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H. K. STEMPER ET AL

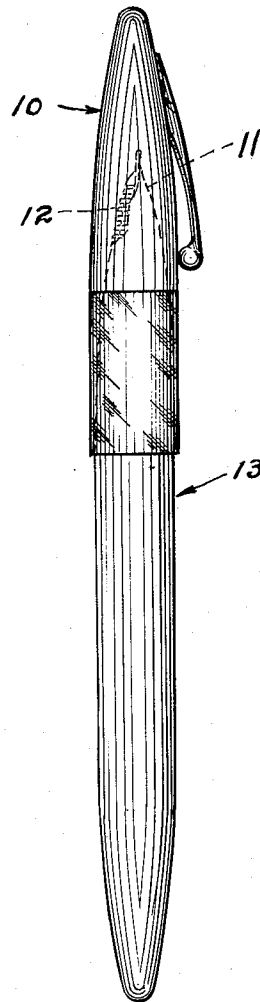
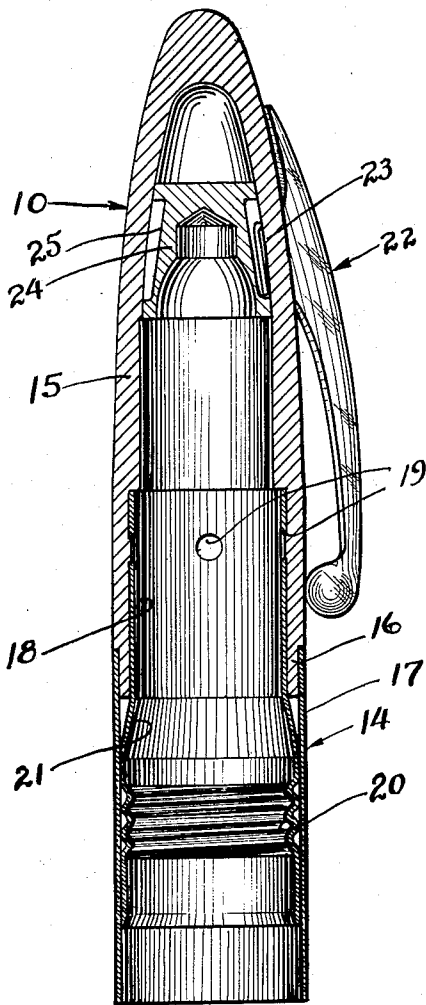
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FOUNTAIN PEN

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*Fig. 1.*

*Fig. 2.*



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## FOUNTAIN PEN

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8 Claims. (Cl. 120—42)

This invention relates to a fountain pen and has special reference to a means for enclosing and sealing the writing point and writing fluid feeding means extending from one end of the barrel of the fountain pen.

More particularly, this invention relates to a fountain pen having a writing point and fluid feeding means extending from one end of a barrel thereof, and a cap for enclosing and for sealing the writing point and fluid feeding means comprising telescoping inner and outer metal sleeves. A non-metallic shell having an open and a closed end has the open end thereof secured to the sleeves at one end of each thereof.

When the cap of a fountain pen is removed from the writing point end of a barrel thereof it is placed, for convenience, on the other end of the barrel when in a writing condition. Ordinarily the cap of a fountain pen is of an enlarged diameter relative to the barrel, and since most fountain pens are made of a plastic material, the diameter of the cap thereof is comparatively great and the weight thereof quite substantial.

It is desirable in a fountain pen to keep the weight thereof as balanced as possible; that is, so that the end of the fountain pen opposite to the writing point end is not top heavy. The distribution of the weight in a fountain pen should be as much toward the writing point end as is possible, since individuals using writing instruments continuously during the day lean toward the common pen holder with a quill end rather than the usual fountain pen.

The present construction contemplates the elimination of as much weight as possible in the cap of the fountain pen in order to provide a balance for writing in a convenient style and without cramped effort. The plastic cap has been retained in a large part. However, a great deal of the weight is eliminated therefrom in the provision of an extending metallic sleeve. The operational part of the cap on which the greatest strain occurs is of metal, and the remainder of the cap where there is little strain is of plastic, permitting the plastic wall to be of a minimum thickness.

The metallic sleeve is of two-part construction, comprising telescoping inner and outer metal parts. One end of one sleeve is spaced laterally from an adjacent end of the other sleeve to receive in the space therebetween a reduced open extension from a non-metallic shell. The reduced extension on the non-metallic shell permits the outer periphery thereof to be continuous with the outer periphery of the outer metallic

shell, in order to effect a streamline appearance, if desired. Also, the outer periphery of the outer metallic sleeve may be continuous with the outer surface of the barrel by the provision of a trunnion on the writing point end of the barrel, or, if a trunnion is not desired, then the thickness of the metal sleeve is so slight that a streamline appearance is effected by a substantial continuous surface.

The inner metallic sleeve extends beyond one end of the outer metallic sleeve and within the bore of the non-metallic shell. The non-metallic shell is preferably of nitro-cellulose or other similar plastic material which has a tendency to shrink. The extension is provided with apertures so that the material as it shrinks will be forced into the apertures to fix the relation between the non-metallic shell and the two-part shell.

If a trunnion is cut into the writing point end of the barrel of the fountain pen, a sealed relation may be provided by abutment of the end of the metal sleeve on the shoulder provided by the trunnion. Otherwise it may be desirable to effect the seal by an engaged relation between a tapered shoulder on the writing point end of the barrel of the fountain pen and a tapered seat provided by the inner cap adjacent to the end of the non-metallic shell. Further, when a clip is employed, ears therefrom may extend through apertures in the shell so that an inner cap may be desirable to seal the apertures through which the ears extend.

One of the objects of this invention is to provide a fountain pen of the character indicated above, in which the cap thereof is formed of two parts, one being of a non-metallic material and the other being of a metallic material. The construction is thus adapted to minimize the weight of the cap.

It is also the object of this invention to provide a fountain pen of the hereinabove mentioned type, wherein the cap is comparatively inexpensive to manufacture and is simple and efficient in construction and in operation.

Other objects and advantages of this invention will hereinafter be more particularly pointed out and, for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description, when taken together with the accompanying drawing, in which latter:

Figure 1 is an enlarged central vertical sectional view of a cap for a fountain pen incorporating the features of this invention; and

Fig. 2 is an elevational view of reduced size of

the cap of Figure 1, showing it in position on the barrel of the fountain pen.

Referring now more particularly to the drawing, the present invention is shown as being embodied in a cap 10 for enclosing and for sealing the writing point 11 and fluid feeding means 12 extending from one end of a barrel 13 of a fountain pen.

The cap 10 comprises a two-part metal sleeve 14 and a non-metallic shell 15, the non-metallic shell being preferably formed of nitro-cellulose or an acetate or other plastic materials and the sleeve being formed of a precious or semi-precious metal. It is, of course, to be understood that different types of metals and various plastics or other materials may be employed and that the specific materials mentioned above are for illustrative purposes.

The plastic sleeve 15 is provided with a reduced extension 16 for engaging the bore of one end of one of the sleeves 17 forming the two-part sleeve 14. The bore of the plastic shell 15 is enlarged at the outer end to receive one end of the other metallic sleeve 18 of the two-part sleeve 14. One end of one sleeve is spaced laterally from an adjacent end of the other sleeve, the space thus formed receiving the extension 16 of the plastic shell.

While some plastic materials hold to dimensions, other plastic materials have the property of shrinking, and this property is depended upon to maintain the non-metallic or plastic shell 15 in a fixed relation with the two-part metallic sleeve 14. Apertures 19 are provided in that portion of the sleeve 18 extending into the bore of the plastic shell 15. Shrinkage of the plastic material into these apertures 19 prevents relative displacement longitudinally of the shell and sleeve as well as relative rotation about the axes thereof. In assembling the shell with respect to the sleeve, the assembled relation is maintained by friction for several days, whereafter shrinkage of the plastic material into the apertures is effected and it is practically impossible to disturb this fixed relation.

The telescoping outer and inner metallic sleeves 17 and 18 respectively forming the two-part metallic sleeve 14 accommodates practically all of the strain of the operational features of the fountain pen, so that the plastic cap may be of a comparatively thin wall. The metal of the sleeve is likewise relatively thin with the inner sleeve being preferably formed of sterling silver and the outer sleeve being formed of a gold fill over a brass or a sterling base. The construction affords a cap of a desired minimum weight, consistent with maximum performance.

The end of the inner cap 18 preferably terminates short of the end of the outer cap 17 and is provided with rolled threads 20 or other connecting means for engaging cooperating connecting means on the barrel 13 of the fountain pen. This end of the cap 18 preferably fits within the bore of the outer sleeve 17 and is fixed thereto by means of soldering or the like. The other end of the inner metal sleeve 18 is preferably spaced, as before stated, to receive the reduced extension on the open end of the shell 15.

The inner sleeve 18 is of enlarged and reduced diameter at opposite ends respectively thereof and the juncture therebetween may be tapered as shown in Figure 1 to form a seat 21 for engaging a shoulder on the writing point end of

the barrel 13. The shoulder 21 may be tapered or may be abrupt, depending upon the type of shoulder at the end of the fountain pen, or the taper 21 may more nearly approach a parallel relation with the axis to provide clearance should it be desired to have the end of the outer sleeve 17 abut against a trunnion on the barrel 13 of the fountain pen to effect a sealed relation of the writing point and fluid feeding mechanism extending from the end of the barrel 13. Thus the shoulder 21 may effect a seal or the end of the sleeve 17 abutting against a shoulder formed by a trunnion on the end of the barrel 13 may provide this function. In one instance the shoulder 21 may be abrupt where it performs the sealing function or may be substantially eliminated to clear, in a spaced relation, the writing point end of the fountain pen if the seal is to be effected by the end of the sleeve.

The present embodiment employs a clip 22 for holding the fountain pen in the pocket of the user, the clip having ears 23 extending through apertures in the cap and being cleated over the material adjacent the apertures on the inside of the shell. In order to maintain a sealed relation of the nib where these apertures are not completely sealed by the passage of the ears therethrough, an inner cap 24 is provided, the inner cap fitting the bore of the shell 15 in a sealed relation and having an annular recess 25 for accommodating the ears 23 extending from the clip.

While but a single embodiment of this invention is herein shown and described, it is to be understood that various modifications thereof may be apparent to those skilled in the art without departing from the spirit and scope of this invention and, therefore, the same is only to be limited by the scope of the prior art and the appended claims.

We claim:

1. A cap for a fountain pen having a writing point and fluid feeding means extending from one end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, and a non-metallic shell having an open and a closed end, said open end of said shell being secured to said sleeves at one end of each thereof.

2. A cap for a fountain pen having a writing point and fluid feeding means extending from one end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, at least one of said sleeves being apertured, and a plastic shell having an open and a closed end, said open end of said shell being secured to said sleeves at one end thereof by portions of the material of said plastic shell engaging the apertures of said sleeve.

3. A cap for a fountain pen having a writing point and fluid feeding means extending from one end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, one end of one sleeve being spaced laterally from an adjacent end of the other sleeve, and a non-metallic shell having an open and a closed end, said open end being held in the space between said sleeves.

4. A cap for a fountain pen having a writing point and fluid feeding means extending from one end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding

means and comprising telescoping inner and outer metal sleeves, at least one of said sleeves being apertured, one end of one sleeve being spaced laterally from an adjacent end of the other sleeve, and a plastic shell having an open and a closed end, said open end being held in the space between said sleeves by material of said shell engaging the apertures of said sleeve.

5. A cap for a fountain pen having a writing point and fluid feeding means extending from one end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, one end of said inner sleeve being spaced both laterally and in a longitudinal direction from an adjacent end of the outer sleeve, and a non-metallic shell having an open and a closed end, said open end being held in the lateral space between said sleeves, the extending portion of said inner sleeve being apertured to receive extending portions of said shell.

6. A cap for a fountain pen having a writing point and fluid feeding means extending from a threaded end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, one end of said inner sleeve being spaced laterally from an adjacent end of said outer sleeve and being threaded adjacent the other end thereof to engage detachably the threaded end of said barrel, and a non-metallic shell having an open and a closed end, said open

end being held in the space between said sleeves.

7. A cap for a fountain pen having a writing point and fluid feeding means extending from tapered end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, one end of said inner sleeve being spaced from an adjacent end of said outer sleeve and forming a tapered seat thereat to engage the tapered end of said barrel, and a non-metallic shell having an open and a closed end, said open end being held in the space between said sleeves.

8. A cap for a fountain pen having a writing point and fluid feeding means extending from a threaded end of a barrel thereof, said cap enclosing and sealing said writing point and fluid feeding means and comprising telescoping inner and outer metal sleeves, one end of said inner sleeve being spaced both laterally and in a longitudinal direction from an adjacent end of the outer sleeve, the other end of said inner sleeve being threaded to engage the threads of said barrel and having a tapered seat adjacent thereto for engaging the end of said barrel, and a plastic shell having an open and a closed end, said open end being held in the lateral space between said sleeves, the extending portion of said inner sleeve being apertured to receive plastic material of said shell shrunk thereinto.

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