R. T. WING.

FOUNTAIN PEN.

APPLICATION FILED JUNE 10, 1914.

1,284,525. Patented Nov. 12, 1918.

Fig. 1.

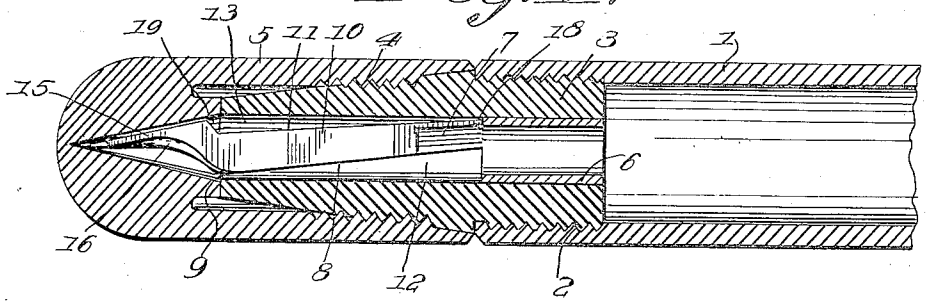


Fig. 2.

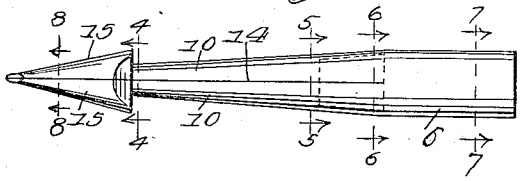


Fig. 3.

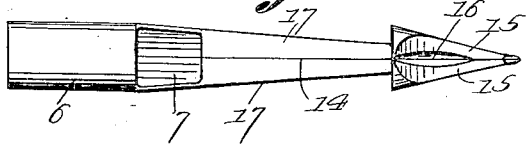


Fig. 4.

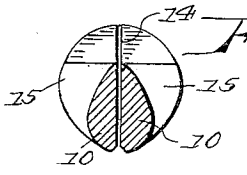


Fig. 5.

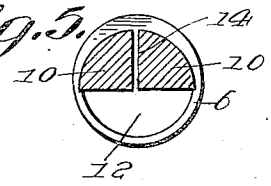


Fig. 6.

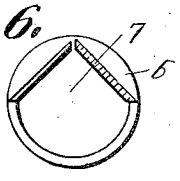


Fig. 7.

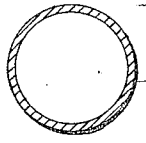
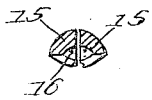


Fig. 8.



Witnesses

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FOUNTAIN-PEN.

1,284,525. Specification of Letters Patent. Patented Nov. 12, 1918.

Application filed June 10, 1914. Serial No. 844,210.

To all whom it may concern:

Be it known that I, RUSSELL T. WING, a citizen of the United States, residing at St. Cloud, in the county of Stearns and State of Minnesota, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to certain new and useful improvements in fountain pens having for its object among others to provide a simple, durable, efficient and inexpensive pen in which the pen point is so constructed as to be practically proof against bending or breaking in ordinary accidents, such as catching in writing or from such shocks as it would receive in accidentally dropping it to the floor, and yet retaining all the essential features of a perfect flowing fountain pen of the quill type.

A further object is to provide means constituting what may be termed an internal "governor" constructed to take care of the overflow within the head of the pen. This is attained by providing a capillary cavity located within the head or holder, so formed that the narrow end of the cavity will be in communication with the ink in the well, the forward and larger end being left open to the air, the cavity being tapered, all for a purpose which will hereinafter appear. I dispose the spring portion of the nibs near the rear of the point and back in the head of the pen, the forward portion of the point having its nibs made stiff and strong so as to withstand shocks, and finally tapered to a suitable writing tip, the nibs being restricted in their separation or parting movement by the surrounding head piece.

Other objects and advantagess of the invention will hereinafter appear and the novel features thereof will be particularly pointed out in the appended claims.

The invention, in its preferred form, is clearly illustrated in the accompanying drawing, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is an enlarged longitudinal sectional view showing the point-end portion of my pen with the cap in place.

Fig. 2 is a top plan of the pen portion.

Fig. 3 is a bottom plan of the pen portion.

Fig. 4 is a cross section on the line 4—4 of Fig. 2 looking in the direction of the arrows.

Fig. 5 is a cross section on the line 5—5 of Fig. 2 looking in the direction of the arrows.

Fig. 6 is a cross section on the line 6—6 of Fig. 2 looking in the direction of the arrows.

Fig. 7 is a cross section on the line 7—7 of Fig. 2 looking in the direction of the arrows.

Fig. 8 is a cross section on the line 8—8 of Fig. 2 looking in the direction of the arrows.

Like numerals of reference indicate like parts throughout the different views.

Referring to the drawings,

1 designates a tubular holder of any suitable material, such as hard or vulcanized rubber, and which serves as a reservoir for containing the supply of ink.

As shown, the holder 1 is provided at one end with internal screw threads, as at 2, for the detachable reception of the screw-threaded plug 3, which, in turn, is exteriorly threaded as at 4, for the detachable engagement of the cap 5 in the usual manner. The holder 1 and the plug 3 may be all in one piece, and for this reason the plug and holder throughout the specification will be termed the holder. The forward end of this holder which shows a screw plug will be termed the head.

My invention resides in the construction of the pen itself, which is made of suitable metal and comprises the tubular portion 6, the nibs 15 and the spring portion 7 as shown. The body portion 10 (called the inclosed portion of the nibs) is longitudinally slitted, as seen at 14, from the tubular portion 6 to the end or tip. These nibs are made stiff and strong toward the forward portion. At the rear, adjacent to the tubular portion is formed the spring portion of the nibs. The exposed portion 15 of the point is as a whole substantially cone-shaped, being transversely rounded on its upper surface, and concaved on its under surface. The said upper surface is disposed on a plane oblique to the longitudinal axis of the tubular portion 6 and in a plane substantially parallel with the body portion 10, forming thereby a shoulder 19 that is preferably rearwardly inclined relatively to the upper surface of the points, and provides in conjunction with the upper surface of the body portion and the adjacent wall of the plug 3 a chamber 13. At this point

and between the nibs is formed a collecting cavity 16, as shown in Figs. 3 and 8.

The cavity 16 operates to form one part of the exposed portion of the point, preferably the upper part, where the nibs touch in but one longitudinal strip, from the beginning of the base of the cone-shaped exposed portion to the tip (see Fig. 1), which gives a lead for the ink to form a film along and which greatly prevents the breaking of the film in making wide lines. The cavity itself serves to take up the ink which might collect on the rapid closing of the nibs.

When the point is placed in the head as shown in Fig. 1, two cavities are formed, by reason of the shaping of the inclosed portions of the nibs. The upper side of the inclosed portion of the nibs as well as the lower side, are inclined as at 11 and 8, forming the cavity 13 on the upper side and the passage 12 on the lower side. The passage 12 communicates directly with the tubular portion, placing the ink in the well practically in direct contact with the nibs. The under and lower end of the inclosed portion of the nibs practically rests on the wall of the head as at 9.

By making the pen with the large opening for the ink where the ink flows from the well to the point, the nibs are practically directly in contact with the ink in the well or reservoir 1. The air gains access to the reservoir or well by working under the nibs in writing. As the sides of the inclosed portion of the body 10 at 17, 17 touch or nearly touch the inner walls of the head or plug, they form the cavity 13 above described on the upper side of the pen to the rear of the nibs; the ink from the reservoir or well is retarded from passing into this cavity, by capillary attraction, except slightly into its narrower end. It is to be understood that the size of the hole in the tubular portion may be small or large, according to the quality of the pen. By having the point directly in contact with the ink in the well, the ink is always at the point and does not depend upon the capillary attraction of any feed arrangement for the flow of the ink.

In use, the chamber 13 takes care of the ink flow entirely. An even flow is obtained at all times, since a small amount of liquid in a tapering cavity will always seek the narrower end, and as the narrower end is at 18, see Fig. 1, then if the ink partially filled the chamber 13 in writing the ink would not remain at 19, the larger end of the tapering chamber, but would flow back to near the point 18 as long as used until air rises in the well, passing around the nibs, and more ink comes down, maintaining a constant level of ink in the governing cavity 13 as long as the pen is used. It is to be noted that the forward end of the chamber 13 is left open to the air which is done to prevent a film of ink from collecting at the point 19, which might happen if this were not done, and to allow air to play freely back and forth in the chamber 13 as the ink pressure in the well may vary, forcing the ink into the chamber 13 at different levels. A film of ink at this point 19 would cause ink to be expelled instead of air, from the chamber 13, and thus result in a direct overflow of ink on the tip of the pen if there were any expansion of the air in the reservoir 1.

From the above it will be seen that I have devised a novel form of fountain pen capable of manufacture at small cost, embodying but few parts and those readily assembled or separated when desired, and while the structural embodiment of the invention as hereinbefore disclosed is what I at the present time consider preferable, it is evident that the same is subject to changes, variations and modifications in details, proportion of parts, etc., and I therefore, do not intend to restrict myself to the exact construction herein disclosed, but reserve the right to make such changes, variations and modifications as come properly within the scope of the protection prayed.

Briefly described, I have provided a fountain pen having a suitable type of reservoir 1 with a pen section 3 at one end thereof, in which pen section there is arranged a combined pen and feeder which has a tubular mouth portion 6 opening into the reservoir and from which extends a pair of parallel nib shanks or necks 17—17 having a generally inclined direction from the upper rear portion of the mouth down to the lower front end of the pen section on which the ends of the shanks 17 are provided with nibs 15—15 disposed wholly beyond the end of the pen section. Preferably the exterior contour of the neck sections 17—17 when these are in relatively closed position, as shown in Fig. 3, is such as to form above the top surface of the shank a chamber or pocket 13 which tapers gently from the outer portion of the pen section to the rear portion above the flexible and flattened parts 7 of the shanks 17, thus allowing the ink which passes between the split line 14 of the shanks to pass under capillary action into the rear portion of the chamber 13 in which the body of ink will collect and be retained during the writing action of the pen nibs.

The operation of this pen structure and the formations of the respective parts may be explained as follows: When the necks 10 swing down to position shown in Fig. 1 there is formed above the top thereof an inwardly contracting space in which ink is drawn and held by capillary attraction. When the nibs 15 are applied to a surface for writing the necks 10 spread apart and

upward and ink then flows from the mouth 6 into the kerf and along the nibs to the points thereof under capillary influence. The expansion of the nibs is limited by the wall of the reservoir head. During play of the necks the ink will advance and recede in the space 13 always receding toward the smaller end as the nib necks approach and the space 13 enlarges.

I have shown in this instance the mouth piece 6, the nib-necks (or feeders) 10 and the nibs 15 as being integrally formed.

What I claim as new is:—

1. In a fountain pen, a reservoir having a pen section and a combined pen and feed having nibs projecting wholly beyond the pen section, the feed comprising a mouth end and a split shank mounted in the section and communicating with the reservoir and forming resilient portions connecting the mouth and the pen nibs and lying in a generally inclined position within the pen section to form an outwardly convergent lower ink space and an upper outwardly flaring ink space, the split shank being movable toward and limited in movement by the interior surface of the pen section.

2. In a fountain pen, a reservoir and a pen section and a combined pen and feed having a mouth at its inner end opening into the reservoir, resilient feed sections extending from the mouth inclosed by the pen section, and nibs, on the ends of the feed sections, projecting beyond the pen section, the feed sections forming an inwardly contracting ink space at their upper surfaces below the pen section.

In testimony whereof I hereunto affix my signature in presence of two witnesses.

RUSSELL T. WING.

Witnesses:
JAMES R. BENNETT, Jr.,
JOE ELLIOTT.