Dec. 14, 1948. A. WINTER 2,455,964

PEN

Filed Sept. 22, 1944

Fig.1.

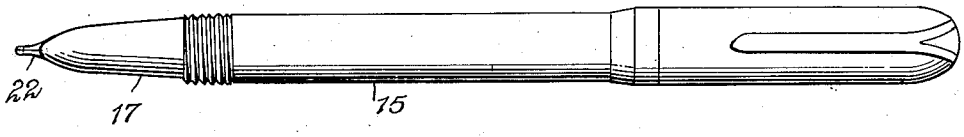


Fig.2

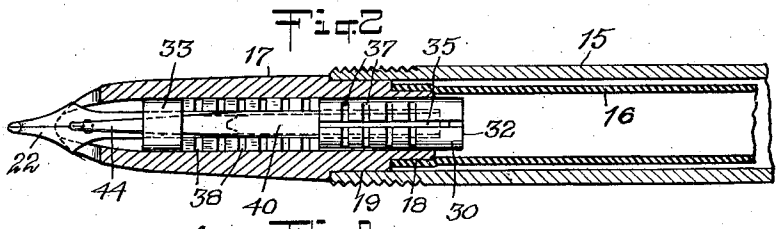


Fig.4.

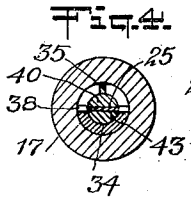


Fig.3.

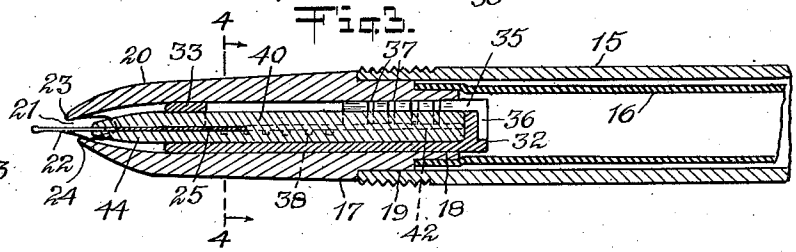


Fig.5.

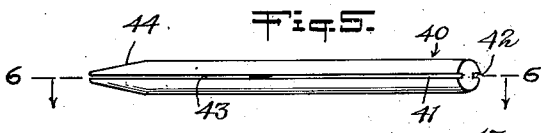


Fig.7.

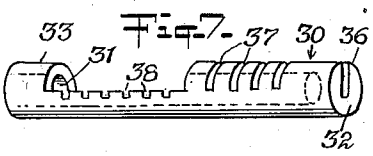


Fig.10.

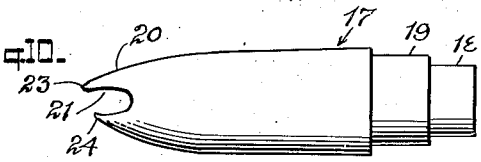


Fig.6.

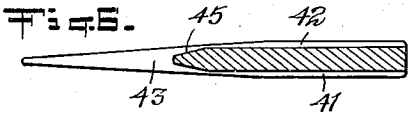


Fig.8.

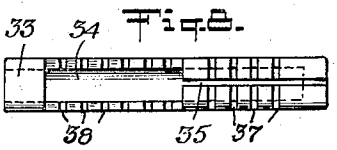


Fig.9.

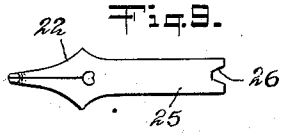
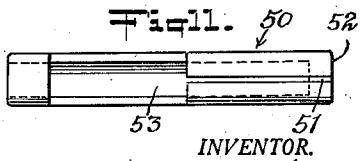


Fig.11.



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Arthur Winter, Weehawken, N. J.

Application September 22, 1944, Serial No. 555,243

9 Claims. (Cl. 120—50)

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This invention relates to fountain pens.

An object of the invention is to provide a pen having an improved feed mechanism so that the flow of ink from the reservoir to the pen point is controlled at all times.

A further object is to provide a feed mechanism in which allowances are made for varying air pressure so that the pen will not leak at lower air pressures.

A still further object is to provide a pen in which all of the feed mechanism is protected by the barrel and where the greater portion of the point is covered to protect it from damage.

A still further object is to provide a pen in which a metal feed may be used. The metal feed has certain advantages insomuch as it can be made in finer and sharper lines, eliminates breakage, and gives a much more even flow of ink. While my construction makes possible the use of a metal feed my invention is not limited to such material and a plastic feed may be used therein.

In the accompanying drawings—

Figure 1 is a plan view of a pen embodying my invention;

Fig. 2 is a cross sectional view taken from the top of the pen showing the feed in place;

Fig. 3 is a cross sectional view taken at right angles to the view of Fig. 2;

Fig. 4 is a cross sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a detailed view of the inner feed;

Fig. 6 is a cross sectional view taken on the line 6—6 of Fig. 5;

Fig. 7 is a perspective view of the outer feed;

Fig. 8 is a plan view of the outer feed;

Fig. 9 is a plan view of a pen point designed to be used with my improved feed;

Fig. 10 is a view of the pen cover; and

Fig. 11 is a modified form of the outer feed.

My pen is provided with a conventional barrel 15 and feed sack 16 adapted to engage cover section 17. The cover section 17 has a reduced portion 18 to receive the sack and another reduced portion 19 to engage the inner circumference of the barrel. This may be threaded, if desired, or may be frictionally engaged. The cover 17 is tapered and at the forward end 20 has an opening 21 to allow the passage of the nib 22. The top 23 extends slightly beyond the bottom 24 so that a greater portion of the top of the pen nib is covered than at the bottom portion.

The cover 17 is adapted to receive and frictionally hold the outer feed 30 which is formed with a bore 31 extending from the front thereof to the end 32. A portion of th outer feed is cut away

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to form a ring 33 and an open section 34. The rear portion of the feed is grooved at 35 with a longitudinal groove extending into the end 32 at 36. Lateral grooves 37 are provided as ink storage spaces as are smaller grooves 38 in the open section. This outer feed may be made of plastic, hard rubber, or any other suitable material.

The feed plug 40 is preferably made of a metal which will not be corroded by ink, such as stainless steel, although it may also be made, if desired, of hard rubber or plastic. The plug is formed with two longitudinal grooves 41 and 42 merging into a slot 43 at the forward end 44 of the said plug. Slot 43 is adapted to receive shank 25 of the pen 22. The rear of the shank 25 is cut away at 26 to register with the portion 45 of the plug so as to firmly fix the position of the pen nib within the said plug. When the said plug is made of metal the end 44 may more readily be constructed to frictionally hold the pen firmly in place and to give it greater support than is possible with rubber or other plastic.

In the form of outer feed shown in Figure 11 the outer feed 50 is formed in much the same manner with the slot 51 extending from the rear 52 to the open portion 53. The grooves 37 and 38 are eliminated. When the pen is assembled plug 40 is inserted into the outer feed 30 with the grooves 41 and 42 at right angles to the groove 35, as shown in Figure 4. The assembled feed is then fed into the cover with the slot 43 in the same direction as the opening 21 and nib is inserted within the slot 43. The balance of the pen is then put together in the usual manner.

In operation the outer feed not only tends to position the inner feed and the pen nib but acts to convey ink to the nib. The outer end 33 of the hollow outer feed 30 contacts the edge of the nib 22, as shown particularly in Fig. 2. This steadies the pen nib against sidewise motion and also holds the slotted end of the inner feed snugly against the pen nib. The cutout or open section 34 acts as a safety chamber to take care of any excess ink which may be forced through the rear part of the outer feed by means of pressure in the ink chamber or sack, thus preventing leakage due to varying air pressures.

I claim:

1. In a fountain pen a feed including an outside feed having a bore therein, a portion of said outside feed being cut away to define an open section into said bore. a slot extending into said bore and running from the open section to the rear of the outside feed, a plurality of grooves communicating with said slot, a feed plug posi-

tioned within said outside feed, said feed plug having a pair of grooves running longitudinally thereof and merging short of the forward end of the feed plug to form a slot with a pen nib positioned in said slot.

2. A fountain pen feed including an outer feed having a bore therein, a longitudinal slot in said outer feed extending into said bore and running from the rear thereof, a feed plug positioned within said outer feed, said feed plug having a pair of grooves running longitudinally thereof and merging short of the forward end of said feed plug to form a slot, a pen positioned in said slot, and an outside cap entirely covering said feed mechanism, and having an aperture for the projection of the pen nib therethrough.

3. In a fountain pen an inner and an outer feed, said inner feed comprising a solid member having a slit at the front end thereof to engage the pen point, the outer feed comprising a tubular member adapted to receive and cover the major portion of the inner feed, said outer feed having a slot extending through one wall thereof to said inner feed and running longitudinally thereof.

4. In a fountain pen an inner and an outer feed, said inner feed comprising a solid member having a slit at the front end thereof to engage the pen point, the outer feed comprising a tubular member receiving and covering the major portion of the inner feed, said outer feed having a slot extending through one wall thereof communicating with said inner feed.

5. In a fountain pen an inner and an outer feed, said inner feed comprising a solid member having a slit at the front end thereof to engage the pen point, the outer feed comprising a tubular member receiving and covering the major portion of the inner feed, said outer feed having a slot extending through the rear thereof to allow the passage of ink to said inner feed.

6. In a fountain pen an inner and an outer feed, said inner feed comprising a solid member having a slit at the front end thereof to engage a pen point, the outer feed comprising a tubular member adapted to receive the major portion of the inner feed, said outer feed having a portion thereof cut away to expose said inner feed in order to accommodate excess ink.

7. In a fountain pen a tubular outer feed, an inner feed, said inner feed being enclosed for the greater portion of its length within said outer feed, said inner feed having a slot in its exposed end to receive and position a pen point and a pair of grooves running longitudinally of said inner feed and merging in said slot.

8. In a fountain pen an outer feed and an inner feed, said inner feed comprising a solid member having a pair of grooves running longitudinally thereof and merging short of the forward end of the inner feed to form a slot, a pen nib positioned in said slot, said outer feed comprising a tubular member enclosing the greater portion of the inner feed and the back of said pen nib to position said pen nib in writing position.

9. A fountain pen, a tubular outer feed, an inner feed having a pair of longitudinal grooves at either side thereof merging in a slot at one end of said feed, a pen positioned in said feed, said inner feed being enclosed within said tubular outer feed with the outer feed engaging the side edges of said pen, a cap entirely enclosing said feeds with an aperture at the forward end of said cap through which the pen point projects, and a recessed portion on the back of said cap engaging an ink sack.

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