

PATENT SPECIFICATION

DRAWINGS ATTACHED

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COMPLETE SPECIFICATION

Fountain Pen

We, PAIROTTO MANNEN HITSU KABUSHIKI KAISHA, (known as The Pilot Pen Co. Ltd.,) a liability limited company of Japan, of No. 7—3, 2-Chome, Kyobashi, Chuo-ku, Tokyo-

5 To, Japan, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

10 This invention relates to fountain pens.

An object of the present invention is to provide an improved fountain pen having a writing head which is of very simple construction.

15 According to the present invention, there is provided a fountain pen having a writing head which comprises an outer shell having a hole through which ink can be sucked into the reservoir and through which air is supplied

20 to the ink reservoir during writing; an ink collector having ink-receiving capillary cells, a longitudinal narrow slit communicating with the capillary cells and with said hole in the outer shell, and a longitudinally recessed portion forming flat shoulders at both its sides;

25 a feed bar having a longitudinal slit for feeding ink to the nib and a longitudinally recessed portion co-operating with the said recessed portion of the ink collector to define a longitudinal channel communicating with the hole in the outer shell; the said ink collector and ink feed bar being assembled with a nib by fitting the feed bar in the said recessed portion of the ink collector, arranging the nib on the said feed bar with side edges of the nib mounted on the said flat shoulders of the ink collector, and holding together said assembled members by insertion in the outer shell.

40 In the accompanying drawings:—

Figure 1 is an enlarged longitudinal section of a writing head of one embodiment of this invention;

45 Figure 2 is a cross section along the line II—II in Figure 1;

[Price 3s. 6d.]

Figure 3 is a longitudinal section of an ink collector;

Figure 4 is a cross section along the line IV—IV in Figure 3;

Figure 5 is a longitudinal section of an ink feed bar, and

Figure 6 is a cross section along the line VI—VI in Figure 5.

Referring to the drawing, a writing head of a fountain pen comprises a nib 2 having an air hole 2a, an ink collector 4, an ink feed bar 1, and an outer shell 5. A hole 5a is provided at the free end of the outer shell 5 for sucking ink into an ink reservoir of the pen and for sucking in the air to be supplied to the ink reservoir during writing.

The ink collector 4 has ink-receiving capillary cells 4d formed around it, a longitudinal narrow slit 4c communicating with the capillary cells and with the hole 5a in the outer shell. A longitudinally recessed portion 4a at the top of the collector 4 forms upper flat shoulders 4b at both its sides.

The ink feed bar 1 has a narrow longitudinal slit 1a for discharging ink from the ink reservoir, a recessed portion 1b just under an air hole 2a of a nib 2, a sunken surface 1c on which the nib 2 is mounted, a longitudinally recessed portion 1d co-operating with the inner side surface of the upper recessed portion 4a of the ink collector 4 to define an air channel communicating with the hole 5a and a sunken surface 1e around which a sleeve 3 is mounted. The feed bar 1 is arranged so that it can be fitted in the upper recessed portion 4a of the ink collector. The sleeve 3 is provided with a packing portion 3a. A collapsible ink sac 6 is attached to the sleeve 3.

In a fountain pen having a writing head as described above, ink suction into the ink sac 6 is effectively achieved by immersing the hole 5a in ink while said sac is collapsed and then releasing said sac so that it resumes its normal state. During writing, the ink in

the sac 6 is gradually fed to the nib 2 adjacent to the top of the feed bar 1 through the longitudinal slit 1a. Air is fed into the ink sac 6 from outside through the hole 5a in the outer shell 5 and the longitudinal channel defined by the longitudinal slit 1d.

When excessive ink from the sac 6 overflows through the longitudinal slit 1a due to expansion of the air in the sac 6, said ink is sucked into the capillary cells 4d through the longitudinal slit 4c communicating with the longitudinal slit 1a, ink overflow through the nib 2 being thereby effectively avoided. In this case, the air in the capillary cells 4d is immediately exhausted through air gaps 4e above both the flat shoulders 4b of the ink collector 4, through the recessed portion 1b of the feed bar 1, and the air hole 2a of the nib 2.

As will be clearly understood from Figs. 1 and 2, the nib 2 is simply and securely supported because it is stably mounted at both its side edges on the flat shoulders 4b of the ink collector 4 and is rigidly held by the upper surface of the ink feed bar 1, and the inner surface of the outer shell 5.

WHAT WE CLAIM IS:—

1. A fountain pen having a writing head which comprises an outer shell having a hole through which ink can be sucked into the

reservoir and through which air is supplied to the ink reservoir during writing; an ink collector having ink-receiving capillary cells, a longitudinal narrow slit communicating with the capillary cells and with said hole in the outer shell, and a longitudinally recessed portion forming flat shoulders at both its sides; a feed bar having a longitudinal slit for feeding ink to the nib and a longitudinally recessed portion co-operating with the said recessed portion of the ink collector to define a longitudinal channel communicating with the hole in the outer shell; the said ink collector and ink feed bar being assembled with a nib by fitting the feed bar in the said recessed portion of the ink collector, arranging the nib on the said feed bar with side edges of the nib mounted on the said flat shoulders of the ink collector, and holding together said assembled members by insertion in the outer shell.

2. A fountain pen having a writing head substantially as hereinbefore described with reference to the accompanying drawing.

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Chartered Patent Agents,
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London, W.C.1,
Agents for the Applicants.

This drawing is a reproduction of the Original on a reduced scale.

Fig. 1

Fig. 2

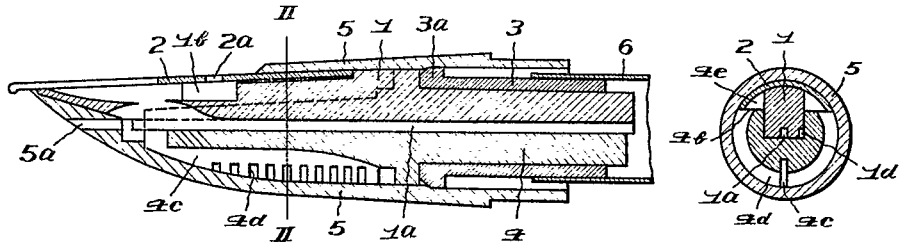


Fig. 3

Fig. 4

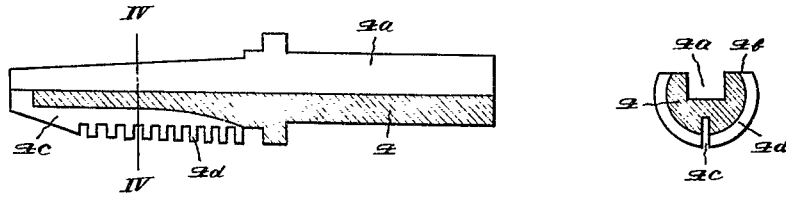


Fig. 5

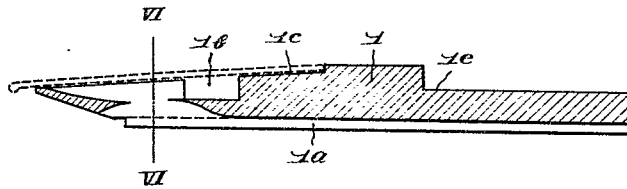


Fig. 6

