H. E. MILLER.

BOTTLE.

APPLICATION FILED FEB. 14, 1914.

1,154,931. Patented Sept. 28, 1915.

Fig. 1.

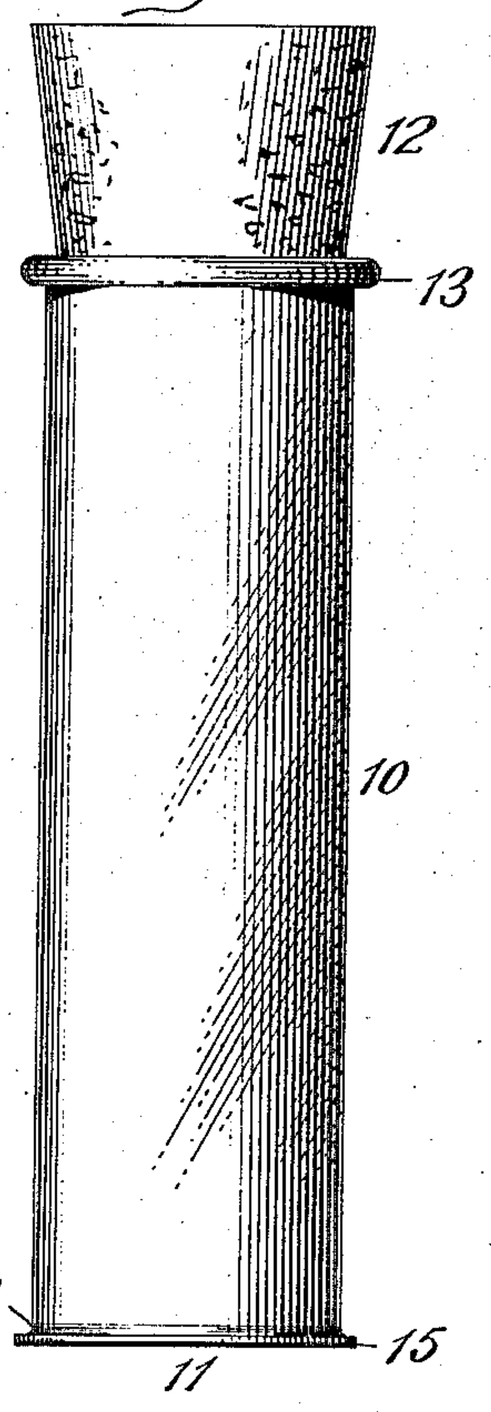


Fig. 2.

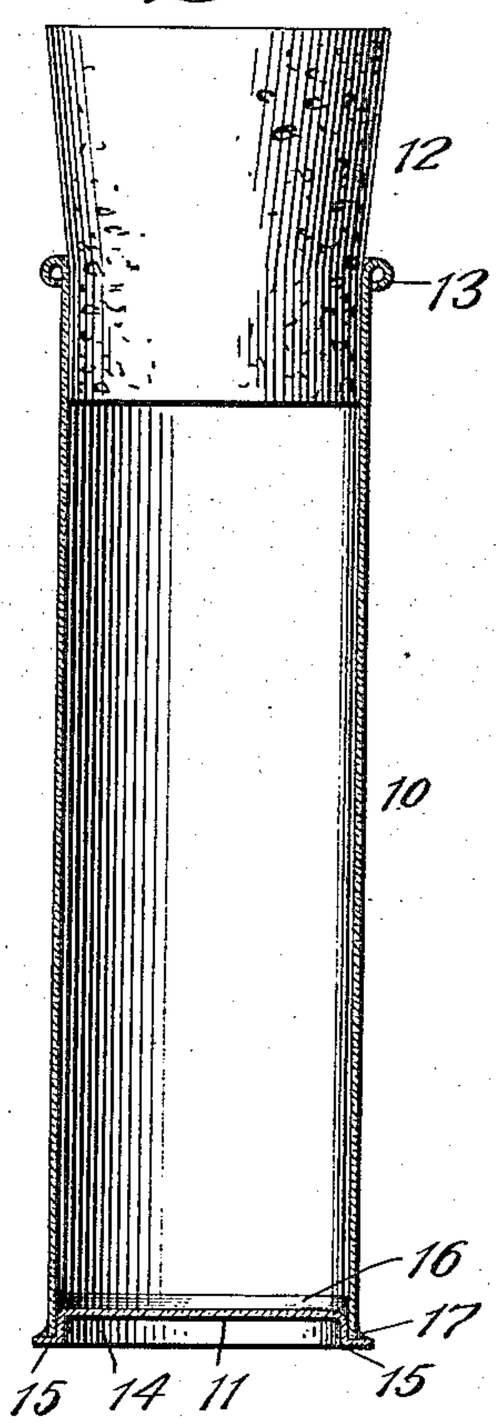


Fig. 3.

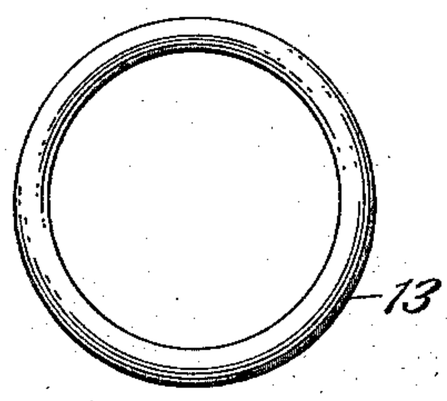


Fig. 4.

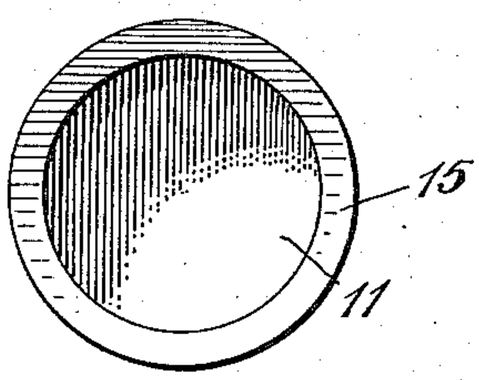


Fig. 5.

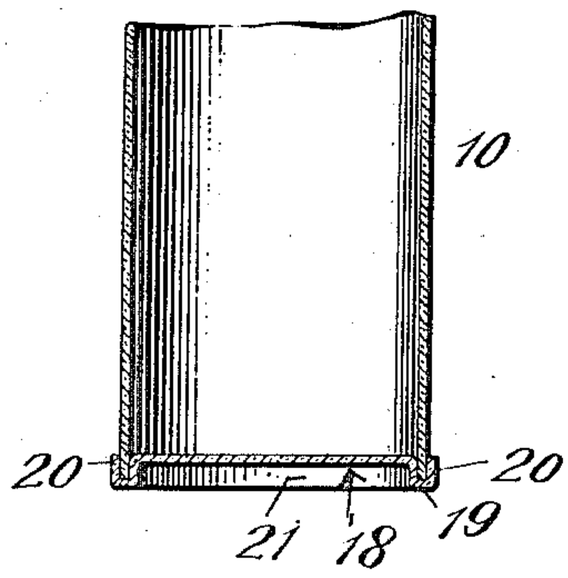
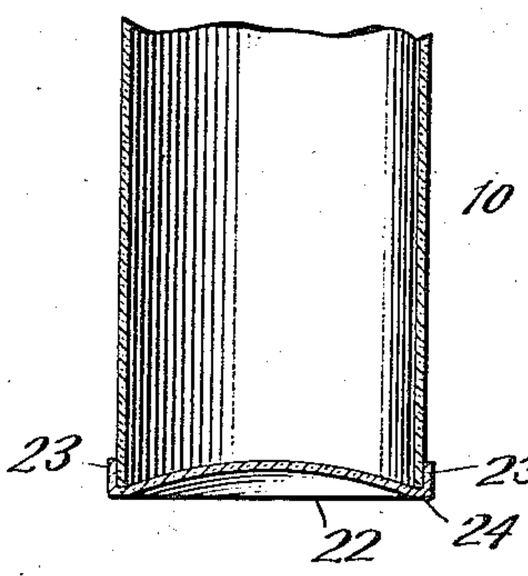


Fig. 6.



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UNITED STATES PATENT OFFICE.

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BOTTLE.

1,154,931. Specification of Letters Patent. Patented Sept. 28, 1915.

Application filed February 14, 1914. Serial No. 818,641.

To all whom it may concern:

Be it known that I, HORACE E. MILLER, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Bottles, of which the following is a specification.

The invention pertains more particularly to a new bottle formed of celluloid or other pyroxylin material and comprising a cylindrical body portion and a bottom united thereto by celluloid cement, rendering the bottom and said body substantially one integral piece, said body being, in the preferred construction, transparent and substantially colorless and said bottom being formed with a mat surface or one adapted to receive writing or marks from a lead pencil. The upper end of the cylindrical body portion of the bottle is beaded over, and said end may be closed by a cork. The bottom applied to the body of the bottle has preferably not only a mat surface but is dished upwardly in its middle portions whereby the circumferential portions of said bottom afford a uniform edge adapted to find a firm support upon a table or the like, which might not be the case if the entire surface of the bottom of the bottle was intended to engage the surface of a table, it being unlikely that the bottom would be so true, in the ordinary course of manufacture, as to uniformly engage the surface upon which the bottle might be placed.

The bottle of my invention was designed for the specific purpose of holding samples of urine preparatory to the analysis of the same, and hence the bottle finds its more extended use in the hands of physicians connected with life insurance companies and other institutions. I have found that when the bottle is made of celluloid or other pyroxylin material it resists action of the urine and does not affect the urine, and this is of particular importance, as may be readily understood.

The bottles are ordinarily of uniform diameter and cylindrical in cross-section and between three and four inches long and about one inch in diameter, but of course the invention is not limited to the particular dimensions of the bottle. The manufacture of the bottles from celluloid or the like is not only desirable for the reasons above-mentioned, but because the bottles may be made thin and light and not be liable to fracture, and in addition when the bottles are made from sections of a celluloid tube, they may not only be quickly and comparatively inexpensively manufactured, but are seamless along their sides and well adapted to properly receive a bottom formed of celluloid or other pyroxylin material united thereto by celluloid cement, so that finally the entire bottle is in effect in one piece. The upper edge of the celluloid tube may also be turned or beaded-over outwardly, so as to strengthen that portion of the bottle and adapt it to readily receive a cork or other stopper.

The invention will be fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which:

Figure 1 is a side elevation of a bottle embodying my invention; Fig. 2 is a central vertical section through the same; Fig. 3 is a top view of the bottle, the cork or stopper being omitted therefrom; Fig. 4 is a bottom view of the bottle illustrated in Figs. 1 and 2; Fig. 5 is a central vertical section, partly broken away, through a bottle embodying my invention and involving a modification of the construction shown in Figs. 1 and 2, in respect to the formation and method of securing the bottom of the bottle, and Fig. 6 is a corresponding view of a further modified form of the invention in its broader scope.

In the drawings, referring to Figs. 1 to 4 inclusive, 10 designates the body of the bottle, 11 the bottom thereof, and 12 a cork or other stopper inserted in the upper end of said body 10 and serving to close the bottle. The body 10 is formed from a cylindrical tube of uniform diameter, of celluloid or other pyroxylin material, the tube being seamless and in one integral piece and also being transparent and substantially colorless. The upper end of the body 10 is turned outwardly to form an annular bead 13 extending around and strengthening the upper end of said body and adapting said end to firmly receive a cork or other stopper 12. The bottom 11 is in one integral piece of celluloid or other pyroxylin material, and is special in construction in that its middle portions are dished upwardly and that at its outer portions it is formed with the vertical flange 14 to engage the inner wall of the

lower end of the body 10 and the horizontal flange 15 which extends laterally outwardly from the lower edges of said vertical flange and engages the lower edge of the body 10, said flange 15 by preference extending outwardly beyond the outer vertical plane of the sides of said body, thereby forming a suitable support for the bottle. The bottom 11 will preferably be formed from a white piece of celluloid or other pyroxylin material, and the lower surface of said bottom will preferably be of mat character so that a physician or other person using the bottle may mark thereon, with a lead pencil or the like, such characters as might be deemed desirable to distinguish the contents of the bottle from the contents of similar bottles.

The bottom 11 is secured to the body 10 by celluloid cement applied to the outer surface of the vertical flange 14 and the upper surface of the horizontal flange 15 and preferably along the inner lower surface of the body 10 or on any of these surfaces which come together when the bottom is inserted in said bottle. I denote at 16 the manner in which the celluloid cement gathers around the upper edge of the bottom 11 when said bottom is pushed upwardly into the body 10, and at 17 I denote the manner in which the cement gathers around the lower outer edge of the body 10 and upon the upper surface of the flange 15 during the assembling of said bottom and said body. It will be seen on reference to Fig. 2 that the celluloid cement gathers in and about the angular space formed between the upper outer curved edges of the main portion of the bottom 11 and the adjacent inner surfaces of the body 10, and that the bottom 11 in the construction shown and secured to the body 10 by the celluloid cement in the manner indicated, becomes in effect one integral piece with the body 10 and therewith creates a bottle adapted to safely hold a liquid placed therein and withstand considerable handling and rough usage. The fact that the main body portion of the bottom 11 is dished upwardly above the lower edges of the body 10 and especially above the lower surface of the flange 15, is important not only in enabling the bottle to find a firm bearing on a table or other support, but also as a protection against any writing that may be placed on such main portion of said bottom from being marred or obliterated by contact with the surface upon which the bottle may be placed. The flange 15 affords a substantial bearing for supporting the bottle in vertical position, and being reasonably narrow and circular will support the bottle with firmness and without danger of tilting over.

In the construction shown in Fig. 5 the bottom of the bottle, which being a modification is numbered 18, corresponds exactly with the bottom 11 shown in Fig. 2, with the exception that the lower base flange, numbered 19 thereof, has its outer edges turned upwardly, as at 20, to engage the outer surface of the lower edge of the body 10. Between the inner flange 21 of the bottom 18 and the outer flange 20 thereof is formed an annular pocket which receives the lower edge of the body 10, and said edge is secured in said pocket by celluloid cement so that the bottom 18 and body 10 may finally in effect become one integral piece. In the construction shown in Fig. 5 the lower flange 19 of the bottom 18 affords the proper means for supporting the bottle in an upright position upon a table or the like.

In the construction shown in Fig. 6 the body 10 has a modified form of bottom 22 secured thereto by celluloid cement or the like, said bottom 22 being concaved upwardly throughout its main body portion and having at its outer edge an annular vertical flange 23 snugly receiving the lower edge portion of the body 10, as will be readily understood on reference to Fig. 6. The lower outer edge 24 of the bottom 22 forms an effectual support for the bottle, and the fact that the main portion of the bottom 22 is dished upwardly results in said main portion being elevated above any table upon which the bottle may be placed and in preventing any marking that may be placed thereon by a physician or other person from becoming obliterated. It is also an important circumstance that when the main portion of the body 22 is dished upwardly the outer edge portion 24 of the bottom is enabled to more firmly support the bottle in vertical position than would be the case if the main portion of said bottom were not dished upwardly since under such condition said main portion of the bottom would likely present irregularities tending to tilt the bottle and render it liable to be upset or fall over on being jarred even to a slight extent.

The upward dishing of the bottom of the bottle in any of the constructions shown facilitates the application and firm securing of the bottom to the body of the bottle and strengthens the lower edge of the bottle, and these advantages are in addition to the fact that the bottom affords a surface on which markings may be placed without danger of being obliterated by the movement of the bottle over a table or the like, and also provides a reasonably narrow edge around the periphery of the lower edge of the body 10 as a support or bearing for the bottle.

As hereinbefore explained, the bottle of my invention was designed for the specific purpose of holding samples of urine preparatory to the analysis of the same by phy-

sicians connected with life insurance companies and other large institutions. The bottle is made of celluloid or other pyroxylin material, and I have found that when the bottle is made of this material it will not prejudicially affect or be affected by the urine.

The bottles are light of weight, proof against accidents which would fracture a glass bottle, and due to their special construction will readily stand on end. The body of the bottle is transparent and preferably colorless.

What I claim as my invention and desire to secure by Letter Patent, is:

1. A bottle comprising a transparent substantially colorless celluloid or other pyroxylin integral body having a beaded upper edge and a bottom secured to the lower end thereof by celluloid cement, said bottom being of celluloid or other pyroxylin material and having a vertical peripheral portion fitting a lower vertical wall surface of said body.

2. A bottle comprising a transparent substantially colorless celluloid or other pyroxylin integral body having a bottom secured to the lower end thereof by celluloid cement, said bottom being of celluloid or other pyroxylin material and having a vertical peripheral portion closely fitting within the lower end of said body, and said bottom being dished upwardly and its said vertical portion having at its lower edge a laterally extending flange.

3. A bottle comprising a transparent substantially colorless celluloid or other pyroxylin integral body having a bottom secured to the lower end thereof by celluloid cement, said bottom being of celluloid or other pyroxylin material and having a vertical peripheral portion fitting a lower vertical wall surface of said body, and said bottom being dished upwardly into the lower end of the body of the bottle and having a mat surface adapted to receive writing or the like.

4. A bottle comprising a transparent substantially colorless celluloid or other pyroxylin cylidrical integral body having a beaded-over upper edge, and a bottom dished upwardly into the lower end of said body and having a mat surface adapted to receive writing or the like.

5. A bottle comprising a transparent celluloid or other pyroxylin cylindrical integral body having a beaded-over upper edge, and a bottom dished upwardly into the lower end of said body and having a mat surface adapted to receive writing or the like.

6. A bottle comprising a transparent celluloid or other pyroxylin cylindrical integral body having a beaded-over upper edge and a pyroxylin bottom dished upwardly into the lower end of said body and affording a reasonably narrow peripheral flange to serve as a base for the bottle.

Signed at New York city, in the county of New York and State of New York, this 13th day of February A. D. 1914.

HORACE E. MILLER.

Witnesses:
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CHAS. C. GILL.