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FOUNTAIN PEN DESK SET

Filed Jan. 2, 1929

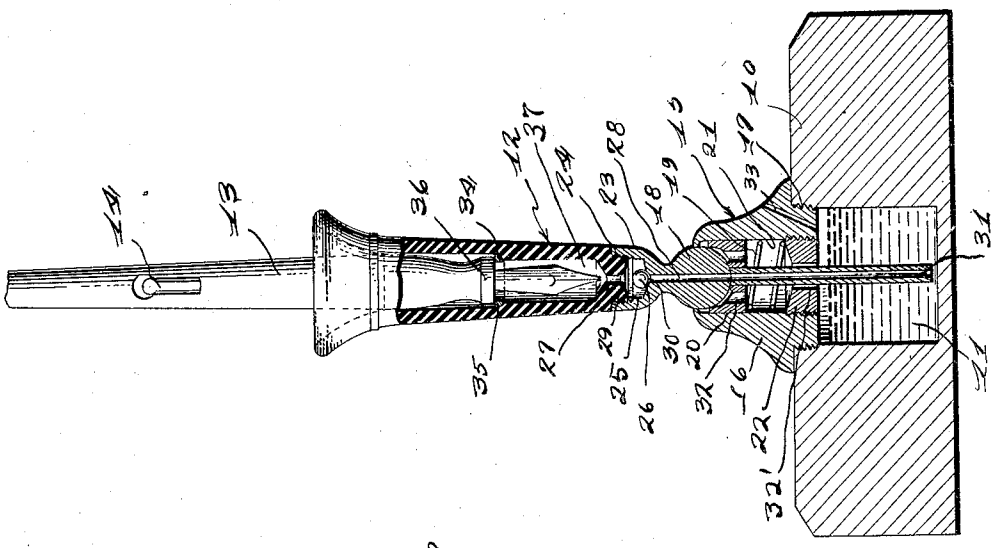

Fig. 1.

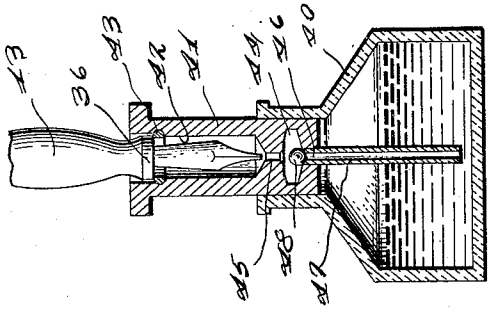

Fig. 3.

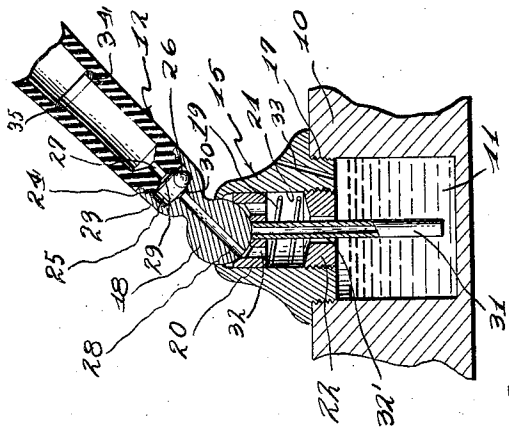

Fig. 4.

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FOUNTAIN PEN DESK SET

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

The fountain pen filling device forming the principal subject matter of this invention may be used in connection with an ink bottle or other writing fluid container or may be constructed as a part of what is commercially known as a desk set.

Fountain pen desk sets as heretofore commercially produced have generally consisted of a base, a pen supporting receptacle, and means for connecting the receptacle to the base either rigidly or in a manner providing for the angular movement of the pen supporting receptacle. With these heretofore commercially known types of fountain pen desk sets it has geen necessary to refill the fountain pen in the ordinary customary manner, no provision for this being made in the desk set itself.

It is therefore one of the primary objects of this invention to provide a device of the herein described character having means associated therewith and cooperating with the fountain pen, whereby the pen may be refilled with ink or other writing fluid contained in a well formed in the one instance in the base of the set or provided in a writing fluid container.

Another object of this invention is to provide a fountain pen desk set of this character wherein means is provided for returning the unused ink or other writing fluid to the well after the pen refilling operation is completed.

Still another object of this invention is to provide a filling device of this character having means for preventing the spilling or leakage of the ink in the event the device is accidentally upset or turned upside down.

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

Figure 1 is a view partly in vertical section and partly in elevation of a fountain pen desk set constructed in accordance with my invention,

Figure 2 is an enlarged fragmentary vertical sectional view of the structure shown in Figure 1 with the parts thereof in a different position, and

Figure 3 is a vertical sectional view showing the filling device used in connection with a writing fluid container.

Referring now to the drawing and more particularly to the Figures 1 and 2 thereof wherein the invention is illustrated as used in connection with a fountain pen desk set, it will be noted that there is illustrated a base 10 which may obviously be made of any desired material, size and configuration. The base 10 may be provided with a well 11, formed or otherwise provided therein, adapted to contain a fluid such as ink or the like.

The reference character 12 indicates generally a pen supporting receptacle which is preferably, although not necessarily, of the type now quite generally commercially employed. This receptacle is adapted to receive and support a fountain pen 13 which may obviously be of any preferred or desired design. The character of fountain pen herein illustrated is adapted to be refilled with a writing fluid by the operation of a lever 14 which compresses the fluid containing bulb (not shown) in the customary manner.

The pen supporting receptacle is adapted to be detachably mounted or supported upon the base 10 for angular or universal movement by means of a universal joint or device indicated generally by the reference character 15. This universal device comprises in part a socket member 16 frictionally fitted or as shown, threadedly engaging a threaded portion formed on the base 10 adjacent the upper edge of the well 11 as indicated at 17. Thus, the socket member 16 acts to close the open upper end of the well 11 and obviously is removable so that when necessary, the well 11 may be refilled with writing fluid.

The ball 18 of the universal device which is associated with the socket member in the customary manner and as illustrated in the drawing, is acted upon by spring 19 which

engages on the one hand a pressure block 20 slidably mounted in a bore or chamber 21 formed in the socket member 16, and on the other hand, against a plug 22 threaded into the lower end of the socket member 16. Thus, the ball 18 is frictionally held in any of its adjusted positions and as a consequence, the pen supporting receptacle 12 may also be likewise adjusted.

The ball 18 is provided with a substantially tubular portion 23 which threadedly engages as at 24 the lower end of the pen supporting receptacle 12. The tubular portion 23 provides a chamber 25 in which a ball check valve 26 is located. This check valve controls a passageway or port 27 arranged in the bottom of the receptacle 12 and connecting the interior thereof with the chamber 25, and also controls a passageway or port 28 extending longitudinally or axially through the ball member 18. A seat 29 is provided at the lower end of passageway 27 and a seat 30 is provided at the upper end of passageway 28. The walls of the parts in which the seats 29 and 30 are formed are inclined in the direction of these seats so that the ball 26 will roll into engagement with the said seats when the parts are in position to permit this.

The passageways 27 and 28 form a part of a passageway connecting the pen supporting receptacle 12 with the well 11. The remainder of this passageway is formed by means of a tube 31 which is carried by the plug or pressure block 20. This tube extends freely downwardly through an aperture 32′ in plug 22 and terminates adjacent the bottom of the well 11. The pressure block 20 is provided with a plurality of axially arranged apertures 32 so disposed that when the receptacle 12 is in an angular position, communication is still provided between the receptacle 12 and the well 11.

The construction of the ball and socket member 15 and its connection with the upper end of the well 11 is such that air is excluded from entering the well through or between any of these parts, and in order to dissipate the effects of a partial vacuum which might be created in the well 11 when the pen is being filled, an opening 33 of very small diameter is formed in the socket member 16 which provides for restricted communication between the well 11 and the atmosphere.

The pen receptacle 12 is provided on its inner wall with a circumferential shoulder 34 adapted to receive and support an annular member 35 of resilient material. This resilient member 35 is adapted to be engaged by the end 36 of the fountain pen when the latter is inserted in the receptacle.

The operation of the device is as follows: When it is desired to refill the fountain pen 13 the pen is inserted in the receptacle 12 when the latter is in an upright position such as illustrated in Figure 1. The end 36 is pressed firmly against the resilient member 35 so that an air tight or substantially air tight union is provided. In this position of the parts the ball check valve 26 is in engagement with its lower seat 30. If then the lever 14 of the fountain pen is so manipulated that the compressed fluid bulb is released, this creates a suction in the receptacle 12 below the fountain pen which will lift the ball valve 26 from its seat and draw the writing fluid upwardly from the well 11 through tube 31 and ports 28 and 27 and into the chamber 37 below the pen. The writing fluid thus drawn upwardly into the chamber 37 is prevented from flowing backwardly into the well by means of the ball valve 26 which seats when the suction ceases. If thereafter the lever 14 is further manipulated so as to again compress the bulb within the fountain pen and to thereafter release the same, the suction created thereby draws the writing fluid from the chamber 37 up into the pen in a customary manner.

If the fountain pen 13 is completely filled, it is obviously desirable to return the remaining fluid contained in the chamber 37 to the well 11 and this is accomplished by angularly displacing the receptacle 12 to, for instance, the position shown in Figure 2. This angular movement of the receptacle causes ball valve 26 to leave its seat 30 and to assume a position in the side of chamber 25 out of register with the passageway connecting the receptacle 12 with the well 11. Thus, the remaining writing fluid in chamber 37 will flow by gravity through port 27, chamber 25, port 28, and one of the apertures 32, and thence through aperture 32′ and into the well. Obviously any angular displacement of the receptacle 12 sufficient to unseat or render inoperative the ball valve 26 will permit the draining of the writing fluid from the receptacle into the well.

Should the device be turned completely upside down, the discharge of the writing fluid from the well 11 will be prevented by the seating of the ball valve 26 on the upper seat 29.

As have been previously referred to in detail, the ball 18 is acted upon by the pressure block on plug 20 which in turn is urged into engagement with the ball by means of the spring 19. The upper surface of the pressure block 20 is concave so as to provide for an intimate surface contact between these parts. Thus, the pen receptacle 12 may be readily adjusted to any angular position and maintained in this position. Should the parts become worn, the tension of spring 19 may obviously be adusted by means of the threaded plug 22. The universal device 15 constitutes in effect a closure cap for the well 11 and may be removed therefrom to permit the well 11 to be refilled.

Referring now to Figure 3, it will be noted that the filling device is shown as used in con-

nection with a writing fluid container, such for instance as ink bottle 40. Obviously the body 41 may be caused to frictionally engage the bottle or may be threaded or otherwise secured thereto. The body 41 is provided with a recess 42 provided with a circumferential shoulder supporting an annular resilient member 43 against which the end 36 of the pen engages. The recess 42 constitutes the pen supporting receptacle.

The body 41 is formed with a chamber 44 communicating by means of a passageway 45 with the pen receiving recess 42 and by means of a passageway 46 with a tubular member 47 adapted to extend down within the ink bottle 40. A ball check valve 48 is arranged within the chamber 44 and the upper and lower walls of this chamber are inclined in substantially the same manner and for the puroses as hereinbefore pointed out.

The operation of this device will be apparent without further detailed description. However, it might be noted that after the pen has been refilled, the check valve 48 may be moved to inoperative position by tilting the bottle 40 which will move this ball to one side of chamber 44 in the same manner as is accomplished by angular movement of the pen supporting receptacle 12.

While several embodiments of this invention have been illustrated and described herein somewhat in detail, it will be readily apparent to those skilled in this art that various changes in many of the essential and all of the non-essential details of construction may be resorted to without departing from the spirit and scope of this invention and to this end reservation is made to make such changes as may come within the purview of the accompanying claims.

What I claim as my invention is:

1. In a fountain pen desk set, a base formed with a well, a pen supporting receptacle, means for supporting said receptacle on said base for angular movement, and a valve controlled passageway connecting said receptacle to said well.

2. In a fountain pen desk set, a base formed with a well, a pen supporting receptacle, means for detachably supporting said receptacle on said base adjacent said well for universal movement, and a check valve controlled passageway connecting said receptacle to said well.

3. In a fountain pen desk set, a base provided with a fluid well, a pen supporting receptacle, means for supporting said receptacle on said base for angular movement, a passageway connecting said well and receptacle, and a valve associated with said passageway adapted to be rendered inoperative upon an angular movement of said receptacle.

4. In a fountain pen desk set, a base provided with a fluid well, a pen supporting receptacle, means including a universal joint for mounting said receptacle on said base for angular movement, a passageway providing communication between said receptacle and well, and a check valve for controlling said passageway located in a portion of said passageway partaking of angular movement, for the purpose set forth.

5. In a fountain pen desk set, a base provided with a fluid well, a pen supporting receptacle, means for supporting said receptacle on said base for relative angular movement, a passageway connecting said well and receptacle, a check valve controlling said passageway, and means for rendering said valve inoperative upon an angular movement of said receptacle.

6. In a fountain pen desk set, a base provided with a fluid well, a pen supporting receptacle, means for supporting said receptacle on said base for angular movement, a passageway providing communication between said receptacle and well, a check valve located in that portion of said passageway partaking for angular movement, and means for rendering said valve inoperative upon an angular movement of said receptacle.

7. In a fountain pen desk set, a base formed with a fluid well, a pen supporting receptacle, a spring pressed ball and socket joint for supporting said receptacle on said base adjacent said well, and a passageway connecting said receptacle to said well.

8. In a fountain pen desk set, a base provided with a fluid well, a pen supporting receptacle, means for supporting said receptacle on said base adjacent said well for angular movement, a passageway connecting said receptacle and well, a valve controlling said passageway, and means for actuating said valve by an angular movement of said receptacle.

9. In a fountain pen desk set, a base formed with a fluid well, a pen supporting receptacle, means for supporting said receptacle on said base for relative angular movement, and a valve controlled passageway extending through said means and connecting said receptacle to said well.

10. In a fountain pen desk set, a base provided with a well, a pen supporting receptacle, a ball connecting to said receptacle, a socket member detachably mounted in said well and adapted to receive said ball, a spring pressed block in said socket engaging said ball, and a passageway extending through said ball and socket and connecting said receptacle to said well.

11. In a fountain pen desk set, a base having a fluid well formed therein, a pen supporting receptacle, a passageway connecting said well to said receptacle, a pair of opposed valve seats associated with said passageway, and a ball valve adapted in its operative position for engagement with one or the other of said seats.

12. In a fountain pen desk set, a base formed with a fluid well, a pen supporting receptacle, and a ball and socket member connected to said receptacle and detachably engaging the open end of said well and constituting a closure for the latter.

13. In a device of the class described, the combination with a fluid well, of a pen supporting receptacle associated with said well adapted to receive the pen end of a fountain pen, and a check valve controlled passageway connecting said receptacle and well whereby fluid from said well may be drawn past said check valve into said receptacle upon the operation of the filling device of the fountain pen, said check valve being operable to permit of the final draining of the fluid back into the well.

14. In a device of the class described, a fluid well, a pen supporting receptacle associated with said well, an annular shoulder in said receptacle adapted to be engaged by the end of a fountain pen supported therein, a passageway connecting said receptacle to said well, and a check valve controlling said passageway whereby fluid may be drawn into said receptacle by actuating the filling device of the fountain pen, said check valve being operable to permit the draining of the fluid back into the well.

15. In a fountain pen desk set, a base formed with a well, a receptacle above said well forming a pen support and sealed by the pen when the latter is thus supported, a passageway connecting said receptacle to said well through which ink may be drawn by the suction means of the pen, valve means for temporarily retaining the ink in said receptacle, and means for caging said valve means whereby said valve means may be displaced from its seat to permit of the final draining of the ink back into the well.

16. In a fountain pen desk set, a base formed with a well, a 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 means for caging the valve whereby the valve may be displaced from its seat to permit drainage of the ink back into the well.

17. A fountain pen holder and filler comprising a base, a socket-shaped member pivotally carried by said base for receiving a fountain pen, an ink reservoir in the base, and liquid conducting means extending from the reservoir to the interior of the socket.

18. A fountain pen holder and filler comprising a base, a socket-shaped member pivotally carried by said base for receiving a fountain pen, an ink reservoir in the base, liquid conducting means extending from the reservoir to the interior of the socket, and means for preventing the return of ink from the socket to the reservoir.

19. A fountain pen holder comprising an ink receptacle, a socket-shaped member adapted to receive the end of a fountain pen therein, a pivotal support for the same and an ink conduit leading from the receptacle to the socket and passing through the pivotal support.

20. A fountain pen holder comprising a base, an ink reservoir therein, a socket-shaped member adapted to receive the end of a fountain pen therein, means for swingably supporting the member on the base and an ink conduit leading from the reservoir to the socket and passing through the supporting means.

21. A fountain pen holder comprising an ink reservoir, a socket-shaped member adapted to receive the end of a fountain pen therein, means for swingably supporting the member on the ink reservoir, and a conduit between the reservoir and the socket member for guiding ink from the former to the latter.

22. A fountain pen holder and filler comprising an ink receptacle, a socket member pivoted relative thereto for removably receiving a fountain pen and means for conveying ink from the receptacle to the socket for filling the fountain pen.

In testimony whereof I affix my signature.

GERALD L. BASSETT.