

Dec. 29, 1925.

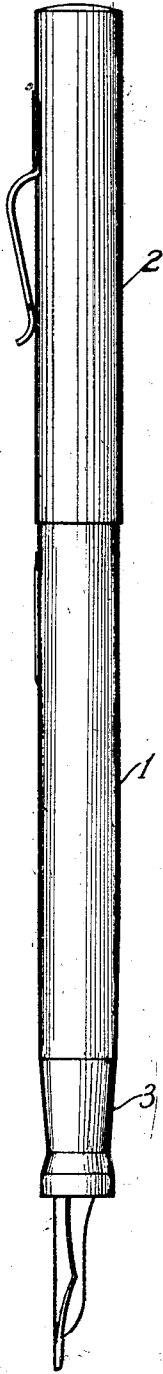
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J. C. WAHL

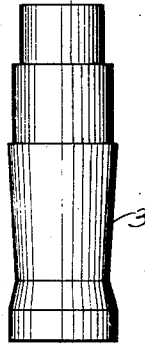
FOUNTAIN PEN

Original Filed Dec. 5, 1921

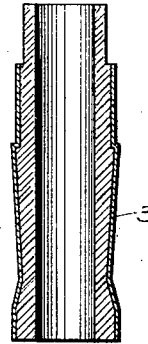
*Fig. 1*



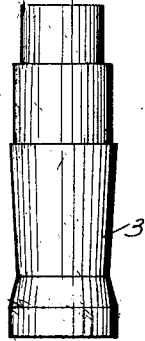
*Fig. 2*



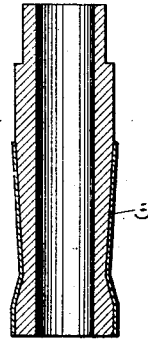
*Fig. 3*



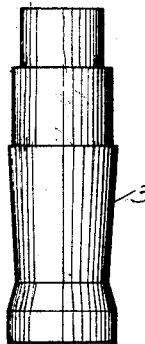
*Fig. 4*



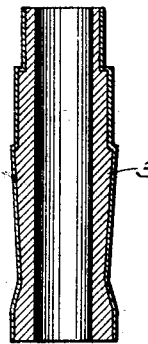
*Fig. 5*



*Fig. 6*



*Fig. 7*



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*Attorney*

# UNITED STATES PATENT OFFICE.

JOHN C. WAHL, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE WAHL COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF DELAWARE.

## FOUNTAIN PEN.

Application filed December 5, 1921, Serial No. 519,841. Renewed January 31, 1923.

*To all whom it may concern:*

Be it known that I, JOHN C. WAHL, a citizen of the United States, and a resident of the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Fountain Pens, of which the following is a specification.

My invention relates to fountain pens and has for its primary object the provision of a metal covering for the pen section of the all-metal fountain pen disclosed in application bearing Serial No. 457,873 filed April 2nd, 1921. The invention, however, is not limited to the particular pen shown in the aforementioned application but may be used with any of the present rubber pen sections in use today.

The metal covering for the pen section has two functions; first, to beautify the pen and, secondly, to prevent the expansion of the rubber enclosed within the metal covering. The expansion of the rubber causes the bore within the pen section to take an oval shape instead of round and inasmuch as the feed that fits in said bore is round, a larger passage will be formed through which the ink from the reservoir will flow in such a volume as to flood the pen. It is a well known fact that rubber expands and contracts at varying temperatures a great deal more than metal and for that reason the metal covering is provided for the pen section disclosed in my application bearing Serial No. 457,873 filed April 2nd, 1921.

Other objects of my invention will appear in the following specification in connection with the annexed drawing in which:

Fig. 1 is a side elevation of a fountain pen having my invention embodied therein.

Fig. 2 is a side elevation of a pen section.

Fig. 3 is a longitudinal sectional view of the pen section illustrated in Fig. 2 having the metal covering extending to the innermost shoulder of the pen section.

Fig. 4 is a perspective view of a pen section.

Fig. 5 is a longitudinal sectional view of Fig. 4 having the metal shell extending only to the shoulder that meets a corresponding shoulder on the pen barrel upon insertion of the pen section into the pen barrel.

Fig. 6 is another perspective view of a pen section.

Fig. 7 is a longitudinal sectional view of Fig. 6 showing the metal covering surrounding the entire outer circumference of the pen section.

In Fig. 1 the numeral 1 indicates the barrel of the all-metal pen disclosed in the heretofore mentioned application. The numeral 2 indicates an all-metal cap adapted to enclose the pen section when it is not in use and 3 is a metal covering for the pen section. As explained in the preface of this application, it has been found that the present rubber nibs when subjected to different temperatures expand and contract in proportion. When expansion takes place the bore changes its outline from round to oval, thus forming a larger passage for the ink to flow from the reservoir to the pen and inasmuch as the pen and feed are constructed to take care of only a certain volume of ink and are set for that volume, the increased flow of ink causes the pen to flood. In overcoming the expansion and contraction of the rubber pen section, much of the present day cause for leaky pens is done away with and from numerous tests it has been found that twenty-five per cent of the leaky pens returned to the assignee of this invention have been caused from the warping of the bore within the pen section. Inasmuch as metal expands and contracts only slightly with varied changes of temperature, it is found that by covering the rubber pen section with metal it will practically eliminate the leaking of fountain pens from the cause heretofore mentioned.

The metal covering is formed around the pen section in the following manner: The metal shells are stamped out to the forms indicated in Figs. 3, 5 and 7 and the melted rubber is simply poured therein and upon cooling the bore is drilled out.

Inasmuch as the invention is so simple, further description is not deemed necessary.

What I claim to secure by Letters Patent is:

1. The method of forming a pen section for fountain pens comprising a metal shell, molten rubber poured into said shell, and a longitudinal bore formed in said rubber.

2. The method of forming a pen section for fountain pens which consists in providing a metal shell, pouring molten rubber into said shell, and forming a longitudinal bore in said rubber.

3. The method of making a pen section for fountain pens which consists in forming a metal shell of the desired shape, and filling said shell with a longitudinally bored rubber section in a manner to take up all lost motion space to prevent expansion of the rubber in the shell.

4. The method of making a fountain pen section which consists in forming a metal shell of the desired shape, applying rubber to the inside of said shell in a manner to take up all lost motion space between

the rubber and the shell, and forming a longitudinal bore in said rubber.

5. A pen section for fountain pens, comprising an outer metal shell, an inner rubber section closely fitting throughout the entire inner surface of said shell, said rubber section having a longitudinal bore therethrough.

6. A pen section for fountain pens, comprising an outer metal shell formed with offsets, an inner rubber section closely fitting the interior of said shell and its offsets, said rubber section having a longitudinal bore therethrough to receive a feed member.

In witness whereof I have hereunto subscribed my name.

JOHN C. WAHL.