April 18, 1950 J. B. EHRHART ET AL 2,504,189

WRITING INSTRUMENT HAVING AN ELLIPSOID POINT REVOLVING IN A RACE

Filed July 14, 1947

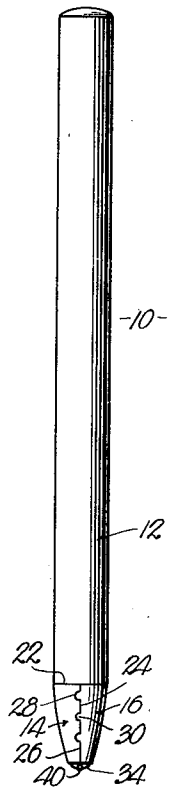


Fig. 1.

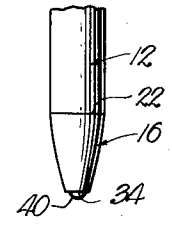


Fig. 2.

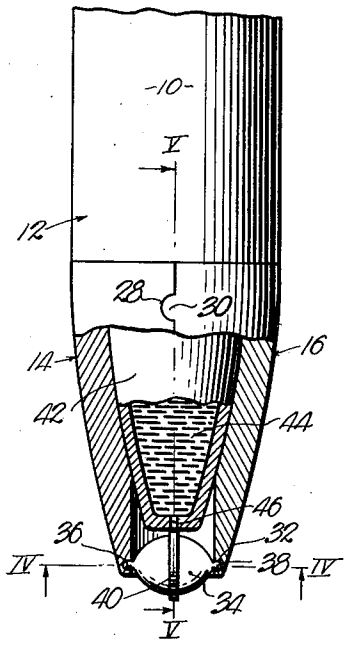


Fig. 3.

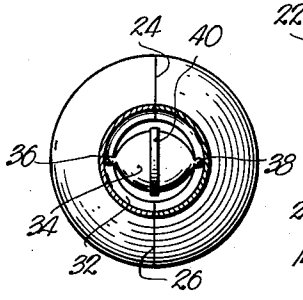


Fig. 4.

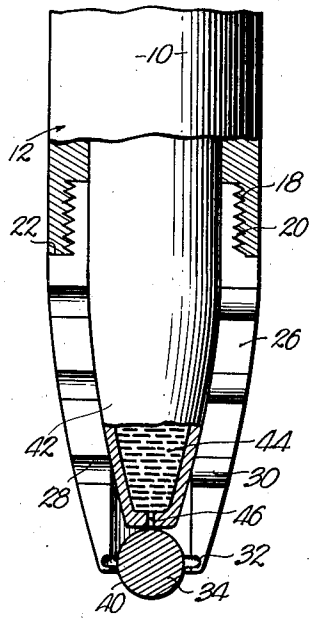


Fig. 5.

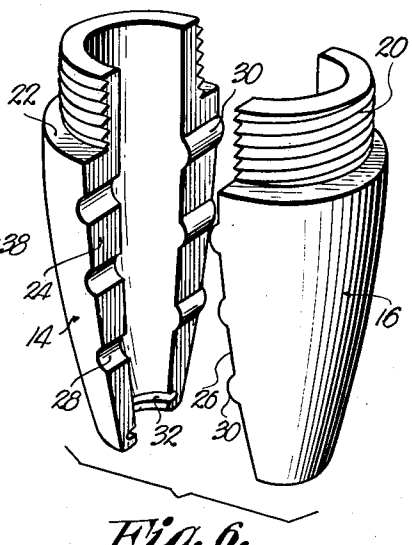


Fig. 6.

INVENTORS.
John B. Ehrhart
Byron A. Piner

BY

ATTORNEY.

Patented Apr. 18, 1950

2,504,189

UNITED STATES PATENT OFFICE

2,504,189

WRITING INSTRUMENT HAVING AN ELLIPSOID POINT REVOLVING IN A RACE

John B. Ehrhart, Leavenworth, Kans., and Byron A. Piner, Terre Haute, Ind.

Application July 14, 1947, Serial No. 760,720

2 Claims. (Cl. 120—42.2)

1

This invention relates to writing instruments of the fountain pen type and has for its primary aim the provision of a freely rotatable nib mounted within a hollow barrel, which nib also revolves within the barrel on an axis substantially perpendicular to its axis of rotation.

The most important object of this invention is to provide a writing instrument having an ink applying nib or point so formed as to present a ball having a plurality of unequal axes and mounted within the supporting barrel therefor, for rotation on its major axis.

Another important object of this invention is to provide a writing instrument having an elliptical-shaped nib as above set forth, which nib revolves freely within a race formed in the barrel and on an axis perpendicular to the aforesaid major axis of rotation.

A still further object of this invention is to provide a writing instrument having ellipsoidal point revolving in a race, which nib is provided with a pair of opposed pins extending into an annular internal groove formed in the barrel for free revolving movement therein.

A still further object of this invention is to provide a writing instrument having an ellipsoidal nib provided with a continuous peripheral bead to present an ink applying writing point and disposed to receive the ink from an open end reservoir therefor, mounted within the barrel.

Many minor objects of this invention will be made clear or become apparent during the course of the following specification, reference being had to the accompanying drawing, wherein:

Fig. 1 is a side elevational view of a writing instrument made in accordance with our present invention.

Fig. 2 is a fragmentary elevational view thereof, showing another side of the writing instrument.

Fig. 3 is a fragmentary enlarged side elevational view thereof, parts being broken away for clearness.

Fig. 4 is a cross sectional view, taken on line IV—IV of Fig. 3, and looking in the direction of the arrows.

Fig. 5 is a fragmentary longitudinal cross sectional view, taken on line V—V of Fig. 3, and

Fig. 6 is an enlarged stretched-out perspective view of a pair of complementary sections forming a part of the barrel of the writing instrument.

Many fountain pens are on the market today having rotatable members as a part thereof to present a writing point but so far as we know none has been developed that is practical from

2

the standpoint of adaptability to many different types of users therof, including left handed writers. The instrument about to be described may be used at any of various conceivable angles with respect to the writing surface and is adaptable to personalize penmanship of the user, since the style of writing, including the fineness of line, slant and other features will be determined entirely upon the way the device is placed in use.

These advantages and many others will become obvious to those skilled in the art and in the drawing the numeral 10 designates a barrel that is sectional and hollow. This barrel 10 includes a main body section 12 and a pair of complementary short sections 14 and 16. One end of the main section 12 of body 10 is internally threaded as at 18 for receiving external threads 20 of short sections 14 and 16. Sections 14 and 16, when fitted together as hereinafter described, presents a hollow frusto-conical body to present a convenient shape and thereby to facilitate handling when the instrument is placed in use. Sections 14 and 16 are each provided with a shoulder 22, which is maintained in abutting relationship to the end of section 12, adjacent to threads 18 when the threads 18 and 20 are in meshing relationship, as illustrated in Fig. 5.

The sections 14 and 16 are each provided with one substantially flat wall 24 and 26 respectively. Half of each of the walls 24 and 26 of sections 14 and 16 is provided with a plurality of transverse grooves 28 and the other wall thereof has a like number of transverse ribs or beads 30 thereon. The grooves 28 of the section 14 receive the beads 30 of the section 16 and similarly the grooves 28 of section 16 receive the beads 30 of section 14 when these two sections are placed together in the manner illustrated in Figs. 1 and 5. Thus it is seen that when all of the sections of barrel 10 are in operative engagement, the threads 18 and 20 of sections 10, 14 and 16 respectively and the grooves 28 and beads 30 all cooperate to rigidly hold sections 14 and 16 against displacement.

A continuous annular groove 32 is formed in the barrel 10 when sections 14 and 16 are together. Half of this groove 32 is formed in each of the sections 14 and 16 near the outermost relatively small end thereof. A nib 34 formed from steel or other suitable material, is solid throughout its area and elliptical-shaped, as shown in Figs. 3, 4 and 5. This nib 34 is provided with a pair of opposed pins cast or otherwise formed integrally therewith and disposed in alignment with the major axis of nib 34. These pins 36 and 38 each extend outwardly from the outermost

surface of nib **34** and extend into the groove **32** when the component parts of the instrument are assembled. These pins **36** and **38** serve not only to rotatably support the nib **34** within the barrel **10** but act as bearings to provide free revolving action of the nib **34** within the groove of race **32**. In other words, the ellipsoidal nib **34** is freely rotatable on its major axis within barrel **10** through the medium of pins **36** and **38** and also revolvable in groove **32** on an axis substantially perpendicular to its axis of rotation. Consequently the axis of rotation of the nib **34** is substantially on an extended longitudinal axis through the barrel **10**. The nib **34** is also provided with a continuous peripheral relatively narrow bead **40**. This bead **40** is disposed substantially centrally between the pins **36** and **38** and encircles the nib **34** in parallelism with its minor axis. This bead **40** is preferably cast or otherwise formed integrally with the nib **34** but may if desired, constitute a separate circumscribing ring of relatively hard material adaptable to present a suitable writing point.

Likewise, the pins **36** and **38** may also be formed from jewelled material or like hard substance and the groove **32** lined with a suitable bushing, all for the purpose of preventing undue wear if the materials forming barrel **10** and the nib **34** are not suitably hard. The barrel **10** is also provided with a hollow tube or container **42** for the writing material **44**. This tube **42** is of conventional character and of such size as to be receivable by the interior of panel **10**. One end of this tube **42** has an opening **46** provided therein, which is disposed in underlying relationship with the bead **40**. As the nib **34** is placed in operation and the same rotates and revolves within the race **32**, this bead **40** remains in continuous engagement with the tube **42** in closing relationship with the opening **46**. This wiping engagement of the bead **40** with the tube **42** causes ink **44** to be continuously fed thereto as the pen is placed in operation.

It is clear from the foregoing that the writing instrument just described may be satisfactorily used when disposed at virtually any angle with respect to the writing surface. As writing takes place, there will be a continuous rotation and revolving movement in the nib **34**, to the end that ink is supplied to the writing surface without interruption. The lines formed on the writing surface will be light or heavy, depending upon the angle at which the operator is accustomed to holding writing instruments and his penmanship will be characterized thereby. By the same token this writing instrument may be used by a left handed

operator as efficiently as when manipulated by a right hand user. The free rotational and revolving action of the nib **34** within the groove **32** permits quick and accurate as well as automatic readjustment thereof, as various upwardly, downwardly and side strokes are made, which when taken with an adequate supply of writing fluid, presents an uninterrupted writing effect when the instrument is placed in use.

Manifestly, many modifications and changes may be made in the writing instrument just described and it is, therefore, desired to be limited only by the spirit of this invention and scope of the appended claims.

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

1. In a writing instrument having an open end hollow barrel, provided with ink feeding means therein, an ellipsoidal nib mounted for rotation on its major axis within the barrel near said open end thereof, said barrel being provided with a continuous internal groove, said nib being freely revolvable in said groove, said nib having a continuous bead thereon to present an ink-applying writing point, said bead circumscribing the nib adjacent the minor axis thereof.

2. In a writing instrument having an open end hollow barrel, provided with ink feeding means therein, an ellipsoidal nib mounted for rotation on its major axis within the barrel near said open end thereof, said barrel being provided with a continuous internal groove, said nib having a continuous bead thereon to present an ink-applying writing point, said nib extending beyond said one end of the barrel, said bead being disposed in ink-receiving relationship to said feeding means.

JOHN B. EHRHART.
BYRON A. PINER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
123,147	Blackman	Jan. 30, 1872
538,492	Askew	Apr. 30, 1895
890,274	Hall	June 9, 1908
984,855	Schaffnit	Feb. 21, 1911
2,258,841	Biro	Oct. 14, 1941

FOREIGN PATENTS

Number	Country	Date
863	Great Britain	1892
278,736	Great Britain	1927