

Jan. 29, 1935.

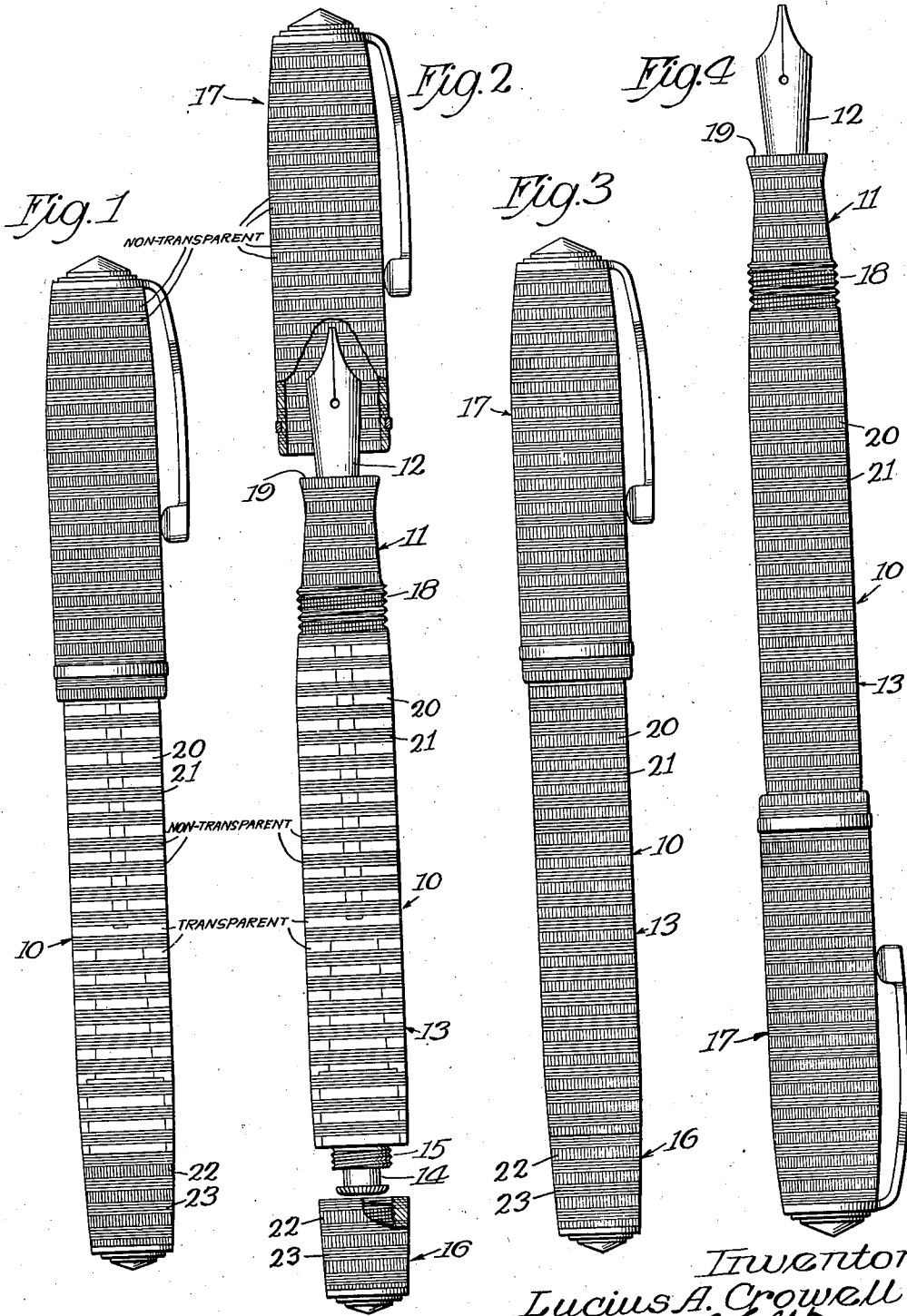
L. A. CROWELL

1,989,351

FOUNTAIN PEN AND OTHER MARKING MEANS

Filed Jan. 18, 1934

2 Sheets-Sheet 1



By

Inventor:
Lucius A. Crowell
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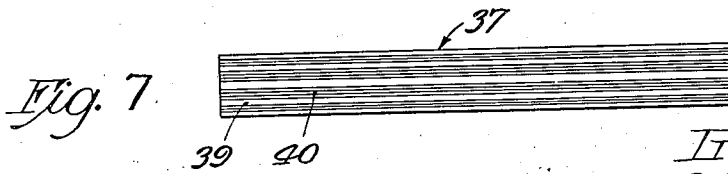
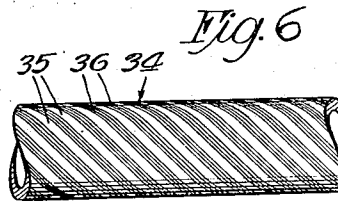
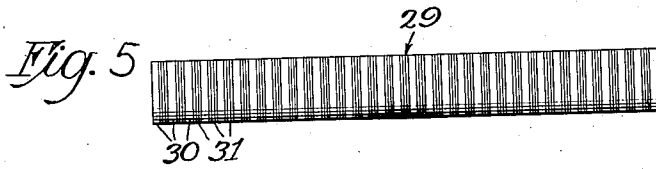
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UNITED STATES PATENT OFFICE

1,989,351

FOUNTAIN PEN AND OTHER MARKING MEANS

Lucius A. Crowell, Chicago, Ill., assignor to The Parker Pen Company, Janesville, Wis., a corporation of Wisconsin

Application January 18, 1934, Serial No. 707,088
In Mexico October 21, 1933

14 Claims. (Cl. 120—42)

This invention relates to fountain pens and other marking means (such, for example, as pencils) wherein the barrel portion thereof serves as a reservoir or container for the writing fluid or marking element. This application is a continuation-in-part of my copending application, Serial No. 693,063, filed October 11, 1933.

In the use of a fountain pen of the foregoing character, it is quite an advantage to be able to determine the amount of ink contained within the barrel without the necessity of manipulating any of the feed or filling parts thereof. This is particularly true in the case of fountain pens of the general type disclosed in the Dahlberg Patent No. 1,904,358 dated April 18, 1933. For example, if one, in order to determine the amount of ink in the barrel, were to manipulate the filling mechanism of such a pen, a large amount of ink might be expelled; and, in the hands of a careless person, it is quite probable that the ink would be expelled unintentionally with resultant smearing. It will be appreciated that this condition might be taken care of by the use of a barrel formed wholly of a transparent material, but such a barrel would fall far short of practical appearance requirements in the finished article. More particularly, in that case there would be a very objectionable appearance difference between the pen barrel and the other parts of the article (such as pen section, caps, etc.) when the barrel is either filled with ink or empty or in both cases.

In every case, it is highly desirable that the article present a uniform exterior appearance. It is customary in many instances to produce definite exterior-appearing color combinations in the finished article. The thought of uniform external appearance would, of course, be defeated in this latter case in the use of a barrel transparent throughout. According to my invention, this problem is solved from both mechanical and appearance standpoints by forming the parts of the device in a certain distinctive way.

One of the objects of my invention is to provide a fountain pen, pencil, or the like, of the foregoing character which has a uniform external appearance throughout when subjected to reflected light and which has a barrel or handle portion adapted, when subjected to transmitted light, to indicate the level or condition of the ink, or the like, therein.

Another object is to provide a fountain pen or the like, having a barrel or handle part adapted to serve as a reservoir, the barrel being formed of a material having alternating transparent and non-transparent zones therein corresponding res-

spectively to non-transparent zones in the material of the other parts of the device, the arrangement being such that, after the reservoir is filled, the exterior appearance of the article is uniform throughout when the article is subjected to reflected light while the transparent zones of the barrel retain their ability to indicate the internal condition of the barrel when the latter is subjected to transmitted light.

A further object is to provide a fountain pen or the like having the foregoing characteristics and wherein the non-transparent barrel zones are of color contrasting with the exterior color appearance of the transparent barrel zones after the ink or other writing fluid is placed in the barrel, and wherein the alternating zones of the other parts of the article are contrastingly colored to correspondingly agree in external appearance with the barrel zones after ink or other writing fluid is placed in the barrel.

A more specific object is to provide in a fountain pen having a barrel serving as an ink reservoir and formed of a material having alternating transparent and non-transparent zones, a pen section and caps mountable upon the opposite ends of the barrel formed of a material having alternating non-transparent zones therein, wherein the non-transparent barrel zones and one set of alternating zones of the pen section and caps correspond in shape, size and color and the other set of zones of the pen section and caps correspond in shape, size and color to the external appearance of the transparent barrel zones when ink is placed in the barrel and the latter is subjected to reflected light.

An additional object is to provide a fountain barrel or the like formed of a plurality of relatively shallow transparent rings or sections and non-transparent rings or sections, said rings or sections being superimposed and integrally joined together with the transparent rings or sections alternating with the non-transparent ones.

Other objects and advantages will become apparent as this description progresses and by reference to the drawings wherein,—

Figure 1 is an elevational view of one form of fountain pen embodying my invention, the same being shown in closed or carrying condition and without ink in the barrel;

Fig. 2 is a view similar to Fig. 1, except for the pen cap members are shown partially in section and in detached relation;

Fig. 3 is a view similar to Fig. 1 except illustrating the pen with the barrel filled with ink;

Fig. 4 is a view showing the pen of Fig. 3 in open or writing condition;

Fig. 5 is a side view of a rod of material from which the barrel of Figs. 1 to 4 may be formed;

Fig. 6 is a fragmentary perspective view of a tube made from which a barrel for another form of my invention may be made; and

Fig. 7 is a side view of a modified form of rod from which a barrel for still another form of my invention may be made.

My invention is well adapted to fountain pens of that type wherein the barrel serves as an ink reservoir, such as that disclosed in the above-identified Dahlberg patent. It is to be understood, however, that the invention is not limited to this particular use and that it has utility in all environments where similar mechanical and appearance requirements exist.

Referring particularly to the drawings, the fountain pen which I have chosen to illustrate the invention includes a reservoir barrel 10 which supports a pen section 11 at its forward end. The pen section supports ink feeding means which includes the pen 12 which may take any suitable form.

The rear end of the barrel 10 supports filling mechanism 13, including a reciprocable finger piece or plunger 14 which projects beyond the rear end of the barrel. The filling mechanism 13 further includes a threaded sleeve portion 15 which projects from the rear of the barrel for guidance of the finger piece or plunger 14 and for support of a cap 16 which encloses the projected parts of the filling mechanism.

A cap 17 is employed for closing the writing end of the pen in the so-called carrying or closed position of the fountain pen. This cap is adapted, in the closed position of the pen, to be screwed upon the exterior threaded part 18 of the barrel (Fig. 1) and, in the open position of the pen, it is adapted to be friction-fitted upon the rear end of the barrel (Fig. 4) in a manner which will be well understood. The interior of the cap 17 may have suitable sealing means (not shown) cooperating with the forward end or shoulder 19 of the pen section 11 for sealing the writing end of the fountain pen in the closed position of the latter in a manner well known.

As hereinabove pointed out, it is not only desirable that one be able to determine the level and condition of the ink within the barrel without operating the pen feeding and filling means, but it is also essential from practical appearance standpoints for the pen to present a uniform external appearance throughout. The several parts of the pen, including the barrel, pen section and caps might be made from a transparent material but, in that case, when ink is placed in the barrel uniform appearance is destroyed. Also, the filling plunger or finger piece 14 would be visible through the cap 16, and the pen 12 and/or the sealing means within the cap 17 would be visible through such cap thereby presenting an unsightly appearance. If the pen section 11 and caps 16 and 17 were made from a non-transparent material to avoid these latter conditions, while making the barrel from a transparent material, the exterior appearance would still be unbalanced with or without ink in the barrel, particularly at the forward part of the barrel at the point of connection between the pen section 11 and barrel and at the rear of the barrel at the point of connection between the latter and the filling mechanism 13.

This invention entirely avoids the foregoing

objectionable conditions and provides a pen which presents a uniform exterior appearance throughout when subjected to reflected light (as when lying on a table desk or the like), but which has a barrel of such a character that when it is submitted to transmitted light (as when held between the eye and a light), the level and condition of the ink therein is indicated.

In carrying out the invention, with respect to the structure disclosed in the drawings, the barrel 10 is formed of a plurality of alternating transparent and non-transparent rings, annular sections, zones or laminations 20 and 21 which are integrally joined to form a continuous barrel structure. The pen section 11 and the caps 16 and 17 are likewise formed of a plurality of superimposed and integrally joined rings, annular sections, zones or laminations 22 and 23. The term "non-transparent" as used herein is intended to include both opaque materials and materials having some translucency.

The transparent barrel sections or zones 20 are comparatively shallow and correspond substantially in size and shape to the pen section and cap sections or zones 22. The non-transparent barrel sections or zones 21 correspond substantially in size and shape to the sections or zones 23 of the other pen parts. Furthermore, the sections 22 of the pen section and caps are of such color that they have substantially the same exterior appearance as that given to the barrel sections 20 by ink upon the placing of ink within the barrel as illustrated in Fig. 3; whereby the entire exterior appearance of the pen, whether in its closed or open position (Figs. 3 and 4) is substantially uniform throughout when the pen is subjected to reflected light. However, the comparatively shallow transparent zones 20 of the barrel retain the ability to indicate ink level and condition within the barrel when the latter is subjected to transmitted light, as when the barrel is held between the eye and a light. In this manner, both the mechanical and appearance advantages hereinabove named are attained.

The foregoing arrangement is well suited for pens formed of a material having contrastingly colored zones therein. For example, the non-transparent zones 21 of the barrel and the non-transparent zones 23 of the pen section 11 and caps 16 and 17 may be of one color while the non-transparent zones 22 of the pen section and caps may be of a contrasting color similar to that which the ink gives exteriorly to the transparent barrel sections 20 when ink is placed in the barrel. In this manner, the ink or writing fluid becomes an element in producing uniform appearance rather than an agent destroying uniform appearance. Once the barrel has been filled with ink, and the interior thereof stained somewhat, the uniform appearance effect under the influence of reflected light will be substantially maintained regardless of lowering of the level of the ink in the barrel; but, at all times, lowering of ink level will be indicated when the barrel is subjected to transmitted light.

The barrel 10 may be formed in any desired manner. Any suitable kind of material adapted to the purpose stated may be employed. I have found that pyroxylin material may take the form of transparent and non-transparent sheets suitably joined to provide a block structure from which a rod 29, such as that shown in Fig. 5, may be cut or otherwise formed. These rods include alternating transparent and non-transparent sections 30 and 31 (corresponding to the

barrel sections 20 and 21) extending circumferentially or transversely of the axis of the finished tube. Each rod (Fig. 5) is bored or otherwise treated to form a tube. The tube is then finally shaped and finished to the form of the barrel shown in Figs. 1 to 4, inclusive. The pen section 11 and caps 16 and 17 may be similarly formed, except for the substitution of the proper kind of non-transparent and barrel-matched pyroxylin sheets.

In some cases, the material from which the rod of Fig. 5 is formed may be cut and wound in any suitable manner to provide a tube 34 like that shown in Fig. 6. In that case, there are provided alternating transparent and non-transparent zones 35 and 36 that take the form of spirals extending from one end of the barrel to the other. A finished barrel may be formed from the tube 34 (Fig. 6) in any desired manner.

Also, if desired, rods 37, similar to that shown in Fig. 7, may be cut from suitable material. These rods are so formed that longitudinally extending and circumferentially alternating transparent and non-transparent zones 39 and 40 are provided therein, or in the tube or barrel formed therefrom. Barrels having similarly arranged zones therein may be formed from sheets of suitable material having therein the desired transparent and non-transparent zones, the edges of which sheets are integrally fused or joined in any suitable manner to provide a tube from which the barrel is made.

While I have not illustrated complete pen structures embodying the forms of Figs. 6 and 7, it will be understood from the foregoing that the structures of Figs. 6 and 7 are adapted to be shaped in any suitable manner to provide barrels, caps and pen sections similar to the corresponding parts shown in Figs. 1 to 4 inclusive.

In some instances, variegated material may be used in forming the pen parts and the alternating zones in the material may be of irregular shape and size but matched in this regard throughout the barrel, pen section, etc. In all of the foregoing cases the resultant tube or barrel part is ground and polished to the desired dimensions and shape.

It is believed that the features and advantages of my invention will be understood from the foregoing. In carrying out my invention it is possible to produce many desirable color effects and color combinations not attainable with prior methods of manufacture and assembly; while, at the same time, providing a barrel which functions in effect as a visual gauge without impairing exterior appearance balance of the pen.

It is to be understood that, while I have shown only one form of fountain pen structure embodying my invention, my invention is well adapted to other forms of pens, writing instruments, and the like, where the advantages described are desired. It is to be further understood that while I have shown and described several forms of my invention, further changes in details and arrangements of parts may be made without departing from the spirit and scope of my invention as defined by the claims which follow.

I claim:

1. The handle of a marking device consisting of a series of shallow coaxial, alternating, transparent and non-transparent rings integrally joined to provide a continuous tubular structure.
2. The barrel of a fountain pen consisting of a series of shallow coaxial, perforated, alternating, transparent, and non-transparent disks integrally

joined to provide a continuous tubular structure.

3. The handle of a marking device consisting of a narrow series of parallel strips of alternating, transparent, and non-transparent material joined together integrally to provide a continuous tubular structure.

4. In a writing instrument, a barrel adapted to serve as a reservoir for a writing fluid, said barrel being formed throughout of a material having narrow longitudinally disposed alternating transparent and colored non-transparent zones, the size and arrangement of said zones being such that when the barrel contains substantially varying quantities of writing fluid the external transparent appearance of the barrel is substantially eliminated in reflected light without impairing the ability of the transparent zones to indicate, when subjected to transmitted light, writing fluid level within the barrel as the writing fluid is fed by said feeding means.

5. In a marking instrument, a barrel adapted to serve as a reservoir for a writing fluid, said barrel being formed throughout of a plurality of narrow and integrally joined and longitudinally alternating transparent and colored non-transparent bands, the size and arrangement of said bands being such that when the barrel contains substantially varying quantities of ink, the internally-covered transparent bands present a substantially external non-transparent appearance when viewed in a reflected light while retaining the ability to indicate writing fluid level within the barrel when the barrel is held between the eye and a light.

6. In a marking instrument, a barrel adapted to serve as a reservoir for a writing fluid and having a pen section extension at its forward end, means mounted within and carried by said pen section for feeding writing fluid from the barrel, said barrel being formed throughout of a material having narrow circumferentially alternating and longitudinally-extending transparent and colored non-transparent zones therein, the transparency of the transparent zones being such that when ink is contained within the barrel in substantially varying quantities the exterior appearance of the barrel is substantially that of opaqueness when viewed in reflected light while retaining the ability to indicate, upon lowering of the writing fluid level within the barrel, writing fluid level within the barrel upon subjecting the barrel to transmitted light, and said pen section being formed of similarly arranged non-transparent zones matched in color with said barrel zones as the latter appears when the barrel is filled with the writing fluid.

7. In a writing instrument, a barrel adapted to serve as a reservoir for a writing fluid and having a pen section at its forward end, means mounted within and carried by said pen section for feeding the writing fluid from the barrel, said barrel being formed throughout of a material having narrow longitudinally spiraled and alternating transparent and colored non-transparent zones therein, the arrangement being such that when the interior of the barrel is stained by ink, the exterior appearance of the barrel is that of opaqueness when subjected to reflected light while the said transparent zones retain the ability to indicate marking fluid level within the barrel when the barrel is subjected to transmitted light, and said pen section being formed of similarly arranged zones all non-transparent and matched in color and shape with said barrel zones when the barrel has been filled with the writing fluid.

8. In a marking instrument, a barrel adapted to serve as a reservoir for a writing fluid, said barrel being formed throughout of a material having narrow longitudinally alternating transparent and non-transparent zones therein, the non-transparent zones being of a color contrasting with the color of the writing fluid, the arrangement being such that when any appreciable quantity of writing fluid is contained within the barrel the exterior appearance of the barrel is one of contrastingly colored zones alternated longitudinally of the barrel without transparent appearance when subjected to reflected light with said transparent zones retaining the ability to indicate, as the writing fluid is fed, writing fluid level when the barrel is subjected to transmitted light.
9. A barrel for a fountain pen composed of narrow alternating transparent and non-transparent areas, the width of the transparent areas not exceeding the width of the non-transparent areas, the transparent and non-transparent areas being integrally joined to provide a continuous tubular structure.
10. A fountain pen having a barrel composed of integrally joined alternate transparent and opaque strips, the relative proportions of the transparent and opaque strips being such that the barrel presents a substantially opaque appearance in reflected light, and is sufficiently transparent when exposed to transmitted light to disclose the level of the writing fluid therein.
11. A fountain pen having a barrel composed of integrally joined alternately transparent and opaque areas, the relative proportions of the transparent and opaque areas being such that the said barrel appears substantially solidly opaque in reflected light, and is sufficiently transparent when exposed to transmitted light to disclose the level of writing fluid therein.
12. In a writing instrument a barrel adapted to serve as a reservoir for a writing fluid, and having a pen section extension at its forward end, and a cap member adapted to be mounted over said forward barrel end in the closed position of the writing instrument to conceal said pen section extension and also to be mounted over the rearward end of said barrel in the open position of the writing instrument to provide a rearward handle-like extension on said barrel, said barrel being formed throughout of a material having narrow longitudinally alternating transparent and non-transparent zones, the size and arrangement of said zones being such that when said barrel contains substantially varying quantities of writing fluid the external transparent appearance of the barrel is substantially eliminated in reflected light without impairing the ability of the transparent zones to indicate, when subjected to transmitted light, writing fluid level within the barrel, and said pen section and said cap being formed of similarly arranged alternating zones all non-transparent matched in size and form with said barrel zones as the latter appear when the barrel is filled with the writing fluid, whereby the writing instrument has of uniform external appearance throughout said barrel, cap and pen section extension, in both its open and closed positions, in reflected light.
13. A fountain pen having a barrel composed of integrally joined alternating transparent and non-transparent rings, the relative proportions of the transparent and non-transparent rings being such that the said barrel appears substantially wholly non-transparent in reflected light and is sufficiently transparent when exposed to transmitted light to expose the level of writing fluid therein, and a cap being formed of similarly arranged alternating rings all non-transparent and substantially matched in size and form with said rings as the latter appear when viewed in reflected light and when the barrel is filled with the writing fluid.
14. A fountain pen having a barrel composed of integrally joined alternating transparent and non-transparent areas, the relative proportions of the transparent and non-transparent areas being such that the said barrel appears substantially wholly non-transparent in reflected light and is sufficiently transparent when exposed to transmitted light to expose the level of writing fluid therein, and a cap being formed of similarly arranged alternating areas all non-transparent and substantially matched in size and form with said barrel areas as the latter appear when viewed in reflected light and when the barrel is filled with the writing fluid.

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