

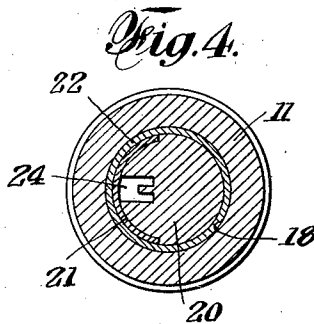
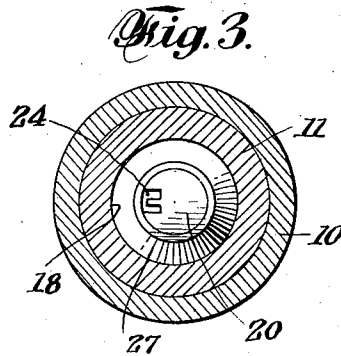
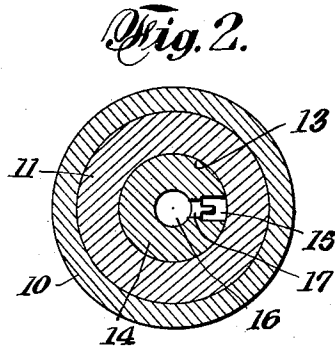
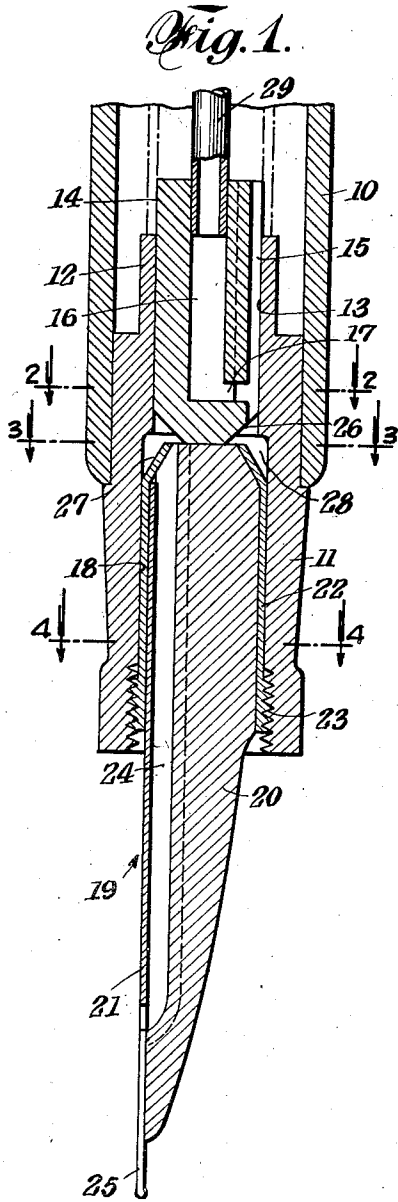
Aug. 27, 1935.

H. KRAUSE

2,012,722

FOUNTAIN PEN

Filed March 10, 1934



INVENTOR
Henry Krause
BY
Ruben S. Hind.
ATTORNEY

UNITED STATES PATENT OFFICE

2,012,722

FOUNTAIN PEN

Henry Krause, Little Neck, N. Y.

Application March 10, 1934, Serial No. 714,907

6 Claims. (Cl. 120—52)

The present invention relates to fountain pens and more particularly to the ink feed portions thereof.

In the modern fountain pen provisions are made to interchange the pen points and feeds as a unit to suit the writing characteristics of different people.

Thus the seller of fountain pens at retail requires but a comparatively small number of fountain pens on hand for sale, together with a number of pen point sections of different shapes and writing characteristics which can be readily inserted in the pens when a different type of point is desired by the purchaser.

Heretofore this interchange was made by providing a removable pen point unit which comprised not only the pen point but the entire feed portion of the pen as a unit. This removable section of the pen usually comprised a rather complicated and somewhat expensive structure, and, if of a length sufficient to carry the feed into the large ink chamber of the pen, is clumsy in appearance and difficult of adjustment and if shortened, it does not carry the feed up to the large main ink chamber in the barrel of the pen, and efficiency is thereby, to a large degree, lost.

Further than this, the long feed unit inclusive of the pen point is a comparatively expensive part of the pen.

Heretofore, ink was fed, by gravity, to the pen point through a channel in the feed member and, as is well understood, air would seek its way up this channel through the ink therein and frequently would form an air bubble at the entrance to the channel. When this occurred the flow of ink would stop until the bubble would break or be broken by shaking the pen violently. When this air bubble burst, a flood of ink would rush to the pen point to the discomfiture and distress of the user.

My improvement comprises the use of a short, removable pen unit and feed which may be made of inexpensive, non-corrosive material in combination with a separate auxiliary feed unit designed to carry a proper and uninterrupted flow of ink through the auxiliary feed and through the main feed unit and designed to prevent air bubbles forming and thereby impeding or impairing the flow of ink.

This invention, therefore, has for its major object the provision of a fountain pen feed having feed channels disposed in a manner to prevent the forming of air bubbles.

More specifically, the invention resides in the provision of an auxiliary feed member disposed

between the ink reservoir and the regular ink feed with means therebetween to provide an uninterrupted passage for the ink to the pen point.

A further object is the provision in a fountain pen of a relatively small, inexpensive removable unit containing an inexpensive pen nib which unit may be discarded and replaced with a new one.

A still further object is in the provision, in such a unit, of minute grooves, channels, and holes for the passage of ink and air.

A still further object is the elimination in such a fountain pen, of the necessity of providing a seat in the pen barrel for the interchangeable unit, the plug or auxiliary feed serving as the seat therefor.

A still further object is to better eliminate leakage of fountain pens by adding additional length to the original feed by the auxiliary feed.

These advantageous features are accomplished by the novel and practical construction, combination and arrangement of parts hereinafter disclosed and illustrated in the accompanying drawing, constituting an essential part of the disclosure, and in which:

Fig. 1 is an enlarged broken longitudinal sectional view through a fountain pen constructed in accordance with the invention.

Fig. 2 is a cross-sectional view as taken along the line 2—2 of Fig. 1.

Fig. 3 is a similar view as taken along the line 3—3 of Fig. 1.

Fig. 4 is a similar sectional view as taken along the line 4—4 of Fig. 1.

The pen is provided in the usual manner with a barrel 10 fitted with a head 11. The head 11 may be provided with a reduced portion 12 receptive of the open end of an ink sac shown in broken lines.

The upper portion of the head may be formed with a central bore 13 into which is preferably fitted a cylindrical plug member 14 having one or more vertical peripheral grooves 15, a central hole 16 and one or more passages or ducts 17 therebetween. The plug 14, formed in this manner, constitutes an auxiliary ink feed.

The other portion of the head is provided with a bore 18 into which may be fitted a removable pen unit 19 comprising the regular ink feed member 20, the pen point 21 and a tubular member 22 serving to retain the feed member 20 and pen point 21, in this associated assembly.

The pen unit is shown retained in the head by the threaded engagement between the member 22 and a screw in the head as at 23, but obviously

any other means for removable engagement between the parts, may be employed.

A feed channel 24 is provided in the pen unit to conduct ink to the pen nibs 25.

5 The auxiliary feed member 14 is provided with a tapered end as at 26 and the feed unit 19 is similarly conically shaped at 27 to provide a ring shaped chamber 28 which serves to communicate the channels 15 and 24.

10 This auxiliary feed member may be variously formed to perform the function intended. It may be provided with tapered end and horizontal ink channel or a cutout of any cross sectional shape in the center, but cut in such manner as to always communicate ink to channel 24 regardless of the radial position of the latter, the bottom of the plug or auxiliary feed member having sufficient surface to provide a seat against which the main ink feeding member and pen unit may abut.

20 If an ink sac type of pen is used the passage 16 may be omitted and assuming that such a type of pen is used the ink will flow from the sac through channel 15 to the chamber 28 and thence to the feed 24 from whence it is withdrawn by application of the pen nibs upon a writing surface. As the ink is used, air will find its way up through the channel 24 into the chamber 28 and thence through the channel 15 to the ink sac. The chamber 28, being full of ink, the air will seek its way through the auxiliary feed to the ink sac.

30 When the pen barrel serves as the ink reservoir it is desirable to employ the tube 29. In this instance the flow of ink will be as hitherto described but as the air seeks its way up through the channels the head of liquid on the channel 15 being greater than that on the passage 16, the air will rise also through the tube 29 and so become dispelled above the ink level in the barrel.

35 Where desired, of course, the auxiliary feed may be integrally formed with the regular feed with a groove provided to form the chamber 28.

40 This auxiliary feed unit in sacless pens may be utilized to hold an air tube, and thereby eliminates the necessity of removing the air tube when the pen unit is removed and also avoids the necessity of careful re-adjustment on the replacement of the air tube.

45 It will be readily understood, therefore, that by the employment of a structure having a separate pen point section and an auxiliary feed, the user of the pen may himself repair same by replacing a defective or injured pen merely by removing the old pen point section and inserting a spare pen point section in its place at an expense measured only by the cost of the inexpensive pen point section, the need of a fountain pen mechanic or expert to make adjustments as and when a new pen point or a new feed is supplied to an old type pen, being entirely eliminated.

50 In practice and by reason of the quick and efficient removability and interchangeability of a small and inexpensive pen point unit, it will be possible for artists and draughtsmen to be provided with various sizes of wide nib pen point sections for use in connection with a fountain pen equipped with the auxiliary feed unit herein described.

55 The auxiliary feed may be also used in connection with non-removable pen point sections, thus permitting the use of a short simple feed section containing the pen; the auxiliary feed will thus promote the efficiency of the pen and cause all air coming up through the feed to pass into the large ink chamber without forming air bubbles to interfere with the free flow of ink from

the large ink chamber to the pen point, thus saving expense in manufacture and eliminating the necessity of a long, clumsy, complicated feed unit.

5 While the auxiliary feed has been shown as substantially straight, it may be provided with a shoulder on its lower end to coact with a shoulder in the head 11 which would act as a positive limit stop for the auxiliary unit, and the lower end of this unit would provide a positive stop or seat for the removable pen unit.

10 From the foregoing it will be seen that a simple device for the purpose has been disclosed in the preferred form of its embodiment, but it is not desired to restrict the details to the exact construction shown, it being obvious that changes, not involving the exercise of invention, may be made without departing from the scope of the appended claims.

15 Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a fountain pen having a barrel adapted to serve as an ink reservoir and a bored head inserted into the open end thereof, ink feeding means comprising a main channeled member and an auxiliary channeled member in abutting engagement and horizontal ink feeding channels between the members, said auxiliary member being disposed in the upper portion of said head and between the main channeled member and the ink reservoir, and both members being readily removable and interchangeable.

2. In a fountain pen having a barrel adapted to serve as an ink reservoir and a bored head inserted into the open end thereof, a main ink feeding member having a pen point associated therewith removably carried in the lower portion of the head and an auxiliary ink feeding member loosely carried by the upper portion of said head and against which the main member abuts, said auxiliary feeding member comprising a plug having peripheral channel means for cooperation with the main feeding member.

3. In a fountain pen having a barrel adapted to serve as an ink reservoir and a bored head inserted into the open end thereof, a main ink feeding member having a pen point associated therewith removably carried in the lower portion of the head, said main ink feeding member being tapered at its upper end and an auxiliary ink feeding member carried by the upper portion of said head and in abutting relation thereto and comprising a peripherally channeled plug having a tapered lower end, said tapers forming therebetween a ring shaped chamber the outer wall of which is defined by a portion of the bore of the head member.

4. In a fountain pen having a barrel adapted to serve as an ink reservoir and a bored head inserted into the open end thereof, channeled ink feeding means carried by said head having an intermediate groove constituting a communicating chamber between the lower portion of the feeding means and the upper portion thereof, and a pen point associated with the said lower portion of the feeding means.

5. An ink feed for fountain pens including a removable pen point assembly comprising a pen point, a channeled feed member associated therewith and a casing supporting the pen point and feed member, an auxiliary feed plug supported above the mentioned assembly and with which the said first mentioned feed member is in constant abutment, said plug having peripheral channel means and a grooved chamber formed between

the channel of the first mentioned feed member and the channel of the auxiliary feed member communicating said channels.

6. An ink feed for fountain pens including a
5 removable pen point assembly comprising a pen
point, a channeled feed member associated there-
with and a casing supporting the pen point and
feed member, an auxiliary feed plug supported
above the mentioned assembly and in abutting
10 engagement therewith and having peripheral
channel means and a grooved chamber formed

between the channel of the first mentioned feed
member and the channel of the auxiliary feed
member communicating said channels, the
auxiliary feed member being also provided
5 with a central bore having communication with
the channel means thereof and a tube inserted
in the bore whereby air seeking its way up through
the channels of both feed members will discharge
above the level of the liquid in the main ink
chamber.

HENRY KRAUSE.

10