

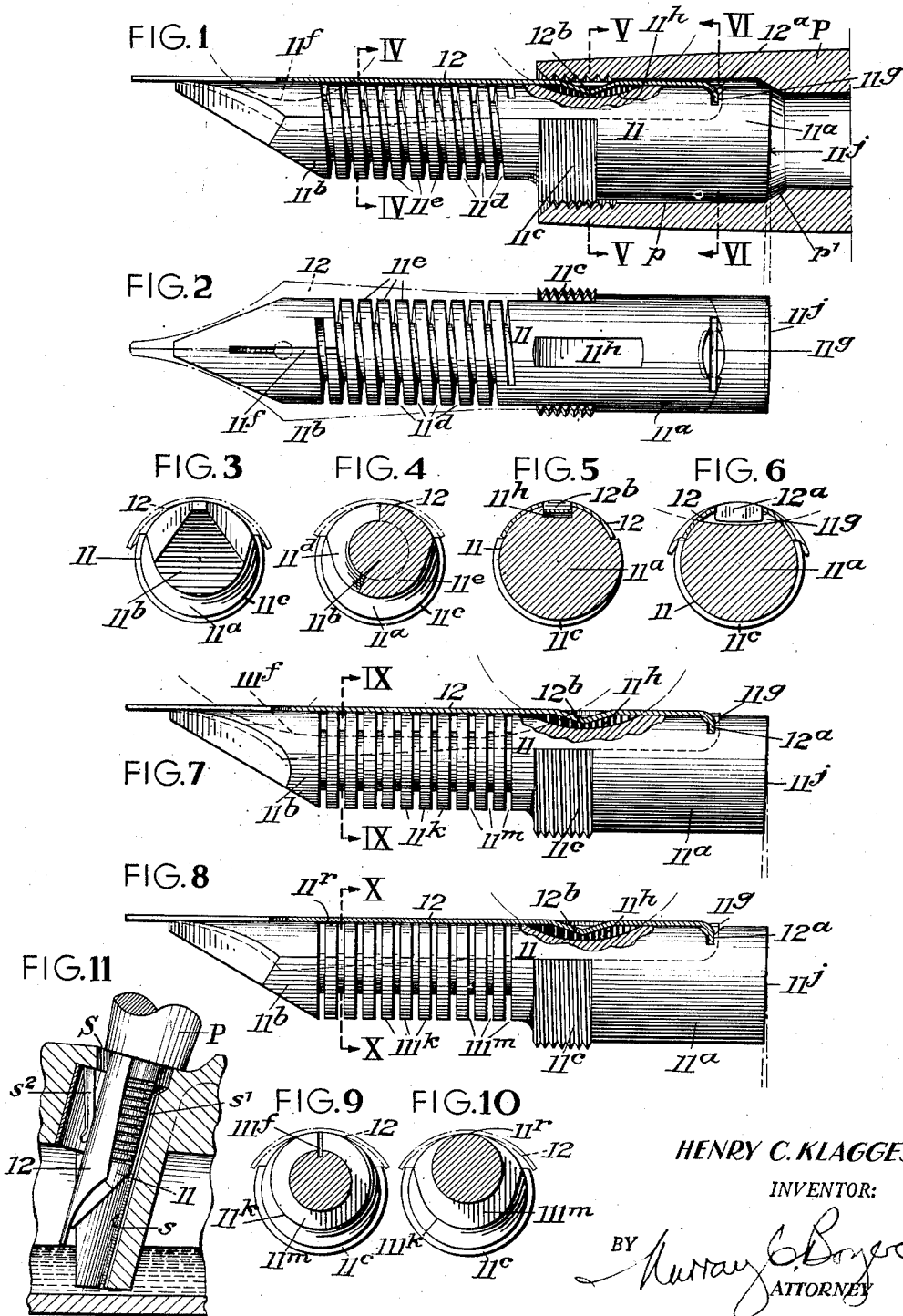
July 1, 1952

H. C. KLAGGES

2,601,846

WRITING PEN ASSEMBLY

Filed May 17, 1947



HENRY C. KLAGGES

INVENTOR:

BY *Murray B. Boyce*
ATTORNEY

UNITED STATES PATENT OFFICE

2,601,846

WRITING PEN ASSEMBLY

Henry C. Klagges, Haddon Township, Camden County, N. J., assignor to The Esterbrook Pen Company, Camden, N. J., a corporation of New Jersey

Application May 17, 1947, Serial No. 748,675

3 Claims. (Cl. 120—114)

1

This invention relates to writing pen and feed-bar assemblies and to fountain or reservoir feed-bars of the type employed with so-called "Dip-Less" writing pens which receive and store a liberal supply of ink; thus permitting the user to write for a considerable length of time after a single dipping into a body of ink. Such type of writing assembly is usually carried by a suitable penholder or pen staff and is left in dipping position in an ink supply when not in use.

My invention comprises an improved form of structure in which a feed member or bar constructed to serve as a reservoir for ink cooperates with a nib or pen point and receives ink when supported by the penholder or pen staff in dipping position in an ink supply; such feed member or bar subsequently dispensing ink by capillary action to the nib or pen point when the writing assembly is employed in a writing operation. In the present instance the pen point, feed-bar and the penholder or pen staff are provided with complementary engaging parts which serve to maintain the elements of the writing assembly in properly associated position when inserted in a socket of the penholder or pen staff and are retained therein by cooperative means carried by the feed-bar and penholder.

One object of my invention is to provide a feed-bar of simple construction and of efficient reservoir type that will maintain a liberal supply of ink for delivery by capillary action to the nib or pen point associated therewith.

A further object of my invention is to provide a feed-bar of the reservoir type that, accompanied by the nib or pen point, may be screwed into the socket of a penholder or pen staff.

A further object of my invention is to provide a feed-bar of the fountain or reservoir type upon which a nib or pen point may be firmly and accurately positioned so as to lie in proper alignment with respect to the means supplying it with ink.

A further object of my invention is the provision of a feed-bar with reservoir and/or storage means for ink in the form of a helical groove of capillary dimensions which groove may be cut or otherwise formed therein to define a continuous capillary space for the reception and storage of ink after a dipping operation in an ink supply; such stored ink being subsequently dispensed to the nib or pen point in a writing operation. This helical groove may be of right-hand or left-hand formation, as convenience or other factors connected with its production may suggest.

A further object of my invention is to provide a fountain feed-bar with reservoir means for the

2

reception and storage of ink in the form of a comb defining a plurality of substantially annular capillary spaces which will fill with ink when the writing assembly is dipped in an ink supply for subsequent passage to a nib or pen point associated with the fountain feed-bar; such spaces, in the present instance, may be connected by a suitable groove of capillary dimensions longitudinally of the feed-bar.

A further object of my invention is to provide the upper surface of the feed-bar with a recess, which may be formed on the arc of a circle; such recess having straight walls paralleling the longitudinal axis of the feed-bar, and to provide the nib or pen point with a struck-up portion providing a protuberance on the underside of its shank; such protuberance having straight parallel sides which exactly fit the side walls of the recess on the upper surface of the feed-bar and position the nib or pen point laterally thereof. To position the nib or pen point longitudinally, the rear end of its shank may have a depending portion or lip arranged to enter a cross-notch adjacent the rear end of the feed-bar. This notch may be formed on the arc of a circle, and the depending lip of the nib or pen point may be correspondingly shaped to fit the same.

A further feature of my invention resides in the beveling of the rear end of the feed-bar; thereby providing a high point for initial engagement with a beveled wall or shoulder within the socket of the penholder or pen staff. In the present instance the feed-bar is constructed to screw into this socket and for this purpose is provided with an interrupted screw thread, suitably positioned. When entered in the socket of the penholder or pen staff, the nib or pen point is associated with the feed-bar in the position illustrated in the drawings. As the feed-bar is screwed home, the high point at the beveled end of the same engages the beveled wall or shoulder within the socket and the camming effect of this engagement tends to slightly tilt the feed-bar together with the nib or pen point so that the latter, with the feed-bar, will be firmly held in the socket and at the same time the forward end of the feed-bar will be brought into the desired relation with respect to the writing end of the nib or pen point and insure the greatest nicety of adjustment for proper writing purposes.

My improved writing assembly may be used with any suitable form of inkwell or other ink supply provided with a dipping opening in which the nib or pen point and the feed-bar may be supported when not in use. Though not limited

thereto in any sense, my improved writing assembly is especially adapted for use with capillary ink-feeding means such as set forth in the patent of H. C. Kofke and H. C. Klagges, No. 2,304,832, dated December 15, 1942 or with the form of ink-elevating means illustrated and described in my pending application for patent filed April 30, 1947, Serial No. 744,863; the feed-bar only lying in contact with a distributing element of such ink-feeding or ink-elevating means.

These and other features of my invention are more fully referred to hereinafter; reference being had to the accompanying drawings, more or less diagrammatic in character, in which:

Figure 1 is a side elevational view of one form of fountain or reservoir feed-bar within the scope of my invention.

Fig. 2 is a plan view of the feed-bar shown in Fig. 1.

Fig. 3 is an elevational view of the forward end of the feed-bar shown in Figs. 1 and 2.

Figs. 4, 5 and 6 are cross-sectional views of the feed-bar and pen nib taken on the lines IV—IV; V—V and VI—VI, Fig. 1, respectively.

Figs. 7 and 8 are elevational views, similar to Fig. 1, illustrating other forms of fountain or reservoir feed-bars within the scope of my invention.

Fig. 9 is a cross-sectional view taken on the line IX—IX, Fig. 7.

Fig. 10 is a cross-sectional view taken on the line X—X, Fig. 8.

Fig. 11 is a fragmentary view, partly in section, of a writing pen assembly, including a fountain or reservoir feed-bar and a nib or pen point, in association with capillary ink-elevating means.

The essential feature of my present invention is the provision of a fountain or reservoir feed-bar of simple construction with ample space of capillary dimensions for the reception and storage of ink picked up by capillary action from a supply into which the writing assembly may be dipped, or by contact with the distributor of ink-elevating means; such ink subsequently passing to a nib or pen point carried by the feed-bar in a writing operation. My improved feed-bar may be molded or otherwise formed and may be made of hard rubber or any suitable plastic material commonly employed in the pen art.

One form of my improved fountain feed-bar, indicated at 11, and illustrated in Figs. 1, 2 et seq., comprises a member having portions of two diameters, indicated at 11a and 11b, respectively; the portion 11a to be entered into the socket of a penholder or pen staff, and the portion 11b to underlie the nib or pen point. The pen holder or pen staff, indicated at P, is provided with a threaded socket p, and the portion 11a of the feed-bar is provided with an interrupted thread portion 11c, which engages the threads of the socket when set in place. Internally thereof, the socket is provided with a beveled wall or shoulder p' for a purpose to be hereinafter described.

The forward portion 11b of my improved fountain feed-bar, of smaller cross-sectional area than the rear portion 11a which is screwed into the socket of the penholder or pen staff, may be substantially circular in cross-section and is provided with a continuous capillary space 11d of helical formation or contour. This continuous capillary space may be formed in several ways; including a molding operation and/or a cutting operation by means of a suitable instrument. Formation of this helical capillary space or groove, which is preferably of material depth, provides a contin-

uous rib or thread 11e, defining the capillary space 11d in which ink will collect by capillary action for subsequent distribution to the nib or pen point in a writing operation when the pen and feed-bar assembly is dipped in or associated with an ink supply.

In order to assure passage of ink to the paper-contacting end of the nib or pen point, the upper surface of the feed-bar at its forward end may be provided with a short groove 11f of capillary dimensions, longitudinally disposed; such groove underlying a portion of the slit defining the nibs and the pierce hole of the pen point, and preferably extending to the forward helix of the continuous capillary space 11d.

The upper surface of the feed-bar is preferably in a single plane and receives the nib or pen point 12, shown in section in Fig. 1. In order that the nib or pen point may be properly positioned—longitudinally as well as laterally—the feed-bar and nib or pen point are provided with co-operative engaging means. For this purpose, the shank of the nib or pen point may be provided with struck-up portions projecting from the underside of the same for engagement with recesses or depressions formed in the upper surface of the feed-bar. In this connection, the pen point shank may be provided with a depending lip 12a, and at a suitable point forward of this lip, the underside of the nib or pen point may be provided with a protuberance, which may be of angular contour, indicated at 12b; which protuberance may be formed by making parallel slits through the metal of the pen point and displacing the portion between such slits.

The feed-bar is provided with a notch or recess 11g in its upper surface—preferably by an arcuate cut—and the depending lip 12a of the nib or pen point enters this recess, as clearly illustrated in Figs. 1 and 6. The feed-bar is also provided with a recess 11h, which may be arcuate, receiving the angular protuberance 12b of the pen point. The recess 11h has straight walls in parallel relation longitudinally of the feed-bar, and the angular protuberance 12b has parallel sides or wall surfaces which exactly fit the side walls of the recess 11h, as illustrated in Fig. 6.

The co-operative means just described firmly position the nib or pen point with respect to the feed-bar; the engagement of the lip 12a of the pen point with the cross notch or recess 11g of the feed-bar holding the pen point longitudinally, and the engagement of the angular protuberance 12b with the recess or depression 11h of the feed-bar, holding the pen point laterally. It will be understood of course that the protuberance 12b may have an arcuate contour fitting the arcuate recess 11h.

In the use of all writing instruments it is essential that the nib or pen point be held in firm position with respect to the penholder or pen staff. In the present instance, the feed-bar is provided with an interrupted thread portion 11c for co-operative engagement with the threaded socket p of the penholder or pen staff P, and the nib or pen point is arranged to rest on the shoulder of the interrupted threads, as illustrated in Figs. 1, 5 and 6; the shank portion of such nib or pen point occupying the space on the upper surface of the feed-bar where the threads have been omitted.

My improved feed-bar is of a size that, generally speaking, may be considered a standard for association with all forms or shapes of nibs or pen points which may be employed therewith. It

happens, however, that these nibs or pen points—considering the wide range for the accommodation of various users—vary in thickness a few thousandths of an inch and in applying them to a feed-bar of the present standard type, there could be a slight looseness of fit between the nib or pen point, feed-bar and wall of the socket, particularly at that part of the threaded portion of the latter overlying the nib or pen point.

For the purpose of holding the nib or pen point firmly in place for a satisfactory writing operation I have provided cooperative means whereby the pen point, despite any variations in the thickness of the metal composing the same, may be so tightly wedged in the socket of the penholder or pen staff—with the feed-bar—as to assure the rigidity so desirable when the instrument is employed in a writing operation. For this purpose, in the present instance, the rear end of the feed-bar is faced off at a slight angle to the plane of its vertical axis as indicated at 11j, and the socket p of the penholder or pen staff P is provided with an annularly beveled seat or shoulder p', as illustrated in Fig. 1. As the feed-bar, with the accompanying nib or pen point is screwed home, the high point of the diagonally faced end of the feed-bar engages the beveled seat or shoulder p' of the socket p and by reason of a camming action thereon slightly tilts the feed-bar and pen point, as illustrated in Fig. 1; the amount of tilt depending upon the thickness of the metal composing the pen point. This tilting of feed-bar and pen point has the effect of tightly wedging the pen point in place and assures a rigid support for the latter as well as the feed-bar, so desirable in an instrument employed in a writing operation. In addition, the tilting action insures proper engagement of the forward end of the pen points with the forward end of the feed-bar and assures the greatest nicety of adjustment of these parts and proper feed of ink to the paper-contacting end of the pen point.

Other forms of feed-bars having capillary spaces for the reception and storage of ink for subsequent use in a writing operation are within the scope of my invention, and two forms are illustrated in Figs. 7 and 8. These feed-bars are of substantially the same character as the one illustrated in Figs. 1, 2, et seq., as to those features which cooperate with the pen point for the purpose of positioning the latter longitudinally and laterally; such feed-bars having the recesses 11g and 11h receiving the projections 12a and 12b underlying the pen point. The capillary spaces for the reception and storage of ink differ, however.

In the form of feed-bar illustrated in Fig. 7, the forward portion thereof is shown as provided with combs 11k defining annular capillary spaces or recesses 11m. These spaces are connected by a groove 11f of capillary dimensions extending longitudinally of the feed-bar and formed in the upper surface thereof.

The form of feed-bar illustrated in Fig. 8 is provided with combs 11k defining substantially annular grooves or recesses 11m of capillary dimensions; more particularly illustrated in Fig. 10. In this form of structure, the curved surfaces defining combs and capillary spaces or grooves are struck from a centre offset with respect to the axis of the forward portion of the feed-bar, and such grooves terminate at opposite sides of a longitudinal land 11r on the upper surface of the feed-bar; their termini underlying

the pen point and insuring distribution of ink thereto.

The rear ends of the feed-bars shown in Figs. 7 and 8 are beveled at 11j in the same manner as the feed-bar shown in Figs. 1 and 2, and effect the same camming action against the beveled seat or shoulder p' of the penholder socket to slightly tilt a feed-bar when its rear end is screwed home in the socket.

Ink may be supplied to the capillary space or spaces of the feed-bars of the several writing assemblies herein described and illustrated in the accompanying drawings by dipping such writing assemblies into an ink supply, or ink may be supplied by associating the pen point and feed-bar assembly with ink-elevating means such as that illustrated in Fig. 11, which is substantially the same as the form illustrated and described in my pending application for patent, filed April 30, 1947, Serial No. 744,863. In this fragmentary view, the socket receiving the pen and feed-bar assembly is indicated at S, in which socket the slotted plate s defining spaces in which ink rises by capillary action is mounted; such plate dipping into the ink supply and delivering the elevated ink through slots s' in its upper portion to the feed-bar resting against the same and which may be held in such position by a spring arm or prong s².

It will be understood that the feed-bar constructions herein described and shown in the accompanying drawings are for illustrative purposes only and not as limitations since modifications may be made therein without departing from the spirit of my invention; all of which is deemed to be within the scope of the appended claims.

I claim:

1. The combination, with a penholder, having a recessed and internally threaded end portion, of a feed-bar having portions of two diameters; one of said portions being threaded for engagement with the threaded recess of the penholder and the other portion of less diameter having a continuous capillary space following a helical path for the reception and storage of ink, and a pen point or nib mounted on said feed-bar and accommodated with the same in the recessed end of the penholder; said elements having complementary positioning means including an angular protuberance with straight side walls fitting a recess in the upper side of the feed-bar with straight side walls whereby the pen point is positioned laterally, and a depending lip carried by the shank end of the pen point; said feed-bar having a recess in its upper surface adjacent its rear end in which said lip seats.

2. The combination, with a penholder, having a recessed and internally threaded end portion, of a feed-bar having portions of two diameters; one of said portions being threaded for engagement with the threaded recess of the penholder and the other portion of less diameter having a continuous capillary space following a helical path for the reception and storage of ink, and a pen point or nib mounted on said feed-bar and accommodated with the same in the recessed end of the penholder; complementary positioning means including an angular protuberance on the underside of the pen point with straight parallel side walls fitting a recess with straight parallel side walls in the upper side of the feed-bar whereby the pen point is positioned laterally, and a depending lip carried by the shank end of the pen point; said feed-bar having a cross-wise

recess in its upper surface adjacent its rear end in which said lip seats.

3. The combination with a pen holder having a recessed and internally threaded end portion with a beveled seat or shoulder at the inner end thereof, of a feed-bar having a diagonally faced rear end adapted to engage said diagonally faced seat, a pen point or nib mounted on said feed-bar and accommodated with the same in the recessed end of the penholder; said feed-bar having a threaded portion for cooperation with the threaded recess of the penholder and said diagonally faced end effecting a camming action against the diagonally faced seat when screwed home in the socket of the penholder and tilting the feed-bar and pen point to an extent sufficient to tightly wedge feed-bar and pen point in place; said diagonally faced end of the feed-bar lying in a plane at a slight angle to the vertical axis of the feed-bar and inclined forwardly from top to bottom of said end.

HENRY C. KLAGGES.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
297,420	Kletzker	Apr. 22, 1884
825,153	Ochoa	July 3, 1906
1,046,821	MacDonald	Dec. 10, 1912
1,608,707	Middleton	Nov. 30, 1926
1,885,862	Sager	Nov. 1, 1932
1,908,123	Cuthbert	May 9, 1933
1,999,177	Ashmore	Apr. 30, 1935
2,075,828	Robinson	Apr. 6, 1937
2,179,727	McKay	Nov. 14, 1939
2,213,931	Huss	Sept. 3, 1940
2,222,599	Ashmore	Nov. 26, 1940
2,292,381	Klagges	Aug. 11, 1942
2,303,374	Martin	Dec. 1, 1942
2,375,770	Dahlberg	May 15, 1945
2,390,541	Klagges	Dec. 11, 1945
2,401,167	Kovacs	May 28, 1946

FOREIGN PATENTS

Number	Country	Date
759,525	France	Nov. 23, 1933