Jan. 11, 1927. 1,613,812

J. C. WAHL

PEN AND NIB AND METHOD OF PRODUCING SAME

Filed June 11, 1924

Fig. 1.

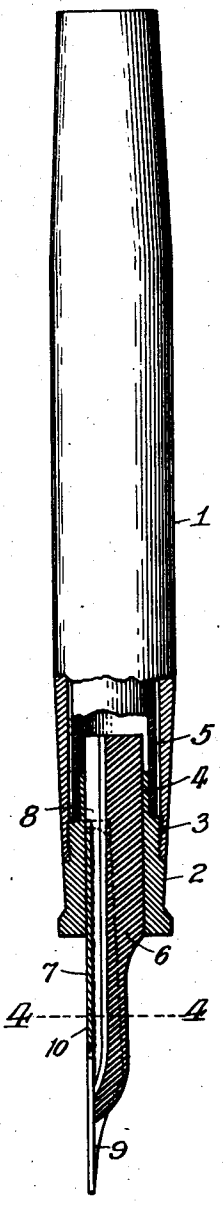


Fig. 2.

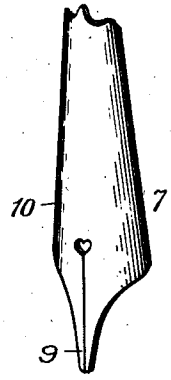


Fig. 3.

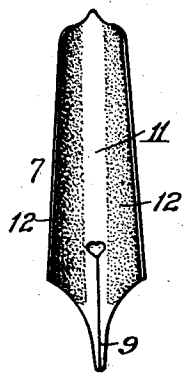
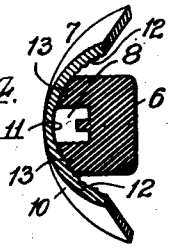


Fig. 4.



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UNITED STATES PATENT OFFICE.

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PEN AND NIB AND METHOD OF PRODUCING SAME.

Application filed June 11, 1924. Serial No. 719,255.

The present invention relates to the manufacture of pens and the nibs thereof and the method of making the same.

In pens having nibs provided with smooth ink adhering or clinging surfaces, the amount of ink adhering or clinging to the nibs is limited if the disadvantage of drops of the ink falling from the nib is to be avoided. Frequently when a pen is resting on its side the ink on the nib will flow to the lower edge of the nib and drop off, the ink not remaining sufficiently distributed over the ink holding surface of the nib to prevent the accumulating and dropping off of the ink from the edge of the nib. If the flow of the ink to the nib point be too free, the ink will flow to the point at a greater rate than demanded by the speed of writing and the ink will drop from the point and form blots. When the flow is regulated to prevent this, then, the flow will be too slow for rapid writing. These, then, require careful fitting and adjustment of the nib in the holder, making the cost of production somewhat high.

The present invention aims to eliminate these disadvantages and has among its objects the provision of a nib with a surface capable of holding a large quantity of ink in more or less distributed extent without the ink accumulating and dropping from the sides or the point of the nib, yet permitting a free flow of the ink to the point in accordance with the demand imposed thereon; to provide such nib with preferably a smooth ink supplying or flow surface portion and roughened ink holding or clinging surface portions, preferably on the inner surface of the body portion of the nib, the smooth portion being preferably a longitudinal strip in the central part of the inner surface of the nib and leading to the point of the nib and the roughened portion being preferably the adjacent side area of the inner surface of the nib; to provide a pen with such a nib and a feed engaging the nib whereby the relation of the nib and the feed may be maintained; to provide a feed with or without a roughened surface which may engage more or less intimately with the inner surface of the nib, preferably adjacent the smooth central portion and upon the roughened areas; to provide for a novel process of making a nib, as by providing a smooth ink supplying surface portion and roughening adjacent or lateral surface portions for holding the ink; to roughen such surface portions by preferably sand blasting or the like; to provide for treating, preferably by heating, the nib and the feed, for preferably causing the same to intimately fit together, particularly the parts of the feed fitting with and into the irregularities or inequalities of the roughened surface of the nib; to provide, whether or not using a roughened nib, for roughening the feed, a device, for aiding in distributing and holding the ink; and, such other and further objects, advantages and capabilities as will later more fully appear and are inherently possessed by the invention.

Referring to the drawing illustrating the invention, Fig. 1 is a view partly in section of a pen embodying the invention; Figs. 2 and 3 are views of the opposite sides of the nib; and, Fig. 4 is a transverse sectional view taken on line 4—4 of Fig. 1 of the drawings.

Referring now more particularly to the drawing, Fig. 1 shows a pen having a barrel 1 to an end of which is secured a section 2, preferably by screw threads 3. The section is provided with a longitudinal bore in which fits a feed 6 and a nib 7, the feed being provided with an inflow channel 8 of suitable form. The section has an inner extension 4 to which is secured, in any suitable manner, an end of an ink sac 5.

The nib 7 has a writing point 9 and a body portion 10, the inner surface of which is provided with a central narrow surface portion or area 11 which is smooth and leads to the point 9, the inner surface of the point 9 being preferably also smooth. At the sides of and adjacent the central portion 11 the inner surface of the nib is formed with roughened surfaces 12, such roughening being preferably made by sand blasting or by other suitable methods so as to provide irregularities or inequalities in such surface areas or portions as clearly shown in Fig. 3 of the drawing.

The nib and the feed are placed together in given relation, by preferably locating the side portions 13 of the feed at the sides of the central strip 11 so that the channel 8 will be opposite the smooth surface portion 11 and with the side portions 13 bearing

upon or intimately engaging with the adjacent roughened surface portion 12 as clearly shown in Fig. 4 of the drawing. With the nib and feed placed together, as above indicated, they may then be inserted in the bore of the section as shown in Fig. 1 of the drawing. If it be desired that the feed fit closely or intimately with the nib so as to prevent relative movement of one with respect to the other, the nib and the feed may be treated, as by heating, so that the contacting portions of the feed with the nib will set with the irregularities or inequalities of the roughened surface portions 12 of the nib. The two members will then be held closely together so that the nib will not slide with respect to the feed. Whether or not the nib be roughened, the feed may be roughened on the surface engaging with the nib so as to aid in holding and distributing the ink and the engaging portion of the feed and the nib may be such as to provide a more or less ink holding space.

By roughening the inside surface of the nib or the feed, or both, a greater quantity of ink may be held upon the nib without danger of the ink dropping from the nib, or even the feed, and thus causing blots. If the pen be rested on its side, the ink will not flow to the lower edge of the nib and fall upon the paper and make blots. The roughened surface portions of the nib have the faculty of distributing, or holding the ink distributed, over an extensive area, the irregularities or inequalities of the roughened surface acting by capillarity. The central smooth portion 11 is provided for giving a smooth path or free supply of the ink from the barrel to the point of the nib where there is a rapid writing or other great demand made upon the pen. The roughened portions 12 being located at the sides of the smooth path will permit the lateral spreading of the ink so as to hold a great quantity of ink on the pen and thus prevent the collecting of the ink at the sides of the pen, yet aids in the supply and feeding of the ink along the smooth portion 11 and in the channel 8 of the feed. Thus, the central smooth strip portion results in providing a continuous supply of ink to the point of the nib while the roughened portions on either side of the strip provide means to prevent the ink from overflowing and overfilling the natural reservoirs of the feed itself. Great care in adjusting and manufacturing the feed is not required since the roughened surfaces of the nib or feed or both readily compensate for variations in manufacture and assembly by causing the ink to cling or adhere to the nib, or feed, or both, more efficiently than upon such having a smooth surface or surfaces, while yet permitting as free a flow of ink to the point of the pen as if the nib were totally smooth. In this way a large channel may be provided in the feed for a rapid flow of ink when the same is required.

While I have herein described an embodiment and process of making such pen and nib, it is to be understood that the invention is not limited to the particular construction, arrangement of parts and details, or the steps described and shown, but that it comprehends other constructions, arrangements of parts and details and steps without departing from the spirit thereof.

Having thus described my invention, I claim:

1. In a pen, a nib having a point and a body portion, the inner surface of the body portion being provided with a longitudinal smooth strip for supplying ink to the point, and roughened surface portions at the sides of said strip for increasing the ink holding capacity of said nib.

2. In a pen, a nib having a point and a body portion, the inner surface of the body portion being provided with a central longitudinal smooth surface portion for supplying ink to the point, and roughened surface portions at the sides of said smooth portion for increasing the ink holding capacity of said nib.

3. In a pen, a nib having a point and a body portion, the inner surface of the body portion being provided with a central smooth strip for the free flow of ink to the point, and the remainder of the inner surface of the nib on either side of the strip being provided with roughened areas for preventing the overflowing of the ink.

4. A pen comprising a holder and a nib, said holder having a feed provided with a channel for the feed of ink therethrough, said nib having a smooth surface portion opposite the channel of the feed and roughened surface portions at the sides of said smooth surface portions.

5. A pen comprising a holder, a feed provided with a feed channel, and a nib having a central longitudinal smooth strip on its inner surface and having roughened portions intimately engaged with the surface of said feed.

6. A pen comprising a holder, a feed having a channel for the feed of ink therethrough, and a nib having a smooth central longitudinal strip on its inner surface for the free flow of ink and disposed opposite the channel of the feed and having roughened inner surface portions intimately engaged with the surface of said feed and roughened inner surface portions adapted to increase the ink holding function of the pen.

7. The method of assembling a feed bar having a feed channel and a pen having a roughened inner surface with a smooth central strip therethrough which consists of po-

sitioning said pen on said feed bar with said strip opposite said channel and causing the intimate engagement of said bar and said pen by applying heat to said bar.

8. The method of assembling a feed bar having a feed channel and a pen having a roughened inner surface with a smooth longitudinal central strip therethrough which consists of softening the surface of said feed bar and of positioning said pen on said bar with said strip opposite said channel, thereafter pressing said pen on said bar to cause the intimate engagement of said surface of said bar with the roughened surface of said pen.

In witness whereof, I hereunto subscribe my name to this specification.

JOHN C. WAHL.