

(No Model.)

2 Sheets—Sheet 1.

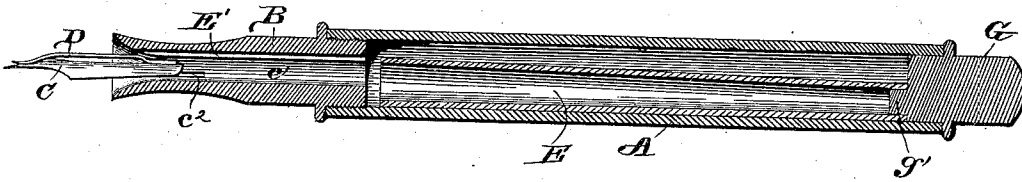
P. E. WIRT.

FOUNTAIN PEN.

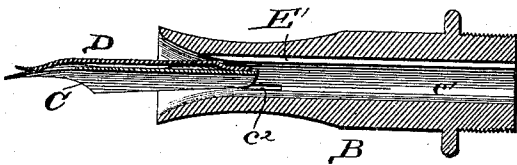
No. 358,525.

Patented Mar. 1, 1887.

*Fig. 1.*



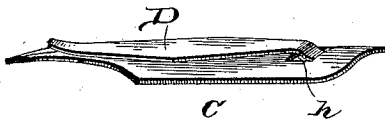
*Fig. 2.*



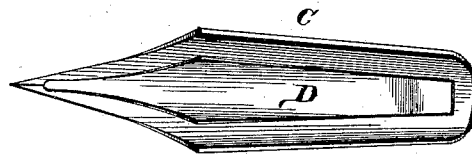
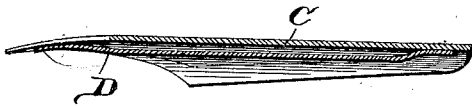
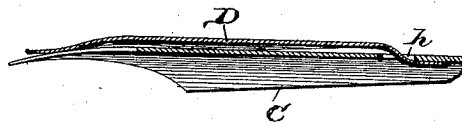
*Fig. 3.*



*Fig. 4.*

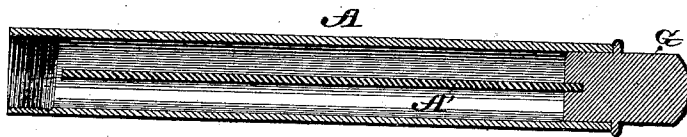


*Fig. 5.*



*Fig. 6.*

*Fig. 7.*



*Fig. 14.*

Witnesses

*Percy C. Bowen.*  
*H. Borchard*

Inventor,

*Paul E. Wirt?*

By his Attorneys

*C. A. Howland*

(No Model.)

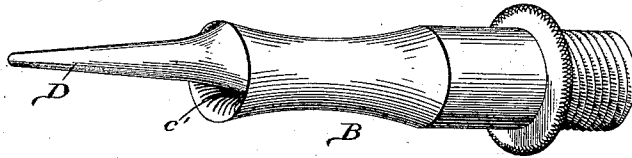
2 Sheets—Sheet 2.

P. E. WIRT.  
FOUNTAIN PEN.

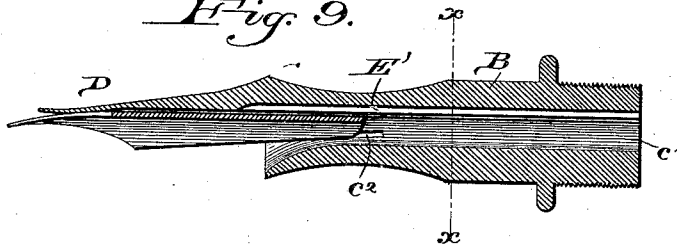
No. 358,525.

Patented Mar. 1, 1887.

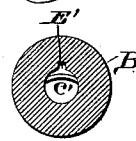
*Fig. 8.*



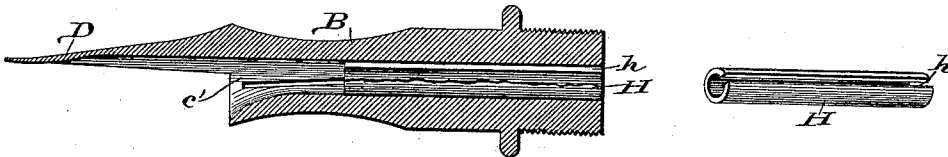
*Fig. 9.*



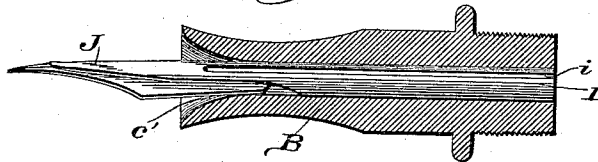
*Fig. 10.*



*Fig. 11.*



*Fig. 12.*



*Fig. 13.*



Witnesses

*Bryce Bowen*

*H. J. Deruhs*

Inventor,

*Paul E. Wirt*

By his Attorneys

*C. A. Snowden*

# UNITED STATES PATENT OFFICE.

PAUL E. WIRT, OF BLOOMSBURG, PENNSYLVANIA.

## FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 358,525, dated March 1, 1887.

Application filed July 28, 1886. Serial No. 209,324. (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 new and useful Improvements in Fountain-Pens, of which the following is a specification.

My invention relates to improvements in fountain-pens; and it consists of the peculiar combination and novel construction and arrangement of the various parts for service, substantially as hereinafter fully set forth, and specifically pointed out in the claims.

The primary object of my invention is to provide an improved fountain-pen with improved means for supplying the extreme point or nibs of the pen proper with a plentiful supply of ink, and thus avoid the common practice of having the pen "skip."

With these ends in view I employ a device which I term a "feeder," that is attached to or carried by the pen, or is independently supported in the nozzle of the implement, and so arranged with relation to the pen that an intervening space or chamber is left between the pen and the feeder, in which the ink is held or retained in check and supplies very freely to the nibs of the pen, so that it is at all times supplied with the necessary amount of ink to avoid "skipping." I also propose to make the feeder of a suitable flexible or yielding material, preferably gold, and attach it, either rigidly or pivotally, to the pen, so as to form the intermediate space and bear upon the extreme forward point or nibs of the pen, whereby when the nibs of the pen are forced upward in writing, by the pressure of the hand thereon, the feeder will yield or give to the movements of the nibs and be deflected upward therewith, and thus least resist the action of the nibs of the pen, and thereby avoid stiffening or hardening of the pen. The feeder, when of gold, can be very thin and flexible at its rear end, where it is attached or fastened to the pen, and at the same time it is stronger and more durable than when it is made of any other material.

A further object of my invention is to provide a fountain-pen with an improved subdivided or double ink-reservoir, which will per-

mit of the free entrance of air therein and yet supply the requisite amount of ink or liquid to the pen necessary for the proper operation of the latter, while at the same time it retains the ink up within the reservoir or barrel of the implement very effectually, and also prevents precipitate fall or rush of the ink out of the barrel and nozzle upon the pen when the device is inverted for writing. By permitting the air to have free entrance to the ink-reservoir the necessary pressure of atmospheric air on the ink in the reservoir is secured, which serves in a measure to hold the ink in check and prevent it from flowing too freely, which is liable to cause the pen to blot.

A further object of my invention is to provide an improved fountain-pen which shall possess superior advantages over others that have preceded it in points of ease of the action of the nibs, simplicity, durability, and strength of construction, and cheapness of manufacture.

In the drawings hereto annexed I have illustrated several devices or forms of fountain-pens which I have devised for carrying my above-named objects into effect, which I will now proceed to describe.

Figure 1 is a vertical central sectional view taken through the longitudinal axis of my improved pen. Fig. 2 is an enlarged vertical longitudinal sectional view of the nozzle shown in Fig. 1, together with the pen attached thereto and its feeder. Fig. 3 is a detached detail view of one form of the pen with its attached feeder. Fig. 4 is a like view of another form of my device. Fig. 5 is a vertical sectional view of the device shown in Fig. 4. Fig. 6 is a vertical sectional view of another form of the pen and its attached feeder, showing the latter on the under side of the pen. Fig. 7 is a bottom plan view of the device shown in Fig. 6. Fig. 8 is an enlarged detail view of another form of nozzle, with means for feeding the ink, and a feeder to the pen attached to the nozzle. Fig. 9 is a vertical sectional view of the device shown in Fig. 8, with the pen in proper position in the nozzle. Fig. 10 is a vertical cross-sectional view on the line *xx* of Fig. 9. Fig. 11 is a view of another form of device for feeding or supplying the ink to the pen-feeder shown in the nozzle. Figs. 12 and 13 are ver-

tical sectional and detached perspective views, respectively, of another mechanism for feeding the ink to the pen. Fig. 14 is a detail view of a modification of the device for forming the ink-reservoir.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the handle or barrel of a fountain-pen constructed in accordance with my invention, which is made of any suitable length, and cylindrical or of any other desired form. This barrel, as well as the other parts of the device, with the exceptions which will be noted hereinafter, is made of hard rubber, as is usual, for the purpose of lightness, strength, and durability, in addition to cheapness of manufacture. The barrel or handle A, which serves as a reservoir for the ink or other liquid which is to be used in writing, may consist of a single tubular space within the handle; or the said space may be subdivided, as hereinafter described, into additional spaces to better retain the ink by atmospheric pressure from without and attraction for ink within the reservoir, produced by a multiplicity of inner walls or surfaces. When a large capacity for ink is desired, it can better be attained, so as not to let the ink rush precipitately out of the nozzle and off the pen, by confining it in narrowed spaces. I have discovered that a narrow tube or space will better retain a fluid by atmospheric pressure than a wide or large one.

B designates a nozzle, which is provided with an exteriorly-threaded rear end, which is screwed into the interiorly-threaded front end of the handle or barrel A, so that the nozzle is detachably connected with the handle or barrel, and can be removed at will to fill the reservoir or reservoirs with the ink that is to be used or consumed in writing. The front or opposite end of the nozzle is reduced slightly, and curved, as shown, so that the fingers of the writer's hand can grasp the implement very firmly and securely in writing; and the nozzle is further provided with a longitudinal central opening or passage,  $e'$ , through which the ink or other liquid passes to the pen, that is fitted in the nozzle, as presently described, the outer end of the longitudinal passage being enlarged or flared, as clearly shown. The nozzle B is further provided with longitudinal grooves  $e^2$ , which are formed in the flared outer end of the same, and at or near the middle thereof, and in these grooves is fitted the heel or rear end of the pen C, so that the latter will be securely held in the nozzle in the middle or center thereof and of the longitudinal passage therein.

The pen C may be of any desired form or construction—preferably a gold pen is used—and by fitting it in the grooves of the nozzle the pen is held out of contact with the inclosing walls of the longitudinal passage of the nozzle, and in the center thereof, so that the ink or other liquid can be fed or supplied very freely

to the feeder and pen by the means which I will now proceed to describe.

D designates the feeder that supplies the ink to the nibs or the point of the pen C, and receives it from the reservoir by capillary attraction. I have shown herein several forms of devices for feeding the ink to the nibs or point of the pen, which will be described hereinafter.

The handle or barrel A, which serves as an outer case or reservoir, also performs the additional function of holding and concealing an auxiliary or additional reservoir, E, that is inclosed within it. In Fig. 1 I have shown the auxiliary reservoir in the form of a cylinder or tube, which is arranged longitudinally and eccentrically within the barrel or handle A. By thus providing another or auxiliary reservoir and arranging it eccentrically within the barrel I am enabled to supply ink very freely to the pen, and at the same time better retain or hold the ink in suspension in the reservoir and about the mouth of the nozzle by atmospheric pressure on the ink, the air passing freely to the open mouth of the reservoirs, or to the lower end thereof, through the space beneath and above the pen C and the nozzle. To insure the proper supply of ink to the pen and its feeder D, hereinafter described, without interfering with the supply of air to the ink-reservoir E, which serves to retain the ink in the same and suspended around the heel of the pen C, it is necessary to provide the nozzle B with an auxiliary channel or passage, or a series of channels or passages, for the ink, which is to flow freely through the channel or channels to the feeder from the ink-reservoir.

If a series of grooves or channels is to be used, it is arranged radially around the inner periphery of the nozzle, as will be very readily understood.

I have shown several devices herein by which the object above mentioned can be attained, and the simplest and most inexpensive of these devices is shown in Figs. 1 and 2. The nozzle B is provided on its inner surface with a longitudinal groove,  $E'$ , or a series of these grooves which are arranged radially within the nozzle, as heretofore mentioned. The groove or channel  $E'$  in this instance is arranged on the upper surface of the nozzle, and extends from the rear end of the same to a point immediately above the pen C on the feeder D, whereby the ink is fed by capillary attraction from the lower open mouth of the ink-reservoir to the longitudinal auxiliary channel or channels, and conducted thereby to the heel of the pen and its ink-feeder. It will thus be seen that the outside air is free to pass to the open mouth of the ink-reservoir on the lower side of the nozzle and beneath the pen C and its ink-feeder without obstruction to the free passage of the ink, which is conducted by the auxiliary channel or channels from the open mouth of the reservoir on the upper side of the nozzle to the

heel of the pen. A free and plentiful supply of ink is thus insured to the feeder and its pen, which obviates the pen skipping, without obstruction from a passing bubble or globule of air, and the necessary atmospheric pressure on the ink in the reservoir is secured to hold the ink in suspension around the heel of the pen and prevent it from flowing too freely, which is liable to cause the pen to blot, the air supplying the place of the ink that is fed from the reservoir to the pen, and thereby maintaining the atmospheric pressure to the proper degree at all times.

In Fig. 14 of the accompanying drawings I have illustrated another form of device for an ink-reservoir, which merely consists of a longitudinal partition or wall, A', which is arranged longitudinally within the barrel or handle A, at or near the center thereof, and flat or of any other desired form. This partition A' terminates at its lower end about in line with the upper side of the longitudinal passage of the nozzle and a very short distance in rear of the said nozzle. If preferred, the partition may be rigidly affixed in the barrel or handle A, so as to divide the latter into two chambers or compartments to serve as the ink-reservoirs for supplying the ink to the pen and its feeder. When the barrel or handle A is provided with an inner auxiliary reservoir, as shown in Fig. 1, the cap G at its upper end is provided with an eccentrically-disposed plug, g', which fits snugly in the upper open end of the said auxiliary reservoir, to close the latter at its top at all times.

In providing the barrel or handle A with the inner auxiliary reservoir, the top or cap G thereof is never opened to fill the reservoirs with ink; and in order to fill them the nozzle is detached and the ink poured in the barrel. The cylinder or partition forms divided spaces within the barrel, which are permanently and tightly closed at the upper end.

The feeder D may be rigidly affixed to the heel of the pen, on the upper or under side of the same; or it may be hinged or pivotally connected to the pen, so as to be entirely carried thereby. When the feeder is carried by and connected with the pen, it is made of some non-corrosive elastic or yielding substance or material, preferably gold, so that it will yield or give to the movement of the nibs or point of the pen, and thus allow free movement or play of the nibs without hinderance from the feeder.

In Figs. 1, 2, and 3 I have shown the feeder, that is to be made of elastic material, rigidly affixed at its rear end to the heel of the pen C. The rear end of the feeder is flattened or reduced in thickness, so that it is quite thin, and it may be bent at an angle to the body, so that a shoulder is provided between the body and the bent end of the feeder. This bent, reduced, and flattened end of the feeder is rigidly affixed, by solder or any other suitable means, to the upper surface of the pen at the

rear end thereof, and as this bent end of the feeder lies on a lower line or plane than the body of the feeder, by reason of the bend and the shoulder thereof, the body of the feeder is elevated above and out of contact with the upper face of the pen, excepting at or near the extreme point, where it slightly bears or rests upon the point or nibs of the pen, thus leaving or providing a small space or chamber between the body of the feeder and the upper surface of the pen, in which the ink for the nibs of the pen is retained or held to insure a plentiful supply to the pen at all times, whereby the pen will respond with a mark or line upon the slightest touch or pressure upon the pen, as is obvious. I attach especial importance to the peculiar arrangement of the feeder with relation to the pen, so as to form an ink chamber or space between the body of the feeder and the pen, as therein lies one of the most important and essential features of my present invention, whereby I am enabled to produce a fountain-pen which is supplied at all times with a plentiful supply of ink and responds to the slightest pressure with a mark or line, which is very important, as it enables the writer or penman to shade the letters and characters properly and thus fulfill all the functions of an ordinary form of pen.

I also attach especial importance to making the feeder of a suitable flexible material, preferably gold, so that when it is lying over and above the pen to give the least resistance to the action of the nibs of the pen as the latter are pressed upward against the feeder when writing, while at the same time such construction is strong and durable, and the pen is easily and readily removed, cleaned, and replaced.

The body of the feeder is curved and shaped to conform to the shape of the pen somewhat—that is to say, it is curved transversely and tapered from its middle toward the front and rear end, as shown in Fig. 3—whereby it will more easily and perfectly supply the ink from the auxiliary channel to the pen C. The point or outer tapered extremity of the feeder comes in contact with or touches the outer ends of the nibs or point of the pen when the feeder and pen are in their normal inactive positions, and the space between the pen and the main body of the feeder extends from the point of the feeder to the bent rear end thereof, so as to provide a larger supply of ink at the point where it is most essential; but when pressure is brought upon the nibs of the pen in writing they are forced or deflected upwardly and in contact with the outer extremity of the feeder, which will yield to the movements of the pen, as it is made of elastic material for this purpose, whereby the proper movement or flexibility of the pen is insured without hinderance from the flexible feeder.

In Figs. 4 and 5 I have shown the ink-feeder hinged or pivotally connected with the heel of the pen C, so that the feeder can be easily and readily detached, if desired. The form of

hinge-connection between the pen and feeder can be varied or modified from the form shown herein, as I do not wish to limit myself to the detail of construction of this part of my device. A transverse slot or opening, *h*, is cut or formed in the heel of the pen, and in this slot is fitted the bent rear end of the feeder, the shoulder thereof impinging against the sides of the slot, while the free end is passed or fitted against the lower side of the pen, as shown. In this instance the feeder is arranged on the upper side of the pen, and out of contact therewith throughout its length, except at the point above mentioned, so as to form the intermediate space or chamber for the ink; but it will be readily understood that the feeder can be arranged on the lower side of the pen, with its bent rear end or tongue fitting on the upper side of the pen, and its body out of contact therewith, for a purpose already explained.

I have shown the feeder arranged on the lower side, and inclosed within the pen C, in Figs. 6 and 7 of the accompanying drawings. In this instance the feeder is provided with the usual tongue, which, however, is bent upwardly instead of downwardly, as shown in Figs. 1 to 5, inclusive, and is attached to the heel of the pen C, either permanently or pivotally, as preferred. The body of the feeder, however, is arranged out of contact with the under side of the pen, so as to form the intermediate space or chamber for the ink that is to be fed to the pen, and the auxiliary ink-channel from the reservoir is arranged on the lower side of the main passage *c'* of the nozzle, instead of on the upper side, so that the ink will flow freely by capillary attraction from the reservoir through the auxiliary channel to the feeder, and from thence to the pen C, while the air that is supplied to the reservoir takes the place of the ink as it is fed to the pen.

The feeder may be made, as shown and described, larger at or near its middle and slightly oval or curved in cross-section, and the sides of the feeder converge toward each other until they meet in a point, as clearly shown; or the form and shape thereof can be changed without departing from the spirit of my invention.

It will be observed from the foregoing description, taken in connection with Figs. 1 to 7, inclusive, of the drawings, that I provide a feeder which is attached at one end to the heel of the pen, and is so bent as to be out of contact with the pen, except at its free end; but in Figs. 8, 9, 11, 12, and 13 of the drawings I have illustrated a feeder which contacts with the pen at its free end only, and is arranged in close proximity thereto, so as to form the intermediate chamber for the ink-supply to the pen, which devices I will now proceed to describe in detail.

In Fig. 8 of the drawings I have shown another form of my invention for feeding the ink to the pen C. The nozzle B is provided with the feeder D in this case, which is formed in

a single piece with the nozzle and projects or extends forwardly beyond the body or main portion of the nozzle.

The feeder D is made of the same material as the nozzle—*i. e.*, hard rubber—and it is curved and tapered longitudinally, the feeder being made concavo-convex in cross-section. The curvature of the feeder in cross-section varies, inasmuch as the feeder is tapered longitudinally, and the feeder is formed on the upper side of the nozzle, so that it lies above the pen C, which is fitted and held in the nozzle in the manner hereinbefore described—*i. e.*, by means of the central longitudinal grooves. The feeder is hollowed or recessed out on its under side, so that it is out of contact with the upper surface of the pen C, for the purpose of forming the intermediate space or chamber. The nozzle C is also provided with the usual longitudinal auxiliary channel or educt for conveying the ink from the reservoir to the feeder, which conducts or supplies it to the upper surface of the pen to insure a plentiful supply of ink thereto, the outer tapered end or extremity of the feeder being elevated slightly above the upper surface of the nibs of the pen, to permit the nibs to have free movement or play in writing. By making the feeder integral with the nozzle I can manufacture the device at a smaller price, as I thereby dispense with the flexible feeder that has to be attached to the pen, as described herein; but I prefer to make the feeder of flexible material, for the reason that it will give or yield to the movements of the pen's nibs. When the feeder is made of pliable or flexible material or substance, it will not harden or stiffen the pen, but will yield or give thereto, and thus adapt the pen to fulfill all of the functions of a pen of any class, the pen C that is to be used herein being of any approved pattern.

In lieu of forming the auxiliary channel or educt in the interior walls of the longitudinal passage *c'* of the nozzle, I may employ a small tube, H, which is provided with a longitudinal slot or groove, *h*, in its periphery, and is fitted snugly in the passage *c'* of the nozzle. This tube H can be of metal, hard rubber, or other desired or preferred substance, and it is made of such diameter that it will fit snugly in the passage *c'* of the nozzle, whereby the longitudinal groove *h* in said tube will be brought or adjusted very close to the walls of the passage *c'*, and thus form the auxiliary channel or educt for the ink from the ink-reservoir to the feeder. The air for supplying the place of the ink in the reservoir and for maintaining the proper atmospheric pressure therein passes freely through the tube H and the nozzle, so that the ink-supply to the feeder is unobstructed, and this tube H can be shifted or rotated in the nozzle, so that its groove *h*, which forms the auxiliary channel, can lie at the top, bottom, or sides of the channel *c'*, and thus convey the ink to either the top or under side of the pen and the feeder thereto. It will

thus be seen that by means of the rotating tube H, with its peripheral channel or educt, pens that have differently located and arranged feeders can be adapted for use in the same nozzle.

In Figs. 12 and 13 of the drawings I have shown a device by which the tube H and the feeder are combined in one implement. The tube I is provided with the peripheral groove or channel *i*, that is arranged longitudinally thereof, and at its front end the tube is reduced or cut away to form the feeder J, which is tapered to a point, as shown. The tube and feeder are made in a single piece of either hard-rubber, metal, or other preferred material, and they are fitted in the nozzle C very snugly. The groove or channel at the periphery of the tube I lies very close to the interior surface of the passage *c*' of the nozzle, and the feeder projects or extends beyond the flared mouth of the nozzle. The peripheral channel of the tube conducts the ink from the reservoir to the feeder, and this channel is extended beyond the tube upon the upper surface of the feeder for a short distance, as shown in Fig. 13, to more perfectly supply the ink to the feeder. The feeder is curved in cross-section to conform somewhat to the shape of the pen, which is fitted in the grooves in the middle of the nozzle, as is usual, the feeder being arranged above and out of contact with the upper surface of the pen to provide the intermediate space or chamber that retains the ink for immediate use.

The operation of my invention will be readily understood from the foregoing description, taken in connection with the drawings.

It will be observed that I provide improved means for retaining the ink suspended in the ink-reservoir and around the heel of the pen by permitting free egress of air to the reservoir, which serves to produce the necessary atmospheric pressure on the ink and retain the same in the reservoir, and preventing too free flowing of the ink to the pen, which is liable to cause blotting thereof. I also provide means for insuring a proper and plentiful supply of ink at the pen for immediate use, by which the pen is prevented from skipping, and will at all times instantaneously respond with a mark or impression upon the slightest pressure or force on the pen. The pen is allowed to have the necessary and free movements which are essential to properly shade the letters and characters, inasmuch as the feeder does not render the pen hard and stiff in working.

My improved fountain-pen is very simple, strong, and durable in construction, thoroughly efficient and reliable in operation, cheap, and inexpensive of manufacture, and easily taken apart and cleaned.

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

1. In a fountain-pen, the combination, with

a handle or reservoir, of a nozzle connected to the handle, a pen fitted in the open end of the nozzle, a feeder arranged in close proximity to the pen and out of contact therewith, except at its free end, and an auxiliary channel intermediate of the feeder and reservoir and arranged longitudinally of the nozzle and at the inner periphery thereof, substantially as described, for the purpose set forth.

2. In a fountain-pen, the combination of a handle or reservoir, a nozzle fitted therein, a pen fitted at its side edges in the open lower end of the nozzle and out of contact therewith on its top and under sides, to provide intermediate air-passages, a feeder arranged in close proximity to the pen and out of contact therewith, except at its free end, to form an intermediate chamber or reservoir, and an auxiliary channel intermediate of the reservoir and feeder and arranged at the inner periphery of the nozzle and longitudinally thereof, substantially as described, for the purpose set forth.

3. In a fountain-pen, the combination of a handle or reservoir, a nozzle connected to the open end thereof and provided on its inner periphery with a longitudinal auxiliary channel, which receives and conducts the ink from the reservoir, a pen fitted in the nozzle and out of contact therewith to permit atmospheric air to pass freely through the nozzle into the reservoir to exert considerable pressure upon the contents of the same and thereby prevent the ink from precipitately flowing upon the pen, and a feeder arranged in close proximity to the pen and in contact with the nibs thereof only, substantially as described, for the purpose set forth.

4. In a fountain-pen, the combination, with a handle or reservoir in which the ink is sustained mainly by atmospheric pressure, of a nozzle fitted to the open end of the reservoir and provided on its inner periphery with one or more longitudinal auxiliary channels, which are cut therein, a pen fitted in the open end of the nozzle, and a feeder arranged in close proximity to the pen and out of contact therewith, except at its free end, to form an intermediate chamber and conduct the ink from the auxiliary channel to the pen, substantially as described, for the purpose set forth.

5. In a fountain-pen, the combination, with the handle or reservoir, of a nozzle fitted therein and having a longitudinal auxiliary channel, a pen fitted in the open end of the nozzle, and a feeder connected at one end to the pen and arranged out of contact therewith, except at its free end, to form an intermediate space or chamber, substantially as described, for the purpose set forth.

6. In a fountain-pen, a handle or reservoir, in combination with a nozzle, a pen fitted in the nozzle and arranged out of contact therewith, except at its sides, the feeder arranged in close proximity to the pen, and a longitudinal auxiliary channel arranged at the inner periphery of the nozzle and terminating at a

point immediately above the pen, substantially as described, for the purpose set forth.

7. In a fountain-pen, the combination of a handle or reservoir, a nozzle, a pen fitted in the nozzle, and a feeder pivotally connected with the pen and carried thereby and having its body portion arranged out of contact with the pen, except at its free end, to form an intermediate space or chamber, substantially as described.

8. In a fountain-pen, the combination of a handle or reservoir, a nozzle connected to the open end of the reservoir, and having a central channel arranged in line with the reservoir, and the longitudinal auxiliary channel arranged at its inner periphery and communicating with the central channel, a pen fitted in the open end of the nozzle, and a feeder, substantially as described, for the purpose set forth.

9. In a fountain-pen, the combination of a handle provided with an interior reservoir arranged eccentrically therein, a nozzle fitted to the handle and having an auxiliary channel which receives its supply from the reservoir, a pen fitted in the nozzle to provide intermediate spaces between its flat or curved sides and the nozzle, and a feeder arranged in close proximity to and out of contact with the pen, except at its free end, to form an intermediate space or chamber, substantially as described, for the purpose set forth.

10. In a fountain-pen, the combination of a handle having an interior reservoir arranged longitudinally thereof and eccentrically within the same, a nozzle fitted to the handle and provided with an interior channel or educt which extends longitudinally thereof and conveys the ink from the reservoir, a pen fitted in the

nozzle to form an intermediate air-space, which opens into the open mouth of the reservoir, and a feeder arranged out of contact with the pen, except at its free end, substantially as described, for the purpose set forth.

11. In a fountain-pen, the combination of a handle or reservoir, a nozzle, a pen fitted in the nozzle, and a feeder connected to the pen and having the converging sides, substantially as described.

12. In a fountain-pen, the combination of a handle or reservoir, a nozzle, a pen fitted in the open end of the nozzle, and a pliable feeder having a shoulder at one end and connected to the pen at the heel of the latter and bearing at its opposite end upon the nibs of the said pen, substantially as described, for the purpose set forth.

13. In a fountain-pen, the combination of a handle or reservoir, a nozzle provided with an interior channel formed by an interior tube having a peripheral groove, a feeder, and a pen, substantially as described, for the purpose set forth.

14. In a fountain-pen, the combination of a handle provided with a reservoir or reservoirs, a nozzle fitted to the handle, a rotary tube enclosed within the nozzle and having a longitudinal groove at its periphery, a feeder, and a pen, substantially as described, for the purpose set forth.

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

PAUL E. WIRT.

Witnesses:

C. C. PEACOCK,  
GEO. S. ROBBINS.