March 20, 1934. O. A. SMITH 1,951,848

FEEDER PEN POINT

Filed Jan. 27, 1933

Fig.1

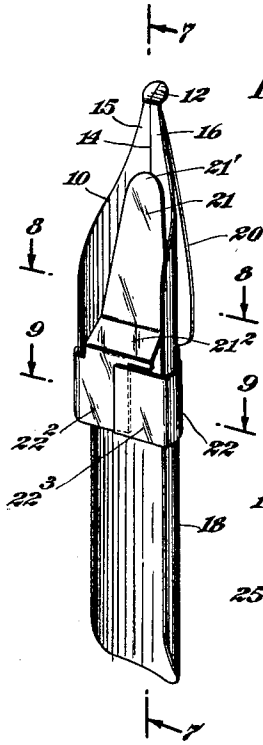


Fig.2

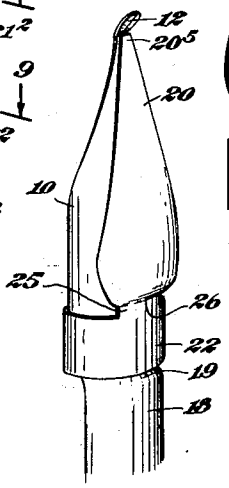


Fig.3

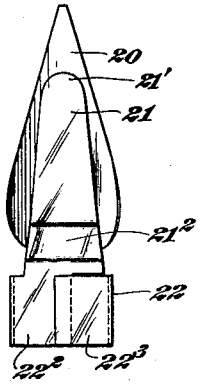


Fig.4

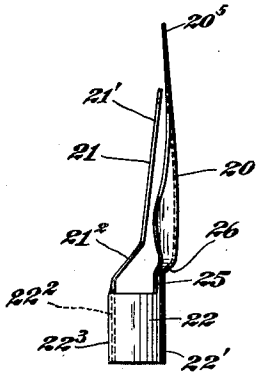


Fig.5

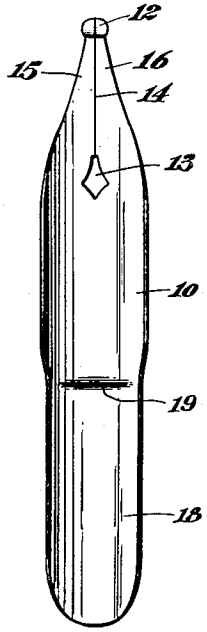


Fig.6

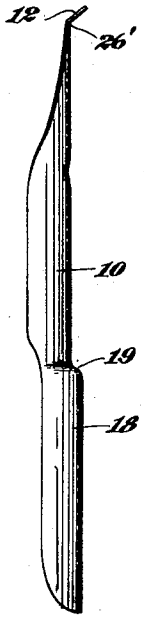


Fig.7

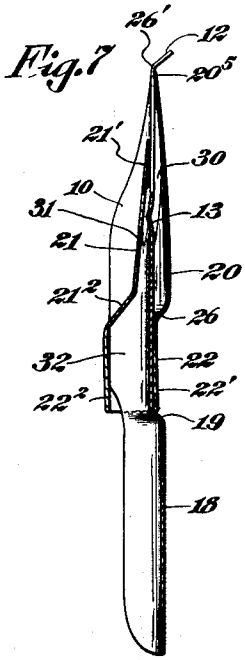


Fig.8

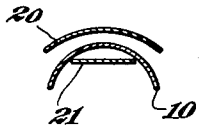
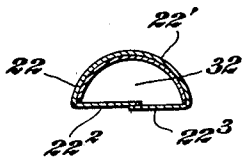


Fig.9



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FEEDER PEN POINT

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Application January 27, 1933, Serial No. 653,847

3 Claims. (Cl. 120—114)

My present invention relates generally to an ink feeder to form a separable attachment to a pen point and more particularly to a pen point and a separable feeder associated therewith.

I have illustrated my feeder as associated with a pen point of the lettering type and in which the ink applying ends present an ink applying surface of substantial area, because ink feeders are particularly useful with such types of pen points which require increased quantities of ink. It will be understood, however, that my feeder attachment can be associated with types of pen points other than those herein illustrated.

Another object of my invention is the provision of a new and improved feeder attachment which can be readily associated and disassociated from the pen point and which when associated with the pen point will be maintained in its associated relation against accidental dislodgment.

Another object of my invention is the provision of a new and improved pen point and feeder assembly which will maintain a substantial supply of ink and will feed the ink to the applying end under controlled conditions in accordance with requirements.

Another object of my invention is the provision with an under feeder adapted for attachment to a pen point to form an ink holding chamber of a new and improved arrangement for applying ink thereto.

Another object of my invention is the provision of an inexpensive and durable feeder for a pen point and which can be readily associated and disassociated therewith and which when associated therewith will remain so associated against accidental dislodgment and which will hold an increased supply of ink and which in combination with the pen point will control the flow from said supply in accordance with the requirements.

For the attainment of these objects and such other objects as may hereinafter appear or be pointed out, I have illustrated an embodiment of my invention in the drawing, wherein:

Figure 1 is a perspective view taken generally from below of a feeder and pen point assembly in accordance with my invention;

Figure 2 is a perspective view of the assembly of Figure 1 taken generally from above;

Figure 3 is a bottom plan view of my feeder attachment;

Figure 4 is a side elevational view thereof;

Figures 5 and 6 are bottom and side elevational views of the form of pen point in the assembly of Figure 1;

Figure 7 is a section taken longitudinally on line 7—7 of Figure 1; and

Figures 8 and 9 are transverse sections taken through the assembly of Figure 1 on line 7—7 and 8—8 respectively.

Before proceeding to describe my invention I will premise that I have herein disclosed my feeder as assembled with the specific type of pen point shown in Figures 5 and 6 and constructed as to details so as to cooperate with the specific pen point design herein illustrated.

The pen point of Figures 5 and 6 illustrates generally a type peculiarly adaptable for lettering purposes and for this reason the pen point 10 is constructed at its nib or writing end with a widened portion 12 illustrated in the drawing for purposes of example, as generally oval in shape, although this end can take any preferred or desired shape. This widened portion is shown in the drawing as bent upwardly at an angle to the body.

The pen point is provided with the opening 13 and the slot 14 which extends forwardly from this opening into and through the enlarged lettering end 12 to form the two nib portions 15 and 16 conventionally provided in pen points.

The pen point 10 is generally of a cylindrical section being arcuately shaped in transverse section and straight in longitudinal section and the rear part 18 which generally serves as the pen holder engaging portion is also constructed as a cylindrical section, except that it is of smaller diameter and off-set upwardly to provide the shoulder 19.

I have set forth the structure of the pen point in all its details, not because my invention requires the employment of a pen point of such construction for the association therewith of my feeder attachment, but because the feeder attachment herein disclosed has been constructed as to its details for assembly association with this particular type of pen point.

It will again be emphasized that my feeder attachment particularly when modified can be associated with other types of pen points than that herein disclosed without departing from the broader phases of my invention.

Upon comparing Figures 3 and 4 of the drawing it will here be observed that my feeder attachment is illustrated here as made out of a stamping to provide the three sections which I will hereinafter refer to generally as the upper

feeder section 20, the lower feeder section 21 and the connecting and securing sleeve 22.

For purpose that will hereinafter appear, the feeder attachment is preferably made out of a spring metal which is hardened after the blank has been given the shape shown in Figures 3 and 4 so as to give to the feeder parts above mentioned a resiliency for the purpose and in the manner to be shortly pointed out.

The upper feeder 20 is also arcuate shaped somewhat as is the pen point to correspond generally to the shape of the portion of the pen point therebelow, except as will be observed upon viewing Figure 8 it is shaped somewhat flatter than is the pen point for reasons that will appear.

The upper feeder 20 is connected to the securing sleeve 22 by means of the neck portion 25 which is in the plane of the securing portion 22 and below the plane of the upper feeder 20 thus presenting a shoulder 26.

The lower feeder 21 takes more or less the shape and contours shown in Figures 3 and 4 being made up of the feeder portion proper 21′ and the angled neck portion 21^2 which connects this feeder portion to the securing sleeve 22.

The securing member 22 is formed generally as a sleeve with its lower half flattened as shown more clearly in Figure 9 wherein the upper part 22′ is cylindrically contoured in accordance with the shape of the pen point so as to lie closely adjacent thereto and the ends are bent inwardly as shown at 22^2 and 22^3 into superimposed relation so as to complete what might be referred to as the semi-cylindrical contour. Upon comparing the showing of the overlapping portion 22^2 and 22^3 in Figures 4 and 9, it will be observed that these are spread apart slightly in their engagement about the pen point so as to serve to resiliently secure the feeder to the pen point.

In assembling the pen point of Figures 5 and 6 with the feeder of Figures 3 and 4, the front end of the pen point is passed through the securing member 22 of Figure 9 and then advanced in between the lower feeder 21 and the upper feeder 20 to bring the applying end 12 beyond the extreme forward end 20^5 of the upper feeder 20. In this assembly operation it will be observed that the sleeve 22 is slightly expanded, portion 21′ of the lower feeder is forced slightly downwardly and the extreme end 20^5 of the upper feeder is forced slightly upwardly, due to the normal bias of these parts.

It will therefore be understood that in the assembled position of the parts, the resilient sleeve 22 due to its expansion during assembly is caused to resiliently and yet tightly grip the portion of the pen point about which it is assembled, and the portion 21′ of the lower feeder will be in frictional engagement with the lower surface of the pen point and the extreme portion 20^5 of the upper feeder will be similarly related to the upper surface.

It will further be observed that upon viewing Figure 7 that the longitudinal dimension of the parts are illustrated as such that the extreme inner end of the sleeve portion 22 abuts the inclined part 19 of the pen point and the extreme outer end 20^5 of the feeder engages the pen point at the bend 26′ between the pen point and the applied part 12.

The shape of the under feeder is preferably as shown in Figures 1 and 3, its perimetrical contour and the incline of the part 21^2 being such as to present its perimeter in somewhat close proximity to the under surface of the pen point.

It will be understood that by my arrangement, there is formed an upper ink receiving chamber 30 formed between the lower surface of the upper feeder 20 and the upper surface of the pen point and that this chamber is open more or less at the sides, the ink being held between the two adjacent surfaces by adhesion for feeding to the applying end of the pen point the feed being controlled more or less by the engagement of the front end 20^5 of the upper feeder and the adjacent portion of the pen point.

So also there is formed a second ink chamber 31 below the pen point and between the lower surface of the pen point and the upper surface of the part 21 and that this lower chamber 31 is open to the enlarged chamber 32 formed between the pen point and the parts 22^2 and 22^3.

When the assembly of Figure 7, attached to a holder in any preferred or desired manner, is dipped into a supply of ink, a quantity of ink will be retained in the ink chambers 30 and 31 and due to the manner of association of the lower feeder 21 with the pen point, the ink in this lower chamber 31 will be fed through the opening 13 of the pen point into the upper chamber, except where a great deal of pressure is applied to the writing end 12 in which even ink will flow under controlled conditions from the lower chamber directly to the under surface of the pen point. The enlarged chamber 32 will supplement the functioning of the chamber 31 in a manner that will be understood.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. In combination with a pen point having upwardly bent portions at its forward end and a shoulder to the rear thereof, of an ink feeding and retaining attachment received on the pen point in between and in abutting relation to said upwardly bent portion and said shoulder and said attachment being provided at its rear with laterally directed portions extended into adjacency to form an expansible encasement adapted to engage about the upper curved surface of the pen point and to bridge the lower curved surface to form a supplemental reservoir therebeneath.

2. In combination with a pen point presenting a concave lower surface, a feeder attachment comprising an under feeder providing a reservoir between it and the lower surface of the pen point, and means for securing said under feeder to the pen point, said means comprising overlapping portions which expansively bridge the lower concave surface of the pen point to provide a chamber between said lower surface and said bridging means.

3. In combination with a pen point presenting a concave lower surface, a feeder attachment comprising an under feeder providing a reservoir between it and the lower surface of the pen point and inclining upwardly and forwardly into adjacency to the pen point and means for securing said under feeder to the pen point comprising means bridging the concave surface of the pen point to form an enlarged chamber to the rear of and opening into said reservoir, and an inclined neck member connecting the bridging means and the under feeder.

OLIVER ALFRED SMITH.