

March 2, 1926.

1,574,919

J. H. MURDOCK

FOUNTAIN PEN

Filed April 26, 1924

Fig. 1.

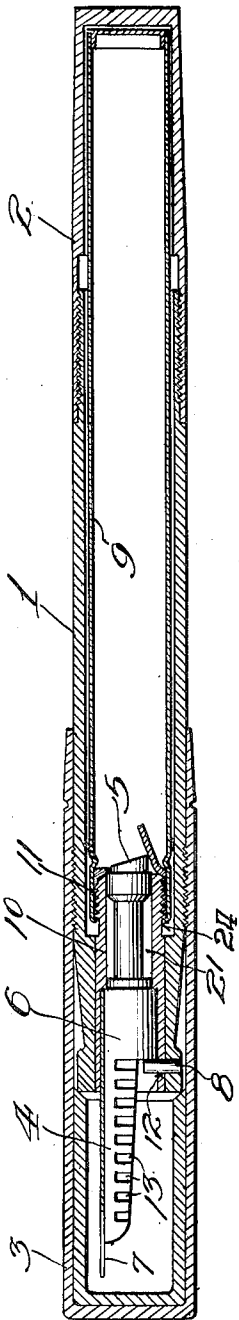


Fig. 3.

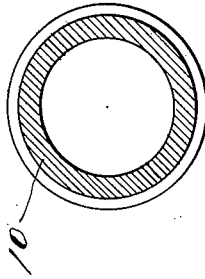
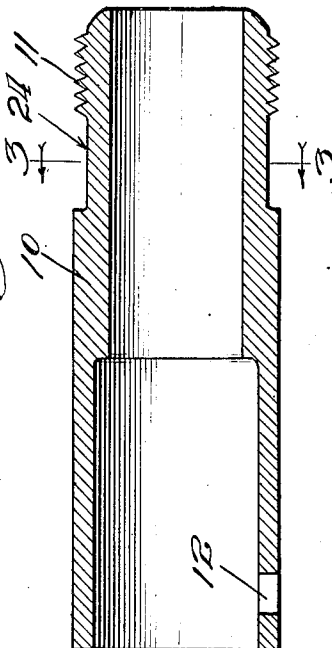


Fig. 2.



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UNITED STATES PATENT OFFICE.

JULIAN H. MURDOCK, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO POLLOCK PEN COMPANY, OF SOUTH BOSTON, MASSACHUSETTS, A CORPORATION OF DELAWARE.

FOUNTAIN PEN.

Application filed April 26, 1924. Serial No. 709,081.

To all whom it may concern:

Be it known that I, JULIAN H. MURDOCK, a citizen of the United States, residing in the city of Boston, county of Suffolk, and State of Massachusetts, have invented certain new and useful Improvements in Fountain Pens, of which the following is a specification.

This invention relates to improvements in fountain pens, and refers more particularly to that type of fountain pen in which the ink may be contained in an ink cartridge, which latter is adapted to be instantly placed in and removed from the barrel.

Among some of the objects of this invention are to provide a fountain pen in which a sleeve seal is removably positioned in the lower end of the barrel for preventing the ink from flowing too freely; to provide a construction in which the pen feed, sleeve seal and nib may be very easily assembled, and disassembled in a minimum of time; to provide a construction in which these various elements can be positioned in the barrel from the lower end, or that end adjacent the feed; to provide a construction by means of which an even, uniform flow of ink is insured and in which the danger of leaking is entirely eliminated, and in general to provide an improved structure of the character referred to.

In the drawing:

Fig. 1 is a longitudinal sectional view of a fountain pen of the cartridge type, illustrating my invention.

Fig. 2 is an enlarged longitudinal sectional view of the sleeve seal.

Fig. 3 is a cross sectional view taken on lines 3—3 of Fig. 2.

Referring in detail to the drawings, 1 designates the barrel having the top screw cap 2 and closure cap 3 for the end adjacent the feed. The feeding element 4 having the puncturing point 5 on its inner end is adapted to be inserted into the barrel and may be provided with the saddle portion 6 on which the nib 7 may be supported.

The feeding element 4 may be pressed in place in the barrel and held in position by a plug 8, which sets the feed in the pen barrel so that the puncturing point 5 will be accurately positioned relative the cartridge 9.

As a feature of the invention, a sleeve seal 10 having an exteriorly screw threaded

inner end 11, may be inserted into the pen barrel from the writing end to surround the feeding element, the screw threaded inner end 11 registering with the screw thread on the cartridge 9, as shown in Fig. 1. The sleeve 10 is provided with the aperture 12 to accommodate the plug 8.

That portion of the feeding element which supports the pen may be milled to form narrow slots shown at 13 and producing the usual type of comb feed well known in the art. The upper portion of the feed may be cut away to allow an excess of ink to pass into the expansion space 21, formed between the shoulders as shown in Fig. 1, when the sleeve is in place on the feed and the feed inserted in the pen barrel. It has been found, by providing an expansion space of this character, that the danger of an excess flow due to expansion, is practically eliminated.

With the normal functioning of the pen, there will be no appreciable accumulation of ink in this expansion space. The relatively blunt end of the puncturing point 5 presents a flat surface to the fluid body in the cartridge, to insure a proper feed.

The novel form of sleeve seal 10 which is shown and described, permits the nib and seal to be in perfect alignment, and by cutting away part of the seal as shown at 24, the danger of a variation in the ink is obviated. It will be immediately apparent that the pen and seal are readily disassembled with ease. Hence, a repair can be made with a minimum loss of time to the user.

From the foregoing description, it will be immediately apparent that the pen can be very readily assembled and disassembled, all the parts being inserted and removed from the front or feed end of the pen. To disassemble, the plug 8, nib 7 and feed 4 are first removed and lastly, the sleeve 10, it being understood, of course, that the cartridge 9 is first removed from the other end of the barrel.

I have shown and described my improved sleeve seal in connection with a cartridge pen. I do not wish to limit myself solely to use with a cartridge pen, as the particular form of sleeve seal may be utilized with the various types of fountain pens now in use.

I claim as my invention:

1. In a fountain pen, the combination with a barrel, of an ink feed inserted in one

- end of said barrel, a cartridge, having a puncturable seal screw threaded immediately adjacent said seal and insertable in the barrel, said ink feed being provided on its inner end with a puncturing point adapted to puncture the cartridge seal and project slightly into said cartridge beyond the seal, a sleeve seal insertable into said barrel from the ink feed end thereof and surrounding the inner end of said ink feed, said sleeve seal having a screw threaded inner end adapted to engage the screw threaded portion of the cartridge.
2. In a fountain pen, the combination with a barrel, of an ink feed inserted in one end of said barrel, a cartridge, having a puncturable seal internally screw threaded immediately adjacent said seal and insertable in the barrel, said ink feed being provided on its inner end with a puncturing point adapted to puncture the cartridge seal and project slightly into said cartridge beyond the seal, a sleeve seal insertable into said barrel from the ink feed end thereof and surrounding the inner end of said ink feed, said sleeve seal having an external screw threaded inner end adapted to engage the screw threaded portion of the cartridge.
3. In a fountain pen, the combination with a barrel, of an ink feed inserted in one end of said barrel, a cartridge having a puncturable seal screw threaded immediately adjacent said seal and insertable in the barrel, said ink feed being provided on its inner end with a puncturing point adapted to puncture the cartridge seal and project slightly into said cartridge beyond the seal, a sleeve seal insertable into said barrel from the ink feed end thereof and surrounding the inner end of said ink feed, said sleeve seal having a screw threaded inner end adapted to engage the screw threaded portion of the cartridge, said ink feed and sleeve seal being removable from or insertable in the barrel through the feed end thereof.
4. In a fountain pen, the combination with a barrel, of an ink feed inserted in one end of said barrel, a cartridge having a puncturable seal, screw threaded immediately adjacent said seal and insertable in the barrel, said ink feed being provided on its inner end with a puncturing point adapted to puncture the cartridge seal and project slightly into said cartridge beyond the seal, a sleeve seal insertable into said barrel from the ink feed end thereof and surrounding the inner end of said ink feed, said sleeve seal having a screw threaded inner end adapted to engage the screw threaded portion of the cartridge, a portion of said sleeve seal having frictional engagement with a portion of the barrel when inserted therein.
5. In a fountain pen, the combination with a barrel, of an ink feed inserted in one end of said barrel, a cartridge having a puncturable seal screw threaded immediately adjacent said seal and insertable in the barrel, said ink feed being provided on its inner end with a puncturing point adapted to puncture the cartridge seal and project slightly into said cartridge beyond the seal, a sleeve seal insertable into said barrel from the ink feed end thereof and surrounding the inner end of said ink feed, said sleeve seal having a screw threaded inner end adapted to engage the screw threaded portion of the cartridge, said sleeve seal being provided with an internal offset shoulder portion adapted to register with a shoulder on the ink feed to prevent excess inward movement of the ink feed.

JULIAN H. MURDOCK.