UNITED STATES PATENT OFFICE

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FOUNTAIN PEN CAP AND INK GUARD

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Heretofore in the construction of fountain pens it has been the usual practice to provide a barrel having removably secured in one end thereof a fountain pen section for supporting a feed bar and a pen point. In other types of fountain pens the feed bar and pen point are normally adapted to be enclosed by means of a cap which usually is provided with an internally threaded portion which is adapted to be threaded onto an externally threaded portion provided around the exterior of the fountain pen barrel. It has been found in the ordinary type of fountain pen that when the fountain pen is not in use and the writing end thereof is enclosed by a fountain pen cap, that excess ink remaining in the feed bar and on the pen point accumulates around the outer end of the section with the result that the excess ink leaks off of the section and collects in the fountain pen cap. Due to the leakage of ink from the end of the section into the fountain pen cap, the interior of the cap and the exterior of the section usually become stained with the excess ink so that when the fountain pen is again used, the hands of a user become stained with the excess ink.

For the purpose of obviating the leakage of excess ink from the feed bar and pen point to the exterior of the fountain pen section, the present invention has been devised to provide a simplified form of fountain pen wherein the section forms an integral part of one end of the barrel and has the end thereof formed to provide a chambered internally threaded and beveled ink guard. The ink guard is so constructed that it is adapted to removably receive the externally threaded and beveled Shank portion of a fountain pen cap or cap liner engaged therein to enclose the writing end of the fountain pen. The fountain pen barrel has the outer end thereof so constructed to permit the externally threaded and beveled portion of the cap to be removable engaged therein to hold the cap in position when the fountain pen is opened for use.

It is an object of this invention to provide an improved fountain pen wherein the barrel and section are integral and wherein both ends of the barrel are constructed for receiving therein a portion of a cap or closure member for retaining the cap in position on either end of the barrel without requiring external threading of the barrel or internal threading of the cap as has been the practice heretofore.

It is also an object of this invention to provide a fountain pen having a body portion thereof so constructed to permit one end or portion of a closure cap to be engaged therein to afford a locking fit therewith to obviate leakage of ink from the writing end of the fountain pen to the exterior of the barrel or cap.

It is a further object of this invention to provide a fountain pen wherein the cap is provided with an externally threaded portion which is adapted to be threaded into an internally threaded ink guard provided at one end of the fountain pen barrel or into an internally threaded recess provided in the opposite end of the fountain pen barrel by depressing a normally closed spring controlled closure disk.

It is furthermore an object of this invention to provide an improved fountain pen wherein the fountain pen barrel and section form an integral unit having internally threaded recesses in both ends thereof for the purpose of removably receiving an externally threaded fountain pen cap in either end of the barrel.

It is an important object of this invention to provide an improved type of fountain pen wherein the barrel and section form an integral unit and wherein the section end of the barrel is provided with an internally threaded and beveled ink guard for receiving the externally threaded and beveled portion of a fountain pen cap to enclose the fountain pen feed bar and pen point to provide a non-leakable fountain pen, said fountain pen barrel having the outer end thereof provided with an internally threaded recess having an end closure member wherein which is adapted to be depressed when the fountain pen cap is removed from the writing end of the barrel and is engaged in the opposite end thereof.

Other and further important objects of this invention will be apparent from the dis...
closures in the specification and the accompanying drawing.

The invention (in a preferred form) is illustrated in the drawing and hereinafter more fully described.

On the drawing:

Figure 1 is a side elevation of an improved fountain pen embodying the principles of this invention and showing the cap in position on the writing end of the fountain pen.

Figure 2 is an enlarged fragmentary longitudinal section of the fountain pen with parts shown in elevation and indicating in dotted lines the position of the cap in the end of the barrel opposite the writing end.

Figure 3 is an outer end view of the fountain pen barrel taken on line III—III of Figure 2.

Figure 4 is a transverse detail section of the fountain pen taken on line IV—IV of Figure 2.

Figure 5 is an enlarged fragmentary longitudinal sectional view of the pen point end of a modified form of fountain pen equipped with a modified form of cap.

As shown on the drawing:

The reference numeral 1 indicates a fountain pen barrel, one end of which is tapered to form an integral section 2. The barrel 1 is provided with an ink chamber 3 which communicates with an axial passage 4 provided in the section end 2 of the barrel. In the present showing of the fountain pen, the same is provided with a plunger filling mechanism designated as a whole by the reference numeral 5. The outer end of the section 2 is provided with an extension sleeve or collar 6 which serves as an ink guard member and is integrally formed on the outer end of the body section to the outside of a head or flange 7. The head or flange 7 is integrally formed externally on the outer end portion of the section 2 and serves to separate the section and the ink guard 6.

The ink guard sleeve or collar 6 has the end thereof shaped or formed to provide an inner beveled end surface 8, the inner end of which terminates at the outer end of an internally threaded portion 9 provided in the ink guard.

Engaged in the section 2 and projecting through the ink guard 6 is a feed bar 10 and a pen point 11. The internally threaded and beveled wall of the ink guard 6 is spaced from and surrounds the feed bar and pen point to afford an excess ink chamber or recess to permit excess ink from the feed bar and pen point to flow back into the ink chamber 3 of the fountain pen when the fountain is positioned in an upright position, that is with the pen point pointed upwardly.

In the present showing of the fountain pen, it will be noted that the barrel 1 and the section 2 form an integral unit and that the ink guard 6 is integral with the outer end of the section 2 thereby providing a one piece barrel and section in place of the old type of fountain pen wherein the section is a separate unit from the barrel.

For the purpose of enclosing the feed bar and pen point, a one piece or unitary cap 12 is provided. The cap 12 is provided with an inner chamber 13 for receiving the outer ends of the feed bar and pen point. The outer end of the cap 12 is closed while the opposite or inner end is provided with an exterior tapered or beveled surface 14, the outer end of which terminates at the inner end of a reduced externally threaded shank portion or collar 15. When the fountain pen is not in use, the cap 12 is adapted to be threaded into the ink guard 6 as clearly illustrated in Figure 2, with the exteriorly threaded portion 15 of the cap having threaded engagement with the interiorly threaded portion 9 of the ink guard. The cap is threaded into the ink guard until the beveled surface 14 of the cap is brought into tight frictional engagement with the beveled surface 8 of the ink guard to provide a non-leakable joint between the ink guard and the cap. In the present showing, the cap 12 is shaped so that the exterior surface thereof is flush with the exterior surface of the ink guard 6 to provide a smooth exterior surface to the outside of the head or flange 7.

The plunger mechanism 5 has the stem thereof slidable projecting through an externally threaded boss 16 and said plunger stem is provided with a head or knob 17 to permit actuation thereof. For the purpose of enclosing the plunger head 17, a head section is removably engaged on the externally threaded boss 16. The head section comprises a tubular housing or sleeve 18 having rigidly secured transversely therein a partition or dividing plate 19 to divide the interior of the head or sleeve 18 into a plunger head receiving chamber 20 and into an outer chamber or recess 21. The interior surface of the chamber 20 is threaded to permit the sleeve or head 18 to be threaded onto the externally threaded boss 16 of the fountain pen barrel. The interior surface at the outer end of the outer chamber 21 of the sleeve 18 is internally threaded at 22 for the removable reception of the externally threaded shank or collar 15 of the fountain pen cap 12 as illustrated in dotted lines in Figure 2. It will thus be noted that when the cap 12 is removed from the writing end of the fountain pen that the threaded end of the cap may be threaded into the interiorly threaded portion 22 in the outer end of the fountain pen head section 18 for the purpose of holding the cap in a definite position when the fountain pen is in use.

For the purpose of closing the outer end of the chamber 21 of the head section 18, an end plate or closure disk 23 is slidably mounted in the chamber 21 on a guide pin or stud 24.
which is rigidly secured axially on the partition or dividing plate 19. Engaged around the pin or stud 24 between the closure disk 23 and the partition 19 is a coiled spring 25 which normally acts to resiliently hold the closure disk 23 in its outermost position as illustrated in full lines in Figure 2 for the purpose of closing the outer end of the fountain pen head section 18. When the fountain pen cap 12 is removed from the ink guard section 6, it is adapted to be mounted in the dotted line position illustrated in Figure 2 by causing the threaded shank or collar 15 thereof to be threaded into the threaded portion 22 of the head section 18, thereby causing the closure plate 23 to be slidable pushed into the chamber 21 against the action of the spring 25.

Figure 5 illustrates a fountain pen similar in construction to that disclosed in Figures 1 and 2 but having a modified form of cap. The modified cap comprises an outer shell or casing 26 open at one end and closed at the opposite end 27. The interior of the outer cap or shell 26 has rigidly secured or wedged therein an improved inner cap or liner comprising an enlarged sleeve or body portion 28 having integrally formed on one end thereof a reduced end section or head portion 29. The inner sleeve or cap is formed to tightly fit within a complementally shaped chamber provided in the closed end 27 of the outer cap 26. The end of the inner cap opposite the closed end 29 is provided with a tapered or beveled portion 30 which terminates in an exteriorly threaded collar or shank portion 31 which is adapted to be threaded into the interiorly threaded portion 9 of the fountain pen ink guard section 6.

When the outer cap is engaged over the section and barrel of the fountain pen, the inner cap is adapted to be threaded into the interiorly threaded ink guard section 6 until the beveled surface 30 of the inner cap is brought into tight frictional contact with the beveled surface 8 of the ink guard section.

In the improved and modified form of fountain pen cap illustrated in Figure 5 it will be noted that the outer cap 26 is free from all interior threading while the exterior of the fountain pen barrel is also free from exterior threading for receiving and holding the outer cap in position. In the present instance, the interior of the outer cap and the exterior of the barrel are smooth and plain and the cap is retained in position by means of the liner or inner cap 28 which is adapted to be positioned to project into the fountain pen ink guard section 6 and tightly interfit therewith so that a non-leaking joint is provided between the inner cap and the ink guard section of the fountain pen. When the cap is removed from the fountain pen to permit the pen point to be used, the open end of the cap 26 is adapted to be slidable engaged over the upper or head end of the fountain pen barrel to prevent the cap from being misplaced or lost when the same is removed from the writing end of the fountain pen.

The present invention is an improvement in the art of fountain pens in that the section 2 and the barrel 1 are integral with one another and the section end of the barrel is provided with an integral ink guard section which is provided with a recess formed with a beveled surface and with an interiorly threaded section whereby an exteriorly threaded and beveled portion of a fountain pen cap may be brought into engagement for the purpose of removably retaining the cap in position to enclose the feed bar and end point of a fountain pen. The threaded and frictional contact between the ink guard section and the cap produces a non-leakable joint obviating the leakage of ink from the interior of the ink guard section outwardly.

In the form of the device illustrated in Figures 1 to 4 inclusive, it will be noted that the improved fountain pen cap is adapted to be securely engaged in either end of the fountain pen barrel instead of being engaged over the ends of the fountain pen barrel as in previous fountain pen constructions. In the form of the device illustrated in Figure 5 it will be noted that the exterior of the fountain pen barrel is free from threads, as is also the interior of the outer cap 26 since the cap is adapted to be retained in position by means of the threaded portion of the inner cap 28 which is adapted to be projected and engaged into the ink guard section 6 of the fountain pen.

It will of course be understood that various details of construction may be varied through a wide range without departing from the principles of this invention and it is therefore not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claim.

I claim as my invention:

A fountain pen comprising a barrel, a tubular member removably secured on one end of said barrel, forming a continuation thereof, a partition member in said tubular member, a pin secured on said partition member, a pin secured on said partition, a closure disk slidable on said pin, spring means between said partition and said disk urging said disk to normally close an end of said tubular member, and a fountain pen cap having an end threadedly entered in the end of said tubular member forcing said disk inwardly against said spring.

In testimony whereof I have hereunto subscribed my name at Chicago, Cook County, Illinois.

SOLOMON M. SAGER.