

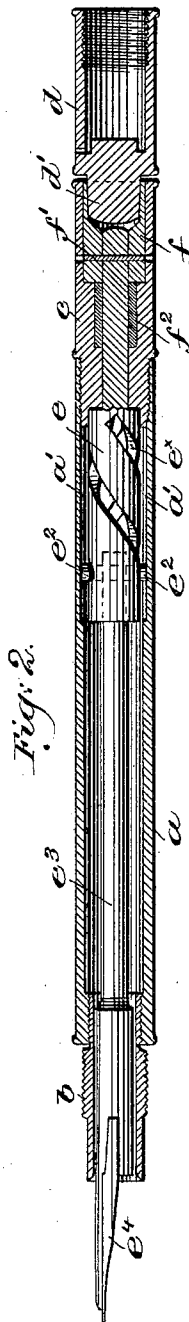
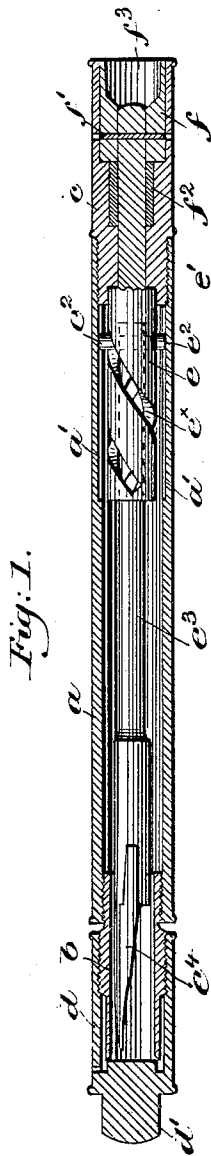
No. 700,909.

Patented May 27, 1902.

W. G. FRAZER.
FOUNTAIN PEN.

(Application filed July 18, 1901.)

(No Model.)



Witnesses.

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UNITED STATES PATENT OFFICE.

WILLIAM G. FRAZER, OF NEW YORK, N. Y., ASSIGNOR TO FRAZER & GEYER CO., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

FOUNTAIN-PEN.

SPECIFICATION forming part of Letters Patent No. 700,909, dated May 27, 1902.

Application filed July 18, 1901. Serial No. 68,711. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM G. FRAZER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented an Improvement in Fountain-Pens, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide a novel fountain-pen.

My invention relates particularly to fountain-pens of the class illustrated by United States patent of July 17, 1894, No. 523,234, wherein the pen proper or "nib," as it is sometimes called, is normally contained within the ink-reservoir, from which it is expelled or caused to protrude for use by rotation of some part of the holder. In pens of the construction shown in said patent of July 17, 1894, it is possible for the operator thoughtlessly to turn the crown plug or member of the holder while the cap is still in position covering the pen, with the result that the pen will be projected out from the reservoir against the cap, closing the end thereof, to the injury of the pen. Furthermore, there is no give whatever between the rotatable crown-piece that expels the pen and the spiral barrel and its delicate connections which actually expel the pen, with the result that the operator unless exercising great care is apt to turn the crown-piece vigorously and beyond the point at which the pen is fully expelled, causing breakage of some of the operating parts, for obviously after the pen has been fully expelled any attempt further to rotate the crown-piece must cause breakage of some part of the connections.

The aim of my present invention is to eliminate these objectionable features and to provide generally an improved pen of this type.

In the drawings accompanying this description, Figure 1, in longitudinal section, shows a pen illustrating one embodiment of my invention, the pen proper being withdrawn within the reservoir and the end of the latter closed by a cap; and Fig. 2, a similar view showing the cap placed upon the rotatable operating member and the pen expelled from the reservoir in position for writing.

In the embodiment of my invention selected for illustration herein and shown in the drawings, *a* is the barrel or reservoir, of usual size, shape, material, and construction, the same being provided at its lower end with a pen section or plug *b*, screwed into the end of the barrel *a*. The barrel at its opposite upper end is also threaded to receive the crown-plug *c*. The pen section or plug *b* is exteriorly threaded to receive the cap *d*, that may be screwed thereon to close the lower pen end of the barrel. The crown-plug *c* is perforated axially to receive the shank *e'* of the spirally-grooved head *e*, arranged within the barrel *a*. The said crown-plug *c* is counterbored at its outer end to receive the crown-operating member *f*, which is fastened in suitable manner, as by the pin *f'*, to the end of the shank *e'*, suitable packing *f²*, as of cork, surrounding the said shank beneath the operating member *f* to prevent leakage outwardly around said shank. This operating member *f* is also in turn counterbored or recessed at *f³*, preferably conically, to receive the preferably conical nipple *d'* upon the end of the cap *d*, as shown in Fig. 2. The spiral groove or grooves *e^x* of the head *e* receive the operating-pin *e²* on the rod *e³*, lying within and longitudinally of the barrel *a* and carrying at its opposite end the usual gold pen or nib *e⁴*. The ends of this operating-pin *e²* project beyond the spirally-grooved head *e* and enter and travel in the diametral longitudinal grooves *a'*, formed in the interior wall of the barrel, said pin, with its rod *e³*, having a movement longitudinal of the barrel, but being restrained from rotation therein by the ends of the pin *e²* in said grooves *a'*.

When the pen is not in use, the parts are in the position shown in Fig. 1, with the cap applied to the pen-section *b* and closing that end of the barrel or holder, the opposite end being permanently closed by the crown-plug *c* and parts carried by it. To place the pen in condition for use, the operator unscrews or removes the cap *d* from the pen-section *b* and places the same upon the opposite end of the pen, inserting the nipple *d'* into the recess *f³* of the operating member *f*. The frictional engagement of this nipple with the wall of the recess is such that by rotating the cap in its

new position, Fig. 2, the operating member *f* will also be rotated, causing corresponding rotation of the spirally-grooved head *e* within the ink-reservoir. Inasmuch as the pin *e*² cannot rotate, the action of the walls of the spiral groove or grooves upon it is such as to cause the said pin to travel longitudinally of the barrel in its grooves *a'*, and this causes corresponding movement of the rod *e*³ to expel the pen from the now open end of the barrel and place it in the position shown in Fig. 2 ready for use. Inasmuch as the engagement of the cap-nipple with the wall of the recess *f*³ is frictional merely, should the operator attempt to turn the cap and the recessed operating member to which it is applied farther than is necessary fully to expel the pen such attempt will merely cause the nipple to slip within the recess of the operating member without turning the latter. Consequently no injury can result to any of the working parts. The frictional engagement will always give before any of the working parts. Furthermore, as the rotatable operating member in or at the crown of the pen is concealed or inclosed from exterior manipulation and operable from the exterior only upon insertion of an operating device, such as the cap-nipple, it is apparent that the pen cannot be expelled while the cap is on and closing the end of the barrel. Consequently it is impossible to project the pen into contact with the cap to the injury of the pen. Thus it is impossible to injure the working parts of the pen by turning its operating member too far, and it is also impossible to damage the pen proper or nib by attempting to expel it without first removing the cap.

My invention is not limited to the particular construction here shown and described, for it is evident the same may be varied without departing from the spirit and scope of the invention as here disclosed.

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

1. In a fountain-pen, the combination with the barrel or casing, of a rotary pen-operating member mounted within the upper open end of the barrel and having its outer end within the plane of, but exposed through, the said open end, the said outer end of the rotating member being shaped to receive a separate and independent rotating device.

2. In a fountain-pen, the combination with

the barrel or casing, of a rotary pen-operating member mounted within the upper open end of the barrel or casing and having its outer end within the plane of, but exposed through, the said open end, a removable cap for the lower end of the casing or barrel and interlocking connections for separably connecting the cap and the said upper end of the rotary member for rotating the latter; substantially as described.

3. In a fountain-pen, the combination with the barrel or casing, of a rotary pen-operating member mounted within the upper end of the barrel or casing and having a socket in its outer end accessible through the upper open end of the said casing or barrel, and a removable cap for the lower end of the casing or barrel having a nipple of a size to snugly fit said socket and form a frictional connection therewith; substantially as described.

4. A fountain-pen comprising the barrel or casing, a pen-carrying rod or member therein, a tubular crown-plug forming the upper end of the barrel or casing, a spirally-grooved head operatively connected with the pen-carrier rod and provided with a shank having a rotary operating member lying wholly within the outer end of said tubular plug and provided in its outer end with a conical socket, and a cap removably fitting the lower end of the barrel or casing and provided with a conical nipple to frictionally engage the said socket and rotate the spirally-grooved head; substantially as described.

5. In a fountain-pen, the combination with the barrel or casing provided at its lower end with a removable cap, of a rotary operating member wholly within the upper end of the barrel, but exposed through the upper end thereof, and means for frictionally connecting the said removable cap with the said rotary operating member and comprising a nipple and socket shaped for frictional engagement, whereby when the said operating member has been sufficiently rotated the connection between it and the cap will slip; substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM G. FRAZER.

Witnesses:

B. T. BAILEY,
D. C. VAN VALE.