Disclosed herein is a device for gauging medication dosage. The device includes a connection part, and a first container and a second container. The connection part is provided therein with a separation membrane having a hole. The first and second containers are symmetrically and threadedly coupled to respective sides of the connection part.
DEVICE FOR GAUGING DOSAGE

TECHNICAL FIELD

[0001] The present invention relates, in general, to a device for gauging medication dosage and, more particularly, to a device for gauging medication dosage, which enables a user to take medicine according to a prescription by virtue of allowing precise measurement of the dosage of liquid medicine through simple manipulation of the device, thus preventing any reproducibility attributable to taking the wrong dosage of a medication.

BACKGROUND ART

[0002] As general methods of taking liquid medicine, there is the method of pouring liquid medicine from a medicine bottle into a measuring spoon and taking the poured liquid medicine, and the method of pouring liquid medicine from a medicine bottle into a measuring cup having a hollow structure and taking the poured liquid medicine. However, the precise dosage of a medicine, which is prepared according to a prescription, cannot be easily measured even if either of the above-described methods is used.

[0003] In the case where liquid medicine contained in a medicine bottle is poured into a measuring spoon and is taken from the spoon, a problem, such as the liquid medicine overflowing the borders of the measuring spoon depending on the degree of inclination of the medicine bottle, occurs frequently.

[0004] In the case where liquid medicine is poured into a measuring cup and is taken, there is a problem in that the liquid medicine must be poured into the medicine bottle again because an excessive amount of the liquid medicine was poured into the measuring cup during use of the measuring cup. Furthermore, there is an inconvenience in that such a measuring cup must be washed after being used. If the measuring cup is not washed, the measuring cup may become sticky due to the presence of remaining material. The measuring cup is unsanitary because it is stored in the state in which the inner surface thereof is exposed to the air. In addition, there is an inconvenience in carrying and storing such a measuring cup, and there is a concern about its loss.

[0005] Meanwhile, in the case where the taker is a child, the case where liquid medicine is spilt or pours over when the child only just slightly twists or shakes his body in order not to take the liquid medicine occurs frequently.

DISCLOSURE

Technical Problem

[0006] Accordingly, the present invention has been made keeping in mind the above problems occurring in the prior art, and an object of the present invention is to provide a device for gauging medication dosage, which enables a user to precisely measure the dosage of liquid materials to be taken in partial doses, and which can be easily manipulated, thus not only improving the user’s convenience but also reducing the manufacturing cost.

Technical Solution

[0007] In order to accomplish the above object, a device for gauging medication dosage according to a first embodiment of the present invention includes a connection part provided therein with a separation membrane having a hole, and a first container and a second container symmetrically and threadedly coupled to respective sides of the connection part.

[0008] In order to accomplish the above object, a device for gauging medication dosage according to a second embodiment of the present invention includes a connection part provided therein with a separation membrane having a hole and configured such that a first side thereof is coupled to a first container, and a second container threadedly coupled with a second side of the connection part.

[0009] In the devices for gauging medication dosage according to the first and second embodiments of the present invention, the hole is formed to have a diameter of 0.5 mm to 3 mm.

[0010] Here, the number of holes is plural.

[0011] In the devices for gauging medication dosage according to the first and second embodiments of the present invention, any one of the first container and the second container is made of a flexible material.

[0012] Here, any one of the first container and the second container is made of a transparent or semitransparent material.

[0013] In the devices for gauging medication dosage according to the first and second embodiments of the present invention, a scale is marked on any one of the first and second container in order to subdivide the capacity.

[0014] Here, the scale includes numerical values.

[0015] In the devices for gauging medication dosage according to the first and second embodiments of the present invention, any one of the first container and the second container is provided with an opening and closing part.

[0016] In the devices for gauging medication dosage according to the first and second embodiments of the present invention, the separation membrane is formed such that the upper surface thereof and lower surface thereof are symmetric to each other.

[0017] In the devices for gauging medication dosage according to the first and second embodiments of the present invention, the separation membrane is formed to have flat shapes or concave shapes.

[0018] In the device for gauging medication dosage according to the first embodiment of the present invention, the connection part is threadedly coupled with any one of the first container and the second container.

[0019] In the device for gauging medication dosage according to the second embodiment of the present invention, the connection part is threadedly coupled with the second container.

Advantageous Effects

[0020] As described above, the device for gauging medication dosage according to the present invention enables oral administration of liquid medicine, contained in the device, by precisely adjusting the dosage of the liquid medicine through simple manipulation of the device. That is, in the device for gauging medication dosage according to the present invention, two spaces are connected via at least one small hole, so that liquid medicine can be moved from one space to another space as needed, with the result that the dosage of chemicals, such as agricultural chemicals, which must not touch the skin, as well as medical supplies, such as liquid medicine, can be precisely adjusted.

[0021] Furthermore, in the device for gauging medication dosage according to the present invention, all of the surfaces that come into direct contact with liquid medicine are made
airtight, so that they are not exposed to the outside except for when the liquid medicine is being administered, and the result that the device can be sanitarily used even though it is not washed every time after being used.

[0022] Furthermore, in the device for gauging medication dosage according to the present invention, two containers are integrally assembled, so that the carrying and storing of the device can be facilitated and, in addition, the concern about its loss can be greatly reduced.

DESCRIPTION OF DRAWINGS

[0023] FIGS. 1 and 2 are sectional views showing respective devices for gauging medication dosage, according to first and second embodiments of the present invention;

[0024] FIG. 3 is a sectional view showing a connection part, having an engaging protrusion, of FIGS. 1 and 2;

[0025] FIGS. 4 to 7 are sectional views showing a process of adjusting the fixed quantity of a predetermined liquid material using the device for gauging medication dosage according to the first embodiment of the present invention;

[0026] FIG. 8 is a sectional view showing the state in which an opening and closing part is opened such that the liquid in a first container flows out, in the device for gauging medication dosage according to the second embodiment of the present invention.

DESCRIPTION OF REFERENCE NUMERALS OF PRINCIPAL ELEMENTS

[0027] 100, 200: devices for gauging medication dosage according to first and second embodiments
[0028] 110, 120: first containers
[0029] 120, 220: second containers
[0030] 130, 230: connection part s
[0031] 140, 240: separation membranes
[0032] 150, 250: holes
[0033] 160, 260: liquids
[0034] 270: opening and closing part
[0035] 180, 280: engaging protrusion

BEST MODE

[0036] Preferred embodiments of the present invention are described in detail with reference to the accompanying drawings below.

[0037] FIGS. 1 and 2 are sectional views showing respective devices for gauging medication dosage, according to first and second embodiments of the present invention.

[0038] The device for gauging medication dosage, according to the first and second embodiment of the present invention may be provided in the state in which it is filled, or in the empty state in which it is not filled with any contents. In the case where the device is provided in the empty state, a user can repeatedly use the device by pouring a desired liquid into the device. In the case where it is desired to use the device by pouring a liquid different from the liquid, which is first used, the device may be reused after being washed.

[0039] As shown in FIG. 1, the device 100 for gauging medication dosage according to the first embodiment of the present invention includes a connection part 130, which is provided therein with a separation membrane 140 having at least one hole 150, and a first container 110 and a second container 120, which are symmetrically coupled to respective sides of the connection part 130.

[0040] As shown in FIG. 2, the device 200 for gauging medication dosage according to the second embodiment of the present invention includes a connection part 230, which is provided therein with a separation membrane 240 having at least one hole 250 in the same manner as in the first embodiment and is configured such that the first side thereof is coupled to a first container 210, and a second container 220, which is coupled with the second side of the connection part 230.

[0041] In the device 100 or 200 for gauging medication dosage according to the first or second embodiment of the present invention, it is preferred that the hole 150 or 250 be formed to have a diameter of 0.5 mm to 3 mm. The reason for this is because it is difficult for a liquid to flow through the hole 150 or 250 if the hole is too small, and because the liquid that is located above the hole 150 or 250 continues to flow through the hole 150 or 250 due to a decrease in the resistant force, which acts in the opposite direction to the load, if the hole 150 or 250 is too large.

[0042] Although not shown in the drawings, a plurality of holes 150 or 250 may be formed. This is for cases where it is required that a relatively large amount of liquid be moved between the first container 110 or 210 and the second container 120 or 220. Accordingly, it is apparent that the size of the hole 150 or 250 may be changed according to the use of the present invention.

[0043] Although not shown in the drawings, in the device 100 or 200 for gauging medication dosage according to the first or second embodiment of the present invention, it is preferred that the separation membrane 140 or 240 be formed such that the upper surface thereof and the lower surface thereof are symmetric to each other. For example, the separation membrane 140 or 240 is formed such that the upper surface thereof and the lower surface thereof have flat shapes or concave shapes. Accordingly, the bi-directional flow of a liquid from the first container 110 or 210 to the second container 120 or 220, or from the second container 120 or 220 to the first container 110 or 210, through the hole 150 or 250 can be achieved.

[0044] Meanwhile, in order to increase the size of the hole 150 or 250, the separation membrane 140 or 240 must be formed to have an increased thickness. That is, the hole 150 or 250 must be formed to have a size proportional to the thickness of the separation membrane 140 or 240. The reason for this is because the liquid that is located above the hole 150 or 250 flows downwards by gravity, but the resistant force, which acts in the opposite direction to gravity, increases in the hole 150 or 250 due to an increase in the thickness of the separation membrane 140 or 240.

[0045] In the device 100 or 200 for gauging medication dosage according to the first or second embodiment of the present invention, any one of the first container 110 or 210 and the second container 120 or 220 is made of a flexible material. For example, the first container 110 or 210, or the second container 120 or 220, may be manufactured using a raw material, such as synthetic resin.

[0046] When one of the first container 110 or 210 and the second container 120 or 220, which is made of the above-described material, is pressed, the difference in pressure between the first container 110 or 210 and the second container 120 or 220 is generated, and thus the liquid flows through the hole 150 or 250 between the first container 110 or 210 and the second container 120 or 220.
Meanwhile, any one of the first container 110 or 210 and the second container 120 or 220 may be made of a transparent or semitransparent material.

In the device 100 or 200 for gauging medication dosage according to the first or second embodiment of the present invention, it is preferred that a scale (not shown) be marked on the first container 110 or 210 and the second container 120 or 220 in order to subdivide the capacity. In addition, it is preferred that the scale include numerical values. That is, any one of the first container 110 or 210 and the second container 120 or 220 is provided with a scale so that the amount of liquid that is contained therein can be numerically measured.

In this case, although the scale is marked with numerical values, which are obtained by calculating volumes from the separation membrane 140 or 240, it is preferred that, in the first container 110 or 210 or in the second container 120 or 220, numerical values, which are obtained by calculating volumes from a location opposite the separation membrane 140 or 240, are marked. More preferably, all the numerical values, which are obtained by calculating volumes both from the separation membrane 140 or 240 and from a location opposite the separation membrane 140 or 240 are marked.

In the device 100 or 200 for gauging medication dosage according to the first or second embodiment of the present invention, it is preferred that any one of the first container 110 or 210 and the second container 120 or 220 be provided with an opening and closing part (not shown). The opening and closing part is formed in a portion of the first container 110 or 210, or the second container 120 or 220, and allows or interrupts the flow of the liquid material in the containers.

FIG. 3 is a sectional view showing the connection part, having an engaging protrusion, of FIGS. 1 and 2.

As shown in the drawing, in the device 100 for gauging medication dosage according to the first embodiment of the present invention, it is preferred that the connection part 130 be formed such that an engaging protrusion 180 protrudes from the outer circumference thereof. In the case where the first container 110 or the second container 120 is externally inserted into the connection part 130, the engaging protrusion 180 prevents the first container 110 or the second container 120 from being excessively inserted thereinto.

Furthermore, in the device 200 for gauging medication dosage according to the second embodiment of the present invention, it is preferred that the connection part 230 be formed such that an engaging protrusion 280 protrudes from the outer circumference thereof in the same manner as in the first embodiment. In the case where the second container 220 is externally inserted into the connection part 230, the engaging protrusion 280 prevents the second container 230 from being excessively inserted thereinto.

In addition, although not shown in the drawings, in the device 100 for gauging medication dosage according to the first embodiment of the present invention, it is preferred that the connection part 130 be threadedly coupled with any one of the first container 110 and the second container 220. Here, it is apparent that the coupling surface of the connection part 130 is formed to have a circular shape, and that the coupling surface of the first container 110 or the second container 120, which is coupled with the coupling surface of the connection part, is formed to have a circular shape.

Furthermore, in the device 200 for gauging medication dosage according to the first embodiment of the present invention, it is preferred that the connection part 230 be threadedly coupled with the second container 220 in the same manner as in the first embodiment. Hereinafter, repeated descriptions are omitted.

The operational principle of measuring a liquid using the device for gauging medication dosage according to the present invention is described below. Since the operational principle of the first embodiment is the same as that of the second embodiment, the descriptions are made based on the first embodiment, and any description of the second embodiment is not repeatedly made.

FIGS. 4 to 7 are sectional views showing a process of adjusting the fixed quantity of a predetermined liquid material using the device for gauging medication dosage according to the first embodiment of the present invention.

First, in the device 100 for gauging medication dosage according to the first embodiment of the present invention, the connection part 130, which is coupled with the first container 110, is coupled with the second container 120 in which a liquid 160 is contained, as shown in FIG. 4. In this case, any one of the first container 110 and the second container 120 must have flexibility, but the other one may have no flexibility, such as for example, a glass bottle.

Thereafter, as shown in FIG. 5, the action of turning over the resulting structure of FIG. 4 is conducted. In this case, the liquid 160 contained in the second container 120 presses the separation membrane 140, which is provided in the connection part 130, due to gravity, but the liquid 160 contained in the second container 120 does not flow to the first container 110 through the hole 150 formed in the separation membrane 140. The reason for this is because the sum of forces that act on the liquid 160 located above the hole 150 becomes equal to the sum of gravity and the resistant force of the hole 150. Here, term ‘the resistant force of the hole 150’ refers to the sum of adhesive force, cohesive force, and surface tension of the liquid 160.

Subsequently, as shown in FIG. 6, any one of the first container 110 and the second container 120 is pressed using a force. As an example, when the first container 110 is pressed, the shape of the first container 110 varies, and thus the volume thereof decreases. In this case, the air in the first container 110 is transmitted to the inner space of the second container 120, which is not connected to the first container 110 via the hole 150 of the separation membrane 140, while the pressure in the first container 110 increases.

Accordingly, until now, the liquid 160 in the second container 120 does not flow down to the first container 110. When the pressing force is removed, the first container 110 is restored to its original shape and, at the same time, the pressure in the first container 110 rapidly decreases. When the pressure in the first container 110 becomes equal to the pressure in the second container 120 while the liquid 160 in the second container 120 is moved to the first container 110, the movement of the liquid 160 through the hole is stopped.

Meanwhile, when the second container 120 is pressed, the volume of the second container 120 decreases and, at the same time, the liquid 160 contained in the second container 120 is moved to the first container 110. In this state, when the pressure in the first container becomes equal to the pressure in the second container 120 while the second container 120 is restored to its original shape, the movement of the liquid 160 through the hole 150 is stopped.

Thereafter, in the case where a greater amount of liquid 160 than was first intended to flow from the second
container 120 to the first container 110, the action of turning over the resulting structure and pressing the first container 110 or the second container 120 is conducted in the state of FIG. 6. Accordingly, the liquid 160 in the first container 110 flows down to the interior of the second container 120, and thus the amount of liquid 160 that is excessively charged in the first container 110 can be easily changed and adjusted.

[0064] When a necessary amount of liquid 160 is charged in the first container 110 by repeating the above-described process, the liquid 160 contained in the first container 110 is administered to a desired external target after the first container 110 assembled to the connection part 130 is disassembled as shown in FIG. 7.

[0065] FIG. 8 is a sectional view showing the state in which an opening and closing part is opened such that the liquid in the first container flows out, in the device for gauging medication dosage according to the second embodiment of the present invention.

[0066] In the device 200 for gauging medication dosage according to the second embodiment of the present invention, the connection part 230, which is provided therein with the separation membrane 240 having the hole 250 and is integrated with the first container 210, is securely coupled with the second container 220 in which the liquid 260 is contained.

[0067] Thereafter, when the liquid 260 flows down from the second container 220 to the first container 210 by generating the difference in pressure between the first container 210 and the second container 220 and when the first container 210 is excessively filled with the liquid 260, the liquid 260 contained in the first container 210 is made to flow to the second container 220 again after the action of turning over the second container 220 and the first container 210 is conducted. In this state, when the opening and closing part 270 is opened in the state in which an appropriate amount of liquid flows into the first container 210, the liquid 260 in the first container 210 can be discharged to a desired external target. In this case, in spite of exiting of the hole 250, the liquid 260 contained in the first container 210, which is integrated with the connection part 230, does not flow to the outside as long as there is no variation in pressure.

[0068] Although the preferred embodiments of the present invention have been described above in the detailed description of the present invention, it will be apparent to a person having ordinary knowledge in the technical field of the present invention that various modifications and variations are possible within the range that does not depart from the scope of the present invention. Accordingly, the scope of the present invention should not be defined as being limited to the above-described embodiments, and should be defined by the equivalents thereof as well as the claims, which will be described later.

INDUSTRIAL APPLICABILITY

[0069] The present invention relates to a device for gauging medication dosage, and, more particularly, to a device for gauging medication dosage, which enables a user to take medicine according to a prescription by virtue of allowing precise measurement of the dosage of liquid medicine, thus preventing any repercussions attributable to taking the wrong dosage of a medication. However, the present invention is not limited to the medical field for the use thereof, and may be applied to containers, such as medicine bottles, which require precise measuring. The general usability of the present invention and the use area thereof is very large.

1. A device for gauging medication dosage, comprising: a connection part provided therein with a separation membrane having a hole; and a first container and a second container symmetrically and threadedly coupled to respective sides of the connection part;

   wherein:
   any one of the first container and the second container is made of a flexible material,
   the separation membrane is formed such that an upper surface thereof and a lower surface thereof are symmetric to each other and have flat shapes or concave shapes, and
   the hole is formed to have a diameter of 0.5 mm to 3 mm.

2. A device for gauging medication dosage, comprising: a connection part provided therein with a separation membrane having a hole and configured such that a first side thereof is coupled to a first container; and a second container threadedly coupled with a second side of the connection part;

   wherein:
   any one of the first container and the second container is made of a flexible material,
   the separation membrane is formed such that an upper surface thereof and a lower surface thereof are symmetric to each other and have flat shapes or concave shapes, and
   the hole is formed to have a diameter of 0.5 mm to 3 mm.