

## PATENT SPECIFICATION



Application Date: July 21, 1936. No. 20164/36.

478.651

Complete Specification Left: May 21, 1937.

Complete Specification Accepted: Jan. 21, 1938.

### PROVISIONAL SPECIFICATION

#### Improvements in or relating to Fountain Pens

We, MENTMORE MANUFACTURING CO. LIMITED, a Company registered under the laws of Great Britain, of Tudor Grove, Well Street, Hackney, London, E.9, and

5 WILLIAM FREDERICK JOHNSON, a Subject of the King of Great Britain, of 13, Merrick Square, London, S.E.1, do hereby declare the nature of this invention to be as follows:—

10 This invention concerns improvements in or relating to fountain pens and has for its object to prevent undesirable flow of ink from the ink-container to the nib of the pen when the cap is in position on the said pen, so that the pen can be carried in any position without leaking and the end of the barrel or nib section is prevented from becoming damp.

20 With this object in view, according to the invention, means is provided whereby the ink-passage between the container and nib is positively closed when the cap is placed on the pen.

25 The usual type of feed-bar in a fountain pen is circular at the end which is placed, together with the nib, in the open end of the pen-barrel and is cut away at the other end on the side remote from the nib, that is the underside. The nib is held firmly between the bar and the barrel. Normally in such a feed-bar, an ink-feed chamber or channel extends along the surface beneath the nib from the inner end of the bar to within a short distance of its outer end, the said chamber having fine grooves in its bottom which constitute capillary tubes through which the ink flows to the nib.

40 According to the invention, a feed-bar of this type is provided, in place of the normal ink-feeding arrangement just described, with a feed-channel extending beneath the nib but not to the inner end of the bar, a feed-channel or duct extending outwards from the inner end of the bar but not to the outer end thereof, and a cross-channel or duct communicating between the first-named channel and the second-named channel or duct and adapted for being closed or cut-off by an obturating device when the cap is placed on the pen.

According to a further feature of this [Price 1/-]

invention, the cap of a fountain pen is provided with an obturating device which is adapted for closing a feed-channel or duct in the feed-bar when the cap is placed on the pen. 55

In a preferred embodiment of the invention, a feed-channel with a grooved bottom extends longitudinally below the undersurface of the nib to a level beyond the level at which the feed-bar is cut-away on its diametrically opposite side. In the latter side, a second grooved feed-channel extends longitudinally from the inner end of the feed-bar, where it communicates with the ink-container, to a level short of that at which the first-named channel terminates. These two channels are connected at or near their adjacent ends by a sloping duct penetrating the centre of the feed-bar. This duct may be a relatively fine capillary duct. 60 65 70

A round axial bore is formed centrally in the feed-bar and extends from the outer end of the latter, where it commences as a part-circular groove in the inner face of the cut-away portion of the feed-bar, to a level somewhat beyond its intersection with the sloping duct. A pin of such size as just to enter this axial bore and to extend down the same beyond the aforesaid intersection is mounted in a central axial position on the inside of the end-wall of the cap. This pin is preferably of non-corrodable material, for example stainless steel. 75 80 85

When the cap is screwed or pressed upon the pen, the pin passes down the bore and obturates the sloping duct in the feed bar. It thus positively cuts off the feed-channel beneath the nib from the other feed-channel and from the ink-container with which the latter communicates. As will have been understood, the slope of the connecting duct is upwardly and towards the nib, assuming the nib to be upper-most. Consequently any ink displaced by the entry of the pin will tend to be forced back into the ink-container rather than towards the nib. 90 95 100

Various modifications of the above embodiment may be made without departing from the invention. 105

For example, the feed-channel com-

48 51

municating with the ink container may be replaced by a duct extending through the interior of the feed-bar, for example centrally.

5 The pin and central bore may both be made to taper, so as to provide a large

seating surface and more positive seating.

Dated this 21st day of July, 1936.

For the Applicants,

RAWORTH, MOSS & COOK,  
75, Victoria Street, London, S.W.1,  
Chartered Patent Agents.

## COMPLETE SPECIFICATION

### Improvements in or relating to Fountain Pens

We, MENTMORE MANUFACTURING Co. LIMITED, a Company registered under the laws of Great Britain, of Tudor Grove, Well Street, Hackney, London, E.9, and WILLIAM FREDERICK JOHNSON, a Subject of the King of Great Britain, of 13, Merrick Square, London, S.E.1, 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:—

20 This invention concerns improvements in or relating to fountain pens and has for its object to prevent undesirable flow of ink from the ink-container to the nib of the pen when the cap is in position on the barrel, so that the pen can be carried in any position without leaking and the end of the barrel or nib-section is prevented from becoming damp.

30 It has previously been proposed to provide fountain pens with means whereby the ink-feeding passage between the ink-container and the nib is positively closed when the cap is placed on the pen.

35 The usual type of feed-section or feed-bar in a fountain pen is circular at the end which is placed, together with the nib, in the nib-section or open end of the barrel and is cut away at the other end on the side remote from the nib, that is the underside. The nib is held firmly between the bar and the nib-section. Normally in such a feed-bar, an ink-feed channel extends along the surface beneath the nib from the inner end of the bar to within a short distance of its outer end, the said channel having fine grooves in its bottom which constitute capillaries through which the ink flows to the nib.

40 According to the invention, a feed-bar of this type is provided, in place of the normal ink-feeding arrangement just described, with a feed-channel extending beneath the nib but not to the inner end of the bar, a feed-channel extending outwards from the inner end of the bar but not to the outer end thereof, and a cross-channel or duct communicating between the first-named channel and the second-named channel and adapted for being closed or cut-off by an obturating device,

such as a pin, when the cap is placed on the pen.

According to a further feature of this invention, the cap of a fountain pen is provided with an obturating device which is adapted for closing a feed-channel in the feed-bar when the cap is placed on the pen.

A preferred embodiment of the invention by way of example will now be described with reference to the accompanying drawing, in which:—

Fig. 1 is a longitudinal section of part of a pen with the cap in position,

Fig. 2 a similar view showing the cap unscrewed, and

Fig. 3 a cross-section on the line III—III in Fig. 2 to a larger scale.

In the illustrated embodiment of the invention, a feed-channel 1 with capillary grooves 2 in its bottom extends longitudinally of the feed-bar 3 below the under-surface of the nib 4 to a level beyond the level at which the feed-bar is cut-away on its diametrically opposite side. In the latter side, a second rather wider feed-channel 5 with capillary grooves 6 extends longitudinally from the inner end of the feed-bar, where it communicates with the ink-container formed by the barrel 7, to approximately the level at which the channel 1 terminates. These two channels are connected at or near their adjacent ends by a sloping duct 8 penetrating the centre of the feed-bar. The duct 8 may be a relatively fine capillary duct of circular bore.

A round axial bore 9 wider than the duct 8 is formed centrally in the feed-bar 3 and extends from the outer end of the latter, where it may commence as a particular circular groove in the inner face of the cut-away portion of the said bar, to a level somewhat beyond its intersection with the duct 8. A pin 10 of such size as just to enter this axial bore 9 and to extend down the same beyond the aforesaid intersection is mounted in a central axial position on the inside of the end 11 of the cap 12. The pin 10 is preferably of non-corrodable material, for example stainless steel.

When the cap 12 is screwed on, it may

be, pressed upon the pen, the pin 10 passes down the bore 9 and obturates the sloping duct 8 in the feed-bar 3. It thus positively cuts off the feed-channel 1 beneath the nib 4 from the other feed-channel 5 and from the ink-container 7. As will be seen, the slope of the connecting duct 8 is towards the nib and upwardly, assuming the nib to be uppermost. Consequently any ink displaced by the entry of the pin will tend to be forced back into the ink-container rather than towards the nib.

Whilst the invention is illustrated in its application to a pen in which the barrel serves as the ink-container it can also be applied to pens with sac-containers, for instance lever-pens. Any desired form of nib-section may then be adopted. For instance, a reduced inner end-part of the nib-section 13 over which the sac is secured may extend beyond the end 14 of the feed-bar 3. The length of the latter may be varied to suit the type of pen.

Various modifications may be made without departing from the invention. For instance, the feed-channel 5 communicating with the ink-container may be replaced by a duct extending through the interior of the feed-bar 3, for example centrally. The pin 10 and central bore 9 may both be made to taper, so as to provide a large seating surface and more positive sealing.

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 fountain pen having a feed-bar formed with a feed-channel extending beneath the nib but not to the inner end of the bar, a feed-channel extending outwards from the inner end of the bar but not to the outer end thereof, and a cross-channel or duct communicating between the first-named channel and the second-named channel and adapted for being closed or cut-off by an obturating device, such as a pin, when the cap is placed on the pen.

2. A fountain pen as claimed in claim 1, wherein the cross-channel or duct slopes upwardly and towards the nib.

3. A fountain pen as claimed in claim 1 or 2, wherein a round axial bore formed centrally in the feed-bar extends from the outer end thereof to and preferably beyond the point of intersection with the cross-channel or duct.

4. A cap for a fountain pen as claimed in claim 1, 2 or 3, and provided with an obturating device which is adapted for closing a feed-channel in the feed-bar when the cap is placed on the pen.

5. A cap as claimed in claim 4, wherein the obturating means comprises a pin mounted inside the cap.

6. The fountain pen as described with reference to the accompanying drawing.

Dated this 21st day of May, 1937.

For the Applicants,  
 RAWORTH, MOSS & COOK,  
 75, Victoria Street, London, S.W.1,  
 Chartered Patent Agents.

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

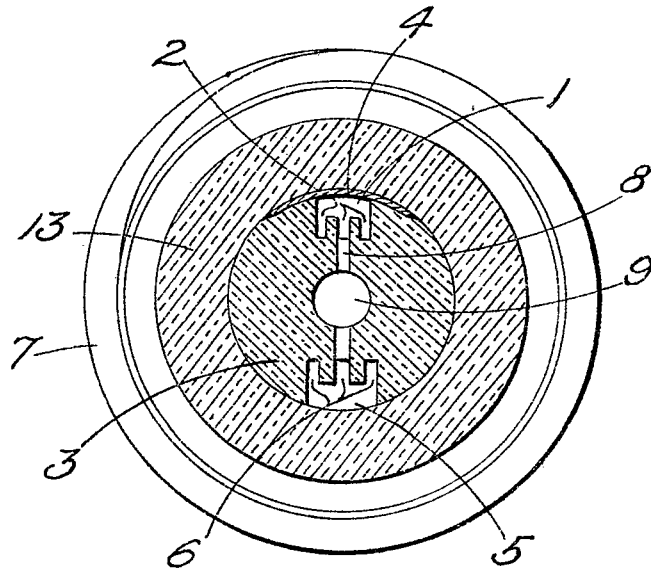
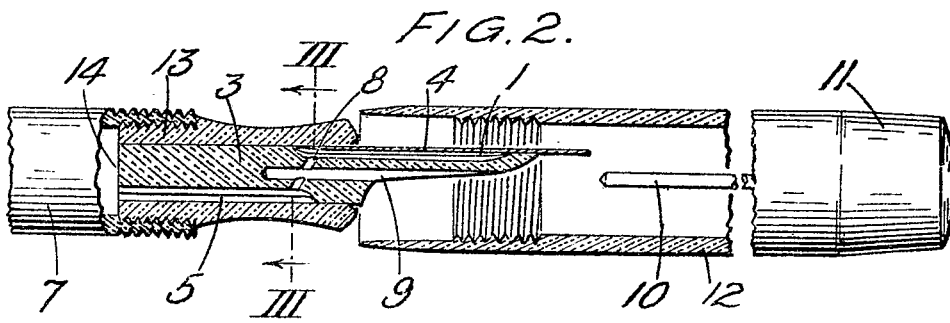
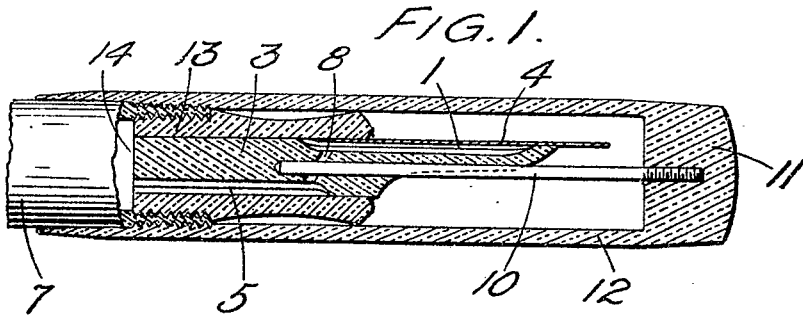


FIG. 3.