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FOUNTAIN PEN AND THE LIKE

Filed May 11, 1932

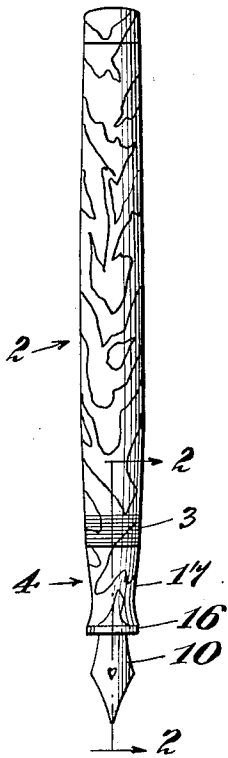


Fig. 1.

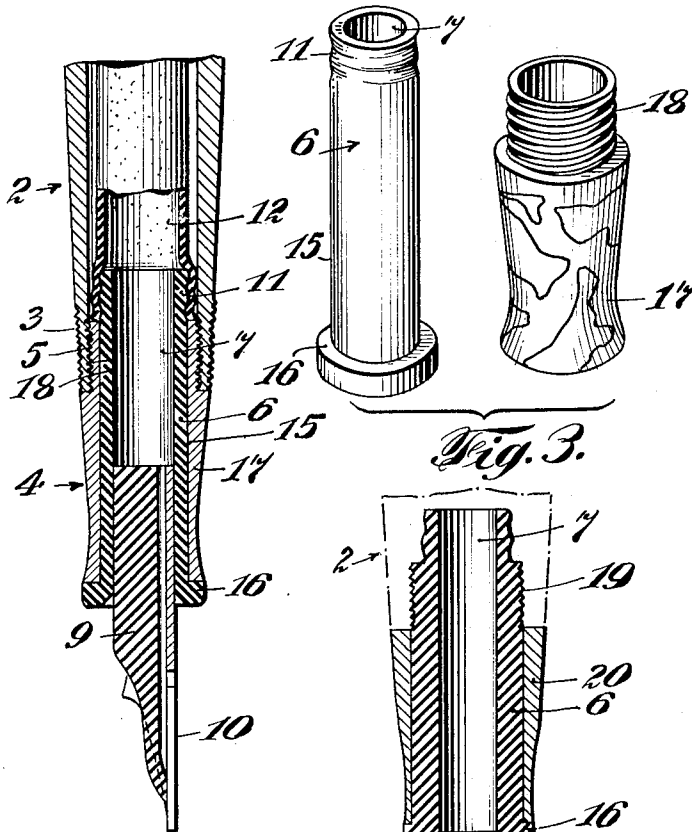


Fig. 2.

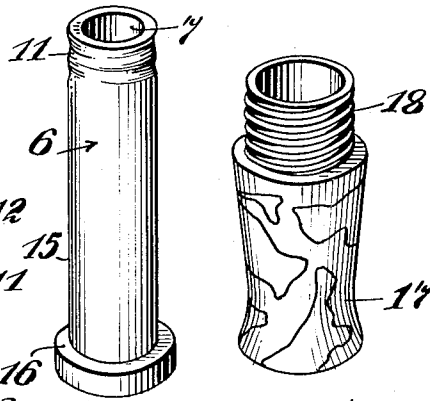


Fig. 3.

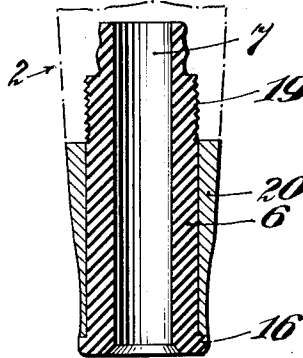


Fig. 4.

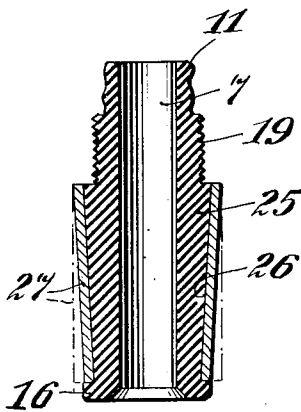


Fig. 5.

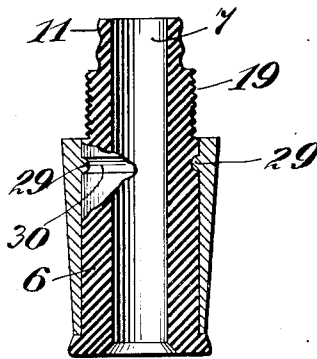


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UNITED STATES PATENT OFFICE

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FOUNTAIN PEN AND THE LIKE

Application filed May 11, 1932. Serial No. 610,557.

The present invention relates to fountain pens and the like, and more particularly, to an improved pen section and method of making.

5 Fountain pens, mechanical pencils, and the like, which are constructed of brightly colored or decorated material have become very popular. For this reason, every effort has been made to develop celluloid compositions and pyroxylin plastics to improve the appearance of these articles and to make them more attractive. At present, there is keen competition among pen manufacturers to market the most artistic articles, and in 10 many instances, mechanical effectiveness is sacrificed for appearance. An attractive article having an appearance which is pleasing to the prospective buyer is particularly important.

20 Where plastic compositions such as pyroxylin are utilized for the barrel portion of a pen, the pen section or gripping portion is at present constructed of hard rubber which is usually colored black. Hard rubber and other unattractive materials are generally used for 25 pen sections, because pyroxylin plastics and the like, have a tendency to shrink after formation. Shrinkage of the pen section would impair the flow of ink to the pen point and 30 eventually would impair the operation of the pen. The color limitations of hard rubber are a handicap because hard rubber cannot be made to harmonize with many of the desirable color creations applicable to plastic compositions. The artistic appearance of an 35 article made of pyroxylin is spoiled by making the pen section of a different material.

The present invention aims to eliminate the above difficulties by providing an improved 40 pen section or similar article, having an outer portion of the same material as the barrel of the pen and an inner portion of substantially non-shrinkable material. In this manner, the color and material of the barrel can be readily 45 matched without impairing the mechanical effectiveness of the pen. The present invention also aims to provide a simple, inexpensive method for assembling the parts of the pen section.

50 An object of the present invention is to pro-

vide a more attractive fountain pen or similar article constructed of a plastic composition.

Another object of the invention is to provide a pen section adapted to match or blend with the design of the barrel portion. 55

Another object of the invention is to provide an attractive pen section which will not impair the operation of the pen.

Another object of the invention is to provide a pen section having an inner part of substantially non-shrinkable material, and an outer part of decorative material similar to the barrel of the pen secured upon the inner part. 60

Another object of the invention is to provide a simple, inexpensive method for making a pen section adapted to match the barrel of the pen. 65

A further object of the invention is to provide a method for making a pen section having a pyroxylin outer surface wherein the shrinkage of the pyroxylin is utilized to assemble the parts of the pen section. 70

Other and further objects of the invention will be obvious upon an understanding of the illustrative embodiment about to be described, or will be indicated in the appended claims, and various advantages not referred to herein will occur to one skilled in the art upon employment of the invention in practice. 80

A preferred embodiment of the invention has been chosen for purposes of illustration and description and is shown in the accompanying drawing, forming a part of the specification, wherein 85

Fig. 1 is an elevational view of a fountain pen showing a preferred embodiment of the invention;

Fig. 2 is an enlarged fragmentary sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is an exploded view of the pen section shown in Fig. 2;

Fig. 4 is a sectional view of a slightly different embodiment of the present invention; 90

Fig. 5 is a sectional view illustrating another embodiment; and 95

Fig. 6 is a sectional view illustrating another embodiment of the pen section.

Referring again to the drawing and more 100

particularly, to Figs. 1, 2 and 3, there is shown a fountain pen comprising a substantially tubular barrel member 2 adapted to receive suitable devices for filling the pen and a pen section or gripping portion 4 adapted to be attached to the barrel by screw threads 5 or other suitable means in the inner bore of the barrel. Threads 3 may also be provided on the outer periphery of the barrel for attaching a cap portion thereto. The filling devices and cap are not illustrated herein since the present invention is not limited to any particular type of filling mechanism. Preferably the barrel member 2 is constructed of a plastic composition such as, celluloid, pyroxylin, or the like, which can be made in any desired color, shade, or decorative pattern, or the material may be mottled or speckled as shown in the drawing.

Heretofore, it has been customary to construct the pen section of hard rubber since the materials utilized for the barrel portion have a tendency to shrink, and to prevent proper feeding of ink through the pen section. At the same time the necessary use of hard rubber or other non-shrinkable material for the pen section made it impossible to provide a fountain pen substantially of the same kind of material, particularly, when a decorative barrel portion was utilized. In many instances, the hard rubber section spoiled the attractiveness of the pen.

The present invention overcomes these difficulties by providing a pen section having an outer part adapted to match the barrel and an inner part of non-shrinkable material adapted to house the pen feed and to insure proper feeding of ink to the pen point. To accomplish this, as shown in the preferred embodiment, the pen section 4 comprises an inner member 6 of hard rubber or the like having a centrally disposed bore 7 therein adapted to receive and support a feed bar 9 and a pen point 10 at one end thereof. The other end of the member 6 is provided with a nipple portion 11 for securing a suitable ink sac or fount 12 thereto which is adapted to supply ink to the feed bar 9 through the aperture 7.

Preferably, a cylindrical portion 15 is provided terminating in a suitable shoulder 16 of a slightly larger diameter than the cylindrical portion 15. In order to match the material of the barrel 2, as shown in Fig. 1, a tubular member 17 of like material, for example, pyroxylin of the same color or pattern, is telescoped about the cylindrical portion 15 so that the lower end thereof abuts against, and is held in position by the shoulder 16. Preferably, the outer surface of the tubular member is tapered or slightly curved to facilitate gripping thereof. After the inner and outer members of the pen section have been assembled, the pyroxylin tubular member 17, by reason of its shrinkable

character, shrinks into engagement with the inner member whereby the parts of the pen section are securely held in position by friction. If desired, other means may be utilized for securing the two parts together, for example, a suitable adhesive may be used.

In order to attach the pen section 4 to the barrel portion 2 of the pen, if the two are not formed integral with each other, the outer member 17 is preferably provided with a reduced portion having suitable threads 18 formed thereon, which are adapted to cooperate with the threads 5 of the barrel portion. The inner non-shrinkable section prevents material shrinkage of the threaded portion which might tend to loosen the threaded connection between the pen section and the barrel.

In Fig. 4 a slightly different pen section is shown, wherein the inner member 6 is provided with threads 19 or other suitable means adapted to cooperate with threads 5 or other means on the barrel 2 for securing the pen section thereto. To match the material of the barrel, a tubular member 20 of like material is telescoped about the inner member and is shrunk thereon. An important advantage of this modified construction is that the outer member 20 is held securely on the inner member 6 not only by reason of shrinkage, but also, by the lower edge of the barrel and the stop or shoulder 16. In this manner, when the pen section 4 is attached to the barrel, the inner member 6 and the outer member 20 are definitely held in position and relative movement therebetween is prevented.

Fig. 5 shows another form of pen section wherein an inner member 25 is provided with a tapered portion 26, and a substantially cylindrical tube 27 of shrinkable material, adapted to match the material of the barrel, is telescoped over the tapered portion and is thereafter reformed or permitted to shrink on the tapered portion and to lock therewith.

Fig. 6 illustrates interlocking projections on the inner and outer members of the pen section to lock the parts in position. The outer member may be provided with an annular ridge or projection 29 adapted to fit into a recess 30, provided within the inner member 6. The outer member, composed of a plastic composition, when fresh, is substantially resilient and can be readily forced about the inner member so that the ridge 29 registers with the recess 30 to hold the parts temporarily in position. Upon curing, the outer member shrinks, and the ridge 29 is permanently locked within the recess. In this manner, the parts may be handled without the danger of separation immediately after the pen sections are assembled.

In making the constructions illustrated herein, the inner members are preferably formed of hard rubber by molding or ma-

chining them into their desired shape. The outer members for the pen sections are then either molded or formed in any suitable manner from the same kind of material which is used for the barrel of the pen, for example, pyroxylin and the like. The outer members or tubular shells, which when freshly formed have a tendency to shrink upon curing, are telescoped over the inner members. The assembled pen sections are then placed in a curing chamber until the pyroxylin outer shells have shrunk sufficiently to hold the parts of the pen section in assembled relation. After the removal from the curing atmosphere, it has been found that the outer members continue to shrink gradually. This is very beneficial and desirable since it increases the grip between the parts. It has also been found that when maximum shrinkage has been attained, the parts are so rigidly connected that they cannot be separated. This result is very desirable and advantageous since the pen section has all the advantages of an integral member, and in addition, the outer surface thereof is attractive and matches the barrel of the pen. Another advantage is that the present method can be practiced without the use of complicated machinery or difficult operations which would increase the cost of the pens or other articles. The improved pen sections are therefore adapted to be manufactured at minimum cost.

In assembling the present pen parts, the shrinkable sleeve of pyroxylin is placed upon the non-shrinkable portion of the pen section and permitted to shrink thereon. Thereafter, the pen and pen nib are inserted in one end and an ink sac is secured to the other end. A suitable barrel is telescoped over the ink sac and threaded onto the threaded end of the pen section. Any suitable means may be utilized for collapsing the ink sac to fill the pen; for example, that shown in my co-pending application, Serial No. 585,192, filed January 7, 1932.

It will be seen that the present invention provides a fountain pen having an improved pen section which can be made in a simple and inexpensive manner. The pen section, or other parts of fountain pens or pencils, can be furnished in any desirable color or pattern which matches or harmonizes with the other parts of the article. In this manner, more attractive pens or pencils can be provided since by utilizing pyroxylin plastics and the like, a wide range of patterns and colors can be used. The pen sections shown herein are rugged in construction and are fully capable of withstanding the rough usage to which they may be subjected.

As various changes may be made in the form, construction and arrangement of the parts herein without departing from the spirit and scope of the invention and without

sacrificing any of its advantages, it is to be understood that all matter herein is to be interpreted as illustrative and not in a limiting sense.

Having thus described my invention, I claim:—

1. As an article of manufacture, a pen section for fountain pens and the like, comprising the combination of an inner member made of substantially non-shrinkable material, and an outer member of shrinkable material, fitting about said inner member.

2. As an article of manufacture, a pen section for fountain pens and the like, comprising the combination of an inner member of hard rubber, and an outer member of thermo-plastic material of a different color extending about a portion of said inner member.

3. As an article of manufacture, a pen section for fountain pens and the like, comprising an inner member of hard rubber and an outer member of pyroxylin material forming in effect, an integral pen section.

4. In a fountain pen and the like, the combination of a barrel member of thermo-plastic material, an inner member attached to said barrel member adapted to receive and support writing means, and an outer member of the same material as said barrel fitting about said inner member.

5. A pen section for fountain pens and the like, comprising an inner member, a tubular member of a material subject to variations in size such as pyroxylin fitting about a portion of said inner member, and means for securing said tubular member to said inner member.

6. A pen section for fountain pens and the like, comprising a member of substantially non-shrinkable material having a recess therein, a sleeve of pyroxylin material telescoped about a portion of said first member, said sleeve being shrunk into engagement with said first member, and a projection on said sleeve extending into said recess on said first member.

7. A pen section for fountain pens and the like, comprising an inner member of hard rubber having a threaded portion for attaching the pen section to a barrel member, a sleeve member of pyroxylin material fitting about said inner member, and a shoulder at one end of said inner member for positioning said sleeve.

8. A pen section for fountain pens and the like, comprising an inner member of substantially non-shrinkable material, and an outer member of thermo-plastic material fitting about said inner member, said outer member having a threaded portion substantially at one end thereof for connecting said pen section to a barrel member.

9. In a fountain pen or the like, the combination of a pyroxylin barrel, a pen sup-

porting member, a tubular member of pyroxylin material shrunk into engagement with said pen supporting member and means on said barrel and said tubular member for attaching said tubular member to said barrel.

10. In a fountain pen and the like, the combination of a pyroxylin barrel member having a threaded portion at one end thereof, a pen supporting member, and a tubular member of pyroxylin material shrunk into engagement with said pen supporting member, said tubular member having a threaded portion for engaging said barrel member to attach said pen supporting member.

11. In a fountain pen or the like, the combination of a barrel of pyroxylin material, a pen supporting member attached to said barrel member, an ink sac secured to one end of said member, writing means operatively connected to the other end of said member, and a tubular member fitting about said first member, said tubular member being of the same material as said barrel, and shrunk into engagement with said first member.

12. The method of making a section for fountain pens, pencils and the like, which method comprises placing a member of shrinkable thermo-plastic material about an inner member, and permitting said first member to shrink into engagement with said second member.

13. The method of making a pen section for fountain pens and the like, which method comprises placing a tubular member of pyroxylin material, and the like, about an inner member of hard rubber, and shrinking said first member to securely engage said second member.

14. The method of making pen sections for fountain pens and the like, which method comprises forming a tubular gripping member of pyroxylin material, inserting a pen supporting member within said tubular member, and permitting said tubular member to contract and securely engage said pen supporting member whereby said members are assembled as a unit.

15. The method of forming a pen receiving section for fountain pens, which method comprises placing a member of shrinkable thermo-plastic material, such as pyroxylin, about an inner pen receiving member of substantially non-shrinkable material such as hard rubber, and permitting said first member to shrink into secure engagement with said second member.

16. In a fountain pen and the like, the combination of an inner member of substantially non-shrinkable material adapted to receive a pen and feed bar, and an outer member of shrinkable material in permanent engagement therewith.

17. In a fountain pen and the like, the combination of an inner member of substantially non-shrinkable material adapted to receive a pen and feed bar, a pen and feed bar mounted within said inner member, and an outer member of shrinkable material in permanent engagement with said inner member, said outer member having screw threads on a portion of the exterior thereof.

18. In a fountain pen and the like, the combination of an inner member of hard rubber adapted to receive a pen and feed bar, a pen and feed bar mounted within one end of said inner member, and an outer member of pyroxylin material in secure engagement with said inner member, said inner and outer members forming together a substantially unitary structure.

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