J. E. HAYES.

FOUNTAIN PEN.

APPLICATION FILED JULY 2, 1917.

1,335,580. **Patented Mar. 30, 1920.**

Fig. 1.

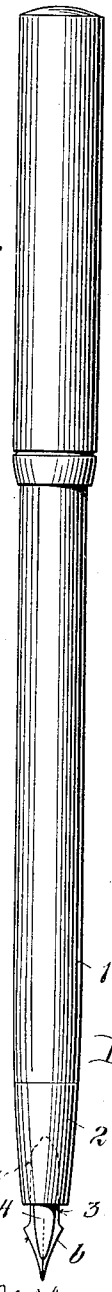


Fig. 2.

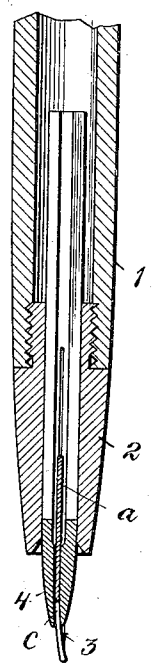


Fig. 3.

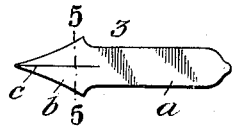


Fig. 4.

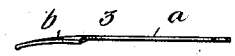


Fig. 6.

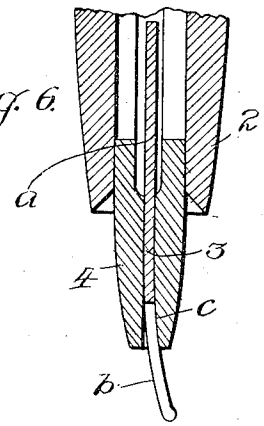
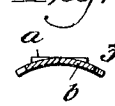


Fig. 5.



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FOUNTAIN-PEN.

1,335,580. Specification of Letters Patent. Patented Mar. 30, 1920.

Application filed July 2, 1917. Serial No. 178,220.

To all whom it may concern:

Be it known that I, JOHN E. HAYES, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Fountain-Pen, of which the following is a full, clear, and exact description.

This invention relates to fountain pens and deals more particularly with a gold pen point therefor.

The invention has for its general object to improve the design of gold pen points so as to adapt a fountain pen for duplicating work, the pen point being of such construction that an ink line of uniform thickness can be made irrespective of excessive pressure applied to the pen in writing, and furthermore, to provide a pen possessing a certain springiness without the fault of spreading at the nib beyond a predetermined degree and thereby breaking the column of ink, as is common with soft nibbed pens.

A more specific object of the invention is the provision of a gold pen for use in a fountain holder, with a feed bar of the ordinary type or so-called "top feed", and the fountain pen is characterized by a special form of spear-head point and a flat shank so that heavy pressure can be applied to the point without causing the split nib to spread beyond a certain limit, these results being obtained by arching transversely the spear-head portion of the pen and backing the pen with the top feed bar to coact with the springiness of the shank preventing back-flexing of the pen beyond the plane of the shank when the writing pressure is applied.

With such objects in view, and others which will appear as the description proceeds, the invention comprises various novel features of construction and arrangement of parts which will be set forth with particularity in the following description and claims appended hereto.

In the accompanying drawing, which illustrates one embodiment of the invention and wherein similar characters of reference indicate corresponding parts in all the views,

Figure 1 is a plan view of a fountain pen drawn on an enlarged scale, with the improved gold pen point applied thereto;

Fig. 2 is an enlarged sectional view of the writing end of the fountain pen;

Fig. 3 is a plan view of the gold pen point;

Fig. 4 is a side view thereof; and

Fig. 5 is a transverse sectional view on the line 5—5, Fig. 3.

Fig. 6 is an enlarged longitudinal section of the forward end of the fountain pen.

Referring to the drawing, 1 designates the barrel of a fountain pen, 2 the nozzle, 3 the pen point and 4 the feed bar of the "top feed" type.

The pen point 3 comprises a flat, straight shank *a* that continues into a spear-head point *b* that has a longitudinal slit *c* in its point or nib. The spear-head portion of the pen point is curved or arched transversely, as clearly indicated in Fig. 5. The arch causes the nibs or slit point to open slightly when pressure is brought to bear on the point in writing, and the flat back or shank permits of a certain spring which prevents the nibs from opening more than a certain distance, depending upon the amount of the arch or transverse curvature of the spear portion of the pen. In other words, the members presented by the split, transversely curved nib, will readily spread to a predetermined degree under the normal writing pressure to produce the desired written line, but said members obviously offer an increasing resistance to spreading pressure, and the superior resiliency possessed by the shank relatively to the split nib as a whole, causes the shank to yield to increasing pressure on the nib and to flex adjacent to the nib, thus permitting the nib to yield as a whole to the excessive pressure without a continued spreading of the members of the nib. Thus, under the pressure of writing the pen nib or point opens to a limited predetermined degree largely governed by its curvature; second, following the opening to the predetermined degree, the shank flexes and prevents the further pressure being exerted on the split point in a way to tend to further open the pen; and third, the flexure of the shank is limited by the top feed bar. The feed bar serves as a back for the pen to limit the same from flexing beyond the plane of the shank, and consequently the spreading of the slit of the pen is limited so

that a line of uniform thickness will be produced irrespective of the application of excessive pressure in writing, which is especially valuable in making carbon duplicates of writing.

From the foregoing description taken in connection with the accompanying drawing, the advantages of the construction and method of operation will be readily understood by those skilled in the art to which the invention appertains, and while I have described the principle of operation, together with the article which I now consider to be the best embodiment thereof, I desire to have it understood that the article shown is merely illustrative and that such changes may be made when desired as fall within the scope of the appended claims.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A pen point including a nib portion and a resilient flat shank thereon, said nib portion being formed with a longitudinal slit terminating approximately at the juncture of the shank and nib portion, said slitted nib portion being curved transversely and possessing in a predetermined spread form a resiliency inferior to that of the shank to cause said shank to flex under undue pressure on the nib portion in writing and following a predetermined spreading of the members of the nib, in proportion to the curvature, under the excessive pressure.

2. A pen point having a resilient shank and a slitted nib portion, the members of which are yieldable to spread to a limited degree for producing the desired line in writing, said split nib as a whole when thus spread having a resiliency inferior to that of the shank, the latter being yieldable to undue pressure on said nib.

3. A pen point having a resilient shank and a slitted nib portion, the members of which are yieldable to spread to a limited degree for producing the desired line in writing, said split nib as a whole when thus spread having a resiliency inferior to that of the shank, the latter being yieldable to undue pressure on said nib; together with means to limit the bodily deflection of the nib portion relative to the shank following the yielding of the latter.

4. A pen point having a resilient, non-slitted, flat shank, and a slitted nib portion the members of which are yieldable to spread to a limited degree for producing the desired line in writing, said split nib as a whole when thus spread having a resiliency inferior to that of the shank, the latter being yieldable to undue pressure on said nib.

5. A pen point having a resilient, non slitted, flat shank, and a slitted nib portion, the members of which are yieldable to spread to a limited degree for producing the desired line in writing, said split nib as a whole when thus spread having a resiliency inferior to that of the shank, the latter being yieldable to undue pressure on said nib; together with means to limit the bodily deflection of the nib portion relative to the shank following the yielding of the latter.

JOHN E. HAYES.