Aug. 10, 1937. M. G. SYPHER 2,089,449

PEN

Filed May 6, 1935

Fig. 1.

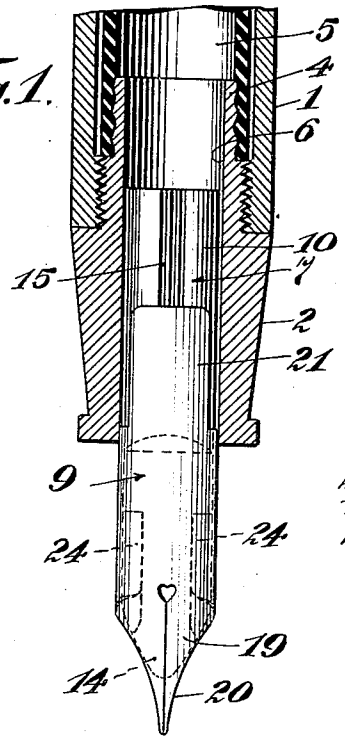


Fig. 2.

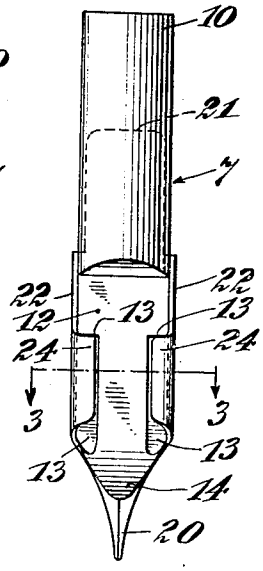


Fig. 4.

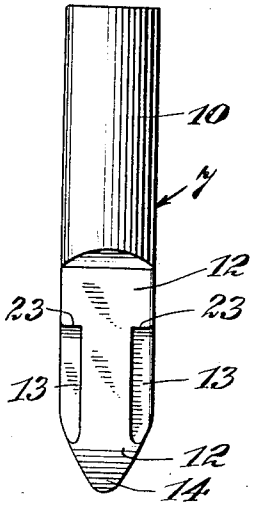


Fig. 7.

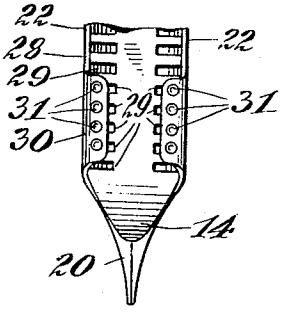


Fig. 3.

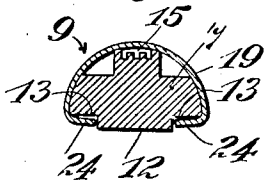


Fig. 5.

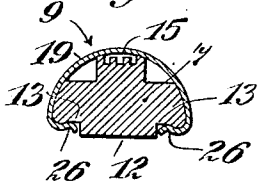
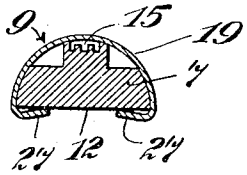


Fig. 6.



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UNITED STATES PATENT OFFICE

2,089,449

PEN

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Application May 6, 1935, Serial No. 19,910

11 Claims. (Cl. 120—51)

The present invention relates to pens and more particularly to pen nibs for fountain pens and the like.

Pen nibs for fountain pens usually are made of gold or other precious metal so that they can resist the corrosive action of chemicals used in writing ink. Since gold or other precious metal is expensive, the pen nib is one of the most costly parts of the pen. Attempts to economize in the cost of gold by decreasing the thickness of the metal have not been successful because pen nibs made of thin metal were too flexible and the writing points thereof were readily damaged. Pens made of base metal and gold plated are undesirable because the gold readily wears off subjecting the nib to corrosion and because base metals do not have the proper resilience necessary for fountain pen nibs. Another difficulty in fountain pens is that pen nibs frequently may be improperly mounted or adjusted on the ink feed bar. Also, during the use of the pen or while cleaning it, the nib may be accidentally rotated or moved longitudinally with respect to the feed bar, thus impairing the feeding of ink to the pen point. As a result, the pen will not function properly and the user of the pen will be dissatisfied.

The present invention aims to overcome the above difficulties by providing a pen nib for a fountain pen which may be made of material of reduced thickness to save an appreciable amount of gold or other precious metal, but which is as serviceable and durable as pens made of thicker material. The present invention further aims to provide an inexpensive pen nib adapted to be held securely in operative position on the feed bar of the fountain pen to prevent accidental rotational or longitudinal movement of the pen with respect to the feed bar during the use of the pen.

An object of the present invention is to reduce the cost of pen nibs for fountain pens and the like.

Another object of the invention is to decrease the amount of gold or other precious metal required for pen nibs.

Another object of the invention is to provide a durable and serviceable pen nib made of relatively thin material.

Another object of the invention is to provide a reinforced pen nib for fountain pens and the like.

Another object of the invention is to provide a pen nib which is readily assembled and attached to the feed bar of the fountain pen.

Another object of the invention is to provide a pen nib which cooperates with the feed bar to prevent accidental rotational or longitudinal movement with respect to the feed bar.

Another object of the invention is to provide a reinforced pen nib of thin material adapted to be maintained in adjusted position on the feed bar.

A further object of the invention is to provide a simple inexpensive pen nib and feed bar for accomplishing the above advantageous results.

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice.

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein

Fig. 1 is a fragmentary elevational view, partly in section, illustrating a preferred embodiment of the invention;

Fig. 2 is an elevational view showing the underside of a feed bar having a pen nib mounted thereon;

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2;

Fig. 4 is an elevational view showing the underside of the feed bar with the pen nib removed therefrom;

Fig. 5 is a sectional view illustrating another embodiment of the invention;

Fig. 6 is a sectional view illustrating still another embodiment of the invention; and

Fig. 7 is a fragmentary elevational view illustrating a further modification of the invention.

Referring again to the drawing and more particularly to Figs. 1, 2, 3 and 4, there is shown a fountain pen comprising a barrel 1 and a pen section 2 threaded or otherwise secured to the lower end of the barrel. The pen section may be provided with a tubular extension or nipple 4 for attaching an ink sac or reservoir 5 to the pen section and any suitable operating device (not shown) may be utilized for filling the ink sac or reservoir, for example, the mechanism shown in the patent to Upton, No. 1,580,093 granted, April 6, 1926.

The pen section is provided with a substantially cylindrical radial bore or aperture 6 extending longitudinally therethrough for mounting a feed bar 7 adapted to feed the ink from the sac to a pen nib 9 mounted adjacent to the feed bar. The feed bar may be substantially cylindrical at its upper end 10 and is fitted into the bore or aperture 6 to frictionally hold the upper end of the pen nib in the pen section. The lower end of the feed bar preferably is provided with an arcuate or semi-cylindrical upper surface 11 adapted to receive the body of the pen while the underside is provided with a substantial flat portion 12 hav-

ing a groove or recess 13 at each side for securing portions of the pen nib. The free end of the feed bar is provided with a rounded tip portion 14 adapted to substantially conform to the writing point of the fountain pen nib. In order to feed ink to the nib and to fill the pen, the upper surface of the feed bar may be provided with a groove 15 or a series of capillary grooves extending substantially from the upper end 10 inserted into the bore 6 of the pen section 2 to the tip 14.

Preferably pen nibs are made of gold to resist the corrosive action of chemicals in the writing ink. It will, of course, be understood that the term "gold" used herein exemplifies a gold alloy, for example, fourteen carat gold which comprises fourteen parts pure gold and ten parts base metal. Heretofore, it has been necessary for the metal used for pen nibs to be of sufficient thickness so that the point would not be too soft for writing and would not be readily damaged. Also, the metal was required to be sturdy, otherwise the pen nib would move away from the feed bar when pressure was applied to the pen nib during writing and hence, ink was not properly fed thereto. The present invention meets all these requirements and at the same time permits a relatively thinner material to be used for the pen nib to reduce the cost of gold or other precious metal required.

In order to accomplish these advantages the pen nib 9 comprises an arcuate or bow-shaped body portion 19 having a writing point 20 at the lower end and a portion 21 of reduced width at the upper end adapted to fit between the inner walls of the pen section bore 6 and the cylindrical portion 10 of the feed bar to hold the pen nib in place. The body portion 19 has suitable sides 22 each provided at their lower end substantially adjacent to the writing point 20 with a flange, tab or wing portion 24 which extend transversely toward each other. These flanges preferably are bent inwardly so that they fit into the grooves or recesses 13 at the underside of the feed bar to hold the pen nib in engagement with the feed bar. In this manner the pen nib cannot be moved away from the feed bar when writing pressure is applied. At the same time the pen point is reinforced and also held in place on the feed bar whereby the nib may be made of relatively thinner material to save in the cost of gold. Another feature of the flanges is that they are provided substantially adjacent to the pen point where the greatest pressure is applied during writing which tends to separate the pen point and feed bar. Preferably the flanges are substantially only one-half the length of the side portions whereby a saving of material is effected. Furthermore, they do not stiffen the pen nib at its upper end and do not interfere with its insertion into the pen section.

The present invention also contemplates overcoming other difficulties heretofore experienced without increasing the cost of the fountain pen. Frequently, during the use of the pen or while cleaning the pen, forces are applied tending to rotate the pen nib with respect to the feed bar thus moving the pen point out of alignment with the ink feeding groove 15. Since the body portion of the pen nib lies in conformity with the upper surface 11 of the feed bar and the flanges extend into the grooves 13 at the underside 12 of the feed bar, the nib is securely held against accidental rotational movement. These advantageous results may also be attained by using the improved pen nib with existing feed bars so that the present invention may be applied to both new and old pens without additional cost. The grooves also prevent the nib from moving longitudinally upwardly with respect to the feed bar since the upper end of each groove is provided with a stop face 23 which is engaged by the upper ends of the flanges. Another advantage of the present invention is that pen nibs may be assembled on the feed bars prior to inserting them into the pen section, and an assortment of pen nibs of various styles may be shipped to the dealer. The purchasers can then select the style of nib suitable to their handwriting and the dealer then inserts the combined pen and feed bar into the pen section. Since the nib is reinforced by being in engagement with the feed bar, the nib may be frequently removed and inserted without damage thereto. Unskilled persons may insert the pen and position it properly in all cases. This is also advantageous in the event that the style originally selected by the customer is unsatisfactory.

In Fig. 5 another embodiment of the invention is shown wherein the underside of the feed bar is provided with a longitudinally extending recess 13 at each side adapted to receive a projection 26 formed on the flanges of the pen nib. The recesses and projections register and facilitate quickly assembling the pen nib and feed bar in properly adjusted position. Also they prevent accidental disarrangement which may be caused by rotational or longitudinal movement of the pen nib with respect to the feed bar.

In Fig. 6 a slightly different pen nib construction is shown wherein the feed bar is provided with a flat underside and the flanges, wings or tabs 27 are bent inwardly and upwardly at an angle towards the arcuate underside of the body portion of the nib. Preferably, the flanges are resilient and engage the flat underside 12 of the feed bar at their free ends so that the nib may yield slightly and move away from the feed bar when writing pressure is applied. Due to the resiliency of the flanges 27, the nib is always pulled back to the feed bar when writing pressure is released. Also, the resilient tabs permit slight separation of the feed bar and nib to induce the flow and feeding of ink to the point. This form of pen nib is adapted to be used particularly with existing forms of feed bars.

Fig. 7 illustrates still another embodiment of the invention wherein the feed bar is provided with comb-like members 28 at the sides spaced by suitable recesses 29 adapted to retain ink and prevent blotting in the event the ink is fed too rapidly. The pen nib is provided with flanges 30 having suitable projections, indentations, bumps or corrugations 31 adapted to register with certain of the recesses 29 at the sides of the feed bar. These projections when in engagement with the recesses between the teeth prevent longitudinal movement of the pen nib to hold the pen point in proper relation with respect to the ink feeding groove 15. It will, of course, be understood that any number of projections may be provided. Preferably, at least one projection is formed on each of the flanges. Where more than one projection is utilized, they preferably are spaced to correspond to the distance the recesses 29 are spaced.

It will be seen that the present invention provides a simple inexpensive pen feed which may be readily manufactured and having a pen nib adapted to cooperate with the feed bar of the fountain pen. The pen nib is reinforced to per-

mit thinner material to be used thereby reducing the cost of gold or other precious metal required. At the same time, the pen nib is securely held in place against accidental movement with respect to the feed bar and may be assembled at the factory. The pen may be used indefinitely without danger of the nib getting out of adjustment, thus eliminating dissatisfaction on the part of the user and the expense of frequent repairs or adjustments. The pen nibs are rugged in construction and can withstand the rough usage to which they may be subjected.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention I claim:

1. A pen nib for fountain pens and the like comprising an arcuate body portion having side portions adapted to lie against the sides of a feed bar, and a substantially flat elongated resilient flange at each respective side portion substantially adjacent to the writing point and extending transversely therefrom to engage the underside of the feed bar.

2. A pen nib for fountain pens and the like comprising an arcuate body portion having side portions adapted to lie against the sides of a feed bar, a writing point at one end of said body portion, and a relatively wide flange at each respective side portion and extending transversely therefrom to engage the underside of the feed bar, said flanges being substantially half as long as said side portion and being substantially adjacent said writing point to reinforce said point without increasing substantially, the amount of material required for said pen nib.

3. In a fountain pen and the like the combination of a feed bar having an arcuate upper surface and a substantially flat portion on the underside thereof, and a pen nib conforming substantially to the upper surface of said feed bar and lying in contact therewith, said pen nib having a writing point at one end and a substantially flat resilient flange at each of the respective sides thereof adapted to engage the flat portion on the underside of said feed bar, said flanges being substantially adjacent to the writing point and extending along the sides of said pen nib for only a portion thereof to decrease the amount of material required for said pen nib.

4. In a fountain pen and the like, the combination of a feed bar having an ink feeding groove therein and a pair of recesses on the underside substantially at the forward end thereof, and a pen nib having a writing point adapted to receive ink from the ink feeding groove and having a pair of tabs substantially adjacent the writing point extending inwardly towards each other and fitting into said recesses to assemble said pen nib and feed bar and prevent accidental movement of said pen nib with respect to said feed bar.

5. In a fountain pen and the like the combination of a feed bar having a pair of longitudinally extending recesses on the underside thereof, said recesses being formed at substantially the forward end of the feed bar, each recess having a stop face at its upper end, and a pen nib mounted on said feed bar having flanges at the sides thereof fitting into said recesses, the upper ends of said flanges abutting against the stop faces to prevent accidental movement between said pen nib and feed bar.

6. A feed bar for a fountain pen and the like, comprising a portion adapted to form a support for a pen nib and feed ink thereto, and a substantially flat longitudinal recess at each side of said feed bar, said recesses being on the underside of said feed bar at the forward end thereof adapted to receive flanges formed on the pen nib, said recesses having a stop face at their upper end adapted to determine the position of the pen nib with respect to the feed bar when placed thereon.

7. A pen nib for fountain pens and the like comprising a body portion adapted to fit over a feed bar, a flange at each side of said body portion, said flanges extending towards each other and being adapted to extend beneath the underside of the feed bar to prevent relative rotational movement between the pen nib and the feed bar, and an upwardly extending projection on each of said flanges adapted to prevent relative longitudinal movement between the pen nib and the feed bar.

8. In a fountain pen and the like, the combination of a feed bar having a plurality of indentations on the underside thereof, and a pen nib having a flange at each side thereof extending beneath said feed bar, said flanges having a plurality of projections therein adapted to register with certain of said indentations in said feed bar.

9. In a fountain pen and the like, the combination of a feed bar, and a pen nib having an arcuate body portion provided with side portions adapted to lie against the sides of the feed bar and having a substantially flat elongated resilient flange at each respective side portion substantially adjacent to the writing point of said nib and extending lengthwise along said side portion for only a portion of said side portions, said flanges extending under and engaging the underside of said feed bar.

10. A pen nib for fountain pens and the like, comprising a writing point, a curved body portion having side portions adapted to lie against the sides of a feed bar, a resilient flange at each side portion and adjacent to the writing point, said flanges extending transversely toward each other, and an upwardly extending elongated portion on each of said flanges adapted to engage the underside of the feed bar.

11. In a fountain pen and the like, the combination of a feed bar and a longitudinally extending recess at each side of said feed bar on the underside and substantially at the forward end thereof, and a pen nib having a writing point and having a tab at each side thereof substantially adjacent to the writing point, said tabs extending inwardly towards each other and fitting into said recesses to assemble said pen nib and feed bar and prevent accidental movement of said pen nib with respect to said feed bar.

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