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PATENT SPECIFICATION

619,349



Application Date: Dec. 4, 1946.

No. 35854/46.

Complete Specification Left: Oct. 24, 1947.

Complete Specification Accepted: March 8, 1949.

PATENTS ACT, 1949

SPECIFICATION NO. 619349

In pursuance of Section 8 of the Patents Act, 1949, the specification has been amended in the following manner:-

- 5 pany's nature Page 2, line 109, and Page 4, line 24, after "member" delete "which is" insert "Thishe fingers or jaws being acted upon by spring means which exert a radially inward the ch:e tending to close the fingers or jaws upon one another, the collet or socket being"
10 protect ment f Page 4, line 30, for "are" read "being"
Usu Page 4, line 48, for "which exerts" read "to exert"

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15 screw-NT OFFICE, end teugust, 1951

ally sc... portion on the pen body or barrel. This screw-threaded connection has the disadvantage that the threads become worn or damaged in use, particularly where the parts are made in plastic material as is generally the case, and the connection becomes ineffective. Another disadvantage is that unless screwed-up tightly the body or the barrel of the pen is liable to become unscrewed from the cap whilst the pen is being carried in the pocket or handbag, and consequently there is a risk of damage being done to the pen nib or of the cap or the body being lost. It is a further object of the present invention to provide new or improved cap retaining means which avoids the use of a screw-threaded connection between the cap and the body or barrel which does not necessitate relative rotation of these parts when making or breaking the connection between them.

According to the invention, the cap is adapted to be retained upon the forward end of the body or barrel of the pen by resilient or spring-pressed means which as the cap is passed axially into its protective position are first forced apart by an annular projection on the forward end of the body or barrel and then engage behind said projection to prevent accidental removal of the cap. Similarly when removing the cap from the forward end of the body or barrel the resilient or spring-pressed means are forced apart by the annular projection to effect disengagement.

Thus the invention provides a snap-action

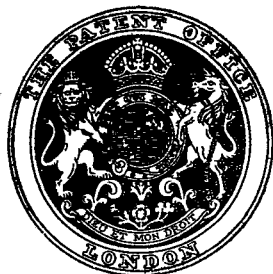
[Price 2/-]

Price 4s

previously described with reference to the fitting of the cap upon the forward end of the body or barrel.

The resilient or spring-pressed means associated with the cap may comprise fingers or jaws of a collet or socket member provided co-axially in the cap and adapted to receive within it the forward extremity of the body or barrel and the associated pen nib and feeder.

In an embodiment of the invention the forward extremity of the body or barrel in which the pen nib and associated feeder are fitted is formed integrally with an annular projection or collar affording on its rear side a rounded shoulder leading into a conical or approximately conical forward face. The cap of the pen comprises a cylindrical sheath-like rear portion adapted to enclose the forward portion of the body or barrel and a gradually tapered forward part having an axial bore to receive and locate a collet or socket member. The collet or socket member comprises a cylindrical body portion formed integrally with a co-axial spigot portion of reduced diameter at the forward end which fits a correspondingly reduced forward portion of the bore in the tapered part of the cap whilst the body portion of the collet or socket member fits the larger rear portion of said bore and extends rearwardly therefrom into the cylindrical sheath-like portion of the cap. The shoulder afforded between the cylindrical body and the spigot of the collet or socket member abuts the complementary



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Index at acceptance:—Class 146(iii), A6.

PROVISIONAL SPECIFICATION

Improvements in or relating to Fountain Pens

We, WYVERN FOUNTAIN PEN COMPANY LIMITED, a British Company, of Woodboy Street, Leicester, and MARK SYDNEY FINBURGH, a British subject of the Company's address do hereby declare the nature of this invention to be as follows:—

This invention relates to fountain pens, the chief object being to provide new or improved means for retaining the removable protective cap against accidental displacement from the forward end of the body or barrel of the pen.

Usually the protective cap is internally screw-threaded at or toward its rear open end to mate with a correspondingly externally screw-threaded portion on the pen body or barrel. This screw-threaded connection has the disadvantage that the threads become worn or damaged in use, particularly where the parts are made in plastic material as is generally the case, and the connection becomes ineffective. Another disadvantage is that unless screwed-up tightly the body or the barrel of the pen is liable to become unscrewed from the cap whilst the pen is being carried in the pocket or handbag, and consequently there is a risk of damage being done to the pen nib or of the cap or the body being lost. It is a further object of the present invention to provide new or improved cap retaining means which avoids the use of a screw-threaded connection between the cap and the body or barrel which does not necessitate relative rotation of these parts when making or breaking the connection between them.

According to the invention, the cap is adapted to be retained upon the forward end of the body or barrel of the pen by resilient or spring-pressed means which as the cap is passed axially into its protective position are first forced apart by an annular projection on the forward end of the body or barrel and then engage behind said projection to prevent accidental removal of the cap. Similarly when removing the cap from the forward end of the body or barrel the resilient or spring-pressed means are forced apart by the annular projection to effect disengagement.

Thus the invention provides a snap-action

connection between the cap and body or barrel which is operated by purely axial relative movements of these parts one over the other.

Preferably the construction or arrangement of the resilient or spring-pressed means in the cap is such that when the cap is mounted on the rear end of the body or barrel they will exert a resilient grip thereon to hold the cap in position. In this connection the rear end of the pen body or barrel may in some instances be provided with an annular projection for snap-action co-operation with the resilient or spring-pressed means in the cap in similar manner to that previously described with reference to the fitting of the cap upon the forward end of the body or barrel.

The resilient or spring-pressed means associated with the cap may comprise fingers or jaws of a collet or socket member provided co-axially in the cap and adapted to receive within it the forward extremity of the body or barrel and the associated pen nib and feeder.

In an embodiment of the invention the forward extremity of the body or barrel in which the pen nib and associated feeder are fitted is formed integrally with an annular projection or collar affording on its rear side a rounded shoulder leading into a conical or approximately conical forward face. The cap of the pen comprises a cylindrical sheath-like rear portion adapted to enclose the forward portion of the body or barrel and a gradually tapered forward part having an axial bore to receive and locate a collet or socket member. The collet or socket member comprises a cylindrical body portion formed integrally with a co-axial spigot portion of reduced diameter at the forward end which fits a correspondingly reduced forward portion of the bore in the tapered part of the cap whilst the body portion of the collet or socket member fits the larger rear portion of said bore and extends rearwardly therefrom into the cylindrical sheath-like portion of the cap. The shoulder afforded between the cylindrical body and the spigot of the collet or socket member abuts the complementary

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shoulder afforded between the larger diameter rear portion and smaller diameter forward portion of the axial bore in the forward part of the cap so that the collet or socket member is located axially in correct position in the cap. The collet or socket member may be secured in its located position in the cap in any convenient or appropriate manner such for example by means of an axially disposed clamping screw which passes through the forward end of the cap into a threaded bore in the spigot of the collet or socket member, which screw may also serve to secure to the forward end of the cap a closure member which may be formed integrally with or form part of a pocket clip.

The larger diameter portion or body of the collet or socket member is formed with an axial bore or chamber with an outwardly flared or conical entrance at the rear leading to an annular rebate or recess of larger diameter than and contiguous with the forward portion of said bore, and the rearward part of the body of the collet or socket is split or divided diametrically or radially to afford jaws or fingers, whilst an annular groove cut in the external cylindrical surface of the body or the collet or socket member toward the rear end thereof accommodates a spring ring which exerts a radially inward force upon said fingers or jaws and tends to close them upon one another. There is a all-round clearance between the rearwardly extending part of the collet or socket member and the inner surface of the sheath-like

portion of the cap to allow for the outward displacement of the collet jaws against the resilient pressure of their embracing spring ring when said jaws are forced apart by the annular projection on the forward end of the body or barrel as the cap is pressed into its protective position thereon. This clearance is preferably such as to allow only sufficient outward displacement of the collet jaws as to permit passage of the annular projection between them: this ensures that the said jaws cannot be overstrained.

In passing the cap into its protective position the annular projection on the forward extremity of the body or barrel engages the flared entrance in the collet or socket member and forces its jaws apart against the spring pressure until said annular projection enters the annular rebate or recess in the bore of the collet, whereupon the spring ring forces the jaws inwardly to engage behind or to the rear of said annular projection to retain the cap in position against accidental displacement.

The collet or socket member may be made of the same plastic material as the body and cap of the pen and the cap, instead of being made wholly of plastic material, or may have its sheath-like portion made of metal and screw connected to the forward portion of plastic material.

Dated this 28th day of November, 1946.

BARKER, BRETTELL, & DUNCAN,
Chartered Patent Agents,
75 & 77, Colmore Row, Birmingham, 3.

COMPLETE SPECIFICATION

Improvements in or relating to Fountain Pens

We, WYVERN FOUNTAIN PEN COMPANY LIMITED, a British Company, of Woodboy Street, Leicester, and MARK SYDNEY FINBURGH, a British subject of the Company's address do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to fountain pens, the chief object being to provide new or improved means for retaining the removable protective cap against accidental displacement from the forward end of the body or barrel of the pen.

Usually the protective cap is internally screw-threaded at or toward its rear open end to mate with a correspondingly externally screw-threaded portion on the pen body or barrel. This screw-threaded connection has the disadvantage that the threads become worn or damaged in use, particularly where the parts are made in plastic material as is generally the case, and the connection becomes ineffective. Another

disadvantage is that unless screwed-up tightly the body or the barrel of the pen is liable to become unscrewed from the cap whilst the pen is being carried in the pocket or handbag, and consequently there is a risk of damage being done to the pen nib or of the cap or the body being lost. However, snap-action connections between the cap and body or barrel have been proposed, which connections are operated by purely axial relative movement of these parts one over the other.

According to the invention, the cap is adapted to be retained upon the forward end of the body or barrel of the pen by resilient or spring-pressed fingers or jaws of a collet or socket member which is provided coaxially in the cap and adapted to receive within it the forward extremity of the body or barrel and the associated pen nib and feeder, which fingers or jaws, as the cap is passed axially into its protective position, are first forced apart by an annular projection on the forward end of the body or barrel and then engaged behind said pro-

jection to prevent accidental removal of the cap. Similarly when removing the cap from the forward end of the body or barrel the resilient or spring-pressed fingers or jaws are forced apart by the annular projection to effect disengagement.

Preferably the construction or arrangement of the collet or socket member in the cap is such that when the latter is mounted on the rear end of the body or barrel resilient or spring-pressed fingers or jaws will exert a resilient grip thereon to hold the cap in position. In this connection the rear end of the pen body or barrel may in some instances be provided with an annular projection for snap-action co-operation with the resilient or spring-pressed fingers or jaws of the collet or socket member in the cap in similar manner to that previously described with reference to the fitting of the cap upon the forward end of the body or barrel.

The invention will now be more fully described with reference to the embodiment shown in the accompanying drawings; in which:—

Fig. 1 is a side elevation of the fountain pen with its cap shown partly in section.

Fig. 2 and 3 are a rear end elevation and a side elevation respectively of the fountain pen cap.

Fig. 4 and 5 are a rear end view and a side elevation respectively of the collet or socket member which co-operates with the forward end of body or barrel of the fountain pen to retain the cap thereon against accidental removal.

Figs. 6 and 7 are respectively an end view and a side elevation of a spring ring or circlip which is fitted to the collet or socket member.

Referring to the drawings, the forward extremity of the body or barrel 1 in which the pen nib 2 and associated feeder are fitted is formed integrally with an annular projection or collar 3 affording on its rear side a rounded shoulder leading into a conical or approximately conical forward face. The cap 4 of the pen comprises a cylindrical sheath-like rear portion, adapted to enclose the forward portion of the body or barrel 1, and a gradually tapered forward part having an axial bore to receive and locate a collet or socket member 5. The collet or socket member 5 comprises a cylindrical body portion formed integrally with a co-axial spigot portion 6 of reduced diameter at the forward end which fits a correspondingly reduced forward portion of the bore in the tapered part of the cap 4, whilst the body portion of the collet or socket member fits the larger rear portion of said bore and extends rearwardly therefrom into the cylindrical sheath-like portion of the cap 4. The shoulder afforded between the cylindrical

body and the spigot 6 of the collet or socket member 5 abuts the complementary shoulder afforded between the larger diameter rear portion and smaller diameter forward portion of the axial bore in the forward part of the cap 4 so that the collet or socket member 5 is located axially in correct position in the cap. The collet or socket member 5 may be secured in its located position in the cap 4 in any convenient or appropriate manner such for example, by means of an axially disposed clamping screw 7 which passes through the forward end of the cap 4 into a threaded axial bore in the spigot 6 of the collet or socket member 5, which screw 7 may, as shown, also serve to secure to the forward end of the cap 4 a closure member 8 which may be formed integrally with or form part of a socket clip 9 as shown in Fig. 1.

The larger diameter portion or body of the collet or socket member 5 is formed with an axial bore or chamber with an outwardly flared or conical entrance 10 (see Fig. 5) at the rear leading to an annular rebate or recess 11 of larger diameter than and contiguous with the forward portion of said bore, and the rearward part of the body of the collet or socket is split or divided diametrically or radially, as shown at 12 in Figs. 4 and 5, to afford jaws or fingers 13, whilst an annular groove 14 cut in the external cylindrical surface of the body of the collet or socket member toward the rear end thereof accommodates a spring ring or circlip 15 which exerts a radially inward force upon said jaws or fingers 13 and tends to close them upon one another. There is an all-round clearance between the rearwardly extending part of the collet or socket member 5 and the inner surface of the sheath-like portion of the cap 4 to allow for the outward displacement of the collet jaws 13 against the resilient pressure of their embracing spring ring or circlip 15 when said jaws are forced apart by the annular projection 3 on the forward end of the body or barrel 1 as the cap 4 is pressed into its protective position thereon. This clearance is preferably such as to allow only sufficient outward displacement of the collet jaws 13 as to permit passage of the annular projection 3 between them: this ensures that the said jaws 13 cannot be overstrained.

In passing the cap 4 into its protective position the annular projection 3 on the forward extremity of the body or barrel 1 engages the flared entrance 10 in the collet or socket member 5 and forces its jaws 13 apart against the spring pressure until said annular projection 3 enters the annular rebate or recess 11 in the bore of the collet, whereupon the spring ring or circlip 15 forces the jaws 13, inwardly to engage behind or to the rear of the annular projec-

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tion 3, as shown in Fig. 1, to retain the cap 4 in position against accidental displacement.

The collet or socket member 5 may be made of the same plastic material as the body or barrel 1 of the pen, and the cap 4 may be made wholly of the same plastic material or it may be made either wholly of metal or partly of metal and partly of plastic material. In this latter connection the cap may have its sheath-like rear portion made of metal and screw connected to the tapered forward portion of plastic material, or the sheath-like rear portion may be of plastic material and the forward portion be made of metal.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A fountain pen, wherein the protective cap is adapted to be retained upon the forward end of the body or barrel of the pen by resilient or spring-pressed fingers or jaws of a collet or socket member which is provided co-axially in the cap and adapted to receive within it the forward extremity of the body or barrel, and the associated pen nib and feeder, and in which, as the cap is passed axially into its protective position, said fingers or jaws are first forced apart by an annular projection on the forward end of the body or barrel and then engaged behind said projection to prevent accidental removal of the cap.

2. A fountain pen as claimed in Claim 1, wherein the collet or socket member is formed with an axial bore or chamber having an outwardly flared entrance at the rear leading into an annular rebate or recess of larger diameter than and contiguous with the forward portion of said bore, the rearward part of said collet or socket member being split or divided diametrically or radially to afford the jaws or fingers.

3. A fountain pen as claimed in Claim 1 or 2, wherein the fingers or jaws of the collet or socket member are encircled by a spring ring or circlip which exerts a radially inward force tending to close the fingers or jaws upon one another.

4. A fountain pen as claimed in any of the preceding claims wherein there is an all-round clearance between the rearward part of the collet or socket member and the sheath-like rear portion of the cap, said

clearance being such as to allow only sufficient outward displacement of the fingers or jaws as to permit the passage between them of the annular projection on the forward end of the pen body or barrel.

5. A fountain pen as claimed in any of the preceding claims wherein the forward part of the cap is formed with an axial bore and the collet or socket member has a cylindrical body with a co-axial forwardly extending spigot portion of reduced diameter which fits in a correspondingly reduced forward portion of said bore, the body portion of the collet or socket member fitting the larger rear portion of said bore and extending rearwardly therefrom into the sheath-like portion of the cap.

6. A fountain pen as claimed in Claim 5, wherein the collet or socket member is located in the cap by the co-operation of a shoulder afforded between the body and spigot portion of the collet or socket member with a complementary shoulder afforded between the larger diameter rear portion and the smaller diameter forward portion of the bore in the cap.

7. A fountain pen as claimed in Claim 6, wherein the collet or socket member is secured in its located position in the cap by a clamping screw which passes through the forward end of the cap into a threaded axial bore in the spigot of the collet or socket member.

8. A fountain pen as claimed in Claim 7, wherein the clamping screw serves also to secure a closure member to the forward end of the cap.

9. A fountain pen as claimed in Claim 8, wherein the closure member is formed integrally with or forms a part of a pocket clip.

10. A fountain pen as claimed in any of the preceding claims, wherein the annular projection on the forward end of the pen body or barrel affords on its rear side a rounded shoulder leading into a conical or approximately conical forward face.

11. A fountain pen having a snap-action connection between the cap and the pen body or barrel, substantially as described with reference to the accompanying drawings.

Dated this 10th day of October, 1947.
BARKER, BRETTELL, & DUNCAN,
Chartered Patent Agents,
75 & 77, Colmore Row, Birmingham, 3.

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Printed for His Majesty's Stationery Office by Charles Birchall & Sons, Ltd., Liverpool.—1949.
Code 39-219. Published at the Patent Office, 25, Southampton Buildings, London, W.C. 2.,
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[This Drawing is a reproduction of the Original on a reduced scale.]

FIG. 1.

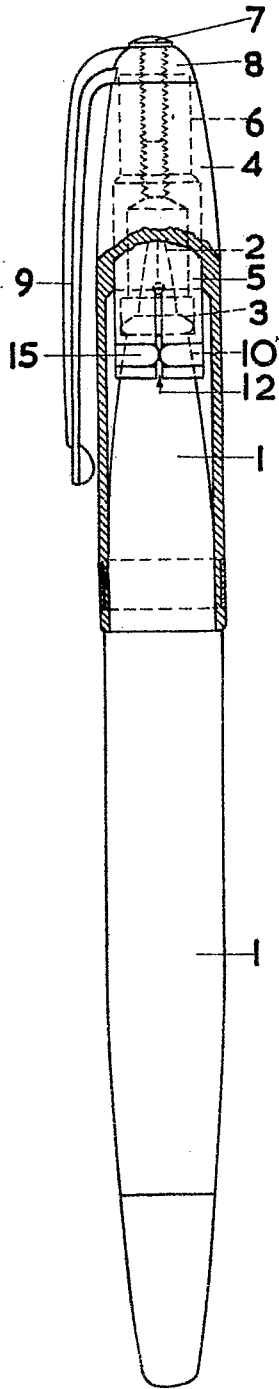


FIG. 2.

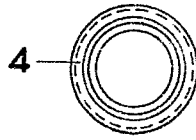


FIG. 4.

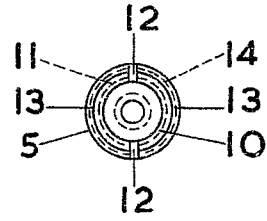


FIG. 3.

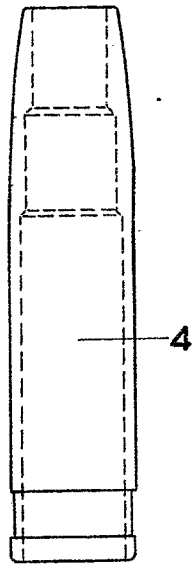


FIG. 5.

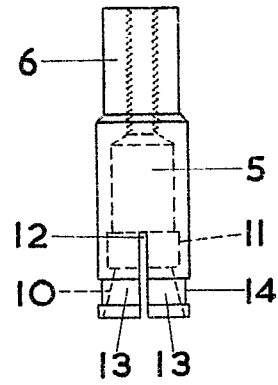


FIG. 6.

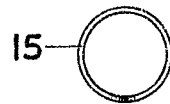


FIG. 7.

