

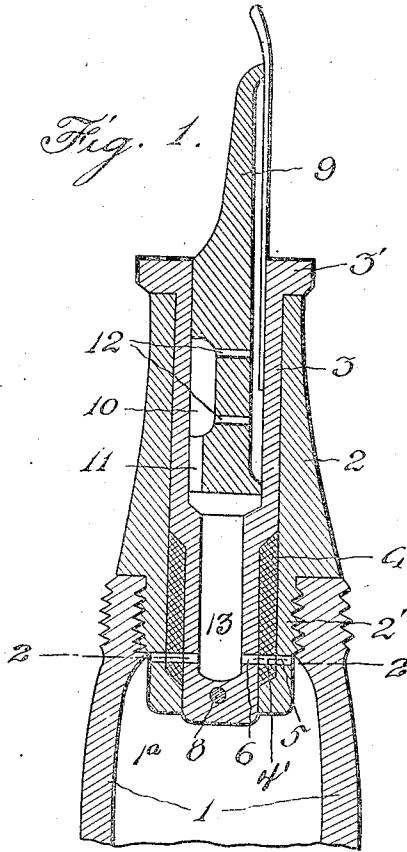
July 27, 1926.

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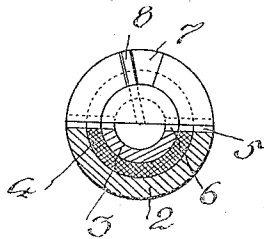
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FOUNTAIN PEN

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*Fig. 1.*



*Fig. 2.*



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## UNITED STATES PATENT OFFICE.

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## FOUNTAIN PEN.

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This invention relates to improvements in fountain pen in which a pen holder is water-tightly fitted in the sleeve rigidly connected to an end of a casing by screw means, thus, by turning the sleeve, permitting the ink contained in a reservoir to flow out through ink-holes to a sub-reservoir of an ink ductor.

This invention has for its object to provide a novel and excellent means to prevent leakage, to simplify repair and to increase the size of a reservoir.

My invention will be readily understood by reference to an accompanying drawing, in which:

Fig. 1 is a longitudinal vertical sectional view of my preferred embodiment, and Fig. 2 is partly an end elevation and partly a transverse section of the same on the plane indicated by the line 2—2 of Fig. 1.

Like numerals refer to like parts in several figures of the drawing. The casing (1) for the ink-reservoir 1<sup>a</sup> is opened at one end to which a frustum-shaped sleeve (2) is engaged by a screw portion (2'). Said sleeve is counter-bored through its longitudinal axis to leave a shoulder at the inner end. A pen-holder (3) is provided with a flange (3') at an end so as to be engaged in the free end of the sleeve and is also reduced at the other end for receiving therein a packing ring (4), so that the pen-holder is revolvably tightly fitted in said bore, thus the leakage through the clearance between the sleeve (2) and pen-holder (3) being prevented. Correspondingly arranged ink openings (5) (6) are provided in the extension (2') of the sleeve and the holder 3, the packing being also provided with openings 4' which register with the openings 5 in the packing ring (4) and in the reduced portion of the pen-holder (3) in such a part where these are immersed in the ink-reservoir, so that, in use these openings 5, 6 may be brought into or out of registry with each other by manual operation, or, by turning in any direction of the pen-holder. There are provided two sets of such ink-holes, one of which serves to lead the ink out of the reservoir, while the other serves to lead the air bubbles into the reservoir, thus facilitating the flowing out of the ink. The pen-holder is provided with a radial projection 8 radiating from its inner end, which projection 8 projects in a radial cut 7 at the inner end of the sleeve. The projection 8 cooperates with the cut 7 to prevent the pen-holder

3 from an eventual detachment out of the sleeve 2 and also to limit the turning of the pen-holder to a suitable degree with respect to the sleeve. An ink-ducter (9) on which a pen is laid as in usual manner, is inserted into said pen-holder (3) as shown. Furthermore, in this invention, the ink-ducter is provided preferably with a sub-reservoir (10) at an under-side which communicates to the inner chamber of the pen-holder through a passage (11) and also to the under-side of the pen laid on the ductor through channels (12). Therefore, by turning of the pen-holder so that the ink-hole (6) is brought into alignment with the other hole (5), the ink contained in the reservoir flows out into the sub-reservoir (10) through the holes (5) (6) and the passage (11) and is conveyed through the channels (12) to the pen-point.

The usual fountain-pen, hitherto, is provided with an ink regulating means or a stop valve secured to a rear plug by medium of a long valve stem. Such a device is not only hard to prevent the ink from leakage by reason of occurrence of the deflection of the valve stem thus making it unhandy to carry, but also is so complicated in construction that any defect in only one element causes the defect of the whole device.

On the other hand this invention, as set forth, consists of a few elementary parts of a casing, a sleeve and a pen-holder set up in such a manner that the mere flow of ink is controlled by the turning of the pen-holder with respect to the sleeve, this operation being remarkably facilitated by the stop means consisting of the projection 8 and the cut 7. Therefore, this invention is strictly prevented from leakage while the ordinary fountain-pens have often impermissible leakage by reason of the defect of the stop valve. Moreover, my improved fountain pen may be readily and economically repaired, because no part other than the sleeve is ever likely to require repairing.

Another advantage is that the construction of the casing is such as to enable the ink reservoir to be of maximum capacity.

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

In a fountain pen a reservoir body, a sleeve detachably secured to one end thereof and extending therethrough and provided

with ink ports, a holder mounted in said sleeve for partial rotation and having ink ports arranged for movement into and out of registry with those of the sleeve, said holder also having an ink chamber and a counterbore communicating therewith, and a plug in said counterbore arranged to co-act with the holder to hold a pen, said plug having an ink reservoir communicating with the ink chamber of the holder and also having ink ducts leading to the pen. 10

In testimony whereof I affix my signature.

RYOSUKE NAMIKI.