

Dec. 7, 1937.

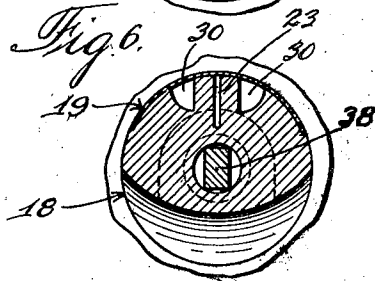
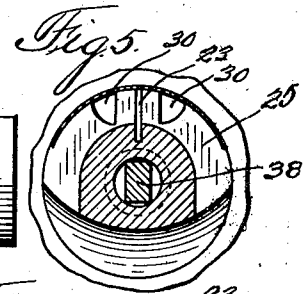
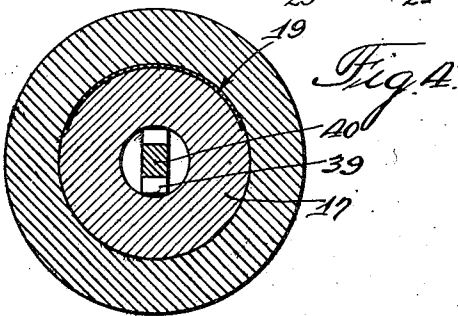
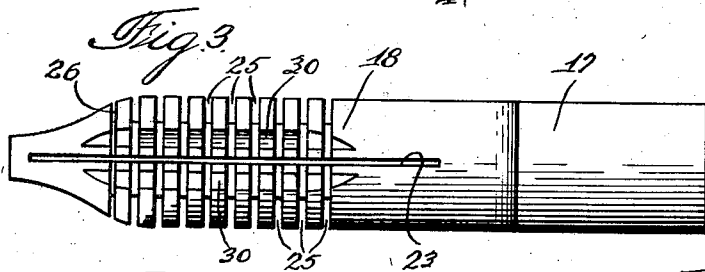
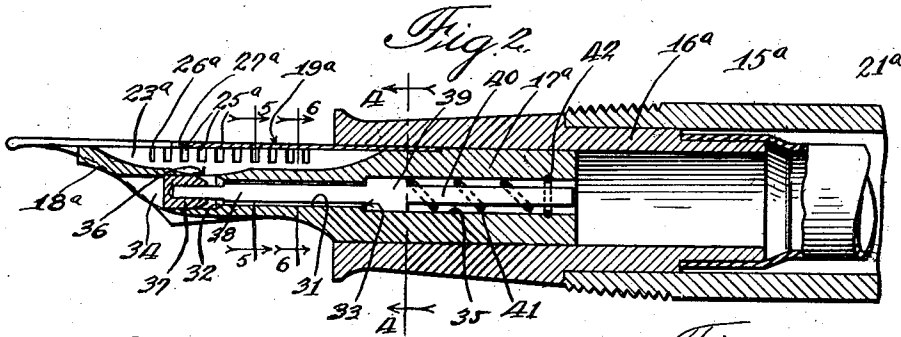
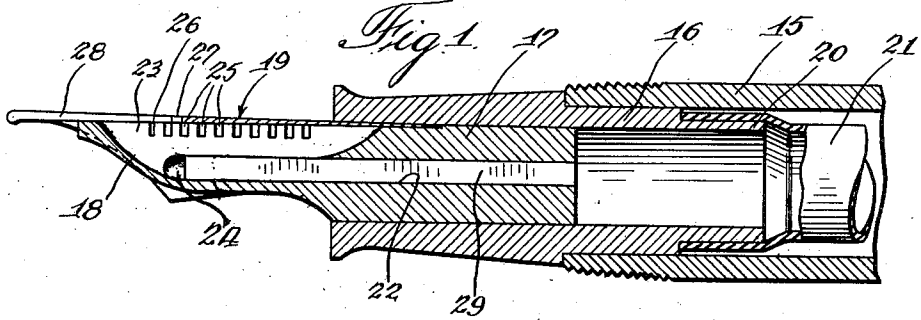
H. S. WRIGHT

2,101,304

FOUNTAIN PEN

Filed June 5, 1936

2 Sheets-Sheet 1



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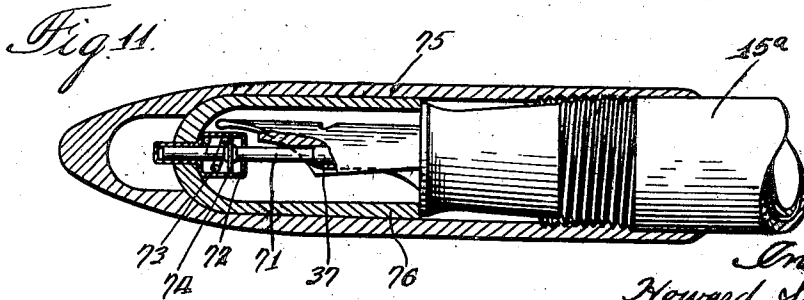
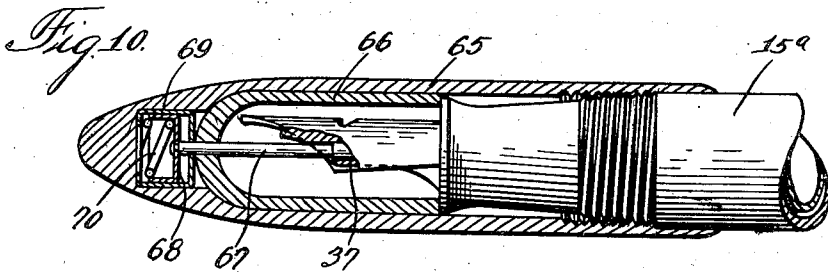
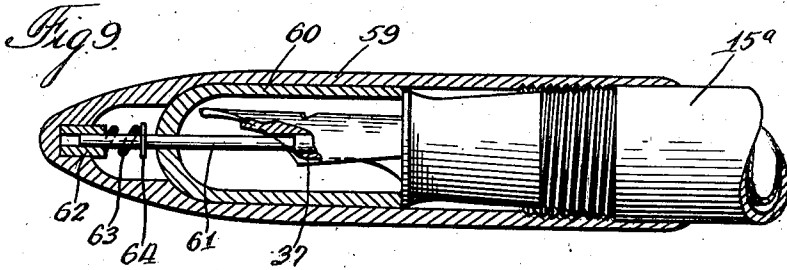
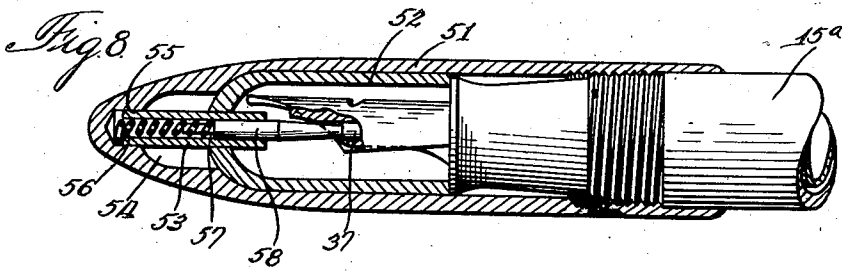
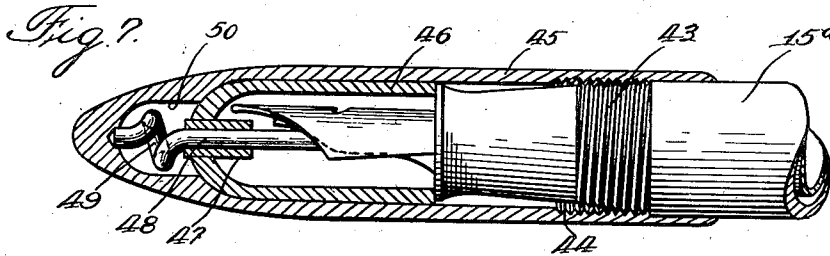
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FOUNTAIN PEN

Filed June 5, 1936

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,101,304

FOUNTAIN PEN

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Iowa, a corporation of Delaware

Application June 5, 1936, Serial No. 83,599

19 Claims. (Cl. 120—50)

This invention relates to a fountain pen and has special reference to a fountain pen having a novel writing fluid feeding mechanism including means for controlling the flow of the writing fluid to the pen nib thereof when the fountain pen is in condition for use and for sealing the writing fluid within the reservoir when the cap is on the writing point end of the barrel and the fountain pen not in use.

More particularly, this invention relates to a fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, the feed bar having an inner longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel and at the other end with a fissure extending over a portion of the nib supporting portion in a direction toward the barrel and communicating with a plurality of spaced transversely extending combs for accommodating writing fluid expansion from the reservoir.

The disposition of the longitudinally extending feed duct internally of the feed bar lends itself to use aside from the usual fluid conducting passage, and although the particular object in the development of the feed bar was the creation of an expansion chamber into which the writing fluid supply in excess of that needed for writing would be accommodated as it was released by the expansion of air in the reservoir, yet it developed that the provision of the internal passage was admirably adapted for the use of a writing fluid flow regulating mechanism as well as permitting the filling of the fountain pen upon immersion of the pen nib but partially over the length thereof and substantially below the end of the feed section.

In developing the type of expansion chamber, which will hereinafter be more fully described, it has been found desirable to maintain a capillary dimension which would both fill and empty the expansion chamber regardless of the position of the fountain pen. Prior to taking a fountain pen in the hand for the purpose of writing, the air within the writing fluid reservoir in the barrel, assuming that the reservoir is not absolutely filled with fluid, is considerably cooler than the temperature of the writer's hand. Should the reservoir contain only one-third of its normal capacity of writing fluid, the heat of the hand creates a considerable expansion of air within the reservoir of the pen to force writing fluid therefrom which is accommodated in the expansion chambers externally of the feed bar, the amount

of expansion being determined by the quantity of air in the reservoir and the temperature thereof.

Should the pen be held in the hand only long enough to fill the expansion chamber and thereafter the pen is laid down or displaced from the hand, the air in the reservoir begins to contract as the pen cools and the writing fluid in the expansion chamber is drawn back into the pen. If the expansion chamber in the feed bar is not controlled by capillary dimensions, it would permit the writing fluid to remain in the expansion chamber and allow air to be drawn into the reservoir. Thus, if the latter condition were permitted to exist and the pen again placed in use, the expansion chamber may be substantially filled with writing fluid and there would be no room therein for the accommodation of further expansion of the writing fluid from the fluid reservoir. Therefore, the present invention contemplates a feed bar based on the fundamental principle that the expansion chamber be emptied either by use in writing or by being drawn back into the reservoir before any passage of air is permitted into the reservoir.

In the present invention the point of inlet or outlet of the writing fluid to or from the nib is substantially below the bottom of the feed section of the barrel, and prior to the time that air is permitted to enter the fluid reservoir to replace the writing fluid that is normally drawn out of the fluid reservoir, all of the writing fluid then in the expansion chambers must be evacuated either to the writing surface or back into the fluid reservoir.

The invention is therefore directed to the provision of an expansion chamber preferably in the form of a plurality of spaced transversely extending combs above the normal inlet to or outlet from the reservoir and longitudinally extending scoops communicating with the combs for accommodating the writing fluid expansion therefrom.

During the time air is passing to the reservoir, so much of the internal passageway is occupied by the air bubble that either an insufficient amount of writing fluid is obtainable for writing operation, or the writing fluid supply is absolutely cut off. For this emergency, a comb of smaller dimension than any of the other comb cuts is disposed below the normal inlet or outlet for the writing fluid so that a sufficient amount of fluid is retained therein to insure full writing operation until a normal supply of fluid from the reservoir is obtained to the pen nib or expansion chamber therefor. Because of the location of this latter comb and its lesser dimension, it holds

a reserve supply of writing fluid during the time that the writing fluid of the expansion chamber is permitted to drain, the latter combs and scoops being of greater dimension.

5 Where the internal longitudinally extending feed duct is provided with a writing fluid flow regulator, the same conditions occur in the expansion chamber, and even though the air in the reservoir cannot force the writing fluid out
10 of the expansion chamber as it contracts when flow is cut off in the passage, neither will it be permitted to draw in more air. Thereafter, when flow is again established, if the air in the reservoir
15 is still in a contracted condition, it will draw the writing fluid from the expansion chamber before it will draw in any more air. Further, because of the fact that the expansion chamber is constructed of capillary dimensions, it will retain
20 any fluid that happens to be in it when the cap is placed on the pen to close the valve or to shut off the passage for the fluid.

It has been mentioned above that the expansion chamber is comprised of transversely extending combs and longitudinally extending
25 scoops communicating therewith, the combs communicating with a fissure extending longitudinally and communicating with the outer end of the internal longitudinally extending feed duct. It is further pointed out that the longitudinally extending scoops should be approximately .010 of
30 an inch less in depth than the bottom of the combs and this feature is considered particularly important. The object of retaining the above dimensions is to retain a capillary dimension in the
35 bottom of the comb cuts which will result in drawing all of the writing fluid from the outer portions of these comb cuts back to the fissure with which the combs are in communication at any time that the writing fluid is removed from
40 the expansion chamber. Failure to provide for this condition may result in the outer portions of the comb cuts remaining full of writing fluid after the fluid in the scoops has been withdrawn, and the center fissure, because of the cohesive
45 force of the writing fluid, is not sufficient to draw it across the flat place in the bottom of the scoop that would be created if the scoop penetrated the feed at the same point or beneath the bottom of the comb cuts.

50 One of the objects of this invention is to provide a fountain pen of the above indicated character in which the feed bar is provided with an expansion chamber disposed above the normal outlet for the flow of the writing fluid to the
55 writing surface.

Another object of this invention is to provide a fountain pen of the character above noted in which the internal feed duct for directing flow
60 of writing fluid to the pen nib is provided with a writing fluid shut-off for regulating the flow of the writing fluid to the pen nib.

It is also an object of this invention to provide a fountain pen of the type above noted in which
65 the cap of the fountain pen is provided with resilient means for overcoming the spring tension of a plunger mechanism disposed in the internal longitudinally extending feed duct for regulating the flow of the writing fluid from the reservoir to
70 the pen nib.

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 to-

gether with the accompanying drawings, in which latter:

Figure 1 is a fragmental central sectional view of a fountain pen employing the novel feed bar embodying the features of this invention;

Fig. 2 is a view similar to Fig. 1 in which the feed bar of Fig. 1 is provided with means for regulating the flow of the writing fluid to the pen nib;

Fig. 3 is a plan elevational view of the feed bar shown in Figs. 1 and 2;

Fig. 4 is an enlarged sectional view taken on the line 4-4 of Fig. 2;

Fig. 5 is an enlarged fragmentary sectional view taken on the line 5-5 of Fig. 2;

Fig. 6 is a view similar to Fig. 5 taken on the line 6-6 of Fig. 2;

Fig. 7 is an elevational view of a fragmentary portion of a fountain pen employing a flow-regulating means showing a cap therefor in section;

Fig. 8 is a view similar to Fig. 7 showing a modified form of resilient arm for acting upon the spring-pressed plunger of the flow-regulating means;

Fig. 9 is a view similar to Fig. 8 showing a further modification of a resilient arm for a cap;

Fig. 10 is a view similar to Fig. 9 showing a still further modified resilient arm construction for a cap; and

Fig. 11 is a view similar to Fig. 10 showing another modified form of resilient arm construction for a cap.

Referring now to the drawings and more particularly to Figs. 1 and 3 thereof, the fountain pen incorporating the features of this invention comprises a barrel 15 having a reduced extension of the feed section 16 engaging the bore of one end thereof, the feed section, in turn, having a shank portion 17 of a feed bar engaging the bore at the outer end of the feed section and extending therebeyond in the usual manner to provide an extending nib supporting portion 18. A pen nib 19 is disposed on the nib supporting surface and extends into the feed section a short distance to be held in position therein between the bore thereof and the nib supporting surface of the feed bar by a frictional fit.

The reduced extension of the feed section 16 is provided with a further reduced extension 20 to accommodate a flexible sack 21, although the invention, as will hereinafter be readily apparent, may be adapted for use on the sackless type pens or those pens in which the barrel proper acts as a reservoir for writing fluid. In this latter event the reduced extension 20 may be omitted.

The feed bar is provided with an internal longitudinally extending feed duct 22 communicating at one end with the reservoir either in the form of the sack 21 or the barrel proper, in the present instance the feed duct terminating near the other end of the feed bar and being enclosed. A central longitudinally extending fissure 23 is cut into the nib supporting surface and communicates with the feed duct 22 through a passage 24 provided at the outer end of the duct 22, the fissure extending inwardly a substantial distance toward the fluid reservoir.

The central longitudinally extending fissure 23 communicates with a plurality of spaced transversely extending combs 25, which combs are preferably of uniform width and depth and are disposed on the nib supporting surface to extend a substantial distance above the passage 24. These combs are for the purpose of accommodating writing fluid expansion from the reservoir.

The feed bar is provided with at least one transversely extending comb 26 which communicates with the fissure 23 and is disposed below the passage 24, the passage 24 being substantially adjacent the heart pierce 27 of the slit pen nib 19. The heart pierce 27, in turn, is at the inner end of the slit 28 in the pen nib 19.

The internal feed duct 22 may preferably be provided with a partition or spreader 29 to divide the passage into capillary ducts or separate air or fluid ducts as the case may be, although it is to be understood that the duct may be provided with other forms of fluid conducting members.

In the form shown, the partition 29, being wider than the fissure 23, prevents the writing fluid in the duct 22 from entering the fissure 23 until the fluid passes the end of the partition into the passage 24. The partition extends into the duct 22 for a substantial distance, terminating just short of the end thereof to provide the passage 24.

The writing fluid in the reservoir 21 is conducted through the internal longitudinally extending feed duct 22 and thence through the passage 24 to the fissure 23 where a normal supply of fluid for writing is supplied to the channel 28 of the pen nib. When the fountain pen is initially picked up from a desk or from the pocket of a user, the temperature within the writing fluid reservoir may normally be around room temperature, more or less, depending upon the place of storage. The heat of the hand will naturally raise the temperature within the sack and create an expansion of the air within the reservoir of the pen so that the amount of writing fluid conducted through the internal feed duct 29 to the fissure 23 may be more than is required for ordinary use in writing. Therefore, the excess of writing fluid is directed by the fissure 23 upwardly and into the laterally extending combs and the communicating longitudinally extending scoops depending upon the amount of writing fluid displaced from the sack.

The excess amount of writing fluid carried in the fissure and in the scoops and combs is fed to the slit or channel 28 of the pen nib as required for writing, and should the fountain pen be used continuously for a substantial period of time, no more writing fluid will be permitted to flow from the reservoir until the expansion chamber provided by the scoops and ducts has been exhausted to a point below the passage 24 and heart pierce 27 since any writing fluid passing out of the reservoir must necessarily be replaced by air. Since the bubble of air necessary to replace the writing fluid in the reservoir takes some time in passing through the duct 22, it is contemplated that a further writing fluid reserve be maintained for the purpose of writing due to the interruption in the flow of writing fluid caused by the bubble arising in the reservoir. This auxiliary supply is carried in the transverse comb 26, the comb being of lesser width than the other comb cuts and also smaller in width than the center fissure 23 to insure its always being full of writing fluid until after the fluid in the combs, scoops and fissures be emptied. This reserve supply of writing fluid held in the comb 26 is fed to the channel and thereafter to the writing surface while the air bubble is traveling from the lower portion of the duct 29 to the reservoir. The provision of this transverse comb at its particular position remedies the defects often occurring in pens that will stop writing for a few words and then start

again, the length of time in which the writing fluid is interrupted being governed by the amount of time required for the air bubble to travel back to the reservoir.

It will be noted that the combs are cut of capillary dimensions and will retain any fluid stored therein until it is actually withdrawn by capillary action. The depth of the combs 25 is approximately .010 of an inch deeper than the bottom of the scoops 30. The object of this dimensional relation is to retain a capillary dimension in the bottom of the comb cuts which will result in drawing all of the writing fluid from the other portions of these cuts back to the center fissure at any time that the writing fluid is removed from the expansion chamber. Were the scoops of the same depth as or deeper than the comb cuts, there would be a possibility that the portions of the comb cuts outwardly beyond the scoops would remain full of writing fluid after the fluid between the scoops and the fissure had been drawn into the center fissure because the cohesive force of the writing fluid may not be sufficiently great to pull it across such flat space in the bottom of the scoop as would be created by such conditions.

From the above description it will be understood that when the heat of the hand in writing is transmitted to the reservoir and the expanding air forces the writing fluid into the expansion chambers provided by the scoops and combs, disuse of the fountain pen thereafter with the hand being removed from the barrel of the fountain pen will permit the reservoir to obtain a normal room temperature, or lower, as the case may be, thus contracting the air in the reservoir, and by reason of the particular construction of the scoops, combs and fissure with the end of the duct 29, will draw the writing fluid, rather than air, back into the reservoir.

The provision of an internal longitudinally extending feed duct in the feed bar to obtain the above use results in a desirable construction for employment of a writing fluid regulating means. Referring now more particularly to Fig. 2, the feed bar of Fig. 1 is changed but slightly to embody a flow regulating mechanism. The barrel 15a of the fountain pen shown therein is provided, as in the aforementioned embodiment, with an open end for receiving a reduced extension 16a of a feed section, the feed section, in turn, receiving the shank portion 17a of the feed bar having an extending nib supporting portion 18a. The nib supporting surface of the portion 18a is provided with a central longitudinally extending fissure 23a having transversely extending combs 25a communicating therewith, a major number of the combs being disposed above the heart pierce 27a of the pen nib 19a and extending over the nib supporting portion. A transversely extending comb 26a in communication with the fissure 23a is provided below the heart pierce 27a of the pen nib and is of a lesser dimension in width than the remaining combs which preferably are of substantially uniform width.

The feed bar 17a is provided with an internal longitudinal passage extending from the outer end of the feed bar to the inner end thereof, the passage having an intermediate portion 31 of reduced diameter forming shoulders 32 and 33 at junctures thereof with enlarged portions 34 and 35, respectively. The fissure 23a communicates with the enlarged portion 34 of the internal passage through a duct 36.

The flow of fluid from the reservoir 21a through the internal passage to the fissure 23a is regulated by a plunger comprising a head 37 preferably formed of hard rubber of a size in cross section to engage in a fluid-tight relation the enlarged portion 34 of the passage for slidable movement therein. The inner portion of the head 37 is preferably tapered to seat on the shoulder 32 to effect a seal of writing fluid through the internal passage when the plunger is in one extreme position. The head is mounted on the end of a shank portion 38 extending through the reduced portion 31 of the internal passage, the shank portion having an enlarged intermediate portion 39 disposed in the enlarged portion 35 of the internal passage for abutting against the shoulder 33 to limit the movement of the head 37 in the other extreme position thereof. The remaining shank portion 40 is reduced from the enlarged intermediate portion 39 of the shank to extend inwardly for centering a compression coil spring 41, one end of the latter being held against displacement in an annular groove 42 of the feed and the other end bearing against the shoulder formed by the enlarged head portion 39.

The shank portion of the plunger is preferably formed of hard rubber although the same may be formed of any rigid material, preferably having writing fluid resisting qualities. The spring 41 normally tends to urge the plunger outwardly so that communication between the internal longitudinally extending passage of the feed bar may be had with the fissure 23a through the duct 36, the head 37 being held in a spaced relation with the seat 32. The shank portion is preferably flat or of substantially rectangular cross section, as shown more particularly in Figs. 4 to 6, inclusive, thereby providing fluid and air ducts on either side thereof.

The passage of fluid from the writing fluid reservoir 21a to the fissure 23a is the same as that previously described and the action of the expansion chambers formed by the combs and scoops is likewise the same. However, when the head 37 is sealed against the shoulder 32 before the air in the reservoir has a chance to contract, the writing fluid in the scoops and combs will not be permitted to be drawn up into the reservoir, but neither will air be permitted to be drawn thereinto. Thereafter, when the cap is again removed, if the air in the reservoir is in a contracted condition, it will draw the writing fluid from the expansion chamber before permitting the entrance of air. When the temperature of the hand again effects an expansion of air in the reservoir after the cap is removed, the same condition will exist as though no regulating means were disposed in the internal longitudinally extending passage, the head 37 merely acting to enclose one end of the longitudinal internal passage.

In order to effect a regulation of the flow from the pen nib when the fountain pen is in condition for use and for sealing the writing fluid within the reservoir when the cap is on the writing point end of the barrel and the fountain pen not in use, a cap is provided with means for operating the spring-pressed plunger. Referring now more particularly to Fig. 7, the barrel 15a of the fountain pen of Fig. 2 is shown as being provided with external threads 43 for receiving in a threaded relation therewith the internally disposed threads 44 of a cap 45.

The cap 45 is provided with an inner sealing

cap 46 against which the end of the feed section of the barrel 15a abuts in order to effect a substantially air-tight seal of the writing point mechanism. The cap 46 is provided with a bushing 47 in the bottom and axially thereof for receiving an arm 48 in a slidable relation therewith. The arm 48 is preferably formed of a spring material and one end thereof is formed into a coil 49 for disposition in a recess 50 in the cap 45 behind the sealing cap 46. The arm 48 extends outwardly beyond the bushing 47 to engage the head 37 of the plunger, the thickness of the arm 48 being substantially the same or smaller than the enlarged opening 34 and bearing against the end of the head 37 to move it against the seat 32 to prevent flow of writing fluid through the internal passage when the cap is in place on the end of the barrel.

The coil 49 provides a resilient mounting for the arm 48 which is sufficient to overcome the tension of the compression spring 41. Since there is a possibility of play due to wear and clearance, the arm 48 is thus resiliently mounted to accommodate such play and effect a substantially air-tight seal at the shoulder between the seal cap 46 and the end of the fountain pen. Thus, should the head 37 seat against the shoulder 32 prior to the point at which the end of the feed section abuts the end of the seal cap 46, then the coil 49 will permit the arm a desired resiliency to accommodate a further movement of the pen into the cap to effect a normal seal.

Referring now more particularly to Fig. 8, the fountain pen 15a is likewise provided with external threads for engaging the internal threads of a cap 51 having an inner sealing cap 52. The sealing cap 52, in turn, is provided with an axial aperture for receiving a sleeve 53 extending there-through and through the recess 54 in the cap for fixed engagement with an aperture 55 communicating with the recess 54. A coil spring 56 is disposed within the sleeve 53, one end of the spring being confined in a space between the sleeve and the end of the recess 55 and the other end extending to fixedly engage a reduced end 57 of the arm 58. The arm 58 extends beyond the end of the sleeve 53 and engages the head 37 of the plunger for effecting a seal of the passage 31 in the same manner as in the embodiment above described. The coil spring 56 will overcome the compression of the spring 41 of the plunger and permit a seating of the head 37 on the shoulder 32, the coil spring 56 compressing when necessary to permit a seating of the end of the feed section of the barrel 15a against the seal cap 52.

Another form of resilient mounting for the arm of a cap to effect a seal of the internal passage of the feed bar is shown in Fig. 9 wherein the fountain pen 15a is provided with external threads for receiving the internal threads of a cap 59, the cap 59 having a sealing cap 60 therein against which the end of the fountain pen abuts when the cap is positioned on the end of the barrel. An arm 61 is slidably mounted in a recess disposed axially in the bottom of the seal cap, the arm being slidably received in a bushing 62 fixedly engaged in a recess in the end of the cap.

A compression spring 63 is disposed on the end of the arm 61, one end of the spring abutting against the bushing 62 and the other end bearing against a flange 64 extending radially of the arm. The flange 64 prevents displacement of the arm in one direction and likewise permits the spring to rest thereagainst during the normal function-

ing of the spring. In the operation of the construction just described, when the cap is threaded on the writing point end of the barrel, the arm 61 operates the head 37 against its seat, the spring 63 permitting displacement of the arm 61 rearwardly in the event that the end of the pen section has not as yet abutted against the end of the seal cap 60.

Referring now more particularly to Fig. 10, another type of resilient mounting for an arm is shown in which, when the cap 65 is positioned on the writing point end of the fountain pen 15a, the inner sealing cap 66 will receive the end of the feed section in substantially air-tight relation. The arm 67 in this instance extends through an aperture in the end of the seal cap for slidable engagement therewith, a cup-shaped member 68 being fixedly attached to the end of the arm and slidably engaging a shell 69 in which is housed a coil spring 70. The shell 69 is fixedly secured in an aperture in the end of the cap, one end of the coil spring 70 bearing against the flange of the shell and against the cup-shaped member 68 to normally urge the arm 67 outwardly.

When the cap 15 is positioned on the end of the fountain pen 15a, the arm bears against the head 37 to seat it against the shoulder 32 to interrupt the passage of writing fluid through the internal passage, the spring 70 overcoming the tension of the spring 41 although permitting a displacement rearwardly of the arm 67 in the event further movement is necessary to seat the end of the pen against the end of the seal cap 66.

In the construction shown in Fig. 11, the arm 71 is confined within a housing 72, the housing, in turn, having a reduced extension for fixedly mounting the same in an aperture in the end of the seal cap 76. The enlarged portion of the housing accommodates a coil spring 73 having one end bearing against the housing and the other end bearing against a flange 74 extending radially from the shaft 71 to normally urge the shaft outwardly of the housing. When the cap 75 is threaded on the end of the fountain pen 15a, the arm 71 urges the head 37 against the shoulder 32 to seat the same, whereafter, should it be necessary, the arm 71 may be displaced against the compression of the spring 73 so that the end of the pen may rest against the seal cap 76.

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

I claim:

1. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure of capillary dimensions communicating with the other end of said feed duct and extending over a portion of the nib supporting portion in a direction toward the barrel, and a plurality of spaced transversely extending combs of capillary dimensions disposed on a portion of the feed bar extending inwardly of the point of communication between said fissure and said feed duct and communicating with said fissure for accommo-

dating writing fluid expansion from the reservoir.

2. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure of capillary dimensions communicating with the other end of said feed duct and extending over a portion of the nib supporting portion in a direction toward the barrel, and a plurality of spaced transversely extending combs of capillary dimensions disposed on a portion of the feed bar extending inwardly of the point of communication between said fissure and said feed duct, said combs being of greater width than said fissure and communicating therewith for accommodating writing fluid expansion from the reservoir.

3. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure of capillary dimensions communicating with the other end of said feed duct and extending over a portion of the nib supporting portion in a direction toward the barrel, a plurality of spaced transversely extending combs of capillary dimensions disposed on a portion of the feed bar extending inwardly of the point of communication between said fissure and said feed duct and communicating with said fissure, and longitudinally extending scoops of greater width than said combs and spaced from said fissure for communicating with said combs for accommodating writing fluid expansion from the reservoir.

4. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure communicating with the other end of said feed duct and extending over a portion of the nib supporting portion in a direction toward the barrel, a plurality of spaced transversely extending combs of greater width than said fissure and communicating therewith, and longitudinally extending scoops spaced from said fissure and communicating therewith for accommodating writing fluid expansion from the reservoir, said scoops being of lesser depth than said combs.

5. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure communicating with the other end of said feed duct and extending over a portion of the nib supporting portion in a direction toward the barrel, a plurality of spaced transversely extending combs of greater width than said fissure and communicating therewith, and longitudinally extending scoops spaced from said fissure and communicating therewith for accommodating writing fluid expansion from the reservoir, said scoops being of lesser depth than said combs, and said fissure being of greater depth than said combs.

6. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending

nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure extending over a portion of the nib supporting portion, a passage connecting said fissure with the other end of said feed duct, a plurality of spaced transversely extending combs of uniform width communicating with said fissure for accommodating writing fluid expansion from the reservoir, and a transversely extending comb communicating with said fissure and being of lesser width than said first mentioned combs.

7. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure extending over a portion of the nib supporting portion, a passage connecting said fissure with the other end of said feed duct, a plurality of spaced transversely extending combs of uniform width communicating with said fissure for accommodating writing fluid expansion from the reservoir, and a transversely extending comb communicating with said fissure and being of lesser width than said first mentioned combs, said latter comb being disposed in a spaced relation from the end comb farthest from said barrel.

8. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end with the writing fluid reservoir of the barrel, a fissure extending over a portion of the nib supporting portion and communicating with said feed duct, and a plurality of spaced transversely extending combs communicating with said fissure for accommodating writing fluid expansion from the reservoir, one of said combs being of substantially lesser width than any one of the remaining combs.

9. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, a fissure extending longitudinally over a portion of the nib supporting portion for receiving writing fluid from the reservoir of the barrel, and a plurality of spaced transversely extending combs communicating with said fissure for accommodating writing fluid expansion in the reservoir, one of said combs being of substantially lesser width than any one of the remaining combs.

10. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, a fissure extending longitudinally over a portion of the nib supporting portion for receiving writing fluid from the reservoir of the barrel, and a plurality of spaced transversely extending combs communicating with said fissure for accommodating writing fluid expansion in the reservoir, one of said combs being disposed outwardly beyond the point of communication between the feed duct and the fissure and being of substantially lesser width than any one of the remaining combs.

11. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending nib supporting portion, an internal longitudinally extending feed duct communicating at one end

with the writing fluid reservoir of the barrel, a fissure extending over a portion of the nib supporting portion, a passage connecting said fissure with the other end of said duct, and a plurality of spaced transversely extending combs disposed on the nib supporting portion and communicating with said fissure for accommodating writing fluid expansion from the reservoir, one of said combs being of lesser width than any one of the remaining combs and being disposed outwardly beyond said passage.

12. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending portion for supporting a slit nib having a breather hole at the upper end of the slit, a fissure communicating with the writing fluid reservoir of the barrel and extending over the nib supporting portion for directing writing fluid to said slit, and a plurality of spaced transversely extending combs disposed on said nib supporting portion and communicating with said fissure for accommodating writing fluid expansion from the reservoir, one of said combs being of lesser width than any one of the remaining combs and being disposed outwardly beyond said breather hole.

13. A fountain pen including a feed bar having a shank portion adapted to be mounted within the end of the barrel thereof and an extending portion for supporting a slit nib having a breather hole at the upper end of the slit, a fissure communicating with the writing fluid reservoir of the barrel and extending over the nib supporting portion for directing writing fluid to said slit, a plurality of spaced transversely extending combs disposed on said nib supporting portion and communicating with said fissure for accommodating writing fluid expansion from the reservoir, one of said combs being of lesser width than any one of the remaining combs and being disposed outwardly beyond said breather hole, and scoops disposed on either side of said fissure communicating between said combs, said scoops being of lesser depth than said combs and said combs being of lesser depth than said fissure.

14. A fountain pen including a cap for enclosing the writing point end of the barrel thereof and a feed bar comprising a shank portion adapted to be mounted within the end of the barrel and an extending nib supporting portion, an internal longitudinal passage extending from the outer end of said feed bar to the inner end thereof and communicating with the writing fluid reservoir of the barrel to direct writing fluid to the nib supporting surface, a spring-pressed plunger slidable in said passage, and resilient means on said cap for moving said plunger to one position of slidable movement against the tension of the spring to prevent communication through said passage when the cap is in position on the barrel, said spring moving said plunger in an opposite direction to permit such communication when said cap is removed.

15. A fountain pen including a cap for enclosing the writing point end of the barrel thereof and a feed bar comprising a shank portion adapted to be mounted within the end of the barrel and an extending nib supporting portion, an internal longitudinal passage extending from the outer end of said feed bar to the inner end thereof and communicating with the writing fluid reservoir of the barrel to direct writing fluid to the nib supporting surface, a spring-pressed plunger slidable in said passage, and a

spring-pressed arm in said cap for moving said plunger to one position of slidable movement against the tension of the spring to prevent communication between said passage and said duct when the cap is in position on the barrel, said spring moving said plunger to permit such communication when said cap is removed.

16. A fountain pen including a cap for enclosing the writing point end of the barrel thereof and a feed bar having an internal longitudinal passage for directing writing fluid from the reservoir to the pen nib, a spring-pressed plunger in said passage, and a resiliently mounted arm in the cap for operating said plunger against the tension of the spring thereof into a closed position to prevent flow of ink through said passage when the cap is in place on the barrel, the spring of the plunger operating the same into an open position when the cap is removed.

17. A fountain pen including a cap for enclosing the writing point end of the barrel thereof and a feed bar having an internal longitudinal passage for directing writing fluid from the reservoir to the pen nib, a spring-pressed plunger in said passage, and means for operating said plunger against the tension of the spring thereof into a closed position to prevent flow of ink through said passage when the cap is in place on the barrel, the spring of the plunger operating the same into an open position when the cap is removed, said means comprising an arm of spring material having one end for engaging

the plunger and the other end forming a coil to impart resiliency to the arm.

18. A fountain pen including a cap for enclosing the writing point end of the barrel thereof and a feed bar having an internal longitudinal passage for directing writing fluid from the reservoir to the pen nib, a spring-pressed plunger in said passage, and means for operating said plunger against the tension of the spring thereof into a closed position to prevent flow of ink through said passage when the cap is in place on the barrel, the spring of the plunger operating the same into an open position when the cap is removed, said means comprising a rigid arm having one end for engaging the plunger and the other end resiliently supported by an enclosed compression spring.

19. A fountain pen including a cap for enclosing the writing point end of the barrel thereof and a feed bar having a passage for directing writing fluid from the reservoir to the pen nib, a spring-pressed plunger for controlling the flow of writing fluid through said passage, and resilient means in the cap for operating said plunger against the tension of the spring thereof into a closed position to prevent flow of writing fluid through said passage when the cap is in place on the barrel, the spring of the plunger operating the same into an open position when the cap is removed.

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