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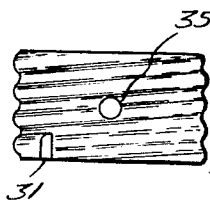
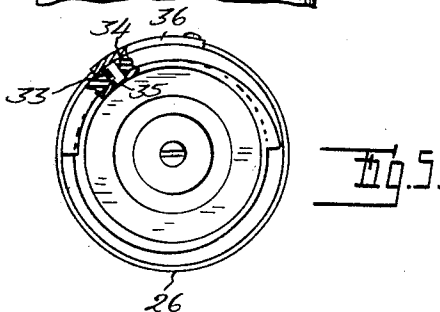
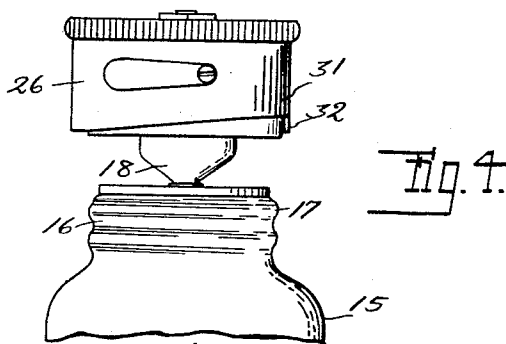
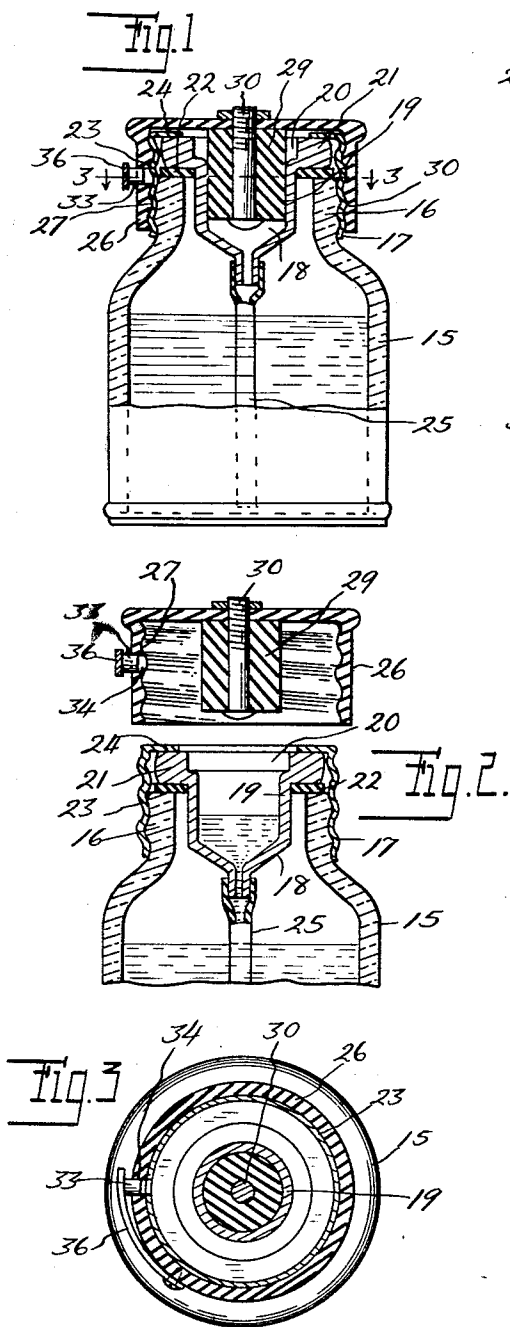
A. BIENENSTEIN

1,932,765

INK BOTTLE

Filed Aug. 25, 1930

3 Sheets-Sheet 1



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Fig. 7.

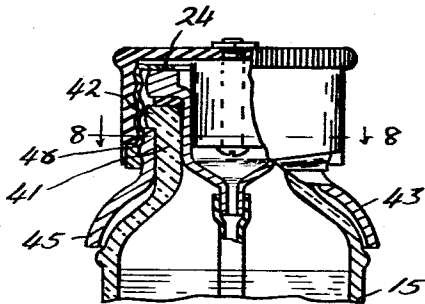


Fig. 10.

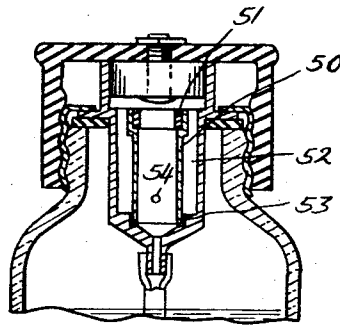


Fig. 8.

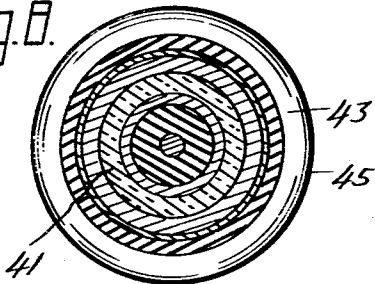


Fig. 11.

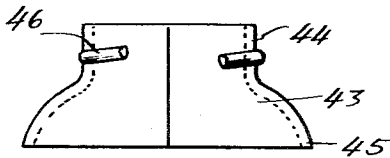
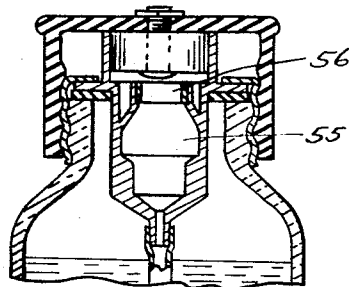


Fig. 9.

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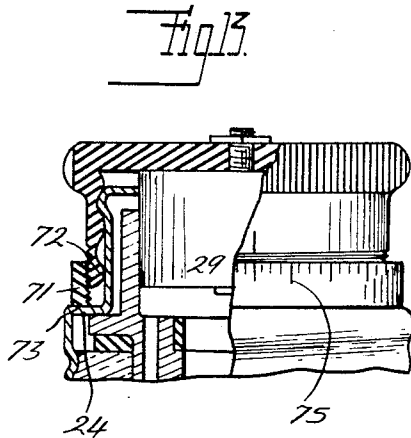
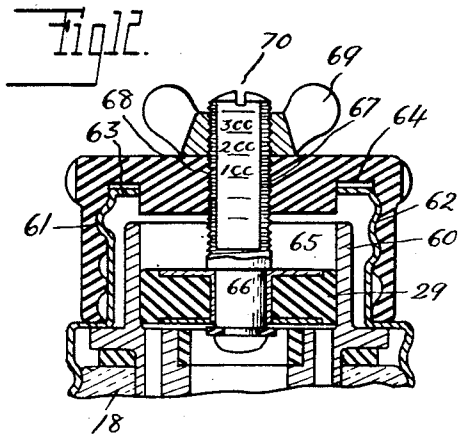
A. BIENENSTEIN

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INK BOTTLE

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3 Sheets-Sheet 3



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# UNITED STATES PATENT OFFICE

1,932,765

## INK BOTTLE

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The Conklin Pen Company, Toledo, Ohio, a  
corporation of Ohio

Application August 25, 1930. Serial No. 477,695

13 Claims. (Cl. 120—69)

The invention relates to bottles or containers of the type which is adapted to automatically provide a limited quantity of liquid at a convenient point for use in the filling of a fountain pen or other similar purpose.

The principal object of the invention is to provide an improved construction of container which is convenient to handle and positive in its operation.

Among the various novel features which I have introduced into the construction are the following:

First, I have provided an arrangement which prevents the pen from being introduced into the ink beyond the pen point and at the same time I have provided a reservoir of sufficient capacity to insure that the barrel of the pen may be completely filled with this limited insertion of the pen.

Second, I have provided a cap for the bottle by which the amount of ink or other liquid drawn into the auxiliary reservoir may be controlled by a rotary movement of the cap.

Third, I have arranged for embodying the invention in several forms and have provided an adapter by which the ordinary ink bottle may be converted into my improved type.

Other objects of the invention will become more apparent as the description proceeds, particularly where reference is made to the accompanying drawings:

Figure 1 is a longitudinal section through a container embodying the invention;

Figure 2 is a similar view with certain parts of the device removed;

Figure 3 is a transverse section on the line 3—3 of Figure 1;

Figure 4 is an elevation of the parts shown in Figure 2;

Figure 5 is a bottom plan view of the cap;

Figure 6 is a side view of the clamping means for the auxiliary reservoir;

Figure 7 is a sectional view of a modified construction;

Figure 8 is a transverse section on the line 8—8 of Figure 7;

Figure 9 is an elevation of the split collar shown in Figure 7;

Figure 10 is a sectional view of another modified construction provided with means for preventing the end of the pen from being inserted into the ink too far;

Figure 11 is another modified construction for the same purpose as Figure 10;

Figure 12 shows a modified structure somewhat similar to that shown in Figure 10;

Figure 13 is another modified arrangement.

Referring to the construction as illustrated in Figure 1, 15 represents the bottle or container having the reduced neck portion 16 which, in this particular instance, has threads 17 formed in the surface of the container. 18 is the auxiliary reservoir mounted in the top of the bottle and having the cylindrical portion 19 and the enlarged mouth 20. The member 18 has a top annular flange 21 for engaging the top of the bottle and a gasket 22 is provided to effect a seal. For clamping the auxiliary reservoir to the container there is a threaded collar 23 having the turned flange 24 engaging the top surface of the auxiliary reservoir. The seal is effected by screwing the collar on the neck of the bottle until a tight joint is made. The auxiliary reservoir communicates with the bottom of the bottle 15 through a conduit 25 which may be formed of rubber tubing or other suitable means.

26 is a cap having internal threads 27 for engaging the external threads 28 on the collar 23. Projecting inwardly from the cap is a piston 29 mounted concentrically of the cylindrical portion 19 for engagement therewith. The piston 29 is preferably secured to the cap by a pin 30 to permit the piston to slide into the cylinder without rotation while the cap is being rotated. With the construction as thus far described it will be observed that rotation of the cap on the threaded collar 23 causes the piston to be drawn axially into the cylinder and the air trapped in the reservoir is thus forced out through the conduit 25 into the container. Therefore upon withdrawal of the piston 29 by unthreading the cap, a predetermined amount of liquid is drawn into the auxiliary reservoir where it is available for use in filling the fountain pen.

In order to insure the right quantity of liquid in the auxiliary reservoir a stop may be provided to determine the amount of rotation of the cap. As shown in Figure 6 this stop may consist of an abutment 31 formed on the threaded collar which is adapted to engage the edge 32 formed in the side wall of the collar.

In the operation of the device it is essential that a tight seal be maintained between the top flange 21 and the top of the bottle and this seal is determined by the pressure of the flange on the gasket which in turn is determined by the rotation of the threaded collar 23. For convenience in rotating the collar 23 the cap 26 may be threaded onto the collar until the edge 32

strikes the abutment 31 whereupon a further rotation of the cap will give an additional turning movement to the collar sufficient to insure a tight seal. It is also desirable to remove all of the parts from the container without having the user come in contact with the liquid in the container, and I have therefore provided an arrangement which permits all of the parts to be removed as a single unit. The cap 26 is provided with a pin 33 which is insertable through an aperture 34 into engagement with a corresponding aperture 35 in the collar 23. The pin is preferably mounted on a spring arm 36 so as to be normally out of engagement with the collar 23. When, however, it is desired to remove the parts as a unit the spring may be manually depressed until the pin engages the aperture 35, this locking all the parts together so that rotation of the cap also rotates the collar. The reservoir member 18 is removed with the cap and collar because of the frictional engagement of the same with the piston 29 carried by the cap.

In the modified construction as shown in Figures 7, 8, and 9 the bottle or container 15 has a plain neck 41 of conventional type provided with a bead 42 at the upper end thereof. For converting such a bottle into a device embodying my invention I provide a split collar 43 made in two complementary portions which can be inserted around the neck of the bottle. The upper collar 44 is of a depth to fit beneath the bead 42 and there is a flared skirt portion 45 for fitting the enlarged portion of the bottle. The collar 44 has raised portions 46 forming threads which are adapted to receive the internal threads of the threaded collar 23 previously referred to in Figure 1. Thus by threading this collar member 23 onto the split collar, the flange 24 exerts a pressure on the auxiliary reservoir and clamps the same onto the neck of the bottle. The threaded cap is the same as in the preceding example.

Figure 10 shows another modification in which the auxiliary reservoir is provided with a guideway 50 for receiving the pen. The upper end of the guideway has the cylindrical insert 51, the diameter of which is small enough to prevent the lower end of the pen above the nib from entering the same. Thus assuming that the level of the ink does not get above the top of the guide 50, it will be apparent that the barrel of the pen will at all times remain unsoiled. It will be noted that the guideway 50 is inserted within the enlarged reservoir 52 so that the filling of the pen will not draw down the level of the ink below the filling aperture in the pen. Communication between the reservoir within the guide 50 and outside of the same may be maintained in any suitable manner, as for example, by providing the aperture 54 in the guide 50 at a point near the bottom of the reservoir.

Figure 11 illustrates another modified form for preventing the soiling of the pen barrel. In this modification the auxiliary reservoir has an enlarged lower portion 55 and a smaller entrance end 56 formed by the tapering side walls. In both Figures 10 and 11 the construction is such as to prevent the insertion of the pen barrel into the ink while providing sufficient capacity in the auxiliary reservoir to fill the barrel without lowering the level below the filling aperture.

In the modification shown in Figure 12 the auxiliary reservoir member 18 is provided with a cylinder 60 extending upwardly above the annular flange. The collar 23 has also the up-

wardly extending annular flange 61 rising above the inturned flange 24 and surrounding the cylinder 60. The annular flange has a threaded external contour 62 for cooperating with the threads on the cap 26 and there is also the inturned flange 63 adapted to extend within the annular recess 64 on the underside of the cap.

The piston 29 is, in this instance, mounted in a sheet metal container 65 which in turn is secured to a metal pin 66. The pin has external threads 67 which cooperate with a threaded aperture 68 in the cap. The pin projects through the cap and serves to receive a wing lock nut 69. The top of the pin is also provided with a coin slot 70 by means of which the pin may be adjusted in the cap to vary the position of the piston 29 in the cylinder 60. Thus by adjusting the pin the relation of the plunger to the cap may be adjusted as desired and consequently the displacement of the piston in the cylinder 60 may be varied so as to draw any desired amount of fluid into the reservoir 18. If desired the stem may be calibrated as indicated in Figure 12 to denote the amount of fluid which will be drawn to the reservoir corresponding with the various settings of the pin 66. These calibrations are designated in the drawings as 1 cc., 2 cc., etc.

In Figure 13 the adjustment of the piston to obtain different volumetric displacements may be obtained by providing a threaded collar 71 on the outer flange 72 of the cap 26. This collar 71 has the lower edge 73 arranged to seat upon the flange 24 of the collar 23 when the cap is threaded down to its lowest position. In this modification the piston 29 may be permanently secured to the cap and the variation in displacement is obtained by adjusting the collar 71 on the outer flange 72. If desired this device may be calibrated by providing the graduations 75 on the outer circumference of the collar as illustrated in Figure 13.

In all of the modifications described above the piston is preferably made of a resilient material forming a seal with the corresponding cylinder but capable of being easily manipulated in and out of the cylinder. Any suitable material may be used but it is preferable to use rubber, cork or other yieldable materials.

What I claim as my invention is:

1. The combination of a container, a cap threadedly engaging the same, an auxiliary reservoir carried by and sealing said container and having a cylindrical portion, and a piston carried by said cap in registration with said cylindrical portion and adapted to be inserted into said cylindrical portion by the threading of said cap on said container.

2. The combination of a container, an auxiliary reservoir connected to said container adapted to seal the same, a conduit connecting said container and auxiliary reservoir, a cap threadedly engaging said container and a piston carried by said cap and adapted to be inserted in and withdrawn from said reservoir by threading said cap on said container.

3. The combination of a liquid container, a reservoir of smaller capacity located in and sealing the upper portion of said container and communicating therewith, a piston engageable with said reservoir and means for inserting said piston in and withdrawing the same from said reservoir by a rotary movement.

4. The combination of a container, an auxiliary reservoir adapted to seal the mouth of said container, a threaded collar connecting said res-

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ervoir and container, a cap threaded on said collar and a piston carried by said cap and engageable with said reservoir.

5 5. The combination of a container, an auxiliary reservoir adapted to seal the top of said container, a threaded collar on said container, a cap threadedly engaging said collar and a piston rotatably mounted on said cap for engaging said reservoir.

10 6. A device for dispensing liquids comprising a container having a reduced neck portion, a member seated on said neck portion and forming a seal therewith, said member having a cup therein forming an auxiliary reservoir, a conduit communicating between said reservoir and the bottom of the container, and rotatable means operating a piston to displace the liquid, in said auxiliary reservoir in proportion to the amount of rotation thereof.

20 7. A device for dispensing liquids comprising a container having a reduced neck portion, a member seated on said neck portion and forming a seal therewith, said member having a cup therein forming an auxiliary reservoir, a conduit communicating between said reservoir and the bottom of the container, means threadedly engaging said container and a piston carried by said rotatable means and insertable in said reservoir.

30 8. A liquid dispensing device comprising a container having a reduced neck portion, a member seated on said neck portion and forming a seal therewith, a threaded collar connecting said member and neck portion, a cap threadedly engaging said collar and a piston rotatably mounted on said cap and aligned with said auxiliary reservoir.

40 9. A liquid dispensing device comprising a container, an auxiliary reservoir in said container communicating with the same, said container being sealed, thereby said reservoir having a cylindrical portion, a piston movable within said cylindrical portion to displace the medium there-

in and means within said reservoir adapted to engage the bottom of the pen barrel, said means having a predetermined relation to said ink level such that the ink does not rise above the bottom of the pen barrel.

80 10. A liquid dispensing device comprising a bottle having a reduced neck portion provided with an annular flange at the top thereof, a split collar engageable with said neck portion beneath said flange and having a thread thereon, a threaded ring engageable with said threaded portion, a member for sealing said bottle arranged between said bottle and said ring, said member having a recess forming an auxiliary reservoir communicating with said bottle.

90 11. A device for dispensing fluid comprising a container, means for sealing said container, an auxiliary reservoir, a duct between said reservoir and said container, a piston movable into said reservoir and an adjustable stop for determining the amount of displacement of said piston in said reservoir.

100 12. A device for dispensing fluid comprising a container, means for sealing said container, a cylinder, a piston movable in said cylinder, a conduit between said cylinder and said sealed container, a cap threadedly connected to said container and means for adjusting the position of said piston with respect to said cap whereby the displacement of said piston in said cylinder may be varied.

110 13. The combination of a container, a cap threadedly engaging the same, an auxiliary reservoir carried by and sealing said container and having a cylindrical portion, a piston carried by said cap in registration with said cylindrical portion and adapted to be inserted into said cylindrical portion by the threading of said cap on said container, and a stop for intercepting the rotation of said cap when said piston reaches a predetermined displacement in said cylinder.

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