

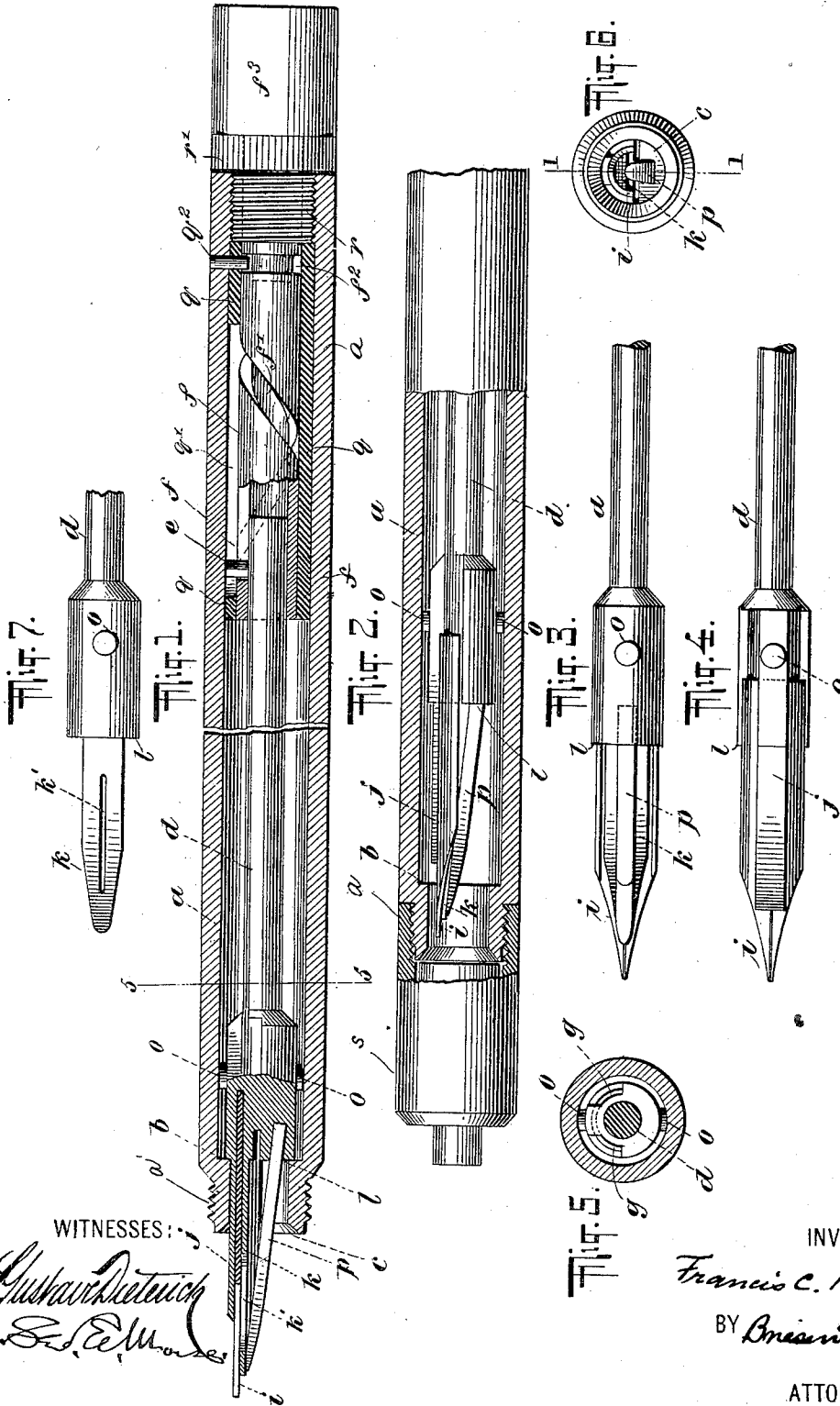
No. 697,975.

Patented Apr. 22, 1902.

F. C. BROWN.
FOUNTAIN PEN.

(Application filed Apr. 23, 1901.)

(No Model.)



WITNESSES:
Chas. H. Ketchum
Geo. E. Moore

INVENTOR
Francis C. Brown.
 BY *Bruce & Trenchard*
 ATTORNEYS

UNITED STATES PATENT OFFICE.

FRANCIS C. BROWN, OF BROOKLYN, NEW YORK.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 697,975, dated April 22, 1902.

Application filed April 23, 1901. Serial No. 57,071. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS C. BROWN, a citizen of the United States, residing in the borough of Brooklyn, city of New York, county of New York, State of New York, (whose post-office address is 229 Broadway, New York, N. Y.,) have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

My invention relates to fountain-pens and will be described in detail with reference to the accompanying drawings. In these drawings I have shown a pen of the general type known as "Caw's pens;" but it will be understood that I do not mean to limit my invention thereto, as the invention is applicable to fountain-pens generally.

My invention applies particularly to the construction of a pen where the nozzle is integral with the holder and the pen and feed are moved in and out of the holder by mechanical means, as shown in my Patent No. 533,942; but it can also be applied to fountain-pens with a detachable nozzle and feed-bar.

The object of my invention is to improve the supply of ink to the nib of the pen and to overcome friction in the nozzle, which causes the feed to stick when coated with ink and ink to spatter when the feed is withdrawn into the font.

My invention embraces the following principal inventive ideas:

First. The forward portion of the barrel or nozzle is formed with a shoulder to cooperate with a shouldered feed-bar. The object of this feature is to efficiently regulate the air-supply without at any time completely closing it off and without causing the pen and feed to fit so closely in the bore of the barrel or nozzle as to bind and move with a jerky motion when the pen is withdrawn into the font, which would cause spattering of ink. In mentioning the fact that the pen is withdrawn into the barrel or nozzle in the form shown in the drawings I would have it understood that I do not by any means limit myself to a fountain-pen having a feed-bar movable back and forth by mechanical devices.

Second. Providing the pen-nib with a double feed and providing a flexible brace to

bear under tension against the lower feed element to force the lower feed element against the pen-nib and the pen-nib against the top feed element.

Third. Splitting the lower feed element in order with the aid of the brace to maintain a large body or reserve supply of ink for the pen.

In the accompanying drawings I have shown, by way of example, a pen in which my invention is embodied. It is understood, however, that this is but one of the many forms in which the invention may be embodied.

In the drawings, Figure 1 is a sectional view of the pen, showing the pen-nib and feed-bar thrust forward in position for use. Fig. 2 is a similar broken-away sectional view of the pen, showing the pen-nib and feed-bar retracted into the barrel and with the cap on. Fig. 3 is a bottom view of the feed-bar. Fig. 4 is a top view of the feed-bar. Fig. 5 is a section on line 5 5 of Fig. 1. Fig. 6 is an end view, and Fig. 7 is a detail view, showing the slit in the lower feed.

In the drawings, *a* indicates the barrel of the pen. This barrel is or may be of the general type shown in United States Letters Patent granted to me February 12, 1895, No. 533,942, with the exception that instead of making the reduced end of the bore of the barrel of a tapering form, as shown in the said patent, I provide the end of the ink-font with an abrupt circumferential shoulder *b* immediately in the rear of the bearing-surface *c* of the nozzle.

d is the feed-bar of the pen and is shown in the present instance as adapted to be reciprocated by a pin *e*, cooperating with a slot in the rotary sleeve *f* after the ordinary manner of Caw's fountain-pens—that is, the pin *e* engages a spiral slot *f'* in the rotary sleeve *f* and also engages a longitudinal slot *q'* in a sleeve *q*, stationary within the font or barrel *a*. This fixed sleeve carries a pin *q*², engaging an annular groove *f*² in the rotary sleeve *f*, so that the latter can turn, but cannot move lengthwise. The outer end of the rotary sleeve terminates in a handle *f*³, and to produce a tight joint a tubular plug *r* is provided, which fits around the sleeve *f* and screws into the rear end of the barrel *a*. To produce a neat finish, the plug is provided

with a collar r' , which fits between the handle f^3 and the end of the barrel a . Preferably this collar is milled, as shown, so that the plug may be screwed more readily. The part of the feed-bar immediately in the rear of the contracted part of the nozzle is of greater diameter than the diameter of the interior of the nozzle of the font. The pen-carrying end of the feed-bar is channeled longitudinally by grooves g to provide an air-supply. The forward end of the feed-bar is slitted from side to side to receive the pen-nib i , thus forming a top feeding element or top feed j and a bottom feeding element or bottom feed k , between which feeds the pen is carried. Immediately in the rear of the pen-carrying top and bottom feed elements the forward end of the feed-bar is of less diameter than the bore of the barrel and is provided with an abrupt shoulder l , which cooperates with the shoulder b of the barrel or nozzle. The pen and its feed-bars may be moved backward and forward in the bore of the nozzle, wherein they fit snugly, so as to efficiently guide and afford lateral support for the pen and its feeds. The barrel has at its front end a screw-thread a' to receive the customary cap s , as shown in Fig. 2. In the construction shown when it is desired to greatly augment the air-supply which passes through the grooves g the feed-bar is slightly withdrawn, thereby separating the shoulders b and l and allowing a great supply of air to enter with a minimum amount of adjustment of the feed-bar, so that the position of the pen-nib in the nozzle will be only very slightly changed, and consequently the nozzle will still furnish an adequate bearing-surface for the pen-nib and its feeds, it not being necessary to effect such an extreme adjustment of the feed-bar as to deprive the pen-nib of the support of its bearing-surface. It will be further obvious that the two abutting shoulders afford a means for effecting adjustments of the air-supply of extreme delicacy and that with a minimum of movement of adjustment.

In order to guide the feed-bar d in its movement, I provide the said feed-bar with one or more projections o , which projections bear against the inner face of the barrel and serve to guide and center the movable feed-bar. Other constructions may be used in lieu of that shown in the drawings, except so far as limited by the prior art. The main object of this construction is to provide means for guiding a movable or adjustable feed-bar, so as to steady the pen when in its various adjusted positions and prevent lateral movement. This feature of the invention finds its greatest utility in pens in which the space in the font in rear of the pen-nib is of greater diameter than the enlarged end of the feed-bar and likewise of greater diameter than the forward end of the barrel or nozzle, the object being to provide an adjustable feed-bar which is of less diameter than the font and to guide

the same in the font by means supplemental to the feed-bar.

In order to firmly bind the under feed against the pen-nib and the pen-nib against the upper feed, I provide a brace p , the forward end of which bears firmly against the lower feed and forces the same against the pen, which in turn exerts pressure upon the top feed, and the pen and its two feeds, together with the brace, move as a concrete whole.

In order to maintain a reserve supply of ink, I slit the lower feed k at k' , as shown in Fig. 7. This slit cooperates with the brace p and aids in maintaining a large reserve supply of ink and constitutes means for affording communication for the ink between the auxiliary supply and the slit in the pen-nib. The brace p is flexible and in the form of the invention shown is inserted in a recess in the feed-bar and bears against the lower feed with a strong pressure. A large reserve supply of ink is maintained between the brace and the under feed. The brace thus virtually forms a third feed-tongue.

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

1. In a fountain-pen, the combination of a feed-bar having two resilient tongues constituting feeds and adapted to receive a pen between them and a resilient brace adapted to bear upon the lower tongue with sufficient force to hold the pen and the two tongues firmly in contact.

2. In a fountain-pen, the combination of a feed-bar provided with two resilient tongues adapted to receive a pen between them and to constitute feeds, and an inclined resilient brace socketed in the feed-bar and adapted to bear firmly against the lower tongue in order to put the tongues under tension.

3. In a fountain-pen, the combination of a feed-bar provided with a plurality of tongues adapted to receive a pen between them in order to form feeds, and a removable resilient brace socketed in the feed-bar, the said brace exerting an upward pressure against the lower tongue of the feed.

4. In a fountain-pen, the combination with a font of a feed-bar provided with a plurality of tongues adapted to receive a pen between them, the lower of said tongues being slitted and a flexible brace bearing against the said slitted tongue in such proximity to the slit therein as to form with the said slit a device for maintaining a reserve supply or body of ink.

5. In a fountain-pen, the combination of a longitudinally-movable feed-bar comprising a lower feed, the said lower feed being slitted, and a flexible brace bearing against the said lower feed and in such proximity to the slit therein as to form with the said lower feed a device for maintaining a reserve supply of ink for the pen.

6. In a fountain-pen, the combination of a barrel which is in open communication with the air at all times, a pen-nib, a slitted under feed for the said pen-nib, a flexible brace bearing against the said under feed adapted to force the said under feed against the pen and to cooperate with the slit in the under feed to maintain a reserve supply or body of ink in proximity to the pen.

7. In a fountain-pen, the combination of a barrel having a contracted nozzle, a longitudinally-movable feed-bar contained within said barrel and furnishing an open connection with the outer air at all times, said feed-bar comprising a plurality of tongues, a pen-nib carried by the feed-bar and cooperating with the tongues, and means for preventing lateral movement of said feed-bar, said means consisting of projections extending from the feed-bar to a sliding engagement with the inner wall of the barrel.

8. In a fountain-pen, the combination of a pen-nib, two superposed feed-tongues on one side of the nib, and a third feed-tongue on the opposite side thereof.

9. In a fountain-pen, the combination of a pen-nib, a plurality of superposed feed-tongues beneath the pen-nib and a feed-tongue above the pen-nib.

10. In a fountain-pen, the combination of a longitudinally-movable feed-bar, a pen-nib carried by said feed-bar, a plurality of feed-tongues beneath said pen-nib and a feed-tongue above the same, said tongue being carried by and movable with the feeder-bar and constituting part thereof.

11. In a fountain-pen, the combination of the font or barrel, with a feed-tongue the inner surface of which is located in engagement with the nib or pen, and another feed-tongue the forward end of which engages the outer surface of the first-named feed-tongue.

12. In a fountain-pen, the combination of the barrel having an interior shoulder, with a feed-bar movable lengthwise of the barrel and provided with a shoulder arranged to engage that of the barrel, and with an end portion extending forwardly from said shoulder and

carrying a writing member, the said two shoulders forming a valve-seat and a valve respectively, and means for preventing lateral movement of the feed-bar, said means consisting of projections extending from the feed-bar to a sliding engagement with the inner wall of the barrel.

13. In a fountain-pen, the combination of the font or barrel with a feed-bar having spaced tongues adapted to receive a pen between them, and a brace carried by the feed-bar and extending to the outer surface of one of the tongues.

14. In a fountain-pen, the combination of the font or barrel with a feed-bar having spaced tongues adapted to receive a pen between them, and a brace carried by the feed-bar and extending obliquely upward therefrom, the upper end of said brace being in engagement with the outer surface of the lower tongue.

15. The combination of a pen, a pen-carrier provided with a tongue adapted to feed ink to the under side of the pen, and a resilient brace adapted to bear against said tongue with sufficient pressure to hold the pen and tongue together and to hold a body of ink in proximity to the nib of the pen.

16. The combination of a pen and a pen-carrier provided with a plurality of tongues superposed on the same side of the pen which are adapted to feed ink to the pen and to hold a body of ink in proximity to the nib of the pen, the tongue lying adjacent to the pen being slitted.

17. The combination of a pen, a pen-carrier provided with a tongue adapted to feed ink to the under side of the pen, and a resilient brace adapted to bear on said tongue with sufficient pressure to hold the pen and tongue together and to hold a body of ink in proximity to the nib of the pen, said tongue being slitted longitudinally.

F. C. BROWN.

Witnesses:

GEO. E. MORSE,
OTTO V. SCHRENK.