July 13, 1937. C. N. ELSY ET AL 2,086,936

CONTAINER DRAINAGE SYSTEM

Filed Dec. 14, 1936

Fig. 1

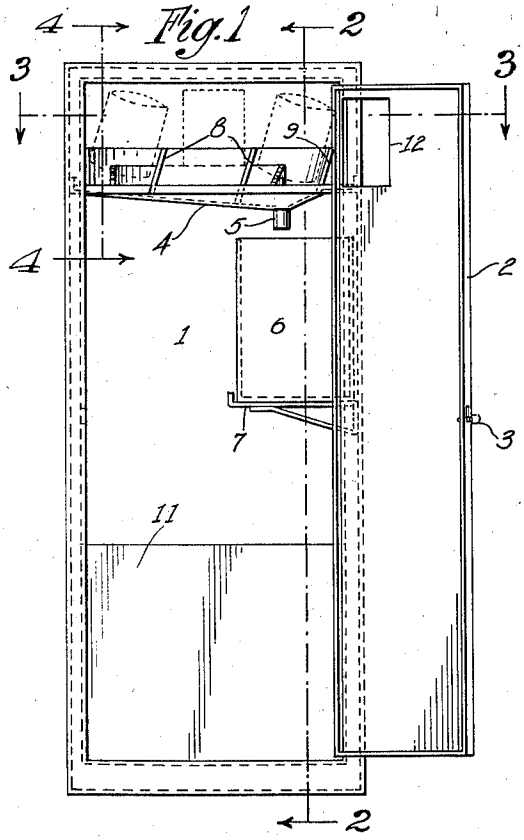
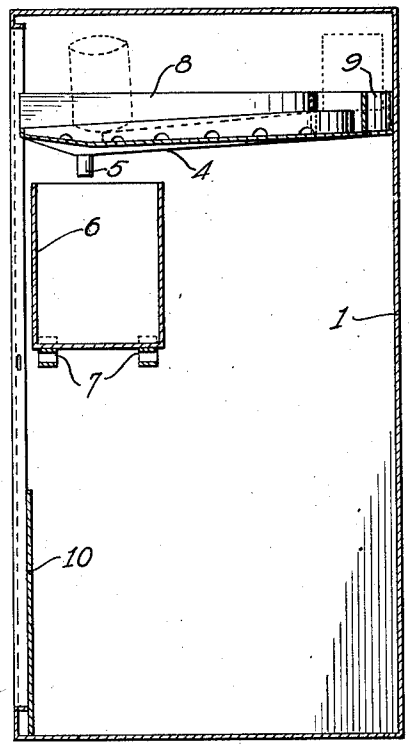
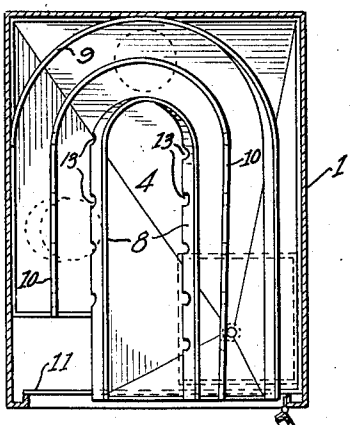


Fig. 2





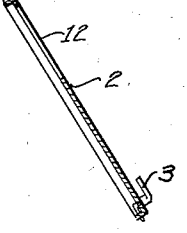
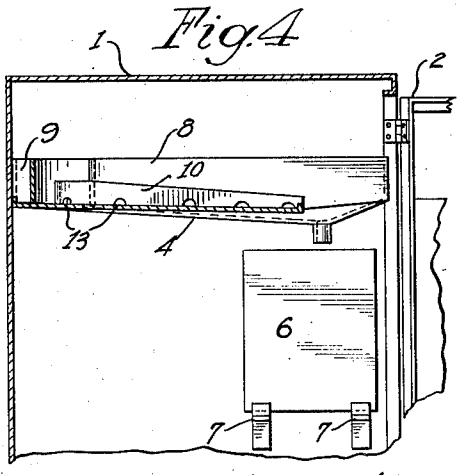


Fig. 3

Fig. 4



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CONTAINER DRAINAGE SYSTEM

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9 Claims. (Cl. 221—69)

The present invention relates to container drainage systems in general and particularly to an improved method of draining fluid receptacles. More specifically the invention comprises a method and structure for draining oil cans of the residual oil and for disposing of the cans.

It is an object of the invention to provide a new and improved method for draining receptacles. It is another object of the invention to provide a new and improved method of draining receptacles and for disposing thereof. Still another object of the invention is to provide a method of residual fluid drainage from receptacles in which the fluid receptacle passes thru a plurality of angular positions to insure the positioning of the outlet at the lowermost point. A still further object is to provide a method of fluid drainage in which the receptacle being drained passes over a receiver in a plurality of angular positions and thereafter passes to a storage position. Still another object is to provide an apparatus for draining and disposing of fluid receptacles. A further object is to provide a drainage apparatus in which perforated receptacles are movably supported upon a drainage rack from which they are displaced to a storage compartment. These and other more specific objects will be apparent from the following specification and claims when considered in connection with the attached drawing.

Referring now to the drawing, in which the same reference character refers to the same part thruout:

Figure 1 is a front view of the device with the closure member or door in the open position to show the interior;

Figure 2 is a vertical section upon the line 2—2 of Figure 1;

Figure 3 is a horizontal section thru the device upon the line 3—3 of Figure 1 and shows the container drainage rack;

Figure 4 is a partial vertical section looking in the direction of the arrows upon the line 4—4 of Figure 1.

Today in the modern gasoline station for automobiles lubricating oil is sold from individual containers or cans. These cans vary in size but the majority sold are of the one quart capacity. These individual cans are perforated in the presence of the purchaser and he can ascertain from the can label that the product is that which he requested and for which he will be asked to pay. This desirable practice grew up in the protection of the motorist against unethical practices.

The oil-containing can is ordinarily perforated by pressing it onto one or more perforators positioned in a transfer receptacle from which the station attendant pours the oil into the waiting engine. The oil then drains from the can thru the perforation or perforations into the transfer receptacle. The exact manner of this operation is not a part of the present invention.

In practice the perforated oil can is permitted to drain into the transfer receptacle for only a fraction of a minute. The viscosity of the ordinary lubricating oil is such that in the allotted time all of the contained oil cannot drain from the can. Oil processors know this and provide a slight excess to compensate for the amount which the purchaser would otherwise lose.

The residual oil in the can will drain therefrom nearly completely if given sufficient time. Station attendants have found that the accumulation of residual oil which can be obtained makes it well worth their time to drain the cans completely. As a result in the ordinary gasoline station inverted draining cans are to be found in odd places and in corners with attendant cluttering. Also there is usually in evidence an unsightly pile of completely drained oil cans awaiting the call of the trash man.

By the present invention a method and means are provided to drain systematically the residual oil from its containers. Further, the cans are automatically removed from the drainage relationship to a storage compartment.

Referring again to the drawing, a preferred embodiment of the invention is illustrated which comprises a boxlike receptacle or container 1 which may be of wood but which is economically and readily made of sheet metal as shown. A hinged vertical door 2 at the front of the receptacle is provided with a manually operable latch 3 by which it is adapted to be retained in the closing position.

The interior of the container 1 is largely empty but there is positioned near the top therein a drain plate 4 which is contoured so that any fluid thereon drains to drain or outlet 5. Plate 4 may be secured in place by any common means such as spot welding its edges to the container walls. Immediately under plate 4 is a removable catch basin 6 suitably supported by arms 7, 7 carried by a wall of the container. Into this basin all fluid draining from the plate 4 will flow.

On the upper surface of drain plate 4 is positioned a U-shaped can rack. This rack is formed by inner and outer side walls 8 and 9, respectively, which are also U-shaped, the open end of the U facing the door 2. As is clearly shown in

the drawing side walls 8 and 9 are tilted along the legs of the U but change to a vertical position at the bend. A can positioned along either side of the U will be tilted to the right of the container, as shown in dotted lines in Figure 1. A can at the bend of the U will be vertical, also shown in dotted lines in Figure 1.

The can rack includes an important element in addition to the side walls 8 and 9 which element comprises a can-supporting shoulder or rib 10 which is positioned between the side walls. Shoulder 10 is not only U-shaped, in the manner of side walls 8 and 9, but its sides of the U gradually increase in height as they approach the U bend around which the height is constant. As the cans rest upon this shoulder they are tilted toward the container door when resting upon the sloping part thereof but are vertical when resting upon the level part thereof.

In the embodiment shown rack side walls 8 and 9 and supporting shoulder 10 are carried directly by the drain plate 4. To eliminate obstructions to oil flow which these members would otherwise offer drain ports 13, 13 etc. are formed in each at frequent intervals and at the surface of plate 4.

The entrance of the can rack is at the right side as viewed in Figures 1 and 3. On that side the rack, as well as the plate 4, extends to the front of the container or to a point immediately adjacent the door 2 when in its closed position. The opposite or exit end of the rack, as determined by the end of shoulder 10, ends at a point spaced inwardly from the door and the plate 4 is cut out to provide an escape for cans leaving the rack at that point. The inner side wall 8 extends adjacent this escape opening to direct cans thereinto.

Across the front of the lower portion of the container 1 a closure plate 11 extends which cooperates with the container side walls to form a storage bin for cans which have fallen from the rack thru the escape opening.

The door 2 of the container is normally closed and to permit cans to be inserted in the rack when it is so positioned a port 12 is provided in the door adjacent the entrance end of the rack. It is therefore necessary to open the door only to remove or replace the catch basin 6 or to empty the storage bin of collected cans.

The operation of the device comprising the present invention is quite simple. A perforated can is inserted, perforations downward, thru the port 12 in door 2 and into the rack. In its initial position the can is tilted to the right and backward because of the angularities of the rack side walls 8 and 9 and the supporting shoulder 10. As additional cans are inserted in the rack the first can travels therealong. By the time it reaches the bend of the U in the rack its major axis is vertical. As it is moved down the rack toward the escape opening in each position it is tilted to the right and forwardly. As the can has moved around the rack without substantial rotation it is clear that the lowermost point in the can's bottom has changed from the right rear quadrant to the left front quadrant, or has moved thru 180 degrees circumferentially. As the usual can is perforated at diametrically spaced points it is clear that one of those points will, at some time in the can's travel on the rack, be in a draining position. Upon reaching the end of the rack the can falls thru the escape opening to the storage bin below. The movement of the can along the rack has been in successive steps, each new step being the result of the forcing of an additional can into the rack.

We claim:

1. A method of fluid drainage comprising placing a fluid receptacle open end down upon a drainage rack, advancing the receptacle along the rack thru a plurality of angular positions to cause the low point of the receptacle to assume various positions, capturing the fluid escaping from said receptacle and passing the receptacle from the rack to a storage position.

2. A method of fluid drainage comprising placing a fluid receptacle open end down upon a drainage rack, tilting said receptacle to a plurality of angular positions while on said rack to change the low point of said receptacle, collecting the fluid escaping from said receptacle, and passing the receptacle under the action of gravity from said rack to a storage position.

3. A container drainage apparatus comprising a container guideway, means to position a container in a plurality of angular positions in said guideway, fluid-collecting means positioned below said guideway, and container-storage means below said guideway to receive containers therefrom.

4. A container drainage apparatus comprising a container guideway including means to position a container in a plurality of angular positions, fluid-collecting means positioned below said guideway, and a storage bin positioned below the end of said guideway to receive containers passing therefrom under the action of gravity.

5. A container drainage apparatus comprising a cabinet, a can rack within said cabinet, fluid-collecting means below said rack, and a can storage bin in said cabinet adapted to receive cans from said rack.

6. A container drainage apparatus comprising a cabinet, a can rack including means to tilt a can at a plurality of angles in passing therethru, a can storage bin in said cabinet positioned below the end of said rack and adapted to receive cans falling therefrom, and means to collect fluid drained from cans in said rack.

7. A container drainage apparatus comprising a cabinet, a door on one side of said cabinet, said door being formed with an opening near its top, a can rack within said cabinet having its entrance adjacent the opening in said door and its exit adjacent an unobstructed opening thru which cans from said rack can pass under the action of gravity, a storage bin within said cabinet adapted to receive cans from said rack, the interior of said bin being accessible with said door in the open position, and fluid-collecting means under said rack.

8. A container drainage apparatus comprising a cabinet, a door on one side of said cabinet, said door being formed with an opening near its top, a can rack within said cabinet having its entrance adjacent the opening in said door and its exit adjacent an unobstructed opening thru which cams from said rack can pass under the action of gravity, a storage bin within said cabinet adapted to receive cans from said rack, the interior of said bin being accessible with said door in the open position, a drain plate below said rack, and a removable catch basin to receive fluid from said plate which is also accessible with said door in the open position.

9. A container drainage apparatus comprising a cabinet, a door on one side of said cabinet, said door being formed with an opening near its top, a can rack within said cabinet having its entrance

adjacent the opening in said door and its exit adjacent an unobstructed opening thru which cans from said rack can pass under the said rack including means to tilt a can moving therealong thru a plurality of angular positions, a storage bin within said cabinet adapted to receive cans from said rack, the interior of said bin being accessible with said door in the open position, and fluid-collecting means under said rack.

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