

Oct. 26, 1954

D. KAHN ET AL
WRITING INSTRUMENT

2,692,580

Filed Nov. 17, 1952

2 Sheets-Sheet 1

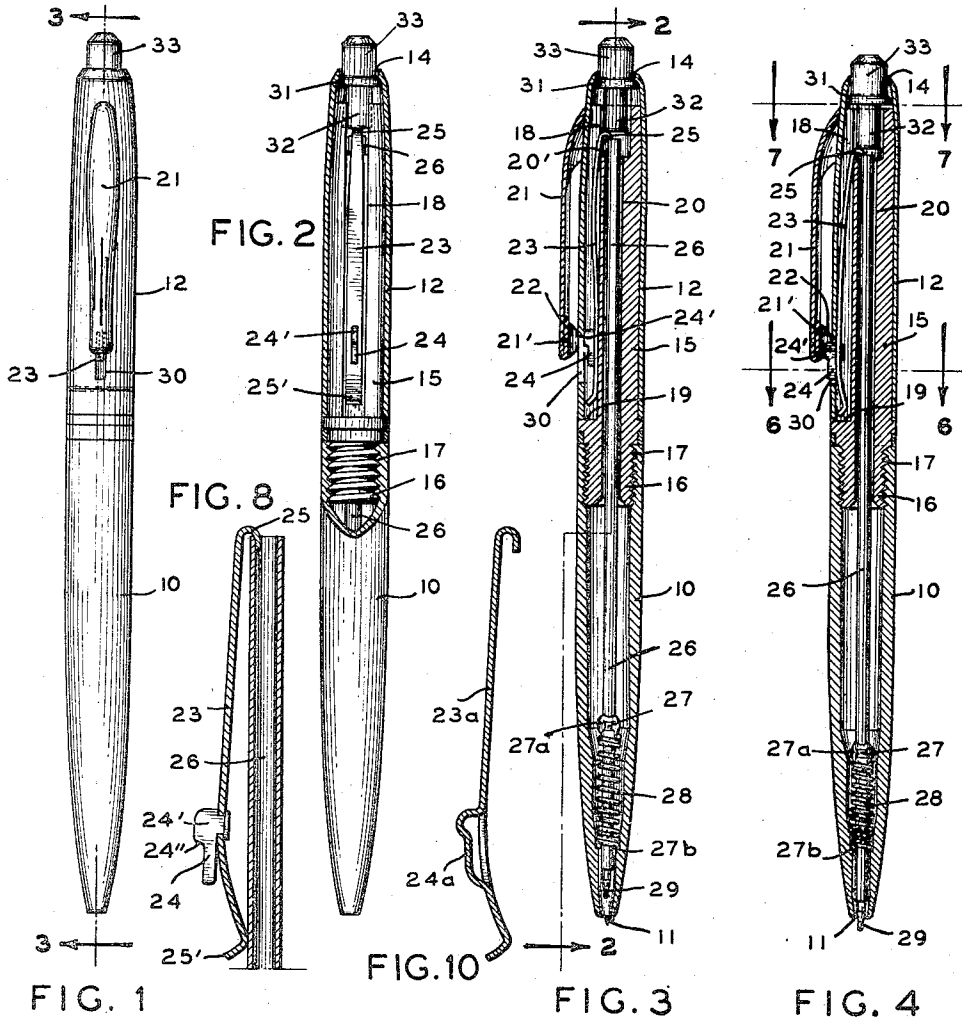


FIG. 1

FIG. 10

FIG. 3

FIG. 4

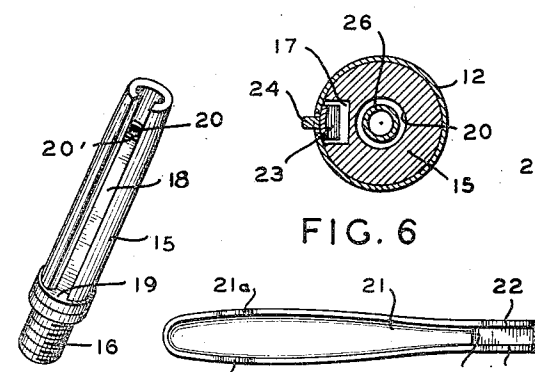


FIG. 5

FIG. 6

FIG. 7

FIG. 9

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2 Sheets-Sheet 2

FIG. 11

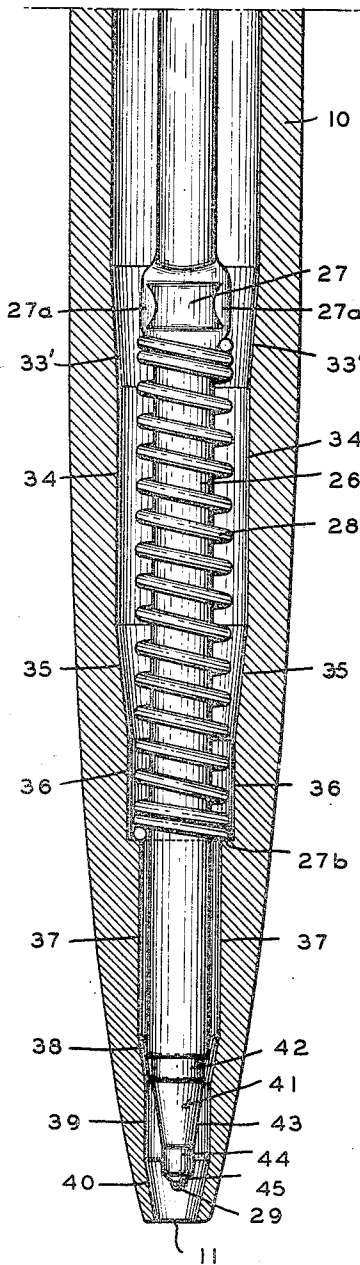


FIG. 12

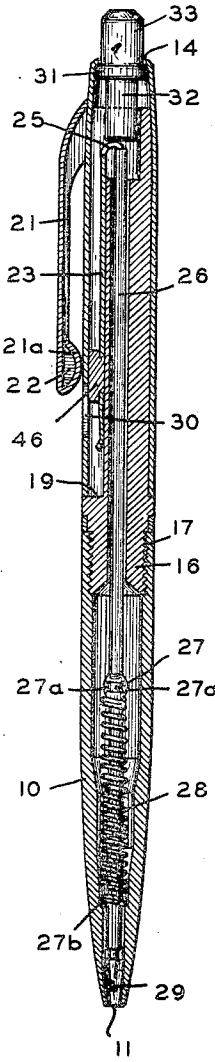
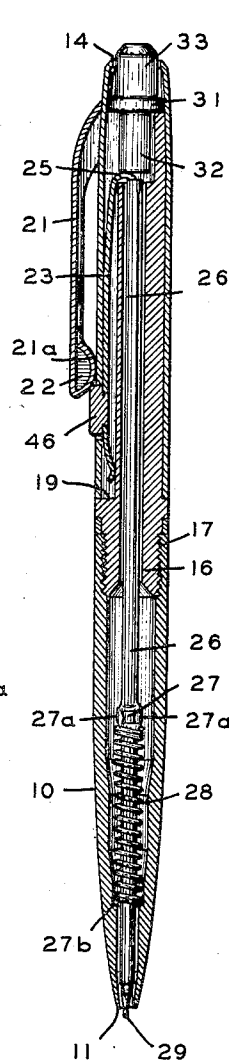


FIG. 13



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WRITING INSTRUMENT

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9 Claims. (Cl. 120—42.03)

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This invention relates to a writing instrument and more particularly to a writing instrument having a retractable writing element as, for example, the so-called ball point.

One object of the present invention is to provide a writing instrument having a novel mechanism for moving the writing element to its protracted or retracted position.

Another object of the present invention is to provide a writing instrument with a novel holding means for maintaining a cartridge writing unit and its writing element in its protracted position and novel means for releasing said holding means to permit said cartridge unit and its writing element to move to a retracted position.

A further object of the present invention is to provide a writing unit having a clip of a particular structure cooperating with a spring-operated releasing lug.

Another object of the present invention is to provide a writing unit preferably having a writing element of the ball-point type wherein the barrel or cap is provided with a slot which is arranged contiguous to the free end of the pocket clip and preferably having a portion thereof extending under the free end of the pocket clip, said slot being adapted to receive therein a projection or lug to hold a writing unit, including a writing element, in its protracted position, the lug being mounted or secured on a spring member wherein in the event a user attempts to pocket the writing instrument before retracting the writing point, the lug will be automatically engaged by a portion of the pocket edge or other material to which the pen is applied to insure retraction of the writing element.

Another object of the present invention is to provide a clip for a writing instrument, a portion of which cooperates with a releasing lug adapted to contact the edge of a material to which the writing instrument is to be clipped and thereby automatically effect retraction of the writing element within the barrel to a non-writing position, said clip having a leg member which is provided at its free end with clipping means having a space for the reception of an operating lug adapted to enter a slot in the barrel of the writing instrument and hold the writing element of the writing instrument in a protracted position.

Another object of the present invention is to provide a novel operating lug.

A still further object of the present invention is to provide a body member seated in the cap member, said body member having a bore extending longitudinally through the body member

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and being provided with a shoulder adjacent its upper end and a longitudinally disposed channel extending from said upper shoulder to a lower shoulder or support, said channel being adapted to house a spring member to which an operating lug is secured.

Another object of the present invention is to provide an ink reservoir tube having an enlarged portion adjacent its lower end and a spring mounted on said reservoir tube and urging the tube into retracted position against said enlarged tube portion, the lower end of the barrel being provided with a shoulder on which the spring member seats.

Another object of the invention is to provide an arrangement whereby the cartridge can never be forced through the opening in the lower end of the barrel.

In the accompanying drawing forming a part of this application and in which like numerals are used to designate like parts throughout the same:

Fig. 1 is a front elevational view of the fountain pen constructed according to the present invention;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 3;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 1;

Fig. 4 is a view similar to Fig. 3, but showing the ball point in extended position;

Fig. 5 is a perspective view of the body member;

Fig. 6 is a sectional view taken on the line 6—6 of Fig. 4;

Fig. 7 is a sectional view taken on the line 7—7 of Fig. 4;

Fig. 8 is a detailed view of the writing instrument clip;

Fig. 9 is a bottom plan view of the clip illustrating in greater detail the side walls and ears formed thereon;

Fig. 10 is a longitudinal sectional view through a modified form of combined spring member and operating lug;

Fig. 11 is a sectional view similar to that shown in Fig. 3 but enlarged to show the internal contour of the barrel and the manner in which the coil spring is mounted relative to the cartridge and the barrel;

Fig. 12 is a sectional view of a modified form of the invention with the writing unit in retracted position; and

Fig. 13 is a similar view with the writing unit in protracted position.

Referring in detail to the drawings, the nu-

meral 10 designates the lower portion of the barrel, and the portion 10 of the barrel is provided with an opening 11 in its front end for the projection therethrough of the ball point. Arranged in end to end relationship with respect to the lower portion 10 and constituting the forward portion of the barrel is a cap or casing 12, and the cap 12 is provided with an opening 14 in its rear end for a purpose to be later described.

Snugly positioned within the cap 12 is a body member 15, and the body member 15 is provided with an exteriorly threaded skirt or sleeve 16 which is arranged in threaded engagement with an interiorly threaded portion 17 of the barrel portion 10, as shown in Fig. 3. Other equivalent means may be provided for mounting the body member in the forward portion of the barrel. The body member 15 is further provided with a longitudinally extending channel or cut-out 18 for a purpose to be later described, and arranged in the body member 15 is a shoulder 19. A longitudinally extending bore 20 is also provided in the body member 15, the upper wall of said bore forming a shoulder 20'.

Arranged exteriorly of the forward portion of the barrel constituted by the cap 12 and secured thereto is a pocket clip 21 having ears 21a and at its lower free end clipping means, which is known in the art as a "ball member," said clipping means comprising side walls 22 and 22' having inturned tongue member 21' which has been pressed down from the position it normally assumes in the usual clip so that it is substantially adjacent the rear surface of the lower portion of the clip, as shown in Fig. 9, to thereby provide a space between the side walls 22 and 22'. The forward end of the barrel preferably, although not necessarily, constituted by the cap 12 is provided with a slot or opening 30 disposed under the lower free end of the clipping means. Extending longitudinally through the channel 18 of the body member 15 is a spring member 23 provided with an operating lug or projection 24 having an enlarged portion 24' to thereby provide a shoulder 24''. The lug is mounted on the spring member 23 for movement into and out of engagement with the slot 30 in the cap 12. The operating lug partially extends within the space of the clipping means when the writing instrument element 29 is in its protracted position. The enlarged portion providing a shoulder 24' is adapted to contact the edge of a material to which the writing instrument is to be clipped as, for example, the edge of a pocket of a coat or the edge of a pocket of a shirt which is made of fairly thin material. The provision of the enlarged portion 24' makes certain that the lug 24 operates when pressure is applied thereto by any pressure-applying means as, for example, the edge of a coat pocket or the edge of a shirt pocket irrespective of the thinness of the material of the engaging end.

It is to be noted that the lower portion of the lug extends forwardly beyond the free end of the clip in order that a camming effect between the enlarged portion 24' and the end of the clip may be more readily effected.

Other means may be provided to make certain that the lug 24 is operated upon the application of pressure irrespective of the thinness of the material. Illustratively, the lug 24 could be such a thickness as to leave little space so as to make certain that it would be retracted from the slot by the application of pressure induced by the application of the writing instrument to the material to which the instrument is to be clipped.

In this form of lug no enlarged portion is necessary.

The rear end of the spring member is shaped to define a hook 25 which engages and extends into the rear end of the ink reservoir tube 25 which is a part of the writing unit or cartridge. The lower portion of the spring is provided with a spring lip 25' projecting away from the exterior surface of the lower end of the cartridge tube 25.

The ink reservoir tube 26 of the writing unit is crimped or compressed to provide an enlarged portion 27. In the specific form shown, this enlarged portion comprises oppositely disposed flanged ears or flanges 27a. The coil spring 28 is circumposed over the lower portion of the reservoir tube 25 abutting against said enlarged portion 27 and more specifically said oppositely disposed ears or flanges 27a. The lower end of the spring 28 rests upon a shoulder 27b formed within the barrel bore of the writing instrument.

Referring to Fig. 11 of the drawing, the bore of the barrel is provided with an interior bore wall formed of a plurality of sections having for the most part alternately parallel and downwardly tapered side walls, the latter being walls 33', 35, 36 and 40. The parallel side walls are identified in the drawing as 34, 36 and 39. Intermediate the side walls 36 and 38 is a section having a parallel side wall 37.

The reservoir tube 26 has mounted therein an auxiliary short terminal tube 41, said tube being provided with a portion 42 having parallel side walls, a portion 43 having downwardly tapered side walls, a short terminal portion 44 having parallel side walls and terminating in a ball-holding section 45 in which is mounted the writing ball 29. The arrangement of these parts is such that the ink reservoir tube cannot drop through the barrel even if the encircling or circumposed coil spring did not prevent such passage. It is to be noted that the angularity of the portion or section 43 of the auxiliary reservoir member is the same as the angularity of the walls 45 of the extreme end of the tip, and further that the diameter of the portion of the auxiliary reservoir tube having parallel side walls 42 is greater than the diameter of the tip opening 11. The coil spring 28 serves to normally bias or urge the instrument writing unit or cartridge in its retracted position. Mounted in the front end of the tube 25 is a writing element 29 as, for example, a writing ball, although the invention is not limited to a writing instrument which is provided with the so-called ball point.

A manually operated mechanism is provided for propelling the cartridge writing unit including the writing element 29 from its retracted position shown in Fig. 3 to its protracted position shown in Fig. 4, said mechanism including a push button 31 provided with a portion 32 slidable within the cap 12, said portion 32 abutting the hook 25 on the spring member 23. Slidably or reciprocally projecting through the opening 14 in the upper portion of the barrel in a finger-engaging portion 33 which may be engaged by a person's finger when the writing element 29 is to be moved into its projected or protracted position. In retracting the cartridge writing unit, the writing instrument may be placed in the pocket of the user to simultaneously retract the ball point 29 and clip the writing instrument to the pocket edge. It is to be noted that when the pen is in its protracted position as shown in Fig. 4, the upper enlarged portion 24' is disposed in the space between the side walls or ears 22 and 22' of the clip 21,

and if the writing instrument is inserted in the pocket of the user, a portion of the pocket edge will engage the protuberance 24' and exert a slight pressure on said protuberance or projection to cause the lug 24 with the protuberance 24' to move inwardly through the slot 30 and thereby cause the cartridge unit and the writing element 29 to move to a retracted position, as shown in Fig. 3. The protuberance 24' functions as a pocket-engaging catch insuring that the pocket edge will abut the shoulder 24' of the lug and in this manner exert sufficient pressure on the lug 24 to move inwardly.

The mechanism for protracting and retracting the cartridge unit including the writing element 29, operates as follows: Starting with the writing element 29 in its retracted position, as shown in Figs. 1, 2, and 3, manual depression of the button 31 acts directly on the rear of the cartridge tube 26 through the hook 25 to project the tube forwardly and move the ball point writing element 29 through the opening 11 of the barrel to the position shown in Fig. 4. As the tube 26 moves forwardly, the spring member 23 is moved forwardly through the channel 13 until the inherent resiliency of the spring member 23 causes the lug 24 and the enlarged shoulder member 24' to project into and through the slot 30. It is to be noted, as shown in Fig. 4, the operating lug 24 and shoulder member project above the exterior surface of the barrel and for a short distance between the ears 22 and 22'. The free end of the clip together with the ears 22 and 22' provide clipping means disposed closely adjacent the exterior surface of the barrel, said means providing a space for the reception of the operating lug. After the lug 24 has entered the slot 30, pressure on the button 31 may be released with the lug 24 projecting through the slot 30 and the cartridge member, including the writing element 29, will be maintained immobile in its protracted or extended position. The writing instrument or pen is then ready for use. To retract the writing element 29, it is only necessary to contact the lug with the edge of the material to which the writing instrument is to be clipped to thereby cause the lug 24 and its shoulder member 24' to move inwardly. Then the spring 23 immediately causes the writing or cartridge unit to be retracted and the parts move from the position shown in Fig. 4 to the position shown in Fig. 3. In the retracted position, the button portion 33 of the button 31 projects out of the upper portion of the barrel where it may be readily engaged by the finger of the user when the cartridge unit is to be moved to its protracted position.

In the modified form of spring member 23a illustrated in Fig. 10 of the drawing, the operating lug or projection 24a may desirably be stamped out or extruded from the material per se of the spring clip which may be a high carbon steel. The operating lug 24a may be extruded from the high carbon spring steel prior to hardening, and then the spring with its integral operating lug, is hardened to give it the proper temper.

While there has been shown a specific embodiment of applicant's invention, it is desired to broadly claim a writing instrument having a clip secured to the barrel, said clip having a free end at least partially disposed over a slot in the barrel, said writing instrument having means for holding said writing unit immobile in a retracted position, and means for automatically releasing the holding means when the free end of the clip engages material to which the writing instrument is

to be clipped as, for example, the pocket of a user, said releasing means including an operating lug automatically movable inwardly out of engagement with the slot into the interior of the barrel when the material to which the writing instrument is to be clipped is passed between the lug and the free end of the clip, to thereby effect retraction of the slidable writing unit to a retracted position, said operating lug being resiliently mounted.

It is also desired to point out that not only is the combination herein shown novel, but that there is provided a novel body member, a novel clip, and a novel operating lug, and that protection is desired upon these novel elements as well as said novel elements in combination as above set forth.

In the form of invention shown in Figs. 12 and 13, the lug is devoid of any protuberance such as the protuberance 24' shown in Figs. 3 and 4. Further, the lug 46 when the writing unit is in a protracted position, extends for only a short distance under the clip 21 and may, if desired, be spaced upwardly from the lower extremity of the clip 21 and from the entrance to the clip 21.

In this form of invention, the ball member of the clip is provided with the usual walls or ears 22 and 22' and an inturned tongue member. However, this inturned tongue is not pressed down as shown in Fig. 9, but is substantially flush with the exterior extremities of the ears 22 and 22' which usually lie substantially adjacent and touching the barrel portion. However, if for any reason it is desirable, the tongue can be pressed downwardly from the position it normally assumes so as to provide space within the ears 22 and 22' so that the lug 46 can, on the projection of the writing ball 29, lie within the space between said ears.

What is claimed is:

1. In a writing instrument, having a tubular barrel provided with a barrel wall and a projectable and retractable writing unit having a writing element in said barrel, said barrel having an opening in its lower end through which said writing point is adapted to be projected, manual means for projecting said unit, said barrel having a slot in the side thereof, spring means in said barrel normally biasing said writing unit toward retracted position, inwardly movable resilient releasable holding means including a lug extensible through said slot and projecting therebeyond for holding said unit in protracted position, a clip having one end attached to the barrel and a free end for engaging a pocket piece, said free end tapering toward said barrel in a direction away from said lug and overlying a portion of said lug and in camming position relative thereto when the lug extends beyond the barrel, the outermost portion of said free end being positioned outwardly, relative to said barrel, of said lug when said lug is in extended position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, at least a portion of the free end of the clip lying more closely to the barrel than the upper edge of the lug when the latter extends beyond the barrel and the writing unit is in a protracted position, whereby the insertion of an intervening medium such as a pocket edge in overlying relationship with a portion of said lug exerts a camming effect to depress said lug through said slot into said barrel and retract said writing unit.

2. In a writing instrument, having a tubular

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barrel provided with a barrel wall and a projectable and retractable writing unit having a writing element in said barrel, said barrel having an opening in its lower end through which said writing point is adapted to be projected, manual means for projecting said unit, said barrel having a slot in the side thereof, spring means in said barrel normally biasing said writing unit toward retracted position, inwardly movable resilient releasable holding means including a lug extensible through said slot and projecting therebeyond for holding said unit in protracted position, a clip having one end attached to said barrel and a free end for engaging a pocket piece, said free end overlying a portion of the slot and a portion of the projecting lug when the writing unit is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, at least a portion of the inner free end of the clip being tapered toward said barrel to lie more closely to the barrel than the upper edge of the lug when the writing unit is in a protracted position, whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug and said tapered free end of said clip exerts a camming effect to depress said lug through said slot into said barrel to permit said spring to move said writing unit to retracted position.

3. In a writing instrument, having a tubular barrel provided with a barrel wall and a projectable and retractable writing unit having a writing element in said barrel, said barrel having an opening in its lower end through which said writing point is adapted to be projected, manual means for projecting said units, said barrel having a slot in the side thereof, spring means in said barrel normally biasing said writing unit toward retracted position, inwardly movable resilient releasable holding means including a lug extensible through said slot and projecting therebeyond for holding said unit in protracted position, a clip having one end attached to said barrel and a free end for engaging a pocket piece, said free end overlying a portion of the slot and a portion of the projecting lug when the writing unit is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, the inner portion of the clip being provided with a cavity into which said first mentioned portion of the lug extends when the writing unit is in protracted position, a portion of the inner free end of the clip being tapered toward said barrel to lie more closely to the barrel than the upper edge of the lug when the writing unit is in a protracted position, whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug exerts a camming effect to depress said lug through said slot into said barrel and retract said writing unit.

4. In a writing instrument, having a tubular barrel provided with a barrel wall and a projectable and retractable writing unit having a writing element in said barrel, said barrel having an opening in its lower end through which said writing point is adapted to be projected, manual means for projecting said unit, said barrel having a slot in the side thereof, spring means in said barrel normally biasing said writing unit toward retracted position, inwardly movable resilient releasable holding means including a lug extensible through said slot and projecting there-

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beyond for holding said unit in protracted position, a clip having one end attached to said barrel and a free end for engaging a pocket piece, said free end overlying a portion of the slot and a portion of the projecting lug when the writing unit is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, at least a portion of the inner free end of said clip being substantially flush with said barrel and being tapered toward said barrel whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug exerts a camming effect to depress said lug through said slot into said barrel and retract said writing unit.

5. The writing instrument defined in claim 3 in which the clip has inwardly extending side portions and an intumed tongue therebetween, the latter being at least partially depressed to provide said cavity into which the lug extends when the writing instrument is in a protracted position.

6. In a writing instrument, a tubular barrel provided with a wall having a slot therein, a reservoir tube, said barrel being open at both ends, an internal assemblage within said barrel, said internal assemblage including a tubular body member mounted in said barrel, said body member having a longitudinally extending exterior channel therein and a seat for the seating of a spring member, said reservoir tube having one end extending into the interior of said body portion, a writing element in the other end of said reservoir tube projectable and retractable through the lower open end of said barrel, spring means in the lower end of said barrel normally biasing said writing tube to a retracted position, a push button abutting the upper end of said body member extensible and projectable through the open end of said barrel, an outwardly convex spring having one end engaging the seat of said body member when the reservoir tube is in protracted position and the other end of the spring engaged by said push button, and a lug on said spring extensible through said slot and projecting therebeyond for holding said reservoir tube in protracted position, a clip having one end attached to said barrel and a free end for engaging a pocket piece, said free end overlying a portion of the slot and a portion of the projecting lug when the reservoir tube is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, at least a portion of the free end of the clip being tapered toward said barrel to lie more closely to the barrel than the upper edge of the lug when the reservoir tube is in protracted position whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug exerts a camming effect to depress said lug through said slot into said barrel to retract said reservoir tube.

7. In a writing instrument having a tubular barrel provided with a wall and an internal assembly therein including a body member mounted in said barrel, a movable writing unit having a writing element projectable and retractable in said barrel, and movable manual means for projecting said writing unit; said barrel having an opening in its lower end through which said writing element is adapted to be projected, said barrel having a slot in the side thereof, spring means in the barrel normally biasing said writ-

ing unit toward retracted position, inwardly movable resilient releasable holding means including a lug extensible through said slot and projecting therebeyond for holding said writing unit in protracted position, said holding means being inwardly movable to released position to thereby permit said spring means to return said writing unit to retracted position, said body member having a bore extending longitudinally therethrough and an exterior spring-receiving longitudinal channel provided with a seat, said writing unit extending through said bore, said channel being aligned with said side slot, said resilient holding means comprising an outwardly convex spring disposed in said channel, said spring being provided with a lower angularly disposed portion for engaging said seat and an upper angularly disposed portion engaged by one of said movable members of said internal assembly and movable with the movable members, a clip having one end attached to said barrel and a free end for engaging a pocket piece, said free end overlying a portion of the slot and a portion of the projecting lug when the writing unit is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, at least a portion of the inner free end of the clip being tapered toward said barrel to lie more closely to the barrel than the upper edge of the lug when the writing unit is in a protracted position, whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug exerts a camming effect to depress said lug through said slot into said barrel and retract said writing unit.

8. In a writing instrument, having a tubular barrel provided with a barrel wall and a projectable and retractable writing unit having a writing element in said barrel, said barrel having an opening in its lower end through which the writing point is adapted to be projected: manual means for projecting said unit, said barrel having a slot in the side thereof, spring means in said barrel normally biasing said writing unit toward retracted position, inwardly movable, resilient, releasable holding means including a lug extensible through said slot and projecting therebeyond for holding said unit in protracted position, a clip having one end attached to said barrel and a free portion including a free end for engaging a pocket piece, said free portion overlying a portion of the slot and a portion of the projecting lug when the writing unit is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, at least a portion of said free end being tapered toward said barrel to lie more closely to the barrel than the upper edge of the lug when the writing unit is in a pro-

tracted position, whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug exerts a camming effect to depress said lug through said slot into said barrel and retract said writing unit.

9. In a writing instrument, having a tubular barrel provided with a barrel wall and a projectable and retractable writing unit having a writing element in said barrel, said barrel having an opening in its lower end through which the writing point is adapted to be projected: manual means for projecting said unit, said barrel having a slot in the side thereof, spring means in said barrel normally biasing said writing unit toward retracted position, inwardly movable, resilient, releasable holding means including a lug extensible through said slot and projecting therebeyond for holding said unit in protracted position, a clip having one end attached to said barrel and a free end for engaging a pocket piece, said free end overlying a portion of the slot and a portion of the projecting lug when the writing unit is in protracted position, a further portion of said lug extending beyond the free end of said clip and above said barrel wall, the inner portion of the clip being provided with a pair of closely spaced projections defining a cavity therebetween into which the lug extends when the writing unit is in protracted position, at least a portion of the inner free end of the clip being tapered toward said barrel to lie more closely to the barrel than the upper edge of the lug when the writing unit is in a protracted position, whereby the insertion of an intervening medium such as a pocket edge in overlying relation with said first mentioned portion of said lug exerts a camming effect to depress said lug through said slot into said barrel and retract said writing unit.

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