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Healey

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[54] **GRADUATED SIGHT GLASS CONTAINER**

Attorney, Agent, or Firm—Michael I. Kroll

[76] **Inventor:** **Thomas J Healey**, 4851 Gandy Blvd.
West, Canal 20, Tampa, Fla. 33611

[57] **ABSTRACT**

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B65D 5/72

[52] **U.S. Cl.** **222/158**; 222/572; 222/456

[58] **Field of Search** 222/566, 572,
222/456, 156, 154, 158; 141/372, 364,
383, 98; 220/602, 665, 365; 215/380; D9/526,
523, 528, 527

A graduated sight glass container for retaining a substance therein and minimizing the possibility of spillage during dispensing of the substance therefrom. The graduated sight glass container includes a housing having a shape of a quadrilateral and including an indented section on a first side thereof. A spout is connected to extend from the indented section of the housing and at most up to the first side. A pool is formed within the indented section and surrounding the spout, wherein, when the container is tilted from a vertical at-rest position causing the spout to be positioned adjacent an opening through which the substance contained within the container is to flow, the pool is caused to at least partially receive an edge of the opening. Extending along a second side of the housing is a first graduated scale and a second graduated scale extends along a base of the housing for measuring an amount of the substance within said container and an amount of the substance dispensed from the container during dispensing. The first and second graduated scales are both made of a clear material allowing a user to view the substance within the container therethrough and include indicia printed therealong indicative of a volume of said container at predetermined positions.

[56] **References Cited**

U.S. PATENT DOCUMENTS

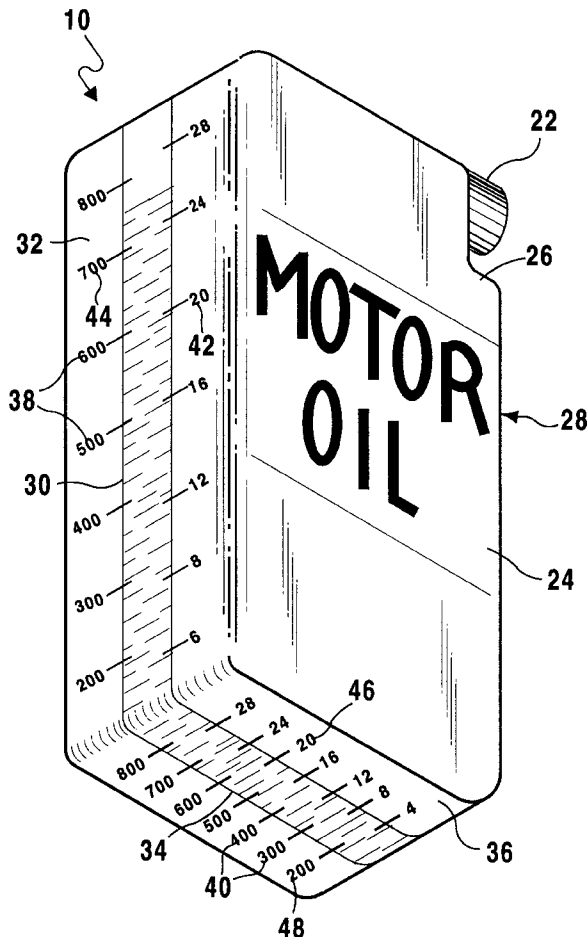
D. 182,683 4/1958 Nowak D58/12
D. 207,030 2/1967 Terrell D58/6
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422394 1/1935 United Kingdom 215/365

Primary Examiner—Kevin Shaver
Assistant Examiner—D A Bonderer

1 Claim, 7 Drawing Sheets



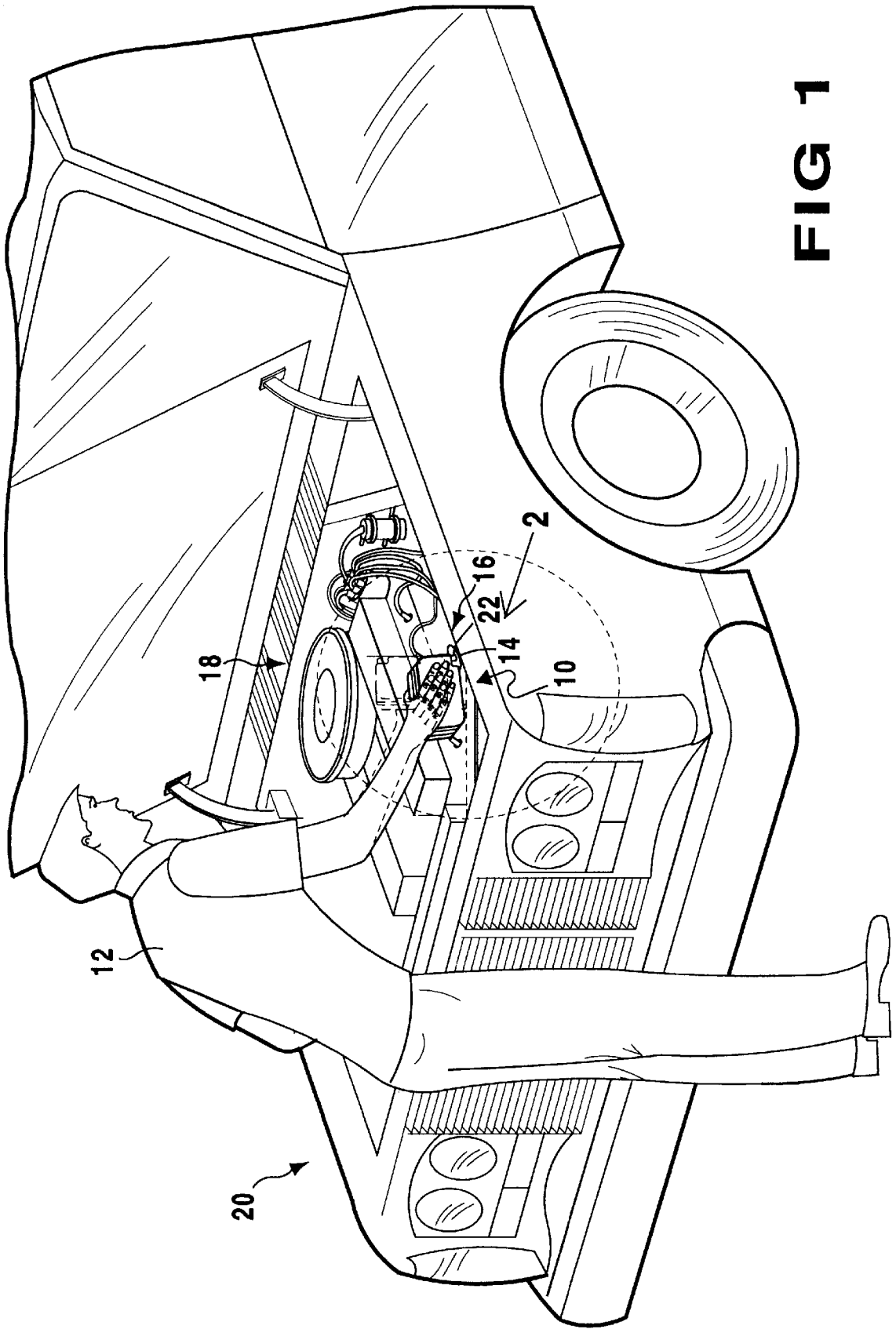


FIG 1

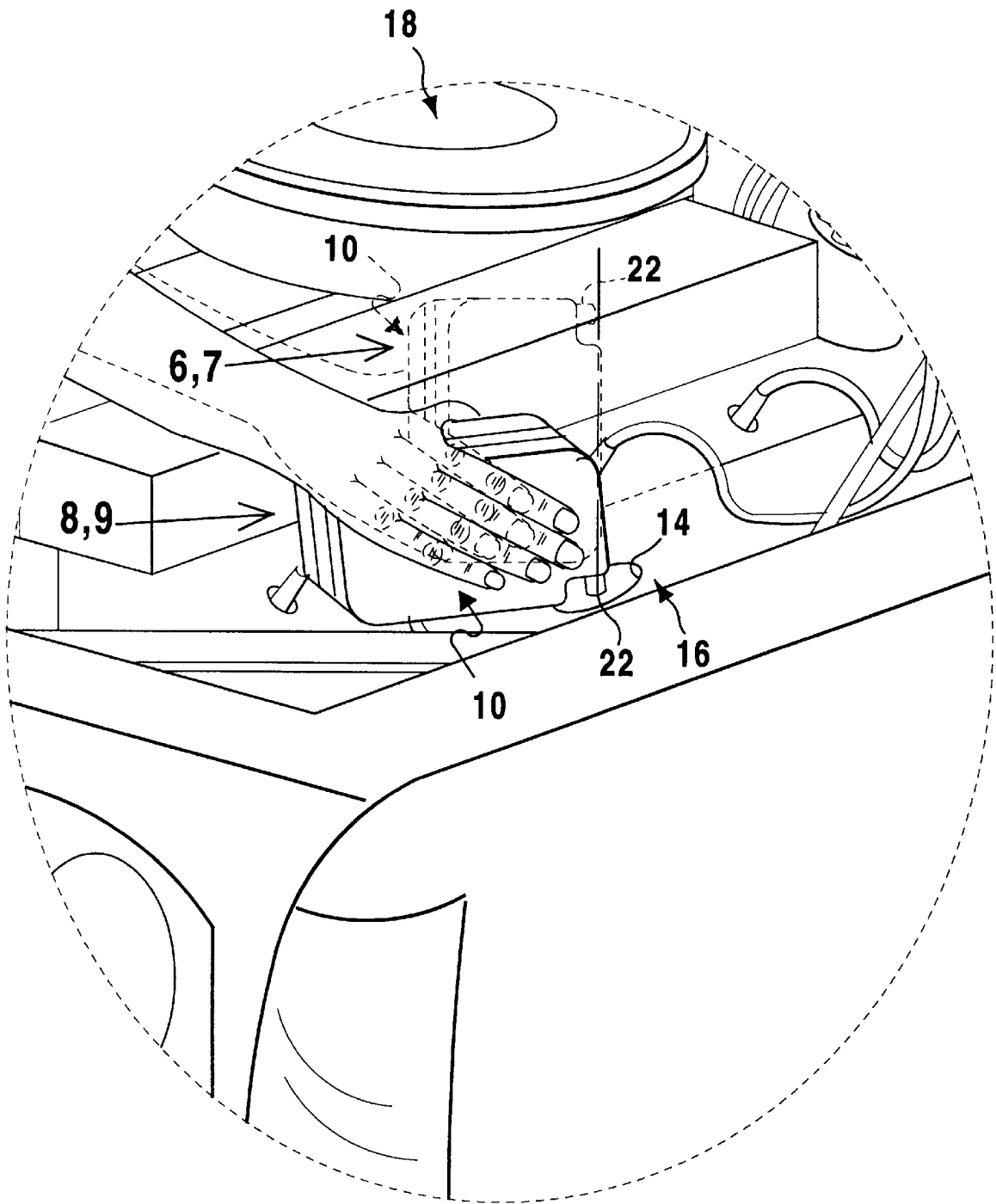


FIG 2

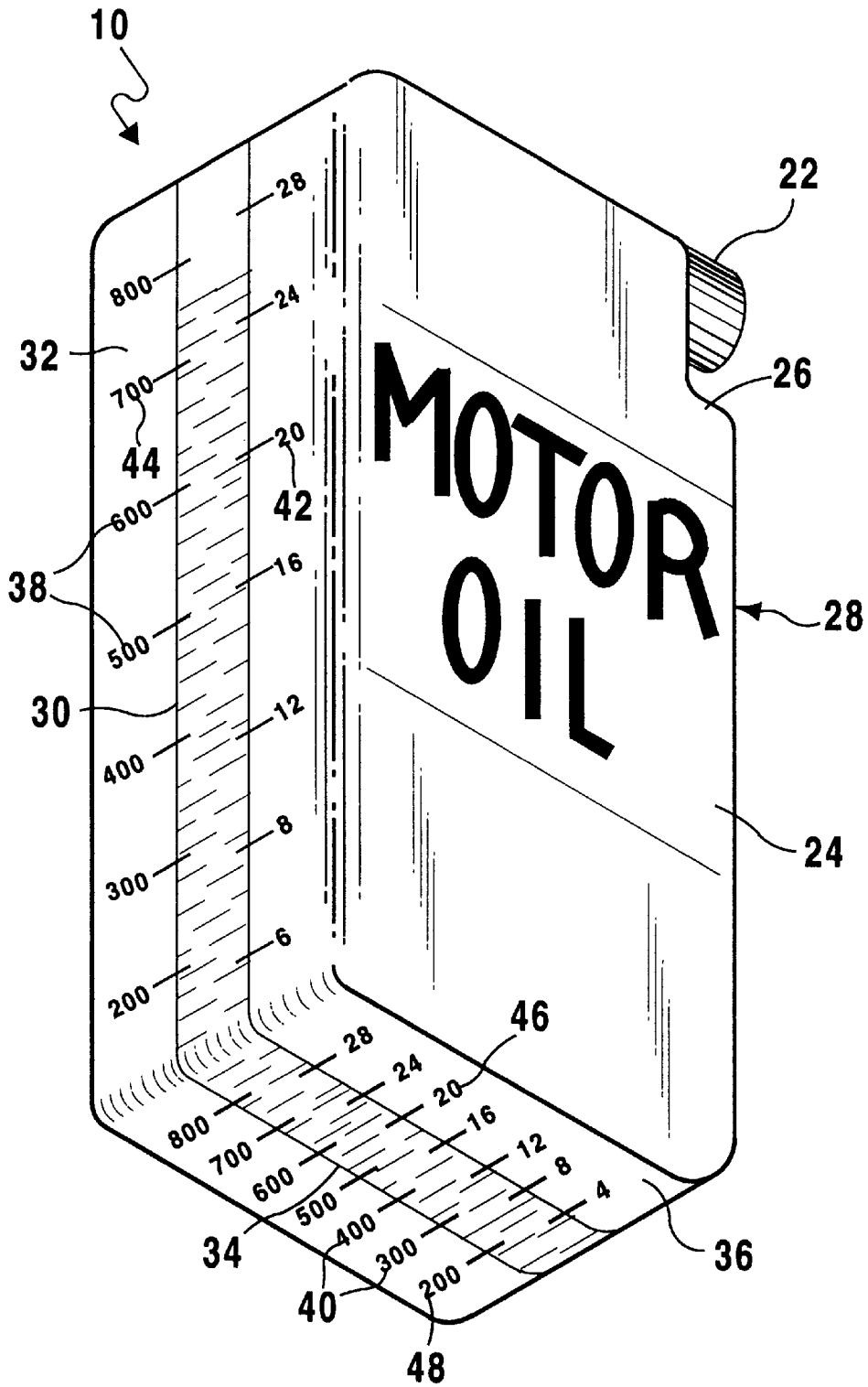


FIG 3

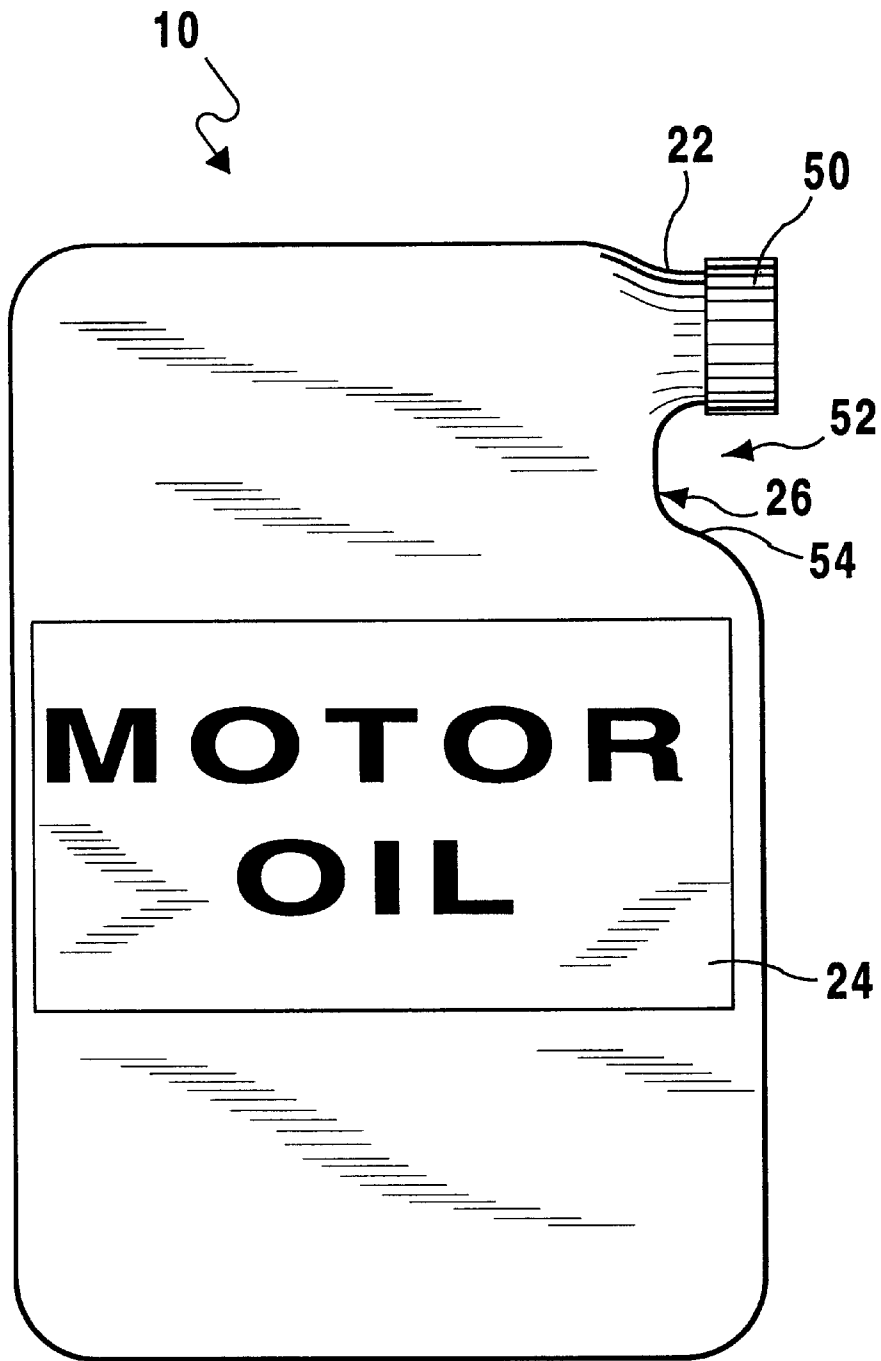


FIG 4

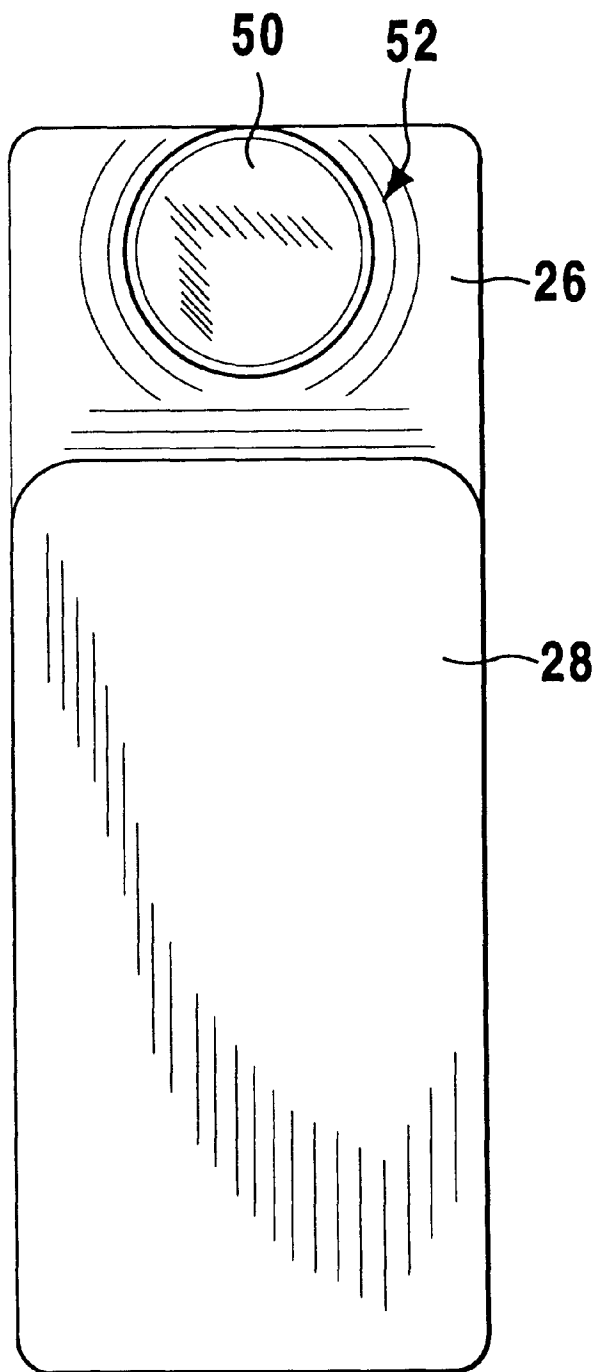


FIG 5

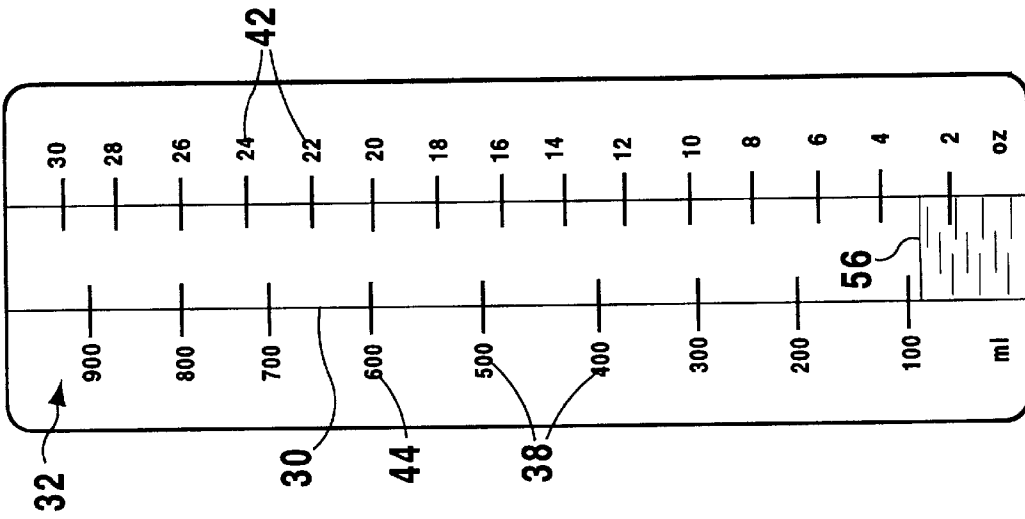


FIG 7

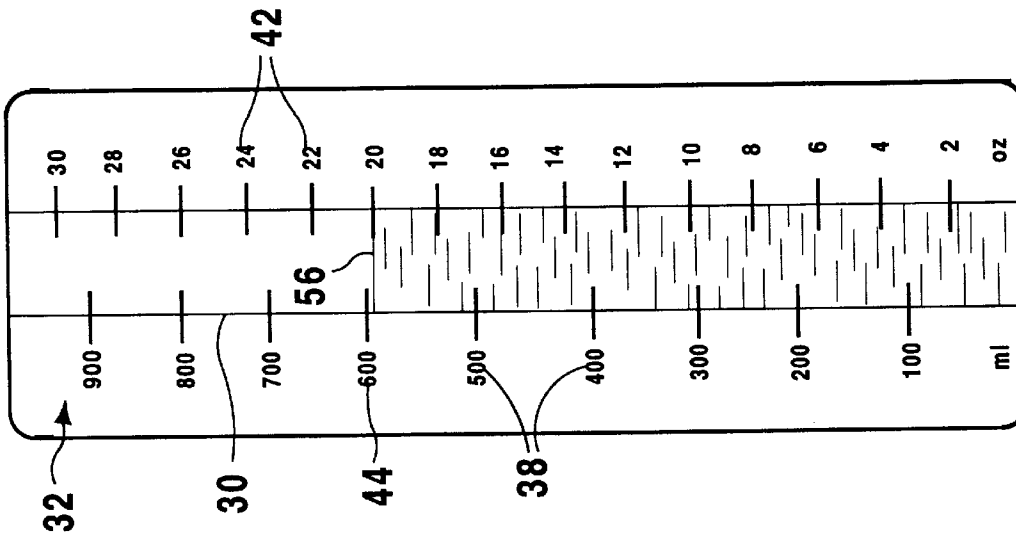


FIG 6

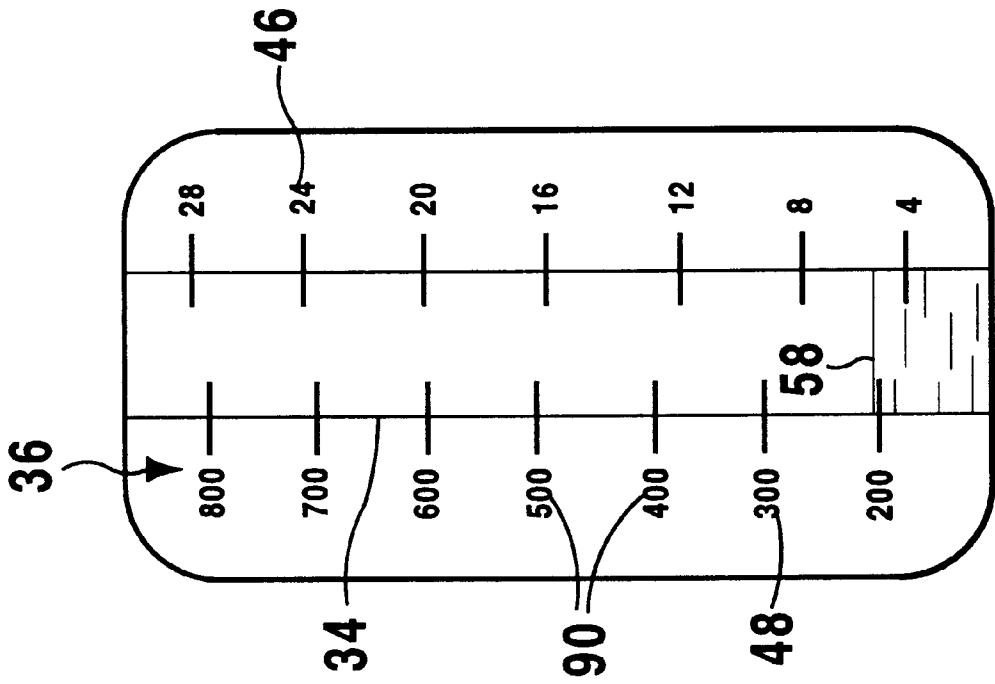


FIG 9

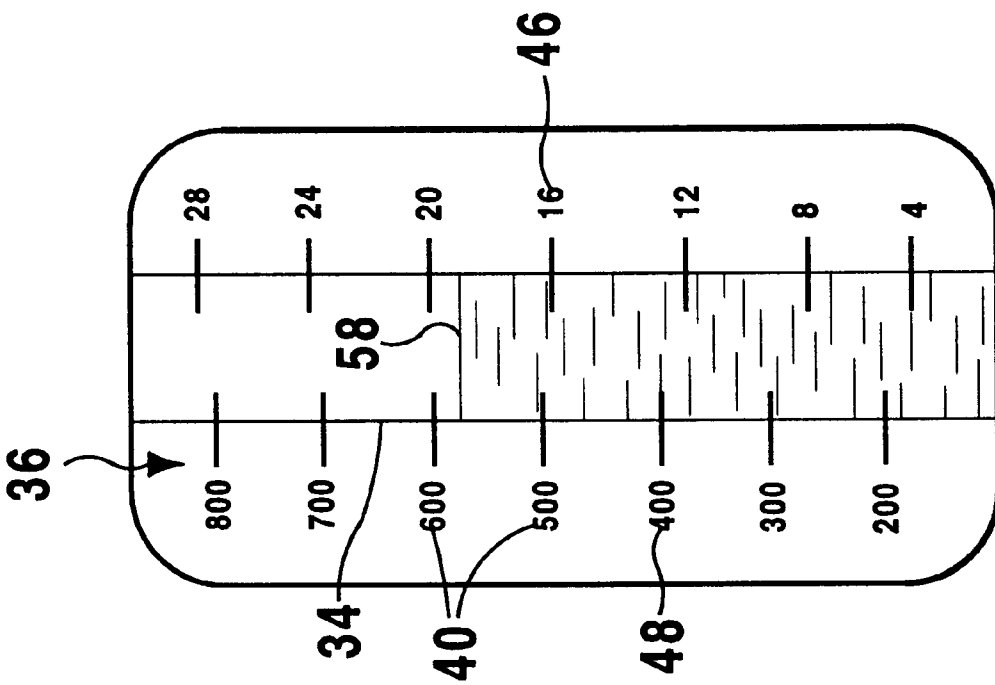


FIG 8

GRADUATED SIGHT GLASS CONTAINER**BACKGROUND OF THE INVENTION**

1. Field of the Invention

The present invention relates generally to containers and, more specifically, to a one piece container having a recessed corner pour spout contained within a conventional rectangular shape. The pour spout is formed by indenting a side of the container at an edge thereof and extending the side situated below the spout to an edge of the spout, thereby forming a generally rectangular shape and increasing the stackability as well as allowing the pour spout to extend closer to the opening receiving the fluid. The container also includes a graduated scale extending longitudinally down a side of the container opposite the pour spout and across the bottom of the container thereby enabling an accurate measurement of the remaining fluid within the container and providing a visual aid as to whether the container is completely empty prior to disposal.

2. Description of the Prior Art

Numerous types of containers including various pour spouts have been provided in the prior art. For example, U.S. Pat. Nos. 3,318,505; 3,493,146; 5,065,914; 5,406,994 and 5,613,574 all are illustrative of such prior art. While these units may be suitable for the particular purpose to which they address, they would not be as suitable for the purposes of the present invention as heretofore described.

This invention relates to plastic dispensing containers, and consists more particularly in new and useful improvements in a plastic container of the type which is thermofomed from two hot sheets of plastic by a known method which includes the heat sealing of two container halves, providing a seam which joins the bounding edges of the respective halves, and wherein a dispensing tube is integrally formed on one side of the container in the plane of the fused seam.

A liquid container of rigid or semi-rigid thermoplastic resin material of substantially cubical form with a vertical front wall and a horizontal bottom wall connected by an angular transversely extending wall with a neck formed thereon through which the container is preferably filled and through which liquid may be dispensed from the container. On the neck is mounted a dispensing valve assembly which includes a valve sleeve slidably mounted in a positioning sleeve, with the latter sleeve slidably mounted within the neck and movable outwardly to move the outer portion of the valve sleeve from a protected position, inwardly of the front vertical wall, to an extended dispensing position outwardly beyond said wall, means being provided for holding the positioning sleeve in its outer extended position. In addition, the valve sleeve is provided with a shroud arrangement for normally enclosing the outer end of the positioning sleeve and a tamper-proof seal arrangement connected between the valve sleeve and the neck for showing whether either the valve sleeve or the positioning sleeve has been moved from its original position. Also, vent means is provided for allowing entrance of air into the container for the dispensing operation.

A thermoplastic container molded in a single piece includes a storing body and a pouring tube. A pivoting means or hinge for the tube is obtained by the formation of two recessed pyramids on two lateral walls such that the pivoting of the tube takes place by inner surfaces, which are incorporated in the break in the articulation, folding up flat.

A pour spout for conducting a liquid, such as fuel, from a portable ventless container to a tank which includes a

mechanism for enabling a user to readily determine when the tank is full and when fluid flow from the portable container into the tank has stopped. The mechanism includes a window in a wall of the container and a deflector connected to the pour spout which extends into the interior of the container for directing air bubbles entering the container through the pour spout toward the window. The window permits a user to visually determine when the displaced air bubbles stop flowing which is an indication that the tank is full and flow of the liquid has stopped. The window may be in the form of a translucent thin wall section, a transparent pane mounted in the wall, or the container itself may be translucent throughout so that the displaced air bubbles may be seen when directed to a location adjacent a wall. The container also includes a carrying handle and a pouring handle located in such a manner that the center of gravity of the container is located closely adjacent to a vertical line passing through the point of support of a user's hand on the pouring handle during a pouring operation.

SUMMARY OF THE PRESENT INVENTION

The present invention relates generally to containers and, more specifically, to a one piece container having a recessed corner pour spout contained within a conventional rectangular shape. The pour spout is formed by indenting a side of the container at an edge thereof and extending the side situated below the spout to an edge of the spout, thereby forming a generally rectangular shape and increasing the stackability as well as allowing the pour spout to extend closer to the opening receiving the fluid. The container also includes a graduated scale extending longitudinally down a side of the container opposite the pour spout and across the bottom of the container thereby enabling an accurate measurement of the remaining fluid within the container and providing a visual aid as to whether the container is completely empty prior to disposal.

A primary object of the present invention is to provide a graduated sight glass container that will overcome the shortcomings of prior art devices.

Another object of the present invention is to provide a graduated sight glass container including a pour spout extending from a side thereof allowing the pour spout to be positioned close to and directly over a fluid receiving opening prior to dispensing the contents of the container through the opening.

A further object of the present invention is to provide a graduated sight glass container which is able to prevent spillage of the contents of the container during dispensing.

A yet further object of the present invention is to provide a graduated sight glass container including a graduated scale extending along a side and base of the container and wherein at least the graduated scale is made of a clear material allowing the user to view the contents therein and determine when the container is empty.

A still further object of the present invention is to provide a graduated sight glass container wherein the graduated scale allows the user to accurately measure an amount to be dispensed from the container as well as an amount of substance remaining in the container.

A further object of the present invention is to provide a graduated sight glass container wherein the translucent graduated scale extends along the base of the container thereby providing the user with an accurate measurement as to the amount of substance remaining in the container during dispensing of the substance.

A still further object of the present invention is to provide a graduated sight glass container having a rectangular shape

without any protrusions extending therefrom to thereby increasing the stackability of the container.

Another object of the present invention is to provide a graduated sight glass container that is simple and easy to use.

A still further object of the present invention is to provide a graduated sight glass container that is economical in cost to manufacture.

Additional objects of the present invention will appear as the description proceeds.

A graduated sight glass container for retaining a substance therein and minimizing the possibility of spillage during dispensing of the substance therefrom is disclosed by the present invention. The graduated sight glass container includes a housing having a shape of a quadrilateral and including an indented section on a first side thereof. A spout is connected to extend from the indented section of the housing and at most up to the first side. A pool is formed within the indented section and surrounding the spout, wherein, when the container is tilted from a vertical at-rest position and the spout is positioned adjacent an opening through which the substance contained within the container is to flow, the pool is caused to at least partially receive an edge of the opening. Extending along a second side of the housing is a first graduated scale and a second graduated scale extends along a base of the housing for measuring an amount of the substance within said container and an amount of the substance dispensed from the container during dispensing. The first and second graduated scales are both made of a clear material allowing a user to view the substance within the container therethrough and include indicia printed therealong indicative of a volume of said container at predetermined positions.

To the accomplishment of the above and related objects, this invention may be embodied in the form illustrated in the accompanying drawings, attention being called to the fact, however, that the drawings are illustrative only, and that changes may be made in the specific construction illustrated and described within the scope of the appended claims.

BRIEF DESCRIPTION OF THE DRAWING FIGURES

Various other objects, features and attendant advantages of the present invention will become more fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the several views.

FIG. 1 is a side perspective view of a person using the graduated sight glass container of the present invention to dispense oil into the engine of a vehicle;

FIG. 2 is an enlarged top perspective view of the graduated sight glass container of the present invention dispensing oil into the engine of the vehicle taken from within the circle labeled 2 of FIG. 1;

FIG. 3 is a bottom perspective view of the graduated sight glass container of the present invention;

FIG. 4 is a side view of the graduated sight glass container of the present invention;

FIG. 5 is a front side view of the graduated sight glass container of the present invention;

FIG. 6 is back side view of the graduated sight glass container of the present invention, the container filled to approximately two-thirds capacity with a liquid;

FIG. 7 is back side view of the graduated sight glass container of the present invention after a significant amount of the contents therein have been dispensed;

FIG. 8 is a bottom view of the graduated sight glass container of the present invention, the container positioned to extend horizontally to illustrate the graduated scale positioned on the bottom thereof and being filled to approximately two-thirds capacity with a liquid; and

FIG. 9 is a bottom view of the graduated sight glass container of the present invention after a significant amount of the contents therein have been dispensed, the container positioned to extend horizontally to illustrate the graduated scale positioned on the bottom thereof.

DESCRIPTION OF THE REFERENCED NUMERALS

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, the Figures illustrate the graduated sight glass container of the present invention. With regard to the reference numerals used, the following numbering is used throughout the various drawing figures.

- 10 graduated sight glass container of the present invention
- 12 user
- 14 fluid receiving opening of oil tank
- 16 oil tank of vehicle
- 18 engine of vehicle
- 20 vehicle
- 22 spout of graduated sight glass container
- 24 label identifying contents of graduated sight glass container
- 26 indented section of graduated sight glass container
- 28 first side of graduated sight glass container
- 30 graduated scale extending down second side of graduated sight glass container
- 32 second side of graduated sight glass container
- 34 graduated scale extending down base of graduated sight glass container
- 36 base of graduated sight glass container
- 38 indicia on graduated scale extending down second side
- 40 indicia on graduated scale extending along base
- 42 indicia indicating volume in ounces graduated scale extending down second side
- 44 indicia indicating volume in ml. graduated scale extending down second side
- 46 indicia indicating volume in ounces graduated scale extending along base
- 48 indicia indicating volume in ml. graduated scale extending along base
- 50 cover for spout
- 52 pool formed around spout
- 54 base side of the indented section
- 56 liquid within graduated sight glass container measured when standing vertically
- 58 liquid within graduated sight glass container measured when horizontal

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Turning now descriptively to the drawings, in which similar reference characters denote similar elements throughout the several views, FIGS. 1 through 9 illustrate the graduated sight glass container of the present invention indicated generally by the numeral 10.

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The graduated sight glass container **10** of the present invention is shown in FIG. 1. In this figure, the graduated sight glass container **10** is being used by a person **12** to deposit oil into an opening **14** for the oil tank **16** in an engine **18** of a vehicle **20**. The graduated sight glass container **10** includes a spout **22** which is able to be positioned close to and directly over the opening **14** through which the contents of the graduated sight glass container **10** will be deposited prior to pouring.

An enlarged view of the graduated sight glass container **10** is illustrated in FIG. 2. This view illustrates the user **12** holding the graduated sight glass container **10** in one hand **24** and placing the spout **22** at the opening through which the contents of the graduated sight glass container **10** will be poured. The graduated sight glass container **10** is shown in its upright position in dashed lines. The spout **22** of the graduated sight glass container **10** is able to fit into the opening **14** and thus allow dispensing of the contents of the graduated sight glass container **10** with a minimal amount of spillage.

An exploded bottom perspective view of the graduated sight glass container **10** is illustrated in FIG. 3. This figure illustrates use of the graduated sight glass container **10** for retaining motor oil therein as is indicated by the label **24**. The spout **22** is positioned to extend from an indented section **26** of a first side **28** of the container **10**. The spout **22** has a length not greater than a length of the indented section **26** and therefore does not extend past the first side **28**.

As can be seen from FIG. 3, the graduated sight glass container **10** is preferably in the shape of a rectangle and includes a first graduated scale **30** extending along a second side **32** thereof. At least a portion of the second side **32** is preferably made of a translucent material allowing the user to view the contents of the graduated sight glass container **10** and determine the amount of substance contained therein using the first graduated scale **30**. The first graduated scale **30** includes indicia **38** printed therealong, the indicia being indicative of the volume of the container **10** at predetermined heights along the length of the second side **32**. The indicia **38** allows the user to determine the amount of substance within the graduated sight glass container **10** when in a vertical upright position. The indicia **38** is provided to indicate the volume of the container in both ounces **42** and milliliters **44**. The measurement of the volume using ounces and milliliters is for purposes of example only. The indicia may use any other unit of measurement such as cubic centimeters, cups, pints, quarts, gallons, etc. Measurement of the volume of the contents when the graduated sight glass container **10** is in a vertical position will be described in greater detail hereinafter with specific reference to FIGS. 6 and 7.

A second graduated scale **34** extends along a base side **36** thereof. At least a portion of the base side **36** is preferably made of a translucent material allowing the user to view the contents of the graduated sight glass container **10** and determine the amount contained therein using the second graduated scale **34**. The second graduated scale **34** includes indicia **40** printed therealong, the indicia being indicative of the volume of the container at predetermined heights along the length of the base side **36**. The indicia **40** allows the user to determine the amount of substance within the graduated sight glass container **10** when in a horizontal position, e.g. when the contents are being dispensed. The graduated scale **34** also allows the user to measure an amount of substance being dispensed. The indicia **40** is provided to indicate the volume of the container in both ounces **46** and milliliters **48**. The measurement of the volume using ounces and milliliters

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is for purposes of example only. The indicia may use any other unit of measurement such as cubic centimeters, cups, pints, quarts, gallons, etc. Measurement of the volume of the contents when the graduated sight glass container **10** is in a horizontal position will be described in greater detail hereinafter with specific reference to FIGS. 8 and 9.

A side view of the graduated sight glass container **10** is shown in FIG. 4. From this figure it is seen that the graduated sight glass container **10** is preferably rectangular in shape and includes an indented section **26** on the first side **28** thereof. Extending from the indented section **26** and having a length substantially equal to that of the indented section **26** is the spout **22**. The spout **22** thus extends no further than the first side **28**. The spout **22** further includes a cover **50** releasably engaged therewith for sealing the graduated sight glass container **10** when not in use. The cover **50** may be releasably connected to the spout **22** by any known means such as a threaded engagement between a thread spiraling around an inner side of the cover **50** and a thread spiraling around an outer side of the spout **22**, a stopper arrangement wherein the cover **50** has a circumference substantially equal to the circumference of the spout **22** and fits within the spout **22**, etc.

Surrounding the spout **22** is a pool **52** as can be seen in FIG. 5. The spout **22** is shaped to fit within a desired opening when tilted for dispensing the contents therein such that the rim of the opening is received within the pool **52**. The placement of the spout **22** in the opening during dispensing eliminates the possibility of spilling the contents. The graduated sight glass container **10** may also include a label **24** for identifying the contents.

FIG. 5 illustrates the graduated sight glass container **10** of the present invention looking at the first side **28**. This view shows the spout **22** extending from the indented section **26** and the cover **50** positioned to selectively seal the spout **22** preventing the contents from being dispensed therethrough. Surrounding the spout is the pool **52**, providing a space between the spout **22** and a base side **54** of the indented section **26**. This allows the spout **22** to extend into the opening when dispensing the contents of the graduated sight glass container **10**.

FIGS. 6 and 7 illustrate use of the first graduated scale **30** for measuring the volume of substance filling the graduated sight glass container **10**. FIG. 6 illustrates a substance **56** within the graduated sight glass container **10** filling approximately two thirds of the graduated sight glass container **10**. The amount of the substance **56** within the container measures up to the line of the indicia **38** indicating 20 ounces and slightly less than 600 milliliters. When an amount of the substance **56** is dispensed from the graduated sight glass container **10**, the level of the substance will decrease as illustrated in FIG. 7. This figure indicates that an amount of the substance **56** has been dispensed from the graduated sight glass container **10** until an amount approximately equal to 3 ounces and slightly less than 100 milliliters remains within the graduated sight glass container **10**. Thus, after dispensing a desired amount of substance therefrom and placing the graduated sight glass container **10** in a vertical position, a user is able to determine when the graduated sight glass container **10** is empty and also determine how much of the contents has been dispensed.

FIGS. 8 and 9 illustrate the second graduated scale **34** extending along the base **36** of the graduated sight glass container **10**. When viewing the second graduated scale **34**, the graduated sight glass container **10** is in a horizontal position for dispensing the contents therein. FIG. 8 illus-

trates a substance **58** within the graduated sight glass container **10** filling approximately two thirds of the graduated sight glass container **10**. The amount of the substance **58** within the container **10** measures up to the line of the indicia **40** indicating slightly less than 20 ounces and slightly less than 600 milliliters. When an amount of the substance **58** is dispensed from the graduated sight glass container **10**, the level of the substance will decrease as illustrated in FIG. 9. This figure indicates that an amount of the substance **58** has been dispensed from the graduated sight glass container **10** until an amount approximately equal to 5 ounces and slightly more than 200 milliliters remains within the graduated sight glass container **10**. When using the second graduated scale **34** an amount of the contents can be measured during dispensing to provide an accurate measurement of the amount which has been dispensed. The user may thus be able to dispense a desired amount, ceasing the dispensing of the contents when the desired measurement is reached.

The operation of the graduated sight glass container **10** will now be described with reference to the figures. In operation, the graduated sight glass container **10** is filled with a desired substance and the cover **50** is positioned to releasably seal the substance therein. When it is desired to dispense the substance from within the container **10**, the cover **50** is removed.

Prior to dispensing, the user views the first graduated scale **30** to determine how much of the substance is contained within the container **10**. The user then calculates how much of the substance is desired to be dispensed and determines the indicia reading on the graduated scale which corresponds to the calculated amount. The container **10** is then grasped by the user and the spout **22** is positioned over the opening **14** through which the contents are to be dispensed. As the container **10** is tilted into a horizontal position, the spout **22** is caused to extend into the opening **14**. The contents are caused to be dispensed from the container **10** as the container **10** is tilted further. As the container **10** is tilted, the second graduated scale **34** enters the line of sight of the user. The user may now measure the amount being dispensed by observing the decreasing level of substance within the container on the second graduated scale **34**. When the level of substance observed matches the determined level, the user will tilt the container **10** back to the vertical position and thereby cease dispensing of the substance. The user is also able to determine when the container **10** is empty and can either be refilled or disposed of by viewing the first graduated scale **30**. The cover **50** will now be placed to seal the spout **22** closed until the next desired use.

From the above description it can be seen that the graduated sight glass container of the present invention is able to overcome the shortcomings of prior art devices by providing a graduated sight glass container including a pour spout extending from a side thereof allowing the pour spout to be positioned close to a fluid receiving opening prior to pouring the contents of the container and thereby prevent spillage of the contents of the container. The graduated sight glass container may be made of a clear material allowing the user to view the contents therein and determine when the container is empty and includes a translucent graduated scale positioned on a side of the container allowing the user to accurately measure an amount of substance to be dispensed from and an amount of substance remaining in the container. The translucent graduated scale extends along the base of the container thereby providing the user with an accurate measurement as to the amount of substance remaining in the container during dispensing of the substance. The graduated sight glass container also has a rectangular shape without any protrusions thereby increasing the stackability of the

container. Furthermore, the graduated sight glass container of the present invention is simple and easy to use and economical in cost to manufacture.

It will be understood that each of the elements described above, or two or more together may also find a useful application in other types of methods differing from the type described above.

While certain novel features of this invention have been shown and described and are pointed out in the annexed claims, it is not intended to be limited to the details above, since it will be understood that various omissions, modifications, substitutions and changes in the forms and details of the device illustrated and in its operation can be made by those skilled in the art without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention that others can, by applying current knowledge, readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention.

What is claimed is:

1. A graduated sight glass container for retaining a substance therein and minimizing the possibility of spillage during dispensing of the substance therefrom, said graduated sight glass container comprising:

- a) a rectangular housing consisting of thermoplastic material having a shape of a quadrilateral and including a right angled indented section on a flat, first side at a corner of a flat top thereof with a flat face of said indented section parallel to said first side;
- b) a spout connected to extend from said face and at most up to said first side; and
- c) said spout being substantially centrally located on said face to form a pool within said indented section and surrounding said spout, wherein, when said container is tilted from a vertical at-rest position causing said spout to be positioned adjacent an opening through which the substance contained within said container is to flow, said pool is caused to at least partially receive an edge of the opening;
- d) said housing further consisting of a flat, second side opposite and parallel to said first side with a first graduated scale with parallel, spaced markings extending along a length of said second side for measuring an amount of the substance within said container, said first graduated scale being made of a clear material allowing a user to view the substance within the container, said second side extending up to the top of said housing with said graduate scale uniformly spaced up to a point opposite a bottom of said indented section;
- e) said housing still further consisting of a flat base opposite the top of said housing having a second graduated scale with parallel, equidistant spaced markings extending along a length of said base for measuring an amount of the substance dispensed from within said container when said container is pivoted from its vertical at-rest position to a horizontal position, said second graduated scale being made of a clear material allowing a user to view the substance within said container; and
- f) third and fourth flat sides at right angles to said first and second sides extending from said base to the top of said housing.