June 19, 1934. W. R. CUTHBERT 1,963,261

AUXILIARY WELL FOR INK BOTTLES

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Fig. 1.

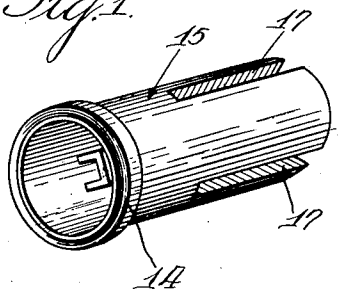


Fig. 3.

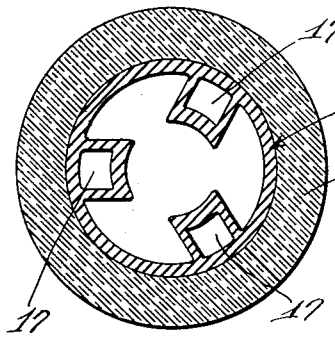


Fig. 4.



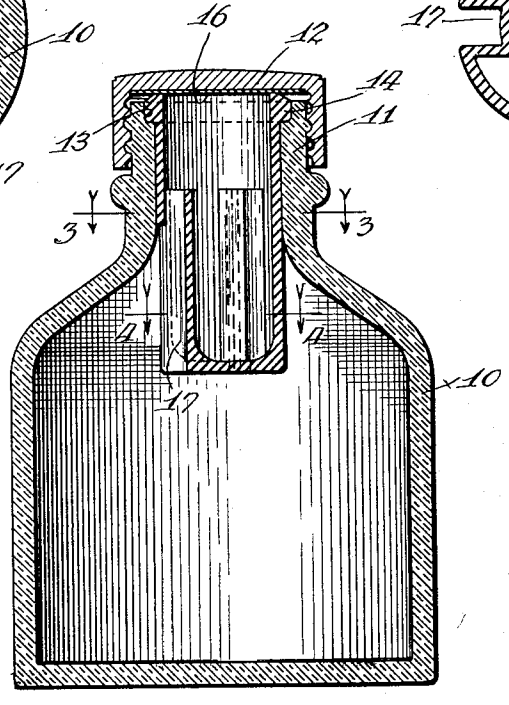


Fig. 2.

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AUXILIARY WELL FOR INK BOTTLES

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10 Claims. (Cl. 120—69)

This invention relates to an auxiliary well for an ink bottle and has special reference to a means for maintaining a supply of ink at the neck or open end of the usual ink bottle to facilitate the filling of fountain pens.

More particularly, this invention relates to an auxiliary well for fitting within the neck or open end of an ink bottle comprising a substantially cylindrical shell having a closed lower end and an open upper end with longitudinally extending passageways set in the side walls thereof to direct ink from the bottle into the well and to form a shoulder against which the end of the barrel of the fountain pen rests while filling. The diameter of the well is such as to form a tight fit with the internal diameter of the neck or open end of the bottle and the height of the well is sufficient to extend out of the bottle sufficiently to afford a seal with the cap of the bottle so as to prevent displacement of ink from the bottle or well onto the outside of the bottle.

The usual ink bottle with which the device of the present invention is to be associated is intended merely for the purpose of storage and in order to fill a fountain pen from such a bottle it is, of course, necessary either to pour out a small quantity of ink into another receptacle in which to dip the pen or to dip the pen into the supply in the ink bottle where the nature of the opening thereinto permits. These methods, of course, result ordinarily in the soiling of the barrel of the pen primarily because of the lack of a suitable means to limit the movement of the pen thereinto and in the latter instance particularly when the supply of ink in the bottle is low.

The present invention facilitates the filling of fountain pens in that the well is disposed in the upper end of the bottle at the neck or open end thereof and is of such a size as to hold a supply of ink sufficient or just in excess of the amount needed to fill the pen. The bottle is provided with a cap in the usual manner and the bottle is tilted or upturned to fill the well, whereafter it is returned to an upright position with the ink in an accessible position for instant use. A small but sufficient quantity of ink may thus be brought into position for convenient use at each time the fountain pen needs filling and avoids the necessity of filling the pen with ink which is not in fit condition for use due to the evaporation, dust and precipitation caused in the practice of filling fountain pens from open ink wells.

The longitudinal passageways for directing the course of ink from the main supply to the well are formed preferably of inwardly directed walls terminating in a single plane to provide a shoulder against which the end of the barrel of the fountain pen rests when in condition for filling. The particular construction shown in the drawing affords an extension from the bottle for engagement with the cap thereof to permit a seal of the ink within the neck or open end of the bottle to avoid soiling the outside of the bottle. The pen resting on top of a shoulder and providing thereby an adjustment of the depth that the pen may be inserted into the ink prevents undue soiling of the barrel.

One of the objects of the present invention is to provide an auxiliary well for ink bottles of the type hereinabove indicated wherein the diameter of the well is such as to form a tight fit with the internal diameter of the neck or open end of the bottle to prevent dissipation of the ink from the main reservoir to the outside of the bottle.

Another object of this invention is to provide an auxiliary well for ink bottles of the character noted above wherein longitudinal passageways are provided for directing the ink from the bottom thereof into the well, the upper ends of the walls of the passageways forming a shoulder against which the end of the barrel of the fountain pen rests in filling.

A further object of this invention is to provide an auxiliary well for ink bottles of the type hereinbefore mentioned wherein the height of the well is such as to extend above the top of the neck or open end of the bottle to afford a seal within the well and thereby to prevent displacement of the ink on the outside of the bottle.

A still further object of this invention is to provide an auxiliary well for ink bottles of the type hereinabove described which is simple in construction, efficient in operation, and inexpensive to manufacture.

Other objects and advantages will hereinafter be more particularly pointed out and for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description when taken together with the accompanying drawing, in which latter:

Figure 1 is a perspective view of the auxiliary well for ink bottles embodying the features of this invention;

Fig. 2 is a central sectional view of an ink bottle incorporating the auxiliary well shown in Figure 1;

Fig. 3 is an enlarged plan sectional view of

the auxiliary well for ink bottles taken on the line 3—3 of Fig. 2; and

Fig. 4 is a view similar to Fig. 3 taken on the line 4—4 of Fig. 2.

Referring now more particularly to the drawing, the device of this invention is shown in association with an ink bottle 10 of a usual construction having preferably an enlarged body portion with a reduced open-ended neck portion 11 at the upper end thereof. The open end of the neck of the bottle is enclosed by means of a cap 12, the latter being of a substantial inverted cup shape with internal threads for engaging threads disposed externally of the neck of the bottle. The upper end of the neck of the bottle is internally recessed as at 13 to provide a seat for receiving an external flange 14 of an auxiliary well 15. The bottle 10 is preferably made of glass and is one of many designs or constructions with which the device of the present invention may be associated, it therefore being understood that the auxiliary well to be more particularly defined hereinafter is to be limited in use to the particular construction of the bottle shown in the drawing.

The auxiliary well 15 is preferably substantially cylindrical and uniform in cross section throughout its length and is preferably moulded of soft rubber which will not deteriorate due to the action of the ink. However, other materials may be desirably employed in lieu of soft rubber as, for example, hard rubber, compositions, metal and earthenware. The diameter of the auxiliary well is substantially the same as the internal diameters of the neck of the bottle with which it is to be associated to form a tight or snug fit therewith so as to prevent particularly the displacement of ink along the side walls thereof and along the inside of the neck to the outside threads.

The flange 14 is preferably of such a height as to extend above the top of the bottle for engagement with the cap 12 or preferably with a washer 16 located within the cap. A sealing is thus effected between the inside of the cap and the well and prevents displacement of ink on to the outside of the neck of the bottle or of the threads whereby soiling of the bottle and the hands of the user may be prevented.

A plurality of longitudinally extending passageways 17 are provided adjacent the side walls of the well and extend from the bottom thereof a substantial distance toward the top. These passageways as shown in the drawing are formed of walls substantially rectangular in cross-section extending radially inwardly into the well. Of course, the cross-section of these apertures may be varied at will, although, for the purposes of this invention, the particular cross-section permits of the seating of the end of the barrel of the fountain pen over a substantial portion thereof. In the use of an arcuate cross-section with the arc directed inwardly toward the inside of the well, a minimum engaging surface would be presented to the end of the barrel of the pen; whereas an oppositely directed arc, as shown in the drawing, permits of a maximum engaging surface.

It has previously been pointed out that the longitudinally extending passageways 17 extend from the bottom of the well a substantial distance toward the top thereof. The distance to which these passageways extend is controlled more or less by the amount of ink necessary to fill the portion of the well bounded by such passageways. For example, the cubic contents of the well above the end of the passageways which is filled when the bottle of ink is upturned should be substantially the same as the cubic contents of the lower end of the well adjacent the passageways.

It will be noted that the passageways 17 are not enclosed by the outer peripheral wall of the well throughout their entire length, the wall being preferably terminated at a point where the neck of the bottle starts to become enlarged or, in other words, where the diameters of the well and the neck of the bottle changes in order that the last drop of ink in the bottle may be used. The cross-section of the well wherein the peripheral wall thereof acts to enclose the passageways is shown in Fig. 3; whereas, with reference to Fig. 4, the lower end of the well is shown wherein the peripheral wall is cut away at the passageways to permit the passage of ink thereinto from the reduced portion of the bottle. In many instances, the neck or open end of the bottle extends substantially flush throughout the length thereof with the well, wherefore the cutaway portions may be eliminated. However, in order to entirely empty the bottle should the neck of the bottle be reduced and contact only a portion of the distance of the overall length of the well, then the outer periphery of the well is cut away at the passageways over the length of the well which is not in contact with the neck of the bottle.

The provision of a substantially cylindrical auxiliary well throughout its longitudinal length permits of a maximum supply of ink to a given depth. In order to provide a shoulder against which the end of the barrel of the pen rests and yet at the same time to preserve a substantial ink capacity, the passageways are indented and of such a size as to readily permit the entrance of ink from the main supply to the chamber when the bottle is tilted or upturned.

In order to provide means for limiting the movement of the pen into the well, of course, but a single passageway need be provided. However, two or more passageways are highly desirable in order to predetermine the axial position of the pen with respect to the axis of the well. The passageways being indented provide that the pen must be axially aligned with respect to the well and, therefore, prevents the soiling of the barrel of the pen by preventing the latter from resting against the side walls of the well. The diameter of the well at the indented portions or passageways is just sufficient to receive the pen nib of the fountain pen which in itself tends to axially align the pen with respect to the well. However, by reason of having a plurality of passageways, the upper ends of which terminate in a single lateral plane, the end of the barrel of the pen resting thereon prevents displacement out of this axial alignment.

In the operation of the device to this invention, when it is desired to fill a pen, the cap of the bottle being tightly in position thereon, the bottle is tilted or upturned and a flow of ink is had through the passageways from the lower end of the well to the upper end thereof. When the upper end of the well is filled with ink, the bottle is righted and the ink in the well directed to the bottom end thereof, the surplus ink, if any, draining back into the main reservoir. By reason of the outside circumference of the auxiliary well snugly fitting the inner circumference of the neck of the bottle, there is no leak-

age of ink therebetween on to the outside of the threads when the cap is removed. Also, by reason of the upper end of the well extending out of the neck of the bottle into engagement with the cap, a seal is afforded at the well and ink is prevented from becoming displaced on to the threads of the bottle or the threads of the cap when the cap is removed.

When the bottle is in an upright position and the cap removed, the end of the fountain pen is inserted into the well until the end of the barrel rests against the upper end walls of the passageways 17, and the pen is filled. The ink, in this instance, occupies a position at the upper end of the bottle convenient for use and the pen is axially aligned with respect to the well so that the barrel does not come into contact with the side walls of the well. After the pen is filled and removed the cap is replaced on the bottle and is then in condition to be used subsequently by the mere tilting or upending of the bottle repeating the cycle previously recited.

While but a single embodiment of this invention is herein shown and described, it is to be understood that various modifications thereof may be apparent to those skilled in the art and, therefore, the same is only to be limited by the scope of the prior art and the appended claims.

I claim:

1. The combination with an ink bottle having an open end, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, said shell having a plurality of diametrically spaced longitudinal passageways therein extending from adjacent the bottom thereof a substantial distance upwardly therefrom to direct the fluid from said container into said well, the spacing of the material of said shell bounding said passageways being less than the outer diameter of the end of said pen to limit the movement of said pen into said well.

2. The combination with an ink bottle having an open end, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, said shell having a plurality of peripherally disposed diametrically spaced longitudinal passageways therein extending from adjacent the bottom thereof a substantial distance upwardly therefrom to direct the fluid from said container into said well, the spacing of the material of said shell bounding said passageways being less than the outer diameter of the end of said pen to limit the movement of said pen into said well.

3. The combination with an ink bottle having an open end, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, and diametrically spaced walls extending inwardly from the periphery of said shell providing longitudinal passageways extending from the bottom of said shell a substantial distance upwardly therefrom, the spacing of said walls being less than the outer diameter of the end of said pen to direct the fluid from said container into said well, the upper ends of said walls limiting the movement of said pen into said well.

4. The combination with an ink bottle having an open end, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, and diametrically spaced walls extending inwardly from the periphery of said shell providing longitudinal passageways extending from the bottom of said shell a substantial distance upwardly therefrom to direct the fluid from said container into said well, the upper ends of said wall terminating in a common transverse plane and being spaced a distance less than the diameter of the end of said pen for limiting the movement of said pen into said well.

5. The combination with an ink bottle having an open end, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, and diametrically spaced walls extending inwardly from the periphery of said shell providing longitudinal passageways extending from the bottom of said shell a substantial distance upwardly therefrom to direct the fluid from said container into said well, the upper ends of said walls being spaced a distance less than the diameter of the end of said pen for limiting the movement of said pen into said well, and the material of said shell enclosing said passageways being cut away over that length of said shell not in engagement with said open end.

6. The combination with an ink bottle having an open reduced cylindrical neck, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said cylindrical neck, said shell having a plurality of diametrically spaced longitudinal passageways therein extending from adjacent the bottom thereof a substantial distance upwardly therefrom to direct the fluid from said container into said well, the spacing of the material of said shell bounding said passageways being less than the outer diameter of the end of said pen to limit the movement of said pen therein.

7. The combination with an ink bottle having an open end with an internal peripheral recess therein, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, and a flange on the external periphery of said well for seating in said recess, said shell having a plurality of diametrically spaced longitudinal passageways therein extending from adjacent the bottom thereof a substantial distance upwardly therefrom to direct the fluid from said container into said well, the spacing of the material of said shell bounding said passageways being less than the outer diameter of the end of said pen to limit the movement of said pen into said well.

8. The combination with an ink bottle having a stoppered open end, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, said shell extending above said open end to effect a seal on said stopper and having a plurality of diametrically spaced longitudinal passageways therein extending from adjacent the bottom thereof a substantial distance upwardly therefrom to direct the fluid from said container into said well, the spacing of the material of said shell bounding said passageways being less than the outer diameter of the end of said pen to limit the movement of said pen into said well.

9. The combination with an ink bottle having an open end and a cap for enclosing the same, of

an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the length thereof for snugly fitting said open end, said shell extending above said open end for engaging said cap to effect a seal therewith, and diametrically spaced walls extending inwardly from the periphery of said shell providing longitudinal passageways extending from adjacent the bottom of said shell a substantial distance upwardly therefrom to direct the fluid from said container into said well, the upper ends of said walls being spaced a distance less than the diameter of the end of said pen for limiting the movement of said pen into said well.

10. The combination with an ink bottle having a reduced neck portion with a cap enclosing an open end thereof, of an auxiliary well for filling pens comprising a cup-shaped shell of substantially uniform outer diameter throughout the entire length thereof for snugly fitting said neck portion, said shell extending above said neck portion for engaging said cap to effect a seal therewith, said shell having a plurality of diametrically spaced peripherally disposed longitudinal passageways therein extending from adjacent the bottom thereof a substantial distance upwardly therefrom to direct the fluid from said container into said well, the spacing of the material of said shell bounding said passageways being less than the outer diameter of the end of said pen to limit the movement of said pen into said well.

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