

PATENT SPECIFICATION

527,422



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COMPLETE SPECIFICATION

Improvements in or relating to Self-filling Fountain Pens

We, MABIE TODD & COMPANY LIMITED, of Sunderland House, Curzon Street, Mayfair, London, W.1, a Company organised under the laws of Great Britain and Northern Ireland, LESLIE WILLIAM JOHNSON, of 41, Park View, Hatch End, Middlesex, and EDWARD STEPHEN SEARS, of 23, Oaklands Avenue, Oxhey, Hertfordshire, both British Subjects, 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 self-filling fountain pens, and although applicable more specifically to that kind having an air tube by means of which air in the reservoir is evacuated during the operation of filling, is equally well adaptable to other types of self-filling fountain pens, for example, in which a collapsible sac forms the primary means whereby the pen is filled by suction, and especially to self-filling pens wherein the ink is admitted to the reservoir thereof through an inlet at that end of the pen remote from the writing point. Such a pen is described in the specification of application for Letters Patent No. 10691 of 1938. (Serial No. 514,513.)

Self-filling fountain pens are known having means for shutting off the supply of ink to the nib section thereof and comprising for example a valve disposed between the barrel section and the nib section and controllable by a relative movement of the parts.

According to the present invention means for shutting off the supply of ink to the nib section of a self-filling fountain pen comprises a valve controllable by a rotary movement of the nib section relatively to the barrel section which is effected through the intermediary of the pen cap.

Preferably, rotation of the nib section is effected through the intermediary of a screw connection being made between the nib section and the barrel section and between the nib section and the cap.

The valve is formed by cooperating shoulders on the barrel section and the nib

section respectively, the shouldered parts of the valve communicating with a recess which in turn communicates with the ink channel of the feed bar carried by the nib section of the pen. 55

In order that the invention may be clearly understood reference is directed to the accompanying drawings, wherein:— 60

Figure 1 is a longitudinal sectional elevation of a point section in accordance with the invention showing a form of ink control valve in the open position. 65

Figure 2 is a similar view to Figure 1 with the closing cap in position and with the ink control valve closed.

Figure 3 is a view similar to Figure 1 showing a modification. 70

Figures 1, 2 and 3 illustrate constructions of valve for ensuring a complete shut off in self-filling reservoir pens of the type described or otherwise, but the form may be modified. 75

In the figures 51 indicates the barrel section, 52 the cap therefor, and 53 the nib section which carries the nib 54 and feed bar 55. The barrel section 51 is tapered towards the nib as shown and has a shank 56 formed at the opposite end for attachment to the barrel. A bore 57 is formed in the barrel section with a suitable thread for almost its entire length, and a short secondary bore 58 completes the passage through the barrel section. The drill angle of the larger bore forms a sloping shoulder 59 where the two bores 57 and 58 meet. The front end of the tapered part of the barrel section is countersunk as at 61. The bore 57 is internally threaded to receive a correspondingly threaded stem 62 of the nib section 53. The nib section is formed with an external thread 63 to receive the cap 52 and the end of the stem thereof is reduced and threaded to receive a lock nut 64. The nib section is bored to a predetermined depth, leaving the inner end solid, and countersunk, or bevelled, to receive frictionally the feed 55 and the nib 54. A small recess 65 is formed at the solid end of the stem 62 for attachment of the air tube 13 if a tube is used. The end of the stem 62 is shouldered as at 66 and 105

at an angle corresponding to the angle of

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the shoulder 59, in the barrel section 51. These two angled faces 59 and 66 constitute the valve or shut off for the ink supply. The valve controls the flow of ink to a cylindrical recess 67 which in turn communicates with the ink feed channel 68 in the feed bar 55 through an aperture 69 formed by a half round or square cut slot or by a drill hole to create an inlet for ink to pass into the feed channel. The lock nut 64 is in the form of an internally threaded collar with two or more cross cuts forming legs 71 in the face adjacent the end of the shank 56 on the barrel section 51. The legs 71 constitute passage-ways for the ink to the bore 58. The lock nut 64 is fixed to the nib section 53 when assembling. The cap 52 is fitted with a sleeve 72 which functions as a shut off by abutting against the outer end of the nib section 53, and against a shoulder 72^a formed in the cap 52 the whole forming a pocket for the nib. The feed 55 may be of the known type. It will be noted that with the construction shown no barrel screw is required to receive the cap. Presuming that the pen is to be closed for the pocket or prepared for filling by any of the mechanical means previously illustrated the action of screwing up the cap till the end of the nib section 53 and the sleeve 72 meet followed by the screwing in of the nib section 53 brings together the two valve faces 59 and 66, thus effectively sealing the reservoir at that point. Obviously, it is immaterial whether valve faces or the faces of nib section and sleeve meet first in screwing on the cap, but in the removal of the cap it is preferable that the valve should open first. This would occur naturally as the area of friction is far greater between nib section and sleeve than between valve faces. Figure 3 shows a construction in which a metal band 73 which may be formed with a knurl or rabbet, or the like is substituted for the screw 63 on the nib section 53 as in Figure 1. A corresponding band would be fixed in the cap, or the knurling may be formed in the wall of the cap itself and would replace the screw in the cap as in Figure 2, but in this case a screw would be necessary towards the front of the cap for attachment to the barrel in the known manner.

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. Means for shutting off the supply of ink to the nib section of a self-filling fountain pen comprising a valve controllable by a rotary movement of the nib section relatively to the barrel section effected through the intermediary of the pen cap.

2. Means as claimed in claim 1 wherein the relative movement of the nib section is a rotary one effected through the intermediary of the pen cap which has a screw thread connection with said nib section.

3. Means as claimed in claims 1 and 2 wherein the nib section has a screw thread connection with the barrel section.

4. Means as claimed in claims 2 and 3 wherein the action of replacing the pen cap first seals the writing point and adjacent part of the feed bar of the nib section and thereafter closes the valve.

5. Means as claimed in claims 2 and 3 wherein the screw thread connection between nib section and cap and nib section and barrel section are so formed that the valve opens before the cap is freed.

6. Means as claimed in any of the preceding claims wherein the valve is formed by cooperating shoulders on the barrel section and the nib section respectively.

7. A valve as claimed in claim 6 wherein the shouldered parts of the valve communicate with a recess which in turn communicates with the feed channel of the feed bar of the nib section of the pen.

8. Improved self-filling fountain pens having shut off means substantially as described with reference to Figs. 1 and 2 or Fig. 3 of the accompanying drawings.

9. Improvements in self-filling fountain pens substantially as herein described.

10. A self-filling fountain pen as claimed in the specification of application for Patent No. 10691 of 1938 (Serial No. 514,513) when provided with a shut off valve as herein claimed.

Dated this 7th day of April, 1939.
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Chartered Patent Agents.

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

