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FOUNTAIN PEN FILLING DEVICE

Filed July 7, 1930

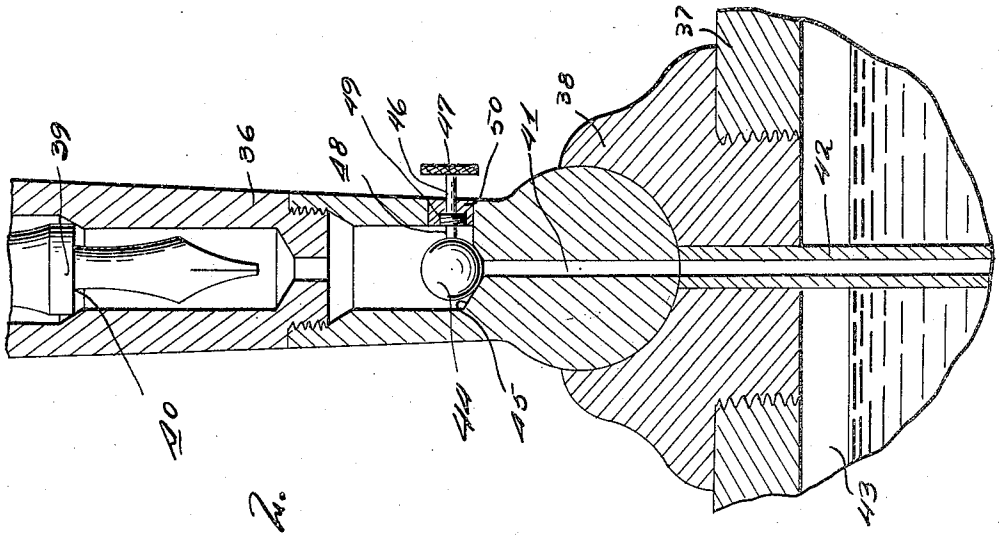

Fig. 2.

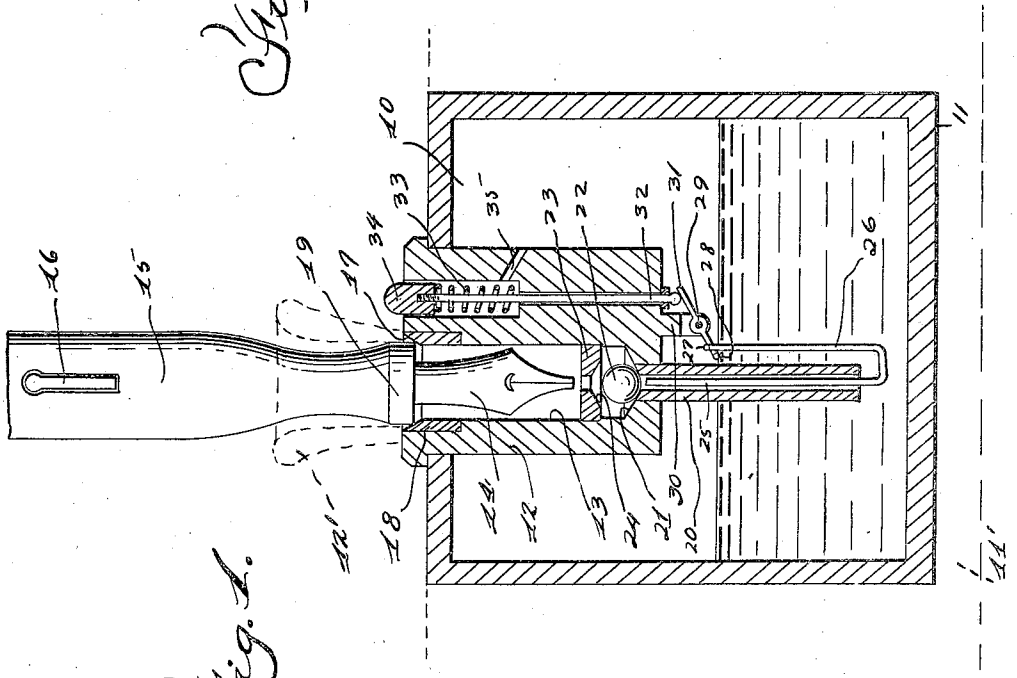

Fig. 1.

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FOUNTAIN PEN FILLING DEVICE

Application filed July 7, 1930. Serial No. 466,214.

This invention relates to fountain pen filling devices for use in connection with writing fluid containers and the like and also for use in connection with fountain pen desk sets.

The structures about to be described herein are generally similar to the type of device illustrated and described in my copending application, Serial No. 329,835 filed January 2, 1929, but comprises specifically modifications of the structure illustrated in my aforesaid prior application.

The present invention has as one of its principal objects to provide a fountain pen filling device which may be used with equal facility either with a fountain pen receiving receptacle stationarily associated with an inkwell or fountain pen desk set base or with a pen receiving receptacle movably connected with an inkwell or the base of a fountain pen desk set.

The invention has also as its objects to simplify, render more efficient and improve generally devices of this general character and to this end consists in the novel construction, combination and arrangement of parts, all of which will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein—

Figure 1 is a vertical sectional view of one form of my improved fountain pen filling device associated with a writing fluid container, the pen receiving receptacle being stationarily associated with the receptacle, and

Figure 2 is a view of a modified form of construction in which the pen supporting receptacle is associated with a fluid well containing base and connected thereto for relative angular movement.

Referring now to the drawings and more especially to Figure 1, it will be noted that there is illustrated a writing fluid well 10 formed in a member 11. This writing fluid well may of itself be placed on a desk or it may be associated with a base 11′ of larger proportions such as commonly used in connection with fountain pen desk sets and the like.

Arranged above and extending down into the well 10 is a pen receiving member or receptacle 12, the latter being provided with a socket or recess 13 adapted to receive the penpoint 14 of a fountain pen 15. Obviously, the fountain pen may be of any desired or conventional type, the style herein illustrated being shown as provided with a filling device operating lever 16 which upon being operated creates a suction within the pen barrel to draw the writing fluid thereinto through the pen end. The open upper end of the recess or socket 13 is provided with an annular tapered surface 17 which may be either formed in the pen supporting member 12 itself or be provided by means of an insert 18 associated therewith. The end 19 of the pen barrel is adapted to rest upon the tapered surface 17 to seal the interior of the socket 13 from the atmosphere. If desired the pen supporting receptacle 12 may be extended upwardly as indicated by dotted lines at 12′ to provide further support for the fountain pen 15 so that the same may be conveniently and fully supported by the pen receiving device 12.

The lower end of the socket or receptacle 12 communicates with a tube 20 which extends down into the well 10 below the level of the writing fluid therein. The wall of the receptacle 13 adjacent the juncture thereof with the tube 20 is inclined as indicated at 21 to form a seat for a ball check valve 22 which in its normal position closes the upper end of the tube 20 to prevent the drainage of writing fluid contained in the receptacle 13 back downwardly into the well 10. Spanning the receptacle 13 is an apertured partition 23 having a valve seat 24 formed therein so that when the well is inverted the ball 22 will seat upon the upper valve seat 24 to prevent spilling of the ink.

In the normal operation of the device, the fountain pen 15 is inserted into the receptacle 13 with the end of the barrel 19 engaging the tapered seat 17 thus sealing the interior of the receptacle from the atmosphere. Thereafter the filling device is operated to create a suction which will lift the ball 22 off its seat and draw ink upwardly from the well 10 into the receptacle 13. Several operations of the filling device will be sufficient

to draw a sufficient quantity of ink into the receptacle 13 to permit the fountain pen to be filled, it being understood that the ball check valve operates to prevent the ink in the receptacle 13 from draining back into the well 10.

After the fountain pen has been filled, it is expedient that the remaining ink be permitted to drain back into the well 10 and for this purpose I have provided an actuating device in the form of a pin or plunger 25 which extends upwardly through the tube 20 and is adapted when actuated to engage the ball check valve 22 and displace the same from its seat 21.

While obviously many forms of devices may be employed for this purpose, the displacing plunger or member 25 is provided with an upwardly extending portion 26 which extends upwardly exteriorly of the tube and is provided with a hook-shape end 27 engaging over one end of a rockable lever 28, the latter being pivoted as at 29 to a depending ear 30 formed on the member 12. The other end 31 of the rockable lever is engaged by the lower end of a plunger 32 extending vertically upwardly through the member 12. The bore through which the plunger 32 extends is enlarged adjacent its upper end to accommodate a coil spring 33 which engages a head or finger-piece 34 on the upper end of the plunger 32. The spring tends normally to maintain the plunger 32 raised or in the position illustrated in Figure 1 of the drawings. When, however, the plunger 32 is depressed, the rockable lever is rocked and by reason of its engagement with the hooked end of the plunger extension 26, the plunger 25 will be raised to displace the ball 22. Thus the ink in the receptacle 13 will be permitted to drain back into the well. Any ink which finds its way up around the plunger 32 will drain back into the well through a downwardly inclined orifice 35.

The form of construction shown in Figure 2 operates generally in the same manner. However, in this form of construction the pen supporting receptacle 36 is mounted on a base or the like 37 for relative angular movement with respect thereto by means of a joint or connection 38. In this form of construction the end 39 of the pen barrel rests upon an inclined seat 40 formed in the interior of the pen supporting receptacle 36. The pen supporting receptacle is provided with a passageway 41 which communicates with a tube 42 which latter extends down into the well 43 formed in the base 37.

The passageway connecting the lower end of the pen supporting receptacle to the well is controlled by the ball check valve 44 which normally rests upon a seat 45 provided at the bottom of the pen supporting receptacle.

As in the previously described construction, the writing fluid may be drawn upwardly from the well 43 past the check valve 44 and into the lower portion of the pen supporting receptacle by the operation of the fountain pen filling device, the check valve preventing the draining of the writing fluid back into the well 43.

After the fountain pen has been filled, the ball 44 may be displaced from its seat 45 by operating a screw plunger 46 having an exteriorly arranged head 47 and having its inner end 48 engageable with the ball 44. This plunger may be provided with an enlarged threaded portion 49 and the whole plunger preferably carried in an insert 50 fixed in the wall of the pen supporting receptacle.

In both of the arrangements described, the operation of the device is substantially the same. The writing fluid or ink will be drawn into the pen receiving member or receptacle by the repeated operation of the pen filling lever, the check valve preventing the drainage of the ink back into the well. In each instance, supplemental means are provided for positively and mechanically displacing the ball check valve from its seat so as to permit the ink to drain back into the well after the fountain pen has been filled. In each instance, the mechanical ball displacing means will then be returned to its normal position so that the ball will again rest upon its seat to prevent evaporation of ink in the well and also so that the device is again ready for its normal operation of filling the fountain pen.

Obvious modifications of the forms of device herein described and illustrated will suggest themselves to those skilled in this art and to this end reservation is made to make such changes in all of the non-essential details of construction as may come within the purview of the accompanying claims.

What I claim as my invention is:

1. In a device of the class described, a base formed with a well, a pen receiving receptacle forming a pen support and sealed by the pen when the latter is thus supported, a check valve controlled passageway connecting said receptacle to said well through which ink may be drawn by the suction means of the pen and mechanical means for unseating said check valve to permit drainage of ink from said receptacle back into the said well.

2. In a device of the class described, a base formed with a well, a receptacle above said well adapted to receive the pen end of a fountain pen and to be sealed thereby, a passageway connecting said receptacle to said well through which ink may be drawn by the suction means of the pen, a check valve controlling said passageway and positive means for unseating said check valve to permit drainage of the ink back into the well.

3. In a fountain pen filling device of the class described, a base formed with a well, a receptacle above said well forming a pen

support and sealed thereby, a valve controlled passageway connecting said receptacle to said well through which ink may be drawn by the suction means of the pen, and mechanical means for unseating said valve to permit drainage of the ink back into the well.

4. In a fountain pen filling device of the class described, a base formed with a well, a receptacle above said well forming a pen support and sealed thereby, a valve controlled passageway connecting said receptacle to said well through which ink may be drawn by the suction means of the pen, and a plunger engageable with said valve for unseating the same to permit drainage of the ink back into the well.

5. In a fountain pen desk set, a base formed with a well, a pen supporting receptacle above said well forming a pen support and sealed by the pen when the latter is thus supported, a valve controlled passageway connecting said receptacle to said well through which ink may be drawn by the suction means of the pen, and positive means for unseating said valve to permit drainage of the ink back into the well.

In testimony whereof I affix my signature.

GERALD L. BASSETT.