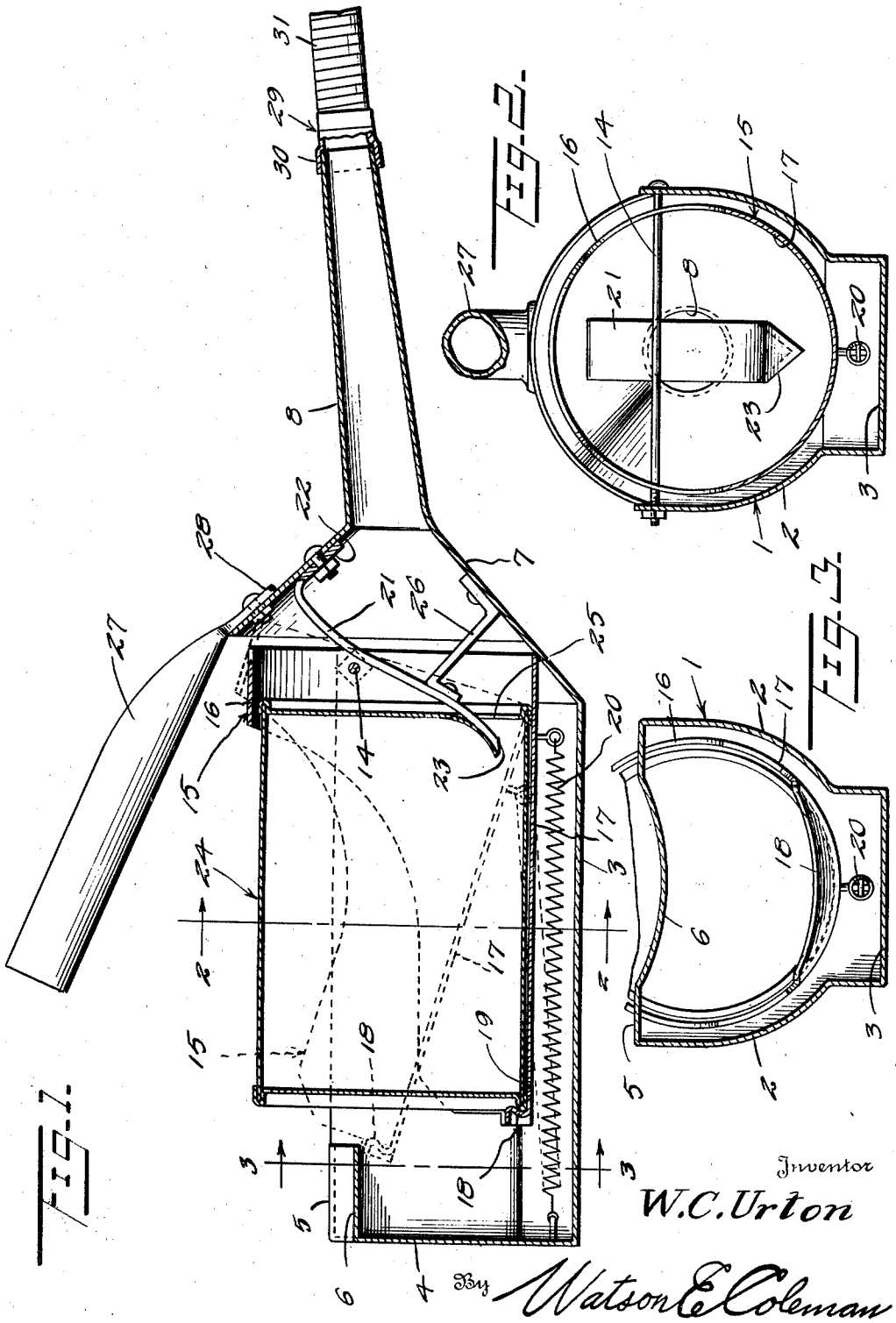
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LIQUID DISPENSER

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LIQUID DISPENSER

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6 Claims. (Cl. 221—23)

This invention relates to improvements in dispensing devices and pertains particularly to dispensers for fluid contained in sealed receptacles.

As is well known, motor vehicle oils are put up by various concerns in sealed quart receptacles which are opened by a suitable punch at the time that the content of the receptacle is to be dispensed, and at the present time the common practice is to punch into the end wall of such receptacle a cutting blade which is attached to a handle and which is then removed so that the contents of the receptacle may be discharged into a funnel for introduction into a motor vehicle crank case.

The present invention has for its primary object to provide a combination funnel receptacle, punch or cutting blade and discharge nozzle which will facilitate the opening of a can and the dispensing of the contents thereof in that it permits a suitable hole to be punched into a can and the contents discharged all substantially at one operation.

Another object of the invention is to provide in a device of the above described character, a receptacle which is formed integral with a funnel-like body and which carries an oscillatable cradle for the oil container, which cradle when oscillated in one direction with a can of oil therein, automatically forces the can against a cutting blade or punch which opens the can at the end nearest the funnel, thus permitting the contents to discharge immediately into the funnel and through the same to the vehicle crank case or other receptacle.

A further object of the invention is to provide a device of the above described character which is designed so that waste is eliminated in that oil adhering to the can after emptying will be drained off and saved.

A still further object of the invention is to provide a device of the above described character which, after being used, may be placed in either of two positions with the emptied can therein so that the can may be thoroughly drained into a receiving sump forming a part of the device or the oil adhering to the sides of the can within the same may be retained and drained to the rear end of the can if the device is set in another position. By providing the drainage receiving sump, the purchaser of the contents of a can will be assured of receiving his full quantity of oil as the drainage from the preceding can will be added to the contents of the new can and the drainage of the new can will be retained for addition to the contents of the next can to be opened, thus it will not be necessary for the user of the device to leave the device for any length of time in dispensing position in order to make sure that the purchaser of the can contents gets the full quantity for which he has paid.

Still another object of the invention is to provide a device of the above described character which is so designed that when more than one can of oil is to be emptied into a vehicle crank case, the cans may be changed in the device without removing the latter from its discharging position or, in other words, without removing the nozzle of the discharge funnel from the oil receiving tube of the vehicle crank case.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing forming part of this specification, with the understanding, however, that the invention is not to be confined to any strict conformity with the showing of the drawing but may be changed or modified so long as such changes or modifications mark no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Fig. 1 is a view in longitudinal section through the device embodying the present invention, the same being shown with a can in discharging position therein.

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Referring now more particularly to the drawing, the numeral 1 generally designates the body of the present dispensing device which is generally in the form of an elongated substantially semi-cylindrical receptacle having the partially rounded side walls 2 which merge into the sides of a drainage receiving sump 3 which extends longitudinally of the body as shown. At the rear end the body is closed by the end wall 4 and has a transverse top wall 5 which extends for a short distance from the end wall 4 longitudinally of the body and has its central part slightly depressed, as indicated at 6, to facilitate the slipping of a can into the dispenser, as will be hereinafter described.

The forward end of the body is joined to or formed integrally with the funnel-shaped head 7 from which leads a dispensing nozzle or spout 8.

Extending transversely between the walls 2 of the receptacle body 1 and adjacent to the funnel 7, is a rod or bolt 14. This bolt constitutes a

pivot and support for a can receiving cradle which is indicated generally by the numeral 15 and which at its forward end is in the form of an annular collar 16 which is integral with the semi-cylindrical bottom part 17 in which a can is designed to lie when it is opened for the discharge of the contents. The cradle lies within the receptacle 1, as shown in Figs. 2 and 3, with the lower part 17 extending only into the upper part of the sump 3 and the collar portion 16 of the cradle has the bolt or rod 14 extending transversely therethrough so that the cradle may rock on this bolt to lift the rear end thereof to the position shown in dotted lines in Fig. 1, in which position such rear end contacts with the underside of the forward edge of the top wall 5, as illustrated. The rear edge of the portion 17 of the cradle is initially formed to provide a longitudinal extension which may be bent back or inwardly over the bottom of the cradle to form the inwardly curved can flange engaging lip 18. This lip secures the flanged end of a can so that it will be prevented from being forced out of the cradle when the opposite end is punctured. Adjacent the lip 18, the bottom of the cradle is provided with a drainage opening 19 whereby any oil which may run to the back of the cradle when the can is set vertically upon the end wall 4, will drain out instead of collecting in front of the lip.

Disposed beneath the cradle is a contractile spring 20, one end of which is attached to the rear wall of the receptacle, as shown, while the opposite end is connected with the underside of the cradle adjacent the forward end of the latter. This spring constantly exerts a rearward pull upon the forward end of the cradle and, therefore urges the cradle to swing to the raised position in which it is shown in dotted outline. When the cradle is empty or when it contains an oil can from which the oil has been drained, this spring will operate to oscillate the cradle to the position shown in dotted outline so that the can may be readily removed or so that a filled can can easily be placed in position in the cradle.

Secured to the top part of the funnel portion 7 of the device and extending rearwardly therefrom and obliquely with respect to the length of the same, is a blade 21, the end which is attached to the inner wall of the funnel being indicated at 22, while the pointed punch end is indicated at 23. This pointed end of the blade extends rearwardly well into the forward end of the cradle in such a position that when a can of the standard quart size, such as is indicated at 24, is placed in the cradle while the latter is in its raised position, and the end of the can is engaged under the lip 18 and the can and cradle then forcibly swung downwardly, the pointed end 23 of the blade will cut out a section of the adjacent end of the can and roll such cut out section back so as to provide a suitable discharge opening 25 through which the contents of the can may flow into the funnel. In order that the free end of the blade may be rigidly held, a supporting bracket 26 is interposed between it and the funnel wall.

Attached to the wall of the funnel 7 at the top side thereof or opposite the drip receiving pocket 12, is a hand grip or handle 27 of suitable form, the forward end of this handle being angularly disposed as indicated at 28, and bolted to the funnel so that the handle may be removed if desired. By angulating the end 28 of the handle, the latter will be disposed at an upward and rearward inclination with respect to the underlying body 1, so that a can may be conveniently introduced into the cradle by sliding it over the depressed portion 6 of the top wall of the receptacle and into the cradle when the latter is in the raised position to which it will be forced by the spring 20.

The spout 8 of the funnel is, of course, designed to be inserted into the oil filling tube of a motor vehicle crank case where the present device is used for dispensing cans of motor vehicle oil, but in vehicles having such oil receiving tube in a position where the spout 8 cannot conveniently reach it, this condition is taken care of by the provision of a flexible extension for the spout such as is generally indicated by the numeral 29.

This extension may comprise a collar portion 30 which is adapted to be slipped over the end of the nozzle 8 and a flexible hose portion 31 of suitable length and of the usual form used in connection with discharge nozzles.

When the present device is in use, after a can has been placed in the cradle and opened in the manner previously described, the nozzle 8 or the end of the extension 29 may be inserted in the oil receiving tube of the vehicle crank case. Where the nozzle 8 is inserted, its rigidity will serve to maintain the device in the necessary inverted position for the discharge of oil from the funnel through the tube or nozzle. After the contents of the can have been discharged, the device may be set down in horizontal position upon the sump 3, this sump being flat, as shown in Fig. 3 and, therefore, providing a suitable bottom for the device. When set in this position, the oil adhering to the inside of the can will slowly drain therefrom as the spring 20 will raise the cradle to its can discharging position and, therefore, all drainage will pass out through the opening 25 onto the cradle and will flow down into the sump. If it is not desired to drain the can, then the device may be set in vertical position upon the end wall 4. When in this position, any oil which may be caught in the cradle will drain therefrom through the opening 19. Thus it will be seen that if a can is left in the device to drain into the sump 3, the next purchaser of a can of oil will get his full quart even though the device is not left in position long enough for the oil to completely drain from within the can because he will receive the drainage from the preceding can. However, if it is not desired to catch the drainage from a can into the sump 3, the device may be set vertically upon the wall 4 so that the adhering oil will drain back into the bottom of the can and may then be removed into any other receptacle, if desired.

What is claimed is:

1. A dispenser for cans of fluid, comprising a receptacle-like body having an end formed to provide a discharge nozzle, a can receiving cradle pivotally secured within the receptacle adjacent said discharge nozzle and adapted to be swung into the receptacle in parallel relation therewith, and a cutter element within the receptacle which is so constructed and arranged that when the cradle is swung into said parallel position with a can therein, a discharge opening will be cut into the can at the end adjacent the discharge nozzle.

2. A dispenser for cans of fluid, comprising a receptacle-like body having an end formed to provide a discharge nozzle, a can receiving cradle pivotally secured within the receptacle adjacent said discharge nozzle and adapted to be swung into the receptacle in parallel relation therewith, a cutter element within the receptacle which is

so constructed and arranged that when the cradle is swung into said parallel position with a can therein, a discharge opening will be cut into the can at the end adjacent the discharge nozzle, and resilient means engaging and normally urging the end of the cradle opposite from said pivotal means to swing outwardly to a position where the cradle extends obliquely to the length of the receptacle.

3. A dispensing means for cans of fluid material, comprising an elongated receptacle open through a portion of its length upon one side, means extending longitudinally of the receptacle at the opposite side forming a fluid receiving sump and a supporting bottom for the receptacle, means forming a funnel-like extension at one end of the receptacle leading to a discharge nozzle, a can receiving cradle within the receptacle and having an end pivotally attached thereto for oscillation from a position parallel with the receptacle to a position oblique thereto, said cradle being open at the end adjacent the funnel, and a punch member secured within the open end of the cradle and adapted to form a hole in a can carried by the cradle when the cradle is swung into said parallel relation with the receptacle.

4. A dispensing means for cans of fluid material, comprising an elongated receptacle open through a portion of its length upon one side, means extending longitudinally of the receptacle at the opposite side forming a fluid receiving sump and a supporting bottom for the receptacle, means forming a funnel-like extension at one end of the receptacle leading to a discharge nozzle, a can receiving cradle within the receptacle and having an end pivotally attached thereto for oscillation from a position parallel with the receptacle to a position oblique thereto, said cradle being open at the end adjacent the funnel, a punch member secured within the open end of the cradle and adapted to form a hole in a can carried by the cradle when the cradle is swung into said parallel relation with the receptacle, and resilient means normally urging the end of the cradle opposite from the pivotal support to swing outwardly with respect to the receptacle.

5. Means for dispensing fluids from cans, comprising an elongated receptacle open through a portion of its length on one side, the remaining portion of the length of the receptacle being closed by a top wall, the wall of the receptacle opposite from the opening being pressed outwardly to form a longitudinally extending fluid receiving sump, said sump also providing a supporting base for the receptacle, a funnel forming a longitudinal extension of the end of the receptacle opposite from said wall, a nozzle extending from said funnel, a can receiving cradle disposed within the receptacle and having pivotal connection between the end adjacent the funnel and the side walls of the receptacle, the opposite end of the cradle being adapted to swing from a parallel relation with the receptacle to an oblique relation therewith, said top wall operating as a stop for the free end of the cradle, resilient means normally urging the free end of the cradle to swing outwardly, and a cutter secured in the funnel end of the receptacle and extending obliquely rearwardly therein into the forward end of the cradle.

6. Means for dispensing fluids from cans, comprising an elongated receptacle open through a portion of its length on one side, the remaining portion of the length of the receptacle being closed by a top wall, the wall of the receptacle opposite from the opening being pressed outwardly to form a longitudinally extending fluid receiving sump, said sump also providing a supporting base for the receptacle, a funnel forming a longitudinal extension of the end of the receptacle opposite from said wall, a nozzle extending from said funnel, a can receiving cradle disposed within the receptacle and having pivotal connection between the end adjacent the funnel and the side walls of the receptacle, the opposite end of the cradle being adapted to swing from a parallel relation with the receptacle to an oblique relation therewith, said top wall operating as a stop for the free end of the cradle, resilient means normally urging the free end of the cradle to swing outwardly, a cutter secured in the funnel end of the receptacle and extending obliquely rearwardly therein into the forward end of the cradle, and a handle secured to the wall of the funnel and extending longitudinally rearwardly and outwardly with respect to the receptacle.

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