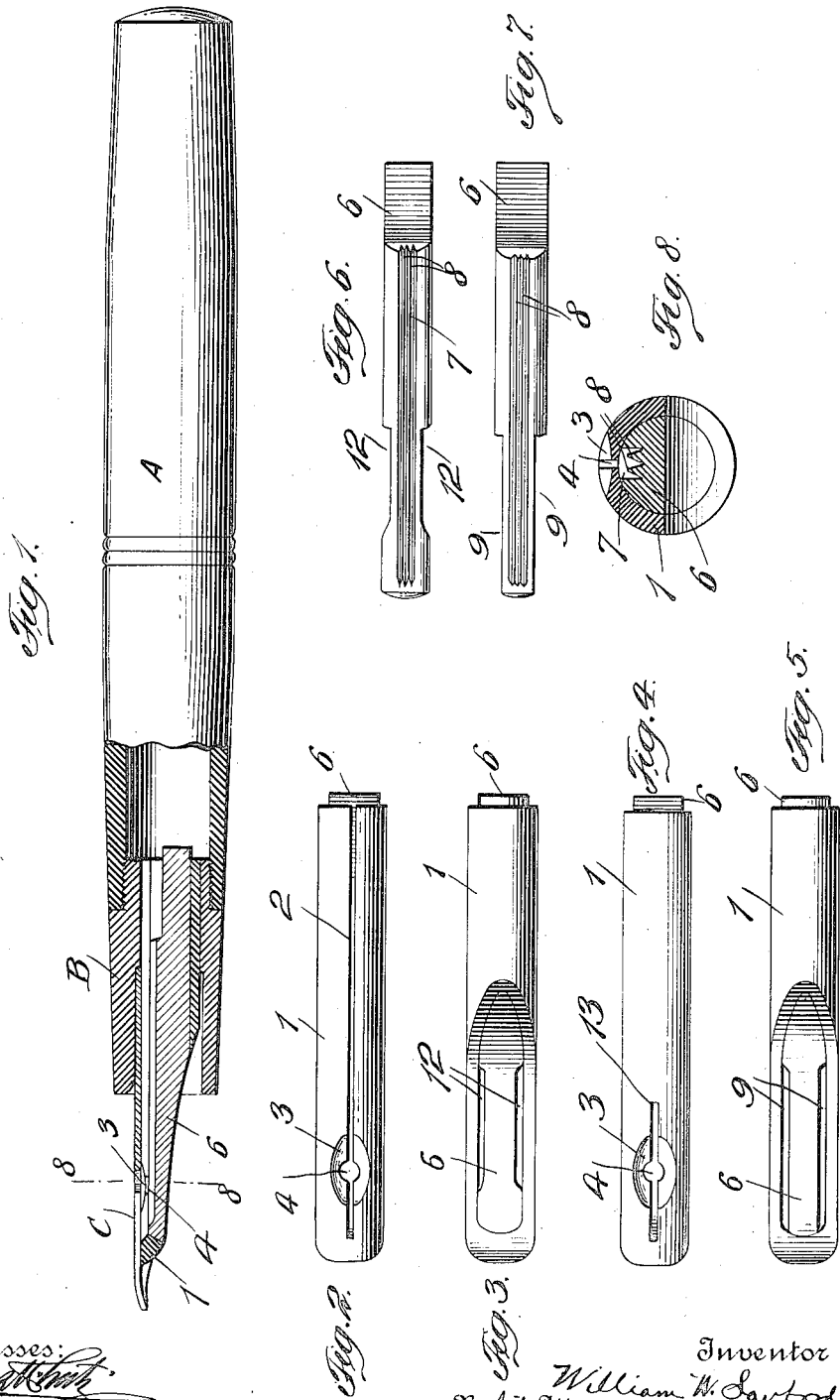


W. W. SANFORD.
 FOUNTAIN PEN.
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1,081,557.

Patented Dec. 16, 1913.



Witnesses:
Julius Smith
W. Brown

Inventor
 William W. Sanford
 By his Attorney
 D. Walter Brown

UNITED STATES PATENT OFFICE.

WILLIAM W. SANFORD, OF NEWARK, NEW JERSEY.

FOUNTAIN-PEN.

1,081,557.

Specification of Letters Patent.

Patented Dec. 16, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM W. SANFORD, a citizen of the United States, and a resident of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Fountain-Pens, of which the following is a specification.

This invention relates to improvements in fountain pens.

The invention is particularly adapted, but is not restricted, to use with pens of large size, which require the regular feeding of a considerable quantity of the ink to the pen-point for proper writing.

The purpose of this invention is to insure the proper feeding of the ink, and at the same time to prevent the ink from flowing so freely as to cause blots, smears and the like.

The invention also aims to overcome difficulties arising from an abnormally increased supply of ink being fed to the pen point due to the pen having been too long allowed to lie in a horizontal position, or to undue expansion of the air in the pen from the heat received from the hand of the user, or to any other like unfavorable conditions, which cause an excessive flow of ink and thereby tend to produce blots and smears unless means are provided to prevent these results. This invention overcomes said difficulty by providing an ink chamber or chambers adjacent to the pen point so arranged as to receive and retain the excess of ink, and thereby prevent blotting and smearing.

Other advantages of the invention will be evident from the description hereinafter contained.

Referring to the drawings which accompany the specification to aid the description, Figure 1 is a broken longitudinal section on large scale of a fountain pen equipped with one form of the invention. The hood is of the form shown in Fig. 4. Fig. 2 is a top view of the preferred form of hood and showing the projecting rear end of the feed bar, and Fig. 3 is a bottom view showing the preferred form of feed bar in place in the hood. Fig. 4 is a top view of a modified hood, and showing the projecting rear end of the feed bar, and Fig. 5 is a bottom view of a hood with a modified form of feed bar. Fig. 6 is a top view of a feed bar similar to that shown in Fig. 3. Fig. 7 is a top view of a modified feed bar similar to that shown

in Fig. 5. Fig. 8 is an enlarged cross section and elevation of the hood and the feed bar on the plane of the line 8—8 of Fig. 1, and looking from the right of Fig. 1.

Referring to Figs. 1, 2, 3, 6 and 8, A being the barrel or reservoir, B the pen section of a fountain pen, and C the pen point, the hood 1 upon which said pen point C lies, fits tightly together with said pen point, into the front end of said pen section B. On its top side said hood 1 is provided with longitudinal slit 2 cut through to the interior of said hood, and extending from a point near the front end of said hood 1, backwardly to the rear end of said hood, as clearly seen in Fig. 2. At a position which will register with the usual air hole through pen point C, and preferably at each side of said slit 2, the top surface of said hood 1 has a dished cavity 3 at the bottom of which is a hole 4 bored through to the interior of said hood 1. Said dished cavity 3 offers the great advantage of dispensing with the need of accurate adjustment on said pen point C, since the position of said pen point can vary considerably and yet the air hole in said pen point will register with said cavity 3, and air will be admitted to the interior of the said reservoir A. The under side of said hood 1 is cut away at the front part on an inclination as indicated in Fig. 1, the under edge of said cut-away part being flushed with the under side of the feed bar 6 to be immediately described. Said feed bar 6 is of size and shape to fit tightly within said hood 1, and when once properly assembled in its position in said hood 1, is intended not to be removed therefrom, except for repairs or renewal. The long slit in the hood illustrated in Fig. 2 provides a springy clamp-like action which facilitates the placing and closely fitting of said hood 1 upon said feed bar 6. Said feed bar 6 is provided on its top side with a capillary ink feed channel 7, the bottom of which is preferably formed with parallel longitudinal grooves 8, whereby a comparatively large amount of ink adhesive surface is attained. Said channel 7 and grooves 8 extend at their front end nearly but not quite to the front end of said feed bar 6, which end is beveled and fits into the under-cut front end of said hood 1, as indicated in Fig. 1. The rear end of said channel 7 and grooves 8 extends through the cut-away rear end of said feed bar 6, so as to communicate with the interior of the said

pen section B and reservoir A. While said feed bar 6 is preferably cut away at the rear end, it is not necessarily so, and if the rear end of said feed bar is not so cut away, then
 5 said channel 7 and grooves 8 will extend clear through the rear end of said feed bar. The front part of said feed bar 6 is cut away, preferably at each side, as at 9, Fig. 7, to form small capillary ink chambers,
 10 when said feed bar 6 is in said hood 1, to receive and retain surplus ink whenever the flow thereof to the pen point has been abnormally increased, the surplus ink being thus prevented from flowing to the pen point too
 15 rapidly, and making blots and smears. The ink feeds as required from said surplus ink chambers slowly and regularly to the pen point.

From the foregoing description, it will be
 20 manifest that, when the parts are assembled, four ink-adhering surfaces are provided by this invention, for preventing excessive feed of ink to the pen point,—viz. the inner surface of the hood which covers the said
 25 ink channel 7, the walls and bottoms of said ink channel 7 and grooves 8, and the under surface of said pen point, and the outer surface of said hood 1 on which said pen point fits.

The operation of the invention is as follows: Ink from the reservoir enters said capillary ink channel 7, films of ink form on the aforesaid adhesive surfaces of said hood 1, and channel 7 and grooves 8, and ink
 35 flows slowly and regularly and in proper quantity, because of the resistance of said adhesive surfaces, to said pen point C, the front end of said slit 2 serving as an ink feed slit to feed the ink to the under side
 40 of said pen point C; and, as the pen point is moved over the paper by the writer, the ink flows properly and regularly without

blot or smears from said pen point C to the paper. The air entering through the hole
 c in said pen point C, passes by said slot 2
 45 and channel 7, against the direction of the ink feed, into the interior of said pen section B and reservoir A.

Referring to Figs. 3 and 6, the construction of the several parts is similar to that
 50 hereinafter described, excepting that the cutaway part 12—12 of the sides of feed bar 6 does not extend clear to the front end of said feed bar. In all other respects however, the construction and operation are
 55 the same as hereinbefore described.

Referring to Fig. 4, the through slit 13 in the top of hood 1 extends backwardly only about to the front end of pen section B. The feed bar used with a hood like that
 60 shown in Fig. 4 may be similar either to the feed bar like that shown in Fig. 6, or to that shown in Fig. 7, and the construction of all parts and the operation are the same as hereinbefore described.
 65

Now having described my improvements, I claim as my invention.

In a fountain pen, the combination of a solid feed bar having a grooved ink channel on its upper surface, a hood inclosing
 70 said feed bar, a slit in said hood connecting the interior thereof with the under surface of the writing pen, and ink chambers formed by the cooperation of the sides of said hood with recesses in said feed bar, substantially
 75 as described.

Signed at New York city, in the county of New York, and State of New York, this 2nd day of May, A. D. 1913.

WILLIAM W. SANFORD.

Witnesses:

ISAAC P. STORM,
 WALTER N. HARRIS.