

# PATENT SPECIFICATION



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469,496

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## PROVISIONAL SPECIFICATION

### Improvements in and relating to Fountain Pens

I, WILLIAM LIVSEY, a British Subject, of 13, Hope Street, Liverpool, do hereby declare the nature of this invention to be as follows:—

5 This invention relates to sac self-filling fountain pens with more especial reference to those of the so-called vacuum type, including an air tube associated with the feed and extending through the lower part of the barrel.

10 Hitherto, vacuum pens have been constructed with the sac mounted on the rear end of the barrel or on a nib section which is inserted in the customary manner from the front into the front or lower end of the barrel.

15 The present invention has for its object to provide an improved construction of sac self-filling fountain pen which can be more rapidly and easily assembled and which shall be durable in use.

20 In a fountain pen according to the invention the sac is mounted on a nib section adapted to be inserted into the barrel via the rear end thereof and to be retained in position by a collar or dummy section in screw-threaded engagement with the nib section.

25 Preferably, the nib section is furnished with a shoulder which co-operates with an internal ledge or shoulder on the barrel to determine the extent to which the nib section is inserted therein, and, preferably, a portion of the nib section projects at the front end of the barrel and is screw-threaded to receive the aforementioned collar or dummy section which, when tightened, engages the front end of the barrel to fix the assembly.

30 Any appropriate form of sac actuating mechanism may be utilised—say a lever mechanism or a stud filling mechanism—although the construction lends itself to the convenient rear end actuating mechanism described in the Specification of my co-pending Application No. 442,262.

35 Where ink visibility is required, the barrel and the nib section or portions thereof are fabricated of translucent material—say celluloid—in which case an intermediate sleeve is advantageously interposed between the feed and the nib section.

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In a specific embodiment of the invention applied to a vacuum sac self-filling pen having actuating mechanism according to my aforementioned Specification No. 442,262, a barrel of translucent or transparent material is furnished internally near its front or lower edge with a shoulder, and the nib section of transparent celluloid is formed in three parts united by adhesive, solvent or in other appropriate manner, the front part being adapted to project at the front of the barrel, the middle part providing a shoulder co-operating with the internal shoulder on the barrel, and the rear part being of reduced diameter and mounting the sac in the usual way. If need be, only the middle part is transparent to afford the necessary ink visibility.

55 The projecting part of the nib section is screw-threaded and receives a collar or dummy section having a normal appropriate exterior configuration and fixing the position of the nib section by engaging the front end of the barrel.

60 The spring presser bar of the actuating mechanism is inserted from the rear and abuts against the middle part of the nib section, the rear end of the barrel being internally screw-threaded to receive the flanged plug of the actuating mechanism which is a unit therewith, to complete the assembly.

65 It will be understood that while the invention is more especially suited to vacuum pens including an air duct extending from the feed through the lower part of the barrel, the method of assembly may also be adopted for other forms of sac self-filling fountain pen.

70 By the present invention an improved construction of fountain pen is obtained which can be cheaply manufactured and rapidly assembled.

Dated this 23rd day of March, 1936.

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## COMPLETE SPECIFICATION

## Improvements in and relating to Fountain Pens

I, WILLIAM LIVSEY, a British Subject, of 13, Hope Street, Liverpool, 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:—

This invention relates to sac self-filling fountain pens wherein the ink content of the reservoir is visible with more especial reference to those of the so-called vacuum type, including an air tube associated with the feed and extending through the lower part of the barrel.

Hitherto to obtain ink visibility, the barrel of the pen, some part thereof, or the nib section has been made of transparent or translucent material, considerable difficulty having been experienced in effecting an ink-tight joint between the transparent and opaque portions especially on re-assembly after repair or inspection.

The present invention has for its object to provide an improved construction of sac self-filling fountain pen, the ink content whereof is visible which can be more rapidly and easily assembled and which is durable in use.

In a fountain pen according to the invention a transparent or translucent inner section mounting the sac is combined or associated with the nib section, and the portion of the pen barrel surrounding the inner section is also of transparent or translucent material so that ink visibility is had through the two concentric transparent or translucent walls of the inner section and main barrel.

Preferably, for assembly, the inner section is adapted to be inserted into the barrel via the rear end thereof and to be retained in position by a collar or dummy section in screw-threaded engagement with it. Conveniently, the inner section is furnished with a shoulder which co-operates with an internal ledge or shoulder on the barrel to determine the extent to which the section is inserted therein, and preferably a portion of the transparent or translucent section projects at the front end of the barrel and is screw-threaded to receive the aforementioned collar or dummy section, which, when tightened, engages the front end of the barrel to fix the assembly.

Alternatively, for front end assembly, the transparent or translucent inner section mounting the sac is secured by cement screw-threading, or in any other appropriate manner to a shank projecting

rearwardly from the counter-part of the aforementioned dummy section, which, in this case is a section proper and may be a sliding fit in the front and of the barrel although advantageously it is screw threaded therein.

Any appropriate form of sac actuating mechanism may be utilised, say, a lever mechanism or a stud filling mechanism, although for pens of the so-called vacuum type the latter mechanism is preferred.

The invention will be further described with reference to the accompanying drawings where two embodiments are illustrated by way of example, and wherein:—

Figs. 1 and 2 illustrate in longitudinal section the preferred construction adapted for rear end assembly, Fig. 1 showing the parts in their normal position and Fig. 2 with the sac collapsed for filling.

Fig. 3 is a view similar to Fig. 1 of an alternative construction.

In the drawings, but with reference first more particularly to Figs. 1 and 2, the pen barrel is generally designated 1 and has at least its forepart formed of transparent or translucent material, being furnished near its front or lower edge 2 with an internal shoulder 3 adapted to provide an abutment for a transparent or translucent inner section 4 which is formed in three parts, a rear tubular part 5 of reduced diameter mounting the sac 6, the ink visible part 4 and a forwardly extending tubular part 7, all of which parts may be of celluloid, united in an ink-tight manner by adhesive, solvent, cement or other appropriate material, or it may be integral with each other.

The projecting part 7 of the section is screw-threaded, and receives a collar or dummy section 8 of vulcanite having a normal or appropriate exterior configuration and fixing the position of the inner section by engaging the front end 2 of the barrel.

9 indicates a spring presser bar of the actuating mechanism which is inserted from the rear of the barrel 1 and abuts against the middle part 4 of the section, the rear end of the barrel 1 being internally screw-threaded at 10 to mount a plug 11 bearing a stud 12 adapted normally to be covered by a finger-piece 13 which is removed to fill the pen by pressing the stud 12 and buckling the spring presser bar 9 to collapse the sac as shown in Fig. 2.

It will be understood that the particular

sac actuating mechanism illustrated is shown by way of example and that any convenient or usual mechanism may be utilised.

5 Referring now more particularly to the alternative embodiment illustrated in Fig 3, the middle part 4 through which the ink in the reservoir is visible is in this case secured by screw-threading, although  
10 it may be by solution or adhesive to a shank 15 of the nib section proper 16, carrying the nib 17 and feed 18 in the conventional manner. The nib section 16 forwardly of the shank 15 is furnished  
15 with an external screw-thread 19 by which the reservoir assembly is secured in the front end 2 of the pen body or barrel 1, a co-operating screw-thread 20 being provided therein for the purpose. 21 is a  
20 washer or packing ring ensuring an ink-tight joint at the shank 15 and 22 is an annular band firmly securing the sac 6 on the rear part 5 of the inner section.

In this case also at least the forepart of  
25 the barrel 1 coincident with the inner section 4 is of translucent or transparent material, the ink content of the reservoir being visible though the concentric  
30 annular walls of such inner section 4 and the barrel at this location. If need be, as will be understood, only the middle part 4 of the reservoir assembly is transparent or translucent, thus to afford the  
35 necessary ink visibility. In this embodiment it is unnecessary to provide the removable end plug 11, and moreover, since the feed 18 is carried in the vulcanite section 16, an intermediate sleeve  
40 of vulcanite such as is shown at 14 in Figs. 1 and 2 where the forepart 7 is of celluloid, is also unnecessary in the alternative arrangement.

In all embodiments the feed bar 18 is shown furnished with an air tube 23  
45 extending through the lower part of the barrel to provide a pen of the so-called vacuum type, having large ink capacity to which type the invention readily lends itself, although not limited in this  
50 respect.

By the present invention, improved constructions of fountain pen wherein the ink content of the reservoir is visible are  
55 obtained which can be cheaply manufactured and rapidly assembled, and which furthermore can be dismantled for inspection or replacement without the ink-tight joints of the reservoir being broken.

60 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:—

65 1. A sac self-filling fountain pen in-

cluding a transparent or translucent inner section mounting the sac combined or associated with the nib section, the barrel or the portion thereof surrounding the inner section being also of transparent or  
70 translucent material whereby ink visibility is had through the two concentric transparent or translucent walls of the inner section and main barrel and  
75 whereby the pen may be dismantled for inspection or repair without breaking the ink-tight joints of the reservoir.

2. A sac self-filling fountain pen according to Claim 1, wherein the inner section is inserted into the barrel via the rear end thereof and is retained in  
80 position by a collar or dummy section, e.g., of vulcanite, in screw-threaded engagement with the front portion of such inner section projecting at the front of  
85 the barrel.

3. A sac self-filling fountain pen according to Claim 2, wherein the transparent inner section is furnished with a  
90 shoulder adapted to co-operate with an internal ledge in the forepart of the pen barrel to determine the extent to which the inner section is inserted therein, the inner section being secured by a screw-threaded collar on its projecting front  
95 part of reduced diameter which collar, when tightened, abuts with the front end of the barrel to fix the assembly.

4. A sac self-filling fountain pen according to Claim 1, wherein the trans-  
100 parent inner section, e.g., of celluloid mounting the sac is secured to a reduced shank on the nib section, e.g., of vulcanite, by screw-threading or adhesive, the nib section in turn being secured in  
105 the transparent front end of the barrel by screw-threading or in any other conventional manner.

5. A sac self-filling fountain pen according to the preceding Claim 4,  
110 wherein the inner section of celluloid is secured to a nib section of vulcanite by screw-threading with an interposed washer or packing ring, ensuring an ink-tight joint.  
115

6. A sac self-filling fountain pen according to any of the preceding claims, wherein the transparent inner section is provided with a rearwardly directed shank  
120 of reduced diameter carrying the sac.

7. A sac self-filling fountain pen according to any of the preceding claims, including an air tube associated with the feed and extending through the lower  
125 part of the barrel, thus enabling the ink reservoir completely to be filled with ink.

8. A sac self-filling fountain pen according to any of the preceding claims affording ink visibility through two  
130 layers of transparent or translucent

material and wherein the visible ink reservoir is separate from the pen body or barrel, substantially as described.

9. A sac self-filling fountain pen  
5 constructed and adapted to operate substantially as described with reference to the accompanying drawings.

Dated this 23rd day of March, 1937.

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FIG. 1.

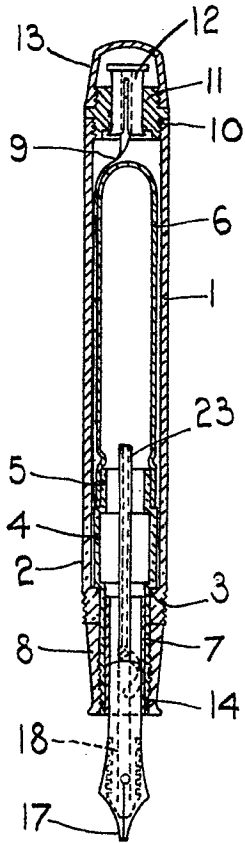


FIG. 2.

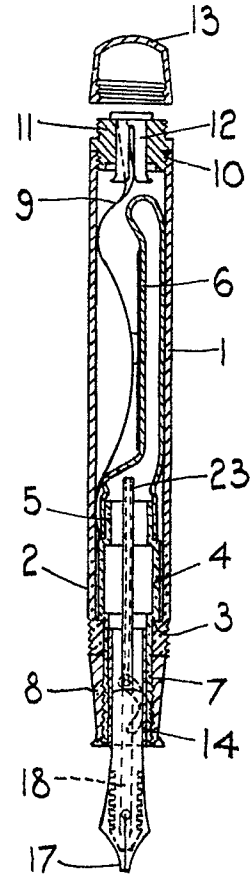
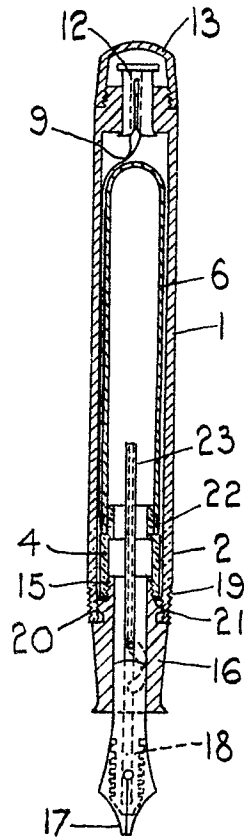


FIG. 3.



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