

No. 679,790.

Patented Aug. 6, 1901.

W. W. STEWART.
FOUNTAIN PEN.

(Application filed Mar. 5, 1901.)

(No Model.)

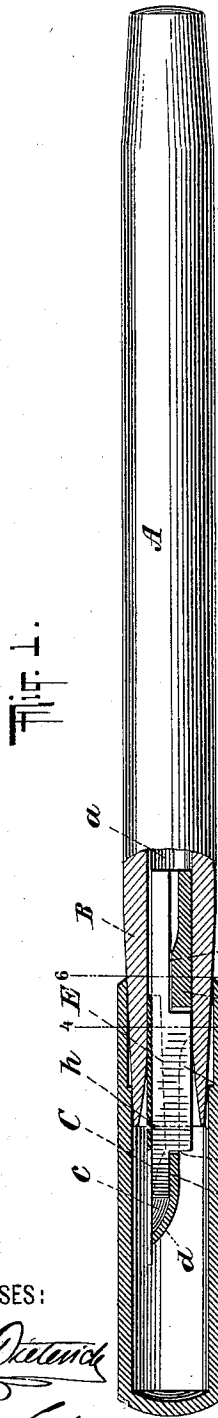


Fig. 1.

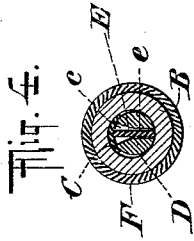


Fig. 4.

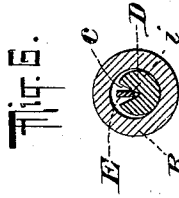


Fig. 6.

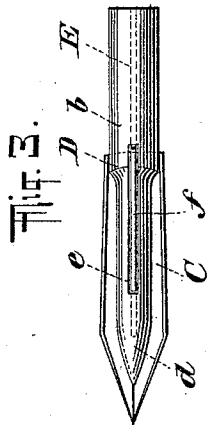


Fig. 3.

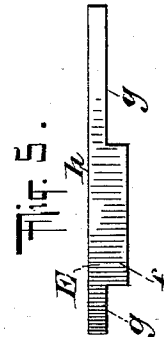


Fig. 5.

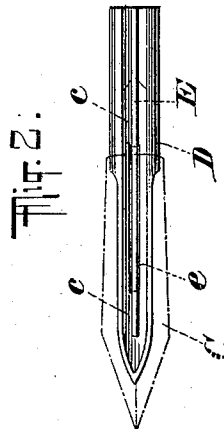


Fig. 2.

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FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 679,790, dated August 6, 1901.

Application filed March 5, 1901. Serial No. 49,728. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. STEWART, a citizen of the United States, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

My invention relates to fountain-pens; and the object of said invention is to provide a simple, cheap, clean, and efficient fountain-pen which is not liable to become clogged or to get out of order, and which can be cleaned with little difficulty, and wherein the flow can be regulated.

To these and other ends, which will hereinafter appear, my invention consists in the novel arrangement and combination of parts to be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view, partly in section, of one form of fountain-pen embodying my invention. Fig. 2 is a detail plan view of the feeder-bar with the controlling-plate in place and the pen-nib shown in dotted lines. Fig. 3 is a bottom view of the same, the pen-nib in this case being shown in full lines. Fig. 4 is a transverse sectional view of the pen with the parts assembled, taken on the line 4 4 of Fig. 1. Fig. 5 is a detail side view of the controlling-plate. Fig. 6 is a transverse sectional view of the pen with the parts assembled, the view being taken on the line 6 6 of Fig. 1.

Referring to the drawings, A indicates the hollow handle of a fountain-pen which constitutes the ink-reservoir. Connected to the reservoir A is a nozzle section or portion B, which is in communication with the reservoir and with the open air. This nozzle may be formed integral with the handle of the reservoir or may be a separate piece, which is adapted to be connected thereto by suitable connections, as is commonly the case in fountain-pens. The nozzle B has a central bore *a* extending therethrough, and seated within this bore is a pen-nib C. Preferably beneath the pen-nib C is situated a feeder-bar D. This feeder-bar is in the nature of a bar which is slotted throughout a portion of its length, and a portion of the exterior surface thereof, as indicated at *b*, conforms to the shape of the bore of the nozzle, so that the feeder-bar acts as a plug, between which and the wall of the

bore the pen-nib C may be secured. The side of the feeder-bar D which is next to the pen-nib is provided with an elongated trough-like recess or opening *c*, which extends throughout the length of the feeder-bar and is open at the rear end, where it communicates with the reservoir, and is preferably closed at the forward or front end, as indicated at *d*. The bottom of this trough-like opening of the feeder-bar is slotted for a portion of its extent, as shown at *e*, the slot extending entirely through the bar at a portion of it which extends outside of the nozzle, so as to provide a lateral opening which communicates with the longitudinal opening *c*, thus establishing open communication between the outer air and the interior of the reservoir. A controlling piece or plate E is employed, which is preferably of the general form represented in Fig. 5 of the drawings. This controlling-piece is preferably in the nature of a thin flat plate of gold or equivalent material having a part *f*, which is adapted to extend into or through the slot *e* in the feeder-bar without entirely closing the same.

From an examination of Fig. 1 of the drawings it will be seen that the portion *f* prevents the controlling-piece E from moving longitudinally with relation to the feeder-bar. It will likewise be observed that the lower edge of the body portion of the controlling-piece rests on the bottom wall of the trough, as indicated at *g*, whereas the opposite edge of the controlling-piece preferably contacts with the pen-nib, as indicated at *h*. This arrangement maintains the controlling-piece E properly centered in the feeder-bar, and the V-shaped portion *i* (see Fig. 6) of the trough further tends to maintain the controlling-piece against lateral displacement. It will be understood that the provision of the slot *e* in the feeder-bar establishes means for the free passage of air to and from the interior of the reservoir and that the controlling-piece E provides against the too-rapid inlet of air to the reservoir, which would occasion a too-free flow of ink and the dropping of ink from the pen, as is common in fountain-pens of certain constructions.

From an examination of Figs. 4 and 6 of the drawings it will likewise be seen that the controlling-piece divides the opening in the

feeder into a plurality of separate and distinct channels or passages which are substantially triangular in cross-section. This is desirable in that the natural formation of film into bubbles is round and would tend to choke the passages against the proper flow of ink to the pen-nib during the inflow of air in case the passages are circular in cross-section. It will also be seen that the controlling-piece at all times constitutes a nucleus for the ready flow of ink from the lower wall of the trough to the pen-nib and that the controlling-piece terminates within the feeder-bar to better act as a controlling-piece and not a mere feeding element.

The flow of ink may be changed by substituting a thicker or thinner controlling-piece, or a plurality of thin controlling-plates may be supplied, and two or more of such plates may be placed side by side in the feeder-bar when the writer desires to decrease the flow of ink to do finer writing.

The construction described has material advantages in that it provides a clean pen under all circumstances and conditions. When the pen is inverted and maintained in the pocket, for instance, it ordinarily occurs that the heat from the body will cause an efflux of air from the reservoir, and it even occurs that the efflux of this air from the reservoir produces, with the ink, a film which is discharged from the free end of the nozzle into the cover F of the pen where it explodes and smears the cover and nozzle of the pen. However, in accordance with my present invention the pen will vent itself without discharging ink therefrom, and yet a so-called "auxiliary" supply of ink is maintained in the trough when the pen is in use and the pen will not "skip" in writing. Furthermore, by my present invention I am enabled to provide a pen in which the various grades of strokes from fine to coarse may be written, thereby avoiding the necessity of specially grinding a pen-nib in order to determine the character of lines to be written, as heretofore.

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

1. In a fountain-pen, the combination of a reservoir, a nozzle having a bore therein, a feeder-bar seated in said bore and having a longitudinally - extending opening therein which communicates with a laterally-extending opening whereby open communication is established between the interior of the reservoir and the open air and a flat controlling-plate contained within said feeder-bar and in contact with the pen-nib.

2. In a fountain-pen, the combination of a reservoir, a nozzle having a bore therein, a feeder-bar seated in said bore and having an opening therein through which open communication is at all times established between the interior of the reservoir and the open air, a pen-nib seated next to the feeder-bar and

a fixed controlling-plate contained in said feeder-bar and which is maintained in contact with a wall of the opening in the feeder-bar and with the pen-nib so as to form a nucleus for the flow of ink to the pen-nib.

3. In a fountain-pen, the combination of a reservoir, a nozzle having a bore therein, a feeder-bar seated in said bore and having a longitudinally-extending trough-like opening therein and a slot in the bottom of said trough through which open communication is established between the interior of the reservoir and the open air and a flat controlling-plate contained within the trough-like opening of said feeder-bar and in contact with the pen-nib.

4. In a fountain-pen, the combination of a reservoir, a nozzle having a bore therein, a feeder-bar seated in said bore and having a longitudinally-extending trough-like opening therein and a slot in the bottom of said trough through which open communication is established between the interior of the reservoir and the open air and a longitudinally-extending flat controlling-plate contained within the trough-like opening in the feeder-bar so as to divide the same into a plurality of separate channels and having a portion thereof which extends into the said slot of the feeder-bar and in contact with the pen-nib.

5. In a fountain-pen, the combination of a reservoir, a nozzle having a bore therein, a feeder-bar seated in said bore and having a longitudinally-extending trough-like opening therein and a slot in the bottom of said trough through which open communication is established between the interior of the reservoir and the open air, a pen-nib seated next to the feeder-bar and a removable longitudinally-extending controlling-plate contained within the trough-like opening in the feeder-bar so as to divide the same into a plurality of separate channels, each of which is substantially triangular in cross-section, said controlling-plate having a portion thereof which extends into said slot in the feeder-bar.

6. In a fountain-pen, a nozzle having a bore, a feeder-bar seated in said bore and having a longitudinal channel open to the outside air, and a vertically-disposed controlling-plate located in said channel and having its upper edge flush with the upper surface of the feeder-bar so as to engage the pen-nib.

7. In a fountain-pen, a nozzle having a bore, a feeder-bar seated in said bore and having a longitudinal channel open to the outside air, said channel being trough-shaped, and a plane controlling-plate extending vertically from the bottom of said channel lengthwise thereof and dividing it into a plurality of parallel channels running side by side.

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