

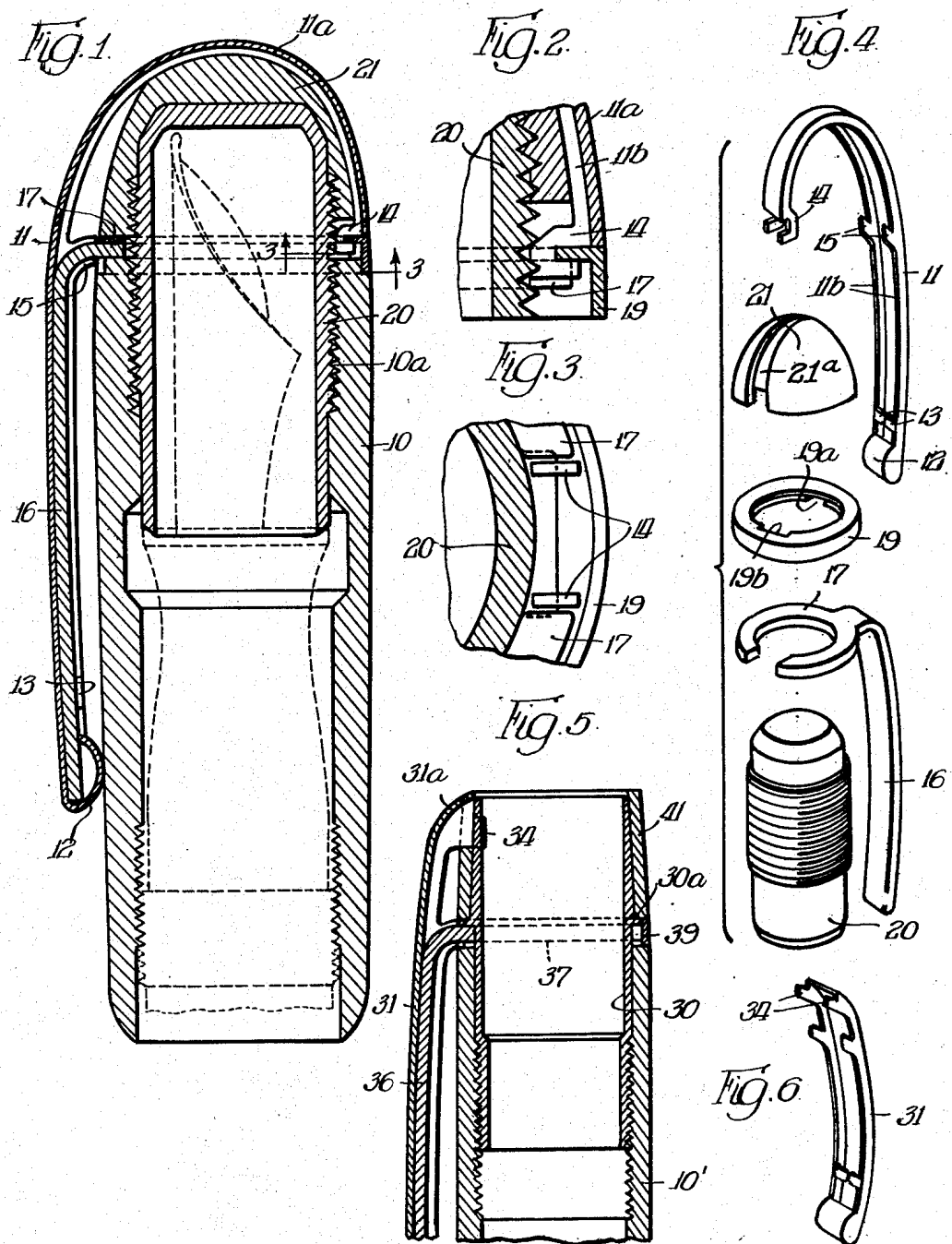
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RETAINING GLASP

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## RETAINING CLASP

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This invention relates to retaining clasps suitable for use on articles carried in the pocket, such as pencils, fountain pens, clinical thermometers, etc.

The general object of the invention is to provide a clasp construction which may be assembled with various types of articles, particularly those of a tubular character, with facility and security, which may be made of small size, particularly as to width, and which is of such character as to distribute the imposed stresses in such fashion that no part will be subjected to strains beyond its elastic limit incident to normal use, and likewise no part will be subjected to advanced crystallization from repeated flexure such as normally may be expected within the lifetime of the article to which it is attached.

A further object is the provision of such a clasp which will have a very secure retentive effect, yet will have a properly smooth and resilient action such as to safeguard the fabrics which it may grip from being torn or excessively worn incident to repeated engagement and disengagement of the article with them.

Other and further objects of the invention will be pointed out or indicated hereinafter or will be apparent upon an understanding of its construction or use of it in actual practice.

For the purpose of aiding in an explanation of the invention, I show in the accompanying drawing forming a part of this specification, and hereinafter describe, certain forms in which it may be embodied. It is to be understood, however, that these are presented merely for purpose of illustration as the invention may take various other particular forms, and that hence these examples are not to be construed in any fashion for the purpose of limiting the appended claims short of the true and comprehensive scope of the invention in the art.

In said drawing,

Fig. 1 is a longitudinal sectional view of a construction embodying my invention, showing it as assembled in the cap for a fountain pen;

Fig. 2 is a sectional detail from Fig. 1 on an enlarged scale;

Fig. 3 is a cross-sectional detail at 3—3 of Fig. 1 and looking upwardly on Fig. 2;

Fig. 4 is a composite perspective illustration of some of the parts comprised in Fig. 1 in disassembled relationship;

Fig. 5 is a sectional view similar to Fig. 1 but showing a modified construction; and

Fig. 6 is a perspective view of the outer leaf portion of the clasp shown in Fig. 5.

The nature of the invention will be ascertained most quickly from a description of the embodiments illustrated, which are as follows.

Referring first to the form illustrated in Figs. 1 to 4 inclusive, let it be understood that the reference numeral 10 designates an article to which the clasp is attached, which article may be in the nature of a fountain pen cap, a mechanical pencil, or the like. Such article has a tubular upper end portion which is internally screw threaded as indicated at 10a.

The clasp itself comprises an outer leaf 11 preferably of a metal having a suitable degree of resilience, said leaf affording a shank portion of suitable length having at its lower end an inwardly and upwardly curled bearing member 12, and having at its upper end a rearwardly arched portion 11a bent through an angle of approximately 180° and terminating in an inwardly offset hook 14. This leaf is formed with rearwardly bent marginal flanges 11b, so that it is of channel shape in cross section. Near its lower end it has a pair of lugs 13 extending from the flanges 11b and a pair of tongues 15 extending from said flanges at about the point where the rearward arched portion begins. The clasp also includes an inner leaf 16 of suitably resilient material formed to fit within the channel and against the under surface of the shank of the leaf 11 when the latter is in its normal position. The inner leaf has at its upper end a resilient split ring 17. The inner leaf is adapted to be assembled with the outer leaf 11 by fitting its shank against the concave side of the latter and inserting its lower end portion within the hook-like bearing part 12, and then bending the lugs 13 inwardly upon it, so that the outer leaf clasps the inner leaf yet allows both leaves an appropriate amount of play longitudinally relative to each other and movement of their upper portions toward and from each other. In such relationship the ring 17 is opposite the tongues 15 and its ends are adjacent the hook 14. The clasp comprises also a mantle collar 19 of angular cross section, having a top flange of width to overlap the upper side of the ring 17 and a depending flange of size to encompass said ring and of depth to extend somewhat below it. The depending flange of the mantle collar is formed with a notch 19a to accommodate the shank of the inner leaf, and its upper flange is formed with a notch 19b to accommodate the depending hook 14 of the outer leaf.

For connection of this clasp to the article, the latter is channeled peripherally to accommodate the depending flange of the mantle ring 19 and to permit its upper end to contact the under surface of the ring 17 when the two leaves are in assembled relationship, and a screw bushing 20 and cap nut 21 are provided, the latter of which may be formed to constitute, in effect, a continuation of the member 10. When the clasp is used on a fountain pen cap, the bushing 20 may serve also as the sealing cap or member which seats on the end of the pen section sleeve to seal off the pen point and ink feeding parts from the external air. The cap nut 21 is provided with a channel 21a for accommodation of a portion of the arched part 11a of the outer leaf, and it is adapted to screw onto the threaded upper end portion of the bushing 20.

Accordingly, to assemble the clasp with the article 10, the cap nut 21 having been inserted within the arched portion 11a of the outer leaf, and the mantle collar 19 having been placed over the ring 17 and against the under surface of the cap nut and engaged with the hook 14, the upper end of the threaded bushing 20 is inserted through the ring and collar and screwed into the cap nut 21. Then the article 10 is screwed onto the lower portion of the threaded bushing until its upper end jams against the lower surface of the ring 17. This fastens all of the parts together, the hook 14 serving to connect the upper end of the outer leaf to the mantle collar, the ring 17 serving to connect the upper end of the inner leaf to the mantle collar and bushing 20, and the channeled upper end portion of the article 10 fitting within the depending flange of the mantle collar and holding the ring 17 therein and clamping the collar against the nut 21 with the outer surface of the collar flush with the peripheral surface of the article. This produces the assembly illustrated in Fig. 1, the inner leaf being enveloped by the outer leaf and the tongues 15 lying along its rearwardly bent upper end. The bearing member 12 is normally held in contact with the side of the article 10 by the normal set of the leaves, but it may be swung away from the article against the resilient pressure of the leaves, as by forcing a thickness or thicknesses of fabric between them, as when sliding the article into a pocket. The resilient reaction of the leaves grips the interposed material so as to hold the article against falling out of the pocket.

It will be observed that by virtue of this construction, the flexing of the clasp is distributed over a considerable length of its component leaves, so that there is not any very great or radical deflection or distortion of the material at any point. The composite clasp is, in effect, connected to the article at two points spaced from each other, viz., at the ring 17 and at the hook 14, and both the resilient ring and the arched portion 11a yield to accommodate part of the deflection of the leaf shanks. The interaction of the two leaves gives a very effective gripping action, yet a smooth flexing action, and the manner in which the component spring is anchored to the article, viz., the inner leaf at one point and the outer leaf at an entirely separate location, is effective to prevent concentration of the flexing stress on the article 10, or the cap nut 21 or bushing 20. This is of importance because the barrels of many of the articles to which clasps are customarily attached, such as fountain pen caps, mechanical pencils, etc., are made of plastic ma-

terials, such as pyroxylin, hard rubber, or the like, which materials, although fairly tough, are susceptible to distortion, or possibly tearing, when stresses are applied to them in limited areas or adjacent to slots or below perforations. The present construction effectively avoids subjection of the wall of the tubular article, which frequently is rather thin, to such localized or concentrated stresses, and thus makes for preservation of the article as well as security in the mounting of the clasp. The inwardly and upwardly curved bearing member 12 allows a smooth sliding engagement of the clip upon the interposed fabric.

In Figs. 5 and 6 I show a somewhat modified embodiment of the invention which may be employed in a tubular article that is open at the top or requires an opening at its upper end. In this construction the inner leaf 36 is of approximately the same form as that described above, and it is likewise provided with a split ring 37 at its upper end. The outer leaf 31 is considerably shorter than in the form described above, this resulting from the shortening of its upper portion which is arched through an angle of about 90°. The connecting member at its upper end, corresponding to the hook 14 of the prior form, consists of a pair of lugs 34 which may be bent laterally to form hooks. With the exception of its upper end portion, the outer leaf 31 is of substantially the same form as above described, and the inner and outer leaves are shaped and dimensioned so as to fit together and function together in the manner above explained. As in the former instance, moreover, the inner leaf 36 may be made of a metal selected primarily for its tensile strength and resilient quality, whereas the outer leaf may be formed of a metal selected primarily for its ornamental or decorative value, but possessing appreciably less, though adequate, tensile strength and resilience, for example, a precious metal which has been given a certain amount of temper or resilience by rolling, or a thin sheet of a suitably resilient base metal which has been given an ornamental surface finish by plating or filling with a precious metal.

A clasp of this construction is attached to the article in much the same fashion as in the instance above described. The article is here designated 10', and it is screw threaded interiorly for engagement with the bushing 30 and shouldered at its upper end for engagement in a mantle collar 39 which in this instance may be a plain cylindrical band. The bushing has shoulders at 30a for clamping the band against the member 10' and holding its periphery flush with the periphery of said member. The bushing may have formed thereon or mounted thereon in any suitable manner a sleeve 41, which corresponds in function to the nut 21 of the previously described embodiment in that it constitutes an end finish member and a retaining member for the collar 39. The ring 37 of the inner leaf embraces the bushing 30, the inwardly turned upper end portion of the leaf being accommodated by a notch in the collar 39 similar to 19a of Fig. 4. The upper end portion of the outer leaf 31 is abutted against the proximate side of the bushing 30 at a distance above the upper end of the inner leaf and is fastened to the bushing by means of the lugs 34 which pass through slots in the bushing and are turned over against its inner surface to form connecting hooks. Thus, as in the form first described, the inner and outer leaves are independently attached to the article at their up-

per ends, the connection of the outer leaf being at a distance from the connection of the inner leaf. The two leaves cooperate with each other in the same manner as described above, and function in the same fashion to distribute the stresses and obtain the desired smooth and effective clasp action. As illustrated in Fig. 5, the bushing 30 may be left open at its upper end, or it may be closed at the upper end, depending upon the nature of the article to which it is attached.

What I claim is:

1. A clasp for a pocket article comprising a shank having a divided upper portion with one of the subdivisions extending beyond the other longitudinally of the shank, and means connecting the subdivisions to the article at locations spaced apart from each other, the lower portion of the shank being associated with the side wall of the article and being resiliently flexible therefrom by intrusion of material between them.

2. A clasp for a pocket article comprising an outer leaf and an inner leaf, both of resilient quality and operably connected to each other to form a resilient shank, the leaves being connected to the article at their upper portions at locations spaced apart from each other.

3. A clasp for a pocket article and the like comprising, in combination, an inner leaf and an outer leaf operably connected at their lower ends to form a resilient shank extending alongside the article, the inner leaf having at its upper end a ring whereby it is connected to the article, and means independently connecting the upper portion of the outer leaf to the article at a distance from the upper end of the inner leaf.

4. A pocket clasp for a writing implement or the like comprising an outer leaf and an inner leaf, said leaves having their lower portions cooperating to form a resilient shank, the upper portion of the outer leaf extending beyond the upper end of the inner leaf, and means connecting the upper ends of the respective leaves to the implement at opposite sides thereof.

5. A pocket clasp for a writing implement or the like comprising an inner leaf and an outer leaf, said leaves having their lower portions associated to form a resilient shank extending alongside the implement, the upper portion of the outer leaf extending beyond the upper end of the inner leaf and over the top of the implement, and means connecting the upper end of the inner leaf to the implement at one side thereof and the upper end of the outer leaf to the implement at the opposite side thereof.

6. A clasp for a pocket article comprising an inner leaf of resilient quality, an outer leaf enshrouding the inner leaf, the lower portions of

said leaves being operably connected to function as a resilient shank and the upper portion of the outer leaf extending beyond the upper end of the inner leaf, and means connecting the upper ends of the two leaves to the article at spaced locations.

7. A clasp for a pocket article comprising a collar arranged to encompass the article, an inner leaf and an outer leaf having parts associated to form a resilient shank, the outer leaf having retentive engagement with said collar at one side of the article, and the inner leaf having retentive engagement with said collar at the opposite side of the article.

8. A clasp for a pocket article or the like comprising an inner leaf formed with a resilient shank extending alongside the article, said inner leaf being connected at its upper end to the article, and an outer leaf forming a shrouding for the outer and lateral portions of said inner leaf and extending beyond its upper end, said shrouding being connected at its upper end to the article.

9. A clasp for a pocket article or the like comprising an inner leaf formed with a resilient shank, means connecting the inner leaf at its upper end to the article with its shank alongside same, and an outer leaf having its lower portion contacting the shank of the inner leaf, said outer leaf being connected at its upper end to the article at a distance from the upper end of the inner leaf, said outer leaf having a resiliently flexible portion extending from its point of connection with the article to its point of engagement with the inner leaf.

10. In a writing implement or the like, a clasp assembly comprising a bushing attached to the article, an inner leaf and an outer leaf having lower portions cooperating to form a shank alongside the article, the inner leaf having at its upper end a resilient ring engaged about the bushing and the outer leaf having its upper end connected with the bushing.

11. In a writing implement or the like, a clasp assembly comprising a bushing adapted to screw onto the end of the implement, a retaining portion carried by said bushing and providing an overhanging shoulder above the end of the implement, an inner leaf having a shank portion extending alongside the implement, a resilient ring portion extending from the upper end of the inner leaf and engaged about the bushing and clamped between said overhanging shoulder and the upper end of the implement, and an outer leaf having its lower portion associated with the shank of the inner leaf and its upper portion extending beyond the upper end of the inner leaf and connected to the bushing.

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