Jan. 9, 1934. J. WALLACE 1,943,048

FOUNTAIN PEN

Filed Feb. 3, 1933

Fig. 1.

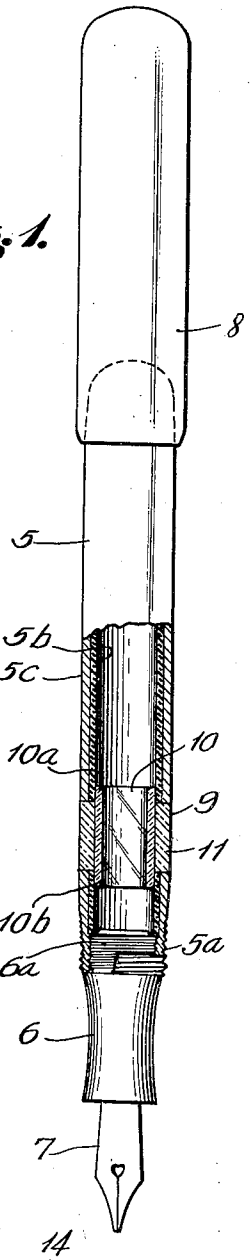


Fig. 3.

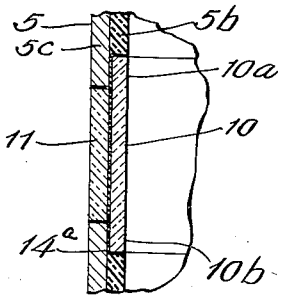


Fig. 2.

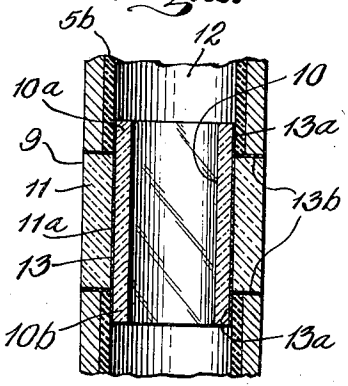
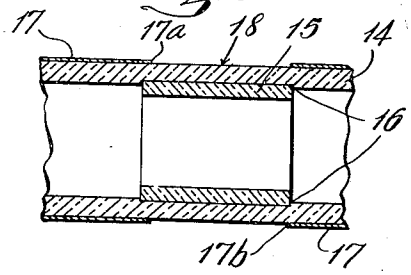


Fig. 4



INVENTOR.
JOSEPH WALLACE
BY Howard C. Thompson
ATTORNEY

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1,943,048

FOUNTAIN PEN

Joseph Wallace, Brooklyn, N. Y.

Application February 3, 1933. Serial No. 655,022

6 Claims. (Cl. 120—42)

This invention relates to fountain pens; and the object of the invention is to provide the barrel of the pen with a transparent wall portion through which the ink or writing fluid for transmission to the pen point may be seen so as to determine at all times the existence of ink or writing fluid in the pen; a further object being to provide a transparent wall portion involving inner and outer transparent bodies, at least one of which is preferably composed of non-breakable material, such for example as celluloid, and further to the arrangement of the transparent wall portion in the barrel structure of the pen to dispose the outer surface of the outer tubular body in alinement with the corresponding surface of the barrel; a further object being to provide a fountain pen of the class described wherein the wall structure of the pen is composed of transparent material with a transparent tube of contrasting material disposed within said wall structure, and means for coating the wall structure of the pen at opposite ends of said tube to render the same substantially non-transparent; and with these and other objects in view, the invention consists in a fountain pen of the class and for the purpose specified, which is simple in construction, efficient in use, and which is constructed as hereinafter described and claimed.

The invention is fully disclosed in the following specification, of which the accompanying drawing forms a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which:

Fig. 1 is a side and sectional view of a fountain pen made according to my invention.

Fig. 2 is an enlarged, detail, sectional view of a part of the construction shown in Fig. 1.

Fig. 3 is a view similar to Fig. 2 but showing only a part of the construction and showing a modification; and,

Fig. 4 is a view similar to Fig. 2 showing another modification.

In the drawing I have shown for the purpose of illustrating one use of my invention a fountain pen consisting of a barrel portion 5 and a point section 6 having a threaded stud 6*a* engaging the end of the barrel 5 for detachably mounting the section 6 in connection with said barrel. The section 6 contains the usual ink feed member and pen point 7, and at 8 I have shown a cap adapted to frictionally engage the closed end of the barrel 5 as seen in Fig. 1 or to be mounted on the pointed end of the pen and being externally threaded to engage the threads 5*a* on the barrel 5.

In carrying my invention into effect, I mount in the wall structure of the barrel 5, preferably adjacent the open and threaded end 5*a* thereof, a transparent wall portion or body 9, which in the construction shown is in the form of inner and outer tubes or sleeves 10 and 11 of transparent material, one of which is preferably composed of non-breakable transparent material. In the construction shown, the tube 10 is longer than the tube 11 so that the ends 10*a* and 10*b* thereof project beyond the ends of the tube 11 and fit snugly within the bore 12 of the pen barrel 5. In the construction shown, the bore of the barrel is provided with a lining sleeve or tube 5*b* which may be composed of hard rubber, whereas the outer wall structure 5*c* may be composed of celluloid, bakelite or other composition material such as commonly employed in the construction of fountain pens. At this time, however, it will be understood that my invention is by no means limited to the use of a pen barrel of double wall structure, as a conventional single wall structure may be employed.

The inner tube 10 has a snug fit in the bore 11*a* of the tube 11 so as to insure a positive seal between the outer wall of the tube 10 and the bore 11*a*. In some cases, it may be desirable to employ a transparent cement or adhesive 13 between the tubes 10 and 11 in forming the seal therebetween as is indicated in Fig. 2 of the drawing, and this cement or adhesive will also serve to seal and secure the tube 10 within the bore 12 of the barrel as seen at 13*a* and to secure the ends of the tube 11 to adjacent walls of the barrel as seen at 13*b*, thus fixedly retaining the transparent body or wall portion 9 within and between the separate parts of the barrel. At this time, it will also be understood that the sealing and securing as at 13, 13*b* need not necessarily be employed at both ends of the body 9. A tight fit may be formed between either end of the body 9 and the corresponding part of the pen barrel to provide a detachable mounting as between said parts, but in any form of construction, it is important that the contact and engagement as between adjacent walls of the tubes 10 and 11 be tight and sealed to prevent the passage of ink into and between said walls which would operate to discolor the transparent wall portion.

In the construction shown, it is preferred that the inner tube 10 be composed of glass, and the outer tube 11 of non-breakable transparent material, such for example, as clear celluloid, the

purpose of which is to provide at all times a clear transparency in the wall portion of the body 9 to show at all times the presence of ink or writing fluid in the fountain pen. I have found in practice that glass will not become stained or discolored to any great degree, and will thus maintain the desired transparency at all times. In other words, the important feature of the inner tube 10 is to provide within the barrel of the pen a surface contacting with the ink or writing fluid which will have no chemical reaction with the ink or writing fluid, or in other words, which will not discolor or become stained in the presence of or movement of a writing fluid thereover.

In Fig. 3 of the drawing, I have shown a slight modification of the structure shown in Figs. 1 and 2 wherein the combined thickness of the inner and outer tubes 10 and 11 are equal to the thickness of the wall of the barrel 5 or the separate wall parts 5*b* and 5*c* thereof if both of said wall parts are employed. In this construction, it will be apparent that the inner wall parts 5*b* terminate short of the ends of the wall parts 5*c* to form grooves 14*a* receiving the protruding ends 10*a* and 10*b* of the inner tube 10. This construction forms a smooth inner surface to the entire bore of the pen barrel, as will be apparent. When the pen barrel 5 is composed of a single material, it will be understood that the grooves 14*a* will be formed in the ends of the separate parts thereof for the purpose stated.

In Fig. 4 of the drawing, I have shown another form of construction wherein the wall structure 14 of a fountain pen or similar article is composed of transparent material, such for example as celluloid, and mounted in this wall is a tube or sleeve 15 of transparent material, such for example as glass, the tube 15 being preferably secured in place by shrinking the wall structure 14 on said tube by subjecting the same to heat in the usual manner, in which operation, the adjacent surfaces of the tube 15 and wall 14 will be in firm engagement with each other and sealed against admission of any fluid, and still further, the inner surface of the wall 14 will overlap the ends of the tube 15 as seen at 16 to further affect this seal and to retain the tube 15 against any possible displacement with respect to the wall portion 14. At this time, it will be understood that the tube 15 may be glued or otherwise secured in position as in the structures shown in Figs. 1 to 3 inclusive. With the construction shown in Fig. 4, it is also desirable, by virtue of the transparency of the wall structure 14, to coat one surface of the wall with an opaque compound or solution as shown at 17, the coating terminating in line with or inwardly of the ends of the tube 15 as indicated at 17*a* and 17*b* so as to leave on the wall structure 14, the transparent portion or section 18 which is preferably annular, it being understood that the coatings 17 may be applied to the wall structure 14 by dipping, spraying or otherwise. The showing in Fig. 4 is more or less diagrammatic, it being understood that the coatings 17 are very thin.

It will also be understood that the same effect produced in Fig. 4 of the drawing may be accomplished by coating the inner surfaces of the wall structure 14 or by inserting an opaque tube or tubes therein as in the structures shown in Figs. 1 to 3 inclusive.

The structure described and claimed in this application constitutes an improvement of the structure described and claimed in a prior application filed by me May 27, 1931 and bearing Serial Number 540,244, which has issued in Patent No. 1,907,626, granted May 9, 1933.

It will be understood that while I have shown a specific location of the transparent wall portion in the pen barrel, I am not limited in this respect nor am I limited to the other structural details of the invention herein shown and described, and various changes therein and modifications thereof may be made within the scope of the appended claims without departing from the spirit of my invention or sacrificing its advantages.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In a fountain pen employing a tubular barrel with a point and feed section detachable with respect to the open end of said barrel, a tubular body of transparent material arranged in and forming part of the wall structure of the barrel of the pen, the wall of said tubular body being in alinement with the wall of the pen barrel, said body consisting of inner and outer tubes fitting snugly one within the other, one of said tubes being composed of non-breakable material, means for sealing and securing one end of said body to the wall structure of the pen barrel, and one end of the inner tube protruding beyond the corresponding end of the outer tube forming an annular groove for receiving the wall structure of the pen barrel.

2. In a fountain pen employing a tubular barrel with a point and feed section detachable with respect to the open end of said barrel, a tubular body of transparent material arranged in and forming part of the wall structure of the barrel of the pen, the wall of said tubular body being in alinement with the wall of the pen barrel, said body consisting of inner and outer tubes fitting snugly one within the other, one of said tubes being composed of non-breakable material, means for sealing and securing one end of said body to the wall structure of the pen barrel, one end of the inner tube protruding beyond the corresponding end of the outer tube forming an annular groove for receiving the wall structure of the pen barrel, and the wall of the pen barrel being composed of inner and outer sleeves of different materials.

3. In a fountain pen employing a tubular barrel with a point and feed section detachable with respect to the open end of said barrel, a tubular body of transparent material arranged in and forming part of the wall structure of the barrel of the pen, the wall of said tubular body being in alinement with the wall of the pen barrel, said body consisting of inner and outer tubes fitting snugly one within the other, one of said tubes being composed of non-breakable material, means for sealing and securing one end of said body to the wall structure of the pen barrel, one end of the inner tube protruding beyond the corresponding end of the outer tube forming an annular groove for receiving the wall structure of the pen barrel, the wall of the pen barrel being composed of inner and outer sleeves of different materials, and the inner sleeve of said barrel terminating short of the end of the outer sleeve to form a groove for receiving the inner tube of said transparent body.

4. In a fountain pen employing a tubular barrel with a point and feed section detachable with respect to the open end of said barrel, a tubular body of transparent material arranged in and

forming part of the wall structure of the barrel of the pen, the outer surface of said tubular body being in alinement with the outer surface of the pen barrel, said body consisting of inner and outer tubes fitting snugly one within the other and adjacent surfaces of which are sealed, and one of said tubes being composed of substantially non-breakable material.

5. In a fountain pen employing a tubular barrel with a point and feed section detachable with respect to the open end of the barrel, a tubular body of transparent material arranged in and forming part of the wall structure of the barrel of the pen and rendering the writing fluid in said barrel visible externally of the pen, the outer surface of said tubular body being in alinement with the outer surface of the pen barrel, said tubular body including a tube of substantially non-breakable material, and the inner surface of said body being of a stain-proof character with respect to its contact with the writing fluid within the barrel.

6. In a fountain pen employing a tubular barrel with a point and feed section detachable with respect to the open end of said barrel, said barrel having a portion consisting of inner and outer transparent tubes forming a circumferentially transparent portion on said barrel, the inner tube being composed of glass and being sealed directly within the outer tube preventing the passage of a writing fluid contained in said barrel between adjacent surfaces of said inner and outer tubes and whereby such writing fluid may be seen through said circumferentially transparent portion.

JOSEPH WALLACE.