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FOUNTAIN PEN

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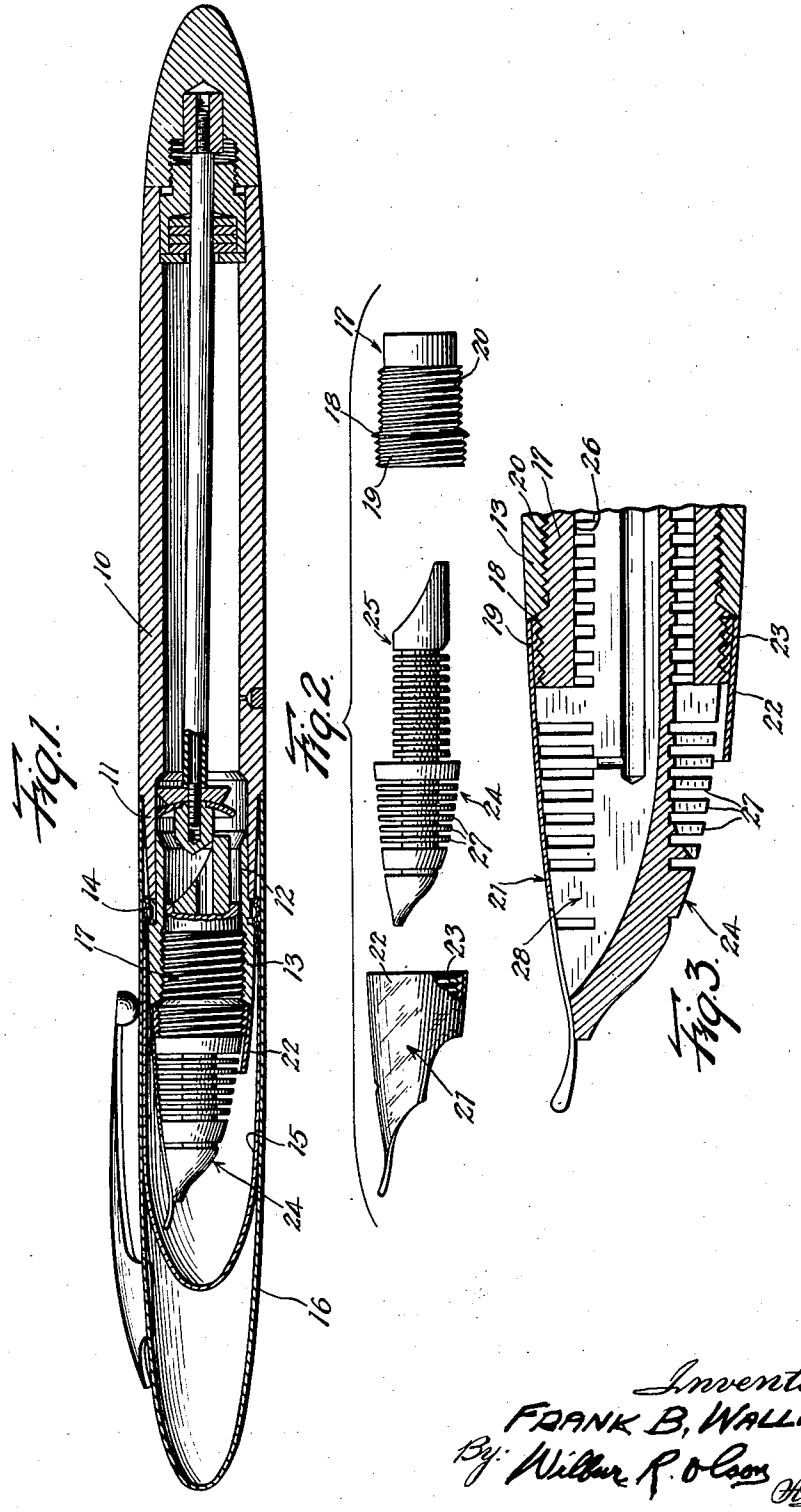

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FOUNTAIN PEN

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3 Claims. (Cl. 120—52)

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This invention relates to a fountain pen and has special reference to a writing point unit therefor.

More particularly, this invention relates to a writing point unit for a fountain pen including a holder in which the unit comprises a plug having one end for detachable connection with the holder and a writing point having a tubular shank portion, a sleeve being fixed to the tubular portion and engaging the other end of the plug for positioning the writing point relative to the holder.

The shank of the usual writing point together with the end of a feed are ordinarily forced by wedging into the bore of a pen section. In order to obtain the best possible fit of the combined writing point and feed in the bore of the pen section, either the bore of the pen section adjacent the writing point is recessed over a longitudinal portion of the wall to accommodate the thickness of the writing point, or the feed is cut away at the end thereof entering the bore of the section on the surface contacting the writing point to accommodate the thickness thereof. In either event the fit of the writing point and feed in the bore of the section is not such as to adequately seal the writing fluid in the fountain pen.

The wedging of the combined feed and writing point into the bore of the pen section results in a percentage of breakage because of its being a force fit; also, because of the brittleness of some of the most desirable materials they cannot be used since they cannot withstand the force of application. Further, many plastic materials of which the section is formed shrink after the writing point and feed are disposed in position therein making it sometimes practically impossible to remove the writing point and feed for repair without rendering them useless thereafter.

The present invention contemplates the elimination of the necessity for wedging the writing point and associated feed into the bore of the section by employing a tubular shank which may envelope either the pen section or a plug which may be detachably associated therewith, or both. Thus rather than have a percentage of breakage because of a force fit tending to expand the bore of the pen section, the present construction tends to reinforce the pen section by enveloping the same.

The tubular shank portion aside from reinforcing the section by encircling it in an embraced relation, has a maximum strength against bending stresses. It is well known that a tube has greater resistance to bending than a strip or solid rod. The ordinary writing point is nothing more than a strip of relatively thin metal formed laterally in a slightly arcuate cross-section and when the shank is inserted in the bore of the pen section, a pressure is imparted at the writing point end thereof in the course of writing which creates a very substantial leverage tending to flex the writing point on the fulcrum provided by the end of the pen section. This continuous flexing in writing tends to fracture the material of the writing point and causes considerable breakage. In the present contemplated construction, the stress is directly against the strong tubular portion of the writing point.

In Patent Number 2,303,373 issued December 1, 1942, and assigned to the assignee of the present application, a construction is shown of which the present invention is a modification. The tubular nib of the patent above referred to and of the present application is preferably formed of sheet stock, the sheet being formed into a tube with the abutting edges being soldered together. In the construction of the above-noted patent the material bounding the open end of the tubular shank portion is spun or otherwise formed on a tapered edge of an enlarged portion of the plug to hold the later in a fixed relation with the writing point. This spinning or forming operation sets up a strain in the material of the shank portion of the writing point and has on occasion caused a splitting of the tubular shank portion usually at the seam. The present invention eliminates the necessity for spinning or forming the material bounding the open end of the tubular shank of the writing point. By providing a sleeve which is bonded within the tubular shank for engaging the end of the plug, no strain is set up in the writing point and, as a matter of fact, the writing point is actually reinforced thereby.

One of the objects of this invention is to provide a fountain pen of the character indicated above wherein the writing point forms a part of a unit for detachable engagement with the barrel of the fountain pen.

Another object of this invention is to provide a fountain pen of the type noted above wherein the

shank of the writing point is of tubular formation to envelope either the pen section or an element detachably engaged with a section or barrel of the fountain pen.

It is also an object of this invention to provide a fountain pen of the above-indicated type in which the writing point of the unit is reinforced at the tubular shank portion thereof by a member which connects the writing point to a holder of the fountain pen.

It is a further object of this invention to provide a fountain pen of the hereinabove referred to type which is relatively inexpensive to manufacture, is simple and efficient in operation and is durable.

Other objects and advantages of this invention will hereinafter be more particularly pointed out and for a more complete understanding of the characteristic features of this invention, reference may now be had to the following description when taken together with the accompanying drawing in which latter:

Figure 1 is a longitudinal central sectional view partially in elevation of a fountain pen embodying the features of this invention.

Fig. 2 is an exploded side elevational view of the elements of the writing point unit, and

Fig. 3 is an enlarged central longitudinal sectional view of the pen unit showing the parts of Fig. 2 in an assembled relation.

Referring now more particularly to the drawing, the present invention is shown as being embodied in a fountain pen comprising a barrel 10 having an open counter-bored reduced end 11 for receiving an extension 12 of a pen section 13, the barrel and pen section when assembled being usually referred to as the holder.

The barrel 10 and the pen section 13 are preferably formed of plastic material, although, of course, it is to be understood that any rigid material may be employed in lieu thereof. The pen section 13 is provided with a band 14 fixedly secured thereto in any suitable manner, the band being preferably of metal and being provided with threads for detachably engaging threads adjacent the open end of an inner cap 15 housed in a pen cap 16. The inner cap 15 is preferably formed of silver or a nickel alloy or any material that is not aversely affected by writing fluids, and pen cap 16 is formed of gold-filled stock or of a material that has good appearance value. However, the above materials are specified merely for purposes of illustration and plastic, stainless steel, or any other well-known material may be substituted therefor. The filling mechanism is of the so-called plunger type and is shown merely for purposes of illustrating a completed article and since no claims are made in this application to the novelty thereof, a description thereof is believed unnecessary since the showing is self-explanatory.

A tubular sleeve 17, referred to hereinafter in the claims as a plug or an apertured plug, telescopically engages the bore of the pen section 13, a portion at the forward end extending beyond the end of the section. Referring more particularly to Fig. 2 of the drawing, the plug 17 will be noted as having an external portion threaded substantially its entire length, there being a shoulder 18 intermediate the ends thereof dividing the threads into portions 19 and 20. The threaded portion 20 engages cooperating threads in the bore of the section 13, the end of the section 13 abutting against the shoulder 18 as seen more particularly in Fig. 3.

A writing point 21 has a tubular shank portion 22 for receiving in the bore thereof a sleeve 23 which is soldered, bonded or otherwise secured thereto. The tubular shank 22 of the writing point 21 is preferably longitudinally tapered to fit a longitudinally tapered peripheral surface of the sleeve 23. The portion of the writing point 21 extending from the tubular shank portion thereof overlies in its longitudinally tapered direction a substantially conical-shaped head of a feed bar 24. A reduced extension 25 of the substantially conical-shaped head 24 of the feed engages the bore 26 of the apertured plug 17. The feed is provided with the usual combs 27 which extend laterally of the feed and of the communicating longitudinally extending fissure 28 for controlling the flow of fluid from the reservoir in the barrel 10 to the writing point 21.

The sleeve 23 is internally threaded for engagement with the threaded portion 19 of the apertured plug 17 and when in position thereon, the end of the tubular shank of the writing point engages the shoulder 18 of the plug so that preferably the writing point and the section 13 may be substantially continuous. The sleeve 23 is preferably formed of silver, plastic, or any material that has no deteriorating effect on the writing fluid or which is not attacked thereby.

The sleeve 23 is held in position in the tubular shank portion of the writing point by solder or any suitable bonding material or by spurs or other means that may be extended from the writing point into the material of the sleeve. Such means are not shown since an infinite variety of means for securing these two members against relative rotation and against displacement may be employed aside from the usual bonding above described.

While but a single embodiment of this invention is herein shown and described, it is to be understood that various modifications thereof will be apparent to those skilled in the art and this information therefore is to be limited only by the scope of the prior art of the appended claims.

I claim:

1. In a fountain pen including a holder, a writing point unit comprising a plug for detachable connection with said holder, said plug having an externally threaded end. a writing point having a nib portion and a tubular shank portion, and an internally threaded sleeve having the external peripheral surface thereof fixed to and being fitted within the bore of said tubular shank portion, said sleeve threadedly engaging the threaded end of said plug for positioning said nib relative to said holder.

2. In a fountain pen including a holder, a writing point unit comprising a plug for detachable connection with said holder, said plug having an externally threaded end, a writing point having a nib portion and a tubular shank portion with a longitudinally tapered bore, and an internally threaded sleeve having an external peripheral surface corresponding to said tapered bore and being fixed therein, said sleeve threadedly engaging the threaded end of said plug for positioning said nib relative to said holder.

3. In a fountain pen including a holder, a writing point unit comprising an apertured plug for detachable connection with said holder, said plug having an externally threaded end, a feed having a portion fitting in the aperture of said plug and having an extending portion, said extending portion having a longitudinally tapered peripheral external surface, and a writing point hav-

ing a nib portion and a tubular shank portion, said nib portion conforming to and overlying said longitudinally tapered peripheral external surface of the extending portion of said feed and said tubular shank portion being internally threaded for engaging the externally threaded end of said plug for positioning said nib relative to said holder.

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