June 21, 1960 M. CIEREMANS 2,941,511

WRITING IMPLEMENT WITH RETRACTABLE GUARD SLEEVE

Filed Dec. 19, 1956

FIG. 1

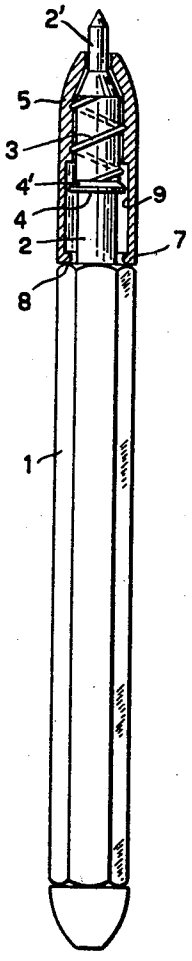
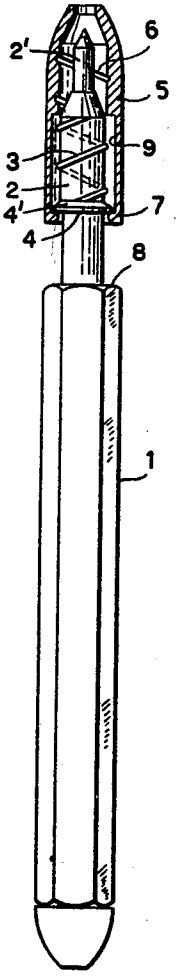


FIG. 2



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2,941,511

WRITING IMPLEMENT WITH RETRACTABLE GUARD SLEEVE

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2 Claims. (Cl. 120—42.03)

The invention relates to a writing implement comprising a tip adapted to writing purposes, more particularly to a ball pointed fountain pen, of the type comprising a guard sleeve open at both ends and provided with an internal screw thread having threaded engagement with a cooperating screw thread on the barrel of the implement, the sleeve being movable between an advanced position wherein the writing tip is shielded and concealed by the sleeve and a retracted position wherein the writing tip is exposed for writing purposes.

It is among the principal objects of the invention to provide a writing implement of this character wherein the guard sleeve is permanently mounted on the barrel of the implement and is movable in either direction thereon between its retracted and its advanced positions by effecting relative turning movement between the parts so that the sleeve will be screwed in one direction or the other along the barrel, the disposition of the cooperating screw threads on the sleeve and barrel respectively being such that, as the guard sleeve assumes its fully advanced position, the cooperating screw threads move out of threaded register with each other, thus allowing the guard sleeve to run free on the barrel so that the screw threads can never be damaged by forced action.

Another object of the invention in a writing implement of the character outlined above, is to provide means for ensuring that the guard sleeve will not become shifted from its retracted position due to pressure by the user's fingers when the implement is in use.

Still another object of the invention is to provide simple means for connecting a guard sleeve adapted to be moved in longitudinal direction of the writing implement and to protect in one position the writing tip, said means eliminating the use of springs of any kind.

In the drawing:

Figure 1 shows an embodiment of the writing implement according to the invention, the guard sleeve being represented in section and in the position which enables writing with the instrument;

Figure 2 is an elevation partly in section of the instrument according to Figure 1, the guard sleeve being in its shielding position.

In Figure 1 a ball pointed fountain pen has been shown, but it is to be understood that the present invention can also be applied to other writing implements such as automatic pencils, the writing tip of which requires protection. However, the invention is of particular importance for ball point instruments because for these, shielding of the rather delicate writing tip is particularly suitable to avoid contact between said tip and the user's clothes when the implement is pocketed.

Referring now to the drawings in detail, the writing implement of the present invention involves in its general organization a barrel 1 having a reduced cylindrical region 2, the forward end of which is further reduced as at 2' to provide a writing tip which may be of the ball point variety.

A part of the implement near the writing tip 2 is provided with a screw thread 3 which ends near an annular retention collar 4 having a forwardly facing frusto-conical surface 4', the nature and function of which will be made clear presently. A guard sleeve 5 is mounted around the tip part of the barrel 1. Said guard sleeve is provided with an internal screw thread 6 fitting the thread 3 on the barrel.

The guard sleeve 5 is provided with an enlarged counterbore 9 which encompasses the collar 4 and affords a clearance region for the collar when the sleeve 5 is shifted longitudinally of the barrel 1. The rear open end of the sleeve 5 is formed with an inturned flange 7 having an internal diameter slightly less than the overall diameter of the collar 4. The material from which the guard sleeve 5 is formed is preferably, but not necessarily, of a resilient nature and possesses a substantial degree of resistance to compressional forces tending to distort it. Thus, in the initial assembly of the sleeve 5 on the reduced region 2 of the barrel 1, the sleeve may be telescoped over the region 2 until the inturned flange 7 engages the collar 4, after which continued movement of the sleeve longitudinally of the barrel 1 will cause the flange 7 to ride outwardly on the frusto-conical surface 4' and snap into position, so to speak, behind the collar by the latching action.

The flange 7 and collar 4 cooperate to prevent the guard sleeve 5 from leaving the writing implement. In the advanced position of the sleeve shown in Figure 2 the flange 7 abuts the collar 4. In the retracted position of the sleeve shown in Figure 1, i.e. when the implement is ready for writing the flange 7 abuts a shoulder 8 of the barrel 1. In this position the outer surfaces of the sleeve 5 and the barrel 1 are flush.

It is clear from Figure 2 that in the advanced position of the sleeve the latter can idly rotate around the end of the writing implement because the screw thread of the sleeve will have run free of the thread on the reduced region 2 of the implement. During such free running of the sleeve 5 on the cylindrical region 2, the inturned flange 7 bears against or at least is in close proximity to the collar 4 so that the guard sleeve 5 cannot be removed from the barrel 1, while at the same time the threads 3 and 6 are out of register with each other yet in such end-to-end proximity that the sleeve is maintained in its advanced position and cannot be shifted to its retracted position, except by reversing the direction of rotation of the sleeve and causing the threads 3 and 6 to enter into mating register with each other. By such an arrangement, accidental retraction of the guard shield is prevented during pocketing of the implement.

Having thus described the invention, what is claimed is:

1. In a writing implement, a barrel having a cylindrical region at its forward end from which there extends forwardly a coaxial writing tip, a limited forwardly disposed portion of said cyclindrical region of the barrel being provided with an external screw thread, a continuous annular rib-like retention collar formed on said cylindrical region of the barrel rearwardly of said external screw thread, and a tubular open-ended guard sleeve telescopically received over said cylindrical region, said guard sleeve being functionally circumferentially continuous, the longitudinal extent of said sleeve being less than the combined longitudinal extent of said cylindrical region and writing tip, said sleeve being formed with a central bore therethrough with a rearwardly disposed enlarged counterbore, the region of said bore forwardly of said counterbore being provided with an internal screw thread designed for mating engagement with the external screw thread on said cylindrical region of the barrel, the axial extent of said enlarged counterbore being at least as great as the axial extent of said external screw

thread, the rear end of said guard sleeve being formed with an inwardly extending continuous annular flange the internal diameter of which is slightly less than the external diameter of said collar, said flange being disposed rearwardly of said collar, said guard sleeve being movable axially between an advanced position wherein said flange engages said collar and wherein the forward internally threaded region of the sleeve is in register with an encompasses said writing tip with said enlarged counterbore in register with and encompassing said external screw thread whereby said sleeve may be rotated in either direction on the cylindrical region of the barrel with said external and internal screw threads running free of each other, and a retracted position wherein the forward region of the sleeve is withdrawn from register with said writing tip and leaves the latter exposed with said external and internal threads in mating engagement with one another, said sleeve being formed of a somewhat resilient material, the forward side of said collar and the rear side of said inturned flange on the sleeve being provided with cooperating cam means in longitudinal register with each other whereby, during initial telescopic reception of the sleeve over said cylindrical region of the barrel in connection with assembly of the sleeve and barrel, said

flange will be first guided and expanded over the collar and then by a latching and contracting action caused to snap into position rearwardly of the collar and between said collar and forwardly facing shoulder to effect permanent application of the sleeve to the cylindrical region of the barrel.

2. In a writing implement, the combination set forth in claim 1 wherein said cooperating cam means comprises a forwardly facing frusto-conical cam surface on said collar and engageable with said inturned flange for spreading said flange radially outwardly to increase the diameter thereof to such an extent that it may pass over said collar.

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