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FOUNTAIN PEN

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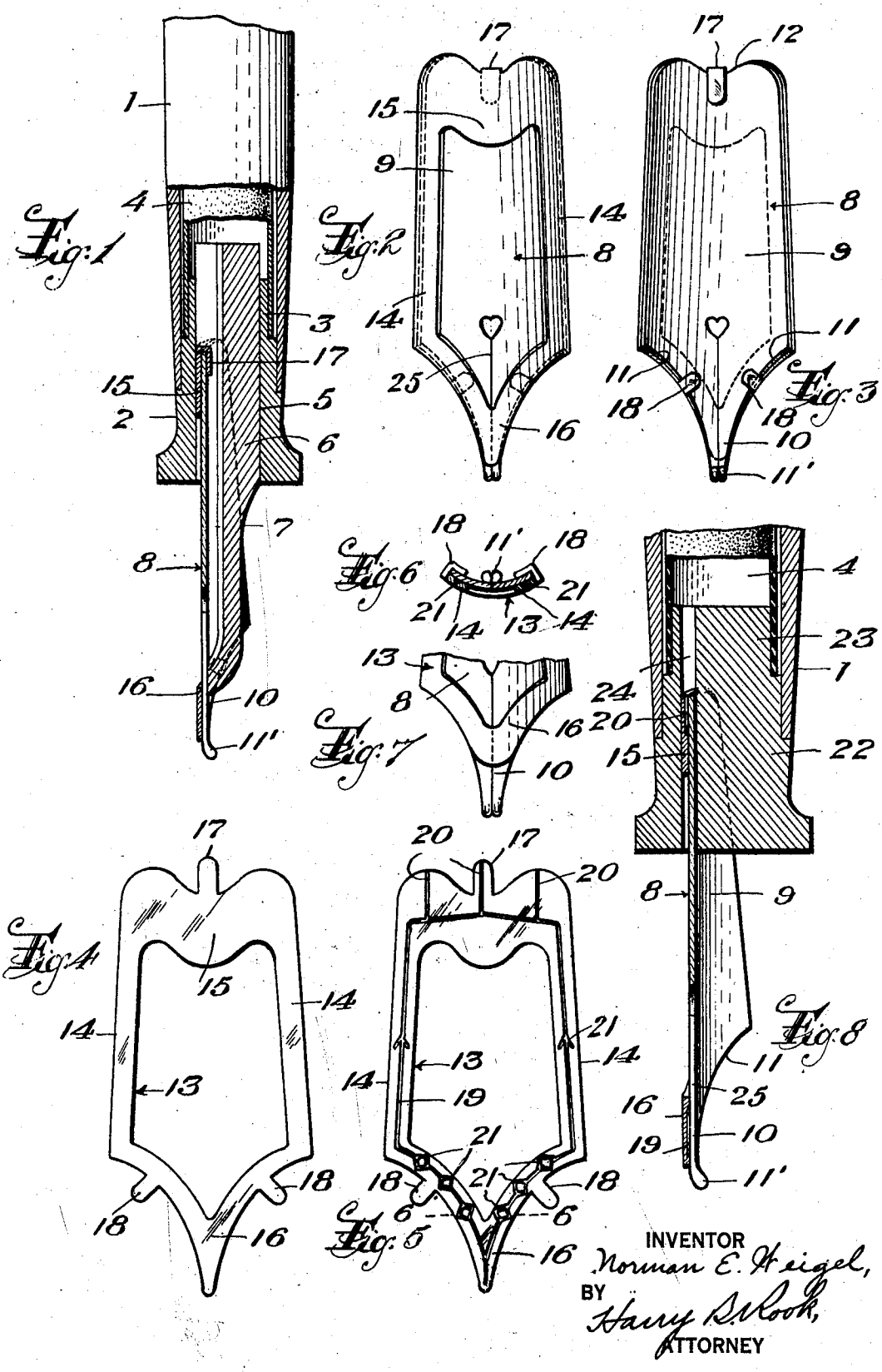

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FOUNTAIN PEN

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7 Claims. (Cl. 120—109)

My invention relates to improvements in pens, particularly fountain pens and nibs, or pens proper, therefor.

In the manufacture of fountain pens it is the prevailing practice to equip them with nibs or pens of more or less standard sizes, containing a high proportion of gold usually fourteen carats alloyed with other metal. The use of gold, as will be understood, is highly desirable because of its non-corrosive character, its softness and flexibility which contribute to ease of writing, and also because of commercial demand due to general appreciation of its intrinsic value. Because of the high cost of gold, its use in any such or much smaller proportions is not practicable in the manufacture of nibs, particularly of the usual sizes, for low cost fountain pens.

With the foregoing in mind, the primary object of my invention is to provide in a fountain pen a so-called gold nib having a high carat content, but a smaller amount or weight of gold therein than present day nibs of corresponding sizes, so that gold nib fountain pens may be produced at low cost.

More specifically my invention comprehends a gold nib, or pen, of high carat content but of finer or thinner gauge than present day nibs of corresponding size, so that the amount or weight of gold therein is appreciably smaller as compared with the usual gold nibs, combined with novel nib reenforcing means for preventing the nib from buckling or undue flexing under writing pressure, said means preferably having the form of a frame of non-corrosive inexpensive metal relatively stiffer than the nib and reenforcing the body portion of the nib and also the writing point thereof.

Another object of my invention is to provide a reenforcing frame for the nib adapted to facilitate and induce the flow of ink to the writing point of the nib and to prevent the ink from spurting.

Another object is the provision of a reenforcing frame readily attachable to the nib to form therewith a manufacturing unit, but detachable therefrom if desired, and adaptable for use with the nib as a separate detached unit.

Other objects are to provide for elimination of the usual ink feed bar, and for varying the flexibility of the writing point of the nib.

Subordinate objects will presently appear and the nature of my invention will be more clearly understood from a reading of the following description and claims in conjunction with the accompanying drawing.

Referring to the drawing in which corresponding and like parts are designated by the same reference characters throughout the several views,

Figure 1 is a fragmentary view partly in longitudinal section and partly in elevation of a fountain pen equipped with my novel nib or pen and a preferred form of my nib reenforcing means.

Figure 2 is a view in elevation of the nib with the reenforcing means attached thereto and looking at the upper face of the nib.

Figure 3 is a similar view looking at the under face of said nib.

Figure 4 is a face view of the reenforcing means detached from the nib and drawn to an enlarged scale.

Figure 5 is a similar view of a modified form of the reenforcing means looking at the under face thereof and illustrating how said means is adapted to facilitate the flow of ink and to prevent the same from spurting.

Figure 6 is a view in transverse section illustrating the reenforcing means of Figure 5 attached to the nib and taken on the line 6—6 of said Figure 5.

Figure 7 is a fragmentary elevation looking at the upper face of the nib and illustrating how the reenforcing means may be modified to vary the flexibility of the writing point of the nib, and

Figure 8 is a view similar to Figure 1, illustrating devices for mounting the nib and the reenforcing means of Figure 5 in the barrel or holder of the pen to eliminate the usual ink feed bar.

Specifically describing the embodiment of the invention illustrated by Figures 1 to 4 inclusive, the numeral 1 designates the pen barrel, and 2 the usual sleeve member wedged into the lower end of the barrel 1 and forming therewith the pen holder. The sleeve member 2 is provided with an extension 3 to which an ink sack 4 is suitably secured and has an axial bore 5 through which projects the upper end of an ink feed bar 6 provided with an ink flow channel as at 7.

The numeral 8 designates the nib, or pen proper, which includes a body portion 9, a writing point 10 having upwardly concave side edges 11 and the usual tip 11'. Preferably the upper edge or heel of the nib or pen 8 is concave as at 12 for a purpose presently apparent. As previously stated, in substance, the nib 8 is formed of gold alloy but of very thin gauge, as compared with pens as now constructed, whereby an alloy of high carat gold content may be utilized in its manufacture while at the same time the amount or weight of gold is small compared with the

known types of nibs to correspondingly reduce the cost of production.

Superposed upon the nib 8 is a single piece nib reenforcing frame 13 including side members 14, an upper end member or heel part 15, and a lower pointed end member or toe part 16, said frame being of a size and shape to extend along the longitudinal edges or marginal portions of the nib substantially flush or coincident with said edges, to within a short distance of the tip 11', the pointed end member 16 extending across the writing point 10 to additionally reenforce the same against undue flexing, as best shown in Figures 1 and 2. In this form of the invention the reenforcing frame 13 is attached to the nib or pen 8 to form therewith a manufacturing unit. Preferably, for this purpose a lug or clip 17 is provided on the upper edge of the end member 15, centrally thereof, to be bent under the upper edge of the nib 8 and set in the concavity thereof, and a pair of similar lugs or clips 18 are provided on opposite sides of the pointed end member 16 for similar arrangement relative to the concave edges 11 of the writing point 10. It will be noted that the lugs 17 and 18 are arranged so as to prevent accidental displacement of the frame 13 and also to obviate undue spreading of the writing point 10. Also other means may be resorted to for attaching the frame 13 to the nib 8 for instance spot welding, or soldering. The nib 8 and attached frame 13 are removably mounted in the bore 5 over the ink feed bar 6 as shown in Figure 1. In this connection it is to be noted that the end member or heel part 15 is wider than the members 14 and 16 to provide an adequate bearing surface therefor in the bore 5, and to reenforce the gold pen against buckling during insertion of the pen in the bore. It has already been stated that the frame 13 is formed of an inexpensive material relatively stiffer than the nib 8. Preferably stainless steel, or monel is utilized, said frame being stamped, or otherwise formed of a thin sheet thereof.

With reference to Figure 5, the frame 13 may be adapted to facilitate the feed of the ink to the nib 8 by providing suitable ink channels in the under side thereof. Preferably a continuous capillary channel 19 is engraved or otherwise formed around the entire frame together with capillary feeder channels 20 leading from the upper edge of the member 15 to said channel 19 all the channels being on the side of the frame that contacts with the nib 8. These channels 19 and 20 are designed under the flexing action of the nib 8 and frame 13 to induce a flow of ink to the writing point 10 of said nib, the channels at the end 16 of the frame being in superposed relation to the usual slit 25 in the writing point of the nib to lead ink thereto. To obviate spurting a series of lateral channels 21 are in the end members 16 in communication with the channel 19 to receive and retain ink from the point 11 when the pen is inverted endwise and to serve as reservoirs for the ink so that ink shall be always immediately available for beginning writing without the necessity for shaking the pen or waiting for the ink to run from the sack. Obviously, ink would flow between the nib 8 and frame, even without the channels 19, 20 and 21.

If desired the described frames 13 may be adapted for use with a nib as a separate detached unit by eliminating the lugs or clips 17 and 18 said frames in this case being merely laid upon the nib and held in place by the holder 1.

The ink feeding, or channeled form of frame 13 may also be used to take the place of the ink feed bar 6 as shown in Figure 8. In this form of the invention a plug 22 is utilized in lieu of the sleeve 2 said plug having an extension 23 to which the ink sack 4 is suitably connected and also having an ink flow channel 24 into which the nib 8 and frame 13 are fitted. Preferably, in this form of the invention, the frame 13 is adapted for use as a separate detached unit held in place together with the nib by the pen holder.

The invention makes it possible to use an extremely thin gold nib with a minimum of metal therein, by reenforcing the gold nib against buckling or undue bending under writing pressure. The whole pen is therefore inexpensive and yet reliable and durable. The degree of flexibility of the writing point may be varied by locating the end 16 of the frame at different distances from the extremity of the writing point; for example Figure 7 shows a nib having a more flexible writing point than that shown in Figures 1 to 4, the end 16 of the frame being located farther from the extremity of the writing point.

The foregoing constitutes a detailed description of my invention and it is believed that the operation and advantages thereof will be clear therefrom. It is to be understood however that the invention is not to be confined to the precise details set forth and that right is herein reserved to modifications falling fairly within the scope of the appended claims.

Having thus described my invention, what I claim is:

1. The combination of a nib having a heel and a writing point, and a nib reenforcing open frame having a heel part overlying the heel of the nib, a toe part overlying the writing point, and side members connecting said heel part and toe part and overlying and secured to the longitudinal marginal portions of said nib, and a holder having a recess frictionally receiving the heel of the nib and the heel part of said frame, so that said heel part, the side members and the toe part of the frame reenforce the heel, the longitudinal marginal portions and the writing point of the nib, respectively.

2. The combination of a nib having a heel and a writing point, and a nib reenforcing open frame having a heel part overlying the heel of the nib, a toe part overlying the writing point, and side members connecting said heel part and toe part and overlying and secured to the longitudinal marginal portions of said nib, and a holder having a recess frictionally receiving the heel of the nib and the heel part of said frame, said frame having lugs at its edges clinched over the edges of said nib to positively secure the frame on the nib, so that said heel part, the side members and the toe part of the frame reenforce the heel, the longitudinal marginal portions and the writing point of the nib, respectively.

3. The combination of a nib having a heel and a writing point, and a nib reenforcing open frame having a heel part overlying the heel of the nib, a toe part overlying the writing point, and side members connecting said heel part and toe part and overlying and secured to the longitudinal marginal portions of said nib, and a holder having a recess frictionally receiving the heel of the nib and the heel part of said frame, said writing point being longitudinally split and said toe part of the frame having lugs clinched

over the opposite side edges of the writing point to limit spreading of said writing point.

4. The combination with a pen nib having a longitudinally split writing point, of a reenforcing member overlying said writing point and having lugs clinched over the opposite side edges of the writing point to limit spreading of said writing point.

5. The combination of a pen nib having a heel and a writing point and being inherently incapable of withstanding writing pressure, and an open relatively stiffer reenforcing frame having a heel part overlying the heel of the nib, a toe part partially overlying said writing point, and side members connecting said heel part and toe part and overlying the side edge portions of said nib, and means positively fastening said frame in snug contact with said nib.

6. A pen nib comprising an open frame formed of stiff inexpensive material having a heel part and a toe part and side members connecting said heel part and toe part, and a thin highly flexible body portion of precious metal alloy underlying said frame and exposed therethrough between said heel part, toe part, and side members and having a split writing point inherently incapable of withstanding writing pressure, said point being partially overlaid by said toe part and having a portion projecting therebeyond, whereby said flexible writing point is reenforced by said frame and said body portion serves to conduct ink to the writing point and cooperates with the frame to produce an ornamental appearance.

7. The combination set forth in claim 6 wherein said frame is formed of stainless steel and said body portion is formed of a gold alloy.

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