Aug. 18, 1953 W. E. MOORE 2,649,347

CABINET MODEL CAN OPENER

Filed Aug. 24, 1950 2 Sheets-Sheet 1

FIG. 1.

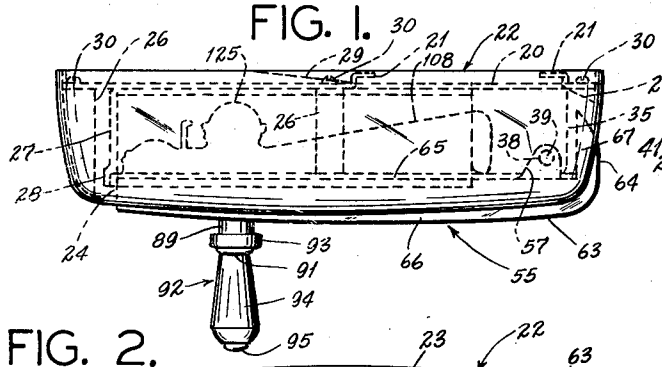


FIG. 7.

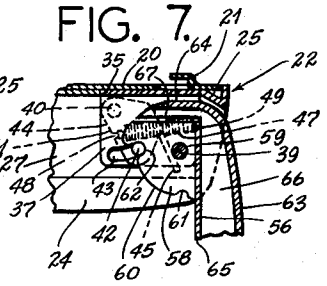


FIG. 2.

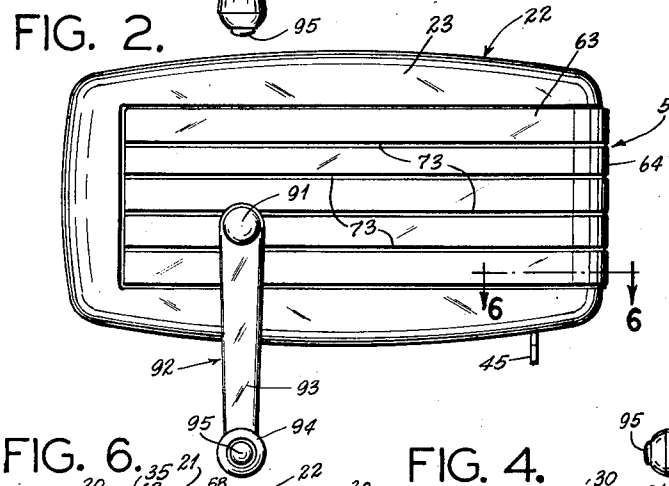


FIG. 3.

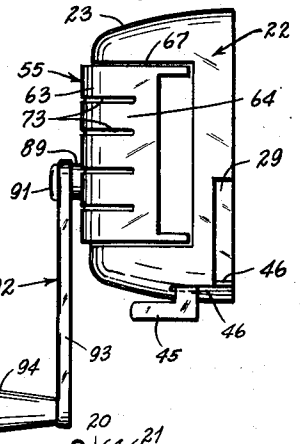


FIG. 6.

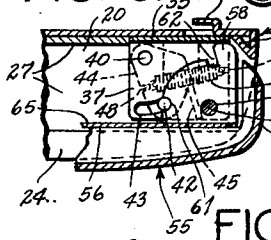


FIG. 4.

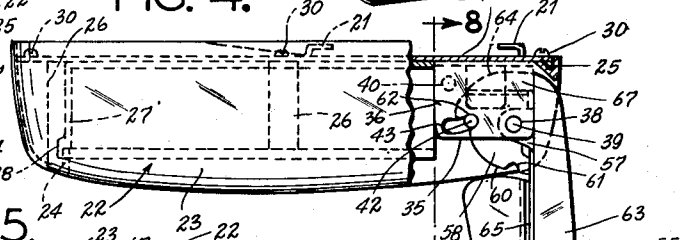
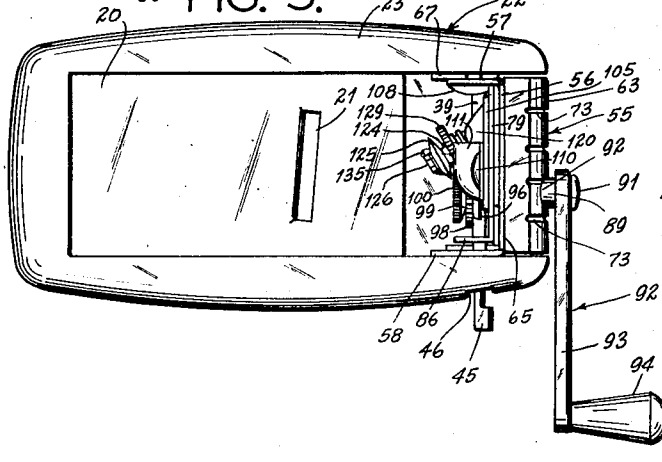


FIG. 5.



INVENTOR:
WALTER E. MOORE,
BY Kingsland, Rogers & Egell
ATTORNEYS

Aug. 18, 1953 W. E. MOORE 2,649,347

CABINET MODEL CAN OPENER

Filed Aug. 24, 1950 2 Sheets-Sheet 2

FIG. 8.

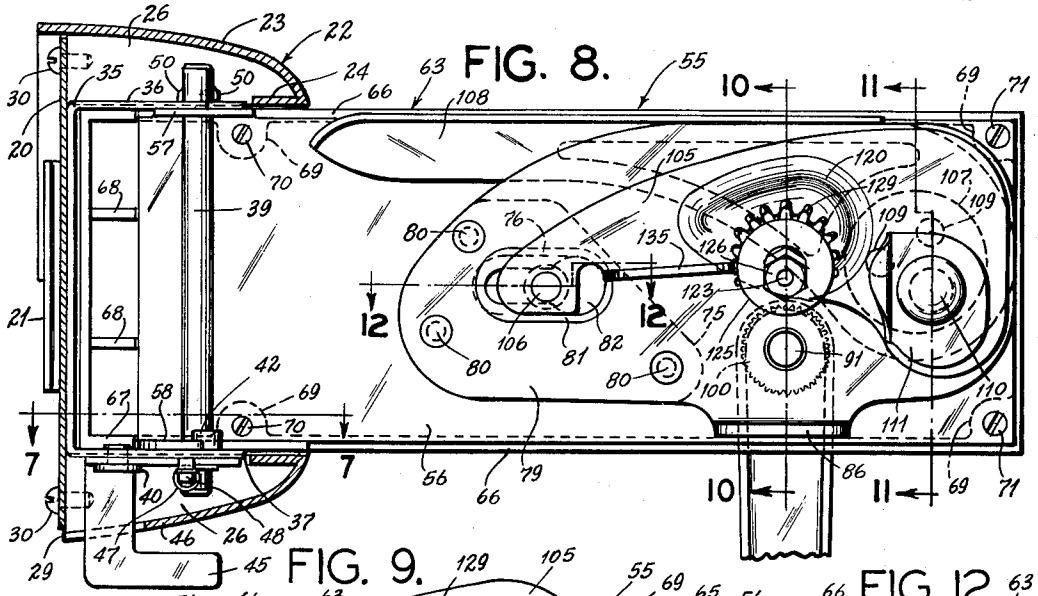


FIG. 9.

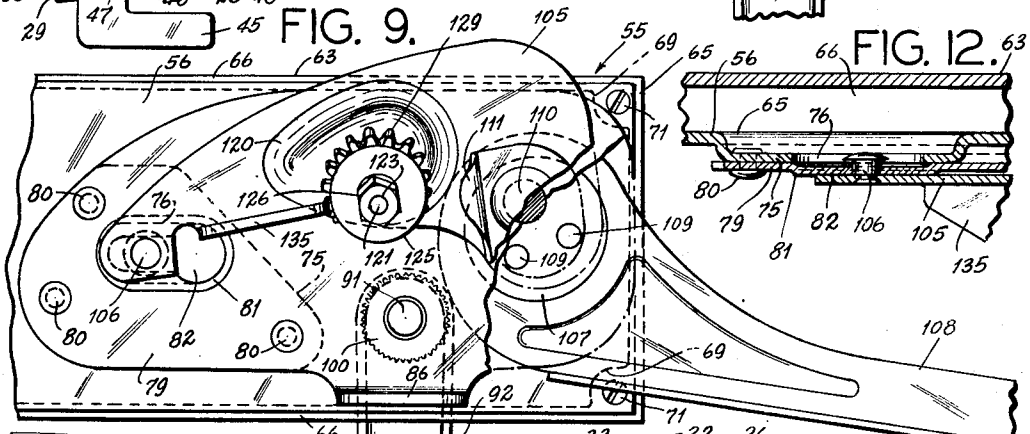


FIG. 12.

FIG. 10.

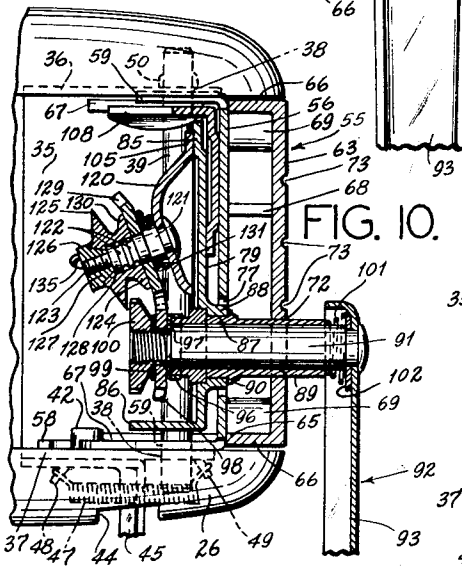
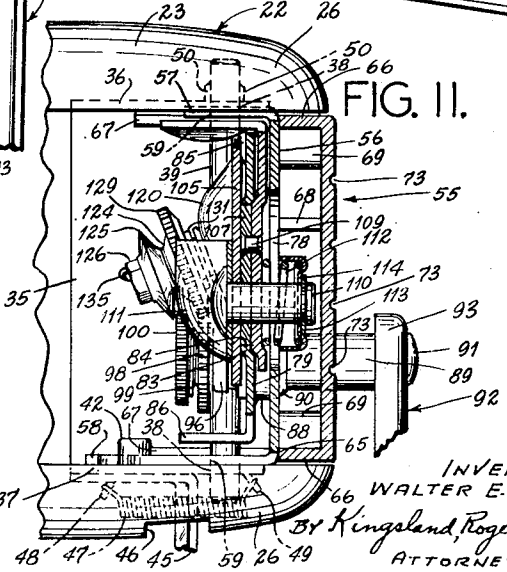


FIG. 11.



INVENTOR:
WALTER E. MOORE,
BY Kingsland, Rogers & Ezell
ATTORNEYS.

Patented Aug. 18, 1953

2,649,347

UNITED STATES PATENT OFFICE

2,649,347

CABINET MODEL CAN OPENER

Walter E. Moore, Bel Nor, Mo., assignor to Swing-A-Way Manufacturing Company, St. Louis, Mo., a corporation of Missouri

Application August 24, 1950, Serial No. 181,121

8 Claims. (Cl. 312—22)

1

The present invention relates generally to can openers, and more particularly to a cabinet can opener.

Can openers are practically indispensable in the modern kitchen. Moreover, the frequency of use in most kitchens is such as to require their availability for substantially instant use if unnecessary inconvenience and annoyance are to be avoided. Although this requirement of availability for immediate use has long since been overcome by the development of can openers adapted to wall attachment, the construction, being primarily functional, has left much to be desired in aesthetic appeal.

It is, therefore, an object of the present invention to provide a styled cabinet for a wall type can opener, said cabinet to enclose and conceal substantially all of the can opening mechanism while not in use.

Another object of the invention is to provide a can opener cabinet that, during intervals of nonuse, will afford protection from dust and dirt for all parts of the can opener that might come in contact with food during use.

Another object of the invention is to provide a can opener cabinet which is an integral part of the can opener construction, thus to simplify the action of alternately using and storing the can opener.

Another object of the invention is to provide a can opener cabinet integral with a wall type can opener so arranged as to permit instant use and subsequent instant storage of the can opener.

Another object of the invention is to provide a can opener housing integral with a wall type can opener, the housing being of molded plastic material and all structural and load-bearing elements being of metal.

Another object of the invention is to provide a cabinet model can opener constructed so that the act of opening the door of the cabinet simultaneously positions and locks the can opener for use.

Another object of the invention is to provide, in combination, a can opener and a can opener cabinet having the advantages enumerated above.

Another object of the invention is to provide, in combination, a can opener and a can opener cabinet adaptable to mountable and demountable attachment as a unit to a wall.

These and numerous other objects and advantages will become evident in the following descriptive delineation of construction and operation of the device.

2

In the drawings:

Fig. 1 is a top plan view of a can opener cabinet with an integral can opener in closed or stored position;

Fig. 2 is a front elevation thereof;

Fig. 3 is an end elevation thereof, showing the hinge end of the closed cabinet;

Fig. 4 is a top plan view thereof, showing the cabinet in open or operating position;

Fig. 5 is a front elevation of the open cabinet with liner removed;

Fig. 6 is a fragmentary horizontal section through the hinge end of the closed cabinet taken along the line 6—6 of Fig. 2;

Fig. 7 is a fragmentary horizontal section through the hinge end of the open cabinet taken along the line 7—7 of Fig. 8;

Fig. 8 is an enlarged vertical section through the open cabinet taken along the line 8—8 of Fig. 4, can opener parts being in cutting positions and a portion of the can opener crank being broken away to conserve space;

Fig. 9 is a fragmentary vertical elevation of the open door and integral can opener, the can opener being in position to receive a can, portions of parts being broken away either to reveal details of construction or to conserve space;

Fig. 10 is a vertical section through the open cabinet door and integral can opener taken along the line 10—10 of Fig. 8, portions of the cabinet and of the trigger release being broken away to conserve space;

Fig. 11 is a vertical section through the open cabinet door and integral can opener taken along the line 11—11 of Fig. 8, portions of the cabinet and trigger release being broken away to conserve space; and

Fig. 12 is a fragmentary horizontal section through the cabinet door and integral can opener taken along the line 12—12 of Fig. 8.

Referring to the drawings more particularly by reference numerals, 20 indicates a metal backplate providing the principal structural support for the can opener cabinet and providing, in addition, means such as the angular deformities 21 for demountable attachment to a trapezoidal wall plate (not shown). A styled housing, shown generally as 22, preferably of molded plastic material, includes an outer shell 23, an inturned inner flange 24 extending continuously around the front opening except for the hinge end, thereby forming a door jamb, an acute angled flange 25 extending across the hinge end, and buttresses 26 at the corners and at points intermediate along the upper and lower sides of

the shell and on the inside thereof. A liner 27, preferably of molded plastic material, may be assembled within the housing 22 to improve the appearance of the interior of the cabinet. This liner 27 is shaped like an open rectangular box with one end removed and has a beaded front edge 28 rabbeted to join smoothly and evenly with the housing flange 24. The liner 27 is retained in place by the flange 24 and the back plate 20, the latter being secured to the buttresses 26 by means of screws 30. Lengthwise movement of the liner 27 is additionally restrained by abutment of the beaded edge 28 against the buttresses 26. Attachment of the backplate 20 to the buttresses 26 enables the housing shell 23 to extend rearwardly beyond the backplate so as to permit substantially flush abutment of the shell 23 with a kitchen wall (not shown), except for a portion of the rear edge of the shell which is cut back as shown at 29 to allow mounting engagement of the backplate deformitites 21 with a trapezoidal wall plate (not shown) as aforementioned.

A hinge bracket 35 secured to the backplate 20 as by spot welding has an upper flange 36 and a lower flange 37, each flange having a hole 38 vertically aligned one to the other for insertion of a hinge pin 39 having near the upper end thereof deformities 50 for retention in said holes. In addition, the lower flange 37 has attached thereto, as by a pivot pin 40, a trigger release 41 rotatable in a plane parallel to the flange and about the pivot pin 40, being limited in its rotative motion, however, by a lock pin 42 secured, as by riveting, to the trigger release 41 and by projecting upward therefrom through a slot 43 in said lower flange 37. The trigger release 41 includes a plate 44 disposed horizontally against the lower face of the flange 37, through which plate passes the pivot pin 40 and to which plate is riveted the lock pin 42 and a depending L-shaped trigger 45 which extends through and below an open ended slot 46 in the lower part of the housing shell 23 to permit manual rotation of the trigger release within the limits imposed. The trigger release 41 is continuously urged in its limited rotative motion in a direction generally toward the hinge pin by the action of a tension spring 47 attached at its one end to a deformity 48 depending from the plate 44 and at its other end to a deformity 49 depending from the flange 37.

A door assembly shown generally as 55 is rotatably retained by the hinge pin 39 and includes as its principal structural member a door plate 56 having an upper flange 57 and a lower flange 58, each flange having a hole 59 vertically aligned one to the other through which holes the hinge pin 39 passes. In addition, the lower flange has a portion of its edge shaped to form a circular arc 60, said arc having its center on the axis of the hole 59 in said lower flange. The arc 60 terminates at its one end in a detention notch 61 and at its other end in a locking notch 62. A styled door 63, preferably of molded plastic material, is formed as an open shallow rectangular box except for the hinge end 64 which is extended beyond the open face 65 of the box, the long sides 66 of the box being also continued as flanges 67 to the extended end and terminating therebeyond. Gussets 68 lend structural support to the hinge end 64 and buttresses 69 at the corners of the swinging end and at points along the long sides 66 near the hinge end serve to attach the door to the door plate by means of roundhead screws 70 and countersunk screws 71. The door 63 has a hole 72 for a purpose to appear and may, in addition, have styling grooves 73 for improved appearance.

The door plate 56, in addition to serving as the principal structural member of the door assembly 55, serves also as a supporting frame for a can opening mechanism. For this purpose, the door plate 56 has an impressed boss 75 of irregular contour and extending in a direction away from the door 63, said boss containing an elongated opening or slot 76. Additionally, the door plate 56 has a hole 77 as shown in Fig. 10 and a hole 78 as shown in Fig. 11 for respective purposes to appear. A body 79 is secured to the boss 75, as by rivets 80, and has an impressed boss 81 of elongated shape and containing an irregular opening 82 in the shape of a round hole with a slot extending horizontally therefrom. Additionally, the body 79 has an impressed circular boss 83 containing a hole 84, as shown in Fig. 11, a subtended circular boss 85, a can engaging flange 86, and a hole 87 formed through a flange 88, the flange 88 being formed from the parent metal of the body by a deforming operation. The hole 87 has a bushing 89 pressed therein, the bushing being further secured by a turned back shoulder 90. The bushing 89 extends also through the hole 77 in the plate 56 and the hole 72 in the door 63 and contains a shaft 91 upon one end of which is mounted a crank shown generally as 92. The crank 92 ineludes a formed arm 93 and a roller type handle 94 attached to the free end of the arm 93 by means of a pin 95. The pivot end of the arm 93 is secured to the shaft 91 by pressing thereon. At the other end of the shaft 91 is mounted a cup washer 96 which abuts a shoulder 97 on the shaft 91, a gear 98, a flat washer 99, and a feed wheel 100, the latter being internally threaded for attachment to a reduced threaded portion of the shaft 91 and thus retaining all members mounted at this end of the shaft against the shoulder 97. A conical compression spring 101 bears at one end against the end of the bushing 89 and at the other end against a bearing plate 102 contiguous to the arm 93 and thus continuously urges the shaft 91 and all elements assembled thereon to the right as shown in Fig. 10 until the cup washer 96 bears continuously against the end of the bushing 89. It is obvious that rotation of the crank 92 will cause rotation of the shaft 91 and all elements assembled thereon including the gear 98 and the feed wheel 100, the latter of which has a milled or serrated edge adapted to be disposed under the rim of a can to be opened.

A carrier 105 slidably engages the bosses 81, 83 and 85 of the body 79 and is slidably attached to the body at one end by the engagement of a pin 106 in the slotted portion of the opening 82 in the boss 81, as shown in Fig. 12. The other end of the carrier 105 is pivotally mounted on the perimeter of a disc 107 supported in the hole 84 contained in the boss 83 of the body 79. The disc 107 is rotated by a handle 108 to which it is secured, as by rivets 109. The handle 108 with the attached disc 107 is pivotally mounted to the carrier 105 by means of a pin 110, said pin being disposed eccentrically with respect to the center of the disc 107 and extending through the hole 78 in the door plate 56, said hole being sufficiently large as to clear the pin and associated members as the handle 108 is rotated. The head end of the pin 110 mounts a can engaging deflector bracket 111 on the face of the carrier 105, the pin being pressed into the latter two members

and retained at its other end by the action of a compression spring 112 acting between the handle 108 and a cup-shaped spring washer 113 retained by a slotted washer 114 as shown in Fig. 11. The spring 112 thus causes the carrier to be urged against the bosses 83 and 85 of the body 79, as shown in Fig. 11, but at the same time permits this end of the carrier to be separated from the body 79 by the application of a force sufficient to overcome the spring action.

The carrier 105 has an outwardly stamped bulge 120, upon which is mounted a stud shaft 121 having grease grooves 122 and at its outer end a reduced threaded portion 123, said stud shaft being disposed in a downwardly inclined direction due to the shape of the bulge 120. A hub 124, having a cutting disc 125 is rotatably mounted on the stud shaft 121 and is retained thereon by a nut 126 having a frusto-conical body 127 adapted to fit within a similarly shaped recess in the hub and to abut a shoulder 128 on the stud shaft 121, as shown in Fig. 10. A gear 129 is mounted on the hub 124, being in driving engagement therewith by means of matching flats on the periphery of the hub and on the hole of the gear, but at the same time being capable of some angular movement relative thereto due to the loose engagement of the flats. The gear abuts a flange 130 on the hub 124 and a conical compression spring 131 acts against the gear so as to urge said gear and the hub 124 towards the outer end of the stud shaft 121, but permitting axial movement of the gear 129 on the hub 124.

The carrier 105 also has a ledge 135 adapted to overlie a can.

Operation

With the device mounted flush against a wall as aforementioned, the door assembly 55 with its attached can opening mechanism is retained in its closed position by the engagement of the lock pin 42 with the detention notch 61. When it is desired to use the can opener, it is only necessary to grasp the crank 92 and swing the door open to a position at right angles to the cabinet which will cause the lock pin 42 to engage with the locking notch 62 and thus to hold the door firmly in open position. When it is desired subsequently to close the door, the lock pin 42 is disengaged from the locking notch 62 by rotating the trigger 45 against the action of the spring 47 which, due to the rotating movement of the locking pin against the side of the locking notch, causes the locking pin to move the door so that the locking pin will rest at the locking notch end of the circular arc 60, from which position the door may be swung to its closed position with the same hand used to operate the trigger.

To open a can, the door assembly 55 is placed in open position and the handle 108 is rotated forwardly to the position of Fig. 9. The latter motion, by virtue of the eccentric attachment of the carrier 105 to the disc 107, lifts the outer end of the carrier causing separation of the gear 129 from the gear 98 and also separation of the cutting disc 125 from the feed wheel 100. Thereupon, the rim of a can may be inserted in the space between the cutting disc 125 and the feed wheel 100 so that the rim overlies the feed wheel 100 and the side of the can rests against the edge of the flange 86. The handle 108 is then rotated to its closed position during which process the carrier 105 is lowered and the cutting disc 125 is forced downward to penetrate the lid of the can just inside the rim. The action of the spring 112, while permitting sufficient lateral movement of the carrier 105 to provide space for the wall of the can between the side of the feed wheel 100 and the side of the cutting disc 125, at the same time resists such movement and causes the cutting disc 125 to bear against the inside of the rim of the can. The lid is therefore sheared just inside the rim and the inside of the rim is at the same time pressed and folded neatly and smoothly against the inside of the wall of the can.

The lowering of the carrier 105 also permits the deflector bracket 111 to engage, and the ledge 135 to overlie, the rim of the can so that the can is held and supported firmly in a vertical position. It will be noted that, during its eccentric movement, the carrier 105 both slides and pivots at its rear attachment where the pin 106 engages the slotted opening 82.

The lowering of the carrier 105 also permits the engagement of the gears 98 and 129 so that thereafter, when the crank 92 is rotated, the gear 98 will drive the gear 129, thus causing simultaneous rotation of the cutting disc 125 and the feed wheel 100 at relative speeds determined by the gear ratio. As the crank 92 is rotated, the rotating feed wheel 100 will cause the can to turn on its own axis thus feeding the lid against the rotating cutting disc 125, thereby shearing the lid and smoothing the rim.

When the lid has been partially or completely severed as desired, the can may be released by again lifting the carrier 105. The handle 108 may then be rotated to its closed position and the cabinet door assembly 55 may be closed as above described.

Manifestly, the can opener mechanism and the plastic housing are so related that the entire structural load and operating load are carried by the former and the bracket unit, the plastic elements being carried rather than serving as a support. It is also clear that opening of the door simultaneously positions the can opening mechanism for use and effects locking in place.

It is clear that there has been provided a cabinet can opener which fulfills the objects and advantages sought therefor.

It is to be understood that the foregoing description and the accompanying drawings have been given by way of illustration and example. It is also to be understood that changes in form of the elements, rearrangement of parts, and substitution of equivalent elements, which will be obvious to those skilled in the art, are contemplated as within the scope of the present invention which is limited only by the claims which follow.

What is claimed is:

1. A cabinet mounting for enclosing a can opening mechanism having means for demountable attachment to a wall and including a hinged door, means for retaining the door in its closed position, means for retaining the door in its opened position, said retaining means comprising detent mechanism for locking the door in a position substantially normal to the wall for a can cutting operation and means on said cabinet for releasing the door from the locked position, said door including a deformed plate-like element constituting the supporting frame of a can opening mechanism which is in integral relation with said door element.

2. A demountable wall cabinet mounting for enclosing a can opening mechanism comprising

a load-bearing assembly and a non-load-bearing external housing, said cabinet including a movable door having a main load-bearing element and a non-load-bearing external element, the said load-bearing element of said door constituting also a main frame member for supporting a can opening mechanism, said can opening mechanism being disposed on the inside of said door on said load-bearing element and having an operating crank communicating with said mechanism and extending along the outside of said door so as to occupy the cabinet when the door is in its closed position and so as to be in position for instant use when the door is in its opened position.

3. A mounting for supporting a can opening mechanism comprising a plate assembly having means for demountable attachment to a wall bracket, a door plate hinged to said plate assembly and constituting a principal frame member of a can opening mechanism assembled with the door plate, said can opening mechanism including an operating crank, detent means for holding the door plate in a position substantially parallel to the plate assembly, detent means for locking the door in a position substantially normal to the plate assembly, means for releasing the door from its locked position, a styled housing secured to the plate assembly, thereby to form a cabinet to receive substantially all of the can opening mechanism except the operating crank therefor when the door plate is in the aforesaid position substantially parallel to the plate assembly, a liner for the cabinet thus formed, said liner being for the purpose of improving the appearance of the interior of said cabinet, and a styled door secured to the door plate so as to be movable therewith and thereby to serve as the front exterior panel of the cabinet when the door plate is in the aforesaid position substantially parallel to the plate assembly.

4. A demountable wall cabinet for enclosing a can opener mechanism and adapted to be mounted on a wall bracket, said cabinet including a load-bearing metal backing plate for connection to the wall bracket, a cabinet housing of plastic material for receiving said can opener mechanism secured to said backing plate and being provided with a door opening, a load supporting hinge member secured to said backing plate positioned in said housing, a door swingably mounted on said hinge member from a closed position to an open position normal to the wall, and said door having means on its inside for supporting a can opener mechanism.

5. A demountable wall cabinet for enclosing a can opener mechanism and adapted to be mounted on a wall bracket, said cabinet including a load-bearing metal backing plate for connection to the wall bracket, a cabinet housing of plastic material for receiving said can opener mechanism secured to said backing plate and being provided with a door opening, a load supporting hinge member secured to said backing plate positioned in said housing, a door swingably mounted on said hinge member from a closed position to an open position normal to the wall, which door comprises an inside load supporting member and an outer plastic covering which is adapted to interfit with said housing when the door is closed, and said door having means on its inside for supporting a can opener mechanism on the inner load supporting member with an operating crank connected thereto on the outside of said plastic door covering.

6. A demountable wall cabinet for enclosing a can opener mechanism and adapted to be mounted on a wall bracket, said cabinet including a load bearing metal backing plate for connection to the wall bracket, a cabinet housing of plastic material for receiving said can opener mechanism secured to said backing plate and being provided with a door opening, a load supporting hinge member secured to said backing plate positioned in said housing, a door swingably mounted on said hinge member from a closed position to an open position normal to the wall, said door having means on its inside for supporting a can opener mechanism, and detent means for locking the door in a position substantially normal to the backing plate and means positioned on said housing for releasing the door from its locked position.

7. A cabinet mounting for enclosing a can opening mechanism having means for demountable attachment to a wall and including a hinged door, means for retaining the door in its closed position, means for retaining the door in its opened position, said retaining means comprising detent mechanism for locking the door in a position substantially normal to the wall for a can cutting operation and means on said cabinet for releasing the door from the locked position, said door including a deformed plate-like element constituting the supporting frame of a can opening mechanism, said door having means on its inside for supporting a can opening means assembled in integral relation so as to be substantially enclosed within the cabinet when the door is in its closed position and so as to be in position for instant use when the door is in its opened position, including a trigger biased in the open locked position by a spring which is operable for disengaging said detent mechanism for manual closing of the door.

8. A cabinet mounting adapted for enclosing a can opening mechanism having means for demountable attachment to a wall and including a hinged door for supporting a can opening mechanism, means for retaining the door in its closed position and means for retaining the door in its opened position, said door retaining means including a detent disc formed by a flange on said door and rotatable therewith about the door hinge and having detents therein corresponding to open and closed positions of said door, and a trigger having a detent engaging lock pin normally biased against said detent disc, which pin is disengageable upon actuation of said trigger.

WALTER E. MOORE.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,427,734	McEntire	Sept. 23, 1947
2,510,357	Wilson	June 6, 1950
2,563,569	Walton	Aug. 7, 1951

OTHER REFERENCES

Hardware Age, August 28, 1947, page 27.