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C. FABRIZIO

FOUNTAIN PEN

Filed March 9, 1925

Fig. 1

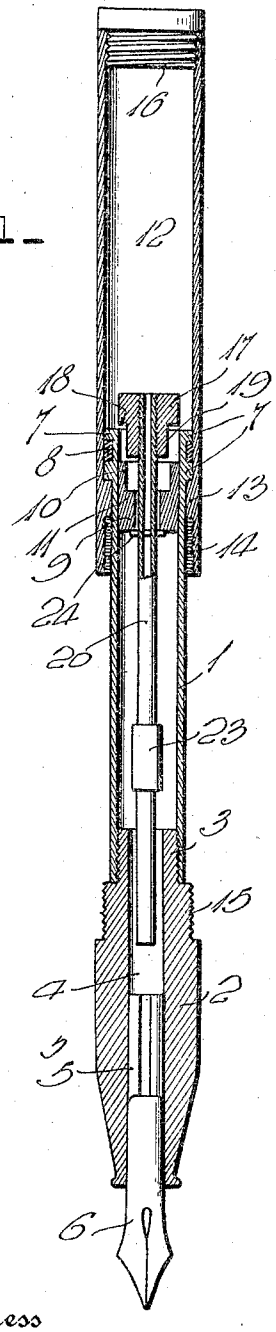


Fig. 2

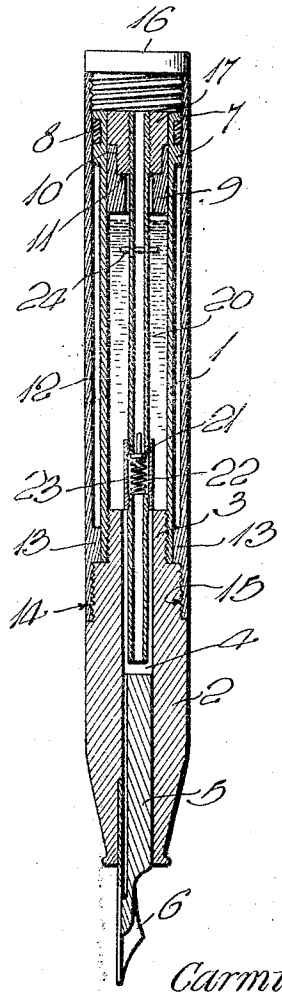
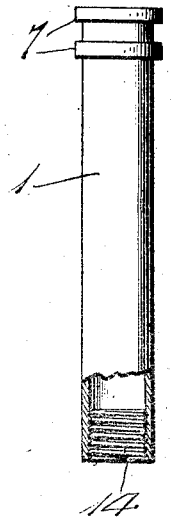


Fig. 3



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UNITED STATES PATENT OFFICE.

CARMINE FABRIZIO, OF NEW YORK, N. Y.

FOUNTAIN PEN.

Application filed March 9, 1925. Serial No. 14,205.

To all whom it may concern:

Be it known that I, CARMINE FABRIZIO, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Fountain Pens; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention aims to provide a new and improved form of self-filling fountain pen which will be rather simple and inexpensive, yet will be efficient and very desirable.

With the foregoing in view, the invention resides in the novel subject matter hereinafter described and claimed, the description being supplemented by the accompanying drawing.

Figure 1 is a longitudinal sectional view through a pen constructed in accordance with my invention, showing the relation of parts when the ink barrel is being filled.

Figure 2 is a view similar to Fig. 1, but illustrating the pen in readiness for use.

Figure 3 is a side elevation partly in section, showing the body portion of the ink barrel.

In the drawing above briefly described, the numeral 1 designates an elongated, cylindrical, ink barrel which is closed at its lower end by a cylindrical body 2, said body preferably having a nipple 3 at its upper end, threaded into the lower end of said barrel. The body 2 is formed with ink-feeding means, including a longitudinal ink passage 4, the usual feeder 5 fitting into the lower end of said passage, and an appropriate pen point 6. The exterior of the barrel 1 is provided, in the construction shown, with a pair of circumferentially extending ribs 7 between which an appropriate packing ring 8 is confined. The interior of the barrel 1 is equipped, adjacent its upper end, with a valve seat 9 which faces upwardly and is preferably of stepped form, to provide upper and lower valve-engaging surfaces 10 and 11 respectively.

Slidable upon the barrel 1 and adapted to engage the packing ring 8 in an air-tight manner, is a suction cylinder 12, said cylinder preferably having an internal rib 13 to abut the lowermost of the ribs 7 and limit the upward movement of said cylinder as shown in Fig. 1. Below the shoulder 13, the cylinder 12 is preferably threaded internally as indicated at 14, to engage screw threads 15 on the rear end of the body 2, so that said cylinder may be held in lowered position for use of the pen, as indicated in Fig. 2. The upper end of the cylinder 12 is closed by any suitable means, such as a screw plug 16. As will be hereinafter more fully explained, upward pulling of the cylinder 12 upon the barrel 1, creates suction within the latter to draw ink into the same, and by the means described below, the air drawn from the barrel 1 into the cylinder 12, when said cylinder is raised, is prevented from discharging back into said barrel and expelling the ink which has been drawn into the latter.

At 17, an upwardly opening check valve has been shown to co-operate with the seat 9, said valve having upper and lower surfaces 18 and 19 to engage the surfaces 10 and 11 respectively, when the valve is closed. When the valve is opened however, it permits communication between the interior of the suction cylinder 12 and the interior of the barrel 1, as shown in Fig. 1.

The valve 17 is provided with a downwardly projecting air escape tube 20 whose upper end communicates with the cylinder 12, while its lower end preferably extends into the passage 4, in a loose manner. This tube is provided with an upwardly closing check valve 21 normally seated by a spring 22, and preferably the tube is formed of upper and lower sections connected by a coupling 23 in which the valve and its spring are housed.

The member 24 shown near the upper end of the tube 20, is merely a stop pin to abut the lower end of the valve seat 9, preventing excessive upward movement of the valve 17 and the tube 20, when the cylinder 12 is pulled upwardly.

Normally, the parts stand as shown in Fig. 2, the plug 16 or other closure for the upper end of the cylinder 12, being then held against the valve 17, so that the latter is retained in its closed position. The threads 15 of the body 2 are then in engagement with the threads 14 of the cylinder 12, so that the latter is rigid with said body and the pen may be easily used. To fill the pen, the cylinder 12 is rotated to disengage its threads from the body 2. Then, when the point of the pen is immersed in ink, the suction cyl-

inder 12 is pulled upwardly. This cylinder now exhausts air from the barrel 1, as the valve 17 has been unseated by raising of said cylinder. The suction thus created in the barrel, draws ink into the latter. As the cylinder 12 is again forced downwardly, the valve 17 closes and all air from said cylinder is discharged through the tube 20, passage 4 and ink passage of the usual feeder 5. During this discharge of air, the check valve 21 of course opens, whereas said valve closes upon ascent of the cylinder 12, so that no ink can enter the latter.

After lowering the cylinder 12, it is of course again threaded onto the body 2, and the upper end 16 of said cylinder will then hold the valve 17 in closed position as above stated.

As excellent results may be obtained from the details disclosed, they are preferably followed, but within the scope of the invention as claimed, modifications may of course be made.

I claim:

1. A self-filling fountain pen comprising an ink barrel having ink-feeding means at its lower end and provided with an upwardly facing valve seat at its upper end, a suction cylinder slidable over said barrel and closed at the upper end of the latter, an upwardly opening check valve co-operable with the aforesaid seat and when open permitting communication between the ink barrel and the suction cylinder, an air escape tube extending downwardly from said valve within said barrel to a point adjacent the lower end of the barrel, said tube communicating with said suction cylinder, and a downwardly opening check valve for said tube.

2. A structure as specified in claim 1; the closed upper end of the suction cylinder being adapted to abut the first named check valve to hold it seated when said cylinder is in its normally lowered position, and means for then connecting said cylinder with the ink barrel.

3. A structure as specified in claim 1; said ink-feeding means including a passage at the lower end of the ink barrel, said air escape tube extending loosely into said passage.

In testimony whereof I have hereunto affixed my signature.

CARMINE FABRIZIO.