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(54) **FOUNTAIN PEN**

(57) **Abstract:**

(54) **STYLO**

*This First Page has been artificially created and is not part of the CIPO Official Publication*

This invention relates to fountain pens.

The object of the invention is to provide a fountain pen which is simple in structure, efficient in operation and economical in manufacture.

A further object of the invention is to provide a fountain pen of the self-filling type, wherein a compressible bag is employed for drawing fluid thereinto and simultaneously therewith a predetermined amount of concentrated writing material in the form of powder, paste or liquid.

A further object of the invention is to provide in the pen of the type above set forth certain improvements in the structure of the pen parts to facilitate, render more certain and greatly improve the feeding of the writing fluid to the pen point.

Further objects of the invention will appear more fully hereinafter,

The invention consists substantially in the construction, combination, location and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown by the accompanying drawing and finally pointed out in the appended claims.

Referring to the drawing:

Figure 1 is a broken view in section of a pen embodying my invention.

Fig. 2 is a sectional view (one part being shown in elevation) of the detached feed part embodying my

invention.

Fig. 3, is a detached sectional view of a slightly modified pen embodying my invention.

Fig. 4 is a view partially in elevation and partly in section showing the related nib and writing fluid feed arrangement employed in accordance with my invention.

The same part is designated by the same reference character wherever it occurs throughout the several views.

My present invention relates to improvements in the structure of the pen to facilitate and render more certain the feed obtained in the known type of pen.

In accordance with my invention, I employ a barrel 1, which has secured in the reverse end thereof a member 2 provided with a bore therethrough and in which is located a partition 3 to afford an ink chamber 4 and an auxiliary chamber 5. The inner end of the member 2, that is, the end extending within the barrel 1, is provided with means to secure thereon a compressible bag 6 which is compressed in any suitable manner not shown. A hollow stem member 7 provided with a cone shaped head which serves as a valve 8 extends through the member 2, the head 8 being located in the auxiliary chamber 5 and being enclosed therein by means of an adjustable nut 9 provided with an orifice 10 therethrough which screws into the wall of the auxiliary chamber 5, to thereby afford means for adjustably limiting the size of the auxiliary chamber 5 and in consequence the movement of the head 6 and stem 7, and to normally retain the head and stem in the pen structure. The member 2 is interiorly threaded as at 12 to receive therein the exterior threads 13 of the nib holder 14, which is provided

with an orifice therethrough of sufficient size to enable the end of the hollow stem 7 to extend therethrough. The nib 15 is positioned in its holder 14 and secured in the usual well known manner the pen 16 over the grooved passage 17 of the nib or pen holder 15.

I have discovered that the feed of the writing fluid from the bag 6, through the orifice 10 of the nut 9 and through the hollow portion of the stem 8 to the nib or pen holder 15 and then to the pen point, is greatly facilitated and improved if either one or both of the modifications thereto and herein incorporated are made.

The first of these modifications consists in supplying what I shall term a feed guide, and which is shown at 20. This feed guide extends, as shown, through the hollow stem 7 and may be in the form of a wire, hard rubber or may be of any material size or shape which tends to freely conduct fluid therealong or afford a guide or non-resisting path for fluid to flow therealong. If the guide 20 is in the form of a wire, one simple arrangement for positioning the same in the stem 7 is to secure one end thereof to the bottom of the head 8 as shown in Fig. 4, with the wire or guide 20 extending thence through the center of the stem 7 into contact with the stem support or nib 15. In the arrangement shown in Fig. 3, the feed guide 20 is in the form of a flat strip of hard rubber or similar material shaped in the form of a wedge which is forced into one end of the stem 7, namely, in the head portion 8 thereof, and extends at its smaller end through the end of the stem 7. Due to the fact that the feed guide 20 is very thin, such a structure aids the feed of the writing fluid rather than obstructs it. Many other types of feed

guides may be employed, and while I have shown and described but two, I wish it to be understood that I do not desire to be limited or restricted thereto. In any instance, however, I prefer to have the end of the guide 20 in contact with the end of the nib 16.

The second improvement to the feed of writing fluid, when the same has been first obtained in the compressible bag 6, and which, as above stated, may be used either independently or in conjunction with the feed guide, the latter is preferable due to the advantages obtained thereby, is in the nib structure itself. I have found that where the end 21 of the nib structure is sawed or grooved to form a plurality of teeth as clearly shown in Figs. 1 and 4, that the feed is greatly facilitated thereby securing a steady flow of writing fluid and a practical instantaneous flow of writing fluid when the pen is inverted to its writing position. The effect of the sawed teeth 21 in conjunction with the grooves 22 formed in the channel 17 of the nib seems to be to afford a ready path from the end of the feed 20 or stem 7 to the writing point of the pen without causing overflow, too rapid a feed or the usual delay in obtaining a writing fluid to the pen point without first vigorously shaking the same.

Many modifications and changes in details will readily occur to those skilled in the art without departing from the spirit and scope of my invention as defined in the claims.

Having now set forth the objects and nature of my invention, and having shown and described structures embodying the principles thereof, what I claim as new and useful and of my own invention and desire to secure by Letters Patent, is:-

1. In a fountain pen structure, and in combination with an ink chamber, and a pen supporting nib, of a duct for supplying writing fluid from said ink chamber to said nib, and a fluid guide device located in said duct out of contact with the walls thereof and terminating in contact with the end of said nib.

2. In a fountain pen structure, and in combination with an ink chamber and a pen supporting nib, of a member provided with a passage therethrough positioned between said chamber and nib, and a fluid guide located in the passage of said member out of contact with the walls of said member and terminating in contact with the end of said nib.

3. In a fountain pen structure, and in combination with an ink chamber and a pen supporting nib, of a member provided with a passage therethrough positioned between said chamber and nib, and a fluid guide located in the passage of said member and terminating in contact with the end of said nib.

4. In a fountain pen structure, and in combination with an ink chamber and a pen supporting nib, of a duct for supplying writing fluid from said ink chamber to said nib, and a rod located in said duct out of contact with the walls thereof and terminating in contact with the end of said nib.

5. In a fountain pen structure, and in combination with an ink chamber and a pen supporting nib, of a member provided with a passage therethrough positioned between said chamber and nib, and a rod extending through said member out of contact with the walls of said member and terminating in contact with the end of said nib.

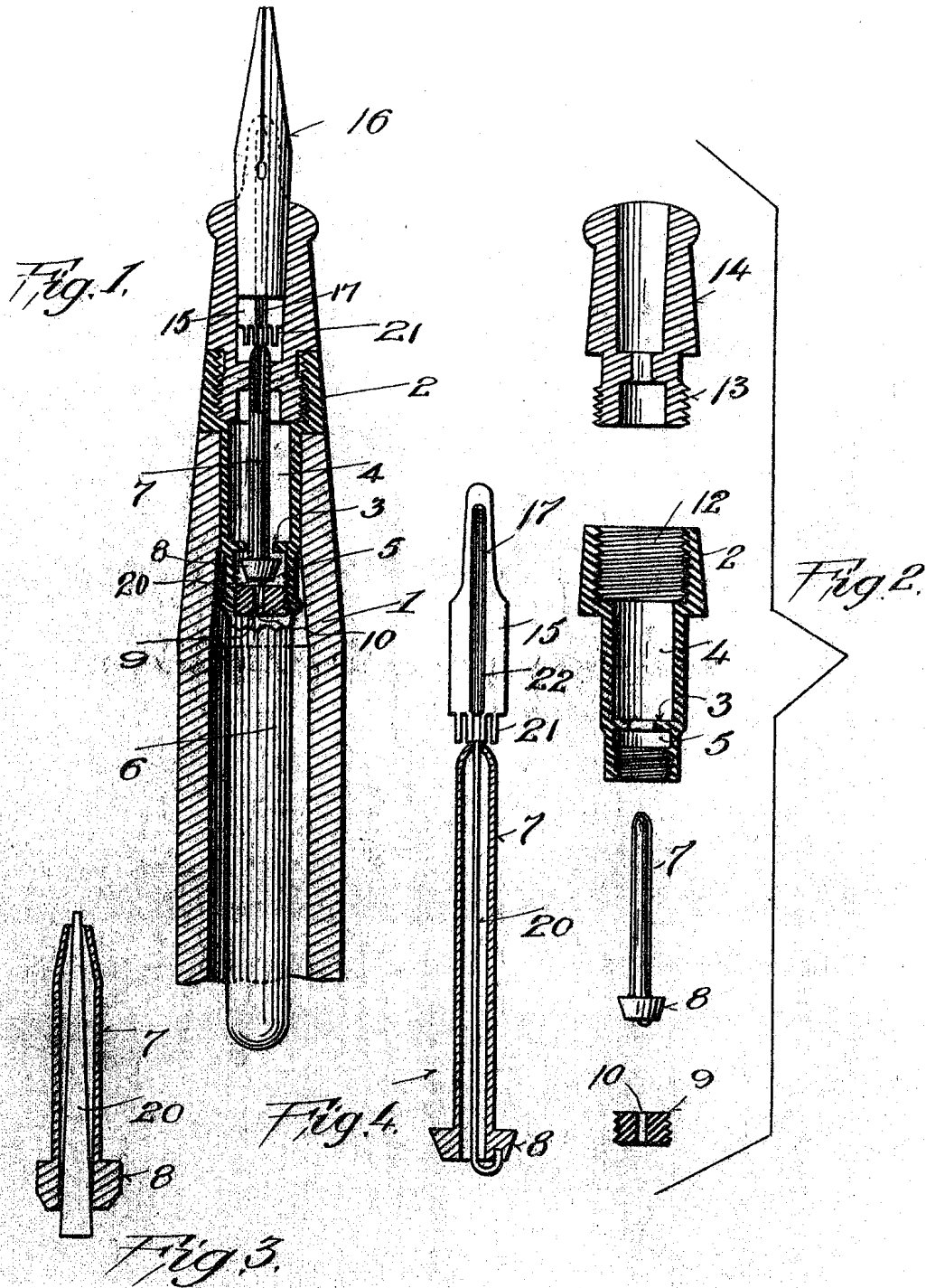
6. In a fountain pen structure, and in combination with an ink chamber and a pen supporting nib, of a member provided with a passage therethrough positioned between said chamber and nib, and a rod extending through said member, and terminating in contact with the end of said nib.

7. In a fountain pen structure, a pen supporting nib provided with a surface duct extending substantially the length thereof and to the rear end thereof, the end of said nib being slotted substantially as shown and for the purpose described.

8. In a fountain pen structure, a pen supporting nib provided with a surface duct extending substantially the length thereof and to the rear end thereof, the end of said nib.

9. In a fountain pen structure, a pen supporting nib provided with a surface duct extending substantially the length thereof and to the rear end thereof, the end of said nib being vertically slotted throughout the entire height of said nib.

*Fountain Pen* 234983



WITNESS:  
 Florence T. Shea  
 Anne Smith

Certified to be the drawing referred  
 to in the specification hereunto annexed.  
 September 30 1921  
 New York, N.Y.  
 U. S. A.

John D. Turner  
 INVENTOR  
 by Samuel E. Darby  
 his ATTORNEY