

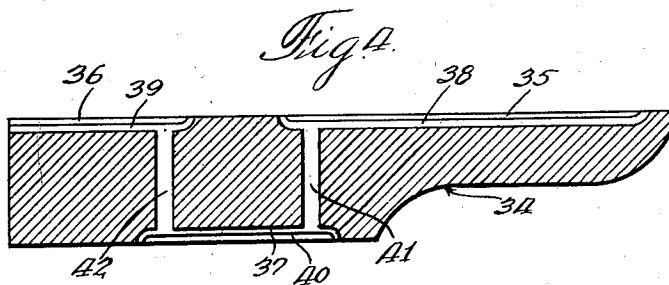
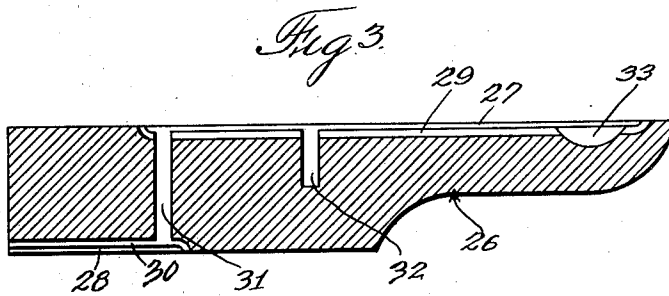
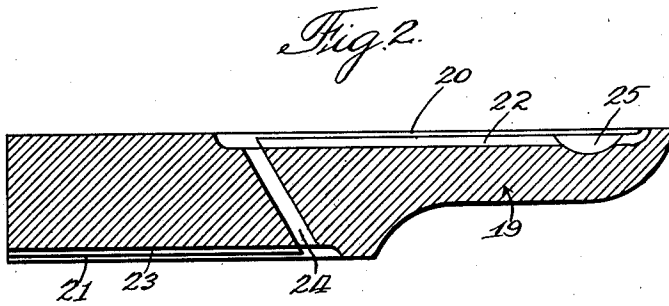
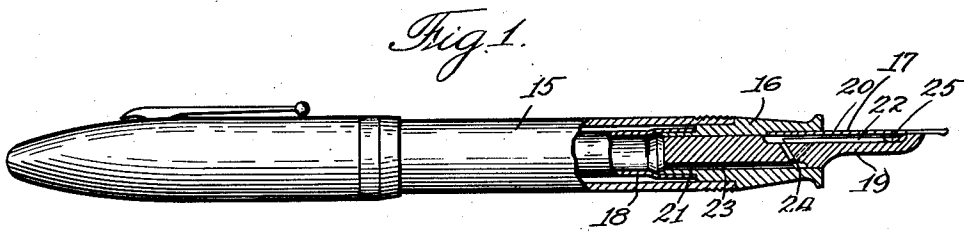
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FOUNTAIN PEN

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# UNITED STATES PATENT OFFICE

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## FOUNTAIN PEN

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3 Claims. (Cl. 120—50)

This invention relates to a fountain pen and has special reference to the feed bar of a fountain pen located between the reservoir or barrel and the pen nib thereof to insure the proper flow of writing fluid and at the same time prevent the writing fluid from flooding or feeding so freely as to cause blots, smears, and the like, on the writing surface.

More particularly, this invention relates to a feed bar for conducting writing fluid from the barrel of the fountain pen to the nib thereof comprising an elongated body having a channel extending longitudinally over a portion of the peripheral surface thereof, the body also having a channel extending longitudinally over a portion of the opposed peripheral surface which channel communicates with the opposed channel through the medium of a passageway extending through the body.

While in fountain pens heretofore in use, the feed bars have been so constructed and arranged as to permit a desired flow during normal periods of use in writing, there are occasions when a slight expansion of air or a jar, or some such occurrence, will cause an abnormal flow in a device which is otherwise perfect in operation. Difficulty has always been experienced in the sackless type of fountain pen, particularly when the reservoir is partly empty since the heat of the hand in writing, or of the body in carrying, expands the air. The present invention contemplates the provision of a substantial quantity of ink adjacent the pen nib available for immediate flow to the writing surface, the flow being regulated to prevent flooding by the particular arrangement of the channels on opposed peripheral surfaces of the feed bar which communicate with each other through the passage extending through the feed bar.

It is one of the objects of this invention to provide a fountain pen having a feed bar of the type indicated above in which, under all conditions of use, the flow of ink is desirably regulated and a supply of ink is always immediately available to the pen nib in writing.

Other objects and advantages will hereinafter be more particularly pointed out, and for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description when taken together with the accompanying drawing, in which latter:

Figure 1 is a side elevational view partially in section of a fountain pen construction embodying one form of this invention;

Fig. 2 is a central longitudinal sectional view of the feed bar employed in Fig. 1;

Fig. 3 is a view similar to Fig. 2 showing a modified form of feed bar embodying this invention; and

Fig. 4 is a view similar to Fig. 2 of still another modified form of feed bar.

Referring now to the drawing and more particularly to Figs. 1 and 2 thereof, the device of this invention is illustrated as comprising a barrel 15 having an open end for receiving a feed section 16, the latter supporting at one end thereof a pen nib 17 and at the other end thereof an ink sack 18. The barrel 15 and feed section 16 are preferably formed of a composition material, rubber, or the like, as is usual in present day fountain pen construction.

The feed section 16 is preferably formed of rubber and is provided with a bore for receiving in forced fit relation therein a feed bar 19. The feed bar is likewise preferably formed of rubber and has a cylindrical portion at the rear end thereof for sealed engagement within the bore of the feed section, a portion of the feed bar extending forwardly beyond the end of the feed section in the usual manner and being of somewhat semi-circular cross section. In the present embodiment the feed bar 19 is provided with a channel 20 extending longitudinally over a portion of the peripheral surface thereof, there being a channel 21 extending longitudinally over a portion of the opposed peripheral surface. Channels 20 and 21 are preferably provided with fissures 22 and 23, respectively, extending in the same direction as the channels and below the base thereof. The channel 21 and fissures 23 communicate with the reservoir for the writing fluid in the fountain pen holder at one end of the feed bar and extend forwardly to communicate with a passageway 24 which extends through the elongated body of the feed bar 19 to communicate with the channel 20 and fissures 22 on a portion of the opposed peripheral surface.

The drawing in full lines illustrates the passage 24 as extending obliquely in one direction, although as illustrated in dotted lines, the passage may, of course, extend obliquely in a forward direction from the channel 21. The writing fluid from the sack 18 or other reservoir holding the writing fluid passes down the fissures 23 of the channel 21 to the passageway 24 where it is passed in a direction of an opposed portion of the peripheral surface to the channel 20 and by capillary attraction through the fissures 22 to the underneath side of the pen nib 17. A slight

depression 25 to extend to a greater depth than the fissures 22 may be provided within the channel 20 at a forward portion thereof substantially in alignment with the heart pierce of the pen nib.

Referring now more particularly to Fig. 3, a feed bar 26 similar to the feed bar 19 of Fig. 2 is provided with a channel 27 extending longitudinally over a portion of the peripheral surface thereof, the feed bar having a channel 28 extending longitudinally over a portion of an opposed peripheral surface. Each of the channels 27 and 28 is preferably provided with fissures 29 and 30, respectively, extending in the same direction as the channels and below the levels thereof. The channels 27 and 28, together with their fissures 29 and 30, communicate with each other through a passageway 31 which extends through the body of the feed bar at substantially right angles to the channels.

The channel 27 is provided with a reservoir 32 intermediate the length thereof, the reservoir being substantially deeper than the fissures and intersecting the fissures. The reservoir is substantially the same width as the channel and the fissures are intersected thereby. A second reservoir 33 may, if desired, be provided at the forward end and within the channel 27, the reservoir extending below the level of the fissures and being of substantially the same width as the channel. Such a reservoir 33 is ordinarily provided in a feed bar as used in a desk fountain pen.

Referring now more particularly to Fig. 4, a feed bar 34, similar to the feed bars of the previous embodiment, is provided with a channel 35 extending longitudinally over a forward portion of the peripheral surface thereof, a second channel 36 extending in the same direction over a rear portion of the peripheral surface of the feed bar. These channels are longitudinally spaced and lie substantially in a common plane. Another channel 37 is disposed over a portion of an opposed peripheral surface and extends longitudinally thereof in an opposed relation with the spaced portion between the channels 35 and 36.

All of the channels 35, 36 and 37 are preferably provided with fissures 38, 39 and 40, respectively, which extend in the same direction as the channels and lie below the surface thereof. One end of the channel 37 is connected to one end of the channel 35 through a passageway 41 which extends through the body of the feed bar. This passageway 41 is shown in full lines at substantially right angles to the channels, although the dotted lines 41<sup>a</sup> and 41<sup>b</sup> show oblique positions of the passageway which may be desirable in some instances. The other end of the channel 37 is connected by the passageway 42 to the inner end of the channel 36, the other end of the channel 36 communicating with the barrel of the pen.

The path of the writing fluid from the barrel of the fountain pen to the pen nib is apparent,

the writing fluid passing by capillary attraction through the fissures 39 to the passageway 42 where the writing fluid is directed to the channel 37 and by capillary attraction through the fissures 40 to the other passageway 41 and thence to be carried by fissures 38 to the underneath side of the pen nib.

While several embodiments of this invention are herein shown and described, it is, of course, to be understood that various modifications thereof will be apparent to those skilled in the art without departing from the spirit and scope of this invention and therefore the same is to be limited only by the prior art and the scope of the appended claims.

I claim:

1. A feed bar for fountain pens comprising an elongated body having longitudinally spaced and longitudinally extending fluid channels of capillary dimensions over a portion of the periphery of said body in substantially a common plane, said body also having a fluid channel of capillary dimensions extending longitudinally over a portion of an opposed peripheral surface, and separate passageways of greater than capillary dimensions through said body communicating between said spaced fluid channels and said opposed fluid channel.

2. A feed bar for conducting writing fluid from the barrel of a fountain pen to the nib thereof comprising an elongated body having a fluid channel of capillary dimensions extending longitudinally over a portion of the peripheral surface of said body adjacent said pen nib, said body having another fluid channel of capillary dimensions extending in the same direction and substantially in a common plane therewith but spaced longitudinally therefrom for communication with the fountain pen barrel, said body also having a fluid channel of capillary dimensions extending longitudinally over a portion of an opposed peripheral surface, and separate passageways of greater than capillary dimensions through said body communicating between said spaced fluid channels and said opposed fluid channel.

3. A feed bar for conducting writing fluid from the barrel of a fountain pen to the nib thereof comprising an elongated body having a plurality of fissures extending longitudinally over a forward portion of the peripheral surface of said body adjacent said pen nib, a reservoir of greater than capillary dimensions in said body intersecting at least a portion of said fissures adjacent said pen nib and being of substantially greater depth than said fissures, said body also having a plurality of fissures on a portion of an opposed peripheral surface communicating with the fountain pen barrel, and a passageway of greater than capillary dimensions through said body in the rear of said reservoir communicating between opposed fissures.

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