N° 18,716 A.D. 1912

(*Under International Convention.*)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in the United States), 10th Jan., 1912

Date of Application (in the United Kingdom), 15th Aug., 1912

Accepted, 12th Sept., 1912

COMPLETE SPECIFICATION.

Improvements in and relating to Fountain Pens.

I, FELIX RIESENBERG, of Columbia University, New York, in the County and State of New York, United States of America, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

The present invention relates to improvements in fountain pens and more particularly to pens of the type known as self filling pens adapted to be filled with ink without the use of separate filling devices and the chief objects of this invention are to simplify the construction of such a pen, eliminate ink joints and secure a larger ink capacity than is now possible in this type of pen.

The invention is more particularly described with reference to the accompanying drawings, in which,

Figure 1 is a sectional elevation of one form of the pen.
Figure 2 is a sectional elevation of a modified form of pen.
Figure 3 is a sectional elevation of a further modification.
Figure 4 is a cross section on the line 4—4 of Figure 1.
Figure 5 is a cross section on the line 5—5 of Figure 2.
Figure 6 is a cross section on the line 6—6 of Figure 3.
Figure 7 is a cross section on the line 7—7 of Figure 1.
Figure 8 is a cross section on the line 8—8 of Figure 2.
Figure 9 is a cross section on the line 9—9 of Figure 3.
Figure 10 is a section on the line 10—10 of Figure 3.

The main body or fount 1 of the pen is as shown, preferably integral with the finger or neck portion 2, the use of the usual joint between these portions being avoided and thus a frequent cause of soiling the fingers eliminated. Within the mouth of the finger portion 2 is placed a feed section 3 having usual ink passage 3-[a] and the pen 4 is held between the feed 3 and the wall of the finger or neck portion 2. The feed 3 has a bore 5 within which is inserted loosely the end of the small tube 6, which has a bore of greatly less diameter than that of the fount 1. At its other end the tube 6, in the forms of the invention shown in Figures 1 and 2, is passed through and rigidly held at or near its upper end by the bottom 7 of a nipple 8 containing a valve chamber 9. In the form of the invention shown in Figure 3, the tube 6 is formed in the wall of the fount itself and at the end towards the pen has its opening coincident with the upper end of the bore of the feed member 3.

Within the valve chamber 9 is arranged a check valve of rubber, vulcanite or other suitable material 10 which may, as shown in Figure 1, be an annular

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ring or as shown in Figures 2 and 3, be a disk valve with feather guides 11, enabling the valve to move vertically with reference to its seat on the bottom of the nipple, but to prevent its dislocation therefrom. Through the said bottom of the nipple, one or more ports 12 are arranged, the upper ends of which afford a seat for the valve 10. The nipple 8 is centrally bored and adapted to receive a small rubber bulb 13, as shown.

When the pen is to be filled its lower end is inserted in the ink bottle with the neck 2 projecting below the surface of the ink thereof and the bulb 13 compressed, valve 10 seats itself and the air is then expelled through small tube 6 emerging beneath or near the pen point outside of the fount. When the bulb is released a partial vacuum causes the ink to flow into the pen through the regular feed section, by way of the feed passage 3-a, the relatively greater skin friction in the long narrow tube 6 causing the ink to rise more freely in the fount than in that tube. The bulb 13 being small, the ink only partially fills the fount and the bulb must be again compressed, whereupon the check valve 10 again closes and the air is expelled through the tube 6. The bulb 13 being again allowed to expand the ink rises further in the fount and the process may be continued until the fount, bulb and ultimately the small tube 6, are filled with ink, a state indicated when air ceases to escape from the lower end of the pen.

A cap 14 may be provided to screw or press on to the fount over the bulb 13, and the usual cap (not shown) may also be provided to cover the pen point.

The principle here adopted makes it possible to fill the pen by the use of a small bulb which would not otherwise be possible. When the fount proper is filled the bulb itself can be filled and will act as an additional reservoir for ink. It is not intended that the valve 10 shall have a tight fit with its seat and therefore when the pen is used in writing the ink in the bulb and valve chamber escapes down into the fount by leaking past the valve, thus making all the ink available for use. In order to empty the pen it is held above the ink surface and the bulb compressed and released as in filling.

Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. In a fountain pen the provision of an air passage of such small cross section as to substantially interfere with the rising of fluid therein extending from a point at the base of the pen on the nib and communicating with the reservoir at or near its upper end, substantially as described.

2. In a fountain pen as claimed in Claim 1, the provision of a check valve controlling the communication between the reservoir and the air passage at or near their upper ends, substantially as described.

3. In a fountain pen as claimed in Claim 1, the provision of a collapsible bulb connected to the reservoir for exhausting the air from the pen for the purpose of filling it with ink substantially as described.

4. In a fountain pen as claimed in Claims 1—3, the provision of a valve chamber contained in a nipple fixed to the reservoir and having means for receiving the collapsible bulb, substantially as described.

5. The fountain pens constructed and arranged to operate substantially as described with reference to the accompanying drawings.

Dated this 14th day of August, 1912.

W. P. THOMPSON & Co.,
6, Lord Street, Liverpool, and at
Bradford and London,
Agents for the Applicant.

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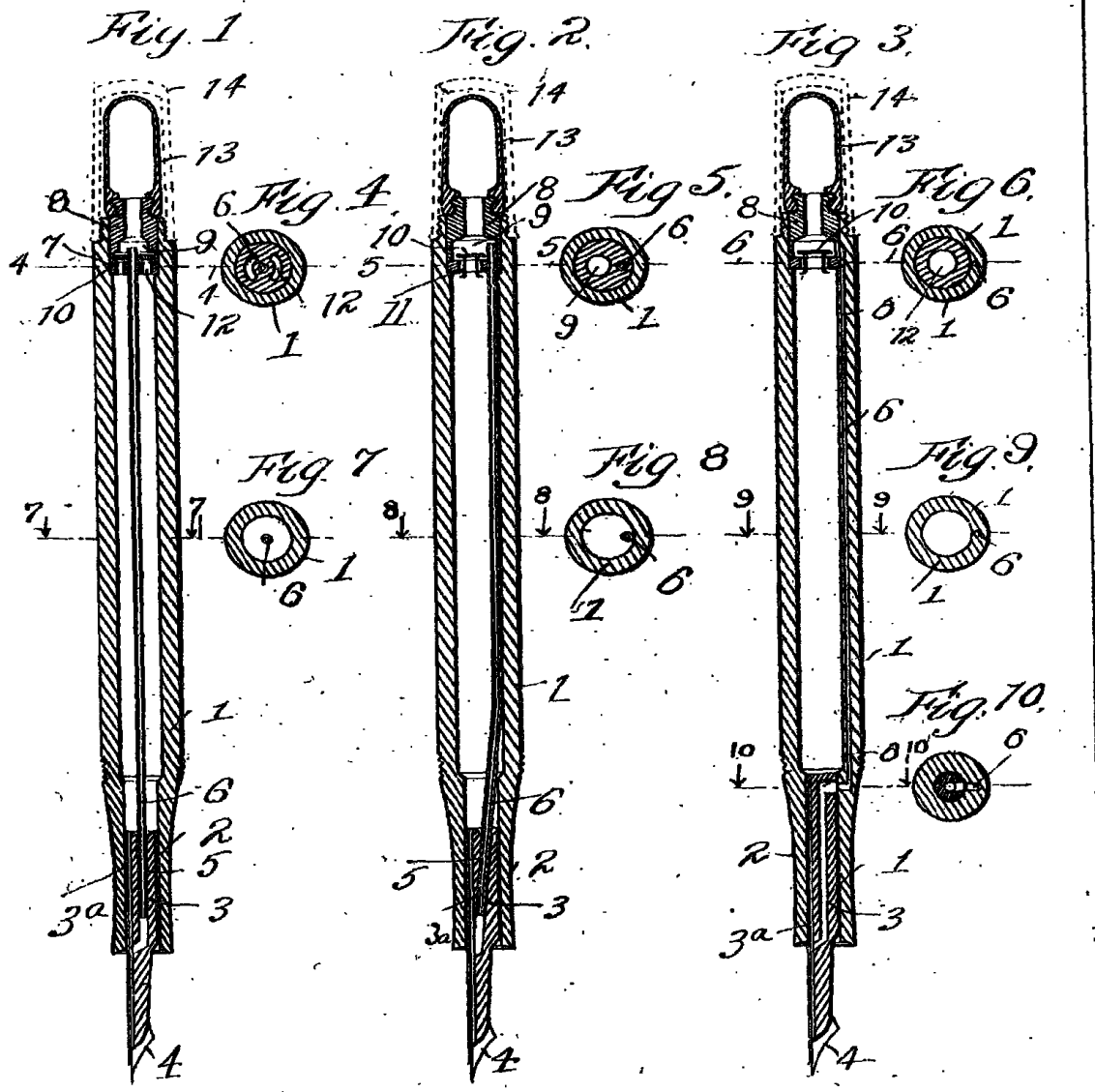
RIESENBERG'S Complete Specification.

(1 SHEET)

[This Drawing is a reproduction of the Original on a reduced scale.]



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