

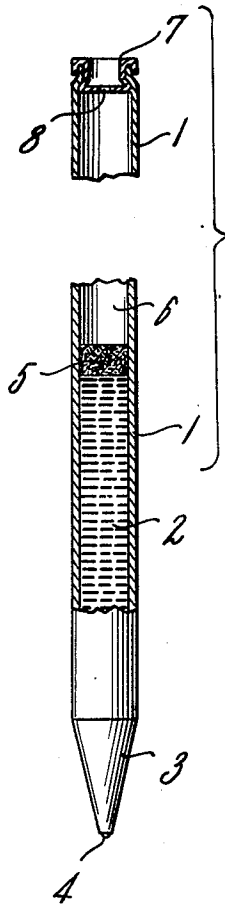
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WRITING INSTRUMENT

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WRITING INSTRUMENT

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This invention relates to writing instruments and more particularly to fountain pens of the ball point type.

It is an object of the invention to provide means protecting the ink in fluid or semipasty state contained in the reservoir of the fountain pen from contact with air or other gaseous medium, which has access to the reservoir.

Another object of the invention is to provide means preventing the ink from flowing out of the reservoir when the latter is tilted from its normal position of writing, and from mixing with air or like medium within the reservoir.

It is still a further object of the invention to provide means affording an even flow of ink from within the reservoir to the ball point and effectively maintaining the column of ink in its proper writing condition without being subjected to drying and other influences of air.

Other objects and advantages of the present invention will become apparent from the following specification, reference being had to the drawing in which there is shown, partly in cross-section, a portion of a reservoir of a writing instrument provided with a ball nib.

Referring more particularly to the drawing, the reservoir 1 is formed by a tube of convenient shape, which contains ink 2 in fluid or semi-pasty state. The reservoir 1 is connected with a nib 3, which is provided with a known ink feeding channel leading from the interior of the reservoir 1 to a writing element in the form of a ball 4. This ball distributes the ink to the paper when the ball rolls over the writing surface during operation. The air-tight follower 5 is slidably disposed within the ink reservoir 1 and positioned in contact with the surface of the column of ink or paste 2 contained therein. This follower 5 consists, for instance, of a semi-pasty mass of a composition of paraffin (as a fatty substance or derivative of petroleum and other mineral oils), or of wax, or of a viscous pulpy mass other than said ink 2 and of such nature that it does not mix with said ink. Such mass may consist of a substance having approximately the same viscosity as said ink.

The purpose of the follower 5 is to protect the ink from contact with the air or from mixing with the air. Such contact with the air has been found to cause undesirable influence on inks due to evaporation of certain ingredients of such inks. The mass of which the follower 5 consists is of such composition that it is normally prevented from flowing out of the reservoir regardless of the position of the writing instrument, and will

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follow the surface of the ink column, whereby said follower effectively protects the ink from communicating with the air. The follower moves together with the surface of the ink as the ink moves in the reservoir when the ink is fed to the ball, whereby an uninterrupted and even ink supply is ensured.

The invention is adapted for use in any kind of fountain writing instrument particularly in which the ink is fed by gravitation in reservoirs with a space 6 with suitable openings or vents 7, 8, allowing atmospheric pressure to prevail inside the reservoir.

The composition of the aforesaid mass depends on the type of ink and in each case such mass must be carefully selected in order to ensure that the mass will not mix with the ink and will slide along the wall of the reservoir during the displacement of the ink surface.

The follower body 5 may consist of a layer of viscous, pulpy mass of substantially the same viscosity as the ink and having a color which may be distinctly different from the color of the ink, thereby providing means for indicating to the user when the ink supply in the reservoir is approaching exhaustion which will become apparent from the change of color on the writing paper when the mass above the ink column is exuded through the ink feeding channel and past the writing ball 4. This latter effect is well known in connection with fountain pens containing an ink column and an ink plug at the end of said column. In this known structure, however, the ink plug is not protected from communication with the atmosphere and therefore subject to influences thereof, which is avoided due to the character of the follower made in accordance with the present invention.

It can thus be seen that there has been provided, according to the invention, a fountain pen with ink reservoir adapted to contain an ink column within said reservoir; said reservoir having a diameter sufficiently large so that the ink column will flow by gravitation out of the reservoir when the pen is tilted from its normal position of writing, and protective means adapted to prevent such flowing out of said ink from said reservoir and comprising a substantially flow resistant or viscous pulpy mass other than ink and immiscible with said ink and readily conformable to the contour of the inner wall of said reservoir, such reservoir including a space providing access for a gaseous medium above said ink column when contained in said reservoir, said mass forming a substantially air-tight follower and being ar-

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ranged intermediate said ink column and said space of gaseous medium and being of such composition that said ink is normally prevented from moving out of said reservoir when the fountain pen is placed in a position other than its normal writing position.

Having thus described the invention what is claimed as new and desired to be secured by Letters Patent, is:

1. In an ink reservoir for a ball point fountain pen adapted to contain an ink column within said reservoir; said reservoir having a diameter sufficiently large so that the ink column will flow by gravitation out of the reservoir when the pen is tilted from its normal position of writing, and protective means adapted to prevent such flowing out of said ink from said reservoir and comprising a substantially viscous pulpy mass other than ink and immiscible with said ink, said reservoir including a space providing access for a gaseous medium above said ink column when contained in said reservoir, said mass forming a substantially air-tight follower and being arranged intermediate said ink column and said space of gaseous medium and being of such composition that said mass is normally prevented from moving out of said reservoir when the pen is placed in a position other than its normal writing position.

2. In an ink reservoir for a ball point fountain pen adapted to contain an ink column within said reservoir; said reservoir being provided with an end wall having an air vent, said reservoir being further of a diameter sufficiently large so that said ink will flow by gravitation out of said reservoir when the pen is tilted from its normal position of writing, and protective means adapted to prevent flowing out of said ink from said reservoir and comprising a substantially viscous pulpy mass other than ink and immiscible with said ink, said mass forming a substantially air-tight follower arranged within said reservoir intermediate said ink column and said end wall provided with said air vent and being of such composition that said ink is normally prevented from flowing out of said reservoir when the pen is placed in a position other than its normal writing position.

3. In an ink reservoir for a ball point fountain pen adapted to contain an ink column within said reservoir; said reservoir being provided with an access for a gaseous medium above said ink column and being adapted to feed ink from said

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ink column to said ball point by gravitation, when the fountain pen assumes its normal position of writing, and ink protective means in the form of a viscous pulpy mass other than and substantially immiscible with said ink, said mass forming a substantially air-tight follower in contact with said ink column and being disposed for exposure to said gaseous medium, said ink being thus normally prevented from moving out of said reservoir when said fountain pen is placed in a position other than its normal writing position.

4. In an ink reservoir for a ball point fountain pen adapted to contain an ink column within said reservoir; said reservoir being provided with an access for a gaseous medium above said ink column and being adapted to feed ink from said ink column to said ball point by gravitation, when the fountain pen assumes its normal position of writing, and ink protective means in the form of a flow resistant pulpy mass other than and substantially immiscible with said ink and readily conformable to the contour of the inner wall of said reservoir, said mass forming a substantially air-tight follower in contact with said ink column and being disposed for exposure to said gaseous medium, said ink being thus normally prevented from moving out of said reservoir when said fountain pen is placed in a position other than its normal writing position.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
370,342	Kletzker	Sept. 20, 1887
555,763	Fessenden	Mar. 3, 1896
630,133	Thurman	Aug. 1, 1899
774,425	Hicks	Nov. 8, 1904
946,036	Hallock	Jan. 11, 1910
982,922	Ashley	Jan. 31, 1911
1,803,616	Hothersall	May 5, 1931
1,808,377	Reichenbach	June 2, 1931
1,885,171	Balmer	Nov. 1, 1932
1,935,000	Vessey	Nov. 14, 1933
2,107,424	Platt	Feb. 8, 1938
2,233,572	Atkins	Mar. 4, 1941
2,249,163	Nissen	July 15, 1941
2,361,478	Jennings	Oct. 31, 1944
2,400,679	Biro	May 21, 1946
2,426,453	Huenergardt	Aug. 26, 1947
2,427,033	Wahl	Sept. 9, 1947
2,495,013	Martin	Jan. 17, 1950
2,506,035	Parker	May 2, 1950