June 1, 1943. M. KESSLER 2,320,936

THREAD LOCK

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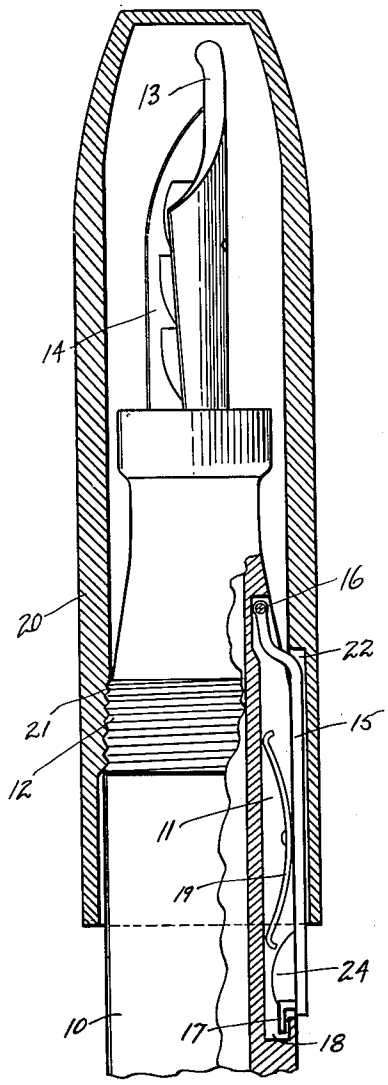


FIG. 1.

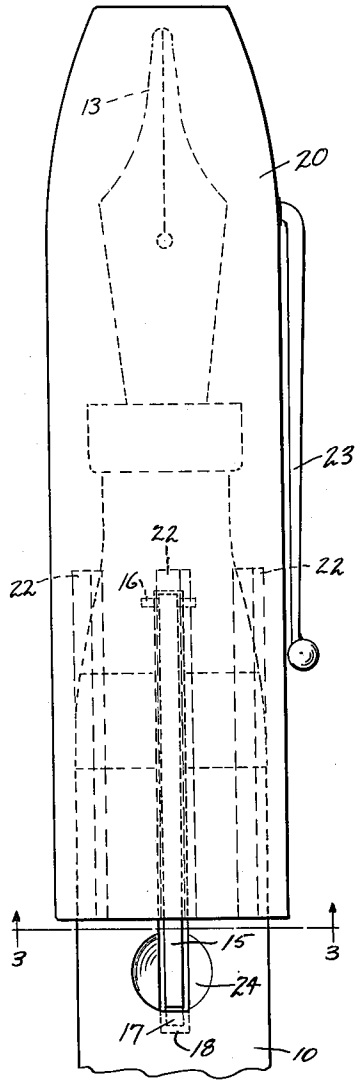


FIG. 2.

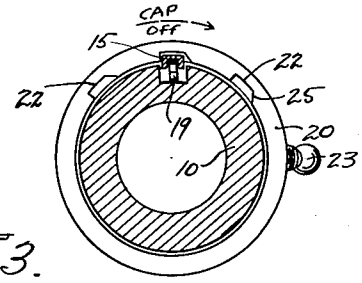


FIG. 3.

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THREAD LOCK

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3 Claims. (Cl. 120—42)

This invention relates to a thread lock and more particularly to a thread locking device applied to fountain pens and more particularly to fountain pen caps.

The principal object of the invention is the provision of a thread locking device adapted to be used in combination with the transverse threads of a fountain pen barrel and fountain pen caps so as to prevent the cap from unthreading from the barrel.

A further object of the invention is the provision of a thread locking device adapted to function in combination with a plurality of axially extending grooves formed in fountain pen cap and at right angles to the transversely positioned conventional threads thereof.

As is well-known it has long been the common practice to attach the caps of fountain pens to the barrels thereof by thread engagement therebetween. Generally such manner of application of caps to barrels of fountain pens has been satisfactory, however, it is not infrequent that the cap becomes loosened and unscrews from the threads of the barrel particularly when the cap is attached to the pocket of an article of clothing and the pen suspending freely in the pocket therefrom. The results of such an occurrence are usually undesirable as considerable quantity of ink usually of a permanent nature is discharged by the pen into the pocket of the article of clothing. The present invention contemplates the provision of a fountain pen barrel and cap conventional in all respects including the usual transversely threaded area on the exterior of the pen barrel and on the matching interior surface of the pen cap. A simple, inexpensive addition is made to the pen barrel construction by inserting in a groove cut therein, a spring opposed locking bar, positioned axially of the pen barrel and the pen cap is provided with several axially extending grooves any one of which is adapted to receive the locking bar.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed without departing from the spirit of the invention.

The invention is illustrated in the accompanying drawing, wherein:

Figure 1 is a cross sectional side elevation with parts broken away illustrating a fountain pen barrel and cap equipped with the device of the invention.

Figure 2 is a plan elevation of a fountain pen barrel with parts broken away and a cap, the pen and cap being turned one-quarter in relation to the illustration in Figure 1.

Figure 3 is a cross sectional elevation taken on lines 3—3 of Figure 2 and illustrates the shape of the axially extending grooves formed in the pen cap and the manner of engagement of the locking device therein.

By referring to the drawing and Figure 1 in particular, it will be seen that a fountain pen barrel generally indicated at 10 has been broken away to show a portion of one of the cylinder like walls thereof which wall has been provided with an axially extending groove 11 which axially extending groove crosses the conventional transversely threaded area 12 of the pen barrel. The pen is provided with the usual and convenient pen point 13 and ink feeding mechanism 14.

By referring to the axially extending grooves 11 formed in the barrel 10, it will be observed that a locking bar 15 is positioned partially in the axially extending grooves 11 and is pivoted to the pen barrel 10 by means of a pivot pin 16. The locking bar is formed so that throughout a majority of its length it lies on a plane slightly above the normal exterior surface of the pen barrel 10. The free end of the locking bar 15 is provided with an in-turned end section 17 which is adapted to move freely in a recess 18 formed in the barrel 10 at one end of the groove 11. This serves to keep the locking bar 15 from moving completely away from the groove 11. In order that the locking bar 15 will normally tend to remain in position slightly above the normal surface of the pen barrel 10, a suitable spring 19 is disposed between the locking bar 15 and the innermost surface of the axially extending groove 11.

Still referring to Figure 1, it will be seen that the fountain pen is provided with a cap 20 adapted to enclose the pen point 13 and it will be seen that the interior of the cap 20 is provided with a transversely threaded area 21 adapted to provide a quick threading operation in connection with the threads 12 formed on the pen barrel 10. The pen cap 20 is also provided with a plurality of axially extending grooves 22 any one of which is adapted to receive and retain the lock bar 15 heretofore described. It will thus be seen that a fountain pen having a locking device formed thereon in accordance with this invention provides a simple and sure

means of insuring the retention of the cap thereon.

By referring to Figure 2 of the drawing, it will be seen that the pen cap **20** is provided with a conventional clip **23** and that the several axially extending grooves **22** are shown in relative position thereon in dotted lines and it will be noted that to facilitate the depression of the locking bar **15** as is necessary to release the thread lock bar **15** from the groove **22** to remove the cap from the pen, a depression **24** is formed about and beneath one end of the lock bar **15**, in the barrel **10** of the pen so that the locking bar **15**, in the barrel **10** of the pen so that the locking bar **15** may be conveniently manually depressed to disengage it from the groove **22** and thus permit the cap to be turned off the pen barrel.

By referring to Figure 3 of the drawing, it will be seen that each of the grooves **22** formed in the cap **20** is provided with one straight and one tapered wall, the tapered wall being indicated by the numeral **25**. The grooves **22** are so formed to facilitate the movement thereinto of the locking bar **15** and still referring to Figure 3, it will be noted that an arrow shown in connection therewith indicates the normal direction of rotation of the pen cap in order to remove the same from the barrel and it will thus be seen that the straight wall of each of the grooves **22** provides a definite obstruction against which the locking bar **15** registers. The locking bar **15** must therefore be depressed before the cap can be disengaged from the transversely positioned threads of the barrel.

It will be obvious that modifications of the invention can be made and more particularly one modification will be seen to comprise the formation of the device heretofore described in connection with the usual filling lever of fountain pens which as is well-known comprises an axially extending bar which is raised to cause the pen mechanism to fill with ink. It is within the scope of this invention to form the device of this invention in combination with the filler bar so that the device serves two purposes, both retaining the cap on the pen and serving as a filler bar. Mechanically, a connection from the pivot pin **16** to the pen filling mechanism is all that is needed with perhaps a minor change in the end portion **17** so as to permit it to be moved outwardly from the pen barrel **10**.

It will also be seen that the device of the invention may be applied to any threaded articles as it forms a simple, efficient, and economical thread lock.

Having thus described my invention, what I claim is:

1. In a fountain pen and the like, the combination of a pen barrel having a threaded area thereon, an axially extending groove formed across the said threaded area, a wide area in said groove adjacent one end thereof, a bar movably positioned in said groove and pivotally affixed at one end to the said pen barrel; a leaf spring positioned between said bar and said barrel and a cap having a plurality of ratchet-like axially extending grooves formed therein as well as a threaded area, the said groove extending across the said threaded area and adapted to register with the said bar on the pen barrel.

2. A cap receiving section formed on a fountain pen or similar article, comprising an inner member having threads thereon, a cap threadably positioned over said inner member, axially positioned registering grooves formed in the said inner member and in the said cap, a locking bar positioned in the groove in the said inner member and pivoted to the inner member at one end, a spring positioned between the said locking bar and the said inner member, the said locking bar thereby urged to engage the said grooves in the said cap, the said bar and the said grooves extending across the said threaded area of the said members, the said bar provided with an outturned end section adapted to prevent the said bar from moving outwardly away from the said inner member, a depression formed in the said inner member about and beneath the free end of the said locking bar to facilitate the manual movement of the locking bar into the said grooves.

3. In a fountain pen and the like, the combination of a barrel provided with threads adapted to be engaged by a protecting cap, an axially positioned groove formed in the said barrel, a bar positioned in the said groove and normally urged outwardly therefrom by means of a spring positioned between the said bar and the said barrel, the said bar pivotally affixed at one end to the said barrel and connected to the pen filling mechanism within the said barrel, an enlarged area in the said groove forming a depression adjacent the free end of the said bar; and a cap for said pen barrel, said cap having a plurality of axially extending grooves formed on its innermost surface and extending across a threaded area thereof, the said threaded area adapted to engage the said threads of the barrel and the said grooves adapted to engage the said bar to prevent the said cap from being unthreaded from the said barrel until the said bar is manually moved into the widened area thereof.

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