

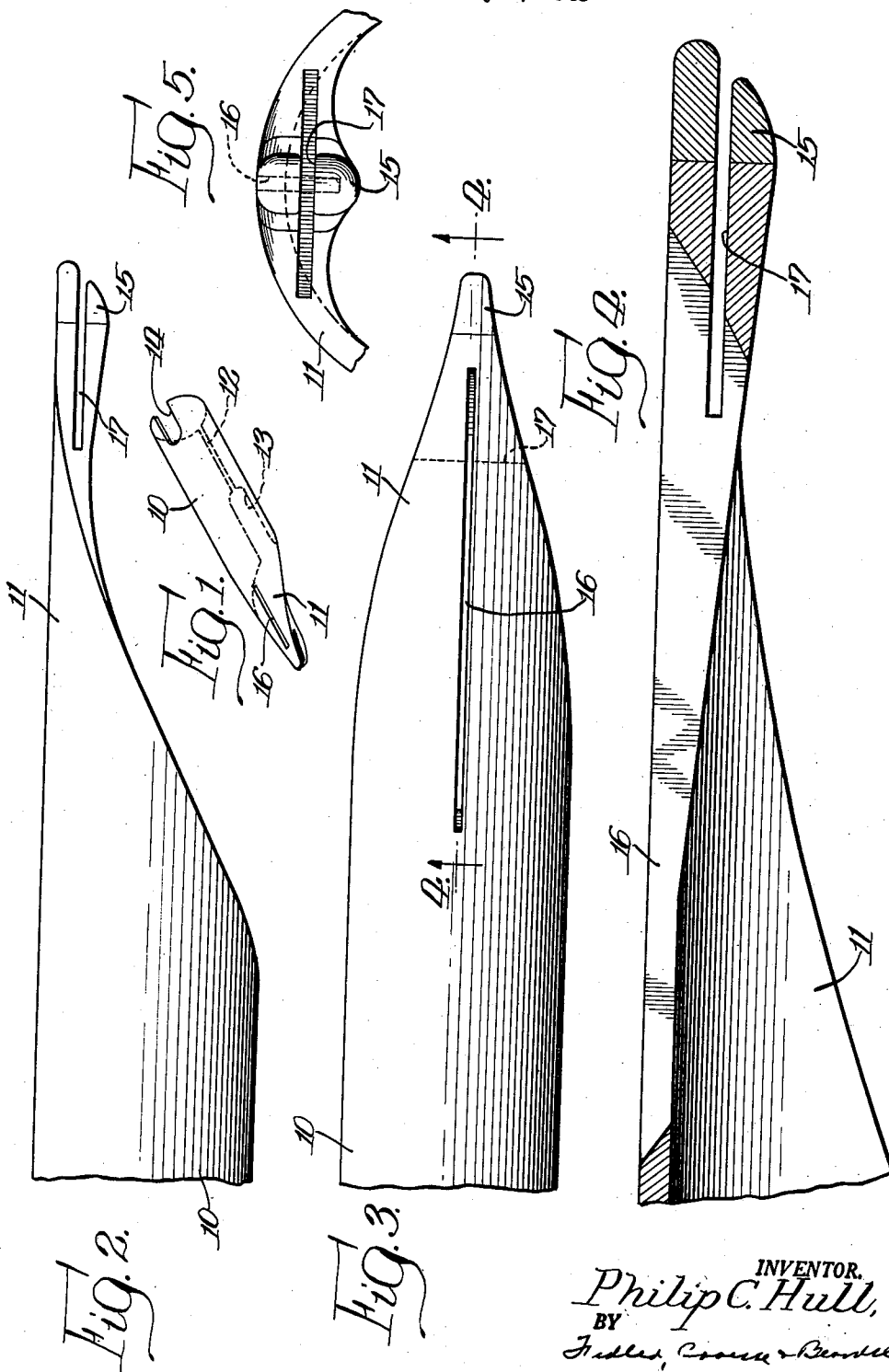
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P. C. HULL

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NIB FOR WRITING PENS

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INVENTOR.  
*Philip C. Hull*  
BY  
*Fidler, Cross & Bentley*  
*Attys.*

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## NIB FOR WRITING PENS

Philip C. Hull, Janesville, Wis., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin

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My invention has to do with writing points or nibs for pens and as relates particularly to a point or nib having improved writing characteristics.

Heretofore, writing points for pens, commonly referred to as "nibs," have customarily taken the form of a transversely arcuate thin metal body having its forward portion tapering substantially to a point to provide a writing tip, the nib being provided with a vertically-disposed slit extending longitudinally through the tapered tip from the pointed end of a substantial distance rearwardly to provide two similar nib sections. The slit in the nib is of small capillary width so that ink is drawn thereinto either when the nib is dipped in a supply of ink or when the slit is placed in ink feeding communication with an ink reservoir in the pen. When the tip or writing end of the nib is placed in contact with a writing surface, the capillarity thus established between the nib and the writing surface causes ink to be drawn from the nib slit which is deposited on the writing surface.

In a conventional nib of the vertically-slitted type, the nib sections are maintained in position to define the nib slit solely by the resilience of the material from which the nib is formed. Thus, when the tip of the nib is drawn across the writing surface in a direction transversely to the plane of the slit, the trailing nib section may be pulled away from the other section by the friction between it and the writing surface, with the result that there is a noticeable "drag" on the nib; also, in many cases the trailing nib section intermittently catches or snags in the paper, causing "chattering" of the nib. In fact, the trailing nib section may engage in the writing surface to such an extent that the nib is halted sufficiently in its movement to cause the formation of an ink blot on the paper. The foregoing difficulties not only interfere with good writing characteristics of the nib but may damage it.

An object of the present invention is to provide a pen nib which has improved writing characteristics.

Another object is to provide a nib which does not drag or chatter when used in writing.

Still another object is to provide a nib wherein the width of the ink feed slit, or at least the principal portion thereof, is maintained substantially constant under all writing conditions for long periods of use.

A further object is to provide a nib which writes with a substantially uniform width of line under substantially all customary writing pressures.

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A still further object is to provide a nib which will not spread but retains its desired writing characteristics even though subjected to heavy writing pressure.

A further object is to provide a pen nib which is very rugged and in which the desired width of the nib slit is maintained even though the nib is subjected to severe use.

Other objects and advantages of my invention will appear from the following description taken in connection with the appended drawings, wherein:

Figure 1 is a perspective view showing one form of pen nib made in accordance with my invention;

Fig. 2 is an enlarged fragmentary side elevational view of the feed portion of the nib of Fig. 1;

Fig. 3 is an enlarged top plan view of the forward portion of the nib;

Fig. 4 is an enlarged fragmentary cross-sectional view taken along line 4-4 of Fig. 3; and

Fig. 5 is an enlarged fragmentary front elevational view of the pen nib.

As will be understood as the description proceeds, the present invention may be embodied in nibs of various sizes and shapes and it is not limited to a nib of the particular shape shown. For example, the nib body may be substantially cylindrical as illustrated herein, or it may be transversely arcuate as in the case of many conventional nibs, or it may be substantially flat.

Referring now particularly to Fig. 1, the illustrative embodiment comprises a nib having a generally cylindrical body 10 and a tapered writing tip 11. The body has a longitudinally-extending slit 12 in its under side which is formed therein by reason of the fact that the body is formed by rolling up a flat blank into cylindrical form. The split cylindrical nib body has sufficient resilience to maintain it in position in a pen either when it is inserted in a cylindrical bore or when telescoped over a supporting feed bar. In the particular embodiment shown, the nib is provided with an air breather notch 13 in its under side and a positioning notch 14 in its upper side for purposes which will be well understood. Preferably, the nib is provided with a tip end 15 of hard, wear-resisting material which tip may be formed by integrally joining to the nib blank a pellet of suitable material in a known manner.

The writing tip is provided with a vertically-disposed, longitudinally-extending slit 16 of suitable capillary width which terminates short of the feed end of the writing tip. In the present illustrative embodiment, the slit 16 is made with a width of 0.005" although this may vary substantially. The tip also is provided with a hori-

zontally-disposed, longitudinally-extending slit 17 which extends rearwardly from the extreme forward end of the tip a sufficient distance to intersect the vertically-disposed slit 16 to form therewith a continuous capillary passage extending along the nib and to the end thereof. The slit 17 also is of capillary width and is the same width or slightly narrower than the slit 16; in the present embodiment it is made with a width of 0.005".

When this nib is employed in a fountain pen, for example, a suitable feed is provided for feeding ink from the ink reservoir to the vertical slit 16. The feed may be formed by the usual feed bar (not shown) having one or more capillary ink feed channels for delivering ink to the nib slit. Ink which is delivered to the nib slit 16 is held therein by capillary action and is drawn by capillary action into the horizontally-disposed slit 17 and is held therein by capillary action. However, when the writing tip of the nib is placed in contact with a writing surface, the capillarity established between the writing tip of the nib and the writing surface is sufficient to draw the ink from the nib slit 17 and deposit ink on the writing surface as the nib is drawn thereacross.

In order to insure that ink will be drawn from the nib in writing, and to insure smooth writing characteristics, the forward end of the nib is formed with a suitably shaped surface. To this end the forward end of the tip is so shaped that when the horizontal slit is cut therein, the forward edges of the slit terminate substantially in a plane extending at an angle of around 45° to the plane of the horizontal slit. Preferably, the surfaces of the tip end above and below the slit are rounded off to provide a smooth writing action.

The forming of the forwardly open slit 17 in a horizontal plane eliminates any tendency of the nib to drag or snag in the writing surface when it is drawn in a sidewise direction thereacross. Moreover, because of the arrangement of the slit 17, and since the slit is made relatively short and the portions of the nib on either side thereof are made sufficiently thick to resist substantial bending stresses, there is little tendency for these portions to change their relative positions when the nib is drawn across the writing surface in a forward or back direction. Accordingly, the nib moves across the paper smoothly and without drag or chatter.

The forward end of the tapered writing tip preferably is of greater wall thickness than the remainder. This not only provides an adequate wall thickness to permit the formation of the horizontal slit 17, but also provides a writing tip having substantial rigidity at its extreme end in a lateral direction. Accordingly, the tip not only is rugged and not readily subject to damage, but is sufficiently rigid to resist lateral bending stresses, thus further reducing any tendency toward vibration.

While the nib of the present invention may be formed by various methods, preferably it is formed by stamping a flat blank (not shown) from a sheet or strip of suitable material such as one of the materials of which pen nibs are usually formed; for example, gold, gold alloy or stainless steel. The strip or sheet preferably is formed with a greater thickness along that portion thereof from which the portion of the blank which is to form the writing tip is stamped in order to provide a blank of greater thickness at

the forward or writing end. After the blank is punched from the sheet or strip, a pellet or granule of suitable hard, wear-resisting material is integrally attached thereto as by fusing, and the tip end of the blank is ground to provide the desired shape and smooth surface. The blank is then formed into arcuate or cylindrical shape, whereafter the slits 16 and 17 are formed therein, preferably by cutting with a circular saw. After the slits have been cut, the tip may be subjected to a finish grinding to provide smooth surfaces of the desired shape.

It will be seen from the foregoing that the present invention provides a pen nib which overcomes many of the disadvantages of pen nibs of the conventionally-slitted type wherein the slit extends vertically throughout the writing end. In the present nib, there is substantially no tendency of the two portions on either side of the horizontal slit to spread and only a very slight tendency for them to be forced together, especially when the nib is held at the proper writing angle. Accordingly, there is no tendency of the nib to drag or chatter when used in writing and the width of the line which the nib makes remains substantially uniform throughout all of the writing. Moreover, there is no tendency for the nib to spread apart, as in the conventional nib, even though subjected to relatively heavy writing pressure. The nib of the present invention is extremely rugged and is not readily damaged even though it may be subjected to severe use. The widths of the slits are maintained throughout a long period of use, thereby insuring uniform feeding characteristics of the nib.

I claim:

1. A pen nib comprising a generally arcuate body having a forwardly tapered portion terminating in a writing tip, an elongated slit of uniform and capillary width extending through said tapered portion from top to bottom thereof and terminating short of said writing tip and a second slit extending through said tapered portion from side to side thereof and inwardly from said writing tip into intersecting relation with the forward portion of said first slit, the forward end of said writing tip being inclined to the plane of said second slit whereby the upper forward edge of said second slit is disposed forwardly of the lower forward edge for contact of both said edges with a writing surface when said nib is held at a normal writing angle.

2. A pen nib comprising a generally arcuate body having a forwardly tapered portion terminating in a writing tip, an elongated slit of uniform and capillary width extending through said tapered portion from top to bottom thereof and terminating short of said writing tip and a second slit extending through said tapered portion from side to side thereof and inwardly from said writing tip into intersecting relation with the forward portion of said first slit, the forward end of said writing tip being inclined to the plane of said second slit whereby the upper forward edge of said second slit is disposed forwardly of the lower forward edge for contact of both said edges with a writing surface when said nib is held at a normal writing angle, said nib increasing gradually in thickness from rearwardly of the forward end of said first slit and the rearward end of said second slit to said writing tip.

3. A pen nib comprising a generally arcuate body having a forwardly tapered portion terminating in a writing tip, an elongated slit of uni-

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form and capillary width extending through said tapered portion from top to bottom thereof and terminating short of said writing tip and a second slit extending through said tapered portion from side to side thereof and inwardly from said writing tip into intersecting relation with the forward portion of said first slit, the forward end of said writing tip being inclined to the plane of said second slit whereby the upper forward edge of said second slit is disposed forwardly of the lower forward edge for contact of both said edges with a writing surface when said nib is held at a normal writing angle, each of said edges being individually curved convexly from side to side and top to bottom.

PHILIP C. HULL.

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## REFERENCES CITED

The following references are of record in the file of this patent:

## UNITED STATES PATENTS

Number	Name	Date
288,290	Wirt	Nov. 13, 1883
477,080	Sulzer	June 14, 1892
2,149,557	Snodgrass	May 19, 1936
2,324,008	Marshall	July 13, 1943
2,513,380	Townsend	July 4, 1950