



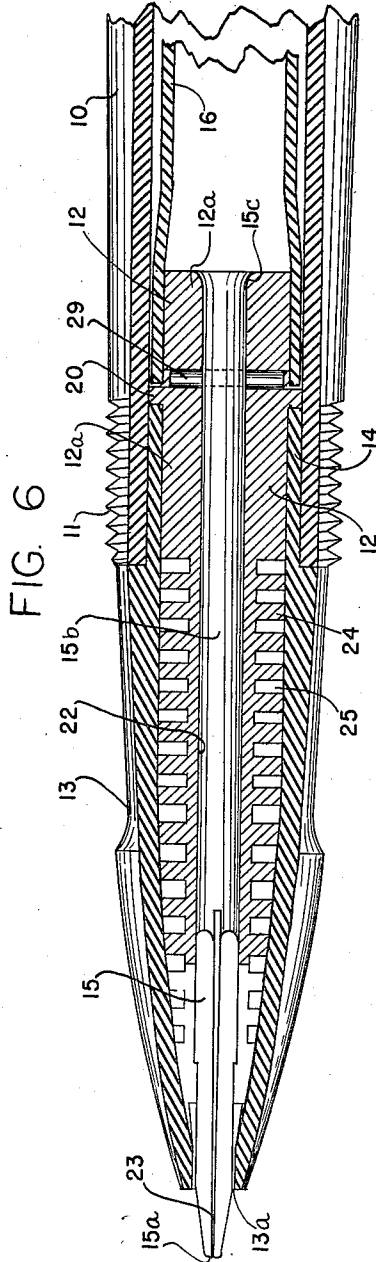
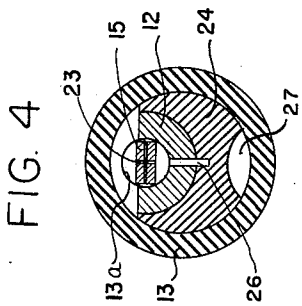
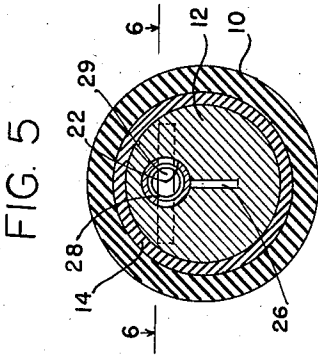
Oct. 10, 1944.

R. T. WING  
FOUNTAIN PEN

2,360,297

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2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

2,360,297

## FOUNTAIN PEN

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Application April 10, 1944, Serial No. 530,330

17 Claims. (Cl. 120—52)

My invention relates to fountain pens and it has to do particularly with fountain pens having ink feeding mechanism and a pen nib covered by a shell that encloses and shields the pen nib, except the extreme writing point thereof, against damage, covers the feed mechanism in such a way as to prevent drying out of the ink therein, and facilitates the handling of the pen in writing by permitting it to be held in close proximity to the writing point without smearing one's fingers with ink during writing and filling operations.

One of the objects of my invention is to provide an improved fountain pen of the foregoing character.

Another object is to provide improved feed mechanism for fountain pens of the foregoing character.

A further object is to provide an improved fountain pen of the foregoing character having feed mechanism comprising ink feed means including ink and air passages, a shell member enclosing the ink feed means, and a pen nib supported by the ink feed means and enclosed by the shell except for the extreme writing tip thereof.

An additional object is to provide a fountain pen of the foregoing character wherein the ink feed means is mounted within and carried by the shell as a self-contained part thereof, the pen nib is supported by the feed means, and all of said parts constitute, in their assembled relationship, a self-contained unit that may be applied to and removed from the forward end of a pen barrel without disturbing the assembled relationship of such parts.

A further object is to provide a self-contained unit of the foregoing character which is adapted to be applied to the forward end of a fountain pen barrel directly in communication with an ink reservoir enclosed by such barrel in direct ink-flow communication with the ink feeding means of the unit.

A further and more specific object is to provide a self-contained unit of the foregoing character wherein the ink reservoir comprises a member carried by the self-contained unit in communication with the feed means thereof so that such unit, with its contained reservoir, may be applied to or removed from the barrel of the pen as a self-contained unit without disturbing the assembled relationship of the parts.

Still another object is to provide a fountain pen of the foregoing character wherein the shell, feed and nib parts thereof may be easily,

quickly and accurately assembled at the factory and in the field without the use of special tools and skilled labor, and such parts may be maintained more definitely and permanently in best writing condition when attached to the pen barrel.

Other objects and advantages will become apparent as this description progresses and by reference to the drawings wherein—

Figure 1 is a side elevational view of the forward end of one form of fountain pen embodying my invention;

Figure 2 is a top plan view of the fountain pen shown in Figure 1;

Figure 3 is a vertical sectional view taken substantially on line 3—3 of Figure 2;

Figure 4 is a section taken substantially on line 4—4 of Figure 3;

Figure 5 is a section taken substantially on line 5—5 of Figure 3; and

Figure 6 is a horizontal section taken substantially on line 6—6 of Figure 5.

The pen shown in the drawings comprises a barrel 10 (only partially shown) which may take any desired shape. The barrel 10, at its forward end, is provided with external threads 11 adapted to cooperate with the threads of a so-called closure cap (not shown) for enclosing the forward end of the pen when it is not in use. The threads 11 may, if desired, be dispensed with and, instead, a slip-fit cap connection may be employed as disclosed in United States Letters Patent No. 2,223,541, in the name of Marlin S. Baker on December 3, 1940.

The pen shown includes ink feed mechanism with which my invention is particularly concerned. This mechanism as shown in Figures 3 to 6, inclusive, takes the form of an annular feed member 12 slip-fitted within and carried by an outer shell 13. The rear end of the shell 13 is provided with a reduced cylindrical shank 14 adapted to be slip-fitted into the forward open end of the barrel 10. If desired, the shell shank 14 may be threaded and screwed into the barrel 10. The feed member 12 supports a metallic nib 15 within the shell 13 in such a way that only the writing tip 15<sup>a</sup> of such nib projects through a reduced opening 13<sup>a</sup> in the extreme forward end of the shell 13. As shown in the drawings, and as will be more fully explained hereinafter, the feed member 12, shell 13 and nib 15 comprise, in their assembled relationship as shown, a self-contained unit that may be applied to and removed from the forward end of the barrel 10 without disturbing the as-

sembled relationship of these parts. This unit further includes, in the specific adaptation of my invention illustrated, an ink sac 16 serving as a flexible ink reservoir which is carried by the rear end of the feed member 12 in such a way that ink contained in the sac 16 is in direct ink-flow connection with ink feed means to be described. The ink sac 16 may be deflated and inflated in any manner as by use of a well-known depressible pressure bar 17, a portion only of which is shown in Figure 3. Or, if desired, the ink sac 16 may be dispensed with, in which event the hollow barrel 10 would serve as the ink reservoir, such reservoir being filled with ink in any desired manner as by the use of a filling mechanism of the type shown and described, for example, in the Dahlberg United States Letters Patent No. 1,904,358.

Specifically, the feed member 12 takes the form of an elongated plug or core-like member which is of the same exterior shape as the interior of the shell 13. The member 12 is provided with a rear shank portion 12<sup>a</sup> which is frictionally fitted in the rear end of the shell 13 with sufficient tightness to firmly retain it in place. The shank of member 12 is provided with an annular rib-like stop 20 near its rear end which is adapted to abut the inner end of the shell 13 to thereby limit the extent to which the member 12 may be inserted within the shell. The rear end of the shank 12<sup>a</sup> of the feed member 12 extends inwardly from the annular rib 20 and within the pen barrel 10 to support the forward or open end of the ink sac 16.

The feed member 12 is provided with ink and air feed means that control the feed of the ink from the reservoir 16 to the writing tip 15<sup>a</sup> of the nib 15. More particularly, the upper portion of the feed member 12 is provided throughout its length with a cylindrical opening 22 in which is snugly received the cylindrical hollow shank 15<sup>b</sup> of the nib 15. The nib 15 is assembled by inserting the forward end thereof in the rear end of the opening 22, the rear end of the nib being flared as at 15<sup>c</sup> to seat against the complementally shaped rear end portion of the wall forming the opening 22 to position the nib in the member 12 with only the writing tip 15<sup>a</sup> projecting through the shell opening 13<sup>a</sup>.

The nib 15 forwardly of its cylindrical shank 15<sup>b</sup> is flattened and slitted to provide the writing tip with flexible nib portions between which is a capillary ink feed fissure 23 (Figures 4-6). The slitted portion of the flattened nib end extends back into the forward end of the cylindrical shank portion 15<sup>b</sup> so that the interior of the cylindrical nib, which at its rear end is connected to the ink reservoir, is connected to the ink fissure 23. The fissure 23 at its juncture with the cylindrical nib shank 15<sup>b</sup> may be, for example, of approximately .005" in width, with the forward nib portions spaced apart to such an extent that such fissure at the writing tip of the pen is approximately .002" to .003" in width. These dimensions are given merely by way of illustration and it is to be understood that any capillary fissure dimensions customarily employed for feeding ink at the forward end of a pin nib may be used. With the foregoing arrangement the interior of the nib shank 15<sup>b</sup> serves as an ink feed channel which conducts ink from the reservoir 16 directly to the capillary slit 23 of the front portion of the nib.

The nib 15 is yieldingly supported within the opening 22. To this end, a coil spring 28 is mounted within the cylindrical nib shank 15<sup>b</sup>,

The front end of the spring 28 is seated against the slitted front end of the cylindrical nib shank 15<sup>b</sup> and the rear end of it is seated against a pin 29 carried by the rear end of the member shank 12<sup>a</sup> in such a position that it passes through the opening 22 and diametrically opposed slots 30 in the rear end of the shank 15<sup>b</sup>. With this arrangement, the fit between the tubular nib shank 15<sup>b</sup> and the wall of the opening 22 may be sufficient to normally support the nib without movement when normal writing pressure is applied thereto. However, if excessive or abnormal pressure is applied to the nib 15, the spring 28 will yield and permit the nib 15 to move slightly inward and prevent breakage.

The feed member 12 forwardly of its shank 12<sup>a</sup> is provided with a plurality of annular, circumferentially disposed fins 24 which provide within the shell a plurality of cells 25. The fins 24 are so spaced apart that the cells 25 provided thereby are of capillary dimension. The cells 25 cooperating with the remainder of the ink feed means provide an ink collector which receives and stores ink in excess of that required for existing writing conditions. The cells 25 also, in conjunction with the remainder of the feed means, control the flow of ink from the reservoir 16 to the writing tip 15<sup>a</sup> in such a way as to insure instantaneous writing and continuous and uniform flow of ink at all times for writing purposes.

To the foregoing end, the feed member 12 is provided throughout its length with a longitudinally extending fissure 26 which is cut through the wall of the opening 22. The fissure 26 also intersects or cuts through the inner surfaces of the fins 24 thereby connecting with the cells 25. It will be seen that the rear end of the fissure 26 is directly connected to the ink reservoir 16 and that it is also connected throughout its length with the opening 22 and the several capillary cells 25. The fissure 26 is of capillary dimension, being preferably no greater than .013" in width. The cells 25 are of a capillary width somewhat greater than the width of the fissure 26, the rearmost cells being preferably of a width not greater than .020" and the foremost cells being of a width not greater than .030". It is to be understood that the relative dimensions of the fissure 26 and cells 25 may be varied so long as the capillary dimension of the smallest of the cells 25 be not less than the capillary dimension of the fissure 26.

The feed member 12 additionally includes an air channel 27 formed by a slot cut through and intersecting the lower edges of the fins 24 substantially directly beneath the fissure 26. The air channel 27 admits air to the ink reservoir solely through this channel by way of the forward shell opening 13<sup>a</sup> and one or more of the capillary cells 25 and the fissure 26 which serves, in effect, as a so-called weir vent. Also, the air channel 27 is so connected to the cells 25 that, during the filling operation, ink passes to the reservoir 16 through the air channel 27, the cells 25 and fissure 26 as well as through the fissure 23 and the cylindrical nib 15<sup>b</sup>.

I believe that my invention will be clearly understood from the foregoing description. The ink feed and control mechanism hereinabove described, while of different specific construction, conforms in principle to the ink feed and control mechanisms described in United States Letters Patent Nos. 2,187,528 and 2,282,840 granted to me on January 16, 1940, and May 12, 1942, respectively. Briefly, in use, the ink sac

or reservoir 16 is filled with ink in a manner well understood. When the ink reservoir 16 is filled with ink the ink feed passages, namely, the capillary fissure 23 in the writing end portion of the nib, the nib shank 15<sup>b</sup> and the fissure 26 are filled with ink and the pen is ready for writing. At that time, if ink is also contained in any of the cells 25 due to the filling operation or to any condition that would require the accommodation of excess ink, and writing occurs, the structure described functions, as described in my aforesaid patents, to first empty the cells 25 before taking ink from the reservoir 16. As soon as the cells 25 are emptied, the flow of ink from the reservoir 16 will take place through the nib shank fissure 26 and fissure 23. It will be noted that the feed fissure 26 is directly connected with the enlarged end of the feed fissure 23 at the juncture with the tubular portion of the nib shank 15<sup>b</sup> so that ink may be supplied to the nib fissure 23 not only through the nib shank 15<sup>b</sup> but also through the feed fissure 26 which is directly connected with the cells 25, whereby the foregoing results of ink control are attained. If, in the use of the pen, a condition arises wherein the ink is forced out of the reservoir 16 as by expansion of air from the heat of the hand or by a rise in temperature in the environment in which the pen is used, or by change in the outside atmospheric pressure, as in riding in an airplane, ink in excess of that required for existing writing conditions may be forced out of the reservoir. In that case, the excess ink will be taken up by the cells 25, preventing flooding of ink at the writing tip of the pen. In view of the fact that the reservoir 16 is connected to the atmosphere via the air channel 27 and one or more of the cells 25, when ink is in the cells 25, air flow to the reservoir 16 is stopped and no more ink is fed therefrom until the cells 25 are cleared of ink. The ink flow to the writing tip 15<sup>a</sup> will then be from the cells 25 until they are emptied, all as more fully explained in my said patents. When the cells are emptied, and the air flow connection with the reservoir 16 is re-established, ink for writing purposes will again be fed from the reservoir 16.

It will also be seen from the foregoing description that my invention provides a unitary feed structure comprising a shell 13, a feed member 12 and a nib 15, which constitute a self-contained unit that may be applied to and removed from the front end of the barrel 10 without in any way disturbing the assembled or functional relationship of these parts. Furthermore, where an ink sac or the like is employed as the ink reservoir, the latter constitutes a part of the self-contained unit so that it may be removed from and replaced in the barrel along with the shell and other parts. This is a highly advantageous feature from the standpoint of assembly and maintenance of the parts in proper adjusted position so as to minimize the repair problem.

I claim:

1. In a fountain pen having a barrel with an open end portion, a self-contained feed and writing unit which comprises a shell member having one end thereof adapted to be detachably supported by the open end of said barrel and having an opening in its other and free end, an ink feed member enclosed and supported by said shell, said feed member having therein ink and air feed means and means for receiving ink under conditions of excess ink flow, and a pen nib support-

ed by said feed member within said shell member and concealed by the latter except its writing tip which projects through the opening in the free end of said shell member to cover the nib to a maximum extent without interfering with writing, said shell member, feed member and nib being firmly supported in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembled relationship thereof.

2. In a fountain pen having a barrel with an open end portion, a self-contained ink-feed and writing unit which comprises an annular shell member having the rear end thereof adapted to be detachably supported by the open end of said barrel and having an opening in its forward end, an ink feed member covered by and supported by said shell member, said feed member having therein ink feed means including ink and air feed fissures and storage means for receiving ink under conditions of excess ink flow, and a pen nib supported by said feed member within said shell member in ink flow communication with said ink feed means and concealed by said shell member except at its writing tip which projects through the opening in the free end of said shell member to cover the nib to a maximum extent without interfering with writing, said shell member, feed member and nib being rigidly supported in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembly and functional relationships thereof.

3. In a fountain pen having a barrel with an open end portion, ink-feed and writing means which comprises an elongated shell member having one end adapted to be supported by the open end of the barrel with an opening in its other or free end, an ink feed member mounted within and immovably carried by said shell member, said feed member having capillary ink feed means, air admission means and a plurality of capillary cells therein, said cells being adapted to receive and store ink when excess ink flow conditions occur, and a pen nib supported by said feed member within said shell member with only its writing tip portion projecting through the opening in the free end of said shell member to cover the nib to a maximum extent without interfering with writing, said shell member, feed member and pen nib constituting a self-contained unit adapted to be applied to and removed from the open end of said barrel without disturbing the assembled unitary mounting and alignment thereof.

4. In a fountain pen having a barrel with an open end portion, a self-contained ink-feed and writing unit adapted to be applied to and removed from the open end of the barrel without disturbing the relationship of the parts thereof which comprises an elongated shell member having its rear end portion adapted to be supported by the open end portion of the barrel and having an opening in its forward end, an elongated feed member firmly supported within said shell member so as to be carried thereby as an enclosed and self-contained part thereof, said feed member having a longitudinal ink feed fissure adapted to be connected at its rear end with an ink reservoir and at its forward end with the writing tip of a pen nib, said feed member also having means providing a plurality of capillary cells operatively associated with said feed fissure and adapted under excess ink flow conditions to receive ink

from said feed fissure, said feed fissure and cells being so disposed within said shell member that air for ink feed purposes is admitted through the opening in the front end of said shell member to said cells and feed fissure, and a pen nib supported within said shell member by said feed member in such a way that it is connected with said feed fissure and is wholly concealed within said shell member except for its writing tip portion which projects through the opening in the forward end of said shell member to cover the nib to a maximum extent without interfering with writing.

5. In a fountain pen having a barrel with an open end portion, a self-contained ink-feed and writing unit mounted at the open end of the barrel and constituting a self-contained unit adapted to be applied to and removed from the barrel without disturbing the assembled relationship of parts thereof which comprises an elongated shell member having its rear portion adapted to be carried by the open end of the barrel and having in its forward end an opening, a feed member including ink and air feed means immovably mounted within and carried by said shell member, a pen nib supported by said feed member in operative association with the ink and air feed means thereof and being concealed by said shell member except the writing tip thereof which projects through said opening in the forward end of said shell member to cover the nib to a maximum extent without interfering with writing, and ink reservoir means carried by the rear end of said feed member and adapted to project within the barrel and to be enclosed thereby when said unit is applied to said barrel, said reservoir means being in direct flow communication with said ink and air feed means in the assembled relationship of said parts.

6. In a fountain pen having a barrel with an open end portion, a self-contained ink-feed and writing unit mounted at the open end of the barrel and constituting a self-contained unit adapted to be applied to and removed from the barrel without disturbing the assembled relationship of parts thereof which comprises an elongated shell member having its rear portion adapted to be carried by the open end of the barrel and having in its forward end an opening, a feed member immovably mounted within and carried by said shell member, said feed member having ink and air feed means and a plurality of capillary storage cells adapted to receive and store ink under excess ink flow conditions, said ink and air feed means and capillary storage cells being connected with the atmosphere through said opening in the forward end of said shell member, and an ink reservoir carried by the rear end of said feed member and adapted to project within the barrel and to be enclosed thereby when said unit is applied to said barrel, said reservoir being in direct flow communication with said ink and air feed means in the assembled relationship of said parts, air being admitted to said reservoir for the feeding of ink therefrom by way of the said opening in the forward end of said shell member, said storage cells, and said ink and air feed means.

7. In a fountain pen having a barrel with an open end portion, an ink-feed and writing unit adapted to be applied to and removed from the open end portion of the barrel as a self-contained unit which comprises a shell member having its rear end portion adapted to be connected to the open end of the barrel, a feed member immovably

mounted within said shell member, said feed member having an ink feed channel, a plurality of capillary cells operably associated with said feed channel and adapted to store ink under excess flow conditions and a separate air channel communicating with said cells whereby air admitted through said opening in the forward end of said shell member passes through said cells and feed channel, the rear end of said unit when applied to the barrel being adapted to communicate with an ink reservoir, and a pen nib carried by said feed member in ink flow communication with said feed channel and concealed by said shell member except for its writing tip portion which projects through said opening in the forward end of said shell member to cover the nib to a maximum extent without interfering with writing.

8. In a fountain pen having a barrel with an open end portion, a self-contained feed and writing unit which comprises an elongated shell member having a reduced portion at its rear end detachably secured within the open end of the barrel and having an opening in its forward end, means at the front end of said barrel adjacent said shell member for securing a cap thereto, a pen nib within said shell member and concealed by the latter except its writing tip which projects eccentrically through said opening, the underside of the shell being curved toward said writing tip and the upper side of the shell extending substantially straight toward said tip, and an ink feed member enclosed and supported by said shell member and supporting said nib, said feed member having therein ink and air feed means and means for receiving ink under conditions of excess ink flow, said shell and feed members and said nib being firmly supported in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembled relationship thereof.

9. In a fountain pen having a barrel with an open end portion, a self-contained feed and writing unit which comprises an elongated shell member the rear end of which conforms to the shape of the front end of the barrel and forms an extension thereof, said shell member also having at its rear end a reduced portion adapted to fit within the barrel to detachably secure the unit to the barrel, said shell member further having an opening in its forward end, a pen nib within said shell member and concealed by the latter except its writing tip which projects eccentrically through said opening, the underside of the shell being curved toward said writing tip and the upper side of the shell extending substantially straight toward said tip, and an ink feed member enclosed and supported by said shell member and supporting said nib, said feed member having therein ink and air feed means and means for receiving ink under conditions of excess ink flow, said shell and feed members and said nib being firmly supported in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembled relationship thereof.

10. In a fountain pen having a barrel with an open end portion, ink-feed and writing means which comprises an elongated shell member having one end adapted to be supported by the open end of the barrel with an opening in its other or free end, an ink feed member mounted within and immovably carried by said shell member,

said feed member having a plurality of longitudinally spaced circumferentially extending fins providing a plurality of circumferential capillary cells therein, said feed member also having longitudinally extending capillary ink feed means as well as air-admission means intersecting said cells at spaced points, said cells being adapted to receive and store ink when excess ink flow conditions occur, and a pen nib supported by said feed member within said shell member, with only its writing tip portion projecting through the opening in the free end of said shell member, said shell and feed members and said pen nib constituting a self-contained unit adapted to be applied to and removed from the open end of said barrel without disturbing the assembled unitary mounting and alignment thereof.

11. In a fountain pen having a barrel with an open end portion, ink-feed and writing means which comprises an elongated shell member having one end adapted to be supported by the open end of the barrel with an opening in its other or free end, an ink feed member mounted within and immovably carried by said shell member, said feed member having a plurality of longitudinally spaced circumferentially extending fins providing a plurality of circumferential capillary cells therein, said feed member also having ink-feed means as well as air-admission means spaced from the ink-feed means with the cells connecting said ink-feed means and said air-admission means, said cells being adapted to receive and store ink when excess ink flow conditions occur, and a pen nib supported by said feed member within said shell member and overlying the ink-feed means with only its writing tip portion projecting through the opening in the free end of said shell member, said shell and feed members and said pen nib constituting a self-contained unit adapted to be applied to and removed from the open end of said barrel without disturbing the assembled unitary mounting and alignment thereof.

12. In a fountain pen having a barrel with an open end portion, a self-contained feed and writing unit which comprises a one-piece shell member having one end thereof adapted to be directly and detachably supported by the open end of said barrel and having an opening in its other and free end, an ink feed member enclosed and supported within said shell member and having ink and air feed means and means for receiving ink under conditions of excess ink flow, said feed member being the only part of the unit having such excess ink receiving means, and a pen nib supported by said feed member within said shell member and concealed by the latter except its writing tip which projects through the opening in the free end of said shell member whereby said pen may be grasped close to said writing tip without touching the nib and smearing ink on the fingers, said nib having ink feed means communicating with the ink feed means of said feed member, and said shell member, feed member and nib being firmly supported in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembled relationship thereof.

13. In a fountain pen having a barrel with an open end portion, a self-contained feed and writing unit which comprises a one-piece shell member having one end thereof adapted to be directly and detachably secured in the open end of said barrel and having an opening extending lengthwise therethrough to and through its

other and free end, an ink feed member enclosed and firmly supported within said shell member and having therein ink feed means and means for receiving ink from said ink feed means under conditions of excess ink flow in said feed means, a pen nib supported within said shell member and having a slitted writing end portion disposed in communication with the ink feed means of said feed member, and having a writing tip at the extreme end of said writing end portion, said nib being concealed by said shell member except said writing tip which projects through the opening in the free end of said shell member, whereby said pen may be grasped close to said writing tip without the fingers touching it and becoming smeared with ink, and means providing an ink reservoir adapted to be received in said barrel in communication with said ink feed means to supply ink to the writing tip of said nib, said shell member, feed member, nib and reservoir means being firmly assembled in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembled relationship thereof.

14. In a fountain pen having a barrel with an open front end portion, a self-contained ink-feed and writing unit which comprises an elongated one-piece shell member the outer surface of the exposed rear end of which conforms to the shape of the outer surface of the front end of the barrel and forms a hollow extension thereof, said shell member also having at its rear end a reduced rearwardly-extending portion adapted to engage within the open front end portion of the barrel to detachably secure the unit to the barrel, said shell member further having an opening in its forward end, a pen nib mounted within said shell member and concealed by the latter except its writing tip which slightly projects through said shell member opening eccentrically and at the upper side of said shell member whereby said pen may be grasped close to said writing tip without touching the nib and smearing the fingers with ink, an ink feed member immovably mounted within said shell member and serving as a support for said nib and having therein ink feed means and means for receiving ink under conditions of excess ink flow, said feed member being the only part of the pen having excess ink receiving means, and an ink reservoir carried by one of the members of the unit in communication with said ink feed means for supplying ink to said ink feed means and nib, said shell member, feed member, nib and reservoir being firmly assembled in aligned relation to provide a self-contained unitary structure that may be applied to and removed from said barrel merely by inserting said reservoir and the reduced portion of the shell member in or withdrawing said reservoir and said reduced portion from the barrel, the assembly and alignment of the parts of said unit being undisturbed by such insertion or withdrawal.

15. In a fountain pen having a barrel with an opening in its forward end, a self-contained pen-holding and ink-feeding unit which comprises an elongated one-piece shell member providing a forward extension of the barrel and of sufficient length to be readily grasped and supported by the fingers of the user, said shell member having a reduced rear extension detachably received in said barrel opening for securing said shell member directly to said barrel with the outer wall of said shell member at its rear end substantially flush with the adjacent forward outer wall of said

barrel, said shell member having a longitudinal opening extending from end to end thereof, ink feed means mounted within said shell member and provided with means for feeding ink, admitting air, and storing ink in excess of that required for writing purposes, a pen nib supported within and concealed by said shell member except its writing tip which projects through the opening in the front end of said shell member whereby the fingers of the user when grasping said shell member are close to said writing tip without touching the nib to thereby avoid smearing of ink on the fingers, and ink reservoir means adapted to extend into the barrel and communicating with said ink feeding means to supply ink to said nib, said shell member, feed means, nib and reservoir being firmly supported in the relation defined so that they may be applied to and removed from said barrel as a self-contained unit without disturbing the assembled unitary mounting and alignment of the parts thereof.

16. In a fountain pen having a barrel with an open end portion, a self-contained ink-feed and writing unit which comprises an elongated one-piece shell member having an opening there-through from end to end thereof and also having means at its rear end by which it is directly and detachably secured to the open end of said barrel, a nib-supporting member mounted within said shell member and having an opening extending therethrough from end to end thereof, ink-feed means within said nib supporting member and extending substantially from end to end of the latter, means within said nib supporting member for receiving from said ink-feeding means ink flowing in excess of that required for writing purposes, a pen nib mounted within said nib-supporting member and having a slitted writing end portion disposed in communication with said ink-feeding means, said nib also having a writing tip at the extreme outer end of its writing end portion, said nib-supporting member, ink-feed means, excess flow means and nib constituting a self-contained sub-unit adapted to be firmly fitted within the opening of said shell member at

such a position therein that the writing tip of said nib and only that part thereof projects through the opening in the forward end of said shell member, said shell member and said sub-unit constituting a self-contained unit that may be applied to and removed from said barrel without disturbing the assembled relationship of any of the above-defined parts.

17. In a fountain pen having a barrel with an open end portion, a self-contained ink-feed and writing unit which comprises an elongated one-piece shell member having an opening there-through from end to end thereof and also having means at its rear end by which it is directly and detachably secured to the open end of said barrel, a nib-supporting member mounted within said shell member and having an opening extending therethrough from end to end thereof, ink-feed means within said nib supporting member and extending substantially from end to end of the latter, means within said nib supporting member for receiving from said ink-feeding means ink flowing in excess of that required for writing purposes, a pen nib mounted within said nib-supporting member and having a slitted writing end portion disposed in communication with said ink-feeding means, said nib also having a writing tip at the extreme outer end of its writing end portion, said nib-supporting member, ink-feed means, excess flow means and nib constituting a self-contained sub-unit adapted to be firmly fitted within the opening of said shell member at such a position therein that the writing tip of said nib and only that part thereof projects through the opening in the forward end of said shell member, and ink reservoir means in communication with said ink feed means to supply ink to the writing tip of said nib, said shell member, said sub-unit and said ink reservoir means constituting a self-contained unit that may be applied to and removed from said barrel without disturbing the assembled relationship of any of the above-defined parts.

RUSSELL T. WING.



CERTIFICATE OF CORRECTION.

Patent No. 2,360,297.

October 10, 1944.

RUSSELL T. WING.

It is hereby certified that error appears in the above numbered patent requiring correction as follows: In the drawings, Sheet 2, Figures 4 and 6 should appear as shown below instead of as in the patent -

FIG. 4

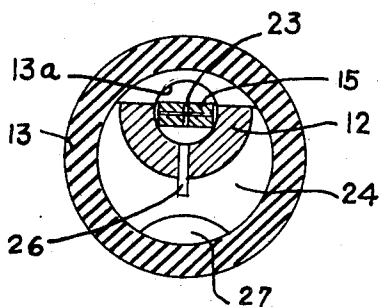
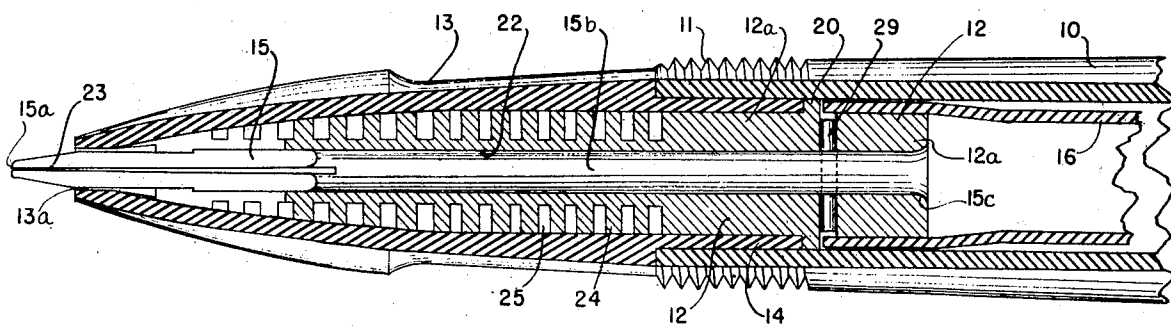


FIG. 6



and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 16th day of January, A. D. 1945.

(Seal)

Leslie Frazer  
Acting Commissioner of Patents.