to discharge an opened container, and a home position, selectively empty and holding a container to be opened; an opener device on said frame near said supporting slide in its home position to engage a container held therein and open the same; a system supplying sanitizing fluid upon said opener device including a fluid pump and a conduit connected to said pump and having a nozzle directed toward said opener device to deliver fluid thereon supplied by said fluid pump; and means to control the operation of said fluid pump consisting of a member operatively mounted on said supporting slide to move into a pump triggering position with said supporting slide in its selective home position and empty of a container, and a trigger movable to initiate pump operation in response to engagement thereof by said triggering member, whereby sanitizing fluid is delivered by said nozzle upon said opener device with said supporting slide empty of a container.

10. The apparatus set forth in claim 9, wherein a cabinet encloses said apparatus, said cabinet having an opening through which said container supporting slide moves between said open position and said home position, and a closure door for said cabinet opening is mounted on said container supporting slide to close said cabinet in opening in said home position of the supporting slide and prevent fluid spray outside said cabinet.

11. The apparatus set forth in claim 9, wherein said fluid pump has an operating lever movable between a pump charged position and a pump discharged position, a detent on said lever engageable by said trigger in said pump charged position, and an element on said supporting slide engageable with said lever to operate said lever into said pump charged position to effect engagement of said detent by said trigger.

12. Apparatus for opening sealed containers comprising a frame, a container opener device on said frame, a container supporting slide movable on said frame adjacent said opener device, a container lifting and lowering support member carried by said slide to lift a container into said opener device and lower the container upon opening of the same, a control shaft rotatable on said supporting slide, a cam on said shaft to lift and lower said support member upon shaft rotation of said cam, electrical motor means operatively connected to drive said opener device through a container opening cycle, said motor means being mounted on said frame for relative shifting movement from a home position through said opening cycle and back to said home position, a source of electrical power connected to said motor means, first and second normally open switches in said electrical power connections, an operating element on said motor means to shift therewith and close one of said switches to hold power on said motor means during said opening cycle and to open said one switch in said home position of said motor means, and an operating member responsive to said control shaft lifting a container into said opener device to close said second switch and start said motor means, said operating member breaking contact with said second switch upon relative shifting of said motor means, whereby said first switch alone supplies electrical power to said motor means for said container opening cycle.

13. The apparatus set forth in claim 12, including a container lid retrieving device operatively swingably carried by said frame adjacent said opener device, a container lid discharge device on said frame spaced from said retrieving device, and operating means connected between said retrieving device and said supporting slide in one direction to swing said retriever device into said discharge device and to swing said retriever device in the opposite direction toward said opener device, said discharge device retaining the container lid for discharge by gravity and to clear the area adjacent said opener device for subsequent opening operation.

14. The apparatus set forth in claim 13, wherein said lid retaining device includes a magnetic element, and said lid discharge device includes a detent finger operatively movable in one direction in response to engagement by a lid held by said magnetic element and movable by gravity in an opposite direction to prevent lid movement with return movement of said magnetic element.

No references cited.