No. 675,698. Patented June 4, 1901.

# P. E. WIRT.

## FOUNTAIN PEN.

(Application filed Sept. 1, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

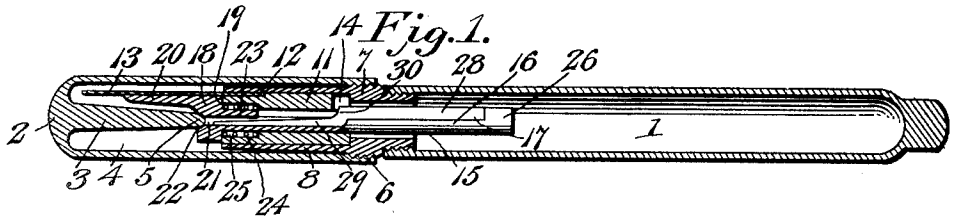



Fig. 2.

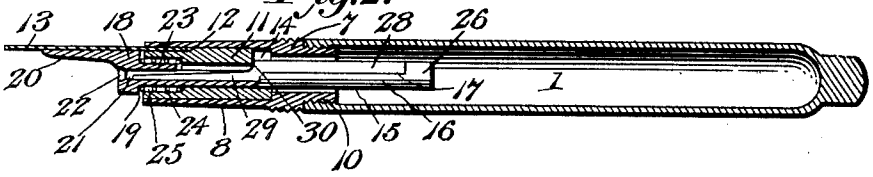



Fig. 3.

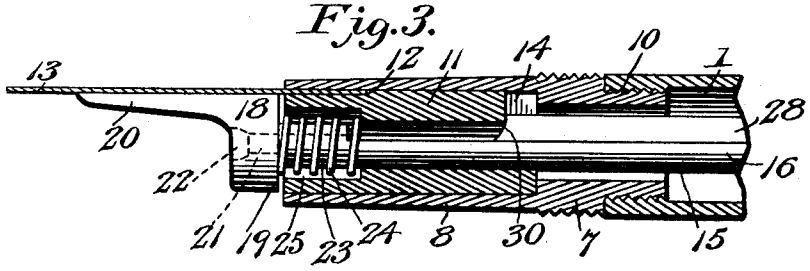



Fig. 4.

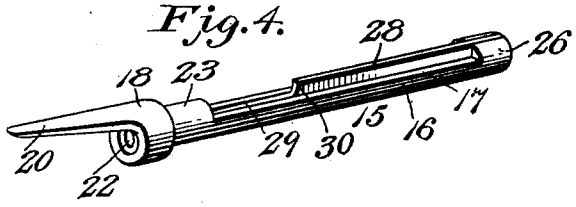



Fig. 5.

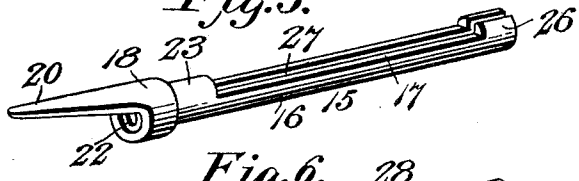



Fig. 6.

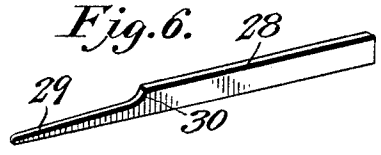
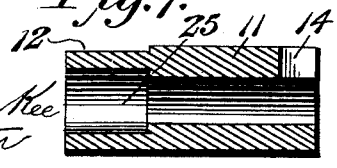



Fig. 7.

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No. 675,698. Patented June 4, 1901.

P. E. WIRT.

FOUNTAIN PEN.

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(No Model.) 2 Sheets—Sheet 2.

Fig. 8.

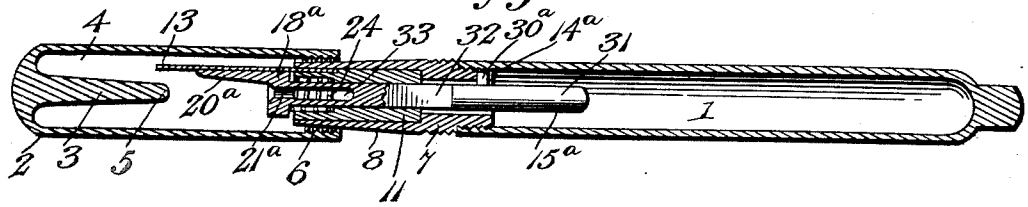



Fig. 9.

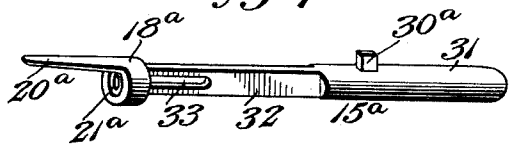



Fig. 10.

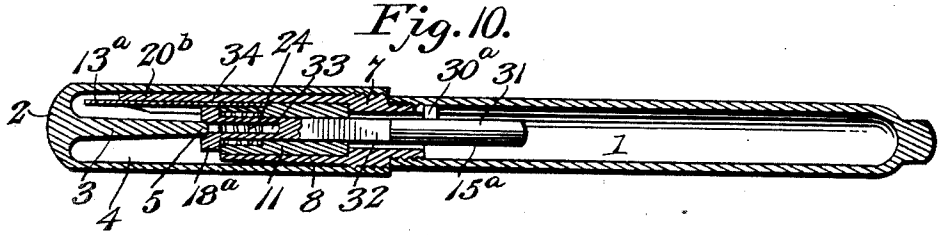



Fig. 11.

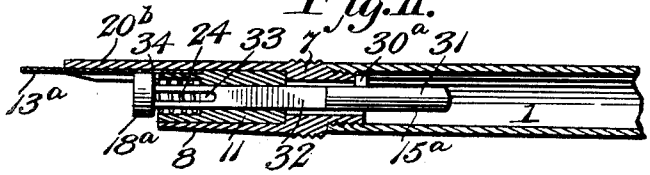



Fig. 12.

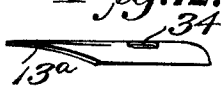
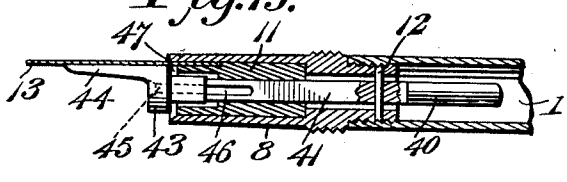



Fig. 13.

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# UNITED STATES PATENT OFFICE.

PAUL E. WIRT, OF BLOOMSBURG, PENNSYLVANIA.

## FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 675,698, dated June 4, 1901.

Application filed September 1, 1900. Serial No. 28,787. (No model.)

*To all whom it may concern:*

Be it known that I, PAUL E. WIRT, a citizen of the United States, residing at Bloomsburg, in the county of Columbia and State of Pennsylvania, have invented a new and useful Fountain-Pen, of which the following is a specification.

This invention relates to fountain-pens, particularly of the type in which the ink is fed to the pen principally by capillary attraction, and has special reference to certain improvements in the ink-feeding means and the cap to insure a positive sealing or cutting off of the flow of ink when the pen is not in use and the cap is placed thereover. To this end the invention primarily has in view the provision of novel ink-feeding means which shall be reliable and positive in action to provide for the proper graduated flow of ink to the pen, principally by capillary attraction, while at the same time so constructed as to coöperate with a specially-constructed cap, whereby the cap when fitted over the pen will not only serve to cut off the flow or leakage of ink into the interior thereof, but will also provide for cutting off the direct flow of ink to the pen itself, thus keeping the pen-point clean and free from ink when the pen is not in use, besides permitting of perfect freedom in carrying or handling the pen in any position without possibility of the ink leaking into the cap or off from the pen, thereby soiling the clothing and fingers in the handling of the pen.

With these and many other objects in view, which will more readily appear to those familiar with the art as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter described, illustrated, and claimed.

The essential feature of the invention, involving the directly-coöperating elements of the cap and the ink-feeding device to provide for cutting off or sealing the flow of ink into the cap and also to the pen-point, is necessarily susceptible of being embodied in a variety of modifications without departing from the spirit or scope of the invention; but for illustrative purposes there are shown in the drawings several preferred forms or embodiments of the invention.

In the drawings, Figure 1 is a longitudinal sectional view of a fountain-pen embodying one form of the invention and showing the pen-cap fitted over the pen to provide for entirely cutting off the outward flow of the ink, either into the interior of the cap or to the pen-point. Fig. 2 is a similar view of the pen with the cap removed from over the pen and showing the elements of the ink-feeding device in operative relation to provide for the capillary attraction or flowing of the ink to the pen. Fig. 3 is an enlarged sectional view of the nozzle end of the pen, showing the same relation of parts as illustrated in Fig. 2. Fig. 4 is a detail in perspective of the plunger-feeder with the supplemental feed bar or shaft in operative position. Fig. 5 is a similar view of the plunger-feeder with the supplemental feed bar or shaft removed from the holding-groove therefor. Fig. 6 is a detail in perspective of the supplemental feed bar or shaft constituting a part of the ink-feeding device. Fig. 7 is an enlarged detail sectional view of the pen-bearing section or tubular feeder-plug, which slidably accommodates therein the shank portion of the plunger-feeder. Fig. 8 is a longitudinal sectional view of a fountain-pen, showing another form of the invention, in which a plunger-feeder is employed without a supplemental feed bar or shaft. Fig. 9 is a detail in perspective of the plunger-feeder constituting a part of the construction illustrated in Fig. 8. Fig. 10 is a longitudinal sectional view of the pen, showing another modification, illustrating means adapted for use in connection with a pen of the "top-feed" type, in which the feeding-finger, directly associated with the pen-point, lies upon the outer side thereof instead of upon the inner side, as shown in the other forms of the invention. Fig. 11 is a view similar to Fig. 10, showing a different position of parts from what is illustrated in said figure. Fig. 12 is a detail in perspective of the pen adapted for use with the construction shown in Figs. 10 and 11. Fig. 13 is a sectional view of the nozzle end portion of the pen, showing a modification in which the ink-feeding device may be utilized as a fixed or stationary feeder when associated with an ordinary pen-cap.

Like numerals of reference designate corresponding parts in the several figures of the drawings.

In carrying out the present invention the

general object in view is to provide an ink-feeding device having a movable element, in combination with the pen-cap, having a cut-off projection directly coöperating with said movable element of the ink-feeding device to insure an effective sealing of all passages and fissures at the pen-bearing end of the holder, so as to effectually cut off the flow of ink not only to the pen, but also to the interior of the cap. This dual result may be accomplished by various mechanical expedients utilized in connection with a common formation of holder or barrel; but in order that this feature of the invention may be comprehensively understood specific reference will now be made to one form of construction which may be utilized in the carrying out of the invention, this construction being illustrated in Figs. 1 to 7, inclusive, of the drawings.

In the group of figures referred to the numeral 1 designates the reservoir holder or barrel, which may be of any approved form; but in the present invention there is associated with said reservoir holder or barrel 1, which constitutes the main reservoir for the supply of ink, a tubular pen-cap 2, which is of the usual configuration, but which for the purposes of the present invention is provided with an interior cut-off projection 3, which is preferably in the form of an elongated post or nipple disposed longitudinally of the cap and projecting from the inner side of its closed end toward the open end thereof. The precise configuration, length, and, in fact, arrangement of the interior cut-off projection 3 of the pen-cap may be changed to suit the particular type of ink-feeding device with which the same coöperates; but in those constructions which have been found best adapted for carrying out the invention the interior cut-off projection 3 of the cap is disposed not only longitudinally thereof, but centrally of the same, and is of a materially narrower width than the interior diameter of the bore of the cap to leave an intervening annular pen-space 4, surrounding the projection or post 3 and adapted to freely receive therein the pen or pen-point when the cap is fitted in place. In the construction illustrated in Fig. 1 of the drawings the interior longitudinally-disposed cut-off post or nipple 3 is materially shorter than the length of the cap and is preferably provided with a rounded tip 5, which is designed to constitute a closure for the port, vent, or opening at the extreme outer end of the ink-feeding device, as will be hereinafter presently explained.

Any suitable expedient may be resorted to for effecting the connection between the cap and the reservoir holder or barrel, but a practical construction is shown in the drawings and consists in providing the cap at the open end thereof with interior threads 6, adapted to adjustably engage with the exterior-threaded collar or annulus 7 of the nozzle 8, which may be fitted to one end of the holder or barrel by any suitable joint connection—such, for instance, as the screw-joint 10, illustrated in the drawings.

To provide for the proper support of the elements of the ink-feeding device which are associated with the pen and also with the cap, the tubular nozzle 7, carried at one end of the holder or barrel, is counterbored to snugly receive within the outer end portion thereof the pen-bearing section 11, which is preferably in the form of a tubular plug and provides a passage for the ink, as well as for the admission of air, which is necessary to replace the ink, and thus insure the proper circulation or downward flow of the ink during the operation of the pen. The said tubular pen-bearing section 11 is provided contiguous to the outer end thereof with an exterior pen-seat 12, channeled in the periphery thereof and adapted to receive the heel end of the pen or pen-point 13, which is of the usual form and preferably of gold, such as ordinarily employed in the best types of fountain-pens. By reason of channeling the exterior surface of the pen-bearing section 11 to form the pen-seat 12 the heel end of the pen will be firmly held in place in its interposed position between the exterior surface of the section 11 and the inner wall of the tubular nozzle 8, and in addition to the pen-seat contiguous to the outer end thereof the tubular pen-bearing section 11, which tightly fits within the nozzle, is provided at the inner end thereof with a longitudinally-disposed retaining-notch 14, which coöperates with the ink-feeding device in the manner hereinafter explained.

The ink-feeding device, which coöperates with the interior cut-off projection 3 of the pen-cap, may be made in a great variety of ways, so long as means are provided for a copious and positive flow of the ink to the pen-point; but in the form of the invention now being described and shown in Figs. 1 to 7, inclusive, of the drawings the ink-feeding device essentially consists in its entirety of what might be properly termed a "plunger-feeder" 15. (Shown in detail in Figs. 4 and 5 of the drawings.) This plunger-feeder is arranged to extend loosely and longitudinally through the adjoining bores of the nozzle and the pen-bearing section 11, besides having elements coöperating directly with the pen-point 13 and extending within the holder or barrel 1 to insure the flowing out of the ink. This plunger-feeder 15 essentially consists of a semicylindrical shank 16, cut away longitudinally at one side, as at 17, nearly the entire length thereof to provide the necessary passages or channels, which establish and maintain communication between the interior of the holder or barrel and the interior of the pen-bearing section, with which also communicate the fissures, channels, or ways which serve to attract the ink by capillary attraction to the pen-point. The said semicylindrical shank 16 slidably fits within the tubular pen-bearing section 11 and is pro-

vided at the outer end thereof with a feed-head 18, which head is provided at its inner side with an annular fissure-wall 19, which normally lies directly opposite and is arranged to be closed directly against the outer end of the pen-bearing section. At its outer side the terminal feed-head 18 of the plunger-feeder has extended therefrom a narrow tapering feed bar or finger 20, which underlies the pen-point 13 and serves to attract the ink downward from the fissure at one side of the wall 19 of the feed-head 18 when the pen is open and ready for use. The said terminal feed-head 18 is centrally bored to provide therein a longitudinally-disposed air-vent 21, which communicates with the interior of the pen-bearing section and serves to provide direct communication between the outer air and the interior of the reservoir holder or barrel to permit of the necessary circulation of the ink, largely under capillary attraction, from the reservoir to the pen-point. The outer exposed end of the air-vent 21 is concaved to form a seat 22 to receive the rounded tip 5 of the cut-off projection 3 when the cap is fitted to the nozzle of the pen.

At the inner side of its terminal feed-head 18 the semicylindrical shank 16 of the plunger-feeder is provided with a collar portion 23, upon which is arranged a non-corrosive retractile adjusting-spring 24, which also fits within the spring-receiving socket 25, counterbored in the outer end portion of the pen-bearing section 11, so that one end of said spring bears against the shoulder provided by the annular fissure-wall 19 at the inner side of the feed-head 18. The tension of said retractile spring is normally exerted in a direction to provide for holding the shoulder or wall 19 of the terminal head 18 spaced a sufficient distance from the contiguous end of the pen-bearing section to provide an ink-fissure directly beneath the pen-point and which will be in communication with the necessary fissure or space provided between the pen-point and the underlying feed bar or finger 20 at the outer end of the ink-feeding device.

The shank 16 of the plunger-feeder is provided at its extreme inner end with a retaining-head 26, which is intersected by a holding-groove 27, formed in the cut-off side of the shank and extending longitudinally thereof from the extreme inner end to the point where the terminal feed-head 18 is provided. The said holding-groove 27 is designed to receive therein one edge of a flat supplemental feed bar or shaft 28. The flat feed bar or shaft 28 fits within the groove 27 throughout the entire length of the latter, and the said bar is provided at one end with a narrow tapering finger extension 29, which lies in the base of the groove 27 and extends well into the air-vent opening 21 through the outer head 18 of the plunger-feeder, thus insuring the conducting of the ink to a point where it will be freely drawn or flowed to the pen-point.

By reason of providing the flat supplemental feed bar or shaft 28 with the finger extension 29 the said bar or shaft is formed at an intermediate portion with an engaging shoulder 30, which loosely interlocks with the retaining-notch 14 in the inner end of the pen-bearing section 11, which interlocking engagement positively prevents a rotary or turning movement of the plunger-feeder, and consequently holds the same in permanent operative relation to the pen-point. It may be further observed at this point that the retaining-notch 14 of the pen-bearing section is of such a depth as to positively gage or determine the separation of the shoulder or wall 19 of the feed-head from the contiguous end of the pen-bearing section, and thereby defines the extent of the ink-feeding fissure at this point. In other words, the engaging shoulder 30 of the supplemental feed bar or shaft 28 acts in the capacity of a stop to arrest the outward movement of the plunger-feeder under the influence of the retractile adjusting-spring 24 when the pen-cap is removed.

In the construction just described when the pen-cap 2 is removed the retractile adjusting-spring 24 moves the plunger-feeder 15 outward, and thereby opens up the annular ink-flowing fissure between the inner side of the feed-head 18 and the contiguous end of the pen-bearing section, thus maintaining an open channel for the free flowing of the ink when the cap is off; but after using the pen when the cap is to be replaced the latter is screwed upon the nozzle 8, thus carrying the interior cut-off projection or post 3 thereof into registering contact with the seat at the outer end of the air-vent 21, thus effectually closing this opening and cutting off leakage of ink therethrough. By a continued screwing of the cap in place upon the nozzle the plunger-feeder 15 is carried inward against the tension of the retractile adjusting-spring 24, thus moving the inner side or wall 19 of the terminal feed-head 18 against the contiguous end of the pen-bearing section and consequently closing the ink-flowing fissure at this point. Means are therefore provided for carrying out the dual purpose of the invention—that is, to close the openings or ports at the pen-bearing end of the holder when the cap is replaced, thus permitting of the free handling of the pen in any position without danger of soiling the clothing or fingers.

With reference to the structural formation of the form of pen just described it may be explained that that part of the ink-feeding device underlying the pen—namely, the tapering feeding bar or finger 20—is designed to cause the feeding of the ink to the pen-point by the usual capillary action, and to secure this result capillary fissures or spaces may be provided between the pen and said underlying bar or finger by grooving the said bar or

finger or adjusting the upper surface thereof the proper distance from the pen to secure the necessary capillary space; but any of these or other expedients known to the art may be resorted to to provide sufficient attraction for the free flowing of the ink to the point of the pen.

The ink-feeding device constitutes such an important part of the pen that great care must be exercised in the construction of the different parts thereof to provide efficient attractive surface fissures, openings, or vents in order that the proper graduated circulation or downward flowing of the ink is preserved and at the same time ingress of air provided for in order that the pen may be operated freely and with certainty at all times without dropping or "skipping," which are serious defects in many forms of fountain-pens now upon the market. In the form of ink-feeding device described the comparatively long plunger-feeder 15, in connection with the supplemental feed bar or shaft 28, serve to attract and keep the general body of ink well down within the nozzle or pen-bearing section, so as to be taken readily to the pen by the feeding bar or finger 20, while the terminal feed-head 18, with the properly-graduated air-vent 21 and the annular ink-flowing fissure at one side thereof, serve to prevent the ink from running out precipitately from the lower end of the pen. Providing said supplemental feed bar or shaft with the narrow tapering finger extension 29 and having this extension projecting into the air-vent 21, but not filling said vent, serves to better insure the keeping of the body of ink well down within the pen bearing section, and therefore means are provided in the present construction to maintain a copious flow of ink through the ink-flowing fissure about the feed-head 18. It is a recognized necessity in fountain-pen structures to have a copious body of ink as near as possible to the point where it is to be taken by the feeder to the pen-point, besides insuring the proper entrance of air in the same zone, as such an arrangement secures the most sensitive supply to the pen. These conditions are supplied by the construction of ink-feeding device already described, and it may be further explained at this point that an additional function of the supplemental feed bar or shaft 28 is to assist in the attraction or drawing back of the ink within the reservoir when the pen is inverted and it is desired to replace the cap over the nozzle.

Various modifications of the construction already described may be resorted to and precisely the same result secured, and while the provision of the plunger-feeder and the supplemental feed bar or shaft, as herein set forth, secures the advantages ascribed to it, still it has been found thoroughly practical to carry out the invention with the longitudinally-movable plunger-feeder having no auxiliary or supplemental feed bar or shaft. Such a modification embodies the invention in one of its simplest and most practical aspects and is represented in Figs. 8 and 9 of the drawings. Referring particularly to these figures of the drawings, it will be noted that a plain longitudinal plunger-feeder $15^a$ is employed, said feeder essentially consisting of a shank 31, extending into the reservoir and provided with an intermediate flattened portion 32, lying within the pen-bearing section. The said shank of the plunger-feeder $15^a$ is also provided at its outer end with a terminal feed-head $18^a$, similar to the one already described, and having extended outwardly therefrom the feeding bar or finger $20^a$, underlying the pen-point 13, the said terminal feed-head $18^a$ also being formed with an air-vent $21^a$. To provide the necessary communication between the outer air and the interior of the pen-bearing section through the said vent $21^a$, the intermediate flattened portion 32 of the plunger-shank 31 is provided contiguous to the head $18^a$ with a longitudinally-disposed air port or slot 33, which is in direct communication with the said vent $21^a$. The other change involving the modification shown in Figs. 8 and 9 over the construction already described and shown in Figs. 1 to 7, inclusive, is to provide the nozzle at its inner end with a retaining-notch $14^a$, adapted to loosely receive therein an engaging lug $30^a$, which serves to prevent the plunger-feeder from turning within the pen-bearing section and also limits the outward movement thereof under the influence of the adjusting-spring to properly define the extent of the ink-flowing fissure between the inner side of the terminal feed-head and the contiguous end of the pen-bearing section. In other respects the construction and operation of the parts are substantially the same as previously set forth.

It is obvious that in the carrying out of the invention the improvements can be associated with pens of the top-feed type, as well as with those of the type in which the feeding bar or finger underlies the pen-point, and in Figs. 10, 11, and 12 of the drawings is shown a modification involving a construction which admits of the feeding of the ink onto the upper side of the pen-point. In the modification shown in Figs. 10, 11, and 12 of the drawings the construction and operation of the plunger-feeder are precisely the same as the construction and operation of the plunger-feeder illustrated in Figs. 8 and 9 of the drawings, with the single exception of omitting the feeding bar or finger $20^a$ from the terminal feed-head of the plunger and arranging a feeding bar or finger $20^b$ upon the upper side of the pen-point $13^a$. A simple construction providing for the arrangement of the feeding bar or finger $20^b$ upon the upper side of the pen-point consists in having this bar or finger extended from the outer end of the tubular nozzle 8, and in order to provide communication from the interior of the pen-bear-

ing section and the interior of the capillary space or channel between the feeding bar or finger $20^b$ and the upper or outer side of the pen-point the latter is provided therein with an ink-port 34. When the plunger-feeder is in its normal extended position to provide the ink-flowing fissure between the terminal feed-head 18 and the contiguous end of the pen-bearing section, the said ink-port 34 in the point is uncovered and placed directly in communication with said ink-flowing fissure; but upon replacing the cap over the pen the terminal feed-head 18 of the plunger-feeder is closed against the contiguous end of the pen-bearing section, thus closing the ink-flowing fissure and at the same time covering the ink-port 34.

In the forms of the invention already described it is to be observed that provision is made for cutting off the flow of the ink immediately at the rim of the opening to the interior of the holder at the pen-bearing end thereof. In other words, the cut off of ink is effected directly at the orifice where the ink comes from the nozzle to the pen-point, and in this particular the invention possesses decided and important advantages over analogous fountain-pen structures in which attempts have been made to cut off the flow of ink from the reservoir when the pen is not in use. It has been proposed in some types of pens to cut off the ink at a point back from the outer end of the nozzle; but where this is done a portion of the ink will remain within the nozzle or duct within the nozzle leading to the pen-point and, being cut off from the reservoir in front of the valve or equivalent cut-off, will ultimately run out into the cap if the point of the pen is carried downward or the case is shaken. The present invention is therefore designed as a special improvement upon pens, providing means for cutting off the ink from the reservoir in such a plane as to leave a quantity of ink in front of the cut-off or valve, inasmuch as the ink-feeding device utilized in the carrying out of the present invention closes in or cuts off all of the ink back of the pen-point, so that none whatever is left in the spaces or fissures in advance of the cut-off or valve.

While the ink-feeding device already described accomplishes the very important and advantageous results noted, still said device as a fixed feeder for the pen-point provides simple and effective means for flowing the ink to the pen with certainty and regularity, besides obviating "bleeding" or "dropping" of the ink from the pen-point, as is common in some types of fountain-pens. Hence the modification shown in Fig. 13 of the drawings may be resorted to. In this modification precisely the same construction of feeder as shown in Figs. 8 and 9 of the drawings may be employed, said feeder consisting of a substantially straight shank 40, extending into the reservoir and provided with an intermediate flattened portion 41, lying within the pen-bearing section. The said shank 40 is designed to be held stationary within the nozzle and pen-bearing section by means of a fastening-pin 42, and the said shank 40 is also provided at its outer end with the terminal feed-head 43, having extended therefrom the feeding finger or bar 44, underlying the pen-point and provided therein with an air-vent 45 in communication with the longitudinally-disposed air port or slot 46 in the shank contiguous to the head 43. The said head 43 is held spaced from the contiguous end of the pen-bearing section to provide an intervening ink-flowing fissure 47, which corresponds in location and function to the ink-flowing fissure involved in all of the forms of the invention hereinbefore described.

Many other modifications might be resorted to in the carrying out of the invention—such, for instance, as shown in my companion application filed of even date herewith, Serial No. 28,788—and it will be understood that various changes in the form, proportion, and minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. In a fountain-pen, the combination of the holder carrying an ink-feeding device having an air-vent, and a cap, said cap and ink-feeding device having coöperating means for sealing the air-vent and also for effecting a cut-off of all ink contiguous to the pen-point, for sealing in all ink in rear thereof.

2. In a fountain-pen, the holder carrying an ink-feeding device for the pen-point, said ink-feeding device including an ink-flowing fissure contiguous to the pen-point, and an air-vent, and a cap, said cap and ink-feeding device having coöperating means for sealing the said vent and also for sealing the said fissure to effect a cut-off of ink immediately at the orifice at the outer end of the pen-bearing section.

3. In a fountain-pen, the holder carrying an ink-feeding device having a movable element, and a cap having means for effecting a cut-off contiguous to the pen-point for sealing in all ink in rear thereof.

4. In a fountain-pen, the holder carrying an ink-feeding device having an ink-flowing fissure directly adjoining the pen-point, and a movable element provided with an air-vent, and a pen-cap having means for carrying the movable element to an inactive position to provide for sealing in the ink in rear of the pen-point and also for sealing the said vent.

5. In a fountain-pen, the holder carrying an ink-feeding device having an ink-flowing fissure adjoining the pen-point, and a movable element provided with an air-vent, and a cap having an interior cut-off projection arranged to engage with said movable element and providing means for sealing in the

ink in rear of the pen-point and also for sealing the air-vent.

6. In a fountain-pen, the holder carrying the pen-point, and an ink-feeding device provided with a movable element having an air-vent and forming in its normal position an ink-flowing fissure adjoining the pen-point, and a pen-cap having a cut-off projection arranged to engage with said movable element and cover the air-vent thereof.

7. In a fountain-pen, the penholder carrying the pen-point, and an ink-feeding device having a movable element provided with an air-vent and normally held in spaced relation from the contiguous part of the structure to form an intervening ink-flowing fissure, and a cap having a member for moving said element in a direction to close said fissure, the cap member being also arranged to cover the air-vent.

8. In a fountain-pen, the penholder carrying the pen-point, and an ink-feeding device having a spring-projected movable element provided with an air-vent and normally held in spaced relation from the contiguous part of the structure to form an intervening ink-flowing fissure in communication with the interior of the holder, and a cap having a projection for moving the said element in a direction to close said fissure, said projection being also arranged to cover the air-vent.

9. In a fountain-pen, the holder carrying the pen-point, and an ink-feeding device having a movable element, normally held spaced from the outer end of the structure to provide an intervening ink-flowing fissure directly adjoining the pen, and a cap arranged to engage with said element to provide for the movement thereof in a direction to close said fissure.

10. In a fountain-pen, the holder carrying the pen-point, and an ink-feeding device having a movable element provided with an air-vent, a spring arranged to normally project said element to an active position spaced from the contiguous part of the pen-bearing section to form an intervening ink-flowing fissure, and a pen-cap having an interior cut-off projection arranged to cover the air-vent, the said cap having a movement to provide for carrying the movable element of the ink-feeding device in a direction for closing the said fissure.

11. In a fountain-pen, the penholder carrying a pen-bearing section, a plunger or feeder longitudinally movable within said section, and having a head portion held normally spaced from the outer contiguous end of the pen-bearing section to provide an intervening ink-flowing fissure, and a cap having a member arranged to engage with the said head portion to provide for moving the same inward and thereby closing the said fissure, so as to entirely cut off the flow of ink to the pen.

12. In a fountain-pen, the holder carrying the pen-bearing section, a longitudinally-movable plunger-feeder extending through the pen-bearing section, and having a feed bar or finger underlying the pen-point, said plunger-feeder also having an ink-vent and an air-vent, a spring arranged to normally project the plunger-feeder to an active position, and a cap having an interior projection arranged to engage with the feeder to move the same to an inactive position, and constituting a cut-off for sealing both the ink and the air vents.

13. In a fountain-pen, the penholder carrying the pen-bearing section, a longitudinally-movable plunger-feeder extending through the pen-bearing section and provided with a terminal feed-head provided with an air-vent and held normally spaced from the contiguous end of the pen-bearing section to form an intervening ink-flowing fissure, and a pen-cap having an interior central longitudinally-arranged cut-off projection adapted to engage with said feed-head to move the same inward, and also adapted to cover the air-vent thereof.

14. In a fountain-pen, the holder carrying the pen-bearing section, a longitudinally-movable plunger-feeder extending through said section into the reservoir and provided with an outer terminal feed-head having extended therefrom a feeding bar or finger underlying the pen-point, said feed-head also being provided with an air-vent in communition with the interior of the pen-bearing section, a spring housed within the pen-bearing section and engaging with the plunger-feeder to provide for holding the feed-head thereof normally spaced from the contiguous end of the pen-bearing section, and a cap having an interior cut-off projection or post arranged to engage with the terminal feed-head of the plunger-feeder and adapted to cover the air-vent thereof.

15. In a fountain-pen, the holder carrying the pen-bearing section, a longitudinally-movable plunger-feeder extending through said pen-bearing section and provided with an outer terminal feed-head normally spaced from the contiguous end of the pen-bearing section, common means for preventing the turning of the plunger-feeder and also limiting the outward movement thereof, and a cap having an interior projection arranged to engage with the plunger-feeder to move the same to an inactive position.

16. In a fountain-pen, the holder carrying the pen-bearing section, a plunger-feeder movably mounted within the pen-bearing section, and extending entirely therethrough, said plunger-feeder essentially consisting of a shank portion provided at its outer end with a feed-head carrying a feeding bar or finger for the pen-point, and held normally spaced from the adjacent end of the pen-bearing section, and a supplemental feed bar or shaft fitted to said shank and arranged longitudinally thereof.

17. In a fountain-pen, the holder carrying

the pen-bearing section having a retaining-notch therein, a longitudinally-movable feeder extending through the pen-bearing section and carrying a feeding bar or finger coöperating with the pen-point, and a supplemental feed bar or shaft fitted to said feeder and engaging with said retaining-notch of the pen-bearing section.

18. In a fountain-pen, the holder carrying the pen-bearing section, a longitudinally-movable plunger-feeder extending through the pen-bearing section and provided at its outer end with a feed-head having an air-vent, and also having extended therefrom a feed bar or finger for the pen-point, and a supplemental feed bar or shaft fitted longitudinally to the shank of the plunger-feeder and provided with a contracted finger extension projecting into the air-vent of the feed-head.

19. In a fountain-pen, the holder carrying a fixed pen-point, and an ink-feeding device having an air-vent, and means coöperating with the ink-feeding device for sealing said air-vent and also for effecting a cut-off of the ink immediately at the orifice at the nozzle or outer end of the pen-bearing section.

20. In a fountain-pen, the holder carrying a fixed pen-point and an ink-feeding device, and a cap, said cap and ink-feeding device having coöperating cut-off means for effecting a sealing of the ink immediately at the orifice at the outer end of the pen-bearing section.

21. In a fountain-pen, the holder carrying the pen-point, and an ink-feeding device provided with an element held in spaced relation to the contiguous outer end of the pen-bearing section to form an intervening ink-flowing fissure.

22. In a fountain-pen, the penholder carrying a point, and a feeder arranged longitudinally within the nozzle and provided at its outer end with a feed-head having an air-vent and held in spaced relation to the contiguous end of the pen-bearing section to form an intervening ink-flowing fissure adjoining the pen-point.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

PAUL E. WIRT.

Witnesses:
C. C. PEACOCK,
C. W. FUNSTON.