Nov. 14, 1939. O. G. DENNISON 2,179,588

LIQUID DISPENSER

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Fig. 1.

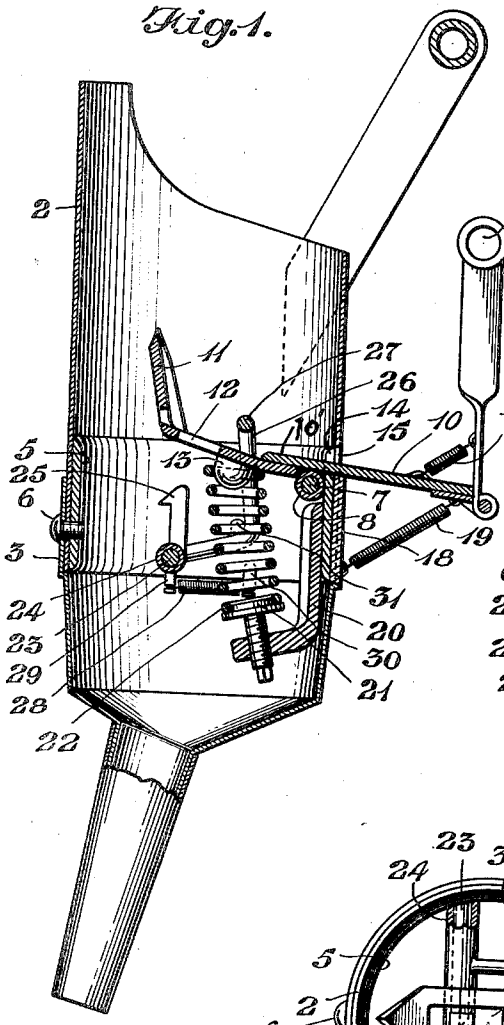
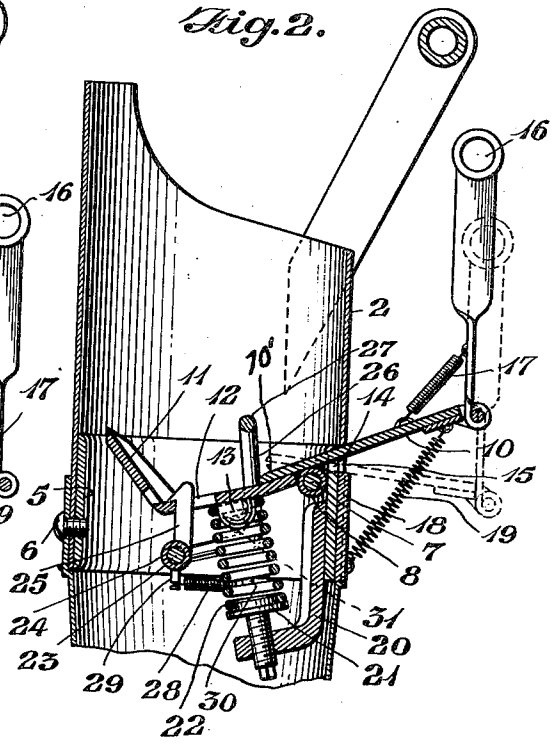


Fig. 2.



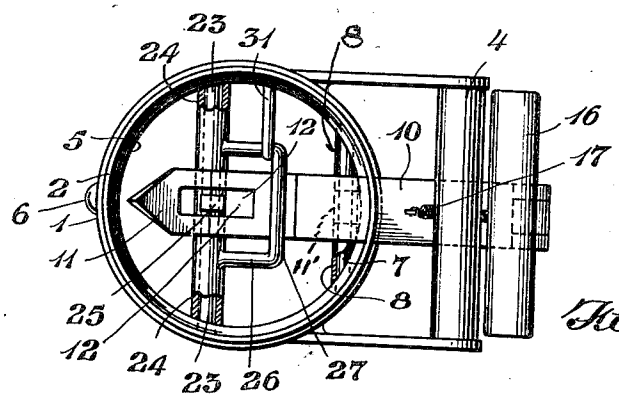


Fig. 3.

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LIQUID DISPENSER

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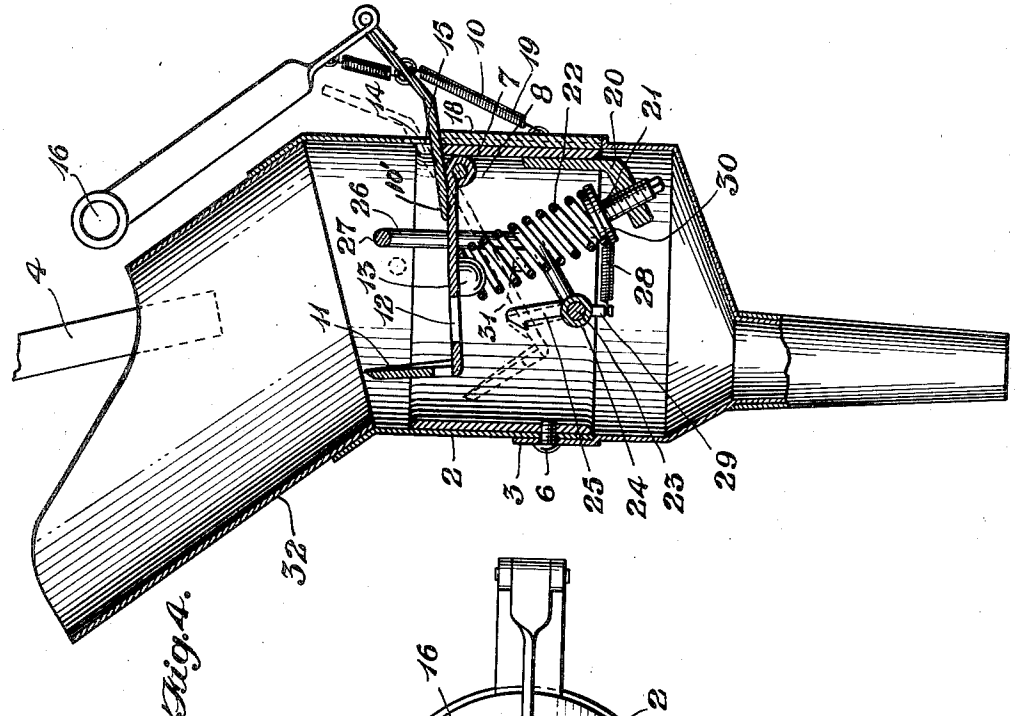


Fig. 4.

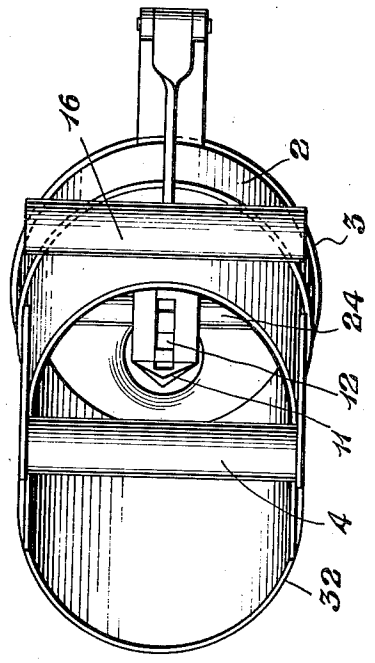


Fig. 5.

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2,179,588

LIQUID DISPENSER

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Application May 5, 1938, Serial No. 206,238

9 Claims. (Cl. 221—23)

This invention relates to a liquid dispenser, and more particularly to a device for use by filling station operators in opening sealed containers and dispensing oil therefrom when filling the crank cases of automobiles, although it is not restricted to such use.

The primary important object of this invention is to provide a device of the above character having mechanism associated therewith for automatically providing an outlet opening in a sealed container.

Another important object of this invention is to provide a device of the above character in which the mechanism for opening the container, so mutilates the latter as to render the refilling and sealing of the container with an inferior product extremely difficult.

Still another important object of this invention is to provide a device of the above character in which the opening mechanism is automatically actuated by the weight of the container and its contents, and in which such mechanism is so arranged as to substantially eliminate the possibility of damage to the operator

A further important object of this invention is to provide a device of the above character which is simple in construction, and one which may be readily and cheaply manufactured and placed upon the market at a reasonable cost.

The foregoing and other important objects and advantages will be apparent during the course of the following description and accompanying drawings, in which

Figure 1 is a fragmentary vertical sectional view of the dispenser, disclosing the mechanism in its operative or container opening position,

Figure 2 is a view similar to Fig. 1, with the container opening mechanism in set position, with the cutter setting handle shown in its normal position in dotted lines,

Figure 3 is a top plan view of the device as shown in Fig. 2,

Figure 4 is a fragmentary vertical sectional view of a modified form of the device for opening a container at the side thereof, and

Figure 5 is a top plan view of the modified form of the device as disclosed in Fig. 4.

Referring in detail to the drawings, 1 designates the body portion of a funnel of any desired construction having a tubular container guide 2 partly telescoped therein, as at 3, and extending upwardly therefrom so as to preferably form a continuation thereof and to the upper portion of which is connected a stationary carrying bail 4. However, it is to be particularly noted that the guide 2 may be of any suitable design for guiding the container toward the upper end of the funnel 1.

Disposed within the funnel 1 and guide 2 at substantially their point of connection, is a ring 5 supported in position by suitable fastening means 6 which latter connects all of said parts together.

The ring 5 supports a tangentially extending shaft 7 on which is rotatably mounted a pair of spaced sleeves 8. Connecting the sleeves 8 for turning movement therewith about the shaft 7 is a lever 10 having a free inner end 10' which is adapted to engage a right angle knife blade 11 which is also pivoted to shaft 7 at 11'. The knife 11 has an opening 12 therethrough and a downwardly extending lug or protuberance 13 formed thereon. The opposite end of the lever 10 extends outwardly through an upwardly extending notch or kerf 14 formed in the upper portion of the ring 5 and through a downwardly extending registering notch or kerf 15 formed in the lower portion of the guide 2.

Pivotally connected to the outer free end of the lever 10, is a handle 16 which is normally held in vertical position against the end face of the lever by means of a tension spring 17, connected as shown in Fig. 1.

The lever 10 is normally held in the full line position in Fig. 1, and in the dotted line position Fig. 2 against a stop 18, formed on the ring 5 and extending through notch 15, by means of a tension spring 19, which latter has its opposite ends connected to the stop 18 and lever 10 respectively.

A depending arm 20 has its upper end connected to the interior wall of ring 5 and its lower free end bent inwardly at right angles thereto to provide a support for an adjustable seat 21. The seat 21 is formed to receive one end of a strong compression spring 22, while the opposite end of the latter engages over the lug 13 formed on the blade 11, whereby to move the blade with considerable force and pressure in an upward direction during the operation of opening a container.

In order to hold the knife blade 11 in its set position, as shown in full lines in Fig. 2, a tangentially extending shaft 23 is connected to and supported by the ring 5. Mounted on shaft 23 is a rockable sleeve 24 to which is connected a catch 25. Also mounted on the sleeve 24 is a substantially inverted and angularly bent U-shaped trigger 26 which has its free ends connected to the sleeve 24 and its bight portion

27 disposed over and spaced above the knife 11, whereby the last named element is free for vertical swinging movement between the arms of the trigger 26.

The catch 25 is normally urged to a vertical or latching position in counter-clockwise direction by means of a tensioned coil spring 28, which has one of its ends connected to a depending arm 29 carried by sleeve 24, and its opposite end anchored to ring 5, as at 30. Continued counter-clockwise movement of the catch 25 is prevented by a stop member 31 carried by ring 5, and which has a part extending into the path of movement of and engaging the trigger member 26.

Referring to the modified form of the invention, as disclosed in Figs. 4 and 5, the container opening mechanism is substantially similar in all essentials to the construction and operation of the mechanism disclosed in Figs. 1 to 3 inclusive, and consequently in this regard like reference characters designate like parts in all of the figures, so as to avoid unnecessary repetition of the detailed descriptive matter.

However, the important distinction between the device disclosed in Figs. 1 to 3, and that disclosed in Figs. 3 and 4, resides in the provision of a container guide 32 which has its vertical axis disposed at an angle with respect to the vertical axis of the funnel 1 so that the cutting mechanism will function to form an outlet opening in the side wall of the container, shown in dotted lines, adjacent to bottom wall thereof. This results in a positive mutilation of the container so as to render refilling and closing of the container extremely difficult, by any person attempting to fradulently reuse the container for dispensing an inferior product.

In operation, assuming the cutting mechanism to be in its full line position as disclosed in Figs. 1 and 4, the handle 16 is moved in an upward direction toward the carrying bail 4. This movement results in a downward sweep of the free end 10' and knife 11 about the shaft 7 until the latch 25, passing through opening 12 engages one of the walls defining said opening under the influence of the tensioned spring 28, thus holding the knife in its set position as shown in full lines in Figs. 2 and 3, and in the dotted line positions of Figs. 1 and 4. The downward movement of the end 10' of lever 10 and the knife 11 compresses spring 22, which has been previously adjusted by means of the seat 21. Immediately after engagement of the latch 25 with knife 11 and release of handle 16, the latter will return to its dotted line position Fig. 2.

The spout of the funnel is then placed in the filling opening of a crank case, whereupon the operator places a filled container in the guide leading to the cutting mechanism. Under the influence of gravity the container engages the bight portion 27 of the trigger member 26, and by its weight moves the trigger in a clockwise direction to release the catch 25 and the energy stored in spring 22. Under the influence of the released spring 22, the knife 11 is projected with considerable force against and into the container to form a fluid outlet therefrom. Release of the empty container from the cutting mechanism and the guide is easily and quickly effected by again moving the handle 16 toward the bail 4 during the resetting operation of the mechanism.

It is to be understood that the several forms of my invention, herewith shown and described, are to be taken as preferred examples thereof, and that various changes in the shape, size and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. In combination, a funnel, spring biased cutting mechanism carried by the funnel, and means connected to the cutting mechanism to automatically release the latter to form an opening in a fluid container under the influence of the weight of the latter.

2. In combination, a funnel, movable cutting mechanism carried by the funnel, releasable trigger means connected to the funnel and engaged with the cutting mechanism to hold the latter in its inoperation position, and means to automatically actuate the cutting mechanism to form an opening in a fluid container when the trigger means is released.

3. A liquid dispenser including a funnel, a biased cutting mechanism disposed in said funnel, and a releasable trigger carried by the funnel for holding the cutting mechanism in its inoperative position and having a part disposed above the cutting mechanism whereby a container is opened when moved against said part.

4. A liquid dispenser including a funnel, a biased cutting mechanism disposed in said funnel, and a releasable trigger carried by the funnel for holding the cutting mechanism in its inoperative position, said trigger being formed to be released by a container moving thereagainst so as to automatically provide an opening in the latter when the cutting mechanism is released.

5. A liquid dispenser including a can receiver having a dispensing conduit, movable can cutting means within the receiver, means to tension the cutting means, means to releasably hold the cutting means under tension, and means operable by engagement with a can inserted within the receiver to effect release of the holding means thereby to cause the cutting means to cut the can.

6. A liquid dispenser in accordance with claim 5, wherein there is manual means for effecting disengagement of the cutting means from the can, and for resetting the cutting means.

7. A liquid dispenser including a can receiver having a dispensing conduit, movable cutting means within the receiver, means to normally hold the cutting means inoperative and means whereby to render the cutting means operative by and upon insertion of a can within the container.

8. A liquid dispenser in accordance with claim 7, wherein there is means to place and hold the cutting means under tension, and wherein the last named means has a part engageable with the can to release the cutting means upon insertion and downward movement of the container.

9. A liquid dispenser in accordance with claim 7, wherein there is means to place and hold the cutting means under tension, and wherein the cutting means has a part engageable with the can to automatically release the cutting means upon insertion and downward movement of the can, and wherein the means to place and hold the cutting means under tension is manually controlled and which upon movement in one direction disengages the cutting means from the can and resets the cutting means.

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