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A.D. 1911

(Under International Convention.)

Date claimed for Patent under Patents and Designs Act, 1907, being date of first Foreign Application (in the United States), } 5th Aug., 1910

Date of Application (in the United Kingdom), 17th July, 1911

At the expiration of twelve months from the date of the first Foreign Application, the provision of Section 91 (3) (a) of the Patents and Designs Act, 1907, as to inspection of Specification, became operative

Accepted, 23rd Nov., 1911

COMPLETE SPECIFICATION.

Improvements in Fountain Pens.

I, FRANCIS WILLIAM VAUGHN, Jr., residing at 537, High Street, in the City of Medford, County of Middlesex, and State of Massachusetts, United States of America, Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to fountain pens more particularly to the type known as "safety" pens in which the nib and its tubular holder are capable of being projected from or retracted into the casing; a cap closing the screw-threaded end of the said barrel or reservoir in order to prevent leakage and also to protect the nib when in its projected position.

The object of the invention is to facilitate the removal and replacement of the cap, and to improve generally the construction of this type of pen.

According to this invention the casing, which surrounds the barrel or ink reservoir of the pen, is provided with apertures through which the exterior of the barrel is exposed and may be gripped by the fingers of the user when the protecting cap is screwed on or off. In order to facilitate the gripping the exposed portions of the barrel are so shaped as to afford a secure grip upon the inner member of the pen when the cap is being removed or inserted in place.

The accompanying drawings illustrate the invention in which—

Figure 1 is a side elevation, partly in section, arranged as a safety pen, with the barrel closed;

Figure 2 is a side elevation partly in section on the line 2—2 of Fig. 1 but arranged as an ordinary pen with the writing pen in position for use, and covered with the cap for protection;

Figure 3 is an end view in section on the line 3—3 of Fig. 1.

In the drawings, the barrel 1, which constitutes the ink reservoir of the pen, is surrounded by a casing 2, in which it makes a sliding fit, and is movable longitudinally therein between the positions illustrated in Figs. 1 and 2; and is freely rotatable therein. The cap 3 has the various combined functions hereinafter described. The writing pen 4 is mounted within a sleeve 5 sur-

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rounding the end of the feed bar 7 and having an outer end of such size that when projected endwise, it enters easily and fills completely the hole 6 at the mouth of the barrel, leaving no escape for ink except through its feed passage. The latter may be of any suitable type. The other end of the feed bar 7 passes through the remote end of the barrel and is anchored in the end of the casing 2, 5 in any suitable way.

A packing to prevent the escape of ink from the barrel is provided. As represented, this consists of disks 9 and 10 screwed into the end of the barrel, with a ring 11 of soft material such as cork compressed between them. The position of the pen is therefore rigid with respect to the casing 2, the barrel 10 being movable with respect to the same. When withdrawn to the degree indicated in Fig. 1 the writing pen stands inside the barrel, the barrel and packing 9, 10, 11 having slid outward on bar 7 until stopped by shoulder 8 on said bar. As the writing pen no longer obstructs the entrance 6 to the barrel, the plug 12 in the inside of the cap has access thereto. This plug has a tapered exterior 15 which tightly fits into the end of the barrel, closing it; being drawn and held by screw-threads 13 on the cap which engage screw threads 14 on the exterior of the barrel. This arrangement constitutes what is known as a non-leakable or safety fountain pen.

If it be necessary, as heretofore, to unscrew the plug 12 and push the barrel 20 back into the casing to project the pen into writing position each time it is desired to open and use the pen, and to perform the reverse operation when it is desired to close the pen, not a little troublesome inconvenience is experienced; and there is also some danger, in the hands of persons not familiar with such pens, of spilling ink before the closure plug is tight in position. The pen 25 illustrated eliminates this inconvenience and greatly reduces said danger by providing a merely pen-protective closing by a frictional clasp of the lips of the cap, which will be the closing ordinarily employed, in the manner in which ordinary fountain pens are closed. This is accomplished by building the case 2 far enough toward the pen end of the barrel so that the cap 3 can fit loosely over 30 the pen, screw 14 and barrel end, and can reach the casing 2 and clasp it frictionally without touching them, as shown in Fig. 2. When thus closed, the writing pen is protected as usual in ordinary types of fountain pens. The cap and case together enclose the barrel completely.

As the barrel slides and rotates easily within the casing, there is no means 35 thus far described, by which the plug 12 within the cap can be screwed tight upon the barrel hole 6. Opposite openings in the case are therefore provided as at 15, through which the exterior of the barrel is exposed and may be gripped by the fingers of the user, to facilitate which this portion of the barrel may be ridged or grooved as at 16. By this means a firm and strong grip may 40 be had upon the barrel in opposition to the cap in screwing the plug 12 tight on the barrel mouth. The same grip may be used for unscrewing the plug; after which, the cap being removed, the barrel may be pushed into the case in order to project the pen into writing position as shown in Fig. 2.

In the operation of sliding the pen into or out of the barrel mouth, the 45 tendency to spill the contents is much relieved if the longitudinal progression be slow, and accompanied by considerable rotation which makes it more gradual. This is possible by the construction described because the barrel 1 is free to turn within the casing 2 as well as to slide longitudinally therein.

Owing to the ease with which the writing pen may be protected by the cap, 50 it is not necessary, in closing the pen, to go to the trouble of closing the barrel by withdrawing the pen into the reservoir and screwing the plug 12 into position, except in cases where it is desired to use the non-leakable safety feature. Consequently, much wear on the packing 9, 10, 11 and much of the inconvenience and danger of spilling ink incidental to the safety closing are 55 eliminated. At the same time, the pen is an improvement over some others, in that the withdrawal of the pen into the reservoir, for the safety closing,

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may be effected by a rotating spiral movement, which produces a slower longitudinal movement and thus reduces the suction which in careless hands sometimes is the occasion of ink spilling.

5 As the closure of the barrel is effected at its mouth when used as a safety pen, the relative lengths of barrel and cap should be designed with reference to the position of the plug 12 in the cap 2, so that when used as a safety pen the plug 12 is seated before the cap binds upon the casing. To guard against
10 injuring the writing pen by attempting to screw the plug 12 into place before sufficiently drawing the writing pen into the barrel, reliance may be placed upon the fact that the lips of the cap will grip the end of the casing before
damaging contact is made, thus protecting the pen; or if desired a central guard rod 17 may be inserted, which will engage the end of the feed bar before the plug 12 strikes the writing pen, in case the lips of the cap should not be
stopped by the case as described.

15 Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

1. In safety fountain pens of the kind having an inner pen-holding member or barrel adapted to be projected from or retracted within a casing, the
20 provision of apertures in said casing whereby the pen-holding barrel may be held against rotation while the cap is screwed on or off as the case may be.

2. In a safety fountain pen of the kind described the combination with an apertured casing of a ridged or grooved barrel adapted to be gripped and held stationary, substantially in the manner and for the purposes set forth.

25 3. A safety fountain pen constructed, arranged and operating substantially as hereinbefore described with reference to the accompanying drawings.

Dated the 17th day of July, 1911.

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FIG. 2.

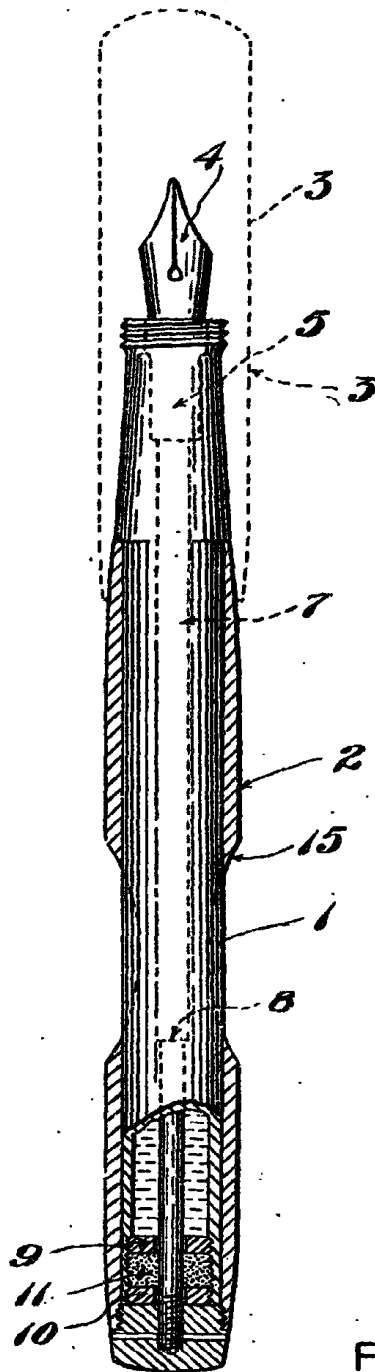


FIG. 1.

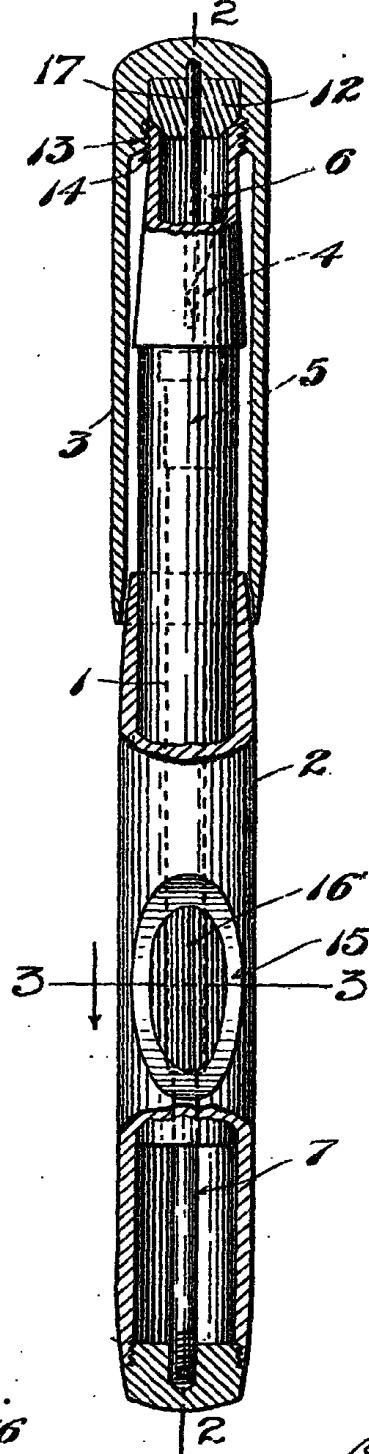
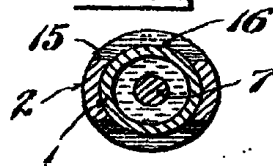


FIG. 3.



[This Drawing is a reproduction of the Original on a reduced scale.]

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