(Model.)

D. W. BEAUMEL.

FOUNTAIN PEN.

No. 603,463. Patented May 3, 1898.

Fig. 1.

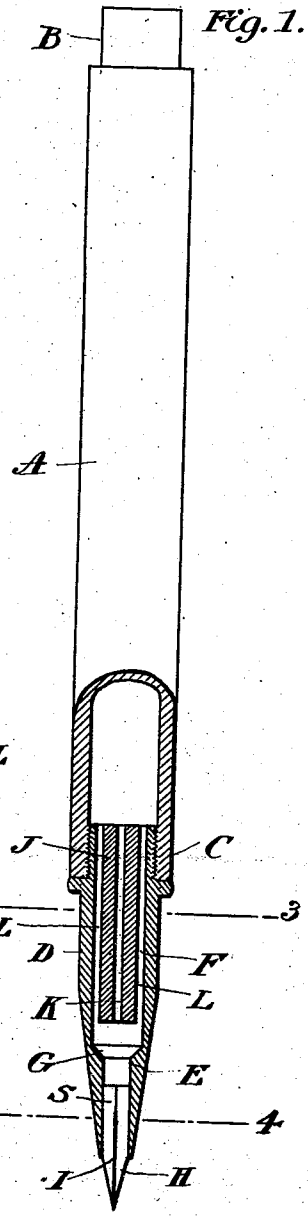


Fig. 5.

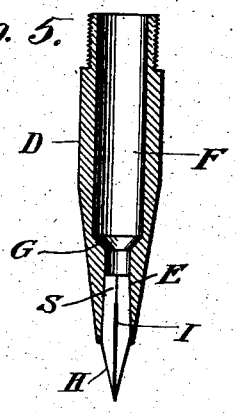


Fig. 2.

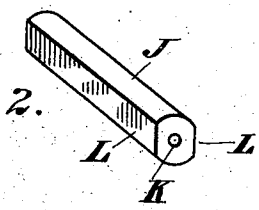


Fig. 3.

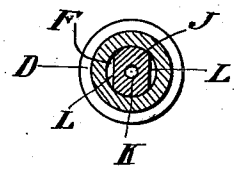
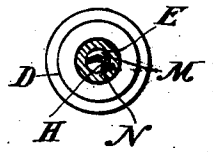


Fig. 4.



WITNESSES:
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UNITED STATES PATENT OFFICE.

DAVID W. BEAUMEL, OF BROOKLYN, NEW YORK.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 603,463, dated May 3, 1898.

Application filed March 26, 1897. Serial No. 629,308. (Model.)

To all whom it may concern:

Be it known that I, DAVID W. BEAUMEL, a citizen of the United States, residing at Brooklyn, Kings county, and State of New York, have invented certain new and useful Improvements in Fountain-Pens, of which the following is such a full, clear, and exact description as will enable any one skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to fountain-pens of the class in which the upper end of the ink-reservoir is permanently closed against the admission of air; and the principal object of the invention is to practically dispense with the ordinary ink-feeding devices or members for leading the ink to the nibs of the pen, and thereby simplifying the construction.

My invention consists in the various novel and peculiar arrangements and combinations of the several parts of the device, all as hereinafter fully described and then pointed out in the claims.

I have illustrated types of my invention in the accompanying drawings, wherein—

Figure 1 is a view of a fountain-pen embodying my improvements. In this view the upper end of the fountain-pen is shown in full, while the lower end thereof is shown as partly broken away and in section on a central longitudinal plane. Fig. 2 is a perspective view of a plug for regulating the flow of ink from the reservoir. Figs. 3 and 4 show views in cross-section, the planes of which are indicated by lines 3 3 and 4 4, respectively, in Fig. 1. Fig. 5 is a sectional view of a form of my invention in which the plug for regulating the flow of ink from the reservoir is omitted. This view shows the detached nozzle in section on a central longitudinal plane.

Referring to the drawings, in which like letters of reference designate like parts throughout, A is an ordinary tubular reservoir of a fountain-pen. The upper end B of the reservoir is permanently closed against the admission of air, while the lower end C thereof is open and is adapted to receive an ordinary tubular nozzle D, which is detachably fitted thereto by a screw-threaded joint. The bore of the nozzle D is preferably formed with the section F thereof at the inner end of a larger diameter than the section E thereof at the outer end, and an inclined or sloping shoulder G is formed between the large and small portions F and E thereof.

A small writing-pen H, which is formed with a central and longitudinally-extending slit I, dividing the pen into the two nibs, is inserted approximately centrally in the bore E at the outer end of the nozzle, so that the slit I extends a considerable distance back therein, while the nibs of the pen project outwardly sufficiently far to write freely with. The pen being placed practically in the center of the bore E, there is thereby constituted a free passage M above the pen and a similar passage N below the pen and through which passages the air and ink may pass during the writing action of the pen. The slit I in the writing-pen is extended an unusually great distance back—for example, about three-fourths of the length of the writing-pen—and the body of the pen is peaked slightly longitudinally—that is, it is slightly higher along the center of its back than at its side edges. The raised center portion of the pen is indicated in the drawings by the fine line S, extending in line with the slit H thereof, as shown in Figs. 1 and 5. This peculiar form of pen may be made by bending the ordinary flat stock along its central line of length, so that it approaches the shape of an inverted **V**. This form is used instead of the usual arched or curved form, as the pen is so small that if an arched one were employed in the small bore E it would lie against the upper wall thereof instead of dividing the bore into the requisite passages M and N. As already seen, the various parts of the device are shown as enlarged beyond the proportions employed in the actual device, so that the diameter of bore E is, as a matter of fact, comparatively small, likewise the pen. The size of pen which I generally use is little less than one-eighth of an inch wide and from three-eighths to one-half an inch long.

The bore E at the outer end of the nozzle, in which the writing-pen is mounted and which practically constitutes the means whereby the ink is fed to the pen, is by preference made straight—that is to say, it has a uniform diameter throughout its length. How-

ever, if preferred, the bore E may be slightly tapered in such direction that the large diameter is located at the outer end, as shown in Fig. 5. When the bore is formed straight, the pen is made with its side edges parallel; but where the bore is tapered the pen is accordingly tapered at its side.

With this arrangement and under the conditions referred to I find that when the reservoir is filled with ink the writing-pen is properly supplied with ink, so that it may be written with continuously, and that there is little or no tendency of the ink dropping from the nozzle or the pen, for it will be noted that the writing-pen itself is comparatively small, likewise the diameter of the bore E, in which it is set, and the flow of the ink is accordingly kept under such control as to make the fountain-pen operative.

In some instances I add to the construction already described a channeled plug J, which is placed in the nozzle back of the pen within the bore F. This plug is provided with a central channel or perforation K, extending longitudinally through it from end to end, and two opposite sides of the plug are flattened or cut away at L L, so that when the plug is inserted in place it affords three channels or passages throughout its length—namely, one channel K through its center and one at L upon two opposite sides, as clearly shown in Figs. 1 and 3. By means of these passages the inflow of air and the outflow of ink from the reservoir toward the writing-pen may be regulated. The plug J is held in place by friction, but may be readily turned on its axis, so as to bring the cut-away portions L L into different angular adjustments, so that the lower ends may be directed toward the side edges of the writing-pen, as shown in Fig. 1, in which case the flow of ink will be more sluggish, as its course is thereby diverted and made less direct, or it may be given a quarter-turn on its axis, so as to place one of said cut-away portions in a plane above the pen and the other cut-away portion L in a plane below the pen, and the flow of ink may be thereby increased.

It will be noted that the outer end of the plug J does not extend to the shoulder G, thereby leaving a small chamber at such lower end and in which the ink accumulates and causes the same to act as a secondary reservoir, from which the ink flows smoothly to the lower bore E and thence to the writing-pen by virtue of the inclination of the shoulder G.

It will now be understood that if the writing-pen is set in the position shown in the drawings the ink coming down from the reservoir through the bore in the nozzle will be fed to the pen through the smaller portion of the bore E, which it divides, and that the pen may thus be written with so long as there is any ink remaining in the reservoir. By virtue of this simple arrangement I am enabled to dispense with the usual pieces or devices which are ordinarily placed in contact with the writing-pen itself for supplying it with ink.

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

1. In a fountain-pen, the combination of a tubular ink-reservoir closed at its upper end against the admission of air and open at its lower end, an open-ended tubular nozzle mounted upon the open end of said reservoir and formed at its outer end with a comparatively small-sized bore for retarding the free outflow of ink from the nozzle, and a comparatively small-sized slit writing-pen having its body mounted within and across the said bore of the nozzle and dividing the same longitudinally throughout the length of the body of the inserted pen into upper and lower passages adjacent the pen, the nibs projecting from the mouth of the nozzle with the slit thereof extending within the bore thereof and the said passages themselves constituting the means for feeding the ink from the reservoir to the nibs of the pen, substantially as and for the purpose set forth.

2. In a fountain-pen, the combination of an ink-reservoir closed at its upper end, an ordinary tubular nozzle mounted upon the lower end of said reservoir, a writing-pen provided with nibs and set in the bore of said nozzle with the nibs thereof projecting from the mouth of the nozzle and extending inwardly within the bore thereof, said pen dividing said bore longitudinally whereby there is constituted above and below said pen a free passage to the heel thereof and in communication with the reservoir, and a plug provided with air and ink passages mounted in the bore of said nozzle at the inner end thereof for regulating the flow of ink from the reservoir to the pen, substantially as and for the purpose set forth.

3. In a fountain-pen, the combination of an ink-reservoir closed at its upper end, an ordinary tubular nozzle mounted upon the lower end of said reservoir, and a writing-pen provided with nibs and set in the bore of said nozzle with the nibs thereof projecting from the mouth of the nozzle and extending inwardly within the bore thereof, said pen dividing said bore longitudinally whereby there is constituted above and below said pen a free passage to the heel thereof and in communication with the reservoir, and a plug channeled or cut away longitudinally to provide air and ink passages throughout its length and set in the bore of said nozzle at the inner end thereof, said plug being capable of being turned on its axis to change the angular position of the ink-passages thereof and vary the relation of the same to the plane of the pen, substantially as and for the purpose set forth.

4. In a fountain-pen, the combination of a tubular ink-reservoir closed at its upper end against the admission of air and open at

its lower end, an open-ended tubular nozzle mounted upon the open end of said reservoir and having the diameter of the bore at its outer end comparatively small and less than that at the inner end, the diameter of the bore at said inner end of the nozzle being less than that of the said ink-reservoir, and a comparatively small-sized slit writing-pen mounted in the outer end of the nozzle within the smaller bore thereof and dividing the same into upper and lower passages adjacent the writing-pen, the nibs of the writing-pen projecting from the mouth of the nozzle with the slit thereof extending within the bore and the said passages themselves constituting the means for feeding the ink to the nibs of the writing-pen, substantially as and for the purpose set forth.

In testimony whereof I have hereunto set my hand this 23d day of March, 1897, in the presence of the two subscribing witnesses.

DAVID W. BEAUMEL.

Witnesses:
WILLIS FOWLER,
SAMUEL M. CHESNUT.