Jan. 12, 1926. 1,569,783

E. G. PEARSON

FOUNTAIN PEN

Filed Sept. 16, 1922

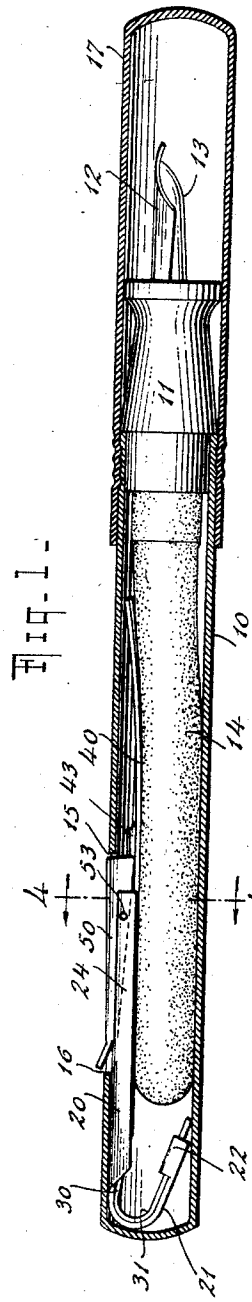

FIG. 1.

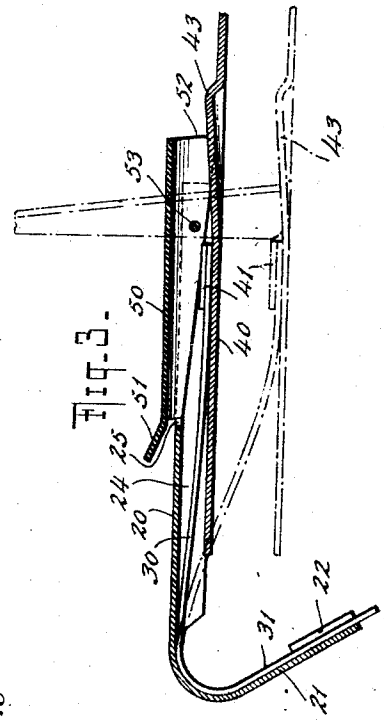

FIG. 3.

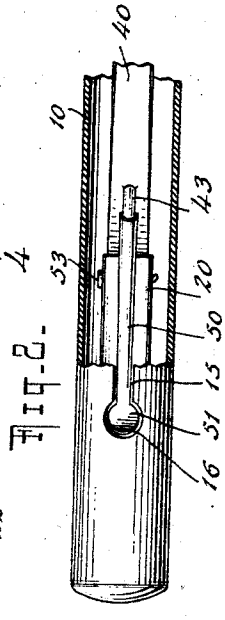

FIG. 2.

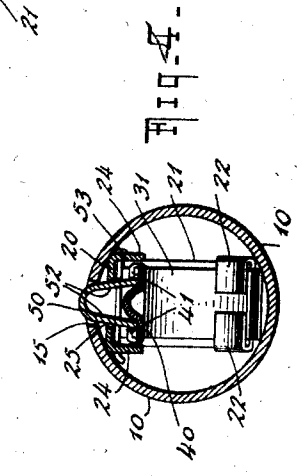

FIG. 4.

INVENTOR

Eric G. Pearson

BY

Arthur L. Kent

HIS ATTORNEY

Patented Jan. 12, 1926. 1,569,783

UNITED STATES PATENT OFFICE.

ERIC G. PEARSON, OF NEW YORK, N. Y., ASSIGNOR TO EAGLE PENCIL COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

FOUNTAIN PEN.

Application filed September 16, 1922. Serial No. 588,545.

To all whom it may concern:

Be it known that I, ERIC G. PEARSON, a citizen of the United States, residing at New York city, in the county of Kings and State of New York, have invented certain new and useful Improvements in Fountain Pens, fully described and represented in the following specification and the accompanying drawing, forming a part of the same.

This invention relates to self-filling fountain pens, and aims to provide an improved article of this class.

Self-filling fountain pens are customarily made with a tubular casing or body containing a collapsible ink reservoir, and provided with a mechanism operable from the outside of the casing for compressing the reservoir to force the air out of it so that when released the reservoir may act to suck in the ink. This pressing mechanism commonly includes a presser strip within the casing which may be forced against the reservoir by the short end of a lever operable through a slot in the casing wall. Various devices have been resorted to for providing a support for the fulcrum of this lever and a mounting for the presser strip. In assembling such pens it has been necessary to fix the fulcrum support in the casing separately from the presser strip and its support and then to apply the lever from the outside of the casing and secure it to the fulcrum support. Such pens have, therefore, been comparatively expensive to manufacture owing to the amount of labor required to assemble them.

An object of the present invention is to provide pressing mechanism for self-filling fountain pens which may be assembled outside the casing and thereafter positioned within the casing by merely pushing it into the casing through the open end thereof.

A fountain pen embodying the invention in the form which I now consider best is provided with pressing mechanism which includes a fulcrum supporting strip provided with locking means for holding it in position when the pressing mechanism is pushed into the pen casing, a presser strip carried by a spring rod or strip extending forward from the locking means so that the presser strip is movable away from the supporting strip, and an operating lever pivoted on the supporting strip and operable to force the presser strip away from the supporting strip. The casing of the pen in which this pressing mechanism is seated is provided with a slot or aperture of sufficient size to permit the operating lever to pass through it from the inside of the casing.

Other objects and advantages of the invention are hereinafter explained in connection with the detailed description of the specific embodiment of the invention which is illustrated in the accompanying drawings, in which:—

Fig. 1 is a side view of a fountain pen embodying the invention, showing the casing sectioned on an axial plane passing through the center of the slot in the casing;

Fig. 2 is a view of the rear part of the pen looking toward the slot in the casing, and showing the casing partially sectioned on an axial plane at right angles to the section plane of Fig. 1;

Fig. 3 is an enlarged longitudinal sectional view of the pressing mechanism, showing the normal position of the parts in full lines, and the pressing position in dotted lines; and

Fig. 4 is an enlarged transverse sectional view taken on the line 4—4 of Fig. 1.

The fountain pen shown in the drawings includes a tubular body or casing 10, which may be made of metal or other suitable material, a tubular nozzle 11 of hard rubber or other suitable material and of ordinary construction, and a pen point 12 and pen feeder 13 secured at the outer end of the nozzle. To the inner end of the nozzle 11 is secured a collapsible ink bag or reservoir 14, of soft rubber or other suitable material, which lies within the casing 10 when the nozzle 11 is inserted in the open end of the casing. The casing 10 is provided with a longitudinal slot 15 for the lever of the pressing mechanism enlarged at one end as shown at 16 to permit the passage of the finger tab on the end of the lever. The pen is shown in Fig. 1 as provided with the usual cap 17 to be secured on to the pen point end of the casing when the pen is not in use and adapted to be placed on the closed end of the casing when the pen is being used.

The pressing mechanism as shown in the drawings includes a supporting strip 20 having a bent end or crook 21, and a flat spring 30 also having a bent end or crook 31. The spring 30 extends beneath the support 20 and its crook 31 lies against the inner side

of, and is secured to, the crook 21 of the supporting strip, as by means of lateral tabs 22 extending from the crook 21 and bent over and against the inner side of the crook 31. At least one of the crooks, the crook 31 as shown, is somewhat longer than the inside diameter of the pen casing so that when the pressing mechanism is pushed into the open end of the casing and into position within the casing as shown in Fig. 1, the crooks will be flexed inward somewhat toward the main portions of the supporting strip and spring. The crooks thus act as a locking means or member which having its end extending at an angle to and bearing against the casing wall on the side opposite the side against which the supporting strip is positioned, locks the pressing mechanism in position within the casing and holds the supporting strip against the casing wall and the spring normally close to the supporting strip. The supporting strip is somewhat wider than the slot 15 in the casing 10 and is provided with a depending flange 24 at each side and it has a central slot 25 extending inwardly from its outer end and of sufficient width to receive the operating lever.

A presser strip 40 is secured to the free end of the flat spring 30 by which it is held against lateral displacement and normally held close to the supporting strip while being free to be moved away therefrom against the yielding force of the spring. The operating lever 50 is pivotally mounted on the supporting strip 20 in such manner that when it is tipped with respect to the supporting strip it forces the presser strip away from the supporting strip and toward the opposite side of the casing. The operating lever has at its outer end the usual finger tab 51, and the remainder of the lever is U-shaped having two depending flanges 52. The tab 51 is small enough to pass through the enlarged end 16 of the casing slot 15 while the rest of the lever is slightly less in width than the slot 15. The lever is pivotally secured in the slot of the supporting strip by a fulcrum pin 53 which passes through the flanges 52 of the lever and the flanges 24 of the supporting strip.

For securing the presser strip 40 to the end of the spring 30, it is provided near its middle with lateral tabs 41 which are bent over the end of the spring. Most desirably the length of the spring and the position of the fulcrum pin 53 in the supporting member 20 are such that the fulcrum pin lies a little beyond the outer end of the spring 30 and the tabs 41.

A central ridge 43 is formed in the presser strip in front of the tabs 41 where it is engaged by the end of the lever 50. The edges of the flanges 52 of the lever 50 engage the presser strip on either side of this ridge, relative displacement of these parts being thus prevented and the presser strip being strengthened.

The pressing mechanism, having been first completely assembled, is inserted in the open end of the casing 10 with the bent ends or crooks 21, 31 of the supporting strip 20 and spring 30 in advance. The pressing mechanism is turned so as to bring the operating lever 50 in line with the slot 15 of the casing, and is pushed in until the operating lever is opposite the slot 15 and the crooks reach the closed end of the casing or other stop. The locking member formed by the crooks 21 and 31 being longer than the internal diameter of the casing is bent or flexed inward as the pressing mechanism is pushed into the casing. Because of the direction in which the locking member extends and its flexibility, it does not prevent movement of the pressing mechanism to its position within the casing, but it acts to effectually prevent movement in the opposite direction, and when the pressing mechanism has been pushed all the way in to its position within the casing, the locking member acts to lock the pressing mechanism against movement toward the open end of the casing and forces the supporting strip 20 outwardly against the inner wall of the casing and the spring 30 outwardly toward the supporting strip. The operating lever enters the slot 15 from the inside and the finger tab 51 passes through the enlargement 16. After the pressing mechanism has been positioned within the casing, the ink bag 14 secured to the end of the nozzle 11 is inserted in the casing, and the inner end of the nozzle, the nozzle carrying the pen point and feed bar, is fitted into the open end of the casing. The fountain pen is thus completely assembled.

In order to fill the pen, the long end of the operating lever 50 is raised by means of the finger tab 51, thus causing the short end of the lever to force the presser strip 40 against the collapsible reservoir 14. The turning of the lever 50 is arrested just after the lever passes dead center by engagement of the short end of the lever with the outer end of the spring 30 and the tabs 41. The outer end of the tubular nozzle 11 is then inserted in the ink in the customary manner and the operating lever is turned back to its normal position, thus releasing the ink reservoir, which by reason of its resiliency swells out and sucks in the ink.

It will be understood that the present invention is entirely independent of the type of tubular nozzle, pen point, or pen feeder used, and that the expression "fountain pen" as used in the claims includes any type of writing implement containing a collapsible reservoir for holding the writing fluid to which the invention is adapted. Furthermore, it is to be understood that the inven-

tion is not limited to the particular form and arrangement of the parts described except in so far as specified in the claims which follow.

What is claimed is:

1. In a self-filling fountain pen, the combination with a tubular casing open at one end and having a longitudinal slot in the side thereof, and a collapsible ink reservoir in the casing, of pressing mechanism comprising a supporting strip having a longitudinal slot secured within the casing against the casing wall with its slot in alignment with the slot in the casing and having inwardly extending side flanges of greater length than its slot, a presser strip normally held close to the supporting strip and movable away therefrom, and an operating lever pivotally mounted on a pin extending between said side flanges and movable in said slots to force the presser strip against the collapsible reservoir.

2. In a self-filling fountain pen, the combination with a tubular casing open at one end and having a longitudinal slot in the side thereof, and a collapsible ink reservoir in the casing, of pressing mechanism comprising a supporting strip within the casing having a longitudinal slot and having inwardly extending side flanges, means for securing said supporting strip in place and pressing it against the casing wall with its slot in alignment with the slot in the casing, a flat spring connected to the supporting strip and extending between said side flanges, a presser strip connected to said spring and normally held thereby in position close to the supporting strip, and an operating lever pivotally mounted on a pin extending between said side flanges and movable in said slots to force the presser strip against the collapsible reservoir.

3. Pressing mechanism for self-filling fountain pens, comprising a supporting strip having a straight portion with inwardly extending side flanges and a longitudinal slot, a flat spring normally extending between said side flanges, the ends of the supporting strip and spring beyond the side flanges of the supporting strip being bent over to form a resilient crook adapted to lock the supporting strip and spring within the pen casing and to hold the supporting strip against the side of the casing, a presser strip secured to the free end of the spring, and an operating lever pivotally mounted between said side flanges and movable in said slot to force the presser strip away from the supporting strip.

In testimony whereof I have hereunto set my hand.

ERIC G. PEARSON.