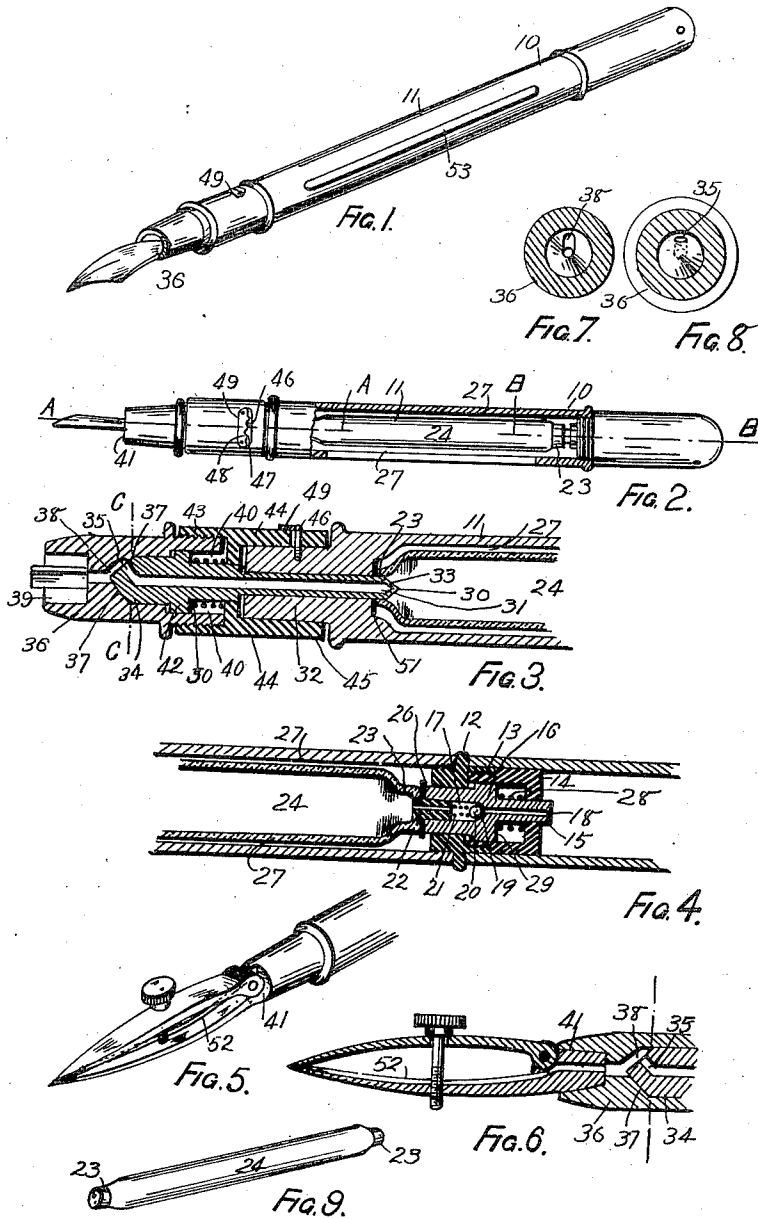


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FOUNTAIN OR SELF FEEDING PEN.
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1,038,743.

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FOUNTAIN OR SELF-FEEDING PEN.

1,038,743.

Specification of Letters Patent.

Patented Sept. 17, 1912.

Application filed March 17, 1911. Serial No. 615,019.

To all whom it may concern:

Be it known that I, HORACE GILBERT, engineer, a subject of the King of Great Britain and Ireland, residing at "Windsor," Alexandra street, Drummoyne, in the State of New South Wales, Commonwealth of Australia, have invented new and useful Improved Fountain or Self-Feeding Pens, of which the following is a specification.

This invention appertains to pens having a self contained ink reservoir and has been devised to effect improvements in the same wherein the fluid reservoir is separate and removable from the pen casing or handle, the supply of fluid from such reservoir and of air to same being controlled by valves, whereby the pen may be readily charged and recharged and, moreover, of such construction that the casing joints of the pen are maintained fluid tight.

According to this invention an improved fountain or self feeding pen consists essentially of an ink reservoir having terminal necks closed by caps of puncturable material said reservoir adapted to be inserted within the tubular casing or handle of the pen and the ends taking between tubular piercing valves one positioned in the handle end being non-return and communicating with the atmosphere and the other at the writing end controlling the supply of fluid to the pen.

The non-return air valve is spring controlled so that when in the horizontal position the same is closed to prevent leakage and the fluid valve passage controlled by a partially rotatable cap whereby the flow of ink may be regulated and cut off.

In the preferred construction the casing of the pen is slotted longitudinally at diametrically opposite points and the reservoir constructed of glass whereby the fluid is visualized, and, further the writing end of the pen socketed to receive either an ordinary writing pen or nib or a ruling or drafting pen.

Referring to the accompanying drawings depicting a fountain or self feeding pen constructed in accordance with this invention Figure 1 is a perspective view of a fountain pen. Fig. 2 a partial longitudinal section. Figs. 3 and 4 are enlarged sections on lines A—A and B—B respectively (Fig. 2). Fig. 5 a partial perspective view of a fountain drafting pen. Fig. 6 a longitudinal section thereof. Fig. 7 a cross section on line C—C

(Fig. 3) showing valve seating. Fig. 8 a similar view on line C—C (Fig. 3) of the valve. Fig. 9, is a perspective view of the removable ink reservoir.

The handle end 10 of the tubular cylindrical casing 11 of the pen is internally threaded to receive centrally apertured flanged plug 12 having screwed into its flange 13 similarly apertured socket 14 through which passes the stem 15 of valve casing 16 communicating through a terminal aperture with the atmosphere as shown. The forward end 17 of the valvular passage 18 is enlarged and provided with a dished seating 19 for spherical valve 20 supported by fine coil spring 21 bearing thereon and upon the end of tubular conical ended plug 22 screwed into said enlarged valvular passage. This coil spring 21 is adapted to impart sufficient pressure to the spherical valve to maintain same in its seating when the pen is in the horizontal position and thereby prevent leakage of the fluid through the valve.

One of the terminal capped necks 23 of the cylindrical glass fluid reservoir 24 is pierced by the conical ended plug 22 the packing ring 26 being provided intermediate of said end 23 and the forward end of the air valve casing 16 whereby the fluid is prevented from leaking into the annular space 27 between the tubular reservoir and the pen casing 11. For the purpose of maintaining an effective joint with said packing ring 26 and securing the reservoir in position, the valve casing 16 is tensioned by spring 28 coiled about the stem of same and bearing against the bottom of socket 14 and a collar 29 provided on said casing 16. The other terminal capped neck 23 of the reservoir 24 is pierced by conical end 30 of the tube 31 screwed into the tapered and reduced forward end 32 of the casing 11. The tube 31 communicates with the reservoir through offset passage 33 in the end 30, its other end 34 enlarged and cone ended as shown being also provided with a terminal offset passage 35 controlled by valve 36 capping and provided with seating 37 for said end 34. The valve 36 is provided with offset passage 38 and has socketed ends 39 and 40 into the former of which fits the pen socket 41 the latter fitting over collar 42 on the enlarged end 34 of tube 31 being externally threaded to take in screwed end 43 of double ended and centrally apertured socket 44 the other

end 45 of which has tapered recess adapted to rotate on tapered end 32 of the casing.

To regulate and also to prevent the movement of socket 44 when regulated, a stop pin 46 is affixed in the tapered end 32 of the casing 11 operating in slot 47 in the socket 44 and taking in teeth 48 in plate 49 affixed to said socket 44 marked to indicate the position of the valve. For maintaining the conical end 34 of the tube 31 effectively in its seating 37 and prevent leakage of the fluid a coil spring 50 takes about the tube 31 as shown and bears upon collar 42 provided thereon. A packing ring 51 is provided in the forward end of the pen casing 11 for the same purpose as the ring 17. In order to conduct the fluid from the terminal valvular passage to the point of a ruling or drafting pen a small tube 52 is provided between the bow members as shown. The pair of longitudinal slots 53 are positioned in the casing 11 diametrically opposite to each other to visualize the fluid in the reservoir 24. To charge the pen one end of the reservoir 24 is inserted into the casing 11 and bears upon the end 30 of tube 31 the plug 12 is then screwed into the handle end 10 of said casing forcing the cone ended plug 22 and tube 31 through the terminal necked ends 23 of the reservoir whereby the air and fluid valvular passages are placed in communication with the fluid (see Figs. 3 and 4). The pen is now ready for use it only being necessary to open the valve 37 to permit the passage of fluid to the pen nib or ruling pen. To recharge the pen the plug 12 is unscrewed thereby removing the cone ended plug 22 from engagement with the capped end 23 of the reservoir which may then be withdrawn.

What I claim and desire to secure by Letters Patent is:—

1. A fountain pen comprising a barrel, a removable reservoir having puncturable ends located within the barrel, an ink feed at one end of the barrel and an air feed at the other end of the barrel, both feeds having pointed ends extending within the removable reservoir, the normal distance between the pointed ends being less than the length of the reservoir.

2. A fountain pen comprising a barrel with longitudinal visual slots therein, a removable reservoir having puncturable ends

located within the barrel, a valve controlled ink feed at one end of the barrel, and a valve controlled air feed at the other end of the barrel, both feeds having pointed ends extending within the puncturable end of the removable reservoir, the normal distance between the pointed ends of said feeds being less than the length of the reservoir.

3. A fountain pen comprising a barrel, a removable reservoir having puncturable ends located within the barrel, a valve controlled air feed at one end of the barrel, and a valvular ink feed having a terminal off-set passage at the other end of the barrel, both of said feeds having pointed ends extending within the puncturable ends of the removable reservoir, the normal distance between the pointed ends being less than the length of the reservoir.

4. A fountain pen, comprising a barrel, a removable reservoir having puncturable ends located within the barrel, a valve controlled air feed at one end of the barrel, a valvular ink feed having a terminal offset passage at the other end of the barrel, both of said feeds having pointed ends extending within the puncturable ends of the removable reservoir, the normal distance between the pointed ends being less than the length of the reservoir, and a rotatable valvular cap to regulate the flow through the ink feed.

5. A fountain pen comprising a barrel, a removable reservoir having puncturable ends located within the barrel, a valve controlled air feed at one end of the barrel, a valvular ink feed having a terminal offset passage at the other end of the barrel, both of said feeds having pointed ends extending within the puncturable ends of the removable reservoir, the normal distance between the pointed ends being less than the length of the reservoir, a rotatable valvular cap to regulate the flow through the ink feed, and means for indicating the position of the valvular cap with relation to the ink feed.

In witness whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

HORACE GILBERT.

Witnesses:

H. C. ALLEN,
WALTER SIGMONT.