

June 11, 1929.

W. F. BENSON

1,717,001

CLIP AND CAP STRUCTURE FOR FOUNTAIN PENS

Filed Sept. 16, 1927

2 Sheets-Sheet 1

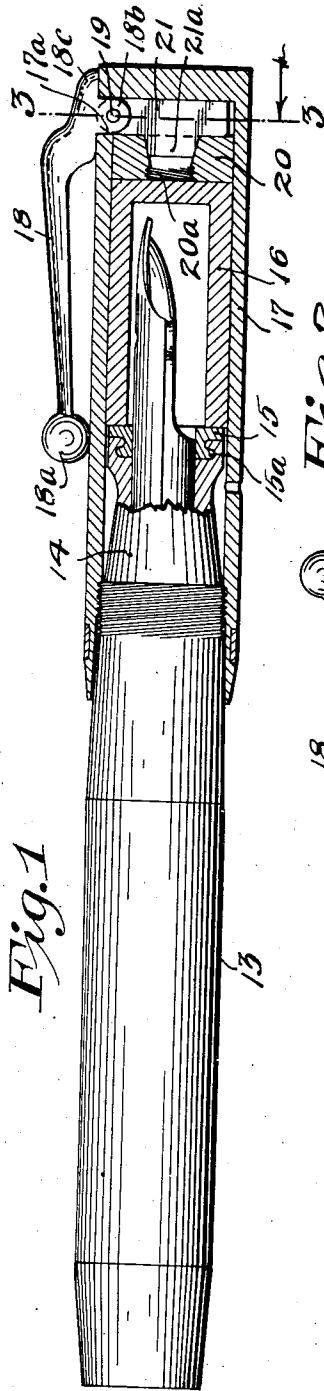


Fig. 1

Fig. 2



Fig. 4

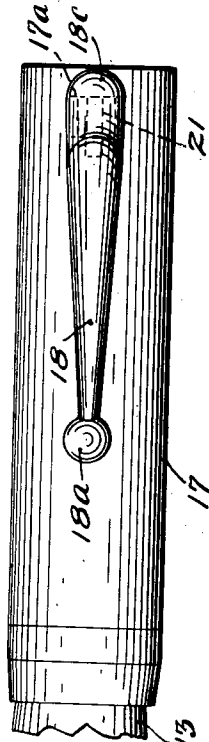
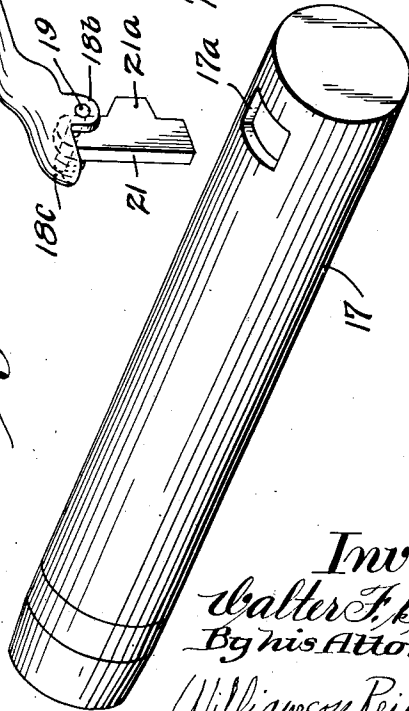
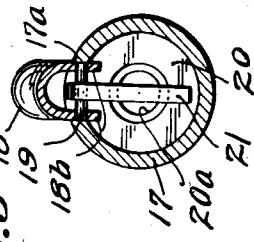


Fig. 3



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2 Sheets-Sheet 2

Fig. 5

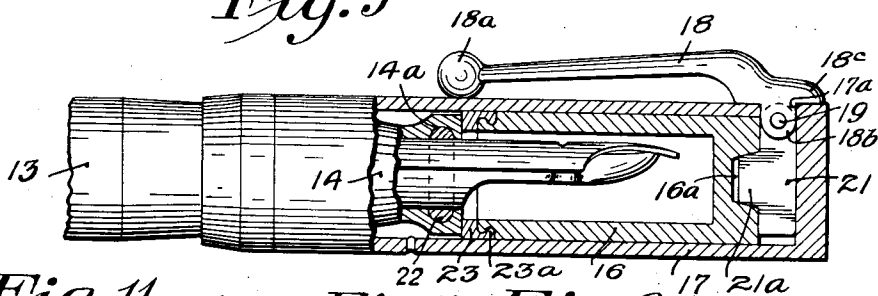


Fig. 11

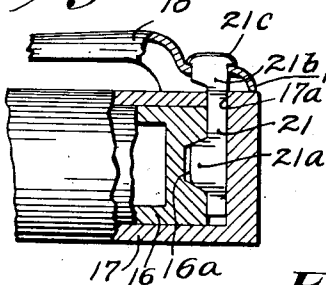


Fig. 13 Fig. 6

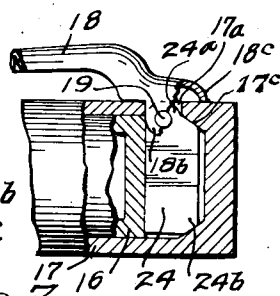
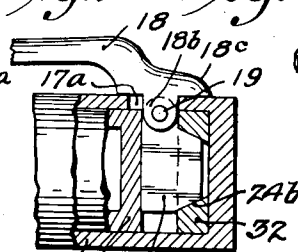


Fig. 12

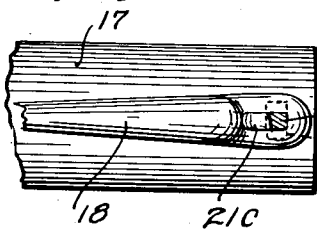


Fig. 8

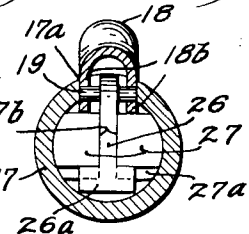


Fig. 7

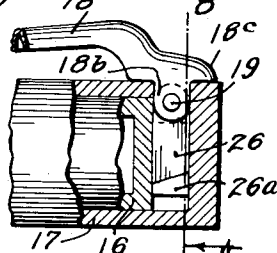


Fig. 14

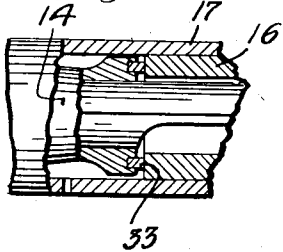


Fig. 10

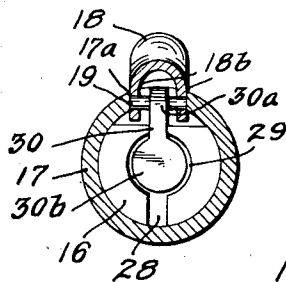
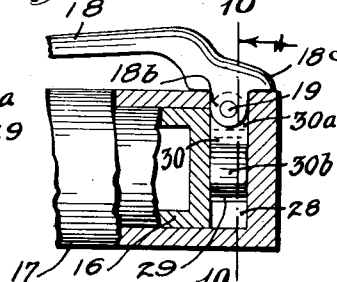


Fig. 9



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UNITED STATES PATENT OFFICE.

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CLIP AND CAP STRUCTURE FOR FOUNTAIN PENS.

Application filed September 16, 1927. Serial No. 219,935.

This invention relates to improvements in fountain pens or analogous devices and especially to clip structure adapted to retain a fountain pen, tubular pencil, or the like in a pocket, and the cap structure for a fountain pen to which the clip is secured.

My invention has for an object to provide simple but highly efficient clip structure for fountain pens and pencils and the like adapted to secure a clip to a cap of a fountain pen or other tubular structure against both torsional and lateral movement relative thereto, which will be invisibly attached to the cap or tubular structure and which will present a simple and highly ornate appearance.

In the manufacture of high grade fountain pens it is usually desirable to provide a solid gold clip and in so doing the manufacturer must minimize the expense thereof.

It is, therefore, a further object of my invention to provide clip structure which will be adapted for economical manufacture, which will withstand heavy wear and continuous usage, and which may be quickly and easily assembled in connection with fountain pens, pencils or the like at little cost.

Another object is to provide cap structure for fountain pens which will form an air tight seal about the nib end of the pen, and between the feed and the forward end of the pen section, thereby preventing evaporation and leakage of ink when the pen is closed.

These and other objects and advantages of the invention will be apparent from the following description made in connection with the accompanying drawings in which like reference characters refer to similar parts throughout the different views, and in which:

Fig. 1 is a longitudinal section of an embodiment of my invention;

Fig. 2 is a plan view of the same, with the barrel portion of the pen proper broken away;

Fig. 3 is a cross section taken on the line 3—3 of Fig. 1;

Fig. 4 is a perspective view of my fountain pen cap showing the clip proper and anchoring plate in position for insertion therein;

Fig. 5 is a view taken mostly in longitudinal section showing a slightly different form of the invention;

Figs. 6 and 7 are similar views showing two other slightly different forms of the invention;

Fig. 8 is a cross section taken on the line 8—8 of Fig. 7;

Fig. 9 is a view mostly in longitudinal section of still another form of the invention;

Fig. 10 is a cross section taken on the line 10—10 of Fig. 9;

Fig. 11 is a similar view of a form of the invention closely related to that shown in Fig. 5, having different means for attaching the clip proper to the anchoring member;

Fig. 12 is a plan view of the same with some parts broken away;

Fig. 13 is a longitudinal section of a slightly modified form; and

Fig. 14 is a longitudinal section of a different form of sealing structure for the pen nib.

In the form of the invention illustrated in Figs. 1 to 4, inclusive, a pen having the usual barrel portion 13 is illustrated, having attached to its forward end the section 14 in which the feed and nib are mounted. Section 14 for the most part is of well known construction, but is provided immediately adjacent its forward extremity with a groove on the inner periphery thereof. Said groove is adapted to receive the smaller flange 15^a of an annular sealing member 15, sealing member 15 having its body portion of flat annular shape adapted to snugly engage the forward end or shoulder of the pen section. From Fig. 1, it will be readily seen that the flange 15^a secures member 15 to the inner periphery of section 14 and that the inner cylindrical portion of said sealing member contacts the feed and nib of the pen, while the flat outer surface constitutes a seal adapted to contact the abutting end of a tubular or cup-shaped lining member or inner cap 16. The cap 17 of my pen is for the most part of common construction having a closed outer end and being interiorly threaded at its open end to be securely locked with the pen section.

Adjacent the closed end of cap 17 a circumferentially extending slot 17^a is provided extending laterally through the circumferential portion of the cap. My clip proper 18

may be made from gold, silver, gold plated brass, or any other suitable material having the requisite degree of resiliency and presenting an ornamental appearance. Clip 18 is bowed slightly adjacent its forward or attachment end and terminates at its lower end in a ball portion 18^a. Adjacent its forward end a pair of down-turned spaced ears 18^b are provided apertured to receive a pivot pin 19. Clip 18 terminates at its forward end in a relatively short tongue or abutment shoulder 18^c adapted to engage the exterior of the closed end of the cap to constitute a base of resistance.

Lining 16 fits snugly within cap 17 and a washer retaining member 20 is disposed within cap 17 having its rear surface abutting the closed end of lining 16. Washer 20 may be provided with a tapered aperture and a few threads 20^a are provided on the inner periphery of washer 20 at the lower portion thereof, the purpose of which will be later explained.

To securely lock my clip 18 with the cap and washer 20, I provide a preferably flat anchoring plate 21 having relatively narrow straight end portions and a depending tapered base portion 21^a. The cross sectional width of plate 21 across the middle of base portion 21^a is slightly less than the length of the slot 17^a in the cap to permit insertion of said plate therewithin. One of the ends of plate 21 is preferably rounded and apertured for pivotal engagement with the spaced ears 18^b of my clip, said hinged relation being effected by means of pin 19.

As illustrated in Fig. 4, anchoring plate 21 is disposed at right angles to the longitudinal center line of cap 17 and inserted in the circumferential slot 17^a of the cap. The clip 18 is then twisted to longitudinal position relatively to the cap, bringing the tapered base portion 21^a into alinement with the tapered recess in washer 20. Lining 16 and washer 20 are, of course, spaced a considerable distance from the closed end of the cap before insertion of the anchoring plate and are then shoved toward the closed end in abutment with the lower edge of anchoring plate 21, tapered base 21^a nesting in said tapered aperture. Shoulder 18^c of my clip then abuts the exterior of the cap forming a base of resistance for the spring action of the clip and the connection between the clip and the cap is, of course, entirely hidden, being within the cap and the bowed portion of the clip completely hiding slot 17^a.

The liner 16 and washer 20 are formed of such dimensions that when set in proper position within cap 17 to retain the anchoring plate, the lower abutment edge of lining 16 will engage the annular sealing member 15 mounted in the shoulder of the pen section as the pen proper is threaded into the cap. By screwing the pen against lining 16 sealing member 15 is compressed, causing the cylin-

dricul inner periphery thereof to be expanded to snugly engage the feed and nib of the pin, and an air tight seal is thus made between the pen section, the feed and the nib and also between the forward shoulder of the pen section and the liner 16.

If for any reason it is desired to remove washer 20 from within the cap 17 the liner 16 is first removed by any suitable means, and a rod provided with an external thread is inserted and screwed into the lower threaded portion of washer 20. Washer 20 may then be easily pulled out.

In many types of clip structures the clip proper is extended and turned in various ways to extend and be anchored within the cap. This requires considerable material to be utilized in forming the clip and where that material is extremely expensive, as in the case of gold, the addition of the clip to the fountain pen adds considerable expense. Also in clips of the type just described, the clip proper is subjected to a large amount of strain and wear at the point where the same passes through the cap, and such clips usually break after a substantial amount of usage. With my structure the flexing of the clip is not imposed at any one point, but is distributed throughout a large area and obviously a minimum amount of material is used for the clip proper. The retaining or locking means for the clip are simple, effective and may be cheaply manufactured, and furthermore do not require extreme accuracy in the manufacture of the several elements thereof to secure the desired results.

The form of the invention illustrated in Fig. 5 is generally similar to the form previously described, the structure of the cap 17, clip 18, anchoring plate 21 being identical therewith. In this form, however, the washer 20 is omitted and a truncated conical recess 16^a is provided in the inner or closed end of the liner 16. The anchoring base 21^a of plate 21 then is nested in the recessed portion 16^a in the same manner as it was nested in the washer 20 in the form previously described.

Furthermore, in this form of the invention a relatively small annular groove 14^a of semi-circular cross section is provided on the inner periphery of the pen section 14, spaced from the forward end thereof and within said groove an annular sealing ring 22 of compressible material is disposed and secured, said ring being inserted before the feed and nib of the pen are mounted in the pen section. The lower end of liner 16 is provided with an annular sealing ring 23 of compressible material, said ring being secured to the lining 16 by means of a small annular bead 23^a engaging an externally complementary shaped groove formed adjacent the lower extremity of the liner. The material of the liner below said groove is reduced and the body portion of sealing member 23 forms a flat abutting

surface at its lower side adapted to be compressed between the opposing shoulder of the pen section to form an air tight seal when the pen is inserted in the cap and screwed tightly therein.

The form of the invention illustrated in Fig. 6 is very similar to the form illustrated in Fig. 5 with regard to the clip and locking structure. Clip 18 is pivoted to a flat generally rectangular plate 24, said plate having a projecting rounded portion 24^a at one end thereof for pivotal connection with clip 18 and having inclined abutting shoulders 24^b adapted to engage the interior portion of the cap 17 adjacent the circumferential slot 17^a formed therein. In this form the circumferential slot is spaced a short distance from the closure of the cap and a tapered seat 17^c is formed in said closure interiorly of said cap, said inclined seat engaging and centering anchoring plate 24 through contact with the inclined shoulders 24^b. No laterally projecting or depending anchoring base is provided in this form of the invention but plate 24 is secured edgewise between said seat in the closed end of the cap and the closed end of the liner 16, said liner being slidably forced inwardly of the cap.

In the form of the invention illustrated in Figs. 7 and 8, an anchoring plate 26 having parallel longitudinal edges is provided carrying a T-head 26^a at its inner end and having pivotal connection with the spaced lugs of the clip 18 at its opposite end. Head 26^a is provided with inclined seating surfaces adapted to engage the inclined surface 27^a of an extension 27 on the slidable liner member. Extension 27 also has a diametrical groove 27^b disposed at right angles to the edges formed by inclined surface 27^a, in which groove the body portion of anchoring plate 26 is adapted to be disposed edgewise. It is, of course, necessary to properly align the lining member 16 with the anchoring plate 24 before sliding said liner inwardly toward the closed end of the cap. Anchoring member 26 is then clamped between the closed end of the cap 17 and liner 16 and is locked against lateral displacement or torsional movement by means of its engagement with the groove 27^b and inclined surface 27^a of the liner projection 27.

In Figs. 9 and 10 a form of the invention is illustrated having a liner provided with a diametrical slot 28 at the closed extremity thereof and a cylindrical recess 29 axially disposed thereof and communicating with said slot. The anchoring plate 30 in this form of the invention is comparatively short with reference to the anchoring members previously described and comprises an enlarged cylindrical portion adapted to be seated within said cylindrical recessed portion 29 and a projecting attachment tongue 30^a pivoted to the clip 18. The lower edge of tongue portion 30^a is seated in a portion of the slot 28 the

liner having been first turned to properly align said slot and then slidably moved toward the closed end of the cap.

The form of the invention illustrated in Figs. 11 and 12 is quite similar to the form illustrated in Fig. 5, with the exception that the clip 18 is connected with the anchoring plate 21 in a different manner. In this form a tapered projection or anchoring base 21^a is formed of similar shape to that disclosed in Fig. 5, but preferably of less width and one end of the anchoring member 21 is extended and provided with an enlarged tongue portion 21^b of similar width to the width of member 21 through the anchoring portion 21^a. Clip 18 is provided at its base or attachment portion with an oblong shaped aperture of approximately the dimensions of tongue 21^b, said tongue passing through said aperture and having a headed portion 21^c adapted to secure the clip to said anchoring member. Tongue 21^b and anchoring portion 21^a being of similar width, plate 21 may be passed through the aperture in clip 18 and into the cap 17 and the liner 16 may then be slidably moved toward the end of the cap to nest and retain the anchoring member. The headed portion 21^c of anchoring member 21 may be plated to present an ornate appearance.

The form illustrated in Fig. 13 is very similar to the form illustrated in Fig. 6. A flat anchoring plate 24 is provided having the inclined shoulders 24^b at the upper portion thereof but being shorter than the form shown in Fig. 6. Tongue 24^a at one end of member 24 is pivotally connected to the ears of the clip 18. Instead of drilling a tapered seat 17^c in the cap 17 a washer 32 is provided having a tapered inner periphery, which washer is disposed in the inner extremity of cap 25 in position to engage the inclined shoulders 24^b of the anchoring member. The usual liner 16 is provided having slidable relation with cap 17 and engaging the lower longitudinal edge of plate 24.

In Fig. 14 I disclose a slightly different structure for sealing the joint between the pen and the cap than the structure previously described. Here the cap 17 is provided with the usual liner or inner cap 16 having the annular abutting shoulder at the open end thereof and the section 14 of the pen has its annular abutting shoulder at the forward extremity thereof provided with an axially disposed annular groove in which an annular sealing member 33 of compressible material is seated and retained. As illustrated, sealing member 33 projects outwardly from said groove and is adapted to contact the abutment shoulder of liner 16 forming an air tight joint between the pen and the cap.

From the foregoing description it will be apparent that I have invented a highly efficient and ornamental clip structure for fountain pens or other tubular articles which

are adapted to be carried on the clothing. My structure will stand up under heavy and continuous wear distributing the strain in the resilient part of the clip over a relatively large surface and securely anchoring the clip against lateral or torsional movement relatively to the cap. The structure may be manufactured economically especially since the amount of expensive material, such as gold utilized for the clip proper is minimized and extends merely on the exterior of the cap. It will also be seen that I have provided highly efficient means for forming an air tight seal between the shoulder of the pen section and the abutment end of the cap and liner, as well as between the pen section and the feed and nib of the pen.

While the several forms of the invention illustrated and described herein differ slightly in details, they all have much in common and work on the same general principle.

It will, of course, be understood that various changes may be made in the form, details, arrangement and proportions of the parts without departing from the scope of the invention.

What is claimed is:—

1. Clip structure for fountain pens and tubular articles having in combination a closed cap member having a laterally extending aperture therethrough, a retaining clip, an anchoring member secured to said clip and projecting laterally therefrom through said aperture, said anchoring member having a projecting portion adapted to be disposed within said cap and a retaining member having slidable relation with the interior of said tubular member and adapted to engage said projecting portion and co-operating with said apertured portion of said cap to lock said clip thereto.

2. Clip structure for fountain pens and tubular articles having in combination a closed cap member provided with a laterally and circumferentially extending aperture there-through, a retaining clip mounted on the exterior of said cap, an anchoring plate secured to said clip and projecting laterally therefrom, said anchoring member being of oblong cross section and having a laterally projecting central portion adapted to be disposed axially of the interior of said cap, said anchoring member being insertable through said aperture when disposed in one position and being securable with said cap when turned through 90° therefrom and a retaining member having slidable relation with the interior of said tubular member provided with a depression adapted to engage and center said anchoring member.

3. Clip structure for fountain pens and tubular articles having in combination a closed cap member provided with a laterally and circumferentially extending aperture adjacent the closed end thereof, a retaining clip

mounted on the exterior of said cap, an anchoring member of uniform thickness throughout secured to said clip and projecting laterally therefrom, said anchoring member having a relatively wide portion spaced some distance from the connection with said clip and being adapted to be inserted through said aperture when said wide portion is transversely disposed to said cap and adapted to be interlocked with said cap when turned through 90° therefrom and a cylindrical retaining member having slidable relation with the interior of said cap provided with a seat at one end thereof adapted to engage said enlarged portion of said anchoring member to rigidly retain the same within said cap.

4. In clip structure for tubular articles, such as fountain pens, a tubular member having an aperture in its side, a retaining clip disposed longitudinally without said tubular member, an anchoring member secured at its outer end to said clip and projecting laterally into said tubular member, said anchoring member having a laterally projecting locking portion disposed within said tubular member, a retaining member within said tubular member interlocked with said laterally projecting portion to prevent longitudinal displacement and torsional movement of said anchoring member.

5. In clip structure for tubular articles, such as fountain pens, a tubular member having an aperture in its side, a retaining clip extending longitudinally on the exterior of said tubular member, an anchoring member connected with said clip and projecting laterally into said tubular member, said anchoring member having a laterally projecting locking portion disposed within said tubular member and a retaining member within said tubular member surrounding said projecting lateral portion to prevent longitudinal displacement and torsional movement of said anchoring member.

6. In clip structure for tubular articles, such as fountain pens, a tubular member having a closed end and an aperture in its side adjacent said closed end, a retaining clip disposed longitudinally on the exterior of said tubular member, an anchoring member connected to said clip and extending laterally into said tubular member with one of its surfaces disposed against said closed end, said anchoring member having a laterally projecting locking portion disposed axially of said tubular member, and a retaining member capable of longitudinal movement within said tubular member and interlocking with said laterally projecting locking portion, and also cooperating with the closed end of said tubular member to clamp said anchoring member.

7. In clip structure for tubular articles, such as fountain pens, a tubular member having an oblong shaped aperture in its side, a retaining clip on the exterior of said tubular

member, an anchoring member connected to said clip and projecting laterally into said tubular member, said anchoring member having a laterally projecting locking portion insertable in one position through said aperture and securable within said tubular member when said anchoring member is turned at an angle from said position, and a retaining member within said tubular member having a recessed portion adapted to surround said projecting locking portion.

In testimony whereof I affix my signature.

WALTER F. BENSON.