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CAP CONSTRUCTION

Filed July 22, 1929

Fig. 1.

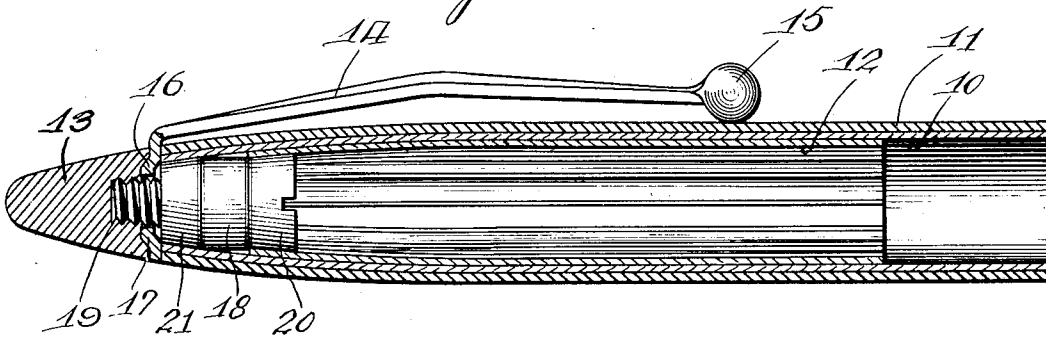


Fig. 2.

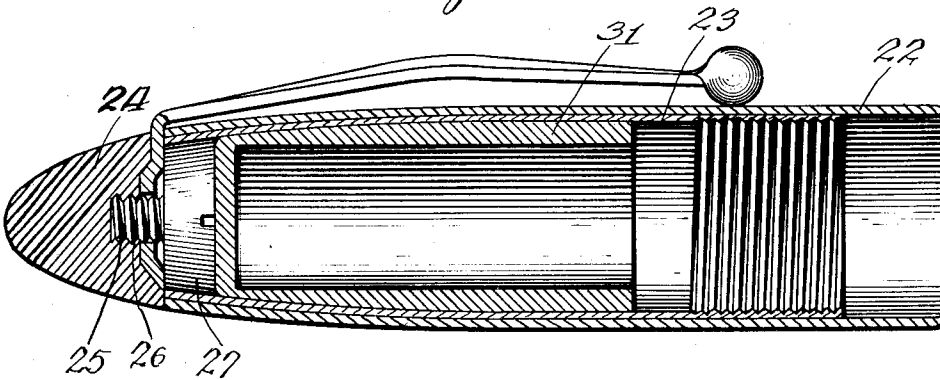
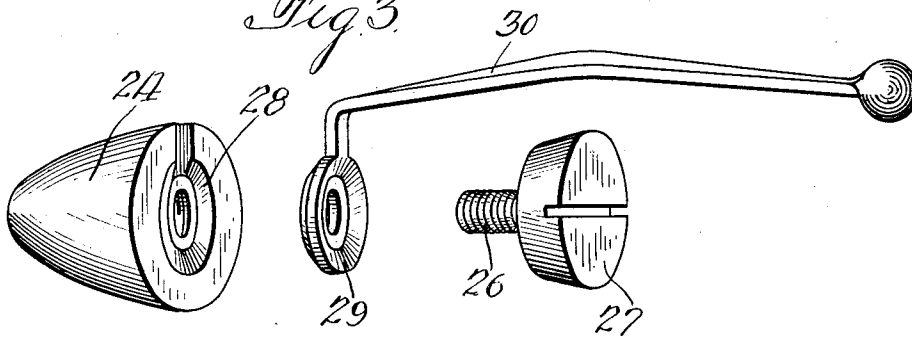


Fig. 3.



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UNITED STATES PATENT OFFICE

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CAP CONSTRUCTION

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This invention relates to a cap construction and has special reference to a cap construction for use in connection with writing instruments and the like.

5 More particularly, this invention relates to a cap construction and to a means for securing a pocket clip to the casing of caps for lead pencils and fountain pens for retaining the same against displacement from a pocket.

10 The specific class of writing instruments to which the cap construction belongs is that class having a metallic inner casing and a composition outer casing, the shape of the cap being conical or tapered at the closed end thereof.

15 Of very recent date there has come into great favor, writing instruments having tapered or conical outer ends. This substantially Zeppelin shape is given to fountain pens, pencils and combination fountain pens
20 pens, pencils and combination fountain pens and pencils. In order to provide a graceful, slender, stream-line instrument of the composition type it has become desirable to provide a casing of a thin outer composition shell superposed on a thin outer metal shell instead
25 of a substantially heavy composition casing. In this manner, the casing may be reduced in diameter to a great degree. The material of the outer composition and inner metal shells extend substantially the entire length
30 of the cap to be terminated by a tip of composition material in a solid piece.

In order that these members may be secured together an insert is provided within
35 the casing and comprises a head portion having converging side walls, (when viewed in cross section) the head portion having a reduced threaded portion extending therefrom. The converging walls of the insert engage the tapered or converging walls of the inner metallic shell, which latter, in turn, engages the
40 converging walls of the outer composition shell, the threaded extension of the insert engaging an internally threaded aperture of the composition tip to hold all of the elements to-

gether. A clip having a ring-shaped extension is assembled together with the aforementioned construction, the ring-shaped portion being engaged between the tip and the insert.

50 One of the objects of this invention is to provide a tapered cap construction for a thin model writing instrument, which cap construction comprises an inner metallic shell, an outer composition shell and a solid composition tip portion, these elements being secured together by an insert.

Another object of this invention is to provide a clip for association in a tapered cap of the type hereinbefore recited wherein the clip is secured between the solid tip and the inner and outer shell members.

Another object of this invention is to provide a common securing means for all of the elements entering into the construction of a tapered cap for a writing instrument, the construction comprising inner and outer shell members, an operating sleeve, a clip and a solid tip.

Other objects and advantages will hereinafter be more particularly pointed out and for a better understanding of the nature, scope and characteristics of this invention reference may now be had to the following description and the accompanying drawing,
75 in which latter:

Figure 1 is a longitudinal sectional view of the cap construction for a mechanical pencil illustrating the present invention.

Fig. 2 is a view similar to Figure 1 showing a cap for association with a fountain pen; and

Fig. 3 is a perspective view of the securing elements employed in the device of Fig. 2.

Referring now to the drawing and more particularly to Figure 1 the cap shown therein comprises an inner metallic shell 10 and an outer composition shell 11. By reason of providing these two shell members in a complementary relation, their combined thick-

nesses are substantially less than the thickness of a casing which would ordinarily be formed were a composition material used alone and present as durable if not more durable a construction. The construction shown herein is for a mechanical pencil wherein the shells 10 and 11 form a casing which is adapted to receive therein a rotatable pencil lead moving mechanism of any of the well-known types, both of the casings being tapered or conically shaped toward the closed end thereof and having the usual axial bore therethrough for receiving a sleeve 12, the latter having longitudinally extending ridges spaced peripherally thereof for engaging registering ridges on the outer wall of a tube for operating the lead propelling, expelling and repelling mechanism. The sleeve 12 is tapered to conform with the tapers of the shells 10 and 11 and snugly engages the inner bore of the shell 10. The sleeve 12 extends to within a spaced distance of the outer ends of the shells 10 and 11 for a reason which will hereinafter be more fully recited.

A solid tip 13 preferably of a composition material similar to the composition material of the shell 11 extends flush with the outer walls of the shell 11 and provides a continuous tapered effect to the cap, the outer end thereof being joined by a hemisphere.

A clip having a main body portion 14 and a ball-shaped outer end 15 is secured by means of a ring-shaped extension 16 thereof being disposed between the tip 13 and the shell members 10 and 11. The tip 13 is provided with an axial recess 17, the peripheral wall thereof preferably converging, when viewed in cross section. It is desirable, although not particularly essential, that such a recess 17 is formed in order to align the axes of the ring and the tip 13 so that the peripheral edge of the ring 16 and the peripheral coextensive portion of the tip 13 be flush, the ring-shaped portion 16 of the clip having a depressed portion to conform to the recess portion of the clip.

An insert comprising a head portion 18 and a threaded extension 19 operates as a common means for securing all of the aforesaid elements in an assembled relation. The head portion 18 of the insert is divided into three component parts, namely, a central portion and end portions, the peripheral walls of the latter portions converging in the same direction toward the threaded extension 19 and the peripheral wall of the central portion having the same diameter throughout the length thereof. The outer converging end portion 20 of the head 18 engages the lower end of the converging peripheral wall of the sleeve 12 and the converging portion 21 of the head 18 engages the converging peripheral wall of the lower end of the metallic shell 10. The shell 11 is, of course, held against movement rearwardly of the insert

by means of the converging portion of the metallic shell 10. The sleeve and the two shells are thus held in position against the ring portion 16 of the clip, which latter is held in the recess of the tip 13 by reason of the extension 19, the latter being threaded in the internally threaded aperture of the tip 13.

Referring now more particularly to Figures 2 and 3 of the drawing a cap for a fountain pen is shown comprising an outer composition shell 22 formed on an inner metallic shell 23 both of the shells being tapered towards one end. A tip 24, similar in most respects to the tip described in the previous embodiment, is provided with an axial internally threaded aperture 25 for receiving a projection 26 of a head 27 of an insert. The insert 27 is provided with peripheral walls converging toward the threaded extension 26, when viewed in cross section, the walls of the insert engaging the converging walls at the lower end of the metallic insert 23.

The tip 24 is provided with an internal recess 28 for receiving a ring-shaped projection 29 of the body portion 30 of the clip. In this embodiment the material of the ring-shaped portion 29 does not extend to the outer periphery of the tip 24, but is embedded within the construction. It may be desirable in some instances to provide such a construction. It also may be desirable to show the peripheral edge of the ring-shaped member as in the previously described embodiment for purposes of ornamentation. The tip 24 is urged against the ends of the shells 22 and 23 by reason of the insert 27 being tightened which action urges the edges of the shells 22 and 23 against the end of the tip 24. A sealing member 31 is generally provided within the inner bore of the cap and has no interference with the securing means of the clip, the clip being secured to the cap without any additional means such as solder, screws, rivets or the like, but being held in position by a securing member common to the various other elements entering into the construction.

While but two forms of this invention are herein shown and described, it is to be understood that various modifications may be apparent to those skilled in the art without departing from the spirit and scope of this invention and, therefore, the same is to be limited only by the scope of the prior art and the appended claims.

I claim:

1. A cap construction for writing instruments comprising an outer shell superposed on an inner shell, a tip for closing one end of said shells, said shells converging in diameter toward said closed end, and a securing member disposed interiorly and axially of said inner shell and having a converging edge for

engaging the converging end of said shell, said securing member engaging said tip for holding said shells and said tip in a fixed assembled relation.

5 2. A cap construction for writing instruments comprising an outer shell superposed on an inner shell, a tip for closing one end of said shells, said shells converging in diameter toward said closed end, a clip having a projecting portion for engagement between said tip and said shells, and a securing member disposed interiorly and axially of said inner shell and having a converging edge for engaging the converging end of said shell, said 10 securing member engaging said tip for holding said shells, said clip and said tip in a fixed assembled relation.

15 3. A cap construction for writing instruments comprising an outer shell superposed on an inner shell, a sleeve for frictional engagement with the lead moving mechanism of said instrument within said inner shell, a tip for closing one end of said shells, said shells and said sleeve converging in diameter toward 20 said closed end, and a securing member having a portion disposed interiorly and axially of said inner shell and a second portion disposed interiorly and axially of said sleeve, said portions converging to engage the ends of said 25 inner shell and said sleeve, said securing member engaging said tip to hold said shells, said sleeve and said tip in a fixed assembled relation.

30 4. A cap construction for writing instruments comprising an outer shell superposed on an inner shell, a tip for closing one end of said shells, said shells converging in diameter toward said closed end, and an insert disposed interiorly and axially of said inner shell comprising a head portion of circular cross section and a reduced threaded extension for engaging an internally threaded aperture in said tip, said head portion having a converging peripheral edge for engaging the converging 35 end of said inner shell for holding said shells and said tip in a fixed assembled relation.

40 5. A cap construction for writing instruments comprising an outer shell superposed on an inner shell, a tip for closing one end of said shells, said shells converging in diameter toward said closed end, a clip having a substantially ring-shaped projection for engagement between said tip and said shells, and an insert disposed interiorly and axially of said inner shell comprising a head portion of circular cross section having a reduced threaded extension thereon extending through said ring-shaped projection for engaging an internally threaded aperture in said tip, said 45 head portion having a converging peripheral edge for engaging the converging end of said inner shell for holding said shells, said clip and said tip in a fixed assembled relation.

50 6. A cap construction for writing instruments comprising an outer composition shell

superposed on an inner metallic shell, a tip of a substantially conical shape and of solid composition for closing one end of said shells, said shells converging in diameter toward said closed end, and an insert disposed interiorly and axially of said inner shell comprising a head portion of circular cross section having a reduced threaded extension thereon for engaging an internally threaded aperture in said tip, said head portion having a converging peripheral edge for engaging the converging end of said inner shell for holding said shells and said tip in a fixed assembled relation.

In witness whereof, I have hereunto subscribed my name.

WILLIAM R. CUTHBERT.

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