

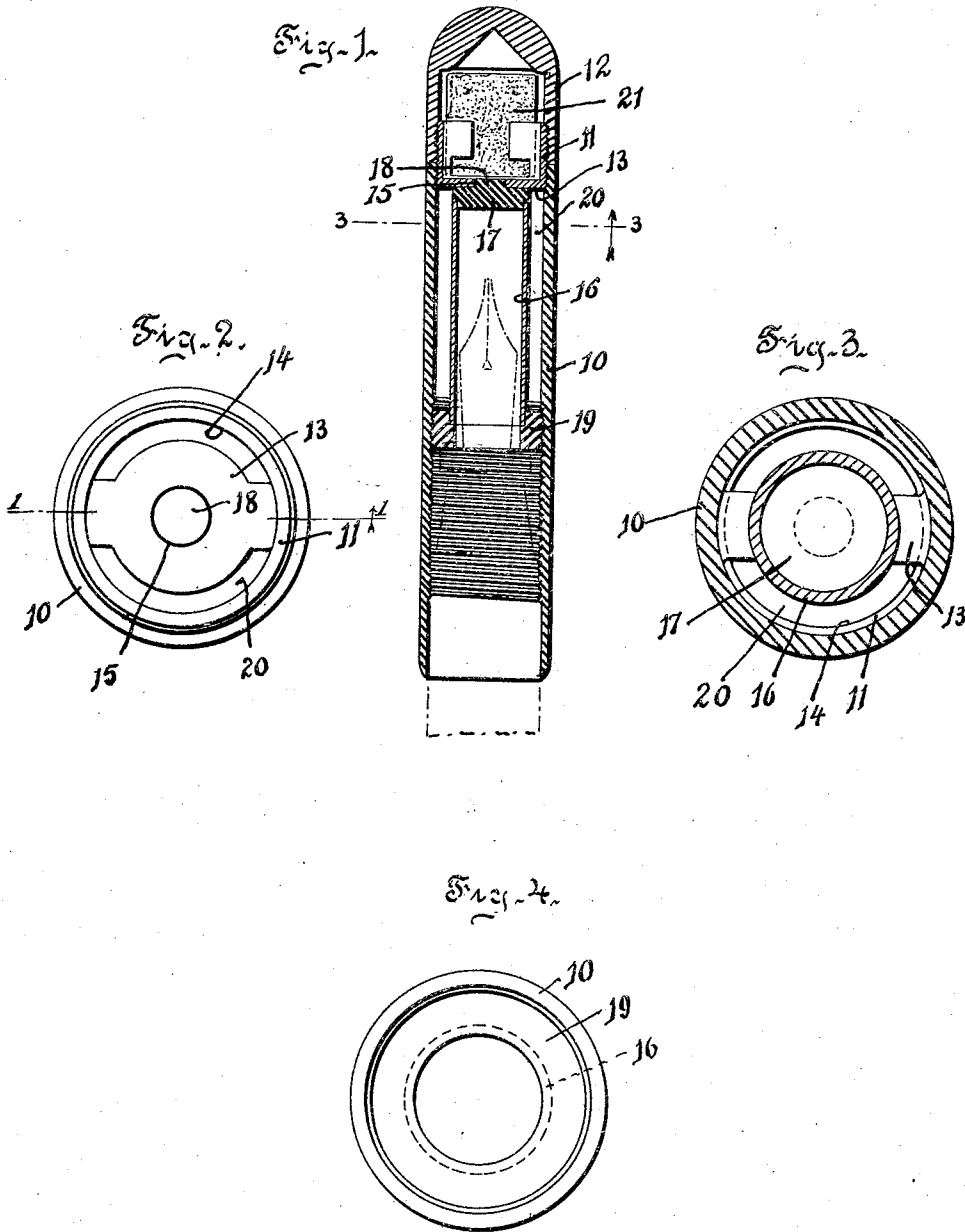
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FOUNTAIN PEN CAP

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UNITED STATES PATENT OFFICE

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FOUNTAIN PEN CAP

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My invention relates to fountain pen caps used with combinations of mechanical pencils and fountain pens, and is a modification of the structure disclosed in my application, Serial No. 428,590, filed February 15, 1930.

The object of the invention is to incorporate in the pen cap, the lead magazine and the eraser, so as to permit the use of a unitary barrel accommodating both the pen and pencil mechanisms.

Another object of the invention is to provide a pen cap having a nib cap within the pen cap, spaced therefrom and forming therewith an annular lead space accessible from the normally closed end of the pen cap.

In the appended drawings forming part of this application, Figure 1 is a vertical section through a cap on line 1—1 Figure 2; showing an embodiment of my invention, a portion of the pen and nib being shown in dash and dot line.

Figure 2 is an enlarged top plan of the cap with the tip cap and rubber removed.

Figure 3 is an enlarged cross-section on line 3—3, Figure 1, and

Figure 4 is a top plan on the open end of the cap.

In the drawings, 10 is a tube of material suitable for a pen cap, one end of which tube has a threaded recess for a threaded nipple 11. A portion of the nipple projects above the end of the tube to receive a tip cap 12 which closes this end of the tube and therewith forms the upper end of the pen cap. The nipple 11 has a bottom 13, in which annular slots 14 are punched out just inside of its inner wall. The bottom 13 has also a central aperture 15.

A trunnion 18 of a plug 17 engages the aperture 15, the diameter of the plug being such that the annular slots 14 remain unobstructed thereby. The plug 17 seals the upper end of a sleeve 16 so as to protect the edge of the tube. The lower end of the sleeve 16 is engaged by a ring 19 recessed to form an

abutment for the end of the tube, said ring 19 being threaded into the tube 10, and whereby it may be screwed tight within said tube against the bottom 13 of the nipple 11. The trunnion 18 and the ring 19 centering the sleeve 16 within the tube 10, provide between said sleeve and tube an annular space 20 which is the magazine for lead, accessible from the circular slots 14 in the bottom 13 of the nipple 11.

To provide sufficient annular space 20 for the leads without increasing the size of the tube 10, forming the cap of the pen, while providing a sufficiently large nib cap by means of the sleeve 16, it becomes necessary to make said sleeve 16 out of metal. To prevent the inner surface of the metal surface from ink corrosion, it is either coated or plated. I prefer to gold plate, but a composition of rubber may be deposited on the surface of the sleeve exposed to ink corrosion. The ring 19 and the plug 17 are made of hard rubber, which are by their nature immune to corrosion by ink.

The circular slots 14 are normally closed by a removable eraser 21, yieldingly positioned in the nipple 11 and normally housed in the tip cap 12.

I claim:

1. A fountain pen cap comprising a tube, a nipple in one end thereof, a tip cap removably connected to the nipple, a sleeve within the tube of a diameter to provide an annular lead space between the tube and sleeve, a plug closing one end of the sleeve, said nipple having a bottom with annular slots therein and a central aperture, said plug having a trunnion for engaging the central aperture to center the sleeve within the tube and register the annular slots in the bottom of the nipple with the annular space formed by the sleeve and tube, and a ring fitted from the open end of the tube, engaging the end of the sleeve for centering said end of the sleeve in

the tube and for locking the sleeve and plug against the bottom of the nipple.

2. A fountain pen cap comprising a tube, a nipple in one end of the tube, a tip cap engaging the nipple and closing the tube, a sleeve within the tube of a diameter to provide an annular lead space between the tube and sleeve, a plug closing one end of the sleeve, said nipple having a bottom with a central aperture therein, said plug having a trunnion for engaging the aperture of the bottom to center the end of the sleeve in the tube, said bottom having means giving access to the annular space formed by the sleeve and tube, and a ring threaded through the open end of the tube and engaging the other end of the sleeve for locking said sleeve and plug against the bottom of the nipple.

3. A fountain pen cap comprising a tube, a nipple in one end of the tube, a tip cap for the nipple closing the end of the tube, a pen nib cap in said tube forming therewith an annular lead space, and a ring at the open end of the nib cap engaging the tube and closing the annular space between the nib cap and the tube, said nipple having a bottom with a central aperture therein, and annular slots through which access may be had to the annular lead space formed by the nib cap and tube, said nib cap having a central trunnion for engaging the central aperture of the nipple bottom.

4. A fountain pen cap comprising a tube, a nipple in one end of said tube, a tip cap for said nipple, a metallic sleeve within the tube, of a diameter to provide annular lead space between the tube and sleeve, a hard rubber plug engaging one end of the sleeve, said nipple and plug having centering means for properly spacing the end of the sleeve at the plug in the tube, said nipple having means giving access to the annular space formed by the sleeve and tube, and a ring of hard rubber threaded into the tube and engaging the other end of the sleeve, said ring locking said sleeve with the plug against the nipple within the tube, said metallic sleeve having its inner periphery coated to render it immune to ink corrosion.

5. A fountain pen cap comprising a tube, a nipple in one end of the tube, a tip cap for said nipple closing the end of the tube, a metallic sleeve within the tube, of a diameter to provide an annular lead space between the tube and sleeve, a hard rubber plug engaging one end of the sleeve and protecting the edge thereof, said plug and nipple having centering means for properly spacing the sleeve within the tube, and a hard rubber ring threaded through the open end of the tube and engaging the sleeve to protect its edge and locking said sleeve and plug against the nipple within the tube, said nipple having means giving access to the annular space

formed by the sleeve and tube, said sleeve being plated to protect it from ink corrosion.

6. A fountain pen cap comprising a tube, a tip cap at upper end of said tube, a sleeve within the tube, of a diameter to provide lead space between the tube and sleeve, and means for locking said sleeve at the ends thereof in the tube, the locking means at the upper end of the tube being adapted to provide access to the lead space from the upper end of the tube, said sleeve being protected from corrosion caused by ink.

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