

PATENT SPECIFICATION

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PROVISIONAL SPECIFICATION

Improvements in or relating to Stylographic 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 "St. Helier", Marsworth Avenue, Pinner, Middlesex, and EDWARD STEPHEN SEARS, of 23, Oaklands Avenue, Oxhey, Hertfordshire, both British Subjects, do hereby declare the nature of this invention to be as follows:—

This invention relates to stylographic pens and more particularly to stylographic pens of the self-filling type, although the invention is not limited in its application to pens of this latter type.

The invention is more particularly directed to the provision of improvements in the manufacture and assembly of the parts comprising the portion of the pen disposed between the ink reservoir and the writing point, by avoiding the use of screw threads and generally to simplify and improve the construction and consequent efficiency of such pens.

The modified parts of a stylographic pen forming the subject of the present invention comprise a lower or end pen section having a bore carrying a feed bar, to the lower part of which is fitted a writing point section. The writing point in the form of a substantially axially disposed wire, the proximate end of which is passed through a small sleeve fixed in the extreme end of the writing point section, is extended upward through a lower bore in the writing point section and terminates in a coil or helical spring disposed in a cavity defined by the lower end of the feed bar and an intermediate and enlarged bore in the writing point section.

The invention is mainly characterised by the feature that the upper part of the feed bar is adapted to be carried by and frictionally retained in the bore of the end pen section, while the writing point section is adapted to fit over and to be frictionally retained on the lower end of the feed bar when the parts are assembled.

More particularly the invention in its application to a self-filling pen of the

sac reservoir type comprises a lower end section having two bores, the upper of which serves to frictionally retain the feed bar and the lower to receive the upper cylindrical part of the writing point section.

The writing point section is of three main bores internally, the upper of which is of such a size as to receive and be retained upon the end of the feed bar, an intermediate bore in which the end of the coil or spring constituting part of the writing point is disposed, this bore being of smaller section than the main bore to define an internal shoulder or its equivalent which serves to position the feed bar. A further bore immediately below the coil or spring is of reduced diameter to the intermediate bore and a centrally disposed bore is provided through which the end of the writing point is adapted to protrude. The feed bar which is preferably of cylindrical form and of uniform diameter is provided with ducts or grooves, one or more of which is preferably formed in the body of the bar and extends longitudinally thereof to permit the passage of ink from the narrow reservoir to the bore of the writing point section, and subsequently to the writing point, while one or more ducts are provided for the passage of air. These passages preferably take the form of longitudinal extending grooves to admit air to the interior of the reservoir, being put in communication with the circumambient air by means of one or more transversely disposed holes in the upper cylindrical part of the writing point section and which holes place the air ducts in the feed bar in communication with the air gap between the writing point section and the lower enlarged bore of the pen section.

Where the pen is of the sac self-filling type the upper external surface of the end section of the pen is stepped down and the upper edge formed with a lip to facilitate the attachment of the sac while the intermediate portion may serve to retain the lower proximate end of an outer casing or barrel, the extreme lower annular end of which is adapted to abut

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against a shoulder formed on the stepped outer and upper surface of the end section.

To assemble the parts the spring is dropped into the point section and one end of the feed bar is thereupon inserted in the upper bore of the writing point section in which it is frictionally retained, the lateral duct in the writing point section being in communication with one of the air ducts formed on the outer surface of the feed bar.

The length of the spring chamber is such that the end of the feed bar prevents backward movement of the spring. The writing point section with the feed bar attached is then pressed into the secondary bore in the lower end section

of the pen, the upper end of the writing point abutting against a shoulder formed in the secondary bore of the end section. 20

It will be obvious that the lower or pen section may be modified and extended upward to form a barrel reservoir for the ink and that various other modifications may be made dependent upon the particular form of ink reservoir employed. 25

Further, we wish it to be understood that various other modifications may be made in the details of construction hereinbefore described within the scope of the invention. 30

Dated this 5th day of May, 1937.

MEWBURN, ELLIS & CO.,
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Chartered Patent Agents.

COMPLETE SPECIFICATION

Improvements in or relating to Stylographic Pens

We, MABLE, 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 "St. Helier", Marsworth Avenue, Pinner, 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 stylographic pens and more particularly to stylographic pens of the self-filling type, although the invention is not limited in its application to pens of this latter kind.

The invention is more particularly directed to the provision of improvements in the manufacture and assembly of parts comprising that portion of the pen disposed between the ink reservoir and the writing point by avoiding the use of screw threads, and generally to simplify and improve the construction and consequent efficiency of such pens.

With this object in view the present invention consists in a stylographic pen comprising a lower or end section or part having a bore carrying a feed bar to the lower end of which is fitted a writing point section carrying the writing point and wherein the feed bar is adapted to be carried by and frictionally retained in the bore of the end section or part of the pen, and the writing point section adapted to fit over and to be frictionally retained on the lower end of the feed bar when the parts are assembled.

Other features of the invention will be

apparent from the following description, and be hereinafter specifically claimed. 75

For the purpose of the specification it is assumed that the pen is vertically disposed as shown in the drawing with the writing point at its extreme lower end. 80

In the accompanying drawings Figure 1 is a vertical section of a stylographic fountain pen of the kind associated with a flexible sac ink reservoir and Figure 2 is a section on the line II—II of Figure 1. 85

Referring now to the drawings, the pen includes a lower end section 1 having an upper axial bore 2 which serves to frictionally retain the feed bar 3 and a lower axial bore 4 in which the upper part of the writing point section 5 is adapted to be positioned in spaced relation thereto to define an annular air space 6. 90

This writing point section 5 is of three main progressively decreasing bores internally as shown. The upper bore 8 is of such size as to receive and be frictionally retained upon the end of the feed bar 3. The intermediate bore 10 being of smaller section than the main bore defines an internal shoulder 11 which serves to position the feed bar 3. This bore 10 forms with the lower circular face of the feed bar 3 a chamber 13 in which the coil or spring 14 constituting the upper part of the writing point wire 15 is disposed. The length of the spring 13 is such that the end of the feed bar prevents backward movement of the spring. A further bore 18 immediately below the bore 10 is of reduced diameter and forms a passage through which the writing point wire 15 is adapted to pass and from the lower end of which it is adapted to protrude to 115

constitute the writing point proper. A small sleeve 19 of hard metal is fixed in the extreme coned end of the writing point section to avoid wear.

5 The cylindrical face of the feed bar 3 is formed with two oppositely disposed longitudinal grooves which, with the wall of the bore of the end section and of part of the bore of the point section, 10 form two ducts 16 and 17, one 16 of which is adapted to permit the passage of ink from the reservoir to the writing point by way of the chamber 13 while the other duct 17 serves for the passage 15 of air to the interior of the reservoir by way of the transversely disposed passage 20 in the upper part of the writing point section leading from the air gap 6 disposed between the writing point section and the lower enlarged bore of the pen section. More than one ink duct and more than one air duct or groove may be provided if desired, as will be understood.

25 The upper external surface of the end section of the pen is stepped down and the edge formed with a lip 21 to facilitate the attachment of the ink sac (not shown) the end of which is positioned 30 by the shoulder 23. The intermediate portion 26 may serve to retain the lower proximate end of an outer casing or barrel, the extreme lower annular end of which is adapted to abut against a 35 shoulder 27 formed on the stepped outer and upper surface of the end section.

To assemble the parts the spring 14 and its writing point 15 are dropped into the point section 5 and one end of the 40 feed bar 3 is thereupon inserted in the upper bore of the writing point section in which it is frictionally retained with its lower circular end abutting against the shoulder 11 and the lateral duct 20 45 in the writing point section in communication with one of the air ducts 17 formed on the outer surface of the feed bar.

The writing point section 5 with the

feed bar 3 is then pressed into the upper bore 2 in the lower end section of the 50 pen, the upper end of the writing point abutting against a shoulder formed in the secondary bore of the end section to complete the assembly.

It will be obvious that the lower or 55 pen section may be modified and extended upward to form a barrel reservoir for the ink and that various other modifications may be made dependent upon the particular form of ink reservoir employed, while various other modifications 60 may be made in the details of construction hereinbefore described within the scope of the invention.

Having now particularly described and 65 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 stylographic pen comprising a 70 lower end section or part having a bore carrying a feed bar, to the lower end of which is fitted a writing point section carrying the writing point, and wherein the feed bar is adapted to be carried by, 75 and frictionally retained in, the bore of the lower end section of part of the pen, and the writing point section adapted to fit over, and to be frictionally retained on, the lower end of the feed 80 bar when the parts are assembled.

2. A stylographic fountain pen according to Claim 1 wherein the helical spring forming part of the writing point is disposed without attachment in a chamber 85 defined by the lower transverse face of the feed bar and a bore in the writing point section.

3. A stylographic pen constructed, 90 arranged and adapted to operate substantially as described with reference to the accompanying drawings.

Dated this 28th day of June, 1937.

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Chartered Patent Agents.

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

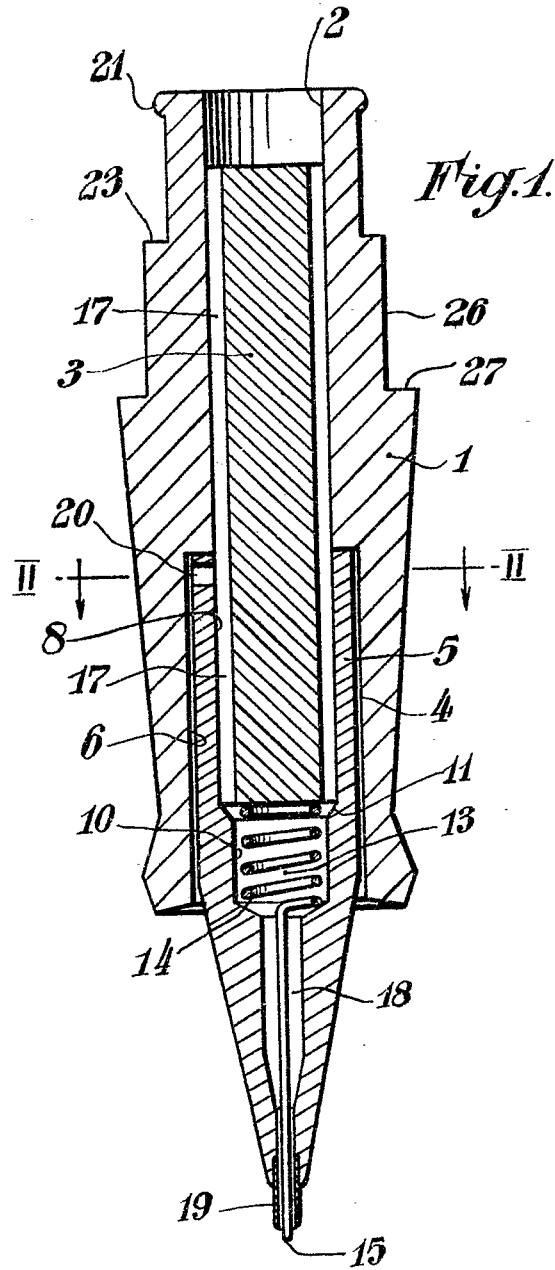


Fig. 1.

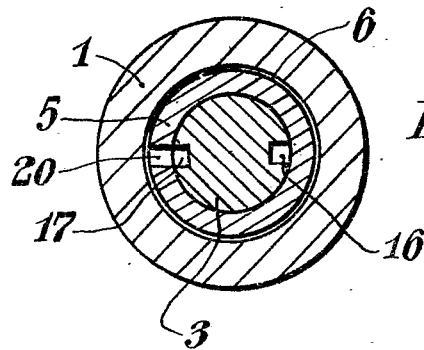


Fig. 2.