R. A. KER.

FOUNTAIN PEN.

APPLICATION FILED APR. 12, 1915.

1,228,781.

Patented June 5, 1917.

Fig. 1.

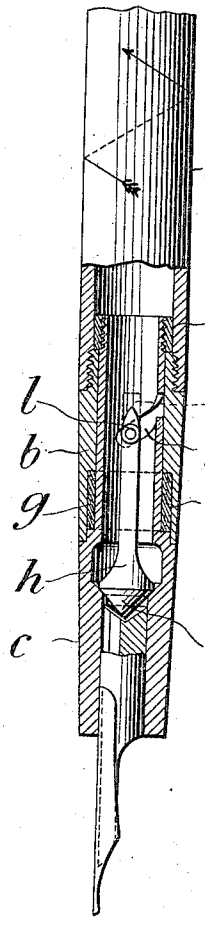


Fig. 2.

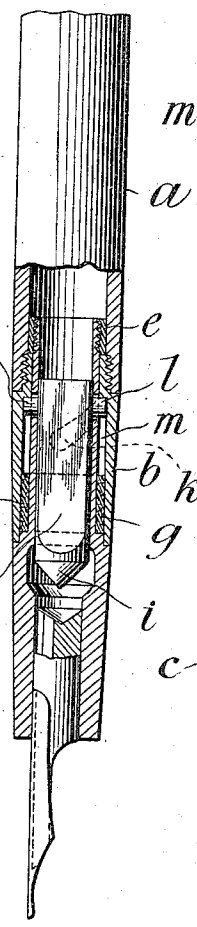


Fig. 3.

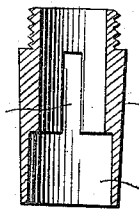


Fig. 4.

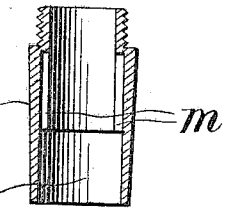


Fig. 5.

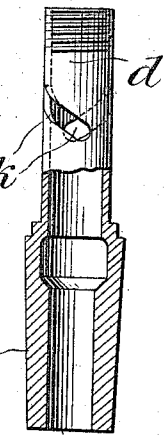


Fig. 6.

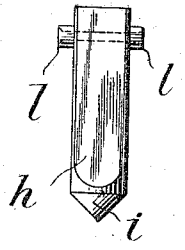
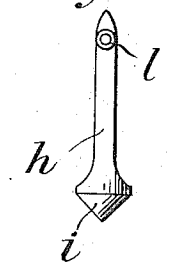


Fig. 7.



WITNESSES

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FOUNTAIN-PEN.

1,228,781. Specification of Letters Patent. Patented June 5, 1917.

Application filed April 12, 1915. Serial No. 20,890.

To all whom it may concern:

Be it known that I, ROBERT ANDREW KER, a subject of the King of Great Britain, residing at 13 Bayston road, Stoke Newington, London, England, have invented new and useful Improvements in Fountain-Pens, of which the following is a specification.

My invention relates to fountain pens of the type wherein a valve is provided for controlling the flow of ink from the reservoir to the pen, and the present invention consists in a novel arrangement for operating such a valve.

In the pen constructed according to my invention the nib section, that is to say, the section in which the nib is carried and in connection with which the regulating valve operates is made in two parts, one of which is designed to be screwed into the end of the reservoir and fixed therein in the ordinary manner, and is hereinafter for convenience of description refererd to as the thimble, while the other is adapted to rotate with relation to the fixed portion and is hereinafter referred to as the nib-holder. This nib-holder is provided with an extension having formed in it spiral slots in which pins on the stem of the cone piece or valve engage. The valve is held against rotation with relation to the thimble so that the relative rotation of the said thimble and nib-holder serves to raise and lower the valve in the required manner.

To enable the invention to be fully understood I will describe the same by reference to the accompanying drawing, in which:—

Figure 1 is a sectional elevation on a large scale of a fountain pen having a valve arranged in accordance with my invention, the said valve being shown as resting upon its seat.

Fig. 2 is a view similar to Fig. 1 but showing the parts moved to lift the valve away from its seat.

Figs. 3 and 4 are sectional views at right angles to each other of what I have termed the thimble, and

Fig. 5 is a sectional elevation of the nib-holder.

Figs. 6 and 7 are elevations at right angles to one another, of the valve.

a indicates the reservoir of the pen and *b*, *c* the thimble and nib-holder respectively, the former of which is adapted to be screwed into the end of the reservoir *a* and to remain stationary with relation thereto, while the latter is adapted to rotate with respect to the thimble. This nib-holder *c*, which is shown detached in Fig. 5, is provided with the tubular extension *d* which is designed to be passed through the thimble *b* and to be held against longitudinal movement therein by means of a nut *e* secured to its upper end, but left free to rotate in the said thimble *b*. Around the neck of this extension *d* a ring *f* of cork or other packing material is placed, the said ring of packing material being designed to enter a recess *g* formed in the thimble *b* as clearly shown in Figs. 1 and 3, this ring of packing material serving to prevent ink from the reservoir from escaping through the joint between the thimble and nib-holder.

h is the valve which, as shown, is provided with a coned end *i* designed to coöperate with a corresponding seat in the nib-holder *c*. In the extension *d* of the nib-holder *c* are formed two spiral slots *k*, *k* and on the stem of the valve are two projections *l*, *l* which may be rollers mounted on a transverse pin, as shown, the said rollers being designed to work in the spiral slots *k*, *k*. In the thimble *b* are formed two straight grooves *m*, *m* and the pins *l*, *l* are made long enough to project right through the spiral slots *k*, *k* into the said grooves *m*, *m*, this engagement of the pins *l*, *l* with the said grooves serving to hold the valve against rotation as regards the thimble.

With this arrangement it will be understood that when the thimble and nib-holder are rotated, with relation to one another, a longitudinal movement of the valve *h* with relation to its seat will take place, so that when the valve is upon its seat the flow of ink to the nib will be completely stopped, while when the valve is more or less raised from its seat a corresponding flow of ink will take place.

Fig. 1 shows the valve *h* resting upon its seat; if, when in this position, the nib-holder *c* is gripped and the reservoir *a* having the thimble *b* upon it is rotated through an angle of, say, 90°, in the direction indicated by the arrow, Fig. 1, the effect will be to rotate the said valve relatively to the extension *d*, so that the pins *l*, *l* on the valve will run along the spiral slots *k*, *k* and lift the valve to the position shown in Fig. 2. By a reverse movement of the thimble *b* it will be understood that the valve *h* will be returned to its seat.

Claims.

1. A fountain pen comprising a barrel, a thimble screwed into said barrel from the front end thereof and provided with an internal longitudinal groove, a rotatable nib holder detachably mounted in said thimble and provided with a valve seat and having a spiral slot in its wall, and a valve arranged in said nib holder and provided with a projection which passes through said spiral slot and engages the groove of the thimble, whereby the relative rotation of said thimble and nib holder will cause said valve to open or close.

2. A fountain pen comprising a barrel provided at its forward end with internal screw threads, a thimble screwed into said barrel from the front end thereof and provided with a longitudinal groove and an annular recess, a nib holder rotatably mounted in said thimble, and provided at its upper end with screw threads, a nut engaging the screw threads of said nib holder for detachably connecting the nib holder and thimble, a packing arranged in said recess for preventing the passage of ink between said nib holder and the lower end of the thimble, said nib holder being also provided with a valve seat and with spiral slots, and a valve located in said nib holder for engagement with said valve seat and provided with projections which pass through said slots and engage said grooves, whereby the relative rotation of said thimble and nib holder will cause said valve to open and close.

ROBERT ANDREW KER.

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