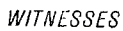


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FOUNTAIN-PEN.

949,752.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FRANCIS C. BROWN, a citizen of the United States, and resident of New Brighton, Staten Island, in the borough and county of Richmond, 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 particularly to that class in which provision is made for advancing and retracting the nib.

The object of my present invention is to simplify the construction and to render it stronger than heretofore, particularly in conjunction with an arrangement in which a spiral is employed for advancing and retracting the nib.

Another feature of my invention relates to the coöperation of the cap with the mechanism used to project or withdraw the nib, and a third feature relates to a novel construction of the nib-carrying end of the feed bar in conjunction with the corresponding portion of the cap.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a side elevation with parts in section showing one form of my invention with the cap in position on the rear end of the barrel; Fig. 2 shows the same construction with the cap in position on the front end of the barrel and the nib withdrawn; Fig. 3 is a view similar to Fig. 1 illustrating a slightly different construction; Fig. 4 is a separate view showing the forward end of the nib-carrying feed bar; Fig. 5 is a corresponding front view; and Fig. 6 is a detail longitudinal section showing the rear end of the barrel constructed as in Fig. 3 in conjunction with a slightly different cap.

A indicates the front portion or body of the barrel which has a reduced end A' preferably screw-threaded as at A² to fit the internal screw-thread B' of the cap B. This cap is made with longitudinal slits B² and is of a diameter slightly larger than the barrel, the fingers formed by the slits B² being held together at the open end of the cap by an elastic ring B³ so that they will hug the barrel tightly. At other points however a space intervenes between the barrel and the cap, as shown clearly in Figs. 1, 2 and 3. The cap is provided with a central internal plug B⁴ from which projects at the center a pin B³.

The rear portion of the barrel body A is screw-threaded internally to engage a corresponding external screw-thread D' upon a rear barrel section D. This section is preferably flush with the main portion A of the barrel, at the rear of the screw-thread D'. In front of the screw-thread D' the said rear barrel section forms a sleeve D² provided with a longitudinal slot or guideway D³ and fitted tightly into the barrel body A. Into the slot D³ extends a pin E' projected from the rear end of the feed bar E. This pin passes through a spiral slot F' in a sleeve F, which I term the feed sleeve since its function is to move the feed bar E and the nib carried thereby forward or rearward according to the direction in which said sleeve F is rotated. The feed sleeve F may be fitted into the sleeve D² substantially tight, yet not tightly enough to prevent rotation. At its rear end the sleeve F is formed with a shoulder F² and with a reduced extension or stem F³ which projects through and beyond the rear barrel portion D, being guided therein adjacent to the shoulder F². An operating button G is rigidly connected with the stem F³ by means of a pin G', the outer surface of said button being preferably roughened or milled, as shown in Fig. 2. The barrel portion D is chambered at its rear end to receive the washer H made for instance of hard rubber and a suitable packing H' made for instance of cork. It will be understood that the operator can grasp the button G and by turning it in one direction or the other he will cause the feed bar E to be moved forward or rearward relatively to the barrel A, D.

The front end of the feed bar is provided with a thickened portion E² adapted to engage the inside of the barrel at one side and also with a pin E³ arranged to engage the inside of the barrel on the other side. The front end of the feed bar is thus properly guided. Two elastic feed tongues E⁴ E⁵ are projected from the forward end of the feed bar and these are adapted to receive the nib between them. The lower face of the tongue E⁵ is engaged by a brace E⁶ provided at its forward end with a depression or seat E⁷ adapted to be engaged by the free end of the pin B³. Between the brace E⁶ and the lower tongue E⁵ I may interpose an ink distributor E⁸ of the same character as described in my patent No. 819719 of May 8, 1906.

Fig. 2 shows clearly that if the operator

should attempt to project the nib J while the cap is on the forward end of the barrel, such movement would be stopped by the engagement of the pin B³ with the forward end of the brace E⁶ so that injury to the nib by contact with the cap is prevented.

In the construction shown in Figs. 1 and 2 the operator turns the button G by hand to advance or retract the nib, and the cap B is not instrumental at all in moving the feed bar. The button G has an axial perforation or recess G², so that the pin B³ may be received therein in the position illustrated by Fig. 1. In Figs. 3 and 6 I have shown a slightly different construction in which the cap itself is used as a means for turning the feed sleeve F and therefore advancing or retracting the nib. For this purpose the button g connected by the pin g' with the stem F and having the recess g² to receive the pin B³, is provided with a reduced external screw-threaded portion g³ at its rear end. This portion corresponds to the screw-thread A² of the barrel body, so that the internal screw thread B' of the cap B may fit the screw thread at said reduced portion g³ as well as the screw thread of the front portion A². Fig. 3 shows the cap screwed on the rear end of the button g and it will be understood that until the cap is screwed home it will not rotate the said button and the feed sleeve. As soon as the cap is screwed home on the button g, these two parts will rotate together. It will also be obvious that in order to retract the pen from the position shown in Fig. 3 the cap and the feed sleeve will be rotated in unison in the proper direction and when this motion of the feed sleeve reaches its limit (determined by the engagement of the pin E' with the end of the slot D³), then a further rotation of the cap B in the same direction will unscrew the cap so that it may be transferred to the front end of the barrel. Similarly with this construction the nib cannot be projected until the cap has been removed from the front end of the barrel. Nevertheless the pin B³ will act as a protection against contact between the nib and the cap in the same manner as described above so that any accidental turning of the button g when the cap is in the position illustrated by Fig. 2 can not injure the nib in any way. As shown in Fig. 6, I may employ a short cap with an internal pin projecting beyond its open end, instead of the long cap shown in Figs. 1, 2 and 3. This long cap may be placed on the front end of the barrel with-

out any danger of injuring the nib even when the pin is in the projected or writing position. It will be seen that the seat E⁷ which the end of the pin B³ is adapted to engage, is located outside of the barrel when the pen is in the writing position. This location of the seat far forward enables me to use a comparatively short pin B³ and therefore a comparatively short cap.

The special construction by which the tube D² is made removable together with the rear barrel section D is of great advantage as regards taking the pen apart. It will be obvious that with this construction I am enabled without thickening the barrel body and without weakening it, to obtain an opening at the rear end of the barrel body (after the removal of the rear section), which has the full cross section of the bore of said body; therefore, when the rear section has been detached from the barrel body, the entire rear section together with the feed bar can be removed, the nib-carrying portion of the feed bar passing out readily through the open rear end of the barrel body.

I claim:

1. In a fountain pen, a barrel, a feed-bar movable therein lengthwise and having at its front end a nib-carrying portion comprising two superposed tongues and a brace engaging the lower tongue, said brace having a recess or seat, and a cap provided with an internal pin to engage said seat.

2. In a fountain pen, a barrel, a feed-bar movable therein lengthwise and having at its front end a nib-carrying portion which comprises a brace for supporting the nib, and a cap provided with an internal pin, the end of which is adapted to engage said brace.

3. In a fountain pen, a barrel, a feed-bar movable therein lengthwise and having at its front end a nib carrying portion provided with forwardly extended feed tongues and a forwardly extended brace arranged to engage one of said feed tongues near its outer extremity, said brace being further provided with a recess or seat, and a cap provided with an internal pin to engage said brace.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

FRANCIS C. BROWN.

Witnesses:

JOHN LOTKA,
FRED A. KLEIN.