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COMPLETE SPECIFICATION.

“Improvements in Stylographic Pens.”

We, FRANCIS CHARLES JARVIS and THOMAS HOWARD GARNER, both of 34, Paternoster Row, in the City of London, Fountain Pen Manufacturers, 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:—

Our invention relates to stylographic pens, and to that class of pen in which the necessary air enters the ink reservoir through an annular chamber formed by a recess around the end or point section, which recess is in communication with the atmosphere and with the ink barrel. The object of our invention is to improve this type of pen and to adapt it to pens designed to be filled either in the ordinary way or by a piston or plunger so as to constitute a self-filling pen.

According to our invention the improved pen comprises an ink reservoir of the usual cylindrical construction and an end section which is designed to be screwed into the open end of the cylindrical reservoir and is fitted with the usual feed tube and spring stylus. The portion of the end section which is screwed into the ink reservoir is formed with an annular groove or recess forming an annular chamber within the end of the reservoir, the said annular chamber being in communication by a radial capillary hole with the interior of the ink reservoir and by an axial capillary hole with the exterior, at or near the lower end of the section. At the point at which the latter capillary hole communicates with the atmosphere, the section is advantageously provided with an annular channel or trough into the bottom of which the said hole opens.

The improved pen may be arranged to be filled in the ordinary way by the removal of the section or it may be fitted with a piston or plunger so as to form a self-filling pen, the ink being drawn through the two capillary holes above mentioned when the end section is dipped below the level of the ink supply and the piston or plunger drawn outwards.

To enable the invention to be fully understood we will describe it by reference to the accompanying drawing, in which:—

Figure 1 is a sectional elevation of a self-filling stylographic pen constructed according to the invention, and

Figure 2 is a detached view of the end section.

*a* represents the cylindrical ink reservoir of the pen and *b* the piston or plunger which fits within the said reservoir *a* and which is designed to be reciprocated for filling purposes in the usual way. *c* is an extension of the cylindrical reservoir which fits on to the reduced end *a*<sup>1</sup> of the latter and encloses the plunger *b*, *d* being the usual protective cap for the point of the pen.

*e* is the end section which is fitted with the feed-tube *f* and the spring stylus *g* and is screw-threaded at its inner end as shown at *h*, the said screw-threaded portion engaging with the internally screw-threaded end of the ink reservoir *a*. *i* is the annular recess or groove which is formed around the end section *e* so as to provide an annular chamber within the reservoir *a* when the said section *e* is screwed into position. *j* is the radial capillary hole which places the annular groove or chamber *i* in communication with the interior of the ink reservoir *a* and *k* is the axial or approximately axial capillary hole or passage which places the said annular groove or recess *i* in communication with the

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*Jarvis and Garner's Improvements in Stylographic Pens.*

atmosphere *l* being the channel or trough which is formed around the outside of the section *e* and into the bottom of which the capillary hole *k* opens.

With this construction of pen the air, which it is necessary should enter the reservoir *a* in order to permit of the efficient flow of the ink, is introduced through the capillary hole *k* annular recess *i* and capillary hole *j*, but the ink in the reservoir is securely trapped, as any which may pass through the hole *j* is retained in the annular recess *i*, and in any case, should a small quantity succeed in passing through the capillary passage *k*, it is retained in the channel or trough *l* and does not run down the end of the section *e*.

To fill the pen which is illustrated, and which, as above stated, is of the self-filling type, it is merely necessary to depress the plunger *b* until it attains the lower end of the reservoir *a* and to then insert the end section into the ink supply until the level of the latter is above the orifice of the capillary passage *k*, when, by pulling the plunger *b* outwards the ink is drawn up through the said capillary passage *k* and into the annular groove or recess *i* whence it flows through the capillary hole *j* into the reservoir *a*. Where the self-filling plunger is not provided it is of course merely necessary to unscrew the end section *e* and to fill through the open end of the reservoir in the ordinary 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. A stylographic pen of the kind described, comprising a reservoir, into the open end of which is fitted the end section provided with an annular recess or groove within the reservoir, the said annular groove or recess being in communication by a radial capillary hole with the interior of the ink reservoir, and by an axial capillary hole with the exterior at or near the lower end of the section substantially as hereinbefore described.

2. In a stylographic pen of the kind claimed in the preceding claiming clause, the provision upon the end section of an external channel or trough into which the outer end of the axial capillary hole or passage opens substantially as, and for the purpose, hereinbefore described.

3. A stylographic pen consisting of the parts constructed and arranged substantially as hereinbefore described and illustrated in the accompanying drawing.

Dated the 10th day of August, 1909.

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Agents for the Applicants.

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

Fig. 1.

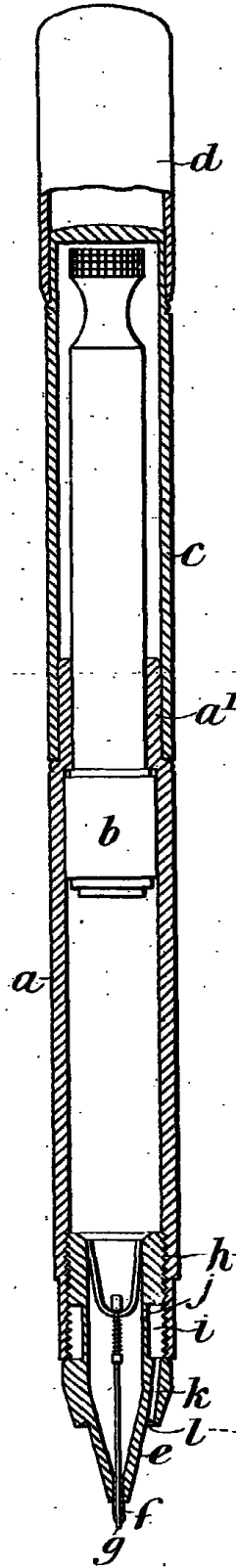
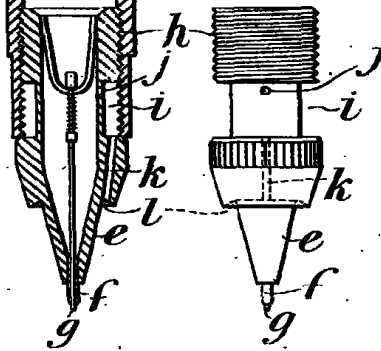


Fig. 2.



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