

May 3, 1938.

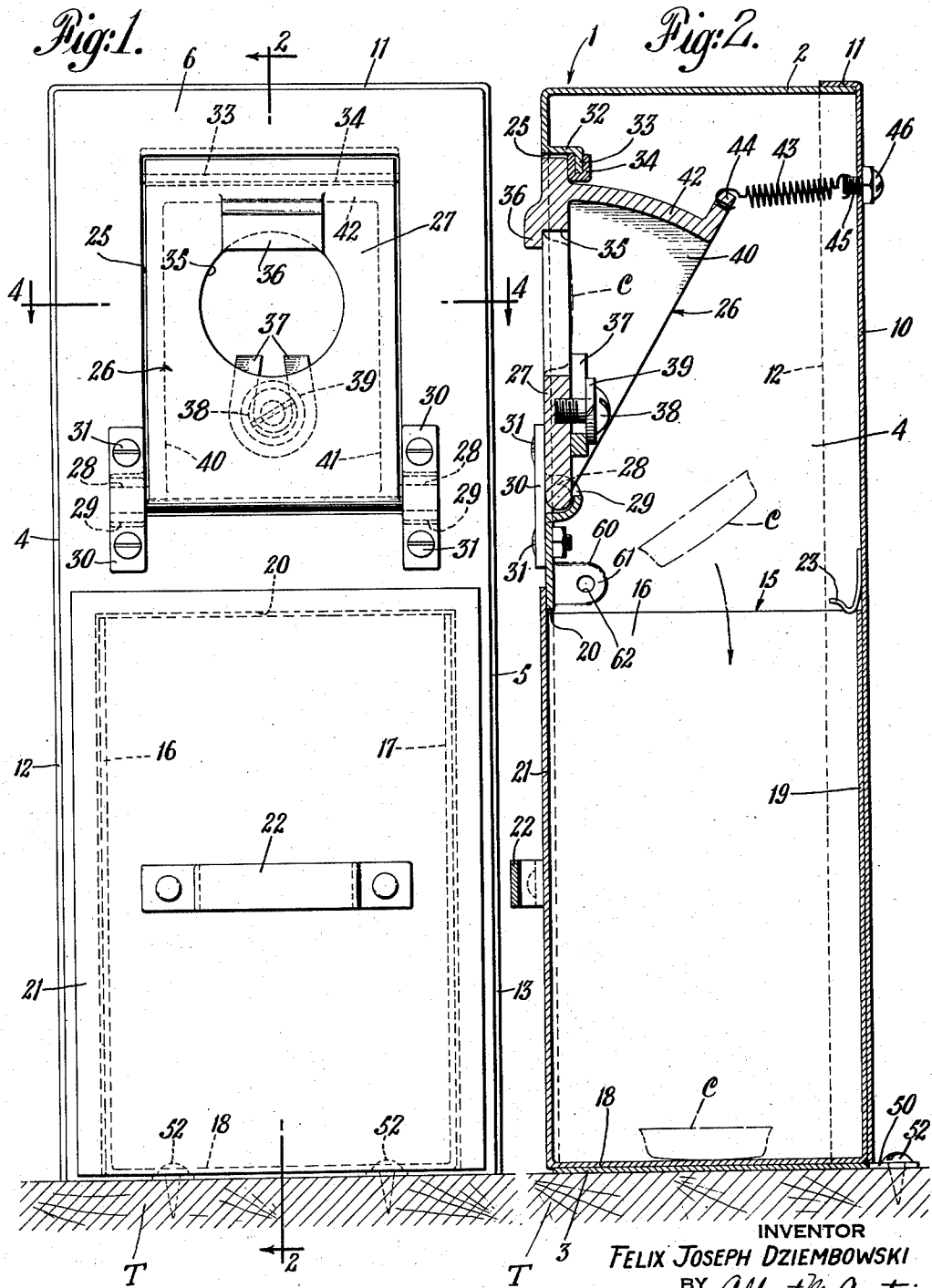
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2,116,306

BOTTLE OPENER

Filed June 15, 1937

2 Sheets-Sheet 1



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Fig. 3.

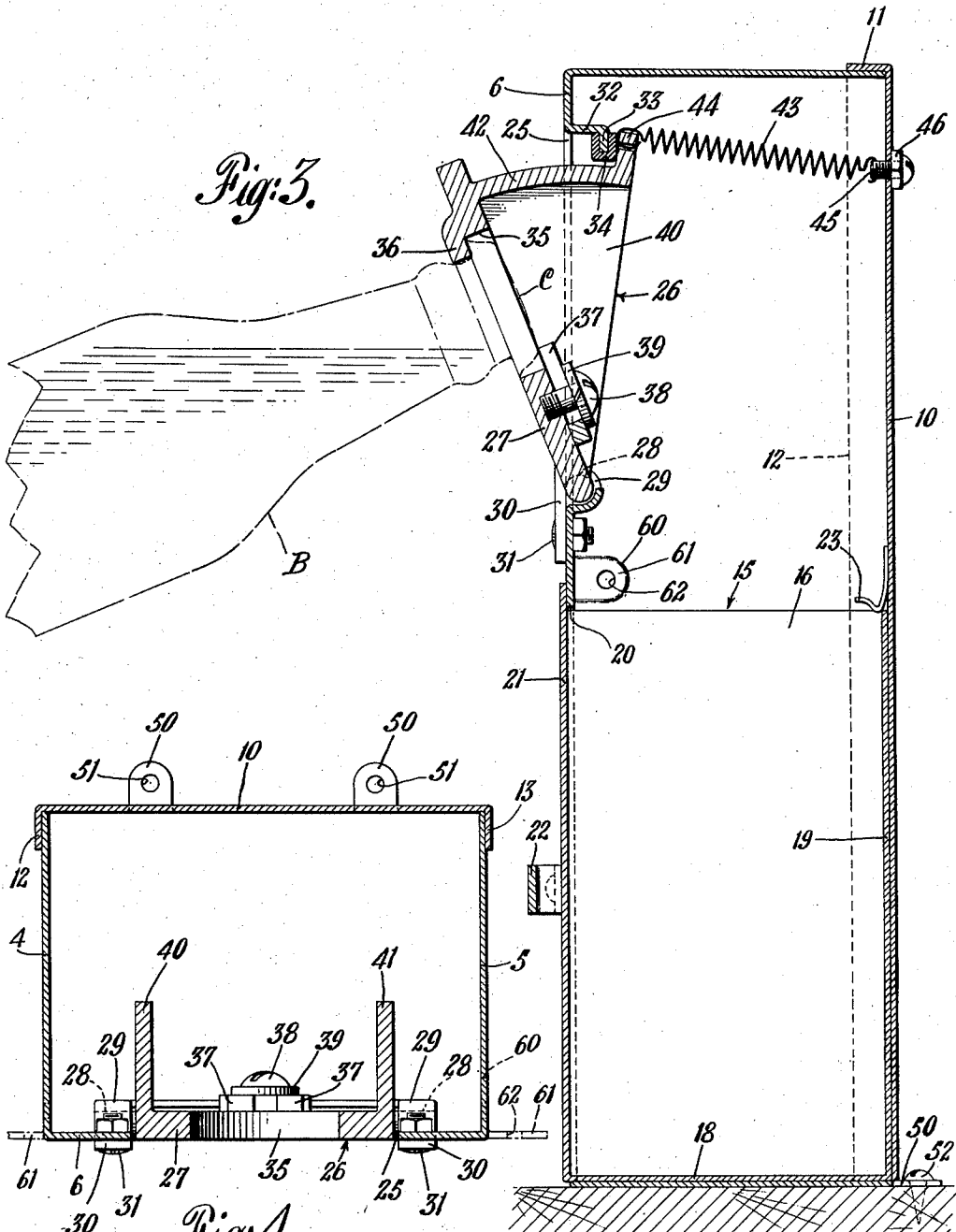


Fig. 4.

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BOTTLE OPENER

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5 Claims. (Cl. 65-46)

This invention relates to bottle openers and more particularly to a device for removing and receiving bottle caps of the crown type.

According to the invention, the device comprises a frame or support, which may take the form of a cabinet, having a decapper movably mounted thereon. The decapper is provided with an opening for receiving a cap of the crown type and has abutments adapted to engage the cap to assist in removing the latter from the bottle to which it is attached. Stop means are provided for establishing a cap-removing and a cap-discharging position of the decapper and a spring urges the decapper into the cap-discharging position. The cap is removed from the bottle by engaging the attached cap with the decapper and moving the bottle until the decapper is halted in cap-removing position. Further movement of the bottle causes the bottle to be separated from the cap and permits the decapper to be snapped to cap-discharging position. The decapper strikes the stop and flips the cap into the cabinet and the cap then falls into a collecting receptacle associated with the cabinet. Means, such as a magnet, are provided for retaining the cap in the decapper during movement of the decapper from cap-removing to cap-discharging position.

An object of the present invention is the provision of a simple, sturdy and efficient cap-removing device which positively operates to remove bottle caps without spilling any of the liquid from the bottle and which receives and collects the removed caps.

Another object of the invention is the provision of a cap-removing device which is neat and attractive in appearance, constructed for conveniently mounting on or adjacent a wall, cabinet or other structure in a beverage dispensing establishment.

Various other features and advantages of the invention will be apparent from the following particular description and from an inspection of the accompanying drawings.

Although the novel features which are believed to be characteristic of this invention will be particularly pointed out in the claims appended hereto, the invention itself, as to its objects and advantages, and the manner in which it may be carried out, may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which:

Fig. 1 is a front elevational view of one form of device constructed in accordance with the present invention;

Fig. 2 is a vertical sectional view of the device, which view is taken along the line 2-2 of Fig. 1;

Fig. 3 is a vertical sectional view illustrating the position of the decapper and associated structure when a bottle has been engaged therewith and moved downwardly preparatory to removing the cap; and

Fig. 4 is a horizontal sectional view taken along line 4-4 of Fig. 1.

In the following description and in the claims, various details will be identified by specific names for convenience, but they are intended to be as generic in their application as the art will permit. Like reference characters denote like parts in the several figures of the drawings.

In the drawings accompanying and forming part of this specification, certain specific disclosure of the invention is made for purposes of explanation, but it will be understood that the details may be modified in various respects without departure from the broad aspect of the invention.

The device includes a support which preferably takes the form of a cabinet 1 or receptacle having the top wall 2, bottom wall 3, side walls 4 and 5 and a front wall 6. The rear of the cabinet 1 may be closed by a cover 10 having a top flange 11 and side flanges 12 and 13 adapted to telescopically receive the rear end of the cabinet 1.

Disposed in the lower portion of the cabinet 1 is a receptacle 15 which preferably takes the form of a drawer, preferably formed with side walls 16 and 17, bottom wall 18 and rear wall 19. The drawer 15 is insertable into the cabinet 1 through an opening 20 in the front wall 6 and has a front wall or plate 21 adapted to abut the front wall 6 of the cabinet 1 and close the opening 20. A handle 22 may be provided for convenience in manipulating the receptacle 15 and suitable means, such as a spring 23, is provided for retaining the receptacle 15 in position in the cabinet 1.

The front wall 6 of the cabinet is formed with an opening 25 adapted to receive a decapper 26. The decapper 26 preferably includes a wall portion 27 carrying trunnions 28 which are journaled in bearings 29, carried by straps 30 secured to the front wall 6 as by bolts 31. The decapper 26 is thus pivotally mounted for movement between an extended or cap-removing position, such as indicated in Fig. 3, and a retracted or cap-discharging position, as in Fig. 2.

The movement of the decapper 26 inwardly is limited by a suitable stop which may be formed by bending inwardly the front wall 6 at the upper portion of the opening 25, as shown particularly

in Fig. 2. The stop is formed by an inbent flange 42 having a depending lip 33, which latter lies in the path of the upper end of the wall 27. A resilient bumper 34 formed, for example, from rubber, may be attached to the lip 33.

The front wall 27 is formed with a circular opening 35 of suitable size to receive a bottle cap C in the manner indicated in Figs. 2 and 3. Although there is generally only a slight variation in the diameters of caps of the crown type, the opening 35 will be of sufficient diameter to accommodate the largest size of such caps generally used. A lip 36 extends chordally across the upper portion of the opening 35 and forms an abutment for the upper rim portion of the cap C when the end of a bottle is inserted in the opening, as indicated in Fig. 3.

Secured to the rear face of the wall 27 adjacent the lower portion of the opening 35 is an abutment member 37 which preferably takes the form of a permanent magnet, for a purpose which will hereinafter appear. The magnet 37 may be of any suitable configuration and extends above the lower portion of the opening 35 to form an abutment for the lower portion of the cap C when the latter is inserted in the decapper. The magnet 37 may be secured to the wall 27 as by a screw 38 and lock washer 39.

Extending rearwardly from the wall 27 are side walls 40 and 41 and an arcuate top wall 42. The decapper 26 is urged into its innermost position by a spring 43 connected between a lug 44 extending from the top wall 42 and the cover 10. For convenience, the spring 43 may be anchored by a screw 45 adjustable by a nut 46. The lug 44 is positioned to strike the lip 33 and thus forms an abutment to limit the outward movement of the decapper 26 and thus establish the extended or cap-removing position thereof.

The cabinet 1 may be mounted in a suitable manner on a table, wall or other supporting structure. For convenience in mounting the cabinet 1, two separate types of mounting arrangements may be provided so that the cabinet may be mounted on a horizontal member or a vertical member. Referring now to Fig. 2, the bottom wall 3 of the cabinet is formed with a rearward extension 50, provided with suitably positioned openings 51. The openings 51 are adapted to receive screws 52 or other fastening members to secure the cabinet about a horizontal member, such as table top T.

It may be desirable to secure the cabinet in inset position in a vertical member. The side walls 4 and 5 of the cabinet are provided with cut lines or lines of weakness 60 defining portions 61 which may be bent out to provide ears and openings 62 are provided therein. When the cabinet is to be mounted on a vertical wall, the portions 61 are bent out into the same plane as the front wall 6 and fastening members (not shown) may be extended through the openings 62 and inserted in the support (not shown).

The operation of the device is as follows:

As will be seen, the decapper 26 is movable between a retracted or cap-discharging position, as shown in Fig. 2, and an extended or cap-removing position, as indicated in Fig. 3. The spring 43 normally urges the decapper into its retracted position.

When a cap is to be removed from a bottle, the end of a bottle B is inserted in the opening 35 and the upper portion of the cap rim is engaged in back of the lip 36. The diametrically opposite portion of the top face of the cap C

is urged into abutment with the magnet 37. The bottle B is then angularly depressed from a horizontal position into the position shown in Fig. 3. It will be noted that the resistance offered by spring 43 is insufficient to prevent the movement of the bottle into the position shown in Fig. 3 and insufficient to effect removal of the cap from the bottle during this movement.

The angular movement of the decapper 26 into extended position is sufficient so that when the bottle is engaged with the decapper and depressed as described, the bottle attains a position inclined to a horizontal plane. In this position the bottle is sufficiently upright to prevent the contents from flowing into the mouth of the bottle and hence none of the contents flow out of the bottle when the cap is removed.

When the decapper 26 reaches its extended position, the lug 44 abuts with the stop and halts the decapper 26. Further downward movement of the bottle causes the bottle to be separated from the cap and the tension on the spring 43 is released. This causes the decapper 26 to be snapped into its retracted position, carrying with it the cap C which remains in the decapper by reason of the retaining action of the magnet 37 and the lip 36.

When the decapper 26 strikes the stop 33, the cap C is dislodged and thrown into the cabinet 1 and topples over into the cabinet and drops into the receptacle 15, as illustrated somewhat diagrammatically in Fig. 2. The magnetic effect of the magnet, together with the positive engagement between the lip 36 and the cap are sufficient to insure that the cap will not fall out of the decapper until the latter strikes the stop. The magnet is only powerful enough to retain the cap until the decapper strikes the stop and thus does not prevent the cap from being dislodged when the decapper is suddenly halted. The sudden stopping of the decapper positively flips the cap into the cabinet and thus the cap is positively directed into the receptacle 15.

The receptacle 15 can be conveniently removed from the cabinet 1, emptied, and replaced and the device is thus capable of continued operation.

From the foregoing, it will be seen that the invention provides a positively operating device for removing caps from bottles which apparatus can be operated conveniently by an operator without necessitating any manipulation other than the grasping of the bottle in one hand. The bottle with the cap thereon can be readily inserted in a decapper and the cap removed by a simple downward movement of the bottle. The cap is positively thrown into the receptacle and there is no possibility of its dropping on the floor or not being deposited in the receptacle. The removable receptacle provides a convenient means for removing the caps from the cabinet.

While certain novel features of the invention have been disclosed and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes may be made by those skilled in the art without departing from the spirit of the invention.

What is claimed is:

1. A bottle cap removing device including a support, a decapper adapted to engage a bottle cap, means movably mounting said decapper on said support, means establishing cap-removing and cap-discharging positions of said decapper, means including a spring resiliently urging said decapper into said cap-discharging position, a permanent magnet fixed to said decapper, and a

receptacle associated with said support for receiving a removed cap from said decapper when the latter is moved into cap-discharging position, said magnet having sufficient attractive force to retain a cap removed from a bottle while said decapper moves from cap-removing to cap-discharging position but having insufficient attractive force to retain said removed cap in said decapper when said decapper is urged by said spring to cap discharging position.

2. A bottle cap removing device including a support, a decapper adapted to engage a crown bottle cap, cap collecting means associated therewith, means movably mounting said decapper on said support for movement between cap-removing and cap-discharging positions, means including a permanent magnet for temporarily retaining a cap in said decapper during movement between said positions, and means including a tension spring operable upon engagement between a capped bottle and said decapper and subsequent separation of the cap from the bottle for moving said decapper into cap-discharging position, said spring having sufficient force to overcome the attractive force of said magnet on a removed cap and snap said cap free from said decapper when said decapper reaches said cap-discharging position and to eject the removed cap therefrom and deposit it in said cap collecting means.

3. A bottle cap removing device including a support, cap collecting means associated therewith, a decapper adapted to engage a bottle cap, a permanent magnet on said decapper for temporarily retaining a cap in said decapper, means movably mounting said decapper on said support for movement between two positions, and means operable for snapping said decapper from one to the other of said positions and adapted to overcome the attractive force of said magnet tending to retain said cap to eject a removed cap from said decapper and deposit it in said cap collect-

ing means after said decapper has removed the cap from a bottle.

4. A bottle cap removing device including a support, a decapper having an opening therein adapted to receive a cap, an abutment adapted to engage the rim of a cap, an abutment adapted to engage the top of the cap diametrically opposite said first abutment, abutment means establishing a first and a second limiting position of said decapper, resilient means active to urge said decapper into said first limiting position, means including a permanent magnet forming said first mentioned abutment for retaining a cap in said decapper after separation from a bottle and adapted to release said cap when said decapper is moved into said first limiting position, and means positioned to receive said cap when released from said decapper.

5. A bottle cap removing device including a support, a decapper having an opening therein adapted to receive a cap, an abutment adapted to engage the rim of a cap, an abutment adapted to engage the top of the cap diametrically opposite said abutment, abutment means establishing a first limiting position of said decapper, resilient means active to urge said decapper into said first limiting position, means establishing a second limiting position of said decapper and providing resistance to the movement of said cap when said bottle is moved in a predetermined manner whereby to separate said cap from said bottle, means including a magnet forming said first mentioned abutment for temporarily retaining said cap in said decapper after separation from a bottle and adapted to release said cap when said decapper is moved by said spring into said first limiting position, and means positioned to receive said cap when released from said decapper.

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