

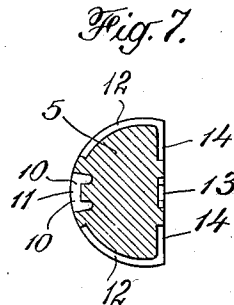
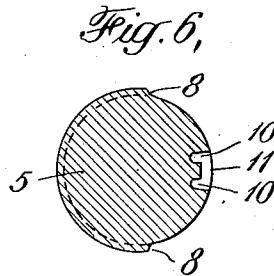
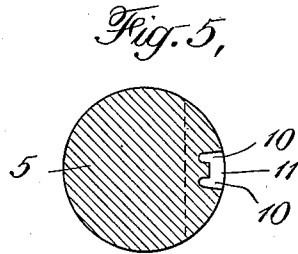
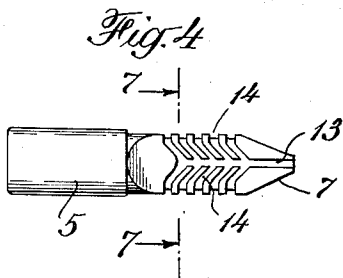
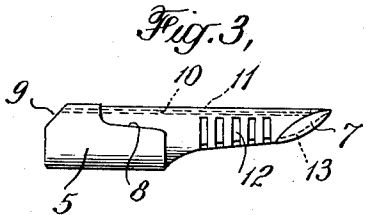
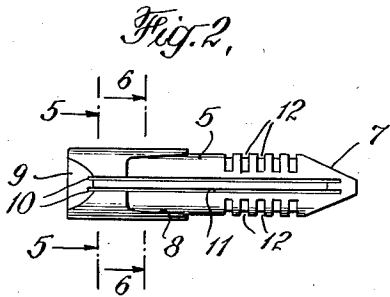
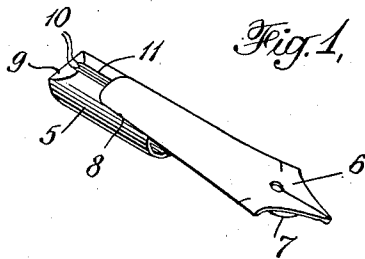
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FEED FOR FOUNTAIN PENS

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FEED FOR FOUNTAIN PENS

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5 Claims. (Cl. 120—50)

This invention relates to fountain pens and particularly to an improved feed device which is designed to avoid the difficulty arising from excessive flow of ink through the feed.

Fountain pens comprise an ink reservoir or barrel, a pen nib and a feed adapted to permit the regulated flow of ink to the nib when the pen is in use. A cap is provided to cover the pen nib when it is not in use. With the common types of feed, such pens have a tendency to flood because of variations of temperature, pressure or other causes. The excessive flow of ink often results in the formation of drops of ink at the end of the nib, or it may overflow into the cap when the latter is in place. Such flooding is a frequent source of annoyance to pen users.

An attempt has been made heretofore to avoid this difficulty by providing grooves in the surface of the feed facing the nib and adjacent the feed groove through which the ink flows from the receiver. Such grooves are intended to catch and hold any surplus ink which may be delivered through the feed groove. This expedient, while helpful, is not entirely satisfactory and does not adequately solve the problem of flooding.

It is the object of the present invention to provide an improved feed for fountain pens which will successfully retain excess ink, and thus avoid the difficulty mentioned.

A further object of the invention is the provision of a feed which will absorb excess ink flow and deliver such excess to the pen nib when the pen is in use.

Other objects and advantages of the invention will be apparent as it is better understood by reference to the following specification and the accompanying drawing, in which

Fig. 1 is a view in perspective of the feed with the nib assembled therewith.

Fig. 2 is a plan view of the upper side or nib seat of the feed;

Fig. 3 is a side elevation of the feed;

Fig. 4 is a plan view of the under side of the feed;

Fig. 5 is a section on the line 5—5 of Fig. 2;

Fig. 6 is a section on the line 6—6 of Fig. 2; and

Fig. 7 is a section on the line 7—7 of Fig. 4.

Referring to the drawing, the feed 5 is assembled with the nib 6 in the manner indicated in Fig. 1, for the purpose of supplying ink from the reservoir (not shown) to the pen nib when the pen is in use. Such an assembly is common in fountain pens and forms no part of the present

invention, which relates particularly to improvements in the feed.

The feed 5 may be made of any suitable material, as for example hard rubber, though preferably it is molded from a suitable plastic material of which numerous types are available. By molding, the feed may be produced at a relatively low cost, since the cost of milling or otherwise cutting the feed to the required form is avoided.

The feed 5 is generally cylindrical in form, having a tapered forward end 7 which is adapted to support the slitted point of the nib 6. The other end of the feed is adapted to closely fit the opening in the barrel (not shown). The feed is provided with a recess 8 forming a seat for the nib 6, the recess being equal in depth to the thickness of the nib so that it completes the circular cross-section of the feed when the latter is inserted in the barrel opening to afford a tight fit and to prevent leakage.

The end of the feed 5 is chamfered at 9 to facilitate entrance of the ink into grooves 10 which extend nearly to the opposite end of the feed but stop short of the end. The grooves 10 merge into a common groove 11 which together with them permits the flow of ink to the nib 6 when the pen is in use.

On the upper or nib seat face of the feed 5 a plurality of grooves 12 are formed circumferentially. The grooves 12 do not merge with the feed groove 11 but are capable of picking up surplus ink which may overflow from the feed groove 11 beneath the under surface of the pen nib. Such grooves have been utilized heretofore in fountain pen feeds.

The under side of the feed is provided with a longitudinal groove 13 terminating with an open end which allows ink to flow to the nib 6 when the pen is in use. The groove 13 merges into a plurality of forwardly-converging, chevron grooves 14 on the under side of the feed 5 which in turn merge respectively into the grooves 12 on the upper side of the feed. Any surplus ink overflowing into the grooves 12 passes into the chevron grooves 14 which, being of a substantially capillary dimension, will hold the ink and prevent it from dropping from the nib when the pen is in writing position or otherwise overflowing into the cap when the latter is in use. The surplus ink collects also in the longitudinal groove 13. When the pen is in writing position and in use, such surplus ink will pass through the groove 13 to the nib and will thus be utilized. If, on the other hand, the pen is not used for a considerable period, the surplus ink will tend to evaporate,

leaving the grooves 13 and 14 free to accommodate any fresh surplus which may be forced out of the barrel when the pen is again used.

The grooves 13 and 14 afford, as indicated, an auxiliary reservoir for surplus ink of sufficient capacity to retain any surplus flow caused by conditions which arise in the normal use of fountain pens. Owing to the form and arrangement of the grooves 13 and 14, the surplus ink will be retained in the grooves. It is not necessary, therefore, to wipe or shake off this surplus ink, since it will flow readily to the pen nib and will be utilized for writing in the normal operation of the pen.

The invention provides, therefore, through the use of a series of angulated channels or grooves of chevron-like form, on the under face of the feed, a means for retaining surplus ink which may flow through the feed channel 11. The direction of angulation is such that the excess ink tends to be pulled upward by capillary action when the pen is in writing position. The longitudinal groove 13 affords means for causing the surplus ink to flow directly to the pen nib. Thus in normal operation any flooding of the ink through the feed channel 11 will result merely in filling the grooves 13 and 14, and the ink in those grooves will be held until it is drawn off and used in the writing operation.

Various changes may be made in the details of form and construction of the feed without departing from the invention or sacrificing the advantages thereof.

I claim:

1. In a feed for fountain pens comprising a body of substantially cylindrical form at one end and semi-cylindrical at the other, tapering at the latter end, and having a feed groove extending along the upper face, the improvement comprising a longitudinal groove on the under side and lateral grooves angularly disposed with respect to the longitudinal groove in opposite directions therefrom toward the cylindrical end and communicating therewith, adapted to receive and retain surplus ink flowing through the feed groove.

2. A feed for fountain pens having a feed groove extending longitudinally thereof along its upper face and a groove extending longitudinally thereof along its under face, said feed also having a series of forwardly-converging grooves connecting with the longitudinal groove in the under face.

3. A feed for fountain pens having a feed groove extending longitudinally thereof along its upper face and a groove extending longitudinally thereof along its under face substantially to the forward end thereof, said feed also having a series of forwardly-converging grooves connecting with the longitudinal groove in the under face.

4. A feed for fountain pens having a feed groove extending longitudinally thereof along its upper face and a groove extending longitudinally thereof along its under face substantially to the forward end thereof, said feed also having a series of transversely extending grooves at each side of the longitudinal groove in its upper face extending from points adjacent said longitudinal groove to the respective sides of the feed, said feed further having a series of forwardly-converging grooves connecting with the longitudinal groove in the under face.

5. A feed for fountain pens having a feed groove extending longitudinally thereof along its upper face and a groove extending longitudinally thereof along its under face to the forward end thereof, said feed also having a series of transversely extending grooves at each side of the longitudinal groove in its upper face extending from points adjacent said longitudinal groove to the respective sides of the feed, said transversely extending grooves being normal to the longitudinal groove in the upper face of the feed, said feed further having a series of forwardly-converging grooves connecting at their forward ends, with the longitudinal groove in the upper face and, at their rear ends, with said transversely extending grooves.

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