PATENT SPECIFICATION

Application Date: Oct. 30, 1923. No. 27,166/23. **224,084**

Complete Left: July 30, 1924.

Complete Accepted: Nov. 6, 1924.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Fountain Pens.

I, LESLIE ROY WADE, of 4, Duke Street, London, W.C. 2, Merchant, a subject of the King of Great Britain, do hereby declare the nature of this invention to be as follows:—

This invention relates to fountain pens, its object being to provide means for preventing leakage of ink when the pen or the like is placed in a hand-bag or other receptacle wherein it is liable to be shaken and to take up a horizontal or inverted position.

According to this invention an intermediate ink feeding section is inserted between the body or barrel of the pen and the nib section, and ink conduits are eccentrically located in both the said intermediate section and nib section, so that by relative rotation between these sections the said conduits can either be brought into alignment with each other to permit the flow of ink, or placed out of alignment to shut off the flow of ink positively. The nib section may have a tapered or other shank entering a recess in the intermediate section, and a collar engaging the front of the said intermediate section, and the engagement of the intermediate section with the body of the pen may be of a similar nature, the joints being merely friction joints, and being provided with means such as resilient washers or sleeves to prevent lateral leakages of ink. The nib section or intermediate member may be operatively connected by means of a pin or oppositely arranged lugs working in a groove or grooves with a longitudinally sliding and more or less rotatable sheath or cap of the kind described in the Specification of my Patent No. 194,895 of 1922, in such manner that the opening movement of the sheath to expose the pen point automatically places the two portions of the divided feed conduit in alignment with each other so that ink can flow to the pen point, while the reverse or closing movement of the sheath automatically places the two portions of the divided feed conduit out of alignment so that the flow of ink is prevented. When the sheath has been removed, if the feeding member has been left in the closed position, the said feeding member can be turned back by hand so as to open the ink conduit for the purpose of filling the reservoir of the pen if required.

A central wire or small bolt may be employed to prevent entire detachment of the nib section and intermediate section, this bolt being secured to the front portion of the ink feed and passing through the intermediate section with a head or nut engaging a collar or washer at the rear end of the said intermediate section.

The intermediate section has been hereinbefore described as a loose part, but may be formed integral with the body or barrel of the pen in the manufacture thereof.

Dated this 30th day of October, 1923.

HASELTINE, LAKE & Co.,
28, Southampton Buildings, London, England, and
15, Park Row, New York, N.Y., U.S.A.,
Agents for the Applicant.

COMPLETE SPECIFICATION.

Improvements in or relating to Fountain Pens.

I, LESLIE ROY WADE, of 4, Duke Street, London, W.C. 2, Merchant, a subject of the King of Great Britain, do hereby declare the nature of this inven-

tion 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 of the kind in which an intermediate ink feeding member is provided between the body or barrel of the pen and the nib section, and ink conduits are eccentrically located in both the said intermediate member and nib section, so that by relative rotation between these parts the said conduits can either be brought into alignment with each other to permit the flow of ink, or placed out of alignment to shut off the flow of ink.

According to this invention the nib section has a tapered or conical shank entering a corresponding shaped recess in the intermediate member, or conversely the intermediate member has a tapered shank entering a corresponding recess in the nib section. There are thus surfaces of revolution in continuous contact above and below the places where the longitudinal ink conduits pierce the inclined engaging surfaces of the opposing parts at the junction of the nib section and intermediate member, preventing lateral leakages of ink without the use of a resilient washer or washers, although such resilient washers may be used if desired.

In order that the said invention may be clearly understood and readily carried into effect, the same will now be described more fully with reference to the accompanying drawings, illustrating an exemplification of the invention, wherein:—

Figure 1 represents a fountain pen in elevation.

Figure 2 represents the nib and feed detached.

Figure 3 represents in vertical transverse section the nib section detached.

Figure 4 represents in vertical transverse section the intermediate ink feeding member.

Figure 5 is a plan of the said intermediate member.

Figure 6 represents a screw for connecting the nib section and the intermediate member together.

Figure 7 represents the shape of an ink hole hereinafter mentioned.

A indicates the pen barrel, in the end of which is a recess a^1; B indicates the nib section, which is provided with a lug b^1 working in the said recess, the relative rotary movement permitted between the parts A and B being limited by the length in a circumferential direction of the recess. A split ring b^2 of spring metal or other suitable material may be secured on the nib section, its feet covering the lug b^1. The nib section B is bored eccentrically with one or more holes or ink conduits b^3 and may be lined with a conical or bell-shaped washer C of rubber or the like soft material, this washer being also perforated at one or more places as indicated at c^1, with holes coinciding with the holes b^3. The intermediate member D which may be firmly secured in position within the barrel A in any suitable manner, has a central lame d^1 internally screw-threaded, in which dome are one or more perforations d^2. A screw E (Figure 6) passes freely through a boss b^4 in the nib section B and through the washer C, and then engages the screw-thread in the dome d^1, but in order to avoid leakage of ink due to its creeping around the screw thread, this screw does not pass through the floor of the dome to the open interior of the member D.

When the nib section and the pen barrel are in the relative positions indicated in Figure 1, that is, with the lug b^1 at the left side of the recess a^1, the openings c^1 and b^3 coincide with the openings d^2 so that conduits are formed for the passage of ink from the pen barrel through the hollow interior of the intermediate member D to the upper part of the nib section B, in a ring b^5 in which the nib F and ink feed G are held, so that ink is supplied for writing; but when the nib section is partially rotated so that the lug b^1 comes to the right hand end of the recess a^1, the openings d^2 are sealed by an imperforate part of the washer C or of the nib section B, which thus prevents the passage of ink to the nib, the openings c^1 and b^3 also coming opposite imperforate parts of the dome d^1.

As there is a difficulty in ensuring the flow of ink through a small round hole owing to radial surface tension of the ink, the holes may each be composed of two intersecting circular holes, forming a shape similar to that of the periphery of a figure 8 as shown in Figure 7.

The ring b^5 may be notched at b^6 and b^7 to facilitate the passage of ink to the nib F.

The construction of the intermediate member is obviously capable of considerable variation within the scope of the present invention. For example, the intermediate member may extend to the outside of the barrel and may have a lug which enters a recess in the barrel and extends beyond the barrel to engage also a recess in a skirt or socketed portion of the nib section, and thus to limit the relative turning movements between the intermediate and nib sections, this skirt giving an improved hold for the fingers

in turning, and preventing their coming in contact with any ink which may possibly be present outside the intermediate member after filling. The nib section or intermediate member may be operatively connected by means of a pin or oppositely arranged lugs working in a groove or grooves with a longitudinally sliding and more or less rotatable sheath or cap of the kind described in the Specification of my Patent No. 194,895, in such manner that the opening movement of the sheath to expose the pen point automatically places the two portions of the divided feed conduit in alignment with each other so that ink can flow to the pen point, while the reverse or closing movement of the sheath automatically places the two portions of the divided feed conduit out of alignment so that the flow of ink is prevented. When the sheath has been removed, if the intermediate feeding member has been left in the closed position, the said feeding member can be turned back by hand so as to open the ink conduit for the purpose of filling the reservoir of the pen if required.

The intermediate member has been hereinbefore described as a loose part, but may be formed integral with the body or barrel of the pen in the manufacture thereof.

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

1. A fountain pen of the kind set forth, in which the joint between the nib section and the intermediate member is tapered or conical, substantially as described.

2. A fountain pen of the kind set forth having its parts constructed, arranged and adapted to operate substantially as described with reference to the accompanying drawings, for the purposes specified.

Dated this 30th day of July, 1924.

HASELTINE, LAKE & Co.,
28, Southampton Buildings, London, England, and
15, Park Row, New York, N.Y., U.S.A.,
Agents for the Applicants.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1924.

[This Drawing is a reproduction of the Original on a reduced scale.]

Fig. 1.

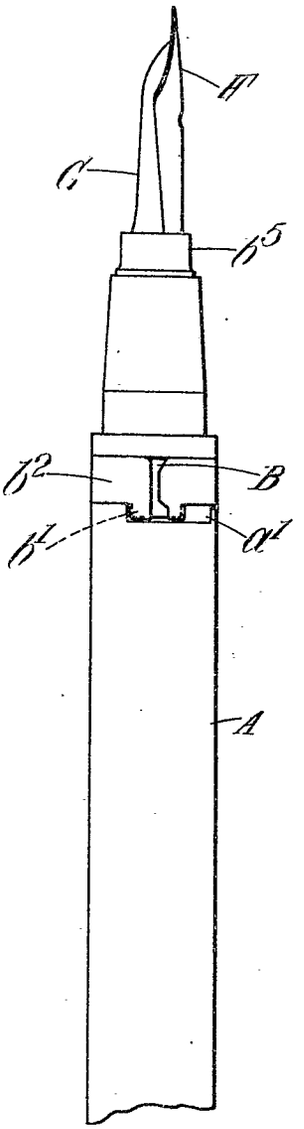
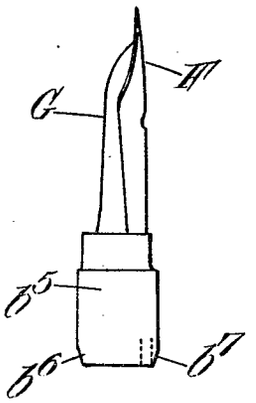


Fig. 2.



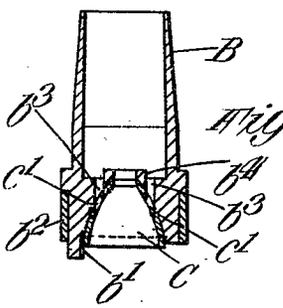


Fig. 3.

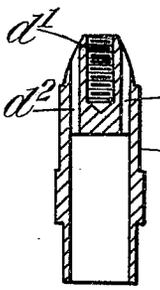


Fig. 4.

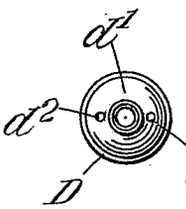


Fig. 5.

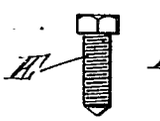


Fig. 6.

Fig. 7.

Malby & Sons, Photo-Lith.