F. W. MILLER.

FOUNTAIN PEN.

APPLICATION FILED AUG. 31, 1917.

1,258,593.

Patented Mar. 5, 1918.

Fig. 1.

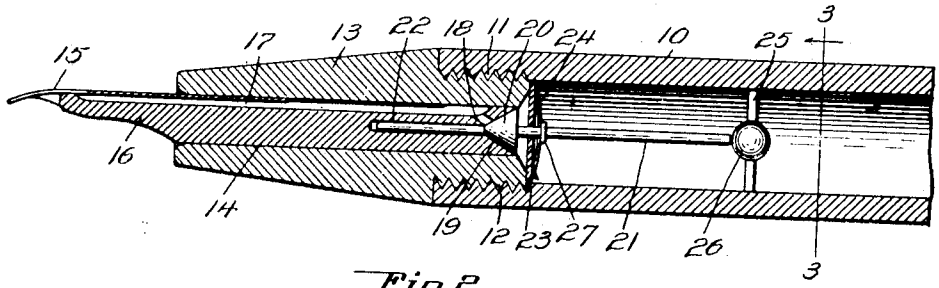


Fig. 2.

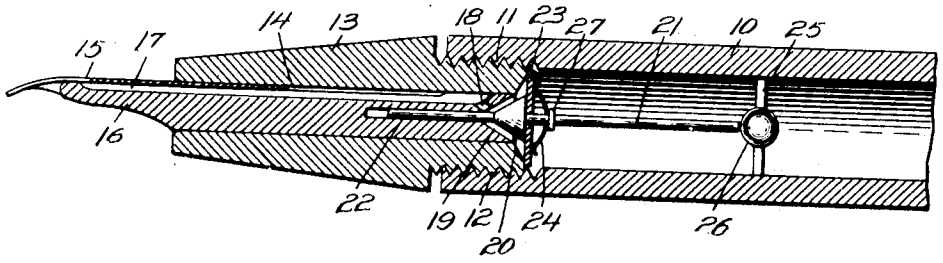


Fig. 3

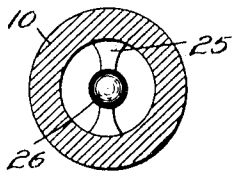
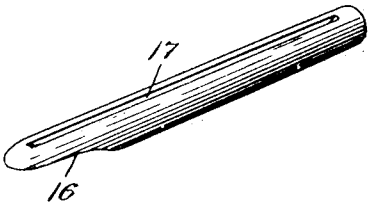


Fig. 4.



Witness

F. C. Gibson.

Edward George

Inventor

Frank W. Miller.

By Victor J. Evans

Attorney.

UNITED STATES PATENT OFFICE.

FRANK WILL MILLER, OF BETHEL, MISSOURI.

FOUNTAIN-PEN.

1,258,593. Specification of Letters Patent. Patented Mar. 5, 1918.

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To all whom it may concern:

Be it known that I, FRANK WILL MILLER, a citizen of the United States, residing at Bethel, in the county of Shelby and State of Missouri, have invented new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to fountain pens, and comprehends the provision of a construction wherein the component parts of the pen may be associated in a manner to prevent leakage, especially when the pen is not in use, while a slight adjustment of the pen section permits of a constant and uniform flow of ink while the pen is in use.

The invention will be better understood when the following detail description is read in connection with the accompanying drawing, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawing forming part of this specification like numerals of reference indicate similar parts in the several views and wherein:—

Figure 1 is a longitudinal sectional view through the pen showing the normal position of parts.

Fig. 2 is a similar view showing the position of parts when the pen is in use.

Fig. 3 is a sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a perspective view of the feeder.

Referring more particularly to the drawing in detail 10 indicates the body of the pen which is hollow to constitute a reservoir. The body 10 is preferably of cylindrical formation in cross section, and is interiorly threaded adjacent its open end as at 11 to accommodate the reduced threaded extension 12 of the pen section 13. The section 13 is provided with a longitudinal bore 14 in which is fitted a portion of the pen 15, and the feeder clearly illustrated in Fig. 4.

The feeder is preferably constructed of hard rubber, and of cylindrical formation for the major portion of its length, but includes a finger 16 which is disposed in juxtaposition to the pen 15 in the usual manner. The feeder is provided upon its upper side with a longitudinally extending groove 17 which extends from one end of the feeder to a point adjacent the extremity of the finger 16, this groove being arranged next to the pen 15 for conveying the ink from the reservoir 10 to the pen 15 for use. A portion of the groove 17 is obliquely disposed as at 18 opening into a conical shaped valve seat 19 at one end of the body, provided to accommodate a valve 20 carried by the stem 21. The valve obviously controls the flow of ink from the reservoir 10 to the groove 17, and this valve is normally maintained seated in the manner to be presently described. The valve stem 21 has a portion projecting in advance of the valve and received within a bore 22 in the feeder, whereby the pen section is guided in its adjustments toward and away from the valve. The stem 21 also projects rearwardly of the valve and is positioned within the reservoir 10.

Secured in any suitable manner to the reduced extremity of the pen section is a strip of metal or other suitable material 23, which bridges the valve seat in the said section and is provided with a central aperture through which the valve stem passes. Fixed within the body or reservoir 10 is a transversely disposed member 25, formed to provide a relatively large central portion 26 adapted to be permanently engaged by the adjacent end of the stem 21 of the valve, with a view of maintaining the latter stationary in its given position. The stem 21 carries a flange or collar 27, with which a resilient means interposed therebetween and the strip of material 23, coöperates for the purpose of maintaining the stem 21 in constant engagement with the enlarged portion of the member 25. As shown in this specific instance, use is made of a bowed leaf spring 24 which has a central opening through which the valve stem 21 operates, while the opposite extremities of the spring 24 bear against the strip 23. As above stated the strip 23 is suitably secured to the adjacent end of the pen section, and with the extremities of the spring bearing against said strip, and its intermediate portion bearing against the collar or flange 27, the spring is always under tension to maintain the stem 21 in contact with the enlarged portion of the member 25, with a result that the valve is immovably positioned in the manner shown.

In practice, assuming that the parts are associated in the manner illustrated in Fig. 1, and use of the pen is desired it is only necessary to rotate the pen section 13 in a direction to move the same forwardly, or in other words in a direction away from the valve 20. As the pen section is moved in

this direction, carrying with it the strip 23, the spring 24 assumes a bowed condition, thus maintaining sufficient pressure upon the collar 27 to maintain the stem 21 in contact with the member 25 for the purpose mentioned. Manifestly, the valve 20 remains stationary while the pen section 13 is moved away from the latter to permit the ink to flow from the valve 10 through the groove 17 to the pen point. Subsequent to the use of the pen, the pen section is rotated in an opposite direction to move the pen section into effective engagement with the stationary valve 20, in order to prevent further escape of the ink from the barrel 10. As the pen section is moved in this direction moving with it the strip 23, the spring 24 is flattened increasing the tension thereof upon the collar 27 to insure against relative movement of displacement of the valve 20 under any circumstance. Obviously, this contemplated operation not only insures a constant and uniform flow of ink, but the quantity of ink flowing from the reservoir can be regulated by a proper adjustment of the pen section 13.

While it is believed that from the foregoing description the nature and advantages of the invention will be readily apparent, I desire to have it understood that what is herein shown and described is merely illustrative, and constitutes the preferred embodiment of the invention to which I do not limit myself, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What is claimed is:—

1. A fountain pen comprising a hollow body constituting an ink reservoir, a pen section having a valve seat, a valve interposed between said reservoir and pen section and including a stem projecting within the reservoir, means disposed within the reservoir, and fixed relatively thereto, said means constituting an abutment for the adjacent end of the stem, means for holding the stem in engagement with the aforementioned means whereby the valve is held immovable, and said pen section being capable of adjustment toward and away from the valve to seat or unseat the latter.

2. A fountain pen comprising a hollow body portion constituting an ink reservoir, a pen section having a valve seat, a valve removably disposed within the reservoir in alinement with said seat, said valve including a stem, an element fixed within the reservoir and separable from said stem, means operable to maintain the stem in constant engagement with said fixed element to maintain the valve immovoble, and said pen section being adjustable toward and away from said valve to seat and unseat the latter.

3. A fountain pen comprising a hollow body constituting an ink reservoir, a pen section having a valve seat, a member secured to said pen section and bridging said seat, a valve disposed beneath said member and including a stem passed centrally therethrough within said reservoir, means including a resilient element for maintaining the valve stationary, and said pen section being movable toward and away from said valve to seat and unseat the latter.

4. A fountain pen comprising a hollow body portion constituting an ink reservoir, a pen section having a valve seat, a member secured to the pen section and bridging said seat, a valve disposed beneath said member and including a stem passed centrally through said member into the reservoir, an element fixed within said reservoir, resilient means coöperating with said member and stem to hold the latter in engagement with said element, whereby the valve is maintained stationary, and said pen section being adjustable toward and away from the valve to seat and unseat the latter.

5. A fountain pen comprising a hollow body portion constituting an ink reservoir, a pen section having a valve seat, a member secured to said pen section and bridging the valve seat, a valve disposed beneath said member and including a stem projecting centrally therethrough, an element fixed within the reservoir, a collar on said stem, resilient means interposed between said member and collar for maintaining the stem in contact with said element and the valve stationary, and said section being adjustable toward and away from the valve to seat and unseat the latter.

6. A fountain pen comprising a hollow body portion constituting an ink reservoir, a pen section having a valve seat, an element fixed within the reservoir, a valve including a stem disposed within the reservoir and contacting said element, a bowed spring having an opening through which the stem slides, means carried by the stem and coöperating with said spring whereby said stem is maintained in contact with said fixed element and the valve stationary, said section being adjustable toward and away from the valve to seat and unseat the latter, and said means carried by the stem serving to flatten the spring as the valve is seated.

In testimony whereof I affix my signature.

FRANK WILL MILLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."