

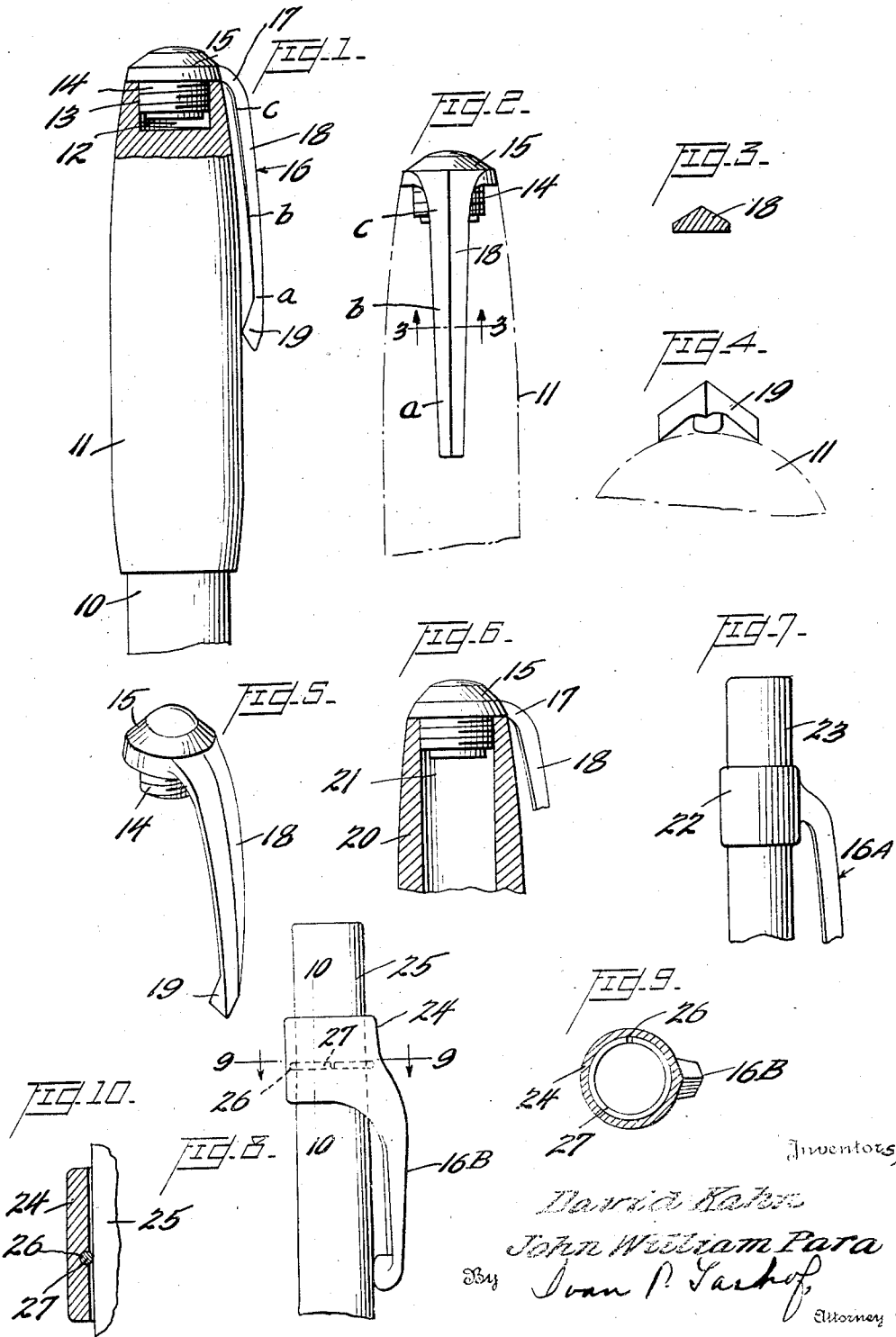
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WRITING INSTRUMENT ASSEMBLAGE

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WRITING INSTRUMENT ASSEMBLAGE

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The invention aims to provide a new and improved clip for holding a pen or pencil in a garment pocket, or connecting it with any other desired support, for example a partition web in a ladies' pocketbook or a brief case. Heretofore it has been customary to form such clips from metal and they have been prone to tarnish and/or corrode, not only becoming unsightly and often weakened, but frequently staining the garments or the like upon which they have been clipped. While this has heretofore been considered a more or less "necessary evil," the present invention aims to overcome the difficulty by constructing the clip from a non-tarnishable and non-corrosive plastic material.

It has in the past been customary to attach the metal clips by means of rivets, spurs, or solder, or by means of a threaded plug passed through a lateral collar on the upper end of the clip, but the present invention aims to provide an improved means of attachment in which a rugged attaching member is formed integrally with the clip. This attaching member may be in the form of a headed plug to be secured in the upper end of a pen cap for example, the head of said plug constituting an attractive tip for the cap or the like, as well as insuring ample material at the juncture of the clip and plug, or the attaching member may be in the form of a sleeve adapted to be tightly screwed to the body member of the writing instrument.

Heretofore, particularly with clips for other than metal pens or pencils, it has been practically impossible to provide a clip of a color permanently matching that of the pen or pencil, due to chipping and wearing off of any color coat applied to the clip. The present invention however aims to overcome this difficulty and provides for a permanently colored clip whether matching or contrasting with the color of the pen or pencil.

Quite frequently, mechanical pencils are provided with a lead magazine having a transparent side wall through which the contents may be viewed, but the metal clips heretofore used have interfered with the view. The present invention therefore aims to provide a transparent clip free from this objection.

It is one of the objects of the present invention to provide, in combination with a writing instrument having a body member made of a plastic material, a plastic clip provided with means to secure the clip to said body member, said clip being provided with a relatively resilient elongated clip portion projecting downwardly from said clip securing means in substantial parallel-

ism with the writing instrument body member, said clip member being characterized by the properties of being non-tarnishable and non-corrosive.

It is still further the object of the present invention to provide a clip having a clip sleeve which encompasses the elongated body member of the writing instrument and is tightly secured thereto, said sleeve being shrunk on to the body member or cemented thereto or tightly held thereon.

Another object of the present invention is to provide the sleeve member of the clip with an internal circumferential groove, said groove having seated therein a metal ring, said ring functioning to reinforce said sleeve and to hold or assist in holding the sleeve portion to the writing instrument body member.

It is a further object of the present invention to definitely assure the tight secureness of the clip to a writing instrument body member, regardless of the fact that there may be minute variations in the cylindrical or otherwise shaped body member of the writing instrument.

A still further object of the present invention is to provide a transparent clip which, in combination with a transparent barrel of a pencil having a magazine therein, permits the pencil leads of the magazine to be visible through the transparent clip member.

A still further object of the present invention is to provide a clip which is made from a plastic material which has the property of shrinking upon the instrument body member, after being applied thereto, thereby becoming permanently attached to the instrument body member. Such materials are the nitrocelluloses, the cellulose ethers, and the like.

With the foregoing general objects in view, the invention resides in the novel subject matter hereinafter described and claimed, and shown in the accompanying drawing in which:

Figure 1 is a side elevation, partly broken away, of an article clip in accordance with the present invention in position on a fountain pen cap;

Figure 2 is a front elevation of the clip of Fig. 1;

Figure 3 is a section of the clip portion taken on the line 3—3 of Fig. 2;

Figure 4 is an end view of the clip of Figs. 1 and 3;

Figure 5 is a perspective of the clip according to the present invention.

Figure 6 is a vertical section of a modified form

of pen cap combined with the clip of the present invention.

Figure 7 is a modified form of clip adapted to be mounted firmly on a pencil barrel.

Figure 8 is a view similar to Fig. 7, but showing a further variation.

Figure 9 is a horizontal sectional view on line 9—9 of Fig. 8.

Figure 10 is an enlarged detailed sectional view taken on line 10—10 of Fig. 8.

Referring to the drawing in general, and particularly Fig. 1, a fountain pen as indicated at 10 is provided with a cap 11. The upper portion of the cap shown in section is provided with an axial bore 12 which may be molded therein, or cut therein in any suitable manner. Preferably, though not necessarily, the cap 11 is molded of a suitable plastic material conventionally used for fountain pens, as for example hard rubber, cellulose acetate, nitro-cellulose, or any other plastic known in the art. The bore 12 is preferably provided with threads at its upper end indicated at 13. Threaded into the bore 12 is a supporting member 14 having an integral button or head 15, said head being integral with the upper end of a plastic clip member indicated in general at 16. As shown in the drawing, the clip button 15 is of a generally frusto-conical shape, although it may be of any other shape which lends itself to ease in molding.

It will also be noted, that the supporting portion 14 provided with threads which are adapted to cooperate with the threads 13 of the fountain pen cap 11, projects centrally from the lower portion of the button 15. Projecting from the lower edge of the button 15 is a neck portion 17 merging into an elongated clip portion proper 18.

As shown particularly in Fig. 3, the clip portion 18 is of a generally triangular shape in transverse section, with its greatest width or base adjacent the cap 11. This particular shape of the elongated portion 18 has been found desirable in order to provide sufficient strength and resilience. In actual practice, in an elongated portion approximately $1\frac{1}{4}$ "', the thickness of the portion 18 at the section indicated at *c* is approximately .073"', at the point indicated at *b* .015"', and at the point indicated at *a* .03"'. Similarly the width of the member 18 as shown in Fig. 2, at *c* is .0245"', at *b* .0135"' and at *a* .121"'. It will be noted that the lower end of the clip is provided with a detent or ball 19 having relatively straight sides as shown in particular in Fig. 4, which lends itself more readily to a molding operation.

The integral clip member thus previously described may be molded from a number of plastic materials, provided these materials are capable of being molded either in their incompletely polymerized form, or in their final form, providing they are thermoplastic and capable of being softened by means of a solvent. It is essential, however, that these materials be sufficiently resilient and non-deformable so that the clip portion 18 may be bent away from the cap 11 and will have a tendency to return to the position shown in Fig. 1, this tendency being of sufficient degree to firmly hold the cap 11 and the instrument attached thereto in a pocket or on a strip of cloth or other material.

It will be noted particularly that when the clip of the present invention is molded of plastic material, it is desirable that it possess a tapering cross-section, with its greatest cross-sectional area adjacent the neck 17.

Referring to Figure 6, it will be noted that a

modified form of pen cap is here shown wherein the cap 20 is provided with a bore 21 extending entirely through the cap. In this form of the invention, the supporting portion 14 which is threaded into the end of the cap also functions as a closure for the cap end.

Referring to Figure 7, there is shown a modified form of a clip 16A including a supporting portion of sleeve 22 which is formed from a plastic material which is treated prior to the time it is slipped over the barrel 23 and then allowed to shrink onto the barrel after being applied. Some cellulose ethers and cellulose esters shrink when water is evaporated therefrom and those materials may be used to form the clip member when it is desired to shrink the clip on the writing instrument body member. Certain other plastic materials expand when heated and shrink when cooled. In this form of the invention, sleeve 22 is united to the elongated body member 23 of the writing instrument by heating the sleeve 22 with steam or hot water, then slipping the sleeve over the body member 23 and thereafter allowing the sleeve member 22 to cool and shrink about the body member 23 to thereby firmly unite the sleeve member of the clip to the body member of the writing instrument.

In Figures 8, 9 and 10 the clip 16B is provided with a complete integral attaching sleeve 24 which may be tightly secured to the body member 25 in the manner heretofore set forth as shown in Figure 7. Alternatively the clip 16B may be forced endwise onto the body member 25 and mechanical means provided for tightly securing the sleeve 24 to the body member 25. The sleeve 24 may be formed with an internal circumferential groove 26 in which is seated a ring 27, preferably a spring ring of steel, Monel metal, chrome steel, or any stainless steel or alloy, said ring contacting with the body member of the writing instrument and tightly holding the clip thereto. The ring 27 functions to reinforce the sleeve 24 and enables clips to be fitted on to the body member even when there are certain variations in the diameter of the body member or the contour of the body member. In other words, the structure shown in Figures 8, 9 and 10 functions to automatically compensate for slight inaccuracies in the writing instrument body member to which the clip is to be attached. The metal ring 24 may be snapped into a pre-formed groove on the sleeve, or may be imbedded on the sleeve at the time when the clip member is molded or otherwise formed. Preferably the ring 27 is of circular cross section with its convex inner peripheral surface projecting inwardly a slight distance beyond the inner surface of sleeve 24. This permits the ring to contact the body member 25 with optimum tightness when the assembled sleeve is shrunk on to the body member or is forcibly pushed thereon from one end of the body member.

Prior to forcing the clip 24 on to the body member 25 the inner surface of the sleeve may be moistened at various areas with a solvent for the plastic material of the sleeve and clip. This will automatically form a cement which will firmly unite the interior surface of the sleeve member 24 to the barrel member 25 on evaporation of the solvent. Suitable solvents are those ordinarily used for softening nitrocellulose, cellulose acetate, celluloid and the like. Such solvents include acetone, methyl ethyl ketone and the usual lacquer solvents. Preferably the sleeve 24 is spot-welded to the barrel member 25 by the

cementing method above set forth, and this spot welding may be used in connection with a metal ring such as set forth in Figure 8, or the grooving of the interior walls of the sleeve may be omitted together with the metal ring and reliance placed upon the spot welding to effectively and tightly mount the clip upon the instrument body member. If the ring member is used, spot welding should be at a point remote from the ring so as to leave the ring free to contract and expand in its groove.

Desirably the clip may be formed of a transparent plastic. When a clip of this character is mounted on a pencil provided with a transparent barrel through which the supply of lead may be seen, the transparent clip will not interfere with the view through the barrel. Thus the clip of Figures 7 and 8 which is shown mounted on a pencil barrel, which may contain a reservoir for leads, would not interfere with the view of the leads through the barrel.

In addition to the aforementioned advantages, a clip of the present construction may be colored to conform to the writing instrument barrel or to contrast therewith. Naturally to durably color a metal clip would be relatively impractical.

Further, the clip of the present invention may easily have impressed therein insignia or initials which may be thus easily assembled with the writing instrument to impart thereto a personalized touch.

The clip in accordance with the present invention is practically indestructible and is not affected by body acids or alkaline constituents which produce tarnishing in metal clips. Although it is preferable that the clip of the present invention be molded from a plastic, it is to be understood that the clip may be cast from a suitable plastic.

Thermoplastic materials which are suitable for use in accordance with the present invention are:

1. Phenol-formaldehyde resins, as for example Bakelite which is thermosetting in character. In other words, if Bakelite were used for molding or forming the pen of the present invention, the molding composition in its incompletely set form would be molded into shape and then heated to produce the final product by polymerization.

2. Furfural resins. These resins are also thermosetting in character and would be subsequently heated for complete polymerization after forming.

3. Urea and thiourea resins. Resins of this character are also thermosetting in character.

4. Glyptal. Some of the glyptal resins are thermosetting, while others are thermoplastic. In other words, the thermoplastic resins and glyptal resins when used can be shaped by applying heat to the desired form herein disclosed after having been initially supplied in bars or tubes.

5. Vinyl and styrene resins. These resins are generally produced by polymerizing styrene or vinyl-benzene. They are highly thermoplastic in character and easily molded by the application of heat. In many forms they are clear or colorless and are sufficiently tough and elastic for the purpose of the present invention.

6. Acrolein and acrylic acid resins. An example of this type of resins is that known as "Lucite." The acryl or acrolein resins are optically clear and have a high index of refraction. They present an extremely attractive appearance for a clip of a pen or the like of this character for this

reason. In addition they are extremely tough and sufficiently flexible for the present purposes.

7. Cellulose esters and ethers. Example of this type of plastic are cellulose acetate and cellulose nitrate. These plastics are thermosoftening; in other words, they soften when heated and can be formed by suitable dies into a pen as set forth.

8. Hard rubber. Hard rubber differs from the soft flexible type of rubber in that it contains from 20% to 30% of sulphur. Hard rubber compositions in general are thermoplastic and can be molded to a suitable shape such as the clip of the present invention.

9. Chlorinated rubber. This material is thermoplastic in character and in sufficient thickness represents a thermoplastic material within the range of this invention. A form of chlorinated rubber is that product sold in sheets under the trade name of "Pliofilm."

10. Synthetic rubber compositions. These in general exhibit the same qualities as hard rubber and can be similarly used.

It is to be understood that mixtures of plastic materials may be suitable in the present invention and that stiffeners or fillers such as fibrous materials, as well as plasticizers may be essential to produce a material having the desired qualities.

As the plastic from which the clip is formed is always non-tarnishable and non-corrosive, it is proof against discoloration and deterioration and moreover it cannot stain any article of apparel or other support upon which it is clipped.

From the foregoing it will be seen that novel provision has been made for carrying out the objects of the invention but attention is invited to the possibility of making variations other than those disclosed.

What is claimed is:

1. In combination with a pencil provided with a transparent barrel and a magazine therein having a visible supply of pencil leads, a plastic non-tarnishable non-corrosive clip member provided with a sleeve encompassing said barrel member and having an internal circumferential groove, a metal ring seated in said groove and contacting with said body member to hold said clip member on said barrel, and a relatively resilient elongated clip portion integrally united with the sleeve member and extending in substantial parallelism with the pencil barrel, said elongated clip portion being extremely tough and sufficiently flexible to spring outwardly from said barrel and return in proximity thereto as a clip therefor, the transparent clip permitting the lead supply to be visible at all times.

2. In combination with a pencil provided with a transparent plastic barrel and a magazine therein having a visible supply of pencil leads, a plastic non-tarnishable non-corrosive clip member provided with a sleeve encompassing said barrel member and having an internal circumferential groove, a metal ring seated in said groove, the sleeve member being cemented to said pencil barrel at a point remote from said metal ring, by a cement resulting from the action of a solvent on the material of said sleeve member and barrel and a relatively resilient elongated clip portion integrally united with the sleeve member and extending in substantial parallelism with the pencil barrel, said elongated clip portion being extremely tough and sufficiently flexible to spring outwardly from said barrel and return in proximity thereto as a clip therefor, the transparent

clip permitting the lead supply to be visible at all times.

3. In combination with a writing instrument having a body member made of plastic material, a plastic clip provided with a clip sleeve encompassing said elongated body member and cemented thereto, with a plastic cement resulting from the action of a solvent on the material of said body and sleeve members and a relatively resilient elongated clip portion integrally united with the sleeve portion, said elongated clip portion extending in substantial parallelism to the body member and being extremely tough and sufficiently flexible to spring outwardly from said body and to return in proximity thereto as a clip therefor, said clip comprising a non-tarnishable and non-corrosive material preventing discoloration and deterioration of the clip and the staining of garment material to which the clip may be attached.

4. In combination with a writing instrument having a body member made of plastic material, a plastic clip provided with a clip sleeve encompassing said elongated body member, said sleeve having an internal circumferential groove and a metal ring seated in said groove and contacting with said elongated body member to hold said clip on said writing instrument body member, a relatively resilient elongated clip portion integrally united with said sleeve member, said elongated clip portion extending in substantial parallelism to the body member and being extremely tough and sufficiently flexible to spring outwardly from said body member and to return in proximity thereto as a clip therefor, said clip comprising a non-tarnishable and non-corrosive material preventing discoloration and deterioration of the clip and the staining of garment material to which the clip may be attached.

5. In combination with a writing instrument having a body member made of plastic material, a plastic clip provided with a clip sleeve encompassing said elongated body member, said sleeve having an internal circumferential groove and a metal ring seated in said groove, the inner periphery surface of said metal ring projecting slightly beyond the inner surface of said sleeve, the so arranged sleeve contacting the said elongated body member to hold said ring in tight engagement with the body member, a relatively resilient elongated clip portion integrally united with said sleeve member, said elongated clip portion extending in substantial parallelism to the body member and being extremely tough and sufficiently flexible to spring outwardly from said body member and to return in proximity thereto as a clip therefor, said clip comprising a non-tarnishable and non-corrosive material preventing discoloration and deterioration of the clip and the staining of garment material to which the clip may be attached.

6. In combination with a pencil provided with a transparent plastic barrel and a magazine therein having a visible supply of pencil leads, a plastic non-tarnishable non-corrosive clip member provided with a sleeve encompassing said barrel member and having an internal circumferential groove, a metal ring seated in said groove, the

sleeve member being spot welded to the said pencil barrel at a point remote from said metal ring by a plastic cement composed of material of said members, and a relatively resilient elongated clip portion integrally united with the sleeve member and extending in substantial parallelism with the pencil barrel, said elongated clip portion being extremely tough and sufficiently flexible to spring outwardly from said barrel and return in proximity thereto as a clip therefor, the transparent clip permitting the lead supply to be visible at all times.

7. In combination with a pencil provided with a transparent plastic barrel and a magazine therein having a visible supply of pencil leads, a plastic non-tarnishable non-corrosive transparent clip member provided with a sleeve encompassing said barrel member and having an internal circumferential groove, a metal ring seated in said groove, said ring being composed of a metal inhibiting staining action on said sleeve and barrel members, said sleeve member being cemented to said pencil barrel at a point remote from said metal ring by a cement resulting from the action of a solvent on the material of said sleeve member and barrel, and a relatively resilient elongated clip portion integrally united with the sleeve member and extending in substantial parallelism with the pencil barrel, said elongated clip portion being extremely tough and sufficiently flexible to spring outwardly from said barrel and return in proximity thereto as a clip therefor, the transparent clip permitting the lead supply to be visible at all times.

8. In combination with a writing instrument having a writing member made of transparent plastic material, a transparent plastic clip provided with a clip sleeve encompassing said elongated body member, said sleeve having an internal circumferential groove, a metal ring seated in said groove, said metal ring being composed of a material which inhibits staining action on said sleeve and body member, said sleeve member being cemented to said body member at a point remote from said metal ring with a cement resulting from the action of a solvent on material of said body member and sleeve member, the inner periphery surface of said metal ring projecting slightly beyond the inner surface of said sleeve, the so-arranged and cemented sleeve contacting said elongated body member to hold said ring in tight engagement with the body member.

9. In a clip for a writing instrument having a body member, a clip sleeve encompassing said body member and shrunk thereon, said clip member having a relatively resilient elongated clip portion united with the sleeve portion, said elongated clip portion extending in substantial parallelism to the body member and being extremely tough and sufficiently flexible to spring outwardly from said body member and to return in proximity thereto as a clip therefor, said clip comprising a non-tarnishable and non-corrosive material preventing discoloration and deterioration of the clip and the staining of the garment material to which the clip may be attached.

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