F. W. VAUGHN, Jr. & H. J. UPTON.

FOUNTAIN PEN.

APPLICATION FILED JUNE 16, 1911.

1,019,930. Patented Mar. 12, 1912.

Fig. 1.

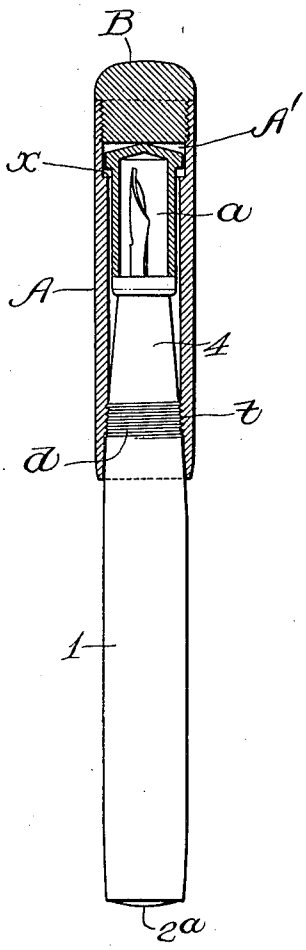


Fig. 2.

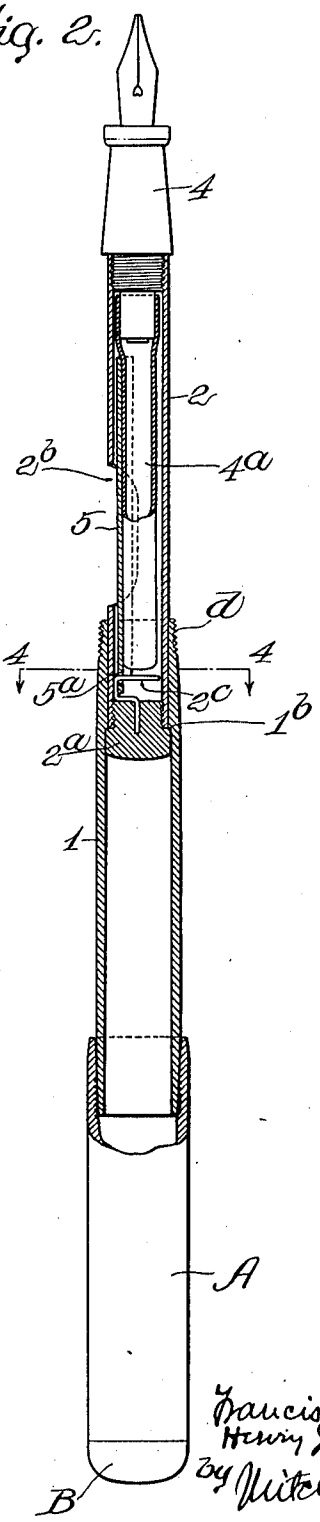


Fig. 3.

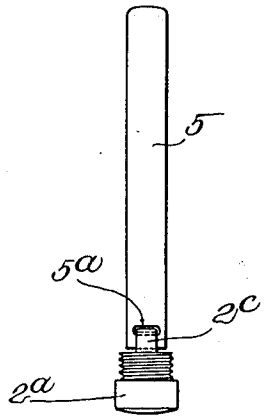
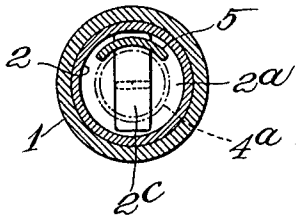


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANCIS W. VAUGHN, JR., OF WEST MEDFORD, AND HENRY J. UPTON, OF SOMERVILLE, MASSACHUSETTS, ASSIGNORS TO VAUGHN-UPTON COMPANY, OF BOSTON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

FOUNTAIN-PEN.

1,019,930. Specification of Letters Patent. Patented Mar. 12, 1912.

Application filed June 16, 1911. Serial No. 633,488.

To all whom it may concern:

Be it known that we, FRANCIS W. VAUGHN, Jr., and HENRY J. UPTON, citizens of the United States, residing at West Medford and Somerville, respectively, both in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Fountain-Pens, of which the following is a specification.

Our invention relates to fountain pens and particularly to an improved arrangement and organization of parts whereby the holder has within it a compressible soft rubber sack and means to compress it to form what is known as a "self-filling" fountain pen.

In the drawings: Figure 1 shows a fountain pen in elevation, the cap being in section; Fig. 2 is a section of the fountain or holder, showing the organization and structure of the various parts; Fig. 3 is a plan view of the presser bar and plug, with the connecting hook; and Fig. 4 is a section, on an enlarged scale, on line 4—4 of Fig. 2, looking in the direction of the arrows.

The cap or closure, as shown in Fig. 1, is made up of an inner and an outer cap, the inner cap being marked *a* and the outer cap A. Cap A is chambered at one end to a larger diameter than at the other, this portion being marked A′ and into the open end of this portion of the cap is screwed a plug B. The inner cap *a* is formed of a tube, closed at one end, which end is slightly enlarged so that it cannot pass the shoulder *x*, formed at the junction of chamber A′ with the body of cap A, the diameter of the remainder of cap *a* being such that it can pass into the body of cap A and hang suspended by its enlarged portion upon the shoulder *x*. The enlarged closed end of cap *a* is slightly conical. At the lower end of cap A are screw threads *t* to engage corresponding threads *d* upon the fountain 1. When not in use, there is a slight play between the conical end of cap *a* and the lower end of plug B. The cap *a* is not vented so that in use it forms a hermetical seal for the pen end of the fountain 1. In operation, the parts having been assembled as shown in Fig. 1, the cap A is passed over the pen end of the fountain 1 until the screw threads *t* engage the threads *d* on fountain 1. As this is done the pen point enters cap *a* until the open end of cap *a* is opposite to the squared end of the fountain 1. The screwing of the cap A upon the fountain 1 proceeds until the open end of cap *a* is brought into contact with the end of fountain 1, the point of the conical end of cap *a* contacting with the inner end of plug B so that cap *a* is centered and firmly and evenly pressed into closure. This centering action is especially useful to take care of any slight imperfection in the manufacture, so that it is not necessary to make and fit a particular cap to a particular fountain, but any cap will adjust itself to any fountains and special pains and care need not be bestowed upon either caps or fountains to obtain faces exactly perpendicular to the axis of the parts.

My fountain or holder is of the self-filling type and my improvement consists in improvements in the organization and construction of the parts, tending to increase efficiency and cheapness of manufacture. The holder consists of a tubular outer case 1; an inner case 2, normally closed at one end by a screw plug 3; a point section 4 carrying the ink and air feed passages, the pen point and the flexible rubber ink-containing sack 4^a, and a presser bar 5 by means of which the ink sack may be compressed to expel the air and released to draw in a supply of ink.

The tubular case 1 is an open ended tube, as shown in section, Fig. 2. At one end this tube has exterior screw threads *d* while the inner surface of the open end of the tube at the same end is shouldered as at 1^b. The inner case 2 is formed of a tube, closed at one end by a plug 2^a and having an aperture 2^b cut in one side. At both ends of tube 2 the interior is screw threaded, the plug 2^a screwing into one end and the point section 4 screwing into the other when the pen is assembled. The plug 2^a carries a hook 2^c and the presser bar 5 has a hole 5^a at one end, which is approximately of the same shape as the cross sectional shape of the hook, though slightly larger, which when the parts are assembled, engages this hook with a free sliding fit. When the parts are put together the presser bar is engaged with the hook and the plug 2^a screwed into the open end of case 2. The threads upon plug 2^a are so cut that when the plug is screwed home the hook will lie across the case 2 from that side upon

which the opening is toward the opposite side, the free end of the hook being toward the opposite side of case 2 to that upon which the opening is cut. The hook is non-circular in cross-section and preferably flat, as shown, and as shown, the width of the hook is across the longitudinal axis of the presser bar. The presser bar and plug being in place the case 2 is slipped into case 1 at the unshouldered end and the point section is then screwed into place in the open end of case 2, the fountain having been turned before the point section is screwed to place, so that the presser bar lies along that side of case 2 in which the aperture 2^b is, and therefore lengthwise across the aperture. This arrangement brings the ink sack between the presser bar and the opposite wall of case 2, the presser bar being exposed at the aperture 2^b. It will now be obvious that the presser bar may be pressed in bodily, sliding upon the hook, but, owing to the interposed ink sack cannot be pressed in far enough to free itself from the hook and also obvious that the position and the shape of the hook in the hole 5^a, will prevent the presser bar from rocking sidewise upon the hook or getting out of alinement with the ink sack. When it is desired to fill the pen the point section is drawn upon and the inner case 2 may be pulled out until the plug 2^a engages the shoulder 1^b but no farther. This being done, the presser bar is depressed to express the air from the ink sack and, the pen being dipped into the ink supply, released, causing the ink to flow into the sack as the sack expands by its natural resiliency. It will be observed that this assemblage provides simple and certain means whereby every part is locked in place by some other part and in which no derangement or dissociation is possible, unless the point section is deliberately unscrewed to permit the parts to be dissociated.

To close the pen when not in use the cap is placed in position over the pen and the screw threads *t* on the inner surface of the cap engage with the threads *d* and the cap A screwed firmly upon the end of case 1.

We claim:—

The holder above described, made up of an outer open ended tubular member, having an internal shoulder at one end; an inner open ended tubular member interiorly screw threaded at both ends and apertured upon one side and of a diameter to pass the shoulder in the outer tubular member; a plug screwing into one end of the inner tubular member and of a diameter to fit the inner diameter of the outer tubular member but greater than the diameter of the shoulder therein and a point section screwing into the other end of the inner tubular member.

Signed by us at Boston, Mass., this 12th day of June, 1911.

FRANCIS W. VAUGHN, JR.
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Witnesses:
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